



Measuring EU global value chains' dependencies with Russia

International Seminar: “Post-COVID Value Chains: Use of the Sub-Regional Input-Output Tables of the Pacific Alliance and FIGARO as impact assessment tools”

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Global value chains indicators such as the OECD's TiVA help understanding better the increased fragmentation of worldwide trade and how value added is traded all around the world.

- Main international suppliers
- ▲ Factories
- ✕ Main sales offices

Source: Ferrero, Sourcemap and various on-line sources.

Value Added in Trade / Trade in Value Added

VA/EMP/CO2 in
EU EXPORTS



VA/EMP/CO2 in EU
FINAL DEMAND



INTRODUCTION

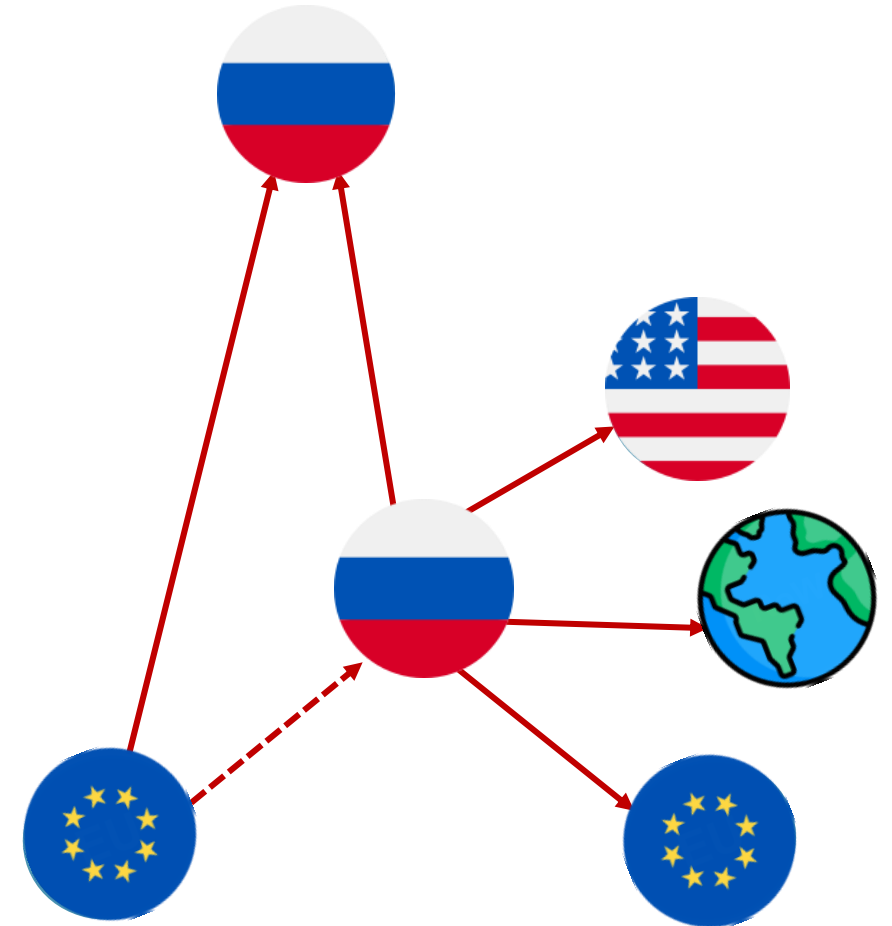
- TiVA indicators provide **complementary information** to conventional bilateral trade balances, **differentiating** the foreign and domestic fractions of the **value added content** of traded products
- TiVA indicators can be useful for measuring the **potential impact** on value added of a **disruption in international trade** (e.g. war, political conflict, pandemic)
- In the context of **COVID-19** or the **Russian invasion to Ukraine**, what can be learnt from standard TiVA indicators?
- All VA dependencies between two regions included in standard TiVA indicators? → We combined **two standard TiVA indicators** for a full exposure indicator

OECD TiVA INDICATORS

→ Final products
- - - Intermediate products

EXGR_DVA

1. Domestic Value Added in **Gross Exports**
2. Informs on the **value added** generated in the EU's **direct domestic exports** to Russia, either for intermediate or for final uses

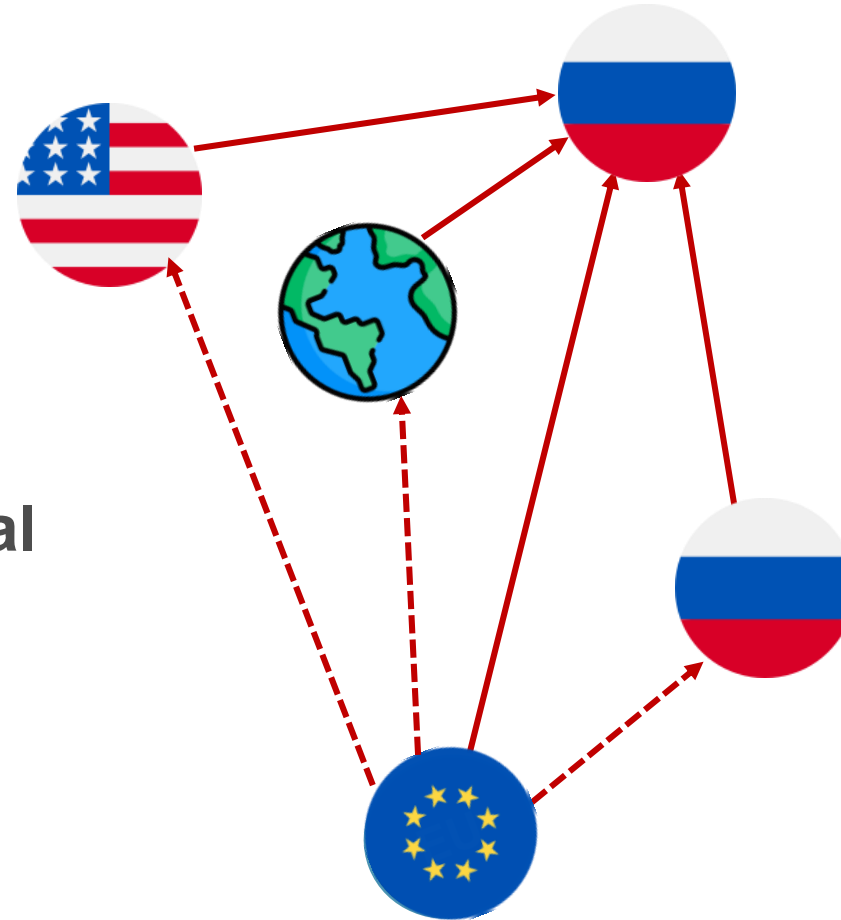


OECD TiVA INDICATORS

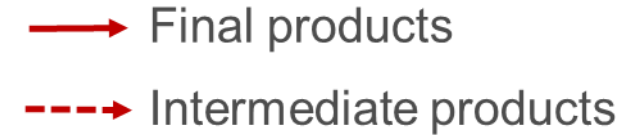
→ Final products
- - - Intermediate products

FFD_DVA

1. Domestic Value Added in **Foreign Final Demand**
2. Records the EU value added supported by (Russian) **foreign final demand**

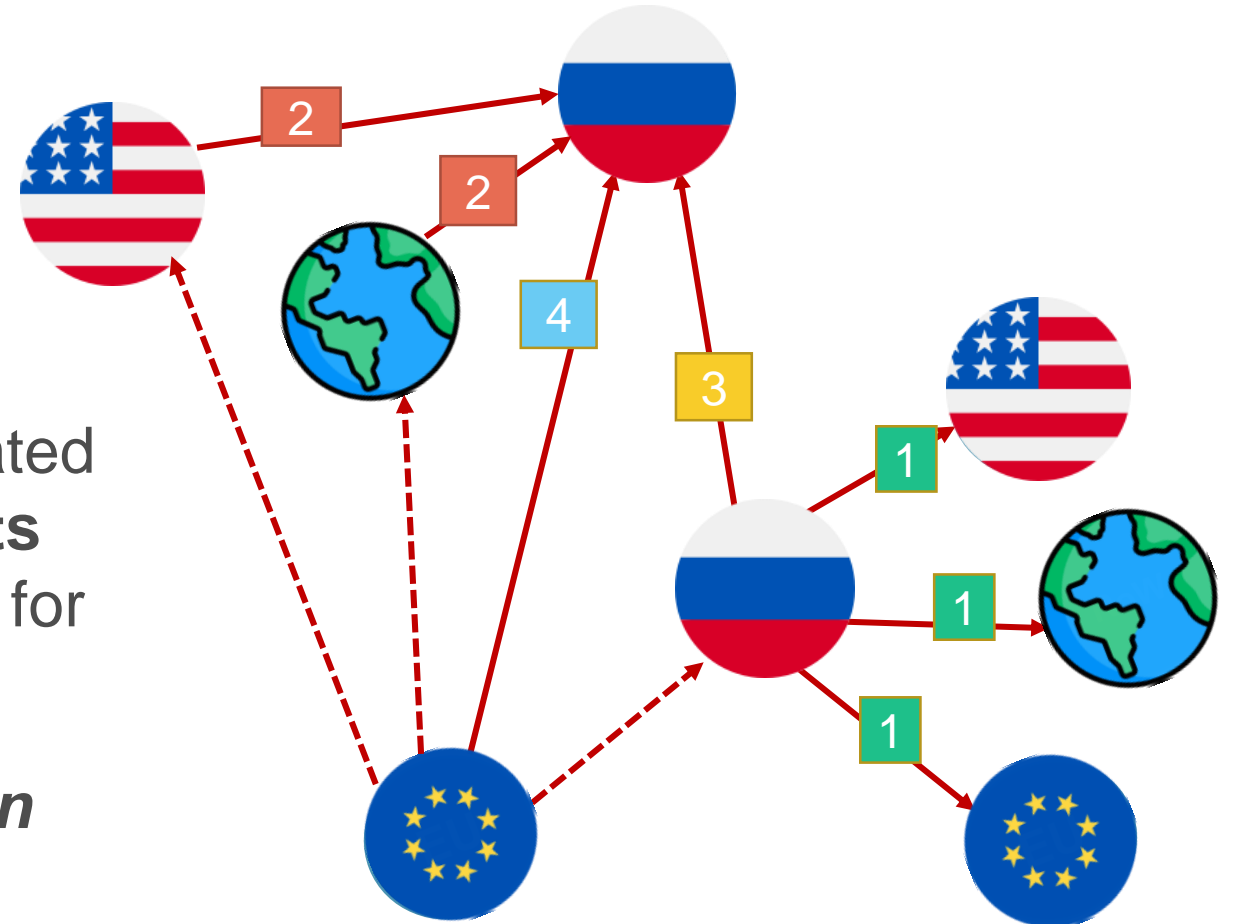


OECD TiVA INDICATORS (revisited)



VUL_DVA

1. Domestic Value Added in **Gross Exports**
2. Informs on the **value added** generated in the EU's **direct domestic exports** to Russia, either for intermediate or for final uses
3. *Adds the value added generated in the EU exports to third countries ending in Russian final demand*



What is FIGARO?

- The result of a co-operation project between Eurostat and the European Commission's Joint Research Centre.
- New statistical product for compiling EU inter-country supply, use and input-output tables.
- A unique tool allowing economic modellers, policy-makers, and other interested parties to analyse the socio-economic and environmental effects of globalisation.



Full

International and

Global

Accounts for

Research in input-

Output analysis

Who provides the data?

- EU Member states for the supply, use and input-output tables, international trade and tourism statistics.
 - OECD inter-country input-output (ICIO).
- UN and OECD for the international trade statistics.
 - OECD for the transport margins.

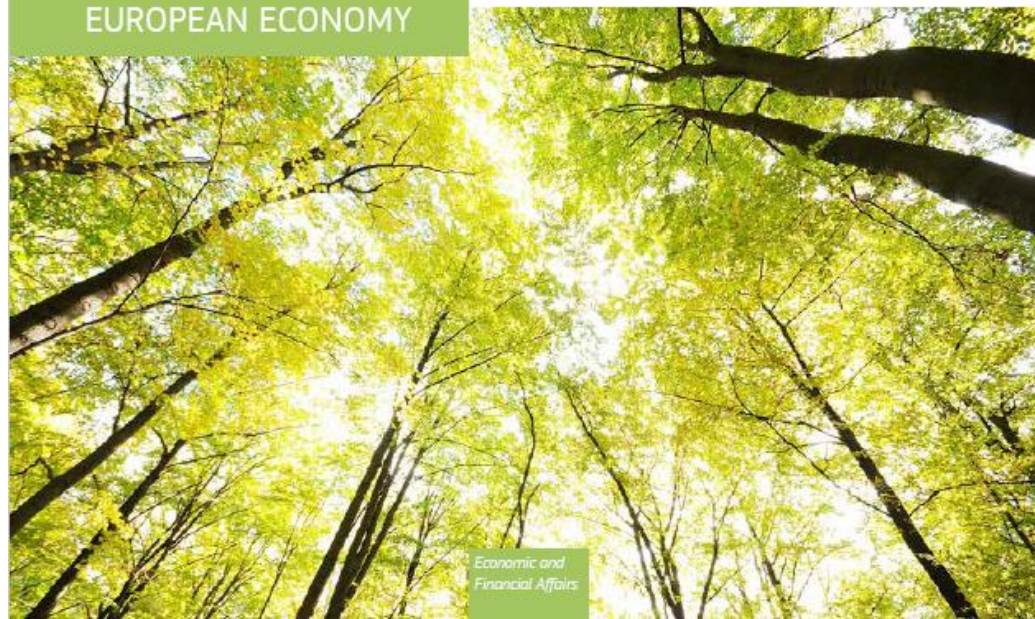
Annual time series available from 2010 for the European Union of 27 Member States, the United Kingdom, the United States and 17 main EU partners.

European Economic Forecast

Spring 2022

INSTITUTIONAL PAPER 173 | MAY 2022

EUROPEAN ECONOMY



Results: overview



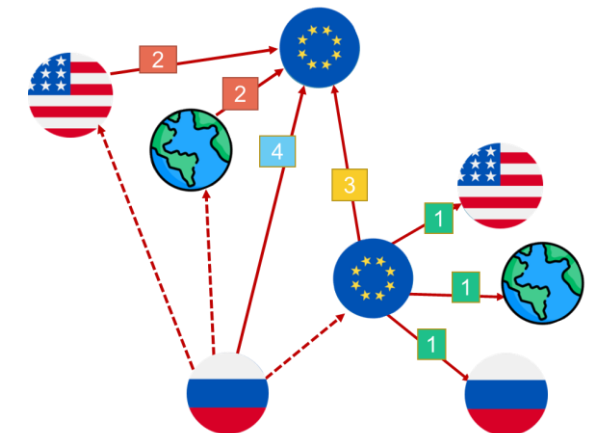
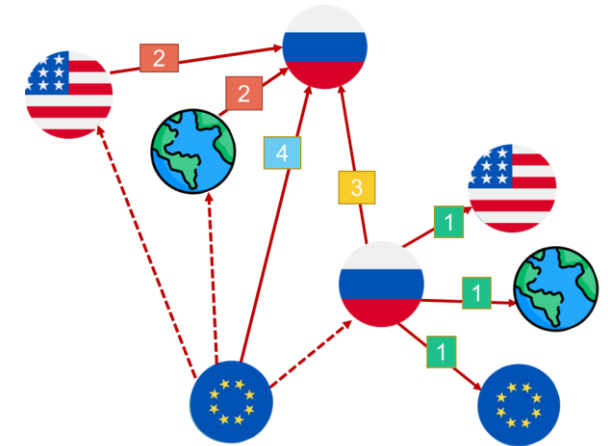
EU	1	2	3	4	Total
EXGR_DVA	14.9		36.6	32.2	83.7 (-7%)
FFD_DVA		6.6	36.6	32.2	75.4 (-14%)
VUL_DVA	14.9 (17%)	6.6 (7%)	36.6 (41%)	32.2 (36%)	90.3

3.5% of all extra EU exports

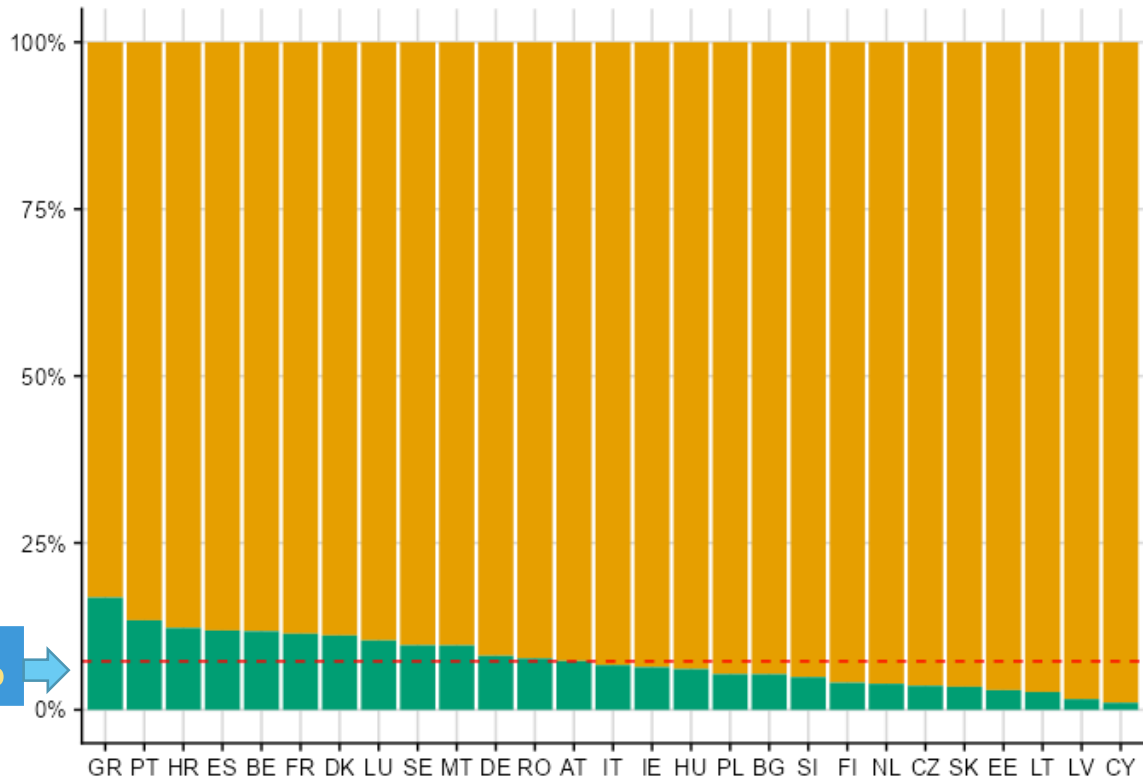


Russia	1	2	3	4	Total
EXGR_DVA	30.1		68.8	15.4	114.3 (-7%)
FFD_DVA		9.1	68.8	15.4	93.4 (-24%)
VUL_DVA	30.1 (24%)	9.1 (7%)	68.8 (56%)	15.4 (13%)	123.4

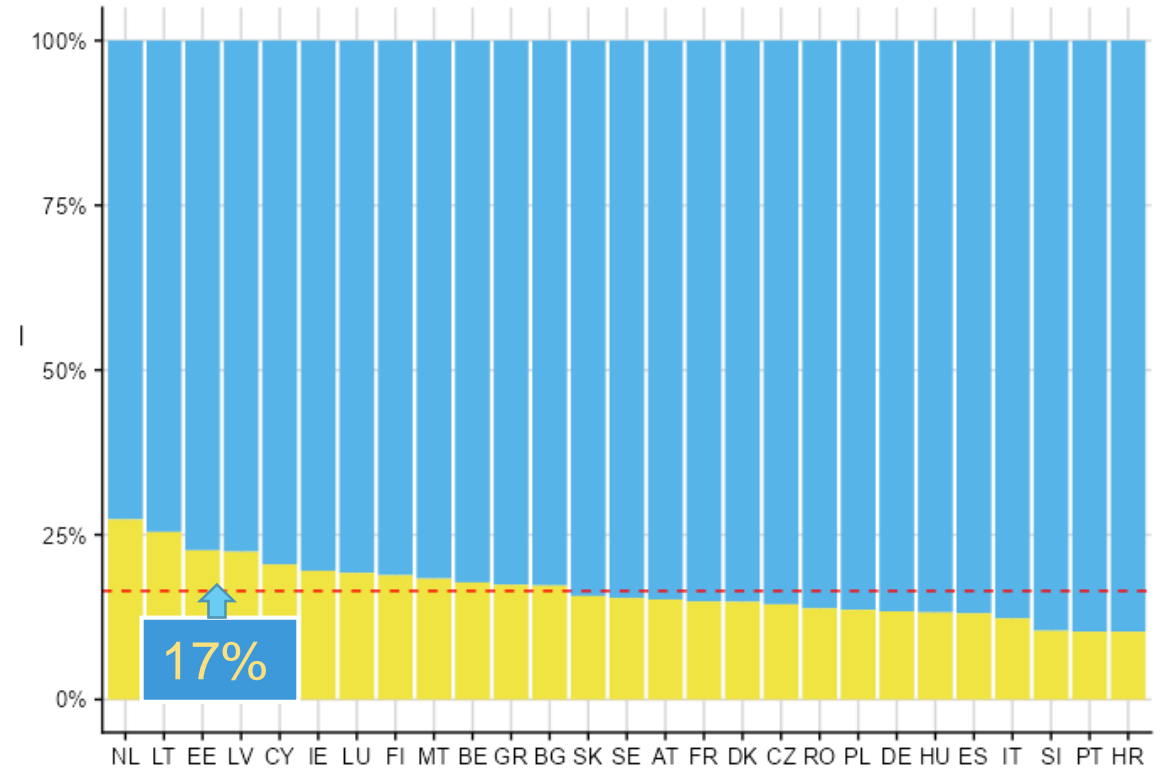
30% of Russian exports



Results by Member States

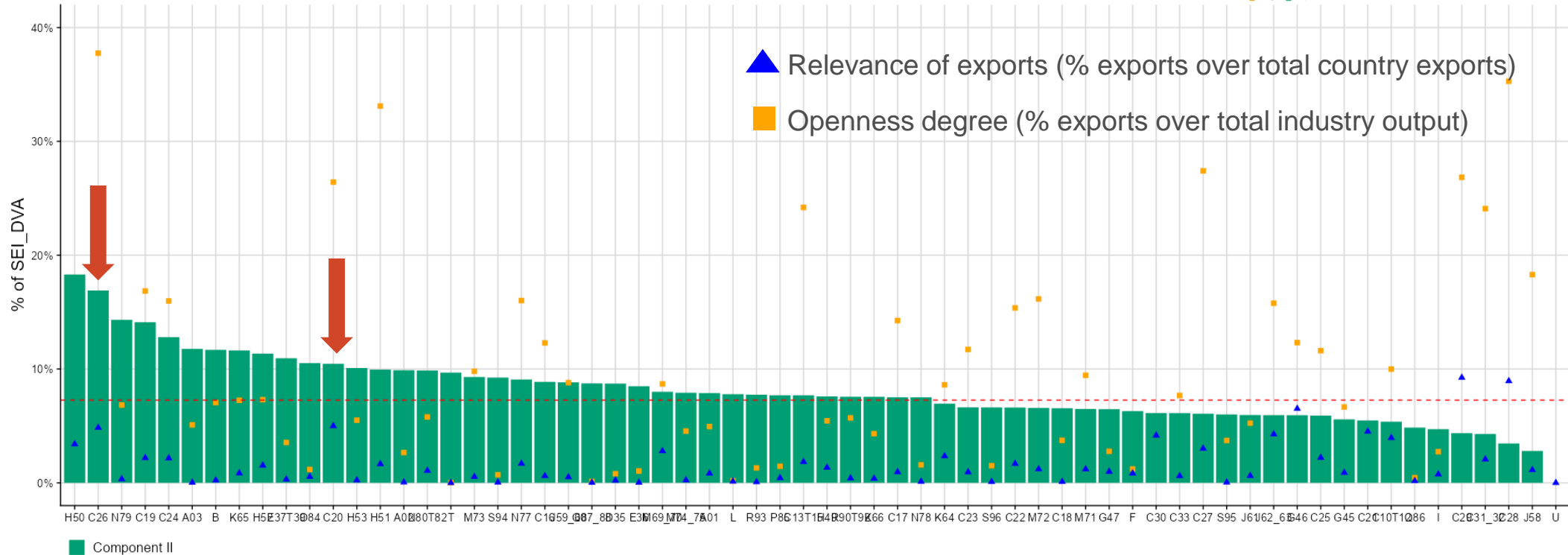
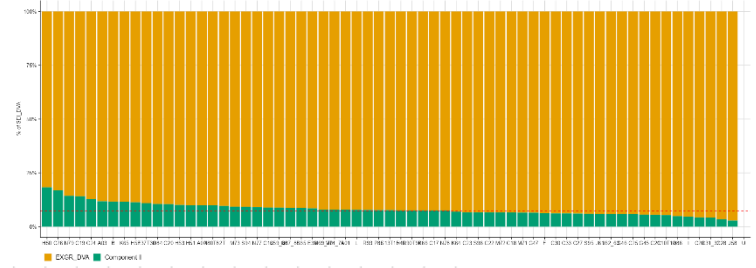


Share (%) of EXGR_DVUL due to EU exports to third countries ending up in Russia's final demand



Share (%) of FFD_DVUL due to foreign final demand of third countries, via Russia

Results: EU industries



- Variation across EU industries between 18% (water transport) and 5% (publishing act.)
- C26 (electronics) → 5% of all exports (openness 38%) → VUL_DVA includes 17% more exposure
- C20 (chemical industry) → 5% of all exports (openness 26%) → VUL_DVA includes 10% more exp.

Conclusions and further steps

- The **analysis of vulnerabilities** arising from COVID19 and the Russian invasion of Ukraine **requires a combination** of two OECD TiVA indicators, i.e. EXGR_DVA and FFD_DVA, **into one single indicator of vulnerability VUL_DVA.**
- Using TiVA indicators separately could **underestimate** by **7%** the vulnerabilities of the EU with respect to Russia **for exports** and by **17%** for **foreign final demand**, in both cases because of **missing indirect spillovers via third countries' participation.**
- Further analysis by **industries** in the pipeline...



Thank you very much!

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