TRADE IN VALUE ADDED

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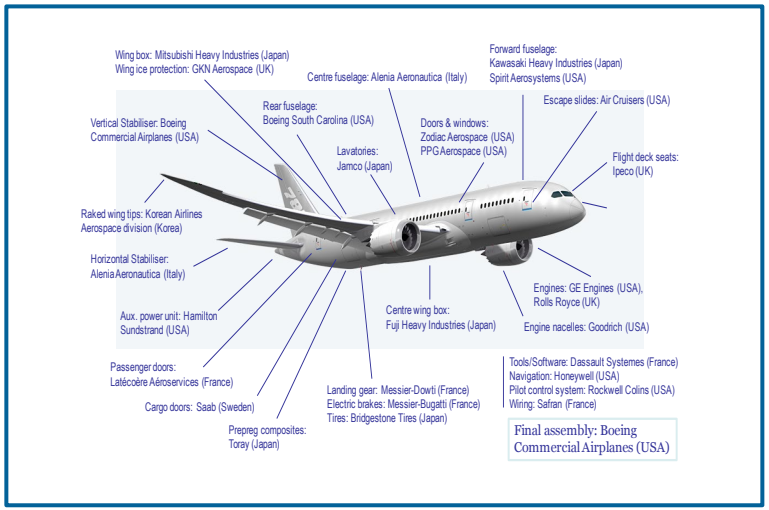
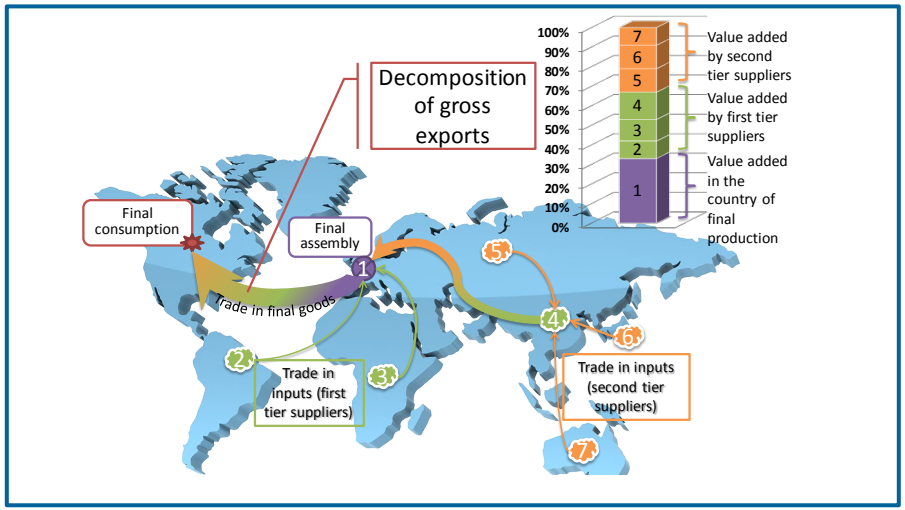
Moldova | October 2017

BETTER POLICIES FOR BETTER LIVES

Increasing international fragmentation of production…

Explosion of trade in intermediates as firms specialise in stages (tasks) of production

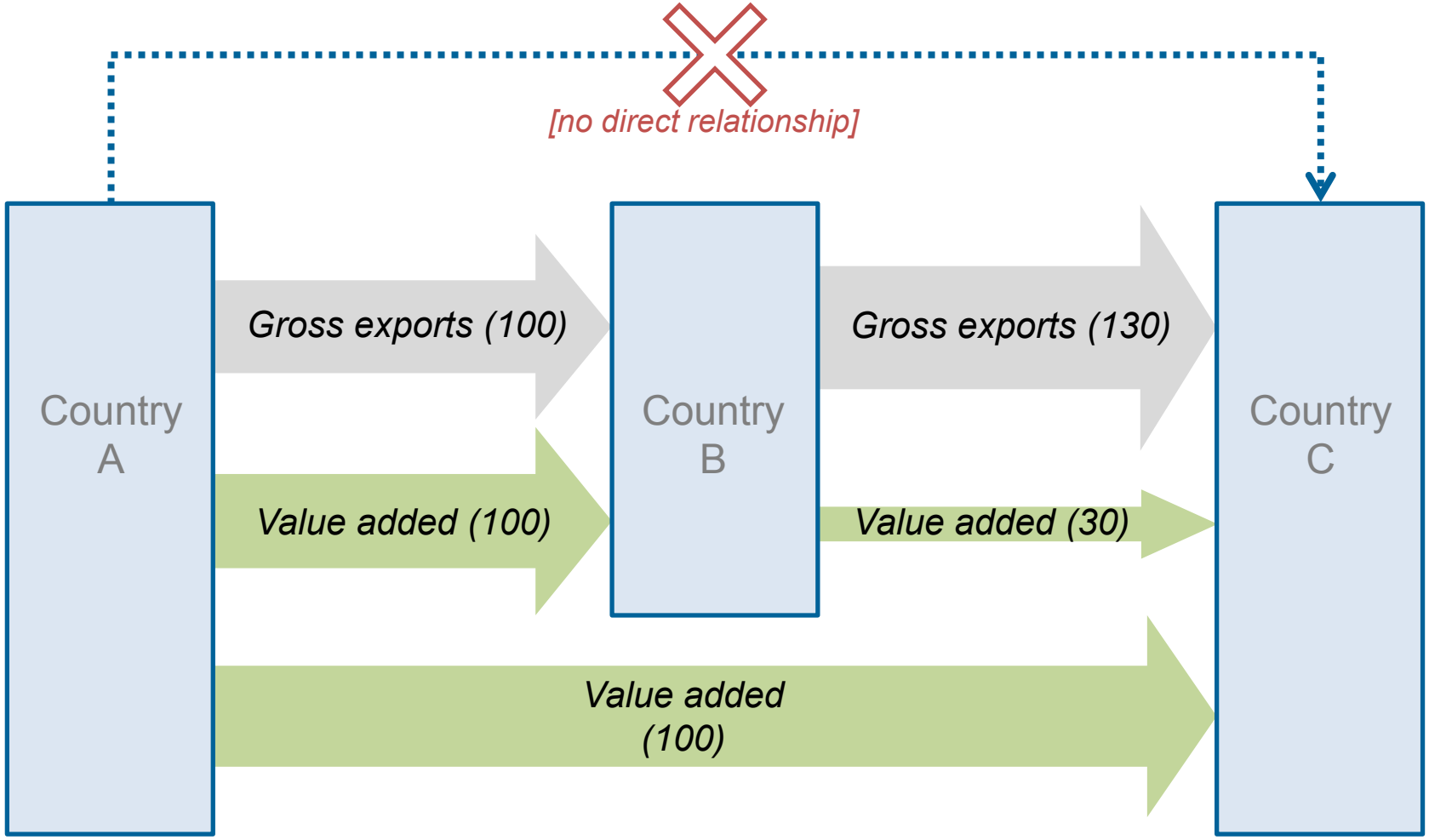




Conventional, 'gross' trade statistics do not fully capture this fragmentation, creating misleading perceptions and imperfect policies:

- Export driven growth strategies may target the wrong sectors or trading partners;
- protectionist policies can hurt domestic upstream industries;
- imperfect assessments of systemic (macro-economic) risks for supply-chains;…

…requires a new statistical response: TiVA



[in value added terms, there is a direct relationship between A and C]

From a ‘gross trade’ to a TiVA perspective

- **TiVA** aims to increase our understanding of the process of globalization by providing **insights** into the **value added** created by **each country and industry** in the **production of goods and services** that are **traded** and **consumed** worldwide
  - How much value added is created by trade – directly *and* indirectly – and where?
  - What is the (indirect) role of services in international trade?
  - What are the risks (in GVCs) and impacts of policy measures
  - How much is our economy/industry dependent upon foreign demand?
- TiVA’s work horse: **Inter-Country Input-Output Table** (ICIO), tracing input-output (GVC) relationships across industries AND countries
  - Constructed by combining **national SUTs** and other national accounts statistics with international trade in goods and services statistics

SUTs are a core input for TiVA indicators

In combination with bilateral trade statistics, **SUTs are the main building blocks**, for constructing Inter-Country Supply and Use tables (and the ICIO), from which TiVA indicators can be derived

National Supply & Use (SUTs) and/or Input-Output tables (IOTs)

Bilateral trade statistics in goods and services

		Country A			Country B			Country C			Final Demand		
		Sector 1	Sector 2	Sector 3	Sector 1	Sector 2	Sector 3	Sector 1	Sector 2	Sector 3	Country A	Country B	Country C
Country A	Sector 1												
	Sector 2												
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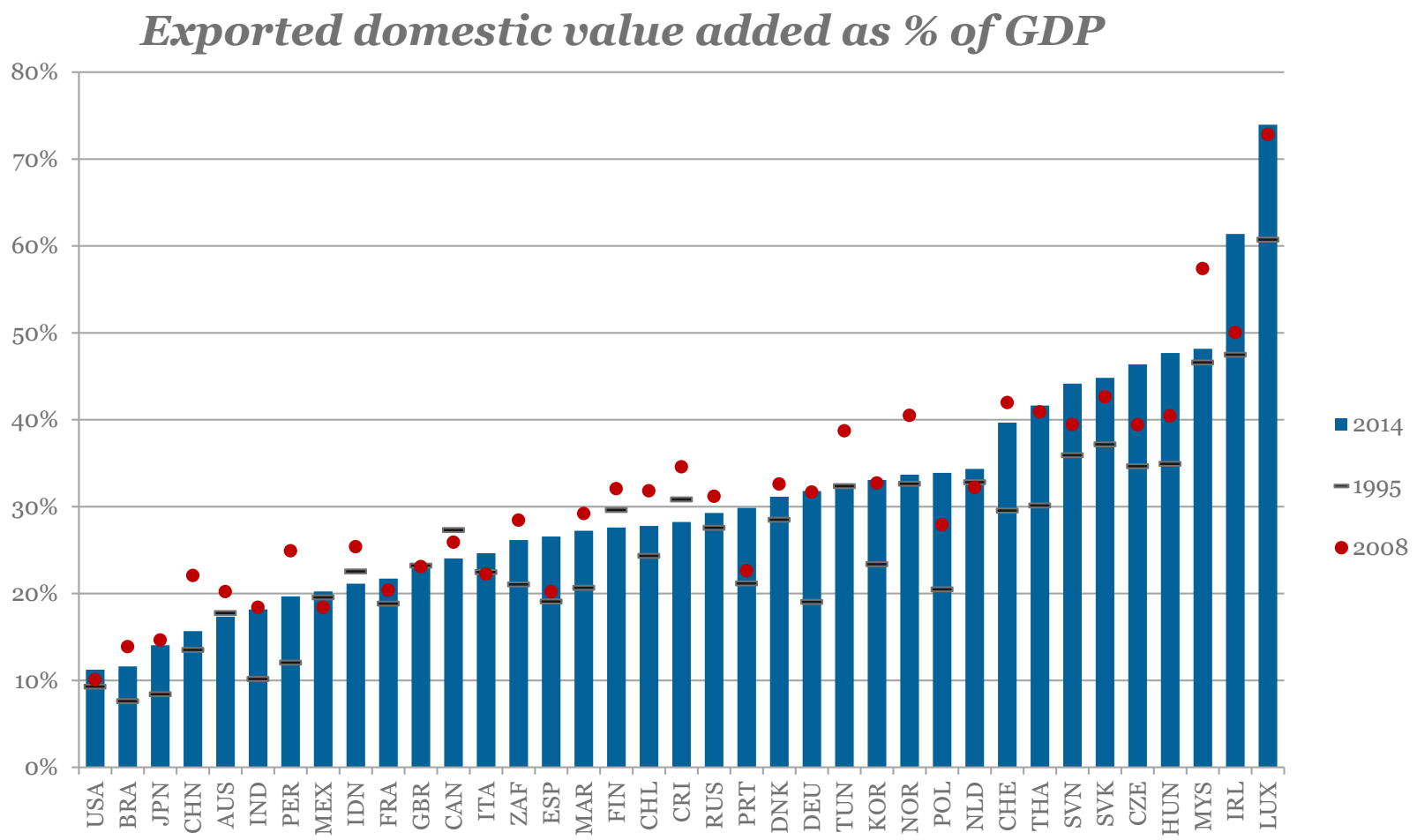
Output													

Inter-Country Input-Output (ICIO) table

TiVA indicators → New perspectives for trade analysis and policy

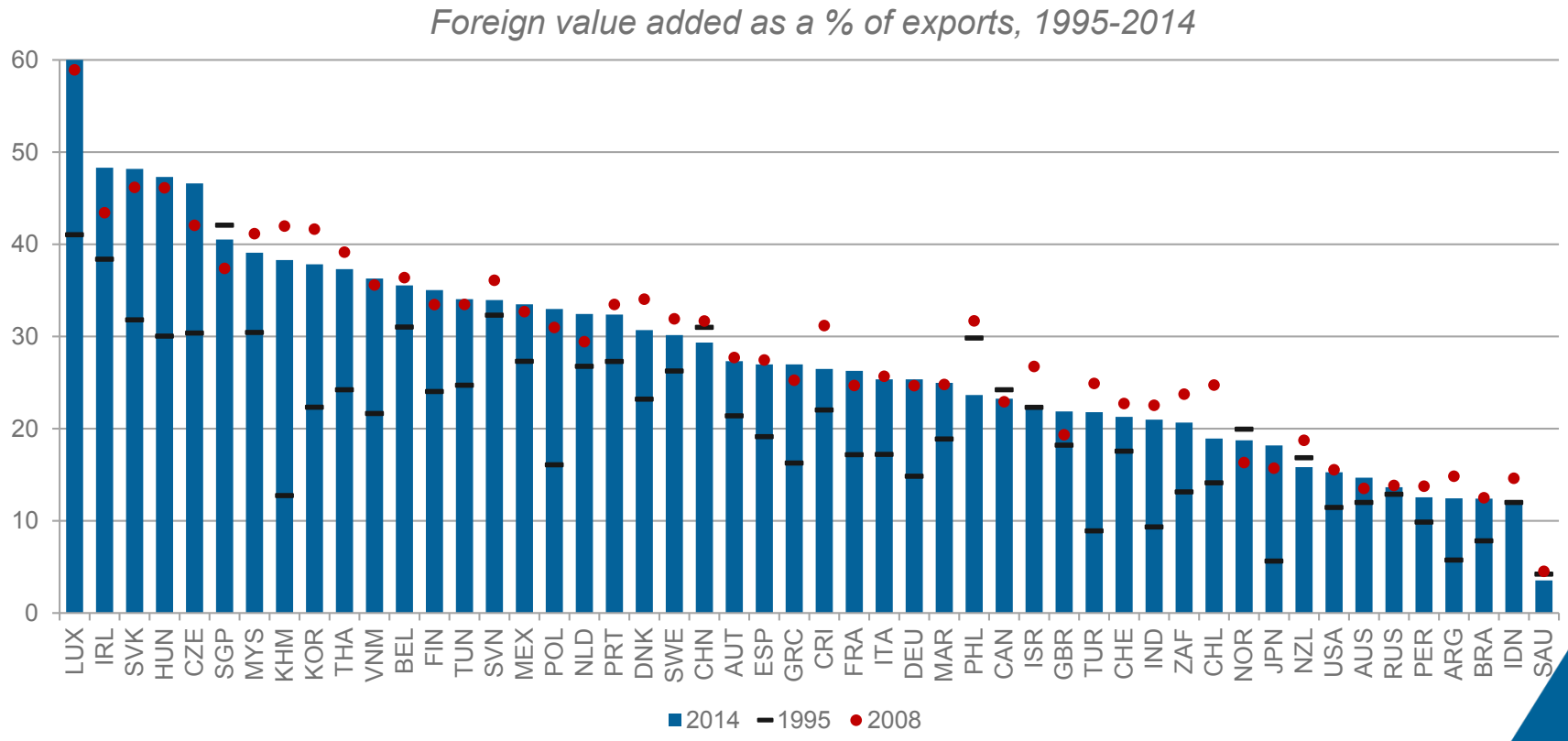
TIVA: **WHAT** DOES IT TELL US?

TiVA highlights: growing export intensity of production…



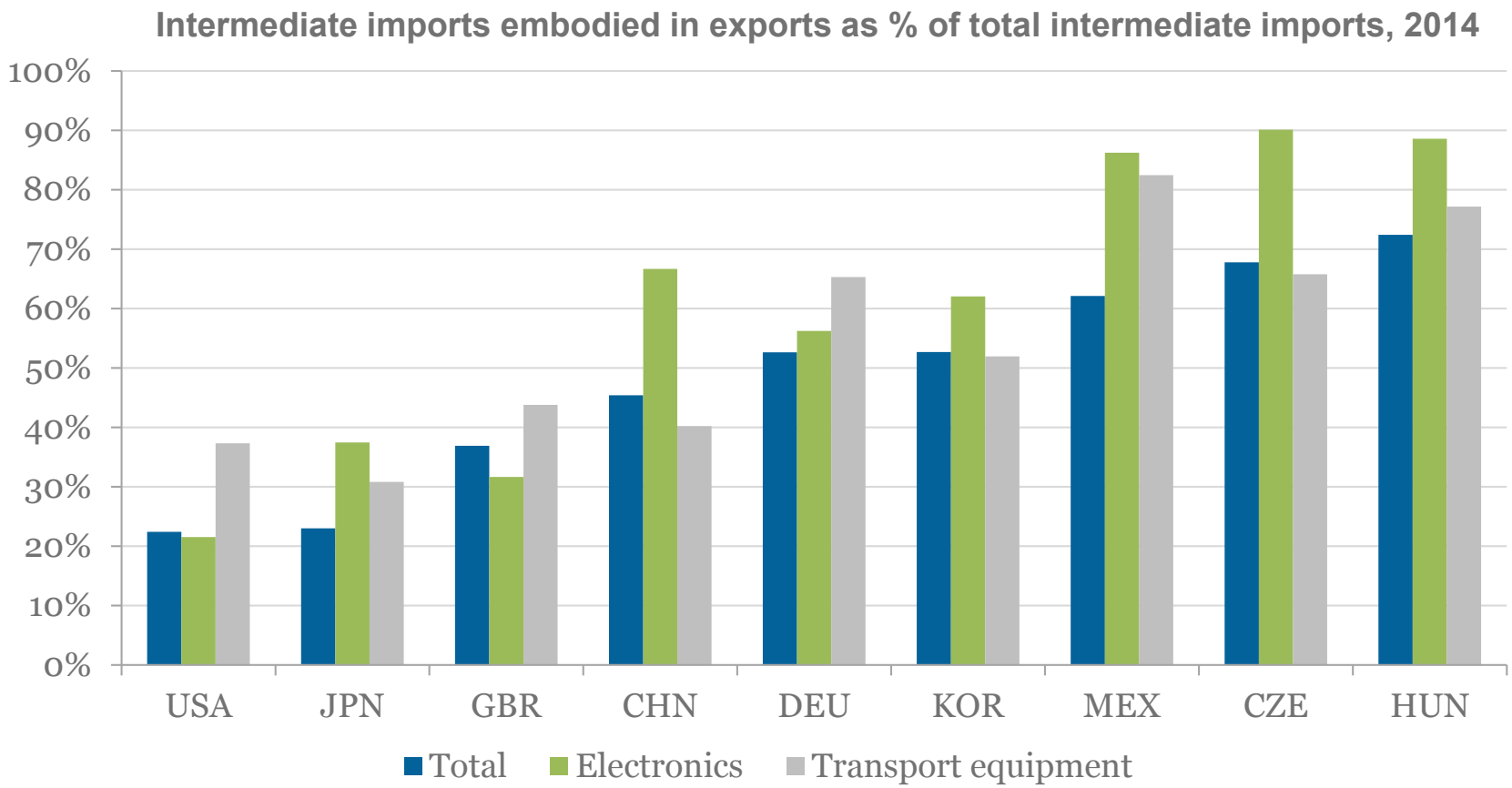
TiVA highlights: Exports require imports…

…even if in not all countries the import content of exports has returned to pre-crisis levels, partly also reflecting domestic upgrading



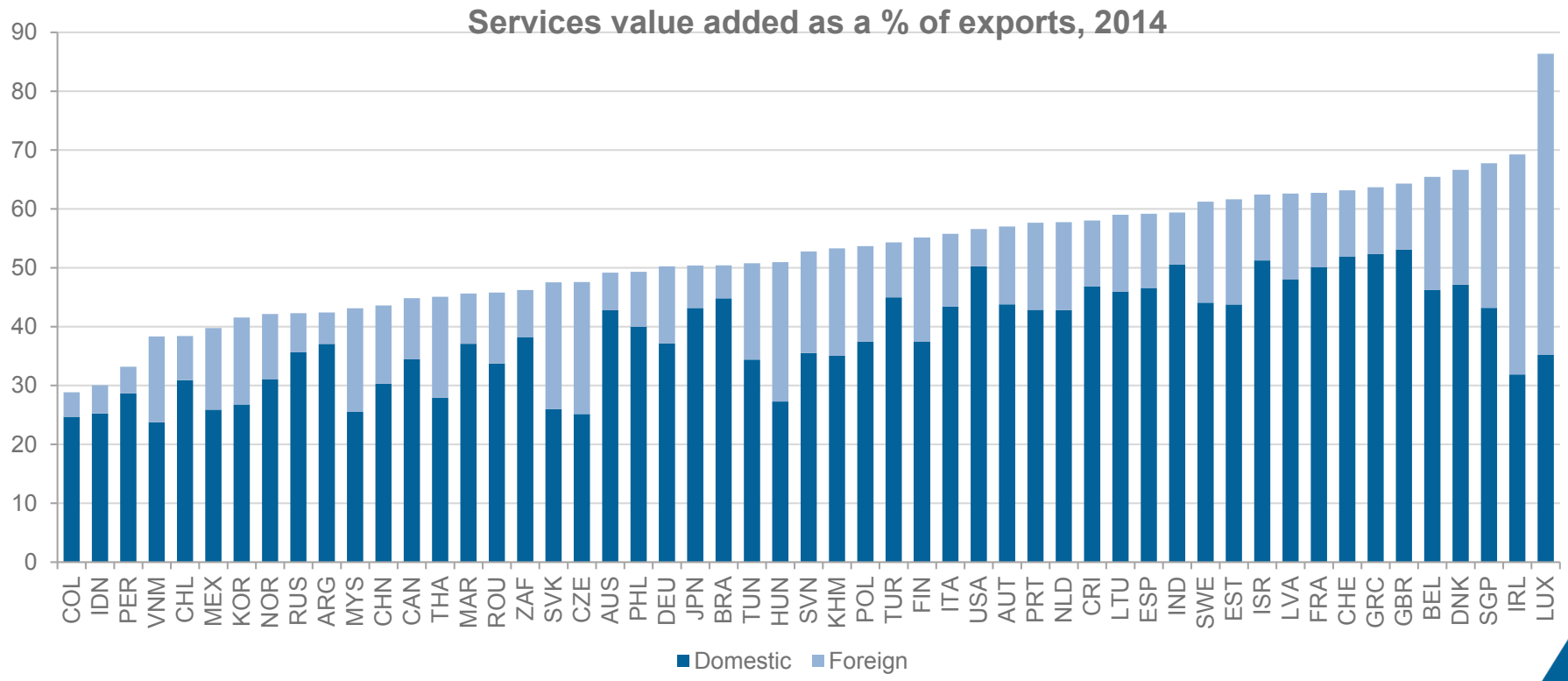
… meaning protectionism can be counter-productive

Imports are often embodied in exports



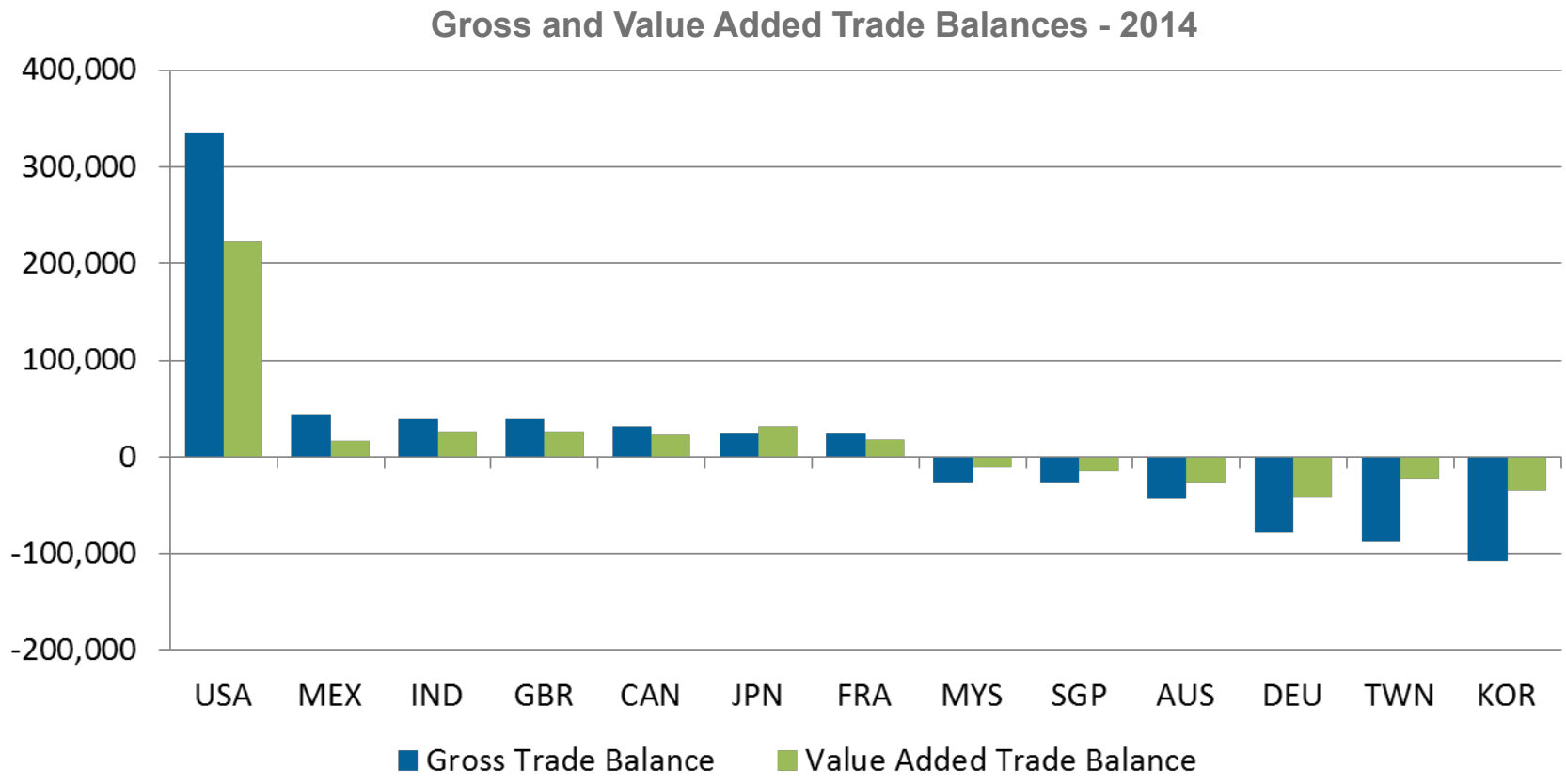
(upstream) services providers play an important role in GVCs…

Services account for more than half of the value added embodied in exports



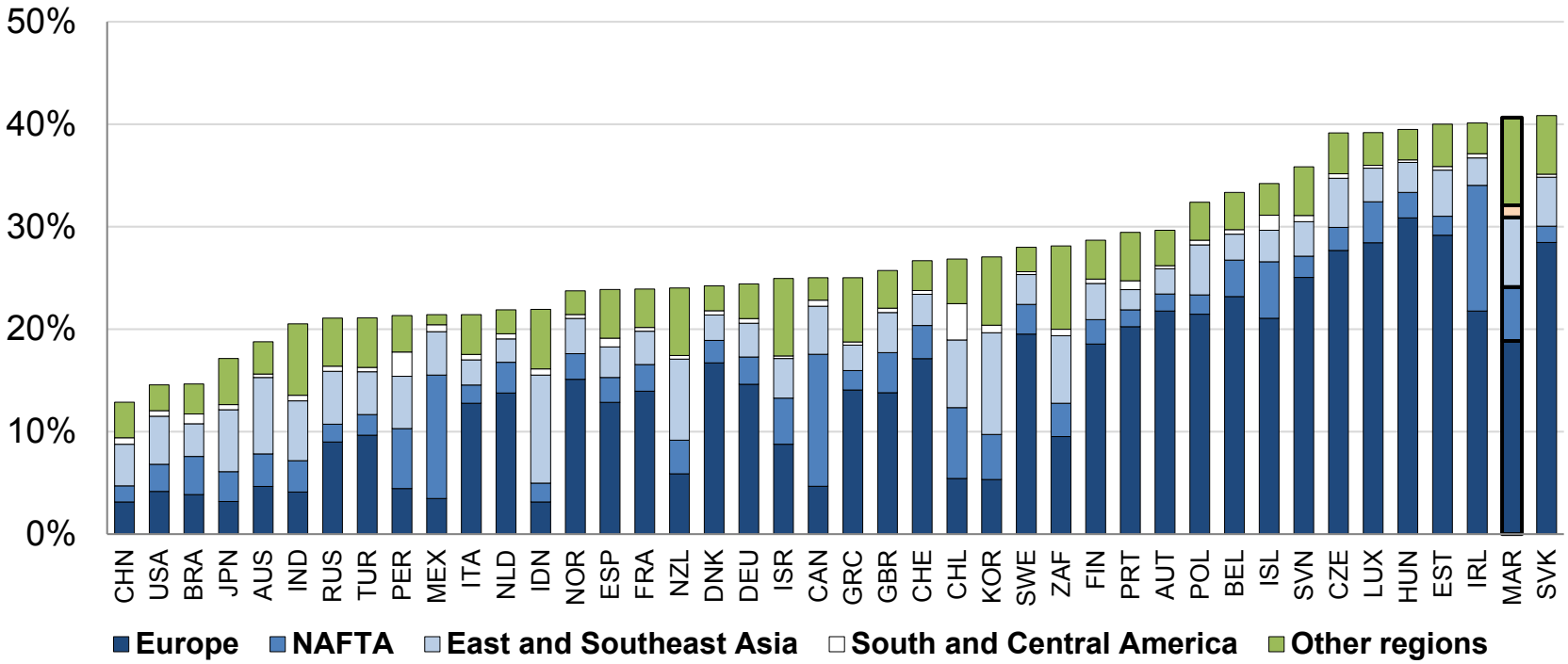
TiVA: Who trades with whom? Chinese trade balances

Smaller surplus with US, smaller deficits with Asian markets



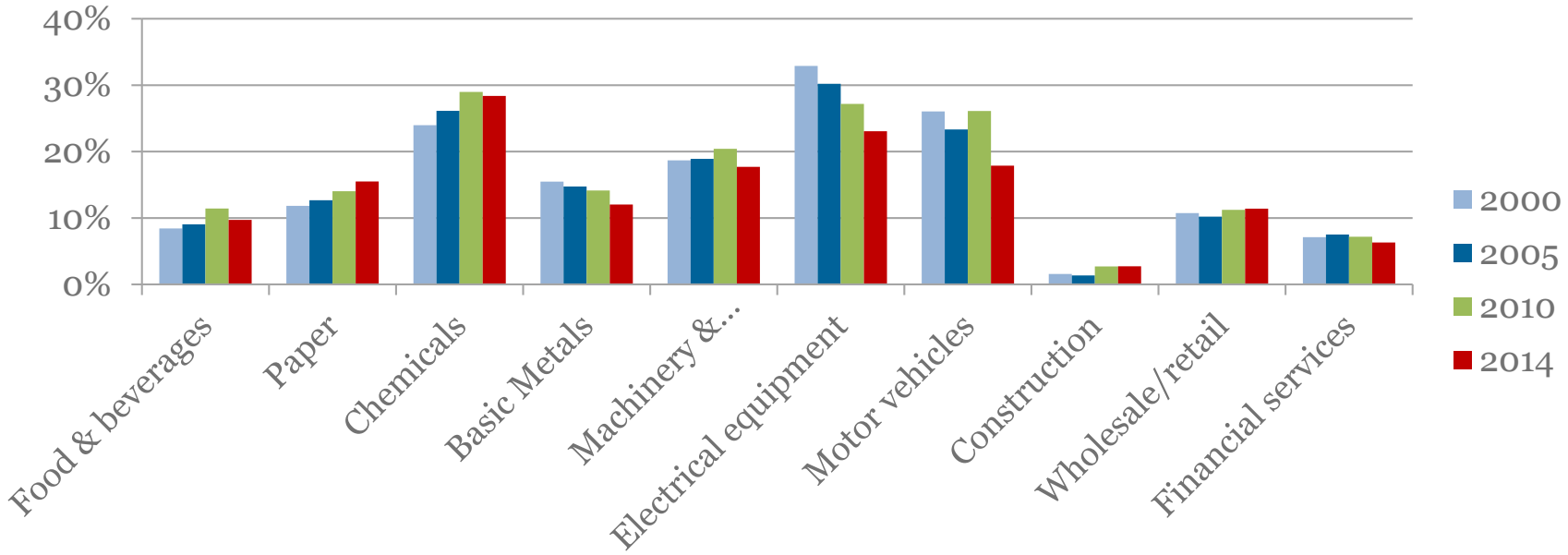
..on interconnectedness

Foreign value added content of domestic consumption by country by source region, 2014



TiVA on UK-EU27 relationships

9% of UK value added ('GDP') is dependent on EU27 final demand (vice versa: 2%) – and in some industries this share is even higher



A further 2.5% of UK GDP is dependent on exports via EU27 countries' to serve markets outside the EU

BEYOND VALUE ADDED

Beyond TiVA: trade, investment and inclusive globalisation

- TiVA and its underpinning ICIO has already been used to shed new light on the relationships between trade, production and consumption.

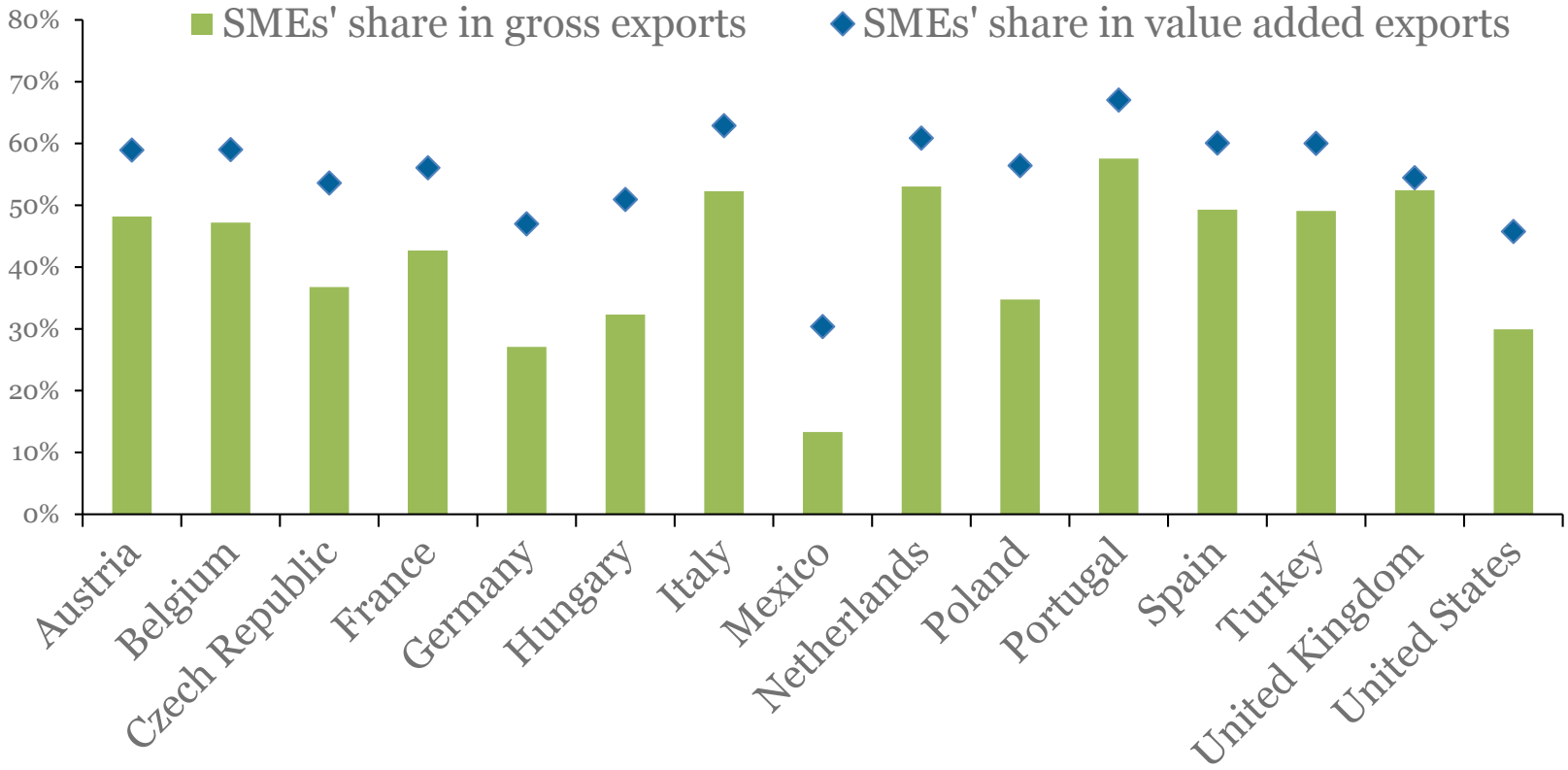
But more is possible – and necessary!

- Examples of policy questions regarding GVCs:
  - What is the role of **SMEs, MNEs (international investment) and other firms** in countries, and in countries position in Global Value Chains?
  - What are the ***social consequences*** (employment: how many jobs are involved in GVCs, how to achieve inclusive globalisation)
  - What are the consequences of GVCs for the ***natural environment*** (e.g. emissions and pollution related to GVCs)
  - And what about ***taxes****?*

Extended supply and use tables *are the core statistical 'tool' to provide answers to these questions by integrating disparate statistics. They thereby also provide important scope for improved and coherent accounts, nationally AND – via global (extended) Supply and Use tables – internationally.*

Example (1): SMEs' contribution to exports in gross and value-added terms

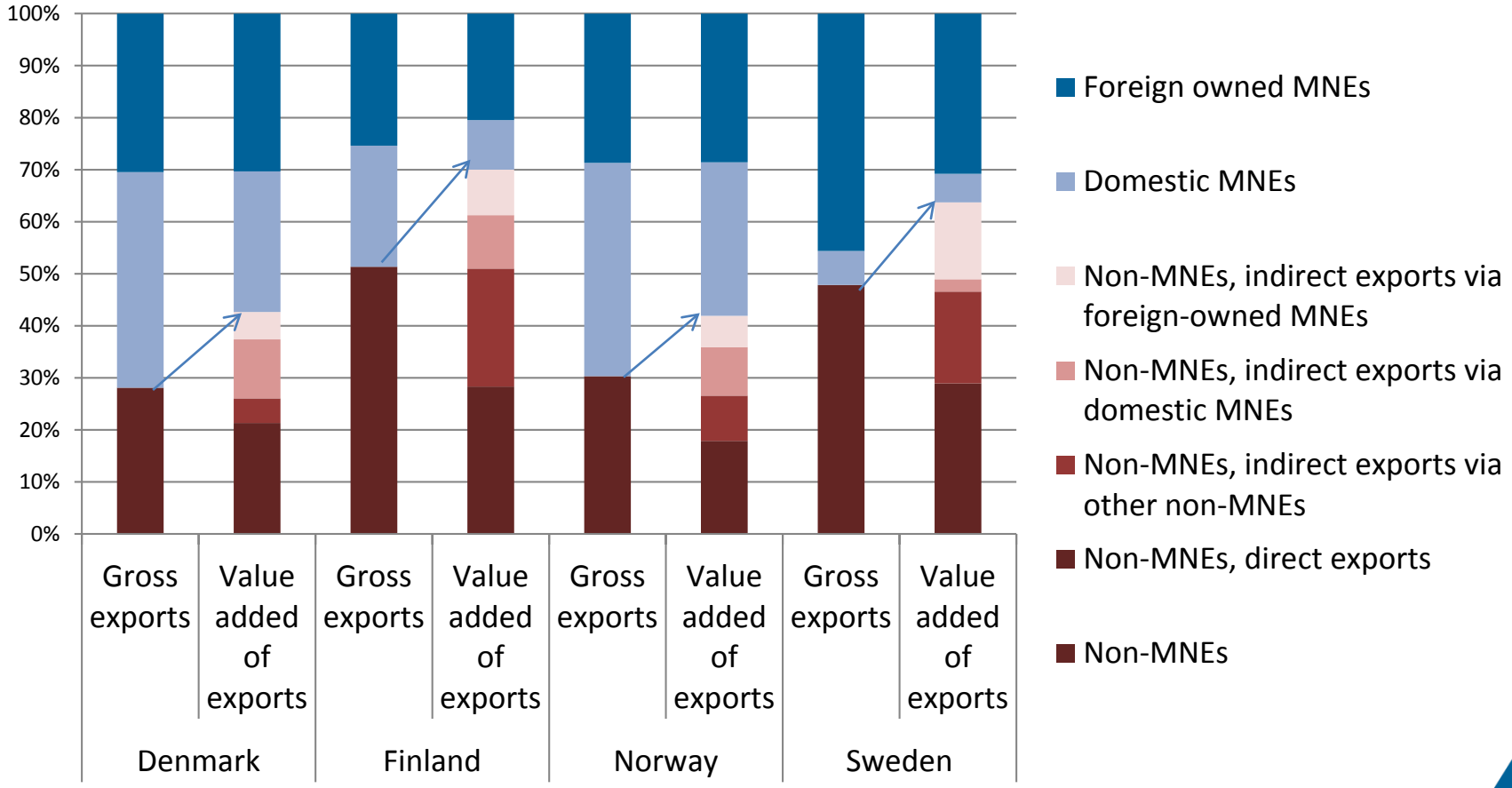
Role of SMEs in international trade and GVCs greater than observed in gross export data alone



Value added exports of SMEs=Direct value added in SMEs' exports + value added in inputs produced by SMEs and used by exporting firms

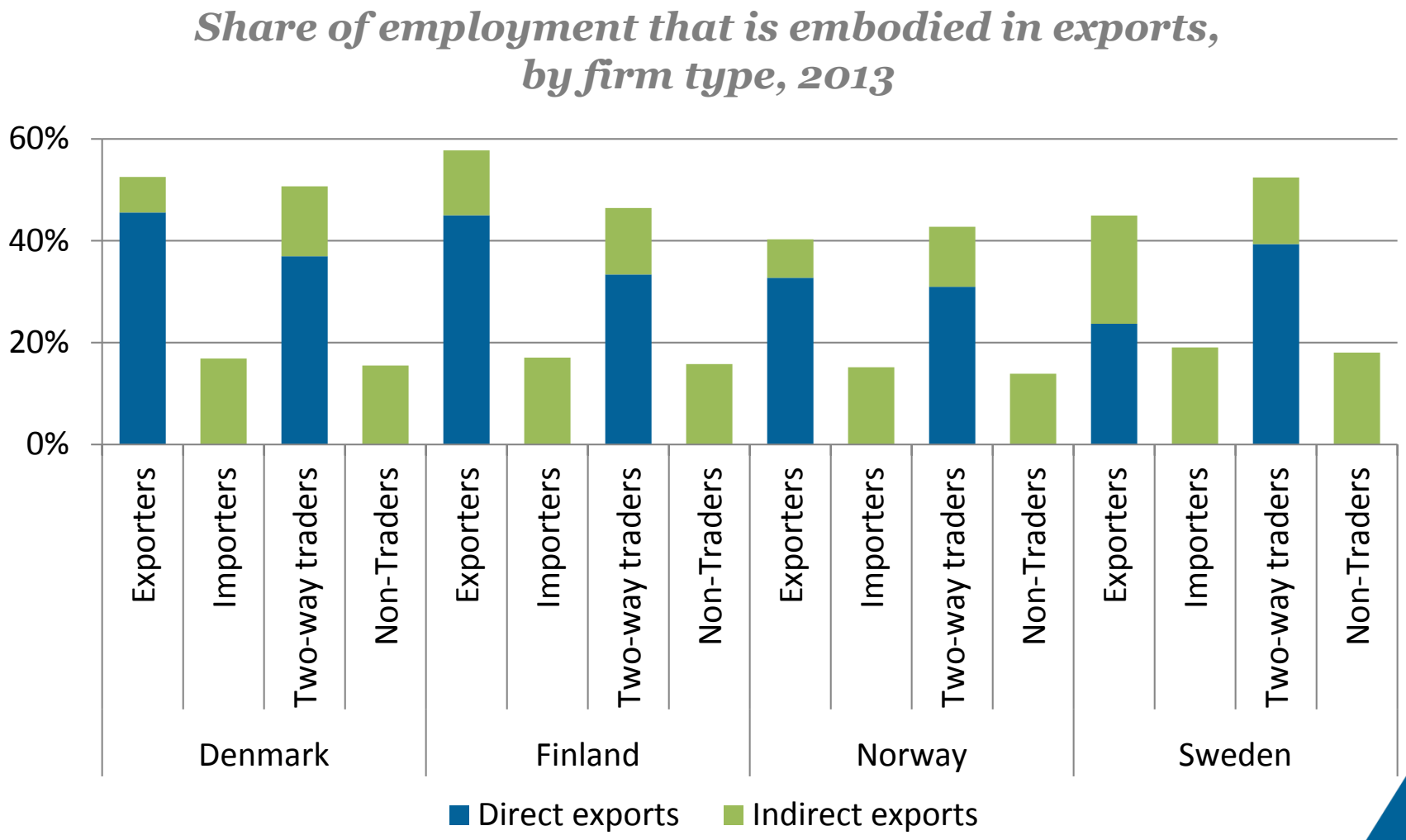
Example (2): Domestic MNEs are a key channel to foreign markets for non-MNEs*

Shares of firms in gross exports and in exported value added, 2013



*Non-MNEs: domestic enterprises without foreign affiliates

Example (3): Up to 20% of employment at non-trading enterprises is sustained by foreign final demand



Institutionalising and mainstreaming TiVA

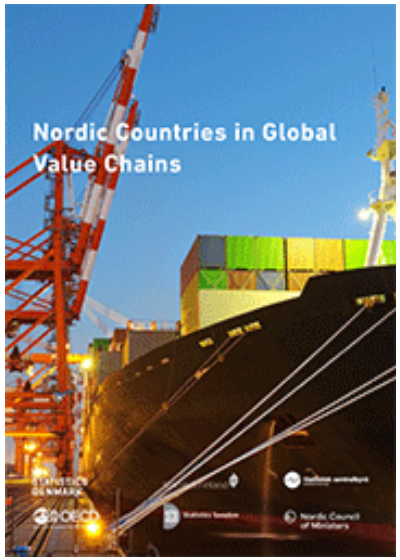
- **Improved statistical foundations**
  - Continued expansion of ***official collection*** of national Supply-Use Tables (OECD and non-OECD countries)
  - Development the ***tools and mechanisms*** to ensure consistency between regional TiVA initiatives and OECD-WTO TiVA
    - Balanced international merchandise and services trade statistics
    - Regional-Global TiVA Steering Group, to coordinate activities and develop a joint Handbook for a globally recognised, jointly developed, single measure of TiVA

- **Increasing quality and country coverage**
  - ***Bilateral collaboration*** (based on country requests)
  - Via ***regional partnerships*** (e.g. with Eurostat (Figaro), UNESCWA, UNECA, APEC (APEC-TiVA initiative), CEFTA, UNECLAC,…)

Institutionalising and mainstreaming TiVA

Development of statistical infrastructure for the 'beyond TiVA' agenda

- CSSP Expert Group on Extended SUTs
- Support for microdata linking:
  - OECD-Nordic NSOs collaboration: Nordic Countries in GVCs http://www.oecd.org/std/its/enterprises-in-global-value-chains.htm
  - Eurostat-OECD STEC Compilers Guide http://ec.europa.eu/eurostat/web/products-manuals-and-guidelines/-/KS-GQ-16-007
  - OECD Handbook on Linking Trade and Business Statistics (in progress)
- Improved statistics on the Trade-Investment nexus
  - Joint STD-DAF Trade and Investment Country Notes http://www.oecd.org/investment/Finland-trade-investment-statistical-country-note.pdf
  - Started construction of an OECD database on multinational enterprises



Thank you

Contact: Fabienne.Fortanier@oecd.org

See also:

http://oe.cd/tiva

http://oe.cd/tiva-nowcast

EXTRA: NOWCASTING METHODOLOGY

Nowcast Trade in Value Added (TiVA)

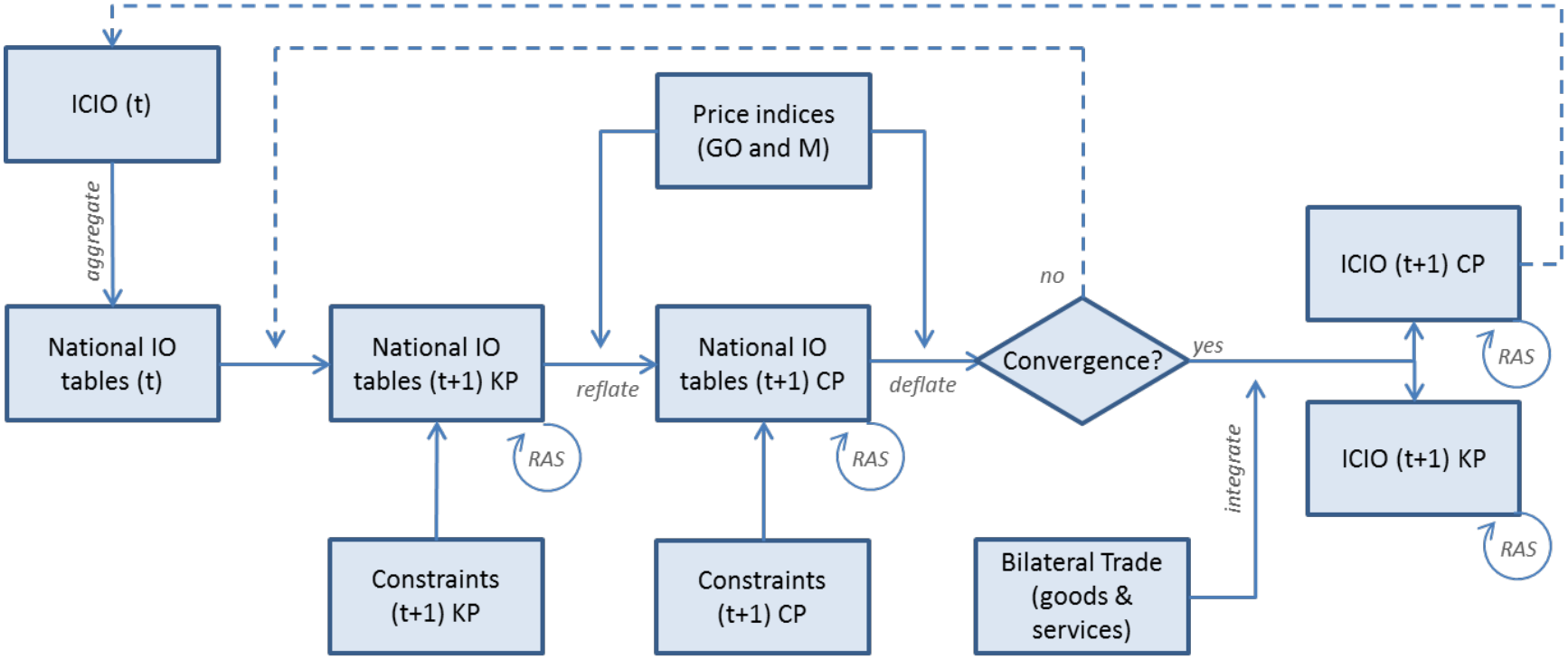
While the ***user demand for more timely TiVA*** estimates is clear, high quality benchmark TiVA estimates ***by necessity*** can only be available with a substantive time lag:

- Availability of national Supply Use Tables (SUTs, key input to the TiVA ICIO): typically only with a 2-3 year time lag
- Data integration into a global accounting framework: lengthy and complex process

TiVA nowcast methodology key characteristics:

- Accounts explicitly for (differential) price movements (e.g. recent fluctuations in oil prices and other commodities) through the use of volume and current price estimates
- Converts statistics reported according to the 2008 SNA into 1993 SNA equivalents for *goods for processing* and *merchanting* transactions, in order to ensure consistent time series and to better reflect the policy drivers for TiVA
- Provides a degree of stability in the evolution of technology/production coefficients and consumption patterns over time by being iterative in nature (e.g. T+2 estimates are derived from T+1, etc)

Nowcast methodology: flow diagram



KP: Constant prices CP: Current prices RAS: matrix balancing technique
Source: TiVA nowcast methodology www.oecd.org/std/its/tiva-nowcast-methodology.pdf

Nowcast full ICIO: required data

- Current and constant price constraints ('Constraints CP' / 'KP' in flow chart)
  - National Accounts main expenditure (and trade) aggregates, including additional final demand information by product from national SUTs where available, with adjustments for 2008 SNA merchanting and goods for processing transactions
  - Gross output (GO) and value added (VA) by TiVA industry
- Price indices ('Prices' in flow chart)
  - Price indices for *Gross Output* (by TiVA industry (column)) derived from the above CP and KP constraints
  - Price indices for *Imports* (by TiVA industry (row)), derived from detailed merchandise import prices, benchmarked to the National Accounts equivalent, and total services trade (see Miao, Cheptitski and Fortanier, 2017, forthcoming)
- Bilateral trade statistics ('Bilateral Trade' in flow chart)
  - Bilateral International merchandise trade and bilateral international services trade, by product (ICIO industry) and end-use category.
    - Building on newly developed OECD-WTO Balanced Trade Statistics

Nowcast full ICIO: SNA 1993 alignment

Merchanting (export only)

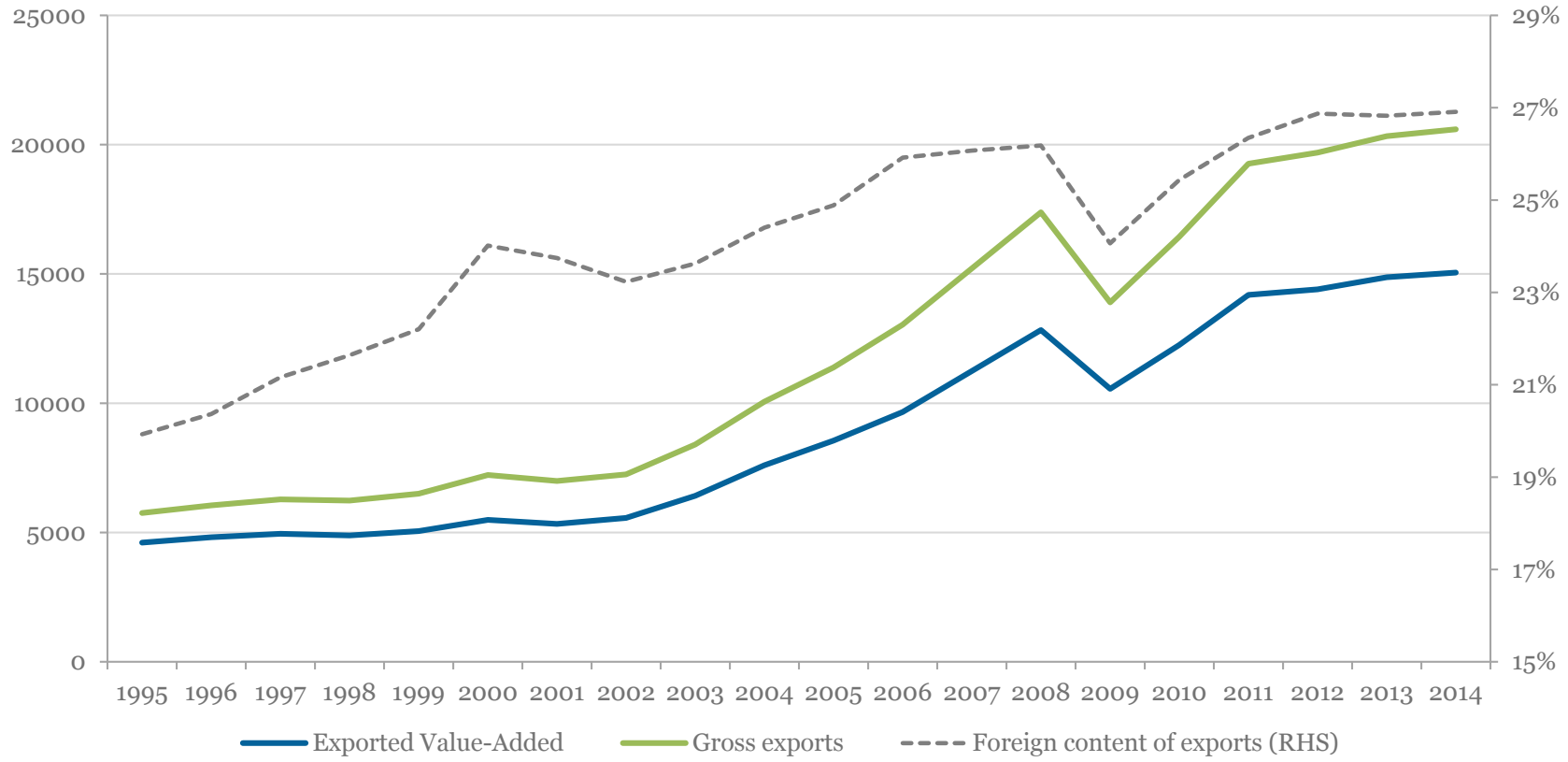
- 1993 SNA recording: export of services (the merchanting fee only)
- 2008 SNA recording: net exports of goods under merchanting
- Adjustment: deduct net exports of goods under merchanting from the total exports of goods, and add back to total services exports

Goods for processing

- 1993 SNA recording: gross flows of goods involved
- 2008 SNA recording: *only* the value of the manufacturing services fee
- Adjustments:
  - deduct manufacturing services from total services trade flows
  - add back the (reported or estimated) gross flows of the goods involved in processing to trade in goods

TiVA nowcast: first results

Growth in international fragmentation stalled in the 2012-2014 period, albeit at record highs



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Where do we find the national data?

		Country A			Country B			Country C			Final Demand		
		Sector 1	Sector 2	Sector 3	Sector 1	Sector 2	Sector 3	Sector 1	Sector 2	Sector 3	Country A	Country B	Country C
Country A	Sector 1												
	Sector 2												
	Sector 3												
Country B	Sector 1												
	Sector 2												
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Country C	Sector 1												
	Sector 2												
	Sector 3												
Taxes less subsidies on products													
Cif-fob adjustments													
Value added	Labour compensation												
	Operating surplus												
	Taxes less subsidies on production												
Output													

Directly taken from the national SUT tables:

1. Intermediate domestic use; **2.** Value added, output per industry; **3.** Final demand (**EXCL** exports)

More effort required:

4. Exports, by partner country (B and C) and INTERMEDIATE end use
5. Exports, by partner country (B and C), and FINAL end use.
6. Imports for intermediate use, by partner country and importing industry
7. Imports for final use, by partner country and *exporting* industry