Global value chains in an uncertain trade and investment environment
Recent developments based on the OECD TiVA database and the joint OECD-Statistics Finland study

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Globalisation has peaked


Source: OECD based on data from TiVA, UN COMTRADE, IMF and World Bank.
Still, a significant share of employment is sustained by gross exports

Domestic employment (number of persons) in Finnish gross exports, by industry, 2015

In Finland, the share of employment sustained by gross exports was 24.1% in 2015, corresponding to about 600,000 jobs. The same share was 25.6% in 2005. TiVA data allow to take into account indirect employment.

Changes in the Chinese economy explain only part of the recent developments in GVCs

Foreign value-added content of gross exports, %, 2005-2016

Chinese net exports of manufacturing services, USD million, 2011-2016

Source: OECD TIVA database.

Source: IMF balance of payments statistics (BPM6).
MEGATRENDS
New protectionism and trade tensions

Share of world trade subject to trade discriminations (%)

Source: Global Trade Alert
The digital transformation

Different technologies underpinning the digital revolution

- Additive manufacturing (3D printing)
- Autonomous machines and systems
- Human-Machine integration
- Simulations
- Artificial Intelligence
- System integration
- Big data
- Cloud computing
- Internet of Things

Source: OECD
Rise of the robots

Robot stock among top 10 using economies, 2000-2016

Servicification: using, producing and selling services

Manufacturing firms use a higher number of services inputs

There is more employment within manufacturing firms in support service functions such as R&D, design, logistics, marketing and sales

Manufacturing firms increasingly sell services bundled with goods to increase value
POLICY ANSWERS
Tariffs are cumulative in the value chain

Average ad valorem tariffs along the value chain, selected industries, 2016

Source: TiVA database 2018 and TRAINS.
Data regulation is increasing

Note: Data protection regulations include different types of regulation relating to data transfers and local storage requirements. Numbers are affected by the way in which regulations are structured, as this varies by country; some countries may have a single regulation covering a wide range of measures; others will have several different regulations covering, for example, restrictions on data flows for different types of data, and local storage requirements.

Source: Casalini and Lopez-Gonzalez (2019)
Trade in services is generally more restricted than trade in goods

OECD Services Trade Restrictiveness Indices (STRI), by sector, 2019

Source: OECD STRI database.
Updated indicators released: April 2019

The OECD ICIO tables are used to provide insights into environmental impacts of global production networks; e.g. going beyond the origin of CO2 emissions to estimate emissions embodied in final demand.

The difference between production-based and demand-based carbon emissions is highlighted by comparing the OECD and non-OECD groups.

In total, the OECD is a net-importer of embodied carbon while non-OECD economies, as a whole, are net-exporters. Net-imports by the OECD countries have gradually been falling since 2005.

Source: Estimation based on OECD’s Inter-Country Input-Output (ICIO) Database (2018) and IEA (2018)
FINNISH INTEGRATION INTO GLOBAL VALUE CHAINS
Foreign value-added content of gross exports, %, 2005-2016

- The total value of merchandise exports and imports were 75 billion and 78 billion, respectively.

- Finland exports and imports of goods and services as percentage of GDP are 38.56% and 39.29% in 2018, respectively.

Finland top-5 exported goods are:
1. Petroleum oils (excl. crude)
2. Semi-bleached or bleached coniferous chemical
3. Coniferous wood sawn
4. Automobiles
5. Multi-ply paper and paperboard

Source: OECD TiVA database.
High petroleum exports result in relatively low shares of domestic services content in total exports.

Source: OECD TiVA database.
But services exports are growing

OECD TiVA release for 2005-2015 and projection for 2016-17

...and domestic services account for one-sixth of manufacturing exports

Domestic services content of manufacturing exports

Preliminary results based on the joint OECD-Statistics Finland Study
SMEs are highly engaged in international trade – and more so in value-added terms

Preliminary results based on the joint OECD-Statistics Finland Study
But size also impacts on who you trade with

SMEs manufacturers typically stay close to home

Gravity also weighs on services based SMEs

Preliminary results based on the joint OECD-Statistics Finland Study
Higher skills foster export growth

Preliminary results based on the joint OECD-Statistics Finland Study
And higher exports can boost salaries…

Preliminary results based on the joint OECD-Statistics Finland Study
Exports by the most productive firms have smaller gender employment gaps

Preliminary results based on the joint OECD-Statistics Finland Study
Concluding remarks: How to navigate the uncertain trade and investment environment?

- **Short term: be ready for some turbulences**
  - Trade tensions can disappear as fast as they have appeared
  - But if they translate into a new wave of protectionism, the disruption of value chains will be important
  - Incentives for companies to localise will lead to a consolidation and re-organisation of value chains
  - Regional integration will be key to not lose the benefits from global production
  - Services are more resilient to macroeconomic shocks and trade tensions

- **Long term: the digital transformation is there**
  - The digitalisation of manufacturing is the biggest game changer
  - Activities previously offshored can to some extent move back to OECD countries (a negative link between robotics and offshoring)
  - The servicification and mass customisation also lead to production closer to the consumer (which can still be international through foreign affiliates)
  - But domestic production should not be driven by new barriers to digital trade
  - There are still gains from international integration (comparative advantage based on differences in skills rather than costs)
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