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Global Value Chains: offshoring, nearshoring and friendshoring

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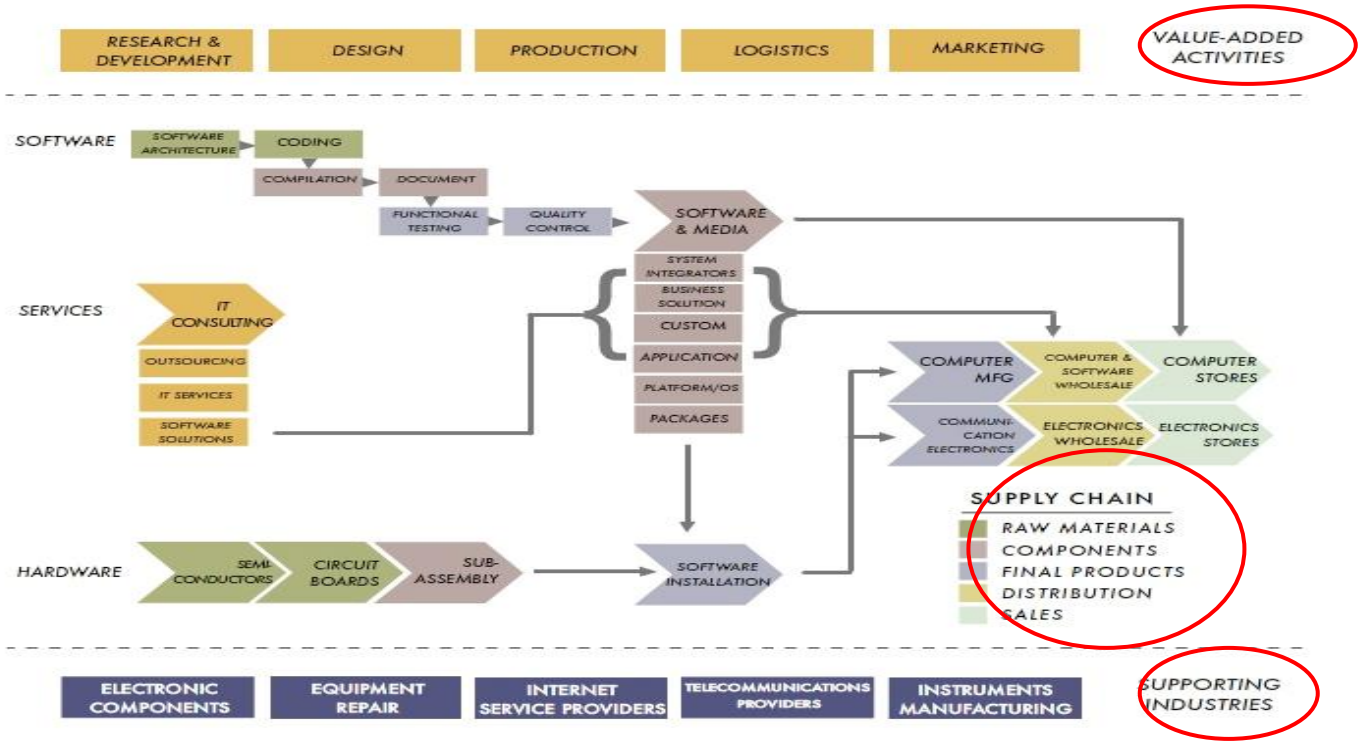
Agenda

- Old and new trends in globalization
- Measuring nearshoring
- Value creation and distribution in GVCs
- Measuring nearshoring
- Nearshoring and employment
- The structure of GVCs and volatility

What is a value chain?

A value chain describes the full range of activities that firms and workers carry out to bring a product from its conception to its end use and beyond.



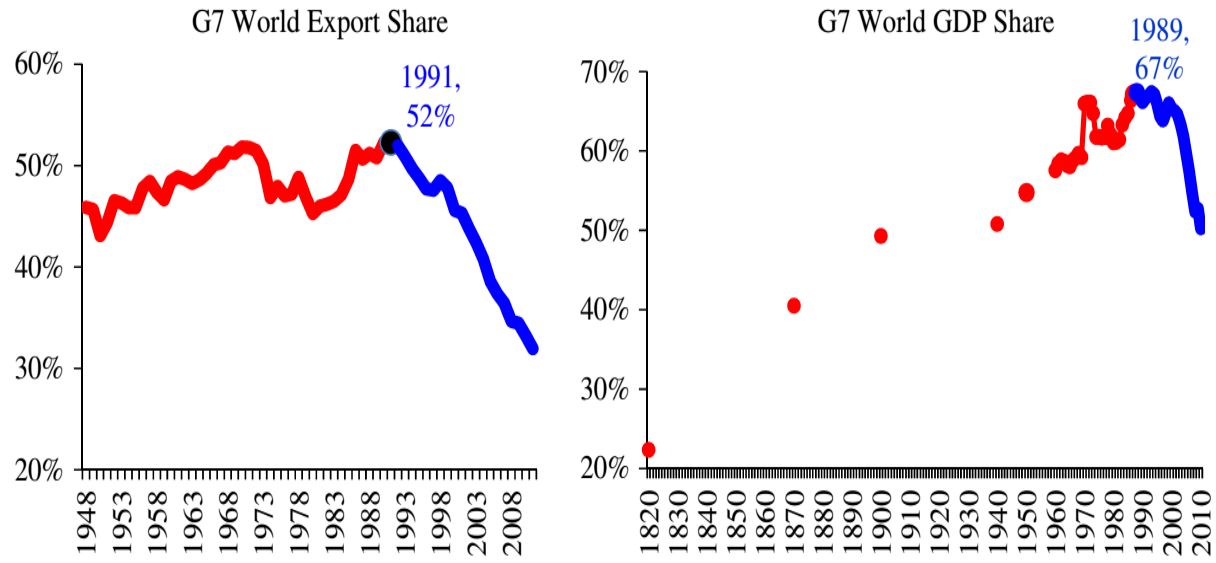
Source: CGGC (http://www.cggc.duke.edu), More Information: Global Value Chains (www.globalvaluechains.org)

Timing the revolution: trends in advanced and emerging economies

- The revolution started when supply-chain trade gained importance among high-tech and low-wage nations between 1985 and 1995
- Up to the end of the 1980s, globalization was associated with rising G7 shares of world trade and income.
- By 2010, the G7 world income share was back to its 1900 level. It took only one decade to return the G7's world trade share to its 1948 level.
- The **G7 nations lost 24 percentage points of world share of manufacturing from 1970 to 2010** dropping from 71 to 46 per cent.
- The big gainer was China, whose share rose 18 percentage points with 16 of these coming since 1990.
- Six other developing nations saw their shares rise by more than half a percentage point of the global total (Korea, India, Indonesia, Thailand, Turkey and Poland).
- The whole rest of the world saw little change with no nation gaining or losing more than half a percentage point.

Timing the revolution: trends in advanced and emerging economies

FIGURE 1
G7 Share of World Income, Trade and Manufacturing



Source: WTO, World Bank and Maddison, UNstats.

Globalization second unbundling (Baldwin et al.)

- The **'first unbundling'**, up until the mid-1980s, was mainly driven by plummeting *transportation* costs and involved competition between sectors, with supply chain remaining *within national borders*.
- The **'second unbundling'**, starting after 1985, and driven by a reduction in *Information and Communication Technology* (ICT) costs, resulted in the unpacking of the factories and led to widespread ***offshoring***.
- This second unbundling shifted the nature of international competition towards *stages of production* rather than *products* and led to the spatial distribution of global economic activity between 'headquarter' and 'factory' economies.
- The latter are developing and emerging countries, which are usually located close to a developed headquarter country. These nations **could industrialize by joining supply chains rather than building their own from scratch**.

Global value chains: headquarter and factory economies

- In a global value chain, some stages may be carried out in different ‘globally’ dispersed locations
- Some elements of a GVC may be located in developing countries
- For example, the assembly of a product such as a computer may be carried out in developing countries, while individual components may be developed/designed in rich countries and the marketing activities may also be carried out in rich countries
- Smiling curve

THE SMILING CURVE

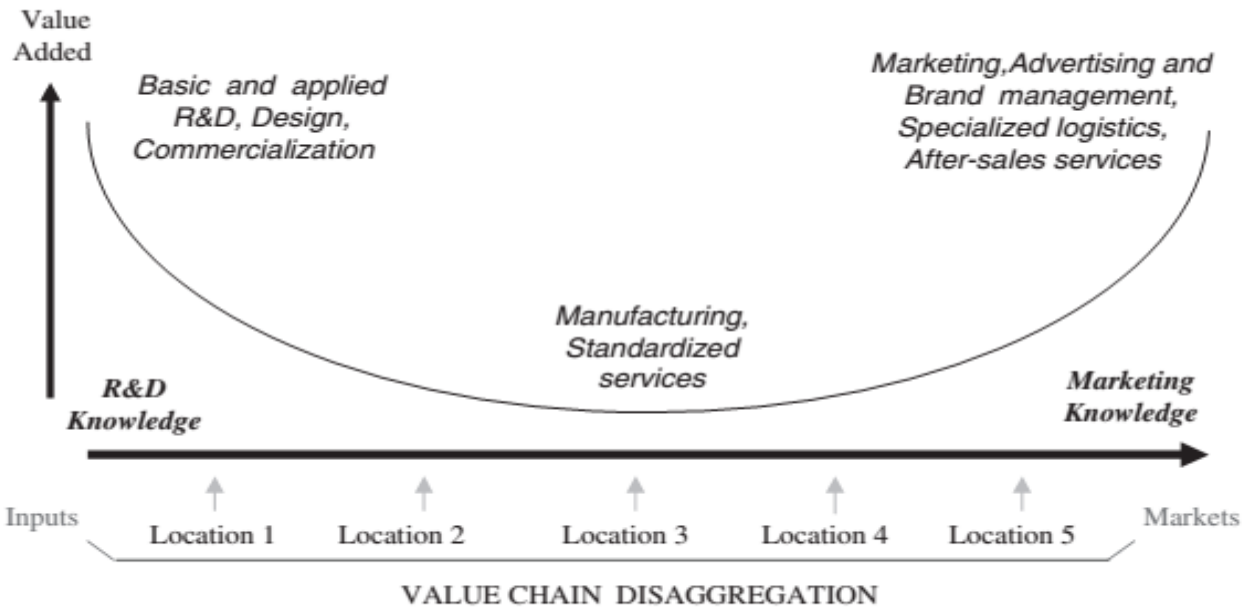


Figure 1. The smile of value creation (Mudambi, 2007).

China assembles all iPods, but it only gets about $4 per unit – or just over 1% of the US retail price of $300. The example is from 2007. What about now?

451 parts that go into the iPod

The retail value of the 30-gigabyte video iPod that the authors examined was $299 in June, 2007

Hard Drive by Toshiba → Japanese company, most of its hard drives made in the Philippines and China; it costs about $73 - $54 in parts and labor -- so the value that Toshiba added to the hard drive was $19 plus its own direct labor costs

Video/multimedia processor chip by Broadcom→ American company with manufactures facilities in Taiwan. This component costs $8.

Controller chip by Portal Player→ American company with manufactures .This component costs $5 .

-Final assembly→ done in China, costs only about $4 a unit

The unaccounted-for parts and labor costs involved in making the iPod came to about $110

The largest share of the value added in the iPod goes to enterprises in the United States→ $163 of the iPod's $299 retail value in the United States was captured by American companies and workers, breaking it down to $75 for distribution and retail costs, $80 to Apple, and $8 to various domestic component makers.

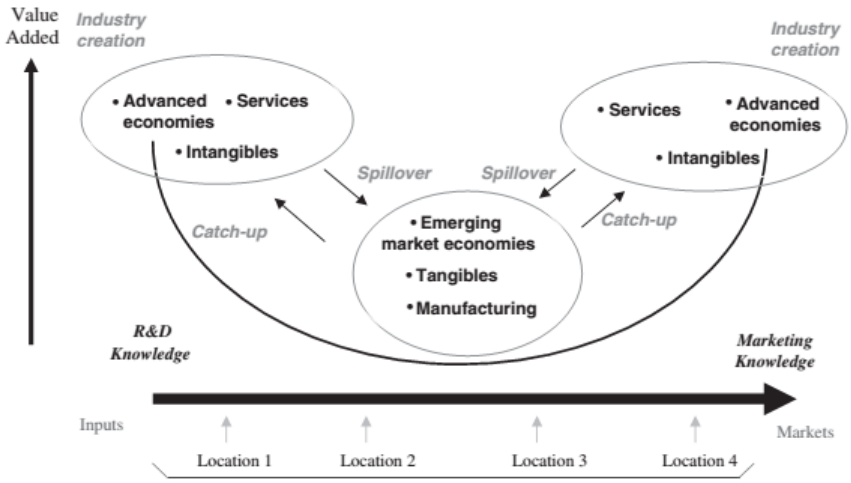
The bulk of the iPod's value is in the conception and design of the iPod. That is why Apple gets $80 for each of these video iPods it sells, which is by far the largest piece of value added in the entire supply chain. Apple figured out how to combine 451 mostly generic parts into a valuable product.

Source: Varian, Hal R. The New York Times, June 28, 2007. An iPod Has Global Value. Ask the (Many) Countries That Make It.

Dynamic analysis

1. Firms controlling activities in the middle of the value chain have strong incentives to acquire the resources and competencies that will enable them to control higher value added activities. China, India, Brazil and Mexico are moving to develop their own brands and marketing expertise in advanced economies to increase their control over the downstream end of the value chain. **Catching up**
2. Firms that control the ends of the value chain, mostly from advanced market economies, are faced with an increasingly competitive landscape, including aggressive new entrants from emerging market economies intent on catching up. They have strong incentives to increase the efficiency and effectiveness of the high value-added activities that they control. Modularization enables these firms to strip out standardized activities from both the upstream R&D and downstream marketing activities that can then be relocated to emerging market economies. Microsoft and IBM locate R&D sites in India they improve the cost efficiency of their overall R&D operations. **Spillover**
3. Finally, the ends of the 'smile' are not static. New industries emerge from basic and applied R&D at the upstream end (e.g. biotech, nanotech) and through marketing and distribution innovations at the downstream end (e.g. e-tailing, online auctions). At the moment, this process is overwhelmingly concentrated in advanced market economies. **Industry creation**

Dynamic analysis

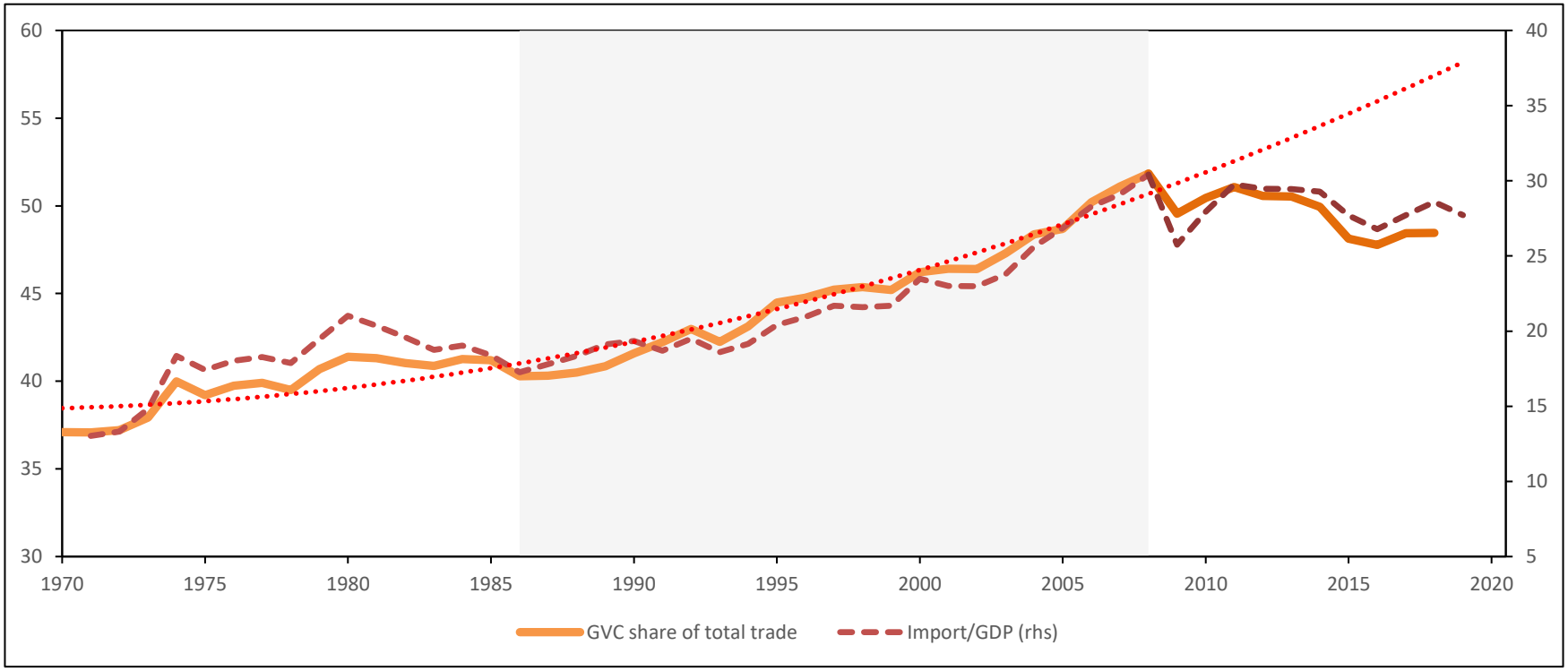


VALUE CHAIN DISAGGREGATION

Geopolitical disruptions and Future GVC trends

- The future of globalization after the pandemic crisis, the Ukrainian war, the USA China trade war, the new Trump administration
- **Reshoring, regionalization** or **friendshoring** of GVC?
- The USA China trade war and the concept of friendshoring
- The new Trump administration and the global disorder

Slowbalization



Nearshoring and friendshoring

- **Nearshoring**: sourcing from countries that are less distant geographically

  e.g. European countries sourcing from within Europe

- **Friendshoring**: sourcing from countries that are less distant geopolitically

  e.g. with the same vote at the UN nations assembly

The International Monetary Fund finds evidence of friendshoring. This mainly depends on the reduction of trade between USA and China. However there is also evidence of indirect trade

Current lines of research: Restructuring of GVCs, employment, and propagation of shocks – with ICIO data

1) Is there evidence of nearshoring?
2) How does nearshoring affect employment creation in Europe?
3) How does the structure of GVCs mediate the propagation of supply-side shocks?

Security and global value chains

GVCs role in the global economy has come under intense scrutiny in the past few years, in light of:

- *The US China trade war*
- *The Pandemic*
- *The Ukrainian war*
- *The issues of "**economic security**" ("**friendshoring**").*
- *The mixed results in terms of **growing inequality**.*
- *Propagation of shocks along international production networks.*

The notions of near-/, re-/, back-/ or even friend-/ shoring have gained significant traction in the policy debate around the future of globalisation – e.g. **EU's Open Strategic Autonomy and Economic security**.

Draghi report: increasing security and reducing dependencies.

Nearshoring and Farsharing in Europe within the Global Economy.

Bontadini, Meliciani, Savona and Wirkierman, Econopol 5, 2022

- Regional (RFVAS) and global (extra-regional) (GFVAS) foreign value added (FVA) share of final output
- Share of domestic value added contributing to regional (RFSUBS) and global (extra-regional) (GFSUBS) value chains

- Increase in Ratio of Regional-to-Global foreign value added (NFVA) → **near-shoring of the sourcing of FVA**
- Increase in Ratio of Regional-to-Global contribution to foreign GVCs (NFSUB) → its homologue on the destination side, **near-sharing**

Dataset

- Global input–output tables: OECD Inter-Country Input-Output (ICIO) dataset (Nov-2021 Ed.);
- 45 industries (ISIC Rev. 4); 66 countries; 1995-2018;
- Three macro-regions:

1. European Union (EU28): 28 European countries, including Croatia and the UK;

2. Asia-Pacific (AP): ASEAN Plus Six (i.e. China, Japan, South Korea, India, Australia and New Zealand), Hong Kong and Chinese Taipei;

3. North and Latin America (NLA): USMCA, Argentina, Brazil, Chile, Colombia, Costa Rica and Peru.

Nearshoring trends in the global economy

- The EU is by far the most regionally integrated region.
- It has been engaging in farshoring until 2012, after which nearshoring has picked up again.
- Asia is less regional but has been experiencing nearshoring consistently over the past two decades.
- Americas are by far the least regionally integrated areas.

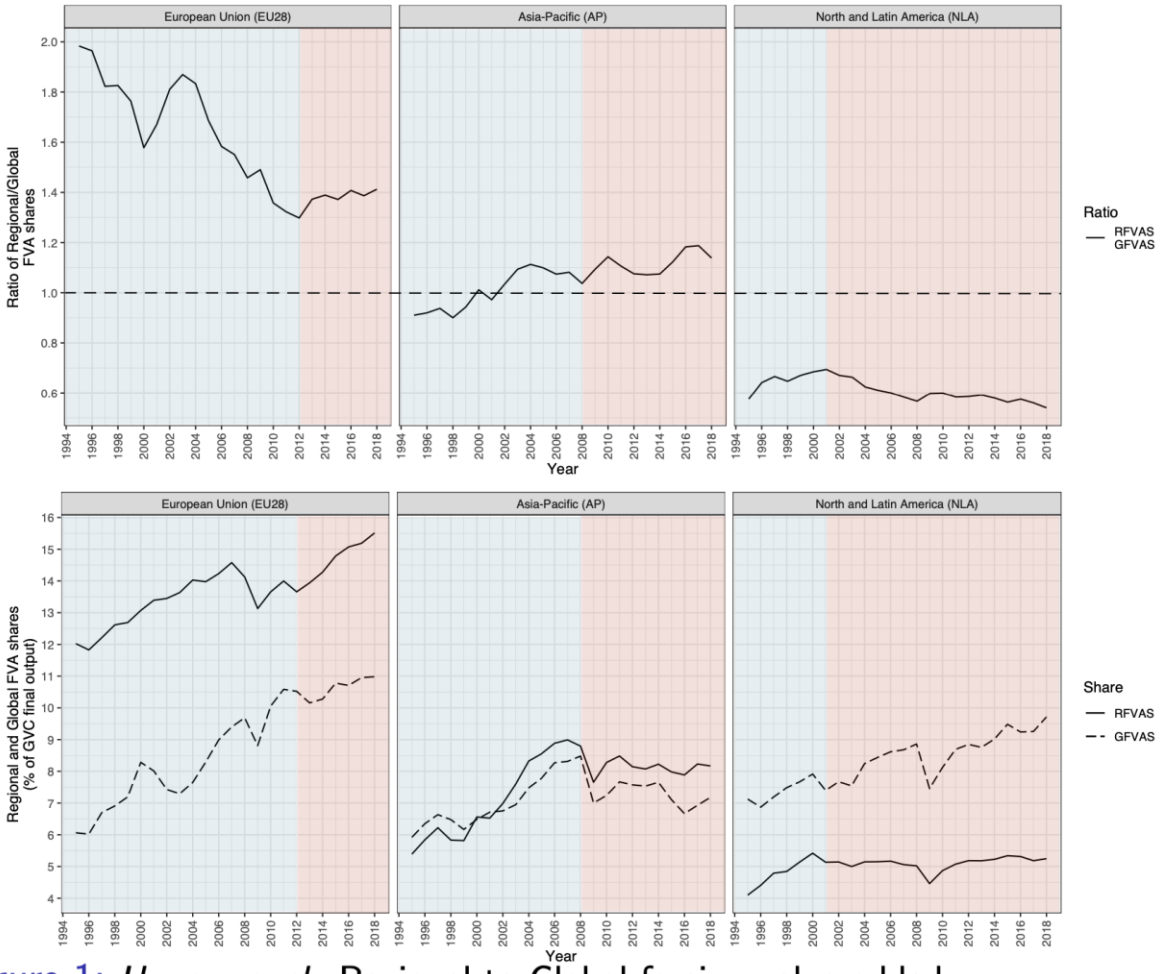


Figure 1: *Upper panel*: Regional-to-Global foreign value added; *Lower panel*: Regional and global FVAS of final output.
Note: All value added corresponding to **primary industries** has been **excluded** from the computations.

Farsharing trends in the global economy

- The EU remains the most regionally integrated also on the destination side, but has experienced a steep decrease.
- This is driven largely by an increase o the extra-regional share of GVA absorption.
- Asian country-industries have experienced the opposite trend, with the extra-regional share collapsing after the financial crisis.
- NLA country-industries have experienced a growing trend of the regional share of valued added, after NAFTA, which has swiftly reverted after China's joining the WTO.

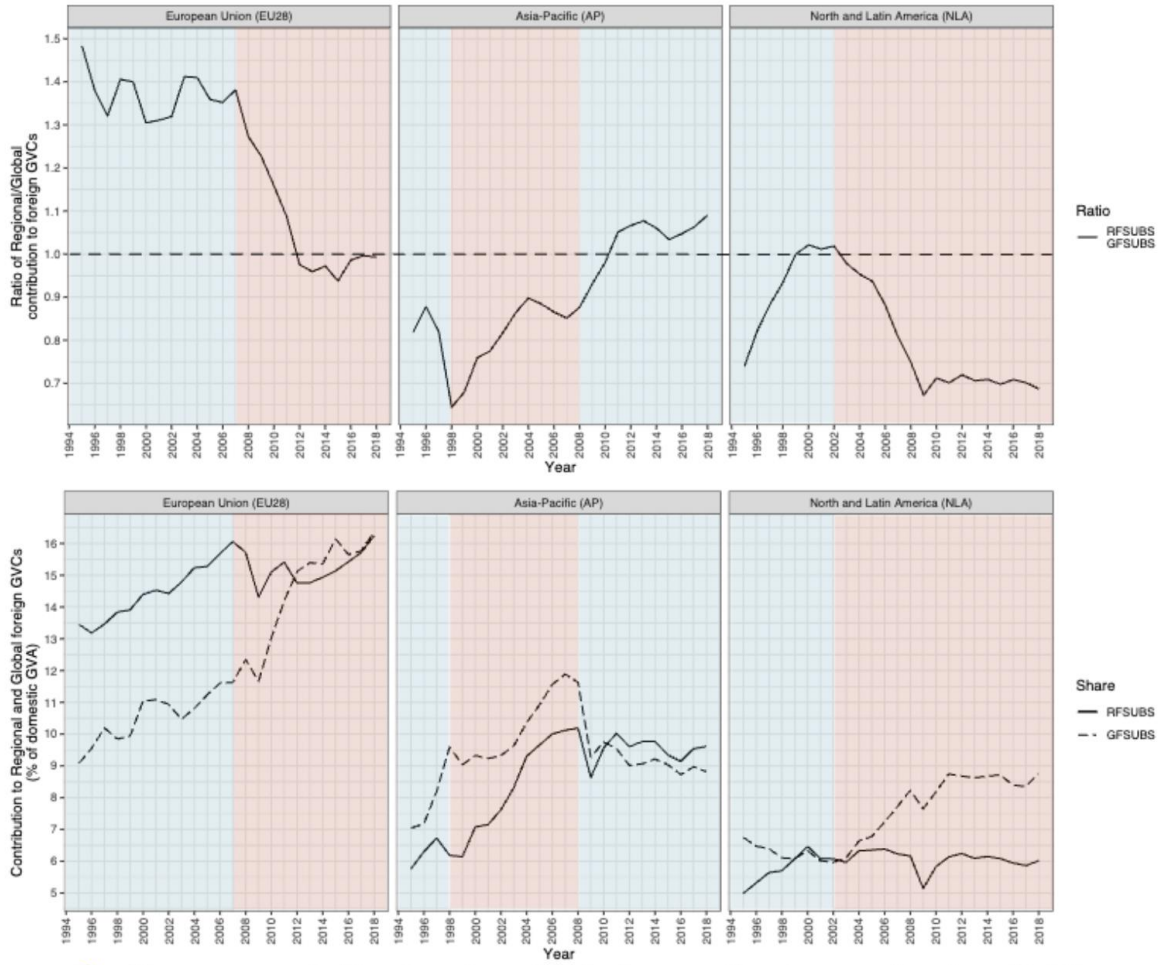


Figure 3: *Upper panel*: Regional-to-Global contribution to foreign GVCs; *Lower panel*: Share of DVA contributed to regional and global GVCs.

Nearshoring and employment

- The idea that restructuring GVCs closer towards final EU demand could not only increase GVC resilience but also 'bring jobs back' is particularly appealing to policy makers.

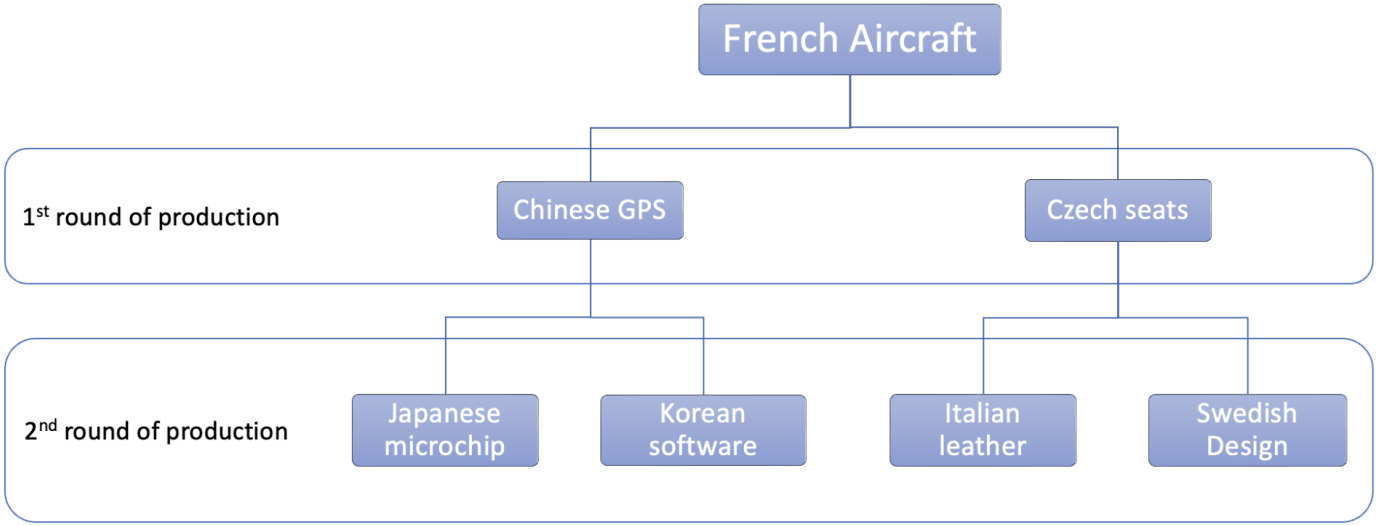
- We explore this conjecture using ICIO and employment data and define nearshoring building on the definition of Los et al. 2015:
  - The ratio of regional (e.g. coming from within the EU) over extra-regional foreign value added as above

- We explore whether nearshoring leads to more employment in the country of completion of GVCs.

Nearshoring and employment – the intuition

In principle nearshoring only involves a compositional change of foreign value added, why should this have any effect on domestic employment?

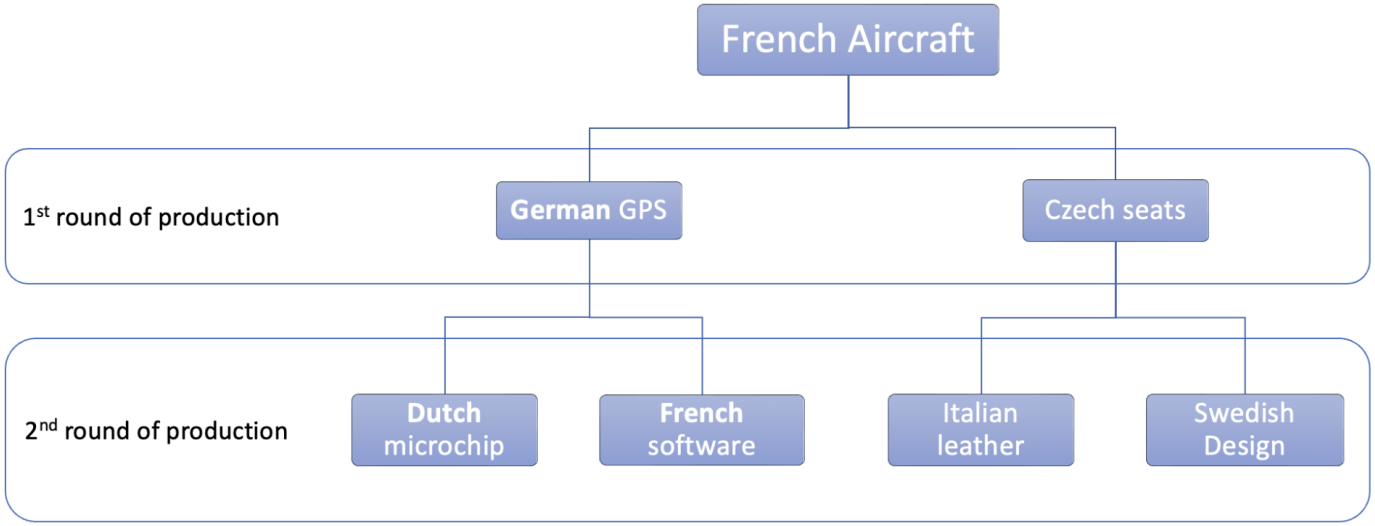
Let's take the example of Airbus aircrafts produced in Toulouse, with the supply chain below



Nearshoring and employment – the intuition

As Chinese GPS suppliers are replaced with German ones, this changes the value chain upstream, generating employment in the French software industry.

Nearshoring generates inter-sectoral employment through indirect inter-sectoral linkages.



Nearshoring and employment - main results

We estimate the relationship between nearshoring and employment:

$$y_{jct} = \alpha + \beta * nearshoringjct + \sum_{jct} \gamma * \boldsymbol{x}_{jct} + \vartheta_{jc} + \tau_t + \varepsilon_{jct}$$

y_{jct} is either the domestic employment participating in GVC *j* of country *c* during time *t*, or its share of total GVC employment.

$\boldsymbol{x}_{jct}$ is a vector of controls including total GVC final output, domestic share of value added, capital intensity, and average wage.

We control for country-industry and year FE and use a system GMM to account for possible reverse causality.

Nearshoring and employment - main results

	(1)	(2)
	DEMS (ln)	DEM (ln)
Nearshoring Regional-to-Global (ln) (NFVA)	0.160***	0.158***
	(0.0334)	(0.0394)
Domestic value added share (ln) (DVAS)	0.676***	0.465***
	(0.0462)	(0.0559)
Final GVC output (ln) (FINO)	-0.0498*	0.940***
	(0.0251)	(0.0388)
Capital/Labour ratio (ln)	-0.120*	-0.665***
	(0.0621)	(0.102)
Average wage rate (ln)	0.101	-0.323**
	(0.138)	(0.124)
Constant	0.0918	0.128
	(0.467)	(0.482)
Observations	11,400	11,400
R2	0.954	0.997
Country-year FE	Yes	Yes
Industry-year FE	Yes	Yes
Country-industry FE	Yes	Yes

Nearshoring leads to higher domestic employment both in absolute terms (DEM) and as a share of total GVC employment (DEMS).

This corroborates the idea that nearshoring can generate employment in the country of completion.

Nearshoring and employment – further results

We replicate the analysis by looking separately at the regional and global components of our two explanatory variables for nearshoring.

When we test our model using a dynamic GMM we find that the effect is mostly driven by the global component.

For Europe, this is reasonable as we have seen that production in Europe is much less labour intensive than outside of it and therefore employment effects of nearshoring may be offset by automation with capital replacing labour.

It is important to note that the outcome variable includes employment in the country of completion across *all* industries, i.e. not necessarily in the industry of completion including all industries that supply inputs to the industry of completion.

We replicate our main results looking at the country-industry of completion, rather than the total country's employment and we find the relationship between nearshoring and employment to become statistically insignificant.

Employment in the country of completion is generated by intra-region input spillovers.

However: Potential implications for macro regional inequalities

Europe seems to be on a very specific pattern of GVC integration:

1. **Nearshoring of sourcing**, with European GVCs increasingly relying on value added coming from within the continent.
2. **Far-sharing on the demand side**, with non-EU GVCs absorbing larger shares of the value added produced in Europe.

- Hence, European GVCs depend less than other areas on foreign suppliers, however **they do depend on foreign demand**.

- Should other regions also embark on a process of nearshoring this may lead to a shrinking demand for European industries.
- Tariffs from other countries may have important negative effects

Potential implications for regional inequalities

We observe a growing share of non-EU GVCs and a stagnating share of EU GVCs

There are at least two explanations of the far-sharing we observe:

1. Despite slow-balisation, European industries have retained their market shares and remain competitive in foreign markets.
   OR/AND:
2. European industries are turning towards non-EU GVCs due to **faltering European demand**.

What to do?

- Beware of nearshoring, friend-shoring and other forms of OSA on trade competitiveness and the European export-led growth model
- Need to increase **public and private investment to maintain strategic competitiveness** in specific high-tech segments of VC (i.e. estimated investment gap of 800 billion per year for green, digital and defense)
- Any strategic autonomy and sovereignty policies should rely on a **proper (EU) fiscal capacity** and on support of **final demand**
- In the lack of a European central fiscal capacity OSA could interfere with the single market and lead to **increasing regional inequalities**

Global value chains and volatility

The policy discussion around the restructuring of GVC has also focused on the idea that GVCs are a conduit for volatility.

The question of how shocks propagate along GVCs has become central.

A trade-off emerges between *efficiency* and *security* - within a broader discussion around the relationship between GVCs and economic growth.

1. Does GVC integration increase exposure to shocks and hamper final output growth?

2. Do GVC structural features (farshoring, length, concentration) mediate supply shocks and their relationship with GVC output growth?