

The Labour Share Along Global Value Chains: Perspectives and Evidence From Sectoral Interdependencies.

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Themes

Empirical investigation on the challenges of the development process bridging the **Evolutionary** and the **Structuralist** traditions.

“Development is an evolutionary process with technological learning at its core.”

- Economy as a complex and evolving system;
- Knowledge Accumulation & Technological Learning;
- Structural Changes
- GVCs

Overview of the literature

- Sectoral and aggregate labour Share are falling in advanced and developing countries.
- Wage-productivity decoupling
- Trade and GVCs integration augment this tendency.
- Smile Curve: Functional Specialization

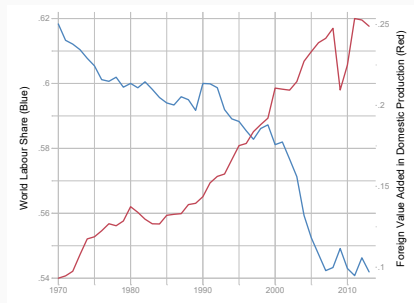


Figure 1: Worldwide labour share (blue) and share of foreign value added (red).

Intuition:

- Firms take part to global production networks.
- Offshoring and Outsourcing processes are major drivers of reconfiguration of global production network.
- Structural and geographical shifts along GVCs affect the Labour Share

RQ: how does globalisation affect workers' share of value added?

Our Contribution

- We propose the novel concept of **Vertical Labour Share**
- We distinguish between **Direct**, **Domestic** and **Foreign** Inputs Labour Share finding heterogeneous dynamics.
- We study the vertical labour share dynamics along production stages
- We account for within- and between-change shifts

Data

- Input-Output Tables (Timmer et al., 2015)
- Socio Economic Accounts
- Penn World Table 9.1 (Feenstra et al., 2015)

Methodology

- Leontief Transformation
- Shift Share Analysis
- Panel with Fixed Effects

Literature Review I: Labour Share fall

▷ Fall in the labour share

Kaldor, 1957; EuropeanCommission, 2007; Karabarbounis and Neiman, 2014; Bivens and Mishel, 2015; Dao et al., 2019; Dosi and Virgillito, 2019

- Kaldor's stylized facts are not anymore valid since the '70s (the rise of the neoliberal phase)
- Wage-productivity detachment (both micro and macro level evidence)
- Fall in workers bargaining power (both in aggregate indicators ex-ante and in output measures ex-post, such as in wage compression)

▷ Determinants of the fall in labour share

EuropeanCommission, 2007; Kristal, 2010; Dao et al., 2019; Dimova, 2019; Stockhammer, 2017; Guschanski and Onaran, 2021

- Labour Market Institutions
- Falling Price of Capital
- Financialization
- International Trade and GVCs

▷ GVCs Rise: **Globalization Second Unbundling**

Pietrobelli and Rabellotti, 2010; Baldwin, 2011; Johnson and Noguera, 2012; Foster-McGregor et al., 2013; Gereffi, 2014; Timmer et al., 2014; Taglioni and Winkler, 2016; Rodrik, 2018

- From final goods to intermediaries trade
- Ease the entrance of developing countries in International Markets

▷ Smile Curve Literature & Functional Specialization: **who gains?**

Timmer et al., 2019; Bontadini et al., 2020; Meng et al., 2020; Stöllinger, 2021; Bontadini et al., 2022

Vertical (GVCs) Labour Share Construction

- VA multiplayer matrix construction:

$$\mathbf{A} = \mathbf{Z} \hat{\mathbf{x}}^{-1} \quad (1)$$

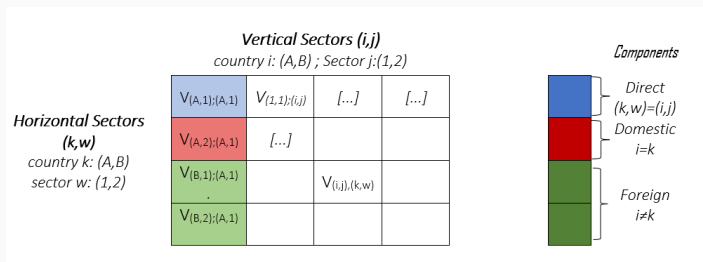
$$\mathbf{x} = (\mathbf{I} - \mathbf{A})^{-1} \mathbf{d} \quad (2)$$

$$\mathbf{L} = (\mathbf{I} - \mathbf{A})^{-1} \quad (3)$$

$$\mathbf{V} = \hat{\mathbf{v}} \hat{\mathbf{x}}^{-1} \mathbf{L} \hat{\mathbf{d}} \quad (4)$$

Z	I-O matrix of intermediate deliveries
x	sectoral output
V	sectoral value-added

- GVCs Labour Share Aggregation:



$$LS_{j,k} = \sum_{(i,c) \in (j,k)} \frac{v_{i,c}}{\sum_{(i,c) \in (j,k)} v_{i,c}} ls_{i,c} = \sum_{(i,c) \in (j,k)} vash_{i,c} ls_{i,c} \quad (5)$$

Vertical (GVCs) Labour Share: Descriptive Statistics

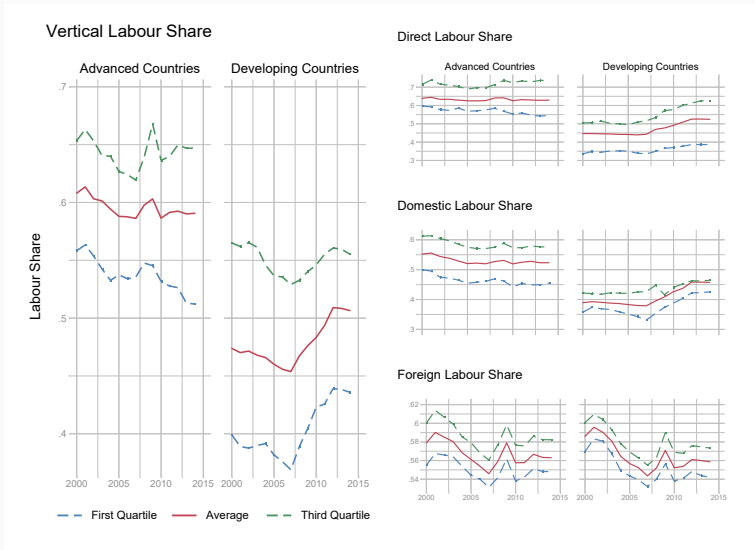


Figure 2: Labour share trends in advanced and developing countries. Labour share distribution is weighted by real value added.

Vertical (GVCs) Labour Share: Descriptive Statistics



Figure 3: Vertical labour share shift in the pre- and post-crisis periods by macro-sector, country development level and GVCs components.

Selected GVCs-Level Evidence

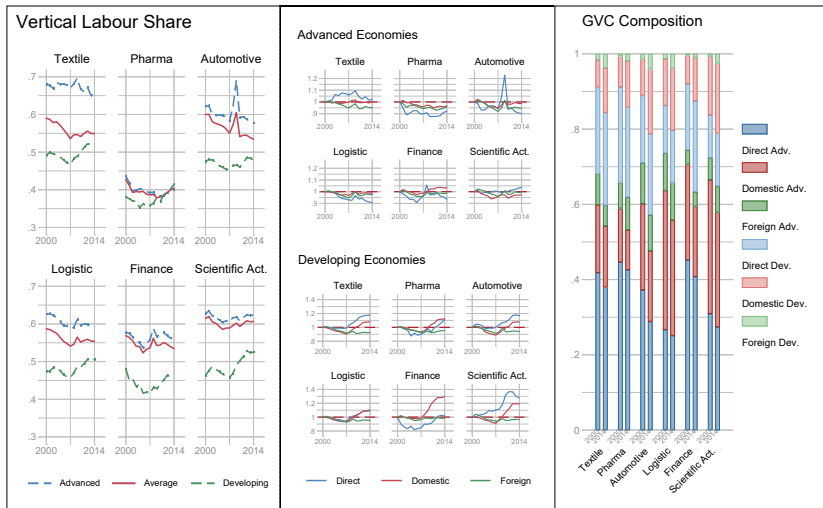


Figure 4: *Left:* aggregate labour share trends. *Centre:* evolution of direct, domestic and foreign contributions' labour share (2000=1). *Right:* sectoral GVCs VA composition.

Selected Country-Level Evidence



Figure 5: *Left:* aggregate labour share trends. *Centre:* evolution of direct, domestic and foreign contributions' lab. sh. (2000=1). *Right:* country-level GVCs VA composition.

Vertical (GVCs) Labour Share: Panel FE estimation

$$LS_{(j,k),t} = \alpha_0 + \alpha_1 \text{LnGDP}/c_{k,t} + \alpha_2 \text{LnGDP}/c_{k,t}^2 + \alpha_5 X_{(j,k),t} + \theta_{(j,k)} + \gamma_t + \epsilon_{(j,k),t} \quad (6)$$

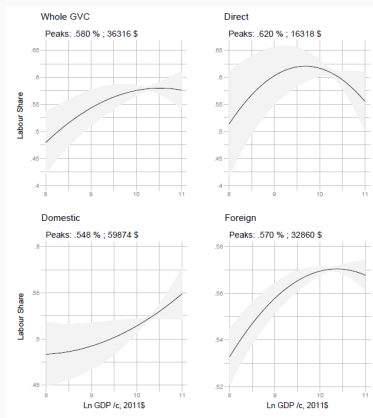


Figure 6: Predicted labour shares for the whole GVCs.

Vertical (GVCs) Labour Share Time Dummies: Panel FE estimation

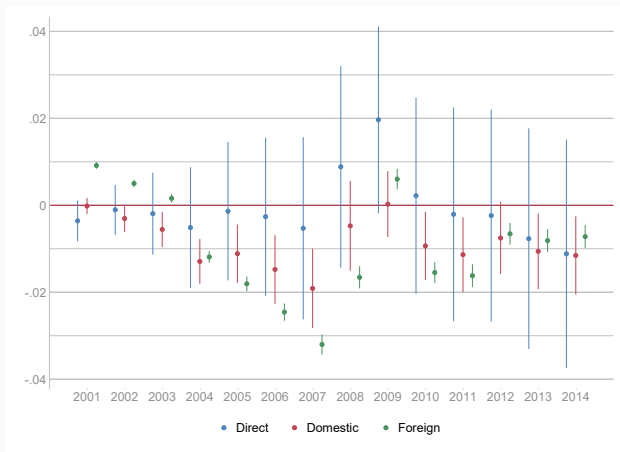


Figure 7: Year FE and 5% significance level confidence intervals

Shift Share Analysis

$$\Delta LS_{(j,k),t}^{GVC} = \underbrace{\sum_{(i,c) \in (j,k)} (\Delta s_{(i,c),t} * \tilde{v}_{(i,c),t})}_{\text{Within Inputs}} + \underbrace{\sum_{(i,c) \in (j,k)} (\Delta v_{(i,c),t} * \tilde{l}s_{(i,c),t})}_{\text{Between Inputs}} \quad (7)$$

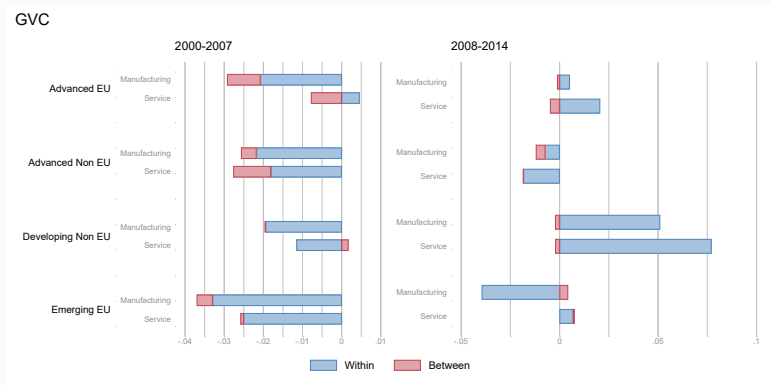
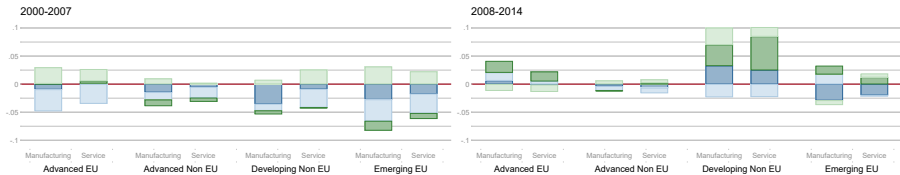


Figure 8: Shift-share analysis by vertically integrated sectors on whole GVCs labour share. Results are computed at the GVCs-level and then averages across sectors weighted by VA.

Shift Share Analysis - Inputs by Sectoral Origin

Domestic Inputs



Foreign Inputs

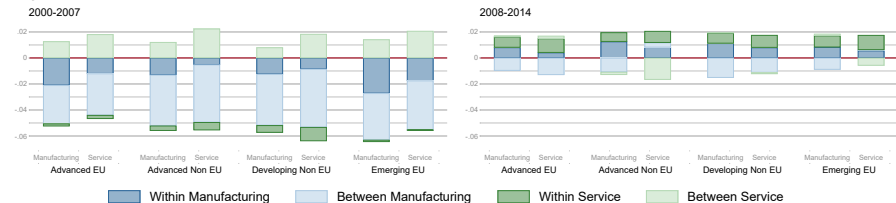
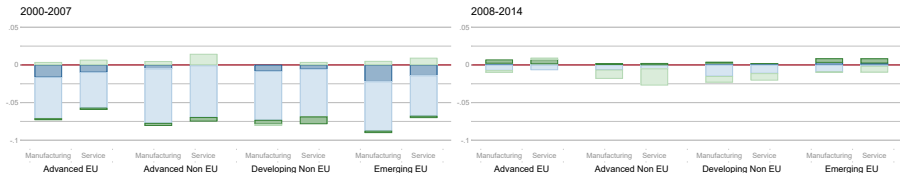


Figure 9: Shift-share analysis on domestic and foreign components following eq. 7.

Shift Share Analysis - Foreign component

Inputs From Advanced Countries



Inputs From Developing Countries

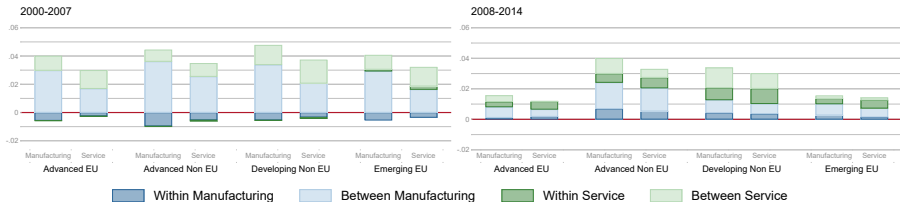


Figure 10: Shift-share analysis on foreign components following eq. 7.

Wrap-up I

- First, we find that the pre-crisis period is characterised by the drop in labour share in virtually all vertically integrated sectors. While the post-crisis period witnesses heterogeneous dynamics.
- Second, we split the whole GVCs dynamics into three components, direct, domestic and foreign contributions and investigate them separately. The remuneration of the foreign components record a drop in advanced countries while increasing in developing ones.
- Third, we find evidence of a hump-shaped relation between GVCs labour share and GDP/c in manufacturing industries in the direct component. The indirect domestic contribution presents a neater positive linear trend. The foreign contribution shows weak evidence of a peak dynamics.
- The composition of the three contributions results in a converging vertical labour share at 58%, a value much lower than the direct component one. The time shift shows a medium-run declining trend, only partially contrasted by a short-run rebound in the proximity of the crisis.

Wrap-up II

- A shift-share analysis, distinguishing within- and between-input changes, shows that the contribution of the within-component has been mostly responsible for the drop. However, the between-component also played a negative role, with value chains restructuring toward cheaper labour inputs
- When accounting for the sector and country of origin, service inputs have experienced a rise in the labour share in contrast with manufacturing inputs, while advanced economies have embraced restructuring processes, signalled by the negative between component, directed versus advancing economies.
- However, such gains already strongly decrease in the second period, also questioning the duration of the benefits of the labour share from GVCs participation

Conclusions

- Novel framework to analyse Labour Share dynamics highlighting the role of international integration of production.
- We divide GVCs into three components having different dynamics
- Labour share along development stages: Inverted U-shape.
- Investigation with a shift-share analysis: restructuring across sectors and countries are an important driver of Labour share decline.

Limitations & Ways to go

- Two-digit aggregate measure
- Including functional specialisation (i.e. occupations) to the analysis.
- The role of intangibles (e.g., IPRs)

Policy implications

1. Defy current comparative advantage: **Getting relative prices wrong (Amsden, 1989)**
2. *Industrial Policies*: nurturing development of internal capabilities in strategic sectors and GVCs
3. *Trade Policies* favouring upgrading towards technological advanced productions;
4. Co-evolution of technology and Institutions: **National System of Innovation**;
5. Beyond re-distribution: **Pre-distribution** or (to use a neglected term) **Welfare state**

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