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**Filippo Bontadini, Valentina Meliciani,
Maria Savona, Ariel Wirkierman**

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Nearshoring and Farsharing in Europe within the Global Economy

Filippo Bontadini^{1,3,4} | Valentina Meliciani¹ | Maria Savona^{1,3} | Ariel Wirkierman^{2,3}♦

1 INTRODUCTION

Has the world economy really entered a phase of de-globalisation or deceleration in globalisation after the great recession of 2008-09? Or, rather, are we experiencing a phase of reorganisation of value chains with a shift from global to more regional configurations? Is the increasingly popular term “nearshoring” indicative of a significant trend similarly affecting Europe, Asia-Pacific and the Americas on both the sourcing and destination sides of value chains or are there regionally distinctive trends?

Recent studies addressing some of these questions find no conclusive evidence of de-globalisation but rather a slowing down of the pace of globalisation relative to the ‘hyper-globalisation’ era (1986-2008) (Piatanesi and Arauzo-Carod, 2019; Antràs, 2020). Despite the extensive literature on globalisation trends and the revived interest in the topic due to the emergence of the Covid-19 pandemic (Baldwin and Evenett, 2020) and the war in Ukraine, empirical evidence on the reconfiguration of global value chains (GVCs) that takes into account both the sourcing (production) and destination (consumption) of value added within and across regional areas is still missing.

Taking into account both the source and destination sides of GVCs is essential for envisaging possible strategies and avenues to follow in Europe in line with the concept of open strategic autonomy.

This policy brief applies (and further refines) the well-established input-output methodology (Foster-McGregor and Stehrer, 2013; Timmer et al., 2014; Los et al., 2015) to the – recently released – OECD Inter-Country Input-Output (ICIO) 2021 dataset to shed light on these issues.

We find very clear-cut results on Europe, suggesting two opposite trends on the source and destination sides of GVCs: Europe is increasingly sourcing value added from within the region (which we refer to as “nearshoring”) but exporting value added globally (a so-far understudied phenomenon which we term “farsharing”).

♦ Luiss – Libera Università Internazionale degli Studi Sociali Guido Carli

¹IMS, Goldsmiths, University of London

²SPRU, University of Sussex

³OFCE – SciencesPo

These two trends raise new questions on Europe's GVC participation. On the one hand, there is the degree to which it is driven by innovation and international competitiveness and, on the other hand, there is the role played by the contraction of domestic demand, partially brought about by fiscal consolidation policies in Europe over the past decade.

In light of this, our evidence suggests that policies aiming at strategic autonomy in Europe should take into account the increasing dependence of the area on foreign demand, especially in relation to the long-standing effects of fiscal consolidation policies on its own countries' domestic final output. In sum, Europe should not only focus on the sourcing of value added across production processes, but also on the final demand that generates economic activity in Europe.

2 MEASURING REGIONAL AND GLOBAL VALUE ADDED CONTENT OF TRADE

The starting point to devise nearshoring and farshoring indicators is the world's gross value added (GVA). Each monetary unit of gross output embodies an amount of value added. But gross output is itself generating by demand for final products through direct and indirect inter-country, inter-industry input requirements. Hence, the value-added content of output can be distributed across and linked to each generating source of final demand, exhausting total value added in the world economy.

Using matrix algebra (for details, please refer to Bontadini et. al., 2022), it is possible to distinguish the geographical source and destination of value added contributed by each country-industry to each country-global-value-chain (GVC).¹ In technical terms, a country-GVC represents an *international* subsystem (Sraffa, 1960, p. 89) or vertically integrated sector (Pasinetti, 1973), in the sense that it is a unit of analysis comprising all direct and indirect input (and value added) requirements to produce a given element of final output in the world economy.

To pursue our analysis, we formulate indicators capturing two aspects of the redistribution of global income through GVCs.

First, we adopt an *input sourcing* perspective: we look at where value chains in each region draw value-added contributions from and whether this comes from within (i.e. the Regional Foreign Value added Share, RFVAS) or outside (i.e. the Global Foreign Value Added Share, GFVAS) a country's region.

Second, we adopt an *output destination* perspective: we look at the final destination of domestic value added and whether it contributes to value chains articulated within (i.e. Regional Foreign Subsystem Share, RFSUBS) or outside (i.e. Global Foreign Subsystem Share, GFSUBS) a country's region.

¹ It is important to stress the difference between country-industry and country-GVC. The former refers to a given industry in a given country -- much like in standard statistics -- which produces both final and intermediate goods. The latter, instead, refers to the production of final goods that reaches completion in a given country-industry but also includes the value-added contributions of all other countries and industries across the world. For example, the production of the textile industry in Italy includes both cloth that is used for production by other industries and dresses that are sold as final products. The Italian GVC instead only includes dresses sold as final goods but it includes the value added of design, yarn, dyes and cotton (and other intermediates) coming from outside of the Italian textile industry.

We then define regional-to-global ratios:

$$NFVA = \frac{RFVAS}{GFVAS} \quad \text{and} \quad NFSUB = \frac{RFSUBS}{GFSUBS} \quad (1)$$

capturing the degree of regionalisation of value chains or industries, respectively. Hence, if NFVA is increasing (decreasing), the country (or region) is nearshoring (farshoring), whereas if NFSUB is increasing (decreasing), the country (or region) is nearsharing (farsharing).

In order to capture the employment dimension of international production fragmentation, besides computing the redistribution of global income through GVCs, we also formulate all previous indicators in terms of the employment content of final output.

Hence, on the one hand, from an *input sourcing* perspective, we will have the Regional Foreign Employment Share (RFEMS) and the Global Foreign Employment Share (GFEMS), quantifying the proportion of total GVC employment coming from within or outside a country's region. On the other hand, from an *output destination* perspective, we compute the domestic employment contributions to foreign regional (RFSEMS) and global (GFSEMS) GVCs. Also in this case we define regional-to-global ratios:

$$NFEM = \frac{RFEMS}{GFEMS} \quad \text{and} \quad NFSEM = \frac{RFSEMS}{GFSEMS} \quad (2)$$

Thus, we use the indicators devised to quantify the extent of far/nearshoring and far/nearsharing in the global economy from both income and employment perspectives.

3 RESULTS

Computations require a set of global input-output tables. We use the OECD Inter-Country Input-Output (ICIO) dataset – published in November 2021 – providing data for 45 industries (based on ISIC Rev. 4) across 66 countries, covering the 1995-2018 period.² We consider three macro-regions: the European Union (EU28), Asia-Pacific (AP) and North and Latin America (NLA).³ We focus on GVCs articulated around manufacturing final outputs to compute foreign value added shares⁴ and on manufacturing industries to compute domestic value-added contributions to foreign GVCs.⁵

² Data can be accessed at <http://oe.cd/icio>

³ EU28 considers 28 European countries, including Croatia and the UK; AP considers 18 countries: ASEAN Plus Six (i.e. including China, Japan, South Korea, India, Australia and New Zealand), together with Hong Kong and Chinese Taipei; NLA considers 9 countries: USMCA, together with Argentina, Brazil, Chile, Colombia, Costa Rica and Peru.

⁴ This means that we only consider the production of final manufacturing goods. Recall, however, that a manufacturing GVC requires – directly and/or indirectly – inputs from all industries of an economy (primary sectors and services included).

⁵ A manufacturing industry contributes to foreign GVCs for all final products (primary sectors and services included).

The upper panel of Figure 1 reports the ratio between RFVAS and GFVAS, while the lower panel depicts that between RFSUBS and GFSUBS. These correspond to NFVA and NFSUB in Equation (1), respectively. Increases in these ratios reflect nearshoring of the sourcing of FVA and its homologue on the destination side, which we term as “nearshoring,” respectively.

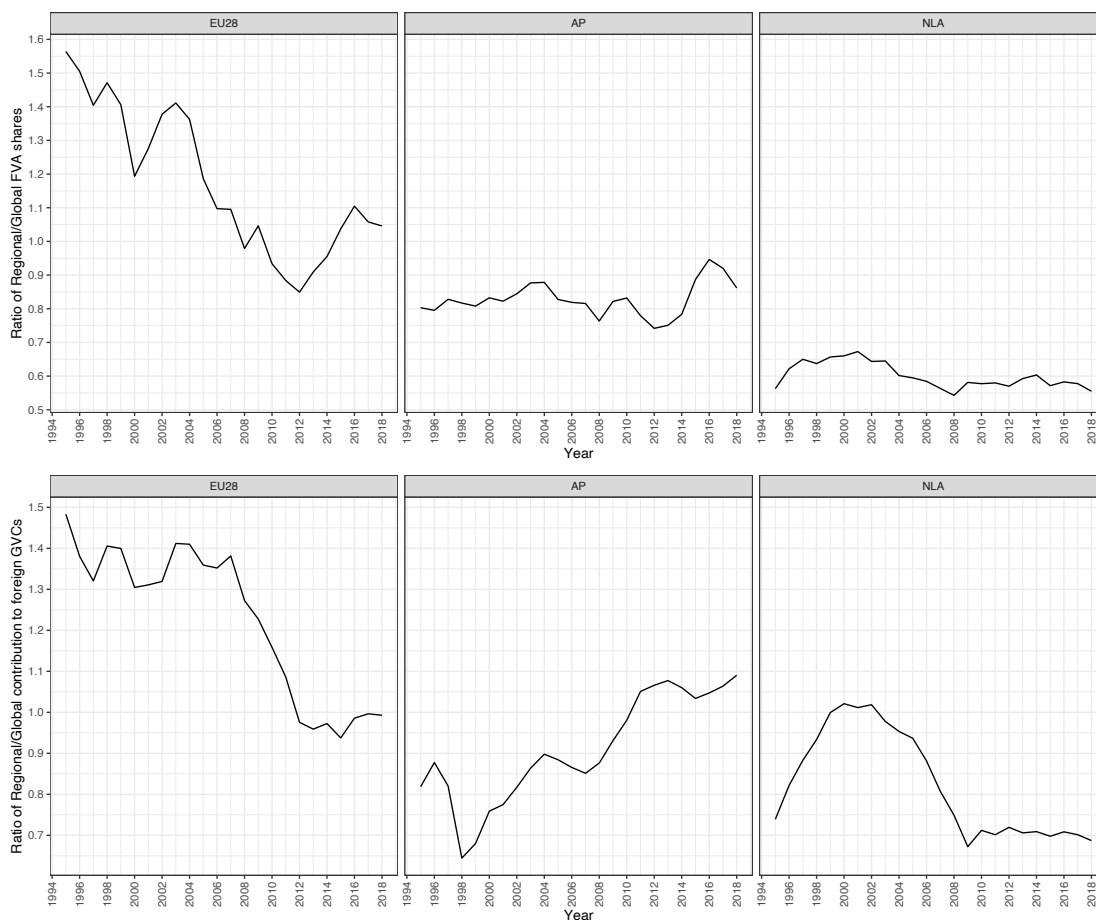
We can see starkly different patterns for each region, with three key findings emerging.

3.1 Nearshoring in Europe and Asia-Pacific

First, Europe has a much higher level of intra-regional integration than both Asia-Pacific and the Americas; this is true when looking at either NFVA or NFSUB in Figure 1.

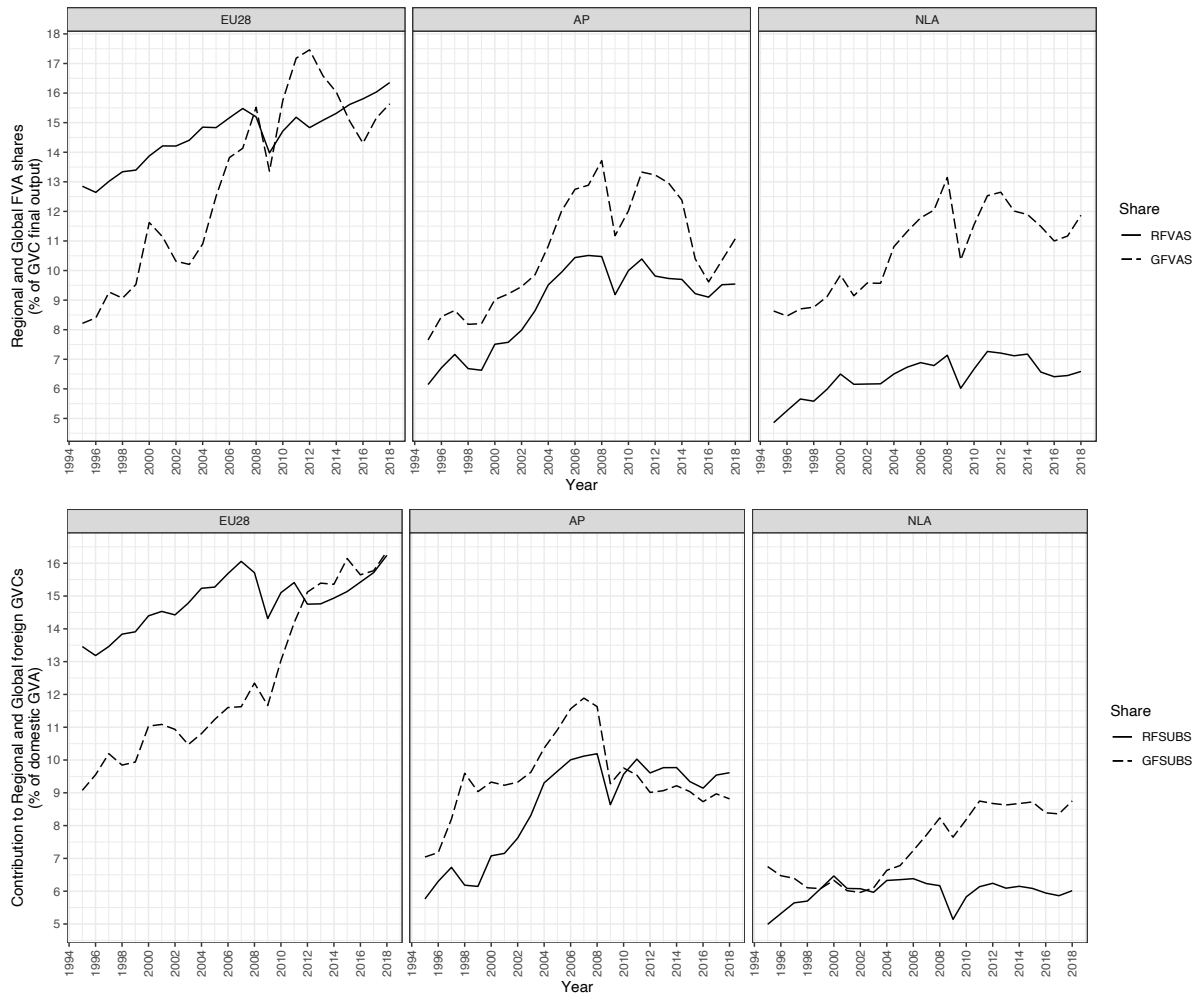
The upward trend for NFVA since 2012 in Europe and Asia-Pacific suggests that nearshoring is taking place in both regions. For Europe, this comes after a long-period decline in the sourcing of regional *vis-à-vis* extra-European value added. In contrast, Asia-Pacific shows a rather stable trend until 2012.

FIGURE 1 Upper panel: Regional-to-Global foreign value added (NFVA); Lower panel: Regional-to-Global contribution to foreign GVCs (NFSUB).



Source: Authors’ calculations based on OECD-ICIO 2021 database.

FIGURE 2 Upper panel: Regional (RFVAS) and global (GFVAS) foreign value added (FVA) share of final output; Lower panel: Share of domestic value added contributed to regional (RFSUBS) and global (GFSUBS) value chains.



Source: Authors' calculations based on OECD-ICIO 2021 database.

Looking at the upper panel of Figure 2, we can see that this common nearshoring trend since 2012 actually has different drivers. In Asia-Pacific it is the result of a sharp decline in global sourcing *vis-à-vis* a stagnant regional share, implying an increase in domestic value added content.⁶ In contrast, nearshoring in Europe is linked to a steady increase in the regional value added share coupled with a declining (though later rebounding) global share. Finally, the Americas show a slowly declining trend for NFVA, with regional FVA remaining at relatively lower levels than for the other two regions.

⁶ This is because RFVAS and GFVAS are shares of value added and together with the domestic share of value they add up to 100%.

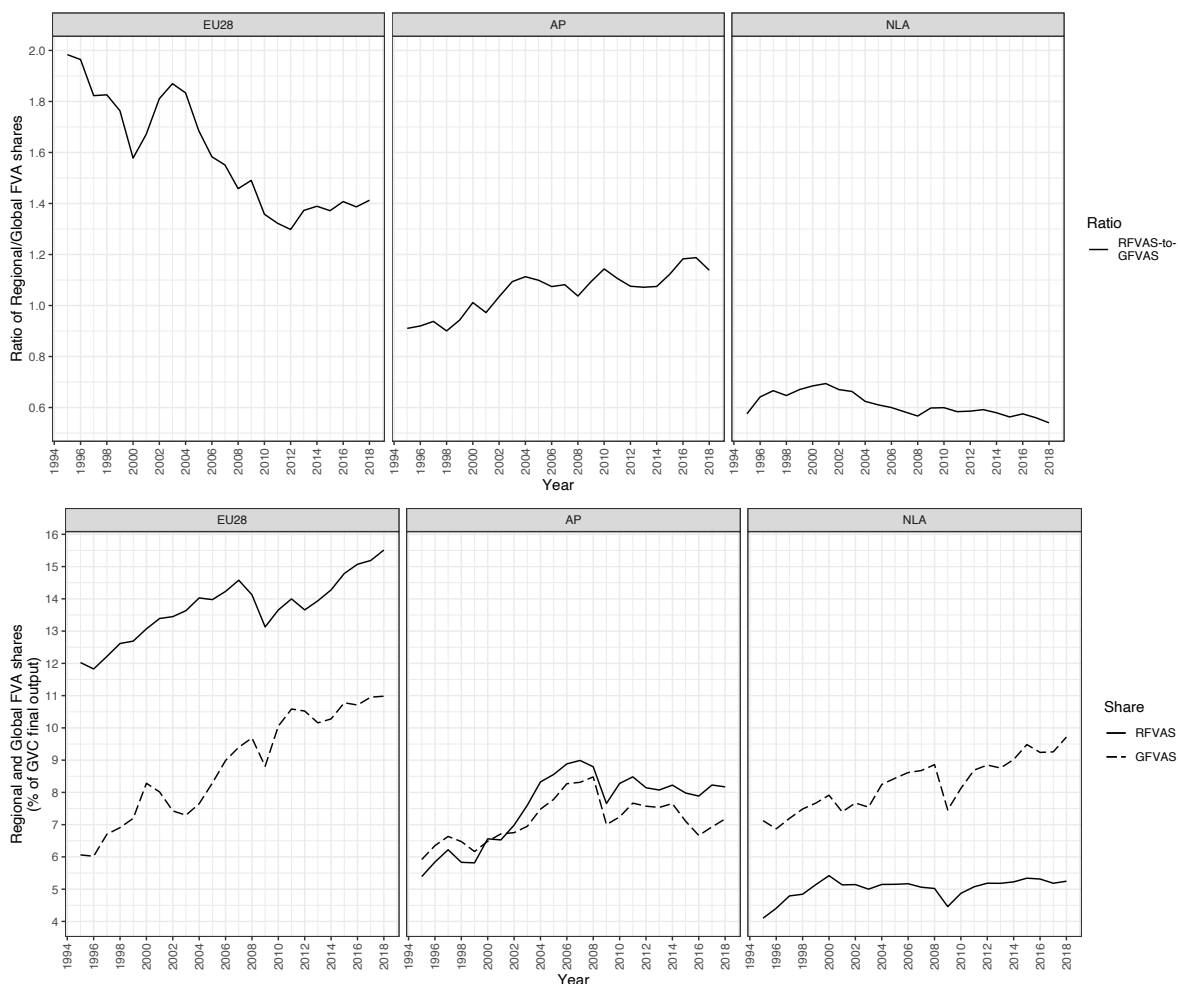
3.2 Commodity price super-cycle and global backward linkages

Looking at the upper panel of Figure 2, the synchronised rise (2002-2012), decline (2012-2016) and rebound (2016- 2018) of the global FVA component (GVAS) across regions – though with different intensity – suggests the influence of a common driver, namely, the commodity price super-cycle (Reinhart et al., 2016).

As a robustness exercise, we recalculate regional and global FVA shares but exclude all value-added contributions by primary industries from our computations, reporting results in Figure 3.⁷

FIGURE 3 Upper panel: Regional-to-Global foreign value added (NFVA); Lower panel: Regional (RFVAS) and global (GFVAS) foreign value added (FVA) share of final output.

Note: All value added corresponding to primary industries has been excluded from the computations. The upper panel of the figure replicates the upper panel from Figure 1, while the lower panel does the same for the upper panel from Figure 2.



Source: Authors' calculations based on OECD-ICIO 2021 database.

⁷ The inter-country input-output database used is only available in current prices, making it impossible to disentangle price from volume effects. We therefore exploit the fact that price effects from primary commodities originate from a clear subset of industries to exclude these from our calculations. Please note that, by focusing on the industry of origin, rather than the final product around which a GVC is articulated, indicators RFSUBS and GFSUBS are unaffected by these recalculations, given that we already focus on manufacturing industries of origin contributing to all GVCs.

Notably, now the regional FVA share appears always above the global FVA component for Europe and Asia-Pacific (lower panel of Figure 3). This suggests that their relative dependence on extra-regional input sourcing fluctuates with commodity prices and, more importantly, signals a limited input substitutability capacity as prices increase. Hence, global backward linkages in value-added terms are considerably affected by primary commodity prices.⁸ This notwithstanding, the upper panel of Figure 3 suggests that the nearshoring trend in Europe since 2012 persists, with no sign of it slowing down after 2016, even when the commodity price super-cycle is accounted for.

3.3 Farshoring in Europe

Third, when it comes to the (regional/global) destination of domestic value added – in lower panels of Figure 1 – NFSUB in the Americas first increases starkly when NAFTA came into effect, but steadily decreases as China joins the WTO (2001) and becomes a major player in the global economy, absorbing growing shares of American-produced GVA. Instead, nearshoring in Asia-Pacific is complemented by a relative increase in the regional destination of its domestic value added. This is mainly driven by a declining global share in combination with a stagnant regional share (GFSUBS and RFSUBS in Figure 2, respectively), reflecting the fact that this region has been able to rely on its countries' own domestic demand to absorb value added.

Europe shows yet a different pattern. On the one hand, non-European value chains have been absorbing an increasing share of value added produced within the continent (GFSUBS in the bottom-left panel of Figure 2). On the other hand, it took almost a decade for the share of European value added absorbed by European value chains (RFSUBS) to recover its pre-crisis level (2007). The combination of these two trends leads to what we refer to as “farshoring.”

3.4 Nearshoring of Employment in Europe

Trends in the employment content of final output in Europe reflect trends in value added but also differences in productivity across geographical areas. Figure 4 (upper left panel) shows that, from an *input sourcing* perspective, the Regional Foreign Employment Share lies always below the Global Foreign Employment Share (GFEMS) despite the opposite being true for the foreign value added shares (Figure 3, lower panel). Although Europe is sourcing the majority of value added from within the region, the employment contribution from within the region is below the global employment contribution. This means that the GVC activities carried out outside Europe are more labour intensive than those performed within Europe.

Looking at trends in the ratios, we find evidence of nearshoring also in the case of employment (Figure 4, lower left panel). The phenomenon is more pronounced than value added nearshoring and starts in

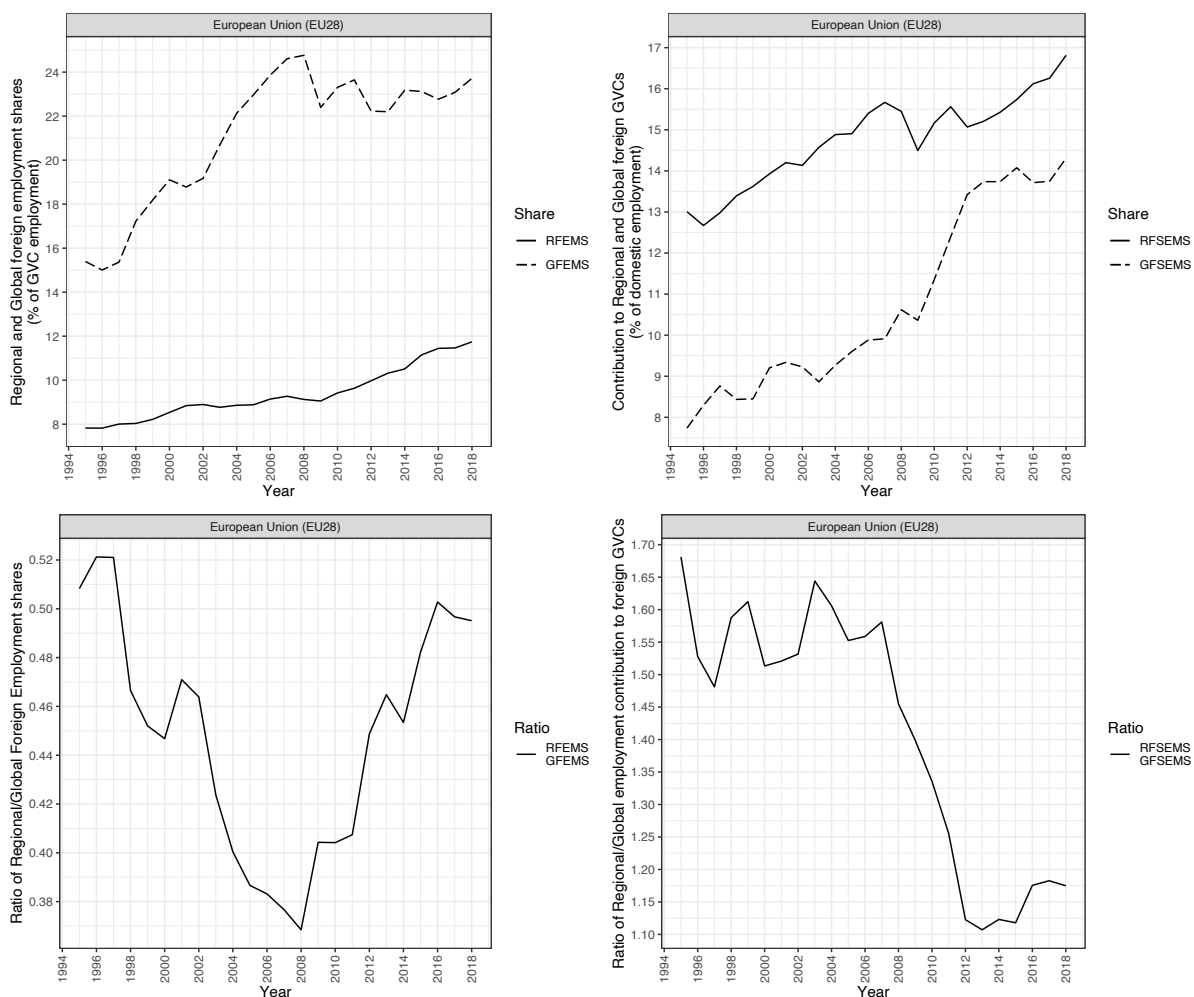
⁸ While this is well beyond the scope of this work, our results do suggest that it may prove to be a challenge for Europe to quickly end its dependence on Russian gas.

2008 with the financial crisis. This is probably due to both a stagnant global component of foreign valued added contribution to European value chains and to a decrease in global labour requirements.

From an *output destination* perspective, the domestic employment contributions to foreign regional GVCs (RFSEMS) are always larger than the global (GFSEMS) ones (Figure 4 upper right panel). This occurs also after 2011 when non-European value chains started absorbing more global than regional value added (see lower panel Figure 2). Overall, also in the case of employment we find from 2008 to 2012 a clear phenomenon of farsharing (Figure 4 lower right panel), with foreign non-European GVCs generating an increasing share of employment in European industries.

FIGURE 4 *Upper panel:* Regional and global foreign employment (FEM) shares and domestic employment contributions to foreign GVCs (FSEM); *Lower panel:* Regional-to-Global foreign employment (FEM) shares and domestic employment contributions to foreign GVCs (FSEM).

Note: All value added and employment corresponding to primary industries has been excluded from the computations.



Source: Authors' calculations based on OECD-ICIO 2021 database.

3.5 Discussion and Policy Implications

In conclusion, our analysis identifies three distinct GVC integration patterns. First, a European model emerges, characterised by an increasing regionalisation of its foreign value-added sourcing (nearshoring) and a globalisation of EU domestic value-added contributions (farshoring). Second, and in contrast to Europe, the Asia-Pacific area experiences a relative regionalisation of input sourcing and a consolidation of its own countries' domestic final demand for value-added absorption after the global financial crisis (2008-2009). Finally, the Americas have, by far, the lowest level of GVC regionalisation, both in terms of input sourcing and of domestic value-added destinations, in stark contrast with the other regions.

The evidence of nearshoring in Europe seems to be the effect of a faster increase in the regional share than the global share of sourcing. However, it remains to discern whether such trends will hold in the future.

At the moment both the pandemic and the war in Ukraine suggest that, at least in some strategic areas, there are political reasons for geographically shortening global value chains. To fully grasp the evidence of farshoring, note that domestic value added contributes to either foreign (regional/global) or domestically articulated GVCs.⁹ It follows that a stable share of value added absorbed by European value chains – coupled with a sharp increase in the share of value added absorbed by extra-regional ones (gradually replaced by intra-regional demand since 2012) – suggests that final demand from domestically articulated value chains has been particularly weak.

This has two key implications that warrant further research and policy discussion. First, it appears that, following the global financial crisis (2008-2009) and sovereign debt crisis in some European countries (2011), fiscal consolidation policy in Europe has contributed to shrinking demand from domestically articulated value chains. The extent to which this has happened may have been underestimated by policy makers across the continent. Second, in response to this, European country industries have re-directed output towards extra-European value chains (Polyak, 2021).¹⁰

The nearshoring and farshoring trends suggest the consolidation of a European export-led growth model involving an increase in intra-regional backward linkages and a diversification towards extra-regional markets. While the perception of the fragility of GVCs to external shocks after the pandemic and the war in Ukraine has shifted the debate on the trade-off between efficiency and security in the direction of reshoring or nearshoring (Javorcik, 2020; Posen 2022; World Bank 2022), little attention has been paid to the destination of European value added.

⁹ This is because RFSUBS and GFSUBS are shares of value added and, together with the share of value added absorbed by domestic value chains, they add up to 100%.

¹⁰ The evidence we present in this study is aggregated at the European level, masking, no doubt, a great deal of heterogeneity at the country and industry level. In our ongoing research we apply the methods outlined here to provide insights at a more granular level.

Differently from Asia, where nearshoring is accompanied by an increasing domestic absorption of value added, Europe has become increasingly dependent on foreign demand. This requires a deeper analysis of the gains and losses for Europe of a process of further fragmentation of value chains into regional blocks. While Europe should be aware of the economic and political risks of a deceleration of globalisation and should defend multilateralism and contrast a new wave of protectionism, its capacity to play a geo-economic role requires a step forward in both common industrial and macroeconomic policies.

This implies that a deeper reflection should be made on the future of European economic governance and on the necessity to reconcile the EU domestic and global agendas (Buti and Messori, 2022). Open strategic autonomy requires an adequate European fiscal stance which can be achieved only through a central fiscal capacity allowing European common investments that are necessary not only for ensuring the supply of strategic inputs but also to sustain European demand.

Finally, from an employment perspective, our results show that European GVCs mostly generate employment outside of Europe, suggesting that these are low value-added jobs. In contrast, most of European employment is generated by European GVCs. In this respect, our results suggest caution in considering the benefits of nearshoring from an employment perspective. Concerning sourcing, it is likely that it will mostly be low-wage and low-productivity jobs that may be reshored and from the destination perspective, it seems that most EU jobs are already dependent on European value chains and that there is therefore little potential to increase this further.

Overall, these results highlight that value added and employment are not always distributed in the same way along GVCs and that both aspects should be at the forefront of policy discussions on the future of GVCs.

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