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Nearshoring and Farsharing in Europe within the Global Economy*

Has the world economy really entered a phase of de-globalization or deceleration in globalization after the Great Recession of 2008–2009? Or, rather, are we experiencing a phase of reorganization 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-globalization, but rather a slowing down of the pace of globalization relative to the "hyper-globalization" era (1986–2008) (Piatanesi and Arauzo-Carod 2019; Antràs 2020). Despite the extensive literature on globalization 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 for 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").

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, 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 Europe's increasing dependence 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.

KEY MESSAGES

- **We distinguish the geographical source and destination of value added contributed by each country-industry to each country-global-value-chain (GVC) from both input sourcing and output destination perspectives**
- **We define indicators that capture the relative intensity of regional vis-à-vis global (i.e., extra-regional) components of foreign value added and employment**
- **Europe is increasingly sourcing value added from within the region ("nearshoring") but exporting value added globally ("farsharing")**
- **European GVCs mostly generate foreign employment outside Europe. In contrast, most of European employment is activated by European GVCs: an important labor market policy implication arguing for more intensive intra-EU trade and integration**
- **Europe and its economic policy 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**

MEASURING REGIONAL AND GLOBAL VALUE-ADDED CONTENT OF TRADE

The starting point to devise nearshoring and farsharing indicators is the world's gross value added (GVA). Each monetary unit of gross output embod-

*This paper has been funded by the Unit for Analysis, Planning, Statistics and Historical Documentation, Directorate General for Public and Cultural Diplomacy, Italian Ministry of Foreign Affairs and International Cooperation in line with Art. 23 of the Presidential Decree n.18/1967. Opinions are solely those of the authors and do not reflect those of the Ministry of Foreign Affairs and International Cooperation.

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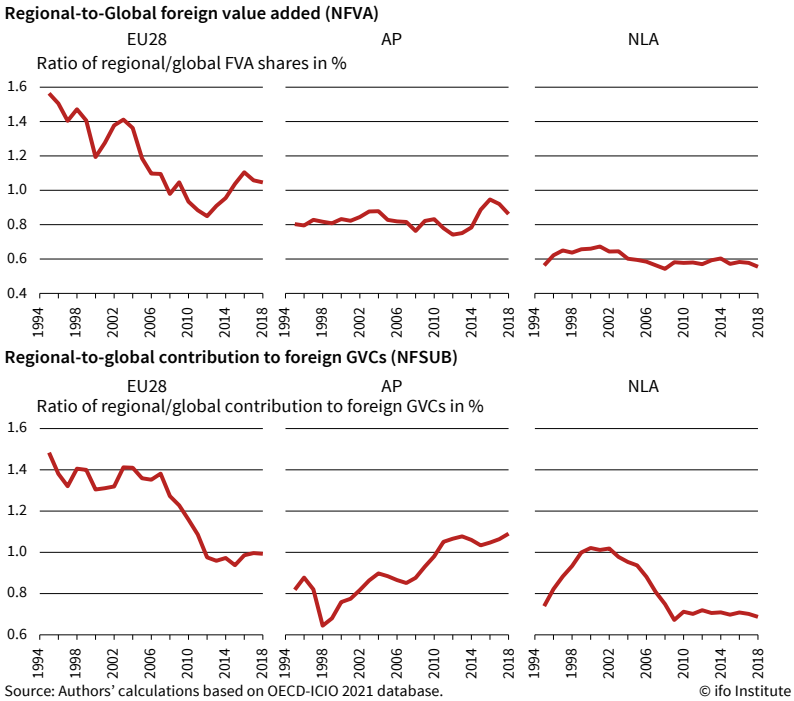
Figure 1

Regional-to-global Foreign Value Added, and Regional-to-Global Contribution to Foreign GVCs



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

ies an amount of value added. But gross output is itself induced 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, adding up to 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) 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.

We then define regional-to-global ratios:

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

capturing the degree of regionalization 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. In this case we also define regional-to-global ratios:

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

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.

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]

[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 the Italian textile industry.

[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.

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We focus on GVCs articulated around manufacturing final outputs to compute foreign value-added shares,[4] and on manufacturing industries to compute domestic value-added contributions to foreign GVCs.[5]

The upper panel of Figure 1 reports the ratio between RFVAS and GFVAS, while the lower panel depicts the ratio 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 "nearsharing," respectively.

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

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 decline in the sourcing of regional *vis-à-vis* extra-European value added. In contrast, Asia-Pacific shows a rather stable trend until 2012.

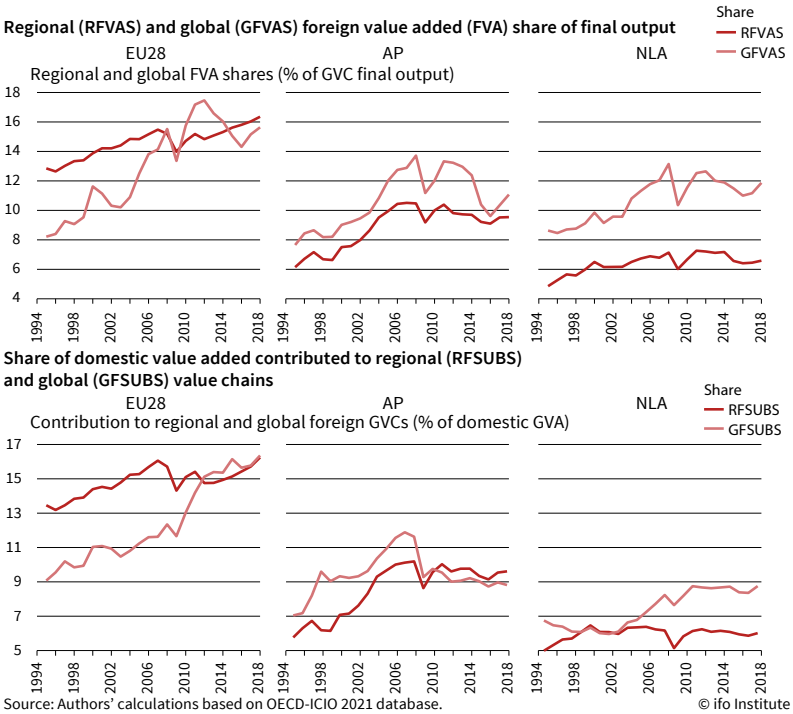
Looking at the upper panel of Figure 2, we can see that this common nearshoring trend since 2012 actually has different drivers. In Asia-Pacific, it is the result of a sharp decline in global sourcing *vis-à-vis* a stagnant regional share, implying an increase in domestic value-added content.[6] In contrast, 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.

COMMODITY PRICE SUPER-CYCLE AND GLOBAL BACKWARD LINKAGES

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

Figure 2

Regional and Global Foreign Value Added Share of Final Output, and Share of Domestic Value Added Contributed to Regional and Global Value Chains



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

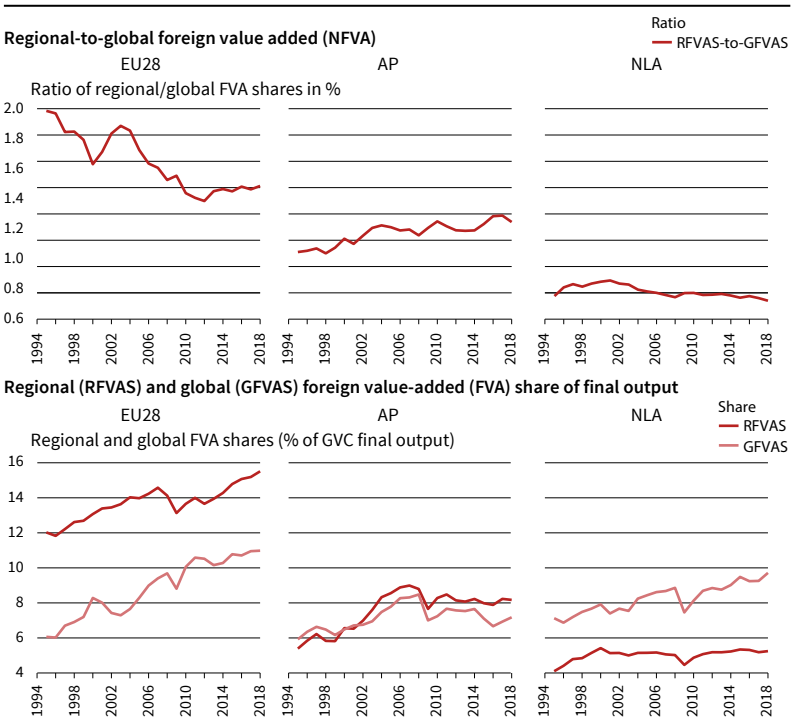
[4] This means that we only consider the production of final manufacturing goods. Recall, however, that a manufacturing GVC requires – directly and/or indirectly – inputs from all industries of an economy (primary sectors and services included).

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

[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 Percent.

Figure 3

Regional-to-Global Foreign Value Added, and Regional and Global Foreign Value-added Share of Final Output

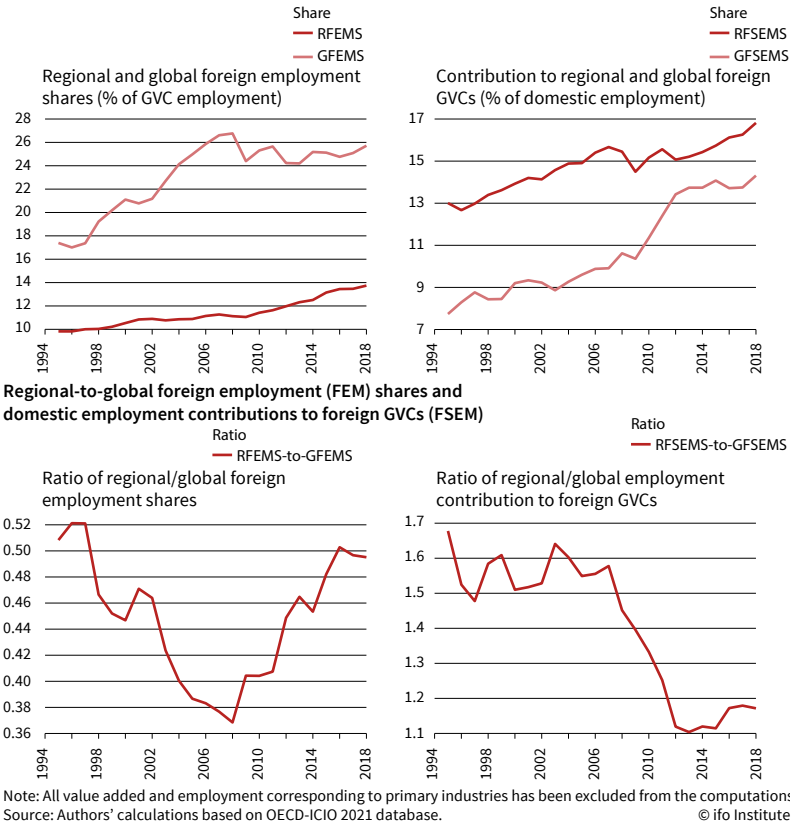


Note: All value added corresponding to primary industries has been excluded from the computations. The upper panel of the figure replicates the upper panel from Figure 1, while the lower panel does the same for the upper panel from Figure 2.

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

Figure 4

Regional and Global Foreign Employment Shares and Domestic Employment Contributions to Foreign GVCs, and Regional-to-Global Foreign Employment Shares and Domestic Employment Contributions to Foreign GVCs



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.

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]

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.

FARSHARING 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 increased starkly when NAFTA came into effect, but steadily decreased as China joined the WTO (2001) and became 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 "farsharing."

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.

[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.

[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.

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 labor intensive than those performed within Europe.

Looking at trends in the ratios, we also find evidence of nearshoring in the case of employment (Figure 4, lower left panel). The phenomenon is more pronounced than value added nearshoring and starts in 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 labor 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, we find from 2008 to 2012 a clear phenomenon of farsharing also in the case of employment (Figure 4 lower right panel), with foreign non-European GVCs generating an increasing share of employment in European industries.

DISCUSSION AND POLICY CONCLUSIONS

In conclusion, our analysis identifies three distinct GVC integration patterns. First, a European model, characterized by an increasing regionalization of its foreign value-added sourcing (nearshoring) and a globalization of EU domestic valued-added contributions (farsharing). Second, and in contrast to Europe, the Asia-Pacific area has experienced a relative regionalization 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 regionalization, 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 be seen 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 farsharing, 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 policymakers across the continent. Second, in response to this, European industries have re-directed output towards extra-European value chains (Polyak 2021). [10]

The nearshoring and farsharing 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.

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 globalization and should defend multilateralism and resist 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 Europe, suggesting that these are

[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 Percent.

[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.

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. With regard to sourcing, it is mostly low-wage and low-productivity jobs that are likely to be reshored; 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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