Nearshoring, global value chainsâ€™ structure and volatility

Topic:
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The debate on the role of GVCs in economic growth has gathered significant attention over the past few decades, especially in light of the recent slow-down of global integration and economic growth. Furthermore, the COVID-19 pandemic and the war in Ukraine have laid bare key dependences of production systems vis-Ã -vis foreign suppliers and raised questions concerning international fragmentation, its structure, and the propagation of shocks.
A trade-off has taken place, in the policy debate, between economic efficiency and security (Baldwin and Evenett 2020). This is reflected in the Inflation Reduction Act in the US, the emerging idea of â€œopen strategic autonomyâ€• in Europe and the growing tensions around the supply of key materials for the green and digital transitions.
As a result, GVCsâ€™ role within the global economy has come into question on two accounts. First, the intensity, i.e. whether the degree of participation in GVCs is linked to higher exposure to shocks. For example, on the one hand, the implementation of very strict measures to contain the spread of the pandemic across the world has brought production processes that heavily relied on foreign inputs to a halt. On the other hand, GVC participation allows firms to access a broader supplier base, making relationship-specific investments that improve resilience to local shocks.
Second, the debate on GVCs has also focused on changes in the structure, rather than the intensity, of GVC participation. The recent disruption of international trade flows has drawn attention to the need to diversify and shorten production. In the current, more turbulent, economic context it has become relevant to consider what changes GVCs should undergo in order to ensure economic production. Specifically, the notion of nearshoring has drawn significant attention in the policy debate to the future of GVCs.
It remains, however, unclear what structural features of GVCs are important in this debate as nearshoring, shortening, and concentration are hard to distinguish from one another. The most intuitive interpretation of nearshoring would be to bring production stages closer to final demand. Shortening of GVCs implies a reduction of the degree of fragmentation and a reduction of the number of intermediate stages. The idea of diversification focuses on reducing the concentration of suppliers.
Literature on international business has devoted significant attention to the issues of reshoring, backshoring and nearshoring, providing qualitative evidence and a discussion of the firm level drivers. However, there is currently no systematic quantitative evidence exploring how different GVC structural features and production are related to each other. We set out to remedy this not only by studying the association between GVC final output growth and their structure, but also by focusing on the propagation of supply shocks. We ask, specifically, two interrelated key questions. First, we assess whether GVC participation increases exposure to shocks, hampering GVC output. Second, we study whether GVC structural features, such as nearshoring, length and concentration, mediate supply shocks and their relationship with GVC output growth.
To achieve this, we use the latest inter-country input-output (ICIO) tables, compiled in 2021 by the OECD. Our unit of analysis are GVCs across countries, i.e. a vertically integrated sub-system (Pasinetti 1973), and we identify GVCs by their country of completion, in line with the methodology developed by Los et al. (2015).
We then compute real output growth for each GVC in each country of completion and calculate measures of GVC integration and its structure. Concerning the latter, we focus in particular on measures of (i) farshoring, following Los et al. (2015), (ii) GVC length as in AntrÃ s et al. (2018) and (iii) GVC concentration (Jimenez et al. 2022). We combine ICIO data with the World Bank global database on inflation (Ha et al. 2023) to compute price volatility for each GVC, which we use to

study the interaction of supply side price shocks with GVC participation and its structure.
Our results suggest that GVCs that are more domestic, i.e. production processes sourcing little value added from abroad, see slower real output growth and have a stronger negative association with supply shocks. Among the structural features of GVCs we find more heterogenous results. The length, i.e. the degree of fragmentation of production, is associated with slower growth in GVCâ€™s real output but at the same time seems to attenuate the negative relationship between supply shocks and real GVC output growth. These results offer novel evidence and contribute to a nuanced understanding of how GVC integration and its structure relates to output growth and the propagation of shocks. We discuss these results in the context of the revived interest in industrial policy and strategic autonomy in Europe.
References are available in the attached paper draft.