

## Global value chains and the challenge of Covid-19



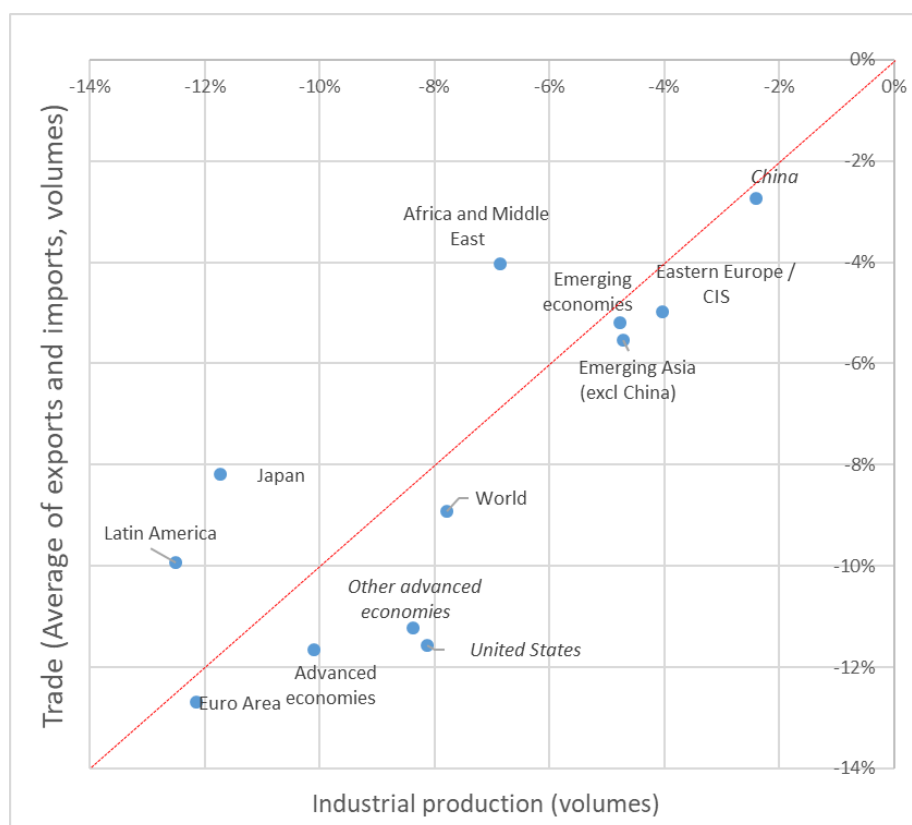
By Antoine Berthou, Juan Carluccio  
and Guillaume Gaulier

Banque de France

*Keywords: Global value chains, Covid crisis, international trade, European integration, European Union.*

*The health crisis has severely impacted global trade and revived debates about the location of production. The widespread onshoring of manufacturing activities would mean abandoning the gains from international specialisation, but without necessarily making value chains more resilient. French companies, as their European counterparts, mainly source their inputs from another European countries and thus a coordinated, EU-wide economic policy response is the way to go.*

**Chart 1: Percentage change in volumes of manufacturing output and external trade between January-June 2019 and January-June 2020**



Source: CPB World Trade Monitor. Authors' calculations.

Note: Between the first semester of 2019 and the semester of 2020, Euro-area manufacturing output (x-axis; member countries are trade-weighted) declined by 12.2 percent, while trade (y-axis, the geometric mean of export and import growth) fell by about 12.7 percent. The point representing the Euro area is close to the red bisector.

## World trade in the eye of the Covid-19 storm

The Covid-19 crisis has had a severe impact on world trade. According to [CPB](#) data, measured in volumes, trade flows plunged by 11% between December 2019 and June 2020. This decline is closely linked to the fall in manufacturing output. Chart 1, compares the evolution of external trade and of manufacturing output and clearly shows that the adjustment in both cases is very close to the 45 degree line. There is nonetheless some heterogeneity across regions, which can be explained by the geographical spread of the epidemic and by differences in the health measures adopted in response. In addition to the direct effects of the health crisis on output, world trade may have amplified the spread of the economic shock between countries via deliveries to (supply shock) or imports by (demand shock) trading partners.

## World trade is shaped by global value chains

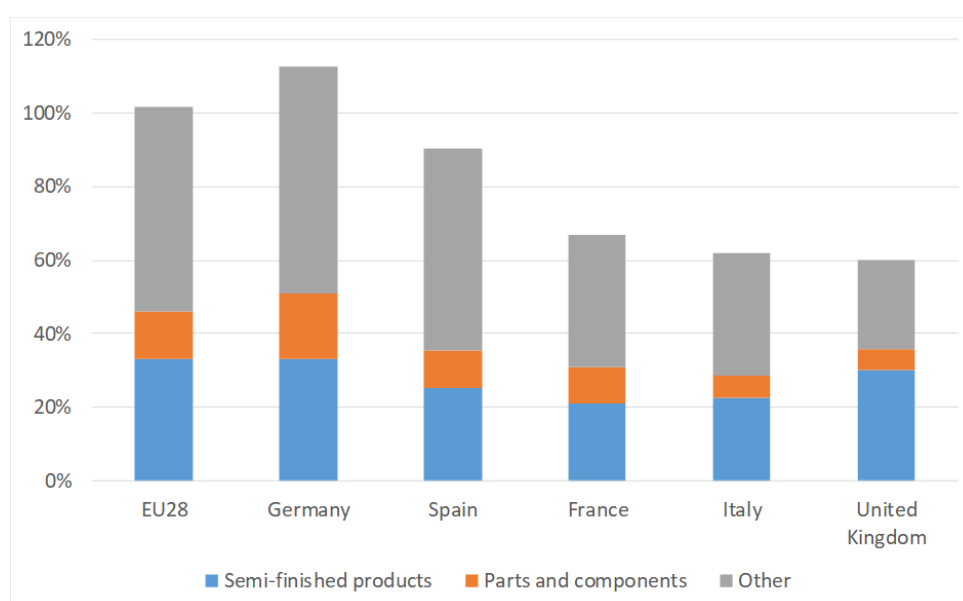
To understand how shocks linked to Covid-19 are transmitted through international trade linkages, we need to take account of the central role played by global value chains (GVCs), which are defined as production processes that are dispersed geographically and thus cover several countries. This international fragmentation of production chains, which intensified in the 1990s, has contributed to the rise in world trade over the past 30 years. Such impressive development has been made possible by technological advances, especially those linked to

information and communication technology (ICT), and by the signature of numerous trade agreements, which have significantly reduced barriers to world trade.

[Richard Baldwin](#) shows fragmentation can be observed in all stages of the manufacturing process (research and development, design, manufacture of intermediate goods, assembly, marketing, distribution). For example, Boeing works with suppliers in around 150 countries, while Apple's iPhone incorporates factors of production from around 50 countries spread across five continents. All sectors are affected by the internationalisation of production, either directly or indirectly.

Chart 2 shows that over the period 2002-2019, imports of parts and components and of semi-finished products used in manufacturing accounted for nearly half of the import growth in European Union countries. [Gaulier, Sztulman and Ünal \(2020\) show](#) that the Great Recession of 2008-09 did not slow the development of GVCs.

**Chart 2: Import growth in EU countries (2002-2019), by type of good**



Source: Eurostat-Comext value data by production stage (BEC), and authors' calculations.

Key: In the case of Germany, semi-finished products (in blue) account for 33% of the growth in total imports, whereas parts and components (orange) account for 17%. When the contribution of other goods (shown in grey) is included, growth in total goods imports over the period 2002-19 is 113%.

### Specialisation within GVCs: a source of benefits and risks

The specialisation of individual economies in their comparative advantage sectors, and the international fragmentation of production across different segments of the value chain, have helped make production more efficient at the global level. As a consequence a company's competitiveness no longer relies solely on its own productivity, but also on its ability to source supplies from most efficient companies.

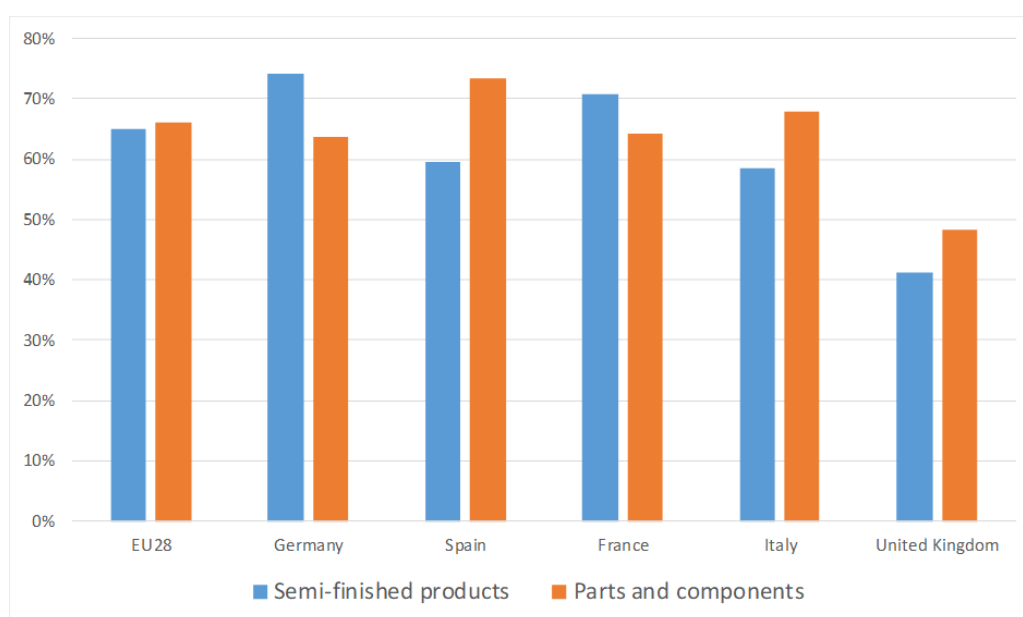
The fragmentation of production can nonetheless create vulnerabilities in the event of the failure of partner firms upstream or downstream in the value chain. For example, the introduction of restrictions to stop the spread of the pandemic led to disruptions in supply. Moreover, the transport and distribution difficulties caused by the lockdowns also had knock-on effects upstream and downstream in value chains.

## Regional rather than global value chains

The Covid-19 crisis has renewed the debate over the location of production, and increased the temptation to shift all or part of value chains back onto domestic territory in order to insulate them from shocks originating in other countries, and thereby “safeguard” them in the event of another crisis.

Yet value chains tend to be more regional than global in nature. Chart 3 shows that, in European countries, the vast majority of the intermediate goods used in manufacturing are sourced from other EU Member States. This regional concentration of production can first be explained by geography, which traditionally plays a very strong role in determining the intensity of trade flows between partner countries. However, it is also attributable to economic and integration policies, which have enabled Europe to create a stable environment that is favourable for trade ties, notably the single market and common currency.

**Chart 3: Share of the EU (28 members) in imports of intermediate goods**



*Source: Eurostat-Comext value data by stage of production (BEC) (2019), and authors' calculations.*

This observation provides a first response to possible tensions in value chains, and to the challenges of onshoring: since French firms' international supply chains are primarily European, an EU-level coordinated economic policy response is the appropriate course of action.

It would also be useful to hold an overall reflection on how value chains function within different sectors. Although it is indeed legitimate to want to safeguard supplies of certain “strategic” products, such as those linked to health care, as highlighted in the public debate, it is important that this reflection does not underestimate the productivity gains linked to specialisation, or ignore the benefits of the international diversification of supply sources. [Heise \(2020\)](#), for example, shows that US firms that had pre-established ties with Vietnam were able to secure supplies that had previously been sourced from China. Increased diversification of supply sources would ensure greater resilience in the event of future crises. ■

## About the authors

**Antoine Berthou** is an Economist at the Banque de France and an Associate Researcher at CEPII. He holds a PhD in economics from the Paris School of Economics. Previously, he was researcher at CEPII from 2008 to 2011. His research mainly focuses on international trade and international macroeconomics.

**Juan Carluccio** is Scientific Advisor with the Directorate of International Economics and Cooperation at Banque de France, and a Reader in International Trade at the University of Surrey. He was previously Head of Research at the International Trade Commission of Argentina, advising the government on trade policy reforms for Argentina and Mercosur. His research, which focuses on the economics of globalization, has been published in journals such as the *Economic Journal*, *The Review of Economics and Statistics* and the *Journal of International Economics*. He holds a PhD in Economics from Paris School of Economics and an Msc Economics from the LSE. In the past he had been Associate Professor at Université Paris 1 – Paris School of Economics.

**Guillaume Gaulier** is a Senior Research Economist at the Directorate of Business Conditions and Macroeconomic Forecasting of the Banque de France. He was previously head of the International Trade and Competitiveness Division. Before joining the Banque de France in 2007, he was economist at the CEPII. He is research associate with the CEPII. He is associate Professor at the University Paris 1 Panthéon-Sorbonne. He has written on various topics in applied trade analysis, growth and convergence, international comparisons (including measure of well-being).



SUERF is a network association of central bankers and regulators, academics, and practitioners in the financial sector. The focus of the association is on the analysis, discussion and understanding of financial markets and institutions, the monetary economy, the conduct of regulation, supervision and monetary policy.

SUERF's events and publications provide a unique European network for the analysis and discussion of these and related issues.

**SUERF Policy Briefs (SPBs)** serve to promote SUERF Members' economic views and research findings as well as economic policy-oriented analyses. They address topical issues and propose solutions to current economic and financial challenges. SPBs serve to increase the international visibility of SUERF Members' analyses and research.

The views expressed are those of the author(s) and not necessarily those of the institution(s) the author(s) is/are affiliated with.

All rights reserved.

### Editorial Board

Ernest Gnan  
Frank Lierman  
David T. Llewellyn  
Donato Masciandaro  
Natacha Valla

SUERF Secretariat  
c/o OeNB  
Otto-Wagner-Platz 3  
A-1090 Vienna, Austria  
Phone: +43-1-40420-7206  
[www.suerf.org](http://www.suerf.org) • [suerf@oenb.at](mailto:suerf@oenb.at)