

Rethinking Geoeconomics: Trade Policy Scenarios for Europe's Economy

Andreas Baur, Florian Dorn, Lisandra Flach, and Clemens Fuest





EconPol is CESifo's economic policy platform. With key support from the ifo Institute, it seeks to leverage CESifo's globe-spanning network of 1,800 high-ranked economists – eleven of whom have won the Nobel Prize – and ifo's decades-deep research expertise to provide well-founded advice to European policymakers. Drawing on the wide range of specializations of its members, EconPol's mission is to contribute to the crafting of effective economic policy in the face of the rapidly evolving challenges faced by the European economies and their global partners.



EconPol POLICY REPORT
A publication of the CESifo Research Network

Publisher and distributor: CESifo GmbH
Poschingerstr. 5, 81679 Munich, Germany
Telephone +49 89 9224-0, Email office@cesifo.de
Shipping not included
Editor of this issue: Clemens Fuest, Florian Dorn
Reproduction permitted only if source is stated and copy is sent to CESifo.

EconPol Europe: www.econpol.eu

Rethinking Geoeconomics: Trade Policy Scenarios for Europe's Economy

Andreas Baur, Florian Dorn, Lisandra Flach, and Clemens Fuest

Abstract

Recent events and rising geopolitical tensions have raised concerns about the external dependence and vulnerability of Europe's economy. Decision-makers need to rethink the playing field of geoeconomics and should be prepared for different trade policy scenarios that may arise from new geopolitical risks. We describe the EU's recent decline in importance as an international trading partner, while for the EU itself global trade dependency has increased. We show that this dependence is highly heterogeneous across different sectors and individual member states. Based on a state-of-the-art trade model we simulate the economic impact of several policy-driven de-globalization scenarios for Europe, for individual EU member states, different economic sectors, as well as for other economies around the world. Our simulations provide information about winners and losers across countries and industries. Europe's welfare losses would be largest if the EU follows a reshoring strategy and decouples from global trade. A world of geoeconomic fragmentation and trade blocs between the East and West would also cause large permanent welfare losses for Europe. Our report provides several policy recommendations for the EU's trade policy in an age of increasing geoeconomic challenges.

Table of Contents

- List of Figures II
- List of Tables III
- Executive Summary V
- 1 Global Trade in Times of Geopolitical Instability 1
- 2 How Dependent Is the EU on Global Trade? 3
- 3 ifo Trade Model and Data 10
- 4 Policy Scenarios 12
- 5 Main Results 14
 - 5.1 Reshoring Scenarios 14
 - 5.2 Geoeconomic Bloc Scenarios 19
- 6 Conclusion 26
- References 28
- A Additional Figures 30
- B Additional Tables 32

List of Figures

Figure 1	Share in Global Trade over Time: EU, US, China	3
Figure 2	Trade Dependence over Time: EU, US, China	4
Figure 3	Trade Dependence by Trade Partner: EU, US, China	5
Figure 4	EU Trade Dependence by Economic Sector	6
Figure 5	EU Sectors with Highest Export Dependence Vis-à-Vis China and the US	7
Figure 6	EU Sectors with Highest Import Dependence Vis-à-Vis China and the US	7
Figure 7	Trade Dependence and Intra-EU Trade Share by EU Member State	8
Figure 8	UN Vote on Suspension of Russian Membership in the Human Rights Council . . .	13
Figure 9	Unilateral EU Reshoring (Scenario 1): Change in Real Income	15
Figure 10	Impact of Reshoring (Scenario 1 and 2) on Real Income: EU-27	16
Figure 11	Impact of Reshoring (Scenarios 1 and 2) on Real Income: Selected Countries . . .	17
Figure 12	Incomplete Geoeconomic Fragmentation (Scenario 3): Change in Real Income . .	20
Figure 13	Impact of Geoeconomic Fragmentation (Scenario 3, 4, and 5) on Real Income: EU-27	21
Figure 14	Impact of Geoeconomic Fragmentation (Scenario 3, 4, and 5) on Real Income: Selected Countries	22
Figure A1	EU as Export Destination: Change in Export Share between 2000 and 2019	30
Figure A2	EU as Import Partner: Change in Import Share between 2000 and 2019	31

List of Tables

Table 1 EU Sectoral Value Added Changes for Scenarios 1 and 2 (Reshoring) 18

Table 2 EU Sectoral Value Added Changes for Scenarios 3, 4, and 5 (Fragmentation) 25

Table B1 EU Member States' Welfare Changes for All Scenarios 32

Table B2 EU Trade Dependence by Economic Sector 33

Executive Summary

Rising geopolitical tensions, increasing supply chain disruptions, and falling public support for economic openness have given new impetus to economic nationalism. Governments around the world increasingly give precedence to domestic production and geopolitical considerations over gains from trade and economic efficiency. This policy trend has important implications for the EU, both as a global trading partner and as an important arena for economic policymaking. This policy report investigates possible repercussions of policy-driven de-globalization for the European Union (EU).

Europe's Dependence on Global Trade:

The report describes how the dependence on global trade has evolved for the three largest global economies – the EU, the US, and China – in recent years. We show trade dependence by trade partners and the importance of external trade linkages for EU member states and different economic sectors.

- **The EU increased its dependence and integration into the global economy:** While Europe's importance as a trading partner declined for countries outside of Europe in recent years, reflecting its falling global economic weight, the importance of external trade for the EU has increased significantly. In 2022, more than 20 percent of European value added depended on extra-EU demand. EU products contained on average 12 percent of value added from outside the EU.
- **The US and China are less integrated into the world economy than Europe:** The three largest global economies share important trade inter-dependencies. For the US, however, the statistics on global integration and trade dependence are much lower than for Europe. Moreover, contrary to the EU trend, China's dependence on both foreign demand and foreign inputs has been declining over recent years and is now below the respective EU levels.
- **The EU's trade dependence is highly heterogeneous across different sectors:** In particular, high-tech manufacturing industries in the EU are profoundly integrated into global supply chains and export around one-half of their total value added to countries outside the EU.
- **The EU is the most important trade partner for its individual member states:** On average, almost 50 percent of value added exports of EU member states remains within the EU. Nearly one-half of all foreign inputs for domestic production of individual member states can be traced back to other EU countries. But there is considerable heterogeneity across member states with respect to trade openness and the importance of the EU single market for external trade.

Geoeconomic Trade Scenarios and their Long-Term Economic Impact:

Based on a state-of-the-art trade model, we quantify the long-term economic costs of different reshoring and geopolitical fragmentation scenarios for the EU and other economies around the world. Our simulations provide information about winners and losers from different policy scenarios across countries and industries. Europe's economy would lose in all simulated de-globalization scenarios:

- **Europe's welfare losses would be largest if the EU follows a reshoring strategy and decouples from global trade:** Broad-based reshoring policies would entail significant economic costs and would substantially hurt the EU's competitiveness. Extra-EU inputs play an important role for the competitiveness of exporting EU firms. Due to the massive increase in trade costs, however, firms have to substitute away from foreign inputs and replace them with domestic and EU alternatives, which tend to be more costly. More generally, reshoring efforts reduce by design the degree of economic specialization, leading to an increase in average production cost and a loss of competitiveness. As a consequence, both extra-EU imports and exports fall drastically. In our simulation of unilateral EU reshoring, the EU real income losses add up to 4.7 percent. However, the heterogeneity of real income changes is substantial. In particular, small open economies such as Malta (-24.0 percent), Luxembourg (-15.7 percent), or Belgium (-12.8 percent) would suffer most. Moreover, unilateral EU reshoring generates significant negative spillovers for non-EU countries. Especially economies with strong EU trade ties such as Turkey or the United Kingdom would face sizable real income losses.
- **Geopolitical trade blocs would cause permanent welfare losses for Europe:** The geoeconomic fragmentation of the world economy based on the concept of friendshoring with a US-led Western bloc (including the EU) and a China-led Eastern bloc would lead to a considerable permanent reduction of EU welfare, but at a lower level than in complete reshoring scenarios. In the scenario of incomplete fragmentation with a group of non-aligned countries, EU real income would shrink by around 1.6 percent. Again, welfare losses vary significantly among member states within the EU. Particularly small open economies with strong trade ties to Eastern countries such as Malta (-8.1 percent), Lithuania (-6.5 percent), or Latvia (-5.4 percent) would suffer most from the geoeconomic fragmentation of the world economy.
- **Smaller losses for the US and higher ones for China in a world of geopolitical blocs:** In comparison to the EU, US welfare losses are smaller and only about half of the percentage change of the European real income losses. The US economy has less trade exposure to the Eastern bloc than many European countries. For China, however, the decline in real income would be even higher than for the EU (close to -4.5 percent).

- **High strategic relevance of the group of non-aligned countries for the economic impact of geoeconomic fragmentation:** Some non-aligned countries, such as India or Mexico, can even benefit from being non-aligned and from a massive trade diversion due to incomplete fragmentation into two trade blocs. They experience small increases in real income (+0.7 percent in the case of India as well as Mexico).

The importance of countries that do not form part of any bloc becomes evident in the scenario of complete fragmentation, where the group of non-aligned countries all join either the Eastern or the Western bloc. In comparison to incomplete fragmentation, EU real income losses would rise by 0.8 percentage points to around 2.4 percent if the group of non-aligned economies would join the Eastern bloc. Incorporating all non-aligned countries into the Western bloc, on the other hand, reduces the welfare cost of geoeconomic fragmentation for the EU by 0.5 percentage points. For China, the dissolution of the non-aligned group and its alignment with the West has severe consequences: the fall in real income of 4.5 percent under incomplete fragmentation almost doubles to 8.0 percent. In the case of the US, however, the inclusion of non-aligned countries hardly changes the respective welfare outcomes in comparison to incomplete fragmentation among the countries around the world.

The aggregate real income effects in the different geoeconomic scenarios mask the highly heterogeneous effects for the different sectors of the EU economy:

- **Winners and losers among European sectors:** In general, agriculture and mining sectors in the EU tend to benefit from a policy-driven reversal of global economic integration, while the EU manufacturing sector would face the largest losses in terms of value added – in particular in scenarios of European reshoring.

But even within the manufacturing sector there are winners and losers. The highest value added losses can be found in manufacturing sectors with large initial trade surpluses such as machinery and equipment, motor vehicles and parts, and basic pharmaceutical products. For some manufacturing sectors, where the EU has a trade deficit and depends highly on imports from third countries, however, the increase in domestic sales (caused by the shutdown of targeted imports) can partly compensate for the loss of extra-EU sales. This is the case, for example, for computers, electronic and optical products as well as textiles.

Policy Implications:

Our simulations show that raising trade barriers and restricting trade flows for the sake of increasing resilience or strategic autonomy comes with significant economic costs. Moreover, it is not clear whether such policies can reduce the probability of supply chain disruptions and limit economic vulnerabilities. This is because they may reduce the diversification of supply and demand as well as international risk-sharing. Hence, in order to increase economic resilience and reduce the risk of economic coercion, the EU should not lightheartedly forsake the benefits of trade-driven specialization. The EU should focus on alternative policies that reduce the risk of both political and non-political shocks through trade diversification. For this purpose, the EU should continue to be a strong advocate for an open multilateral trading system and support plurilateral agreements that are open to all WTO member states. Moreover, new strategic partnerships and trade agreements could support EU firms in making their supply chains more resilient. That is, however, more resilience with more, not less, globalization.

In general, in a world of rising geoeconomic tensions, a well-functioning EU single market gains even more importance. Hence, the deepening and broadening of the single market should be a central priority for EU policymakers. Finally, in the dawning age of geoeconomics, speaking with one voice is of paramount importance for the economic and political stability of the EU and its member states. As a consequence, better coordination of economic diplomacy as well as a shared strategy for reducing geoeconomic risks are decisive for the future development of the European project.

1 Global Trade in Times of Geopolitical Instability

The fundamental changes in the landscape of global trade policy become strikingly evident when comparing the European Commission's current trade policy strategy "An Open, Sustainable and Assertive Trade Policy" from 2021 with its predecessor "Trade for All," which was published in 2015. In "Trade for All" there is not a single mentioning of "growing unilateralism," "resilience," or "geopolitical instability." Since 2015, however, a whole series of shocks has hit the global economy and brought these terms to the center of the current EU trade strategy and the debate on globalization more generally: Brexit and the start of the US-China trade and technology tensions revealed how public support for open markets has been fading and that "growing unilateralism" has become an increasingly popular policy option around the world. Evidently, the liberalization of global trade in recent decades has not been irreversible. Moreover, when in 2020 the COVID-19 pandemic broke out, it provoked fundamental questions about the "resilience" of global supply chains. As a result, trade linkages were increasingly regarded as a source of economic vulnerabilities instead of being a driver of economic efficiency. The recent shocks of the Covid pandemic and the Russian invasion of Ukraine have shown critical dependencies of Europe's economy on political decisions of other states. "Geopolitical instability" has become a central concern for both (trade) policymakers and firms, further raising global levels of trade uncertainty.

As a consequence of these events, the policy debate on global economic integration and international trade has shifted toward prioritizing domestic production and using the economy as an instrument of geopolitical strategies instead of focusing on gains from specialization and "win-win" trade cooperation. What has been coined by *The Economist* as "Homeland Economics" broadly contains two sets of policies (which are not mutually exclusive). First, the promotion of domestic production (reshoring) and production in neighboring countries (nearshoring) is becoming increasingly popular among policymakers with the aim of becoming more self-sufficient and less reliant on imports from far-away countries. Examples for such localization policies are the Chinese dual-circulation strategy, the US Inflation Reduction Act or Donald Trump's "Make America Great Again" campaign, and the EU Net-Zero Industry Act. Second, to reduce the risk of economic coercion and sanctions, governments around the world intend to reduce economic interdependencies with geopolitical rivals and increase trade links with like-minded countries (friendshoring). This focus on friendshoring and thinking in geopolitical blocs has already become evident in the US-China relationship in recent years. Moreover, it has led multinational institutions, such as the International Monetary Fund (IMF) or the World Trade Organization (WTO), to warn against the danger of increasing geoeconomic fragmentation and policy-driven de-globalization (Aiyar et al., 2023; World Trade Organization, 2023).

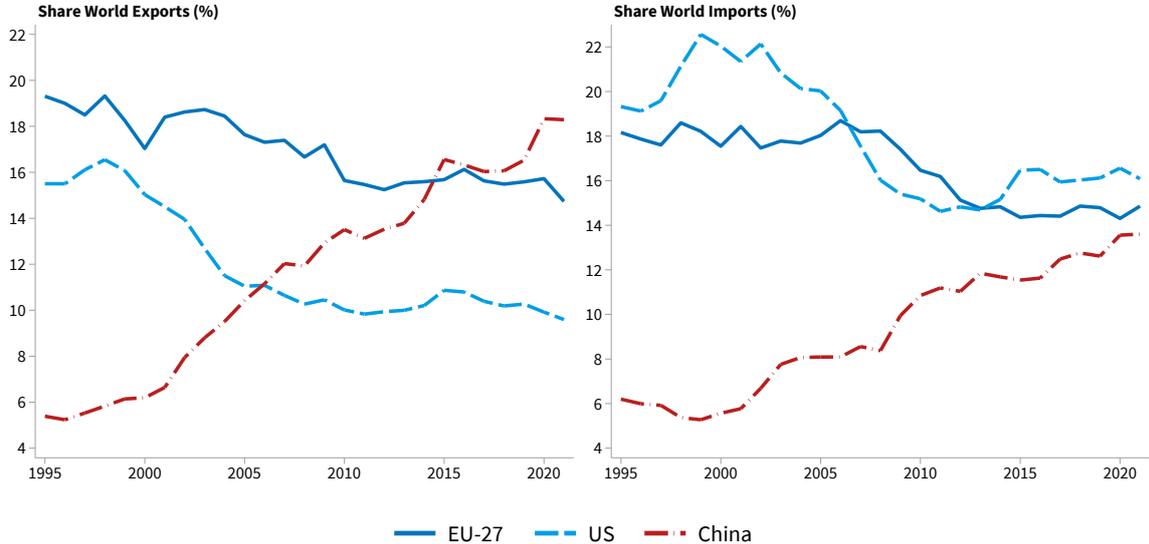
The recent events and increasing risks of geopolitical tensions and thinking in blocs have raised concerns about the external dependence and vulnerability of Europe's economy. Decision-makers

1 Global Trade in Times of Geopolitical Instability

in politics and business should be prepared for the effects of different geopolitical scenarios in order to be able to make informed decisions and take preventative measures based on evidence. This report aims to shed light on the potential effects of different geoeconomic policy scenarios for the EU. First, we investigate how the EU's dependence on global trade has evolved in recent years and analyze the importance of external trade linkages for different economic sectors and member states. We show that the EU's importance as a trading partner has declined recently, while for the EU itself the importance of foreign inputs as well as foreign demand for its export goods has increased. Second, we use a state-of-the-art trade model to simulate different geoeconomic scenarios and their impact on Europe's economies. Here, we examine both unilateral reshoring policies as well as different forms of geoeconomic fragmentation. Simulating these scenarios allows us to quantify the economic costs of a policy-driven reversal of global economic integration for the EU as well as for other economies around the world. In addition, we show a sectoral decomposition of the potential economic effects from different policy scenarios. That way, our analysis provides information about winners and losers from different policy scenarios across countries and industries in Europe. Finally, our policy report provides several policy recommendations for the EU's trade policy in an age of increasing geoeconomic challenges.

2 How Dependent Is the EU on Global Trade?

Figure 1 Share in Global Trade over Time: EU, US, China



Notes: Intra-EU trade is excluded when calculating the EU’s share in world exports over time.

Source: BACI (Gaulier and Zignago, 2010), own calculations.

In recent years, the EU’s integration into the global economy has followed two diverging trends: First, the EU’s overall role in world trade has been in decline. Excluding intra-EU trade, the EU’s share in both world exports and world imports has almost monotonically fallen over the last 30 years, as shown in Figure 1. In the meantime, China has replaced the EU as the world’s largest exporter and accounts for almost the same share of world imports as the EU. In particular for many countries in the global South, the EU’s importance both as an export destination and as an import partner has fallen markedly (see Figures A1 and A2 in the Appendix).

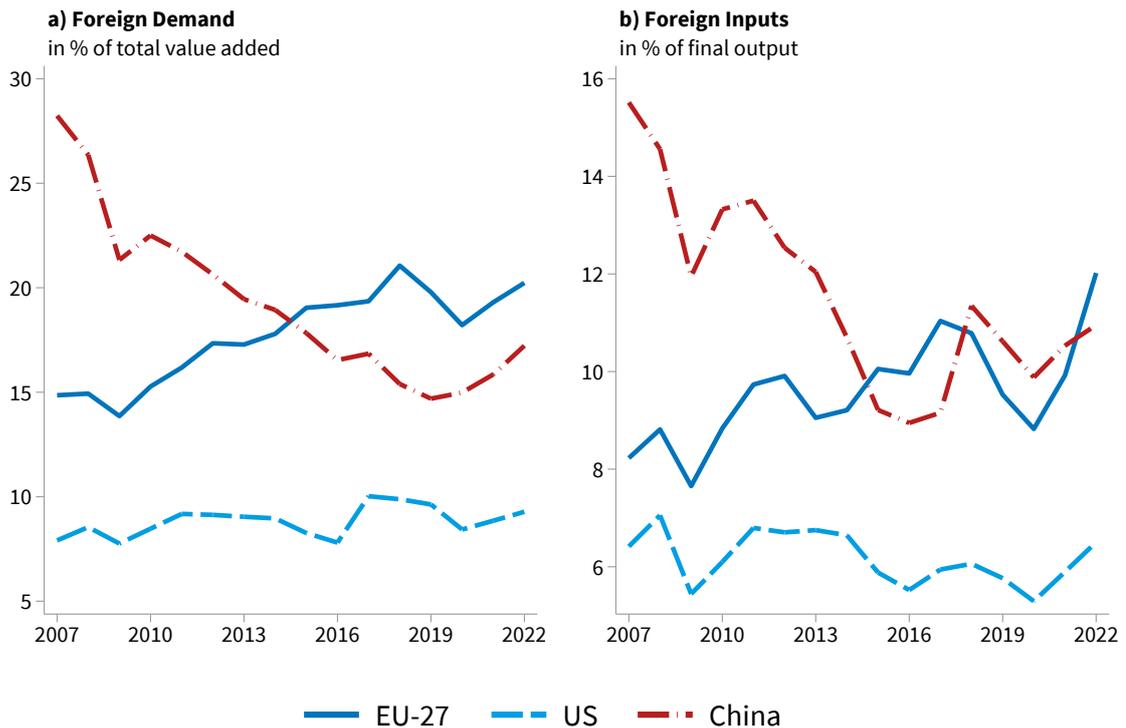
Global Trade Dependence over Time

At the same time, however, the importance of external trade for the EU as a whole has increased significantly. In order to analyze the EU’s dependencies on foreign supply and demand, we make use of value added based trade statistics. The main reason for this is that in contrast to conventional gross trade statistics, value added based trade statistics make it possible to take into account indirect trade linkages that arise due to global production networks. Slovak gross exports, for example, contain on average more than 50 percent of foreign value added. Hence, taking Slovak gross exports as a simple measure for Slovak dependence on external demand would lead to an overestimation of its importance. Similarly, more than 50 percent of Slovak gross exports are intermediate goods

2 How Dependent Is the EU on Global Trade?

and services, which might be further processed over multiple production stages around the world. Hence, complex patterns of direct and indirect trade linkages arise that are hard to disentangle based on gross trade flows. Decomposing exports and imports into the different sources of value added, however, allows us to factor in the role of international production networks.

Figure 2 Trade Dependence over Time: EU, US, China



Notes: Intra-EU trade linkages are excluded when calculating the respective EU shares.

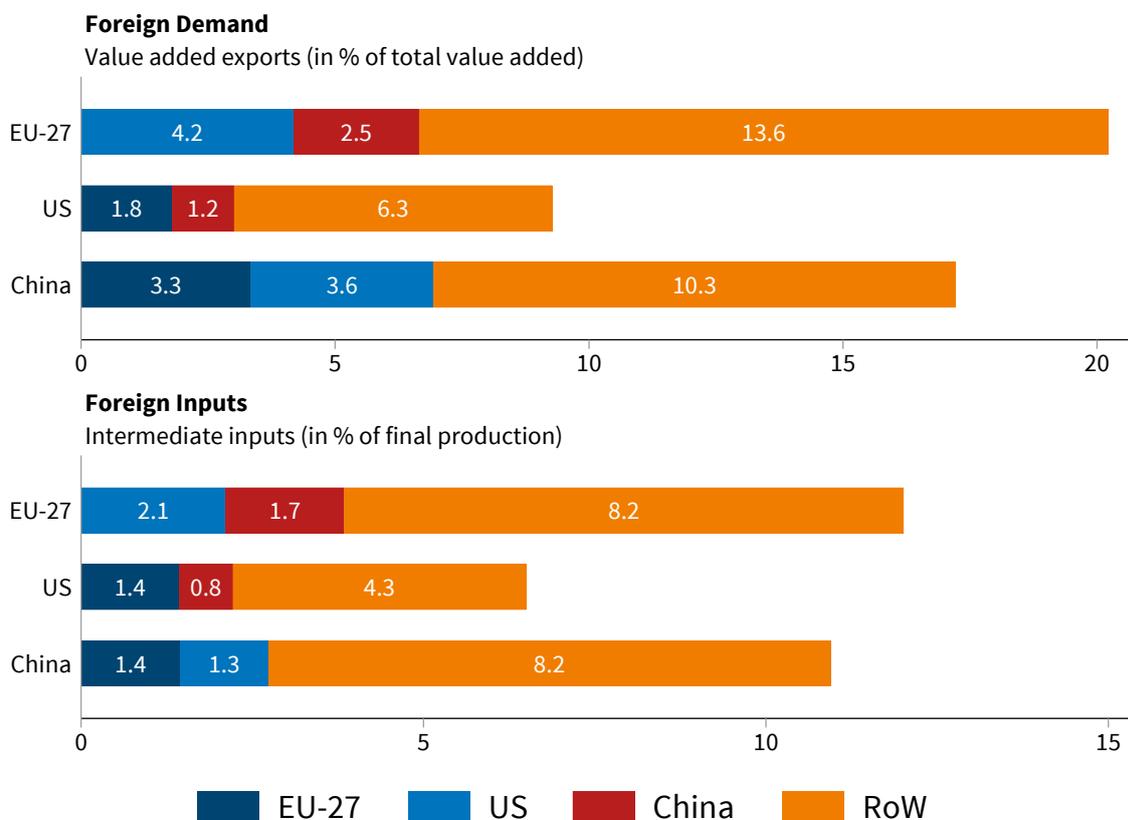
Source: ADB MRIO 2023, own calculations .

The left panel in Figure 2 shows, based on value added trade statistics, that the share of EU value added that depends directly or indirectly on demand outside the EU increased substantially, from an initial value of 15 percent in 2007 to close to 20 percent in 2022. This is more than double the corresponding value of the US, which is around 9 percent and has practically stagnated over recent years. In contrast to the EU, China's dependence on foreign demand has declined significantly despite the strong growth of Chinese gross exports. While in 2007 almost 30 percent of Chinese value added depended on external demand, this share has almost halved to around 18 percent in 2022. A similar picture arises for the importance of foreign inputs: in 2022, EU products contained on average around 12 percent of value added from outside the EU, compared to only 8 percent in 2007. Again, the average share of foreign inputs in US products is much lower (6 percent) and has not changed much over the years. Chinese dependence on foreign inputs, on the other hand, has fallen markedly (2007: 15 percent, 2022: 12 percent) and is now also below the EU's share.

Global Trade Dependence by Trade Partner

Despite the striking differences in external trade dependence between the EU, the US, and China, the three largest economies in the world share important trade interdependencies, as shown by Figure 3. From an EU perspective, direct and indirect trade linkages with the US are stronger than with China. For example, more than 4 percent of EU value added depends ultimately on US demand, while Chinese demand accounts for 2.5 percent of EU value added. For the US economy, the EU is also more important than China both as a supplier of intermediate inputs and as a final destination of value added exports. However, this is the case at a significantly lower level. For China, trade links with the EU and the US are of comparable importance. Importantly, Figure 3 also illustrates the significance of trade linkages with third countries. For the EU, two-thirds of EU value added exports (13.6 percent of total EU value added) depend on final demand in countries other than the US or China. Similarly, almost 70 percent of extra-EU inputs are not from the US or China. This shows that the US and China play an important role for the EU both as a supplier and as a sales market from an overall economic perspective, but they do not have a dominant role compared with all other trading partners around the world.

Figure 3 Trade Dependence by Trade Partner: EU, US, China



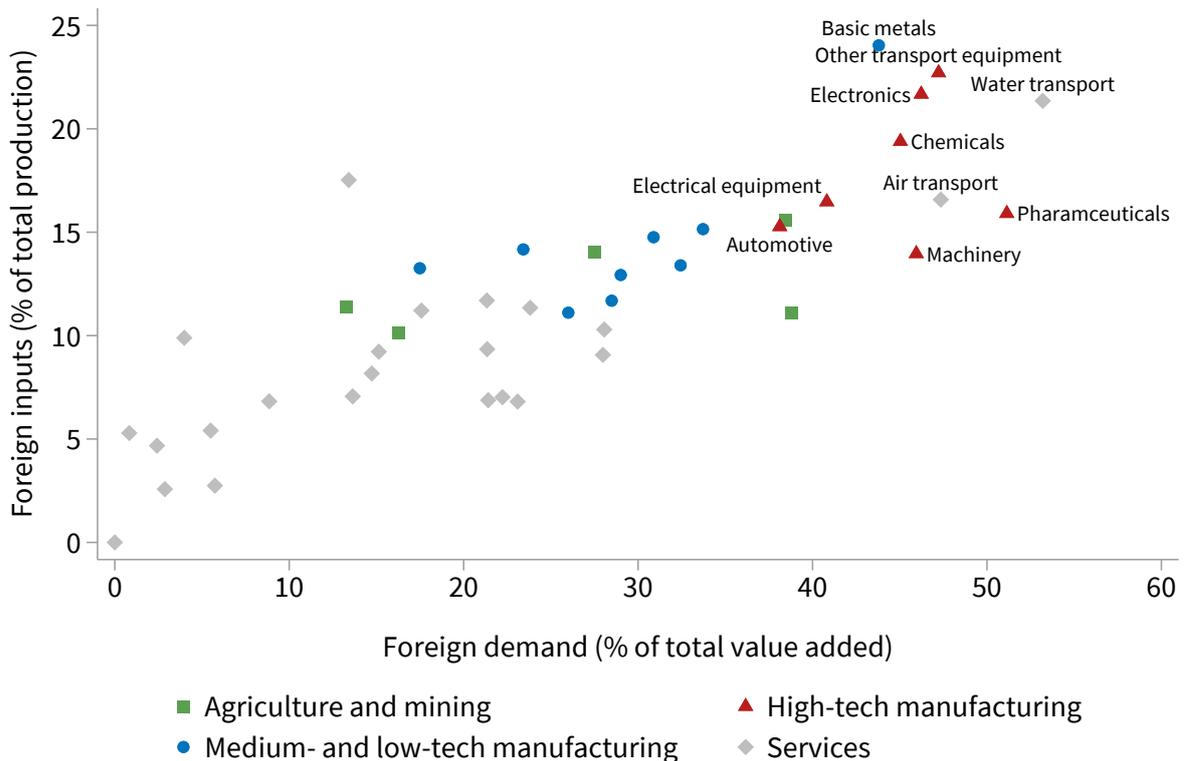
Notes: Intra-EU trade linkages are excluded when calculating the respective EU shares. Calculations are based on the year 2022. **Source:** ADB MRIO 2023, own calculations.

2 How Dependent Is the EU on Global Trade?

EU Trade Dependence by Economic Sectors

The variation in external trade dependence across different sectors of the EU economy is substantial, as can be seen in Figure 4. Especially EU high-tech manufacturing industries are deeply integrated into the world economy. With respect to extra-EU inputs, more than 20 percent of EU production of computer, electronic and optical equipment can be attributed to imports of intermediate inputs from outside the EU. Strong backward linkages also exist for the production of other transport equipment or chemical products (24 percent and 19 percent respectively). These high-tech manufacturing industries are also highly dependent on extra-EU demand. In the case of the manufacture of other transport equipment, almost 50 percent of total value added created in this industry is linked to export activities to non-EU countries. Similar levels of value added exports are reported for the production of pharmaceuticals (51 percent) or machinery and equipment (46 percent). In contrast to high-tech manufacturing, the general importance of external trade remains relatively low for EU service industries. Notable exceptions are water and air transport services, which both depend highly on foreign inputs and foreign demand.

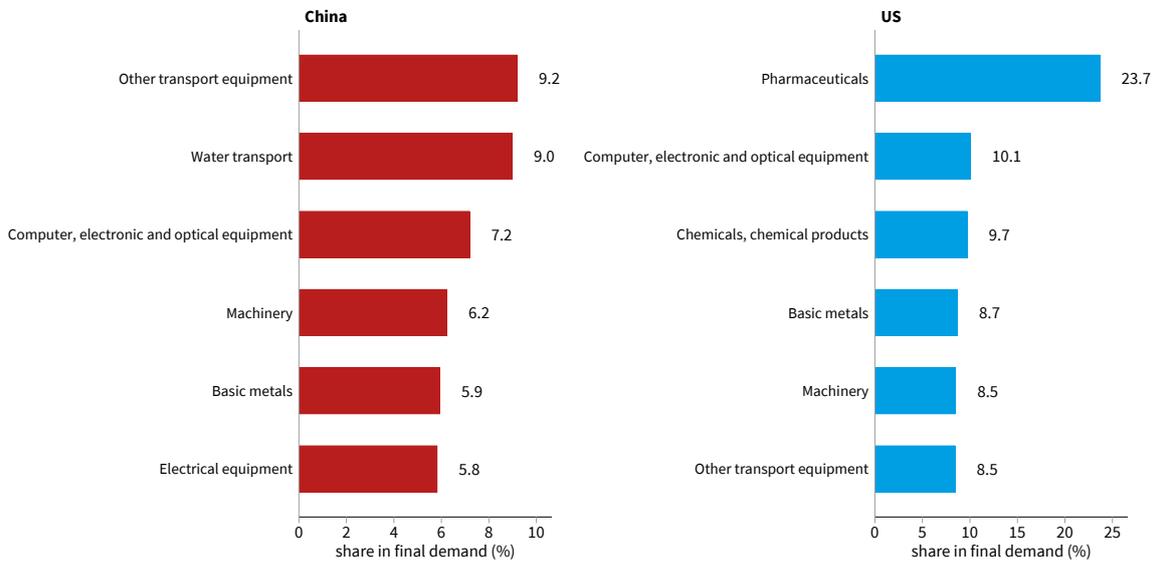
Figure 4 EU Trade Dependence by Economic Sector



Notes: Intra-EU trade linkages are excluded when calculating the respective EU shares. Calculations are based on the year 2018.

Source: OECD ICIO 2021, own calculations.

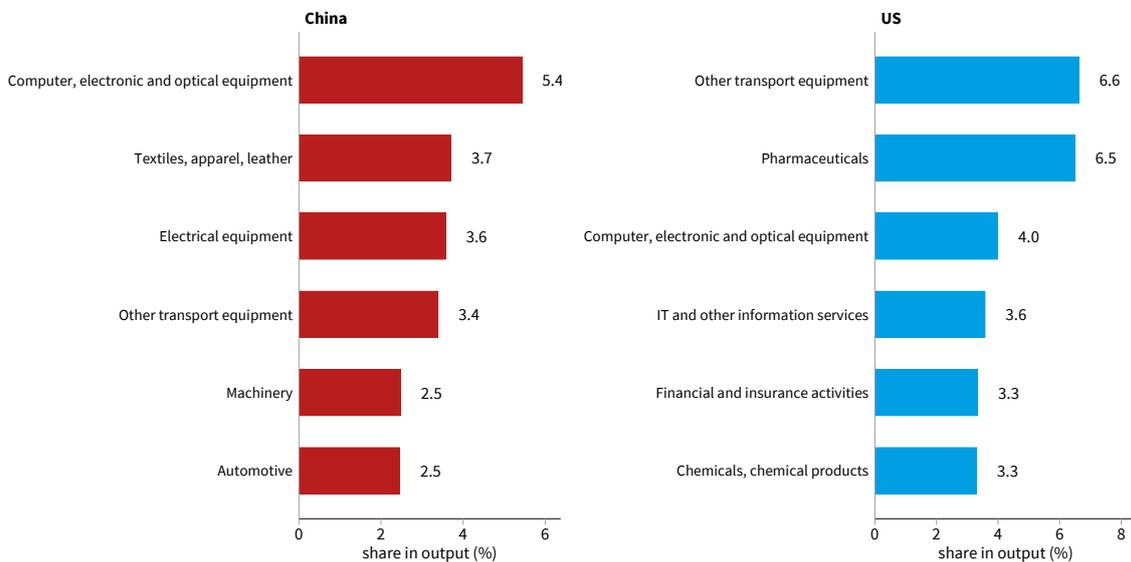
Figure 5 EU Sectors with Highest Export Dependence Vis-à-Vis China and the US



Notes: This figure shows the six EU sectors with the highest share of value added that depends on final demand in China (left panel) or the US (right panel). Intra-EU trade linkages are excluded when calculating the respective EU shares. Calculations are based on the year 2018.

Source: OECD ICIO 2021, own calculations.

Figure 6 EU Sectors with Highest Import Dependence Vis-à-Vis China and the US



Notes: This figure shows the six EU sectors with the highest share of Chinese or US intermediate inputs in final production. Intra-EU trade linkages are excluded when calculating the respective EU shares. Calculations are based on the year 2018.

Source: OECD ICIO 2021, own calculations.

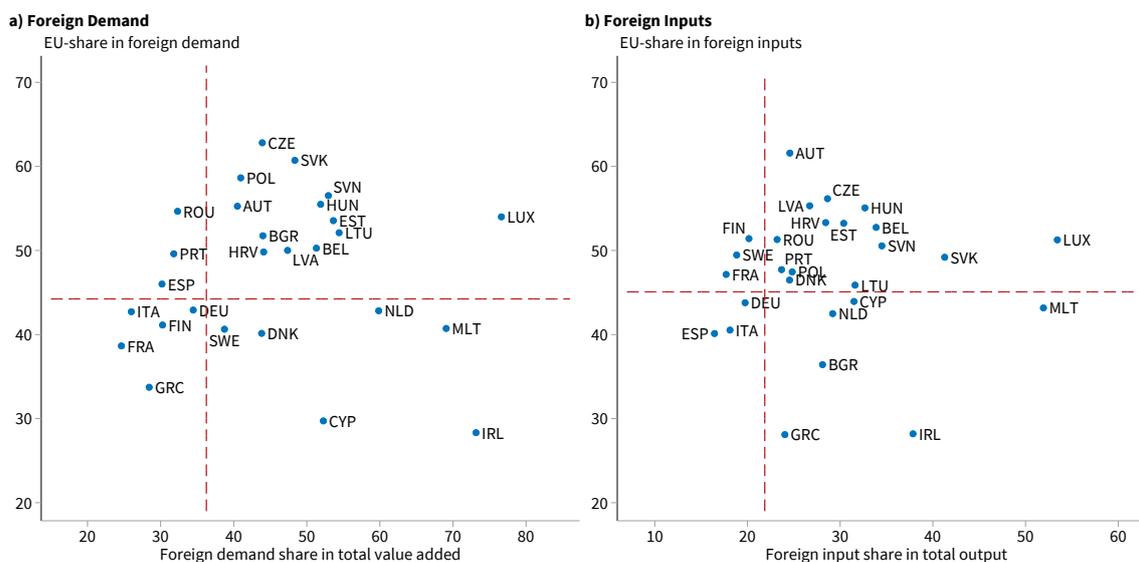
The EU’s bilateral trade dependence vis-à-vis China and the US is also highly heterogeneous at the sectoral level, as shown in Figure 5 and Figure 6. For example, almost one-fourth of the EU’s entire value added in the production of pharmaceuticals (23.7 percent) depends on US final demand alone.

2 How Dependent Is the EU on Global Trade?

The manufacture of computer, electronic and optical equipment exports 9.7 percent of value added to the US and 7.2 percent to China. In general, most EU sectors depend more heavily on the US than on China with respect to final demand. A notable exception is the EU production of other transport equipment (e.g., air- and spacecraft and related machinery), which exhibits the highest level of export dependence of all sectors vis-à-vis China (9.2 percent of value added). Interestingly, the production of other transport equipment is also the EU sector with the highest dependence on US inputs: 6.6 percent of its production value can be attributed to US value added. Similarly, 6.5 percent of the production value of pharmaceuticals can be traced back to US inputs. The highest share of Chinese inputs can be found in the production of computer, electronic and optical equipment (5.4 percent) and in EU textiles, apparel and leather products (3.7 percent), as well as electrical equipment (3.6 percent).

Trade Dependence by EU Members States

Figure 7 Trade Dependence and Intra-EU Trade Share by EU Member State



Notes: The red dotted lines show the respective EU averages.

Source: ADB MRIO 2023, own calculations .

In order to analyze the importance of external trade for the EU, we have assumed up to now the perspective of the EU as a whole and only considered extra-EU trade. From an individual EU member state perspective, however, trade linkages with other member states (intra-EU trade) are crucial. Figure 7 shows that in general the EU single market is of paramount importance for EU member states: on average, around 44 percent of value added exports stays within the EU. Similarly, more than 45 percent of foreign inputs can be traced back to other EU countries. Nonetheless there are

2 How Dependent Is the EU on Global Trade?

also significant differences between member states with respect to both trade openness and the importance of intra-EU trade. For example, the Visegrád countries as well as the Baltic EU member states exhibit both a high degree of trade openness and above-average intra-EU trade. On the other hand, Ireland, for example, is one of the most open EU economies, but the share of intra-EU trade for Ireland is less than 30 percent.

3 ifo Trade Model and Data

The ifo Trade Model allows us to simulate the general equilibrium effects of a wide range of different trade policy scenarios. It makes it possible to infer statements about the trade policy effects on trade flows, trade volumes, sectoral value added, as well as real income. The ifo Trade Model covers more than 120 countries and 65 economic sectors, accounting for over 90 percent of global value added. Simulations allow us to derive trade and output effects for all 65 sectors at a disaggregated level. These sectoral effects can be analyzed for all available countries in the data. The data required for the simulation (e.g., international value added linkages) come from the global Input-Output database GTAP 10, which contains comprehensive information about economic sectors in agriculture, manufacturing, and services. Because the model captures international value added chains and country-specific parameters at the sectoral level (e.g., sector productivity), the adjustments caused by different trade policy scenarios can be approximated.

The ifo Trade Model is based on the general equilibrium model of Caliendo and Parro (2015), building on the groundbreaking work of Eaton and Kortum (2002). It is a static, general equilibrium model of international trade and parameterized through econometric estimations resulting from the model's theoretical equilibrium conditions. In the model, trade flows are affected by both tariffs and non-tariff trade barriers. Additionally, technology is described stochastically, and domestic and foreign sectors are linked through input-output relationships (Johnson and Noguera, 2012). Trade in intermediate and final goods, as well as domestic trade, are included in both the model and the underlying data. Two of the estimated model parameters are of particular interest: the elasticity with which changes in tariffs affect trade flows in the considered sectors, and the effect of non-tariff trade barriers on the respective trade flows. The technical details of this model are described in various academic research articles by the ifo Institute (see, e.g., Sforza and Steininger, 2020; Aichele et al., 2016; Flach et al., 2021; Flach and Steininger, 2020).

It is important to take into account several limitations of the following simulations. First, the level effects resulting from the simulations represent a new medium-term equilibrium and are of a static nature, meaning they shift, for example, a country's GDP level but not its growth rate. These results describe a new economic equilibrium that can be reached after a real adjustment period of approximately 10 to 12 years, depending on the different scenario assumptions. Hence, the following results do not take into account short-term transition costs, which can be potentially very high especially for critical inputs and raw materials. Moreover, due to the static nature of our model, dynamic effects are not considered. For example, the restriction of trade flows might have detrimental effects on investment, innovation, or the transfer of technology, which are absent

in our simulations.¹ Hence, we consider the simulated effects of reshoring and geoeconomic fragmentation as being a rather conservative estimate.

¹ Furthermore, the countries' aggregate trade balances are exogenous to the model and are therefore kept constant in our simulations.

4 Policy Scenarios

The simulations are based on two different types of scenarios. First, we analyze the effects of unilateral reshoring policies (Scenarios 1 and 2). The aim of these policies is to boost domestic production and become less dependent on foreign suppliers.

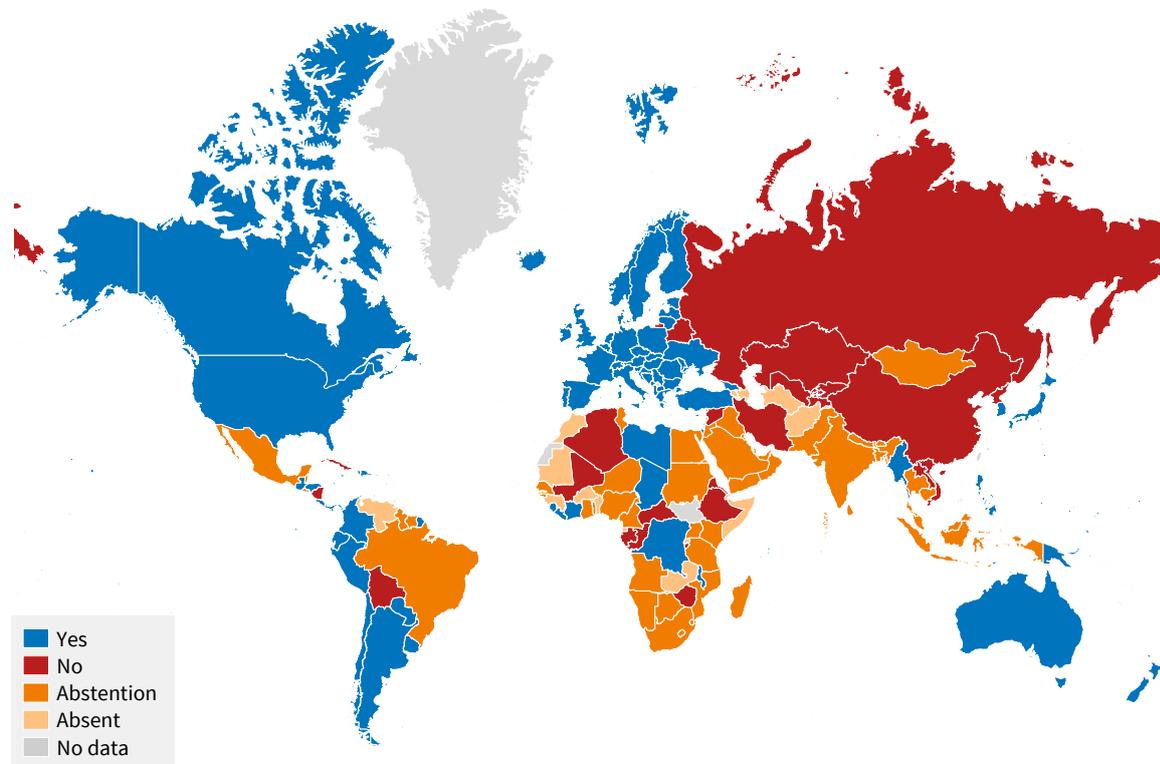
- **Scenario 1:** In our first reshoring scenario, the EU imposes highly restrictive trade barriers indiscriminately against all imports from outside the EU .
- **Scenario 2:** In our second reshoring scenario, the US and China follow the EU's example and also impose trade barriers of similar size .

Our second group of scenarios focuses on the economic consequences of geoeconomic fragmentation (Scenarios 3, 4, and 5). For this purpose, we consider two distinct economic blocs: the US-led West and the China-led East. Following Campos et al. (2023), we allocate countries to these two blocs according to their vote on April 7, 2022, in the United Nations (UN) General Assembly on the resolution concerning the suspension of the rights of membership of the Russian Federation in the Human Rights Council (see Figure 8). Accordingly, countries are part of the Western bloc if they voted in favor of the resolution.² The Eastern bloc comprises countries that voted with Russia against the resolution. Finally, countries that abstained, or did not cast a vote, form the group of non-aligned countries in our simulations.

- **Scenario 3:** In our baseline scenario of geoeconomic fragmentation, the US-led Western bloc and the China-led Eastern bloc impose massive trade barriers against imports from the other bloc. The group of non-aligned countries, however, is not targeted by these trade barriers. Hence, the fragmentation of the world economy is incomplete.
- **Scenarios 4 and 5:** Scenarios 4 and 5 deviates from the baseline fragmentation scenario by dissolving the group of non-aligned countries: In Scenario 4 all non-aligned countries become part of the Western bloc, in Scenario 5 non-aligned countries are allocated to the East. Thus, in these two scenarios the global economy is completely fragmented.

In the simulation of these scenarios, trade barriers are approximated by an increase in tariffs as well as a sharp rise in non-tariff trade costs. In general, import tariffs against all other countries (in the case of reshoring) or against countries of the opposing geoeconomic bloc (in the case of fragmentation) are increased to a tariff level of 25 percent. Furthermore, non-tariff trade costs on

² We add Taiwan, which is not a UN member state, to this bloc.

Figure 8 UN Vote on Suspension of Russian Membership in the Human Rights Council

Notes: This Figure shows the UN General Assembly vote on the resolution adopted on 7 April 2022 concerning the suspension of the rights of membership of the Russian Federation in the Human Rights Council.

Source: UN General Assembly Resolution ES-11/L.4.

the import side are doubled.³ This massive rise in trade costs makes imports from the targeted countries significantly less profitable, leading in general to an almost complete breakdown of the targeted imports in the simulations.

³ However, imports of intermediate goods and raw materials that cannot be produced in the respective country or bloc are still allowed.

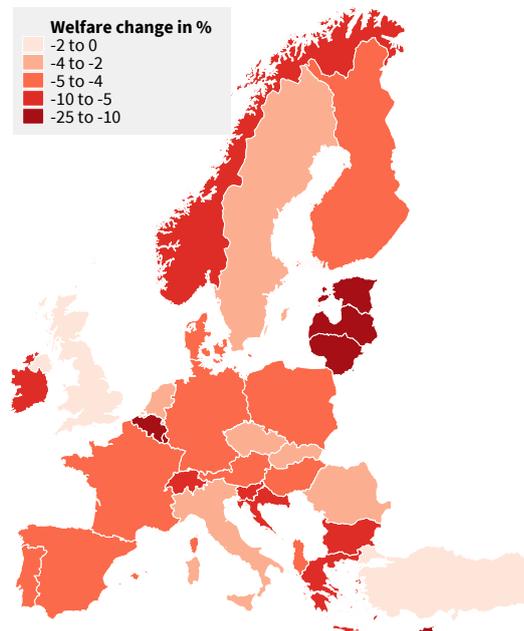
5 Main Results

5.1 Reshoring Scenarios

Scenario 1 — Unilateral EU Reshoring

The unilateral EU-reshoring scenario leads to drastic changes in trade flows for EU member states. Unsurprisingly, extra-EU imports fall sharply due to the massive increase in tariff and non-tariff barriers. At the same time, EU member states trade more with each other, leading to increasing intra-EU trade volumes due to trade diversion (+14.4 percent). However, all EU member states are faced with drastic declines in extra-EU sales. Both domestic and external reasons can explain this change in trade. First, reshoring policies lead to a notable deterioration of EU economies' competitiveness. Extra-EU inputs play an important role for the competitiveness of exporting EU firms. Due to the massive increase in trade costs, however, firms have to substitute away from foreign inputs and replace them with domestic and EU alternatives, which tend to be more costly. More generally, reshoring efforts reduce by design the degree of economic specialization, leading to an increase in average production cost and a loss of competitiveness. As a result, demand for EU products in non-EU markets tends to fall. Second, the significant decrease in EU demand for goods and services from outside the EU results in a price reduction for these products. The implied real depreciation for non-EU economies makes it harder for EU exporters to sell their own products in non-EU markets as a consequence. In total, the increase in intra-EU trade cannot offset the massive decline in extra-EU trade by far: total EU imports fall by 30 percent, total EU exports by 34 percent.

Overall, unilateral reshoring leads to a permanent reduction of EU real income (our preferred measure of welfare) of 4.7 percent (see Figures 9 and 10). In particular, small open economies with high levels of extra-EU trade such as Malta (-24.0 percent), Luxembourg (-15.7 percent), Belgium (-12.8 percent), or the Baltic countries (between -10.3 percent and -11.9 percent) face severe welfare losses. On the other hand, large economies such as Italy (-3.4 percent) and countries with a relatively high share of intra-EU trade such as the Czech Republic (-3.7 percent) experience smaller albeit still significant reductions in real income. Figure 11 shows that outside the EU, countries with strong EU trade ties are hit hardest. For example, EU unilateral reshoring causes a permanent reduction of real income in Turkey or the United Kingdom of around 1.6 percent. Moreover, China is hit much harder than the US by the EU's resurrection of massive trade barriers: while Chinese real income goes down by more than 1 percent as a consequence of EU reshoring, the US welfare losses only add up to 0.2 percent. In total, global real income falls by 1.8 percent.

Figure 9 Unilateral EU Reshoring (Scenario 1): Change in Real Income

Notes: The figure shows the change in real income based on Scenario 1 (unilateral EU reshoring).

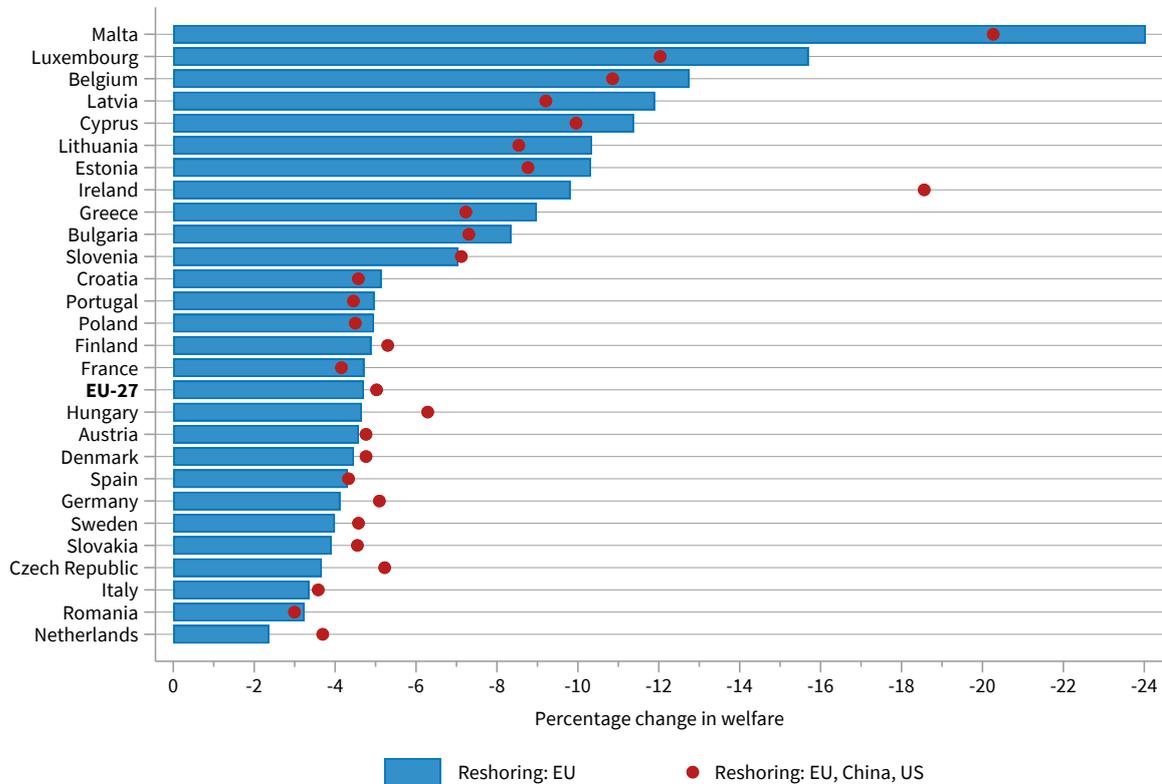
Source: GTAP, ifo Trade Model.

Scenario 2 – Reshoring in the EU, US, and China

In Scenario 2 the US and China also adopt unilateral reshoring policies along with the EU. Similar to Scenario 1, reshoring leads not only to strong reductions in foreign imports for all three economies, but also in this case to a massive loss of competitiveness. As a consequence, EU, US, and Chinese exports fall drastically. For the EU as a whole, the additional shutting down of the US and Chinese market translates into slightly larger welfare losses in comparison to Scenario 1 (-5.0 percent compared to -4.7 percent without US and Chinese reshoring). In particular, Ireland with its strong trade ties to the US is hit extremely hard by the US protectionist policies (-18.6 percent). At the same time, for some EU countries the reduced competition from the US and China in third countries translates into marginally reduced welfare losses in comparison to Scenario 1. On a global scale, however, the fall in real income in Scenario 2 is much worse than in Scenario 1 (-4.2 percent compared to -1.8 percent). First of all, US and Chinese welfare losses increase massively due to their own reshoring efforts, leading to a fall of real income of around 3.6 percent (US) and 5.5 percent (China). Hence, in comparison to the EU and the US, China's welfare losses would be the largest. Moreover, close trading partners like Canada and Mexico (in the case of the US) or Vietnam and South Korea (in the case of China) are hit particularly hard by US and Chinese reshoring. Large and relatively closed economies like India and Brazil also experience substantial, but markedly smaller welfare losses.

5 Main Results

Figure 10 Impact of Reshoring (Scenario 1 and 2) on Real Income: EU-27

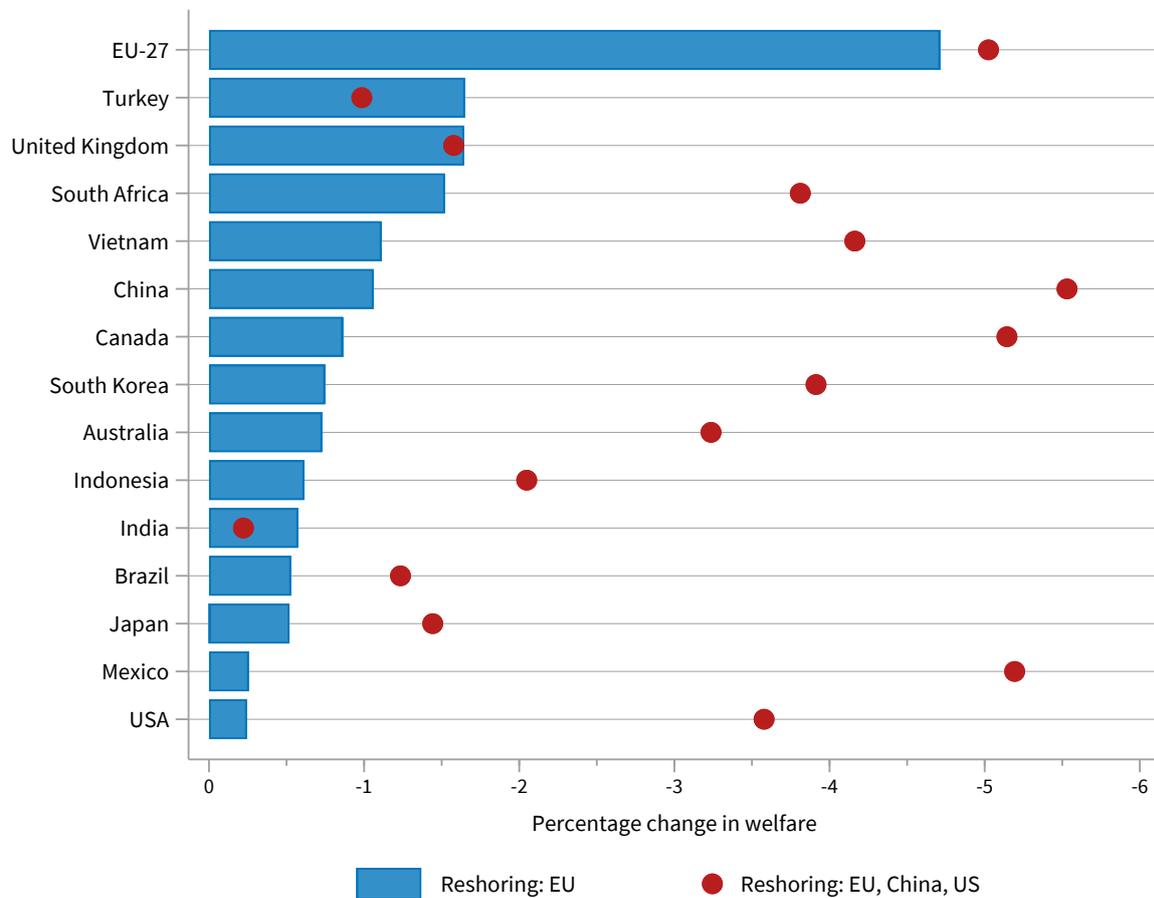


Notes: The figure shows the change in real income for EU member states in scenario 1 (unilateral EU reshoring) and 2 (unilateral reshoring by the EU, US and China).

Source: GTAP, ifo Trade Model.

Sectoral changes in scenarios 1 and 2

Both reshoring scenarios lead to winners and losers among different sectors of the EU economy (see Table 1). First, the agriculture and mining sectors tend to benefit from EU reshoring. The EU is highly dependent on extra-EU imports in these sectors and exports relatively little to markets outside the EU. As a consequence, the agriculture and mining sectors can increase their EU sales substantially while export losses in third markets are limited. In total, for EU agriculture and mining this translates into an increase in value added of around 12 percent in Scenario 1 and 11 percent in Scenario 2. Agriculture and mining, however, accounts only for a small share of the EU's economy. Value added in services, which constitute almost 80 percent of total EU value added, falls by more than 5 percent in both reshoring scenarios. Most affected by reshoring, however, is EU manufacturing, with a decrease in value added of around 11 percent in total. This does not come as surprise, as EU manufacturing is in general highly integrated into global value chains and as a result highly dependent on foreign inputs and foreign demand. In particular, the highest value added losses can be found in manufacturing sectors with large initial trade surpluses such as machinery and equipment (-19.8 percent in both scenarios), motor vehicles and parts (-26.8 percent in Scenario 1,

Figure 11 Impact of Reshoring (Scenarios 1 and 2) on Real Income: Selected Countries

Notes: The figure shows the change in real income for a selected group of countries in Scenario 1 (unilateral EU reshoring) and 2 (unilateral reshoring by the EU, US, and China).

Source: GTAP, ifo Trade Model.

-27.6 percent in Scenario 2), and basic pharmaceutical products (-27.2 percent in Scenario 1, -28.8 percent in Scenario 2). For some manufacturing sectors, where the EU has a trade deficit and highly depends on imports from third countries, however, the increase in domestic sales (caused by the shutdown of foreign imports) can compensate for the loss of extra-EU sales. This is the case, for example, for the production of computer, electronic and optical products (Scenario 1: +11.6 percent, Scenario 2: +15.3 percent) as well as textiles (Scenario 1: +14.4 percent, Scenario 2: +16.6 percent).

5 Main Results

Table 1 EU Sectoral Value Added Changes for Scenarios 1 and 2 (Reshoring)

Sector	Value added benchmark in Bn. USD	Scenario 1		Scenario 2	
		Δ sectoral value added		Δ sectoral value added	
		in Bn. USD (1)	in % (2)	in Bn. USD (3)	in % (4)
Agriculture & Mining	649.42	78.04	12.0	73.09	11.3
Manufacturing	2279.46	-256.17	-11.2	-245.05	-10.8
Machinery and equipment nec	313.12	-62.14	-19.8	-61.92	-19.8
Chemical products	217.78	-33.28	-15.3	-32.84	-15.1
Metal products	206.37	-25.90	-12.5	-25.78	-12.5
Motor vehicles and parts	190.10	-50.87	-26.8	-52.38	-27.6
Computer, electronic and optical products	166.74	19.29	11.6	25.57	15.3
Electrical equipment	154.01	-17.27	-11.2	-15.43	-10.0
Paper products, publishing	147.64	-15.95	-10.8	-16.07	-10.9
Manufactures nec	147.54	-12.06	-8.2	-11.91	-8.1
Rubber and plastic products	141.05	-12.19	-8.6	-12.18	-8.6
Basic pharmaceutical products	132.10	-27.17	-20.6	-28.75	-21.8
Mineral products nec	89.61	-9.46	-10.6	-9.64	-10.8
Ferrous metals	73.56	-11.77	-16.0	-11.67	-15.9
Transport equipment nec	73.14	-15.78	-21.6	-15.15	-20.7
Textiles	48.57	6.99	14.4	8.04	16.6
Wearing apparel	45.08	18.11	40.2	19.86	44.0
Wood products	42.17	-4.54	-10.8	-4.58	-10.9
Metals nec	41.81	-2.22	-5.3	-2.05	-4.9
Leather products	32.30	2.47	7.7	3.97	12.3
Petroleum, coal products	16.74	-2.46	-14.7	-2.13	-12.7
Services	11 247.74	-628.67	-5.6	-643.57	-5.7

Notes: The table shows the sectoral changes in value added for different EU sectors. The sectoral value added benchmark is based on GTAP data for 2014, the most recent year in the data.

Source: GTAP, ifo Trade Model.

5.2 Geoeconomic Bloc Scenarios

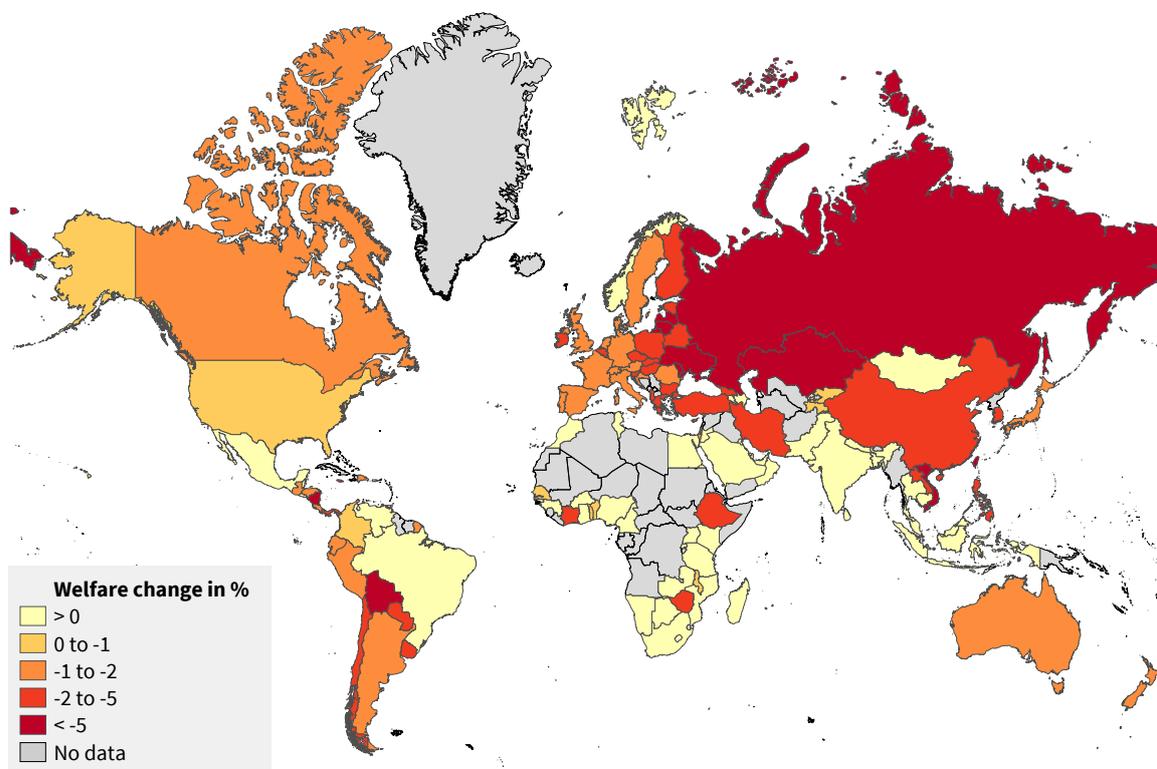
Scenario 3 – Incomplete fragmentation: West, East, Non-aligned

In Scenario 3 the world economy is characterized by incomplete fragmentation: a US-led Western bloc and a China-led Eastern bloc erect massive trade barriers against each other. However, a group of countries including India, Brazil, or South Africa does not form part of any geoeconomic bloc. This group of non-aligned countries is still able to trade with both blocs without facing any additional trade barriers. Incomplete fragmentation along geopolitical lines leads to substantial changes in global trade patterns. As expected, strong trade restrictions between West and East drive trade flows between the two blocs almost to zero. At the same time, trade diversion leads to increasing trade volumes within the Western bloc (+5.3 percent) and even more within the Eastern bloc (+23.7 percent). Also the group of non-aligned countries trades more with each other (+5.0 percent).

Although direct trade between West and East is almost non-existent, indirect trade between the two blocs is still possible via the group of non-aligned countries. And indeed, both geopolitical blocs increase trading with non-aligned countries, but in opposing ways. For most Western countries, being cut off from Eastern imports comes with a substantial loss in competitiveness: firms in the West have to replace Eastern inputs with more expensive Western inputs or with inputs produced in non-aligned countries. As a result, Western imports from non-aligned countries increase substantially (+7.9 percent). Simultaneously, higher production costs for Western producers translate into a fall in Western exports to the non-aligned group (-9.7 percent). For the Eastern bloc the drastic fall in Western demand dominates the effect of incomplete fragmentation. As a result of declining demand, prices for Eastern products fall. This real depreciation causes a massive increase in Eastern exports to non-aligned countries (+34.9 percent), while exports from non-aligned countries become less attractive in the East (-28.2 percent). Overall, although direct trade links between West and East are cut in Scenario 3, indirect economic exposure increases through third countries. In particular, indirect exports from the East to the West via non-aligned countries grow as a consequence of incomplete fragmentation, since exports from non-aligned countries contain an increasing share of Eastern inputs. This can partially substitute for the loss in direct access to Western markets.⁴

Taken together, the EU's real income losses under incomplete fragmentation amount to around 1.6 percent, which constitute substantial economic costs, but at lower level than in the reshoring Scenarios 1 and 2 (see Figures 12 and 13). The main reason for this is that extra-EU imports are not reduced as drastically as in the case of unilateral reshoring. Moreover, there are still indirect trade linkages between the EU and the East via non-aligned countries, which further limit the

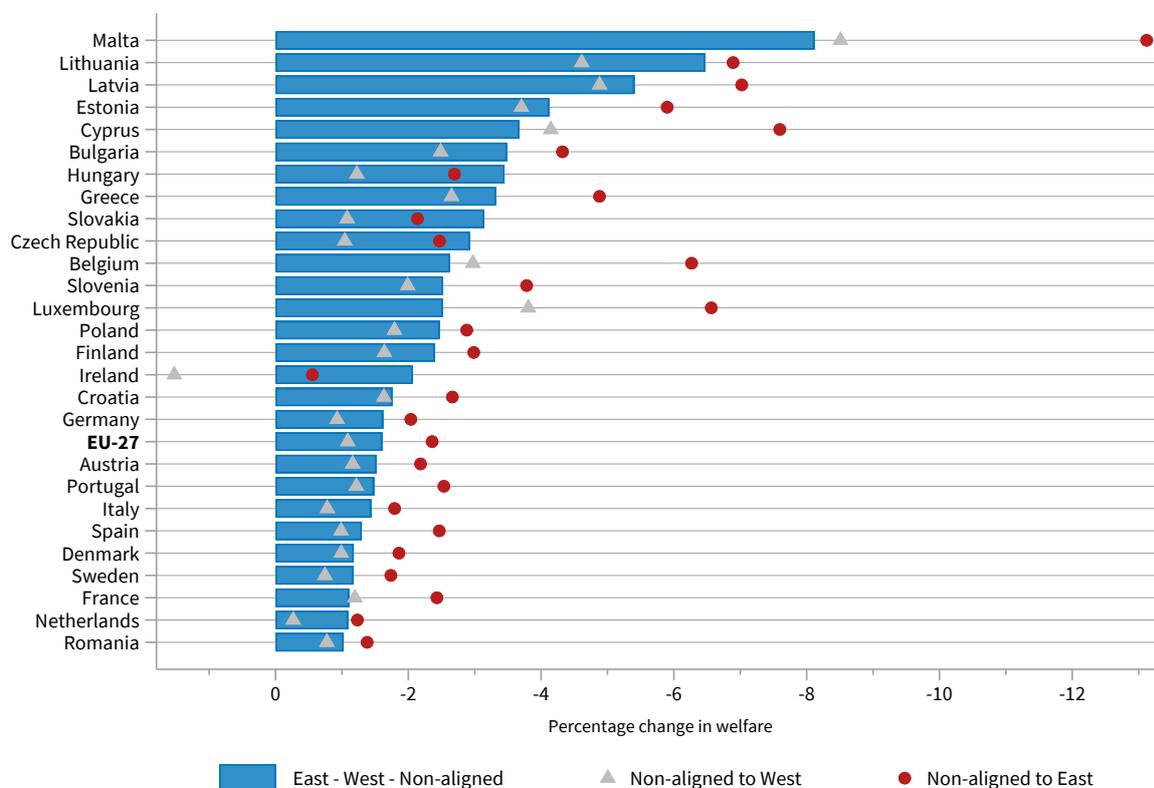
⁴ Alfaro and Chor (2023) as well as Freund et al. (2023) find empirical evidence that, consistent with our simulations, direct US sourcing from China has decreased between 2017 and 2022, while indirect trade linkages between the US and China have strengthened through the supply chains of trade partners.

Figure 12 Incomplete Geoeconomic Fragmentation (Scenario 3): Change in Real Income

Notes: The figure shows the change in real income based on scenario 3 (incomplete geoeconomic fragmentation: Western and Eastern bloc and a group of non-aligned countries).

Source: GTAP, ifo Trade Model.

losses from increasing trade costs. However, welfare losses still vary significantly among member states. Particularly small open economies with strong trade ties to Eastern countries such as Malta (-8.1 percent), Lithuania (-6.5 percent), or Latvia (-5.4 percent) suffer most from the geoeconomic fragmentation of the world economy. In comparison to the EU, US welfare losses are an order of magnitude smaller and amount to -0.8 percent owing to more limited trade exposure to Eastern countries. In total, Western welfare losses reach around 1.4 percent. For China, the fall in real income is much higher than the EU's and is close to 4.5 percent. Small open economies in the Eastern bloc suffer even more: Vietnam, for example, loses more than 12 percent of its real income due to incomplete fragmentation. The East as a whole faces welfare losses of around 5.9 percent. Nonetheless, there are also a few countries that gain slightly from a full-blown trade war between West and East. These economies all belong to the group of non-aligned countries. Indian real income, for example, increases by around 0.7 percent in the scenario of incomplete fragmentation. The same is true for Mexico. The welfare gains for the entire group of non-aligned countries, however, are relatively small and close to zero (+0.2 percent).

Figure 13 Impact of Geoeconomic Fragmentation (Scenario 3, 4, and 5) on Real Income: EU-27

Notes: The figure shows the change in real income for EU member states in Scenario 3 (incomplete geoeconomic fragmentation based on Western and Eastern bloc and a group of non-aligned countries), 4 (complete fragmentation: non-aligned countries join Western bloc), and 5 (complete fragmentation: non-aligned countries join Eastern bloc).

Source: GTAP, ifo Trade Model.

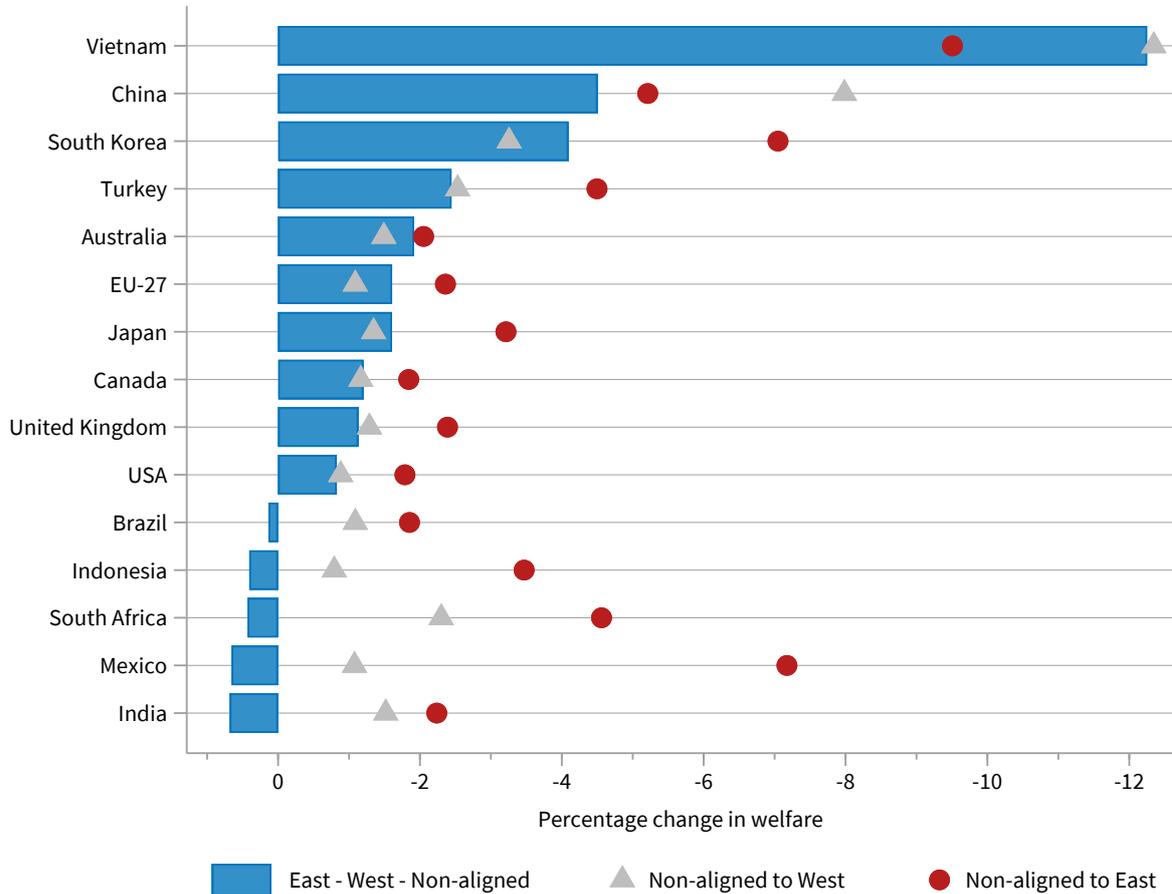
Scenarios 4 and 5 – Complete Fragmentation of the World Economy

In the following two scenarios the group of non-aligned countries is dissolved and the fragmentation of the global economy is *de facto* complete. Scenario 4 assumes that all non-aligned countries form part of the Western bloc, in Scenario 5 non-aligned countries join the Eastern bloc.

For the original Western bloc the inclusion of non-aligned countries has both positive and negative trade effects. Under incomplete fragmentation, indirect trade between East and West had still been possible via non-aligned countries. With complete fragmentation, however, substituting for Eastern inputs becomes more costly for Western firms without the possibility of indirect imports. As a consequence, production costs for Western firms rise even more than under incomplete fragmentation. At the same time, the exclusion of Eastern imports in the former non-aligned group makes it also easier for Western countries to export to these markets, as it reduces competition there. Moreover, the drastic reduction of imports from the East leads to a notable deterioration of competitiveness for the group of formerly non-aligned countries. Overall, exports from the original

5 Main Results

Figure 14 Impact of Geoeconomic Fragmentation (Scenario 3, 4, and 5) on Real Income: Selected Countries



Notes: The figure shows the change in real income for a selected group of countries in Scenario 3 (incomplete geoeconomic fragmentation based on Western and Eastern bloc and a group of non-aligned countries), 4 (complete fragmentation: non-aligned countries join Western bloc), and 5 (complete fragmentation: non-aligned countries join Eastern bloc).

Source: GTAP, ifo Trade Model.

Western bloc to former non-aligned countries slightly increase, while Western imports from the former non-aligned group increase less than under incomplete fragmentation.

For most EU countries, the enlargement of the Western bloc reduces the welfare cost of geoeconomic fragmentation. In total, EU real income falls permanently by 1.1 percent, which is 0.5 percentage points less than under incomplete fragmentation with neutral non-aligned economies. Exceptions are, among others, France and Belgium, which face slightly larger welfare losses. For many other countries in the Western bloc the inclusion of non-aligned countries hardly changes the respective welfare outcomes in comparison to incomplete fragmentation. US real income, for example, falls by 0.9 percent (compared to -0.8 percent under incomplete fragmentation). The same is true for Canada (-1.2 percent in both scenarios) and the United Kingdom (Scenario 3: -1.1 percent, Scenario

4: -1.3 percent). For the former group of non-aligned countries the small gains from incomplete fragmentation (in total +0.2 percent) turn into losses under complete fragmentation and alignment toward the Western bloc (-2.0 percent), as they do not benefit from positive trade diversion effects anymore. For China, however, the dissolution of the non-aligned group and its alignment with the West has even worse consequences: the fall in real income of 4.5 percent under incomplete fragmentation almost doubles to 8.0 percent. These losses are even higher than under the extreme reshoring Scenario 2 (-5.5 percent) and illustrate how important trading with non-aligned countries and the possibility of indirect exports to the West has been for China in a scenario of incomplete fragmentation of the world.

In the opposite Scenario 5, when the group of non-aligned countries joins the Eastern bloc, Western countries tend to lose more than under the incomplete fragmentation of Scenario 3. This has two main reasons: first, trading possibilities with former non-aligned countries are drastically reduced; second, indirect trade with the Eastern bloc is not feasible anymore. As a consequence, trade within the Western bloc increases substantially (+11.0 percent), but total Western exports and imports still shrink due to the enlargement of the Eastern bloc (exports: -23.0 percent, imports: -19.6 percent). For the EU as a whole, welfare losses increase in comparison to incomplete fragmentation by 0.8 percentage points to around 2.4 percent.⁵ Similar patterns hold for other Western countries such as the US (-1.8 percent) or the United Kingdom (-2.4 percent).

For most non-aligned countries, joining the Eastern bloc is significantly worse than joining the West. This can be explained by the fact that, in the status quo, in general Western countries are more important trading partners for non-aligned countries than Eastern countries. Moreover, the economic power of the Eastern bloc is markedly smaller than that of the Western bloc. As a result, the real income losses for the former group of non-aligned countries are significantly higher when joining the Eastern bloc in a global trade war scenario: Mexican welfare losses, for example, amount to around 7.2 percent when joining the Eastern bloc, compared to 1.1 percent when being part of the Western bloc. Interestingly, even for China the enlargement of the Eastern bloc would lead to a further reduction in real income in comparison to incomplete fragmentation. This again highlights the importance of indirect trade with the West via non-aligned countries for the Chinese economy, when having no direct market access to Western markets.

⁵ There are a few EU member states that can slightly reduce welfare losses under complete fragmentation, because they benefit relatively more from increasing trade within the Western bloc. This is the case for some small open economies such as Hungary, Slovakia, or the Czech Republic.

Sectoral Changes in Scenarios 3, 4, and 5

As in the case of the reshoring scenarios, the three geoeconomic fragmentation scenarios create winners and losers among different economic sectors within the EU (see Table 2). Similarly to reshoring, value added in agriculture and mining tends to increase slightly in the different fragmentation scenarios. This is true, in particular, when the group of non-aligned countries joins the Eastern bloc and as a consequence import competition in this sector is reduced drastically. On the contrary, for manufacturing and services, the enlargement of the Eastern bloc leads to the largest decline in value added. One important difference to the reshoring scenarios, however, is that in the fragmentation scenarios manufacturing is less negatively affected than services. This highlights that in the case of reshoring the EU manufacturing sector suffers significantly from the general exclusion of foreign inputs. In a fragmented world economy access to foreign inputs is still restricted, but the possibility of directly importing components from other Western and non-aligned countries significantly limits the reduction in value added for EU manufacturing. Nonetheless, the highest value added losses can be found in manufacturing sectors with a high dependence on foreign demand such as machinery and equipment (up to -13.7 percent), motor vehicles and parts (up to -14.3 percent), and other transport equipment (up to -19.2 percent). Similar to reshoring, for some manufacturing sectors with relatively large initial trade deficits the increase in domestic sales (caused by the shutdown of Eastern imports) can compensate for the partial loss of export sales. This is the case, for example, for the industries of computer, electronic and optical products (up to 17.2 percent) and textiles (up to 22.1 percent).

Table 2 EU Sectoral Value Added Changes for Scenarios 3, 4, and 5 (Fragmentation)

Sector	Value added benchmark in Bn. USD	East-West-NA		NA to West		NA to East	
		Δ sectoral value added in Bn. USD	in %	Δ sectoral value added in Bn. USD	in %	Δ sectoral value added in Bn. USD	in %
Agriculture & Mining	649.42	12.49	1.9	2.44	0.4	30.92	4.8
Manufacturing	2279.46	-32.70	-1.4	-10.09	-0.4	-82.39	-3.6
Machinery and equipment nec	313.12	-20.69	-6.6	-16.77	-5.4	-42.93	-13.7
Chemical products	217.78	-11.86	-5.4	-7.67	-3.5	-12.40	-5.7
Metal products	206.37	-4.65	-2.3	-3.34	-1.6	-13.67	-6.6
Motor vehicles and parts	190.10	-20.76	-10.9	-19.88	-10.5	-27.18	-14.3
Computer, electronic and optical products	166.74	24.77	14.9	28.72	17.2	23.19	13.9
Electrical equipment	154.01	0.83	0.5	3.29	2.1	-4.83	-3.1
Paper products, publishing	147.64	-3.82	-2.6	-3.20	-2.2	-7.44	-5.0
Manufactures nec	147.54	1.46	1.0	2.30	1.6	1.56	1.1
Rubber and plastic products	141.05	-2.55	-1.8	-1.84	-1.3	-4.30	-3.1
Basic pharmaceutical products	132.10	-9.57	-7.2	-9.43	-7.1	-16.37	-12.4
Mineral products nec	89.61	-2.14	-2.4	-1.51	-1.7	-4.61	-5.1
Ferrous metals	73.56	-1.29	-1.8	-0.82	-1.1	-5.49	-7.5
Transport equipment nec	73.14	-5.72	-7.8	-5.39	-7.4	-14.08	-19.2
Textiles	48.57	5.28	10.9	6.14	12.6	10.74	22.1
Wearing apparel	45.08	9.18	20.4	9.88	21.9	22.89	50.8
Wood products	42.17	0.17	0.4	0.30	0.7	-0.62	-1.5
Metals nec	41.81	-0.85	-2.0	0.16	0.4	-0.90	-2.1
Leather products	32.30	11.01	34.1	10.12	31.3	16.45	50.9
Petroleum, coal products	16.74	-1.53	-9.1	-1.15	-6.9	-2.39	-14.3
Services	11 247.74	-218.46	-1.9	-196.61	-1.7	-353.49	-3.1

Notes: The table shows the sectoral changes in value added for different EU sectors. The sectoral value added benchmark is based on GTAP data for 2014, the most recent year in the data.

Source: GTAP, ifo Trade Model.

6 Conclusion

Economic nationalism is on the rise: governments around the world are increasingly reprioritizing domestic production over international trade and intend to reduce exposure to foreign shocks by making supply chains shorter and less global. Clearly, a narrative that questions the open, rules-based trading system based on geoeconomic considerations is gaining traction worldwide. In this study we show that scenarios of increasing reshoring and geoeconomic fragmentation would be particularly challenging for the EU. Over recent years, the EU's dependence on trade with non-EU countries has increased. In particular, EU manufacturing is highly dependent on both extra-EU inputs and extra-EU demand. At the same time, the EU's importance in the world economy is in decline: for many countries around the world the EU has lost weight both as an export and as an import partner. Based on a state-of-the-art trade model, we quantify the economic costs of different reshoring and fragmentation scenarios for the EU and other countries. Broad-based reshoring policies would entail significant economic costs and would substantially hurt the EU's competitiveness. In our simulation of unilateral EU reshoring, the EU's real income losses add up to 4.7 percent. However, the heterogeneity of real income changes is substantial among EU member states, with small open economies suffering most. The geoeconomic fragmentation of the world economy based on a US-led Western bloc and a China-led Eastern bloc would also lead to considerable permanent reductions of EU welfare. In the scenario of incomplete fragmentation with a group of non-aligned countries, EU real income would shrink by around 1.6 percent. The importance of countries that do not form part of any bloc becomes evident in the scenario of complete fragmentation where the group of non-aligned countries joins the Eastern bloc. In comparison to incomplete fragmentation, the EU's real income losses would rise by 0.8 percentage points to around 2.4 percent.

In general, our simulations show that raising trade barriers and restricting trade flows for the sake of increasing “resilience” and “strategic autonomy” are very costly policies. Moreover, it can be questioned whether such policies really do contribute to fewer disruptions in supply chains and reduced economic vulnerabilities, as diversification of supply and demand as well as international risk-sharing might be reduced as well.⁶ Hence, in order to increase economic resilience and reduce the risk of economic coercion, the EU should not lightheartedly forsake the benefits of trade-driven specialization, but rather focus on alternative policies that reduce the risk of both political and non-political shocks through trade diversification (Caselli et al., 2020; Dorn et al., 2022). This would require more, rather than less, globalization and global economic integration:

⁶ See, for instance, Bonadio et al. (2021) and D'Aguanno et al. (2021).

First, the rule-based multilateral trading system remains central to the EU's trade engagement with the rest of the world⁷ and is a facilitator for diversifying international trade relations. Hence, the EU should continue to be a strong advocate for an open multilateral trading system in the face of rising unilateralism and geopolitical tensions, and it should support plurilateral agreements that are open to all WTO member states. As proposed by Bown and Clausing (2023), direct negotiations between the EU, the US, and China with the aim of resolving some of their central differences over global trade rules and possibly initiating new plurilateral disciplines would be highly desirable, even if prospects for success seem to be rather low *ex ante*. In this context it should also be borne in mind that, according to our results, China has a lot to lose from economic fragmentation. Letting this fragmentation happen today may well dampen the geopolitical power of China, as its economy would be damaged. But this also means that China then has less to lose in the case of a potential geopolitical conflict in the future. This may even increase the likelihood of such a conflict.

In addition, EU trade policy should actively pursue strategic partnerships with other countries and extend its current network of regional trade agreements. This would see European firms benefit from better access to foreign markets, and it would also strengthen bilateral cooperation with partners around the world. In this context, both the negotiation processes and the ratification and implementation of trade agreements should be significantly accelerated in the future.

In a world increasingly shaken by geopolitical shocks, a well-functioning EU single market gains even more importance. As shown in Section 2, intra-EU trade accounts for a substantial share of trade dependencies of EU member states. However, there are still several areas where the single market remains fractured and incomplete. Hence, deepening and broadening the single market should rank high on the EU policymakers' agenda. For example, further progress in liberalizing services trade among member states or building a true digital single market would not only bring additional economic gains for member states, but would also make access to the single market more attractive for trading partners around the world. Similarly, the building of new strategic partnerships as well as the defence against acts of economic coercion makes it more important than ever for EU member states to speak with one voice on the global stage. In the dawning age of geoeconomics, systemic rivals will increasingly try to divide EU member states and benefit from internal fractures. Better coordination of economic diplomacy as well as a shared strategy for reducing geoeconomic risks are therefore of paramount importance.

⁷ More than 80 percent of EU imports take place under the WTO tariff regime (Baur and Flach, 2023).

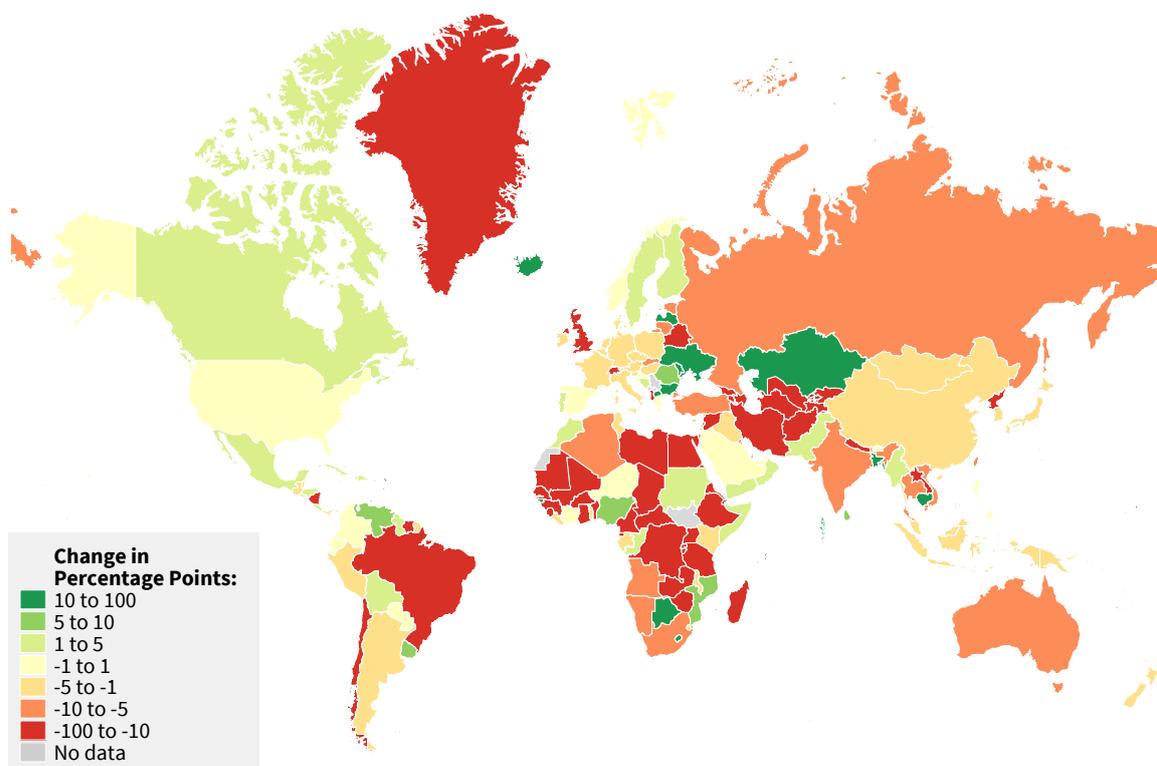
References

- Aichele, R., Felbermayr, G., and Heiland, I. (2016). Going Deep: The trade and welfare effects of TTIP revised. *ifo Working Paper 219*.
- Aiyar, S., Chen, J., Ebeke, C., Garcia-Saltos, R., Gudmundsson, T., Ilyina, A., Kangur, A., Kunaratskul, T., Rodriguez, S., Ruta, M., Schulze, T., Soderberg, G., and Trevino, J. P. (2023). Geo-economic fragmentation and the future of multilateralism. *IMF Staff Discussion Notes*, (2023/001).
- Alfaro, L. and Chor, D. (2023). Global supply chains: The looming “great reallocation”. *NBER Working Paper*, (31661).
- Baur, A. and Flach, L. (2023). Protectionism on the rise? New challenges for EU trade policy. *EconPol Forum*, 24(5):32–35.
- Bonadio, B., Huo, Z., Levchenko, A. A., and Pandalai-Nayar, N. (2021). Global supply chains in the pandemic. *Journal of International Economics*, 133:103534.
- Bown, C. P. and Clausing, K. A. (2023). How trade cooperation by the United States, the European Union, and China can fight climate change. *CEPR Discussion Paper Series*, (DP18519).
- Caliendo, L. and Parro, F. (2015). Estimates of the trade and welfare effects of NAFTA. *The Review of Economic Studies*, 82(1):1–44.
- Campos, R. G., Estefania-Flores, J., Furceri, D., and Timini, J. (2023). Geopolitical fragmentation and trade. *Journal of Comparative Economics*.
- Caselli, F., Koren, M., Lisicky, M., and Tenreyro, S. (2020). Diversification through trade. *The Quarterly Journal of Economics*, 135(1):449–502.
- D’Aguanno, L., Davies, O., Dogan, A., Freeman, R., Lloyd, S., Reinhardt, D., Sajedi, R., and Zymek, R. (2021). Global value chains, volatility and safe openness: Is trade a double-edged sword? *Bank of England Financial Stability Paper*, (46).
- Dorn, F., Flach, L., Fuest, C., and Scheckenhofer, L. (2022). Langfristige Effekte von Deglobalisierung und Handelskriegen auf die deutsche Wirtschaft. *ifo Schnelldienst*, 75(09):27–34.
- Eaton, J. and Kortum, S. (2002). Technology, Geography, and Trade. *Econometrica*, 70(5):1741–1779.

- European Commission (2015). Trade for All – Towards a more responsible trade and investment policy.
- European Commission (2021). Trade Policy Review – An Open, Sustainable and Assertive Trade Policy.
- Flach, L., Gröschl, J., Steininger, M., Teti, F., and Baur, A. (2021). Internationale Wertschöpfungsketten – Reformbedarf und Möglichkeiten. Studie im Auftrag der Konrad-Adenauer-Stiftung e. V., München.
- Flach, L. and Steininger, M. (2020). Globalisierung nach Covid-19: Die Folgen der Pandemie für die deutsche Wirtschaft. *ifo Schnelldienst*, 73(03).
- Freund, C., Mattoo, A., Mulabdic, A., and Ruta, M. (2023). Is US Trade Policy Reshaping Global Supply Chains? *World Bank Policy Research Working Papers*, (10593).
- Gaulier, G. and Zignago, S. (2010). Baci: International trade database at the product-level. The 1994-2007 version. *CEPII Working Papers*, (2010-23).
- Johnson, R. C. and Noguera, G. (2012). Accounting for intermediates: Production sharing and trade in value added. *Journal of International Economics*, 86(2):224–236.
- Sforza, A. and Steininger, M. (2020). Globalization in the Time of COVID-19. *CESifo Working Paper Series*.
- World Trade Organization (2023). World trade report 2023: Re-globalization for a secure, inclusive and sustainable future.

A Additional Figures

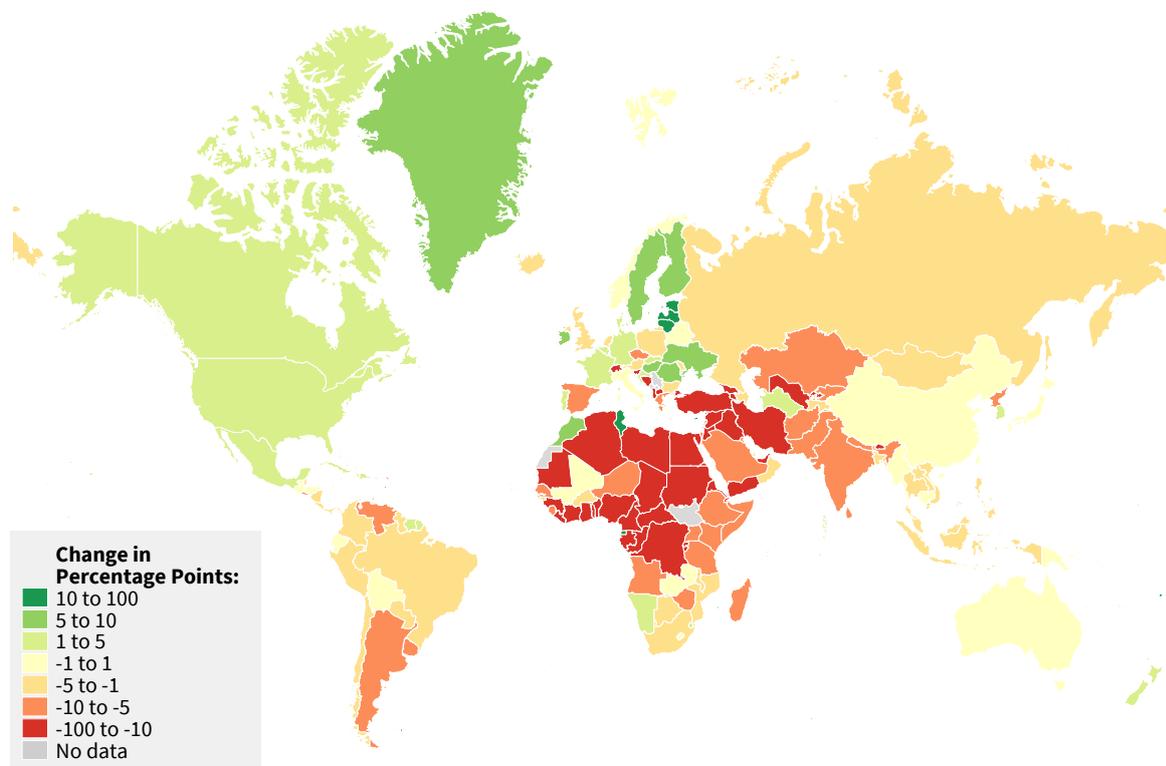
Figure A1 EU as Export Destination: Change in Export Share between 2000 and 2019



Notes: This figure shows how the importance of the EU as export destination has changed between 2000 and 2019. For each country the share of exports that are sold in the EU is calculated for the years 2000 and 2019. The map shows how this share has changed (in percentage points) in the respective time period.

Source: BACI (Gaulier and Zignago, 2010), own calculations.

Figure A2 EU as Import Partner: Change in Import Share between 2000 and 2019



Notes: This figure shows how the importance of the EU as import partner has changed between 2000 and 2019. For each country the share of imports that originate from the EU is calculated for the years 2000 and 2019. The map shows how this share has changed (in percentage points) in the respective time period.

Source: BACI (Gaulier and Zignago, 2010), own calculations.

B Additional Tables

Table B1 EU Member States' Welfare Changes for All Scenarios

Code	Country	Welfare changes (in %)				
		Scenario 1	Scenario 2	Scenario 3	Scenario 4	Scenario 5
AUT	Austria	-4.6	-4.8	-1.5	-1.2	-2.2
BEL	Belgium	-12.8	-10.9	-2.6	-3.0	-6.3
BGR	Bulgaria	-8.4	-7.3	-3.5	-2.5	-4.3
CYP	Cyprus	-11.4	-10.0	-3.7	-4.1	-7.6
CZE	Czech Republic	-3.7	-5.2	-2.9	-1.0	-2.5
DEU	Germany	-4.1	-5.1	-1.6	-0.9	-2.0
DNK	Denmark	-4.5	-4.8	-1.2	-1.0	-1.9
ESP	Spain	-4.3	-4.3	-1.3	-1.0	-2.5
EST	Estonia	-10.3	-8.8	-4.1	-3.7	-5.9
FIN	Finland	-4.9	-5.3	-2.4	-1.6	-3.0
FRA	France	-4.7	-4.2	-1.1	-1.2	-2.4
GRC	Greece	-9.0	-7.2	-3.3	-2.7	-4.9
HRV	Croatia	-5.1	-4.6	-1.8	-1.6	-2.7
HUN	Hungary	-4.7	-6.3	-3.4	-1.2	-2.7
IRL	Ireland	-9.8	-18.6	-2.1	1.5	-0.6
ITA	Italy	-3.4	-3.6	-1.4	-0.8	-1.8
LTU	Lithuania	-10.4	-8.5	-6.5	-4.6	-6.9
LUX	Luxembourg	-15.7	-12.0	-2.5	-3.8	-6.6
LVA	Latvia	-11.9	-9.2	-5.4	-4.9	-7.0
MLT	Malta	-24.0	-20.3	-8.1	-8.5	-13.1
NLD	Netherlands	-2.4	-3.7	-1.1	-0.3	-1.2
POL	Poland	-5.0	-4.5	-2.5	-1.8	-2.9
PRT	Portugal	-5.0	-4.5	-1.5	-1.2	-2.5
ROU	Romania	-3.2	-3.0	-1.0	-0.8	-1.4
SVK	Slovakia	-3.9	-4.6	-3.1	-1.1	-2.1
SVN	Slovenia	-7.0	-7.1	-2.5	-2.0	-3.8
SWE	Sweden	-4.0	-4.6	-1.2	-0.7	-1.7
-	EU-27	-4.7	-5.0	-1.6	-1.1	-2.4

Notes: The table shows the changes in real income based on different geoeconomic trade scenarios.

Source: GTAP, ifo Trade Model.

Table B2 EU Trade Dependence by Economic Sector

ISIC Rev. 4	Sector	Foreign Inputs (% of production)	Foreign Demand (% of value added)
01, 02	Agriculture, forestry	10.1	16.3
03	Fishing, aquaculture	11.4	13.3
05, 06	Mining and quarrying: Coke, petroleum, natural gas	14.1	27.5
07, 08	Other mining and quarrying	11.1	38.8
09	Mining support service activities	15.6	38.4
10, 11, 12	Food, beverages, tobacco	13.3	17.5
13, 14, 15	Textiles, apparel, leather	14.8	30.9
16	Wood	11.1	26.0
17, 18	Paper, printing	11.7	28.5
20	Chemicals, chemical products	19.4	45.0
21	Pharmaceuticals	15.9	51.1
22	Rubber, plastics	15.1	33.7
23	Other non-metallic mineral products	14.2	23.4
24	Basic metals	24.0	43.8
25	Fabricated metal products	13.4	32.4
26	Computer, electronic and optical equipment	21.7	46.2
27	Electrical equipment	16.5	40.8
28	Machinery	14.0	45.9
29	Automotive	15.3	38.1
30	Other transport equipment	22.7	47.2
31, 32, 33	Other manufacturing	12.9	29.0
35	Electricity, gas, steam and air conditioning supply	17.5	13.4
36, 37, 38, 39	Water supply; sewerage, waste management and remediation activities	8.2	14.7
41, 42, 43	Construction	9.9	4.0
45, 46, 47	Wholesale and retail trade; repair of motor vehicles	7.0	22.2
49	Land transport and transport via pipelines	10.3	28.1
50	Water transport	21.4	53.2
51	Air transport	16.6	47.4
52	Warehousing and support activities for transportation	9.1	28.0
53	Postal and courier activities	9.3	21.3
55, 56	Accommodation and food service activities	7.1	13.6
58, 59, 60	Publishing, audiovisual and broadcasting activities	11.3	23.8
61	Telecommunications	9.2	15.1
62, 63	IT and other information services	11.7	21.3
64, 65, 66	Financial and insurance activities	11.2	17.6
68	Real estate activities	2.7	5.7
69 to 75	Professional, scientific and technical activities	6.9	21.4
77 to 82	Administrative and support services	6.8	23.1
84	Public administration and defence; compulsory social security	4.7	2.4
85	Education	2.6	2.9
86, 87, 88	Human health and social work activities	5.3	0.8
90, 91, 92, 93	Arts, entertainment and recreation	6.8	8.9
94, 95, 96	Other service activities	5.4	5.5

Notes: Intra-EU trade linkages are excluded when calculating the respective EU shares. Calculations are based on the year 2018.

Source: OECD ICIO 2021, own calculations.

Authors of this Issue



Andreas Baur

Andreas Baur is a Junior Economist and Doctoral Student at the ifo Center for International Economics and LMU Munich. Previously, he obtained master's degrees in economics from the University of Nottingham and the University of Tübingen as part of a double-degree program in economics. His research focuses on the empirical analysis of international trade and financial globalization.

Contact: baur@ifo.de



Florian Dorn

Florian Dorn is Director of EconPol Europe, Senior Secretary to the President at the ifo Institute Munich, and Economist at the ifo Taxation and Fiscal Policy Research Group. His main areas of research and policy advice are public economics, regional economics, and political economy. He is Lecturer in Economics at the University of Munich (LMU), and a member of the CESifo Research Network. Dorn studied at the University of Mannheim, LMU Munich, and the University of California in Berkeley. He received his PhD in Economics from LMU Munich.

Contact: dorn@ifo.de



Lisandra Flach

Lisandra Flach is Director of the ifo Center for International Economics and Professor of Economics at the LMU Munich. She is a research affiliate at CEPR and CESifo and associate editor of the Review of International Economics. Her main area of research is international economics. Flach received her PhD from the University of Mannheim.

Contact: flach@ifo.de



Clemens Fuest

Clemens Fuest is President of the ifo Institute – Leibniz Institute for Economic Research at the University of Munich, Director of CESifo, Professor of Economics at the University of Munich (LMU), and Director of the Center for Economic Studies (CES) at LMU. His research areas are economic and fiscal policy, international taxation, and European integration. He is, among others, a member of the Scientific Advisory Board at the German Federal Ministry of Finance. Prior to his appointment in Munich, he was a professor at the Universities of Cologne (2001-2008), Oxford (2008-2013), and Mannheim (2013-2016).

Contact: fuest@ifo.de