Box 1.1

GLOBAL GEOPOLITICAL TENSIONS: CHANNELS OF IMPACT ON THE EUROPEAN UNION

Geopolitical factors have played a central role in driving activity and economic relations in recent months. The Russian invasion of Ukraine has cast a shadow over the geopolitical landscape and heightened global uncertainty (see Charts 1 and 2), with severe economic consequences. That said, geopolitical factors have become increasingly important in economic developments over the past decade, with recent examples including the US-China trade war in 2018-2019 and Brexit.

The existing empirical evidence shows that rising geopolitical risks have historically been accompanied by higher uncertainty. This eventually feeds through to financial asset prices, making them more volatile, and also reduces investment and employment, with a potential negative impact on GDP.[1] The academic literature also underlines how trade and financial links are the main channels of transmission of higher uncertainty across countries and geographical areas.[2] Against this backdrop, the EU's high degree of trade and financial openness, which has long been one of the main reasons for its prosperity, could now become a factor of vulnerability.[3]

One of the sources of Europe's vulnerability to the rise in geopolitical tensions is the high external dependency with respect to some products that are key to the EU economy but which are imported from a small number of non-EU countries. In particular, the EU's goods imports are highly concentrated in China (see Chart 3),[4] which is also the main exporter of some electronic goods (such as computers, optical devices and photovoltaic cells), for which the EU has a relatively low internal production capacity. This reliance on Chinese imports can have significant consequences for the European manufacturing sector. For instance, recent empirical evidence[5] shows that the pandemic-related interruptions in the supply chain from China in the early months of 2020 had a considerable impact on euro area manufacturing output, reducing it temporarily by 7%.

The EU is also highly dependent on some raw materials that are crucial to the energy and digital transitions. The European Commission has a list of 30 raw materials deemed to be "critical" owing to their considerable economic importance, the difficulty in replacing them with other materials, the high import concentration and other supply-related risks.[6] Russia is the EU's main supplier of these raw materials (accounting for 18% of the total value of such imports in 2019), ahead of the United Kingdom, the United States, South Africa, Brazil and China (see Chart 4). The European Commission estimates that demand for some of these critical raw materials will rise fivefold by 2030, thereby drastically increasing the EU's external dependency in this area.

The EU's trade dependency with respect to energy products, in particular gas, is an example of the consequences of a very concentrated supply of a key commodity. Before the invasion of Ukraine, natural gas imports from Russia and, to a lesser extent, Norway played a central role in Europe's value chain. The surge in gas prices (which, as shown in Chart 5, has been much sharper in the EU than in the United States), the drastic reduction in supply from Russia and the difficulties in replacing gas with other energy sources have exerted strong pressure on inflation and become one of the main risks for the European economy in the short and medium term. The estimated impact of the natural gas price

---

1 See D. Caldara and M. Iacoviello (2022), "Measuring Geopolitical Risk", *American Economic Review,* vol. 112 (4), pp. 1194-1225; S. R. Baker, N. Bloom and S. J. Davis (2016), "Measuring Economic Policy Uncertainty", *The Quarterly Journal of Economics,* 131(4), 1593-1636; and M. Diakonova, L. Molina, H. Mueller, J. J. Pérez and C. Rauh, "The information content of conflict, social unrest and policy uncertainty measures for macroeconomic forecasting", *Working Paper* No 2232, Banco de España.

2 See C. Ghirelli, J. J. Pérez and A. Urtasun (2021), "The spillover effects of economic policy uncertainty in Latin America on the Spanish economy", *Latin American Journal of Central Banking,* vol. 2 (2).

3 In addition, a fragmentation of international trade along geostrategic lines could lead to a marked decline in trade flows between different blocs of countries and a consequent erosion of trade-related welfare gains. See R. Campos, J. Estefania-Flores, D. Furceri and J. Timini (2022), "Trade fragmentation", *Documento de Trabajo,* Banco de España, forthcoming.

4 The import concentration of a product is measured using a Herfindahl-Hirschman index, which is obtained as the sum of the squared shares of each exporter country in EU imports. An indication of the internal productive capacity and replacement capacity for a product is obtained through two metrics: (1) the share of intra-EU imports in the total value of EU imports of that product, and (2) the ratio of imports from outside the EU to total EU exports of that product.

5 M. Khalil and M.-D. Weber (2021), "Chinese supply chain shocks", *MPRA Paper* No 110356.

6 European Commission (2020), "Critical Raw Materials Resilience: Charting a Path towards greater Security and Sustainability", COM (2020) 474. "Critical" raw materials include, for example, rare earth, palladium, cobalt, lithium and magnesium.

Chart 1
GEOPOLITICAL RISK INDEX (a)

Chart 2
WORLD UNCERTAINTY INDEX (WUI) (b)

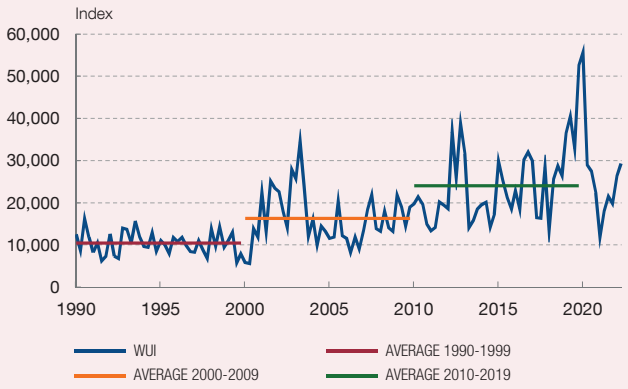


Chart 3
BILATERAL IMPORT CONCENTRATION INDEX FOR THE EUROPEAN UNION (c)

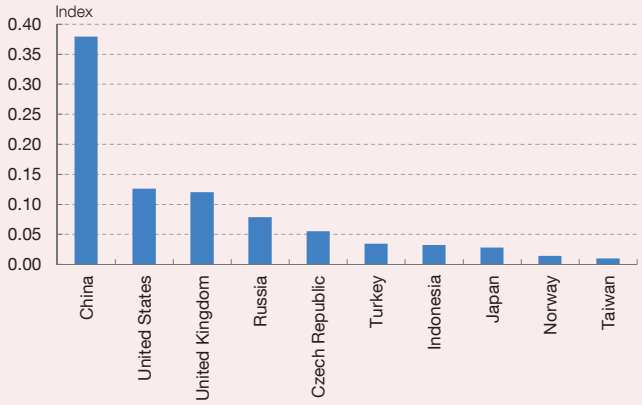
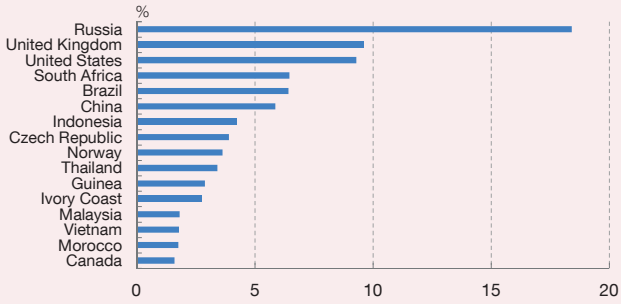


Chart 4
MAIN EXPORTERS OF CRITICAL RAW MATERIALS TO THE EUROPEAN UNION (d)



SOURCES: Ahir et al. (2021), Caldara and Iacoviello (2022) and Banco de España calculations, drawing on product-level data in the CEPII's BACI database (2019 data).

a The geopolitical risk index uses text analysis on English-language newspaper articles, counting mentions associated with geopolitical risks, such as "war", "invasion", "military threat", "military escalation" and "terrorist act" (see D. Caldara and M. Iacoviello (2022), "Measuring Geopolitical Risk", *American Economic Review,* vol. 112 (4), pp. 1194-1225.
b The world uncertainty index is calculated by counting the percent of the word "uncertain" or its variant in the Economist Intelligence Unit country reports (see H. Ahir, N. Bloom and D. Furceri (2022), "The World Uncertainty Index", *NBER Working Paper* 29763).
c The bilateral import concentration is measured by weighting the total value of imports from outside the EU of each group of Harmonised System level 6 (HS-6) products, for which the partner country is the main exporter to the EU, by the respective import concentration index.
d Share in the total value of EU imports of critical raw materials, by country of origin.

increases on euro area inflation suggests the effects will be significant and persistent (see Chart 6),[7] especially the indirect effects stemming from the higher costs of goods that are produced using gas or whose price is closely linked to natural gas prices (for example, electricity).

Geopolitical risks also have a bearing on the EU's foreign direct investment exposures. In all categories of financial flows (direct investment, portfolio investment and bank flows), the EU's main partners are other advanced economies (specifically, the United States, the United

7 L. López, S. Párraga and D. Santabárbara (2022), "The pass-through of higher natural gas prices to inflation in the euro area and in Spain", *Economic Bulletin* 3/2022, Banco de España.

Chart 5
NATURAL GAS PRICES (a)

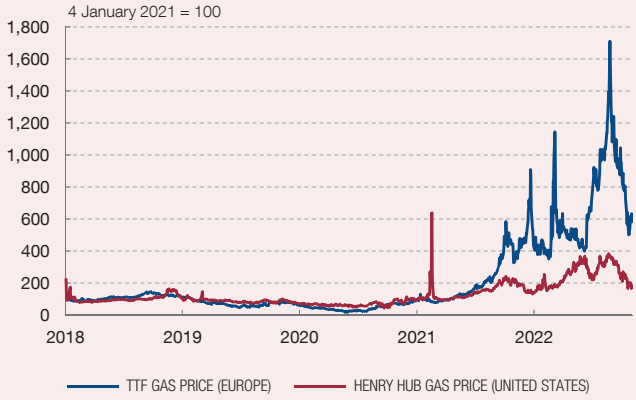


Chart 6
EFFECT ON EURO AREA HICP INFLATION OF A PERMANENT 10% INCREASE IN NATURAL GAS PRICES (b)

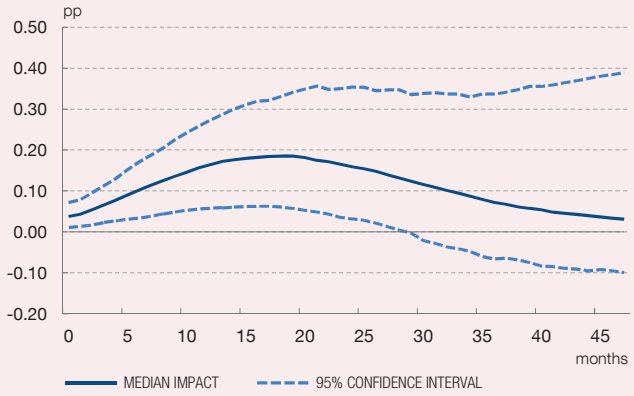


Chart 7
FOREIGN DIRECT INVESTMENT IN THE EURO AREA (c)

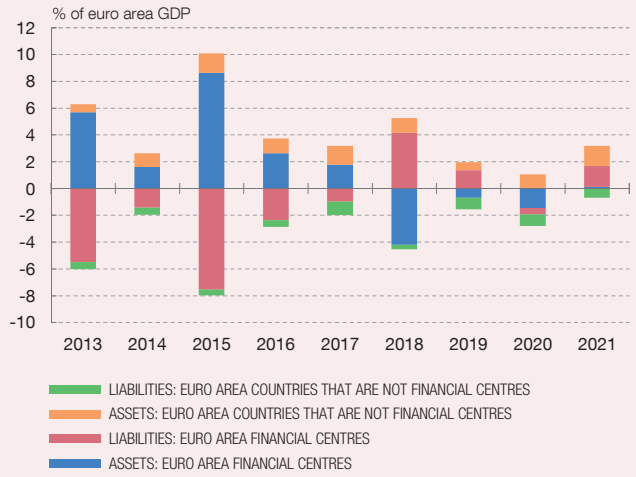
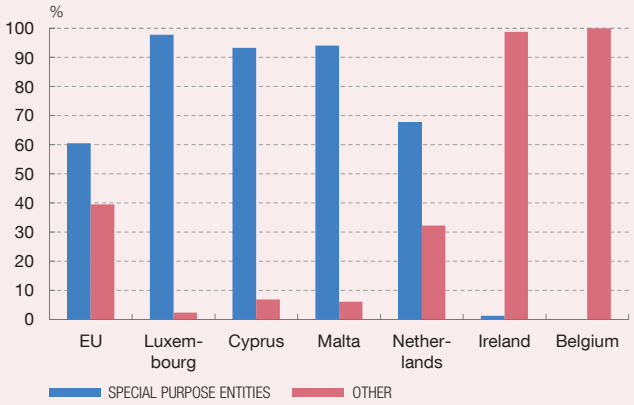


Chart 8
FOREIGN DIRECT INVESTMENT THROUGH SPEs IN THE EUROPEAN UNION. AVERAGE 2015-2020 (d)



SOURCES: BP Statistical Review of World Energy, Eikon, Eurostat and Banco de España calculations.

a Spot prices in both markets are expressed in euro for comparison.
b Impulse-response functions to a permanent 10% increase in natural gas prices, estimated through a Bayesian Vector Autoregression (BVAR) model that includes year-on-year changes in the harmonised index of consumer prices (HICP) (headline HICP, the electricity component and the gas-derived products component), in natural gas prices in Europe and in oil prices (all expressed in euro).
c Net change in flows of foreign direct investment assets and liabilities from/to the EU. The liability flows are shown with a negative sign for visualisation purposes. Negative (positive) flows of assets (liabilities) denote divestments and repatriation of profits. The financial centres in the euro area are Belgium, Cyprus, Ireland, Luxembourg, Malta and the Netherlands.
d The blue vertical bars denote the percentages of foreign direct investment stocks in the EU intermediated by special purpose entities (SPEs), and the pink vertical bars show those not intermediated by SPEs in 2015-2020. Such entities are created in countries with legal frameworks that are favourable from a tax perspective, for transferring the risk off the parent's balance sheet or for confidentiality reasons. They typically form part of sophisticated chains of firms covering several countries.

Kingdom and Switzerland), with emerging countries still representing a very small part of such exposures.[8] However, some aspects make it difficult to identify the ultimate investors in the EU. To begin with, around one-quarter of foreign direct investment in the EU comes from offshore centres. Further, most direct investment flows to

8 In 2015-2020, the United States, the United Kingdom and Switzerland together represented 60% of the EU's foreign direct investment assets and liabilities, with the other advanced countries accounting for a further 10%. China (including Hong Kong) represented around 3% in the same period.

and from the EU are intermediated through six investment hubs (Belgium, Cyprus, Ireland, Luxembourg, Malta and the Netherlands) (see Chart 7), with nearly 60% of direct investment inflows being channelled through special purpose entities (SPEs),[9] which are used mainly for tax or confidentiality reasons (see Chart 8). The empirical analyses[10] that have sought to shed light on these exposures estimate that direct investment flows (not through SPEs) from the United States into the EU may be nearly twice as high as those observed directly, while those from China could be nearly three times so.[11]

In sum, the EU economy is exposed to significant channels of transmission of the negative economic effects of geopolitical tensions. This could contribute to temporary adverse deviations from the current baseline scenarios and even to a shock to the EU's potential growth in the long term. The EU's reliance on energy commodity imports from non-EU countries, in particular from Russia, poses the greatest risks in the short term. However, its dependency on Chinese manufacturing and global financial interconnections are also potential sources of risks over longer time horizons. The energy and digital transformation presents opportunities for mitigating these risks, yet the potential gains – in terms of incorporating new technologies and reshaping trade flows – will only unfold gradually over time. Meanwhile, such risks need to be quantified as accurately as possible and properly incorporated into economic policy and business planning, particularly in the financial sector.

---

9 Such entities are created in countries with legal frameworks that are favourable from a tax perspective, for transferring the risk off the parent's balance sheet or for confidentiality reasons. They typically form part of sophisticated chains of firms covering several countries.

10 C. Alcidi, D. Postica and F. Shamsfakhr (2021), "Study on the Analysis of Developments in EU Capital Flows in the Global Context", *External Contribution,* Centre for European Policy Studies.

11 Thus, C. Alcidi, D. Postica and F. Shamsfakhr (2021) estimate direct flows from the United States (not through SPEs) in 2019 at €1.8 trillion (as compared with the €1.1 trillion observed) and those from China at €116 billion (as compared with the €40.5 billion observed).