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De-risking European trade with China: Implications for Belgium

by K. Buysse, D. Essers and E. Marchand



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Introduction

“We see a clear push to make China less dependent on the world, and the world more dependent on China.”

Ursula von der Leyen

Speech to the Mercator Institute for China Studies and the European Policy Centre, 30 March 2023

Geopolitical tensions and risks of fragmentation of the world economy into opposing blocs have increased. Recent shocks – including COVID-19, Russia’s invasion of Ukraine, Europe’s energy crisis, and conflicts in the Middle East – have awakened concerns amongst policymakers as to sudden, potentially costly trade disruptions and their implications for economic security. Furthermore, selective trade decoupling, notably between the US and China, the EU and Russia, and China and advanced Asian countries, can already be observed, especially in sectors regarded as more strategic, such as semiconductors, other advanced electronics and energy products (ESCB-IRC, 2024).

Given its open trade model, these developments are particularly relevant for the EU, and by extension for a small open economy like Belgium. Although maintaining an open, multilateral perspective remains Europe’s preferred option since broad-based protectionism would result in substantial welfare losses, there is a growing awareness of the need for coherent policies to enhance resilience to geopolitical shocks. This will require a de-risking of trade, which may entail promoting self-reliance and/or further diversifying trading partners in specific sectors in which the EU is deemed too dependent on a single foreign partner. Based on public statements and recent parliamentary resolutions, Belgian policymakers appear to agree with the need for de-risking.¹ However, some argue that a lack of expertise and knowledge, the fragmentation of powers across different levels of government, and political discord “leave the Belgian debate uninformed, superficial and reactive” and hamper the implementation of policy initiatives (Pepermans and De Decker, 2024).

As a key trading partner, a global manufacturing powerhouse with a strong export orientation, and an authoritarian country that does not shy away from economic coercion, China is at the centre of European concerns. The EU aims to de-risk its relationship with China, not decouple from it, suggesting that the EU does not envisage trading less with China but rather trading more with countries both within and outside the single market. This position reflects the still widely held view that trade relations with China are, for the most part,

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¹ See, in particular, Parliamentary Resolution Doc 55, No. 2591/006 of 2 February 2023, which was adopted by a large majority.

beneficial to the EU (and Belgium). China's large market is a magnet for European businesses, offering both export and investment opportunities. At the same time, China supplies the EU with attractively priced products in many areas, including key inputs for the green and digital transitions.

The main purpose of this article is to provide insight into EU and Belgian trade (and, to some extent, supply chain) exposure to China and the associated vulnerabilities, it being noted that financial integration with China is much less developed. Reference should be made to other studies for analyses of European exposure to China in (related) areas such as inward/outward FDI, technology, and R&D/innovation (see, e.g., EC-JRC, 2022; ESCB-IRC, 2023; Kratz *et al.*, 2024; Vandermeeren, 2024). Our focus is on investigating macro-level trade exposure, while acknowledging that this needs to be complemented with firm-level analysis to obtain a more complete picture of where Europe's and Belgium's vulnerabilities lie in their trading relations with China.

We first briefly lay out the EU's de-risking strategy, the instruments at its disposal to implement this strategy and the risks related to high trade dependence on China (section 1). We then map the direct and, to some extent, indirect trade exposure of the EU and Belgium to China using publicly available macroeconomic data on exports, imports and value added (section 2). We look at aggregate flows, their sector-level composition and product-level statistics. We identify the most strategic dependencies using a bottom-up approach that draws on the European Commission's work, combining product-level measures of the level and concentration of demand in extra-EU supplier/destination countries with information on the relevance of imported products for national security, health, energy, and the green and digital transitions. We also apply this approach to Belgium. Finally, we illustrate how firm-level analysis may offer additional insight, by briefly reviewing recent ESCB work in this area (section 3).

1. De-risking from China: An overview of EU policies

1.1 A new EU trade policy tailored to a more hostile international environment

Europe has thrived due to a high degree of openness to international trade and investment under a multilateral rules-based system. However, the EU's longstanding enthusiasm for unfettered globalisation is coming under pressure from a changing world marked by rising geopolitical tensions. Recent events have raised awareness of the potential harm that can be inflicted through trade relationships – be it in the form of exogenous shocks (such as COVID-related trade disruptions) or deliberate actions by foreign governments (such as Russia's unlawful invasion of Ukraine or China's economic coercion against Lithuania and Australia). Such risks of disruption are particularly relevant today owing to the combination of the EU's deep trade integration, specialisation, long supply chains, and international actors willing to engage in coercion through trade channels (Pisani-Ferry *et al.*, 2024). For these reasons, the EU has begun to contemplate policies to better manage its trade-related vulnerabilities.

The need to rethink Europe's trade strategy was clearly articulated by European Commission President Ursula von der Leyen in a speech given on 30 March 2023 to a joint meeting of the Mercator Institute for China Studies (MERICS) and the European Policy Centre (EPC).² She called for a reassessment of the EU's (trading) relationship with China and concluded that while decoupling from China is neither viable nor in Europe's interest, a greater focus on de-risking trade with China is imperative. Dependencies on exports to and, especially, imports from China have grown in many sectors over the years, sometimes to exceedingly high levels, leaving the EU vulnerable to a weaponisation of trade. The first step in the EU's de-risking strategy entails obtaining an in-depth understanding of the bloc's trade dependencies on various extra-EU27 countries for both imports and exports and then assessing which dependencies can be considered of strategic importance. This step constitutes the focus of most of this article (section 2).

2 For the full speech, see https://ec.europa.eu/commission/presscorner/detail/en/speech_23_2063.

This de-risking strategy is embedded in a broader economic security strategy³ aimed at “promoting the EU’s economic base and competitiveness, protecting against risks, and partnering with the broadest possible range of countries to address shared concerns and interests” (EC, 2023). Although the European Commission plays a central role in economic affairs, it lacks a strong national security mandate and thus tends to approach the issue of economic security as a matter of trade policy rather than national security (Chimits *et al.*, 2024). While maintaining its commitment to trade openness, the Commission wishes to avoid overdependence by the EU on a single country, for fear that this could undermine its sovereignty.

3 The EU’s economic security strategy addresses four main categories of risks: (i) risks to the resilience of supply chains, (ii) risks to critical infrastructure including cybersecurity, (iii) risks to technology security and (iv) risks of economic coercion (Chimits *et al.*, 2024).

Table 1

European instruments to support the de-risking of international trade and investment¹

Policy	Year	Description
Promotion of EU competitiveness and economic resilience		
Health Emergency Preparedness and Response Authority (HERA)	2021	HERA aims to improve the resilience and availability of medical supplies by identifying key supply chain bottlenecks and addressing them through measures such as coordinated stockpiling and joint procurement (Pisani-Ferry <i>et al.</i> , 2024).
European Chips Act (ECA)	2023	ECA is structured around three pillars: (1) public/private funding to strengthen EU semiconductor research and innovation, (2) support in the form of (otherwise prohibited) state aid to boost the production of cutting-edge chips in the EU, and (3) the monitoring of supply chain risks and crisis response (ESCB-IRC, 2023).
Net Zero Industry Act (NZIA) + Temporary Crisis and Transition Framework (TCTF)	2023	NZIA sets a target for European net-zero manufacturing and aims to streamline the administrative procedures for the permitting and procurement of such projects. TCTF provides the Member States with additional flexibility to support clean tech manufacturing, including the possibility to match third-country state aid (Essers, 2023).
Critical Raw Materials Act (CRMA)	2024	CRMA tackles the issue of highly concentrated imports of certain critical raw materials. It seeks to boost domestic extraction, processing and recycling through accelerated permitting procedures, improved access to finance, the promotion of circularity, and international engagement (Buysse and Essers, 2023).
Internal Market Emergency and Resilience Act (IMERA)	2024	IMERA aims to ensure continued access to critical goods and services. Although primarily intended for COVID-type emergencies, it also covers disruptions to the single market triggered by conflicts, such as Russia’s invasion of Ukraine (Pisani-Ferry <i>et al.</i> , 2024).
Trade and investment defence instruments		
FDI screening regulation	2020	The Commission introduced a common EU framework for the screening of inward FDI by Member States. The latter must notify the Commission of any inward FDI subject to screening. A proposed update is intended to ensure that all Member States have a screening mechanism in place, with better harmonised national rules (Buysse and Essers, 2019).
Foreign Subsidies Regulation (FSR)	2023	FSR aims to prevent companies that have benefited from foreign subsidies from gaining advantages within the single market, notably in areas such as mergers and acquisitions and public procurement. It complements the anti-subsidy measures (Kenningham, 2024).
Anti-Coercion Instrument (ACI)	2023	ACI is a retaliatory trade defence instrument intended to be applied in cases of economic coercion against an EU Member State (or the EU itself). If triggered, the EU can take a broad range of countermeasures (such as the imposition of tariffs and restrictions on trade, services, IP rights and procurement) (McCaffrey and Poitiers, 2024).

Sources: Own summary based on listed references and broader literature.

1 This list is not meant to present an exhaustive overview of all recent measures that can potentially contribute to the de-risking of trade and investment.

An effective way of reducing excessive trade dependencies is to diversify suppliers and export markets through the broadening of international trade relationships and the conclusion of free trade agreements with “friendly” countries. In 2023, the EU concluded free trade agreements with New Zealand and Chile. It also established new strategic partnerships⁴ with third countries to secure its supply of critical raw materials (CRMs). The second pillar of the EU’s de-risking strategy consists of strengthening the resilience of European economies to geopolitical shocks, regardless of the cause. This objective is arguably best served by a better functioning and more flexible single market (Pisani-Ferry *et al.*, 2024). However, policy responses to economic security threats have often taken the form of vertical, industrial policy-like measures, i.e. targeted interventions to boost or protect domestic production in specific sectors with a high degree of economic importance (health, digital and green technologies). The third pillar of the de-risking strategy entails better use and expansion of the existing toolbox of trade defence instruments, to ensure a level playing field on an international scale. Table 1 summarises the main measures taken in recent years to help implement the EU’s de-risking strategy.

This de-risking strategy has gained political support in most EU Member States, although their positions are not completely aligned and they play different roles in relation to de-risking (from China). Andersson and Lindberg (2024) classify the Member States into four groups: early adopters, endorsers/followers, cautious followers and opponents. France, which was an early advocate for more robust economic security tools at the EU level (including FDI screening, industrial policy and the ACI), is a prominent example of the first category. Likewise, the Netherlands was an early adopter of risk-reducing measures, blocking several Chinese takeover bids in 2018 and prohibiting (under US pressure) its national semiconductor champion, ASML, from exporting its most advanced chip-making technology to China in 2019. Belgium is seen as a follower, albeit a slow one, as the development and implementation of a coherent China strategy are hindered by a lack of expertise and internal fragmentation (Pepermans and De Decker, 2024). Germany takes a more cautious position in its dealings with China, mindful of its strong business interests in China as an export market and relatively high dependence on Chinese suppliers. German firms also hold the largest stock of FDI in China (Kenningham, 2024). Hungary is arguably the only Member State that opposes the EU’s de-risking strategy, with de-risking from China not on its political agenda. On the contrary, the Hungarian government takes pride in attracting an increasing number of Chinese investors to the country (Matura, 2024).

The implementation of the EU’s de-risking strategy faces practical hurdles imposed by a complex governance system. Whereas certain trade defence measures, such as anti-dumping and countervailing duties, FSR and ACI, are under the control of the Commission, other tools, like FDI screening and export controls, are the responsibility of the Member States, with the Commission performing a coordinating role. As the individual Member States tend to progress at varying speeds, EU-wide implementation of FDI screening and export controls⁵ can take a long time. For example, it took seven years of intergovernmental discussions in Belgium before its inward FDI screening mechanism became operational in July 2023 (Pepermans and De Decker, 2024). And while the EU regulation aims to facilitate convergence in national screening regimes, there is little evidence of actual legislative convergence so far (Bencivelli *et al.*, 2023). In January 2024, the Commission tabled proposals⁶ for a Europeanisation of inward and outward FDI screening and export controls based on an assessment of risks to the EU and the bloc’s own interests. While this would allow for a more resolute response to rising security concerns and the uniform implementation of decisions across the EU, the project remains a red line for some Member States, which view it as interference with their national foreign and security policies (Chimits, 2024).

4 The EU has established such CRM-focused partnerships with Canada, Ukraine, Kazakhstan, Namibia, Argentina, Chile, DR Congo, Zambia, Greenland, Rwanda, Norway and Uzbekistan. More partnerships are currently being negotiated (Buysse and Essers, 2023).

5 Dual use goods (those with both military and civilian applications) are subject to an authorisation when exported outside the EU. These checks generally derive from the obligations and commitments incumbent on the EU Member States or the EU under international non-proliferation agreements and multilateral export control regimes, which have been implemented in a uniform manner in the EU.

6 Proposal for a new regulation on the screening of foreign investment, White Paper on outbound investment, and White Paper on export controls.

Other recent legislative initiatives aimed at boosting the EU’s competitiveness and economic resilience, such as the ECA, the NZIA and the CRMA, are textbook examples of targeted industrial policies. They are a response to similar policies enacted by the United States under the Biden administration (Essers, 2023). The implementation of industrial policies is mainly the responsibility of national governments. Progress in this area is thus likely to be slower and could be inconsistent depending on the Member States’ attitudes towards China (Kenningham, 2024). In addition, the rebirth of industrial policy in the EU has led to a more lenient approach to state aid, the bulk of which is provided by the Member States. This risks jeopardising the single market’s level playing field, in particular when countries with more fiscal space create their own green or digital industrial policy packages (Tagliapietra *et al.*, 2023) and deploy fiscal incentives to attract investment by leading multinationals.⁷

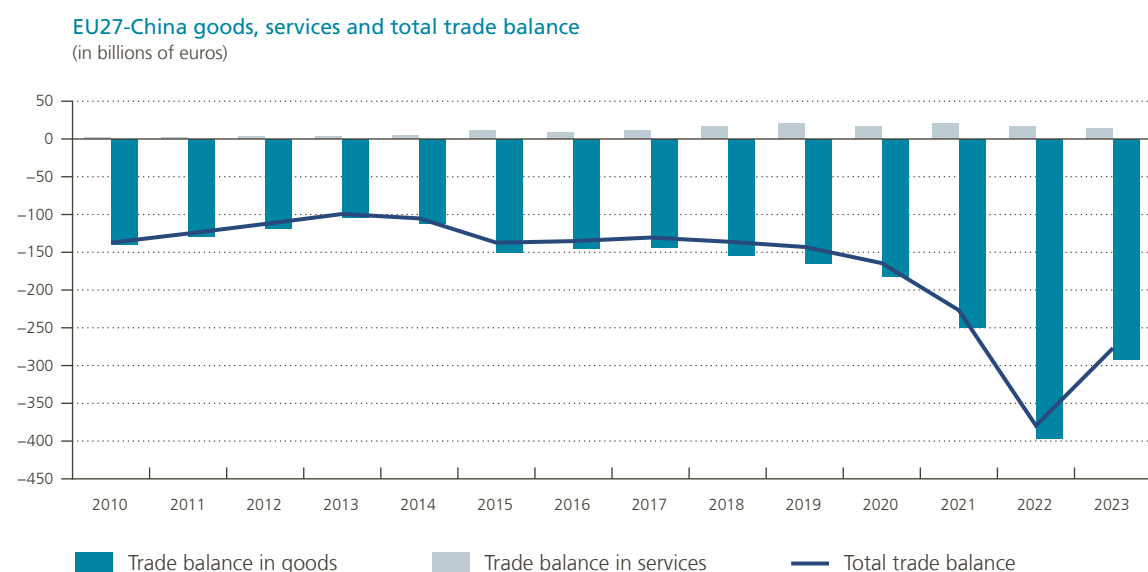
1.2 A strained (trade) relationship with China lies behind the EU’s de-risking strategy

Over the past two decades, the nature of economic relations between Europe and China has evolved. The two economies were once largely complementary but have now entered an era of more direct competition in potentially strategic sectors (see section 2.2). This shift prompted the Commission to label China, in its 2019 strategic outlook on the country, as “a cooperation partner, a negotiating partner, an economic competitor and a systemic rival”, depending on the policy area (EC, 2019). Since then, the EU’s perception of China as a systemic rival, and increasingly a security threat, has become more pronounced due to China’s slide towards a more repressive regime under President Xi, its emergence as a military power, its “no-limits” friendship with Russia at a time of war, and rising military tensions in the Taiwan Strait. Together with China’s explicit fusion of its military and commercial sectors, these developments imply that trade and investment in some areas may pose risks to the EU’s economic and national security. The fact that EU-China trade relations, while still viewed as mutually beneficial, are increasingly tilted in China’s favour further complicates matters.

7 A notable example is the German subsidy package for chip maker Intel to build a plant in Magdeburg.

Figure 1

The EU’s trade balance with China has deteriorated over time

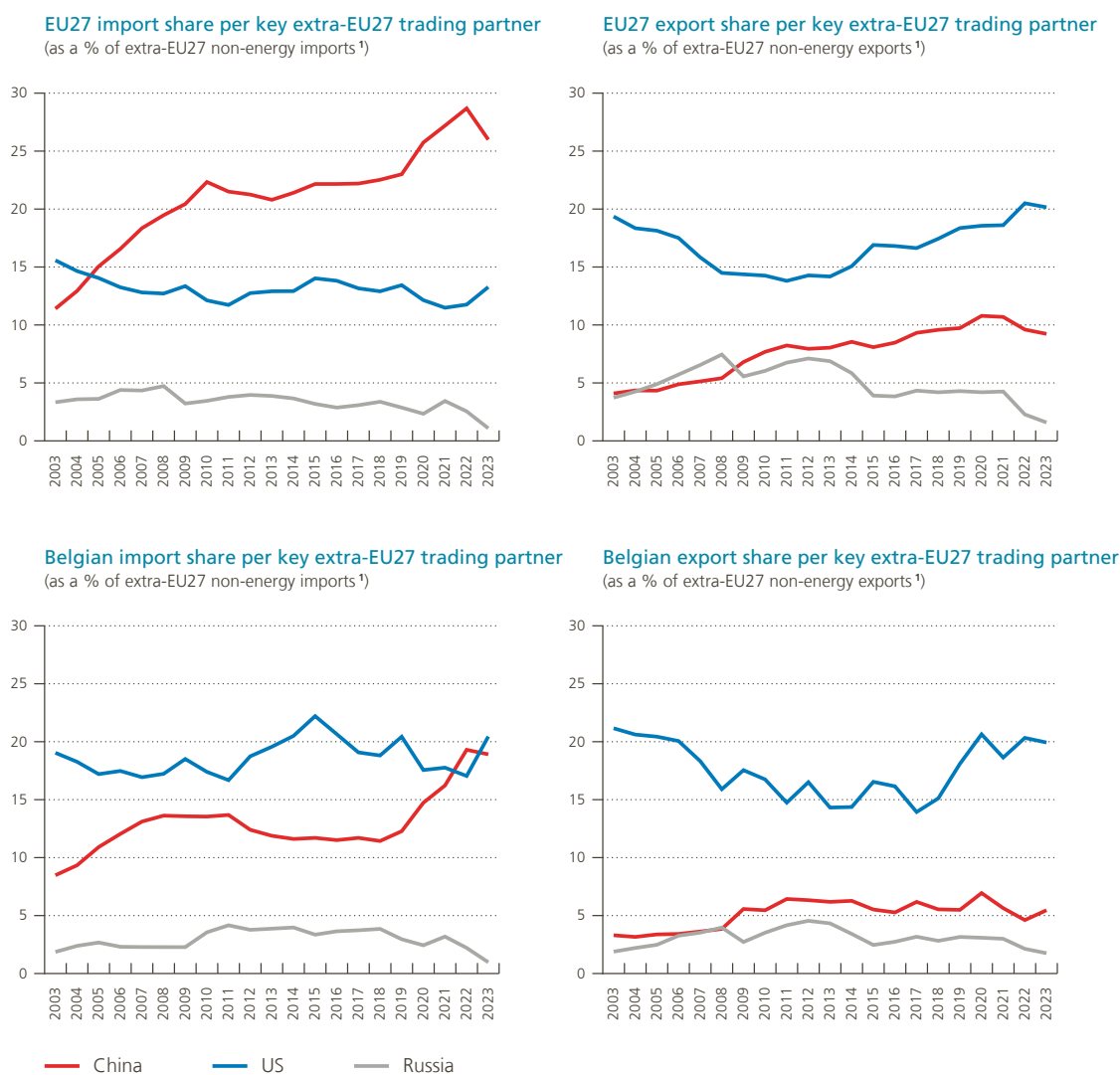


Source: Eurostat Comext.

While remaining relatively stable albeit negative over the past decade, the EU's trade balance with China has deteriorated sharply since the outbreak of the COVID-19 pandemic, reaching an all-time low of €380 billion in 2022 (Figure 1). This can largely be explained by developments on the imports side. The worldwide lockdowns induced by the pandemic caused a sudden shift in demand towards durable consumer goods like computers and electronics – the global production of which is dominated by China – which boosted Chinese imports into the EU. The outsized trade deficit recorded in 2022 appears to be in part due to exceptional factors, such as the positive impact on trade values of the restocking of depleted inventories and price spikes in sectors hit by severe disruptions, as well as very weak domestic demand in China under the severe lockdowns which pushed Chinese firms towards export markets (Matthes, 2024). By 2023, these pandemic-induced effects had been reversed, and the EU's trade balance with China consequently improved. However, it remains significantly more negative than in 2019. As will be explained shortly, this is a source of concern for the EU.

Figure 2

The EU's and Belgium's direct trade exposure to China has grown over the past two decades, especially on the imports side



Source: Eurostat Comext.

1 Total extra-EU27 imports (or exports) less imports (or exports) of energy products (HS chapter 27).

The rise of China as a manufacturing powerhouse is first and foremost reflected in a rapid expansion of trade between the EU and China. China's share of extra-EU imports and exports has nearly tripled since 2002 – from 9 % to 26 % and from slightly over 3 % to 9 %, respectively, excluding trade in energy products. China's extra-EU27 import share expanded rapidly until the global financial crisis and, more surprisingly, again starting in 2020 (top left graph in Figure 2), while its extra-EU27 export share gradually increased until 2020 (top right graph in Figure 2). Its share of Belgian extra-EU imports and exports (again, excluding energy products) was 18.9 % and 5.5 %, respectively, in 2023 (bottom graphs in Figure 2), thus below the EU27 median, as the Belgian economy is more services oriented.⁸

The strong growth of Chinese imports into the EU since 2019 in part mirrors the marked deceleration of economic growth in China over the same period. More specifically, a deep correction in the real estate market, which started in the second half of 2020, and the Chinese government's poor handling of the pandemic both undermined consumption, as households and private firms lost confidence. New investments in real estate, traditionally a driver of growth in China, also collapsed. The Chinese authorities responded to flagging growth rates with their usual focus on supply-side policies in the form of more investment support for manufacturing, broadly speaking, and the promotion of "new quality productive forces" (Party talk for cutting-edge technological sectors) (EC, 2024; IMF, 2024). It should be noted that China currently already accounts for 28 % of global manufacturing (Pettis, 2023) and dominates global export markets for numerous products (Jean *et al.*, 2023). Moreover, China's economy is extremely unbalanced⁹ on the domestic demand side as a result of longstanding overreliance on a growth model based on subsidised investment and export-oriented manufacturing with financial repression, which indirectly depresses household consumption (Buyse *et al.*, 2018). Against this backdrop, China's aim of sustaining a 4 % to 5 % economic growth rate can only be achieved through the ongoing expansion of manufacturing production and exports – with the implied sectoral excess capacities (Pettis, 2023). In other words, China's imbalance between domestic production and consumption implies that it relies on foreign demand to sustain its economic growth and production base (Matthes, 2024). It is increasingly recognised, including within China, that substantial overcapacity exists in, among other industries, steel, solar panels, batteries and electric vehicles (EVs) (Chorzempa, 2024). Given the current size of China's economy, this results in tangible negative spillovers on industrial production elsewhere, leading to tensions with trading partners.

Another source of concern for trading partners relates to China's extensive use of industrial policies to steer its economy in line with the objectives set by the Chinese Communist Party. As was made explicit in the Made In China 2025 plan, launched in 2015, industrial policies have the dual objective of upgrading China's manufacturing capabilities and reducing its dependence on foreign technology. It is common for firms (both state-owned and private) in priority as well as traditional sectors to receive support from different levels of government as well as preferential access to credit at below-market interest rates. DiPippo *et al.* (2022) develop a comparative method to estimate industrial policy spending in eight countries¹⁰ and find that China's spending reached 1.7 % of GDP in 2019, compared with 0.67 % for the second largest spender (South Korea) and 0.33 % for the lowest spender (Brazil). These estimates are believed to err on the side of caution. Another study by the OECD (2023a), based on firm-level data, calculates that industrial firms in China received aid (including government grants and below-market rate loans) totalling nearly 3 % of their annual revenue, thus far in excess of the OECD average of less than 0.2 %. Chinese firms also receive more tax concessions relative to their revenue: 0.75 % against 0.32 % for OECD-based firms. Recent empirical work by Rotunno and Ruta (2024) suggests that China's industrial policies may have significant effects on trade flows, including through input-output linkages. Exports in sectors that directly receive support from subsidies (broadly defined as grants, loans and tax exemptions) expand over time, as do exports in downstream sectors, relative to those that do not receive such support. Domestic subsidies are also associated with lower imports, including in downstream sectors, suggesting that China's industrial policies

8 In 2023, China accounted for 7.1 % and 1.8 %, respectively, of all non-energy Belgian imports and exports – including large intra-EU trade flows (accounting for 62.7 % of Belgian imports and 67.1 % of exports).

9 China has a chronically low consumption share and extremely high investment rate, estimated at 37.5 % and 43.2 % of GDP, respectively, in 2022 (IMF, 2024).

10 The countries included in the study are Brazil, China, South Korea, Japan, Taiwan, France, Germany and the US.

create import substitution effects (as intended). The automotive, computing, chemicals, industrial equipment and metals sectors are among the top recipients of subsidies in China (IMF, 2024).

China's industrial policies are increasingly provoking a backlash from its trading partners. The strongest response so far has come from the US, where a bipartisan consensus on the need to decouple from China has resulted in a wide array of measures.¹¹ As indicated above, the EU is not (yet) prepared to venture this far down the protectionist path and prefers to address excessive dependencies on China primarily through the diversification of its supply chains. The EU's more nuanced position towards China could be a hedge, as the future of the bloc's trading relationship with the US remains uncertain given the risk of a second term for Trump, who has vowed to impose a 10% tariff on all imports into the US and much higher tariffs on Chinese imports (Bown, 2024). At the same time, the EU is under pressure from its own firms over rising levels of Chinese imports. The rapid increase in the value of Chinese EV imports,¹² starting in 2021, set off alarm bells in some Member States about a possible China shock to the European automotive industry. Determined to show more assertiveness and use the trade defence tools at its disposal, the Commission initiated an anti-subsidy investigation into Chinese EVs in October 2023. The investigation concluded that China has made a concerted "whole of government effort"¹³ to subsidise the EV supply chain, which it has long identified as strategic. As a result, the Commission officially imposed countervailing duties of between 17% and 38% on imported Chinese EVs, on top of the current import duties of 10%, in July 2024. These tariff hikes still need to be confirmed by the Member States in November, with some countries, including Germany and Hungary, showing reluctance for fear of retaliation from China. The imposition of punitive tariffs by the EU may not shield European EV makers from pressure by Chinese producers if the latter decide to serve the European market through local production, which is likely to occur, as earlier experience with Japanese and Korean carmakers has shown (Mayer *et al.*, 2024). In fact, the EU remains open to Chinese FDI in the EV sector.¹⁴

Finally, China has adopted a more assertive stance in international affairs under President Xi, and the country has not shied away from using economic coercion to further its own agenda or to deter companies and governments from making public statements on sensitive issues. Adachi *et al.* (2022) identify 123 publicly known cases of coercion by China against companies and foreign governments between 2010 and early 2022 and finds that the Chinese government uses a range of measures in response to actions taken by foreign governments, from popular boycotts of companies to trade and tourism restrictions and empty threats, at minimal cost to the Chinese economy through pragmatic target selection (e.g. the consumer goods, agricultural and services sectors). They also find that China has stepped up its use of economic coercion since 2018. The costs of the coercive measures employed by China in targeted countries appear to be very limited at an aggregate level but can be more significant at sector level (McCaffrey and Poitier, 2024). In any case, the EU should prepare for more retaliatory measures by China having regard to its deteriorating relationship with the country, as illustrated by China's recent opening of an anti-dumping probe into pork and brandy imports from Europe (Leahy *et al.*, 2024).

11 The backlash in the US against China intensified with the tariff war under the Trump administration. The Biden administration has not only maintained higher tariffs on a large share of Chinese imports, but also added more measures, such as restrictions on China's access to advanced semiconductors, tighter screening of investments from and to China, protectionist provisions in the Inflation Reduction Act and, most recently, a hike in tariffs on lithium-ion batteries, natural graphite, permanent magnets, solar cells and selected medical products.

12 The value of EVs imported from China into the EU rose from €3.5 billion in 2021 to nearly €10 billion in 2023 according to Eurostat. It should be noted, however, that foreign brands produced in China, such as Tesla, Dacia and BMW, represent a large share of European EV imports from the country (Mayer *et al.*, 2024).

13 One example is the lack of a 13% value-added tax rebate on exported lithium, which incentivises local producers to sell domestically, lowering the price in China for this essential input produced in large quantities there. Another example is that the two largest battery producers, CATL and BYD, can purchase lithium iron phosphate at favourable prices set by the Chinese government through a special pricing mechanism (Jimenez Buendia, 2024).

14 For example, French President Macron has already declared that Chinese EV manufacturers are welcome to build factories in France.

2. Trade exposure to China and associated vulnerabilities

2.1 Trade balance with China by Member State

The EU's overall trade in goods deficit with China results from the fact that most Member States have a negative bilateral trade balance with the country (Figure 3). Apart from Germany and three small EU economies (Finland, Ireland and Luxembourg), all Member States imported more from China than they exported to it in 2023. According to Eurostat, Belgium had the sixth largest goods deficit with China, at around €22.6 billion, after the Netherlands (a clear outlier with a bilateral deficit of approximately €95 billion), Spain, Poland, Italy and the Czech Republic. Like the EU-wide trade deficit (see Figure 1 in section 1.2), the trade deficits of most EU Member States with China have widened markedly since the pandemic, due to surging imports (alongside more gradually increasing exports), with a modest reversal between 2022 and 2023. Belgium is no exception to this trend; its trade deficit with China grew from less than €6 billion in 2012 to just under €10 billion in 2019 and jumped to a record high of €27.7 billion in 2022.¹⁵ In Germany, the growing bilateral trade surplus between 2015 and 2019 had turned into a large deficit by 2022, despite growing exports to China.

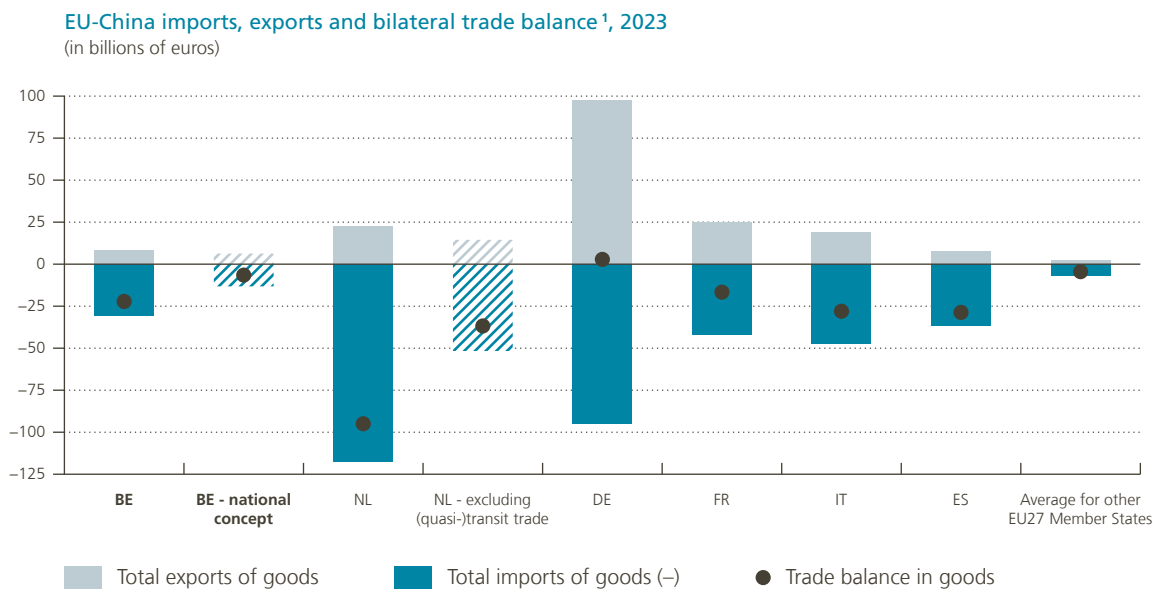
The three largest EU exporters to China are Germany (by a wide margin), France and the Netherlands. Germany also has the highest share of extra-EU exports (13.6%) destined for China (Eurostat, 2024). On the imports side, the Netherlands, Germany and Italy were leading the pack in 2023, with the Czech Republic having the highest share of extra-EU imports from China (43.7%).¹⁶

15 In addition to the factors highlighted in section 1.2, anecdotal evidence collected from NBB Business Echo interviews suggests that the exceptionally high energy prices of 2022 led to adjustments in the sourcing of production inputs. The cost of local (sometimes in-house) production of such inputs outweighed that of imports from economies with lower energy and labour costs, e.g. China.

16 Vandermeeren (2024) demonstrates that more industry-oriented EU Member States – a category that includes Germany as well as some Central and Eastern European countries – tend to exhibit higher shares of Chinese imports.

Figure 3

Most EU Member States have a sizeable trade deficit with China



Sources: CBS, Eurostat Comext, NAI, NBB.

1 For Belgium, the shaded bars show Chinese imports/exports of goods according to the national concept, i.e. excluding cross-border movements of goods in Belgium involving two non-resident parties. For the Netherlands, the shaded bars show Chinese imports/exports excluding transit trade, i.e. goods traded between non-resident parties that cross the Dutch border without any significant processing in the country, and quasi-transit trade (re-exports), i.e. goods that cross the Dutch border without any significant processing in the country but which are temporarily owned by a Dutch resident.

Dutch and Belgian trade flows with China, as reported by Eurostat, especially imports, are distorted by the “Rotterdam-Antwerp effect” : as per EU conventions, goods arriving in Dutch/Belgian ports and subsequently dispatched to other EU Member States (or other countries more generally) are recorded as extra-EU imports by the Netherlands/Belgium. Figures from Statistics Netherlands (*Centraal Bureau voor de Statistiek* or CBS), which explicitly exclude such flows, show a Dutch trade deficit with China that is only half the size of that reported by Eurostat, especially due to much smaller bilateral imports (Figure 3). Likewise, figures compiled by the National Accounts Institute (NAI) based on the “national concept”, which excludes cross-border movements of goods in Belgium involving two non-resident parties, indicate a more modest 2023 Belgian trade deficit with China of €6.9 billion. Notwithstanding the foregoing, even after removing the bias introduced by transit trade, Belgium’s trade deficit with China has been increasing since the pandemic, with a peak in 2022.

2.2 Composition of trade with China

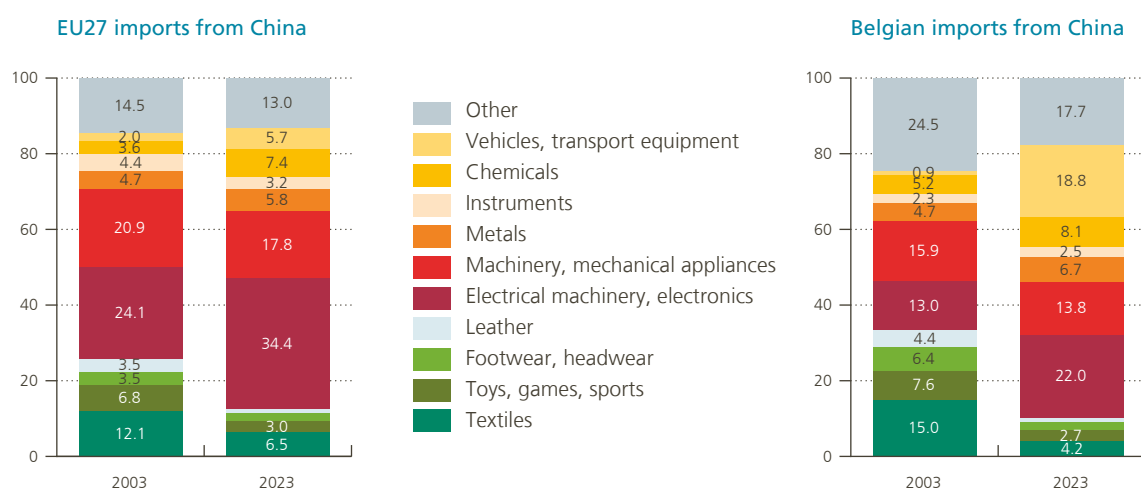
In addition to an increase in overall EU trade with China, there has been a shift in the underlying composition of EU-China trade flows over time. Between 2003 (thus two years after China joined the World Trade Organization) and 2023, the weight of electronics (including lithium-ion batteries, smartphones, telecom equipment, semiconductor chips and photovoltaic solar panels); chemical products (various organic and inorganic compounds and pharmaceuticals); and vehicles and other transport equipment (electric cars, motorcycles, ships and vehicle parts) in EU27 imports from China increased, at the expense of (typically) less sophisticated product groups such as textiles, toys and sport articles, foot- and headwear, and leather products (see the left-hand chart in Figure 4). For Belgium, similar changes in the composition of Chinese imports can be observed, albeit with larger relative gains for vehicles (from 1 % to 19%, mostly due to electric cars) and a greater relative reduction in textiles (from 15 % to 4 %) (see the right-hand chart in Figure 4).¹⁷ Overall, it could be argued that the nature of European imports from China has become more

17 When based on figures compiled according to the national concept, the share of vehicles and chemical products in total Belgian imports from China is somewhat smaller, or larger, for 2023 (11 % and 12 %, respectively).

Figure 4

The composition of European and Belgian imports from China has shifted towards (potentially) more “strategic” goods¹

(product group shares, in %)



Sources: Eurostat Comext, Vandermeeren (2024).

1 Product groups are constructed by combining HS chapter codes, which consist of two digits.

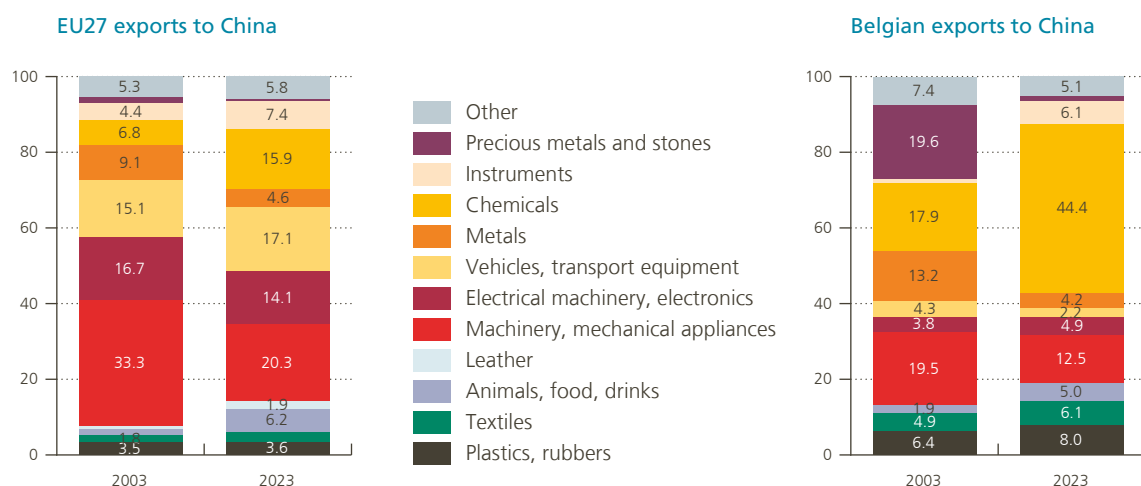
“strategic”, since products like batteries, phones, chips and pharmaceuticals tend to be regarded as more “critical” and/or “sensitive” than, say, toys or clothes (Vandermeeren, 2024). We will revisit the concept of “strategic” import dependencies in section 2.4, where we look in more detail at product-level statistics and consider aspects such as import diversification, product scarcity, substitution possibilities and the strategic applications of goods.

European exports to China have also changed in composition. Broadly speaking, between 2003 and 2023, EU27 exports shifted away from machinery (with relative declines in, for example, engine parts, machinery for textile production and boilers) – in line with China’s doubling down on industrial value chain upgrading (see Buysse *et al.*, 2018) – towards chemical products (including blood, vaccines and other medicaments) (see the left-hand chart in Figure 5). In terms of Belgian exports to China, the shift towards chemicals is much more pronounced (from 18 % to 44 %, with a dominant contribution by pharmaceutical products), at the expense of machinery as well as precious stones and metals (primarily reduced diamond exports) and base metal products (see the right-hand chart in Figure 5).¹⁸

Figure 5

Chemical products have seen the fastest growth in both European and Belgian exports to China¹

(product group shares, in %)



Source: Eurostat Comext.

1 Product groups are constructed by combining HS chapter codes, which consist of two digits.

2.3 Trade in value added with China

Direct trade statistics provide only a partial view of Europe’s economic exposure to China. European production also relies indirectly on Chinese inputs, through goods imported from third countries that in turn use Chinese components. Likewise, inputs that originate in Europe may end up in China through their incorporation into goods that third countries export to China. To study total exposure across international supply chains, we use the trade in value added (TiVA) indicators constructed by the OECD on the basis of harmonised intercountry input-output tables, mapping the flows of final and intermediate goods and services between industries and countries. The latest TiVA indicators cover 76 economies and 45 unique industries over the years 1995 to 2020 (OECD, 2023b).

18 The composition of Belgian exports to China based on figures compiled according to the national concept is very similar.

TiVA data on the origin of value added in final demand by EU27 and Member State sectors show that in 2019 (the last available year before the pandemic), China was an important source of value added in several European manufacturing industries (Figure 6). Industries such as textiles, electronics, base metals and electrical equipment were particularly exposed to Chinese inputs along international supply chains, with the contribution of Chinese value added to production ranging from 10 % to 20 % or more, depending on the Member State. Aggregated across all European economic sectors, including mining, agriculture and services, the contribution of Chinese value added was much more modest, at around 2 %. In the pharmaceutical, car and other transport equipment, and fabricated metal industries as well, total exposure to Chinese inputs remained limited, at least until 2019.¹⁹ Belgian industries broadly follow the EU27 pattern of exposure, but tend to be somewhat less dependent, both directly and indirectly, on China than in the Netherlands and the largest EU Member States.

On the exports side as well, Europe’s total exposure to the Chinese market has increased. Some EU Member States that are less exposed to China via direct exports exhibit significantly higher exposure once indirect exports through international supply chains are taken into account (Vandermeeren, 2024). According to TiVA data on the absorption of domestic value added into foreign final demand, 3.7 % of Belgian value added and 4.7 % of Dutch value added that ended up abroad was ultimately absorbed by China in 2019 – which is larger than the share of gross exports from Belgium and the Netherlands that went to China.²⁰ A substantial proportion of this additional indirect exposure is through the provision of services to other European exporters, notably Germany, that have stronger direct exposure to China.

19 For more recent years, updates of the TiVA data will likely show a higher Chinese value-added contribution to the European car industry, given the strengthening of China’s hold over EV battery supply chains (IEA, 2024).

20 By way of comparison, China represented 2.2 % of Belgian gross exports (including intra-EU exports) and 2.7 % of Dutch exports in 2019.

Figure 6

Certain European industries are highly reliant on China through international supply chains

Contribution of Chinese value added to EU production, 2019

(share of total value added in final demand per country-sector, in %)

	EU27	BE	NL	DE	FR	IT	ES
Total for all activities	2.1	1.4	1.9	2.3	2.0	1.8	2.1
Total for all manufacturing	6.8	4.4	7.2	6.4	7.8	5.7	7.7
Textiles, apparel, leather	21.4	19.6	22.5	28.0	26.9	12.4	18.4
Chemical products	8.8	5.9	9.0	8.8	9.2	8.8	9.8
Pharmaceutical products	0.9	0.4	0.8	0.6	1.3	1.0	1.3
Plastics and rubbers	6.9	5.6	9.8	5.8	8.2	5.7	8.3
Other non-metallic mineral products	6.3	4.1	7.9	6.3	6.4	5.5	6.9
Base metals	14.3	11.2	15.8	14.0	16.2	12.5	14.1
Fabricated metal products	4.2	3.6	4.9	3.7	4.7	2.9	5.2
Computer, electronic and optical products	17.9	10.6	18.3	16.8	20.5	15.4	23.8
Electrical equipment	11.1	8.3	12.9	8.7	16.1	9.7	13.5
Other machinery and equipment	5.6	4.9	5.4	4.2	7.8	4.8	7.9
Motor vehicles, trailers	1.5	1.4	2.6	0.9	2.2	1.9	1.7
Other transport equipment	3.2	2.1	3.8	4.1	2.9	2.4	3.7
Other manufacturing, repair and installation	3.7	2.7	2.3	3.7	3.7	3.2	4.7

Sources: OECD TiVA, Vandermeeren (2024).

A deeper dive into Europe’s international supply chain linkages with China, at a more granular, product-based level, would be useful. Unfortunately, however, the current input-output tables do not provide sufficient detail to allow the mapping of supply networks at product level.²¹ Therefore, for the remainder of this section, reference is made to direct trade statistics, so as to exploit the available granularity.

2.4 Strategic dependencies in trade with China

Central to the European Commission’s “de-risking, not decoupling” mantra is the idea that not all trade exposure to China is alike. Whether or not product-level trade dependencies on China – or other extra-EU countries for that matter – pose a potential threat to the EU economy and society depends on, among other considerations, the significance and concentration of extra-EU suppliers for the product concerned, possibilities for substitution through EU production, and the product’s relevance for particular industries.

To identify the EU’s key strategic dependencies on the imports side, we use the bottom-up data-driven approach proposed by the Commission (EC, 2021) in the framework of its updated industrial strategy, as enhanced by Arjona *et al.* (2023). We start from the harmonised *Base pour l’Analyse du Commerce International* (BACI) database compiled by the *Centre d’Études Prospectives et d’Informations Internationales* (CEPII), which covers global bilateral trade flows between more than 200 countries at the very granular HS sub-heading (or “product”) level, a six-digit number (Gaulier and Zignagno, 2010). We use the latest available version of BACI (published in April 2024), which traces 5,381 products based on the 2017 edition of the HS nomenclature. To better capture structural dependencies and smooth the effects of the COVID-19 pandemic, we adopt a multi-year timeframe and look at total trade flows over the years 2017-2022 (by country pair and by product).²²

As a first step, the following three core import dependency indicators (CDIs) are calculated per product, from the perspective of the EU27 as importer:

$$CDI_1 = \sum_{i=1}^n \left(\frac{\text{import from extra-EU country } i}{\text{total extra-EU imports}} \right)^2; \quad CDI_2 = \frac{\text{total extra-EU imports}}{\text{total imports}}; \quad CDI_3 = \frac{\text{total extra-EU imports}}{\text{total exports}}.$$

The first indicator (CDI_1) is a Herfindahl-Hirschman index which sums the squared market shares in total extra-EU imports of the different extra-EU supplying countries (over the total number of extra-EU suppliers, denoted by n). It measures the degree of concentration of imports from outside the EU and aims to capture the risk of disruption linked to limited import diversification. The second indicator (CDI_2) measures the level of extra-EU import sources in total imports (i.e., extra-EU and intra-EU imports) and can be seen as an approximation for the scarcity of the product in the EU. The third indicator (CDI_3) describes the extent to which extra-EU imports exceed total exports. Taking total exports as a (very) rough proxy for the EU’s internal production capacity, CDI_3 captures whether EU production could substitute for extra-EU imports in the event of a disruption.

The second step is to establish a list of goods most dependent on extra-EU imports, based on the previously calculated indicators. Rather than using pre-determined thresholds for each indicator, as in the Commission’s initial exercise (EC, 2021), we follow Arjona *et al.* (2023) and rank products based on their values for the three indicators. We then calculate an aggregated ranking by simply averaging the three indicator rankings and select the top 10% of products with the highest overall ranking (and therefore the highest degree of extra-EU import dependency). Out of the 539 selected products for the EU27, 219 are most dependent on China for extra-EU imports; this figure far exceeds the number for which the US, India or Türkiye is the primary supplier (36, 36 and 28 products, respectively). However, these 219 products include many goods that are

21 Efforts to construct more granular input-output tables are underway (Berthou *et al.*, 2024; ESCB-IRC, 2024).

22 The EC (2021) uses an earlier version of BACI with about 5,200 HS6 products in the 2012 classification and considers trade data for 2018 only. Arjona *et al.* (2023) use an unpublished trade dataset for the years 2017-2020, based on the Full International and Global Accounts for Research in Input-Output (FIGARO) analysis tables. Unlike BACI, the FIGARO-based dataset accounts for re-exports (see section 2.1), which could introduce bias in the identification of extra-EU dependencies (most likely in the form of underestimation).

clearly non-strategic, such as gymnastics equipment, suitcases, baby carriages, umbrellas, artificial flowers, and Christmas decorations.

Hence, the third and final step is to further narrow down the product list, by focusing on those extra-EU import-dependent products that are more likely to be strategic. Building on the Commission's notion of "sensitive ecosystems" – or those more prone to strategic dependencies liable to impact core European interests and priorities (EC, 2021) – we focus on goods related to national security, health, energy, and the green and digital transitions. Specifically, we compare our initial selection of 539 products against the list of 204 foreign-dependent goods identified by Arjona *et al.* (2023) as having applications in those ecosystems. We find 125 overlapping products which can be labelled strategic.²³ Another 271 products can be matched to foreign-dependent products that Arjona *et al.* (2023) classify as non-strategic. The remaining 143 products are screened manually, with reference to qualitative guidelines on the classification of agri-food products, textiles, construction materials and other product categories (see Arjona *et al.*, 2023, pp. 15-16). Our final list contains 178 strategic goods for which the EU27 is highly dependent on extra-EU sources.²⁴

China remains the foremost supplier of strategic products to the EU27: it is the primary extra-EU source for 67 out of 178 products and accounts for 32.7 % of the total extra-EU import value of those goods (see the top left chart in Figure 7). The US is second in terms of the number of strategic goods for which it is the main supplier (20), but accounts for a more moderate share of the value of strategic imports (4.5 %). Conversely, Norway and Russia account for significant shares of import value with a smaller set of strategic products (mostly natural gas and base metals).

Chemicals represent the highest number of strategic goods for which China is the primary extra-EU supplier (36 out of 67, including synthetic graphite, vitamins and pyrotechnics), but less than 3 % of strategic imports by value originating from China (see the top right chart in Figure 7). Fewer strategic goods for which China is the dominant supplier fall into the machinery and electronics segments, but those that do are much more significant in value terms. Examples include portable computers, monitors, radio receivers, solar panels and permanent magnets (used in electro-motors and wind turbines). Optical devices, a few strategic textiles with (potential) medical and/or military applications, plastic gloves, and metals like tungsten, magnesium, manganese also make the cut.²⁵

It is important to stress the limitations of this exercise (EC, 2021). First, there are several ways in which this analysis could be refined and extended. For example, Arjona *et al.* (2023) add indicators measuring the concentration of world exports and the network centrality of key export markets to identify strategic goods with the highest risk of "single points of failure" (SPOF). The majority of the EU's strategic product dependencies on China have been found to be at high risk of SPOF, unlike dependencies on other extra-EU sources (Vandermeeren, 2024). Méjean and Rousseaux (2024) extend the EC's (2021) three-indicator approach by adding more explicit criteria to factor in European domestic production capacity and the ease of switching between suppliers after a shock.²⁶ They show that considering the potential for substitution not only refines the list of strategic goods but may also alter its sectoral composition.

23 We deviate from Arjona *et al.*'s (2023) assessment only for a handful of (mostly camping-related) products, which may be used for military purposes but perhaps not predominantly so.

24 Extra-EU imports of these 178 strategic products represented about 8 % of total extra-EU imports over the period 2017-2022.

25 These products correspond closely with the examples given by Vandermeeren (2024) based on Arjona *et al.* (2023).

26 To measure European production, Méjean and Rousseaux (2024) rely on disaggregated data from Eurostat's Prodcum. Important drawbacks are that the Prodcum database suffers from many missing values at the six-digit level and that matching with the HS nomenclature is imperfect. The ease of switching between suppliers is proxied by a product-level measure of "stickiness", derived from the average duration of business relationships between French firms and their EU suppliers (in firm-to-firm panel data). Implicitly, it is assumed that this stickiness classification captures certain product market specificities that carry over to the imports of those products by all EU firms from their extra-EU suppliers.

Second, the results of the analysis may vary significantly depending on the time period under consideration. Vicard and Wibaux (2023) apply the EC's (2021) algorithm to identify foreign-dependent products using BACI data starting in 1996 and find large year-to-year churning in the individual products that are flagged, although the number of products and their sectoral composition remain relatively stable. The clearest longer-run trend is an increase in the number of dependent products sourced from China, although this shift had already occurred by 2010. Lagging trade figures may fail to capture rapidly emerging vulnerabilities, hence the need for regular updates.²⁷

Third, as highlighted above, bilateral trade statistics alone do not allow the international supply chains along which additional chokepoints may exist to be fully mapped. Other data sources, including at firm level (see section 3), could offer further insight. Moreover, to gain a better understanding of which dependencies are truly "strategic" in nature, any data-driven exercise should be complemented by more qualitative, ecosystem-specific deep dives. This is what the Commission has begun to do for ecosystems in areas such as semiconductors, cloud and edge computing, batteries, solar panels, clean hydrogen, active pharmaceutical ingredients (EC, 2021, 2022) and critical raw materials (see Buysse and Essers, 2023). Such deep dives should include the monitoring of breakthrough technologies that could give rise to new strategic dependencies in the future.

With these important caveats in mind, we repeat our strategic import dependencies analysis, this time specifically for Belgium. This exercise allows us to update earlier applications of the Commission's approach to Belgium (again based on BACI data) by *the Sociaal-Economische Raad van Vlaanderen* (SERV, 2021) and the FPS (Federal Public Service) Economy (Jaucot *et al.*, 2022).²⁸ It should be noted that our Belgium-specific analysis considers only direct imports from outside the EU. Indirect extra-EU imports, meaning those that first pass through another EU Member State before entering Belgium, are classified as intra-EU imports in the BACI data. Any indirect dependencies of Belgium resulting from such flows are thus not captured. Likewise, a portion of the imports labelled as strategic for Belgium are not used for domestic production/consumption but are just transiting through the country on their way to other (EU or even non-EU) destinations.²⁹ For these reasons, the Belgian analysis should be seen as complementary to the EU27 exercise set out above.

After going through the same three steps as in the EU27 exercise, we obtain 214 strategic goods for which Belgium is highly dependent on extra-EU suppliers.³⁰ Of these 214 products, 70 appear on the EU27 list.³¹ Unlike for the EU27, however, China is not the primary supplier of strategic goods to Belgium: it comes in second in terms of the number of products for which it is the largest extra-EU supplier, i.e. 47 out of 214 goods, and only sixth in terms of the share of extra-EU imports by value (7.5 %) (see the bottom left chart in Figure 7). The US is the main supplier of strategic goods to Belgium (57 products), while Russia, the US, Singapore, Japan and Qatar account for the top-five largest shares of strategic imports by value.³²

The strategic goods for which China is Belgium's main extra-EU supplier are mostly chemicals: 28 out of 47 products (including vitamins, acids, aluminium oxides and industrial precursors), representing 18 % of strategic imports by value from China (see the bottom right chart in Figure 7). Belgium also imports textiles from China with possible strategic uses; machinery such as multifunctional copiers, moulding machines and electric drills; and a relatively higher share than the EU of base metal products, including steel bars/rods and gallium (or

27 Note, for example, the absence in our 2017-2022 BACI-based strategic products list of goods such as electric vehicles and lithium-ion batteries, which were identified as key EU27 imports from China in the 2023 Eurostat data.

28 The EC (2021) approach (or similar approaches) has been applied to other individual EU Member States, including France (Bonnet and Nakaa, 2020; Jaravel and Méjean, 2021) and Germany (Baur and Flach, 2022). Arriola *et al.* (2024) calculate measures based on import concentration for all individual OECD countries.

29 We leave application of the Commission's approach to Belgian trade statistics based on the national concept – which corrects for transit trade (see section 2.1) – for future studies.

30 Belgian extra-EU imports of these 214 strategic products represented about 9 % of total Belgian extra-EU imports over the period 2017-2022.

31 Unsurprisingly, for almost all of these 70 products, the primary extra-EU supplier is the same for both Belgium and the EU27 as a whole. For a dozen products, including diamonds and selected chemicals, Belgium receives the lion's share of total extra-EU imports.

32 For Russia, this is mostly due to iron, steel and fertilizers; for the US and Singapore, to various chemicals and machines; for Japan, to gear boxes, rubbers and chemicals; and for Qatar, exclusively to LNG. This country distribution reflects earlier findings by SERV (2021) and Jaucot *et al.* (2022).

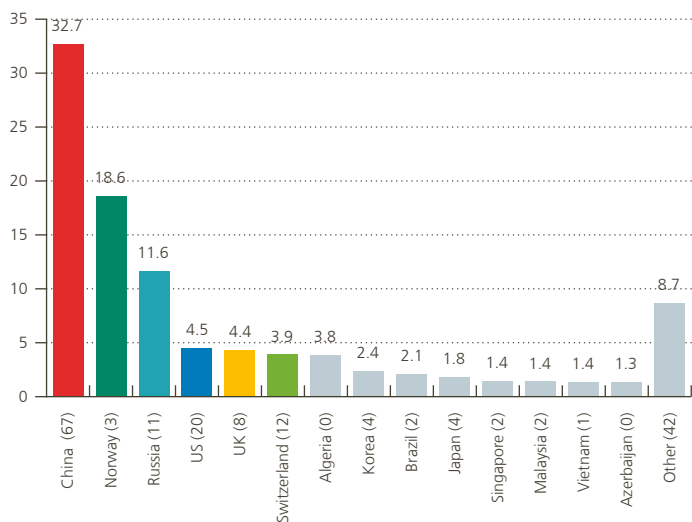
similar substances). Compared with the EU, Belgian imports of strategic electronics from China are much lower, although LED lamps, radio receivers and permanent magnets appear on the list, as do motorcycles, floating vessels and vacuum flasks (included in other product categories).

Figure 7

China is the EU’s main supplier of strategic imports in various sectors but plays a more moderate role for Belgium¹

EU27 imports of strategic goods²

(% share per country of extra-EU strategic imports, with the number of products for which a country is the largest extra-EU supplier in brackets)



EU27 imports of strategic goods for which China is the main supplier country

(product segment share as a %, with the number of products for which China is the largest extra-EU supplier country in brackets)

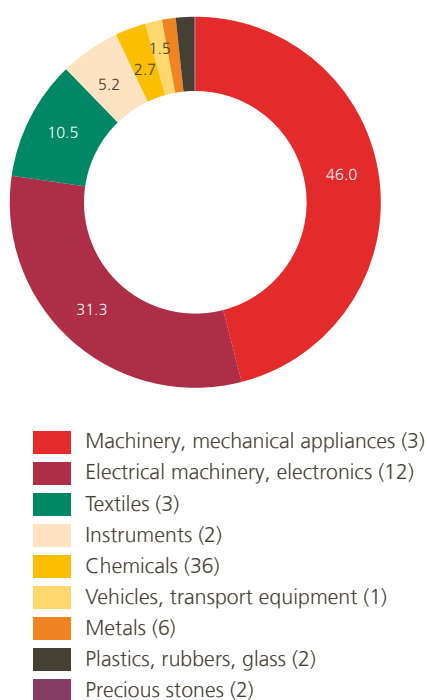
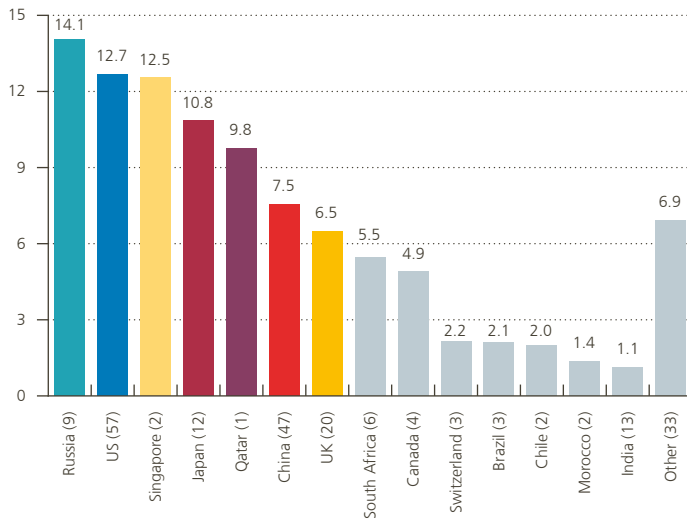


Figure 7 (Continued)

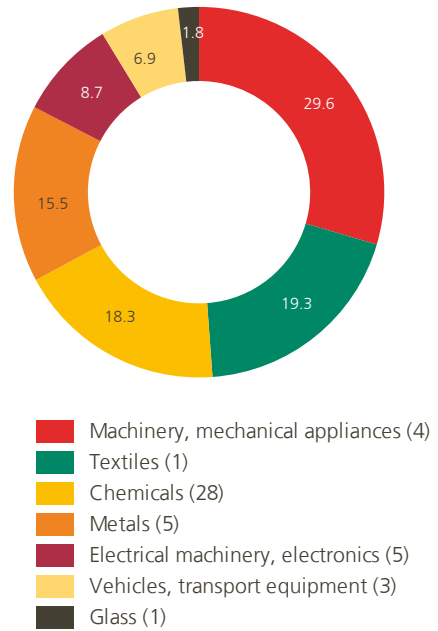
Belgian imports of strategic goods²

(% share per country of extra-EU strategic imports, with the number of products for which a country is the largest extra-EU supplier in brackets)



Belgian imports of strategic goods for which China is the main supplier country

(product segment share as a %, with the number of products for which China is the largest extra-EU supplier country in brackets)



Sources: Own calculations based on CEPII BACI, EC (2021) and Arjona *et al.* (2023).

1 For information on the identification of strategic imports, see the description of the methodology in this article.

2 Country shares are based on extra-EU imports of all strategic goods, including those for which a country is the second-largest, third-largest or lower-ranked supplier.

To assess EU27 and Belgian dependencies on the exports side, we can use a similar approach. We formulate mirrored versions of the Commission’s three indicators – which we can refer to as core dependency indicators for exports (CDIXs) – as follows:³³

$$CDIX_1 = \sum_{i=1}^n \left(\frac{\text{export to extra-EU country } i}{\text{total extra-EU exports}} \right)^2; \quad CDIX_2 = \frac{\text{total extra-EU exports}}{\text{total exports}}; \quad CDIX_3 = \frac{\text{total extra-EU exports}}{\text{total imports}}.$$

The first indicator ($CDIX_1$) is again a Herfindahl-Hirschman index, capturing the risk of limited diversification in extra-EU export destinations. The second indicator ($CDIX_2$) measures the share of extra-EU markets in total exports and approximates the scarcity of EU internal demand. The third indicator ($CDIX_3$) is a rough proxy for whether EU demand (from both internal and external sources) could compensate in the event of an extra-EU demand shock. Again, there is certainly room to further refine these indicators, including by adding information on EU production.

As before, we calculate the indicators for all six-digit HS (product) codes, produce an average ranking based on the results, and then select the top 10 % of products with the highest overall ranking. Unlike in our analysis of import dependencies, we choose not to further filter the product list based on relevance for (foreign) sensitive ecosystems. Arguably, from the point of view of European industry, the degree of dependency on extra-EU demand does not necessarily relate to the product’s application abroad.

For the EU27, China is the second destination for extra-EU exports with highly concentrated demand, both in terms of the number of products (97 out of 539 selected products) and the share of these exports by value (13.2 %) (see the top left chart in Figure 8). The US is the undisputed primary destination for extra-EU exports with concentrated demand, accounting for roughly twice the number of products and export share represented by China. Other key extra-EU export markets are the UK, Switzerland and Japan.

Exports for which the EU27 is mainly dependent on Chinese markets are predominantly in the machinery, instruments, chemicals, and food and drinks segments (see the top right chart in Figure 8). Somewhat surprisingly, the food and drinks segment accounts for the largest share of exports to China in value terms, thanks to frozen pork and baby formula. Semiconductor chips are the single largest foreign-dependent export to China and explain the high share held by the electronics segment. Other products with highly concentrated Chinese demand are machinery for textile production and metalworking; semiconductor manufacturing equipment (machinery); lasers, test benches and microscopes (instruments); silicon and hormones (chemicals); and wood (included in the “other” category).

We repeat this exercise specifically for Belgium and find that China is a much less important destination for extra-EU-dependent exports from Belgium: it is the primary extra-EU market for only 38 out of 538 selected products and represents just 4.3 % of the value of these exports (see the bottom left chart in Figure 8). This means that China occupies fourth place in terms of the number of products, far behind the UK, the US and India, and comes in eighth with respect to export value, behind India, the US, the UK, the UAE, Canada, Switzerland and Israel.³⁴

The breakdown by product segment of the 38 Belgian exports for which China is the main export market is quite different from that of the EU27 (see the bottom right chart in Figure 8). Food and drinks as well as machinery (incorporated into the “other” category) weigh much less in Belgium’s exports to China, whereas both chemicals as well as textiles and leather goods account for a larger share. The former includes catalysts and photographic film, the latter flax and wool. Electronic products include reception and transmission apparatus and lamps. Other key products are flat-rolled stainless steel and various types of wood.

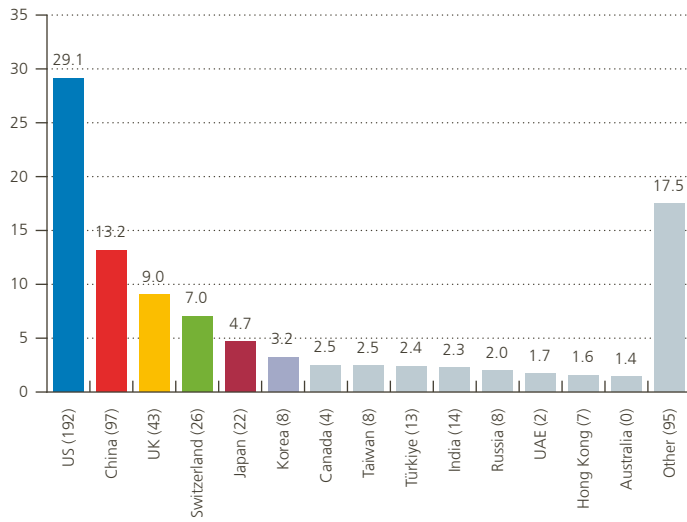
³³ The first two indicators have also been used by the ESCB-IRC (2023) to study the EU’s export dependencies.

³⁴ For India, this is due to diamonds; for the UAE, to air-conditioning systems; for Switzerland, mostly to gold; and for Israel, to semiconductor manufacturing equipment. Belgian exports that mainly depend on US, UK and Canadian demand belong to various product segments.

Figure 8

For some products, Europe and – to a lesser extent – Belgium are dependent on China as an export market¹

EU27 exports with highly concentrated extra-EU demand²
 (% share by country, with the number of products for which a country is the largest extra-EU market in brackets)



EU27 exports with highly concentrated extra-EU demand for which China is the main market

(product segment share as a %, with the number of products for which China is the largest extra-EU market in brackets)

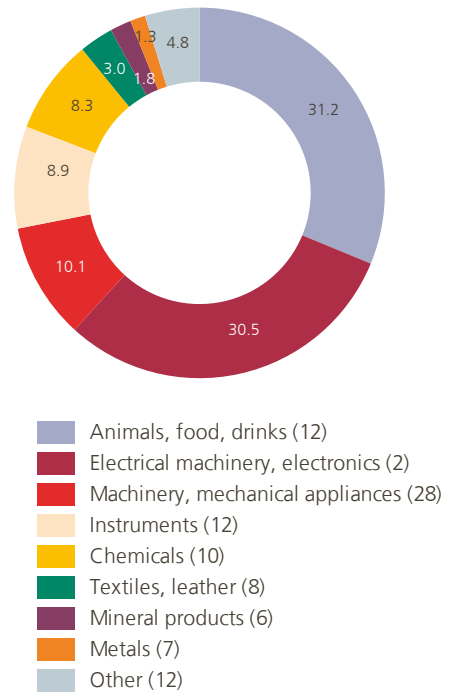
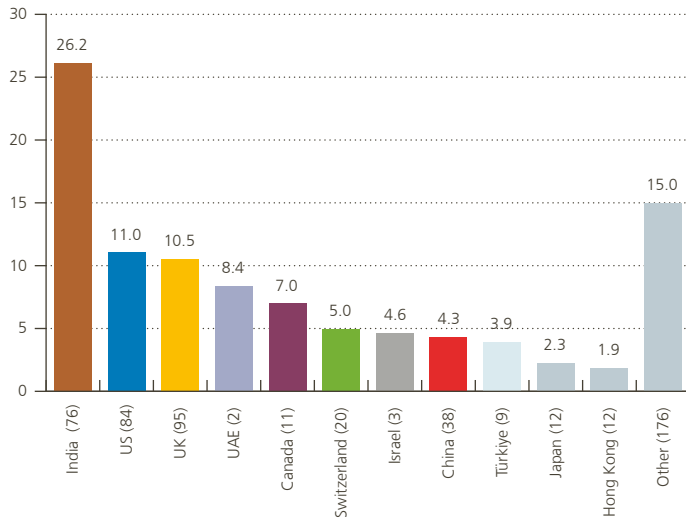


Figure 8 (Continued)

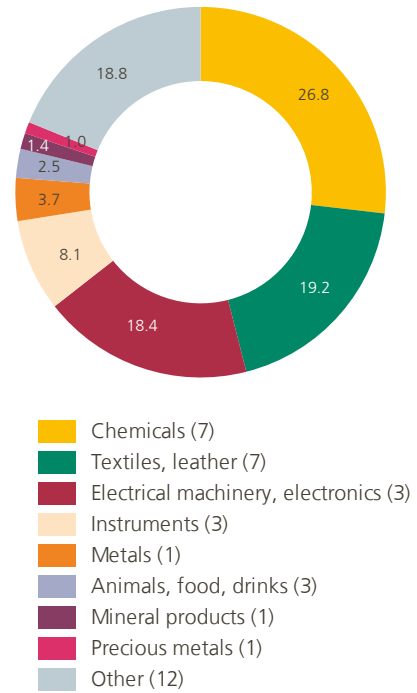
Belgian exports with highly concentrated extra-EU demand²

(% share by country, with the number of products for which a country is the largest extra-EU market in brackets)



Belgian exports with highly concentrated extra-EU demand for which China is the main market

(product segment share as a %, with the number of products for which China is the largest extra-EU market in brackets)



Sources: Own calculations based on CEPII BACI and ESCB-IRC (2023).

- 1 For information on the identification of exports with highly concentrated extra-EU demand, see the description of the methodology in this article.
- 2 Country shares are based on EU27 exports of all goods with highly concentrated extra-EU demand, including those for which a country is the second-largest, third-largest or lower-ranked export market.

3. Exposures and vulnerabilities below the macroeconomic level

As explained above, this article focuses on European and Belgian trade relations with China at the macroeconomic level. Macro-level gross trade statistics, and to some degree value-added trade statistics, are publicly available and have been rendered readily comparable across countries. Nonetheless, to get a more complete picture of where Europe's and Belgium's vulnerabilities lie in their trading relations with China and to be able to formulate appropriate policy responses, this macro perspective needs to be complemented by an analysis at a more disaggregated level, ideally at the level of individual firms. Firm-level data on international exposures – and a fortiori on the broader supply network – are, however, harder to come by and typically only available at the national level (Pichler *et al.*, 2024), although some advances have been made. In this section, we briefly review some findings on European firm-level exposure to Chinese inputs from recent ESCB work on trade fragmentation (ESCB-IRC, 2024).

In line with the results of our macro-level strategic imports exercise (see section 2.4), firms most often identify China in business surveys as a key supplier of inputs deemed “critical” for their activity – in the sense that but for these inputs production processes could not be completed, would suffer delays or would result in lower-quality output. Almost 40 % of the 65 respondents to a summer 2023 ECB survey of leading multinationals active in the euro area identified China as their dominant source of critical inputs, and all regarded this factor as an elevated risk given the low or very low perceived substitution possibilities (Attinasi *et al.*, 2023). Exposure to other partners – and their perceived level of risk – was assessed much lower. According to representative national surveys of manufacturing firms, more than one-third of German firms, 20 % of Italian firms and 17 % of Spanish firms rely on China for inputs they deem critical (Balteanu *et al.*, 2024). An even higher share of firms (40 % in Italy and Spain and 75 % in Germany) indicate that their activities would be negatively affected by heightened geopolitical tensions between the West and China that lead to new trade and investment restrictions, as those with no direct links to China also expect a negative impact (mostly through the channel of increased uncertainty). For such reasons, the abovementioned and other surveys reveal that many firms have already implemented (or are considering implementing) de-risking strategies, including “EU-shoring” or “friendshoring” critical inputs previously sourced from China (see also the references in Buysse and Essers, 2022). Thus far, such trends (or intentions) cannot yet be clearly observed in the macro-level EU trade statistics, with the possible exception of those for certain specific electronic products (Conteduca *et al.*, 2024).³⁵

Analysing detailed (pre-pandemic) firm-level customs and balance sheet data from five EU Member States (Belgium, France, Italy, Spain and Slovenia), Panon *et al.* (2024) clearly illustrate the very large degree of heterogeneity in manufacturing firms' exposure to critical inputs from China and countries with a similar geopolitical orientation.³⁶ For each of these five EU countries, larger firms are found to be more likely to be exposed to critical inputs from China-aligned supplier countries than smaller firms, partly as the former are more often (large) importers in the first place. Manufacturing firms that source critical inputs abroad typically import only a handful, with a median of three and an average of seven in the case of Belgium. The median firm sources a critical input from only one country, while 10 % of firms source from three or more countries. Supplier country diversification is again linked to firm size. For firms that import at least some critical inputs from China-aligned countries, the share of imports from such countries is inversely related to the size of the firm in value-added terms (see the left-hand graph in Figure 9).³⁷ For Belgium, the share of imports from China-aligned countries is 11 % for the top 1 % of firms by size, compared with 34 % for the 25 % to 50 % category, and 87 % for the smallest quartile of firms.

35 For example, Conteduca *et al.* (2024) show that from 2022 to 2023, the Chinese share of EU27 imports of laptops, mobile phones and chips declined, while the shares of Vietnam, India and Taiwan increased.

36 More specifically, Panon *et al.* (2024) define “foreign critical inputs” as advanced technology products (used in fields such as electronics, biotech and aerospace) identified by the US Census Bureau, inputs and raw materials key to the green transition (e.g., lithium, nickel, batteries and solar cells), and any other foreign-dependent products identified by Arjona *et al.* (2023) (excluding final goods). Source countries are divided into three blocs – an EU/US-aligned bloc, a China-aligned bloc and a neutral bloc – based on various measures of (geo)political alignment between countries over the past decade, including the frequency of sanctions, military imports, Chinese official lending, and voting patterns with respect to specific UN resolutions. The most important members of the China-aligned bloc are China, Russia, Hong Kong and Pakistan. However, China is the EU's main source by far of foreign critical inputs.

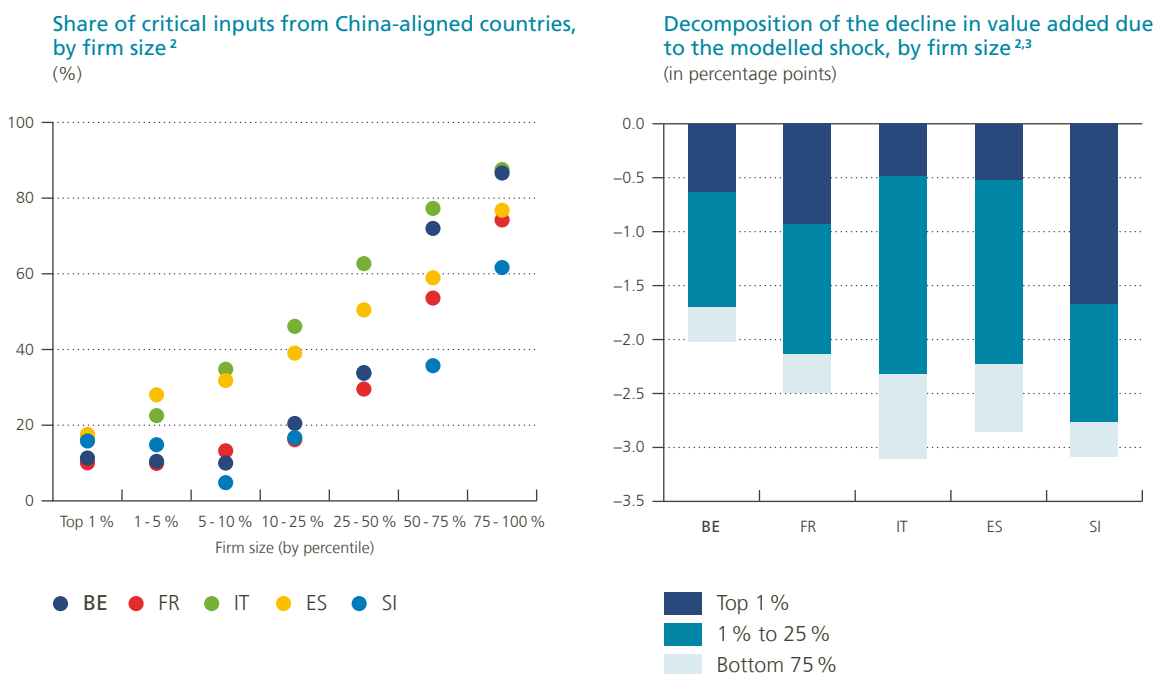
37 Further descriptives confirm that in more recent years, too, small firms importing from China have had much lower supplier diversification than larger ones (ESCB-IRC, 2024).

Prompted by this variation in firm-level exposure, Panon *et al.* (2024) use a parsimonious production function-based set-up to trace the quantitative value-added impact of supply disruptions at different levels of aggregation. A hypothetical 50% reduction in critical inputs from China-aligned countries would result in substantial short-term losses (when the elasticity of substitution between those inputs and other intermediates is close to zero), from 2% of total value added in the Belgian manufacturing sector to more than 3% in Italy and Slovenia.³⁸ These aggregate changes are mostly driven by exposed firms in the highest quartile of the value-added distribution: 25% of firms account for 75% (84% in Belgium) or more of the drop in value added in all five EU countries (see the right-hand chart in Figure 9). The top 1% of firms by size account for 15% to more than 50% of the decline, depending on the country (32% for Belgium, in part due to the presence of large multinational groups). Additional decomposition exercises reveal wide variations in shock impacts across geographical regions within the EU countries and across manufacturing industries (Panon *et al.*, 2024). In the case of Belgium, the province of Antwerp, home to a number of large, exposed firms, would be hardest hit by the modelled shock. In terms of industries, the chemicals and the machinery and equipment sectors would be particularly affected and together explain about half the total 2% impact on value added for Belgium. Such industry-specific effects tend to vary significantly across the five selected EU countries, reflecting differences in sub-sector composition and firm-specific sourcing patterns.

38 Modelling a similar shock to inputs sourced from China only (as opposed to the China-aligned bloc) yields slightly smaller losses, of around 1.5% of manufacturing value added for Belgium. If the economy as a whole is considered (rather than only the manufacturing sector), the impact of the shock is closer to 1% of Belgian value added (see Panon *et al.*, 2024 for more sensitivity tests).

Figure 9

Large firms would drive the aggregate impact of a sudden stop in critical imports from China-aligned countries, despite having a more diversified supplier base¹



Source: Panon *et al.* (2024).

1 The sample is based on 2019 data and restricted to firms in the manufacturing sector that import at least some critical inputs from China-aligned countries. See the text of this article for more information.

2 Firm size is based on percentiles of the value-added distribution.

3 The modelled shock is a 50% decline in the import of critical inputs from China-aligned countries.

While studies such as Panon *et al.* (2024) are a helpful first step in shedding light on direct firm-level exposure to specific imports from China and elsewhere, they do not capture indirect exposures.³⁹ For example, linking foreign trade data with the full Belgian network of domestic firm-to-firm transactions, Dhyne *et al.* (2021) find that whereas only a small share of firms exhibit large dependencies through direct imports, most Belgian firms rely heavily on foreign inputs through indirect trade, by buying from direct importers. Likewise, a majority of Belgian firms are indirect exporters (see also Dhyne and Duprez, 2017). Méjean and Rousseaux (2024) illustrate the potential level of indirect exposure using French intra-EU export data at the firm-to-firm level: the 70 000 French firms found to import foreign-dependent products on the Commission's list (see section 2.4) have export relations with more than one million European firms.

Failure to account for indirect exposures could lead to an underestimation of the trade risks originating from China or other source/destination countries. That being said, firms could use their access to domestic (or EU) supply/demand networks to mitigate the effects of a negative shock arising from their foreign (extra-EU) exposures, depending on the degree of substitutability between producers and inputs. The net effect of these two channels on shock impacts remains an empirical question and would be an interesting avenue for further research (Panon *et al.*, 2024).

Conclusion

A series of large economic and geopolitical shocks has prompted policymakers around the world to reconsider the trade-offs inherent in international economic integration. In Europe, much of this attention has focused on managing trade relations with China, under the Commission's mantra of de-risking, not decoupling.

In this article, we first discussed the various EU policy initiatives taken in this area and their main rationales. European trade with China has become increasingly unbalanced, due at least in part to the export of Chinese overproduction in several sectors, stimulated by generous industrial policy. Moreover, an increasingly powerful and authoritarian China presents a risk of economic coercion, which could disrupt key supply chains and/or reduce access to China's attractive domestic market.

We then attempted to map Europe's and Belgium's key trade exposures to China and the associated vulnerabilities. Belgium's direct import and export exposure to China is – in relative terms – lower than the EU's, and Germany's in particular. That being said, the composition of both EU-level and Belgian imports from China has shifted away from textiles and toys towards potentially more "strategic" goods such as electronics, chemicals and vehicles. On the exports side, the growing share of chemicals in Belgian exports to China is noteworthy.

To identify the *most strategic* dependencies, we applied a bottom-up approach which draws on the Commission's work, combining product-level measures of the significance and concentration of extra-EU supplier/destination countries with information on the relevance of imported products for national security, health, energy, and the green and digital transitions. China is the foremost supplier to the EU of products that can be labelled strategic. This is not the case for Belgium, whose main supplier of such products is the US. Nevertheless, Belgium is strongly dependent on China for around 50 of the 200 selected strategic imports – ranging from vitamins and industrial precursors to steel bars, LED lamps and permanent magnets. Moreover, China is the EU's second-largest market for exports with highly concentrated demand outside the EU, including semiconductor chips and chip manufacturing machines, as well as frozen pork, baby formula and specific types of wood. Belgium's extra-EU exports with highly concentrated demand tend to go elsewhere, with some exceptions. While insightful,

³⁹ Another limitation of the Panon *et al.* (2024) study is that prices and factors of production are held constant, which could be a reasonable approximation for the short term but makes the set-up less suitable to study shock effects over longer time horizons.

exercises like these, based on gross bilateral trade statistics, have their limitations and should be complemented by other sources of information.

Publicly available value-added trade statistics unfortunately lack the timeliness and detail to delve deeper into *indirect* exposure to China through international supply chains, but the available data suggest that some European industries, including textile manufacturing, electronics and base metals, rely heavily on China, beyond direct imports. Qualitative studies of the (often complex) ecosystems surrounding specific strategic goods could reveal additional China-controlled chokepoints. And while this article's focus is squarely on macro-level exposure to China, we briefly touch on recent ESCB research to illustrate how more granular, quantitative firm-level analysis could offer additional insight into where Europe's and Belgium's trade vulnerabilities with China lie. Indeed, such micro-level analysis reveals large variations – across geographic regions, sectors and individual firms – in exposure to potential disruptions of Chinese inputs, suggesting the need for well-targeted policy measures. There remains ample room for further research that maps firms' indirect supply chain exposure to China, ideally carried out in a pan-European setting.

While Belgium may be less exposed to disruptions in trade with China than several other EU Member States, this article has demonstrated that pockets of vulnerability nonetheless exist. Many other forms of indirect exposure may well remain under the radar. Due to the large presence of multinationals in Belgium and in the broader context of the single market, other EU Member States' trade exposure to China is relevant for Belgium, too. In any case, Belgian policymakers and firms are likely to increasingly bear the consequences of Europe's strategy for de-risking from China, ranging from punitive import tariffs and (possible) export controls, increased screening procedures and reporting duties, to spillovers from EU and Member State industrial policies aimed at counteracting Chinese dominance in particular supply chains.

It has been argued that the Belgian knowledge base needed for informed policymaking on de-risking economic relations with China is lacking (Pepermans and De Decker, 2024). We hope this article contributes to bridging the knowledge gap.

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Conventional signs

€	euro
%	per cent
e.g.	<i>exempli gratia</i> (for example)
et al.	<i>et alia</i> (and others)
i.e.	<i>id est</i> (that is)

List of abbreviations

Countries or regions

EU(27)	European Union (27 Member States)
BE	Belgium
DE	Germany
ES	Spain
FR	France
IT	Italy
NL	Netherlands
SI	Slovenia
UK	United Kingdom
US	United States
UAE	United Arab Emirates

Abbreviations

ACI	Anti-Coercion Instrument
ASML	Advanced Semiconductor Materials Lithography
BACI	<i>Base pour l'Analyse du Commerce International</i>
BYD	Build Your Dreams
CATL	Contemporary Amperex Technology Co., Limited
CBS	Centraal Bureau voor de Statistiek (Statistics Netherlands)
CDI	Core import dependency indicator
CDIX	Core dependency indicator for exports
CEPII	<i>Centre d'Études Prospectives et d'Informations Internationales</i>
COVID(-19)	Coronavirus disease (2019)
CRM	Critical raw material
CRMA	Critical Raw Materials Act
EC	European Commission
EC-JRC	Joint Research Centre of the European Commission
ECA	European Chips Act
EPC	European Policy Centre
ESCB-IRC	International Relations Committee of the European System of Central Banks
EV	Electric vehicle

FDI	Foreign direct investment
FIGARO	Full International and Global Accounts for Research in Input-Output analysis
FPS	Federal Public Service
FSR	Foreign Subsidies Regulation
GDP	Gross domestic product
HERA	Health Emergency Preparedness and Response Authority
HS	Harmonised System
IEA	International Energy Agency
IMERA	Internal Market Emergency and Resilience Act
IMF	International Monetary Fund
LED	Light-emitting diode
LNG	Liquefied natural gas
MERICs	Mercator Institute for China Studies
NAI	National Accounts Institute
NZIA	Net Zero Industry Act
OECD	Organisation for Economic Co-operation and Development
R&D	Research and development
SERV	<i>Sociaal-Economische Raad van Vlaanderen</i>
SPOF	Single point of failure
TCTF	Temporary Crisis and Transition Framework
TiVA	Trade in value added

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