Foreign direct investment and trade patterns in the European Union: implications for competitiveness

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Competitiveness is a central concept in European Union (EU) policy discourse; however, recent reports on the single market and competitiveness frequently underestimate the pivotal role of foreign direct investment (FDI) and trade. This study addresses this gap by analysing EU-level FDI and trade trends between 2005 and 2023, incorporating comparative insights from the United States and China, as well as intra-EU dynamics. The analysis reveals a complex and uneven landscape: FDI flows are highly concentrated, with some member states primarily acting as intermediaries, thereby distorting resource allocation. In terms of trade, the European Union faces rising competitive pressure from China, persistent internal trade imbalances, and significant dependence on foreign value added. Although the EU performs strongly in services and medium-tech exports, it lags in high-tech and primary products. The study argues that addressing these challenges necessitates a differentiated and targeted EU competitiveness strategy aimed at strengthening strategic autonomy within an evolving global economic environment.

Introduction

The concept of "a country's competitiveness" is, in itself, rather vague and it remains widely debated, with economists arguing that it should be examined at the micro-, meso-, and macro-levels, as these interconnected layers (Delgado et al. 2012, Chikán 2008) interact and influence national productivity (Schwab–Sala-i-Martin 2013). Porter (1990) identified several concepts of competitiveness and the factors contributing to the success of some countries (i.e., macroeconomic phenomena, cheap labor, natural resources, government policies, and corporate governance); however, he considers none of them to be satisfactory. He emphasized productivity in specific industries as the key metric. Krugman (1994) argued that competitiveness at the national level is a meaningless indicator because international trade is not a zero-sum game, and a national living standard depends on its domestic economic performance.

Despite these debates, the concept has evolved over time to include sustainable and green competitiveness, incorporating environmental and social factors (Bruneckiené et al. 2023). Other new approaches emphasize the spatial dimension of competitiveness (Komlósi–Páger 2015, Szabó 2019, Győri 2023). Aiginger (2018) contrasted "high-road" innovation-oriented strategies with "low-road" cost-driven approaches to enhancing competitiveness. Tools such as the global competitiveness index are used to assess competitiveness, linking it to growth and beyond-GDP objectives (Aiginger–Vogel 2015). Scholars have also connected competitiveness to economic complexity, noting shifts such as China's rise and stagnation in the United States (US) and European Union (EU) (Arnal–Feás 2024). Approaches differ in terms of whether they include external factors and measures of competitiveness, such as foreign trade, or focus solely on internal factors and related measures (i.e., institutions, policies, wellbeing, etc.).

Due to its recent weak performance compared to its main competitors, the EU has directed its attention to competitiveness, as highlighted by reports such as the Letta report and Mario Draghi's competitiveness study. These advocate structural reforms, increased research and development (R&D) investment, and deeper single market integration. The adoption of the Budapest Declaration at the end of 2024, emphasizing innovation, productivity, and a favorable business environment, reflects the EU's commitment to competitiveness as a cornerstone of its economic future.

Nevertheless, two key areas remain underrepresented in EU competitiveness debates. The first is foreign direct investment (FDI). In the 1990s, FDI was regarded as an indicator of competitiveness in former transition economies, many of which are now EU members (Kalotay–Hunya 2000). This perspective can be applied to examine changes in the international positions of the EU's FDI. However, studies on the causal link between FDI and competitiveness yield mixed results, with some arguing that FDI enhances competitiveness (Bonelli 1999, Škare–Cvek 2020) while others contend that competitiveness attracts FDI (Apostu et al. 2023). The relationship

differs across industries and economies and is shaped by factors such as financing sources, investment composition, absorptive capacity, trade liberalization, and the local business environment (Bonelli 1999).

The second area is foreign trade. Trade integration enhances competitiveness through two main channels: expanding market access for domestic firms, and boosting productivity and innovation via exposure to international competition, expertise, and technology (World Economic Forum [WEF] 2016). Various specializations and comparative advantage indicators are used to assess foreign trade competitiveness and identify the sectors in which countries excel in internationally. These indicators measure the competitiveness of products in which a country specializes relative to others. However, with the rise of global value chains (GVCs) and fragmented production, gross trade figures often fail to align with comparative advantages in production. Instead, they frequently reflect the activities of foreign multinationals. European countries, particularly those in Central and Eastern Europe (CEE), are deeply integrated into the GVCs, as shown by value-added trade databases.

Our study focuses on foreign trade and FDI, which are often overlooked in recent official reports on the European single market and competitiveness. These indicators are critically important and have evolved differently within and outside the EU, as well as among member states. We aim to evaluate the EU's performance from multiple perspectives by using these two indicators to reinforce, challenge, or complement prior analyses. We explore the trends and challenges in FDI and foreign trade within the EU, as well as their implications for European competitiveness – defined as "external" competitiveness performance. We addressed this by conducting a statistical analysis of FDI and trade data spanning 2005–2023, drawing on and reliable data sources such as Eurostat, OECD, and UNCTAD (UN Trade and Development). Additionally, our research examines the EU's position relative to other major global powers, such as the US and China, and analyses intra-EU trends in greater detail. Although trade and FDI are often neglected in discussions of EU competitiveness, we consider them crucial for a comprehensive analysis.

Since our objective was to map structural positions and highlight long-term trends rather than test causal relationships, a descriptive data analysis approach was appropriate for exploring evolving FDI and trade patterns. This method enabled us to classify complex economic dynamics into analytically tractable categories, revealing the underlying diversity of integration within the EU. The period from 2005 to 2023 was selected for its longitudinal depth, capturing major economic shifts such as the global financial crisis, Eurozone crisis, pandemic, and subsequent recovery. Where data availability was limited – particularly for certain service export and FDI indicators – a shorter timeframe was used, as specified in the relevant sections and footnotes.

The study is structured as follows: first, we present key findings from recent flagship analyses of EU competitiveness. Next, we briefly describe the relationship between competitiveness and foreign trade and FDI, followed by supportive or

nuanced insights derived from our analysis of FDI and trade developments. Finally, we summarize our findings and discuss their implications.

Recent developments in the EU

Recent studies highlight significant challenges to the EU's global competitiveness. While the US has outperformed the EU in key areas, China has also emerged as a rising competitor, posing a threat to surpass the EU in several sectors, including high-technology industries. Although the EU held a strong position in high-tech and premium product markets in the early 2000s (Curran–Zignago 2009), its competitiveness in these segments has declined since the global financial crisis (Cheptea et al. 2014). The 2004 enlargement temporarily bolstered competitiveness in certain industries by enhancing the division of labor within the EU, with lower-wage CEE member states assuming labor-intensive activities (Curran–Zignago 2009). However, recent economic shocks, including the Covid-19 pandemic and Russia's invasion of Ukraine, have further exacerbated and exposed the EU's competitiveness challenges.

Regulatory changes have facilitated state intervention to restore growth and boost productivity; however, these efforts have achieved only partial success. During the pandemic, the EU eased state aid rules, amending the General Block Exemption Regulation (GBER) in 2021 and 2023. These amendments raised reporting thresholds, streamlined approval procedures, and extended the GBER's validity until 2026. In 2023, the European Commission further relaxed state aid rules in specific areas through the Temporary Crisis and Transition Framework (TCTF), which superseded the 2022 Temporary Crisis Framework. The pandemic and war in Ukraine exposed vulnerabilities in transport routes and global production networks, redirecting attention toward strengthening resilience. In response to external pressures, including China's rise and the weakening of the liberal international order, Europe has adopted selective fortification measures and new industrial policies. Although the single market previously constrained protectionist measures, the EU has since introduced instruments addressing security and economic concerns. The FDI screening mechanism, operational since October 2020, counters hostile foreign acquisitions, whereas the 2023 Foreign Subsidies Regulation (FSR) targets state-subsidized firms in strategic sectors such as critical raw materials and semiconductors (Lavery 2024).

The core premise of European resilience is strategic autonomy, first introduced in 2013 in the context of security and later expanded to encompass trade, digital technology, health, and energy. In 2021, the European Commission introduced open strategic autonomy (OSA) as its new trade doctrine (EC 2021). OSA represents "qualified openness," defined as maintaining openness as possible while achieving sufficient autonomy to protect European interests (Schmitz–Seidl 2023). Several initiatives aimed at reducing strategic dependencies have been launched

(Freudlsperger–Meunier 2024). Originally rooted in security and defense, the concept has generated internal debates and is now increasingly applied to trade and external economic relations (Juncos–Vanhoonacker 2024). This shift reflects a spectrum between "reluctant geopoliticization" – the selective use of geoeconomic tools – and "deep geopoliticization," exemplified by the EU's antisubsidy investigation into Chinese electric vehicles (Herranz-Surrallés et al. 2024). The potential reelection of Trump as US president may intensify EU security discussions on strategic autonomy. The related concept of derisking, introduced in 2022, aims to enhance EU competitiveness by reducing vulnerabilities and fostering partnerships with global allies (Jerzyniak 2024). From a policy perspective, it emphasizes enhancing resilience and mitigating risks associated with economic linkages formerly regarded benign. These measures involve diversifying trade relationships, reducing harmful dependencies, and promoting domestic production (European Commission–High Representative 2023).

The OSA debate has focused on four key areas: defense, the energy transition, microchip manufacturing, and critical raw materials (CRMs). CRMs, essential for green technologies, defense, and robotics, include items such as rare earth metals, solar panels, and batteries. Defining "critical" imports remains challenging due to the complexities GVC dynamics and re-export flows (Méjean–Rousseaux 2024, Pisani-Ferry et al. 2024). CRM vulnerabilities became evident following Russia's invasion of Ukraine and China's weaponization of minerals such as gallium, cobalt, and magnesium, on which the EU heavily depends. To address these challenges, the EU has introduced several measures, including the CRM Act in 2023. The act sets 2030 domestic capacity targets of at least 10% of annual consumption for extraction and 40% for processing. Similarly, the Net-zero Industry Act, also adopted in 2023, identifies eight strategic clean energy technologies (e.g., solar and wind energy, battery production) and aims for the EU meeting 40% of these industries' domestic needs by 2030.

However, harmonizing OSA with the principles of a liberal single market remains a delicate balancing act. Despite the EU's historical commitment to harmonization as a result of divergent national rules, sectors such as services face increasing regulatory fragmentation, hindering the seamless movement of goods and services. All this may discourage European and foreign investors from entering the EU market, as it involves additional costs. According to OECD data, services trade restrictiveness rose significantly, with Bauer–Pandya (2024) reporting an increase from 31% of restrictive observations in 2014–2018 to 80% in 2018–2022. Antidumping and countervailing duty investigations have increased markedly over the past decade, further complicating the EU trade landscape. This trend underscores the challenges of maintaining openness while safeguarding resilience and competitiveness in an increasingly complex global environment.

A notable study commissioned by the European Council, the Letta Report (2024), identifies persistent obstacles within the EU, such as border-related issues, national

regulations, and fragmented rules. The report provides a detailed list of policy proposals aimed at strengthening the single market, emphasizing the need for greater speed, scale, and adequate financial resources. Another key report, the Draghi report (2024), focuses on EU competitiveness, outlining the single market's shortcomings and investment gaps. It also identifies several critical issues that pose a significant implementation challenge for the EU, including innovation, decarbonization, the integration of Europe's fragmented defense industry, strategic autonomy, and economic security. Notably, the report estimates an additional annual investment requirement of approximately 5% of the EU's GDP, representing a significant implementation challenge.

Both the Draghi and Letta reports, however, devote relatively little attention to FDI and trade patterns, despite their pivotal role in evaluating the EU's competitiveness. In January 2025, BusinessEurope (representing a federation of companies) published a competitiveness strategy for Europe. Apart from calling for regulatory easing and greater digitalization, the report devotes limited consideration to trade issues. The proposals are that the EU should define an international trade and investment diversification strategy (i.e., trade agreements, CRMs, mutual recognition, digital partnership), ratify deals with Mexico, Mercosur, and Australia, solve trade disputes with the US and China, and work to preserve and modernize the WTO. These were more detailed in their earlier separate report (BusinessEurope 2024).

Based on these reports, the European Commission introduced the Competitiveness Compass (EC 2025a), covering three main areas: innovation, decarbonization, and security. In the area of innovation, the key initiatives include AI gigafactories and apply AI to accelerate the adoption of artificial intelligence. Furthermore, the Commission has proposed a 28th legal regime to simplify the regulatory framework for companies – including tax, labor, and insolvency laws – thereby supporting business growth. The Compass includes an Affordable Energy Action Plan and a Clean Trade and Investment Partnership Program. Additionally, the Commission plans to create a Competitiveness Fund to finance policies enhancing competitiveness.

The new US foreign policy since Donald Trump's reelection to the presidency has generated uncertainty regarding the long-term sustainability of Europe's defense. This situation has led the EU to develop a more autonomous defense policy, one of the latest manifestations of which is the ReArm Europe initiative – now known as Readiness 2030 – which aims to strengthen Europe's defense industry and mobilize up to €800 billion of investment, financed through a more flexible application of fiscal rules, joint EU borrowing, and an enhanced role for the European Investment Bank (EC 2025b).

In response to intensifying geopolitical instability, the EU has emphasized that its external trade policy will be actively implemented. In December 2024, a political agreement on a trade and investment partnership was reached with the Mercosur

countries (EC 2024). In January 2025, the EU modernized its trade agreement with Mexico, expanding its scope and revising its rules in several key areas (EC 2025c). In March 2025, India and the EU signed a memorandum of understanding for a comprehensive free trade agreement, which is expected to be finalized by the end of the year (Saaliq 2025).

The EU, therefore, has established a clear agenda with a focus on competitiveness, defense, and trade policy. To support this process, having a clear picture of FDI and trade trends in the EU is necessary.

Are foreign trade and FDI relevant from the point of view of competitiveness?

As mentioned above, the competitiveness of an economy lacks a universally accepted definition. Some definitions (e.g., OECD 1992) focus on the foreign dimension, assessing performance in international markets, while others (e.g., the Draghi report [2024]) highlight domestic determinants of competitiveness.

The relationship between competitiveness, trade, and FDI is indeed complex. Focusing on the strong productivity aspect of competitiveness, it is possible to identify several channels through which competitiveness, trade, and FDI are interrelated. Inward FDI can enhance productivity through technology transfer (Dunning 1993) or spillovers, enabling local firms to acquire knowledge and adopt advanced technologies (Blomström–Kokko 1998). Enhancements in the quality of human capital can improve firm- and sector-level productivity, as well as R&D outcomes (Nicolini–Resmini 2010, Damijan et al. 2008). Outward FDI may also increase country-level productivity and competitiveness (World Bank 2018). Foreign trade may increase productivity through economies of scale and specialization (Krugman 1991), learning-by-exporting (Atkin et al. 2017), and competition with imports (Amiti–Khandelwal 2013). The positive impacts are not automatic; institutions and policies and other factors (Rodríguez–Rodrik 2000, Alfaro et al. 2004) play a crucial role.

Several academic and policy-oriented articles use FDI and/or foreign trade data as proxies, drivers, or components in assessing national competitiveness. These studies often examine the relationship between FDI and economic outcomes, such as productivity, export performance, innovation, or structural transformation (e.g., Alfaro et al. 2004, Nunnenkamp–Spatz 2004, Hausmann et al. 2007, Benáček et al. 2014).

Overall, foreign trade and FDI are essential for competitiveness, as they improve productivity through mechanisms such as technology transfer, spillovers, economies of scale, and increased competition. Many studies use trade and FDI as proxies or drivers of competitiveness, linking them to export performance, innovation, and structural transformation.

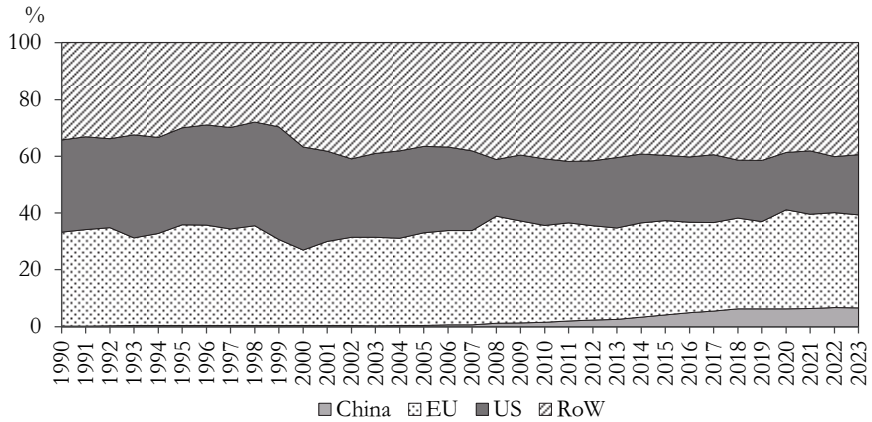
EU in the global FDI flows

The evolution and magnitude of outward FDI (OFDI) can serve as a valuable indicator of the international competitiveness of a country's firms. Inward FDI can enhance economic growth, productivity, technology, and employment in the affected sectors, and thus competitiveness, by positively influencing domestic firms' operations. Regional economic integration significantly shapes FDI flows. According to Bruno et al. (2021) inward FDI (IFDI) increased by approximately 60% from non-EU sources and 50% from within the EU, with the effects of EU membership on FDI were found to surpass those of other regional agreements. Despite the importance of FDI, analysis is hindered by data limitations, including the absence of information on the nationality of ultimate owners and inconsistencies in reported data (e.g., O'Mahony–Barry 2019, Fertő–Sass 2020). These issues pose challenges for the effective application of gravity models and other econometric approaches that rely on country-level data.

The EU has been a major player in global FDI flows, accounting for approximately 30% of outbound FDI stock between 1990 and 2023 (Figure 1). However, the EU's position has been challenged by recent global economic shifts and a slowdown in FDI flows (Witkowska 2021). The rise of China and other emerging outward-investor economies has contributed to a decline of the EU's share, with an even more significant reduction in the US share. Economic and noneconomic shocks – such as political instability or trade disruptions – have further slowed global FDI flows, especially following the 2008–2009 financial crisis, the Eurozone crisis, and the Covid-19 pandemic. Consequently, the pool of available FDI has shrunk, making policies that effectively mobilize capital for investment increasingly critical.

Figure 1

The shares of the EU, US, China, and the rest of the world in the world stock of FDI



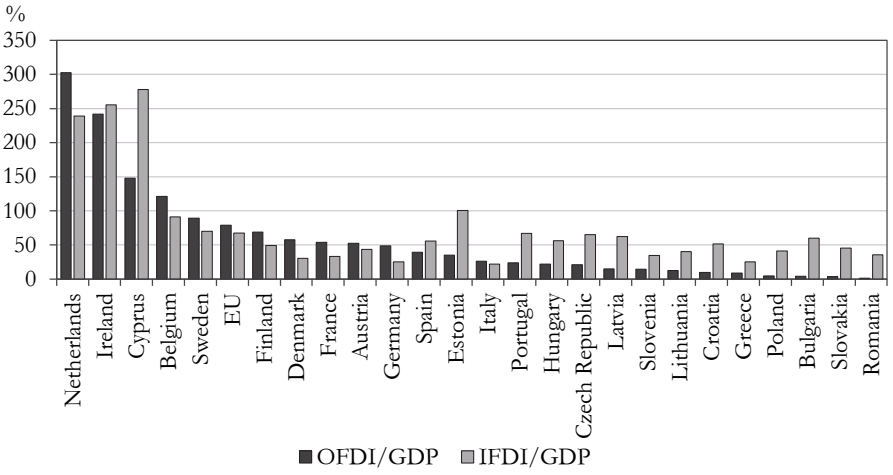
Source: own compilation based on UNCTADstat data.

Around one-third of the European Union's FDI is represented by intra-EU investments according to Eurostat data. After deducting the intra-EU FDI stock, recalculating the breakdown of the world FDI stock for the period between 2020 and 2022 (due to data availability) reveals a similar picture, with the rest of the world accounting for an ever larger share of FDI. Throughout the years, the EU's share is approximately 15%, the US is above one-quarter, and China's is above 8%.

Reported intra-EU FDI may overstate actual levels, as statistics typically reflect the nationality of the immediate owner rather than that of the ultimate owner. Data, which distinguish between immediate and ultimate ownership show that, on average, approximately 80% of FDI is truly intra-EU. Conversely, 20% originates from outside the EU but is routed through a European intermediary country. This practice is common among non-EU investors for various reasons, including tax optimization, organizational efficiency or management considerations, and in some cases, obscuring the ultimate origin of the investment (Gubik et al. 2020).

Figure 2

IFDI stock/GDP and OFDI stock/GDP ratios for the EU member countries, 2023



Source: based on UNCTADstat data.

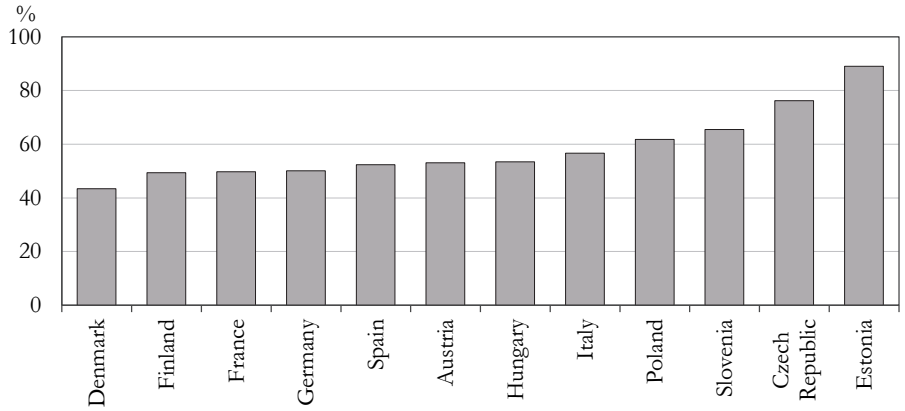
Member states exhibit varying levels of exposure to inward and outward FDI (Figure 2). Some countries act as key intermediaries, attracting foreign investors through favorable regulations and tax environments. Malta and Luxembourg are excluded from Figure 2 because their IFDI/GDP and OFDI/GDP ratios exceed 1,000%, highlighting their roles as significant intermediary. Other countries, such as the Netherlands, Ireland, Cyprus, and Belgium, also serve as essential intermediaries. Moreover, Austria facilitates FDI toward CEE, and Estonia channels investment within the Baltic region. Estimates of the total magnitude of FDI are unavailable, as FDI may be counted twice or even three times in Europe when routed through these

intermediary countries. However, UNCTAD analysis for 2024 highlighted a concerning trend: inflows to Europe decrease by 45% when FDI routed through intermediary countries is excluded (UNCTAD 2025).

Significant differences also exist in the shares of intra- and extra-EU inward and outward FDI among member states (Figures 3 and 4). For IFDI, data are shown only for countries that provide breakdowns based on the nationality of the ultimate owner. Despite variations, intra-EU capital inflows generally dominate in most member states.

Figure 3

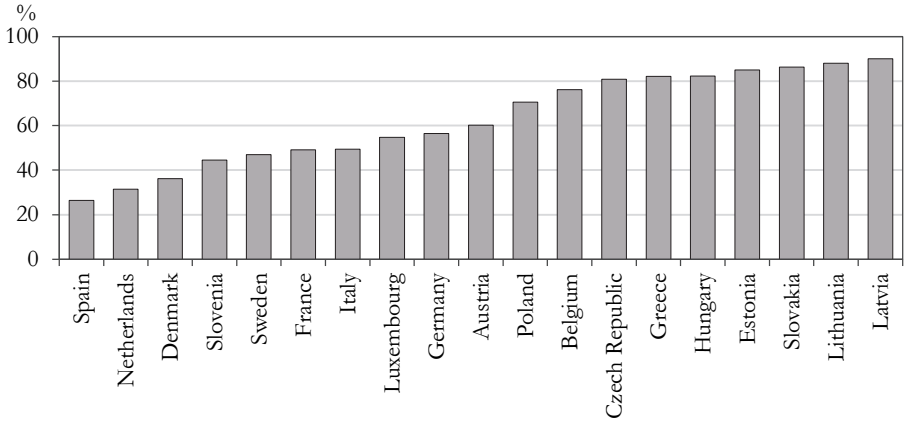
Share of ultimately EU-owned FDI in total IFDI, 2022



Note: data for Germany and Hungary refer to 2021.
Source: OECD data explorer.

Figure 4

Share of intra-EU OFDI in total OFDI of member states, 2022



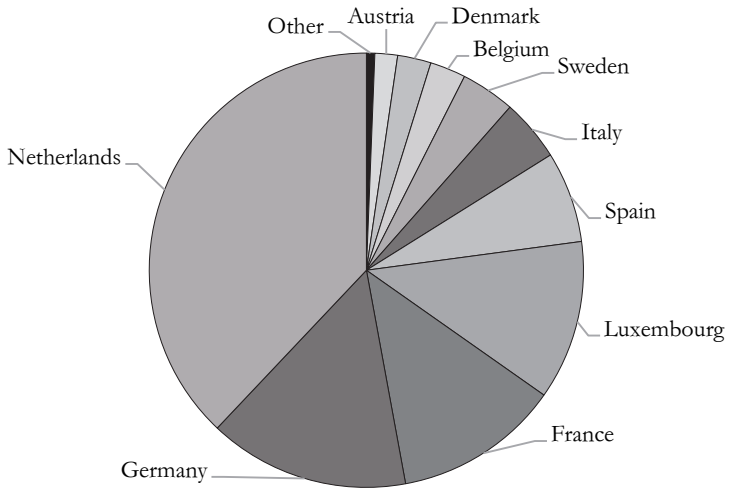
Note: confidential data for Finland, Ireland, and Portugal; data for 2020 for Lithuania, data for 2021 for Sweden.
Source: OECD data explorer.

For OFDI (Figure 4), data on the final destination country are unavailable; however, member states exhibit considerable variation in the proportion of FDI directed toward other EU countries. In most cases, other EU countries are the primary destinations, although notable exceptions occur. For example, Spain directs a significant share of FDI to the Americas, the Netherlands functions as a transit hub, Denmark focuses on the US and the UK, Slovenia targets former Yugoslav countries, and Sweden invests heavily in the US, Norway, and the UK.

Overall, the EU remains a significant outward investor, although individual member state contributions to the EU OFDI stock vary. The Netherlands and Luxembourg owe their high shares mainly to their intermediary role. In contrast, the primary extra-EU foreign investors are Germany, France, Spain, Italy, and Sweden (Figure 5). Data on the sectoral composition of extra-EU inward and outward FDI are limited; however, available information indicates significant differences across countries.

Figure 5

Share of individual EU member states in extra-EU OFDI stock, 2022 (%)



Note: no data for Finland, Ireland, Lithuania, and Portugal; Sweden: 2021.
Source: OECD data explorer.

FDI data reveal significant and persistent differences among EU member states regarding their reliance on and openness to IFDI and OFDI. Member states also differ in the share of extra-EU IFDI within their total IFDI, and a small number of countries account for the majority of the EU's extra-EU OFDI. Furthermore, countries vary in the extent to which they serve as intermediary for both IFDI and OFDI within the EU, posing challenges related to tax optimization and resource allocation. Sectoral patterns of FDI exhibit considerable variation across member states, reflecting differences in economic structures and investment priorities.

Overall, the European Union remains a significant global player in FDI, holding a substantial share of OFDI stock and ranking among the primary targets of IFDI. However, its position has been increasingly challenged by global economic shifts, the rise of emerging economies such as China, and disruptions caused by crises, including the Covid-19 pandemic. Intra-EU FDI continues to dominate. The persistent heterogeneity among member states in terms of FDI and OFDI reliance, openness, and sectoral patterns underscores the complexity of the EU's economic landscape.

EU and trade: strengths and challenges

The second area that received limited attention in the Draghi and Letta reports is trade patterns. Trade plays a vital role in micro-level competitiveness, as exporting firms are generally more productive and innovative than firms that focus solely on domestic markets. Trade is also essential for accessing technological inputs, which drive innovation and growth. Processes of economic integration have significantly expanded trade among member countries (Egger–Pfaffermayr 2013, Vásáry 2013). Analysing trade patterns and the challenges can yield valuable insights into the EU's overall competitiveness.

Thus, examining trade patterns enables the identification of key challenges and strengths in competitiveness. In the following section, a comparative analysis of trade patterns is conducted among the EU, the US, and China. The study encompasses merchandise exports, technology-based products, services exports, and foreign value-added content. To ensure accuracy, extra-EU trade data were calculated, excluding intra-EU trade flows. In addition to comparing the three major regions, we also examine diversity within the EU. This distinction is particularly significant given that the EU does not constitute a single nation-state. Therefore, analysing the competitiveness of individual countries can reveal structural patterns pivotal to the EU's competitiveness strategy.

Merchandise trade

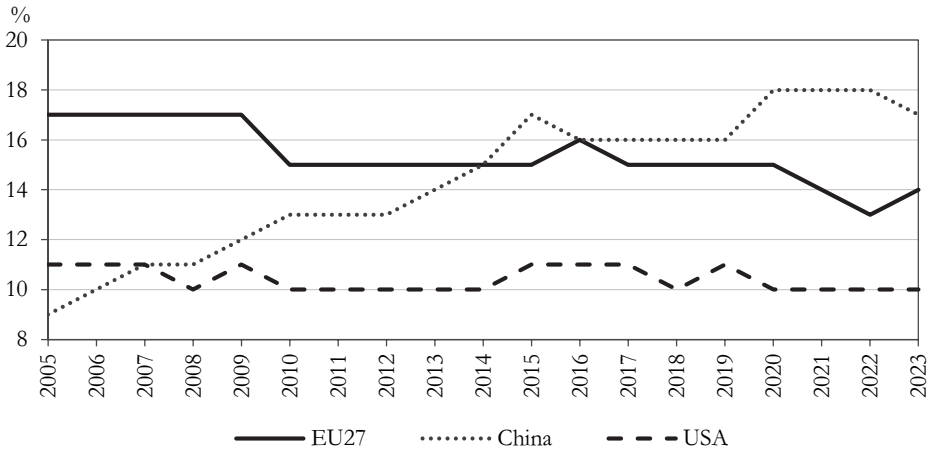
Since 2005, the EU's share of global merchandise exports (excluding intra-EU exports) has decreased from 17.1% to 14.3%. By contrast, China's export share rose significantly, from 9.3% in 2005 to 17.5% in 2023, surpassing the EU in 2015. Meanwhile, the US export share has remained relatively stable at approximately 10% since 2005, consistently lower than both the EU and China. These figures highlight China's substantial growth in global merchandise exports, resulting in its overtaking of the EU, whereas the US has maintained a relatively stable but smaller share. Although the EU remains a key player in global trade, its decline in recent decline reflects challenges in maintaining competitiveness (Figure 6).

Changes in the technological composition of traded products offer insights into shifts in competitiveness. The Lall product classification system (Lall 2000) was

utilized to categorize manufactured goods as primary resource-based and low-, medium-, and high-technology products, based on the technological complexity and knowledge intensity involved in their production.

Figure 6

Share in world merchandise exports*



* In the case of EU27, excluding intra-EU27 exports and including extra-EU27 exports.
Source: own calculations based on UNCTADstat data.

An analysis of the EU's exports to non-EU countries in 2023, classified by technological level, shows that medium-technology manufactured goods accounted for the largest share (see in Appendix Table A1). Since 2005, this category has consistently represented approximately 40% of total extra-EU exports, although it has declined slightly in recent years. High-technology and resource-based products also make up a significant proportion, while primary products account for only a small percentage of exports. By comparison, in the US, medium-technology manufactured goods also constitute the largest share (29% in 2023), slightly higher than the EU's share. Additionally, the share of high-technology products is slightly lower than in the EU (22% vs. 19%). However, primary products are much more important in the US export structure (18% in 2023). China's export structure raises concerns for the US and the EU, as high-technology manufactured goods accounted for the largest share (30%) in 2023, followed by medium- (29%) and low-technology (18%) manufactured goods.

In 2023, the EU enjoyed an export surplus in medium-technology and resource-based manufactured goods, although it had a trade deficit in low-technology manufactured goods. The EU's largest trade deficit is in primary products, including raw materials. Another concern is the negative trade balance in high-technology products, which are vital for innovation and economic growth. These imbalances pose risks to the EU's competitiveness and strategic autonomy. The situation is of

particular concern when compared to China, which had trade surpluses in low-, medium-, and high-technology products in 2023. However, like the EU, it has a negative trade deficit in primary products. The US has a trade deficit in low-, medium-, and high-technology product categories.

Three major technological challenges to competitiveness in merchandise exports can be identified. First, the trade deficit in primary products threatens the EU's strategic autonomy. Second, the EU's trade deficit in high-tech products is concerning, particularly given China's significantly better performance in this sector. In 2005, the EU accounted for 15% of global exports of high-tech product exports, declining to 13% by 2023 (see in Appendix Figure A1). Meanwhile, China's share rose from 12% to 21%, whereas the US continues to lags behind the EU. Third, China presents a competitive challenge in the medium-technology sector, traditionally a key strength of the EU. In 2005, the EU accounted for 18% of global exports in this category in 2005, declining to 16% by 2023. Over the same period, China's exports increased from 5% to 15% (see in Appendix Figure A2).

Overall, the EU maintains a strong position in merchandise exports relative to the US, particularly in medium-technology products. However, the EU's gradual decline and China's growth, may present significant competitive challenges.

EU diversity

An additional challenge for the EU stems from its composition as a union of 27 member states, resulting in considerable diversity in trade patterns. Competitiveness studies comparing the EU with the US and China tend to overlook this aspect, although understanding the EU's internal diversity is crucial for effective competitiveness strategies. Therefore, in addition to examining EU external merchandise trade, it is important to analyse the contributions of individual member states to both external and internal trade, as these vary significantly. These differences reflect internal economic disparities and distinct roles in the EU's division of labor. Because these factors affect efforts to enhance competitiveness, identifying them is crucial.

Germany stands out as the dominant force in the EU's external exports. In 2023, it accounted for over 27% of total external exports – more than twice the share of Italy, the second largest exporter (Table 1). The EU's external trade is highly concentrated, with just four countries – Germany, Italy, France, and the Netherlands – representing more than 60% of external exports. The Netherlands' major role is partly due to the strategic importance of the port of Rotterdam in international trade. Another sign of this concentration is that the top 10 exporters are mostly core countries, such as Austria, Sweden, Belgium, and Ireland. From the EU's eastern periphery, only Poland has made it into the top 10. An analysis of the largest exporters relative to the size of the country's economy shows that Belgium, the Netherlands,

and Ireland are the largest exporters, with exports accounting for over a fifth of their GDP (Table 1).

To better present the results, the four largest exporters in EU diversity (Germany, Italy, France, and the Netherlands) are analysed individually in the following graphs. Other countries are grouped for analysis, comprising core EU countries (Belgium, Luxembourg, Austria, Ireland, Sweden, Denmark, Finland), the southern periphery (Spain, Portugal, Malta, Greece, Cyprus), and the eastern periphery (post-socialist member states). This grouping facilitates a clearer understanding of the regional dynamics within the EU's trade landscape.[1]

An analysis of extra-EU export shares highlights Germany's consistent dominance in external exports since 2005 (see in Appendix Figure A3). In the mid-2010s, German exports accounted for over 30% of total extra-EU exports, although this share decreased in the aftermath of the Covid-19 pandemic. More recently, the distribution of external exports has shifted, with France and Italy experiencing gradual declines, while the Netherlands and the eastern periphery have seen increases. In contrast, the southern periphery's share has remained stable between 2005 and 2023.

Table 1

Top 10 exporters' share of external EU export in 2023 and external export in percent of the country's GDP

Rank	Country	Export share of external export	External export in percent of GDP
1	Germany	27.2	15
2	Italy	12.3	14
3	France	11.0	9
4	Netherlands	10.3	23
5	Belgium	6.5	26
6	Spain	5.7	9
7	Ireland	4.8	22
8	Poland	3.6	11
9	Sweden	3.1	14
10	Austria	2.4	12
	All other countries	13.1	–

Source: own calculations based on Eurostat Comext database.

The trends in extra-EU exports share diverge significantly from trends in intra-EU export shares (see in Appendix Figure A4). Although Germany remains the dominant player in intra-EU exports, its share is considerably less pronounced than in extra-EU exports. In 2023, Germany accounted for 21% of intra-EU exports,

[1] The core–periphery description in this work refers to a geographical and developmental divide, with the core countries outside the five highlighted countries comprising the most developed economies of the EU, while the southern periphery comprises the less-developed countries located geographically to the south, and the eastern periphery comprises the less developed regions located to the east. This approach is in line with the literature examining the core–periphery relationship within the EU (see, for example: Bruszt–Vukov 2024).

followed closely by the other core countries. The Netherlands plays a more prominent role in intra-EU exports than France and Italy, due to the abovementioned "Rotterdam effect." Furthermore, a notable realignment is discernible within intra-EU trade patterns. Internal export shares of the core countries (comprising Germany, Italy, France, and the other core country group) gradually declined between 2005 and 2023. At the same time, the eastern periphery's share has achieved a notable degree of convergence, reaching 20.8% by 2023, closely matching that of Germany. The exceptions to this trend were the Netherlands, where the share remained stagnant, and the southern periphery, which experienced similar stagnation, albeit at a lower level.

We also examined which EU countries and regions exhibit the greatest propensity for external exports (Figure 7), measured as the ratio of external exports to total exports. The results demonstrate that, among the four main exporting member states, Italy, rather than Germany, relies more on external exports. Nevertheless, exports to markets outside the EU does not exceed 50% of Italy's total exports. Italy is followed by France and Germany, which have similar proportions. Notably, the southern periphery exhibits a relatively high external export ratio, averaging above 30%, mainly because of the high levels in Cyprus and Greece. Among the remaining core countries, the Nordic countries and Ireland display higher external export ratios. However, the Benelux states and Austria appear to prioritize internal exports. Among the four main external exporters, the Netherlands records the lowest share of exports to non-EU markets. Similarly, the eastern periphery also prioritizes internal exports, which may be attributed to their role as suppliers and manufacturers within European value chains (Kordalska–Olczyk 2023, Gurály 2024).

The proportions of extra-EU export and imports, together with the external trade balance, can be used to distinguish fundamental structural trade positions within the European Union. Countries or regions whose exports to non-EU countries exceed imports have a trade surplus, whereas those whose extra-EU imports exceed exports demonstrate a trade deficit. A comparison of the average values of these three indicators between 2005 and 2023, relative to the EU average, identifies seven distinct structural positions across the EU (see in Appendix Table A2).

1. Export drivers: these countries have an above-average share of exports to countries outside the EU, a below average share of imports, and a consistent trade surplus. They are open to the world in terms of exports, but are more focused on internal imports. This group includes Germany, the Nordic countries (Denmark, Finland, and Sweden), France, and Lithuania. Germany is the indisputable EU leader of external exports, with a notable surplus in this category.
2. Dependent outward-oriented: similar to the previous group, these countries exhibit an above average export ratio to non-EU countries and a below-average import ratio. However, unlike the leading exporters, these countries experience

a trade deficit. They rely heavily on intra-EU imports and maintain an external export orientation, although they remain structurally dependent. This group includes Croatia, Cyprus, and Malta.

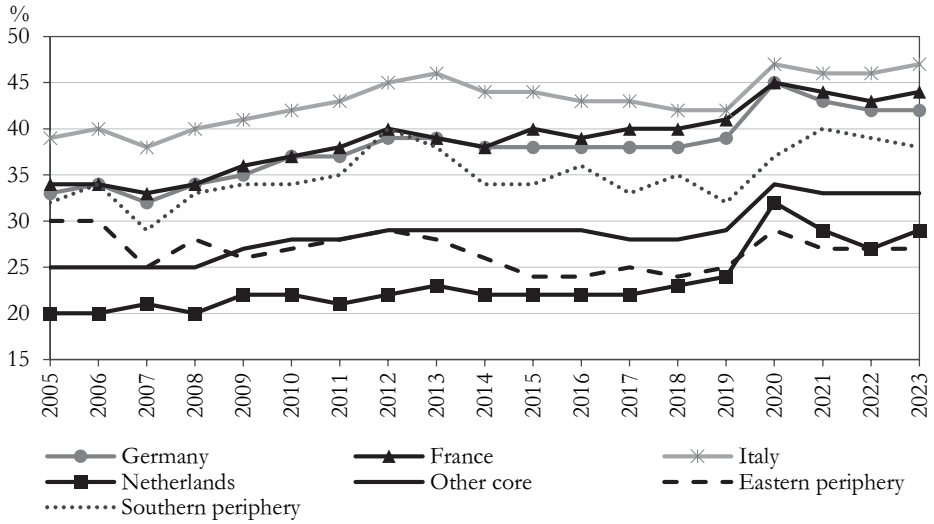
3. Gateway economies: these countries have a below-average export ratio to non-EU countries, an above-average import ratio, and a significant external trade deficit. They act as gateways, collecting a large proportion of non-EU imports and redistributing them within the EU market. The Netherlands provides the clearest example of a gateway country, with over 50% of its imports originating from outside the EU (the Rotterdam effect), the highest proportion among EU member states. Spain, and Belgium in certain years, also fall into this category.
4. Stable embedded economies: these countries exhibit below-average extra-EU export and import ratios, indicating a strong orientation toward intra-EU trade. Within this group, countries that record an external surplus are classified as stable embedded economies, including Austria, Estonia, and Latvia.
5. Dependent embedded economies: these countries, which also display below-average extra-EU export and import ratios, differ from the previous group in that they run an external deficit. This group includes Belgium, the Czech Republic, Hungary, Luxembourg, Poland, Romania, Slovakia, and Slovenia. Some of these countries, such as Slovakia and Luxembourg, are highly embedded within the EU's internal market, reflecting deep integration into EU trade. In the case of the Eastern European countries, this may be attributed to their role in the assembly and manufacturing within European and extra-EU value chains oriented toward production for the EU market.
6. Less embedded dependent economies: these countries have above-average extra-EU export and import ratios, indicating a lower level of intra-EU integration, and also operate with a trade deficit. This includes Bulgaria and Greece.
7. Less embedded exporters: similar to the previous group, these countries exhibit above-average exports and imports outside the EU, indicating lower integration into the EU's internal market. However, they maintain an external trade surplus. This category includes Ireland and Italy.

This categorization highlights the diverse structural positions of EU member states and the resulting different economic interests. These differences should be taken into account when formulating an effective, cohesive EU competitiveness strategy. Gateway economies, such as the Netherlands, which run persistent trade deficits, occupy a fundamentally different position than leading exporters with large surpluses. Similarly, dependent countries may face challenges linked to structural deficits, while those that are less embedded, such as Ireland, follow unique trajectories based on their degree of global integration. This diversity underscores the internal imbalances within the EU that must be addressed in the formulation of a

competitiveness strategy. Enhancing the EU's external export performance requires recognizing and addressing the unique circumstances of the peripheral regions and the Netherlands, where external import surpluses currently prevail.

Figure 7

Extra-EU export share in total export
(unweighted averages of the country groups)



Source: own calculations based on Eurostat Comext database.

Service exports

While the EU has experienced a decline in its global share of both GDP and merchandise exports, a contrasting trend applies in the area of service exports.[2]

The EU27 continues to hold a dominant position in the export of services compared to China and the US, with China maintaining a consistently low share (Figure 8). This highlights the strategic importance of services, which demonstrate considerable global stage, in shaping the EU's overall competitiveness strategy.

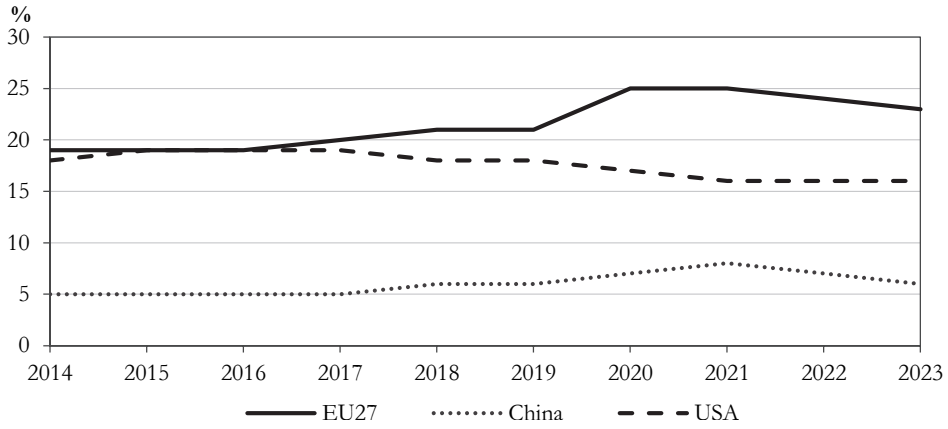
Since 2019, the EU's share of global service exports (excluding intra-EU service exports) has continued to increase. During the pandemic, the EU accounted for over 25% of the world's total service exports, underscoring the resilience of this sector. In contrast, the US has shown a gradual decline in its share of service exports during the same period. Leveraging the EU's strong position in services will be essential for enhancing its global competitiveness moving forward.

[2] Unlike the previous sections, the data presented here does not start in 2005. This is because it was only possible to calculate extra-EU service exports from 2013 onward, due to missing data from certain countries (Bulgaria, the Netherlands, Slovakia, Spain, Croatia, and France) in the UNCTAD database.

In the context of the EU's external service exports, Ireland plays a prominent role, accounting for 18% of these exports in 2023. This can be attributed to Ireland's distinctive position in the digital services sector, likely influenced by the presence of US companies. The Nordic and Benelux states also hold considerable shares. Germany accounts for approximately 20% of external service exports, although its contribution has declined in recent years (see in Appendix Figure A5). France follows Germany in terms of service export shares, surpassing those of the southern periphery and the Netherlands. Italy lags in service exports, with its share falling below 5% in the 2020s. The eastern periphery also demonstrates a lower proportion of external service exports.

Figure 8

World share of service exports*



* In the case of EU27, excluding intra-EU exports, and including its extra-EU27 service exports.
Source: own calculations based on UNCTADstat data.

Trade in value-added

Over recent decades, fragmentation of production has become increasingly widespread. Within GVCs, countries specialize in specific activities across industries or services rather than developing entire industries or sectors, enabling them to engage in international trade by supplying parts, components, or final products. As a result, the distinction between trade in intermediate goods and final goods has grown more critical with the expansion of GVCs. Indicators, trade in value-added (TiVA, WIOD, Eora) databases, and global input–output tables have provided valuable resources for studying the complex interconnections within the global economy.

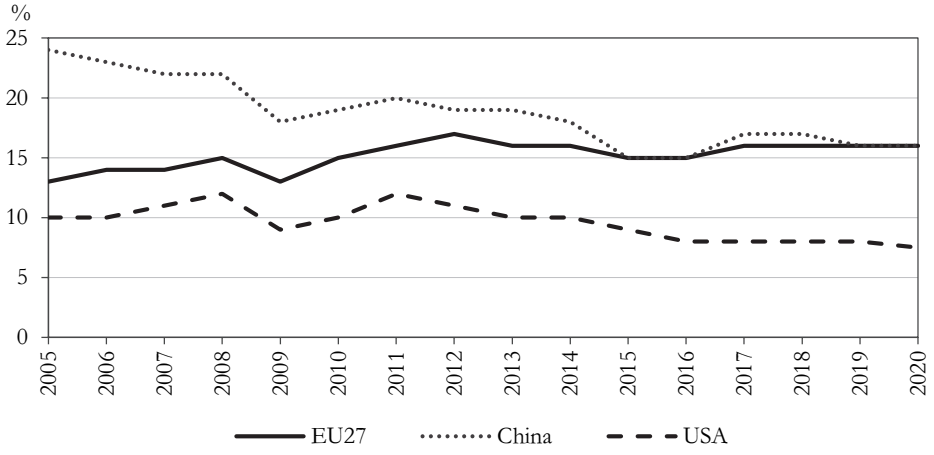
Within the EU, particularly the CEE region, there has been substantial integration into GVCs (Kersan–Škabić 2017, Černá et al. 2022), and scholars have examined patterns of upgrading and specialization within these chains (Kordalska–Olczyk 2023). Germany has emerged as the primary trading hub, forming the manufacturing

core for Central Europe (Stehrer–Stöllinger 2015). Similarly, Grodzicki–Geodecki (2016) and Kersan-Škabić (2017) found that Central European countries occupy a stronger position than Southern European countries in terms of GVC involvement. German exports to third countries incorporate numerous components produced in other member states – particularly those in Eastern or Southern Europe – as well as in non-EU countries. The exports of a given country, accordingly, a country's exports contain "foreign value added" that is, imported inputs. CEE countries are often described as "factory economies" (Baldwin–Lopez-González 2015) due to their high foreign value-added share in exports, also referred to as "backward GVC participation".

The OECD TiVa statistics include data for the EU as a single economy, making it comparable with the US and China. The data indicate that the EU exhibits a greater share of foreign value-added in gross exports than the US (Figure 9).[3]

Figure 9

Foreign value-added share in gross exports, percent (EU as a single economy, intra-EU value-added flows are treated as domestic value-added)



Source: own calculations based on OECD TiVA database.

In the US, the share of foreign value-added in gross exports was 7.5%, whereas in the EU this figure was more than double in 2020 (15.8%). Between 2005 and 2020, the proportion of foreign value-added in the US exhibited a gradual decline, whereas in the EU, it remained above 15%. In China's exports, the share of foreign value-added was notably high in the late 2000s, reaching nearly 25%. However, over the course of the previous decade, this proportion has gradually declined, reaching the

[3] For the EU, the data excludes intra-regional exports, thus it only contains exports to non-EU countries. Intra-regional value-added flows are treated as domestic value-added (e.g., foreign value-added in the EU originates from non-EU countries).

level of the EU by 2015. This illustrates the strengthening of the China's domestic economy and its gradual decoupling from foreign companies. While both the US and China are demonstrating a declining trend in the foreign value-added of gross exports, the EU remains relatively stable, which may pose a potential challenge for the EU's competitiveness.

The share of foreign value-added in gross exports varies considerably across EU member states. An analysis of the share of foreign value-added in total gross exports in 2020 (including both intra- and extra-EU exports; see in Appendix Figure A6) highlights notable differences among member states.[4] Smaller states, such as Luxembourg, Malta, and Cyprus, exhibit particularly high shares, largely reflecting the prominence of offshore activities. Similarly, several CEE countries, including Slovakia, Hungary, the Czech Republic, and Estonia, also report high shares of foreign value-added, reflecting their deep integration into GVCs and their roles as "factory economies" within the European production network. Moreover, Ireland also records high shares, largely attributable to the presence of American technology companies. By contrast, larger economies – such as Germany, Italy, France, and Spain – show comparatively lower shares of foreign value-added. Notably, the eastern periphery is not uniform, with some countries, such as Romania, Croatia, and Poland, exhibiting lower levels of foreign value-added. These differences are critical to consider when formulating a competitiveness strategy, as the concept of strategic autonomy varies across countries with differing degrees of foreign exposure in their export profiles.

Trade data indicate that, unlike in the US and China, the share of foreign value-added in the EU has remained stable. This suggests that the latter two countries increasingly rely on domestic resources and intermediate goods. Nevertheless, significant heterogeneity persists within the EU, with the highest levels of foreign value-added concentrated in the CEE factory economies.

Conclusions

The concept of competitiveness has become a central theme in the EU's economic discourse in recent years. Numerous analyzes have been conducted and proposals developed to improve the EU's competitiveness and the functioning of the single market. However, in this renewed focus on competitiveness, it is crucial to emphasize the contingent nature of the specific definition of the term. The objective of remaining competitive can be achieved either on a purely quantitative basis – by maintaining low costs – or on a qualitative basis, which necessitates stimulating innovation and developing a knowledge-based economy. Therefore, the layered nature of the concept of competitiveness must be considered.

Our study focused on two frequently overlooked areas in the analysis of European competitiveness: FDI and foreign trade. In these two dimensions, countries engage

[4] For individual member states, it is not possible to separate data relating to extra- and intra-EU export.

with the external global environment. We addressed the trends and challenges in these commonly referred to as "external" areas and their implications for EU competitiveness. Our approach and findings partially align with the Draghi report (2024), which also emphasized the diverse capacity of member states to respond to global competition. Previous studies have also documented the diverging economic developments in Europe and in the Eurozone (e.g., Gräbner et al. 2020) and the need for tailored EU strategies (e.g., Aiginger–Rodrik 2020). Our approach differs from those adopted by the WEF, OECD, or ECB, which primarily, and in some cases exclusively, address "internal" areas of competitiveness.

In terms of FDI, we highlighted the critical role of intra-EU FDI, particularly for less-developed member states, and identified large variations in FDI intensity across countries. Member countries also exhibit significant variation in their OFDI intensities, with a handful of countries accounting for the majority of EU OFDI. Furthermore, some member states act as intermediaries in FDI flows, which gives rise to distortions, particularly in fiscal and resource allocation systems. To address these issues, EU competitiveness strategies should explicitly recognize and address these inter-country differences.

With regard to trade, we identify ten key trends and challenges influencing EU competitiveness are identified. First, China has overtaken the EU in terms of its share of world merchandise exports, and the EU's share has declined marginally in recent years. However, the EU still outperforms the US in this regard. Second, the EU's external exports are highly concentrated, with Germany, Italy, France, and the Netherlands accounting for over 60% of external exports. These patterns reflect internal disparities between core and peripheral regions. Third, external exports have recently been internally reallocated, with the role of France and Italy declining and that of the eastern periphery and the Netherlands increasing. Fourth, a comparable reallocation has occurred within intra-EU trade, with the eastern periphery gaining strength, contrasting with the findings of Nagengast et al. (2025).

Fifth, based on extra-EU import and export ratios and the external trade balance, seven structural positions can be distinguished within the EU, each in a different trade situation. While leading exporters are the flagships of global exports (e.g., Germany), gateway zones distribute external imports within the EU and have significant trade deficits (e.g., the Netherlands). Additionally, some are outward-oriented but dependent (e.g., Cyprus), whereas others focus more on internal EU trade. Still, some countries can be considered dependent because they have a trade deficit with external partners (e.g., stable versus dependent embedded, such as Austria versus Hungary). Additionally, some regions are less embedded and, therefore, less dependent on intra-EU trade. These include less embedded exporters with an external surplus (e.g., Ireland) and less dependent embedded regions with an external deficit (e.g., Greece). These different structural positions also generate conflicting interests that must be considered in the overall competitiveness strategy.

Sixth, the EU performs relatively well in service exports, outperforming the US and China. As Altieri et al. (2024) highlighted, this may remain the case in the coming

years as well. Seventh, the EU is strong in medium-tech exports but faces challenges in primary and high-tech exports, which must be addressed for strategic autonomy. Eighth, China has recently posed a significant challenge to the EU in medium-technology products. Ninth, foreign value-added is significantly higher in the EU than in the US and China. This reliance on foreign inputs highlights a need to strengthen domestic firms, which is in line with the findings by Baldwin–Freeman (2021). Tenth, internal imbalances are also present in the different reliance of the member countries on foreign firms for their exports. Our results are based on the analysis of longer datasets compared to those of existing studies, which explains why some of our results differ from the literature.

The policies of President Trump have created a riskier environment for the EU compared to previous years, including direct protectionist pression coming from the new US president toward the EU. Combined with the observed loss of competitiveness, this new environment may prompt the EU to adopt measures to reinforce its economic position. While achieving this requires greater unity and cooperation among member states, the rise of populism encourages more individualistic national policies. Our research highlights divergent FDI and external trade structures within the EU. These differences result in varying national interests and, consequently, varying approaches to competitiveness that mirror these distinct structural positions. This inherent tension – between structural diversity and the need for unified action – can only be resolved through a tailored competitiveness strategy that considers the implications of these varied structural positions. Existing policies insufficiently account for these differences in FDI and trade. Therefore, a successful European competitiveness strategy must address member state heterogeneity and their divergent structural positions. Tailored approaches that address specific national and regional challenges, while aligning with broader EU objectives are essential. Designing a competitiveness strategy requires consideration of the European division of labor to ensure developmental opportunities for all member states. Addressing these imbalances and leveraging strengths, including service exports and medium-technology manufacturing, will be crucial for a more inclusive and strategically autonomous EU trade policy. Policy efforts should prioritize reducing dependence on foreign value-added and enhancing the performance of high-tech industries.

This study has some limitations. The analysis is primarily descriptive and does not seek to establish causal relationships between structural trade and FDI positions and broader economic outcomes. Moreover, due to constraints in the availability of data, some indicators could only be analyzed over a shorter time period or for a limited set of countries. Future research could build on this framework by incorporating econometric methods to test the drivers and consequences of different FDI and trade positions, or by integrating firm-level FDI and value chain data to better capture the microfoundations of structural divergence within the EU.

Appendix

Table A1

External export, import, and trade balance by technological levels in the EU, China and US, 2023

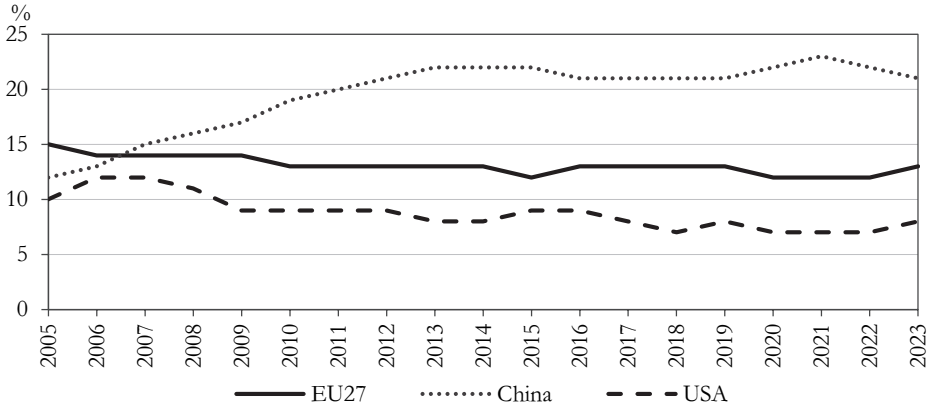
(%)

Denomination	Percent of external export	Percent of external import	Trade balance (in percent of total trade)
	EU27		
Primary products	5	24	−10
Resource-based manufactured goods	19	13	2
Low-technology manufactured goods	11	14	−2
Medium-technology manufactured goods	38	23	6
High-technology manufactured goods	22	22	−1
Unclassified products	5	4	0
	China		
Primary products	3	29	−11
Resource-based manufactured goods	9	20	−3
Low-technology manufactured goods	27	3	14
Medium-technology manufactured goods	29	17	9
High-technology manufactured goods	30	26	6
Unclassified products	2	4	0
	US		
Primary products	18	11	0
Resource-based manufactured goods	16	12	−1
Low-technology manufactured goods	7	15	−6
Medium-technology manufactured goods	29	32	−8
High-technology manufactured goods	18	25	−8
Unclassified products	11	5	1

Source: own calculations based on UNCTADstat data.

Figure A1

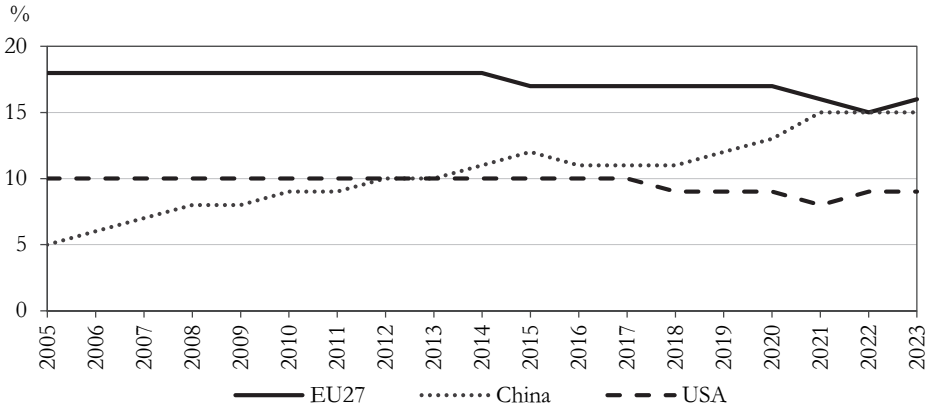
Share in world total high-technology product exports (extra-EU export for the EU)



Source: own calculations based on UNCTADstat data.

Figure A2

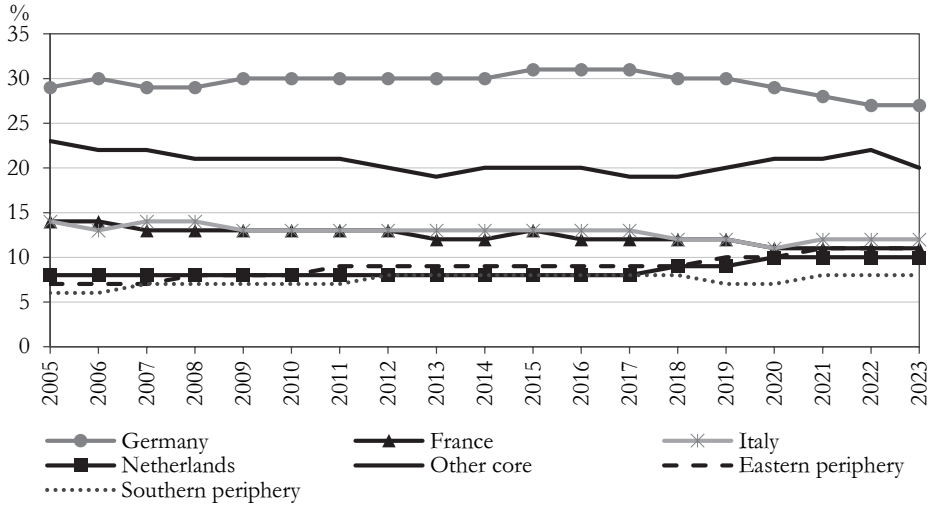
Share in world total medium-technology product exports (extra-EU export for the EU)



Source: own calculations based on UNCTADstat data.

Figure A3

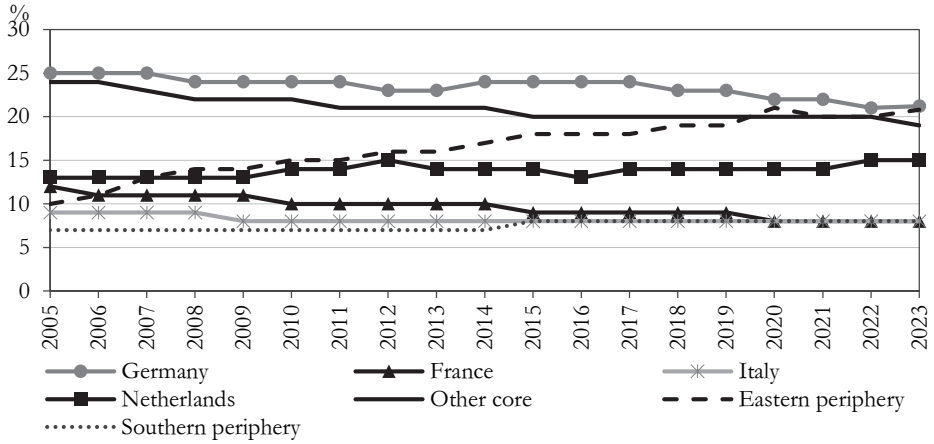
Share in extra-EU exports



Source: own calculations based on Eurostat Comext database.

Figure A4

Share in intra-EU exports



Source: own calculations based on Eurostat Comext database.

Table A2

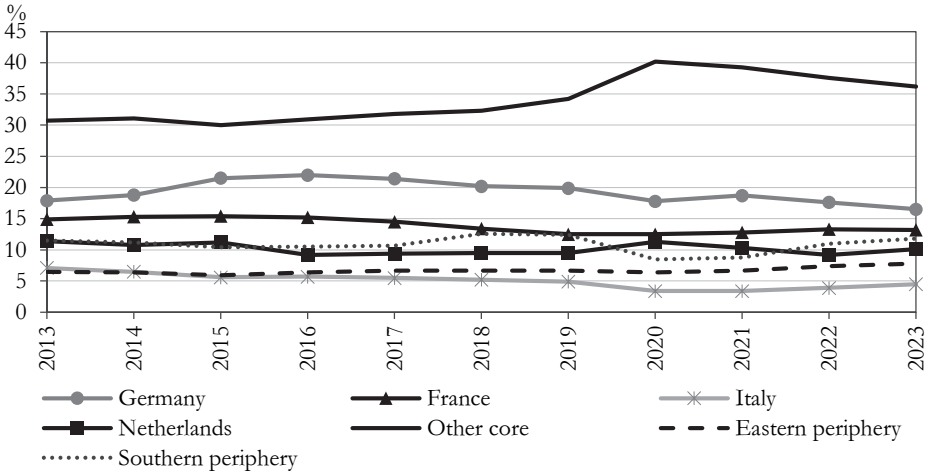
Extra-EU export ratio, extra-EU import ratio, external trade balance (average of 2005–2023)

Countries	Extra-EU export ratio	Extra-EU import ratio	External trade balance	Category
	%			
Austria	27	22	Positive	Stable embedded
Belgium	26	33	Negative	Dependent embedded
Bulgaria	**37**	**39**	Negative	Dependent less embedded
Croatia	**38**	30	Negative	Dependent outward oriented
Cyprus	**35**	29	Negative	Dependent outward oriented
Czech Republic	16	23	Negative	Dependent embedded
Denmark	**36**	28	Positive	Driver exporter
Estonia	26	17	Positive	Stable embedded
Finland	**42**	32	Positive	Driver exporter
France	**39**	31	Positive	Driver exporter
Germany	**38**	34	Positive	Driver exporter
Greece	**44**	**46**	Negative	Dependent less embedded
Hungary	19	27	Negative	Dependent embedded
Ireland	**44**	**39**	Positive	Less embedded exporter
Italy	**43**	**40**	Positive	Less embedded exporter
Latvia	31	22	Positive	Stable embedded
Lithuania	**39**	35	Positive	Driver exporter
Luxembourg	16	20	Negative	Dependent embedded
Malta	**39**	28	Negative	Dependent outward oriented
Netherlands	23	**53**	Negative	Gateway zone
Poland	20	28	Negative	Dependent embedded
Portugal	26	25	Negative	Dependent embedded
Romania	28	27	Negative	Dependent embedded
Slovakia	12	22	Negative	Dependent embedded
Slovenia	28	31	Negative	Dependent embedded
Spain	32	**41**	Negative	Gateway zone
Sweden	**40**	31	Positive	Driver exporter
EU27	33	35		

Note: bold markings indicate values above the EU27 ratios.
Source: own calculations based on Eurostat Comext database.

Figure A5

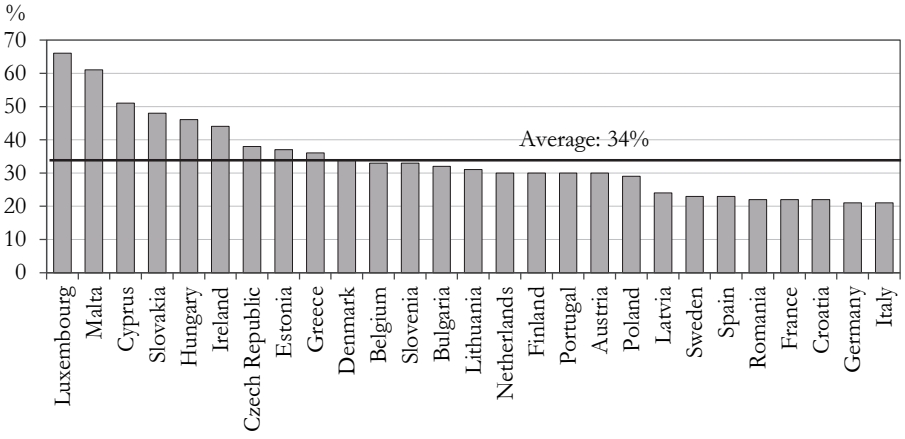
Share of extra-EU service exports (unweighted averages of the country groups)



Source: own calculations based on UNCTADstat data.

Figure A6

Share of foreign value-added in gross exports in 2020



Source: own calculations based on OECD TiVA database.

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