About a quarter of the losses of market share in the Eurozone since the health crisis stem from the energy price shock, but do not appear to be due to energy-intensive products alone

Since the health crisis, the main advanced economies have lost market shares to some of the emerging economies, first and foremost China. Between 2019 and 2023, the market share of the advanced economies, defined as the weight of their exports by value in world trade in goods, declined by almost 2% (both in the Eurozone and the United States), while that of China increased by 10%.

A comparison of the export performance of the main advanced economies in goods by volume – which adjusts for the geographic orientation of exports as well as for relative price variations – confirms this diagnosis: since the health crisis, China's performance has significantly improved (+20%) while that of the advanced economies has generally declined, to varying degrees. US performance has declined by -6% compared with its 2019 performance level, against -4% for the Eurozone. The countries of Southern Europe (Spain, but especially Italy) have more or less maintained their export performance. However, the performances of the United Kingdom (-19%), France (-9%), and Germany (-8%) have deteriorated particularly significantly since the health crisis. These developments mark a turning point: Italy and France had stabilised their export performance since 2010 (the United Kingdom since 2015) after losing considerable ground in the 2000s; Germany and the United States had generally maintained their performance since 2002; China made no further progress from 2012 to 2019.

This decline in the Eurozone's export performance in recent times could be linked to the deterioration in the zone's cost competitiveness: the rise in energy prices following the invasion of Ukraine by Russia is specific to the Eurozone, giving rise to an asymmetric supply shock. The economic model developed in this Focus shows that this was a contributory factor to the deterioration in European performance, although only in part, to the tune of around 20% to 25%.

A detailed analysis by product of changes in market share over the recent period confirms this macroeconomic diagnosis. Goods from "energy-intensive" branches have indeed contributed in recent times to market share losses by European countries and to China's gains, but they account for only about a quarter of this change. Other products are also responsible for the Chinese economy's market share gains over its western competitors since the health crisis: this particularly applies to automobiles and electronic equipment. For these two market segments, the price of energy plays a more secondary role and the loss of performance tends to reveal a deterioration in competitiveness, excluding cost.

Enzo Iasoni, Guillaume Roulleau, Sarah Zaidan

Since the health crisis, the main advanced economies have suffered losses of market shares to the benefit of certain emerging economies, primarily China

The export market shares of goods[1] from the advanced economies by value, defined as the ratio of their exports to world trade, have fallen back significantly since the 2000s, to the benefit of emerging economies, especially China. These losses in market share generally occurred during the decade following 2000, after China became a member of the World Trade Organization: in 2007, on the eve of the financial crisis, the market shares of the advanced economies were 11% below their 2000 level (►**Bas and al., 2015**). These market shares eventually stabilised during the 2010s: in 2019, they were almost 20% below their 2000 level (►**Figure 1**).

In 2019, the Eurozone represented 27% of global exports of goods, a significant proportion due to the inclusion of intra-zone flows. If these flows had been excluded, the weight of the Eurozone in world trade would have only amounted to about half that figure. Exports from France and from Italy represented 3% of world exports, compared to more than 8% for Germany and 2% for Spain. The United States accounted for about 9% of world trade compared to less than 3% for the United Kingdom and 14% for China.

Since the health crisis, the advanced economies have suffered a further decline in market shares with corresponding new gains for the emerging economies, notably China. Between 2019 and 2023, the market share of the advanced economies would appear to have declined by almost 2%, while that of China would seem to have grown by 10% (►**Figure 1**). This new decline, after a decade of relative stability, concerns both the Eurozone and the United States (about -2% in both cases).

The decline in US market shares could be partly due to that country's trade war with China, whose effects appear to be asymmetrical. The increase in reciprocal customs

1 The scope of this study is limited to exported goods only, thereby excluding services. Trade in services is poorly correlated with the economic cycle and fares poorly in international comparisons (►**Marc et Patier, 2016**).

tariffs would seem to have affected United States exports to China, while China has played its cards right, notably by diversifying its trading partners (►**Bertrand and Villani, 2024**). In addition to these short-term transformations linked to the trade war, losses of US market shares could be the result of a longer term US disengagement from the world economy (►**Mandel, 2012, PIIE, 2021**), accentuated by the Inflation Reduction Act (IRA) requiring final assembly in North America for a large number of industrial components and products. Alongside the decline in exports, the share of US imports in world imports has also fallen slightly.

In addition to the emerging economies of Asia (China, India, etc.), some Latin American and Eastern European countries are also are likely to gain market shares in the post-health crisis period, whether they are considered as advanced or emerging (►**Box** "Change in market shares in other advanced and emerging economies"): for most countries, however, trend gains maintained a similar pace both before and after the health crisis, whereas in China, these market share gains occurred after several years of relative stability and therefore mark a real change.

This conclusion can also be drawn from export performances

A potential explanation for this further decline in the market shares of the advanced economies could reside in the geographic orientation of exports. In the case of France, for example, the deterioration in market share could simply reflect the fact that its main trading partners (the European Union in particular) are growing less quickly than the rest of the world, especially since 2022 and the start of the energy crisis. In addition, since these market shares are calculated by value, they incorporate relative price variations.

In order to neutralise these two effects, the comparison can be applied to export performances (►**Figure 2**), defined as the ratio of a country's exports of goods by volume to demand for its products (Box "Data source and concepts used"). This change in metric does not modify the basic assessment: the export performance of the main advanced economies has deteriorated since the health crisis, while that of China has improved significantly (+20% compared to the 2019 performance level).

In the advanced economies, the decline in export performance is similar on both sides of the Atlantic: -6% for the United States and -4% for the Eurozone. Within Europe, however, contrasting changes are observed: the countries of Southern Europe (Spain, and especially Italy) have more or less maintained their export performance since 2019, whereas it has fallen sharply in France (-9%), the United Kingdom (-19%) and Germany (-8%), which had nevertheless managed to maintain its export performances from 2000 to 2019.

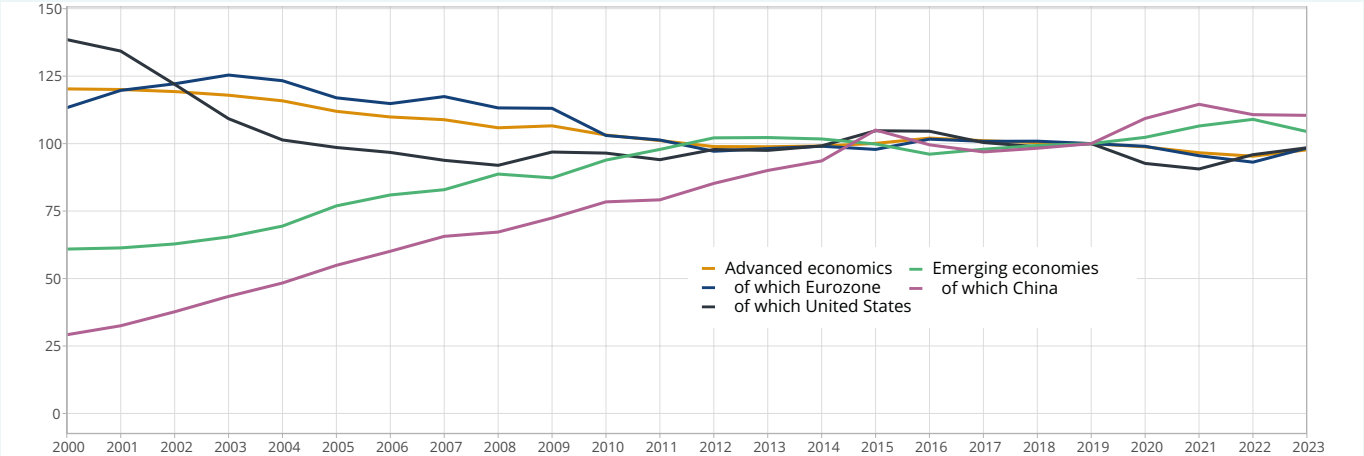
From a macroeconomic standpoint, the market share losses by the main Eurozone economies since the crisis are only partly due to the increased cost of energy inputs

Over the long term, exports of goods from the main Eurozone economies[2] can be modelled using an econometric error-correction model (see Annex). Over the long term, the volume of exports is traditionally determined by global demand for the products of the main Eurozone economies and by the share of emerging countries; in this way the automatic decline in the market shares of the group of six countries is determined throughout the estimation period and linked to the emergence of new players in world trade (especially China) which played a marginal role at the beginning of the period

2 Germany, France, Italy, Spain, the Netherlands and Belgium.

►1. Global market shares in the export of goods by value in the main economies

(in level, base 100 in 2019)



Last point: 2023.
Note: the definition of advanced economies is broader than that used by the OECD, and includes notably Turkey and the countries of Eastern Europe.
Source : Source : Centraal Plan Bureau.

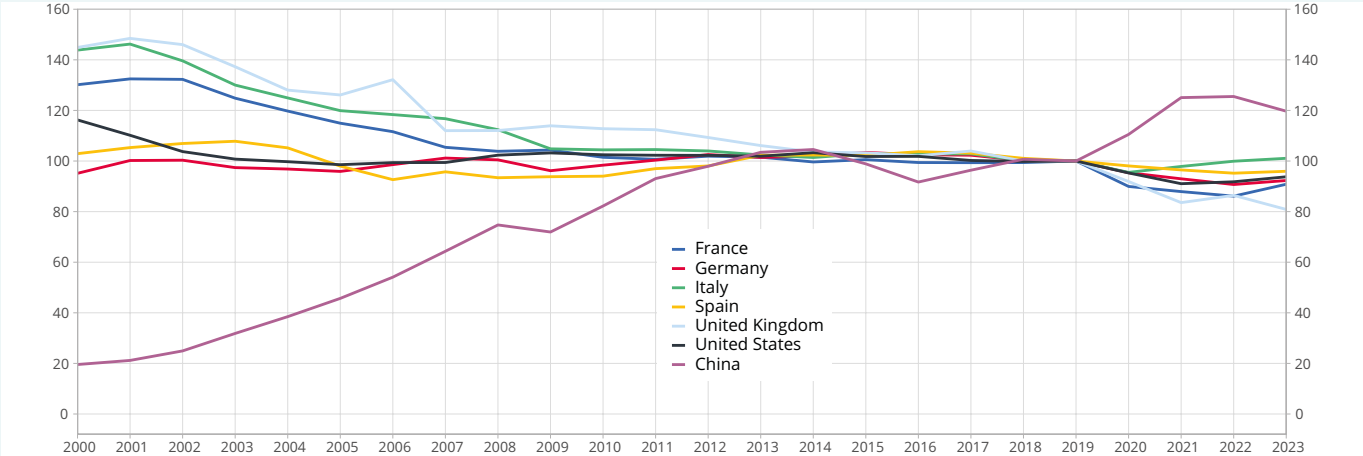
(this methodological choice is the same as that used for the Mésange model for France, ►Bardaji and al. 2017). Two other variables are introduced in order to determine the competitiveness of European products on the world markets, all other things being equal: the real effective exchange rate in the Eurozone and a relative price for gas used in the European countries compared to that available in North America. This variable was selected in order to measure the impact on Eurozone competitiveness of specific supply shocks affecting the price of energy inputs: from this point of view, it seems most relevant to monitor the price of gas. The oil market is integrated at a more global level which makes it impossible to use the price of this energy source to model first-order supply shocks affecting different geographic zones asymmetrically. In addition, gas-price fluctuations can also be used to take account of variations in the price of electricity, which is strongly linked to that of gas in Europe, given the functioning of the market. This model was estimated for the 1997-2019 period (►Figure 3).

Over the recent period, this model can only account for a proportion of the decline in export performances in the Eurozone: between 2020 and 2023, the export performance of all the main Eurozone economies declined by 4.3% while the model forecast a decline of only 1.4%, about 1 point of which was due to the change in the relative price of gas after the invasion of Ukraine.[3] This variable can determine the deterioration in cost competitiveness in the Eurozone compared not only to the United States, but also more broadly to all the countries that have not suffered a specific gas price shock. It can therefore account for only a proportion of the decline in market shares in the Eurozone compared to other economies.

3 Over the 2020-2024 period, the model has been used by extending the market share of emerging countries not by their observed level but as a trend. This enables the unusual increase in China's market share observed over the period with respect to the rest of the world (and hence to the Eurozone) to be neutralised in an attempt to explain it using the other factors included in the equation (exchange rate and relative gas price). See Annex for more details.

►2. Performance in the export of goods by volume in the main economies

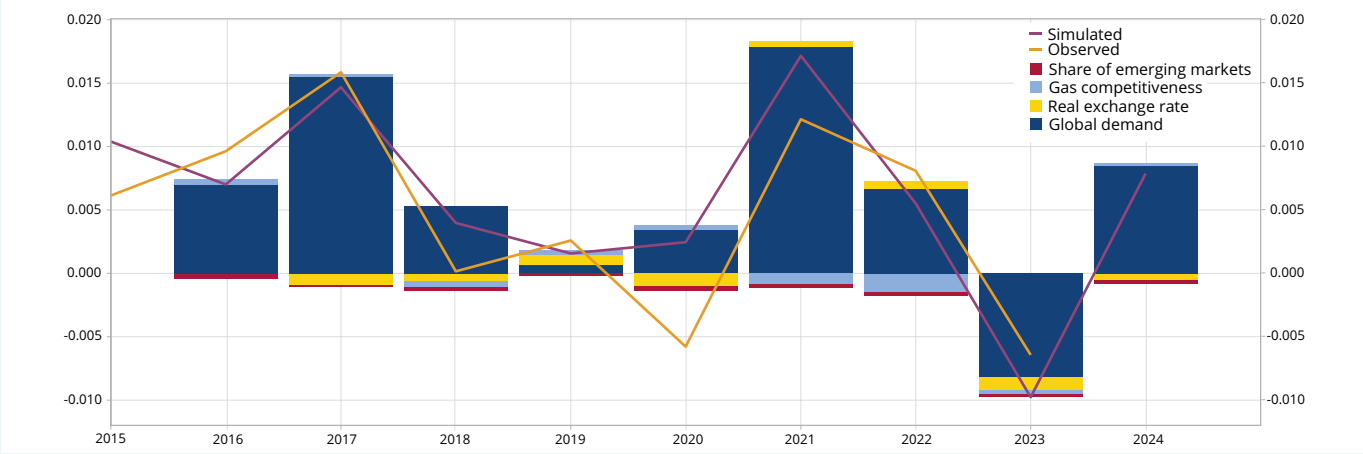
(in level, basee 100 in 2019)



Last point: 2023.
Source: National Accounts, CPB, Direction Générale du Trésor. INSEE calculations.

►3. Observed and estimated changes in exports in the Eurozone

(changes in %, contributions in points)



Source: INSEE, Destatis, Istat, INE, Statistics Netherlands, National Bank of Belgium, CPB, Banque Mondiale, BCE, INSEE calculations.

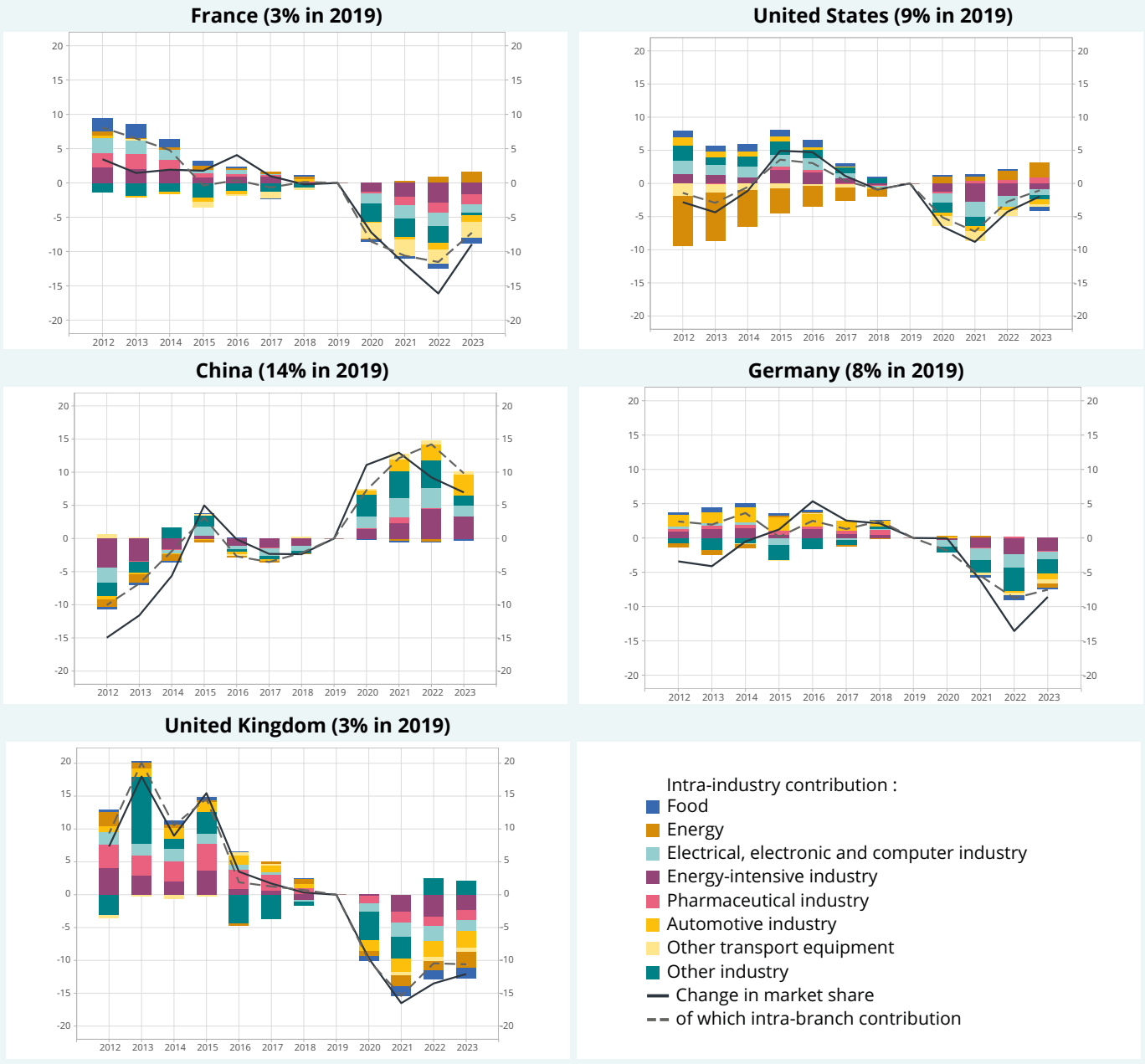
Losses of market shares in the Eurozone can be broken down in detail by product

In addition to the observation made at the macroeconomic level, analysing the changes in market shares per product may be worthwhile. To this end, a "Berthier" breakdown (►Berthier 2002) of market-share losses and gains was carried out in relation to the 2019 level. Using this breakdown, the contribution of each product to the change in aggregated market shares undergoes two effects (►Box "Data source and concepts used"):

- a "structural effect" reflecting the reallocation of world exports between products. Even if a country's market shares remain constant product by product, the structure of world trade may have an impact on changes in aggregated market shares. For example, when the relative weight of the aeronautics sector in world trade decreases (as has been the case since the health crisis), a country

►4. Breakdown by sector of changes of market shares in exports of goods by value in the main economies

(variation in market shares of each country compared to base 2019, in %)



Last point: 2023.
Note: the solid black line corresponds to the variation in total market shares as a percentage compared to 2019 and the dashed line to the "intra-branch contribution", adjusted for the change in market shared aggregated for the "structural effect" reflecting the redistribution of global exports between branches (this structural effect is therefore measured according to the difference between the two lines). This "intra-branch contribution" is then broken down per product (►Box "Data source and concepts used" for details of the method). The level of market shares in 2019 for each country is shown in the title of each graph: these are market shares by value calculated from UN Comtrade data and may therefore differ marginally from the market shares by volume taken from CPB data, which are also mentioned in this Focus.
Source : UN Comtrade. INSEE calculations.

specialising in aeronautics exports and maintaining its market shares in this sector will nevertheless see its overall market share decline automatically;

- an "intra-product effect" measuring the impact of changes in market shares specific to each product.

Note that structural effects play only a small part in the recent period (►**Figure 4**), despite France and Germany appearing to be slightly penalised by their sectoral specialisation since the end of the health crisis.

Products from energy-intensive industries account for about a quarter of European market-share losses

In line with the results highlighted by the econometric estimate (see above), the Eurozone has lost market shares in energy-intensive products, i.e. goods which are highly energy-intensive to manufacture (wood and paper industry, chemicals, rubber and plastics, and metallurgy). These products accounted for 22% of market-share losses (excluding the structural effect) between 2019 and 2023 for France and also for the United Kingdom (which suffered the same shock as the Eurozone on energy inputs) and up to 25% for Germany, a share which is comparable to the weight of these products in the total exports of goods from these different countries. Symmetrically, these products played a decisive role in China's market share gains over the period, with a contribution of 33%, whereas these products only account for a total of around 20% of Chinese exports of goods in 2019 (►**Figure 4**).

Europe has also lost ground to China in electronic products and automobiles

In addition to energy-intensive products, the market-share losses in the different advanced countries since 2019 concern a wide range of products. In particular, two other types of product play a key role in the market-share losses by different advanced economies compared to China: electronic equipment and automobiles.

Electrical, electronic and IT equipment (which includes semi-conductors and computers) accounts for a significant proportion of the market shares lost by the advanced economies between 2019 and 2023, although to varying degrees: 17% in France, 15% in Germany (i.e. a similar share to the weight of these products in their total exports of goods) and almost a total loss in the United States. The loss of US market shares in semi-conductors could be explained by the restrictions imposed by the United States government on exports to China and more stringent controls (►**Shivakumar and al., 2024**). Symmetrically, China has gained market shares for these products, which contributed 16% of its overall gains between 2019 and 2023, as these products represent 30% of the country's total exports of goods.

Concerning the automotive industry, the market reached a turning point with the significant growth of the electric car market. Since the health crisis, market shares in the automotive sector of the main advanced economies have declined once again (►**Figure 5**). The market share of the French automotive sector – whose competitiveness had already declined between 2000 and 2012 (►**Head and al., 2020**) – has dropped by almost 10% since the crisis and this product accounts for 13% of the total losses of French export market shares between 2019 and 2023 (i.e. a slightly higher share than the weight of automobiles in their total exports of goods, equal to 9%). Losses of market shares are greater in the United Kingdom (-20%), of roughly the same order of magnitude in the United States (-10%), and slightly lower in Germany (-5%, i.e. a contribution of 12% to losses with the sector representing nearly 17% of total exports of goods). In contrast, China's market share in the automobile sector doubled between 2019 and 2023, even though it represents only 3% of the country's total exports of goods. The automobile sector accounts for nearly a third of the country's gain in market shares across all goods. This growth has been especially driven by the rapid rise of electric and hybrid cars (►**DGDDI, 2024**), a segment in which Chinese brands have emerged and are now competing directly with their European and American counterparts.

In France, the aeronautics sector accounts for a third of market share losses…

Certain products also stand out due to their particular impact on certain advanced economies, even though they do not (or only minimally) contribute to the redistribution of market shares between China and the advanced economies.

The primary example is the aeronautics sector, which – for France – accounts of the majority of its "other transport equipment". This sector has contributed to the market-share losses in Germany and France in recent times: this contribution is estimated at 32% (excluding the structural effect) in France and 9% in Germany. However, these losses of market shares, notably in relation to our non-European partners, are likely to be only temporary, and are expected to be absorbed, or even reversed (►**Roulleau, 2024**).[4]

4 It should be noted that the definition of sectors of activity in this study is an imperfect approximation of the French classification of activities (NAF), see ►**Box** "Data source and concepts used". For example, the "other transport equipment" sector in this study does not include aircraft engines – despite their being essential to French performance in the aeronautical sector within the meaning of NAF (►**Roulleau, 2024**). This contribution therefore increases the contribution of the sector within the meaning of NAF.

… and pharmaceuticals for a fifth

In 2023, the global pharmaceutical market regained its pre-COVID-19 crisis momentum. The United States – historically the world leader – comfortably retained its dominant position. In fact, the giant American sector has seen a significant increase in its market shares (+25% between 2019 and 2023, ►**Figure 6**) thanks to exports of vaccines, especially against COVID. China also recorded a sizeable, albeit temporary, increase in its market shares, which tripled between 2019 and 2021 thanks to the sale of anti-COVID pharmaceutical products, and then evened out at a slightly lower level than before the health crisis. Amongst the main Western European economies, France and the United Kingdom stand out with notable losses of market shares in this sector, recording a drop of around 20% and 25% respectively between 2019 and 2023. The pharmaceutical sector would appear to account for almost 20% of market share losses (excluding structural effects) for France and 14% for the United Kingdom.

The United States gained market shares in energy

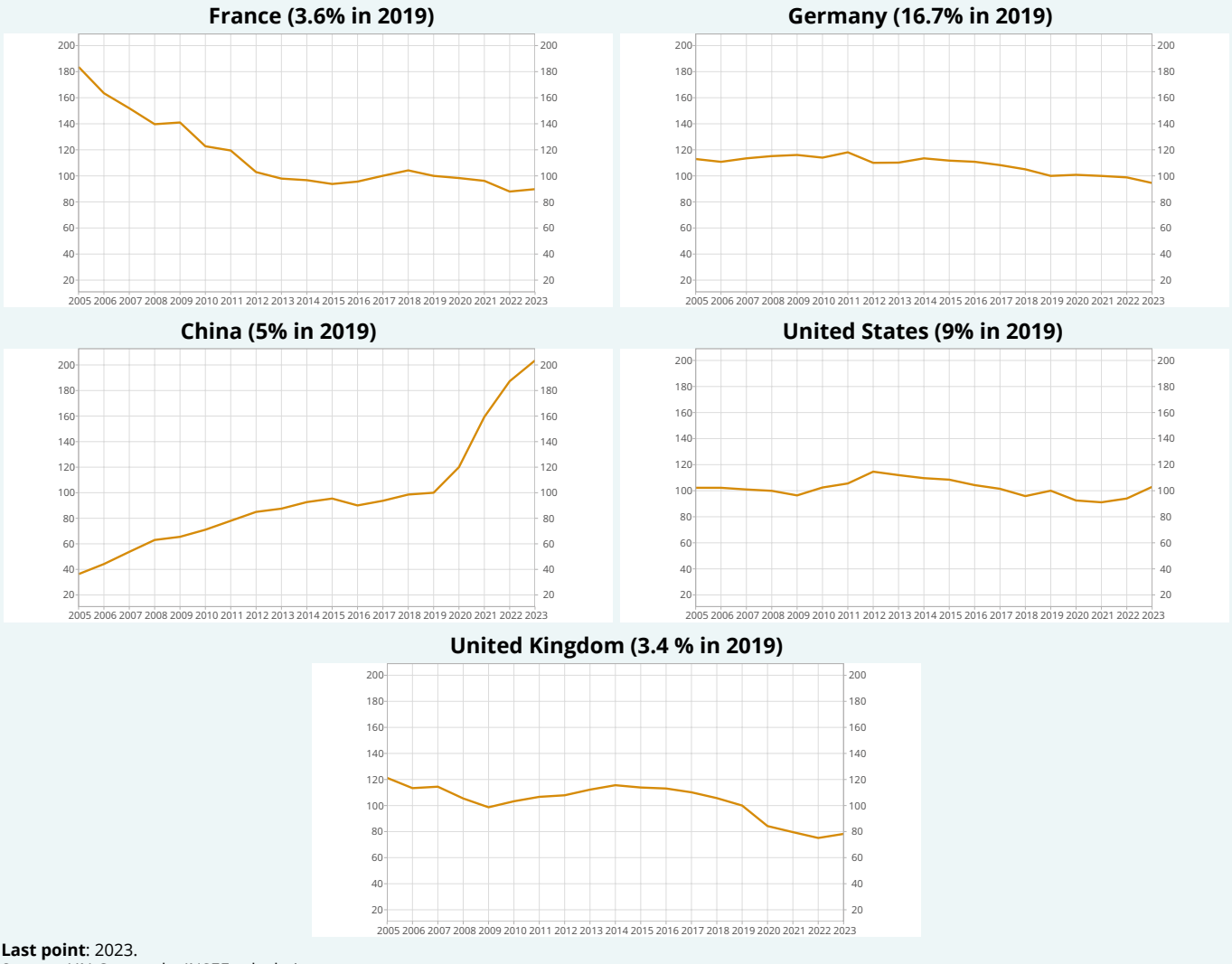
Finally, the United States managed to limit its losses of global market shares due to the ramping up of its energy sector, driven by accelerated growth in the extraction of unconventional hydrocarbons. This momentum was building prior to the health crisis and has continued since then, notably with the increase in deliveries of LNG to European countries that had been deprived of Russian gas supplies since the invasion of Ukraine.

Finally, the losses in export performance in the Eurozone seem to be permanent in part

The preceding analysis outlines a typology of export performance losses. A large proportion of the losses linked to the increase in the relative price of energy seem to be lasting as the liquefied natural gas that Europeans have been using since the embargo on Russian gas is structurally more expensive. Losses relating to the aeronautics sector

►5. Market share in the automotive industry by value in the main economies

(in levels, base 100 in 2019)

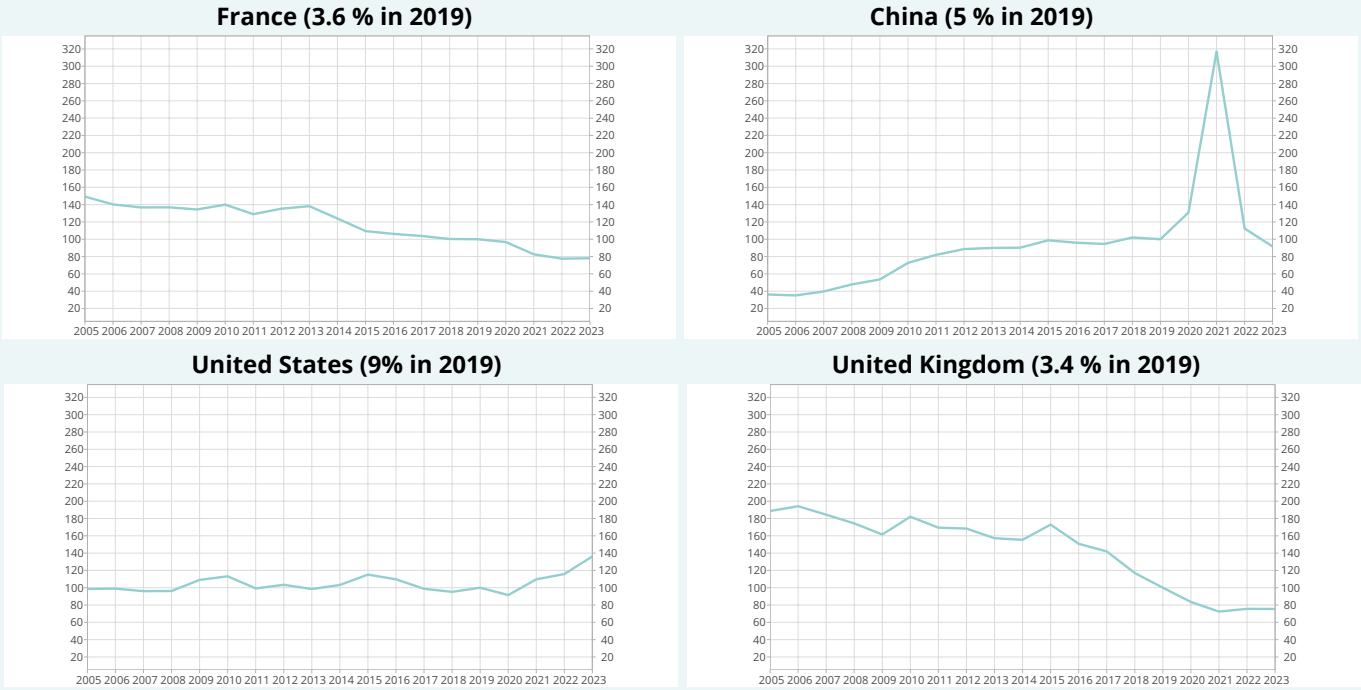


Last point: 2023.
Source: UN Comtrade. INSEE calculations.

appear to be temporary. In other cases, the analysis is more complex: short-term developments will be highly dependent on the ability of European enterprises to close the technological gap, or of European countries to attract foreign industrial companies. ●

►6.Market share in the pharmaceutical industry by value

(in level, base 100 in 2019)



Last point: 2023.
Source: UN Comtrade. INSEE calculations.

Box 1: Data source and concepts used

Data sources and concepts

The export market share of country *j* is defined as the ratio of the country's exports on date *t* by value, X_{jt} to world exports by value (i.e. the sum of exports from the *J* countries in the scope considered):

$$Part_{jt} = \frac{X_{jt}}{\sum_{i}^{J} X_{it}}$$

Several institutions collect different national data, usually from customs sources in the case of exports of goods, in order to measure market shares per zone. The data used in this study originates from the Dutch organisation, Centraal Plan Bureau (CPB). However, the disaggregated analysis per product and per country is based on United Nations data (UN Comtrade), which has the advantage of being extremely detailed (more than 5,000 products).

Regarding changes in market shares, in order to distinguish between what relates to the geographic specialisation of each country and what relates to export performance in relation to competition on each third-country market, export performance is defined as the change in market shares not explained by the geographic orientation of exports.

To calculate this export performance, the concept of world demand for the products of each country must be used. World demand for the products of country *j* measures what exports from *j* would be if the market share in each of its partners remained constant compared to the previous year. It is therefore a measure of demand from external markets in which the enterprises of *j* are present. The growth rate of world demand for the products of *j* at *t*, ΔDM_{jt} is expressed in the following manner:

$$\Delta DM_{jt} = \sum_{i}^{I} \Delta M_{it} \frac{X_{ji,t-1}}{\sum_{i}^{I} X_{ji,t-1}}$$

Where:

- ΔMit is the growth rate of imports by volume of country *i* in the current year;
- $X_{(ji,t-1)}$ are exports from country *j* to country *i* by value in the previous year;

The export performance of *j* is then measured as the ratio of exports by volume of *j* to world demand for the products of *j*:

$$Performance_{jt} = \frac{X_{jt}}{DM_{jt}}$$

As it is calculated by volume, export performance – unlike market shares – can also be used to neutralise the effects of relative price variations. Data relating to world demand for goods from different countries by volume originates from the French Directorate General of the Treasury (**►DG Trésor, 2024**), exports of goods by volume originate from the national accounts of the different countries, with the exception of China, where exports of goods by volume are calculated on the basis of exports of goods by value produced by Chinese customs deflated by the price of Chinese exports in goods obtained from the CPB.

Statistical processing of the UN Comtrade database

The UN Comtrade database compiles customs data from a large number of countries and provides extremely detailed information (almost 5,000 products for the most detailed classification) on exports from different countries worldwide. In this Focus study, a level of aggregation of around a hundred products is considered. At this level of aggregation, the transition between the customs classification used by UN Comtrade and the French classification of sectors of activity (NAF) is imperfect. For example, transport sectors (automotive, aeronautics, etc.) from UN Comtrade and used in this Focus only cover vehicle assembly and not engine construction, unlike the NAF.

In addition, the UN Comtrade database for 2023 (and to a lesser extent for 2022) is incomplete. Just over 50% of countries are present for each sector of activity in both 2019 and 2023. In terms of amounts, the restricted scope of the countries present in 2023 represents more than 80% of global trade. To supplement the global trade data used in the analysis for the 2022-2023 period, global exports of each product are extended by adding their changes calculated for the restricted scope of countries present over the 2022-2023 period.

Sectoral breakdown of market shares

In accounting terms, each product contributes to the change in market shares aggregated via two effects:

- a "structural effect" measuring the impact of the distortion of the structure of world trade. When the relative weight of a product in world trade declines, and a country's market shares are particularly low for this product, this contributes to increasing the country's overall market share;
- an "intra-product effect" measuring the impact of change in the market shares of a given product, with the structure of world trade remaining unchanged. Note that this "intra-product" effect reflects both the "pure performance" of the branch and the geographical orientation of the country.

A Berthier style breakdown formula is used (►**Berthier, 2002**), with $Part_{jt}$ being the market shares of product *j* at *t*, and α_{jt} being the weight of the product *j* in world trade at *t*. The difference in the aggregated market share between date *t* and date t_0 (typically 2019) is expressed as follows:

$$Part_t - Part_{t_0} = \underbrace{\sum_j (\alpha_{jt} - \alpha_{jt_0})\left(\frac{Part_{jt} + Part_{jt_0}}{2} - \frac{Part_t + Part_{t_0}}{2}\right)}_{effet\ de\ structure} + \underbrace{\sum_j \left(\frac{\alpha_{jt} + \alpha_{jt_0}}{2}\right)(Part_{jt} - Part_{jt_0})}_{effet\ \text{intra-branche}}$$

Box 2: Change in market shares in other advanced and emerging economies

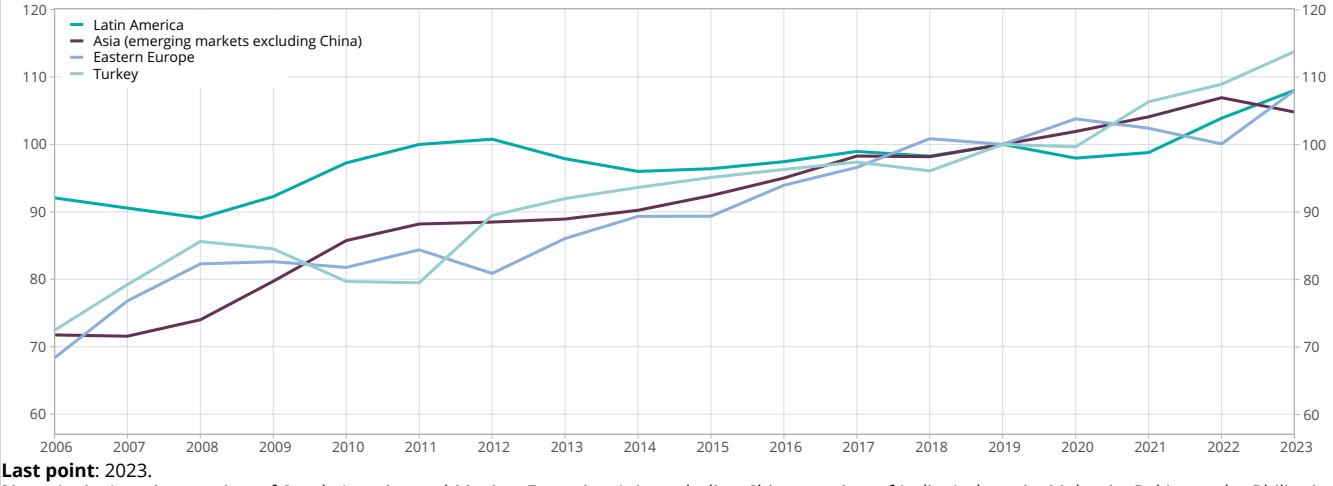
This analysis focuses on the main advanced economies and on China. However, it may be useful to check the movements of market share gains or losses affecting other advanced and emerging economies over the recent period, notably in Latin America, emerging countries in Asia, excluding China, Eastern Europe (excluding Russia and Ukraine), Japan, South Korea, Canada, Australia and Turkey (►**Figure 7**).

This comparison is based on CPB data for certain large zones (such as Latin America and the emerging countries in Asia excluding China), supplemented by UN Comtrade for any missing data (►**Box** "Data source and concepts used"). Among the emerging economies excluding China (►**Figure 7**), there is an overall gain of around 5 to 10% in market shares compared with the period before the health crisis. From this perspective, the momentum in Turkey is stronger (almost 13%) and could correspond to the effects of Russia's "eastern escape route" (►**Grekou, Mignon et Ragot, 2023**) from Western sanctions translated into gains in market shares (with the same applying to India, classified amongst the emerging Asian countries excluding China, and to China). However, market share gains are maintaining their pre-crisis trend with no sign of a break in this trend, which has occurred in China.

Concerning the other advanced economies, the economies of Asia – including Japan – have suffered relatively similar post-health-crisis market share losses to those in the Eurozone, in contrast to Canada and Australia which have maintained or even increased their market shares.

►7. Global export market shares of goods by value in other advanced and emerging economies

(in level, base 100 in 2019)



Last point: 2023.
Note: Latin America consists of South America and Mexico. Emerging Asia excluding China consists of India, Indonesia, Malaysia, Pakistan, the Philippines and Thailand. Eastern Europe consists of Poland, Romania, Bulgaria, Czech Republic, Slovakia and Serbia.
Source: Centraal Bureau Plan, UN Comtrade.

Box 3: Export equation for the Eurozone

The econometric modelling of Eurozone exports is based on an error-correction model. The model is used to measure the contribution of different explanatory factors: demand for Eurozone goods, market shares of the emerging economies, price competitiveness and the relative price of gas compared to the North American market (▶**Figure 8**). The estimate is carried out in two stages with details of the explanatory variables given below.

Demand for Eurozone products

Usually (▶**Bardaji and al. 2017**), the coefficient of demand for products is limited to 1 in the long-term equation. The long-term relationship, via the other variables, thus accounts for export performances more than the exports themselves.

Market shares of emerging economies

To account for the rise of the emerging economies in world trade and China in particular since it joined the WTO in 2001, the export market shares of the emerging economies are used in the model. They are calculated as the ratio of the volume of exports from emerging countries to world trade by volume, with both aggregates being provided by the Centraal Plan Bureau. This variable is essential over the estimation period as it can be used to record the decline in export market shares for all the advanced economies over the last twenty years, due to the emergence of new players in world trade. Consequently, over the estimation period, the long-term relationship, via the other variables, accounts for the export performance of the Eurozone compared with that of other advanced countries.

The real effective exchange rate

The real effective exchange rate (REER) is calculated as the product of exchange rates with partner countries weighted by the importance of the respective trade to total foreign trade deflated by the consumer prices of these countries. An increase in the REER therefore corresponds to a deterioration in export price competitiveness. The REER used in the equation for the euro is the value provided by the ECB.

Relative price of gas used by European countries compared to that available in North America

This variable can be used to determine variations in cost competitiveness between Europe and the rest of the world linked to fluctuations in the price of energy inputs. Changes in gas prices are considered to be the most relevant for modelling supply shocks affecting the different geographic areas asymmetrically, due to the fact that the oil market is more integrated at the global level and fluctuations in gas prices also enable variations in electricity prices to be taken into account, as they are strongly linked to gas prices in Europe. The data used is provided by the World Bank.

Modelling of exports

$$\Delta \log(X_t) = 0{,}4 + \underset{(0{,}04)}{0{,}99} * \Delta(\log(DM_t)) - \underset{(0{,}03)}{0{,}09} * \Delta \log(TCER_t)$$

$$- \underset{(0{,}06)}{0{,}21} * [\log(X_{t-1}) - \log(DM_{t-1}) + \underset{(0{,}01)}{0{,}28} * \log(PdE_{t-1}) + \underset{(0{,}02)}{0{,}16} * \log(TCER_{t-1}) + \underset{(0{,}00)}{0{,}01} * \log(PrG_{t-1})]$$

Where:

- X_t: denotes Eurozone exports;
- DM_t: world demand for Eurozone products;
- $TCER_t$: real effective exchange rate of the Eurozone;
- PdE_t: market share of emerging economies in world trade.
- PrG_t: price of gas in Europe compared to the price of gas in North America (World Bank data).

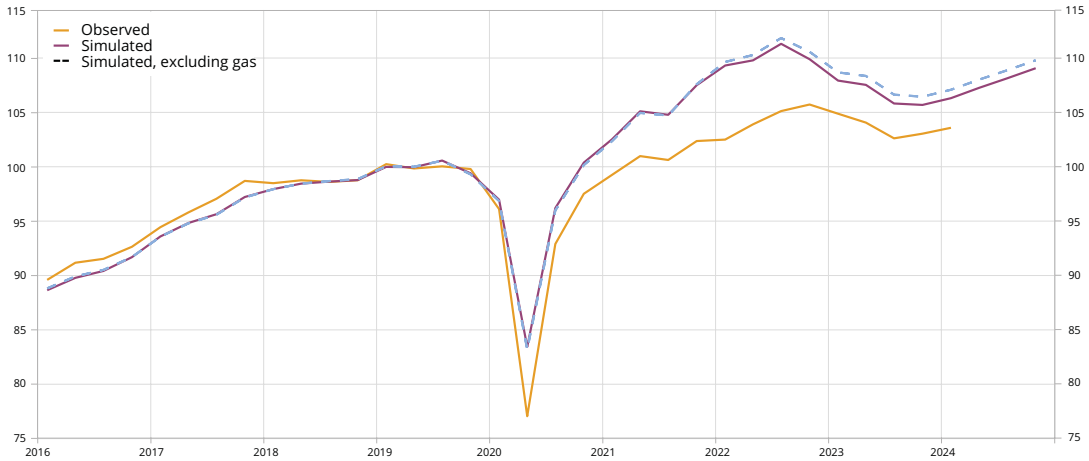
Standard deviations of the coefficients are given in brackets below the coefficients.

R^2=0.88, standard deviation of residuals = 0.01 – Estimation period: 1997 to 2019.

Over the period from 2020 to 2024, a forecast is estimated on the basis of the model using the following hypotheses:

- the weight of the emerging economies in world trade is extended, not by its observed level but as a trend, in order to neutralise the unusual increase in China's market share observed over the period in relation to the rest of the world (and hence to the Eurozone), in an attempt to explain this increase by the other factors considered in the equation (exchange rate and relative price of gas). It is therefore assumed that the coefficients relating to the exchange rate and the relative price of gas, which account for the Eurozone's export performance in relation to the other advanced economies over the estimation period, are relevant explanations in the recent past for the losses in performance in relation to China. It is also assumed that the relative price of gas used in the model can be used to determine the deterioration in the cost competitiveness of the Eurozone not only compared with the United States, but also in relation to all countries that have not suffered a specific gas price shock, including China;
- the real exchange rate of the ECB is extended by applying a forecast for 2024 (fixed nominal exchange rates, inflation forecasts presented elsewhere in this *Economic Outlook*);
- for 2024, the relative price of gas is fixed at its level at the beginning of the year. ●

►8.The relative price of gas accounts for part of the recent buoyancy in Eurozone exports
(level, base 100 in 2019)



Last point: Q4 2024.
How to read it: the level of exports observed in the Eurozone in chained volumes increased by 4% compared to its 2019 average. However, exports simulated by the model would appear to have increased by 6% compared to the 2019 average.
Source: INSEE, Destatis, Istat, INE, Statistics Netherlands, National Bank of Belgium, CPB, Banque Mondiale, BCE, INSEE calculations.

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