Inflation is falling, growth is hesitant

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Jean-Philippe Cotis, former Director-General of INSEE, has passed away. The Economic Outlook was a publication for which he felt a great affection, particularly appreciating its analytical quality and its relevance. The example he set continues to be a source of inspiration.

Inflation is falling, growth is hesitant

Bolstered by the normalisation of production conditions, yet subject to tightening monetary and financial conditions, the main world economies are evolving in different ways

By mid-2023, the global economy seems less constrained than a year ago by the direct consequences of the shocks experienced in recent years (notably the Covid-19 pandemic, and the war in Ukraine). Health restrictions have been lifted completely in China. Supply chains in industry are now less disrupted. Energy prices and the prices of many commodities have fallen back significantly from the peaks of spring 2022.

However, this gradual normalisation of production conditions is not without its questions and uncertainties. In China, the potential for catch-up seems tempered by concerns over demand and there are already signs of a slowdown in production. Meanwhile, United States activity is gradually losing momentum. In Europe, it may take some time for the drop in energy prices to benefit some companies, given that contractual commitments are sometimes fixed in advance. Fluctuations in commodity prices too may take several quarters to impact retail prices.

Western economies are therefore facing both inflation that remains relatively high (despite the beginning of a reduction, in particular with regard to the energy component) and the first consequences of the monetary tightening introduced by the central banks to curb it. High inflation is holding back household consumption, while high interest rates are hampering both corporate and household investment. The real estate market in particular has recently turned around in many western countries.

By the end of 2023, economic activity in the Eurozone is thus expected to improve modestly, in the absence of any marked boost in domestic demand. As an annual average, there are several factors that can account for contrasts between European countries: Spanish and Italian growth are likely to continue to benefit from their catch-up potential in terms of investment, with strong European budgetary support. Conversely, German activity appears to be most exposed to shocks affecting industry. French growth, meanwhile, is expected to remain in an intermediate position. The UK economy, for its part, looks set to continue to be hampered by high inflation and supply chain problems.

The signs of a decline in inflation are starting to be seen

In May 2023, for the first time in a year, the year-on-year variation in consumer prices in France, at +5.1%, came down from its plateau of around +6%. This decline in inflation is due mainly to the fall over one year in petroleum product prices, which are now lower than they were just after the outbreak of war in Ukraine (“base effect”), but also to the slowdown in the prices of other goods and services, including those of food (which nevertheless increased by more than 14% over one year, and 19% over two years).

This slowing is confirmation of the warning signs that have been evident over the last few months in the agricultural and industrial production price indices (“farm gate” or “factory-gate” prices), also in the results of the business tendency surveys. In April 2023, for example, the agricultural production price index was 7% below its April 2022 level (but nevertheless 22% above that of two years ago), thus reflecting recent movements in world agricultural commodity prices. These movements have a delayed impact on production prices in the agrifood industries (which slowed in April, but without falling) then on consumer prices. Our estimates therefore suggest that fluctuations in agricultural commodity prices will be passed through to retail prices to the tune of around 50% after three quarters, and 80% after one year.

During H2 2023 and provided they follow their usual determinants, consumer prices of food products could slow significantly, although without their average necessarily falling. The year-on-year variation would then be halved by the end of the year to between +7 and +8%. Consumer prices of manufactured products are also expected to slow. However, services are likely to contribute more and more to headline inflation, which would then be back to +4.4% year-on-year in December. Core inflation is also expected to fall back (+4.1% year-on-year forecast for the end of the year).

After declining in H1 2023, household gross disposable income (GDI) purchasing power is expected to stabilise during the second half of the year

In this context, it is likely that in the course of the year the buoyancy of wages will gradually catch up with that of consumer prices. As an annual average, the average wage per capita (SMPT) in the non-agricultural market branches should therefore increase by 5.1%, a similar pace to the expected annual change in the consumer price index (+5.0%).

After a further decline forecast for Q2 2023, household GDI purchasing power is then expected to stabilise in H2, mainly due to the slowdown in prices and the relative buoyancy of earned income. On average over the whole of 2023, purchasing power looks set to increase slightly (+0.5% forecast). Measured by consumption unit to take demographic changes into account, it is expected to be stable (0.0% forecast in 2023), after a slight drop (-0.4%) in 2022.

Regarding companies, the buoyancy of the per capita wage in a context where prices are slowing is likely to have an impact overall on variation in the margin rate of non-financial corporations (NFC). Conversely, however, this rate is expected to be sustained by domestic terms of trade, given the prices of value added which are expected to become more dynamic than consumer prices once again. All in all, the margin rate of NFCs is therefore expected to be virtually stable in H2 2023, at around 32%.

French growth is expected to remain hesitant

For several months, the economic climate in France has been eroded, according to the business tendency surveys. The latest available data, covering May 2023, show an increase in this trend, in all sectors and especially in wholesale trade. Thus the business climate indicator for France has returned to its long-term average. This gloom mainly reflects some more serious concerns over demand. The index of household confidence in the economic situation remains very much in decline: it has never really recovered since spring 2022.

French GDP growth is therefore expected to remain modest over the next few quarters (+0.1% forecast in Q2 2023, +0.1% in Q3, and +0.2% in Q4). This would be more or less the average pace observed since early 2022, the date of the post-Covid return to normal. As an annual average, growth is expected to be +0.6% in 2023, after +2.5% in 2022.

Among the main demand items, household consumption is expected to falter in the spring due to a further downturn in food consumption, then pick up only slightly in H2. Corporate investment looks set to rebound occasionally in Q2, mainly as a result of the renewal of fleets of professional vehicles, then it will be at standstill, with investment in construction continuing to decline in a context of high interest rates. This context is also likely to affect household investment, which is expected to continue its sharp decline. Lastly, exports should provide some support in the spring, then again in the autumn, mainly as a result of aeronautical and naval deliveries, whereas imports are expected to be sluggish, in the wake of domestic demand.

Among the main sectors of activity, manufacturing industry could fall back in Q2, adversely affected by the most energy-intensive branches and by coke and refined petroleum production, then stabilise from the summer onwards. Energy production, especially electricity, is likely to continue to catch up. Growth is expected to be modest in market services. And lastly, in construction, activity is expected to remain on its downward trend.

The unemployment rate is expected to remain stable until the end of the year

Despite relatively weak growth, the momentum in employment did not wane in Q1 2023, raising more queries about the change in productivity. However, payroll employment could slow by the end of the year, against a background of modest growth in economic activity. All in all, at the end of 2023, the net number of jobs created year-on-year is expected to stand at 175,000, compared to 445,000 at the end of 2022.

The active population is also expected to increase more moderately in 2023 than in 2022, given the less sustained momentum in sandwich contracts and despite the first effects of the retirement reform from September. The joint slowdown in employment and in the active population is expected to result in stability in the unemployment rate (at 7.1% of the active population) until the end of 2023.

The uncertainties of forecasting relate not only to the behaviour of economic players in France but also to the international environment

This forecast is still surrounded by uncertainty, both nationally and internationally. Changes in consumer prices, especially food prices, depend in part on margin behaviour by the agrifood industries and distributors, and partly on the results of trade renegotiations. The consumption forecasts presented in this *Economic Outlook* assume that the household savings ratio will remain at around 18%, significantly higher than the pre-crisis level (15%). Any drop in this rate would tend to bolster consumption. Lastly, the reports on monetary tightening and the speed at which it is transmitted to the real economy remain uncertain in the western countries, while questions persist about the future pace of Chinese growth.

French econmic outlook

Consumer prices of food products could slow considerably by the end of 2023

The continuous increase in food inflation since the end of 2021, and the unprecedented levels reached in recent months represent a challenge for the economic forecaster, both in understanding its determinants and predicting its evolution. In fact, prices of agricultural and energy commodities have risen sharply for more than a year, but some prices have also slipped back markedly since last summer. To analyse how these movements are ultimately reflected in consumer prices, it is important to look first at how they are passed on to agricultural producer prices then to agrifood industry producer prices and, lastly, to distributors' selling prices (consumer price). This Focus models the different stages of this chain of transmission, analysing price-fixing behaviours during the current period and inferring forecasts for the future.

The first link in the chain, agricultural producer prices (excluding fruit and vegetables) rose by 23% in 2022, compared to 2021. The increase was 16% for producer prices in the agrifood industries and 7% for consumer prices of food products (excluding fresh produce). According to the model used in this Focus, the increase in the price of inputs outside the sector –world prices of agricultural commodities, energy, etc.– would appear to account for a significant proportion of these price dynamics during 2022: almost 90% of the momentum in agricultural producer prices, about 70% for agrifood industry producer prices and about half for consumer prices of food products. Wage costs would seem to have been the second most important factor behind these price increases in 2022, contributing notably a little over one third to the rise in consumer prices of non-fresh food products. Margin behaviour may also have been at work in 2022: significant increase in unit margins mainly in the agrifood industries, after margin squeezing in 2021, whereas the dynamics of consumer prices could, on the contrary, reflect a squeezing of the unit margins of distributors from the end of 2021 until the end of 2022. This analysis of margin behaviours obviously remains surrounded by uncertainty inherent in the model being used.

The model selected for this Focus study also highlights the delayed effects on production and consumer prices of movements in commodity prices. Our simulation suggests that increases in agricultural commodity prices are passed on to consumer prices at a rate of about 50% after three quarters, and 80% after one year. Thus, in the forecast for the months to come, the decline in agricultural and energy commodity prices since summer 2022 should exert downward pressure on agricultural producer prices then on agrifood industry producer prices. The latter could then fall back in turn, with a "normalisation" of margin behaviour which could even accentuate the downward trend. This decline would lead to a slowdown in consumer prices of food products (excluding fresh) from Q2 2023, sustained nevertheless by the buoyancy of wage costs and by probable anticipatory margin reconstitution behaviour by distributors. However, these anticipatory movements, resulting from an econometric model, are still dependent on various factors, including the rounds of negotiations between producers, processors and distributors.

Narjis Benchekara, Jérémy Marquis et Guillaume Roulleau

French economic outlook

The prices of commodities used to produce food products have experienced unprecedented shocks

Since the end of 2021, food inflation has increased steadily. The year-on-year variation in the consumer prices of food products rose from 1.4% in December 2021 to 14.9% in April 2023, making food the main contributor to headline inflation.

The rise in food inflation was the result of the increased cost of commodities, both agricultural and energy, which began in 2021 as activity recovered and was then accentuated in 2022 with the outbreak of war in Ukraine. Thus the price of agricultural commodities imported by the French economy increased substantially between the beginning of 2021 and summer 2022 (►**Figure 1**). Meanwhile, the increase in the cost of energy affected the agriculture[1] and agrifood industry sectors, both directly and indirectly. Although these sectors are not among the most energy-intensive, energy (oil, electricity and gas) represents a sizeable proportion of their production inputs (►**Figure 2**). And increases in energy prices have been substantial: the market price of gas, which also directly influences the price of agricultural fertilizers, increased 10-fold between the beginning of 2021 and mid-2022. Although most energy prices have fallen back since summer 2022, they nevertheless remain at levels well above those at the start of 2021. This is also the case for agricultural commodities.

The aim of this study is to understand how the increase in the cost of agricultural and energy commodities is transmitted to the consumer price of food products, from the producer sectors to the distributor sector, and to produce a forecast to the end of 2023. First, it should be noted that within the meaning of the CPI, food products (16.2% of the entire CPI in 2023) are subdivided into fresh produce (2.4%) and "other food products", also called "food products excluding fresh" (13.9%). Prices of fresh food (i.e. unprocessed products including fresh fish, fruit and vegetables) depend mainly on climate conditions in France, and in other producing countries too, and are therefore highly volatile. Prices of "other food products" are subject to determinants that are less volatile, and therefore more easily observable. In the following, only the CPI of food products excluding fresh will be considered (and this will be called, somewhat inaccurately, the food CPI).

1 The agricultural branch considered here corresponds to "agriculture, forestry and fishing" in the national accounts classification (branch "AZ").

►1. Variation in prices since the beginning of 2021, for different inputs in the agriculture and agrifood branches

(variation in prices in euros, in %)

Prices	between Q1 2021 and Q3 2022	between Q1 2021 and Q1 2023
Imported agricultural commodities		
Wheat	+79	+55
Sugar	+33	+43
Oilseeds	+43	+22
Energy		
Gas	+1014	+190
Brent	+96	+49
Electricity (EPEX)	+707	+145

Note: the price of natural gas corresponds to futures contracts at the next expiry date in the Netherlands (TTF). Electricity prices correspond to the EPEX spot prices for France.
Source: INSEE.

►2. Composition of inputs used by the agriculture branch and by agrifood industries

(share in intermediate consumptions, in 2019, in %)

Share of all inputs used by the industry to produce	Agricultural branch	Agri-food branch
Agricultural inputs	34	33
Inputs from the agri-food industry	15	28
Energy inputs	11	5

Note: the composition shown here is taken from the table of intermediate entries in the 2019 annual national accounts. Energy inputs include intermediate consumptions in products that derive from the manufacture of coke and refined petroleum products and products from the "energy, water, waste" branch. Other inputs may include, for example, intermediate consumptions in industry, especially the chemical industry, also in services.
How to read it: in 2019, 33% of intermediate consumptions in the agrifood industries consisted of agricultural inputs.
Source: INSEE.

The modelling of food inflation (►**Bibliography**) is often sequential, focusing on the price formation chain. Thus an exogenous shock, affecting the price of wheat, for example, is only transmitted with some delay to consumer food prices. Over the recent period, time lags can be seen between the price of agricultural commodities, the producer price of agricultural products, that of agrifood industries, and finally, the CPI of food products excluding fresh (►**Figure 3**). For example, in response to the sudden rise in the prices of agricultural commodities, which began in Q1 2022 and subsided thereafter, there was a rise in the consumer prices of food products, which was less sudden, but continuous.

Variation in agricultural producer prices is modelled first, then in producer prices in agrifood industries –which process the agricultural products– and finally in consumer prices of food products, paid by the consumer. The price determinants for each of these stages are not the same: these successive links (agriculture, agrifood industries, retail trade) have different production functions and margin behaviours.

After absorbing a large proportion of the impact of price rises, the agriculture sector could pass on their change of direction at the end of 2022

The recent sharp increases in commodity prices, whether in agriculture or energy, have primarily affected the agriculture branch, which consumes them directly in its production process. Agricultural producer prices[2] (IPPAP hereafter), which represent "farm-gate" prices, increased by about 23% in 2022 compared to 2021 (►**Figure 3**).

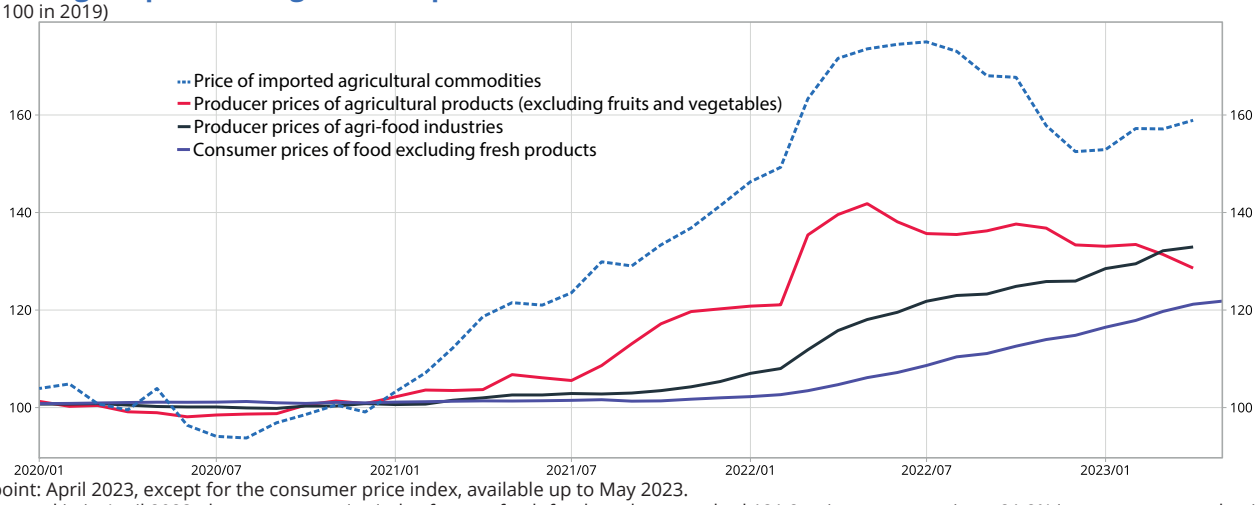
Econometric modelling of the dynamics of the IPPAP identifies the main determinants and analyses the scale and speed at which the increased cost of inputs were passed through to these farm-gate prices (►**Method box** for more details on the different models). In the model used here, the IPPAP is determined in the long term by agricultural commodity prices (including wheat), energy prices (oil, gas and electricity) and labour productivity in the agriculture branch. In the short term, only the prices of agricultural and energy inputs determine fluctuations in the IPPAP.

According to this model, there is a delay in passing on the increase in the cost of inputs to the IPPAP. By way of illustration, a permanent rise of 10% in the world price of agricultural commodities (including wheat) translates in the long term into a rise in producer prices of about 3.5% (►**Box: Price-response function modelled to exogenous shocks**). However, it would take the agriculture branch almost 5 quarters to fully pass on this price increase, and less than 2 quarters to pass on half of it.

2 Agricultural producer prices, considered here and throughout, exclude fruits and vegetables. Like consumer prices of fresh produce, fruit and vegetable production prices are too much subject to the vagaries of the weather for it to be possible to analyse their determinants in detail. In addition, as harvests can vary widely throughout the different quarters of the year, quarterly variations can sometimes be difficult to interpret. The agricultural producer prices finally modelled here therefore include plant products excluding fruits and vegetables (i.e. cereals, wine and horticultural products) and also animal products.

►3. Change in prices along the food production chain

(base 100 in 2019)

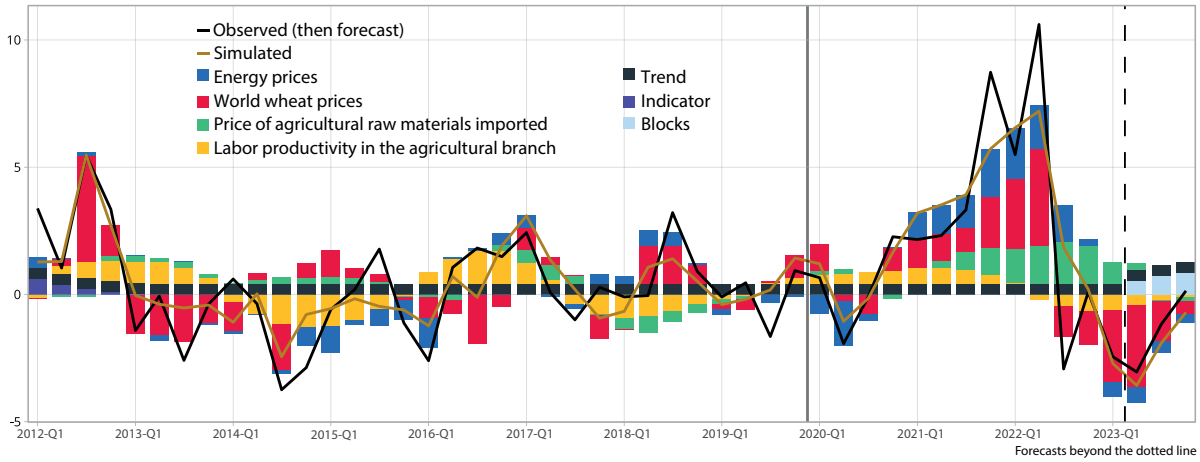


Last point: April 2023, except for the consumer price index, available up to May 2023.
How to read it: in April 2023, the consumer price index for non-fresh food products reached 121.2 points, representing a 21.2% increase compared to its average level in 2019, while in March 2023 the price of imported agricultural commodities increased by 59%.
Source: INSEE.

As an annual average, it would seem that about 55% of the increase in the IPPAP in 2022 can be explained by the increase in the cost of agricultural commodities. The rise in energy prices, meanwhile, appears to account for 30% of the increase in these producer prices in 2022. In other words, almost the entire increase in the IPPAP in 2022 would appear to be due to the increase in the cost of inputs in the agriculture branch, i.e. agricultural commodities and energy (►**Figure 4**).

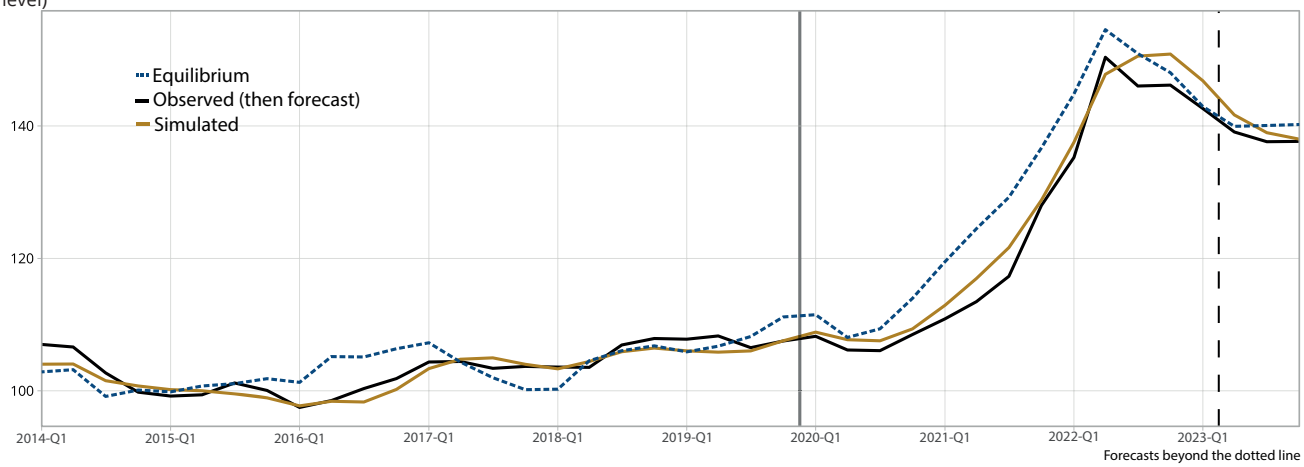
The econometric model of the IPPAP and comparing it with the observed price can also reveal margin behaviour (upwards or downwards) by the agriculture branch, in relation to historical average behaviour. The model used here assumes that the IPPAP fluctuates in the short term around an "equilibrium price", resulting from the long-term relationship of the model: a situation where the IPPAP is below this equilibrium price, in relation to usual behaviours, corresponds to margin squeezing, while the opposite situation corresponds to margin expansion (►**Method box**). During 2022, the gap between the observed IPPAP and its equilibrium price widened (►**Figure 5**). This decline could reflect an attempt to squeeze margins in the agriculture branch, in the face of rising input prices. The econometric model of the adjustment dynamics picks up most of this behaviour: the IPPAP simulated by the model also appears to be lower than the equilibrium price for most of 2022. However, the difference between it and the equilibrium price is on average less than for the IPPAP observed: with regard to this model, the dynamics of the observed price can therefore represent a slightly greater margin squeeze than usual. However, this analysis should be considered with caution as it is subject to several limitations: the quarterly account data do not at this stage indicate any particular margin squeezing for the agriculture branch as a whole; the unexplained part of the model (difference between the observed IPPAP and the simulated IPPAP) may therefore pick

►4. Variation in agricultural producer prices and econometric contributions of its determinants
(quarterly changes in farm-gate prices in %, contributions in points)



Estimation period ends at solid line.
Last point: Q4 2023.
Note: the model is estimated between Q1 1990 and Q4 2019. The gold line corresponds to the model simulation, the black line to quarterly variations observed then forecast. After the vertical dotted line, in the forecast area, the black line (observed) corresponds to the forecasts made by the model (gold line) to which blocks have been added representing a hypothesis of convergence between the price of production and the equilibrium prices.
How to read it: in Q2 2022, agricultural producer prices increased by around 10.6% whereas the model of these prices forecast a rise of 7.2%. Energy prices probably account for almost 25% of this price increase.
Source: INSEE, INSEE calculations.

►5. Agricultural producer prices: observed, simulated and long-term equilibrium price
(in level)



Last point: Q4 2023.
How to read it: in Q4 2022, the agricultural producer price index was 146, whereas the econometric model forecast 151.
Source: INSEE, INSEE calculations.

up atypical margin behaviour, as has been mentioned, but also other types of behaviour, or finally, simple modelling errors. In addition, the equilibrium price does not perfectly reflect the long-term determinants of the IPPAP:[3] the model should not be considered as a structural representation of agricultural producer prices, but rather it attempts to record average behaviours over the long term, from which forecasts may be drawn for the coming quarters.

As a forecast for 2023, the decline in commodity prices during H2 2022 should result in the IPPAP decreasing slightly, as a result of the delayed effect, as has already been the case in Q1 2023 (►**Figure 4**). The IPPAP is expected to stabilise at the end of the year, assuming constant agricultural and energy input prices over the forecasting period. However, as the observed IPPAP has remained lower than the simulated version since the beginning of 2022, its decline in 2023 could be less significant than the model suggests: thus the IPPAP is likely to be closer to its equilibrium price (►**Figure 5**).

Having squeezed their margins for some time, the agrifood industries would seem to have compensated recently with a higher price than expected

Production costs in the agrifood industries (IAA) increased by about 15% in 2022 compared to 2021. As it is in the nature of the IAAs to process the production of the agriculture branch, the econometric model of the IAA producer price includes the IPPAP excluding fruit and vegetables, as seen above, and also the cost of energy and even also the unit wage costs of the branch.

Given the model of the IPPAP proposed in the last section, an increase in the cost of agricultural commodities is passed on to the IAA producer price directly, in short-term fluctuations in the model, but also indirectly, *via* the producer prices in the agriculture branch. Thus, a permanent rise of 10% in the price of agricultural commodities would result in the long term in a 1% increase in IAA production costs, indirectly via the IPPAP. Transmission would be complete after 3 quarters, and more than half would be transmitted at the end of 2 quarters.

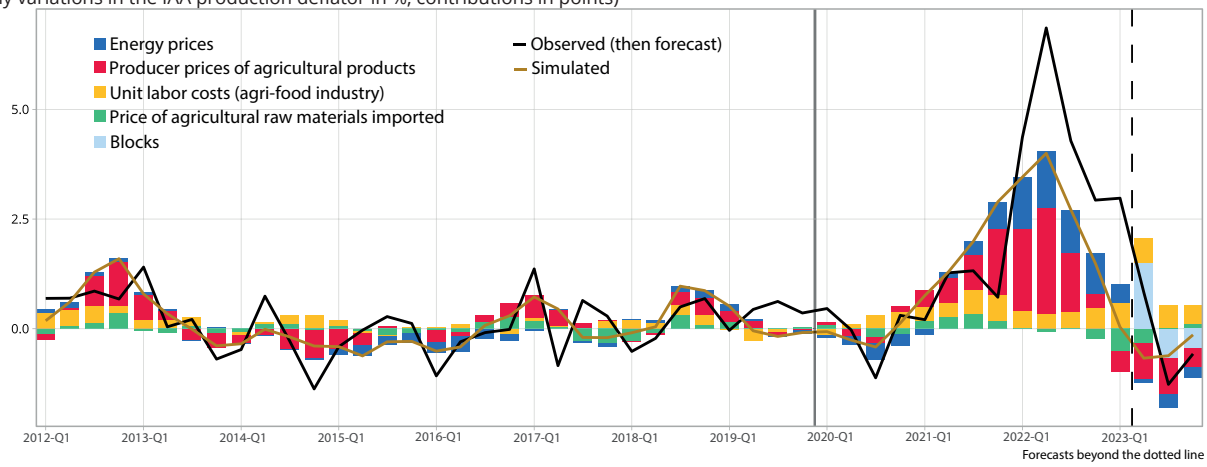
On average over 2022, increases in the IPPAP accounted for about 45% of the variation in IAA production costs, against 25% for energy costs and 8% for unit wage costs. However, the model does not successfully explain all movements in IAA production costs over the past two years: it slightly overestimated those at the end of 2021 and significantly underestimated those in 2022 (►**Figure 6**).

As in the previous analysis of the IPPAP, while the unexplained movements in IAA production costs may correspond, in 2021 and 2022, to a poor specification in the model in the context of very strong inflation, they may also be due to "unusual" margin behaviour in the sector in this same context. Looking first at a period running from the end of 2020

3 As such, the energy cost variable does not perfectly take into account the nature of the energy contracts in the agriculture branch.

►6. Variation in IAA production prices and econometric contributions of their determinants

(quarterly variations in the IAA production deflator in %, contributions in points)



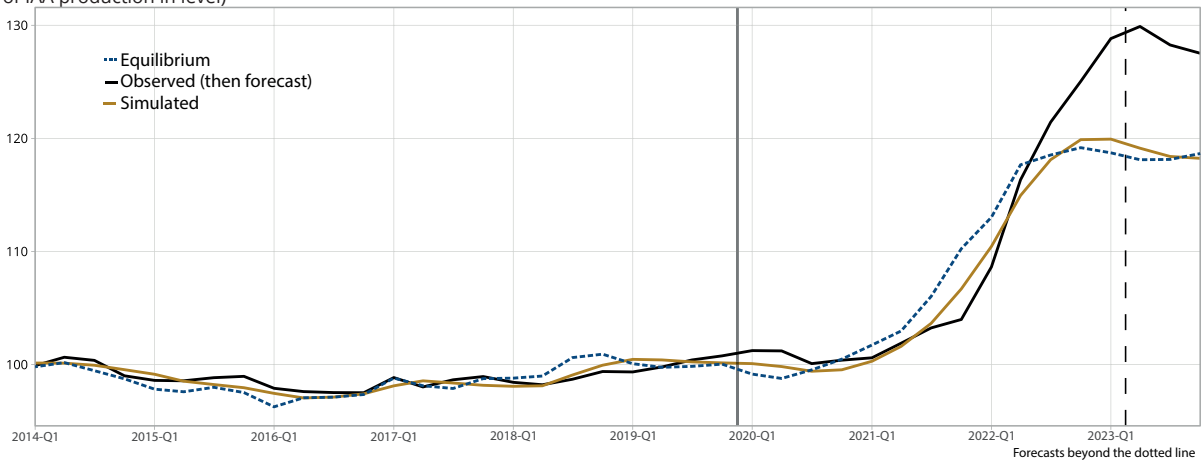
Estimation period ends at solid line.
Last point: Q4 2023
Note: the gold line corresponds to the model simulation, the black line to quarterly variations observed then forecast. After the vertical dotted line, in the forecast area, the black line (observed) corresponds to the forecasts made by the model (gold line) to which blocks have been added representing a hypothesis of convergence in H2 between the producer price and the equilibrium prices.
How to read it: in Q2 2022, IAA production costs increased by about 7% whereas the model forecast a rise of 4%. Energy prices account for about 32% of this increase.
Source: INSEE, INSEE calculations.

and including all of 2021, the observed IAA producer prices were systematically below the "equilibrium price" resulting from the long-term relationship of the model (►Figure 7). Since Q2 2022, however, the observed price has exceeded the equilibrium price, and is at much higher levels, which would suggest a marked recovery in the branch's margins. While this interpretation remains subject to the same limitations as those indicated in the previous section, it is nevertheless corroborated by the results from the national quarterly accounts concerning the margin rate of the IAA, which clearly recovered over the course of 2022. Variations in the margin rate of the branch, quarter by quarter, appear in this respect to be relatively well correlated to the residual variance in the model (►Figure 8).

In 2023, according to the econometric model, IAA production prices should start to fall back from H2: the IPPAP and the cost of energy, which pushed IAA production prices upwards in 2022, are now expected to exert downward pressure, in line with the recent downturn in the IPPAP and its forecast declines, and also in line with the recent drop in the cost of energy (assuming that fixed oil and gas prices are forecast and despite a partial modelling of the delayed adjustment to the price of electricity and gas contracts against prices). It is also possible that this fall forecast in IAA production prices is more pronounced than suggested by the econometric model: in the same way that the observed price seems to have recently deviated from its equilibrium price, it could return to it even more quickly in 2023. In other words, the agrifood industries are expected to partially "normalise" their margins from Q3 2023. This is the forecasting assumption that has been made in this *Economic Outlook*, consistent with the next round of renegotiations, knowing that beyond the limitations of the analysis already mentioned above, there are two forces that could alter these downward pressures: the buoyancy of wage costs, and a smaller drop in agricultural producer prices.

►7. IAA production costs: observed, simulated and long-term equilibrium price

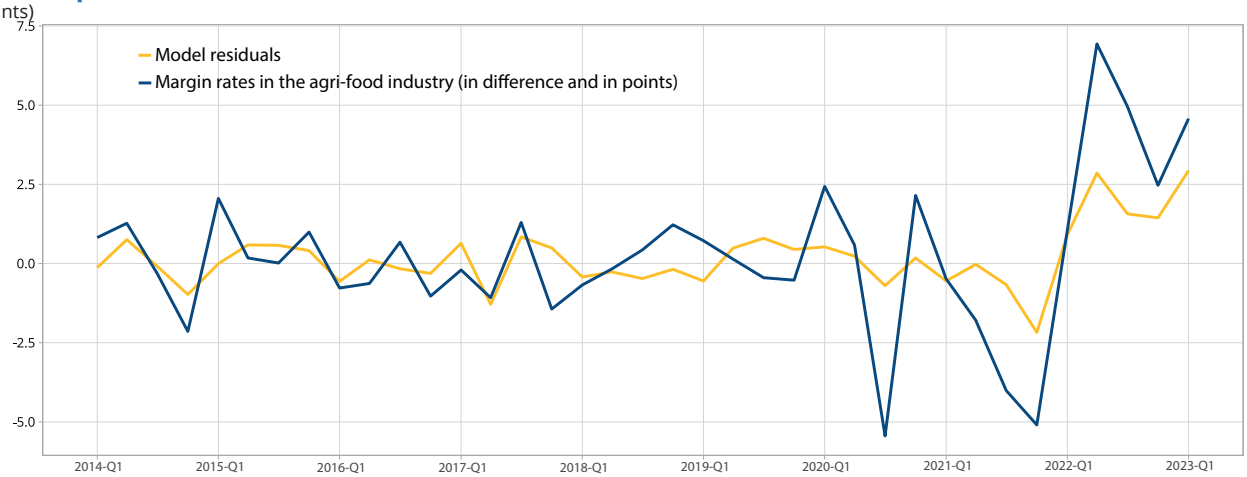
(deflator of IAA production in level)



Last point: Q4 2023.
How to read it: in Q4 2022 the observed level of IAA production costs was 125 compared to 120 for the simulated price.
Source: INSEE, INSEE calculations.

►8. Margin rate of agrifood industries, difference from one quarter to another, and model residual of producer prices in the sector

(in points)



Last point: Q1 2023.
How to read it: in Q4 2022, the difference between the margin rate from one quarter to another was 2.5 points, whereas the model residual was 1.4 points.
Source: INSEE, INSEE calculations.

The change in consumer prices of food products is consistent with the increase in the cost of distributors' inputs, even if renegotiations could shorten the usual transmission times

Since 2022, the consumer price index for food products excluding fresh (food CPI hereafter) has accelerated sharply, rising from +1.1% year-on-year in January 2022 to +14.9% in May 2023. However, this acceleration began almost 3 quarters later than the rise in agricultural commodity costs, and continued after the summer of 2022 despite the downturn in prices and the relative slowdown in IAA production costs.

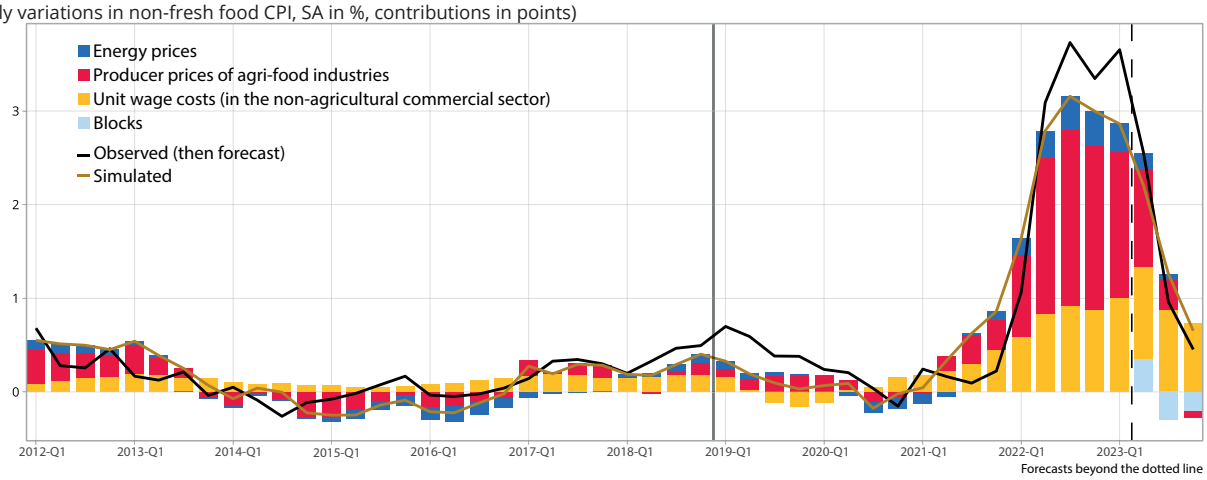
Since the retail trade sector distributes the production of the IAAs, an econometric model of the food CPI includes among its determinants IAA production costs (of which the movements are described in the previous section), as well as the wage costs of the non-agricultural market sector and distributors' energy costs, although the impact of this on prices remains weak. Transmission of the increase in the cost of agricultural commodities to the food CPI is thus indirect, *via* the IAA production prices. Thus, according to the model used, a permanent increase of 10% in the price of agricultural commodities (including wheat) would result in the long term in an increase of about 0.3% in the food CPI *via* the indirect channels of the agriculture sector and IAA production prices. Transmission is complete after 5 quarters, half complete after 3 quarters.

In addition, in the current inflationary context, in order to take into account shortening of price transmission times between producers and distributors, the restoring force of the model is assumed to be dependent on the balance of opinion of retail trade companies regarding expected change in their selling prices of food products, as reported in the business tendency surveys (►**Method box**). With this choice of model, the speed of return to the equilibrium price (where shocks are transmitted instantaneously) can be all the higher as many retail companies plan to increase their selling prices in the food sector.

Over recent quarters, unprecedented changes in IAA production costs would appear to have strongly supported the food CPI: on average in 2022, they seem to account for 65% of the change in the food CPI, against 11% for energy and 36% for wage costs (►**Figure 9**). The sum of the contributions exceeds 100% as other factors also had a role to play. Thus the model captures most of the recent dynamics, suggesting that distributors have transmitted the increased costs of inputs in a consistent manner (in comparison with past inflationary episodes). This trajectory is below the equilibrium price, defined by the long-term relationship, indicating a partial absorption of the shock by the margins although below what the model predicted (►**Figure 10**). At the beginning of 2023, however, the food CPI would appear to have moved slightly above this equilibrium price, enabling distributors to partly offset their smaller profits from previous quarters.

►9. Variation in the consumer price of non-fresh food products and econometric contributions of its determinants

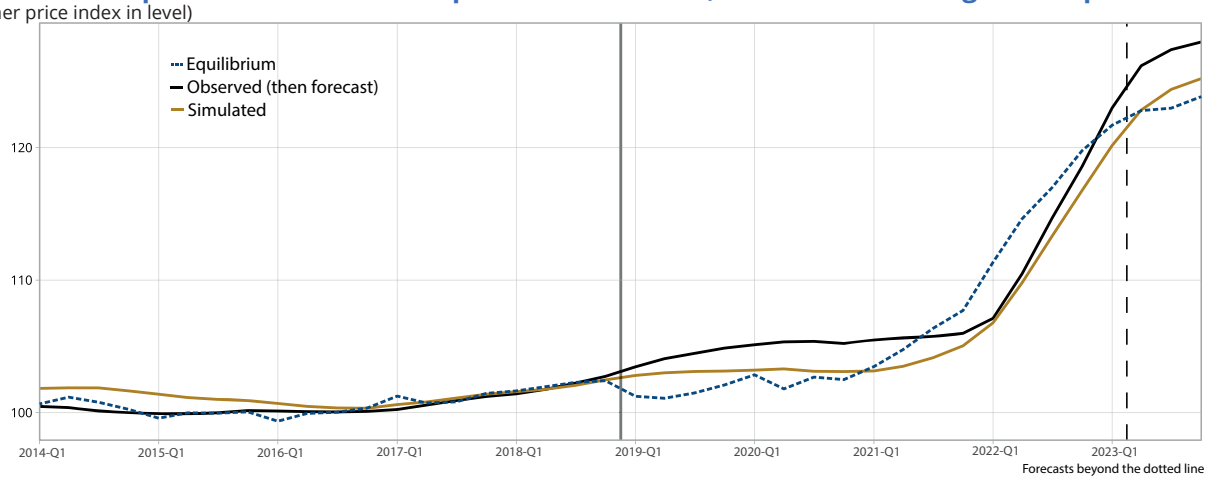
(quarterly variations in non-fresh food CPI, SA in %, contributions in points)



Last point: Q4 2023.
How to read it: in Q4 2022, the non-fresh food CPI, seasonally adjusted, increased by +3.7%, whereas the model predicted +2.8% for these prices. Agrifood producer prices would appear to account for about 62% of this price rise. In the forecast, blocks have been added to try and incorporate the impact of negotiations between distributors and suppliers over price transmission times (►**figure 10**).
Source: INSEE, INSEE calculations.

As a forecast for the rest of 2023, the model of the food CPI suggests a slowdown, especially *via* the drop in IAA production prices. However, the effect of the EGalim 2 Law, promulgated in 2021, is also worth considering. This law makes agriculture producer prices non-negotiable in the prices of major retailers, during renegotiations with suppliers. In practice, this would involve a shortening of transmission times between the price of certain inputs and the price paid by the final consumer. This recent change has potentially already been picked up in the restoring force of the econometric model, by introducing the balance of opinion on expected change in the selling price of food products. This balance of opinion, taken from the outlook survey in retail trade, increased significantly in February and March 2023, during negotiations on the transmission of price increases, then began to fall in April with the announcement of new negotiations –in June– this time relating to the slowing of commodity prices. Despite the addition of this balance of opinion, a model estimated on the past can only partially incorporate the effect of such a recent law. It is possible that in view of the change predicted by the model, the food CPI would be more dynamic in Q2, when the price rises already measured for April and May seem to indicate that the model underestimates the effect of the negotiations. In H2 2023, prices could then be less dynamic than the simulated prices: the downward effect of the June negotiations would not be fully captured by the model, mirroring the start of the year (▶ **Figure 9**). ●

▶10. Consumer price of non-fresh food products: observed, simulated and long-term equilibrium price
(consumer price index in level)



Note: in the forecast, a block has been added to the variations proposed by the model, to gradually join up with the equilibrium price.
Last point: Q4 2023.
How to read it: in Q4 2022, the consumer price index for non-fresh food products stood at 119, whereas the econometric model predicted 117.
Source: INSEE, INSEE calculations.

Method box

In this model of the consumer price index of food products excluding fresh products (hereafter food CPI) three stages of price formation are differentiated: the agriculture branch that produces, the agrifood industries that process the agricultural production, then the retail trade that distributes the processed products to the final consumers (mainly households). With this transmission chain, the rise in agricultural commodity prices (e.g. wheat) has an indirect impact on the food CPI: it initially increases the producer prices of agricultural products, which in turn feed into the production costs of the agrifood industries which are ultimately passed on by the distributors to the consumers.

Using error-correction models (ECMs), links between these prices and their other determinants can be estimated for each of these stages by defining a long-term relationship (adjustment against an "equilibrium" price) and the short-term dynamic. If the branches of the economy are considered to be in a situation of monopolistic competition (many companies competing on the market but with very different goods), the production price of branch P^* is fixed in the long term on the marginal cost of production C_m^* (which is a function of the cost of inputs, unit wage costs, etc.) weighted by a *"markup" –*μ^**–* indicating the level of profit in the branch.[1] Thus, in equilibrium, after moving to the logarithm:

$$\log(P^*) = \log(1 + \mu^*) + \log(C_m^*) \quad (1)$$

The theory behind error-correction models is that the production price applies to the "long-term target" or "equilibrium target" of the equation (1). In this context, the "long-term target" means that the marginal cost of production and the level of profit in the branch –the markup– are on fixed rate growth paths. In other words, $\Delta\log(C_m^*)$ and $\Delta\log(1+\mu^*)$ are constants.

However, the model assumes that the branch does not adjust to this long-term target immediately but with a certain momentum which can be estimated. The general form of the equations is then:

$$\Delta\log(P_t) = \underbrace{\alpha + \beta_1\Delta\log(P_{t-1}) + \beta_2\Delta\log(C_{m_t})}_{short\text{-}term\ dynamics} - \rho\left[\underbrace{\log(P_{t-1}) - \log(1+\mu_t) - \log(C_{m_t})}_{long\ term\ target}\right] + \epsilon_t \quad (2)$$

Empirically, it will be a matter of both approximating a "long-term target" for the production price that is consistent with the theory presented in the equation (1), and then estimating the dynamics of the production price in equation (2). In practice, concerns over parsimony in the choice of explanatory variables, the need to be able to manage them easily in forecasting, constraints over the temporal depth of the data, etc., will ultimately result in the selection of econometric models that deviate from the theoretical form above. These models should not be interpreted as structural forms but rather they aim to capture average behaviours over a long period, in order to infer relevant information for forecasting.

Compared to existing food inflation models (see for example **►Milin, 2017**, **►Charsonville and al., 2017** or **►Ulgazi and Vertier, 2022**),the models presented below take inspiration from them, but differ from them, notably in:

- the introduction of energy costs into the model;
- the consideration of "non-linearity" in some equations by introducing variables derived from the business tendency surveys.

These innovations represent first attempts to overcome the difficulties of forecasting in an unprecedented inflationary situation.

1 The *markup* is the ratio of the factory-gate price to the marginal cost of production. It is not synonymous with the margin rate (ratio of gross operating surplus to value added) as production costs already theoretically include "normal" return on capital.

Incorporating the cost of energy into modelling agricultural producer prices and IAA production prices

Inflationary tensions, which began in 2021 and have been aggravated by the war in Ukraine since February 2022, affected energy particularly strongly, with the result that it was necessary to include it specifically in the model of agricultural and agrifood production prices. Including energy in this way is certainly not a new notion, but it is often approximated simply by changes in the price of Brent. This approximation is justified economically insofar as, in the past, there was a strong correlation between the price of gas and the price of oil (►**Bortoli and Milin, 2016**). However, the current energy crisis shows a decorrelation (at least partial) between gas and oil prices (►**Sheet: Energy and commodities**). Also, the models presented here include an energy cost variable aggregating both the price in euros of gas in Europe and the price of Brent, depending on the energy mix in the sector (agriculture, agrifood industries or distributors).

More formally, let e_{ijt} (resp. p^e_{ijt}) be the quantity (or price) of energy i (electricity, gas or oil) used by sector j on date t. The cost of energy nrj_{jt} for sector j on date t, as included in the models below, is written:

$$nrj_{jt} = nrj_{jt-1} + \sum_i \frac{e_{ijt}}{\sum_i e_{ijt}} \Delta p^e_{ijt}$$

In this calculation, it is also assumed that the price of electricity varies like that of gas. Data on the amount of energy used by the different sectors (e_{ijt}) are obtained *via* the Tables of Intermediate Inputs (TEI) in the annual national accounts.[2]

Finally, the real cost of gas and energy paid by companies in the sector is measured very imperfectly from gas prices in Europe. In fact, as shown by the business tendency surveys (►**Bjai and al., 2022**), energy contracts (gas and electricity) are for the most part subject to a fixed price over a certain contractual period. Thus, using sector results from the business tendency surveys, the model weights the price of gas according to the prevalence of types of contract in the sector and the frequency of renegotiations in the case of companies that have adopted a fixed-price contract for a contractual period. Despite these adjustments, the cost of energy modelled in this way is only an approximation of the real cost paid by companies in the sector.

Incorporating variables derived from the business tendency surveys to adjust the speed of transmission of prices

In the models presented hereafter, the elasticities governing relationships between prices are, by necessity, estimated over periods of time when inflation is low –typically, the period 1990-2019– which can detract from the model's predictive quality in a context of high inflation.

By using a linear relationship for the forecast estimated over a long period between, for example, the producer price of agricultural products and production costs in the agrifood industries, it is implicitly assumed that the reaction of companies to an increase in the prices of inputs in the current period is the same as during the estimation period, when inflation was much lower. However, a period of high inflation could involve different mechanisms (see for example the stylised facts of ►**Borio and al., 2023**): prices would be more volatile, there would be more co-movement of prices between sectors, inflation would be more persistent and above all, price transmission would be faster. The theory of "coordination failure" as a cause of price rigidity (►**Ball and Romer, 1991**) is a way of explaining these different speeds of transmission. In this model, prices would be rigid because a company adjusts its prices according to its anticipation of the behaviour of its competitors: in a low-inflation regime, the company will prefer to wait rather than raise its prices unilaterally, so as not to lose market share, whereas in a period of high inflation, the company will pass on the price rise regardless of the behaviour of its competitors.

2 For the recent period when the TEI is not available, values are approximated based on 2019 data.

The methods used to model these non-linearities in detail can be relatively sophisticated (▶ **Ihle and Cramon-Taubadel, 2008**, for a comparison of non-linear threshold models and "Markov" regime-switching models). Rather than using these methods, and for the sake of parsimony, the error correction models presented hereafter assume that the strongest price diffusion in times of high inflation can be captured using data from the business tendency surveys, in particular the balance of opinion on expected change in selling prices in the sector concerned. Thus, the more the share of companies reporting that they want to raise their selling price increases, the faster prices would be transmitted. The introduction of this balance of opinion, which captures the level of coordination in price fixing, has led to a significant improvement in the predictive quality of models since the end of 2021. This involves adding a multiplicative coefficient to the restoring force of the ECM, which depends on the balance of opinion in question.

The next part describes the econometric models used for the following three prices: agricultural producer prices excluding fruit and vegetables (called IPPAP), the price of production in the agrifood industries (deflator of IAA production within the meaning of national accounting), consumer price of food products (food CPI excluding fresh). For each econometric equation, the production or consumption prices modelled (or entered as explanatory variables) are considered as a quarterly average and seasonally adjusted. Lastly, the modelled price-response functions are presented, illustrating the speed at which prices adjust to different exogenous shocks.

Econometric modelling of agricultural producer prices

In the long term, production prices of agricultural products (as a quarterly average, seasonally adjusted, and excluding fruit and vegetables) adjust to the price of wheat and imported food commodities, and to the price of energy in the "agriculture, forestry and fishing" branch (defined above) and the labour productivity of this branch. The price of wheat and the price of energy also contribute to short-term dynamics, as shown in the following equation:

$$\Delta p_t^{AZ} = \underset{(17)}{0.61} + \underset{(7.3)}{0.42}\,\Delta p_{t-1}^{AZ} + \underset{(9.2)}{0.12}\,\Delta ble_t + \underset{(2.9)}{0.04}\,\Delta nrj_{AZ,t}$$
$$-\underset{(-5.4)}{0.20}\left(p_{t-1}^{AZ} - \underset{(7.2)}{0.16}\,ble_{t-1} - \underset{(3.3)}{0.19}\,mpa_{t-1} - \underset{(6.3)}{0.08}\,nrj_{AZ,t-1} + \underset{(-9.4)}{0.41}\,\omega_{t-1}^{AZ} + \underset{(-3.4)}{0.0631}_{t\in 2009Q3} - \underset{(7.0)}{0.004}\,t\,1_{t>2005}\right) + \epsilon_t^{AZ}$$
$$\text{Estimation}: \text{Q1}\,1990 - \text{Q4}\,2019\ ,\ R^2 = 0.64\ ,\ DW = 1.9\ ,\ \sigma^2_{p^{AZ}} = 0.139\ ,\ RMSE = 0.039$$

where:

- p^{AZ} is the logarithm of the producer price index of agricultural products, excluding fruit and vegetables and seasonally adjusted (source: INSEE);
- *ble* is the logarithm of the world price of wheat on the Chicago market in euros (source: Chicago Board Of Trade);
- nrj_{AZ} is the logarithm of the price of energy in the "agriculture, forestry and fishing" branch in euros defined above (source: INSEE);
- *mpa* is the logarithm of the imported food commodities price index in euros (source: INSEE);
- ω^{AZ} is the logarithm of labour productivity in the "agriculture, forestry and fishing" branch, i.e. the ratio of the value added of this branch to the employment of natural persons (source: national quarterly accounts, INSEE).

Econometric model of IAA production prices

A long-term relationship is estimated between agrifood industry production prices and agricultural producer prices (excluding fruit and vegetables), energy costs and unit wage costs. The short-term equation incorporates food commodity prices, agricultural producer prices and unit wage costs directly. Finally, the restoring force of the model is weighted by the absolute value of the balance of opinion relating to expected change in selling prices in the IAAs, as a result of the monthly tendency survey in industry, in order to take into account the non-linear effect of a period of high inflation on the transmission of prices. The model is therefore as follows:

$$\Delta p_t^{C1} = \underset{(-14.7)}{-0.36} + \underset{(6.1)}{0.39}\,\Delta p_{t-1}^{C1} + \underset{(2.2)}{0.03}\,\Delta mpa_{t-1} + \underset{(5.8)}{0.11}\,\Delta p_t^{AZ} + \underset{(2.7)}{0.09}\,\Delta csu_t^{C1}$$
$$\underset{(-5,1)}{-0.28} \times (1 + s_t^{C1}) \times [p_{t-1}^{C1} - \underset{(16)}{0.27}\,p_{t-1}^{AZ} - \underset{(10)}{0.32}\,csu_{t-1}^{C1} - \underset{(6.9)}{0.04}\,nrj_{C1,t-1} + \underset{(-5.689)}{0.03}\,1_{t<2000}] + \epsilon_t^{C1}$$
$$\text{Estimation}: \text{Q}1\,1993 - \text{Q}4\,2019\ ,\ R^2 = 0.70\ ,\ DW = 2.1\ ,\ \sigma^2_{p^{C1}} = 0.09\ ,\ RMSE = 0.01$$

where:

p^{C1} is the logarithm of the deflator of IAA production (source: national quarterly accounts, INSEE);

nrj_{C1} is the logarithm of the price of energy in the IAAs in euros defined above (source: INSEE);

csu^{C1} is the logarithm of unit wage costs in the IAAs (source: national quarterly accounts, INSEE);

s^{C1} is the absolute value, divided by 100, of the balance of opinion relating to the expected change in IAA selling prices (source: monthly tendency survey in industry, INSEE).

Econometric model of consumer prices of food products excluding fresh

In the long term, the consumer price of food, excluding fresh produce, is indexed on a unitary basis on IAA production prices, unit wage costs in the non-agricultural market sector (SMNA) and energy costs (although the coefficient is low). A linear trend is added over the period before 1998 to capture the differences in the legal framework for price formation (in particular with the Galland law defining the threshold for resale at a loss). The short-term dynamics are based on the variation in the IAA production price. As was the case when modelling IAA production costs, the restoring force of the model is weighted by the absolute value of the balance of opinion, among retail businesses, on expected change in the selling prices of food products, in order to integrate the non-linear effect of a period of high inflation into the speed of price transmission. The model adopted is as follows:

$$\Delta ipc_t^{Alim} = \underset{(134)}{0.52} + 0.61\,\Delta ipc_{t-1}^{Alim} + \underset{(5.0)}{0.15}\,\Delta_{p_t}^{C1}$$
$$\underset{(-3.4)}{-0.11} \times (1 + s_t^{GZ}) \times [ipc_{t-1}^{Alim} - \underset{(7.2)}{0.35}\,p_{t-1}^{C1} - \underset{(13.5)}{0.65}\,csu\_smna_{t-1} - \underset{(4.0)}{0.02}\,nrj_{GZ,t-1} - \underset{(8.2)}{0.003}\,t1_{Q<1997} + \underset{(-17.0)}{0.08}\,1_{Q<1997}] + \epsilon_t^{Alim}$$
$$\text{Estimation: Q}1\,1993 - \text{Q}4\,2018, R^2 = 0.71, DW = 2.0, \sigma^2_{ipc^{Alim}} = 0.0982, RMSE = 0.06$$

where:

ipc^{Alim} is the logarithm of the consumer price index of food, excluding fresh produce (source: INSEE);

nrj_{GZ} is the logarithm of the price of energy in distribution in euros defined above (source: INSEE);

s^{GZ} is the absolute value, divided by 100, of the balance of opinion relating to expected change in the selling price of food products in retail trade (source: monthly tendency survey in retail trade, INSEE);

csu^{SMNA} is the logarithm of unit wage costs in the non-agricultural market branches (source: national quarterly accounts, INSEE). ●

Box: price-response function modelled to exogenous shocks

In addition to providing a better understanding of the determinants of food product prices in the past and as a forecast, the error-correction model is used to assess the diffusion of an exogenous shock, quarter by quarter. The exercise consists in simulating a permanent 10% increase in world food commodity prices and studying change in the different prices modelled over several quarters. The response of the modelled prices may come from a direct effect –as food commodity prices are some of the explicit determinants in the econometric model– but also from an indirect effect –among its determinants the modelled price contains a price which is itself affected by the exogenous shock. It should be noted that the simulations carried out do not include loopback effects from the increase in wages generated by the increased cost of food products. In addition, the balance of opinion from the business tendency surveys on probable price changes is assumed to be equal to its long-term average, which cancels out its impact on the speed of diffusion of the shocks in the simulations.

A +10% shock on agricultural commodities leads, in the long term, to a 3.5% rise in agricultural producer prices (excluding fruit and vegetables), a 1.0% rise in production prices in the agrifood industries and about 0.3% in the non-fresh food CPI (►**Figure 11**). At the end of one year, most of the shock has been transmitted: the agriculture sector would appear to have transmitted over 90%, compared to almost 80% for distributors. The impact on IAA production prices is stronger after one year than in the long term (+1.1 points against +1.0 point in the long term), with the short-term momentum generating a slight over-reaction in the price. ●

►11. Response to a permanent +10% increase in world agricultural commodity prices
(cumulated impact in %)

Quater	1	2	3	4	5	6	7	8	9	10	LT
Producer prices of agricultural products	1.22	2.17	2.83	3.24	3.46	3.56	3.60	3.59	3.58	3.56	3.51
IAA production prices	0.13	0.70	0.99	1.10	1.12	1.09	1.06	1.02	1.00	0.99	0.98
direct effect	*0.00*	*0.32*	*0.35*	*0.27*	*0.16*	*0.07*	*0.02*	*-0.01*	*-0.02*	*-0.01*	*0.00*
indirect effect	*0.13*	*0.39*	*0.64*	*0.84*	*0.96*	*1.02*	*1.04*	*1.03*	*1.02*	*1.00*	*0.98*
CPI Food	0.02	0.10	0.19	0.27	0.32	0.36	0.37	0.38	0.37	0.37	0.33
direct effect	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*
indirect effect	*0.02*	*0.10*	*0.19*	*0.27*	*0.32*	*0.36*	*0.37*	*0.38*	*0.37*	*0.37*	*0.33*

Note: the impact of the shock includes indirect effects that correspond to the share of the increase that derives not from agricultural commodities but from the previous price in the food production chain. For example, the indirect effect for the IAA production price is equivalent to the contribution of the increase in agricultural production prices. These simulations do not include loopback effects caused by wage increases. The permanent increase takes place in Q1.
Source: INSEE.

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Energy-saving behaviour in energy-intensive industries in 2022

The economic recovery following the health crisis, along with the war in Ukraine, have resulted in strong tensions in the European energy markets. Although not all French companies were immediately affected by this surge in energy prices, they were encouraged to reduce their energy consumption to protect themselves from possible shortages.

*With regard specifically to electricity, from monthly data on electricity withdrawal by almost 500 energy-intensive companies connected directly to the Electricity Transmission Network (*Réseau de Transport d'Électricité - *RTE), energy-saving behaviours could be identified in the course of H2 2022. Electricity consumption by these businesses would seem to have fallen back in December 2022 by about 22% year-on-year.*

By studying the sub-sample of around 200 companies which also appear in INSEE's business tendency survey, the electricity consumption of each company could be measured against change in its economic activity, as reported in the survey. This microeconometric analysis suggests that half of the decline in electricity consumption (i.e. about 11 points) would seem to represent energy-saving behaviour by the companies considered, i.e. a drop in electricity consumption independently of any change in their activity.[1] *The other half of this downturn in electricity consumption can probably be explained by a drop in production by these companies. However, at a more aggregated level, production indices in the corresponding energy-intensive branches would appear to suggest a more moderate drop in activity, which may reflect a selection bias in the sample used for the microeconometric analysis: the activity of companies connected directly to the RTE network did indeed seem to have deteriorated more than activity in their sector over the period studied.*

Due to the qualitative nature of the measurement of activity in the business tendency surveys, the estimate of energy-saving behaviours remains somewhat imprecise. These results also encourage us to look at the determinants of energy-saving by these energy-intensive industrial companies. Changes in energy-saving behaviour at the end of 2022 would seem to be more apparent in companies that, in previous years, had improved their energy efficiency only moderately or not at all. These companies would thus have potentially more useful room for manoeuvre than those companies that had already achieved a certain degree of energy efficiency.

Jérémy Marquis, Gaëlle Pécresse, Guillaume Roulleau

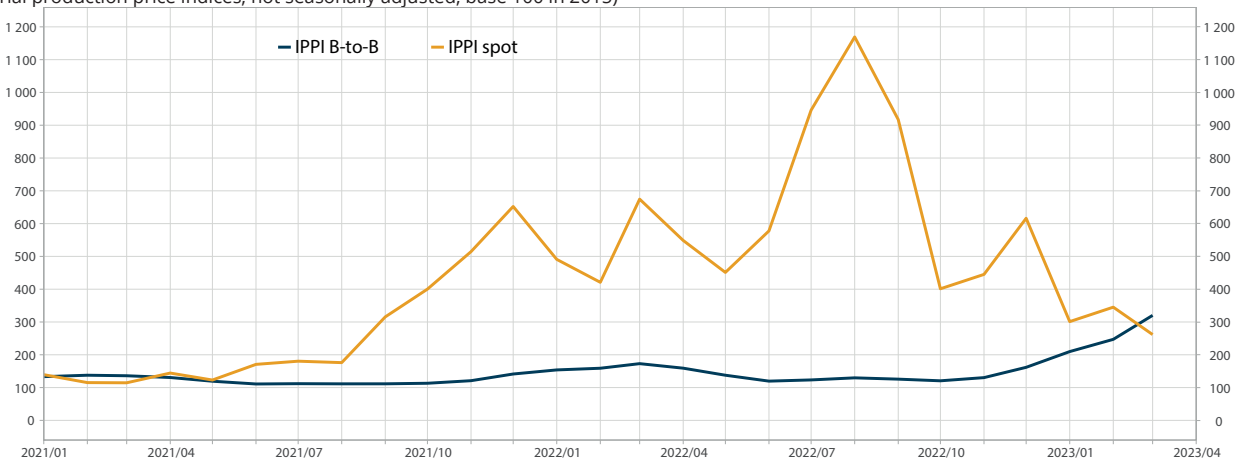
The increase in the market price of electricity is only passed on later to the price of electricity actually paid by companies

From summer 2021 and until mid-2022, the price of electricity on the European market increased sharply (►**Figure 1**): in addition to the vigorous upswing in demand once European health restrictions were lifted, the supply of natural gas from Russia was reduced. Thus the market price of electricity (EPEX) increased 8-fold between Q1 2021 and August 2022. However, the increase in the Producer Price Index in industry for electricity sold to companies was much lower.

1 In this study, we use the terms "energy-saving behaviour" and "energy efficiency" interchangeably, since the method used here is unable to differentiate between them. This is a slight inaccuracy, since energy-saving implies, unlike efficiency, a loss of "utility": for example, turning down the heating in offices reduces energy consumption with no impact on production, but it can affect employee comfort.

►1. Price of electricity exchanged on the markets and sold to companies in France

(industrial production price indices, not seasonally adjusted, base 100 in 2015)



Last point: March 2023.
Note: IPPI spot designates the industrial production price index for electricity sold wholesale at the spot price. The IPPI B-to-B for electricity designates the industrial production price index for electricity sold to companies that have signed a contract for power greater than or equal to 36 kVA.
How to read it: in March 2023, the production price index for electricity sold on the European market stood at 262 points, whereas the index corresponding to electricity sold to French companies was 320 points.
Source: INSEE, INSEE calculations.

In fact, only a minority of businesses, including industrial companies, pay the European market price for their electricity (►**Bjai and al., 2022**) ; the rest benefit from a price indexed to the regulated tariff, with price variations limited by the introduction of a tariff shield, or they are subject to fixed-price contracts which are reassessed at regular intervals. Almost 60% of industry is on a fixed-term electricity contract over a contractual period. While the inertia associated with his type of contract initially "protects" companies from a rise in the market price of electricity, this effect is gradually reversed: contracts renewed in 2022 remain indexed to a very high price, while at the same time, the market price of electricity has been relatively relaxed since autumn 2022. Thus in March 2023 the index price of electricity actually paid by French companies was higher than that of the European market.

This increase in electricity prices, combined with the supply chain difficulties that appeared at the start of 2021, hampered production in industrial companies. Thus, in energy-intensive branches such as metallurgy or the paper and cardboard industry, the industrial production index fell by more than 5% year-on-year in H2 2022.

Almost 85% of the reduction in electricity withdrawal is not accounted for by the decline in meso-economic production, suggesting the presence of both composition effects and energy-saving behaviour

In companies where production declined in H2 2022, this decrease was probably accompanied by a reduction in energy consumption associated with the production process, whether of gas or electricity. It is also possible that companies' energy consumption decreased more than would have been expected from their drop in production, suggesting energy-saving behaviours. The question therefore arises of how to identify, in companies' changing energy consumption, what is due solely to changes in their activity and what reflects energy-saving behaviour.

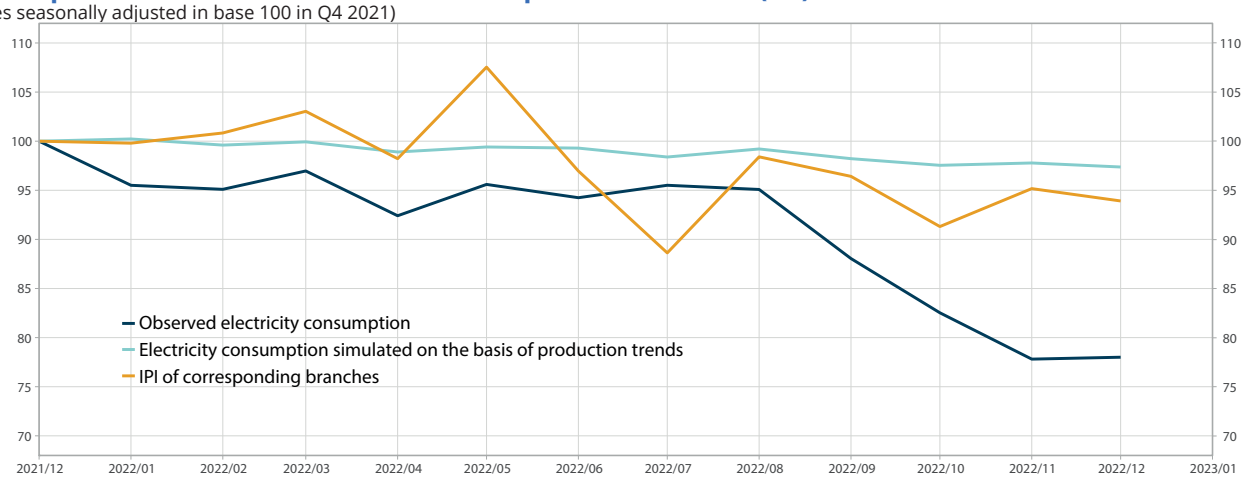
In this Focus, the aim is to provide an answer in the case of electricity consumption, by monitoring electricity withdrawal in about 475 industrial sites connected directly to the RTE (Electricity Transmission Network -*Réseau de Transport d'Électricité*). These withdrawal data have the triple advantage of being monthly, available quickly and concentrated on the most energy-intensive branches of activity. The rest of the analysis is limited to these branches, which are part of the manufacturing industry and represent a large proportion of "other industrial branches"[2]: metallurgy, the chemical industry, the wood, paper and cardboard industry, and the manufacture of non-metallic products, minerals or rubber[3]. For the rest of the economy, RTE withdrawal data do not cover enough companies to produce a satisfactory econometric analysis.

Electricity withdrawal by companies in the energy-intensive branches considered here and connected directly to RTE declined by around 22% between December 2021 and December 2022, i.e. 3.5 times more than production in the

2 Within the meaning of the classification of branches at level A17 of the national quarterly accounts.
3 These branches correspond to divisions 16, 17, 20 and 22 to 25 of NAF.

►2. Electricity consumption observed in energy-intensive companies connected to RTE and electricity consumption simulated with the industrial production index (IPI)

(indices seasonally adjusted in base 100 in Q4 2021)



Last point: December 2022.
Note: electricity consumption resulting from change in production is obtained using an econometric model which, for each branch of activity considered, accounts for variations in electricity consumption by companies in this branch connected to RTE (at division level) through variations in the IPI for this branch (►**Box Method**).
How to read it: in December 2022, the simulated electricity consumption index for companies in electricity-intensive industries and connected to RTE is 97 points, whereas the observed index is 78 points.
Scope: companies connected directly to RTE and belonging to the metallurgy, chemical industry, paper and cardboard industry branches, also the manufacture of non-metallic products, minerals, wood or rubber.
Source: RTE, INSEE, INSEE calculations.

corresponding branches (►**Figure 2**). This difference increases when electricity withdrawal resulting solely from change in production by the branches considered is simulated, branch by branch (►**Box Method**). Thus in the energy-intensive branches, about 85% of the decline in electricity withdrawal is not explained by the drop in macroeconomic production. This suggests that during 2022 and especially at the end of the year, electricity consumption declined much more than expected compared to production, thus reflecting possible energy-saving behaviours on the part of the companies considered.

In addition to energy-saving behaviours, this considerable difference between electricity consumption observed and that simulated from change in production in the branches being considered could also be due to the particularly mild weather at the start of winter 2022. This is not included in the model here, but could have been a reason for electricity consumption to be reduced without any particular drop in activity. In its report for winter 2022-2023, RTE (►**RTE, 2023**) stresses, however, that electricity consumption by industrial companies is not very sensitive to temperature variations.

An alternative explanation, unrelated to energy-saving behaviour, could be that of a substitution effect between electricity and other types of energy, with companies reducing their consumption of electricity and using another type of energy, and without reducing their activity. However, such a substitution effect seems negligible as the prices of the competing energies increased so much: the price of gas in particular increased 6 times more than that of electricity[4].

Finally, a sample selection bias could be a third possible explanation: companies connected to RTE could have experienced greater production losses than the branch as a whole during the period under study.

Microeconomic analysis suggests that in 2022, half of the reduction in electricity withdrawal by companies connected to RTE could be due to energy-saving behaviour

The previous meso-economic analysis highlights probable energy-saving behaviour, but also possible selection biases in the sharp drop in electricity withdrawal observed between the end of 2021 and the end of 2022, in companies in the energy-intensive branches and connected to RTE.

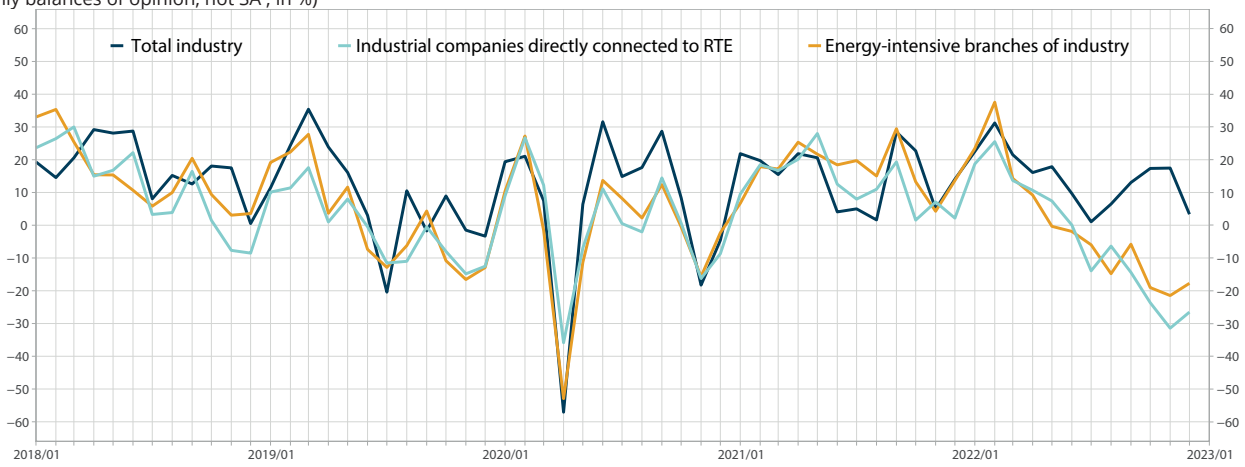
To dissociate energy-saving behaviour from selection biases, the analysis was completed at microeconomic level by matching data for electricity withdrawal by companies connected to RTE and the responses of these same companies in the monthly tendency survey in industry. This survey includes qualitative questions on past and expected change in activity, the idea being to compare, at company level, electricity consumption taken from RTE data, and production, measured qualitatively in the outlook survey. Of the 314 companies connected to RTE, about 183 are questioned in the outlook survey and thus constitute the microeconomic sample considered below.

Comparison of the balances of opinion on expected production in the next 3 months shows that during 2022, companies connected directly to RTE reported a declining production more often than companies in industry as a whole (►**Figure 3**). In addition, in Q4 2022, the balance of opinion of companies connected directly to RTE appeared to have deteriorated further than that of companies in the energy-intensive branches, which does indeed suggest the presence of composition

4 Calculation based on production prices of gas and electricity sold to French companies that are final consumers, as an annual variation 2022.

►3. Balances of opinion on expected activity, across all industry, in companies connected directly to RTE and in companies in energy-intensive branches

(monthly balances of opinion, not SA ; in %)



Last point: Decembre 2022.
How to read it: in December 2022, the balance of opinion on expected production in companies connected directly to RTE is -27 against +3 for all of industry and -18 for electricity-intensive industries. Here, the energy-intensive sectors include divisions 16 to 18, 20 and 22 to 25 of NAF. This balance is the difference, weighted by turnover of the companies questioned, between the number of companies in a given month reporting an increase in production for the next three months and those reporting a decline in production.
Source: RTE, INSEE business survey, INSEE calculations.

effects in the analysis in the previous section.

The answers to the qualitative questions on past and expected change in production were exploited in order to model, at the level of each company connected to RTE, monthly change in electricity consumption compared to production, in a company-specific effect and in various control variables (►**Box Method**). Thus, the part that remains unexplained at the end of this modelling could be likened to a measure of energy-saving behaviour.

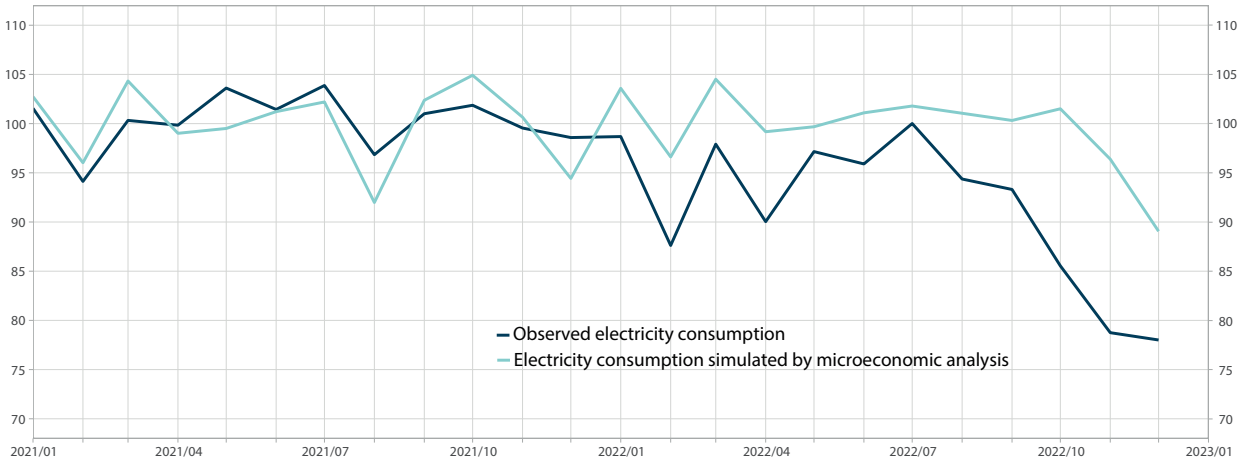
The electricity consumption of companies in the microeconomic sample fell by 22% at the end of Q4 2022 compared to Q4 2021, i.e. an identical decline to that measured at the meso-economic level. According to the microeconomic model, the decline in individual company production would appear to have led to a reduction in electricity consumption of approximately 11 points over this period, all other things being equal (►**Figure 4**). The scale of this drop in consumption is much greater than the estimate obtained *via* the meso-economic approach (around 3 points). The difference is attributable to biases in sample selection, notably the fact that companies connected directly to RTE would appear to have had a greater drop in activity than the drop in the branch as a whole over the entire period studied (►**Figure 3**).

The other half (about 11 points) of the drop in electricity consumption, which is not explained by the microeconomic model, could correspond to energy-saving behaviours and energy efficiency. This quantification has a certain number of limitations and probably represents an upper bound in energy-saving behaviours. However, the changes in activity reported in the outlook surveys are qualitative, which means it is more complicated to apply their predictive ability to a quantitative variable like electricity consumption. A conservative estimate *via* a quantitative measurement of activity but based on a fairly small sample of companies[5] thus suggests a drop in electricity consumption attributable to energy-saving behaviour of around 7 points (i.e. a quarter of the decline) –an effort estimated as less than that of the model presented here.
Variations in the weather are also not modelled; while they do not seem to have any significant impact in the macroeconomic analysis, this result is not necessarily valid at individual level. In addition, the size of the sample for analysis is limited due to the matching between companies connected directly to RTE, of which there are relatively few, and the non-exhaustive data from the tendency surveys in industry. Finally, as highlighted above, the scope of the analysis is very specific, focusing on electrical energy in the most energy-intensive branches, and cannot easily be generalised across the whole of the French economy.

5 For about fifty industrial sites, a match between the individual industrial production index and electricity withdrawals could be exploited using a model similar to the microeconomic assessment but with a quantitative rather than a qualitative activity variable.

►4. Electricity consumption observed in companies connected to RTE and electricity consumption simulated by microeconomic analysis, with production of these companies

(indices not seasonally adjusted, in base 100 in Q4 2021)



Last point: December 2022.
Note: the electricity consumption observed is obtained by aggregating individual data (SIREN level) on withdrawals by companies that are both connected to RTE and questioned in the tendency surveys of industry. The simulated electricity consumption is based on a microeconometric model (►**Box Method**) which simulates the electricity consumption resulting solely from changes in the company's production.
How to read it: in December 2022, the simulated electricity consumption index of industrial companies connected to RTE was 89 whereas the observed index was 78.
Source: RTE, INSEE business survey, INSEE calculations.

Energy-saving behaviours would seem to have been particularly pronounced for companies that had not yet improved their energy efficiency

The demonstration of a significant energy-saving effect at the end of 2022 suggests that, in the past, there was a disparity between the levels of energy efficiency actually achieved by industrial processes and those that are theoretically possible, without loss of production. The economic literature has investigated this disparity, called the "energy efficiency gap", both in its magnitude and its causes (►**Allcott and Greenstone, 2012**) –although these analyses focus more often on consumers than on companies. The main causes of this energy efficiency gap (►**Gerarden and al, 2017**) are assumed to relate to market imperfections, especially information problems concerning possible adaptations of the production process, also cognitive biases (e.g. inattention biases when confronted with low energy prices).

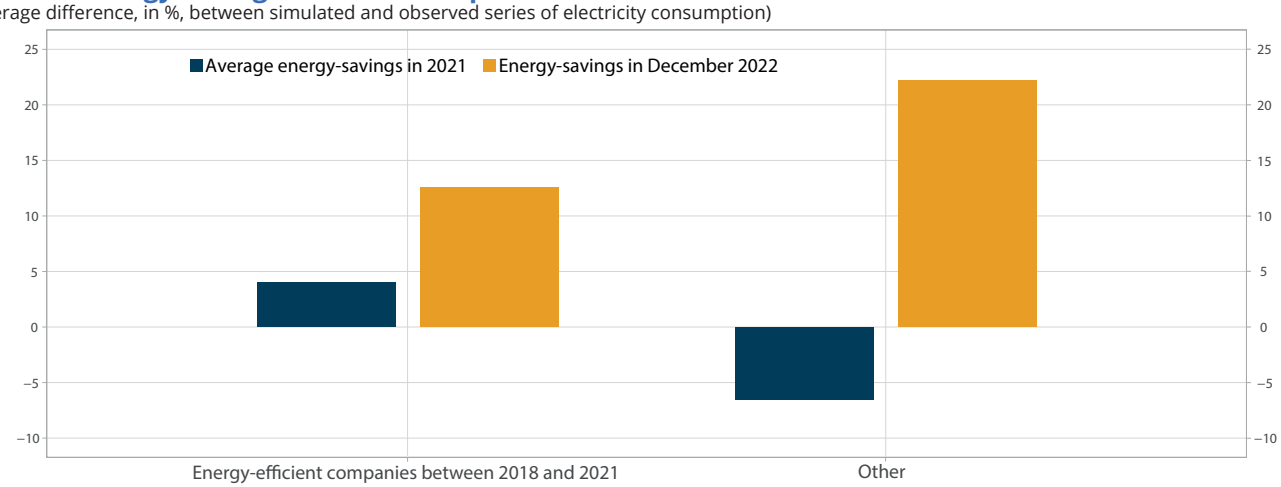
Although it does not provide the reasons for this electricity-saving behaviour observed at the end of 2022, the microeconomic analysis seems to suggest that the companies that have improved their energy efficiency most are the ones that, in recent years (2018-2021), demonstrated least energy-saving behaviour. This conclusion is consistent with the idea that the costs of closing the energy efficiency gap were low at first then increased rapidly (►**Abadie, 2012**).

By combining the microeconomic model presented above with the annual survey on industrial energy consumption (EACEI), an individual measurement of the "energy-saving trend" is constructed for each company over the period 2018-2021 (►**Box Method**). The energy-saving trend shows the companies' tendency to use less energy for its production, over the period 2018-2021. Companies are divided into two groups: those that have demonstrated a particularly strong energy-saving trend over the period 2018-2021, and the others. For each group, it is then possible to assess the extent of their energy-saving behaviour at the end of 2022, in the same way as was done in the previous section on the matched sample. Recent energy-saving behaviour appears to be greater in the group of companies that did not display a significant energy-saving trend between the years 2018-2021: at the end of 2022, their electricity consumption would seem to have dropped by more than 20% (excluding what would have resulted from change in their production) whereas this decline was a little over 10% on average for companies that have shown a marked energy-saving trend in recent years (►**Figure 5**). For the former this energy-saving behaviour at the end of 2022 contrasts with 2021 when their electricity consumption had, on the contrary, increased (by around 6%, excluding trends linked to change in production).

This analysis suggests that energy-saving behaviour at the end of 2022 would seem to have been more pronounced in companies that had not shown a marked trend towards energy-saving in recent years. One possible interpretation is that these companies may have more room for manoeuvre in this area, where additional efforts at energy-saving are more costly for companies that have already tended to improve their energy efficiency. ●

►5. Change in energy-saving behaviour between 2021 and the end of 2022, for companies trending towards energy-saving and other companies

(average difference, in %, between simulated and observed series of electricity consumption)



Note: the separation between the group of companies that improved their energy efficiency between 2018-2021 and other companies is defined in the ►**Box Method**.
How to read it: in 2021, companies that displayed most energy-saving between 2018 and 2021 consumed 4% less electricity than a simulation based on their economic activity; in December 2022, this difference between simulation and observation was 13%.
Source: RTE, INSEE (business survey, EACEI), INSEE calculations.

Methodology

Meso-econometric model of energy-saving behaviour

To monitor companies' electricity consumption, data on monthly electricity withdrawals by the 478 establishments (SIRET level) connected directly to the Electricity Transmission Network (RTE - *Réseau de Transport d'Électricité*) were mobilised for the period 2018-2022. The companies concerned were those connected directly to RTE for high voltages above fifty kilovolts. These energy-intensive companies cannot be said to be representative of companies across the whole of industry, and certainly not for the entire economy.

Consequently, in order to consider companies that were most representative of their branch of activity, the meso-economic analysis is limited to those branches for which the companies connected directly to RTE (SIREN level) represent a significant share of activity in the sector (in terms of turnover or total electricity consumption). To do this, a match is made between companies' annual electricity withdrawals in 2019 (RTE data at SIREN level), companies' tax returns for 2019 (FARE data) and the 2019 survey on energy consumptions in industry (EACEI survey by INSEE). ►**Figure 6** suggests that companies connected to RTE are particularly representative of certain energy-intensive sectors (paper and cardboard industry, chemical industry and metallurgy) and also in the manufacture of transport equipment and coke and refined petroleum (►**Cheptitski and Poulhès, 2021**). The meso-economic analysis is therefore limited to the following energy-intensive "other industrial branches": metallurgy, chemical industry, wood, paper and cardboard industry, and the manufacture of non-metallic mineral products or rubber.[6]

In the energy-intensive branches selected, monthly activity is measured by the industrial production index (IPI) of the branch. For each branch *b* selected, energy-savings in month *t* –written ϵ_{bt} – are estimated as the residual of the linear regression of the variation in electricity consumption *elec_bt* by the companies in branch *b* and connected to RTE on the variation in the IPI of the branch. More formally, the regression takes the following form:

$$\Delta log\left(elec_{bt}\right) = \underset{(0.001)}{0.002} + \beta_b \Delta log\left(IPI_{bt}\right) + \epsilon_{bt} \quad (1)$$

Estimation: 2018-01/2022-02, R^2=0.72

where β_b is a coefficient specific to each branch of activity and equal to 0.64 on average.[7] All model variables are seasonally adjusted. Equation (1) is estimated between January 2018 and February 2022 (before the start of the war in Ukraine).

►6. Sectoral representativeness of companies connected directly to RTE
(share of companies connected directly to RTE in turnover and total electricity consumption of the branch in 2019; in %)

Branch	Percentage of sales	Percentage of electricity consumption
Food products	10	13
Coke and refined petroleum	53	ns
Manufacture of capital goods	2	10
Manufacture of transport equipment	53	52
Other industrial products	18	58
energy-intensives	24	61
excluding energy-intensives	5	11

ns: not significant.
Note: the EACEI survey does not provide information on the coke and refined petroleum sector. Here, the energy-intensive sectors include divisions 16 to 18, 20 and 22 to 25 of NAF.
Source: RTE, INSEE (FARE, EACEI). INSEE calculations.

6 These branches correspond to divisions 16, 17, 20 and 22 to 25 of NAF.
7 This coefficient varies, depending on the branch, between 0.31 and 0.96, and is always significant at the confidence level of 1%.

The approach consists in using the model (1) to construct a "simulated electricity consumption" for the period from February 2022 to January 2023, by adding together the forecasts by branch and assuming ϵ_{bt} to be zero. This simulated consumption can be interpreted as the electricity consumption, for companies in the branch and connected to RTE, that should have occurred, given the change in activity in the branch. The difference between this simulated consumption and the electricity consumption actually observed can then be interpreted as reflecting cumulated energy-saving behaviours over 2022 in response to the energy crisis, with of course all the limitations described in the body of this Focus (weather effects, substitution effects, composition effects).

Microeconomic model of energy-saving behaviour

The meso-economic analysis can be combined with an estimate of energy-saving behaviour at company level. Such an estimate can be used to assess the robustness of the meso-economic results, to remove any selection bias and also to obtain an individual measurement of energy-saving behaviour, which is useful for analysing its determinants.

The aim is to match companies' individual electricity withdrawals (data have been aggregated by establishment at SIREN level) with individual data on company activity. For this, the tendency surveys in industry are used, and in particular the qualitative responses to the questions on past and expected production.

However, this matching poses several difficulties. First, attrition is significant as the tendency surveys in industry question only a sample of industrial companies. Thus for 2022, 58% of companies (or 57% of electricity withdrawals) connected to RTE are available in the surveys (or 183 SIREN out of 314 SIREN of companies connected to RTE).[8] As in the meso-economic analysis, companies represented in the matched sample are not representative of industry as a whole. As suggested in ►**Figure 7**, these are above all large companies, i.e. with large turnovers. In addition, the responses of these companies to questions on past and expected production suggest that their activity in 2022 had significantly deteriorated. As shown in a ►**Figure 3** in the body of the Focus, for companies in the matched sample, their balance of opinion on expected activity[9] was particularly in decline in 2022, compared to all industrial companies, but also slightly lower than that of energy-intensive industrial companies.

It should be noted that electricity withdrawals by companies connected to RTE were obtained at establishment level (SIRET level) while the data from the tendency surveys are at company level (SIREN level). The construction of the matched sample therefore involves adding together electricity withdrawal data per establishment in order to obtain withdrawals at company level. This therefore assumes that the variation in electricity withdrawals of establishments present in RTE is representative of total withdrawals of electricity by the associated company.

The tendency surveys in industry do not provide quantitative information on activity in month *t*. Information on company production is obtained from qualitative data on the variation in production in the past 3 months (stable, up, down) ad for the next 3 months. After comparing the performances of the different combinations of variables, the model finally adopted takes into account what the company declares in t+1 concerning its past activity:

$$\Delta log\left(elec_{i,t}\right)=\alpha_i+\underset{(0.01)}{0.02}\times\left(\ ActPass_{i,t+1}=Increase\ \right)-\underset{(0.02)}{0.04}\times\left(\ ActPass_{i,t+1}=Decrease\right)+g\left(X_t\right)+\epsilon_{i,t}\quad(2)$$

Estimation: 2018-01/2021-12, R^2=0.16, N×T=6355

where X_t is a series of control variables (month of the year to adjust results for seasonality, specific dummies for the months of lockdown during the health crisis, etc.), *ActPass* is the company's opinion on its past activity and α_i is a company-specific fixed effect. The fixed effect corresponds, for each company, to the average monthly change in electricity consumption at constant production (and adjusted for seasonal variations). With this fixed effect, it is possible to capture, at company level, both gradual improvement in its energy efficiency (its "energy-saving trend effort") and change in the electrification of its production process.

As in the macroeconometric model, the approach consists of using the model (2) to construct a "simulated electricity consumption" for 2022. The difference between consumptions can then be interpreted as cumulative energy-saving.

8 Microeconomic modelling is not limited to the energy-intensive branches of the meso-economic approach, even if these represent 75% of the final analysis sample.
9 This balance is the difference, weighted by turnover, between the number of companies declaring that in a given month their activity is up and the number declaring that their activity is down.

Accounting for energy-saving in 2022 through past energy-saving behaviour

In order to study whether energy-saving behaviour at the end of 2022 was driven by companies that had already made energy-efficient gains in the past or, on the contrary, by companies that had not done so, an "energy-saving trend" indicator was defined for the period 2018-2021 from the fixed effects α_i of equation (2): due to the specification of this equation, these effects reflect the average variation in electricity consumption, between 2018 and 2021, at constant production.

These fixed effects do not constitute a perfect measurement of companies' energy-saving from 2018-2021 as they may also capture company behaviour related to the electrification of production processes. Also, in order to remove these fixed effects of possible electrification behaviour, several years of the annual survey on industrial energy consumption (EACEI) were examined. These surveys provide information on the share of electricity in the energy mix for each company. For the companies in the sample matched above, these companies are compared between the 2014-2015 and the 2018-2019 EACEI surveys. For those that are in these years, the change in this share of electricity (written *ΔpartElec*) can be a proxy for the electrification of their production chains.

The "energy-saving trend" indicator for the period 2018-2021 –written $\hat{\alpha}_i$ – is the residual of the equation :

$$\alpha_i = \underset{(0.002)}{0.008} + \underset{(0.02)}{0.042}\ \Delta partElec_i + \hat{\alpha}_i$$

$R^2 = 0.03$, $N = 151$

Companies that improved their energy efficiency over the period 2018-2021 are defined as those where $\hat{\alpha}_i$ is less than the median.

According to this measurement, these companies are expected to be larger in size and more energy-intensive than the others. These results are consistent with the literature on business investment for industrial decarbonisation, which suggests that it tends to be the largest, the most productive and the most energy-intensive companies that have the highest investment rate in favour of decarbonisation (►**Faquet, 2021**). ●

►7. Distributions of turnover of companies in the tendency survey in industry sample and in the sub-sample matched with RTE data

(average –not weighted–, median, first and third quartiles of the distribution of company turnover –in thousands of euros– declared in the tendency surveys in 2022)

Data	Average	1st quartile	Median	3rd quartile
Final sample (RTE/ECJ)	629	104	231	646
Industry business survey	195	13	37	106

Note: the final sample (RTE/ECJ) corresponds to the matching (SIREN level) of data on electricity withdrawal from RTE and tendency surveys in industry. Turnover distribution corresponds to what was declared in the tendency surveys.
How to read it: on average (not weighted), companies in the tendency surveys in industry have a turnover of €195k against €629k in the final sample (RTE/ECJ).
Source: RTE, Insee business survey. Insee calculations.

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Economic activity

In Q1 2023, French GDP accelerated slightly (+0.2%, according to the detailed results from the quarterly accounts, after stability in Q4 2022, ►**Figure 1**). Although domestic demand was still flagging, supply chain difficulties had lessened their effect on economic activity. Industrial action disrupted some sectors, especially transport services, but its impact was weak at the macroeconomic level. The relative resilience of the manufacturing industry is partly due to the strong rebound in activity in the manufacture of coke and refined petroleum products, as a backlash to the strikes in October 2022. In addition, energy production continued to pick up, with the reopening of some nuclear plants (►**Figure 2**).

According to the business tendency surveys, supply chain difficulties in industry and construction eased significantly in H1 2023 (►**Figure 3a**). However, business leaders' opinions on activity have recently deteriorated, as suggested by the decline in business climate indicators which in May reached their lowest level since the end of the health crisis, both in industry and services (►**Figure 3b**). Given the relaxation of supply constraints, the gloom expressed in business leaders' expectations is probably due more to concerns over the future of demand. Balances of opinion regarding levels of orders on their books have declined both in industry and building construction, while in services, the balance of opinion relating to expected demand dropped below its long-term average in April.

In this uncertain context, GDP growth is expected to remain modest in Q2 2023 (+0.1% forecast). Despite the continuing recovery in the manufacture of transport equipment, activity in the manufacturing industry is likely to weaken slightly, hampered mainly by the most energy-intensive branches and the coke and petroleum sector, which was again affected by strikes in April (►**Figure 4**). Energy production, and especially electricity production, is expected to slow but should continue to catch up. At the same time, market services are expected to grow only moderately. In particular, activity is likely to decline in trade, and will probably rebound only partially in transport, adversely affected by the strikes in Q1. Lastly, activity in construction looks set to continue its decline, against a backdrop of rising interest rates.

Among the main demand items, household consumption is expected to decline slightly, driven down by the further downturn expected in food consumption, linked to the sharp rise in the prices of these products. Despite a less favourable context due to rising interest rates, corporate investment is expected to rebound sporadically, with the renewal of fleets of professional vehicles, as suggested by the latest vehicle registration data. Household investment, however, is likely to continue its sharp decline. Finally, foreign trade is expected to make a positive contribution to growth in Q2: exports are likely to be boosted by naval and aeronautical deliveries, while imports remain sluggish, in the wake of domestic demand.

►1. Goods and services: resources-uses balance at chain-linked prices for the previous year, in quarterly and annual change

(quarterly and annual changes, in %; seasonally and working-day adjusted data)

	2021				2022				2023				2021	2022	2023
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4			
Gross domestic product	**0.0**	**1.0**	**3.1**	**0.5**	**-0.1**	**0.5**	**0.2**	**0.0**	**0.2**	**0.1**	**0.1**	**0.2**	**6.4**	**2.5**	**0.6**
Imports	2.1	2.2	0.6	5.5	1.6	0.2	4.0	-0.8	-2.8	0.1	0.2	0.3	9.2	8.7	-1.2
Total resources	0.5	1.5	2.6	1.4	0.5	0.8	0.9	-0.2	-0.2	0.1	0.1	0.1	7.7	4.3	0.5
Household consumption expenditure	0.5	1.3	5.0	0.3	-1.1	-0.3	1.3	-1.0	0.1	-0.3	0.2	0.2	5.1	2.1	-0.2
General government consumption expenditure*	-0.4	0.5	3.3	0.9	0.3	-0.3	0.4	0.7	-0.3	0.0	0.2	0.2	6.5	2.9	0.5
of which individual general government expenditure	0.1	0.7	4.6	0.9	0.3	-1.1	0.4	0.6	-0.7	-0.1	0.1	0.2	8.4	2.9	-0.3
of which collective general government expenditure	-1.6	0.0	0.0	0.6	0.3	0.9	0.3	0.9	0.3	0.2	0.2	0.2	3.0	1.8	1.6
Gross fixed capital formation (GFCF)	0.3	1.7	0.1	-0.3	0.4	0.5	2.3	0.2	-0.8	-0.5	-0.5	-0.4	10.2	2.3	-0.1
of which Non-financial enterprises (NFE)	1.0	1.2	0.6	-0.3	0.7	0.6	4.1	0.6	-0.4	0.3	-0.1	-0.1	9.8	3.8	2.5
Households	-2.2	2.9	0.5	-0.6	-1.7	1.0	-1.0	-1.2	-2.3	-2.7	-2.0	-1.5	15.4	-1.3	-6.7
General government	-1.5	1.1	-1.9	-0.6	2.6	-0.6	0.9	0.4	0.0	-0.3	-0.1	0.0	2.3	1.5	0.4
Exports	0.0	2.9	3.2	3.5	1.2	1.7	-0.7	0.2	-0.2	1.2	0.3	0.6	10.9	7.2	1.3
Contributions (in points)															
*Domestic demand excluding inventory***	0.2	1.2	3.4	0.3	-0.4	-0.1	1.3	-0.3	-0.2	-0.3	0.0	0.1	6.7	2.4	0.0
*Changes in inventories***	0.4	-0.3	-1.1	0.8	0.4	0.2	0.4	-0.1	-0.6	0.0	0.1	0.0	-0.6	0.8	-0.3
Foreign trade	-0.6	0.1	0.7	-0.6	-0.2	0.5	-1.5	0.3	1.0	0.4	0.0	0.1	0.2	-0.6	0.9

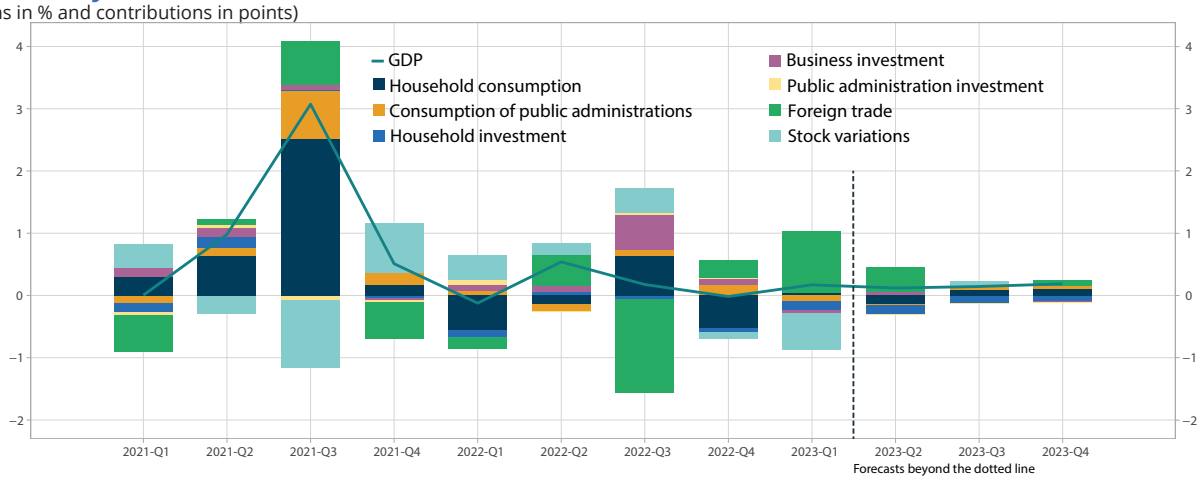
Forecast.
* Consumption expenditure of general government and non-profit institutions serving households (NPISH).
** Changes in inventories include acquisitions net of valuable items.
How to read it: in Q1 2023, exports declined by 0.2%. They are expected to increase by 1.2% in Q2 2023 with foreign trade contributing +0.4 points to GDP change.
Source: INSEE.

In H2 2023, GDP growth is expected to remain modest (+0.1% forecast in Q3 then +0.2% in Q4). It will probably remain sluggish in the manufacturing industry, but should be buoyant in the energy sector, with electricity production continuing its catch-up. On the demand side, household consumption is expected to pick up only slightly, in a context where prices are slowing and wages are only relatively buoyant. Corporate investment is likely to be at a standstill, hit by past increases in interest rates, while household investment continues to fall. All in all, domestic demand is likely to be sluggish overall in H2. In this context, foreign trade is expected to provide some support, mainly through naval deliveries due at the end of the year and growth in global demand.

All in all, annual growth for 2023 is expected to be +0.6%, after +2.5% in 2022 (►**Figure 5**; ►**Figure 6** shows past and forecast change in the GDP deflator and its components). This forecast is still surrounded by uncertainty, especially regarding the speed at which monetary tightening is transmitted to the real economy and the possible exacerbation of fragility in the financial world which could result. Conversely, the return of supply chains to normal, the slowdown in prices and a drop in the household savings ratio, which currently remains high, could be factors to support growth in the coming quarters. ●

►2. Quarterly variations in GDP and contributions of main demand items

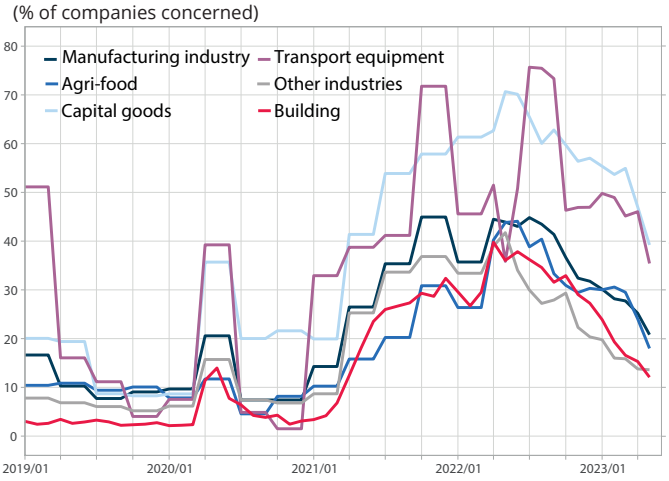
(variations in % and contributions in points)



How to read it: in Q2 2023, GDP is expected to increase by 0.1% compared to Q1 2023; the contribution of household consumption is likely to be about -0.1 points.
Source: INSEE.

►3a. Share of manufacturing industry and building companies experiencing supply chain difficulties, by branch

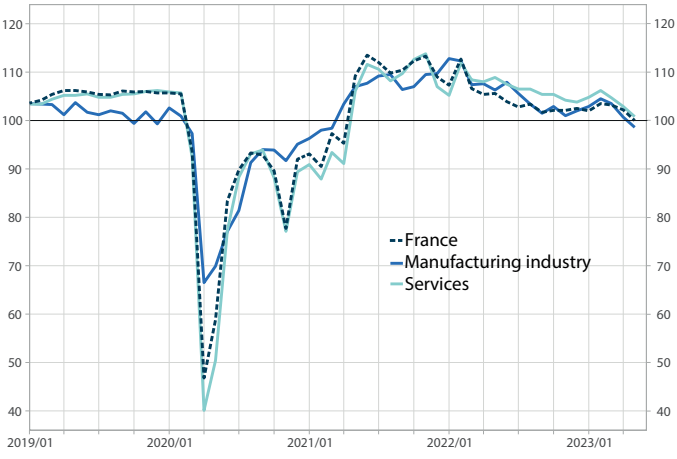
(% of companies concerned)



Last point: May 2023.
Note: results are weighted by turnover.
How to read it: in May 2023, 21% of manufacturing industry companies reported supply chain difficulties.
Source: business surveys, INSEE.

►3b. Business climate in France and sector climate in industry and services

(standardised with mean 100 and standard deviation 10)



Last point : May 2023.
How to read it: the business climate composite indicator in the manufacturing industry stood at 99 points in May 2023, below its long-term average (100).
Source: business surveys, INSEE.

►5. Quarterly changes in economic activity by industry

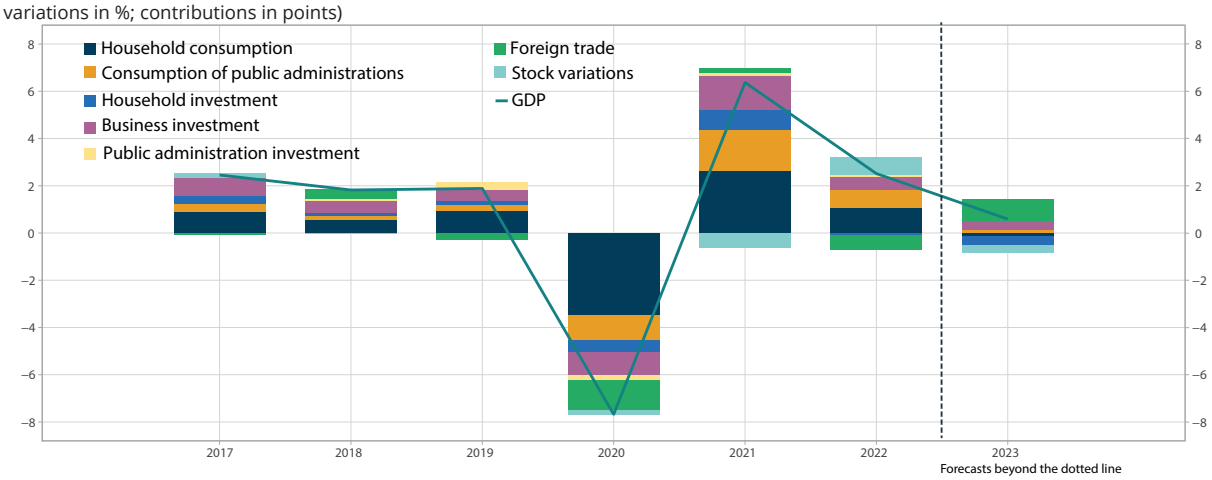
(quarterly changes in %)

Branch	Weight in %	2021				2022				2023			
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Agriculture, forestry and fishing	**1.7**	**-1.8**	**-0.8**	**1.0**	**2.1**	**3.0**	**2.1**	**1.5**	**0.6**	**-0.6**	**0.0**	**0.1**	**0.4**
Industry	**13.9**	**-1.4**	**-0.6**	**-0.3**	**-0.2**	**-0.6**	**-0.7**	**-0.4**	**1.2**	**1.8**	**0.3**	**0.2**	**0.2**
Manufacturing industry	11.3	-1.2	-1.2	-0.9	0.1	1.2	0.5	0.5	-0.6	0.2	-0.2	0.0	0.0
Manufacture of food products, beverages and tobacco-based products	2.1	0.4	0.8	-0.8	1.8	0.5	-0.7	-0.3	-0.4	-0.6	-0.4	-	-
Coke and refined petroleum	0.1	-50.1	-36.7	-41.7	25.1	58.9	11.8	3.0	-9.7	9.4	-5.0	-	-
Manufacture of electrical, electronic. computer equipment; manufacture of machinery	1.5	0.0	-1.7	-0.7	-0.2	0.0	0.2	2.0	-0.3	1.8	0.6	-	-
Manufacture of transport equipment	1.6	-0.7	-3.4	-1.8	1.2	-3.3	6.7	3.3	-0.1	0.8	2.2	-	-
Manufacture of other industrial products	5.9	-1.3	-1.2	-0.7	-0.8	1.9	-0.4	-0.2	-0.4	-0.5	-0.3	-	-
Extractive industries, energy. water, waste treatment and decontamination	2.6	-2.3	1.7	2.3	-1.0	-7.2	-5.5	-4.3	9.2	8.2	2.3	1.2	1.2
Construction	**5.7**	**-0.5**	**0.2**	**-1.0**	**0.3**	**0.0**	**0.1**	**-0.2**	**-0.1**	**-1.0**	**-0.8**	**-0.9**	**-0.9**
Mainly market services	**56.8**	**0.2**	**1.9**	**4.7**	**0.9**	**-0.1**	**1.2**	**0.3**	**-0.1**	**0.0**	**0.3**	**0.2**	**0.2**
Trade; repair of automobiles and motorcycles	10.4	0.1	-0.3	1.6	-0.3	-1.4	-1.0	-0.3	-1.7	0.3	-0.2	-	-
Transportation and storage	4.6	4.6	2.1	6.2	1.4	-0.5	2.4	-2.0	0.3	-1.6	0.2	-	-
Accommodation and catering	2.9	-12.2	26.9	42.3	3.4	3.3	12.3	2.0	0.0	-0.7	0.5	-	-
Information and communication	5.4	2.2	1.5	2.9	0.9	0.9	1.9	2.4	0.8	0.6	0.6	-	-
Financial and insurance activities	3.8	4.0	3.1	2.9	-0.4	-1.8	-0.4	-0.6	-0.1	0.4	0.3	-	-
Real estate activities	12.8	-0.2	0.3	0.7	0.1	0.2	0.4	0.2	0.0	0.1	0.1	-	-
Scientific and technical activities; administrative and support services	14.1	-0.3	1.9	3.2	1.1	0.6	1.3	0.6	0.1	0.1	0.4	-	-
Other service activities	2.9	-2.0	5.1	26.6	7.0	0.0	2.5	0.8	1.1	1.0	0.9	-	-
Mainly non-market services	**21.9**	**0.2**	**-0.2**	**1.7**	**0.1**	**0.4**	**-0.4**	**0.2**	**0.1**	**0.3**	**0.2**	**0.2**	**0.2**
Total value added	**100**	**0.0**	**0.9**	**3.0**	**0.6**	**0.0**	**0.6**	**0.2**	**0.1**	**0.2**	**0.2**	**0.1**	**0.2**
Taxes and subsidies		*0.5*	*1.6*	*4.0*	*-0.2*	*-1.4*	*0.2*	*0.0*	*-0.8*	*-0.5*	*-0.5*	*-0.1*	*0.0*
GDP		**0.0**	**1.0**	**3.1**	**0.5**	**-0.1**	**0.5**	**0.2**	**0.0**	**0.2**	**0.1**	**0.1**	**0.2**

Forecast.
How to read it: in Q1 2023, value added of the manufacture of transport equipment branch increased by 0.8%. It is expected to rise by 2.2% in Q2 2023.
Source: INSEE.

►3. Annual variations in GDP and contributions of main demand items

(annual variations in %; contributions in points)



Note: general government consumption also includes consumption by non-profit institutions serving households (NPISH).
How to read it: in 2022, GDP increased by 2.5%, with household consumption contributing 1.0 percentage point. In 2023, GDP is expected to increase by 0.6% with foreign trade contributing 0.9 points to this change, and household investment -0.4 points.
Source: INSEE.

▶6. Goods and services: resources-uses balance; change in chain-linked price indexes

(quarterly and annual changes, in %; seasonally and working-day adjusted data)

	2021				2022				2023				2021	2022	2023
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4			
Gross domestic product	**0.9**	**0.4**	**0.0**	**0.2**	**0.9**	**1.0**	**1.3**	**1.3**	**1.8**	**0.9**	**1.0**	**0.9**	**1.4**	**2.9**	**5.2**
Imports	2.3	2.1	3.1	5.0	5.8	5.3	2.9	-1.9	-1.4	0.2	0.5	0.2	6.9	17.4	0.2
Total resources	1.5	1.3	1.3	2.4	3.3	2.5	1.9	0.3	1.0	1.2	1.3	1.0	3.7	9.3	4.6
Household consumption expenditure	0.6	0.3	0.7	0.8	1.1	1.8	1.7	1.9	2.0	1.2	1.0	0.8	1.5	4.8	6.5
General government consumption expenditure*	1.7	0.8	-2.3	-0.1	0.9	0.4	1.7	0.7	0.5	0.2	1.1	0.4	-0.4	1.2	2.8
Gross fixed capital formation (GFCF)	0.8	0.8	1.2	1.5	2.0	2.0	1.2	0.9	0.9	0.6	0.7	0.5	2.9	6.3	3.7
of which Non-financial enterprises (NFE)	*0.5*	*0.5*	*0.9*	*1.3*	*1.7*	*1.6*	*0.9*	*0.9*	*0.8*	*0.6*	*0.8*	*0.6*	*2.1*	*5.3*	*3.3*
Households	*1.2*	*1.5*	*1.4*	*1.6*	*2.7*	*2.5*	*2.3*	*1.3*	*1.7*	*1.0*	*0.7*	*0.4*	*4.4*	*8.5*	*5.7*
Exports	2.3	1.9	3.2	3.4	4.2	5.0	2.6	-2.6	-0.4	0.3	0.5	0.6	6.9	13.7	0.7
Domestic demand excluding inventories**	0.9	0.6	0.0	0.7	1.3	1.5	1.6	1.4	1.4	0.8	1.0	0.6	1.2	4.3	4.9

Forecast.
* General government.
** Changes in inventories include net acquisitions of valuables.
How to read it: in Q2 2023, the GDP deflator is expected to increase by 0.9%, after +1.8%. As an annual average, this chain-linked price index is expected to increase by 5.2% in 2023.
Source: INSEE.

Foreign trade

In Q1 2023, foreign trade fell back but managed to sustain GDP growth overall, as the downturn in imports was much stronger than that in exports. In particular, imports of manufactured goods declined substantially, especially imports of refined petroleum products, which had been very dynamic at the end of 2022, linked to strikes in the refineries. Imports of energy products also declined, especially electricity imports, due to the return to production of nuclear reactors, and also crude oil imports in March, as strikes started up again in the refineries. Regarding exports, their decline was the result of a downturn in exports of services and also of agricultural products, especially cereals. Conversely, exports of energy products and spending by foreign tourists in France increased in Q1.

In Q2 2023, foreign trade is expected to bolster activity once again, then contribute to it marginally in H2. These movements are likely to result in part from trade in energy. With the return to production of the nuclear reactors, net exports of electricity are expected to increase in Q2, as was the case at the beginning of the year, and this rise is expected to continue into H2. Net exports of gas also increased at the end of 2022 and early 2023, especially to Italy and Germany, and hence gas inventory, which was particularly high at the beginning of winter, returned in April to a similar level to previous years. Thus the recovery of gas inventory in the spring is expected to cause net gas exports to fall back in Q2, both through the rise in gas imports and the fall in exports.

Exports look set to increase over the entire forecasting period, in line with world demand for French products. Nevertheless, their quarter by quarter profile could be affected by aeronautical and naval deliveries, which were buoyant in Q2 and Q4. Spending by foreign tourists in France is not expected to be very dynamic, despite the return of Chinese tourists. Meanwhile, not much increase is expected in imports given that domestic demand is sluggish.

►1. French foreign trade

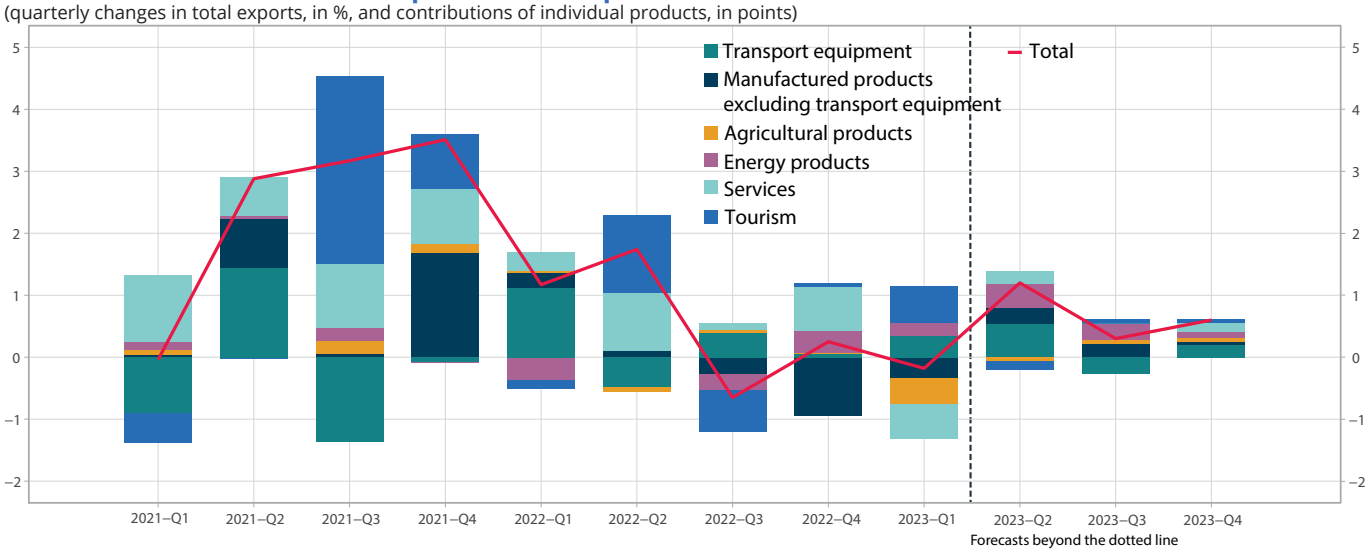
(variation in %, volumes of previous year's chained prices, contributions in points)

	Quarterly variations												Annual variations		
	2021				2022				2023						
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	2021	2022	2023
Exports															
Total	0.0	2.9	3.2	3.5	1.2	1.7	-0.7	0.2	-0.2	1.2	0.3	0.6	10.9	7.2	1.3
Manufactured products (66%*)	-1.3	3.3	-2.0	2.5	2.1	-0.6	0.2	-1.4	0.0	1.3	-0.1	0.4	9.3	3.0	-0.1
Imports															
Total	2.1	2.2	0.6	5.5	1.6	0.2	4.0	-0.8	-2.8	0.1	0.2	0.3	9.2	8.7	-1.2
Manufactured products (70%*)	2.0	1.0	-2.3	6.0	0.1	-0.2	2.0	1.0	-3.0	0.2	0.1	0.2	8.9	4.8	-1.1
Contribution of foreign trade to GDP	**-0.6**	**0.1**	**0.7**	**-0.6**	**-0.2**	**0.5**	**-1.5**	**0.3**	**1.0**	**0.4**	**0.0**	**0.1**	**0.2**	**-0.6**	**0.9**

Forecast.
* Share of exports (or imports) of manufactured products in total exports (or imports), in 2021.
How to read it: in Q2 2023, French exports are expected to increase by 1.2%.
Source: INSEE.

►2. Contributions of different products to exports

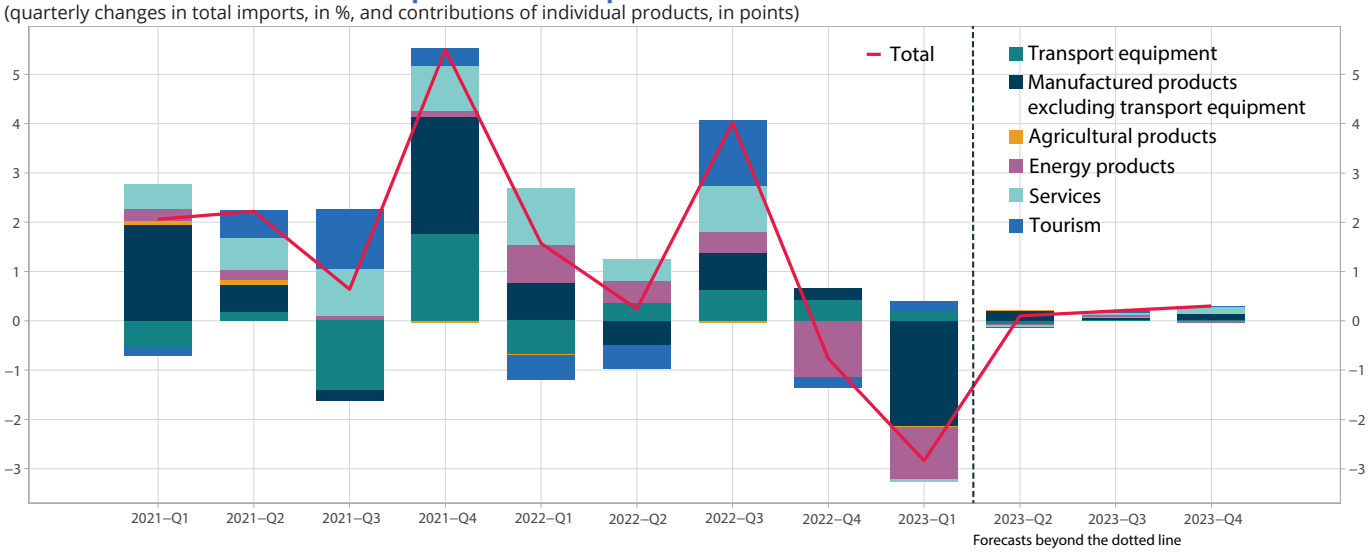
(quarterly changes in total exports, in %, and contributions of individual products, in points)



How to read it: French exports fell by 0.2% in the first quarter of 2023. Exports of transport equipment contributed +0.3 points.
Source: INSEE.

►3. Contributions of different products to imports

(quarterly changes in total imports, in %, and contributions of individual products, in points)



How to read it: French imports fell by 2.8% in the first quarter of 2023. Imports of manufactured goods excluding transport equipment contributed -2.1 points.
Source: INSEE.

Employment

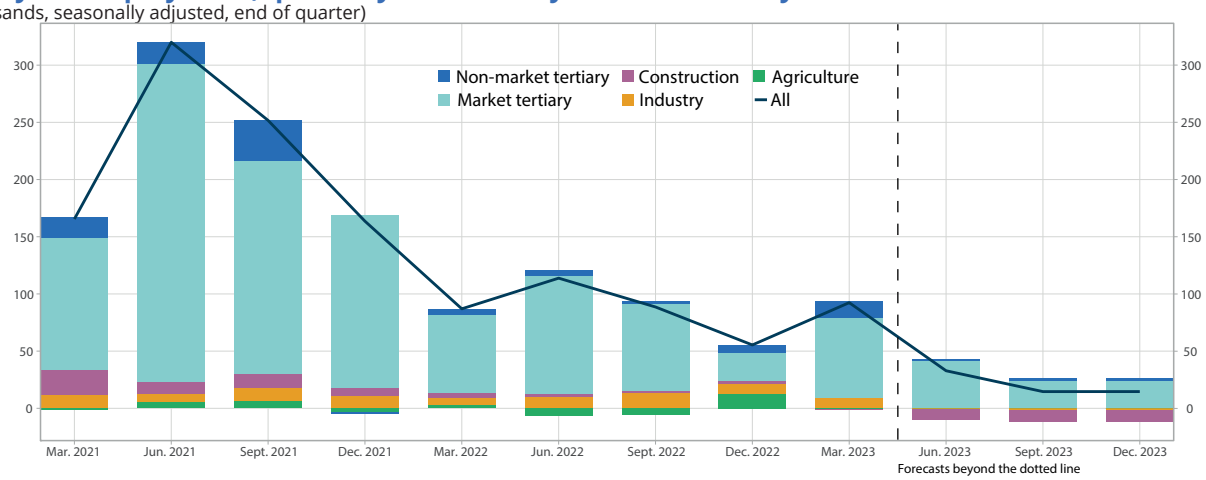
In Q1 2023, payroll employment increased by 0.3% (+92,400 jobs between the end of December 2022 and the end of March 2023), after +0.2% in Q4 2022 (+55,400 jobs) and +0.3% in Q3 2022 (+88,700 jobs). Thus at the end of March 2023, payroll employment rose by +1.3% year-on-year. This was the ninth consecutive quarter to experience a rise since the end of 2020. However, the pace of salaried job creations has gradually declined: +0.9% on average every quarter in 2021, then +0.3% on average for each quarter in 2022.

In Q1 2023, payroll employment accelerated in the market tertiary sector, while industrial payroll employment increased once again by 0.3%. Conversely, in construction, payroll employment fell back for the first time since Q4 2016. All in all, payroll employment has risen sharply since the end of 2019 (+1.3 million jobs), with the expansion in apprenticeships contributing a third of these job creations.

In the coming quarters, this momentum in apprenticeships is likely to falter a little, with salaried employment expected to slow significantly, against a background of moderate growth in economic activity. As a result, apparent per capita labour productivity –the ratio of value added to employment– is expected to pick up very slightly. It will still be well below its pre-health crisis level, however, especially in construction and industry despite the decline forecast for employment in these sectors in H2. By also taking into account the slight rise forecast in self-employment, total employment is expected to increase by 38,000 during Q2 2023 then by 40,000 in H2 2023, after +97,000 in Q1 2023. At the end of 2023, the number of jobs created over the year should reach 175,000, much less than one year earlier (+445,000 at the end of 2022). ●

►1. Payroll employment, quarterly evolution by sector of activity

(in thousands, seasonally adjusted, end of quarter)



Note: temporary workers are counted in the market service sector.
How to read it: in Q4 2022, payroll employment increase by 55,000.
Scope: France (excluding Mayotte).
Source: INSEE.

►2. Change in payroll employment

(in thousand, seasonally adjusted, at the end of the period)

	Evolution over 3 months												Evolution over 1 year			
	2021				2022				2023				2020	2021	2022	2023
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4				
Payroll employment	**166**	**320**	**252**	**164**	**87**	**114**	**89**	**55**	**92**	**33**	**15**	**15**	**-67**	**901**	**345**	**155**
	0.6%	**1.2%**	**1.0%**	**0.6%**	**0.3%**	**0.4%**	**0.3%**	**0.2%**	**0.3%**	**0.1%**	**0.1%**	**0.1%**	**-0.3%**	**3.5%**	**1.3%**	**0.6%**
Agriculture	-1	5	6	-3	2	-7	-6	12	0	0	0	0	6	7	2	0
Industry	12	7	12	11	6	10	13	9	8	0	-2	-2	-29	42	38	5
Construction	22	10	12	7	5	3	3	3	-2	-10	-10	-10	53	51	13	-32
Market tertiary	116	278	187	151	68	103	75	24	70	41	24	24	-168	732	270	160
Non-market tertiary	18	19	35	-3	5	5	4	7	15	2	2	2	71	70	21	21
Self-employment	**56**	**56**	**56**	**56**	**25**	**25**	**25**	**25**	**5**	**5**	**5**	**5**	**60**	**225**	**100**	**20**
All	**222**	**376**	**308**	**220**	**112**	**139**	**114**	**80**	**97**	**38**	**20**	**20**	**-6**	**1,126**	**445**	**175**
	0.8%	**1.3%**	**1.0%**	**0.7%**	**0.4%**	**0.5%**	**0.4%**	**0.3%**	**0.3%**	**0.1%**	**0.1%**	**0.1%**	**0.0%**	**3.9%**	**1.5%**	**0.6%**

Forecast.
Note: in this table, temporary workers are counted in the commercial tertiary sector.
How to read it: in Q1 2023, payroll employment rose by 0.3%, or 92,000 net new jobs.
Scope: France (excluding Mayotte).
Source: INSEE.

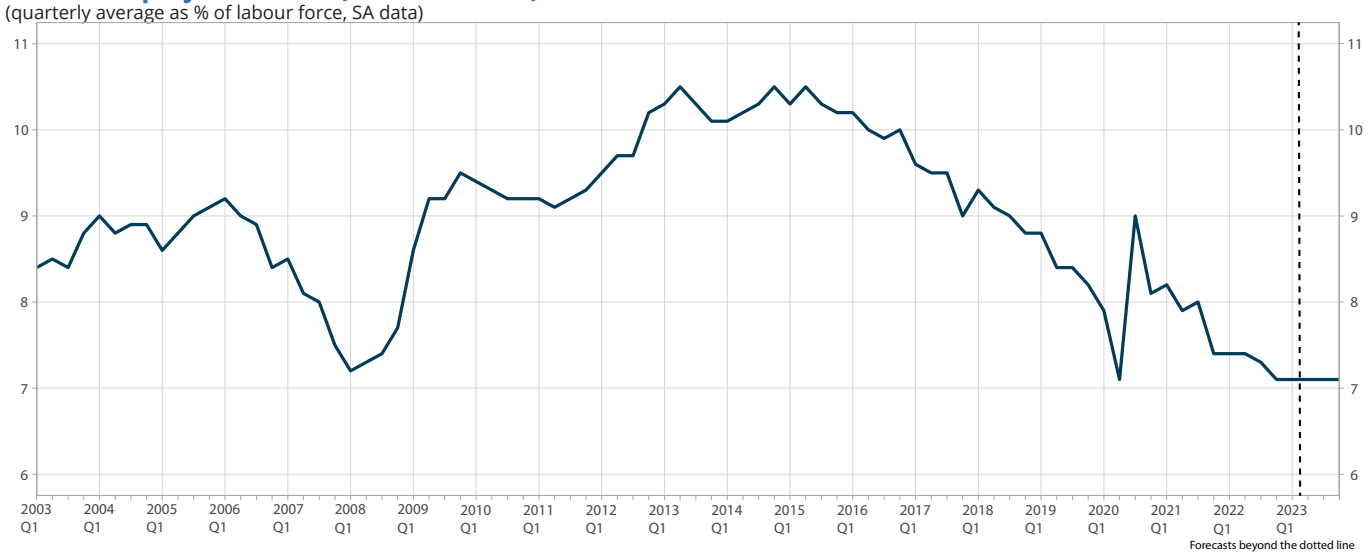
Unemployment

In Q1 2023, the unemployment rate according to the ILO definition had stabilised compared to the previous quarter, at 7.1% of the labour force (►**Figure 1**). This rate was 0.3 points below its level of Q1 2022 and 3.4 points below its peak in mid-2015; this is its lowest level since Q2 2020, with the exceptional artificial drop during the first lockdown. Equivalent levels were measured in Q1 2008 (7.2%) and Q2 1982 (7.1%). The year-on-year fall is the result of a more vigorous momentum in employment than in the labour force: 514,000 net jobs were created throughout the year for 441,000 additional workers. The rates of employment (68.6%) and activity (73.9%) for 15-64-year-olds were both high in Q1 2023, at their highest level since INSEE has been measuring them (1975).

Over the rest of 2023, the labour force is expected to increase by about 50,000 workers per quarter on average, a more moderate rise than in 2022. This increase in the labour force in 2023 is likely to be driven in part by the increase in sandwich contracts, although at a slower pace than in 2022, and by the pension reform from September. There are also the first effects of the February 2023 unemployment benefit reform which are expected to be felt by employment and the labour force in H2. Given the expected slowdown in employment (+68,000 on average in Q2 2023 then +29,000 and +20,000) the unemployment rate should remain stable at 7.1%, of the labour force until the end of 2023 (►**Figure 2**). ●

►1. Unemployment rate (ILO definition)

(quarterly average as % of labour force, SA data)



Scope: France (excluding Mayotte), persons aged 15 or over living in ordinary housing.
Source: INSEE, Labour Force Survey.

2. Change in employment, unemployment and the active population

(variation in quarterly average in thousands, SA data)

	2022				2023				Annual change			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	2020	2021	2022	2023
Employment (1)	**166**	**125**	**126**	**97**	**89**	**68**	**29**	**20**	42	1 027	514	206
reminder: employment at the end of the period	112	139	114	80	97	38	20	20	-6	1 126	445	175
Unemployment (2)	**-17**	**9**	**-18**	**-48**	**-8**	**-8**	**3**	**31**	-46	-155	-74	18
Active population = (1) + (2)	**149**	**135**	**108**	**49**	**81**	**60**	**32**	**51**	-5	872	441	224
Trend labour force (a)	*7*	*8*	*9*	*11*	*9*	*8*	*22*	*38*	*24*	*27*	*35*	*77*
"Short-term flexion effect (b)	*17*	*13*	*13*	*10*	*9*	*7*	*3*	*2*	*4*	*102*	*53*	*21*
Effect of work-linked training on youth activity (c)	*14*	*20*	*30*	*22*	*8*	*5*	*7*	*11*	*40*	*133*	*86*	*31*
Residue (d)	*112*	*94*	*56*	*6*	*55*	*40*	*0*	*0*	*-74*	*611*	*268*	*95*
Variation in unemployment rate	**0.0**	**0.0**	**-0.1**	**-0.2**	**0.0**	**0.0**	**0.0**	**0.0**	-0.1	-0.7	-0.3	0.0
Unemployment rate	7.4	7.4	7.3	7.1	7.1	7.1	7.1	7.1				

Forecast

(a) Trend based on adjusted 2022 active population projections, including the effect of the 2023 pension reform and the effect of the 2023 unemployment benefit reform.
(b) This flexibility effect represents the fact that new workers enter the labour market when the employment situation improves.
(c) Effect based on sandwich contract numbers from DARES, calculations by INSEE.
(d) In 2020 and 2021, the residue covers the specific effect of the health crisis on activity behaviour.
Note: employment corresponds here to total employment (payroll employment including sandwich contracts + self-employment), measured as a quarterly average.
How to read it: in Q1 2023, employment increased by 89,000 on average, unemployment decreased by 8,000 and the labour force increased by 81,000. The unemployment rate was stable at 7.1%.
Scope: France (excluding Mayotte), persons aged 15 or over.
Source: INSEE, Labour Force Survey, Quarterly employment estimates

Consumer prices

After plateauing for 11 months at around 6% year-on-year, the variation in consumer prices in France over the year declined in May 2023 (+5.1% year-on-year), mainly because petroleum products were cheaper than a year ago. However, the year-on-year variation in food prices remains dynamic (+14.3% year-on-year in May). By the end of the year, and assuming that the price of a barrel of Brent remains constant over the forecasting period (€72), inflation is expected to fall back a little to reach just under 4.5% year-on-year in December (►**Figure 1**). This fall would be mainly due to "base effects", given the strong momentum in consumer prices one year earlier (►**Figure 3**), especially food prices. The consumer price index looks set to continue to rise, but less rapidly than a year ago. As an annual average, inflation is expected to stand at 5.0% in 2023, after 5.2% in 2022 (►**Figure 2**).

Month on month, the relatively bumpy trends in headline inflation are probably the result of upheavals in energy inflation, again due to the base effect, and the sharp upward and downward movements in energy prices in H2 2022 (discount at the pump extended then gradually reduced, higher fuel prices due to strikes at the refineries, drop in oil and gas prices in late 2022). In fact, consumer prices of energy products are expected to remain broadly stable until the end of the year. In particular, barring any major change in the price of gas on the European market, the ending of regulated gas tariffs on 1st July 2023, and hence of the tariff shield, is unlikely to result in a significant movement in prices. The regulated gas tariffs resulting from the tariff shield are currently around the average tariffs without any price freeze in place. Regarding consumer prices of electricity, they are forecast to remain stable, as are the regulated electricity tariffs, in line with the tariff shield in force, and the market offer prices, assuming that the price of electricity on the European market remains stable.

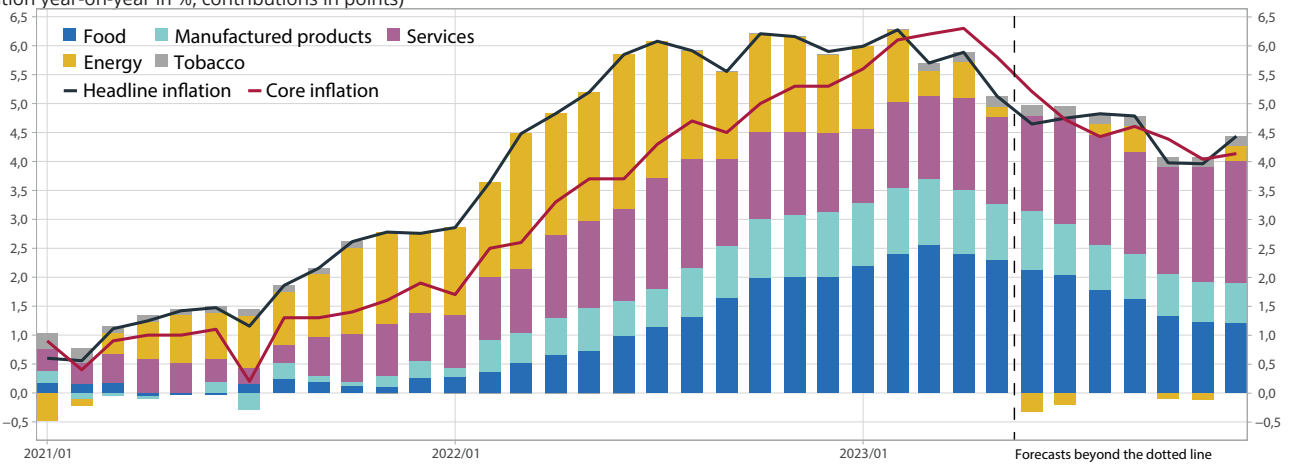
Meanwhile, food prices, the main contributor to headline inflation since September 2022, are expected to slow throughout the forecasting period. In recent quarters they have been driven mainly by the sustained rise in production prices in the agrifood industries (IAA). This buoyancy demonstrates to some extent the delays in transmitting prices along the food chain, from the agriculture branch to the IAAs, then the distributors, but also possible margin behaviour (►**Focus**). In the forecast, in view of the decline in world prices of food and energy commodities, IAA production prices could slow significantly or even fall due to the lower cost of their inputs and a gradual return of their unit margin to its long-term level. Consumer prices of food products are then likely to slow in turn by the end of 2023. The context of renegotiations between producers and distributors could accentuate this movement, although the speed and scope of their impact is uncertain, as this will depend mainly on the disposal of inventories of the products concerned. The forecast for the price of fresh food is surrounded by great uncertainty because of the vagaries of the weather. Food inflation is therefore expected to halve, from 14.3% in May to about 7.5% in December, as the slowdown in food product prices combines with the base effect resulting from their strong momentum the year before.

In the case of manufactured products, inflation is expected to decline mainly as a result of the base effect, reaching 3% year-on-year by the end of 2023. Prices of manufactured products are likely to slow, in a context where production prices (excluding IAAs and excluding energy) are expected to decrease in the sectors concerned. Thus in May, the business tendency surveys showed a sharp decline in the balance of opinion on expected change in selling prices in industry (►**Box**). Conversely, services are expected to have more and more of an effect on headline inflation and are likely to become the leading contributors from the summer onwards. The year-on-year variation in the price of services is expected to rise from 3.0% in May to 4.2% in December. Such an increase of more than one point would mainly be the result of the increase in wage costs, given the successive revisions of the minimum wage (SMIC) during H1 2023 (in January and May). It would also reflect the slower transmission of earlier increases in input prices (e.g. in the prices of catering services, the delayed impact of the strong momentum of agrifood production prices). The price of health services is also expected to rise in November, with the revision of tariffs for general practitioners.

Due to the decline in inflation in non-fresh food products and manufactured products, core inflation is likely to come down gradually. At the end of 2023 it is expected to be slightly above 4% year-on-year. ●

►1. Headline inflation and contributions by item

(inflation year-on-year in %, contributions in points)



How to read it: in April 2023, headline inflation was 5.9%. Food contributed 2.4 points whereas manufactured products contributed a little over one point.
Source: INSEE.

►2. Headline inflation, past and forecast

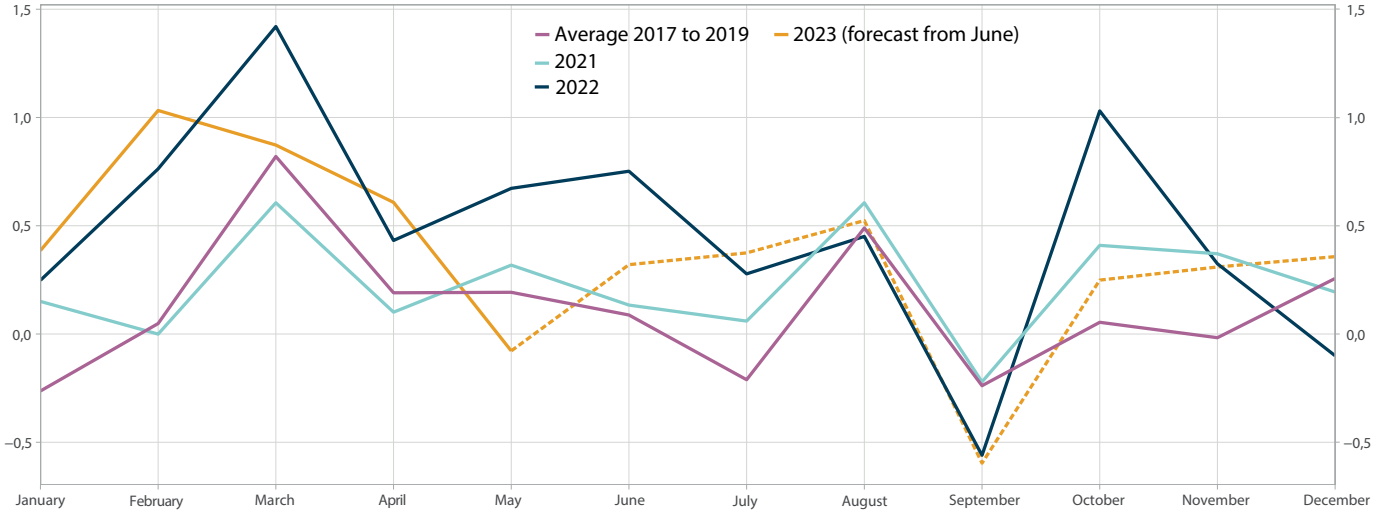
(annual change in %, contributions in points)

CPI groups* (2023 weightings)	Apr. 2023		May 2023		June 2023		Sept. 2023		Dec. 2023		Annual averages	
	yoy	cyoy	yoy	cyoy	yoy	cyoy	yoy	cyoy	yoy	cyoy	2022	2023
Food (16.2%)	**15.0**	**2.4**	**14.3**	**2.3**	**13.2**	**2.1**	**9.9**	**1.6**	**7.4**	**1.2**	**6.8**	**11.8**
fresh food (2.4%)	10.6	0.3	10.7	0.3	10.2	0.2	6.6	0.2	7.6	0.2	7.7	9.6
excluding fresh food (13.9%)	15.8	2.1	14.9	2.0	13.8	1.9	10.4	1.5	7.3	1.0	6.6	12.2
Tabacco (1.9%)	**9.4**	**0.2**	**9.8**	**0.2**	**9.8**	**0.2**	**9.8**	**0.2**	**9.8**	**0.2**	**0.1**	**8.0**
Manufactured products (23.2%)	**4.6**	**1.1**	**4.1**	**1.0**	**4.3**	**1.0**	**3.3**	**0.8**	**3.0**	**0.7**	**3.0**	**3.9**
clothing and footwear (3.4%)	2.7	0.1	2.6	0.1	4.6	0.2	4.1	0.1	4.1	0.1	2.7	3.5
medical products (3.8%)	-0.5	0.0	-0.6	0.0	-0.6	0.0	-0.7	0.0	-0.7	0.0	-1.2	-0.6
other manufactured products (16.0%)	6.2	1.0	5.6	0.9	5.4	0.9	4.2	0.7	3.7	0.6	4.1	5.1
Energy (8.6%)	**6.8**	**0.6**	**2.0**	**0.2**	**-2.9**	**-0.3**	**4.9**	**0.4**	**2.9**	**0.2**	**23.1**	**3.7**
oil products (4.3%)	-1.3	-0.1	-9.7	-0.5	-17.2	-1.0	-0.2	0.0	-1.7	-0.1	29.0	-4.6
Services (50.1%)	**3.2**	**1.6**	**3.0**	**1.5**	**3.3**	**1.6**	**3.5**	**1.8**	**4.2**	**2.1**	**3.0**	**3.4**
rent, water and household refuse collection (7.4%)	3.1	0.2	2.7	0.2	2.7	0.2	2.8	0.2	2.7	0.2	2.0	2.7
health services (6.4%)	-0.5	0.0	-0.5	0.0	-0.5	0.0	-0.2	0.0	1.6	0.1	-0.1	0.0
transport (3.0%)	9.6	0.2	8.0	0.2	8.8	0.2	5.9	0.1	7.6	0.2	10.4	8.5
communication (2.1%)	-1.5	0.0	-1.3	0.0	-1.3	0.0	-1.2	0.0	0.9	0.0	0.6	-0.8
other services (31.2%)	3.9	1.2	3.7	1.2	4.0	1.3	4.7	1.5	5.0	1.6	3.7	4.2
All (100%)	**5.9**	**5.9**	**5.1**	**5.1**	**4.6**	**4.6**	**4.8**	**4.8**	**4.4**	**4.4**	**5.2**	**5.0**
All excluding energy (91.4%)	*5.8*	*5.3*	*5.5*	*4.9*	*5.5*	*5.0*	*4.8*	*4.3*	*4.6*	*4.2*	*3.6*	*5.2*
All excluding tabacco (98.2%)	*5.8*	*5.7*	*5.0*	*4.9*	*4.6*	*4.5*	*4.7*	*4.6*	*4.3*	*4.3*	*5.3*	*5.0*
Core inflation ** **(60.6%)**	**6.3**	**3.7**	**5.8**	**3.4**	**5.2**	**3.1**	**4.6**	**2.8**	**4.1**	**2.5**	**3.9**	**5.1**

Forecast.
yoy: year-on-year; cyoy: contribution to the year-on-year change of the overall index.
* Consumer price index (CPI).
** Index excluding public tariffs and products with volatile prices, corrected for tax measures.
Source: INSEE.

►3. Monthly variations in headline inflation from 2021 to 2023 and the 2017-2019 average

(monthly variations in %)



How to read it: in January 2023 the consumer price index increased by 0.4% compared to the previous month. In 2021 as in 2022, this increase was around 0.2%. From 2017 to 2019, this average monthly variation dropped by 0.3%.
Source: INSEE.

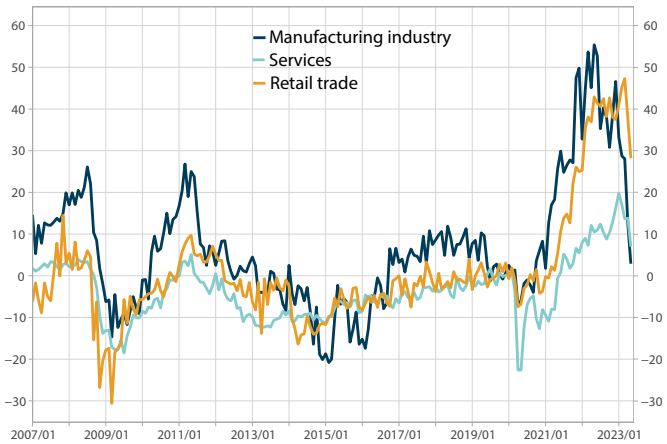
Business tendency surveys suggest an easing of inflationary pressures

The May 2023 business tendency surveys show a downturn, in all sectors of activity, in business leaders' balances of opinion on probable changes in their selling prices in the next three months. In the manufacturing industry in particular, this balance of opinion has been falling sharply for the past few months and in May it was back to the same level as in early 2021. In retail trade and services, this balance is also falling, after reaching historically high levels in Q1 (►**Figure 4a**).

In addition, since the end of 2022, INSEE has adjusted the questions in the business tendency surveys to find out about companies' reactions to energy price hikes. Among the response modalities offered, increasing selling prices was the most frequently cited reaction (47%) in the manufacturing industry when considering the last three months. However, for the next three months, the proportion of companies who plan to increase their selling prices in the light of the current energy situation declined sharply and was back to 31%. This is therefore less than the share of companies (41%) planning to adapt their production methods over the next three months (►**Figure 4b**). ●

►4a. Balances of opinion on changes in selling prices in the next three months

(monthly balances of opinion, SA, in points)



Last point: May 2023.
Source: monthly business surveys, INSEE.

►4b. Reaction of industrial companies in the current energy situation

(in %)

Note: data collected from 26 April to 31 May 2023.
Scope: industry.
Source: monthly business surveys, INSEE.

In April 2023, food became the main driver of inflation disparities between household categories

Émilie Cupillard, Olivier Simon

In April 2023, inflation in Metropolitan France stood at 5.9% year-on-year, i.e. a similar level to January (6.0% year-on-year). Inflation disparities between household categories appear less pronounced than at the start of the year, however, at least according to age or type of municipality of residence (►**Figure 1**). In particular, the oldest households (over 75 years old) face an average inflation 1.1 points higher than the youngest (under 30 years old), a gap that stood at 2.5 points in January. Disparities according to type of municipality of residence are also reduced: for households living in the Paris conurbation or in major cities, inflation is significantly closer to the average than it was in January; this is also the case for households living outside urban units.

However, when comparing standards of living, inflation disparities remain comparable to January: in particular, inflation in April 2023 for the least well-off households (first standard of living quintile) has deviated a little further from the household average (+0.3 points against +0.2 points in January).

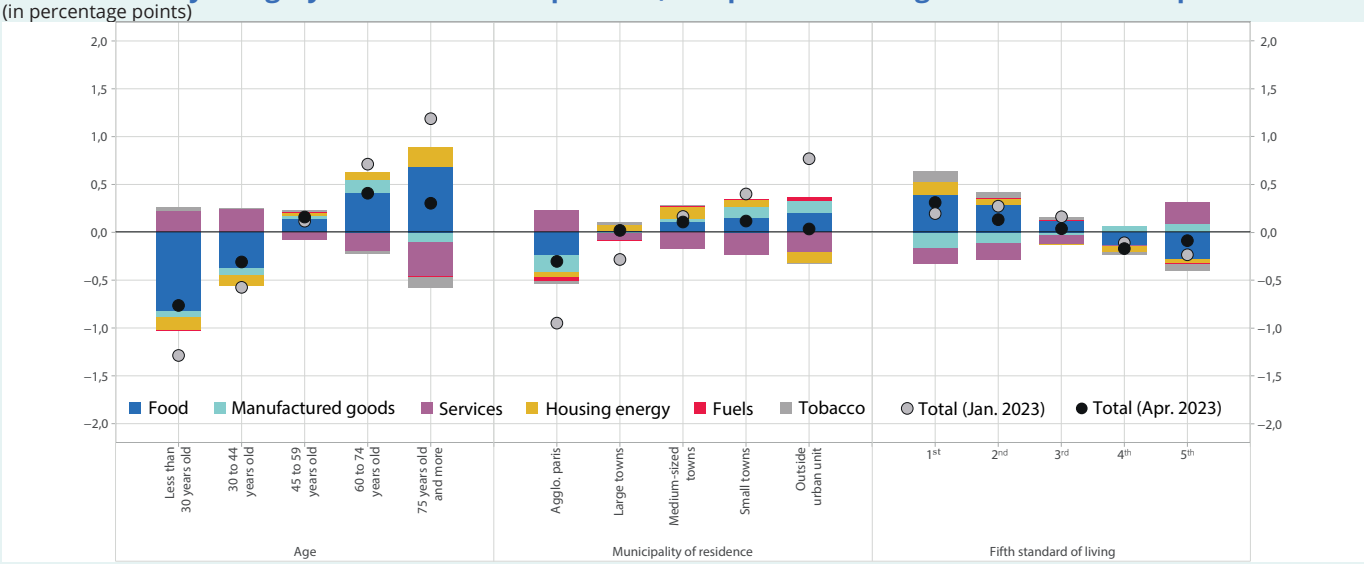
In April, energy contributed moderately or even minimally to inflation disparities between household categories, whereas in January it had been one of the main factors (and the main factor in April 2022). In fact, energy inflation dropped substantially between January (+16.4% year-on-year in Metropolitan France) and April (+6.9%). In particular, the year-on-year variation in petroleum prices became slightly negative in April (-1.2%). As a result, fuel now contributes marginally to inflation differentials between household categories and the contribution of housing energy is much less than in January.

Food, on the other hand, with inflation at 15.1% year-on-year in April 2023 in Metropolitan France, has become the main factor of inflation disparities between household categories. In particular, it contributes to increasing inflation for the oldest households, and reducing inflation for the youngest households, in line with the share of the budget spent on food by these two categories, which is higher for older people. Food is also the main factor in the inflation gap between the poorest and the richest households, as the share spent on food is greater in low-income households.

Within each household category, inflation was still dispersed across households in April 2023 in relatively similar proportions to those measured in January (►**Figure 2**). Among the oldest households, however, the dispersal of inflation eased somewhat in April: the interquartile gap stood at 3.5 points (against 3.7 points in January). Comparing households in the Paris conurbation and those living outside urban units, inflation appears to be dispersed at similar magnitudes. Finally, the interquartile gap remains higher for the least well-off households, compared to the wealthiest. ●

►1. Inflation by category of household in April 2023, compared to average inflation in Metropolitan France

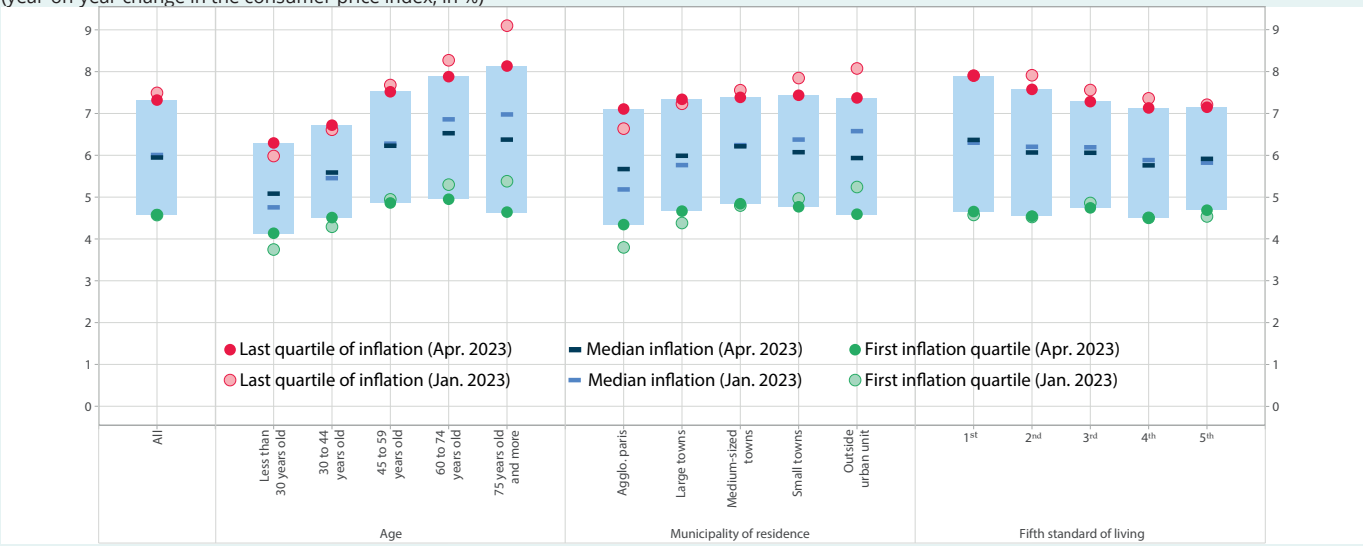
(in percentage points)



Note: the municipality of residence is understood to mean belonging to an urban unit of large or small size.
How to read it: in April 2023, for households whose reference person is over 75, inflation was 0.3 points higher. Housing energy contributed +0.2 points to this difference and food +0.7 points.
Scope: households living in ordinary housing in Metropolitan France.
Source: Consumer price indices, 2017 Family Budget survey, INSEE calculations.

►2. Dispersal of inflation within each category of household, in April 2023

(year-on-year change in the consumer price index, in %)



Note: the municipality of residence is understood to mean belonging to an urban unit of large or small size.
How to read it: in April 2023 in households where the reference person is under 30, median inflation was 5.1% (4.8% in January 2023). 25% of households experienced inflation lower than 4.1% (3.7% in January 2023) and 25% experienced inflation higher than 6.3% (6.0% in January 2023).
Scope: households living in ordinary housing in Metropolitan France.
Source: Consumer price indices, 2017 Family Budget survey, INSEE calculations.

Wages

In Q1 2023, the average wage per capita (SMPT) increased by +1.2%, after +1.8% the previous quarter (►**Figure 1**). This slowdown was mainly due to fewer payments under the value sharing bonus (PPV) scheme, after major payouts in late 2022 (►**Focus** "Value sharing bonus: massive payouts at the end of 2022, with potential windfall effects" in the *Economic Outlook* of March 2023). In fact the basic monthly wage (SMB[1]) accelerated in Q1 (+1.5% after +0.9% at the end of 2022), linked to the fact that increases in consumer prices were taken into consideration in wage negotiations and to the automatic revision of the minimum wage (SMIC) at the beginning of the year (+1.8% on 1st January).

The persistence of high inflation, and the second revision of the SMIC on 1st May (+2.2%), are expected to keep the SMPT dynamic in Q2 (+1.0% forecast). In H2 2023, nominal wages are likely to continue to be buoyed up: +1.0% forecast in Q3 then +1.6% in Q4 for the SMPT. It will probably be driven once again by inflation, which is expected to remain relatively high, although it is declining. The inflation forecast used in this *Economic Outlook* includes no further automatic revisions to the SMIC before the end of the year, but an upward surprise development in prices that would trigger one cannot be ruled out. The acceleration forecast in the SMPT in Q4 2023 is the expected result of high levels of PPV payouts once again, assumed to be on a similar scale to those recorded at the end of 2022.

In the course of the year, the buoyancy of wages is expected to gradually catch up with the dynamism of prices: at the beginning of 2023, the real SMPT fell by 2.2% year-on-year, thus at the end of 2023 it will probably be only 0.2% below its level of one year earlier (►**Figure 2**). On average over 2023, despite a nominal increase of +5.1% forecast, the real SMPT is expected to be 1.3% weaker than in 2022. As usual in *Economic Outlook*, these forecasts of the purchasing power of wages are produced from forecasts of nominal wages using household consumption as a deflator, in a framework consistent with the quarterly national accounts. This differs from the consumer price index, a reference tool for measuring inflation (CPI, ►**Box** in the Household income sheet). By using the CPI as a deflator, the purchasing power of the SMPT is expected to increase again by the end of the year: +0.7% year-on-year in Q4 2023. On average over 2023, it is expected to be stable compared to 2022.

In general government, the nominal SMPT increased significantly in 2022 (+4.3% on average, after +2.5% in 2021), mainly driven by the review of Category C personnel wages and of the index point on 1st July (+3.5%). However, because of the upturn in inflation, the purchasing power of the SMPT in general government, as in the private sector, slipped back in 2022 (-0.5% on average). In 2023, nominal wages look set to accelerate (+6.9% forecast as an annual average), due to category-specific measures, especially in favour of teachers, and assuming new wage measures in July 2023, of an equivalent amount to the 3.5% increase in the index point in July 2022.[2] Real wages are likely to increase on average over 2023: +0.4% (+1.8% using the CPI as deflator). ●

1 The SMB corresponds to the core component of the SMPT, alongside the short-term component which was affected mainly by value sharing bonus payouts.
2 Although the measures announced on 12 June 2023 took on a different form from the standard assumption selected for this forecast, the amounts involved appear to be relatively commensurable.

►1. Variation in the average wage per capita (SMPT) and the basic monthly wage (SMB)

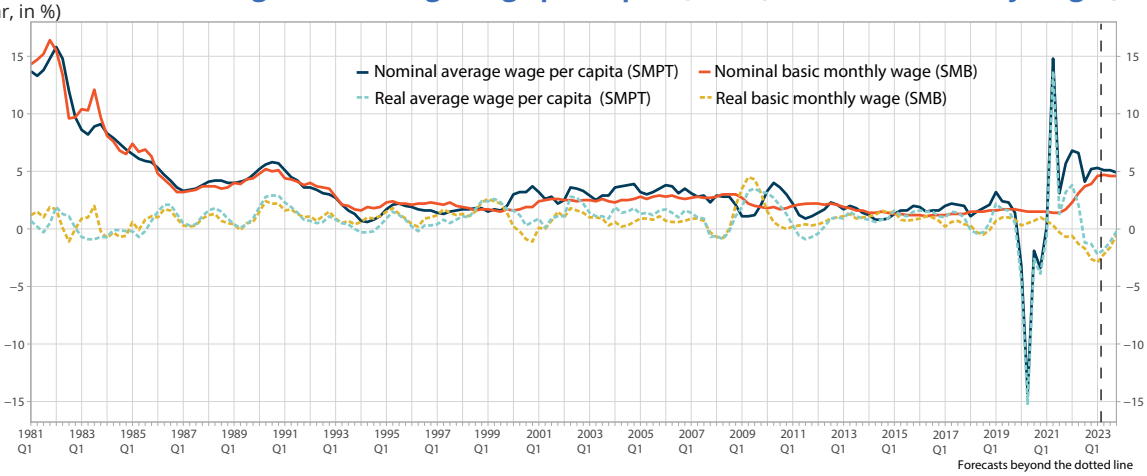
(changes in %, seasonally adjusted data)

	Quarterly growth rates								Year-on-year growth								Average annual change		
	2022				2023				2022				2023						
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	2021	2022	2023
Average wage per capita (SMPT) in non-agricultural market branches	1.2	1.2	1.0	1.8	1.2	1.0	1.0	1.6	6.8	6.6	4.1	5.2	5.3	5.1	5.1	4.9	5.7	5.7	5.1
Basic monthly wage (SMB)	0.9	1.0	1.0	0.9	1.5	1.1	1.0	0.9	2.3	3.1	3.7	3.9	4.6	4.7	4.6	4.6	1.5	3.2	4.6
SMPT in general government																	2.5	4.3	6.9
Real SMPT* in the non-agricultural market branches	0.1	-0.7	-0.7	-0.1	-0.8	-0.2	0.0	0.8	3.8	2.1	-1.2	-1.3	-2.2	-1.8	-1.1	-0.2	4.1	0.8	-1.3
Real SMB*	-0.2	-0.8	-0.6	-1.0	-0.5	-0.1	0.0	0.1	-0.6	-1.3	-1.7	-2.6	-2.9	-2.2	-1.6	-0.5	0.0	-1.5	-1.8
Real SMPT* in general government																	0.9	-0.5	0.4
Real SMPT** in non-agricultural market branches	-0.3	-0.7	-0.3	0.5	-0.2	-0.1	0.1	0.9	3.0	1.2	-1.6	-0.8	-0.7	-0.1	0.3	0.7	4.0	0.4	0.0
Real SMB**	-0.7	-0.8	-0.3	-0.3	0.1	0.0	0.1	0.2	-1.3	-2.1	-2.0	-2.1	-1.3	-0.5	-0.2	0.4	-0.1	-1.9	-0.4
Real SMPT** in general government																	0.8	-0.9	1.8

Forecast.
* in the sense of the household consumption price (quarterly national accounts).
** in the sense of the CPI - household consumption price index.
How to read it: in Q4 2023, the basic monthly wage (SMB) would grow by 0.9% compared to the previous quarter.
Source: DARES, INSEE.

►2. Nominal and real changes* in average wage per capita (SMPT) and basic monthly wage (SMB)

(year-on-year, in %)



* in the household consumption price sense (quarterly national accounts).
How to read it: in Q4 2023, year-on-year growth in nominal SMPT would be 4.9%.
Scope: non-agricultural market sector.
Source: DARES, INSEE.

Household income

In Q1 2023, household gross disposable income (GDI) slowed (+1.6% in constant euros after +3.3%), due mainly to the smaller payouts under the value sharing bonus (PPV) scheme after some particularly dynamic amounts at the end of 2022. Given also the acceleration in consumer prices (+2.0% after +1.9%), the purchasing power of GDI fell back this quarter (-0.4%, or -0.6% per consumption unit). This decline follows on from two quarters when there was a significant increase in purchasing power, sustained by measures put in place in summer 2022 (introduction of the PPV, review of the index point of civil service personnel, anticipated review of pensions and benefits, etc.).

In Q2 2023, GDI is expected to slow further (+0.6% forecast) as a result of another deceleration in earned income (PPV payouts down again). Despite the automatic revisions to a certain number of statutory social minima, social benefits are also likely to slow down (+0.2% after +0.9%), with the end of the fuel allowance on 1st April. In the context of rising interbank rates, households' property income (including the gross income surplus of pure households[1]) is expected to remain dynamic (+1.4% after +3.7%); however the rise in interest rates is expected to also have an impact on the prices of financial intermediation services provided to households, thereby increasing the household consumption deflator (►Box). All in all, despite a slowdown, household consumer prices (+1.2% forecast after +2.0%) are expected to be more buoyant than GDI; the GDI purchasing power is therefore likely to decline once more (-0.6% forecast in Q2 2023, or -0.7% per consumption unit).

In H2 2023, purchasing power is expected to pick up gradually, with the momentum of earned income outpacing that of household consumer prices. This forecast is made under the conventional assumption of an increase in civil service personnel wages from 1st July 2023, equivalent to the 3.5% increase in the index point in July 2022.[2] The conventional assumption is also made that there will be a revision of supplementary pensions in Q4 2023, similar to that in 2022.

In particular, in Q3 2023, earned income, driven mainly by public sector wages, is expected to be especially buoyant (+1.7%) enabling household purchasing power to remain virtually stable after two consecutive quarters of decline. In Q4 2023, household GDI is likely to be sustained by market sector wages, mainly because of PPV payouts, and to a lesser extent by the momentum in benefits (especially the review of supplementary pensions). Given the expected slowdown in consumer prices, household purchasing power per consumption unit looks set to increase at the end of 2023 (+0.3% forecast in Q4 2023, or +0.2% per consumption unit).

On average over 2023, household GDI is expected to increase more quickly that the consumption deflator (+7.0% against +6.5%). Purchasing power would therefore appear to be up slightly (+0.5%). Purchasing power per consumption unit is likely to stabilise (+0.0%) after a downturn in 2022 (-0.4%). ●

1 The gross operating surplus (GOS) of "pure households" corresponds to the rents that individual homeowners receive from their tenants or would receive if they rented out their property (these are then called "imputed rents"), minus intermediate consumptions and property tax.
2 Although the measures announced on 12 June 2023 took on a different form from the standard assumption selected for this forecast, the amounts involved appear to be relatively commensurable.

►1. Components of household gross disposable income

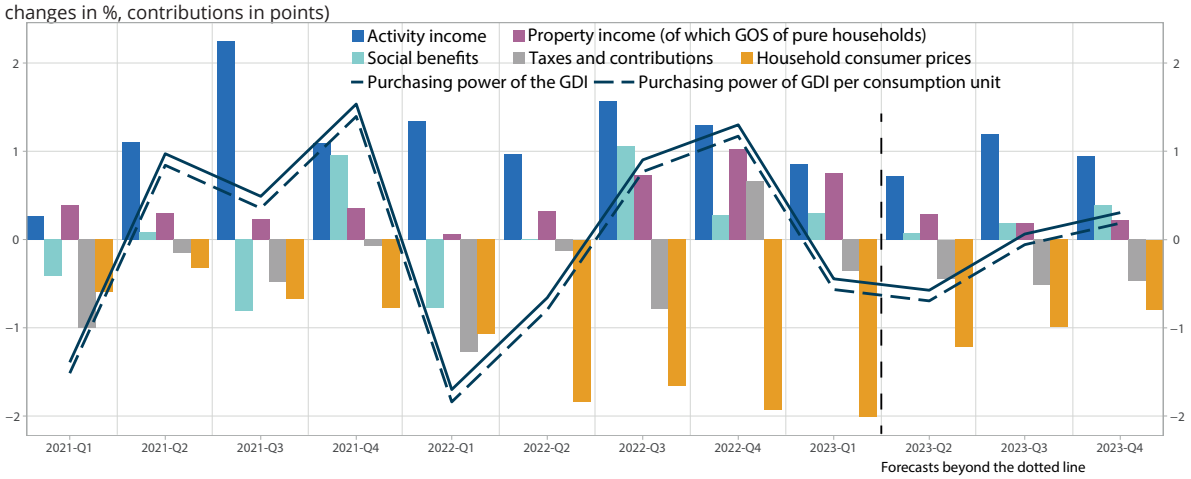
(variations in %)

	Quarterly changes												Annual changes			
	2021				2022				2023				2020	2021	2022	2023
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4				
Gross disposable income (100%)	**-0.8**	**1.3**	**1.2**	**2.3**	**-0.6**	**1.2**	**2.6**	**3.3**	**1.6**	**0.6**	**1.1**	**1.1**	**1.2**	**4.2**	**5.1**	**7.0**
including:																
Earned income (72%)	0.4	1.6	3.2	1.5	1.9	1.3	2.2	1.8	1.2	1.0	1.7	1.3	-3.7	7.2	7.7	6.0
Gross wages and salaries (64%)	0.7	1.9	3.9	1.7	1.8	1.5	2.1	2.0	1.3	1.1	1.8	1.4	-4.0	7.7	8.3	6.4
GOS of sole proprietors* (8%)	-1.9	-1.1	-2.1	0.4	3.0	0.1	2.5	0.3	0.0	0.5	0.4	0.2	-1.0	3.1	3.3	2.1
Social benefits in cash (35%)	-1.1	0.2	-2.2	2.7	-2.2	0.0	3.1	0.8	0.9	0.2	0.5	1.2	9.7	-1.8	0.4	3.8
Property income, of which GOS of pure households (20%)	2.2	1.6	1.2	1.9	0.4	1.6	3.8	5.2	3.7	1.4	0.9	1.1	-1.1	7.4	7.5	12.1
Social contributions and taxes (–27%)	4.1	0.6	1.9	0.3	5.0	0.5	3.0	-2.5	1.4	1.8	2.0	1.8	-3.4	4.6	7.7	4.0
Household consumer prices	**0.6**	**0.3**	**0.7**	**0.8**	**1.1**	**1.8**	**1.7**	**1.9**	**2.0**	**1.2**	**1.0**	**0.8**	**0.9**	**1.5**	**4.9**	**6.5**
Purchasing power of gross disposable income	**-1.4**	**1.0**	**0.5**	**1.5**	**-1.7**	**-0.7**	**0.9**	**1.3**	**-0.4**	**-0.6**	**0.1**	**0.3**	**0.3**	**2.6**	**0.2**	**0.5**
Purchasing power per consumption unit	**-1.5**	**0.8**	**0.4**	**1.4**	**-1.8**	**-0.8**	**0.8**	**1.2**	**-0.6**	**-0.7**	**-0.1**	**0.2**	**-0.3**	**2.1**	**-0.4**	**0.0**

Forecast.
***** the gross operating surplus (GOS) of sole proprietors is the balance of the operating account of sole proprietorships. This is mixed income as it remunerates work carried out by the owner of the sole proprietorship, and possibly members of their family, but it also contains profit made as a sole proprietor.
Note: figures in brackets give the structure for 2019.
How to read it: after an increase of 1.6% in Q1 2023, household gross disposable income would continue to rise, although to a more limited in Q2 2023 (+0.6%).
Source: INSEE.

►2. Quarterly variation in purchasing power of household gross disposable income (GDI) and its main contributions

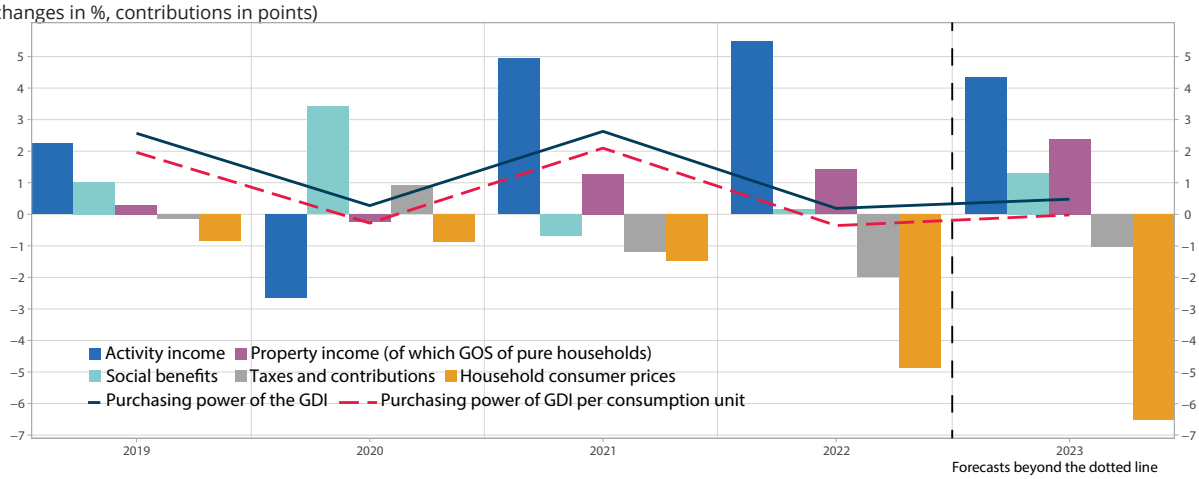
(quarterly changes in %, contributions in points)



Source: INSEE.

►3. Annual variation in purchasing power of household gross disposable income (GDI) and its main contributions

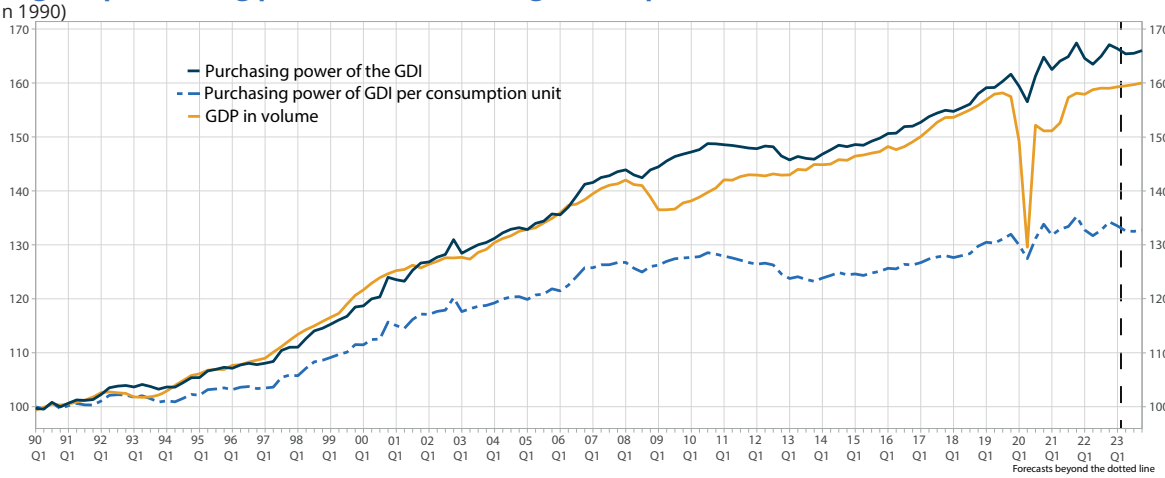
(annual changes in %, contributions in points)



Source: INSEE.

►4. Change in purchasing power of household gross disposable income (GDI) and of GDP since 1990

(base 100 in 1990)



Source: INSEE.

In 2023, the household consumption deflator (within the meaning of national accounting) is expected to be substantially more dynamic than the consumer price index

The "household consumption deflator" within the meaning of national accounting, as used in the definition of purchasing power, is not exactly the same as the consumer price index (CPI) used to measure inflation. In particular, the household consumption deflator is linked to the conceptual framework of national accounting, where household consumption covers a broader scope than the CPI: for example it includes imputed rents, which are not present in the CPI, and which represent rents that homeowning households would pay for their dwelling if they were tenants.

Changes in the household consumption deflator and the CPI (seasonally adjusted, SA) are generally similar from one quarter to the next, however, differences may appear when there are sizeable shifts in specific prices. In Q1 2022 for example, the rise in energy prices affected the momentum of the CPI (SA) more than that of the household consumption deflator, as energy has a higher weighting in the CPI than in the consumption deflator, where the scope is broader. Thus the CPI (SA) increased more quickly than the consumption deflator.

In H2 2022, and also in H1 2023, the momentum of the CPI (SA) and the household consumption deflator were reversed: consumer prices increased more quickly than the CPI (SA). This was mainly due to the buoyancy of Financial Intermediation Service Indirectly Measured (FISIM) prices, which fall within the scope of the household consumption deflator but are not in the CPI. FISIMs represent services provided by financial intermediaries but not invoiced as such, because they are paid via margin interest rates on their clients' deposits or loans they are granted: as they are not invoiced, strictly speaking, these services are not included in the CPI but they are counted in household consumption within the terms of national accounting, where margin interest rates represent the price of the service provided. Because of the money tightening operated by the European Central Bank since summer 2022, the rise in the interbank refinancing rate has led to an increase in margin interest on households' deposits. In fact, the rise in the interbank refinancing rate happened much faster than the rise in the rates of return on deposits, which are mainly regulated (especially the Livret A) or are very sluggish to respond to any increase in the interbank rate. This results in a rise in the price of FISIMs, which are counted in the household consumption deflator but not in the CPI. In addition, the abolition of the TV licence fee in Q4 2022 slowed the momentum of the CPI, but this was not reflected in the household consumption deflator (as in national accounting the TV licence fee is recorded as a contribution).

By late 2023, the price of FISIMs is expected to slow, or may even turn around by the end of the year, bringing the momentum of the household consumption deflator closer to that of the CPI. Assuming that monetary tightening starts to ease, the gradual increase in interest rates actually applied to household deposits or loans is then likely to result in the interest margins operated by financial intermediaries being less dynamic, or even being reduced. The household consumption deflator as an annual average looks set to increase by 6.5% in 2023, whereas the increase in the CPI is likely to be 5.0%. This difference is to a large extent the result of gains already observed in Q1 2023.

►5. Consumer price index (SA) and household consumption deflator (quarterly accounts)

(quarterly changes in %)

	2022				2023				2021	2022	2023
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4			
Consumer price index (SA)	1.5	1.8	1.3	1.2	1.5	1.1	0.9	0.7	1.6	5.2	5.0
Household consumption deflator (quarterly accounts)	1.1	1.8	1.7	1.9	2.0	1.2	1.0	0.8	1.5	4.9	6.5

Forecast.
Source: INSEE.

Household consumption and investment

After a sharp decline at the end of 2022 (-1.0%), household consumption remained virtually stable in Q1 2023 (+0.1%, ►**Figure 1**). The slump in energy consumption in Q4 2022 was the main contributor to the overall trend in consumption, and it has only partially rebounded: although weather conditions were not as mild as at the end of last year, households' energy-saving behaviour persisted (►**Figure 2**). In addition, purchases of manufactured goods fell back further: this was especially the case for food products, in line with the ongoing acceleration in their year-on-year prices. This drop in consumption recorded in the national accounts may reflect not only a fall in amounts consumed, but also changes in the product ranges bought. In services, household consumption, driven by accommodation-catering services, increased at a similar pace overall to that at the end of 2022 (►**Figure 3**).

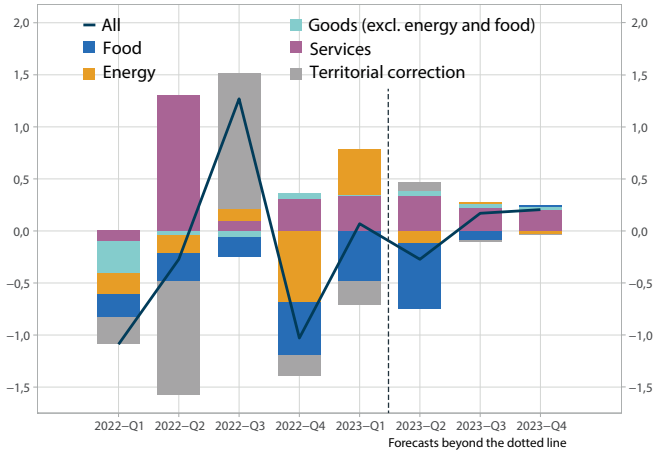
In Q2 2023, household consumption is expected to decline slightly (-0.3%). Inflation is likely to continue to affect the purchase of food products, which are expected to fall back for the sixth consecutive quarter, bringing down the consumption of goods overall. However, the consumption of services is expected to continue to increase at the same pace as in previous quarters: in particular, spending on accommodation-catering should recover a degree of buoyancy, whereas consumption of transport services is expected to be at a standstill, as a result of rail transport strikes in April.

In H2 2023, household consumption looks set to pick up again, albeit modestly (+0.2% forecast per quarter), in a context of slowing consumer prices and nominal income supported by the buoyancy of wages. Regarding goods, the decline in purchases of food products is expected to ease or even come to a halt at the end of the year, leading to virtual stability in the consumption of goods overall in Q4 2023. In services, consumption is expected to continue to improve, slowing slightly. All in all, household consumption is likely to fall back a little in 2023 (-0.2%), after +2.1% in 2022. Given the expected trend in households' purchasing power, it is likely that their savings ratio will continue to fall in Q2 then remain virtually stable for the rest of the year. It should therefore reach about 18% in H2, still substantially higher than in 2019 (15.0%).

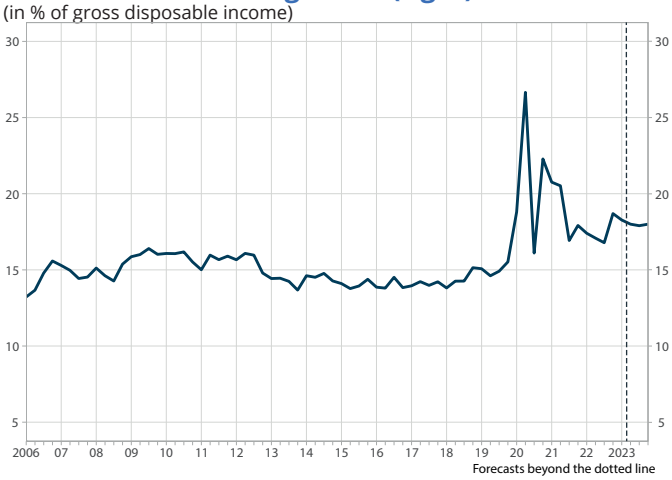
Finally, household investment, in continuous decline for the last year, is likely to continue to fall, in a context where access to credit is tightening (►**Figure 4**). This drop is expected to result in the production of fewer dwellings, both individual and collective (►**Figure 5**), and more generally the downturn in real estate transactions looks set to continue. ●

►1. Past and expected quarterly consumption (left) and household savings ratio (right)

(quarterly variations in % and contributions in points)



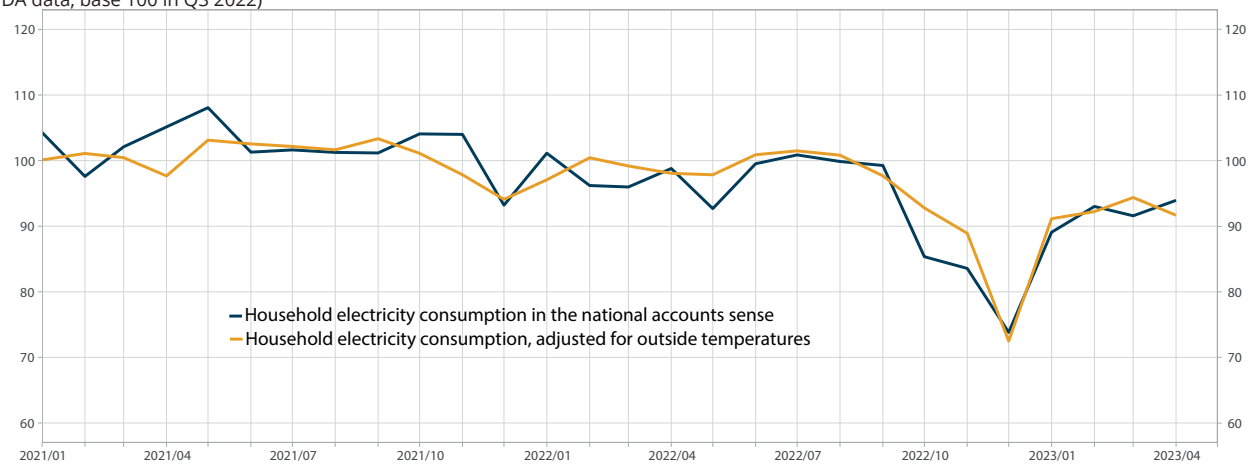
(in % of gross disposable income)



Note: territorial correction represents purchases made by French residents abroad (also counted in imports) minus purchases by non-residents made in France (counted in exports). The other contributions to household consumption (food, energy, etc.) refer exclusively to consumption in France.
How to read it: in Q2 2023, household consumption is expected to fall by 0.3% compared to the previous quarter. The household savings ratio is expected to stand at to 18.0% of gross disposable income.
Source: INSEE.

►2. Monthly household electricity consumption, with and without correction for outside temperatures

(SA-WDA data, base 100 in Q3 2022)



Last point: April 2023.
How to read it: in January 2023, household electricity consumption was 11% less than its average level in Q3 2022. Adjusted for the weather conditions (which were slightly milder than seasonal norms), consumption would have been 9% lower than in the third quarter of 2022.
Source: INSEE.

►3. Estimated and projected quarterly household consumption

(quarterly and annual variations, in %, SA-WDA)

Products	weight(1)	2022				2023				2021	2022	2023
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4			
Agricultural products	**3%**	**-2.3**	**-1.3**	**-1.5**	**-4.3**	**-1.7**	**-1.1**	**0.2**	**0.2**	**-2.8**	**-6.2**	**-6.6**
Manufactured products	**40%**	**-1.4**	**-0.9**	**-0.4**	**-1.0**	**-1.0**	**-1.8**	**-0.1**	**0.1**	**4.1**	**-1.9**	**-3.5**
Food products	15%	-1.0	-1.5	-1.0	-2.6	-2.9	-4.2	-0.7	0.1	-0.4	-3.2	-8.9
Coke and refined petroleum	4%	-2.8	-2.6	1.5	-1.0	1.1	-3.9	0.2	-0.4	10.2	-0.7	-2.6
Capital goods	3%	0.1	-0.6	0.8	-2.3	-0.3	0.0	-0.5	-0.2	7.9	-3.7	-2.1
Transport equipment	6%	-1.3	-1.2	1.3	2.7	1.8	1.7	1.2	0.7	3.6	-2.8	6.4
Other industrial products	12%	-2.0	0.4	-1.1	-0.2	-0.7	-0.3	-0.1	0.0	7.8	0.2	-1.6
Energy, water, waste	**5%**	**-1.9**	**-1.7**	**1.3**	**-13.3**	**9.6**	**1.2**	**0.1**	**-0.1**	**4.6**	**-6.5**	**-0.5**
Construction	**2%**	**0.8**	**0.4**	**-2.7**	**-0.3**	**2.9**	**0.2**	**0.3**	**0.2**	**14.7**	**2.5**	**1.7**
Trade(2)	**1%**	**-1.2**	**-0.5**	**-1.0**	**2.0**	**-0.7**	**-0.2**	**0.0**	**0.5**	**10.6**	**-0.1**	**0.2**
Market services excluding trade	**46%**	**-0.2**	**2.8**	**0.3**	**0.6**	**0.7**	**0.6**	**0.4**	**0.3**	**5.9**	**9.7**	**2.7**
Transportation	4%	-0.1	7.4	-1.1	2.4	2.7	0.0	0.6	0.0	18.1	29.9	6.1
Accommodation and food	8%	-1.7	11.9	0.2	-0.1	0.3	1.1	0.2	0.1	15.5	37.1	4.0
Information-communication	3%	0.0	-0.5	1.5	0.9	0.2	0.3	0.4	0.6	3.7	3.2	2.0
Financial services	5%	-0.2	-0.1	0.1	0.3	0.4	0.4	0.3	0.3	3.0	0.3	1.2
Real estate services	19%	0.2	0.3	0.2	0.4	0.4	0.4	0.3	0.3	1.5	1.3	1.5
Business services	2%	1.0	0.5	0.6	0.3	0.4	0.8	0.4	0.3	11.6	8.6	1.9
Household services	4%	-0.8	2.2	1.1	1.2	1.6	1.9	1.2	1.1	13.8	19.2	6.0
Non-market services	**5%**	**0.1**	**0.4**	**0.1**	**0.5**	**-0.1**	**0.5**	**0.5**	**0.5**	**9.9**	**2.8**	**1.2**
Territorial correction	*-1%*	20.0	68.9	-48.7	15.1	14.5	-4.6	1.0	1.0	16.2	150.6	-2.4
Imports of tourism services		-11.2	-12.5	40.7	-5.4	5.8	-0.3	1.0	1.0	17.6	21.0	16.1
Exports of tourism services		-1.1	19.4	-8.8	1.0	8.9	-1.9	1.0	1.0	17.2	53.3	8.5
Total	**100%**	**-1.1**	**-0.3**	**1.3**	**-1.0**	**0.1**	**-0.3**	**0.2**	**0.2**	**5.1**	**2.1**	**-0.2**

Forecast.
(1) weight in household final consumption expenditure in current euros in Q4 2019.
(2) this item corresponds to sale and repair of motor vehicles.
How to read it: in Q2 2023, household consumption of energy, water and waste would increase by 1.2% compared to the previous quarter.
Source: INSEE.

▶4. Household consumption, investment and savings ratio

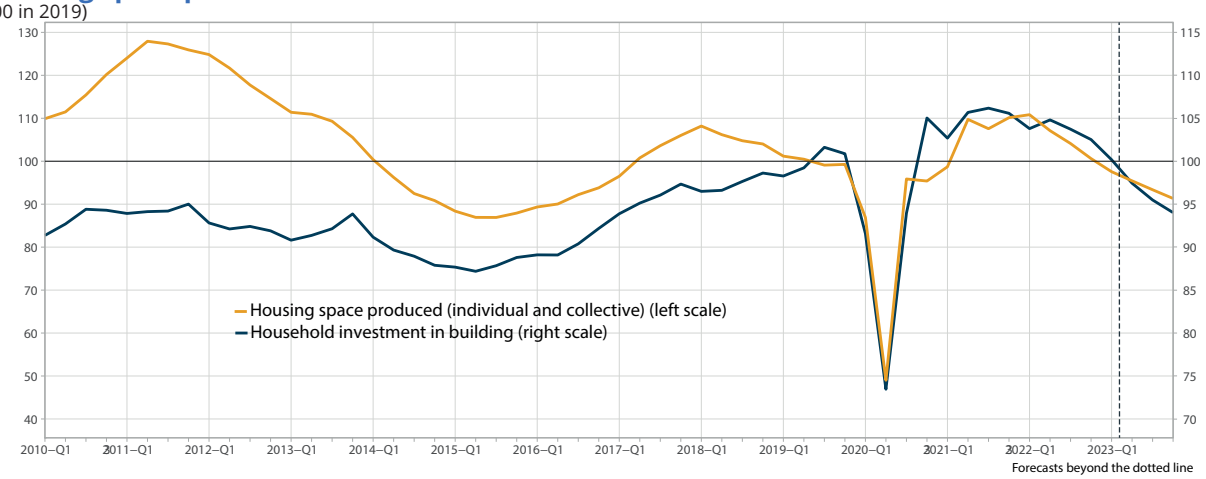
(quarterly changes and difference to Q4 2019, in %)

	2022				2023				2021*	2022*	2023*
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4			
Consumption:											
quarterly changes	-1.1	-0.3	1.3	-1.0	0.1	-0.3	0.2	0.2	5.1	2.1	-0.2
difference to Q4 2019	-0.5	-0.7	0.5	-0.5	-0.4	-0.7	-0.5	-0.3	-1.9	0.1	-0.1
Savings ratio:											
as % of gross disposable income	17.4	17.1	16.8	18.7	18.3	18.0	17.9	18.0	19.0	17.5	18.1
difference in points to Q4 2019	1.9	1.6	1.3	3.2	2.8	2.5	2.4	2.5	4.0	2.5	3.0
Investment:											
quarterly changes	-1.7	1.0	-1.0	-1.2	-2.3	-2.7	-2.0	-1.5	15.4	-1.3	-6.7
difference to Q4 2019	2.9	3.9	2.8	1.6	-0.7	-3.4	-5.3	-6.8	5.0	3.7	-3.2

Forecast.
* for the last three columns, annual variations (apart annual average for savings ratio) and difference to the average level for 2019.
Source: INSEE.

▶5. Housing space produced and household investment in construction

(base 100 in 2019)



Note: housing space produced represents one of the two components of household investment in construction, the other being major maintenance work (not shown in this figure). Note that housing space produced in a given quarter is distinct from housing starts in that quarter as it is based on considering the distribution over time of investments made while the construction work is in progress. In the national accounts, a housing space is not considered as fully produced at the time of the housing start, but its value is spread over the duration of the work, estimated statistically.
How to read it: in Q1 2023, household investment in construction was 0.2% above its 2019 average. Housing space produced was 2.4% below the 2019 level.
Source: INSEE.

Entreprises' earnings

In Q1 2023, the margin rate of non-financial corporations (NFCs) increased (►**Figure 1**): while the buoyancy of employment in relation to activity helped hold it back, the increase was sustained by the decline in the real cost of labour –since per capita pay was less vigorous than household consumer prices– and by government policy measures, especially the reduction in taxes on production (reduction in the corporate value added contribution) and the payment of aid to energy-intensive companies. However, changes in domestic terms of trade –i.e. the ratio of the price of value added to consumer prices– had virtually no impact on change in the margin rate of NFCs in Q1 2023. Nevertheless, this average finding across all NFCs may mask disparities within the different branches of activity (►**Focus**).

In Q2 2023, the margin rate is expected to fall back slightly, then remain broadly stable in H2, at around 32% of the value added of NFCs (►**Figure 2**). The decline forecast in Q2 is likely to be the result of less aid being paid out to energy-intensive companies and, to a lesser extent, the deterioration in per capita productivity, with employment still more buoyant than activity. However, the real cost of labour, which is predicted to decline further in Q2, is expected to support the margin rate moderately.

In H2 2023, and especially towards the end of the year, the acceleration in per capita wages in a context of slowing consumer prices is likely to hamper change in the margin rate. With the price of value added remaining more buoyant than consumer prices, domestic terms of trade are expected to bolster change in the NFC margin rate, which is then likely to remain virtually stable in Q3 and Q4. As an annual average, the margin rate of NFCs in 2023 is expected to be a little above 32%, up from the 2022 average (31.7%) and half a point above the 2018 average (31.6%), before the health crisis.[1]

1 2018 can be considered as a suitable reference year for margin rate. From 2019 to 2021, margin rate experienced some upheavals due to the "double" payment of the Competitiveness and Employment Tax Credit (CICE) in 2019 then the health crisis.

►1. Decomposition of margin rate of non-financial corporations (NFC)

(margin rate in %, variation and contributions in points)

	2021				2022				2023				2020	2021	2022	2023
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4				
Margin rate	**36.8**	**35.1**	**32.4**	**31.6**	**31.3**	**31.8**	**31.9**	**31.9**	**32.3**	**32.1**	**32.0**	**32.1**	**32.2**	**33.9**	**31.7**	**32.1**
Variation in margin rate*	**2.1**	**-1.7**	**-2.7**	**-0.8**	**-0.4**	**0.5**	**0.1**	**0.0**	**0.4**	**-0.2**	**-0.1**	**0.1**	**-1.2**	**1.7**	**-2.2**	**0.4**
Contributions to variation in margin rate:																
productivity gains	-0.4	0.1	0.9	-0.4	-0.2	0.1	-0.1	-0.5	-0.4	-0.1	0.0	0.1	-5.7	1.9	-0.1	-0.8
real cost of labour per capita	0.3	-0.5	-1.5	0.1	-0.3	0.6	0.9	-0.2	0.3	0.2	-0.1	-0.5	4.1	-2.7	-0.2	0.7
ratio of price of value added to consumer prices	0.1	-0.1	0.0	-0.3	0.2	0.3	-0.6	0.3	-0.1	0.0	0.0	0.5	0.6	0.5	0.0	0.1
other factors (including subsidies and taxes on production)	2.1	-1.1	-2.1	-0.2	-0.1	-0.4	-0.1	0.3	0.5	-0.3	0.0	0.0	-0.2	1.9	-1.9	0.4

Forecast.
* The variation shown here is a difference calculated before rounding.
Note: the margin rate (*MR*) measures the share of value added that remunerates the capital.
This variation can be broken down additionally into:
- changes in productivity (*Y/L*), where *Y* is value added and *L* is employment, and in the ratio of the price of value added to consumer prices, or terms of trade *(Pva/Pc*), which have a positive effect;
- changes in the real cost of labour (*W/Pc*, where *W* represents the cost of labour per capita), which have a negative effect on the margin rate;
- other factors: these are mainly taxes on production net of subsidies, including the Solidarity Fund.

This breakdown can be synthesised in the equation:

$$TM = \frac{GOS}{VA} \approx 1 - \frac{WL}{Y\,P_{VA}} + other\ factors = 1 - \frac{L}{Y}\frac{W}{P_C}\frac{P_C}{P_{VA}} + other\ factors$$

Source: INSEE.

►2. Margin rate of non-financial corporations (NFC)

(in % of value added)

Source: INSEE.

What is the reason for recent changes in production prices in the non-agricultural market branches?

In the non-agricultural market branches, unit margins boosted the momentum of production prices in Q1 2023, a little less than unit input costs, but more than unit wage costs.

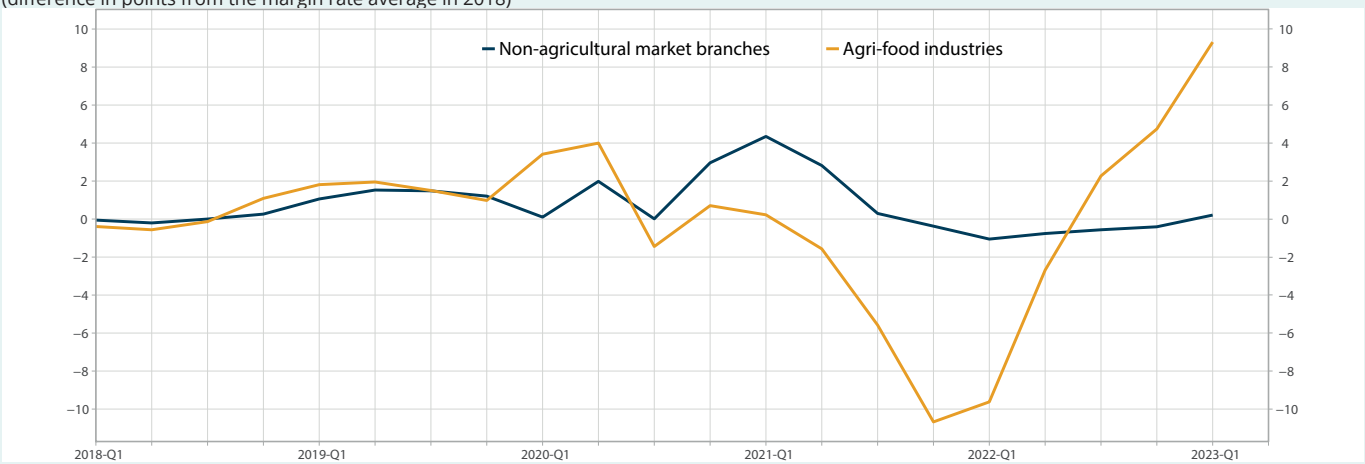
Guillaume Roulleau, Olivier Simon

In Q1 2023, the margin rate in the non-agricultural market branches (BMNA) increased slightly (+0.6 points), just exceeding its 2018 level (►**Figure 1**). This momentum can be analysed in relation to the dynamics of the production price in these branches and the accounting contributions of its determinants. At the start of 2023, the production price of BMNAs accelerated, bolstered by the increased cost of inputs, whose unit price had been at a standstill in 2022, and by a further significant increase in unit margins (gross operating surplus per unit produced, ►**Figure 2**). The unit wage cost, on the other hand, contributed only moderately to the dynamics of the BMNA production price: the momentum of wages at the beginning of 2023 was less vigorous than in Q4 2022, when it was affected by the massive payouts from the value sharing bonus. In this context, the substantial rise in unit margins resulted in the increase in BMNA margin rates observed in Q1. This increase in unit margins is an extension of that observed in recent quarters and follows on from a phase in the opposite direction of margin compression during 2021.

This overall observation for BMNAs of course masks differences that can exist between branches. In the agrifood industries (IAA), the margin rate increased sharply in Q1 2023, continuing an upward momentum that began at the start of 2022: thus the margin rate of IAAs at the beginning of 2023 was almost 10 points above its 2018 level (conversely, at the end of 2021, it was 11 points below its 2018 average). In fact, although it has slowed since mid-2022, the production price of IAAs remains very dynamic: in Q1 2022, it increased by 3%, as it had done the previous quarter (►**Figure 3**). The increase in the cost of inputs has significantly supported this dynamic, and has done so since the start of 2021: however, their contribution has been decreasing since mid-2022 and at the start of 2023 represented about a third of the overall dynamic of the IAA production price. Conversely, unit margins accounted for more than two thirds, and were thus the main factor in the rise in IAA production prices in Q1 2023. ●

►1. Margin rate in all non-agricultural market branches and in the agrifood industries

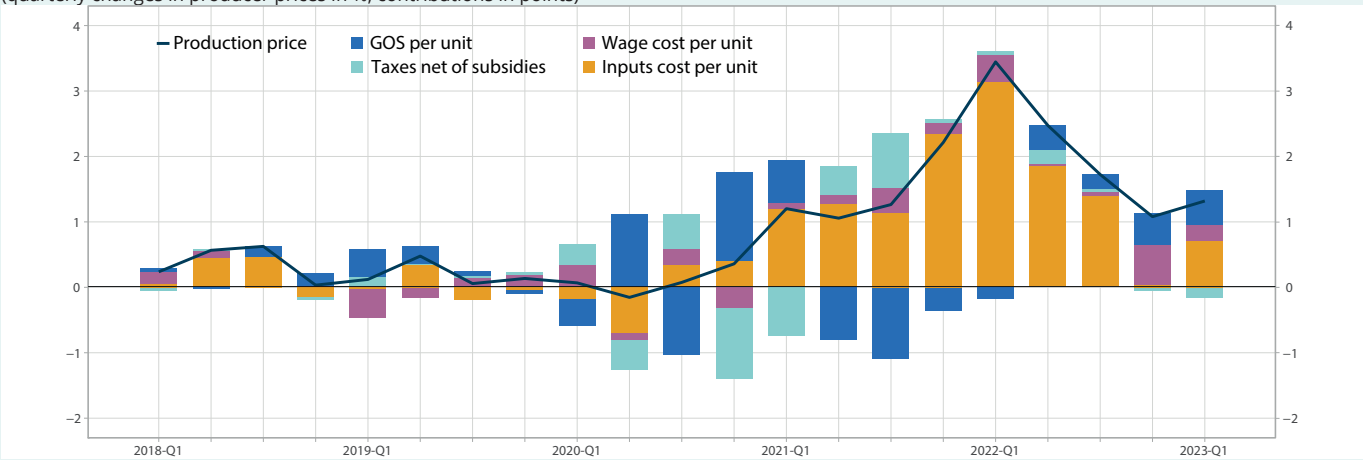
(difference in points from the margin rate average in 2018)



Note: the margin rates shown here cover all institutional sectors of the branches concerned (non-financial corporations, sole proprietors, financial corporations, etc.) and not only the scope of non-financial corporations.
How to read it: in Q1 2023, the margin rate in the non-agricultural market branches was 0.2 points above its 2018 average. In the agrifood industries, it was 9.3 points above its 2018 average.
Source: quarterly national accounts, INSEE.

►2. Change in production price in the non-agricultural market branches by contributions of its components

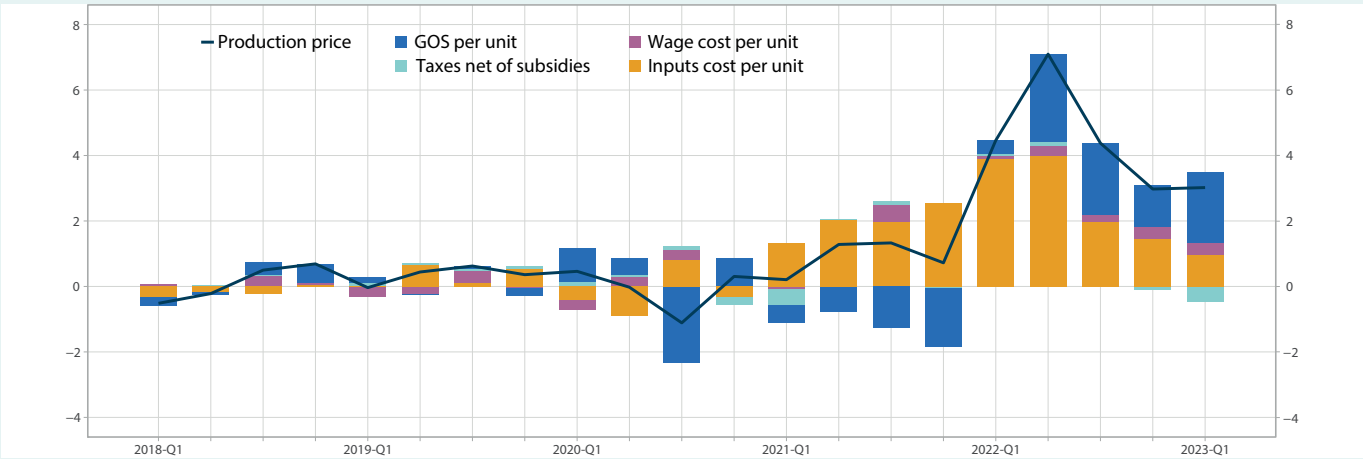
(quarterly changes in producer prices in %, contributions in points)



How to read it: in Q1 2023, the production price in the non-agricultural market branches increased by 1.3% compared to the previous quarter. The rise in the unit cost of inputs (amount of inter-mediate consumptions per unit produced) contributed 0.7 points to this change, while the rise in unit margins (gross operating surplus per unit produced) contributed 0.5 points.
Source: quarterly national accounts, INSEE calculations.

►3. Change in production price in agrifood industries by contributions of its components

(quarterly changes in producer prices in %, contributions in points)



How to read it: in Q1 2023, the production price in the non-agricultural market branches increased by 3.0% compared to the previous quarter. The rise in the unit cost of inputs (amount of inter-mediate consumptions per unit produced) contributed 1.0 point to this change, while the rise in unit margins (gross operating surplus per unit produced) contributed 2.2 points.
Source: quarterly national accounts, INSEE calculations.

Corporate investment

In 2022, investment by non-financial enterprises (NFE) increased by 3.8% as an annual average (►**Figure 1**). Most of this increase was recorded in Q3 (+4.1% compared to the previous quarter) due to a major catch-up in investment in the automobile sector.

In Q1 2023, investment by NFEs declined (-0.4%, after +0.6% in Q4 2022). Investment in services continued to grow (+0.7% after +0.6%), but represented the only positive contribution to change in NFE investment (►**Figure 2**). In fact, investment in manufactured products slipped back significantly (-1.1% in Q1 after +1.2%). This downturn concerns both investment in capital goods, which had seen two quarters of sustained growth, investment in transport equipment, which continued to decline after its very strong increase in summer 2022, and investment in other industrial products. Finally, investment in construction continued to fall (-1.3%): despite an increase in investment in building maintenance and improvement, non-residential building construction starts fell back sharply.

By the end of 2023, NFE investment is expected to improve very little, given the sluggishness of activity and the increasing cost of capital for companies, in the context of rising interest rates. Non-residential building construction starts look set to continue their decline, with the result that investment in construction will continue to fall. Investment in services is likely to slow down slightly, while retaining a certain dynamism, driven by information-communication. Concerning investment in manufactured goods, despite a rebound forecast in Q2 as a result of purchases of transport equipment, it is unlikely to increase further in H2. All in all, after a one-off acceleration in the spring (+0.3% forecast), investment by NFEs is then expected to decline (-0.1% forecast in Q3 and Q4). In a context of uncertainty, although driven by investment in services and manufactured goods, NFE investment is likely to increase by 2.5% as an annual average in 2023, despite a significant drop in investment in construction. ●

►1. Investment by non-financial enterprise (NFEs)

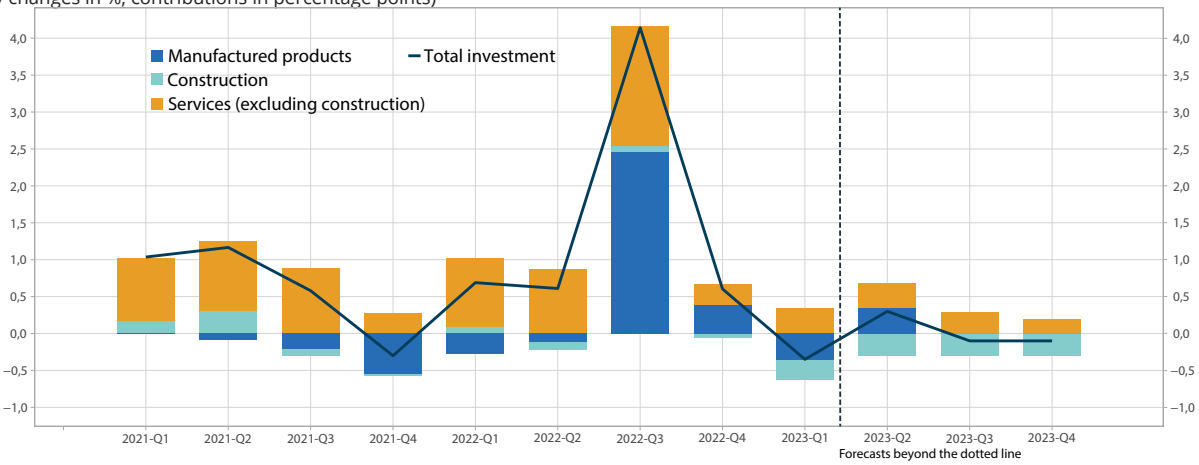
(quarterly and annual changes, in %, seasonally and working day adjusted)

	Quaterly changes												Annual changes		
	2021				2022				2023						
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	2021	2022	2023
Manufactured product (34%)	0.0	-0.3	-0.6	-1.7	-0.9	-0.4	7.9	1.2	-1.1	1.1	0.0	0.0	12.1	1.4	4.3
Construction (24%)	0.7	1.4	-0.4	-0.1	0.4	-0.5	0.4	-0.3	-1.3	-1.5	-1.5	-1.5	9.7	0.2	-3.6
Services (42%)	2.0	2.1	2.0	0.6	2.0	1.8	3.4	0.6	0.7	0.7	0.6	0.4	8.2	7.4	4.3
All products (100%)	**1.0**	**1.2**	**0.6**	**-0.3**	**0.7**	**0.6**	**4.1**	**0.6**	**-0.4**	**0.3**	**-0.1**	**-0.1**	**9.8**	**3.8**	**2.5**

Forecast.
Source: INSEE.

►2. Investment of non-financial enterprises by product

(quarterly changes in %, contributions in percentage points)



Source: INSEE.

International economic outlook

International synthesis

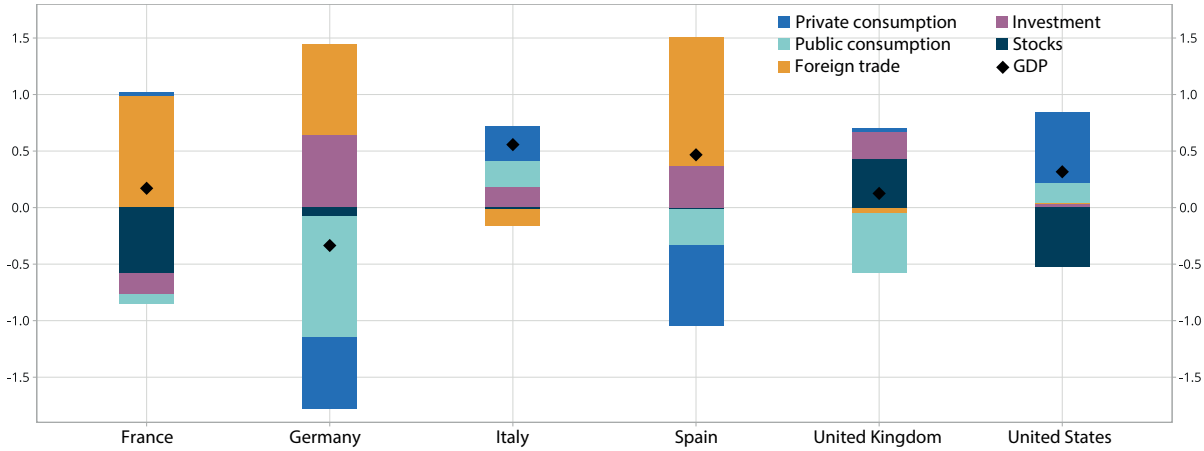
In 2023, the main world economies are growing in very different ways with no consistency, driven by different factors in the various countries and quarters. A certain number of constraints to which the world economy was exposed in 2022 seem to be easing: the economic consequences of the outbreak of the war in Ukraine appear to have been relatively limited for European productive systems, energy prices have fallen back significantly, health restrictions have been completely lifted in China... However, other stalling factors can be seen, not least the tightening of monetary and financial conditions.

Thus in Q1 2023, the Chinese economy rebounded as consumption recovered following the end of health restrictions. In the United States, growth was also sustained by household consumption (►**Figure 1**), with household income up in January. Conversely, in Germany and Spain, where purchasing power has deteriorated, private consumption weighed heavily on activity. With the exception of Italy, foreign trade made a positive contribution to change in GDP in the Eurozone, contrasting with recent changes in the trade balance (►**Focus** trade balances in the Eurozone): imports fell back in France, Germany and Italy while tourism exports drove GDP in Spain. This decline in imports by the advanced economies contributed to the further decline in world trade (►**Figure 2**), which received no further support from China where imports were sluggish at the start of the year.

In a context of continuing monetary policy tightening, investment fell back in the United States and France in Q1 2023. However, it increased in several European countries although for different reasons: support for the European recovery

►1. Change in activity in the main western economies in Q1 is due to different factors

(quarterly change in GDP in Q1 2023 in %, contributions in percentage points)



How to read it: in USA, in Q1 2023, GDP increased by 0.3% and private consumption contributed +0.6 points to this change.
Source: INSEE, Destatis, Istat, INE, ONS, BEA.

►2. World trade down for two consecutive quarters

(levels, quarterly and annual variations –for the last three columns– in %)

	2021				2022				2023				2021	2022	2023
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4			
Euro-dollar exchange rate	1.20	1.21	1.18	1.14	1.12	1.06	1.01	1.02	1.07	1.08	1.07	1.07	1.18	1.05	1.07
Barrel of Brent (in dollars)	61.0	68.9	73.5	79.5	100.8	113.6	100.6	88.6	81.2	78.8	77.0	77.0	70.9	100.9	78.5
Barrel of Brent (in euros)	50.7	57.1	62.3	69.6	89.8	106.6	99.9	86.8	75.9	72.7	72.0	72.0	59.9	95.8	73.1
World trade (variations)	2.3	2.2	1.0	3.5	1.1	1.1	1.5	-1.2	-0.5	0.6	0.6	0.6	11.0	6.2	0.5
Imports by advanced economies	1.0	2.4	1.3	3.6	2.5	1.2	1.1	-1.4	-0.7	0.2	0.2	0.2	10.2	7.7	-0.6
Imports by emerging economies	5.4	1.7	0.3	3.2	-2.3	0.8	2.7	-0.7	-0.1	1.3	1.7	1.7	12.6	2.4	3.2
World demand for French products (variations)	1.3	2.5	1.6	3.5	1.7	1.4	1.4	-1.5	-0.7	0.7	0.5	0.5	10.5	7.2	0.2

Forecast.
Source: Commodity Research Bureau, IHS Markit, OCDE, CEPII, INSEE calculations.

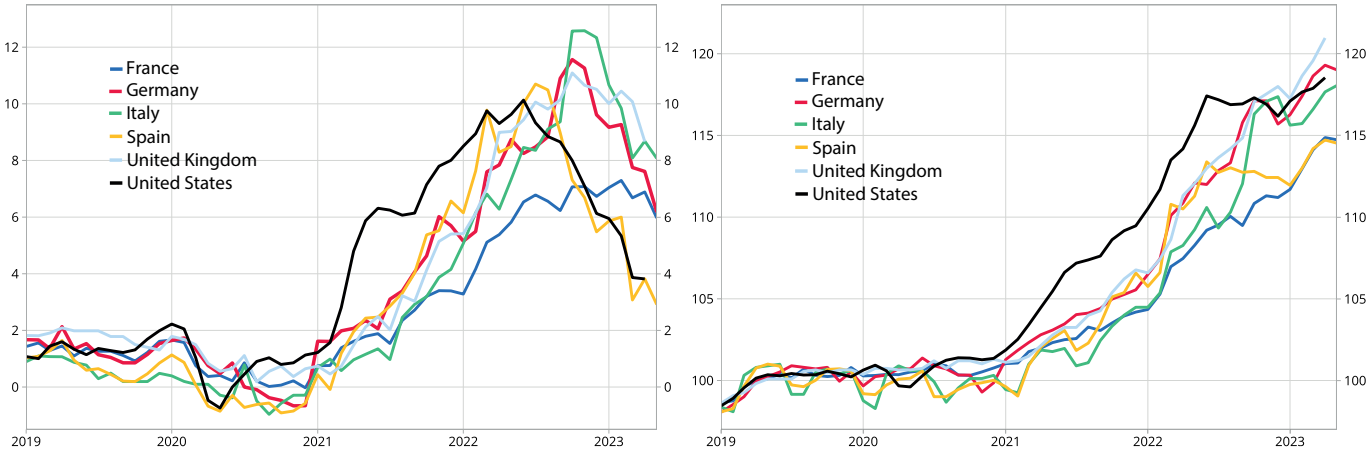
and resilience plan mainly in Spain and Italy, favourable weather conditions for construction in Germany, anticipation of the end of subsidies to companies in the United Kingdom. Also in the United Kingdom, counting the cost of strikes for government consumption had a considerable effect on activity, whereas in Germany, when the stopping of spending linked with Covid in 2022 was effectively taken into account, the resulting strong downturn in government consumption caused a decline in GDP. Apart from Germany, growth in the main western economies remained positive in Q1 2023.

Western economies are having to face both inflation that remains high and the first consequences of monetary tightening. Admittedly, inflation as measured by the year-on-year variation in the HICP seems to have begun its decline in most of the countries monitored here (►**Figure 3, left**), but this is largely due to "base effects", especially for energy (►**Box** inflation). Consumer prices are not coming down or only slightly (►**Figure 3, right**): they are around 20% higher than in 2019 in the United Kingdom, Germany, the United States and Italy, 15% higher in France and Spain. The higher interest rates, decided in response to this increase in prices, are beginning to affect the real economy, whether through the turnaround in the real estate market in many countries (►**Focus** real estate), the slowdown in corporate investment in some economies or by highlighting financial fragility, like the bank failures that occurred in March.

For the rest of 2023, the world economies are expected to continue to grow, although with no consistency (►**Figure 4**), supported mainly by a moderate change in household consumption, especially of services, while investment is likely to be sluggish, or even in retreat. After two quarters of decline, activity in Germany is expected to be virtually lifeless, while in Italy and Spain it is likely to slow gradually. GDP is also expected to slow gently in the United States, while China is likely to return to a more moderate pace of growth after the post-lockdown catch-up. Thus it looks as if the global economy will avoid recession in 2023, but its progress is not expected to be very vigorous. ●

►3. Although they appear to be in decline year-on-year, price levels continue to rise

(harmonised Index of Consumer Prices, year-on-year variation) (harmonised Index of Consumer Prices, base 100 in 2019)



Last point: May 2023.
Source: Eurostat, ONS, INSEE calculations.

►4. Past and forecast GDP growth in the main economies

(quarterly and annual variations –for the last four columns– in %)

	2021				2022				2023				2020	2021	2022	2023
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4				
France	0.0	1.0	3.1	0.5	-0.1	0.5	0.2	0.0	0.2	0.1	0.1	0.2	-7.7	6.4	2.5	0.6
Germany	-1.5	1.9	0.8	0.0	1.0	-0.1	0.5	-0.5	-0.3	0.2	0.1	0.1	-4.1	2.6	1.9	-0.3
Italy	0.5	2.5	2.9	0.9	0.1	1.0	0.4	-0.1	0.6	0.3	0.2	0.2	-9.0	7.0	3.8	1.3
Spain	-0.2	1.4	3.1	2.3	-0.4	2.5	0.4	0.4	0.5	0.4	0.2	0.2	-11.3	5.5	5.5	2.0
United Kingdom	-1.1	6.5	1.7	1.5	0.5	0.1	-0.1	0.1	0.1	0.1	0.1	0.1	-11.0	7.6	4.1	0.3
United States	1.5	1.7	0.7	1.7	-0.4	-0.1	0.8	0.6	0.3	0.3	0.2	0.2	-2.8	5.9	2.1	1.5
China	0.7	1.6	0.4	1.6	0.8	-2.3	3.9	0.6	2.2	0.6	0.6	0.6	1.8	8.9	3.0	5.0

Forecast.
Source: INSEE, Destatis, Istat, INE, ONS, BEA, NBSC, INSEE forecast.

Inflation in the main European economies

During the first months of 2023, the year-on-year variation in consumer prices decreased overall in the main European economies. Inflation trends continue to be determined largely by change in energy prices: the contribution of energy to inflation has declined in all countries since the start of the year, with Spain set apart with a negative contribution since December 2022. The decline in energy inflation can be explained mainly by "base effects", especially in March 2023, reflecting the effects of the outbreak of war in Ukraine a year earlier. Inflation excluding energy and food products remains dynamic, although in the Eurozone countries, the business tendency surveys suggest a slowdown in production prices in the manufacturing industry for the coming months.

Mathilde Niay, Meryam Zaiem

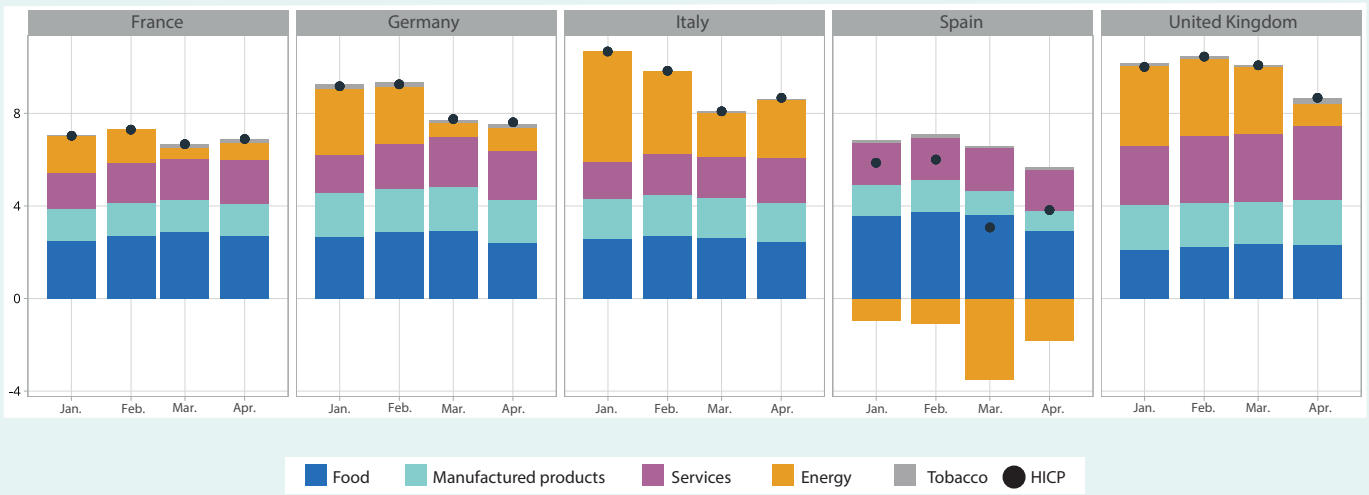
Inflation is falling back in Europe, due mainly to "base effects" on energy prices, one year after the start of the war in Ukraine

In March 2023, inflation, as measured by the year-on-year variation in the Harmonised Index of Consumer Prices (HICP), fell sharply in Germany, Italy and Spain, and to a lesser extent in France and the United Kingdom (►**Figure 1**). This decline is mainly due to significant "base effects" on energy as a result of the very large monthly increase in the prices of energy products a year earlier, after the outbreak of war in Ukraine (►**Figure 5**). The HICP for fuels, which is strongly correlated to oil prices, had risen sharply in March 2022. Consumer prices of other energy products, which are usually less responsive to market prices, had increased less, with the exception of electricity in Spain, where the consumer price soared in March 2022 resulting in a strong "base effect" in March 2023. In addition, the HICP for energy remained broadly stable in February and March 2023, and even fell in Italy as gas and electricity market prices fell back.

In April 2023, inflation, measured as year-on-year variation, declined substantially in the United Kingdom, and more marginally in Germany, but rebounded in France, Italy and Spain. Once again, "base effects" on energy account for a sizeable proportion of these movements. In the United Kingdom, gas and electricity prices are regulated by Ofgem (Office of Gas and Electricity Markets), which normally reviews price caps twice a year in April and October. The price cap was increased by 54% in April 2022 but was not increased in April 2023 because of the price freeze announced by the UK government. Conversely, the "base effect" contributed to a rise in inflation in France, Italy and Spain in reaction to the introduction in April 2022 of the reductions at the pump.

In May 2023, harmonised inflation fell again in the main Eurozone economies, according to the provisional estimate. This drop in the year-on-year variation in prices was accompanied by a slight monthly decline in prices in France, Germany and Spain. The detailed figures are not yet available, but qualitative analyses based on the national

►1. Breakdown of the year-on-year variation in the HICP in the main European economies
(year-on-year changes in the HICP in %, contributions in points)



Last point: April 2023.
How to read it: in France, in April 2023, the Harmonised Index of Consumer Prices increased by 6.9% year-on-year, with food contributing 2.7 points.
Source: INSEE, Destatis, Istat, INE, INSEE calculations.

publications are possible. In Germany, the decline in the price index is linked to the introduction in May of a 49-euro monthly subscription ticket for public transport throughout the country. In France and Spain, it is mainly the drop in fuel prices that would seem to account for the monthly decline in the HICP.

Energy price trajectories have been relatively contrasting between countries, mainly as a result of government policies, while food price trajectories have been more similar

The year-on-year variation in energy prices fell in all countries (►**Figure 2 left**), remaining positive or tangential in some, while in others it has already become negative. Thus in Italy and Spain prices fell considerably, while in France, Germany and the United Kingdom they have recently stabilised (►**Figure 2 right**). These recent differences in trends reflect two years of disparities in price variations, linked to the specific features of pricing systems in the different countries, and to government price regulation policies in the exceptional context of a year that saw the war in Ukraine and market volatility.

In Spain and Italy, where household contracts adjust more quickly to energy market prices, the rapid pass-through of market prices to consumer prices caused an earlier increase in consumer prices and today accounts for the decline in energy prices in these two countries. The two price trajectories diverged in mid-2022, however. In Spain, the introduction of the "energy island" plan to the Iberian Peninsula in May enabled the country to reduce the link between gas and electricity prices, thus bringing down energy consumer prices. In Italy, the gas regulatory tariff, which is revised every quarter, surged in October in line with the doubling of gas prices in Q2.

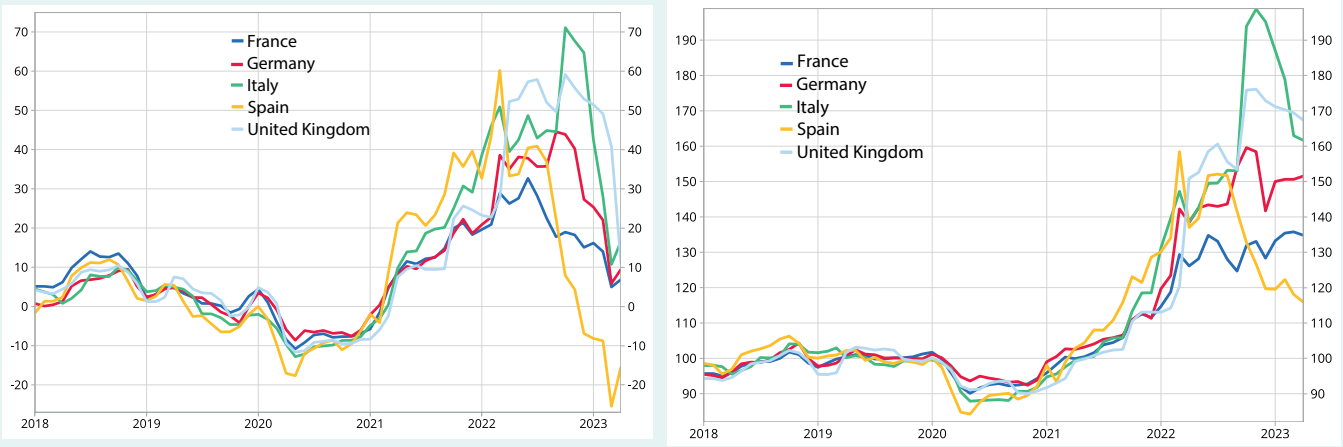
In the United Kingdom, increases in consumer energy prices were applied in stages, with half-yearly price cap reviews (October 2021, April 2022) before stabilising in October 2022 with the introduction of an exceptional price cap. In Germany, household energy contracts are fixed tariff and are often renegotiated annually, thus delaying the rise in consumer prices. Since the beginning of 2023, households have also benefitted from a cap on gas and electricity prices. Finally, in France, energy prices stabilised in October 2021 then in February 2022 with the implementation of price shields on gas and electricity respectively.

All in all, in April 2023, compared to the situation before the health crisis, Spain's energy price levels were below those of the other main European economies, after their decline started in summer 2022. In Italy, despite a sharp decline since the end of 2022, the cumulative rise since 2019 in the HICP for energy is still higher than that in the other main Eurozone economies. The same is true for the United Kingdom, mainly because of the sharp increase in the HICP for energy in October 2022.

The year-on-year variation in food prices, which are now usually the largest contributor to headline inflation (or the second largest in Italy and the United Kingdom), fell back in April 2023 in the Eurozone countries and especially in Germany and Spain, for the first time in more than a year (►**Figure 3 left**). However, it is still at very positive levels everywhere, above 10%. This decline is due mainly to base effects,

►2. Harmonised Index of Consumer Prices for energy, in the main European economies

(HICP in year-on-year change in %) (HICP in level, in base 100 in 2019)



Last point: April 2023.
How to read it: in April 2023, in Spain, energy inflation was -15% (left graph). In the same month in Germany, energy prices were 50% higher than their 2019 average (right graph).
Source: INSEE, Destatis, Istat, INE, ONS, INSEE calculations.

with food prices continuing to increase in recent months, except in Germany where they fell slightly (►**Figure 3 right**). All in all since 2019, however, it is in Germany that consumer prices of products have increased most, followed by Spain, and thus it is in these two countries that price levels started to rise earliest and fastest. In France and Italy, the HICP for food recorded its lowest cumulative increase, although the level was nevertheless more than 20% above that of 2019.

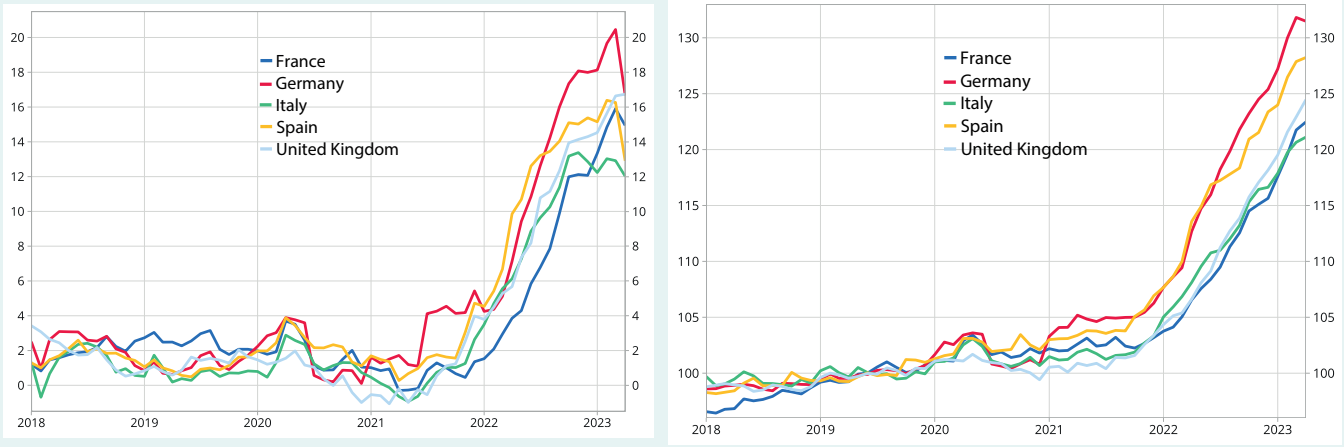
The core HICP, defined as the level of prices excluding energy and food products, has been rising strongly in the main European economies for more than a year and does not yet appear to be slowing. The United Kingdom stands out, with a cumulative increase in the core HICP since 2019 which is significantly higher than in the other countries (►**Figure 4**).

The business tendency surveys suggest a slowdown in production prices for manufactured goods

In the main Eurozone economies, the business tendency surveys indicate that fewer and fewer business leaders expect a rise in their selling prices. Balances of opinion have been falling for several months in the manufacturing industry and are now close to their long-term average in France, Germany and Italy (►**Figure 6**). In services, the decline in the balances of opinion is more recent, and for the moment they remain high in all four countries (►**Figure 7**). This suggests that production prices could slow in the Eurozone, especially for manufactured goods. This trend would then be passed through to consumer prices. In services, the slowdown is expected to be less pronounced, and at this stage more uncertain. ●

►3. Harmonised Index of Consumer Prices for food, in the main European economies

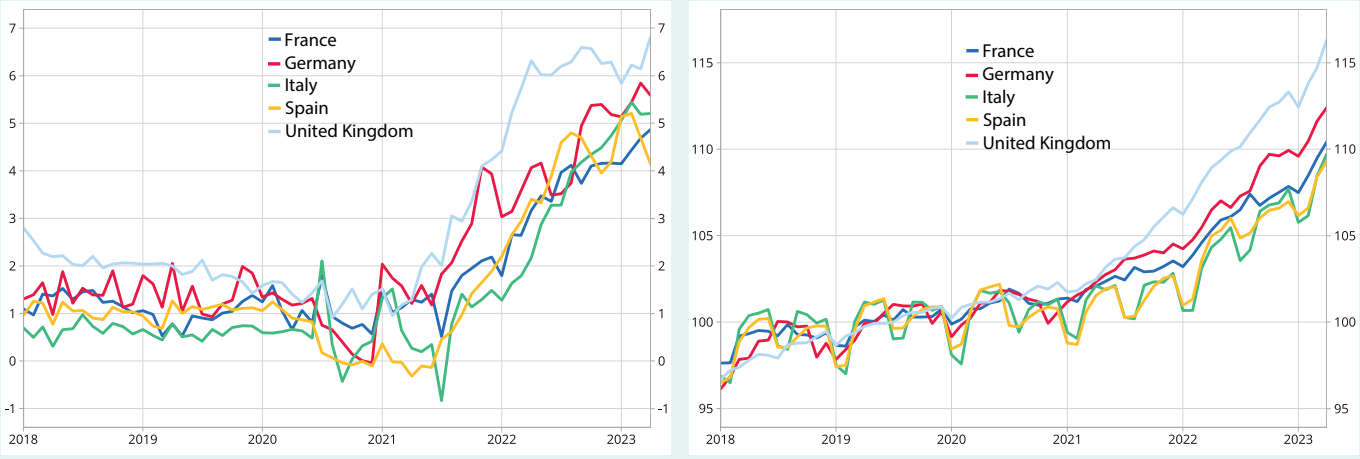
(HICP in year-on-year change in %) (HICP in level, in base 100 in 2019)



Last point: April 2023.
How to read it: in April 2023, in Italy, food inflation was 12% (left graph). In the same month, in the same country, food prices were 21% higher than their 2019 average (right graph).
Source: INSEE, Destatis, Istat, INE, ONS, INSEE calculations.

►4. Harmonised Index of Consumer Prices excluding energy and food, in the main European economies

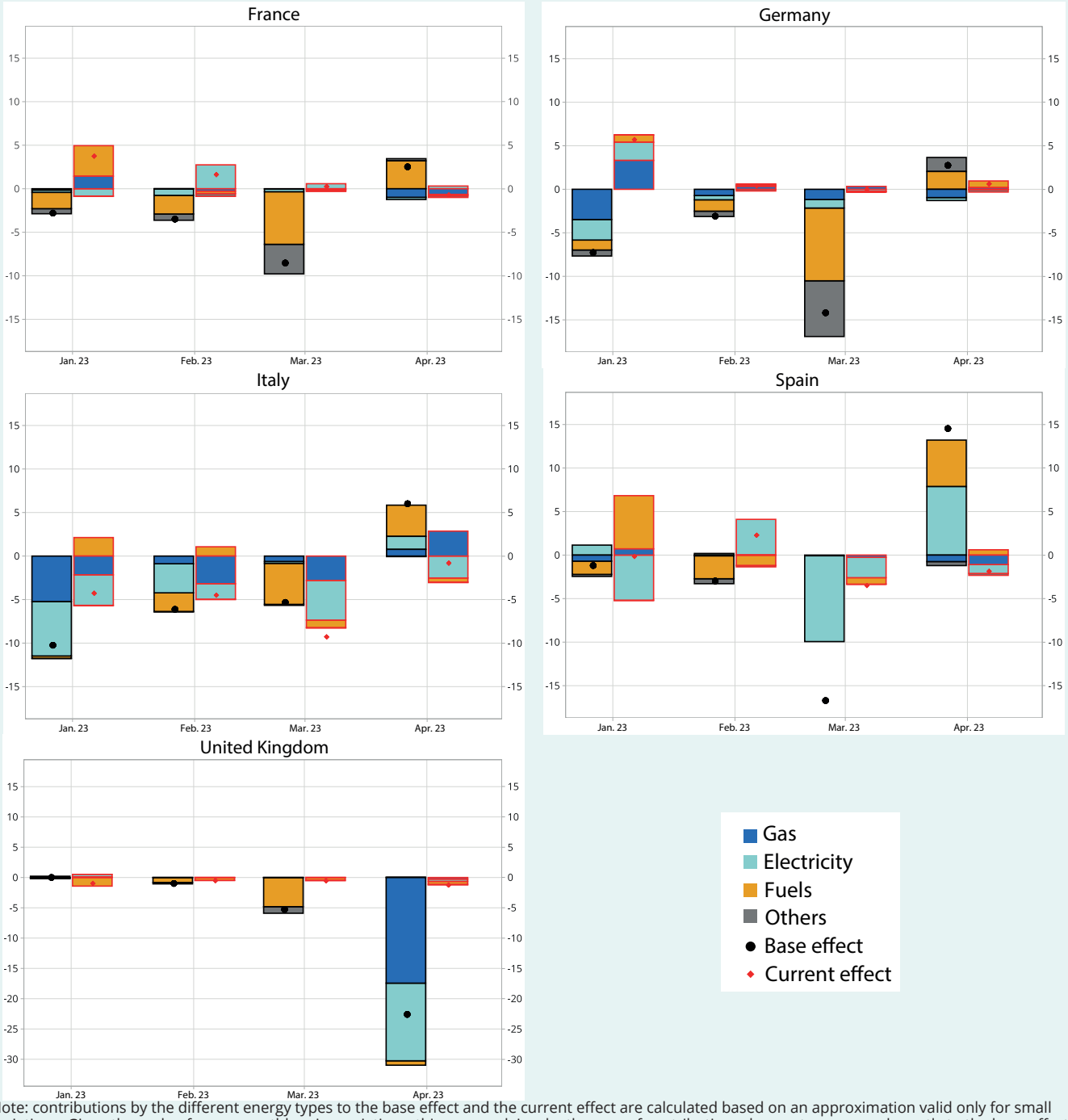
(HICP in year-on-year change in %) (HICP in level, in base 100 in 2019)



Last point: April 2023.
How to read it: in April 2023, in United kingdom, core inflation, defined as inflation excluding energy and food, was 7.0% (left graph). In the same month, prices, excluding energy and food, were 16% higher than their 2019 average (right graph).
Source: INSEE, Destatis, Istat, INE, ONS, INSEE calculations.

►Contribution to the year-on-year variation in HICP for energy and its components due to the base effect and the current effect in the main European economies

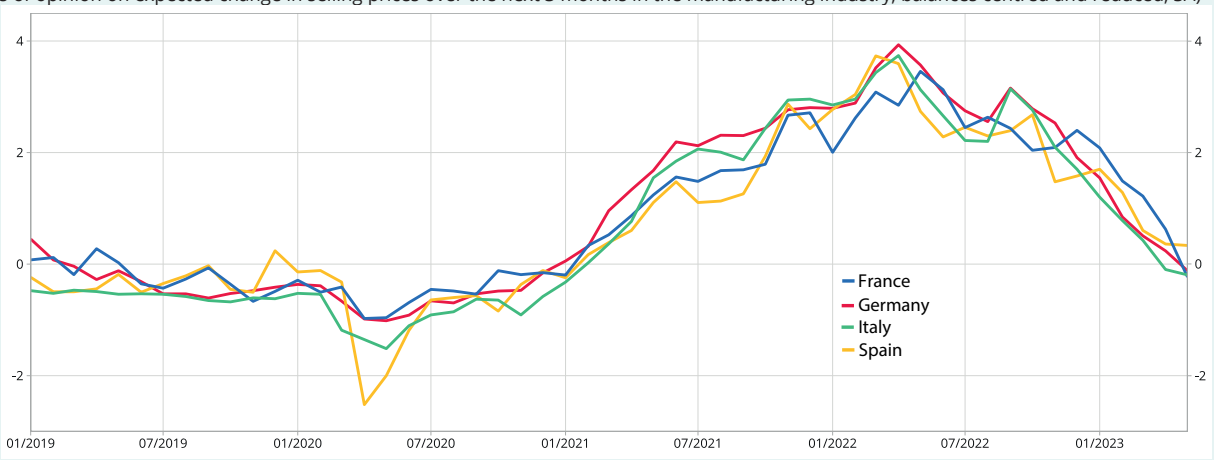
(current effect of month M, defined as the variation in the HICP between month M and the preceding month; base effect of month M, defined as the variation in the HICP between month M-12 and month M-11; contributions in percentage points)



Note: contributions by the different energy types to the base effect and the current effect are calculated based on an approximation valid only for small variations. Given the scale of some monthly price variations, this may explain why the sum of contributions does not correspond exactly to the base effect or the current effect. However, this approximation does not call into question the qualitative messages that come out of the analysis.
How to read it: in France, in April 2023, the base effect linked to the variation in the price of fuel contributed +3.2 points to year-on-year variation in the energy HICP. The contribution of the current effect of the price of fuel was -0.2 points.
Source: INSEE, Destatis, Istat, INE, ONS, INSEE calculations.

►6. In May 2023, in France, Germany and Italy, expected changes in selling prices were similar to their long-term average in the manufacturing industry

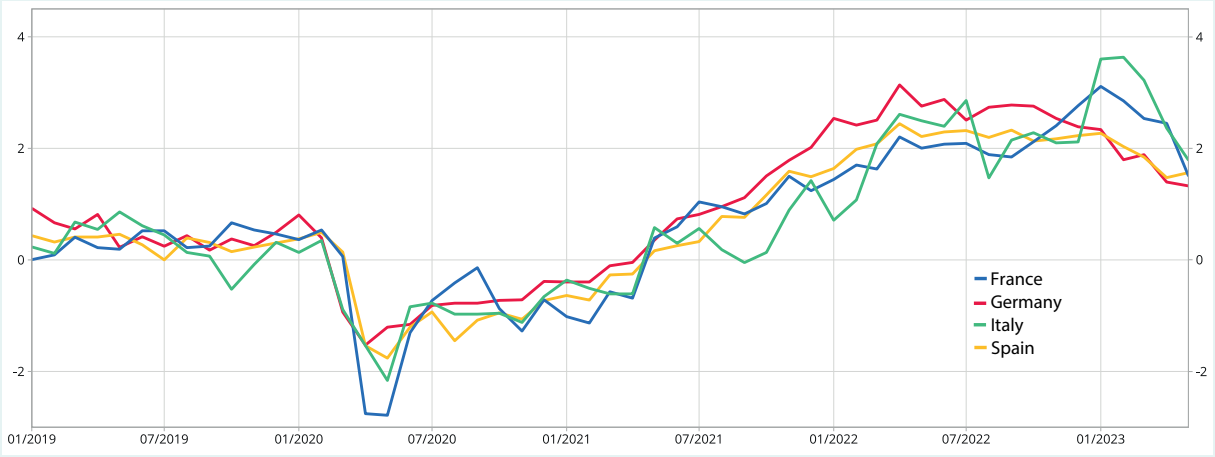
(balances of opinion on expected change in selling prices over the next 3 months in the manufacturing industry, balances centred and reduced, SA)



Note: data are from business tendency surveys. These balances are monthly and correspond to European surveys centralised and harmonised by the DG ECFIN, mainly regarding seasonal adjustment. They have been centred (average of balance between January 2005 and May 2023) and reduced in order to facilitate comparisons between countries.
How to read it: in May 2023, in Spain, fewer business leaders in the manufacturing industry expected a rise in their selling prices: the balance of opinion was 0.3 above its long-term average (average of the balance between January 2005 and May 2023).
Source: DG ECFIN, INSEE calculations.

►7. In May 2023, in the Eurozone, expected changes in prices were still trending upwards in services

(balances of opinion on expected change in prices over the next 3 months in services, balances centred and reduced, SA)



Note: data are from business tendency surveys. These balances are monthly and correspond to European surveys centralised and harmonised by the DG ECFIN, mainly regarding seasonal adjustment. They have been centred (average of balance between January 2005 and May 2023) and reduced in order to facilitate comparisons between countries.
How to read it: in May 2023, in Italy, there were still many business leaders in services who expected a rise in their selling prices: the balance of opinion was 1.7 above its long-term average (average of the balance between January 2005 and May 2023).
Source: DG ECFIN, INSEE calculations.

The turnaround in the real estate market is currently less pronounced in France than in the other major western economies

In the major western economies, the main consequences of the increases in base interest rates set by the central banks more than a year ago emerge in the real estate market. These increases cause a tightening of access to credit for households and a decline in demand for real estate, leading in turn to a turnaround in the real estate market. In particular, real prices of real estate, i.e. prices adjusted for inflation, appear to be falling back to different degrees depending on the country, with France being least affected for the moment, in contrast to Germany. This turnaround in the real estate market could hamper household investment, as is already the case in the United States, and affect households' financial situation, especially in the United Kingdom, Italy or Spain, where the characteristics of the credit market are likely to cause a rapid rise in household debt.

Jules Baleyte, Mathilde Niay

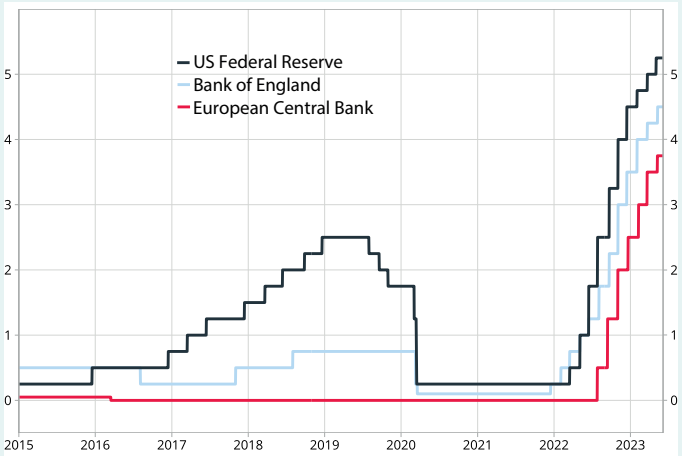
The increase in base interest rates by the central banks is tightening access to credit for households

Faced with the increase in inflation in the western economies, the central banks have embarked on a rapid cycle of monetary tightening since the beginning of 2022, in order to meet the price stability objective that is part of their mandate. Thus the US Federal Reserve (Fed) raised its base interest rate by 500 basis points between March 2022 and May 2023 (►**Figure 1 left**), followed by the European Central Bank from summer 2022: the ECB introduced several consecutive increases of 75 basis points, bringing to an end the period of negative deposit rates, then went on to raise the rate on the main refinancing operations to 3.75% before the May meeting. At the same time, these central banks decided on a gradual reduction in their balance sheets, which had reached unprecedented levels following the monetary easing decided in 2020 at the height of the health crisis. Some of the first indirect consequences of this monetary tightening started to be felt in the main western economies, especially on the financial markets (►**INSEE, 2022 Focus** in the *Economic Outlook* of 24 June 2022), where tensions emerged in spring 2023 with the collapse of several regional banks in the United States.

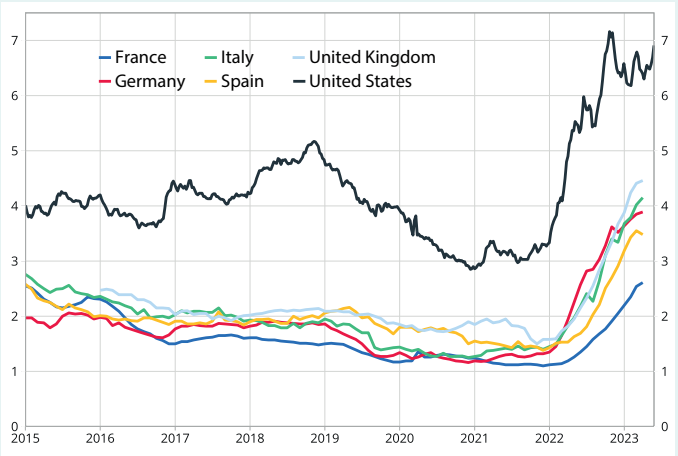
Since the raising of key interest rates increases the rates at which commercial banks can borrow and deposit money at the central bank, this has the effect of also increasing the rates at which the banks lend to economic agents, in particular the interest rates for new loans to households for real estate purchases (►**Figure 1 right**). Thus in the United States, the interest rate surged for new 30-year loans (strongly represented in loans to households), going from about 3% to over 6% in one year. In Europe, the rates for new home loans to households, which had fluctuated on average around 2% for the last few years, then between 1% and 2% during the health crisis, increased by more than 2 points during 2022. In France, however, the rise in mortgage rates appears to be more moderate (from 1.1% at the start

►1. The rise in base interest rates is having an impact on interest rates for housing loans to households, but to a lesser extent in France

(base interest rates; daily rate, in %)



(interest rate for new housing loans to households; average monthly rate, weekly rate for the United States, in %)



Last point: left: 6 June 2023; right: April 2023 for European countries and 26 May 2023 for the United States.
Note: for European countries, the interest rate shown for new housing loans to households is the volume-weighted average of borrowing rates for households and NPISHs for the purchase of housing. For the United States, because of the large number of 30-year loans, the interest rate shown for new home loans to households is the interest rate for 30-year loans.
Source: European Central Bank, Bank of England, Federal Reserve, Mortgage Bankers Association.

of 2022 to 2.6% in April 2023) due mainly to their being capped by the usury rate, which is revised regularly based on the average effective rates implemented by the credit institutions. Since February 2023, given the rapid rise in base interest rates, the pace of revision of the usury rate has become monthly (instead of quarterly, this new measure initially being introduced for 6 months), which allowed for a faster increase in interest rates for new loans to households.

This tightening of household access to loans can also be seen in the business tendency surveys of banks carried out in the Eurozone (►**Figure 2 left**). The conditions for granting loans for house purchases went through a highly unusual period in 2020, then hardened significantly in 2022 in all countries, although more so in Italy, Spain and Germany than in France. However, in Q1 2023, with the rise in the usury rate, the indicator for France caught up with the Spanish and Italian levels, a sign that France is realigning with its European neighbours, after a period of more abundant and cheaper credit. In Germany, on the contrary, affected for several months by a less dynamic rise in rates for new loans, and an intensification of competition between banks due to the decline in household demand, the indicator declined sharply at the beginning of 2023 after the high point reached in mid-2022.

The tightening of the credit supply affects household demand for new loans for house purchase (►**Figure 2 right**). In surveys of banks, the balance of opinion on demand for loans from households fell sharply in 2022, reaching very degraded levels in France and Germany; in Spain it fell back significantly in Q1 2023. The rise in interest rates is the main factor to account for this fall, according to the banks surveyed, but future prospects for the real estate market are also suggested, particularly in France and Germany, while the drop in household confidence also contributed negatively in all countries. This sharp fall in demand for loans to households resulted in a significant reduction in new loans granted: in February 2023, the volume of home loans granted to households plummeted by 54% year-on-year in Germany and by 37% in France.

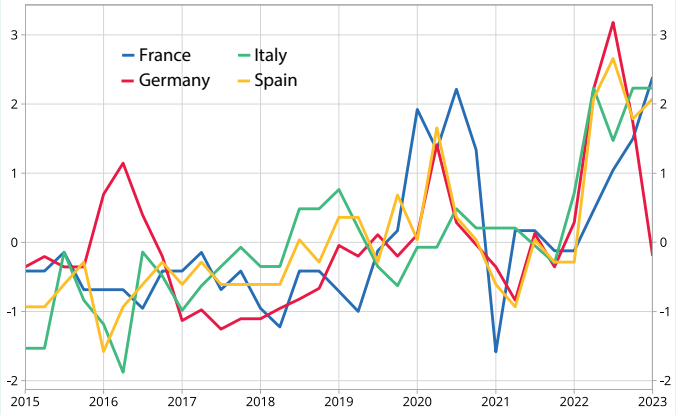
In the United States, the Federal Reserve Senior Officer Opinion Survey, published on 8 May, offers a similar diagnosis for Q1 2023 with both a tightening of conditions for granting housing loans to households and a decline in demand for these loans.

As a result, the real estate market shows signs of a turnaround

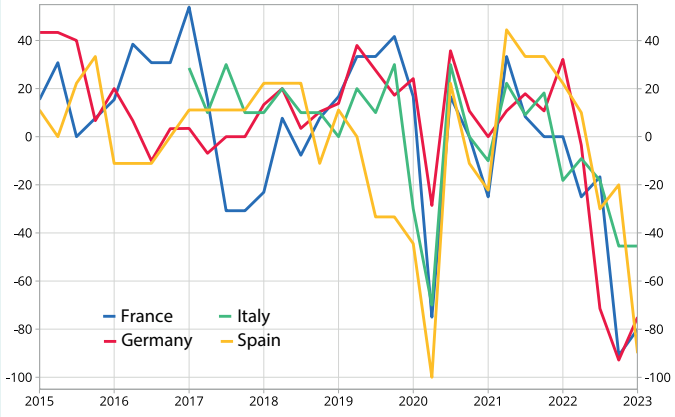
The deterioration observed in conditions of access to credit for households and the decline in the volume of new home loans, since 2022 in Europe, are passed on to the real economy *via* the residential real estate market. This market experienced a period of strong momentum at the end of spring 2020, driven by enthusiasm for residential comfort and open spaces in the countryside after the first lockdown, in a context of low interest rates,

►2. Bank lending conditions for granting loans to households for house purchase have tightened in the Eurozone while the demand for home loans from households is in decline

(centred-reduced indicator of bank lending conditions for granting loans to households for house purchase)



(balance of opinion on demand for loans to households for house purchase; in %)



Last point: Q1 2023.
Note: for a given question in the bank lending survey, the balance of opinion is calculated as the net difference between the percentage of banks reporting an increase and the percentage reporting a decrease. On the left-hand graph, the indicator is the average of the two balances of opinion: one on credit standards applied to the approval of loans to households for house purchase (i.e. the bank's internal guidelines or loan approval criteria), the other on the terms and conditions for loans to households for house purchase (i.e. the actual conditions for a loan to which a bank is willing to agree). This indicator is then centred around 0, reduced to a standard deviation of 1. If this indicator is positive, this means that the share of banks that are tightening their conditions for granting loans to households for house purchase is greater than the share of banks that are easing their conditions. On the right-hand graph, the balance of opinion represented refers to the demand for loans to households for house purchase.
How to read it: in France, in Q1 2023, the centred reduced indicator for the bank lending conditions for granting loans to households for house purchase was 2.4; the balance of opinion on demand for loans to households for house purchase was -80%.
Source: European Central Bank, Bank Lending Survey.

making debt easy and inexpensive. This momentum has recently been reversed, for purchases of homes, the construction of new homes and real estate market prices.

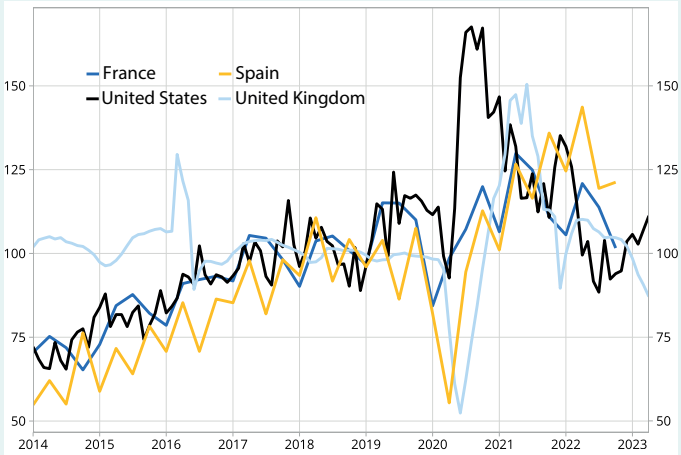
In fact, the number of real estate transactions, which had increased substantially, reaching record levels just after the health crisis in 2020, declined sharply in the United States, the United Kingdom and, to a lesser extent, France (►**Figure 3 left**). This reversal of the momentum came earlier in the United States, where the number of real estate transactions started to tumble in autumn 2020, in reaction to the peak in summer 2020, then continued to decline with the rapid introduction of monetary tightening by the Fed. At the beginning of 2023, real estate transactions in the United Kingdom returned to their pre-health crisis trend trajectory, while in the United States and France, they are now slightly below this trajectory. In Spain, the decline in transactions seems more moderate, but the real estate market has a very different momentum there from the other countries studied over the last decade. The country still bears the scars of the 2008 crisis, which means that caution is required when comparing recent dynamics between Spain and its neighbours.

In addition, the fall in demand for housing was accompanied by a decline in the granting of building permits, and hence in the construction of new homes, from Q2 2022 for the United States, France, Germany and Italy (►**Figure 3 right**). In these countries, building permits have followed a similar trend to real estate transactions in recent years, with a strong increase after spring 2020 then a sharp decline from 2022. In the United States, for example, the number of building permits was 40% higher than its 2018 average in Q1 2022, but only 7% above this level in Q4 2022.

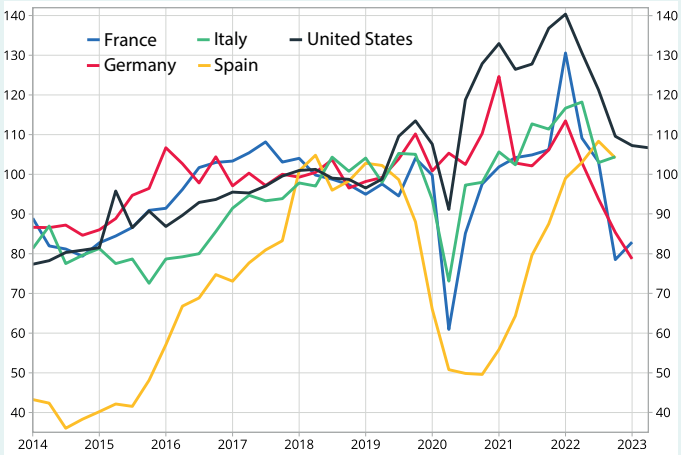
Real property prices, i.e. adjusted for the dynamics of consumer prices, are also showing signs of a reversal (►**Figure 4**). Coming out of the first lockdowns in 2020, and in line with the sharp increase in demand for housing, real property prices rose significantly, moving upwards, away from their short-term trend from Q3 2020 (except in Spain, which also demonstrated a specific dynamic, with real property prices on the contrary having slowed down in 2020). The deviation from the trend trajectory of recent years (2015-2019) can be interpreted as a form of overvaluation of the property market, resulting from conditions specific to the convergence of the health crisis and remarkably low interest rates. This deviation from the trend varied from country to country, but was particularly pronounced in the United States and Germany (deviation from the trend trajectory of 18 percentage points in Q1 2022 and 11 percentage points in Q4 2021 respectively, at their maximum), and to a lesser extent in France (9 percentage points in Q3 2021), Italy (6 percentage points in Q3 2021) and the United Kingdom (4 percentage points in Q3 2022). In Italy, unlike the other countries, the trend trajectory for prices is in decline, as has been the case since the 2008 crisis, because of the prolonged slump in demand between 2008 and 2015, the accumulation of housing stock and low household expectations for the real estate market during this period of negative spiral. As a result, like the situation in other countries, the maintaining of prices in Italy after 2020 can be seen as an upward deviation from the pre-crisis trend.

►3. Real estate transactions and building permits are now in decline

(number of real estate transactions; base 100 in 2018)



(number of building permits; base 100 in 2018)



Last point: for real estate transactions, April 2023 for the United States and the United Kingdom, Q4 2022 for France and Spain; for building permits, Q2 2023 for the United States, Q1 2023 for France and Germany, Q4 2022 for the others.
Note: real estate transaction data (new and second-hand dwellings) are quarterly in France and Spain, and monthly in the United Kingdom and the United States. The quarterly Eurostat indicator used for building permits is the useful floor area authorised in m^2 in residential buildings, whereas in the United States, it is the monthly number of building permits for new privately owned homes expressed on a quarterly basis.
How to read it: in France, in Q4 2022, the number of real estate transactions was 1.6% higher than in 2018; in Q1 2023, the number of building permits granted was 17.1% lower than in 2018.
Source: Eurostat, HM Revenue & Customs, Census Bureau.

From the end of 2021 or the beginning of 2022, in line with the expectations of a rise in borrowing rates and a tightening of the credit supply, the dynamics of the real prices of real estate reversed and started moving downwards. Prices in Germany dropped well below their trend trajectory (-8.6 percentage points in Q4 2022), while in Italy and the United Kingdom, they more or less returned to this trajectory (-1.6 and +0.0 percentage points respectively). Real prices of real estate also slipped back in the United States and France, but remained higher than their pre-crisis trend trajectory (9.3 percentage points and 4.9 percentage points respectively). Again, the situation in Spain was unique, with real prices of real estate accentuating the downward trend that began from the end of 2020: the reason may be the context of high inflation that Spain experienced from early 2021 to mid-2022, as the momentum of consumer prices had been significantly stronger than nominal real estate prices. In the countries studied, nominal prices actually have a generally upward trend, accelerating during the health crisis before slowing down recently –Germany is nevertheless the only country where we observe a substantial drop in nominal prices from the last quarter of 2021.

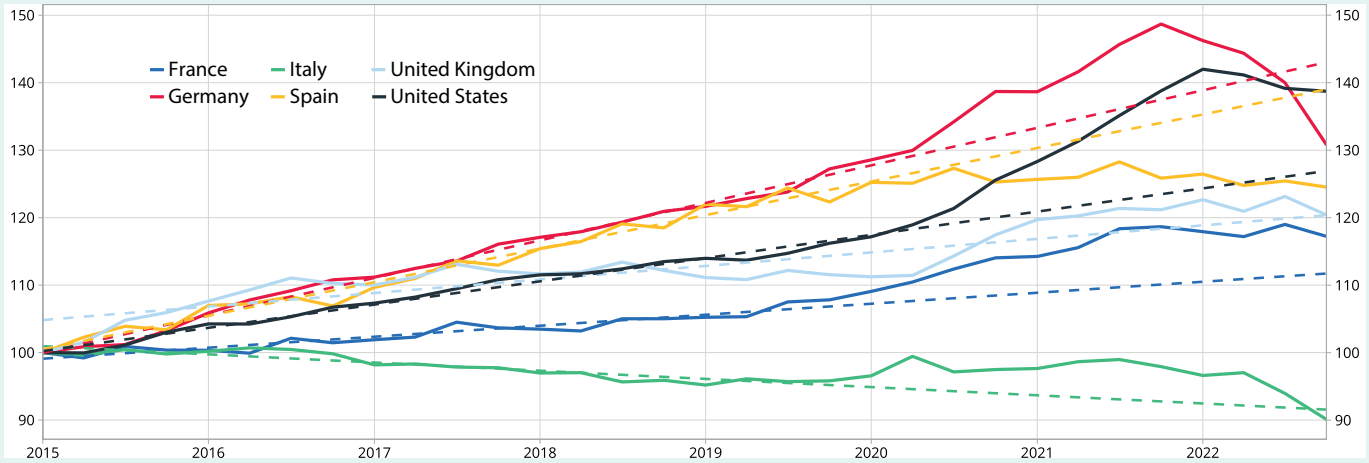
Thus it appears that in the United States and France, real prices are still above their pre-heath crisis trend trajectory. This observation could suggest a continuation in the adjustment of real prices, especially in France, due to catch-up in the rise in interest rates on new loans. Indeed, in countries where real property prices had largely exceeded their pre-crisis trend trajectory, they subsequently fell back fairly sharply (►**Box**). In Italy and the United Kingdom, the consequences of tightening monetary policies, which played a major role in moderating real estate prices observed since the start of 2022, may continue to affect real estate prices in 2023, bringing real prices below their trend trajectory, as is already the case in Germany as well as in Sweden and Canada (►**Box**). The turnaround in the real estate market could then affect economic activity.

The turnaround in the residential real estate market could affect economic activity to different degrees depending on the country

The turnaround in the momentum of real estate activities could have several types of consequence for economic activity. On the demand side, difficulties in the real estate sector could emerge through investment in housing, which represents, for example, around 4% of GDP in France or the United States. After the automatic rebound after Q2 2020, housing investment continued its recovery at a sustained pace in 2021, and this was the case for all countries (with the exception of Germany and Spain, however, ►**Figure 5**). This trend was subsequently reversed: for example, in the United States, investment in housing declined for eight consecutive quarters, and more strongly towards the end of 2022 (-7.6% in Q3, which represents -0.4 points of quarterly GDP, and -7.0%, in Q4). In Italy, the turnaround in 2022 was less pronounced, with investment in housing still largely above its pre-health crisis trend trajectory, in particular thanks to large subsidies for households for energy efficiency work in their homes. In Germany, where the post-Covid recovery was not accompanied by much of a rebound in household investment in construction, it declined throughout 2022, whereas in Spain, it has fallen back since mid-2022.

►4. After a sharp acceleration in 2020, real estate prices, adjusted for inflation, changed momentum in 2022 and are now on a downward trend

(real and trend prices of residential real estate, base 100 in Q1 2015)



Last point: Q4 2022.
Note: for each country, the solid line represents real prices, while the dashed line represents the linear trend calculated for the period between Q1 2015 and Q4 2019. Real prices have been deflated by the consumer price index.
How to read it: in France, in Q4 2022, real estate prices were 17.2% above their Q1 2015 level and 5.5% above their trend level.
Source: Bank for International Settlements.

The continuing downturn in the real estate market could be accompanied by a downturn in activity in the construction sector, thus holding back GDP in the western economies. For example, in France and Germany, the value added of construction has already fallen back in every quarter since Q2 2022 (cumulated, -2.4% in France between Q2 2022 and Q1 2023 and -4.6% in Germany).

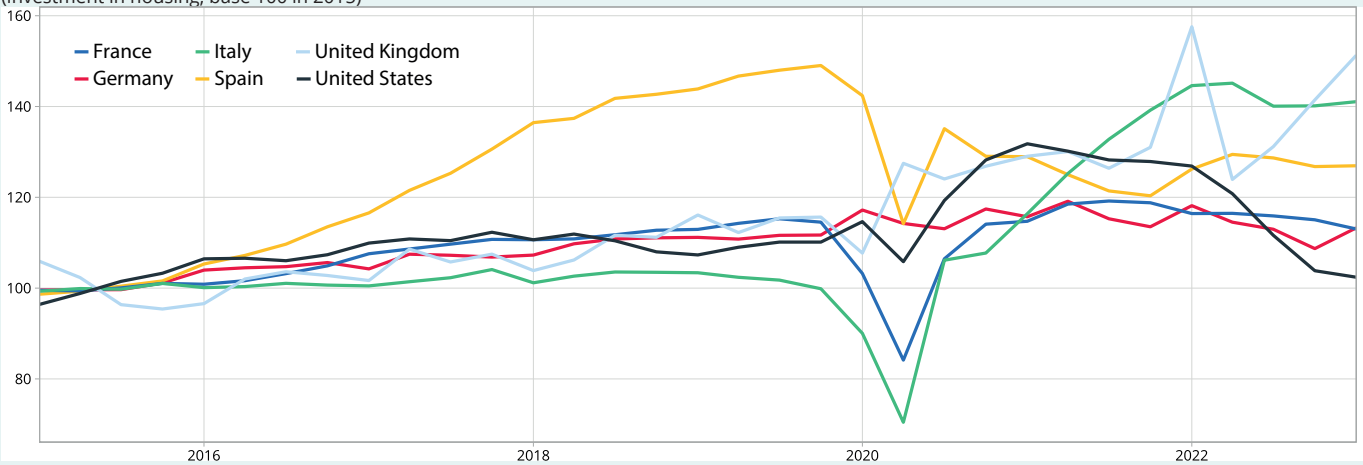
In addition, the rise in the cost of credit could have an effect on households' gross disposable income, by increasing the cost of old loans when they have been contracted at a variable rate or when they have to be renegotiated due to their short maturity. The countries studied are not all exposed to this risk to the same extent because the proportion of loans contracted at variable rates varies considerably from one country to another, and has even changed in recent years (►**Figure 6 left**). In France, the share of variable rate loans is structurally extremely low, including in 2022, thus protecting households that had taken out home loans. Similarly, in Germany and the United States since the 2008 real estate crisis, the share of variable rate loans appears to be quite modest (despite an increase during 2022). In Spain and Italy, the proportion of these loans has fallen sharply since 2010, but a sizeable share of existing loans have been taken out with this variable rate and could therefore see their monthly repayments increase substantially in the coming months. Also in Italy, and to a lesser extent in Spain and Germany, banks have increased the use of variable rate loans in the context of rising rates in 2022. In the United Kingdom, in addition to a relatively high proportion of variable rate loans in recent years, the vast majority of loans are for 2 or 5 years; their rate is then renegotiated when they mature. Households in the UK, Spain and Italy therefore appear to be the most exposed to the rise in the cost of old loans, when these are at variable rates or short-term maturity. This increase in the cost of old loans could result in an increase in the cost of repaying households' debt, as can already be observed in Australia (►**Box**).

An increase in monthly repayments, especially if households had not anticipated it, may possibly hamper financial and real estate stability. Certainly, the risk that these households may default is increased, putting extra risk onto the credit institutions: to compensate for this, these institutions may then increase the rates on loans, thus leading to a negative spiral. Default on payment may also force buyers to sell their home, lowering its price, and thereby increasing the supply of housing in the face of falling demand. The risk of households defaulting on their loan is mainly linked to their level of debt. In relation to gross disposable income, the level of household debt appears particularly high in the United Kingdom, thus exposing them all the more to the risk of a turnaround in the real estate market (►**Figure 6 right**). In France, household debt is higher than in the other Eurozone countries, and it is the only country to have experienced a regular and continuous upward trend for more than forty years. Spanish household debt has fallen sharply since 2010 but, at nearly 80% of gross disposable income, it could rise again following the rise in interest rates.

In addition, the turnaround in the real estate market could reduce the value of owner households' assets, and a "wealth effect" could then encourage them to reduce their consumption in anticipation of a reduced income in the future. However, this effect appears to be happening mainly in the United States or the United Kingdom, and much less in France (► **Chauvin, V. & Muellbauer, J., 2018**). ●

►5. The momentum in housing investment reversed in 2022

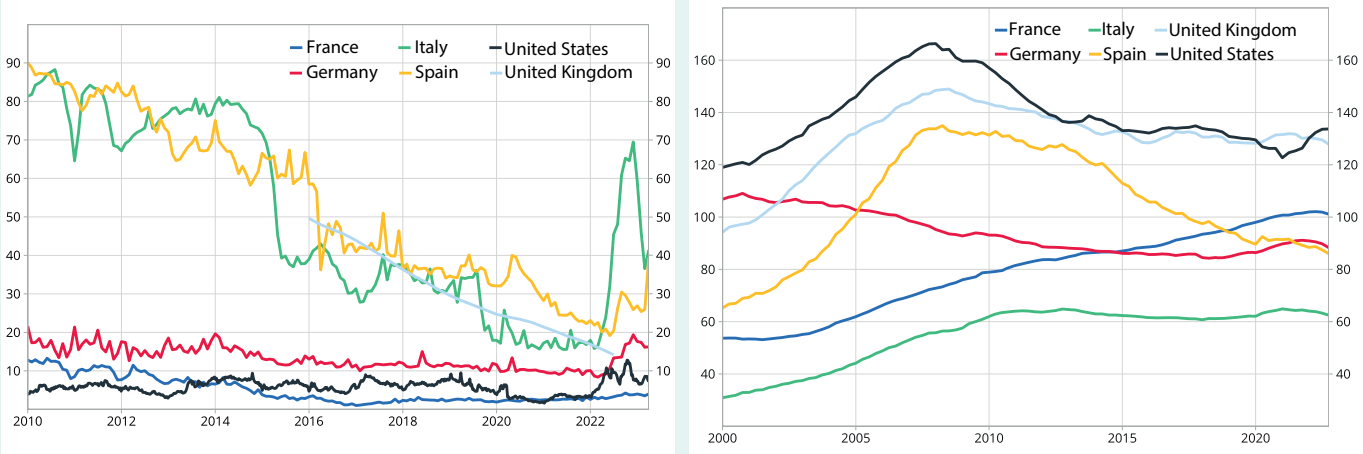
(investment in housing, base 100 in 2015)



Note: for Eurozone countries, the investment considered is investment in housing, whereas for the United Kingdom and the United States, it is specifically household residential investment.
How to read it: in France, in Q4 2022, investment in housing was 14% higher than its average level throughout 2015.
Source: Eurostat, BEA, ONS, Insee calculations.

▶6. UK and Spanish households seem more exposed to the turnaround in the real estate market

(share of new variable rate loans, in %) (household debt, in % of GDI)



Last point: for the share of new loans (on the left), Q3 2022 for the United Kingdom, April 2023 for all other countries; on the right, for household debt (in % of GDI), Q4 2022.
How to read it: in April 2023 in France, the share of new variable rate loans was 4.0%. In Q4 2022, in the same country, household debt was 101.1% of their gross disposable income.
Source: European Central Bank, Mortgage Bankers Association, ONS, Banque de France.

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Drehmann, M., Illes, A., Juselius, M. and Santos, M., (2015) "How much income is used for debt payments? A new database for debt service ratios", BIS Quarterly Review, September. ●

What lessons can be drawn from real estate market trajectories observed in other advanced economies?

The movements in the real estate market analysed in this Focus study can also be found in other advanced economies, at a higher intensity in some cases, or perhaps an earlier timeframe. This is particularly the case in several northern European countries (Sweden, Netherlands, Denmark) and English-speaking countries (Australia, New Zealand, Canada).

In these six countries, the real estate market was very dynamic coming out of the worst part of the health crisis, with notably a sharp rise in real prices of real estate (►**Figure 7 left**), especially in New Zealand, where they increased by 34% between Q2 2020 and Q4 2021. However, the rise in prices in these economies was followed by a sharp decline from the end of 2021 or the beginning of 2022. The downturn in real property prices was -18% in Canada, -17% in New Zealand, -15% in Sweden, -11% in Denmark and Australia and -7% in the Netherlands between the end of 2021 and the end of 2022.

This recent decline in real prices of real estate could be interpreted, depending on the case, as a backlash from the specific period 2020-2021, marking a return to more traditional real estate market conditions. At the end of 2022, real prices of real estate in New Zealand or in the Netherlands seemed to have returned to the pre-health crisis trend trajectory.

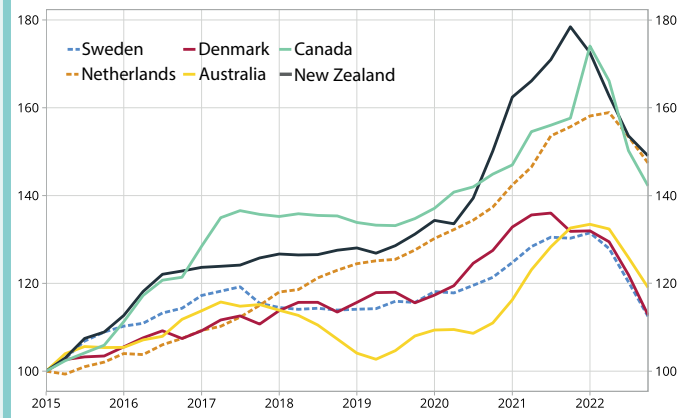
The consequences of this turnaround in the real estate market for households were already beginning to appear. The Debt Service Ratio, calculated by the Bank for International Settlements, measures the weight in household income of their loan repayments; it started to rise sharply again in Australia and Canada (►**Figure 7 right**). In these countries, debt service was already structurally high, above 12% in the years preceding the health crisis, while in comparison, it is between 6 and 8% in France, Germany or the United States. In the six countries monitored in the body of the Focus, debt service appeared stable in 2022, except in the United States, where it was rising again.

The speed at which the real estate market was passed through to household income in Australia could be explained by the large number of variable rate loans, as the increase in their rates was passed on almost immediately to households' monthly payments, with the share of these loans rising to 60% in Australia.

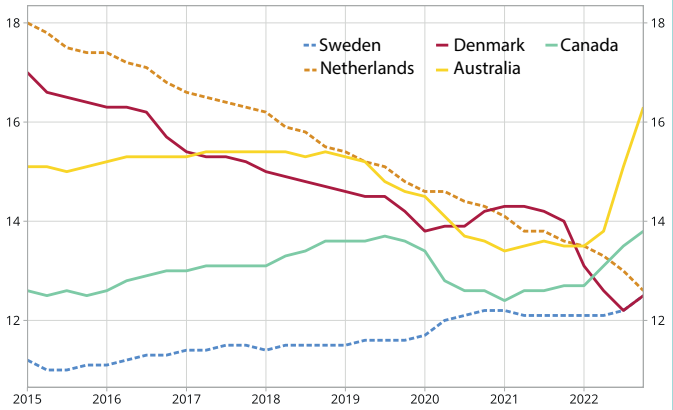
In the countries of northern Europe, the turnaround in the real estate market could also have consequences for the sustainability of household debt. This amounts to almost 200% of GDI in Denmark and the Netherlands, despite a reduction over several years, like the reduction in debt service in these countries since 2015. If household investment and consumption capacities were to deteriorate in these countries, demand for the products of Germany, and to a lesser extent those of France, could be affected. ●

►7. The real estate market reacted more briskly in other advanced economies

(real prices of real estate, base 100 in Q1 2015)



(Debt Service Ratio, in % of GDI)



Last point: Q4 2022.
Note: the Debt Service Ratio (DSR) is constructed as the sum of interest paid by households and loan repayments, divided by the average disposable income to which is added interest paid, giving the following formula (►**Drehmann and al., 2015**):

$$DSR_{j,t} = \frac{i_{j,t}}{\left(1-\left(1+i_{j,t}\right)^{-s_{j,t}}\right)} * \frac{D_{j,t}}{Y_{j,t}} \quad (1)$$

where $i_{j,t}$ is the average interest rate for the stock of existing debt, $D_{j,t}$ is the stock of debt, $Y_{j,t}$ is the household disposable income increased by interest paid, and $s_{j,t}$ is the residual maturity remaining on outstanding loans. The debt service series is not available for New Zealand.
Source: Bank for International Settlements.

Energy and commodities

Since the start of 2023, in a context where global activity is slowing, world commodity and oil prices have returned to levels well below those of mid-2022. Nevertheless, volatility remains high and prices are still, for the most part, much higher than before the health crisis.

In Q1 2023, the price of oil (Brent) stood at $81.2 per barrel (after $88.6 in Q4 2022, ►**Figure 1**). After falling to $78.4 on average in March, linked to concerns over financial upheavals (collapse of the Silicon Valley Bank (SVB) and difficulties at Crédit Suisse), the price rebounded in April to $84.7 after the announcement at the beginning of the month of a reduction in OPEC+ output from May. Concerns over the scale of the current monetary tightening and its economic consequences are nevertheless affecting oil prices, which declined further at the beginning of May. Over the forecasting period (end of 2023), the assumption is that of constant oil prices, set at $77 per barrel (or €72 assuming a euro-dollar exchange rate of 1.07 dollars for 1 euro). Despite prospects of a supply deficit compared to expected demand, driven mainly by the end of health restrictions in China, the markets seem to remain cautious, given the fears over global demand.

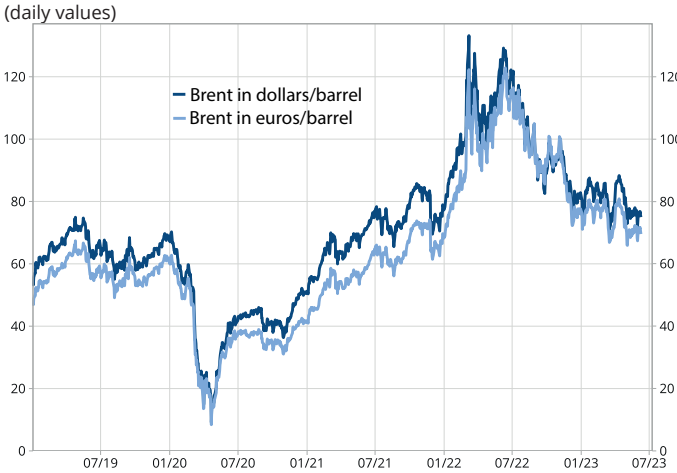
Meanwhile, the price of gas on the European market (TTF) was divided by 7.5 between its peak in August 2022 and May 2023 (►**Figure 2**). After a mild winter, when European inventories were maintained at similar levels to those of 2020 (►**Figure 3**), the price is now around €30/MWh. However, this is still one and a half times higher than before the health crisis, and also well above the price of gas on the North American market (Henry Hub). Finally, the price of carbon dioxide (CO_2) on the European Union Emissions Trading System (►**Figure 4**) has remained at around €90 per tonne since the end of January 2023, after the European Union announced a raft of measures at the end of 2022, including limiting access to free emissions allowances in the next few years.

Global commodity prices (excluding energy) have followed more contrasting trends since the beginning of 2023, after falling back sharply in H2 2022. Prices of imported agro-industrial commodities continued to decline, standing in April at "only" 7.2% above their 2019 average. Prices of mineral commodities –which rebounded following the reopening of the Chinese economy– and food commodities, were nevertheless still up by 37.5% and 58.9% respectively over the same period (►**Figure 5**). While the price of wheat has largely fallen since Q4 2022 (►**Figure 6**), the prices of certain food products –e.g. olive oil– have been deeply affected by early and prolonged periods of drought. ●

International economic outlook

►1. Price of oil (Brent) in dollars and euros

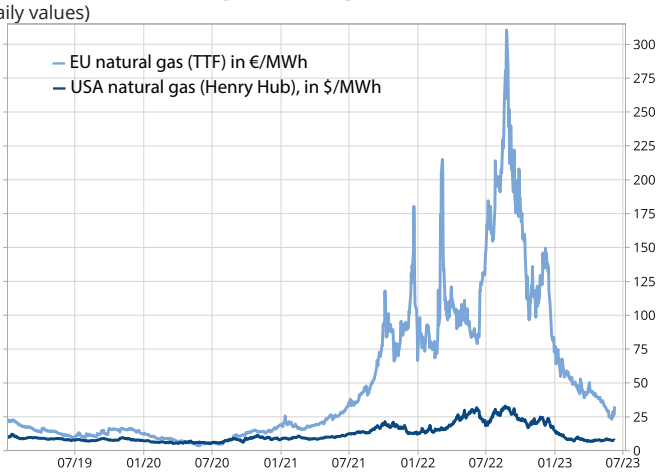
(daily values)



Last point: 9 June 2023.
How to read it: on 9 June 2023, the price of a barrel of Brent was $75.0.
Source: Commodity Research Bureau.

►2. Prices of natural gas in Europe and in the United States

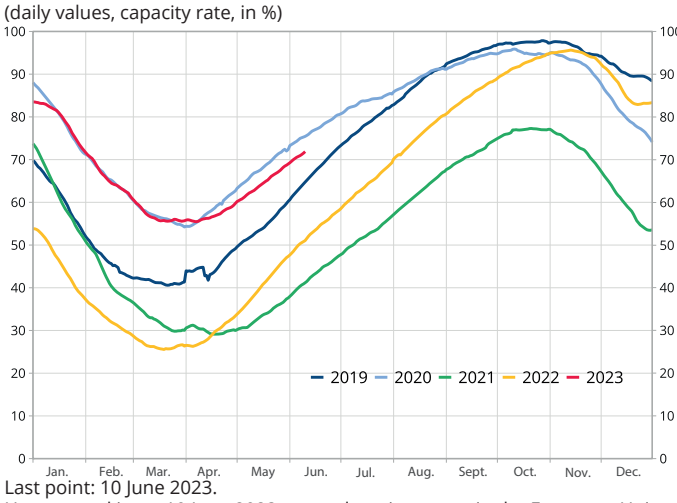
(daily values)



Last point: 9 June 2023.
How to read it: on 9 June 2023, the value of natural gas futures contracts at the next expiry date in the Netherlands (TTF) is €32.8 per megawatt-hour.
Source: ICE Futures Europe, New York Mercantile Exchange.

►3. Natural gas inventory in the European Union

(daily values, capacity rate, in %)



Last point: 10 June 2023.
How to read it: on 10 June 2023, natural gas inventory in the European Union countries stood at 71.9% of total inventory capacity.
Source: Gas Infrastructure Europe – AGSI+.

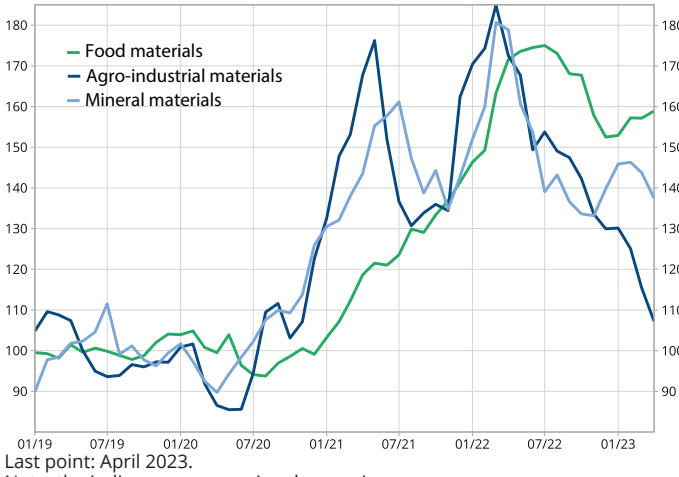
►4.Price of a tonne of CO_2 on the European Union Emissions Trading System

(daily values, in euros)

Last point: 9 June 2023.
How to read it: on 9 June 2023, the price of a tonne of CO_2 on the European Union Emissions Trading System was €85.1.
Source: ICE Futures Europe.

►5. Prices indices for imported commodities in France

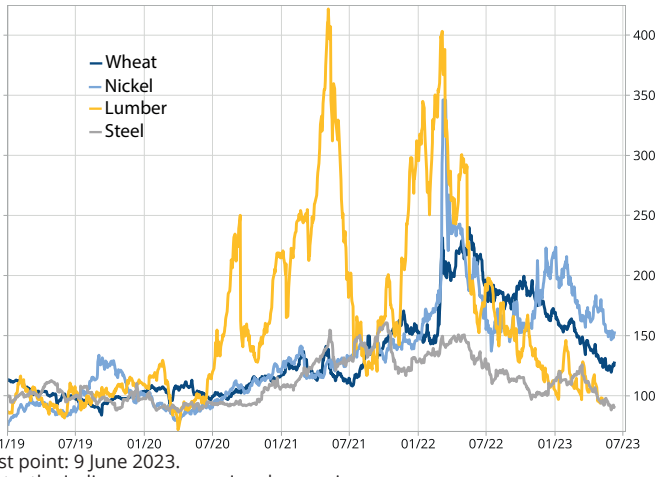
(mensual index – base 100=2019)



Last point: April 2023.
Note: the indices measure price changes in euros.
How to read it: in April 2023, prices in euros of imported food commodities were 58.9% above their 2019 average.
Source: INSEE.

►6. Prices of wheat, nickel, lumber and steel

(daily index - base 100=2019)



Last point: 9 June 2023.
Note: the indices measure price changes in euros.
How to read it: on 9 June 2023, the price of wheat in euros was 28.4% above its 2019 average.
Source: Euronext Paris, London Metal Exchange, Chicago Mercantile Exchange, Shanghai Futures Exchange.

Eurozone

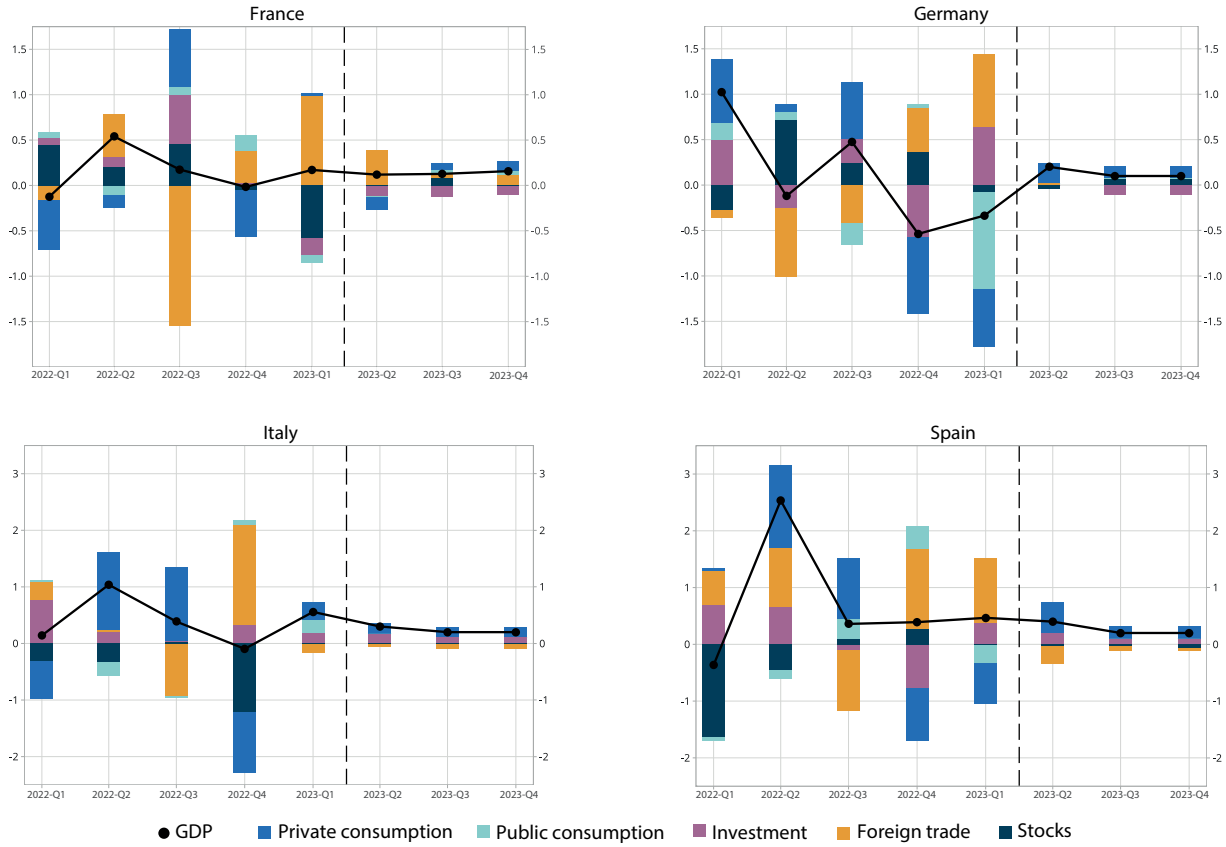
In Q1 2023, growth in the main Eurozone economies was slightly more buoyant than in the previous quarter

In Q1 2023, growth in economic activity was sluggish in the Eurozone (-0.1% after -0.1% in Q4 2022), in a context of high prices which curbed both household consumption and production in the most energy-consuming industries. Thus, activity fell back again in Germany (-0.3% after -0.5%, ►**Figure 1**): this downturn should be qualified somewhat, however, as it is mainly the result of a strong decline in government consumption (-4.9%, as government spending on vaccines and tests associated with the health crisis came to a halt). In contrast in Italy and France, activity recovered a little of its vigour (respectively +0.6% after -0.1% and +0.2% after +0.0%). In Spain, where there is greater potential for catch-up, activity continued to grow at a similar pace to previous quarters (+0.5% after two quarters at +0.4%).

After falling at the end of 2022 in the four main Eurozone economies, household consumption then evolved in a variety of ways, but was hampered by prices that were still high even though inflation year-on-year had begun to ebb (►**Focus** international inflation). Thus, consumption continued to fall in Spain and Germany, it remained virtually stable in France and increased in Italy, although not making up for the downturn in the previous quarter. In Spain, this further decline comes after a significant deterioration in household purchasing power in 2022 (-3.0%). In Germany, the reduction in household consumption is linked in particular to the decline in car purchases, with the ending of subsidies for the purchase of hybrid and electric vehicles at the end of 2022.

►1.Quarterly variations in GDP and contributions of demand items

(quarterly variations in % and contributions in points)



Note: forecasts beyond the dotted line.
How to read it: in France, in Q1 2023, GDP improved compared to Q4 2022 (+0.2%), and foreign trade contributed +1.0 point to this increase.
Source: INSEE, Destatis, Istat, INE, INSEE calculations.

Investment increased considerably in Spain, Italy and Germany, despite the monetary tightening policy that had begun in the Eurozone in summer 2022. In Germany, investment in construction rebounded, taking advantage of favourable weather conditions after several days of frost had hampered construction in Q4. In Italy and Spain, investment was sustained mainly because funds started to be mobilised as part of the European recovery and resilience plan, of which these two countries are the main beneficiaries. This funding is mainly useful for catching up with investment, as neither country has yet been able to recover from losses following the 2008 crisis. In France, investment fell in Q1: household investment has declined sharply since mid-2022, and corporate investment weakened at the start of 2023.

Thus, with the exception of Italy, domestic demand hampered activity, whereas foreign trade on the contrary bolstered it, sometimes with some strong trends. Spanish exports in particular were very dynamic, driven in part by tourism. In Germany and France, the positive contribution of foreign trade is due more to the drop in imports, in line with sluggish domestic demand. In Italy, foreign trade affected activity, as a result of a sharp decline in exports of goods (-1.7%).

Despite falling energy prices, energy-intensive industries are hampered in manufacturing production

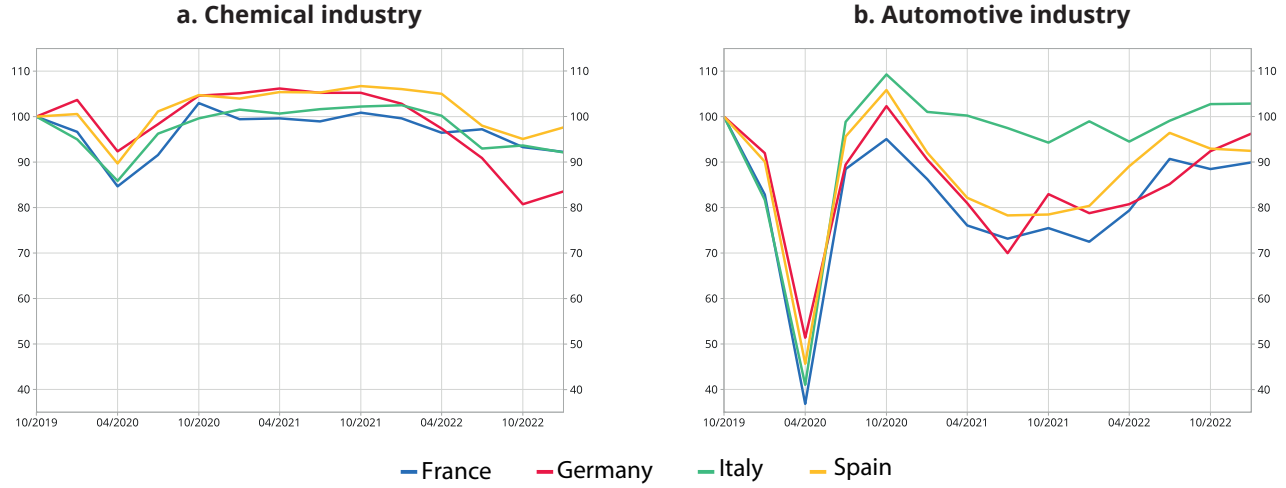
Manufacturing production evolved in different ways in Q1 2023: the manufacturing production index increased significantly in Germany, whereas in France, Italy and Spain it contracted slightly. As in the previous quarter, and despite the drop in energy prices, output in the energy-intensive branches was fairly slow or even fell back (as in the chemical industry, for example, where output remains very much in decline compared to its level one year ago, ►**Figure 2.a**). In fact, the prices that companies are experiencing now are not necessarily the spot prices, but may reflect earlier increases in these prices (►**Focus** in *Economic Outlook* of December 2022). Conversely, in branches that have been experiencing supply chain difficulties since the end of the health crisis, production has continued to make up for this shortfall: this is the case in the manufacture of transport equipment (and especially in the automobile industry, ►**Figure 2.b**). These branches have had the benefit of value chains that are continuing their return to normal and according to the business tendency surveys their order books are fairly full.

In Q2 2023, manufacturing output is expected to continue to develop in contrasting ways in the different branches. The easing of supply chain difficulties could continue to bolster output in the branches concerned, but it may slow if there is less potential for catch-up and, in the case of Germany, if order books are considered to be on a downward trend. Output in energy-intensive industries could recover some of its vigour, as energy prices continue to fall.

In construction, where production was dynamic at the start of 2023 in Germany, Italy and Spain, there are contrasting prospects for the coming months. According to the business tendency surveys (►**Figure 3.a**), the indicator of economic confidence, based on the current level of order books and on coming workforce trends, has been in continuous decline in Germany since the start of the year, and in France since the autumn. It seems to be more promising in Italy and Spain, however, probably due to the support from the recovery and resilience plan.

►2. In Q1 2023, output in the automobile branch continued to make up for the accumulated delay after supply chain difficulties

(industrial production index as quarterly average, base 100 in Q4 2019)



Last point: Q1 2023.
How to read it: in Q1 2023, in France, output in the chemical industry, according to the IPI definition, was 8.0% below its Q4 2019 level (data adjusted for seasonal variations and working days).
Source: INSEE, Destatis, Istat, INE.

In services (►**Figure 3.b**), the outlook for production seems to be relatively unpromising in Italy, Germany and France, according to the business tendency surveys. In particular, the balance of opinion on expected output fell sharply in May in Germany and Italy after several months when it increased. Conversely, this balance of opinion is on an upward trend in Spain, especially in the catering branch, promising a dynamic tourist season.

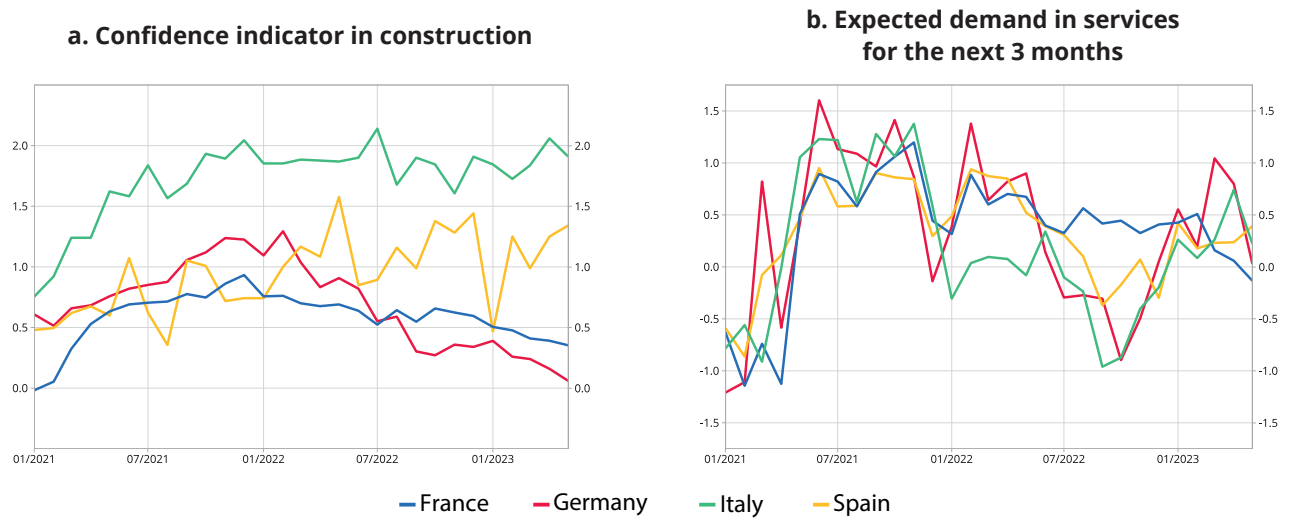
Prices are likely to remain high but the trend looks set to place a little less strain on household purchasing power

In the main Eurozone countries, inflation (according to the year-on-year variation in the consumer price index) has fallen back in recent months, although this trend is mainly the result of "base effects" (►**Focus** International inflation). Nevertheless, prices overall continued to rise in the Eurozone during the first four months of the year: energy prices did indeed fall back, but food inflation and core inflation were high, as price increases were spread across all products. In May, however, in France and Spain, the drop in fuel prices led to a decline in the consumer price index overall. In Germany, the drop in the price index was linked to the introduction in May of a 49-euro monthly ticket for local and regional public transport. By the end of the year, and assuming that the price of oil remains fixed across the forecasting period, inflation is expected to continue its decline, mainly due to base effects, with price levels continuing to increase but not as briskly as last year.

Employment rose in Q1 in the four main Eurozone economies and the employment indicator, according to the business tendency surveys, remains well above its long-term average (►**Figure 4.a**). Wages, meanwhile, are expected to maintain the same momentum as last year, and could even accelerate slightly. In Spain, they were boosted at the start of the year by a sharp increase in the minimum wage (+8% in January) and should continue to be buoyant following the agreement reached in May between employers and unions, which set a 4% pay rise in 2023 for employees covered by collective agreements. In Germany, employee pay is expected to benefit from pay reviews already signed in some branches of the economy, such as metallurgy and the public sector.

Consequently, but excluding France, purchasing power is likely to be a little more vigorous from one quarter to the next than in 2022: support for nominal income is expected to be stronger than last year and price rises less dynamic. As an annual average, purchasing power is expected to fall back in Germany in 2023, hampered by its net decline in H2 2022, while in Italy it is unlikely to be very dynamic. It should have more momentum in Spain, bolstered by wage income. Nevertheless, in Germany and France, households say that in recent months they have been a little less pessimistic over their future financial situation, according to the outlook surveys (►**Figure 4.b**).

►3. In spring 2023, the outlook for the construction branch is on a downturn in Germany and France
(long-term average=0; standard deviation=1)



Last point: May 2023.
Note: data are taken from business tendency surveys. These balances are monthly and correspond to European surveys centralised and harmonised by the DG ECFIN, mainly regarding seasonal adjustment. They have been centred (average of balance between January 2005 and May 2023) and reduced in order to facilitate comparisons between countries. The confidence indicator for construction is an aggregated indicator. It corresponds to the average of balances of opinion on the current level of orders and on prospects for employment in the next 3 months.
How to read it: in May 2023, in Italy, companies in the construction branch have a higher level of confidence than normal: the aggregated indicator is 1.9 points above its long-term average (average of balance between January 2005 and May 2023).
Source: DG ECFIN, INSEE calculations.

International economic outlook

Over the rest of 2023, activity in the Eurozone is expected to increase slightly, with no significant boost from domestic demand

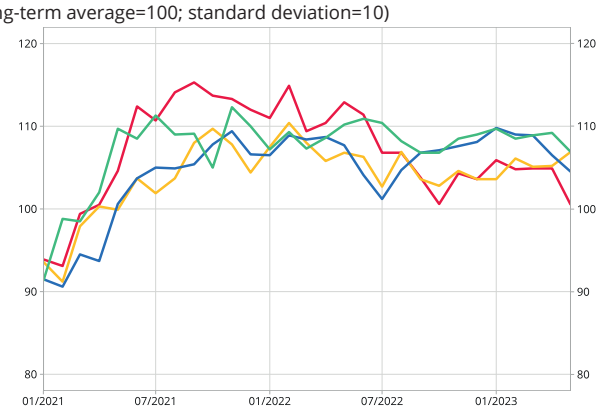
In 2023, domestic demand is expected to remain sluggish overall in the main Eurozone economies. Consumption could certainly pick up a little, especially in Germany and Spain due to wage increases, but it will probably continue to be hampered by continuing price rises, although these should lessen. Investment is likely to be affected by the rise in interest rates, but could nevertheless benefit from the different recovery plans, especially in Italy and Spain. Regarding foreign trade, imports are expected to be sluggish, in the wake of domestic demand; in Italy and Spain exports could derive benefit from the summer tourist season, but otherwise their growth is likely to be modest, due to weak support from foreign demand.

Between now and the end of the year, activity is expected to be sluggish in Germany, resulting in a drop in German GDP as an annual average in 2023 (►**Figure 5**). It is likely to improve moderately in Italy and Spain, boosted by domestic demand that looks set to continue a fairly upward trend. ●

►4. In spring 2023, the outlook for employment remained high, while the financial situation expected by households improved

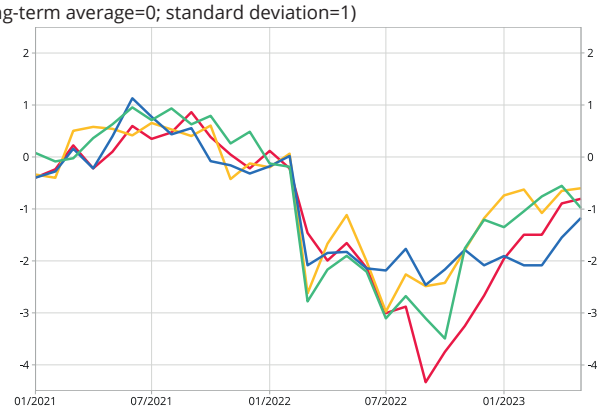
a. Indicator of probable change in employment in the next three months

(long-term average=100; standard deviation=10)



b. Financial situation in the next 12 months

(long-term average=0; standard deviation=1)



France Germany Italy Spain

Last point: May 2023.
Note: data are taken from business tendency surveys. These balances are monthly and correspond to European surveys centralised and harmonised by the DG ECFIN, mainly regarding seasonal adjustment. In the left-hand graph, the indicator is the weighted average of the branches normalised at an average of 100 and standard deviation is set at 10. These values may therefore differ from employment climate data calculated and disseminated by INSEE from the same source but using factor analysis; the trends are similar, however. In the right-hand graph, the balances of opinion are centred (average of balance between January 2005 and May 2023) and reduced in order to facilitate comparisons between countries.
How to read it: in May 2023, in Spain, companies expected a rise in employment: the indicator is 6.9 points above its long-term average (average of balance between January 2005 and May 2023).
Source : DG ECFIN, INSEE calculations.

►5. Past and forecast GDP growth in the Eurozone

(in %)

	2021				2022				2023				2020	2021	2022	2023
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4				
France	0.0	1.0	3.1	0.5	-0.1	0.5	0.2	0.0	0.2	0.1	0.1	0.2	-7.7	6.4	2.5	0.6
Germany	-1.5	1.9	0.8	0.0	1.0	-0.1	0.5	-0.5	-0.3	0.2	0.1	0.1	-4.1	2.6	1.9	-0.3
Italy	0.5	2.5	2.9	0.9	0.1	1.0	0.4	-0.1	0.6	0.3	0.2	0.2	-9.0	7.0	3.8	1.3
Spain	-0.2	1.4	3.1	2.3	-0.4	2.5	0.4	0.4	0.5	0.4	0.2	0.2	-11.3	5.5	5.5	2.0

Forecast.
Source: INSEE, Destatis, Istat, INE, INSEE forecast.

Trade balances in the main Eurozone economies: signs of a rebound after a difficult period

Since 2019, trade balances in the main Eurozone countries have deteriorated. This general decline is due mainly to the rise in imported commodity prices, gas and oil in particular, as a result of the upswing in demand following the health crisis and then the outbreak of war in Ukraine. Terms of trade, i.e. the ratio of the price of exports to that of imports, have worsened significantly. In addition to the decline in the energy balance, which affected all countries, France stands out because its trade surplus in transport equipment is significantly lower than before the health crisis. This is not the case in Germany, where the trade surplus in transport equipment remains high, despite production difficulties in the automobile industry. In Spain, with support from tourism, the balance of trade has recovered its pre-health crisis level, while in Italy, trade in manufactured goods remains in surplus, bolstered by textile products and capital goods. Since Q4 2022, the terms of trade have improved once again, suggesting a possible upturn in the trade balances of the main Eurozone countries.

Vianney Ducatel

In 2022, the terms of trade in goods were the main determinant of the deterioration in trade balances in the Eurozone

During 2022, the balance of trade (difference in value between exports and imports, ►**Box**) in the main Eurozone countries reached particularly low levels compared to previous years: -4.9 GDP points in France in Q3 2022 (►**Figure 1**), after a decline from the end of 2021; -0.6 points in Germany, also in Q3 2022, after more than 20 years of surplus; -0.7 points in Spain at the beginning of 2022, first trade deficit in 10 years; -3.0 points in Italy at mid-2022, with the balance of trade in deficit since the beginning of 2022. Since then, the balance of trade has improved markedly in Germany and Spain, which have returned to surplus, while it remains degraded in France and Italy.

Movements in the trade balance, as compared to 2015 which is used here as a reference, may be the result either of changes in volumes traded (exports, imports) or fluctuations in their prices. In the years preceding the health crisis and until mid-2021, the dynamics of the trade balance in the main Eurozone countries, were primarily the result of movements in volumes since 2015: changes in foreign trade prices contributed much less, mainly because export and import prices often moved together.

Since the end of 2021, however, changes in foreign trade prices, and in the price of goods in particular, have contributed much more, and negatively, to variations in the balance of trade. In Q3 2022 notably, the change in these prices had a significant effect on the balance of trade (between -2.2 and -4.5 points, depending on the country, ►**Figure 1**, compared, for example, to an effect of between -0.4 and +0.9 points in 2019). This widening of the balance of trade as a result of changes in the prices of quantities exchanged indicates a faster increase in import prices than in export prices, i.e. a deterioration in the terms of trade (ratio of the price of exports to the price of imports, ►**Box**).

In 2022, however, some discrepancies emerged between countries. In France, the change in volumes of traded goods also affected the trade balance, as it had done since early 2020. This was also significantly the case in Germany, since mid-2018. In Italy and Spain, changes in volumes of traded goods influenced the trade balance more moderately. In Spain, change in volumes of services bolstered the trade balance in 2022.

Terms of trade are no longer in decline, and have even improved since Q4 2022

The negative contribution of foreign trade prices to changes in trade balances reflects a more dynamic momentum in the price of imports than in the price of exports. In fact, the terms of trade (ratio of the price of exports to the price of imports) deteriorated continuously in Italy and Germany between mid-2020 and mid-2022. In Spain and France, the decline began about a year later (►**Figure 2**).

However, after reaching a low point in early or mid-2022, terms of trade have improved, or at least are no longer deteriorating. The decline in the prices of imported commodities since summer 2022 has in fact contributed to reducing the price of imports, while export prices have held up better. Thus, having seriously hampered trade balances in 2022, the terms of trade could continue to pick up in 2023 and, on the contrary, help improve them.

The structures of trade balances in the main Eurozone countries reflect strong sectoral features, but all are affected by the increased cost of energy inputs

The energy balance is structurally in deficit in the main Eurozone countries, having seriously deteriorated since the end of 2021, contributing to the widening of their trade deficits up to Q3 2022 (►**Figure 3**). However, in Q4 2022, the energy deficit was reduced in the four main

Eurozone economies. Although these changes are mainly due to the rise then the fall in the prices of imported energy inputs (mainly oil and gas), other factors may also have played a role depending on the country. In particular, due to the shutdown of many of its nuclear reactors, France became a net importer of electricity in 2022, although less so towards the end of the year.

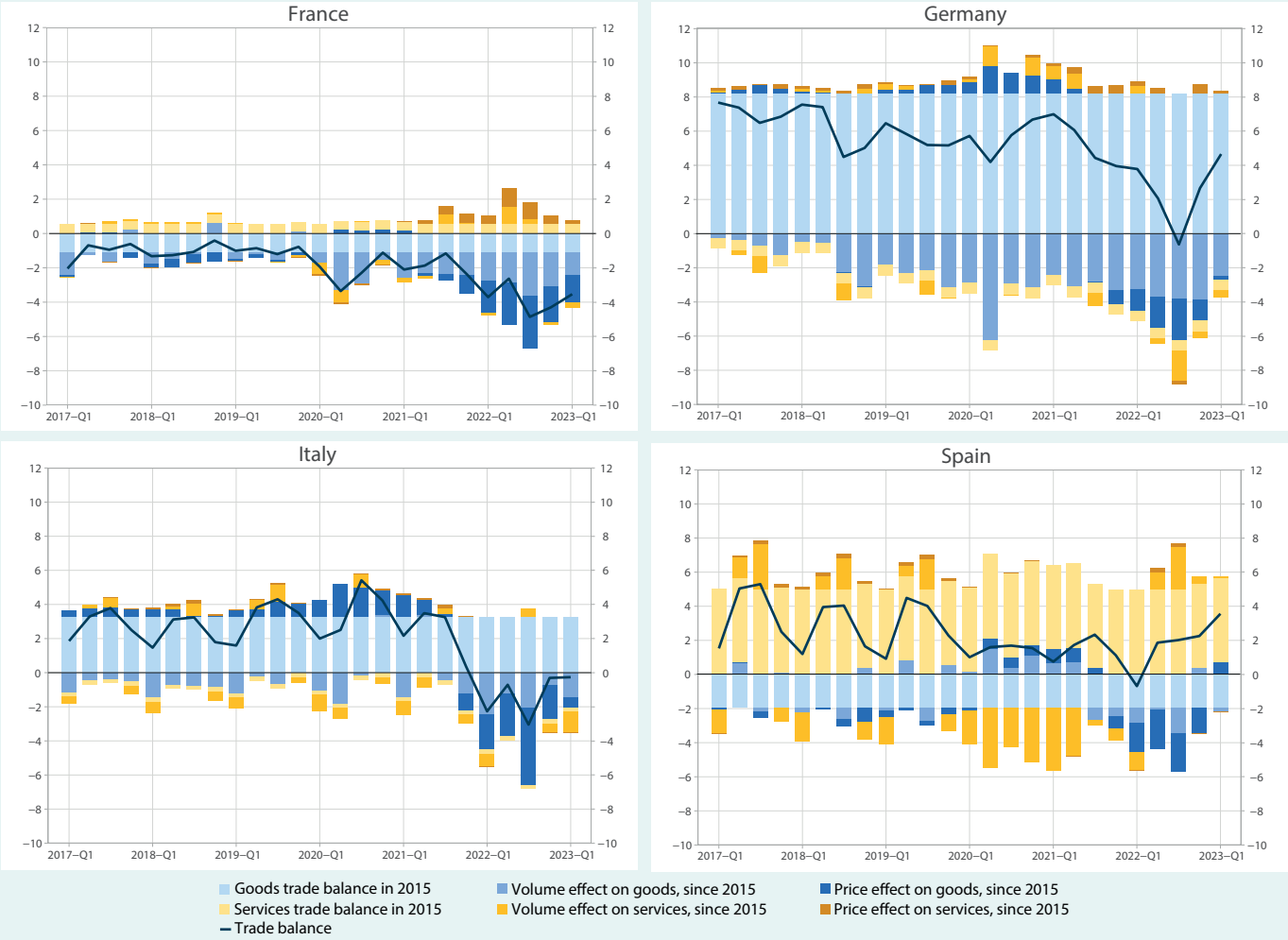
Apart from energy, traded goods and services have a different effect, depending on the country, on the trade balances recorded in recent quarters. In France, until 2019, the balance of trade benefitted from a surplus in transport equipment, driven by aeronautical deliveries. This declined considerably during the health crisis, due to the sizeable drop in demand for aeronautical sector goods, then was slow to recover, because of production difficulties in the sector. Meanwhile, the trade deficit in the automobile sector has widened in recent years, especially between 2015 and 2019.

Germany stands out with a very positive balance of trade in goods (excluding energy), both in the years preceding the health crisis and in the recent period. This surplus concerns both transport equipment, particularly automobiles, and other goods. The production difficulties encountered by the German automobile industry since 2021 have not translated into a significant reduction in the trade surplus. However, the trade surplus for other goods has been shrinking over the past 5 years. Spain also has a surplus in transport equipment, offset by a deficit in other goods. As for Italy, it has recorded a high surplus in the trade of capital goods and textiles.

In addition, Spain, and to a lesser extent Italy recorded a significant surplus in tourism, except during the health crisis, resulting in a pronounced seasonality in their trade balance. In France, the tourism surplus is lower than that in Italy or Spain, due to high spending by French tourists abroad, which offsets national tourism receipts. The trade balances of Spain and Italy, excluding energy and tourism, have remained relatively stable over the past 5 years. ●

►1. Trade balance of the main Eurozone economies

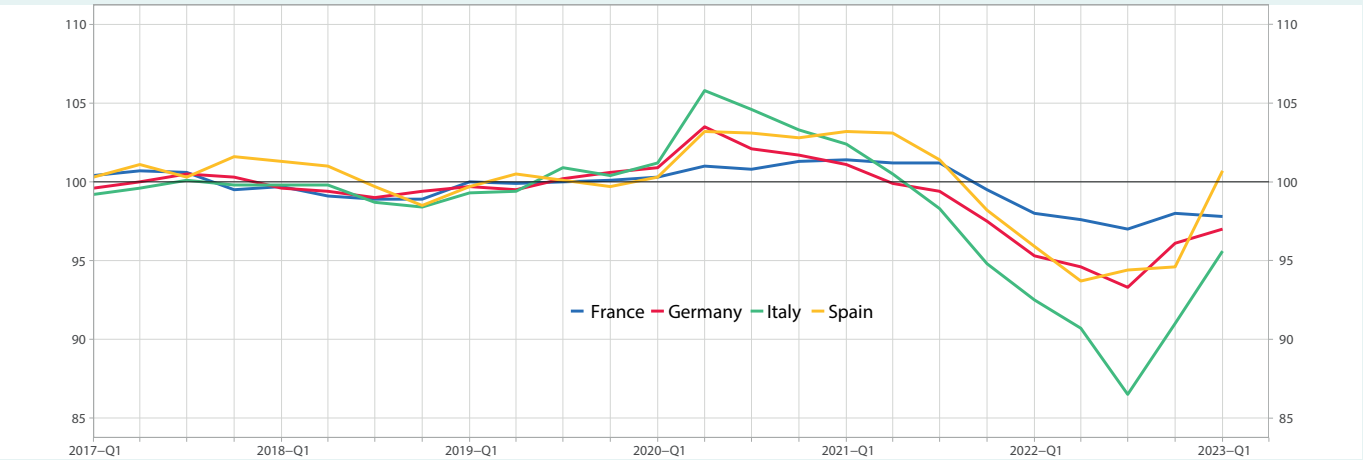
(in GDP points, in value)



How to read it: in Q4 2022, the French trade balance was in deficit, equivalent to -4.3 GDP points. Changes in the terms of trade in goods since 2015 contributed 2.1 points to this deficit..
Source: Eurostat.

►2. Terms of trade in the main Eurozone economies

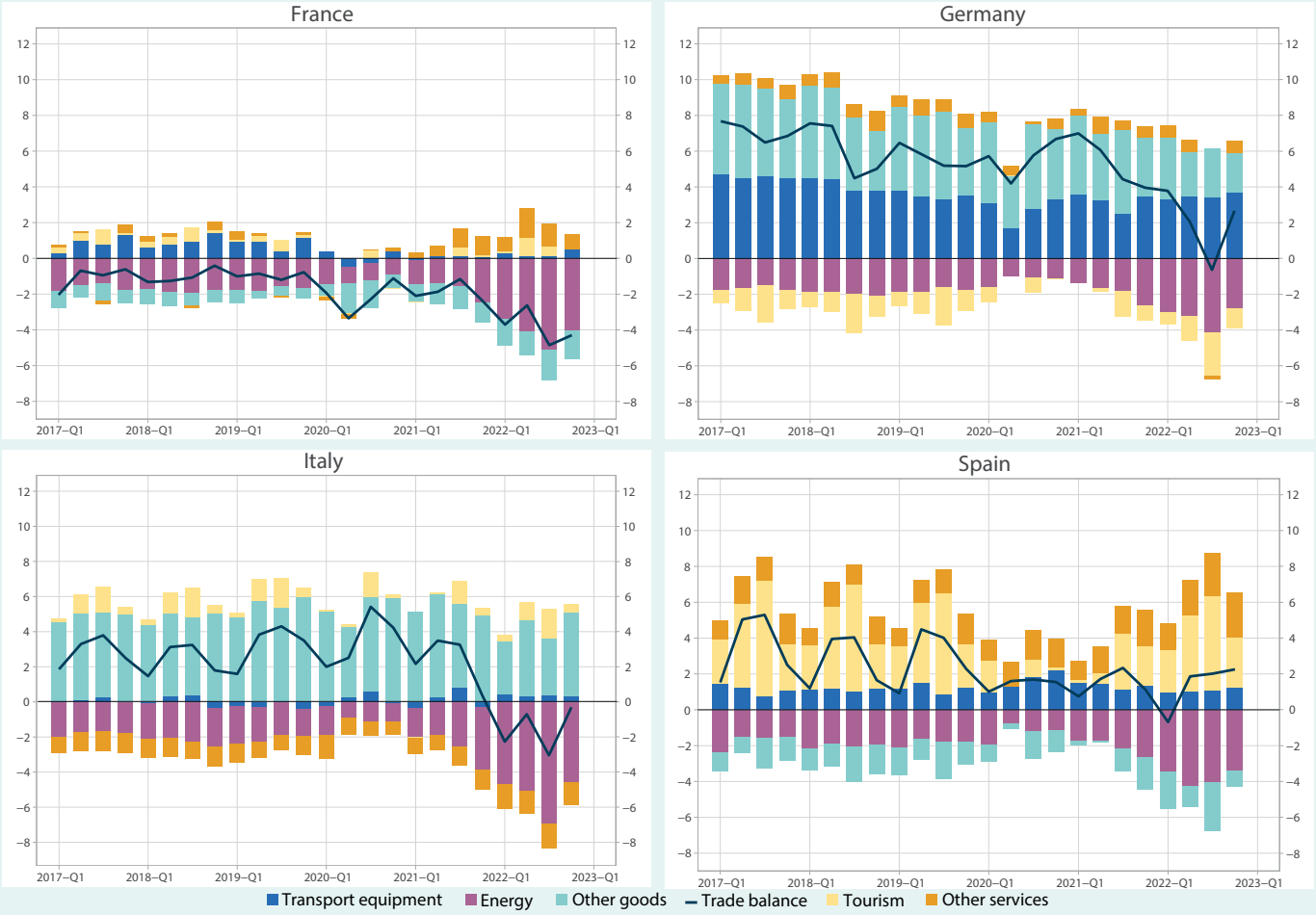
(base 100 in 2019)



How to read it: in Q4 2022, terms of trade in France, i.e. the ratio of the price of exports to the price of imports, were 2.0% lower than in 2019.
Source: Eurostat.

►3. Trade balance of the main Eurozone economies

(in GDP points, in value)



How to read it: in Q4 2022, the French trade balance was -4.3 GDP points. The contribution of energy was -4.0 points.
Source: Eurostat, customs and balance of payments data.

Definitions and method

The trade balance corresponds to the difference in value between exports of goods and services and imports of goods and services, expressed in GDP points. It is not seasonally adjusted and can thus be broken down by type of goods and services. The volume effect corresponds to the difference, compared to the 2015 average, in the balance of trade by volume at constant prices compared to 2015. The price effect is the difference between the balance in value and the balance in volume at constant prices compared to 2015.

The contribution of total goods (sum of contributions under “energy”, “transport equipment” and “other goods” headings) is calculated from data on exports of goods published in the national accounts. Contributions of different types of goods (“energy”, “transport equipment”, “other goods”) are calculated from monthly customs data, taken as a quarterly average and assuming that the contributions from customs data are distributed proportionally across the contribution of total goods from the national accounts data.

With regard to services, the process is similar: the contribution of total services (sum of contributions under “tourism” and “other services” headings) is calculated using data from the national accounts; contributions of different types of services (“tourism” and “other services”) are calculated from monthly balance of payments data.

The classification used for international trade in goods is the Standard International Trade Classification (SITC). The classification used for trade in services is the sixth edition of the Balance of Payments and International Investment Position Manual (BPM6). Terms of trade correspond to the ratio of the price of exports to the price of imports, with base 100 in 2019.

Comparison of change in margin rate in the main Eurozone countries

Corporate margins in the main Eurozone countries have fluctuated sharply upwards and downwards since 2020. In 2022, in particular, against a backdrop of rising energy input prices, the deterioration in domestic terms of trade (ratio of value-added prices to consumer prices) negatively affected the aggregate margin rate, not only in France but also in Germany, Italy and Spain. The end of aid payments to enterprises during the health crisis was another factor contributing to the decline in the margin rate in 2022, in France as in Germany. Conversely, the drop in the real cost of labour, due to wages increasing at a slower rate than prices, boosted the margin rate in all four countries. This was also the case for productivity gains in Italy and Spain.

Robin Navarro, Olivier Simon

In the main Eurozone countries, the margin rate for all branches of activity at the start of 2023 stood at close to or slightly above its pre-health-crisis level

In the main Eurozone countries, the margin rate of the economy as a whole[1] has fluctuated strongly over the last three years (►**Figure 1**). In fact, the restrictions on activity introduced during the health crisis in 2020 and 2021 led to significant losses in turnover for enterprises, although they were accompanied by specific aid measures. The margin rate deteriorated significantly in Spain, while rising sharply in France and Germany, significantly exceeding its pre-health-crisis level.[2] In 2022, against a backdrop of sharply rising inflation and pressure on energy supplies, the margin rate in France returned to a level approaching to that of 2018. It remained at a high level in Germany and improved significantly in Spain. In Italy, where fluctuations during the health crisis were less pronounced, the margin rate had returned to a level comparable to that recorded before the health crisis by the end of 2022.

Despite the deterioration in domestic terms of trade, the margin rate was bolstered in 2022 by wages remaining less dynamic than consumer prices and by productivity gains in certain countries

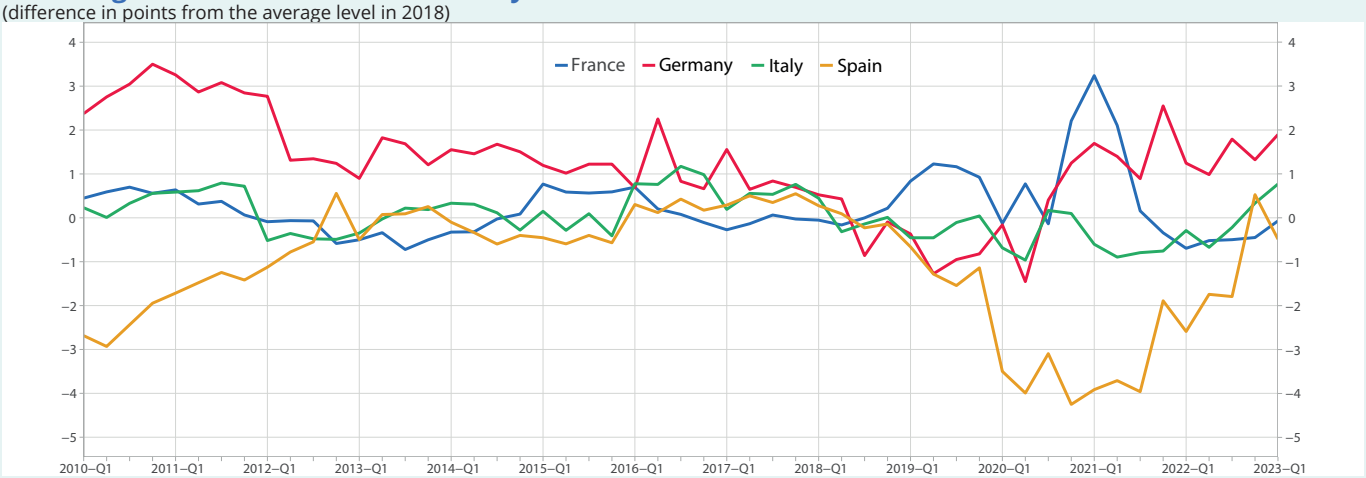
Changes in the margin rate from one quarter to another, or from one year to the next, can be analysed (►**methodology box**) by distinguishing between the contributions of the real cost of labour (purchasing power of remunerations per capita), labour productivity, the share of payroll employment in total employment, value-added prices in relation to household consumption prices (also known as domestic terms of trade), and other factors (notably taxes net of subsidies on production).

In the four main Eurozone countries, the domestic terms of trade (ratio of value-added prices to household consumption prices) affected the margin rate trend in 2021, and even more so in 2022 (►**Figure 2**). Indeed, since the end of 2020 or the beginning of 2021, domestic terms of trade have deteriorated almost

1 ►**Methodology box** for justification of the field in question.
2 As the margin rate of the French economy had been buoyed up in 2019 by the changeover from the competitiveness and employment tax credit (CICE) to reductions in employee contributions, 2018 was used as the point of comparison for France and its neighbours for the pre-health-crisis period.

►1. Margin rates for the total economy in the main Eurozone countries

(difference in points from the average level in 2018)



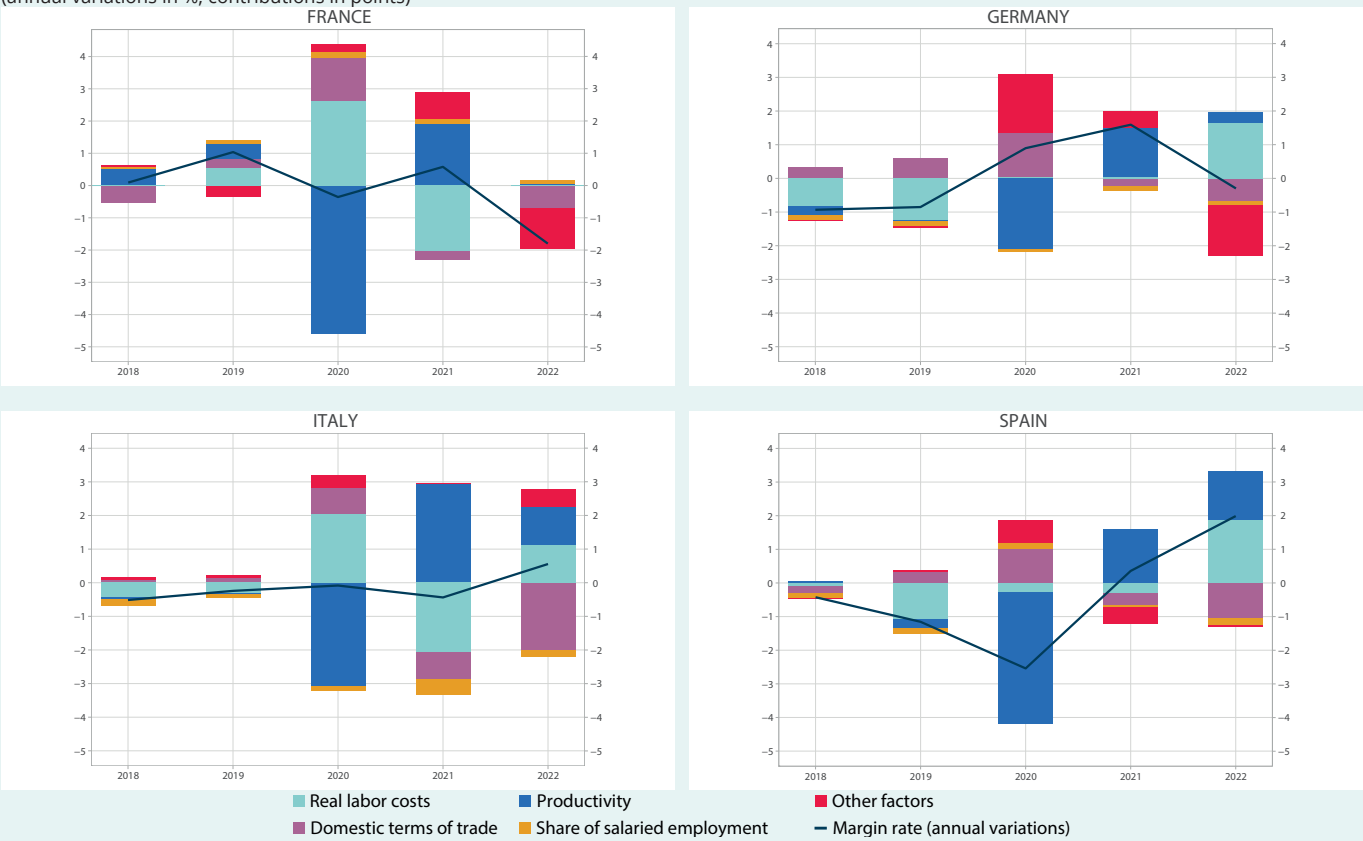
Last point: Q1 2023.
Note: the margin rate corresponds to the ratio of the gross operating surplus (including mixed income) to value added..
Scope: all branches of the economy.
Source: quaterly national accounts, Eurostat, INSEE calculation.

continuously, except at the end of 2022, when they recovered significantly in Spain and stabilised to a certain extent in France and Germany (►**Figure 3**). In a context of rising imported commodity prices since 2021, the deterioration in domestic terms of trade is a direct consequence of the imported inflation shock affecting the domestic economy, which raises the cost of imports relative to exports (deterioration in external terms of trade), and automatically increases the cost of household consumption relative to value added. This exerts downward pressure on the margin rate insofar as the buoyancy of consumer prices can basically be linked to that of wages. In 2021, the domestic terms of trade deteriorated in both the manufacturing industry and market services. In Germany and Italy, this deterioration was more pronounced in manufacturing than in services, in contrast to Spain. In 2022, the further deterioration in France stemmed mainly from market services, with a marked improvement in domestic terms of trade for the manufacturing industry as a whole. By the end of 2022, the improvement in Spain's domestic terms of trade was driven by both manufacturing and market services.

With the exception of France, changes in the real cost of labour significantly boosted the margin rate in 2022, compared with 2021. In Italy and Germany, the real cost of labour has indeed been falling since mid-2021, whereas it stabilised in Spain in 2022, but at a much lower level than in 2021 (►**Figure 4**). In France, while the real cost of labour fell over the course of 2022, it remained, on average, at its 2021 level; however, this virtual stability was due to the fact that in accounting terms, wages in 2021 were reduced by short-time working allowances. When adjusted to account for this effect, the real cost of labour therefore buoyed up the margin rate more strongly than Figure 2 suggests. This was also the case in Italy and Spain, where short-time working was accounted for in a similar manner to in France.

Productivity gains made a slight contribution to margin growth in France and Germany in 2022. In Spain and Italy, however, they clearly boosted it, with activity being more dynamic than employment in 2022 (►**Figure 5**). In France, labour productivity at the end of 2022 remained significantly below its pre-health-crisis level. This was also the case in Spain and, to a lesser extent, in Germany. In France and Germany, this loss of productivity can be partly attributed to industry, including possible workforce retention in the automotive industry and, specifically in France, occasional production difficulties in the national nuclear power plants (►**Focus** in the *Economic Outlook* of 14 December 2022). The easing of these constraints, and the resulting productivity gains, could therefore buoy up the margin rates in the French and German economies.

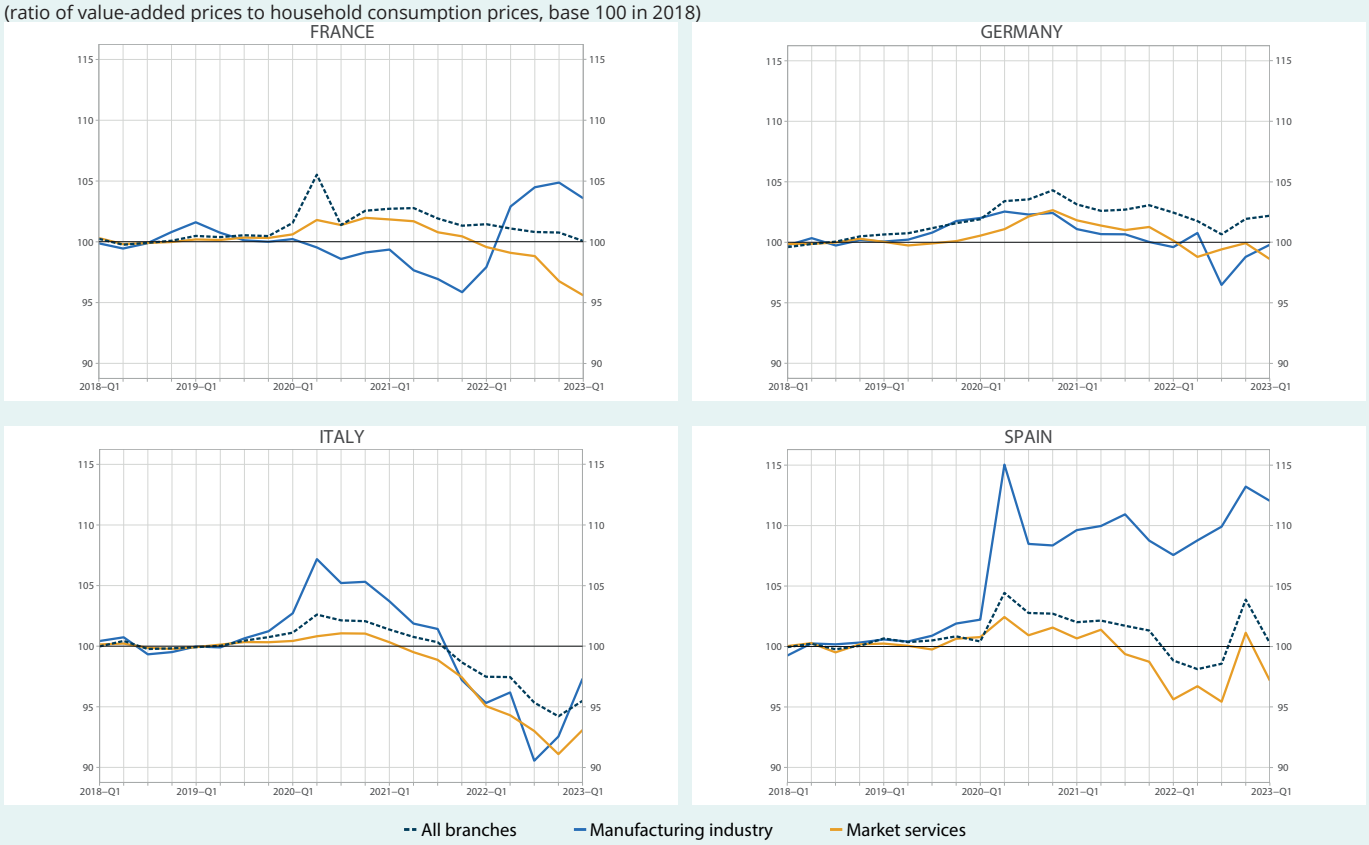
►2. Breakdown of annual changes in the margin rate for all branches of activity
(annual variations in %; contributions in points)



Last point: 2022.
Source: quaterly national accounts, Eurostat, INSEE calculation.

►3. Domestic terms of trade

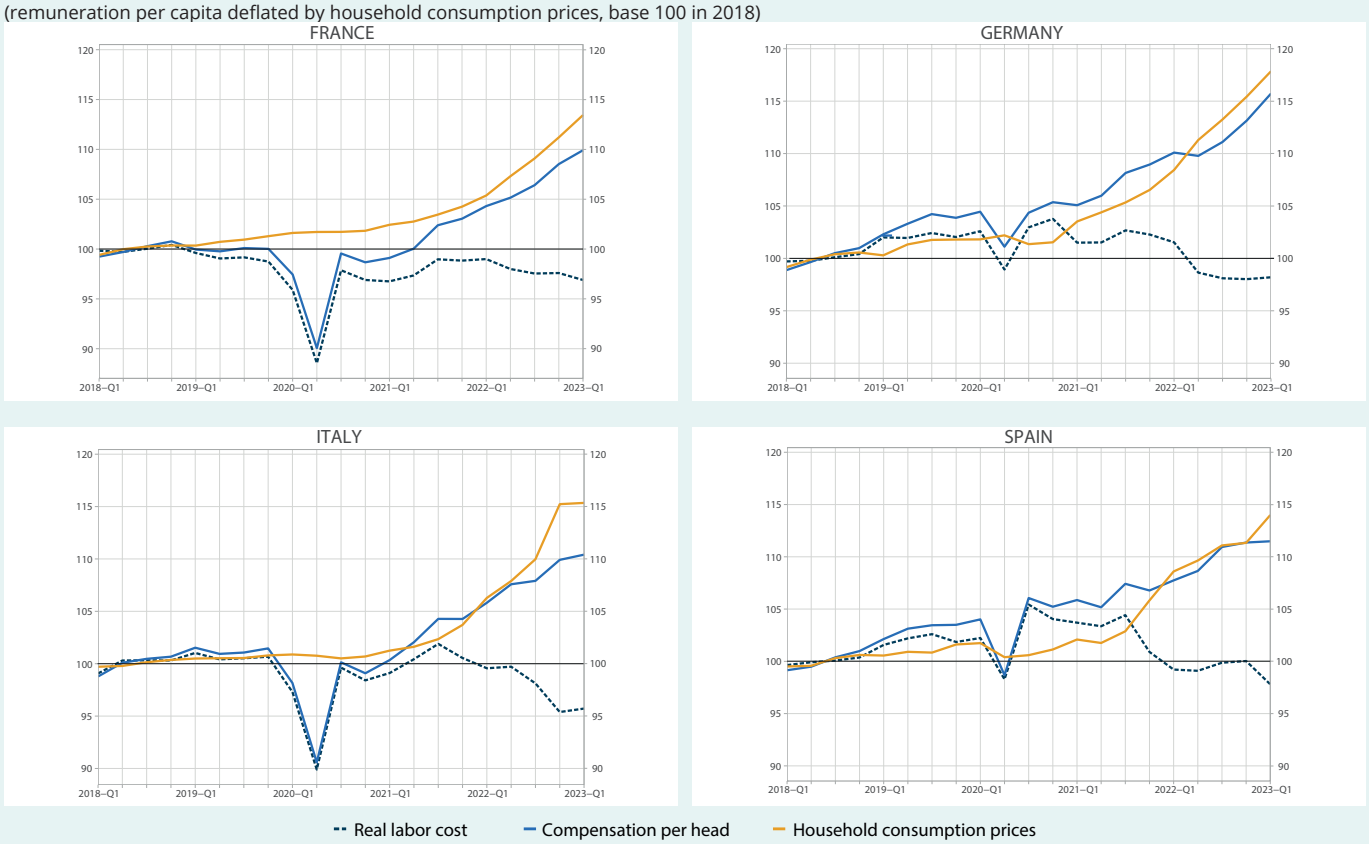
(ratio of value-added prices to household consumption prices, base 100 in 2018)



Last point: Q1 2023.
Source: Eurostat, INSEE calculation.

►4. Real cost of labour

(remuneration per capita deflated by household consumption prices, base 100 in 2018)



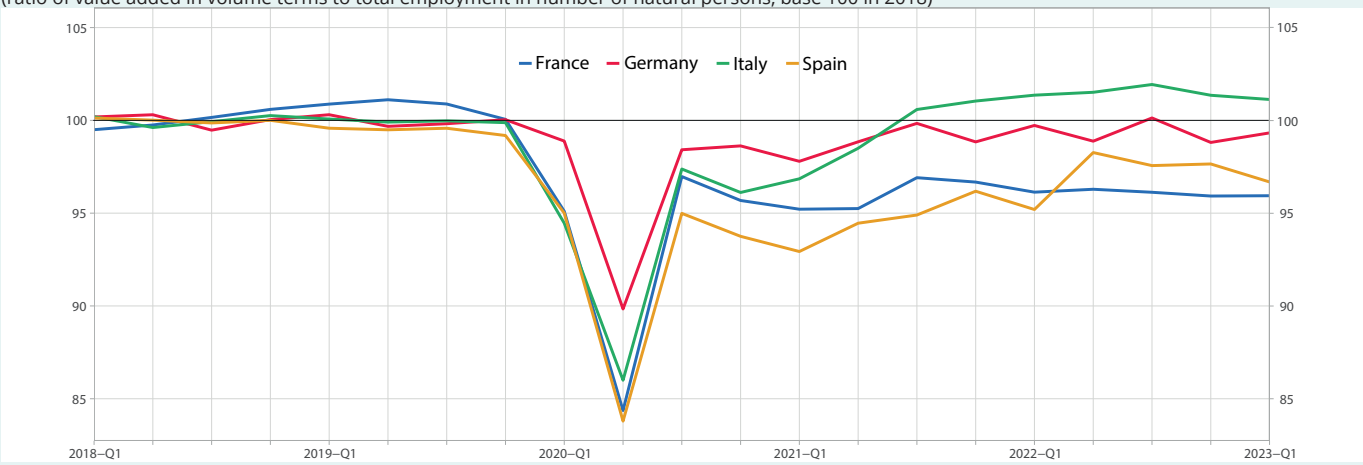
Last point: Q1 2023.
Source: quaterly national accounts, Eurostat, INSEE calculation.

Other factors also negatively affected the French and German margin rates in 2022. In France, this negative contribution reflected the reduction in aid payments to companies in relation to the health crisis (Solidarity Fund), despite the reduction in taxes on production in 2022. In Germany, the phasing out of exceptional aid to enterprises also contributed to reducing the margin rate in 2022. In Italy, however, other factors bolstered the margin rate in 2022, compared with 2021, reflecting the introduction of support measures for enterprises against a backdrop of rising energy input costs (lower energy bills for enterprises), in particular.

At the end of 2022, the fact that the German margin rate remained higher than in 2018 stemmed from the reduction in the real cost of labour in 2022, a much higher level of aid payments to enterprises than in 2018 and, to a lesser extent, the domestic terms of trade which, despite deteriorating since 2021, continued to buoy up the margin rate compared with the pre-crisis period (►**Figure 6**). These supporting factors compensated for the loss of productivity, which in turn affected the margin rate. In France, the loss of productivity affected the margin rate even more adversely at the end of 2022, compared with the pre-crisis period. The margin rate in France nevertheless remained at a similar level to 2018, bolstered by the reduction in the real cost of labour.

In Italy, where by the end of 2022, the margin rate had also returned to a level approaching its pre-health-crisis level, the deterioration in domestic terms of trade compared with the pre-crisis period was offset by the drop in the real cost of labour and, to a lesser extent, by specific factors (notably, more subsidies paid to enterprises). In Spain, where by the end of 2022, the margin rate was close to, or even slightly higher than its 2018 level, the domestic terms of trade bolstered it strongly compared with the pre-crisis period, thereby offsetting productivity losses. ●

►5. Labour productivity for the economy as a whole
(ratio of value added in volume terms to total employment in number of natural persons, base 100 in 2018)



Last point: Q1 2023.
Source: quaterly national accounts, Eurostat, INSEE calculation.

▶6. Breakdown of the deviation of the margin rate from the 2018 average for all branches of activity
(in percentage points)

Last point: Q1 2023.
Source: quaterly national accounts, Eurostat, INSEE calculation.

Bibliography

Y. Jauneau, R. Navarro, M. Niay and M. Zaiem (2022), "Recent changes in labour productivity in the four main Eurozone economies: breakdown per branch of activity", Focus of *Economic outlook* of 14 December 2022, INSEE. ●

Methodology

The margin rate for an institutional sector (non-financial corporations, financial corporations, etc.) or a branch of activity corresponds to the ratio of its gross operating surplus (including mixed income[1]) to its value added (in current euros).

While the margin rate is usually analysed for the institutional sector of non-financial corporations (NFCs), the scope considered in this Focus concerns the total economy, including all institutional sectors. Indeed, the breakdown of the margin rate presented below requires information about employment and value added in volume terms for the scope in question. In the case of NFCs, these variables are not published by the national accounts, so they can only be approximated by restricting the analysis to market branches excluding agriculture, financial services and real estate, for example. While this approximation works in the case of the French economy, it seems less relevant for other countries, leading to a substantial accounting residual. This problem is avoided by choosing to cover all branches of activity. In addition, the margin rate trends for all branches of activity are similar to the trend for NFCs, suggesting that the conclusions drawn for the former scope are probably valid for the latter.

1 Mixed income corresponds to the balance of the trading account for sole proprietorships. It contains two inseparable elements: remuneration for the work carried out by the proprietors and any members of their families, and their profit as entrepreneurs.

The breakdown of the margin rate presented in this report is based on the following accounting equation:

$$\tau = \frac{EBE}{VA} = 1 - \frac{W\,L_S}{P_Y\,Y}\left(1 + \frac{InS}{W\,L_S}\right) = 1 - \left(\frac{Y}{L}\right)^{-1}\left(\frac{L_S}{L}\right)\left(\frac{W}{P_C}\right)\left(\frac{P_Y}{P_C}\right)^{-1}\left(1 + \frac{InS}{WL}\right)$$

where:

$\frac{Y}{L} \equiv Prod$ is the ratio of value added in volume terms to total employment expressed in the number of natural persons (apparent labour productivity);

$\frac{L_S}{L} \equiv PartS$ is the ratio of total employment expressed in the number of natural persons to payroll employment (share of payroll employment);

$\frac{W}{P_C} \equiv CWR$ is the average remuneration per employee deflated by household consumption prices (real cost of labour);

$\frac{P_Y}{P_C} \equiv ToT$ is the relative price of value added and household consumption prices (domestic terms of trade);

$1 + \frac{InS}{WL} \equiv Aut$ represents other factors, including taxes net of production subsidies (*InS*).

Therefore, assuming that the relative variations in *Prod, CWR, ToT, PartS* and *Aut* are limited in magnitude, the variation in the margin rate between *t* and a reference period t_0 is calculated in first order:

$$\Delta\tau = \tau_t - \tau_{t_0} \approx (1 - \tau_{t_0})\left(\frac{\Delta Prod}{Prod_{t_0}} - \frac{\Delta PartS}{PartS_{t_0}} - \frac{\Delta CWR}{CWR_{t_0}} + \frac{\Delta ToT}{ToT_{t_0}} - \frac{\Delta Aut}{Aut_{t_0}}\right)$$

The variation in the margin rate is therefore broken down in the accounts according to the contributions of five terms:

• productivity gains, which have a positive impact on the margin rate: all other factors being equal, if a company produces more with the same number of jobs, it will create more value added for the same level of remuneration, generating a higher margin rate;

• the increase in the proportion of salaried employees, which negatively impacts the margin rate: all other things being equal, maintaining the same level of production with more salaried employees will increase the share of remunerations in value added, driving down the margin rate;

• the increase in the real cost of labour, which negatively affects the margin rate: assuming an increase in the real cost of labour in a context where other factors remain equal, including the fact that value-added prices change in line with consumer prices, the rise in the real cost of labour means that remunerations per capita will rise faster than consumer prices, and therefore value-added prices, implying a contraction in the margin rate;

• a deterioration in the domestic terms of trade, which negatively affects the margin rate: assuming that value-added prices are less dynamic than consumer prices, in a context where all other factors remain equal, remunerations per capita will increase as quickly as consumer prices. Value added is therefore less dynamic than wages, which reduces the margin rate;

• changes in other factors affecting the margin rate: all other factors remaining equal, an increase in taxes on production, or a drop in subsidies paid to companies, will reduce the gross operating surplus in accounting terms, and hence the margin rate.

The data used are derived from the quarterly national accounts of the various countries in question, compiled by Eurostat.

United Kingdom

The UK economy improved a little in Q1 2023 (+0.1%, the same as in Q4 2022, ►**Figure 1**), despite a situation affected by high inflation, continuing social protests, especially in the public sector, and further monetary tightening. This backdrop is expected to remain the same, at least in part, until the end of the year, curbing private domestic demand: activity is likely to continue to make slow progress, but is not expected to decline.

In Q1 2023, domestic demand fell back sharply, despite the slight increase in activity at the start of the year. Household consumption was at a standstill, while government consumption declined significantly, penalised by strikes. Meanwhile household investment fell back further (-1.4% after -3.1% at the end of 2022), in a context of difficulties in accessing credit, as a result of monetary tightening. Conversely, corporate investment increased (+0.7%, before the end of the *Super deduction* scheme in April), as did government investment (+9.7%, mainly in new and existing buildings). Foreign trade has been affected by major downward trends, both in exports (-8.1%, as a backlash to withdrawals of non-monetary gold in previous quarters) and in imports (-7.2%, notably in transport equipment after a substantial increase in Q4 2022). On the supply side, only construction improved significantly in Q1 (►**Figure 2**), while production in industry and in services is below its early 2022 level, affected by the disruption to supply chains, the increased cost of inputs and more recently by serious strikes from summer 2022 onwards.

At the start of Q2 2023, inflation remained high, but with the first signs of a decline (+8.7% year-on-year in April after +10.1% in March and +10.4% in February), mainly linked to base effects (consumer prices continue to rise, but less vigorously than a year ago). Food inflation remains very high, however (+19.1% year-on-year in April), maintained by shortages of certain foodstuffs.

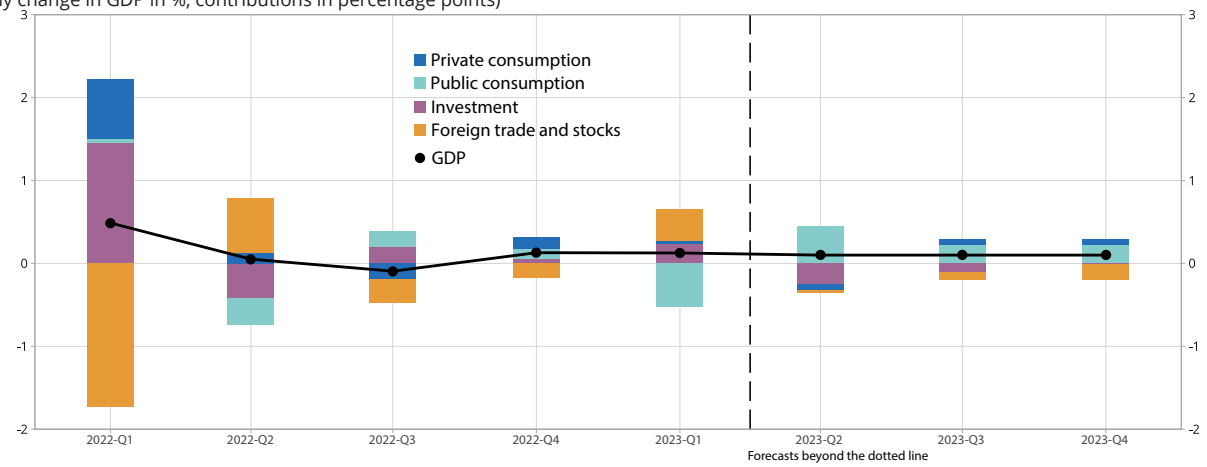
The effect of these price rises on income is expected to be partly offset by the ongoing increase in wages (reaching +5.8% year-on-year in March including bonuses) and by government measures to support purchasing power (including extending the cap on energy bills). In this context, household purchasing power is expected to fall back moderately before improving at the end of the year. Household consumption therefore looks set to deteriorate in Q2 then rebound slightly in H2.

The tightening of monetary policy is restricting households' access to credit, and hence household investment is likely to continue to decline throughout the forecasting period. Corporate investment too is expected to slip back due to the increase in the cost of capital and the end of the *Super deduction* scheme (despite the fact that this has been replaced since April by a new tax incentive for investment, called *Full Expensing*). Government investment meanwhile is expected to be buoyant, driven by growth in spending planned in the spring budget in the areas of health, defence and education.

Between now and the end of the year, UK activity is expected to improve slightly (+0.1% each quarter), driving annual growth to +0.3% in 2023. Domestic demand is likely to increase very modestly, with the momentum of consumption and government investment offsetting the decline in private demand, but supply is still expected to be curbed by persistent production constraints. On the foreign trade side, imports are expected to remain sluggish, like domestic demand, while exports look set to rebound slightly, driven by the modest upswing in demand for British products. ●

►1. Domestic demand is expected to continue to hamper activity until the end of 2023

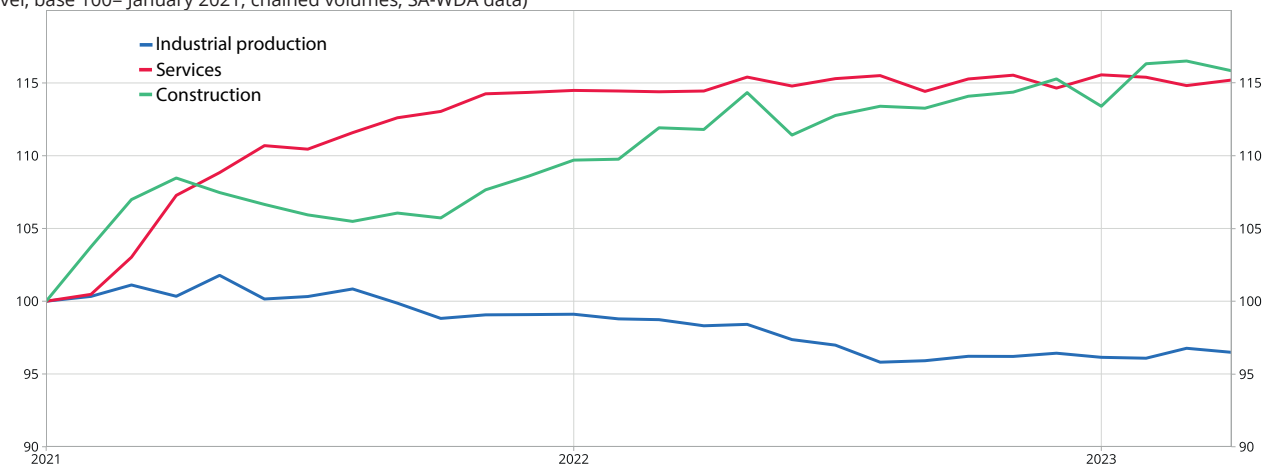
(quarterly change in GDP in %, contributions in percentage points)



How to read it: in Q1 2023, GDP increased by 0.1% and total investment contributed +0.2 points to this evolution.
Source: ONS, INSEE calculations.

►2. Industrial output was affected by strikes at the end of 2022, and remained sluggish this spring

(in level, base 100= January 2021; chained volumes, SA-WDA data)



Last point: April 2023.
How to read it: in April 2023, industrial output was 3.5% below its January 2021 level.
Source: ONS, INSEE calculations.

United States

The American economy has been losing momentum for several months due to waning domestic demand, in spite of a rebound in household consumption at the beginning of 2023. Thus, GDP growth slowed to +0.3% in Q1 2023 (after +0.6% in Q4 2022), hampered in particular by the very negative contribution of changes in inventories (-0.5 points, ►**Figure 1**) resulting from another fall in manufacturing output (-0.2% in Q1, after -0.8%) and in spite of a rebound in household consumption.

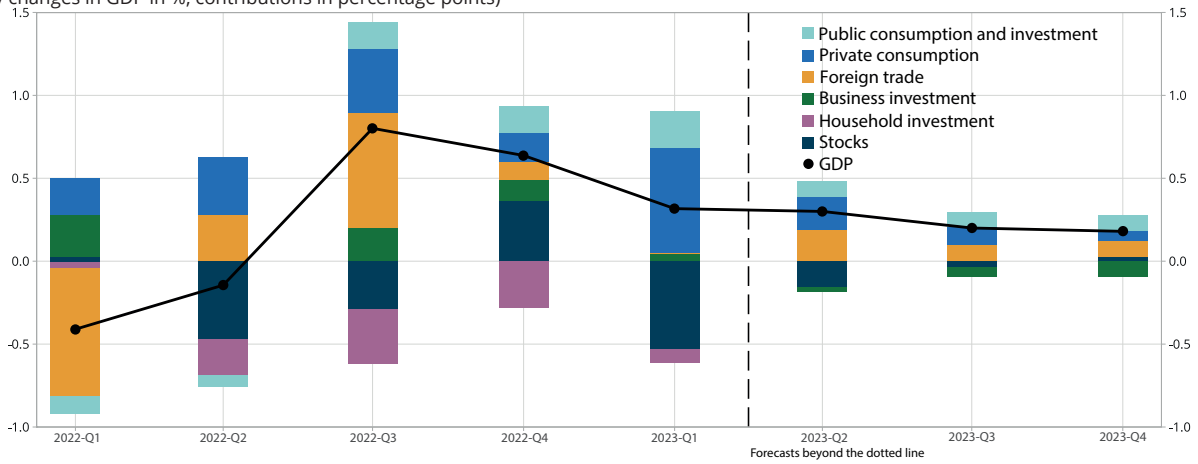
This rebound in household consumption (+0.9% in Q1) is exclusively due to a bounce in January (+1.3% against December, with the support of automobile purchases in particular) which was followed by a slight decline in February and March. This spurt in the middle of an overall slowdown could be explained, in particular, by the substantial increase in nominal household income in January (►**Figure 2**), linked to the reduction in income tax in many States and with the wage increases seen in a labour market that was particularly buoyant at the beginning of the year.

In fact, wages have continued to rise in response to the increase in prices, which remains sustained, the fall in the year-on-year change in the price index mainly reflecting some "base effects". The dynamics of inflation (as defined by the CPI) have fundamentally changed compared to 2022 (►**Figure 3**): energy prices are now falling year-on-year (-5.1% in April) whilst food inflation also fell sharply (+7.7% year-on-year in April, as against +10.1% in January). The rise in inflation is now mainly being driven by rents, including imputed rents, a very rigid component in the price index which is expected to prevent headline inflation returning rapidly to the 2% level targeted by the Federal Reserve. In spite of the continued rise in prices, household purchasing power picked up in Q1 (+1.9%, after +0.6%), driven by tax reductions in January (►**Figure 2**).

In addition, investment is still being affected by higher interest rates and continued to fall back in Q1. On the one hand, home investment fell for the eighth consecutive quarter, although more moderately than at the end of 2022 as 30-year borrowing rates stabilised. It is now at a very low rate (-19% year-on-year in Q1) whereas real estate prices remain at a high level compared to the trend before the health crisis (►**Focus** international real estate comparison). On the other hand, corporate investment, which was still buoyant in 2022, has been treading water (+0.3% after +1.0%), due to a fall in equipment investment (-1.8%) offsetting the rise in investment in infrastructure (+2.7%).

In this context, domestic demand is likely to slow significantly over the rest of the year, gradually returning to normal in relation to output. Private investment is expected to continue slipping back. Public consumption and foreign trade, however, are expected to bolster activity. In particular, exports should grow moderately, in a lacklustre international environment, whilst following a rebound in Q1 in the wake of increased consumption, imports are expected to fall in Q2. That being the case, GDP is expected gradually slow until the end of year, although without actually falling by then. ●

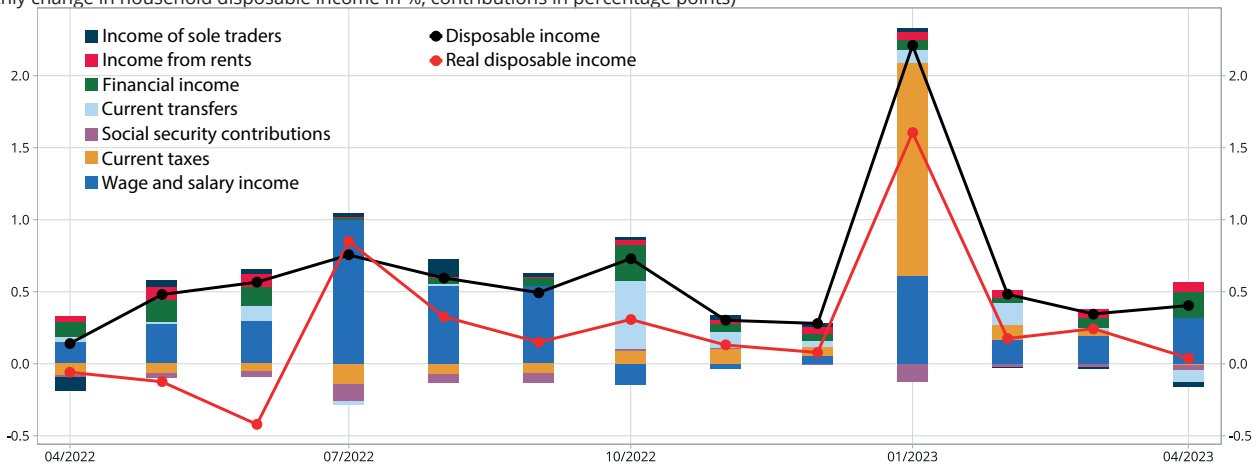
►1. The US economy is expected to slow, but not fall back in 2023
(quarterly changes in GDP in %, contributions in percentage points)



How to read it: in Q1 2023, GDP increased by 0.3% and private consumption contributed +0.6 points to this change.
Source: Bureau of Economic Analysis.

►2. Household income increased sharply in January 2023, driven by tax reductions and higher wage incomes

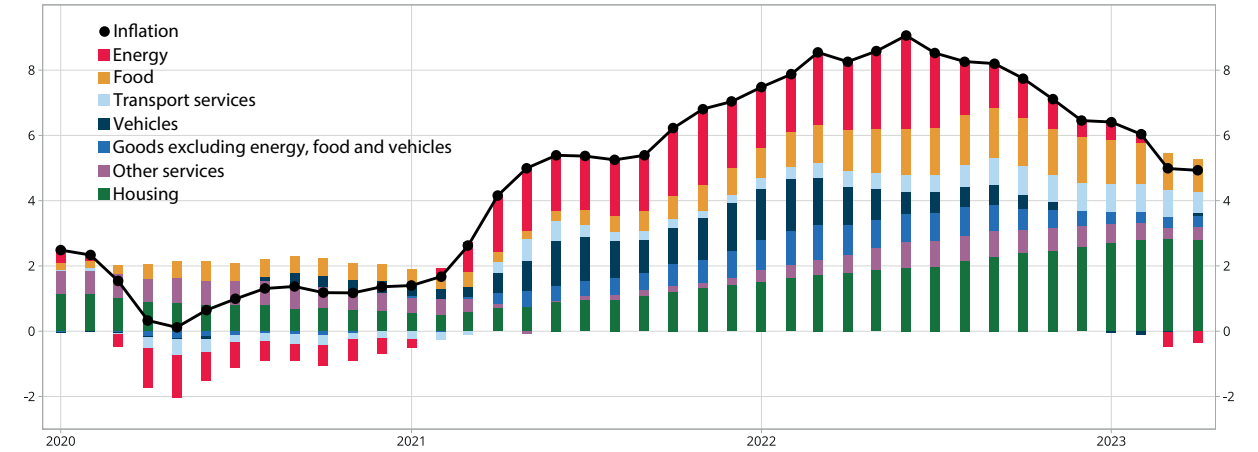
(monthly change in household disposable income in %, contributions in percentage points)



How to read it: in January 2023, the increase in wage incomes contributed 0.6 percentage points to the 2.1% rise in households' disposable income. Corrected for inflation, real household disposable income rose by 1.5%.
Source: Bureau of Economic Analysis.

►3. In the United States, inflation is now mainly being driven by rents

(year-on-year change in the consumer price index in %, contributions in percentage points)



Note: the "Housing" component in the US consumer price index (CPI) includes the prices of rent, and in particular imputed rents (which is not the case in the French CPI where only "real" rents are counted). The Harmonised Indices of Consumer Prices (HICP) presented in the International Summary of this *Economic Outlook* only concern the scope of real rents so as to allow comparisons between countries.
How to read it: in April 2023,the consumer prices index increased 4.9% year-on-year, and the increase in house prices contributed 2.8 points to that change.
Source: Bureau of Labor Statistics.

China

After the lifting of the health restrictions at the end of 2022, the Chinese economy regained momentum and has the potential to catch up in 2023, although this would seem to be tempered by some concerns about demand and some signs of a slowdown in output. In Q1 2023, GDP accelerated sharply (+2.2%, after +0.6% in Q4 2022), practically returning to the new trend that had started to emerge in 2021 (►**Figure 1 left**). Nevertheless, economic activity remains well below (-4.4%) the level it would have reached had it continued to grow at the same pace as in the years before the pandemic.

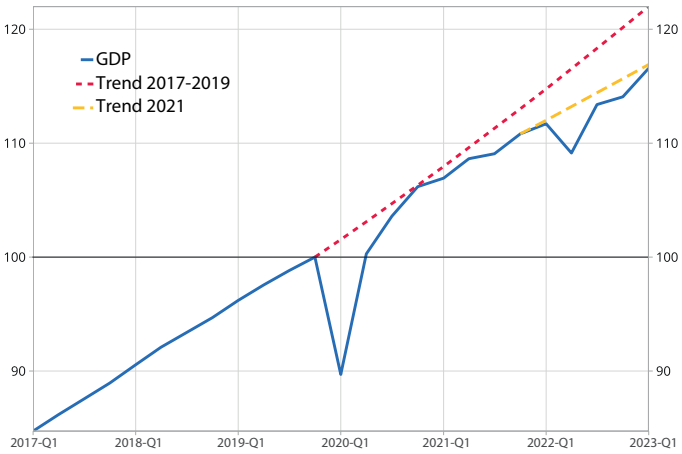
This resumption of economic activity has been driven by the buoyancy of services (►**Figure 1 right**) and by the rebound in consumption following the end of the health restrictions, as can be seen from the growth in retail sales as of December (+7.1% month on month, ►**Figure 2**). However, the situation of households is mixed due to persistent fears relating to developments with the epidemic, the continuing real estate crisis and a particularly high youth unemployment rate (19.6% in March). Thus, in spite of a rise in the last few months, the household confidence indicator remains very poor (►**Figure 2**) whilst retail sales are no longer growing, remaining at a level close to that of the end of 2021. Likewise, although real estate transactions and housing starts, indicators of the state of the real estate sector, have bounced back considerably due to the lifting of restrictions, they continue to be affected by the persistent crisis in the sector and are still at a level even lower than at the beginning of 2022.

The weakness of domestic demand and households' reluctance to spend could lead to deflationary pressures in an international environment seeing a strong inflationary trend: the consumer price index slowed again in April (+0.1% year on year, after +0.7% in March and +2.1% in January, ►**Figure 3**), well below the official target ("around 3%"), while production prices fell year-on-year for the seventh consecutive month (-3.6% in April). Until now, imported inflation was limited due to a basket of goods that can differ from those of western countries, strong competition between companies mitigating the passing on of price rises to consumers and the re-orientation of a part of China's energy imports to benefit from low prices offered by a Russia subject to Western sanctions. The inflation differential with China's commercial partners has led to a fall in the real effective exchange rate of 9% year on year, favourable to foreign trade. At the end of 2022, imports of goods were 7.5% below their level at the end of 2021 whilst the figures for exports of goods were even more degraded at the end of 2022 (-12.3% year on year). Exports are thought to have bounced back substantially at the beginning of 2023, but are expected to lose momentum over the year due to sluggish international demand.

In Q2 and over the rest of 2023, the slowdown in output, especially manufacturing output (►**Figure 1 right**), and low consumer confidence are expected to temper the positive effects of the continuing normalisation of consumption and travel conditions. GDP is expected to slow from Q2 onwards (+0.6% per quarter); in total, it should grow 5.0% in 2023, driven in part by catch-up effects following the low growth of 2022. ●

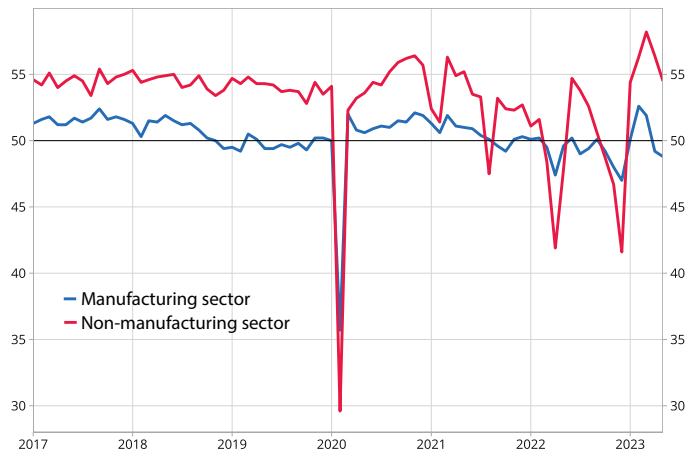
►1. After the turmoil of 2022, GDP growth is regaining momentum, driven by the non-manufacturing sector

(GDP base 100 in Q4 2019)



Last point: Q1 2023.
Note: the trend curve for 2017-2019 has been constructed by extending the GDP series at a constant quarterly rate from Q1 2020, equal to average quarterly GDP growth over the period 2017-2019.
Source: NBSC, INSEE calculations.

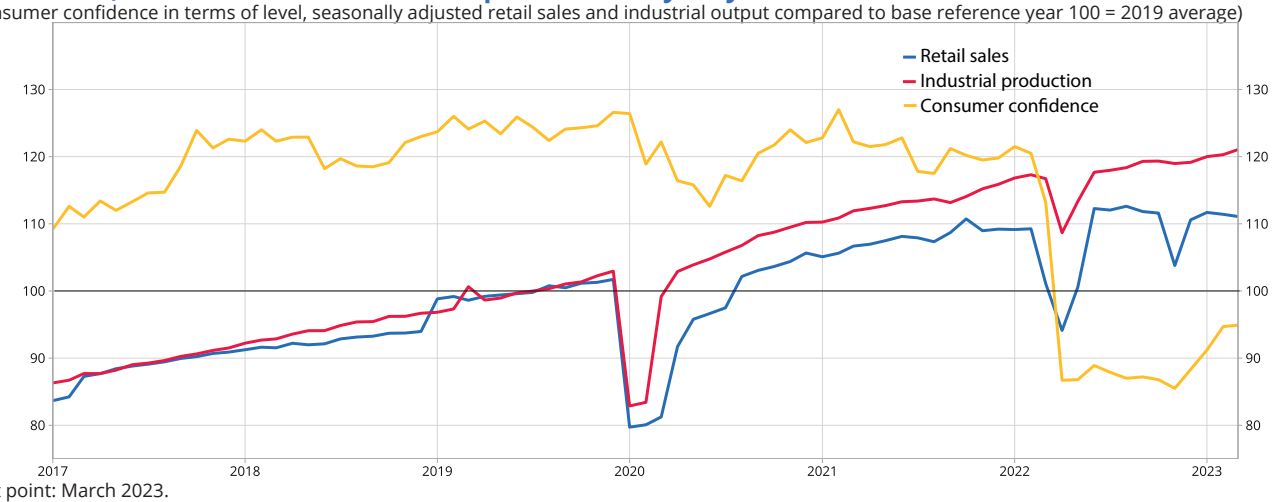
(PMI index, in level)



Last point: May 2023.
Note: a PMI of 50 refl ects an unchanged economic situation compared to the previous period. An index higher than 50 indicates an economic expansion compared to the last month, and an index below 50 indicates a contraction.
How to read it: in May 2023, the PMI index for the non-manufacturing sector was 54.5, above the expansion threshold of 50.
Source: NBSC.

►2. Retail sales bounced back after the lifting of health restrictions, but in a context of low confidence, have not returned to their pre-crisis buoyancy

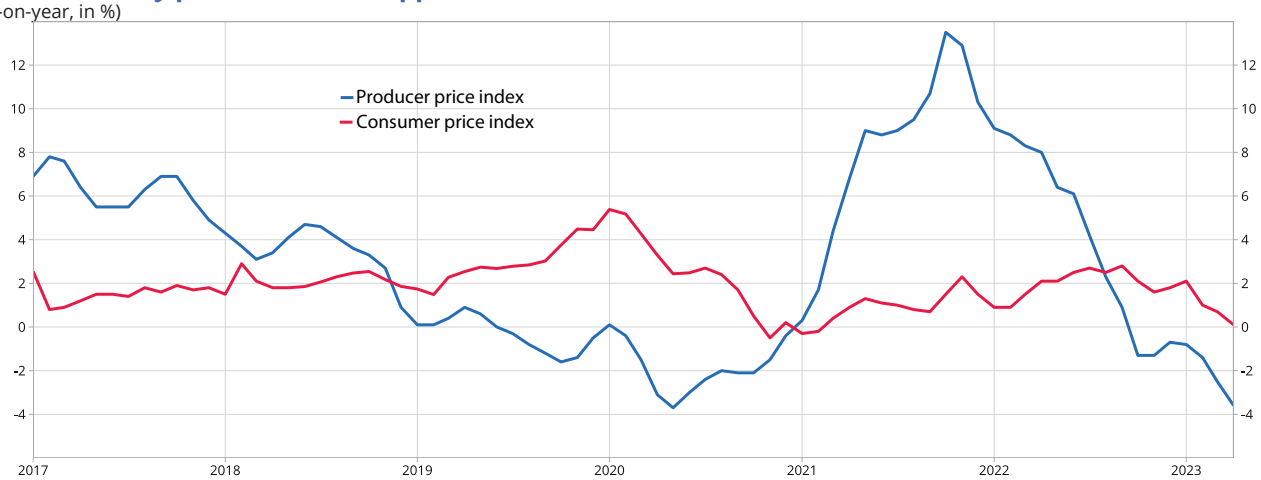
(consumer confidence in terms of level, seasonally adjusted retail sales and industrial output compared to base reference year 100 = 2019 average)



Last point: March 2023.
How to read it: in March 2023, industrial output was 21% above its 2019 average level.
Source: NBSC, INSEE calculations.

►3. Deflationary pressures could appear in China

(year-on-year, in %)



Last point: April 2023.
How to read it: in April 2023 the consumer price index went up by 0.1% year on year..
Source: NBSC, INSEE calculations.