QUARTERLY REPORT ON THE SPANISH ECONOMY

Editorial

Global economic activity has lost momentum over the summer. This is the result of various interacting adverse factors. Worldwide, inflation has risen to rates not seen in several decades, eliciting a firm response from central banks which, in turn, is leading to a tightening of financial conditions. In addition, in most countries, the acceleration in consumer prices is largely driven by the increase in the cost of many commodity imports, which is squeezing the purchasing power of households and non-financial corporations. In turn, numerous commodity price rises have been exacerbated by the war in Ukraine, which has also generated uncertainty regarding the security of Europe's energy supply and the possibility of a significant escalation in global geopolitical tensions.

Global financial conditions have tightened since mid-August. In early summer, the perception that central banks could choose to tighten monetary policy gradually, in view of the slowdown in activity, led to an increase in risk appetite, with rising stock prices and easing interest rates. However, these trends were subsequently reversed when the monetary authorities reaffirmed their commitment to combating inflation. A key development observed in global financial markets is the broad-based appreciation of the US dollar, which could have significant implications for other countries. It could, for instance, further increase high commodity prices (given that commodities are generally traded in US dollars), or add to the financial burden of agents who have borrowed in that currency (as is often the case in many emerging market economies).

Europe is particularly exposed to some of these recent adverse developments. Its vulnerability to the war in Ukraine stems from its geographical proximity to the conflict and, in particular, its reliance on commodity imports from Russia, especially gas, which is used as a primary source of energy by households and firms and also in electricity production. The war has triggered increasing disruptions in the supply of gas, which Europe is addressing through a number of complementary channels, including the geographical diversification of gas imports, using the limited possibilities available in the short run to replace it with other energy sources, and reducing consumption, all of which have resulted in high storage capacity utilisation. Nevertheless, the measures adopted to date cannot fully guarantee that there will be no winter supply interruptions this year, especially in some central European countries. In the least favourable scenarios, this could severely affect economic activity.[1]

The impact of these factors has prompted a downward revision of economic growth projections across all geographical areas. The short-term outlook has worsened as a result of persistently high inflation rates, tighter financial conditions and protracted supply distortions. Beyond the next few quarters, economic growth is crucially dependent on the course of the war in Ukraine. If the uncertainty generated by the conflict were to abate, activity should pick up, in a

1 See J. Quintana (2022), "Economic consequences of a hypothetical suspension of Russia-EU trade", Analytical Articles, *Economic Bulletin* 2/2022, Banco de España.

setting in which there are emerging signs that the global production and transport bottlenecks could be easing and that inflationary pressures could be reaching their peak, as indicated by the fact that most commodity prices (which had soared to very high levels) have declined somewhat.

In the last few months, **Spain too has seen growing signs of loss of economic momentum.** The lifting of most of the pandemic-related restrictions drove activity in Q2 and paved the way for continued recovery in international tourism in the summer months. However, social security registrations, whose strength surprised on the upside in the first half of the year, decelerated in Q3. In addition, higher energy prices have gradually spread to an increasing share of the goods and services that make up the household consumption basket. This has reduced households' purchasing power, which in turn has given rise to weaker household expenditure indicators. Moreover, the high cost of energy commodities and supply insecurities are affecting production at the most electro-intensive industries. Overall, this decline in industrial and household income is also driving down demand for output at all other sectors. In any event, according to the latest edition of the Banco de España Business Activity Survey (EBAE by its Spanish acronym), the deterioration in activity perceived by firms in Q3 is highly uneven across sectors, with those that have benefited most from the lifting of the pandemic-related restrictions, such as hospitality and leisure,[2] recording the best performance.

Various factors will exert downside pressure on the economic growth outlook for the coming quarters. On top of persistent inflation, lower agents' confidence and continued high uncertainty, all of which are heavily influenced by the consequences of the current energy crisis and the war in Ukraine, inbound tourism will likely lose some momentum once the bulk of the pent-up post-pandemic demand has been met. In addition, external demand can be expected to weaken, against a backdrop of simultaneous monetary policy tightening in numerous countries.

Under certain assumptions – which are subject to great uncertainty – economic activity could become more dynamic from spring 2023. Specifically, throughout 2023, energy and food prices will moderate gradually (drawing on futures market trends), the supply bottlenecks and economic consequences of the war in Ukraine will ease (albeit very slowly) and the pass-through of higher costs and prices to final product prices and wage demands will be relatively contained. A larger relative roll-out of investment projects under the NGEU programme would also contribute to this economic recovery in Spain.

Under this scenario, Spanish GDP growth, after rising by 4.5% this year, will decelerate to 1.4% in 2023 and then head up again, in 2024, to 2.9%.[3] Meanwhile, the rate of growth of prices is revised up over the entire projection horizon, meaning that forecast inflation rates are now significantly higher and more persistent than some months ago. Specifically, inflation is expected to average 8.7% in 2022, and to moderate gradually thereafter, to 5.6% in 2023 and 1.9% in 2024. Naturally, this inflation outlook for Spain is also subject to extraordinary uncertainty and will depend, inter alia, on commodity price developments and on the wage and profit margin response to higher consumer prices and production costs.

2 See M. Izquierdo (2022), "Encuesta a las empresas españolas sobre la evolución de su actividad: tercer trimestre de 2022", Notas Económicas, *Boletín Económico* 3/2022, Banco de España.

3 See Box 1, "Macroeconomic projections for the Spanish economy (2022-2024)", in this report.

Report

Contents

Global economy

1 High inflation rates persist globally 10

2 The world's main central banks maintain or accelerate the normalisation/tightening of their monetary policy 12

3 There are clear signs of a global economic slowdown 13

4 The international financial markets show notable volatility and widespread declines in asset prices 14

Euro area economy

5 The reopening of the economy boosted activity in the euro area in Q2, but the high inflation and gas supply cut-offs darken the future outlook 15

6 Euro area inflation has continued to rise and is proving more persistent than expected 16

7 The main risk for the euro area is the exacerbation of the problems stemming from gas supply cuts 17

8 The ECB has continued with its monetary policy normalisation process 18

Spanish economy

9 In Spain inflationary pressures remain very high and are spreading… 19

10 …as a result of the upward surprises in commodity prices and these higher prices feeding into the rest of the consumption basket 20

11 For the time being no significant second-round effects on inflation via wages are being detected… 21

12 …while profit margins remain relatively subdued in aggregate terms, albeit with significant heterogeneity across sectors and firms 22

13 GDP growth in Q2 was much stronger than expected… 23

14 …although the pace of economic growth in Spain appears to have slowed down significantly in the past three months… 24

15 …amid the ongoing gradual tightening of financing conditions 25

16 Employment slowed down during the summer months, although growth in permanent hiring remains strong 26

17 Consumption also appears to have moderated in Q3, albeit unevenly across the different components 27

18 Greater uncertainty and the worsening economic outlook appear to have weighed down on business investment in recent months 28

19 Housing investment also appears to have lost momentum in Q3 29

20 International tourism appears to have propped up activity in the summer months… 30

21 …although net exports of goods and non-travel services appear to have slowed down 31

22 The government deficit continues to fall thanks to strong revenues, which are expected to offset the impact of the measures adopted to address the energy crisis on public finances 32

23 In an extraordinarily uncertain context, the Banco de España's latest macroeconomic projections revise GDP growth slightly upwards for 2022, but notably reduce the pace of output growth for 2023 33

1 High inflation rates persist globally

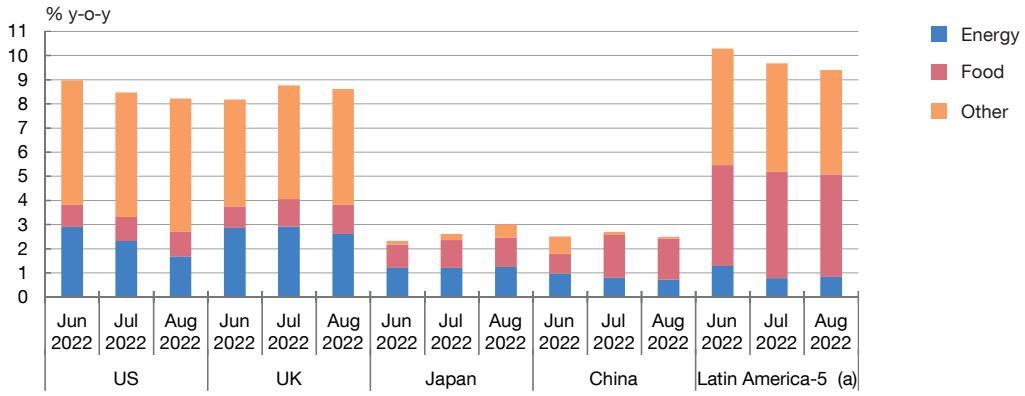
— In the United States, inflation moderated slightly in July and August, but the year-on-year inflation rate remained above 8% in this period and underlying inflationary pressures accelerated to 6.3% in August (see Chart 1.a).

— As regards the other advanced economies, inflation rates recently rose in the United Kingdom – to 8.6% in August, with additional hikes expected in the coming months –, in Japan – to 3%, albeit with underlying inflation still relatively contained (1.6%) – and in the euro area – from 8.6% in June to 10% in September, according to the early estimate for the harmonised index of consumer prices (HICP).

— As for the emerging market economies, inflation remained subdued in China – standing at 2.5% in August – while decreasing slightly in Latin America, from 10.3% in June to 9.4% in August, mainly as a result of price changes in Brazil.

Chart 1

1.a Recent developments in inflation rates and their contributions by geographical area



SOURCES: National statistics and Refinitiv.

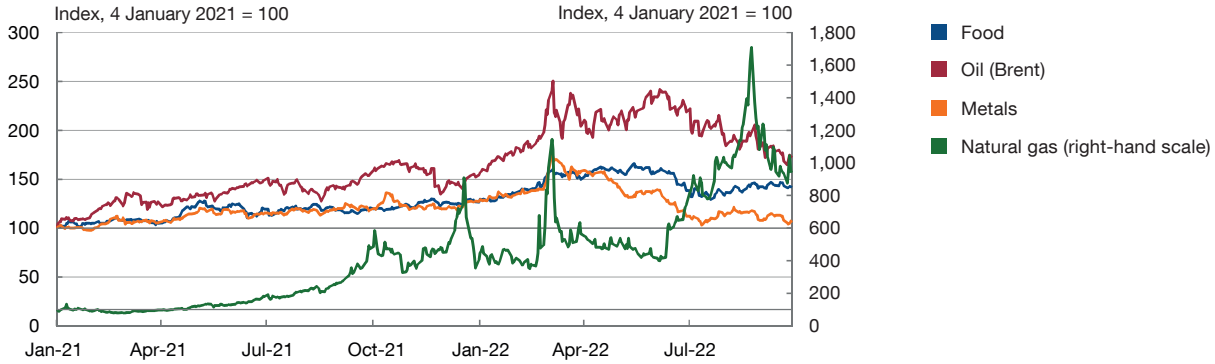
a The Latin America-5 aggregate includes Brazil, Chile, Colombia, Mexico and Peru.

— Broadly speaking, in recent months these global inflation dynamics have been influenced by several factors:

- The moderation in prices of oil, metals and the main food commodities, amid slowing demand and a slight increase in supply (see Chart 1.b).
- A sharp rise in level and volatility of the price of natural gas in Europe, highly influenced by geopolitical aspects linked to Russia's invasion of Ukraine (for more details on the direct and indirect effects of higher gas prices on inflation, see Box 4).
- A slight easing of global supply chain bottlenecks, although they are still limiting activity and are not expected to fully dissipate in the immediate short term. Their future outlook depends, among other aspects, on the course of the pandemic in China and the still uncertain consequences of the cut-off of Russian gas supply to Europe.

Chart 1 (cont'd)

1.b Recent developments in commodity prices



SOURCE: Refinitiv.

2 The world's main central banks maintain or accelerate the normalisation/tightening of their monetary policy

— Against a backdrop of higher and more persistent inflation rates than those forecast a few months ago, the world's main central banks – in advanced and emerging market economies – have maintained or intensified their monetary policy normalisation or tightening process (see Chart 2.a).

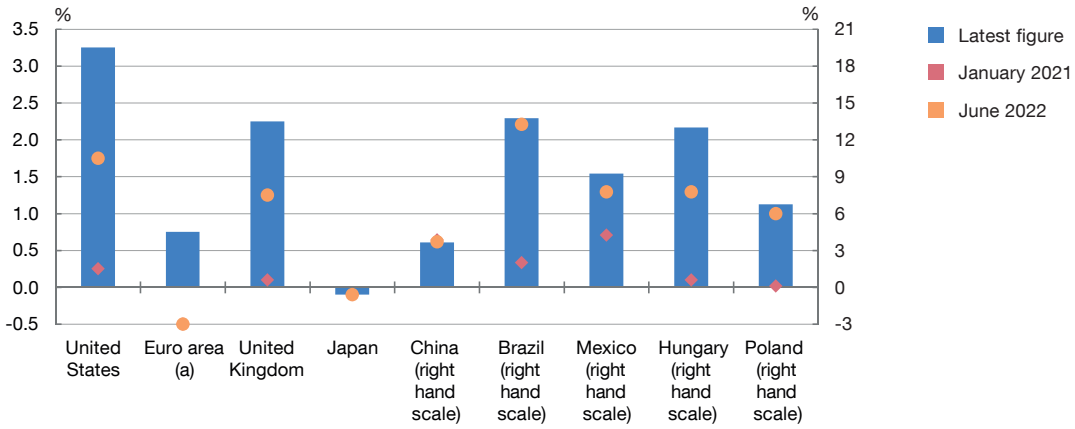
— Thus, for instance, the US Federal Reserve raised its policy interest rate by 75 basis points (bp) at both its July and September meetings, to a target range of 3%-3.25%.

— In recent months, there have also been significant interest rate hikes by the European Central Bank (ECB) – of 50 bp in July and 75 bp in September – and by the Bank of England – of 50 bp at its August and September meetings, to 2.25%.

— The most salient exceptions to these broad-based dynamics have been, among the developed economies, the Bank of Japan – which at its latest meetings maintained the accommodative stance of its monetary policy unchanged, contributing to the depreciation of its currency – and, among the emerging market economies, the People's Bank of China – which in August reduced its main interest rates by between 5 bp and 15 bp.

Chart 2

2.a Main policy interest rates since January 2021



SOURCE: National central banks.

a In January 2021 the ECB's deposit facility rate was also at –0.5%, as in June 2022.

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3 There are clear signs of a global economic slowdown

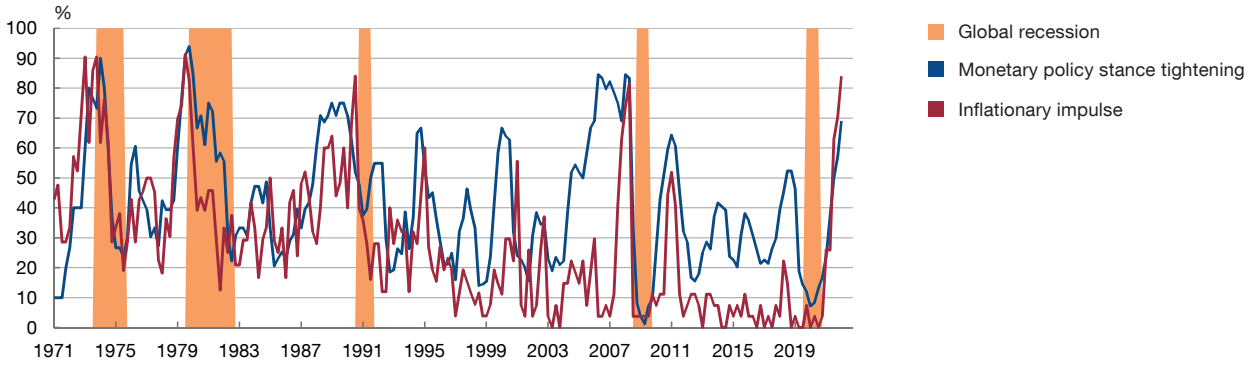
— The severity and broad-based nature of the strong inflationary pressures and monetary policy tightening seen at global level in recent quarters have few historical precedents, most of which were followed by a notable weakening of global economic activity (see Chart 3.a).

— Aside from the declines already observed in GDP in the United States (in the first half of the year) and in China (in the second quarter), in recent months the consensus forecasts have been revising down notably the growth outlook for global economic activity (see Chart 3.b).

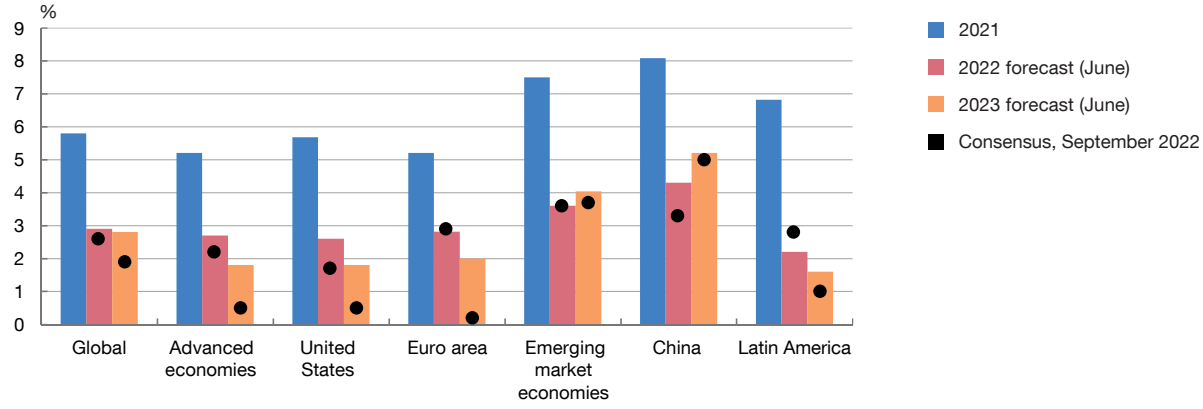
— These downward revisions are consistent with, among other factors, the extraordinary uncertainty characterising the current economic and geopolitical environment and the notable deterioration of a broad range of confidence indicators.

Chart 3

3.a Percentage of countries with increases in inflation and policy interest rate hikes (a)



3.b GDP growth forecasts by geographical area (b)



SOURCES: National statistics, BIS, Consensus Economics and Refinitiv.

a Inflationary impulse shows the percentage of countries which each quarter simultaneously experience an inflation rate higher than that of the previous quarter and a level of inflation above their historical average (1984 Q1-2022 Q2). Monetary policy stance tightening shows the percentage of countries that are raising their interest rates each quarter. Global recession refers to periods in which growth in world GDP per capita is close to 0 or negative. For the purpose of these measures the number of geographical areas increases gradually to 28: Australia, Canada, Switzerland, Denmark, United Kingdom, Japan, South Korea, Norway, New Zealand, Sweden, United States and the euro area (advanced economies) and Brazil, China, India, Mexico, Malaysia, Poland, Russia, Saudi Arabia, Turkey, South Africa, Argentina, Chile, Colombia, Hungary, Indonesia and Peru (emerging market economies). The euro area data begin in 1999.

b Consensus Forecasts (bars: June; dots: September). The advanced economies aggregate includes 12 geographical areas (Australia, Canada, Hong Kong, Japan, New Zealand, Norway, Singapore, Sweden, Switzerland, United Kingdom, United States and the euro area) and emerging market economies includes ten Asian and Eastern European economies (China, India, Indonesia, Malaysia, Philippines, Hungary, Poland, Romania, Russia and Turkey), together with Latin America (Argentina, Brazil, Chile, Colombia, Mexico and Peru).

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4 The international financial markets show notable volatility and widespread declines in asset prices

— In recent months, fluctuations in investors' expectations about the pace of monetary policy tightening or normalisation which the world's main central banks would have to follow, as well as the degree of buoyancy which global economic activity could show in the future, have led to notable price volatility in the international financial markets.

— Against this backdrop, at the cut-off date for this report higher-rated long-term sovereign bond yields stand above the levels observed at end-June. Thus, for instance, the yield on US 10-year sovereign bonds increased by 83 bp to 3.8%, while the German 10-year bond yield rose by 74 bp to 2.1%.

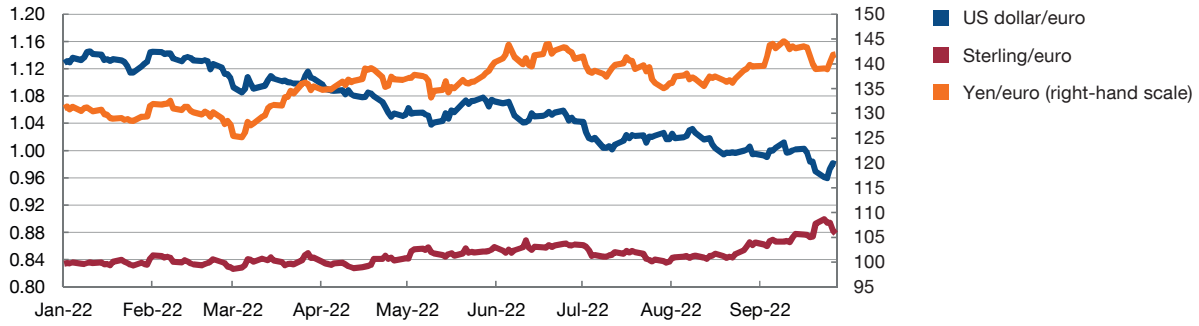
— Over Q3, the yield spread between European and German long-term sovereign bonds has widened – slightly in Spain (to 118 bp) and further in Greece and Italy (to 272 bp and 240 bp, respectively).

— The world's main stock market indices have posted losses vis-à-vis the end of the second quarter, despite the increase recorded until mid-August.

— In recent months, the euro has continued to depreciate against the US dollar, influenced, among other factors, by the expectations of greater relative monetary policy tightening in the United States, although it has appreciated against the pound sterling (see Chart 4.a).

Chart 4

4.a Bilateral exchange rates against the euro



SOURCE: Refinitiv.

5 The reopening of the economy boosted activity in the euro area in Q2, but the high inflation and gas supply cut-offs darken the future outlook

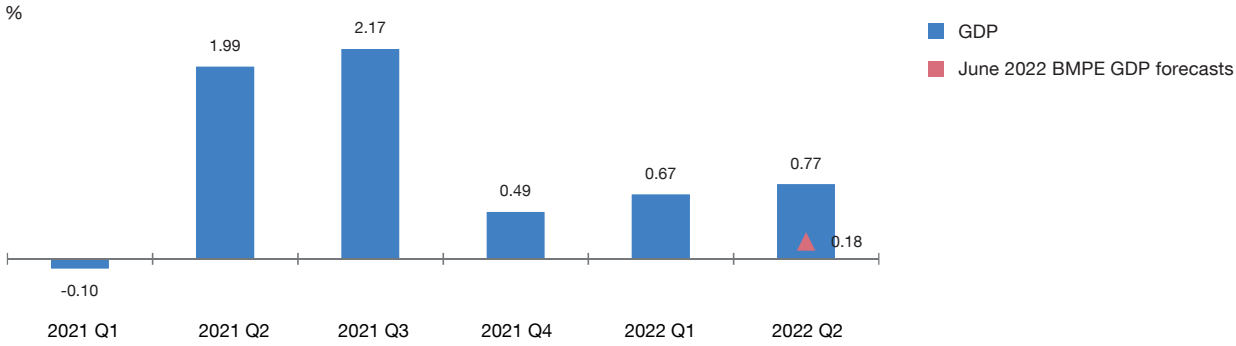
— In Q2 the lifting of virtually all pandemic-related restrictions boosted household consumption (especially in recreation, hospitality and tourism) and GDP growth in the euro area above projected figures (see Chart 5.a).

— However, gas supply disruptions and the increase in gas and electricity prices (mainly as a result of the war in Ukraine) have raised uncertainty and substantially reduced households' and firms' purchasing power and confidence.

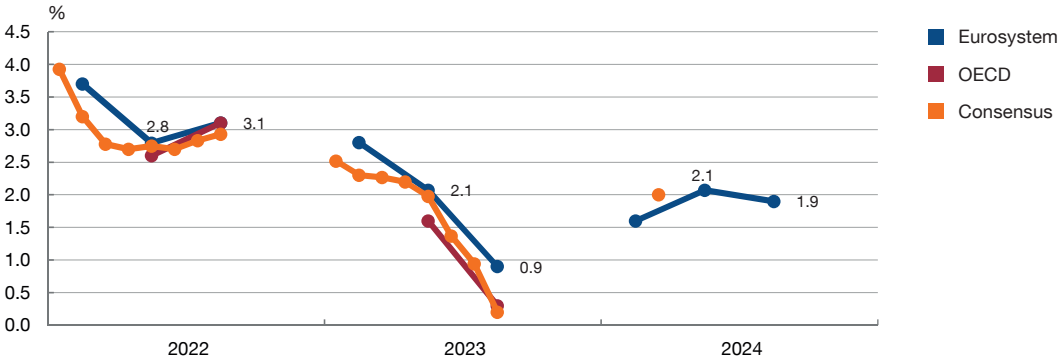
— In these circumstances, the ECB September Macroeconomic Projection Exercise envisages a slight upward revision in the annual average growth for 2022,[1] but a notable downward revision for 2023 (see Chart 5.b).

Chart 5

5.a Euro area. GDP path (q-o-q rate of change)



5.b Euro area. GDP growth forecasts (a)



SOURCES: Consensus Economics, Eurosystem, Eurostat and OECD.

a Changes in the forecasts between February and September 2022.

1 See the Eurosystem staff macroeconomic projections for the euro area, September 2022.

6 Euro area inflation has continued to rise and is proving more persistent than expected

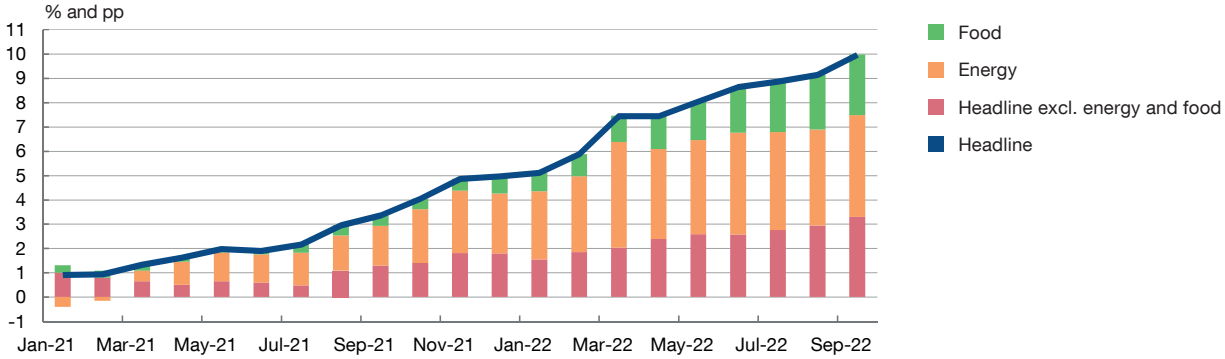
— According to the early estimate for the HICP, the year-on-year rate of inflation in the euro area was 10% in September, compared with 8.6% in June. Higher energy and food prices (mainly as a result of the war in Ukraine) and these products' rising prices feeding into the other goods and services in the consumption basket[2] have contributed to this higher-than-expected increase (see Chart 6.a).

— Looking ahead, inflation projections – especially the short-term ones – have been revised upwards once again to reflect the surprises that have already materialised and the intensification of some of the factors underlying the current inflationary pressures (see Chart 6.b).

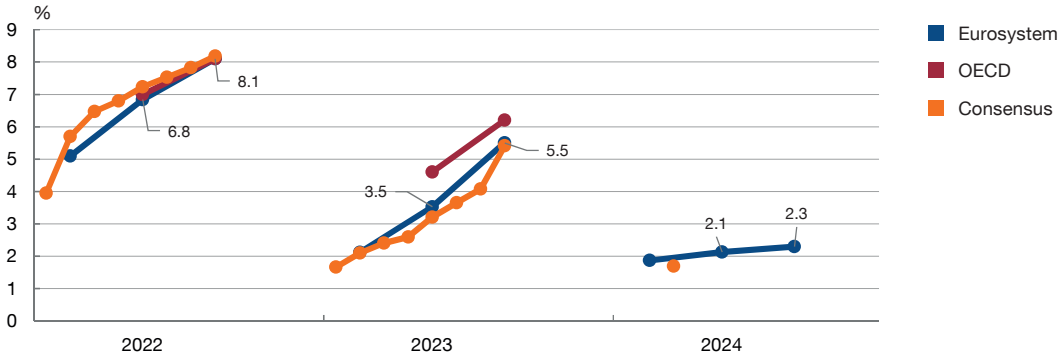
— Nevertheless, despite recently rising, the medium-term inflation expectations appear to remain anchored around values that are consistent with the ECB monetary policy target of 2% and particularly acute wage pressures that could give rise to significant second-round effects on inflation are not yet being detected.

Chart 6

6.a Euro area inflation. Headline HICP and contributions of the components



6.b Euro area. Inflation forecasts (a)



SOURCES: Consensus Economics, Eurosystem, Eurostat and OECD.

a Changes in the forecasts between February and September 2022.

2 This increase has proven particularly sharp in household equipment and maintenance, transport and recreation, hospitality and tourism (see M. Pacce, A. del Río and I. Sánchez (2022). "The recent performance of underlying inflation in the euro area and in Spain", Analytical Articles, *Economic Bulletin* 3/2022, Banco de España).

7 The main risk for the euro area is the exacerbation of the problems stemming from gas supply cuts

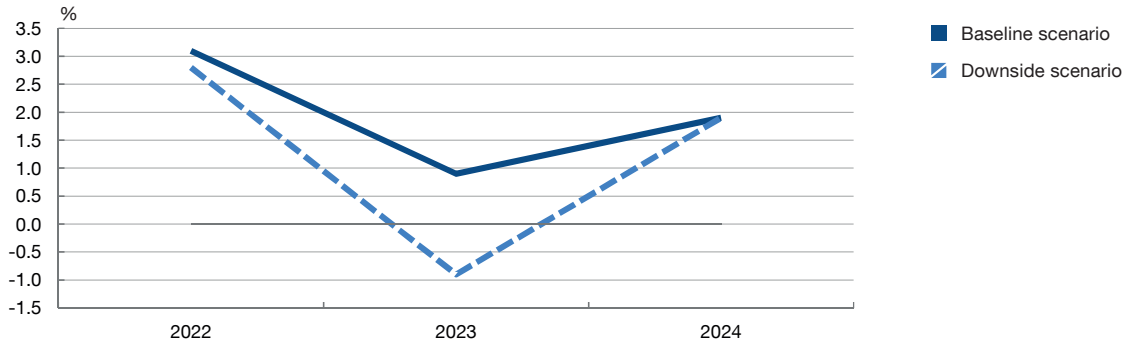
— In light of the prolongation and escalation of the war in Ukraine, the ECB's September projections envisage a downside scenario in addition to the aforementioned baseline scenario.

— The downside scenario includes, inter alia, a complete cut-off of Russian gas, exacerbated supply issues – e.g. as a result of an unusually cold winter – and greater economic and financial uncertainty, which would increase bank funding costs.[3]

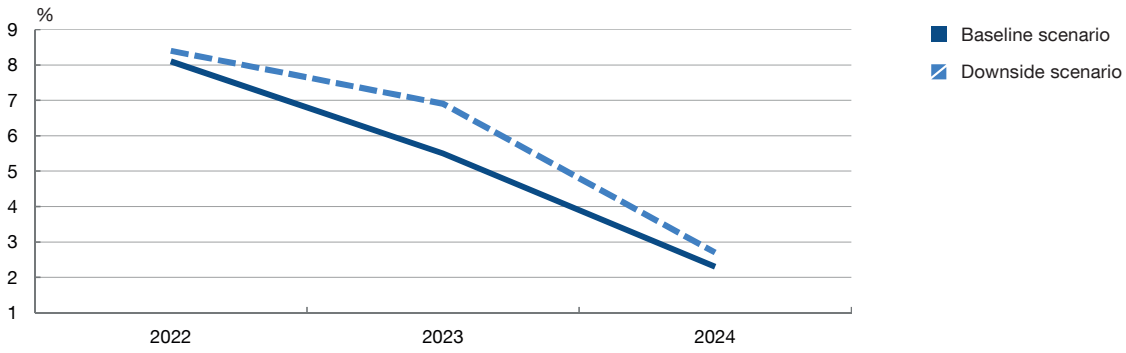
— Under these conditions, euro area GDP could contract by 0.9% in 2023 (see Chart 7.a), while inflationary pressures would be stronger and last longer (see Chart 7.b).

Chart 7

7.a Euro area. ECB September 2022 projections for GDP growth. Baseline and downside scenarios



7.b Euro area. ECB September 2022 projections for inflation. Baseline and downside scenarios



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SOURCE: ECB.

3 The cut-off of Russian gas via Nordstream in early September entails the materialisation of some, but not all, of the assumptions for the ECB's downside scenario. For more details, see the Eurosystem staff macroeconomic projections for the euro area, September 2022.

8 The ECB has continued with its monetary policy normalisation process

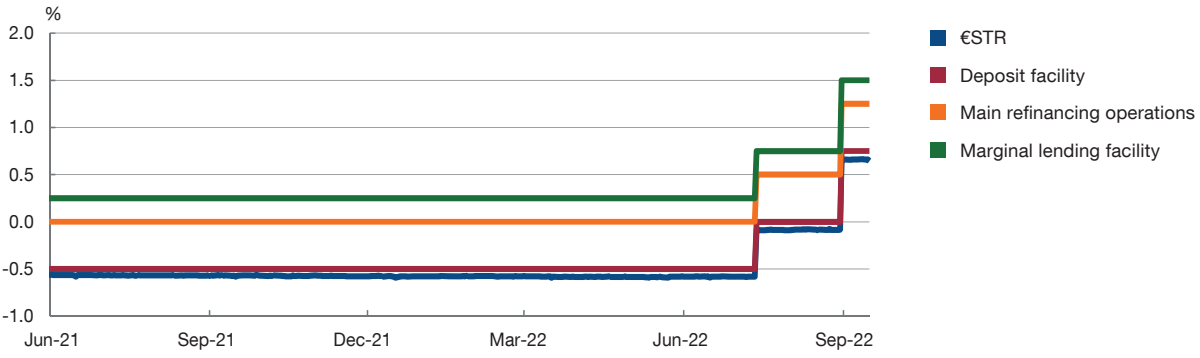
— Against a backdrop marked by high inflationary pressures, the ECB Governing Council has, at its latest meetings, continued with the monetary policy normalisation process it began in late 2021, by raising its key interest rates by 50 bp in July and by 75 bp in September (see Chart 8.a).

— The ECB Governing Council approved the Transmission Protection Instrument (TPI) in July. The TPI can be activated to counter market dynamics not warranted by the economic fundamentals and that pose a serious threat to the transmission of monetary policy in the euro area as a whole.

— Looking ahead, over its next meetings the ECB Governing Council expects to raise interest rates further to dampen demand and guard against the risk of a persistent upward shift in inflation expectations. In any event, such future policy rate decisions will continue to be data-dependent.

Chart 8

8.a Key ECB interest rates and €STR



SOURCES: Banco de España and Refinitiv.

9 In Spain inflationary pressures remain very high and are spreading…

— Although the early estimate of the HICP shows a decline (to 9.3%) in the headline inflation rate in the Spanish economy from August to September, in Q3 as a whole, the average year-on-year rate of inflation was slightly more than 1 pp above the Q2 rate.

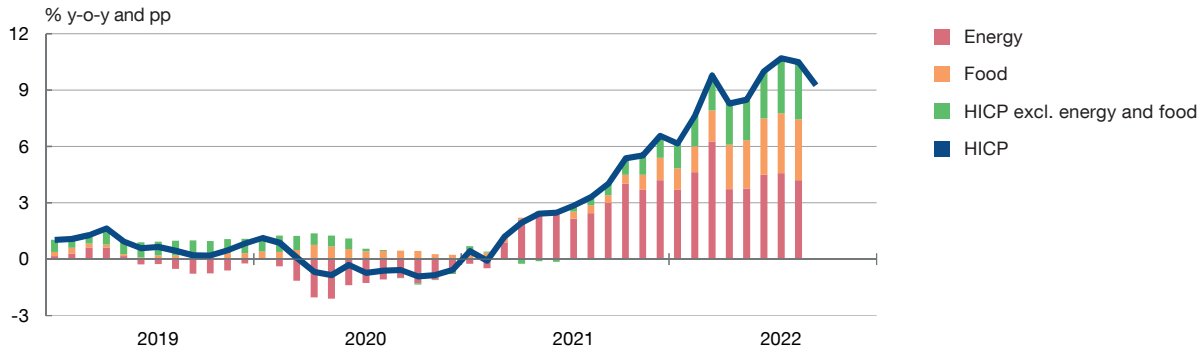
— This quarterly acceleration in inflation is not solely attributable to energy; food and recreation, hospitality and tourism services have also played a prominent role (see Chart 9.a).[4] In this regard, underlying inflation (which excludes energy and food) amounted to 4.9% in August, up 1 pp and 0.3 pp on the June and July rate, respectively.

— The widespread nature of the current inflationary pressures in Spain is evidenced by more than 50% of the HICP items and more than 40% of underlying inflation components seeing year-on-year price growth of above 4% (in January 2022 these percentages were below 25% and 15%, respectively).

— In any event, inflation rates in Spain would be even higher were it not for some of the measures rolled out by the authorities. Specifically, the measures adopted to contain the increase in the price of electricity helped lower headline inflation in August by just over 2 pp, with the cap on the price of gas used to produce electricity contributing slightly over 1 pp.[5]

Chart 9

9.a Inflation in Spain: change and contributions



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SOURCES: INE, Eurostat and Banco de España.

4 See M. Pacce, A. del Río and I. Sánchez (2022). "The recent performance of underlying inflation in the euro area and in Spain", Analytical Articles, *Economic Bulletin* 3/2022, Banco de España.

5 The impact of the mechanism to cap gas prices on the average inflation rate for 2022 is estimated at -0.6 pp, according to the updated estimates made in M. Pacce and I. Sánchez (2022). "Impact on inflation of the mechanism to cap gas prices on the Iberian market", Box 4, "Quarterly report on the Spanish economy", *Economic Bulletin* 2/2022, Banco de España.

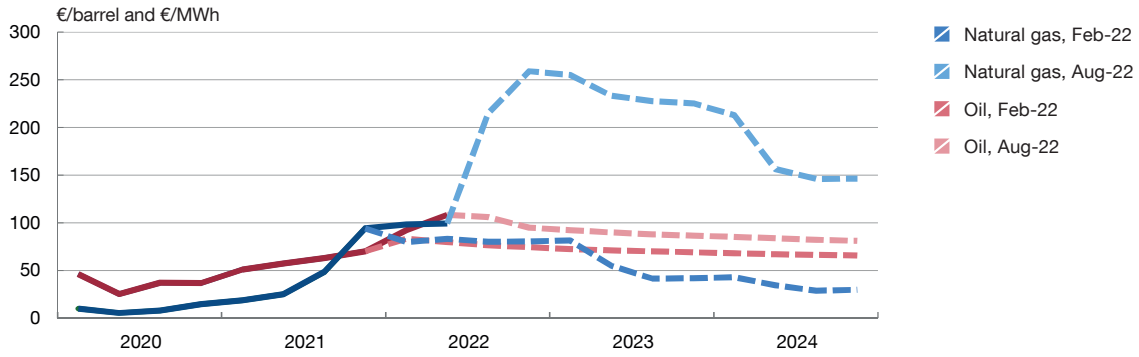
10 …as a result of the upward surprises in commodity prices and these higher prices feeding into the rest of the consumption basket

— The inflation surprises in recent months are largely attributable to energy and food commodity prices growing more than initially expected (see Chart 10.a).

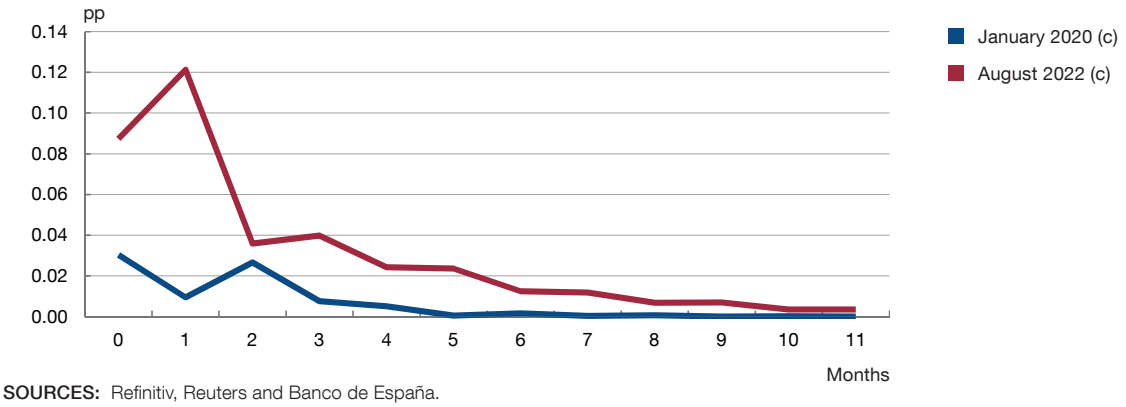
— Underlying inflation responding to the energy price shocks somewhat more quickly and forcefully in the current episode than in the past has also contributed to the rise in headline inflation (see Chart 10.b).[6] In other words, in the current setting, the indirect effects – the pass-through – of higher energy prices on the prices of other consumer goods and services are proving particularly acute (for more details on the magnitude of these indirect effects for Spain and the euro area, see Box 4).

Chart 10

10.a Energy commodity prices: spot and futures (a)



10.b Response of underlying inflation to innovation in energy prices (b)



SOURCES: Refinitiv, Reuters and Banco de España.

a Average monthly commodity prices on international spot markets and market prices in futures at different terms.
b Effect of an unexpected increase of 1% in energy prices on underlying inflation. Results of estimating a VAR model with parameters that change over time following random walks.
c Each line depicts the response estimated on the basis of the January 2020 and August 2022 coefficients.

6 See J. M. González-Mínguez, S. Hurtado, D. Leiva-León and A. Urtasun (2022). "De la energía al resto de componentes: la generalización del fenómeno inflacionista", Artículos Analíticos, *Boletín Económico,* Banco de España, forthcoming.

11 For the time being no significant second-round effects on inflation via wages are being detected…

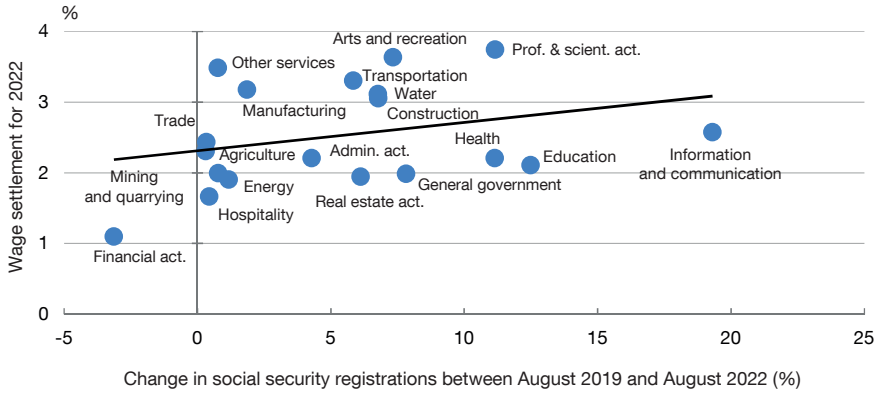
— On the data to August, the average wage settlement under collective bargaining agreements in force in 2022 is 2.6%. While this settlement – which is far below the current inflation rates – largely reflects the increase negotiated in agreements signed in previous years, to August 2022 negotiated wage increases in newly signed collective agreements have also remained relatively contained, at around 2.9%.

— In any event, the percentage of workers covered by indexation clauses has risen to almost 25% (from the 16.1% recorded in 2021), which increases the risks of future second-round effects on inflation being stronger than those observed to date.[7]

— Wage settlements are somewhat larger in the services sectors where employment has fared better since the onset of the pandemic (see Chart 11.a).

Chart 11

11.a Wage settlement, by sector and change in employment



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SOURCES: INE, Ministerio de Trabajo y Economía Social and Ministerio de Inclusión, Seguridad Social y Migraciones.

7 For a more detailed analysis of the characteristics of the indexation clauses in collective bargaining agreements signed in Spain and their possible impact on labour costs, see Box 6 of this report.

12 …while profit margins remain relatively subdued in aggregate terms, albeit with significant heterogeneity across sectors and firms

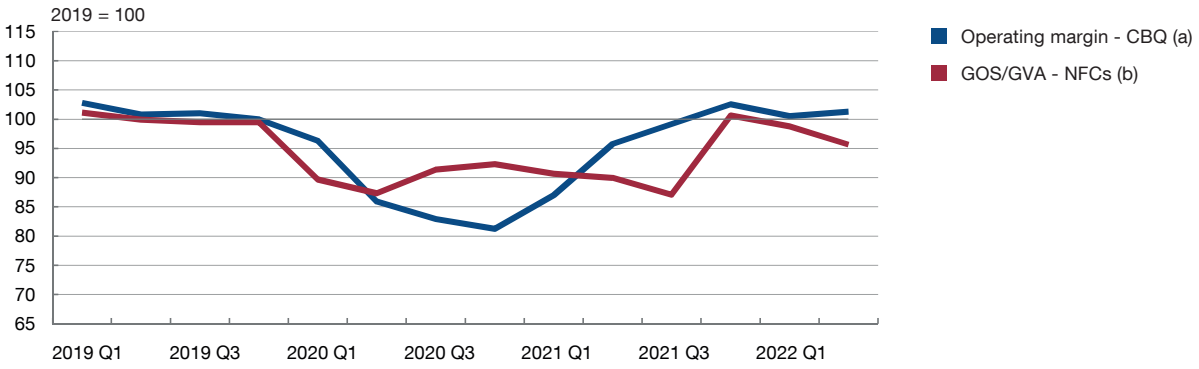
— The median operating margin in the Banco de España's Central Balance Sheet Data Office Quarterly Survey (CBQ) held relatively stable in 2022 H1 at around pre-pandemic levels (see Chart 12.a).[8]

— On the information in the quarterly non-financial accounts of the institutional sectors, the ratio of gross operating surplus (GOS) to gross value added (GVA) of non-financial corporations (NFCs), which had returned to pre-pandemic levels at end-2021, declined in the first two quarters of 2022.[9]

— In any event, it is important to highlight that these overall developments conceal considerable heterogeneity across sectors and firms.[10] For instance, the sectoral information in the Quarterly National Accounts points to profit margins performing more dynamically in manufacturing, mining and quarrying, energy and water, in contrast to their sluggishness in construction.

Chart 12

12.a Profit margins



SOURCES: Banco de España and INE.

a Four-quarter average of the median operating margin (ratio of gross operating profit to net turnover) from the Banco de España's Central Balance Sheet Data Office Quarterly Survey.
b Ratio of gross operating surplus to gross value added of non-financial corporations. Quarterly non-financial accounts of the institutional sectors.

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8 For further details, see A. Menéndez and M. Mulino (2022). "Results of non-financial corporations to 2022 Q2", Analytical Articles, *Economic Bulletin* 3/2022, Banco de España.

9 For further details on this metric, see "Mark-ups in Spain: recent developments", Box 3, "Quarterly report on the Spanish economy", *Economic Bulletin* 2/2022, Banco de España.

10 For further details on the firm-level heterogeneity in profit margins, see R. Blanco, A. Menéndez and M. Mulino (2022). "Results of non-financial corporations in 2022 Q1", Analytical Articles, *Economic Bulletin* 3/2022, Banco de España.

13 GDP growth in Q2 was much stronger than expected…

— According to the latest information published by the National Statistics Institute (INE), Spanish GDP grew at a quarter-on-quarter rate of 1.5%, far exceeding the 0.4% forecast in the Banco de España macroeconomic projections exercise published in June[11] (see Chart 13.a), the GDP growth rate in the same period for the euro area as a whole and that of some of its largest economies.

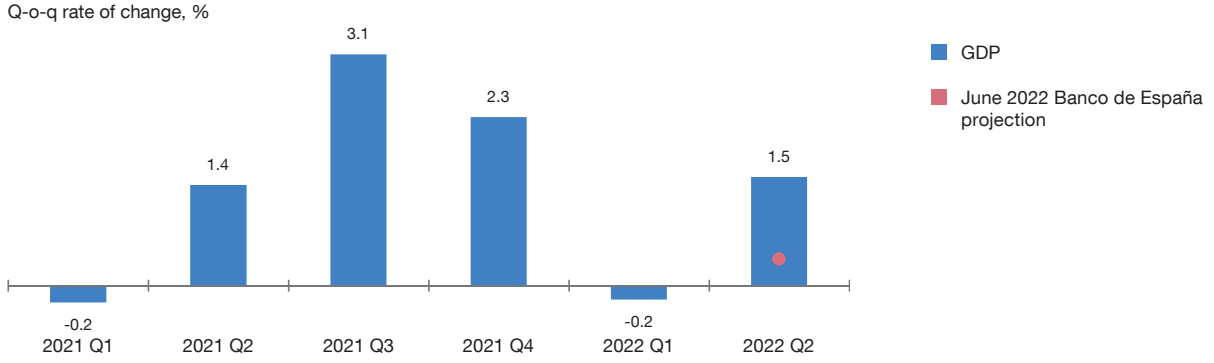
— This growth was mainly underpinned by the buoyancy of exports, private consumption and construction investment (see Chart 13.b). On the supply side, the highest growth rates were in the market services sectors, particularly tourism and recreation-related sectors.

— In any event, despite this high output growth, Spanish GDP was still 2.2 pp lower than at end-2019. By contrast, in 2022 Q2 euro area GDP had already surpassed this level by almost 2 pp.

Chart 13

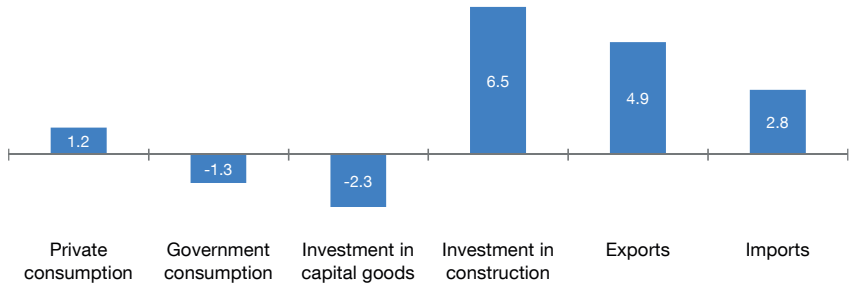
13.a Spanish GDP

Q-o-q rate of change, %



13.b Spanish GDP by demand component in 2022 Q2

Q-o-q rate of change, %



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SOURCES: Banco de España, Eurostat and INE.

11 See "Macroeconomic projections for the Spanish economy (2022-2024)", Box 1, "Quarterly Report on the Spanish Economy", *Economic Bulletin* 2/2022, Banco de España.

14 …although the pace of economic growth in Spain appears to have slowed down significantly in the past three months…

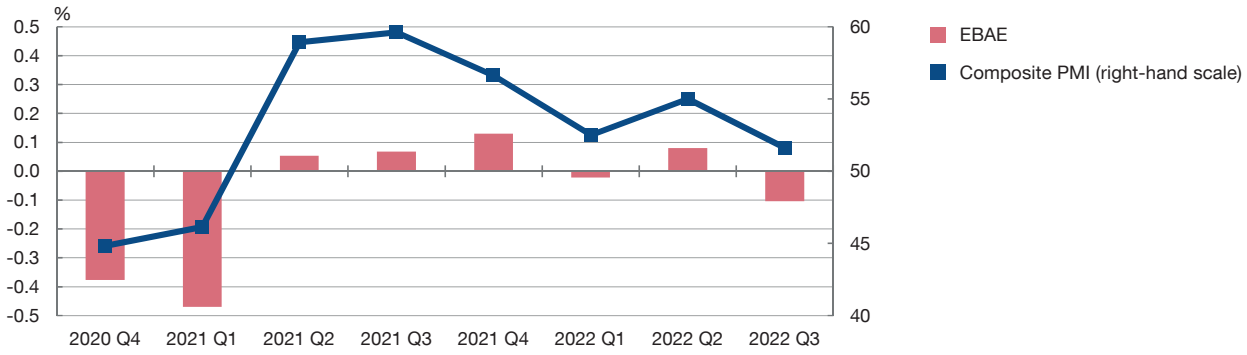
— Various indicators of activity, employment and consumption point in this direction. For instance, the results of the Banco de España Business Activity Survey (EBAE) suggest that there was a decline in Spanish firms' turnover in Q3, after improving in Q2 (see Chart 14.a).

— In any event, there is significant sectoral heterogeneity, since the services sectors most closely linked to tourism and recreation reported relatively high turnover growth in Q3, while in other sectors, such as industry and agriculture, firms reported a fall in their quarterly turnover (see Chart 14.b).

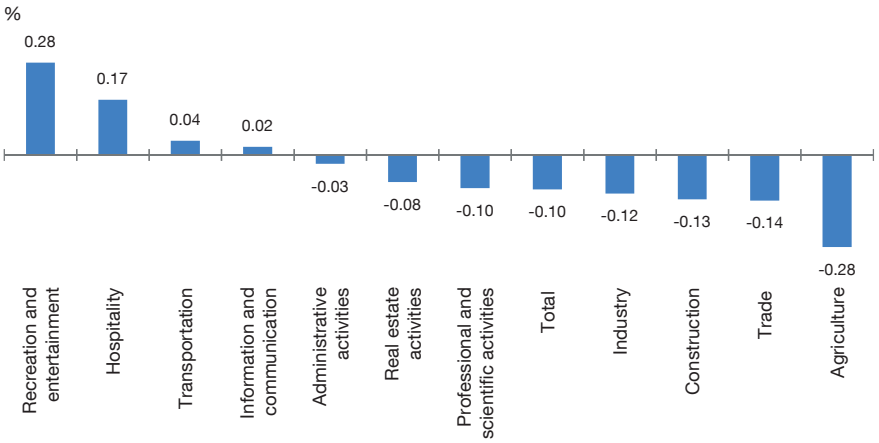
— Other qualitative indicators, such as the PMIs, are also consistent with weaker output in Q3, which was more evident in manufacturing than in services.[12]

Chart 14

14.a Quarterly change in turnover according to the EBAE and the composite PMI (a) (b)



14.b Turnover in Q3, by sector (a)



SOURCES Banco de España and IHS Markit.

a The qualitative responses from the EBAE are converted into a numerical scale as follows: significant decrease = -2; slight decrease = -1; stability = 0; slight increase = 1; significant increase = 2.
b The composite PMI for 2022 Q3 refers to the average of July and August.

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12 See Box 2 for a detailed analysis of the performance of Spanish manufacturing in recent months.

15 ...amid the ongoing gradual tightening of financing conditions

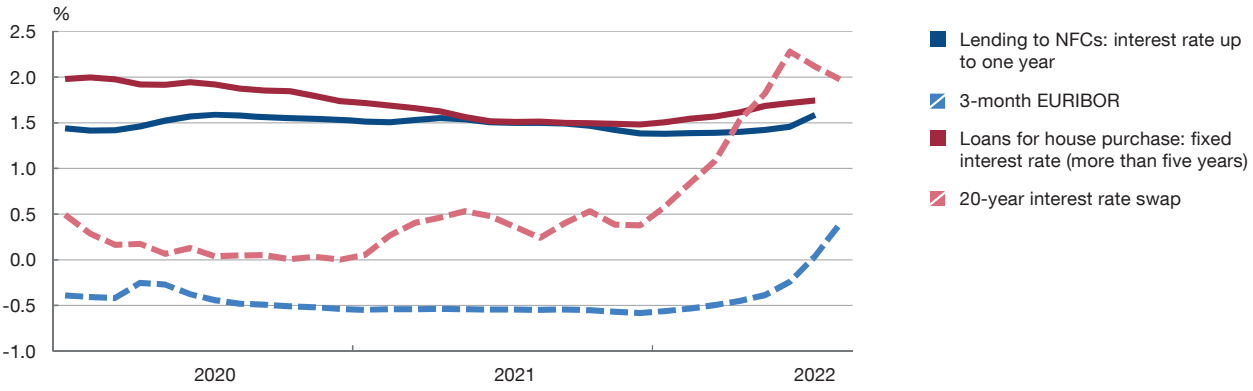
— Higher market interest rates have continued to gradually filter through to the cost of new bank loans to households and firms, albeit more slowly than in previous cycles, meaning that these costs are still at historically low levels (see Chart 15.a).[13]

— The Bank Lending Survey indicates that credit standards tightened across the board in Q2 and anticipates a further tightening in Q3.

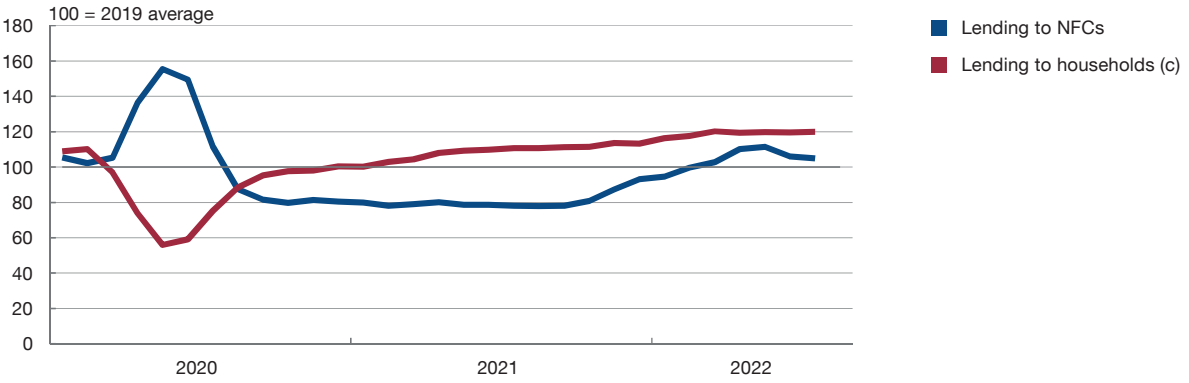
— The tightening of financing conditions observed in recent months has gone hand in hand with weaker momentum in new lending to households and firms (see Chart 15.b).

Chart 15

15.a Cost of new bank lending and market interest rates (a)



15.b New lending: 3-month cumulative seasonally-adjusted flows (b)



SOURCE: Banco de España and Refinitiv.

a Bank interest rates are narrowly defined effective rates (NDER), i.e. they exclude related costs, such as repayment insurance premiums and fees. They are also cycle-trend rates, i.e. they are adjusted seasonally and for the irregular component (small changes in the series with no recognisable pattern in terms of periodicity or trend). The chart shows the segments with the interest rate reset periods that had the largest volume of new loans over the last two years.
b Bank financing series include financing granted by credit institutions and by specialised lending institutions.
c The "other lending" segment includes renegotiations of previous loans.

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13 See Box 3 of this report for an analysis of the potential impact of the rise in interest rates on Spanish firms' financial vulnerability.

16 Employment slowed down during the summer months, although growth in permanent hiring remains strong

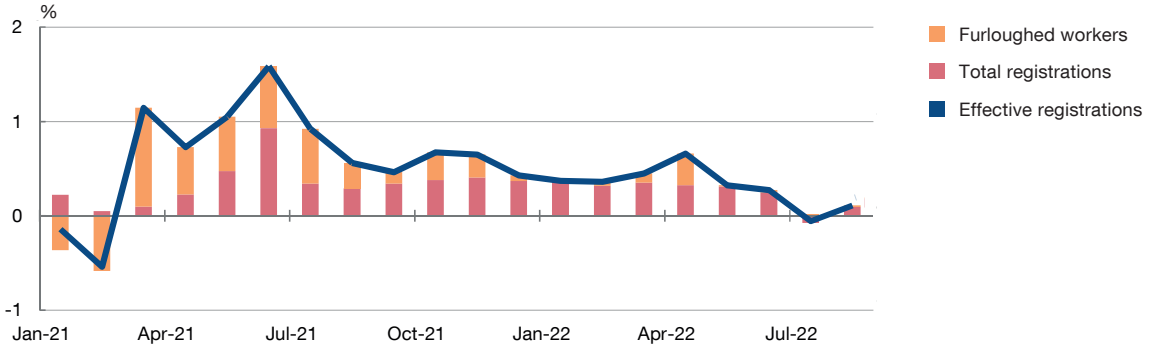
— The pace of growth of social security registrations, whose dynamism had surprised on the upside during the first half of the year, slowed down in Q3 (see Chart 16.a).[14]

— This moderation was fairly widespread across sectors, although the services sectors most linked to tourism continued to record particularly high year-on-year growth in employment (see Chart 16.b).

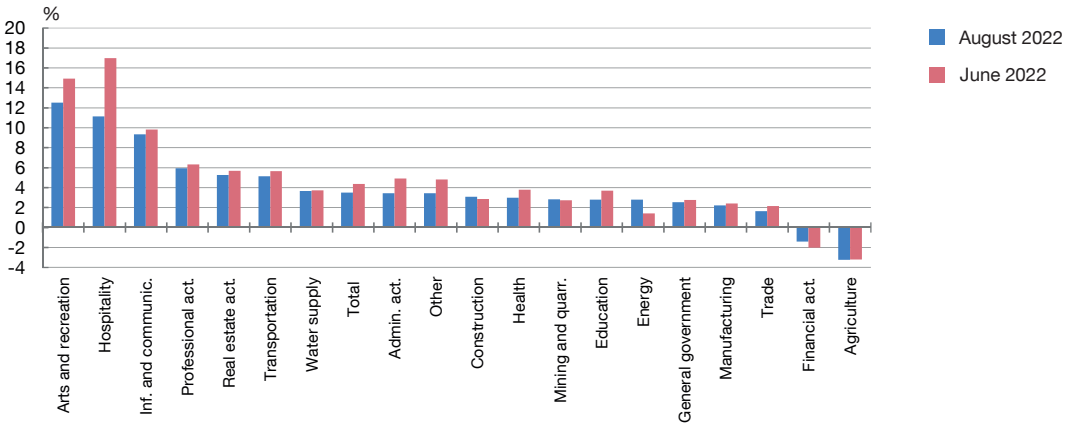
— Most of the growth in employment continued to be in workers on a permanent contract, which saw year-on-year growth rates of more than 20% during the summer months, while the decline in temporary hires accelerated to 33.1% year-on-year in August. Of note among permanent contracts was the rise in permanent discontinuous and part-time contracts, which are behind 22.6% and 24.4%, respectively, of the total increase in permanent employment.

Chart 16

16.a Total social security registrations, furloughed workers and effective social security registrations (seasonally adjusted monthly rate)



16.b Social security registrations by activity at the start and during the summer of 2022 (year-on-year rate)



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SOURCES: Banco de España and Ministerio de Inclusión, Seguridad Social y Migraciones.

14 This quarterly deceleration of employment is consistent with the information available at the cut-off date for this report, which covers the first half of September.

17 Consumption also appears to have moderated in Q3, albeit unevenly across the different components

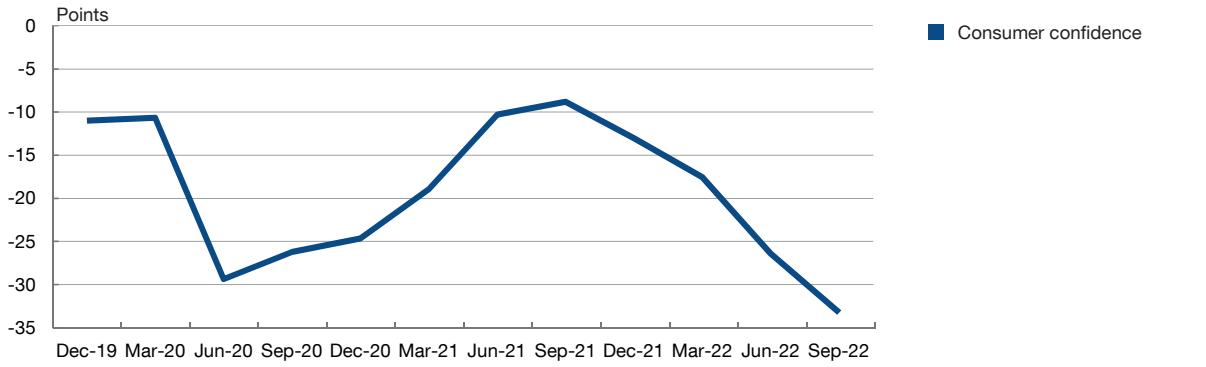
— Consumption growth appears to have slowed down between June and September, amid increased uncertainty, high inflation rates,[15] tighter financing conditions and deteriorating consumer confidence (see Chart 17.a).

— This deceleration in household spending stems at least partially from a slowdown in the purchase of goods, particularly durable goods. For instance, private vehicle registrations declined notably between July and August (see Chart 17.b).

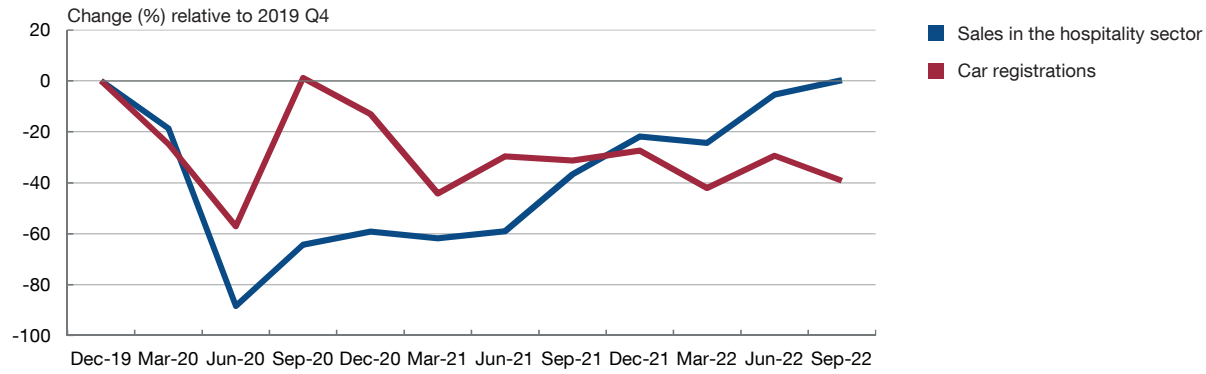
— Conversely, several indicators of spending on services suggest that spending on hotels and restaurants continued to recover in Q3, albeit at a slower pace than in Q2, boosted by the lifting of the pandemic restrictions (see Chart 17.b).

Chart 17

17.a Consumer confidence



17.b Indicators related to household spending (a)



SOURCES: Agencia Tributaria, ANFAC and European Commission.

a Seasonally adjusted series. The chart shows the percentage change relative to 2019 Q4. For 2022 Q3, the calculation takes into account the data for July and August (the latest available at the cut-off date for this report).

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15 For a more detailed account of how electricity and fuel consumption in Spain has responded to the rise in these products' prices, see Box 5 of this report.

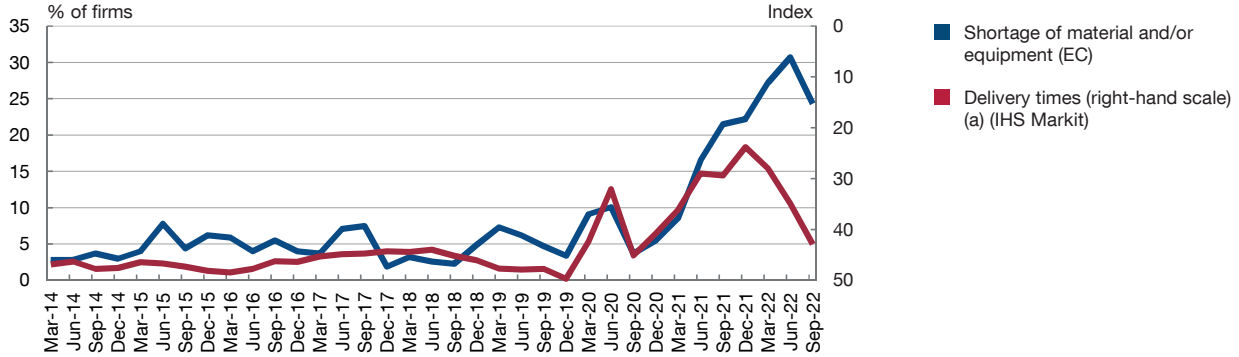
18 Greater uncertainty and the worsening economic outlook appear to have weighed down on business investment in recent months

— Various factors suggest that business investment may have slackened over the course of Q3, despite a slight easing of supply shortages (see Chart 18.a):

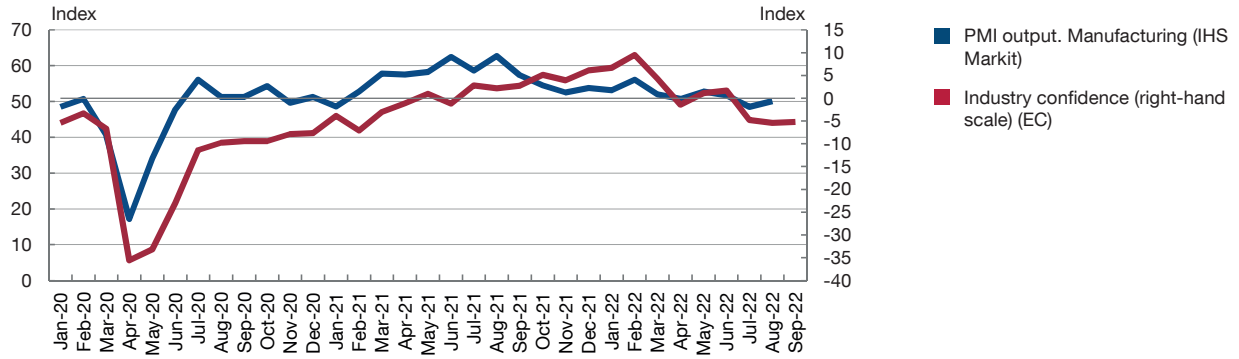
- The falls in the industrial confidence indicator (up to September), reflecting heightened uncertainty and worsening domestic and global economic prospects (see Chart 18.b).
- The gradual tightening, as noted above, of corporate financing conditions.
- The apparent delay in implementing the investment projects under the Next Generation EU programme.[16]

Chart 18

18.a Factors limiting industrial activity



18.b Confidence indicators



SOURCES: European Commission and S&P Global.

a The closer to 50, the shorter the delivery time.

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16 See Box 1 of this report for more details.

19 Housing investment also appears to have lost momentum in Q3

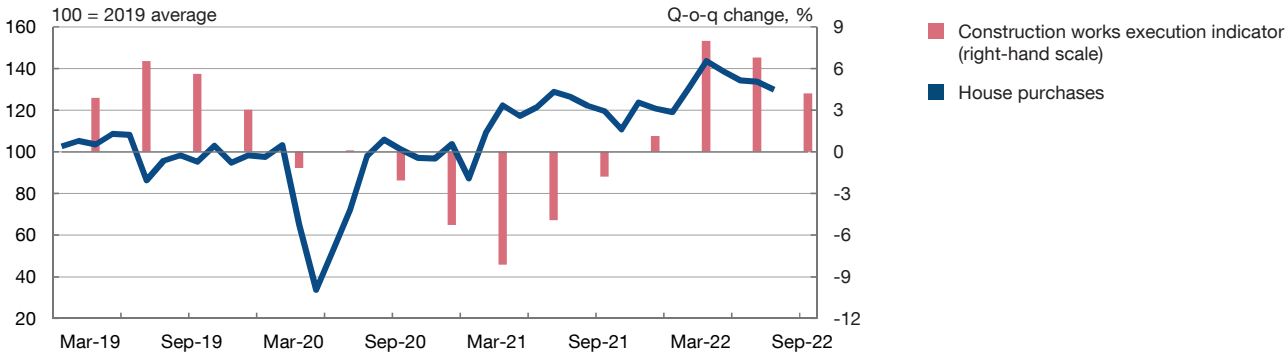
— Although house purchases remain well above pre-pandemic levels, the slowdown seen in the construction works execution indicator in recent months points to some deceleration in housing investment in Q3 (see Chart 19.a).

— In view of the rising cost of bank lending, the fall in the number of building permits and the increasing cost of building materials, this slowdown in residential investment may persist through the remainder of 2022 and into the first quarters of 2023 (see Chart 19.b).

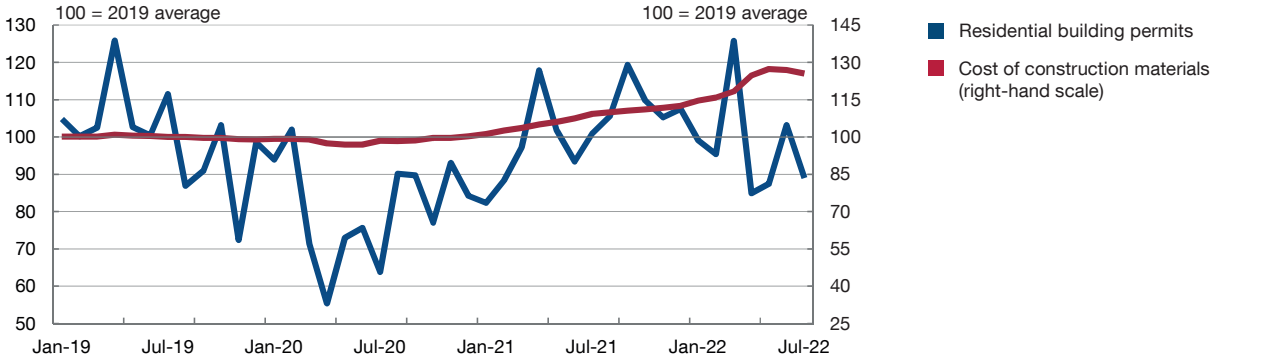
— While house prices increased slightly less in Q2, the year-on-year rises were still significant (8%, according to the National Statistics Institute) given the shortage of housing required to meet the relatively robust demand.

Chart 19

19.a House purchases and the construction works execution indicator (a)



19.b Building permits and construction costs (a)



SOURCES: Banco de España, Centro de Información Estadística del Notariado, INE and Ministerio de Transportes, Movilidad y Agenda Urbana.

a Seasonally adjusted series for purchases and building permits. The latest figures for purchases, building permits and construction costs are from July 2022. The construction works execution indicator assumes three months between the date on which the permit is issued and the start of construction, and construction lasting eighteen months.

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20 International tourism appears to have propped up activity in the summer months…

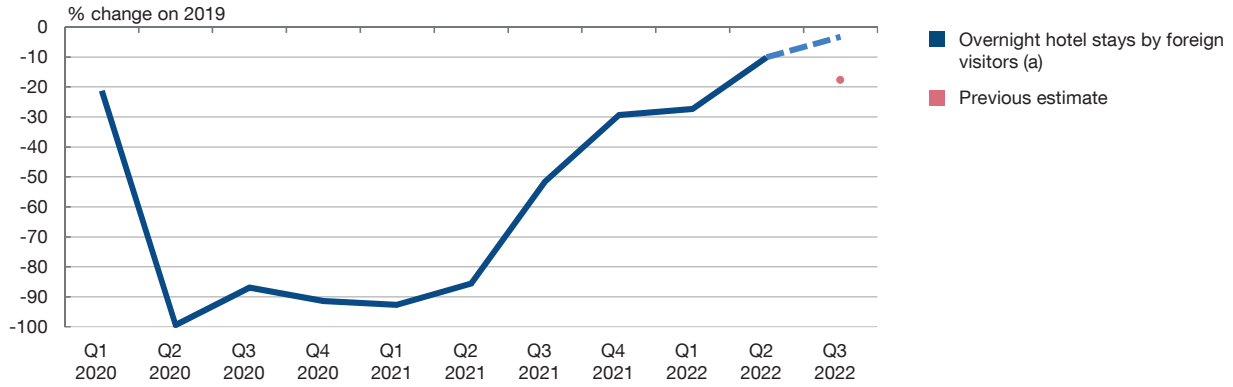
— Tourism caught up to pre-pandemic levels during the summer months faster than was anticipated, spurred by the lifting of almost all of the restrictions on international travel set in place when the virus was most prevalent (see Chart 20.a).

— The recovery in non-resident tourism varied depending on its geographic origin. Thus, in July arrivals of European tourists were down 7.1% on the 2019 figures, while visitors from further afield were slower to return, particularly in the case of Asian tourists.

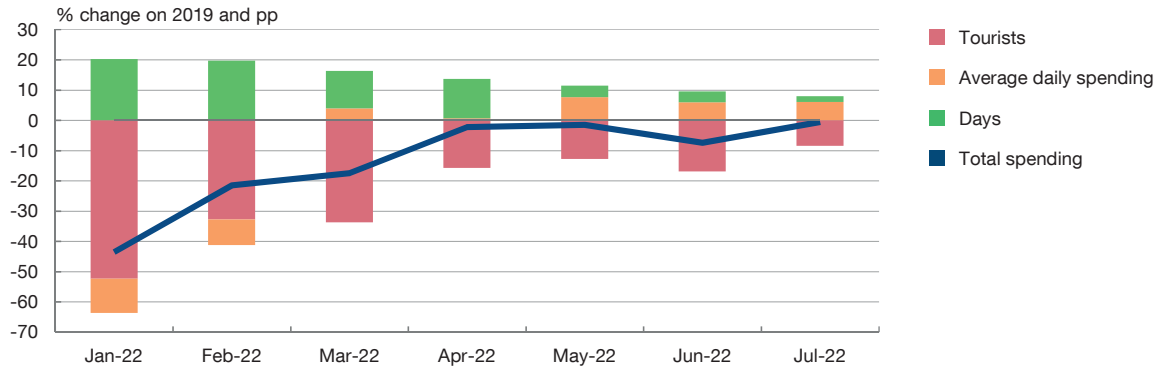
— Meanwhile, nominal spending by non-resident tourists returned to pre-pandemic levels over the summer, despite the incomplete recovery of tourism flows. This was due to the higher average daily spend – at least partially due to higher prices – and the longer average stay (see Chart 20.b).

Chart 20

20.a Overnight hotel stays by foreign visitors (change with respect to the same dates in 2019)



20.b Nominal spending of tourists. Contribution to the logarithmic change with respect to the same months in 2019



SOURCES: Banco de España and INE.

a Q3 estimation based on a regression model using indicators of tourist arrivals, international air passenger arrivals and air transport capacity.

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21 ...although net exports of goods and non-travel services appear to have slowed down

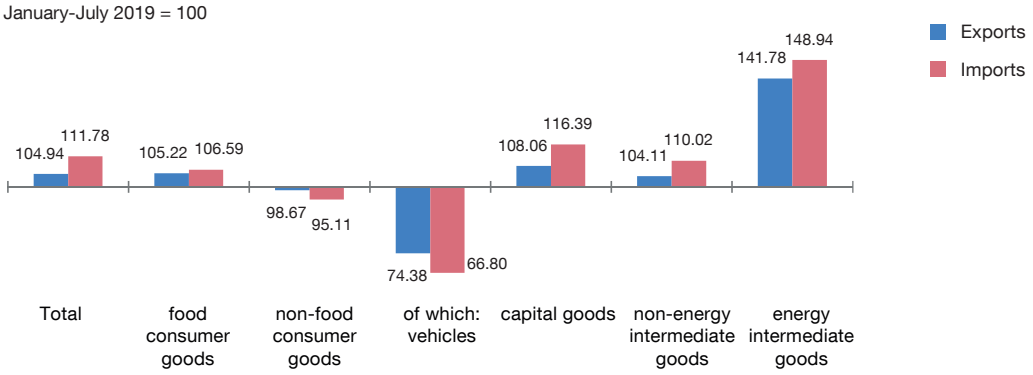
— Despite the slight easing of global supply chain bottlenecks in recent months and the competitiveness gains associated with the depreciation of the euro, transactions with the rest of the world in goods and non-travel services appeared to have slowed in Q3, amid a downward revision to export markets.

— In any event, in recent quarters real goods imports have increased – driven by both energy and non-energy intermediate goods – faster than exports (see Chart 21.a), although Spanish exports have maintained their global share in real terms, performing somewhat better than euro area sales (see Chart 21.b).

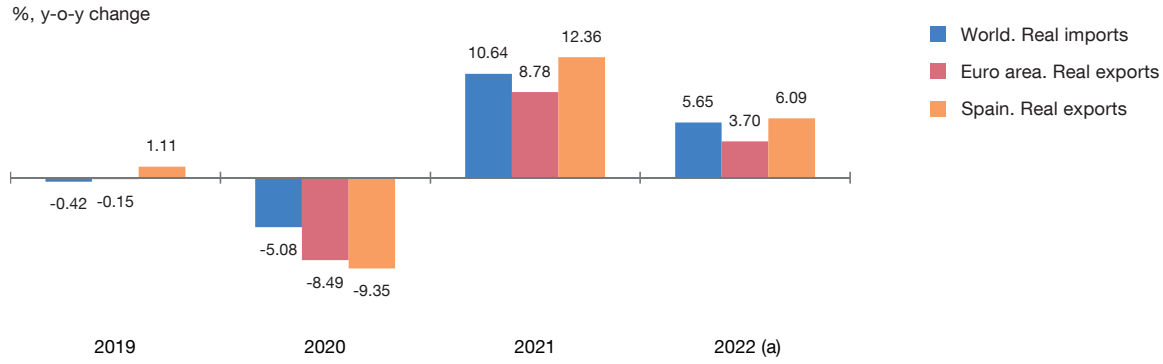
— Meanwhile, the balance of trade in goods worsened significantly up to July in nominal terms, posting a deficit of 4.5% of GDP in cumulative 12-month terms, with a notable deterioration of both the energy and non-energy components.

Chart 21

21.a Real exports and imports of goods. January-July 2022 (as a percentage relative to the same period of 2019)
By use group ("grupos de utilización")



21.b Trade in goods, in real terms



SOURCES: CPB, Departamento de Aduanas, Ministerio de Asuntos Económicos y Transformación Digital and INE.

a Change in January-July 2022 relative to the same period the preceding year.

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22 The government deficit continues to fall thanks to strong revenues, which are expected to offset the impact of the measures adopted to address the energy crisis on public finances

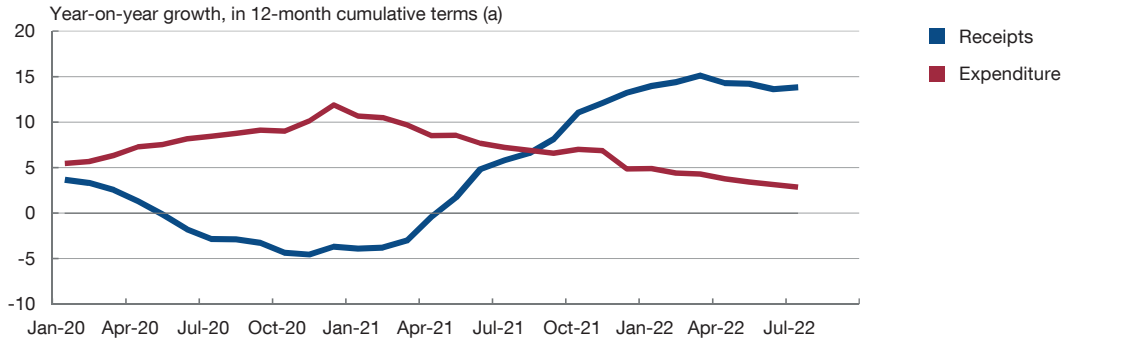
— Up to July, general government revenues continued to grow at very high rates, thanks in large part to the notable increase in activity and prices (see Chart 22.a). Nonetheless, the tax take in recent months was again unexpectedly high relative to its macroeconomic determinants, albeit to a lesser extent than in the two previous years.

— Robust revenues and the expected slowdown in spending combined to reduce the general government deficit to 4.3% of GDP in July (in cumulative 12-month terms)[17], 2.6 pp down on the figure at end-2021 and also below the 5% benchmark established in the Stability Programme for the year as a whole.

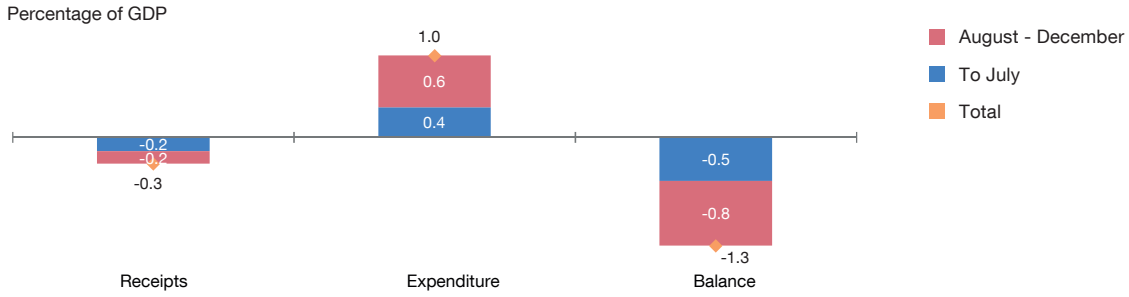
— The general government balance is expected to improve more slowly in the rest of 2022, due to the worsening macroeconomic context and the measures approved by the authorities to counter the adverse impact of rising prices and the fallout from the war in Ukraine. As per the Banco de España's estimates, such measures will have a budgetary cost in terms of GDP of 1.3 pp, of which 0.8 pp will materialise as from July (see Chart 22.b)[18].

Chart 22

22.a Government receipts and expenditure



22.b Measures approved by the government in response to the energy crisis and the invasion of Ukraine



SOURCES: Banco de España, Spanish Government and Intervención General de la Administración del Estado.

a Overall general government figure, not including local government, and excluding transfers between general government units. Data adjusted by distributing extraordinary receipts and expenditure arising in a month over the year as a whole.

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17 Calculated based on the information available for general government as a whole up to June and on the July figure for general government excluding local government.

18 These measures notably include the fuel subsidy, on the expenditure side, and the temporary reductions to VAT and the excise duty on electricity, on the revenue side.

23 In an extraordinarily uncertain context, the Banco de España's latest macroeconomic projections revise GDP growth slightly upwards for 2022, but notably reduce the pace of output growth for 2023

— Box 1 of this report describes the salient features of the Banco de España's latest projections for the Spanish economy (2022-2024).

— Under the assumptions of the exercise, Spanish GDP is projected to grow by 4.5%, 1.4% and 2.9% in 2022, 2023 and 2024, respectively.

— Compared with the projections published in June, the current projections revise GDP growth for 2022 up by 0.4 pp, essentially due to stronger 2022 Q2 output growth than had been forecast in June. Conversely, the growth forecast for 2023 is 1.5 pp lower than envisaged in the previous projection exercise, owing, inter alia, to the higher projected inflation rate, less favourable financing conditions, heightened uncertainty and weakened global demand.

— Meanwhile, the pace of price increases has been revised upwards over the entire projection horizon, with higher and more persistent inflation than projected in June. Specifically, average inflation of 8.7% is expected for 2022, before easing gradually to 5.6% in 2023 and 1.9% in 2024. Among other factors, this upward revision is due to the recent inflation surprises, the new projected trajectories for energy prices and the fact that the euro exchange rate envisaged is lower than in the June projection.

— The risks to these projections, which are subject to extraordinary uncertainty, are tilted to the downside in the case of activity and to the upside in the case of inflation.

Figure 1
Summary of the macroeconomic projections for the Spanish economy (2022-2024)

	2022	2023	2024
GDP	4.5% ⬆ 0.4 pp	1.4% ⬇ 1.5 pp	2.9% ⬆ 0.4 pp
Inflation	8.7% ⬆ 1.5 pp	5.6% ⬆ 3.1 pp	1.9% ⬆ 0.1 pp

SOURCE: Banco de España.

Boxes

Contents

Box 1. Macroeconomic projections for the Spanish economy (2022-2024)

The Banco de España's latest macroeconomic projections revise Spanish GDP growth slightly upwards in 2022, but significantly reduce the rate of growth in 2023. They also envisage higher and more persistent future inflation rates than those projected in June. These projections are subject to an exceptional level of uncertainty and the risks are tilted to the downside for activity and to the upside for inflation, especially on account of hypothetical adverse developments on energy markets.

Box 2. Manufacturing in Spain: recent developments

Between January and July 2022 manufacturing output in Spain increased, with respect to the same period in 2021, by proportionately more than in Germany, France and Italy. Beneath the aggregate performance lies a high level of heterogeneity across the different sub-sectors, the buoyancy of wearing apparel and of leather and related products contrasting with declines in output in basic metals and motor vehicles. This heterogeneity is explained by the differences between subsectors in the intensity of their energy consumption, their exposure to the recovery of social activities and the impact of bottlenecks.

Box 3. An approach to the possible impact of the rise in interest rates on firms' financial position

Rising interest rates will have an adverse impact on the incomes of indebted firms through the increase in the average cost of their debt. As a result of these developments, the share of corporate debt owed by firms under high financial pressure may increase considerably.

Box 4. The pass-through of higher natural gas prices to inflation in the euro area and in Spain

The increase in natural gas prices is passed through to inflation via direct and indirect effects. The latter, arising from the higher prices of products using this commodity in their productive process, take longer to materialise, but are more persistent. The sharp increase in natural gas prices since January 2021 may explain around one third of the inflation in the euro area and in Spain in August 2022.

Box 5. A preliminary analysis of the sensitivity of energy consumption in Spain to energy price rises

In recent quarters, the sharp increase in the price of electricity and vehicle fuel has given rise to a less pronounced fall in the consumption of these products than historical evidence would have suggested. However, it is still too early to assess the precise factors that may have contributed to this reduced sensitivity of demand to price, let alone to conclude that there has actually been a structural change in the price sensitivity of demand.

Box 6. Recent indexation clauses: an analysis

In the collective bargaining agreements recorded up to August an increase in the prevalence of indexation clauses is discernible in those effective in 2022 and, especially, in 2023. The historical evidence suggests that the coverage provided by indexation clauses against different inflation surprises has declined in recent years.

Box 1

MACROECONOMIC PROJECTIONS FOR THE SPANISH ECONOMY (2022-2024)

This box describes the key features of the most recent update to the Banco de España's macroeconomic projections for the Spanish economy. Under the assumptions of the exercise, Spanish GDP is projected to grow by 4.5%, 1.4% and 2.9% in 2022, 2023 and 2024, respectively (see Table 1).[1] Headline inflation is projected to decelerate from 8.7% in 2022 to 5.6% in 2023 and 1.9% in 2024, and underlying inflation from 3.9% this year to 3.5% next year and 2.1% in 2024. The cut-off date for the projections is 30 September 2022.[2]

Activity

In 2022 Q2, GDP grew by 1.5%, 1.1 pp more than anticipated under the baseline scenario of the June projections,[3] partly reflecting strong tourism exports. This demand component was boosted by the lifting of the pandemic restrictions, a factor that more than offset the adverse impact on economic activity arising from the Russian invasion of Ukraine. The latest QNA data also reflect revised growth rates for previous quarters and, in particular, for 2022 Q1, the rate now estimated being 0.4 pp lower. Overall, in terms of their impact on average GDP growth in 2022, these data amount to a somewhat more favourable starting point for activity in the current projection exercise than was anticipated in June.

Following the pick-up in activity in Q2, various developments, exacerbated by the war in Ukraine, had a negative impact on economic activity during the summer and have darkened the global economic outlook for the coming quarters. In particular, the rise in geopolitical uncertainty and the recent deepening of the energy crisis in Europe, as a consequence of the interruptions to supplies from Russia, have had global consequences, weighing on economic growth and increasing inflationary pressures. All this has affected the spending decisions of private agents in Spain and other countries, by knocking their confidence and exacerbating the loss of real income they were already experiencing. Moreover, the persistent pronounced upside surprises in consumer price growth have led to monetary policy tightening worldwide. In the specific case of the ECB, this has taken the form of a cumulative interest rate hike of 125 bp since June, so that financial conditions in the euro area are now less accommodative.

Table 1
Macroeconomic projections for the Spanish economy (a)

Annual rates of change (%)

	GDP				HICP				HICP excluding energy and food				Unemployment rate (% of labour force) (b)			
	2021	2022	2023	2024	2021	2022	2023	2024	2021	2022	2023	2024	2021	2022	2023	2024
October 2022	5.5	4.5	1.4	2.9	3.0	8.7	5.6	1.9	0.6	3.9	3.5	2.1	14.8	12.8	12.9	12.4
June 2022	5.1	4.1	2.8	2.6	3.0	7.2	2.6	1.8	0.6	3.2	2.2	2.0	14.8	13.0	12.8	12.7

SOURCES: Banco de España and INE.
NOTE: Latest QNA figure published: 2022 Q2.

a Projections cut-off date: 30 September 2022.
b Annual average.

1 Compared with the projections published on 10 June, the current projections incorporate the new information that has become available since then. In particular, this includes, first, the latest Annual National Accounts estimates (the first estimate for 2021 and the revised figures for 2019 and 2020). According to this source of information, GDP growth in 2021 was 5.5% (0.4 pp higher than estimated on the available QNA data), while the fall in GDP in 2020 was 11.3% (0.5 pp more than had been estimated previously). Second, the 2022 Q2 data from the Quarterly National Accounts (QNA) and the Quarterly Non-Financial Accounts of the Institutional Sectors (QNFAIS) are also incorporated. Finally, the current projections take into account the changes in the technical assumptions underlying developments in the different key variables in the exercise (see Table 2).

2 With the exception of the assumptions regarding export market developments, which are taken from the *September ECB staff macroeconomic projections for the euro area*, with cut-off date of 23 August.

3 See Macroeconomic projections for the Spanish economy (2022-2024).

Box 1
MACROECONOMIC PROJECTIONS FOR THE SPANISH ECONOMY (2022-2024) (cont'd)

These developments have been reflected in the latest monthly indicators for the Spanish economy, which point to a slowdown in activity in Q3. Thus, social security registrations show that job creation, albeit continuing in this period, slowed significantly. Furthermore, firms' turnover also slowed, according to the Banco de España Business Activity Survey (EBAE).[4] However, there appears to have been significant cross-sector heterogeneity in activity developments, according to the results of the EBAE. In particular, sectors that have benefited most from the end of the pandemic restrictions, such as hospitality and leisure, posted higher turnover in Q3.

In short, subject to the caveats arising from the fact that the quantitative information available for August and September is still incomplete, quarter-on-quarter GDP growth in Q3 is estimated at 0.1%. In terms of the demand components, the loss of momentum in private consumption – implied by the weakness of the latest data for indicators such as retail sales and private vehicle registrations – stands out, against a background in which, according to the European Commission indicator, consumer confidence reached its lowest level since 2013.

A crucial assumption underpinning the projections are the gas and electricity price trajectories. In the present context, with such high levels of uncertainty, Iberian Gas Market (MIBGAS) futures prices are assumed to be the most likely scenario for the future developments in gas

Table 2
International environment and monetary and financial conditions (a)

Annual rates of change (%), unless otherwise indicated

		October 2022 projections			Difference between the current projections and the June 2022 projections (b)		
	2021	2022	2023	2024	2022	2023	2024
Spain's export markets (c)	9.8	6.3	2.6	3.2	1.8	-0.4	-0.2
Oil price in dollars/barrel (level)	71.1	102.9	79.5	74.2	-3.0	-13.9	-10.1
Monetary and financial conditions							
Dollar/euro exchange rate (level)	1.18	1.04	0.98	0.98	-0.03	-0.07	-0.07
Nominal effective exchange rate against non-euro area countries (d) (2000 = 100)	120.7	111.3	107.3	107.3	-1.8	-4.6	-4.6
Short-term interest rates (3-month EURIBOR; level) (e)	-0.5	0.3	2.9	3.0	0.4	1.6	1.4
Long-term interest rates (10-year Spanish government bond level; level) (e)	0.3	2.2	3.4	3.6	0.4	1.0	1.0

SOURCES: ECB and Banco de España.

a Cut-off date for assumptions: 23 August 2022 for Spain's export markets and 30 September 2022 for all other variables. Figures expressed as levels are annual averages; the figures expressed as rates are calculated on the basis of the related annual averages.
b The differences are in rates for export markets, in levels for oil prices, the dollar/euro exchange rate and the nominal effective exchange rate and in percentage points for interest rates.
c The assumptions regarding the behaviour of Spain's export markets presented in the table are obtained from the *September 2022 ECB staff macroeconomic projections for the euro area*.
d A positive percentage change in the nominal effective exchange rate denotes an appreciation of the euro.
e For the projection period, the figures in the table are technical assumptions, prepared following the Eurosystem's methodology. These assumptions are based on futures market prices or on proxies thereof and should not be interpreted as a Eurosystem prediction as to the course of these variables.

4 See M. Izquierdo (2022), "Encuesta a las empresas españolas sobre la evolución de su actividad: tercer trimestre de 2022", Notas Económicas, *Boletín Económico* 3/2022, Banco de España.

Box 1
MACROECONOMIC PROJECTIONS FOR THE SPANISH ECONOMY (2022-2024) (cont'd)

prices.[5] In particular, the prices on these markets can be expected to reflect all the relevant information regarding the most likely future scenario for the geographical diversification of European gas imports (to replace Russian gas with supplies from other producer countries), the substitution of other energy sources for gas and energy-saving measures. Gas prices on futures markets should also reflect to some extent the most likely scenario for how quickly the impact of the current uncertainty on agents' spending decisions will dissipate.

Over the next few quarters, high gas and electricity prices will adversely affect economic activity. However, the high gas prices themselves, coupled with the measures adopted at European level to reduce gas use, will dampen demand for this commodity. This should avoid the need for severe gas rationing, even if Russian gas supplies to the European Union were cut off completely.

Activity will recover momentum from spring, fuelled by a combination of factors. These include an easing of the ongoing energy market tensions – bringing with it a progressive recovery in agents' real income, confidence improvements and a strengthening of external demand –, the gradual abatement of the persisting supply chain disruptions and a larger deployment of Next Generation EU (NGEU) funds.[6] Inbound tourism flows, which have now virtually recovered pre-health crisis levels, will also underpin activity, although in the near term their momentum will be tempered by the effects of higher inflation on the real income of potential tourists.

In annual average terms, GDP growth of 4.5% is projected for 2022 (see Table 1 and Chart 1). Given the significant slowdown in economic activity expected in the second half of the year, this output growth essentially reflects the activity improvements that had already materialised by

Chart 1
GDP growth and contributions of main components

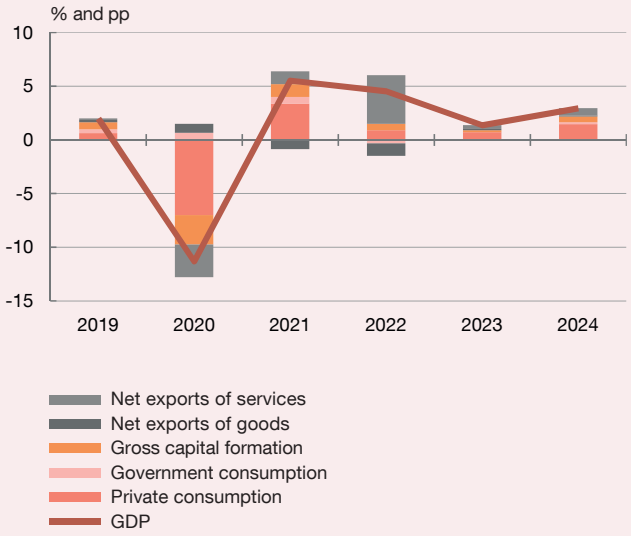
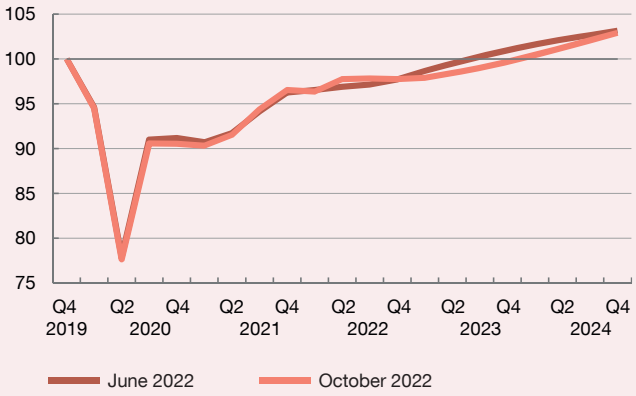


Chart 2
Real GDP. Level (2019 Q4 = 100)



SOURCES: INE and Banco de España.

5 Specifically, gas prices on futures markets are taken up to the one-year term. Thereafter, prices are considered not very representative, owing to limited market liquidity, and therefore it has been decided to keep the price of this commodity constant at the futures price for October 2023 until the end of the projection horizon. The electricity price trajectory, meanwhile, is obtained from a formula that approximates the technical efficiency of electricity generation from gas with currently existing technology. Also, the cost of CO2 emission allowances is included. The trajectory of this cost is assumed to coincide with that used by the ECB staff in the September ECB staff macroeconomic projections for the euro area. Finally, the calculation of the electricity price trajectory takes into account the mechanism to cap the price of gas until May 2023 and the reversal of the tax measures when the period they have been approved for expires.

6 The projects under the NGEU's Recovery and Resilience Facility are being implemented with something of a delay compared with the June projections, translating into a lower contribution to economic growth in the near term and a higher one towards the end of the projection horizon. See Annex 1.

Box 1
MACROECONOMIC PROJECTIONS FOR THE SPANISH ECONOMY (2022-2024) (cont'd)

the end of Q2. In 2023, GDP growth will moderate very significantly to 1.4% as a result of weak activity levels in 2022 H2 and in 2023 Q1. Lower output growth in the final stretch of one year considerably curbs the average growth rate in the following year through carry-over effects. Meanwhile, the economic improvement from spring 2023 will progressively intensify, paving the way for GDP growth of 2.9% in 2024. The return to pre-pandemic output levels will probably be delayed until 2024 Q1 (see Chart 2), some two quarters later than projected in June.

As compared with those published in June, the current projections revise up GDP growth for 2022 by 0.4 pp (see Table 3). The latest QNA data, to Q2, which reflect a sharper overall increase in GDP than estimated in June, mean an automatic upward revision of 0.7 pp in the average growth rate for this year. However, that increase is undermined by the weaker activity growth now expected for H2. Meanwhile, the forecast growth for 2023 is 1.5 pp lower than projected in June. The factors behind this notable downward revision to growth for 2023 include higher projected inflation rates, less favourable financing conditions, the difficulties faced by firms in the sectors hardest hit by the deepening of the energy crisis, heightened uncertainty and the weakening of global demand.

Prices and costs

The pace of consumer price growth, measured by the harmonised index of consumer prices (HICP), continued to surprise on the upside in the summer months. In July, this index reached a year-on-year rate of 10.8%, its highest level since 1984. Since then, the food, non-energy industrial goods and services components have continued to accelerate, meaning a growing proportion of components have been recording very high rates of inflation. In particular, the prices of leisure, hospitality and tourism services have risen sharply, linked to the notably robust demand that followed the lifting of virtually all of the pandemic restrictions. However, the rate of change in the

Table 3
Projections for the main macroeconomic aggregates of the Spanish economy (a)

Annual rate of change in volume terms (%) and % of GDP

		October 2022 projections			June 2022 projections		
	2021	2022	2023	2024	2022	2023	2024
GDP	5.5	4.5	1.4	2.9	4.1	2.8	2.6
Private consumption	6.0	1.6	1.3	3.2	1.4	4.9	2.8
Government consumption	2.9	-1.5	0.0	0.9	-0.2	0.4	1.2
Gross fixed capital formation	0.9	4.7	1.7	2.6	6.5	2.1	2.4
Exports of goods and services	14.4	17.5	4.0	3.1	12.5	2.9	3.5
Imports of goods and services	13.9	8.2	3.1	2.4	7.0	4.0	3.1
Domestic demand (contribution to growth)	5.2	1.1	0.9	2.5	2.1	3.2	2.4
Net external demand (contribution to growth)	0.3	3.4	0.5	0.4	2.0	-0.4	0.2
Nominal GDP	7.9	8.1	5.9	5.6	7.2	5.8	5.0
GDP deflator	2.3	3.5	4.5	2.6	2.9	2.9	2.4
HICP	3.0	8.7	5.6	1.9	7.2	2.6	1.8
HICP excluding energy and food	0.6	3.9	3.5	2.1	3.2	2.2	2.0
Employment (hours)	7.2	4.0	0.8	2.5	4.6	1.5	1.1
Unemployment rate (% of labour force). Annual average	14.8	12.8	12.9	12.4	13.0	12.8	12.7
Net lending (+)/net borrowing (-) of the nation (% of GDP)	1.9	2.6	2.7	3.4	3.1	3.2	3.0
General government net lending (+)/net borrowing (-) (% of GDP)	-6.9	-4.3	-4.0	-4.3	-4.6	-4.5	-4.2
General government debt (% of GDP)	118.3	113.3	110.7	109.9	114.9	113.2	112.5

SOURCES: Banco de España and INE.
NOTE: Latest QNA figure published: 2022 Q2.

a Projections cut-off date: 30 September 2022.

Box 1
MACROECONOMIC PROJECTIONS FOR THE SPANISH ECONOMY (2022-2024) (cont'd)

headline index has eased somewhat recently thanks to the decline in fuel prices.[7] Nonetheless, this deceleration has been less intense than envisaged in the June projections owing to the surge in gas prices, which persisted through to end-August and also affected electricity prices.

One factor that has reined in inflation developments are the very measures introduced by authorities to dampen the impact of these higher gas prices. Specifically, it is estimated that in August these measures helped to lower headline inflation by somewhat more than 2 pp, with approximately half of this effect owing to the cap on the price of gas used to produce electricity.

Over the projection horizon, headline HICP is expected to gradually ease from its current levels, largely due to the expected reduction in the pace of growth in the energy and food components (see Chart 3), which is consistent with the price trajectories of oil, gas and food commodities on the futures markets.

However, underlying inflation is not expected to decline from its current levels until next spring (see Chart 4), since, over the coming months, firms will finish off passing through the recent cost increases to their selling prices. The completion of this pass-through, coupled with the firming of the recent indications that the persistent global supply chain disruptions are fading away, should lead to a progressive moderation of underlying inflation. Thus, in average annual terms, underlying inflation will reach 3.9% this year and moderate to 3.5% in 2023 and 2.1% in 2024. Headline inflation, meanwhile, will ease from 8.7% in 2022 to 5.6% in 2023 and 1.9% in 2024.

These projections rest on two very important assumptions. First, the available evidence indicates that the prices of non-energy goods and services have responded to the current energy price shock more swiftly in the current inflationary episode than they have, on average, in the past. The projections therefore assume that the feed-through of higher energy costs to final selling prices is already at a relatively advanced stage. Second, the wage response to the upturn in inflation has, thus far, been moderate. Looking ahead, this response is expected to remain relatively constrained, so that a price-wage spiral will be avoided.

The recent surprises in price growth – largely explained by sharper increases in energy and food commodity prices

Chart 3
Contributions to HICP growth by component

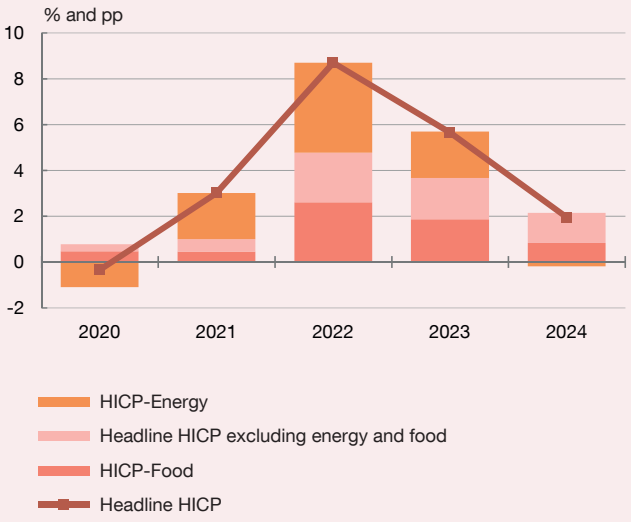
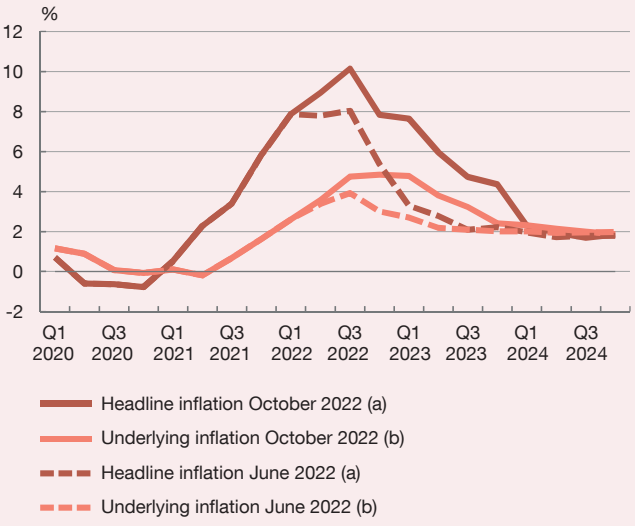


Chart 4
Headline and underlying inflation



SOURCES: Banco de España and INE.

a Measured by the HICP.
b Measured by the HICP excluding energy and food.

7 According to the flash estimate, HICP inflation stood at 9.3% in September.

Box 1
MACROECONOMIC PROJECTIONS FOR THE SPANISH ECONOMY (2022-2024) (cont'd)

than expected in June, and by a faster feed-through of that price growth to the prices of other goods and services – mean a higher starting point than envisaged in the June projections. This new starting point, together with the new projected trajectories for energy prices and a lower euro exchange rate, implies persistently higher headline and underlying inflation rates than projected in June (see Table 1).

Risks

The risks to these projections are tilted to the downside in the case of activity and to the upside in the case of inflation. In particular, the main risk derives from developments in the energy markets that could differ significantly from those envisaged in the baseline scenario. Such risks would in principle be concentrated in the gas market, and they could manifest themselves in prices (following a higher or lower trajectory than in the baseline scenario) and in volumes (greater supply problems than those considered or, conversely, a complete absence of restrictions on the use of gas).

In this respect, performing various sensitivity exercises is useful for assessing how certain significant changes in the baseline assumptions regarding natural gas market dynamics may affect growth and inflation.

First, in the case of gas price developments, two alternative paths to that envisaged in the baseline scenario are considered. In particular, under an adverse scenario, it is assumed that gas prices gradually increase from their current level, reaching their August 2022 peak in January 2023 and remaining at that level over the rest of the projection horizon (see Chart 5).

A benign scenario is also considered, which envisages lower gas prices from October 2022 than under the baseline scenario. Specifically, prices are assumed to decline on a linear basis to January 2024, whereupon they reach the level indicated by the futures markets for transactions for this time horizon, to hold steady at this level until December 2024.[8]

Second, as regards volumes, a single alternative scenario has been drawn up, which assumes that Europe's ability to replace Russian gas imports in the short term is limited and stands at the lower end of the range of elasticities of substitution considered in Quintana (2022).[9] Such limitations may owe to the difficulty in finding alternative

Chart 5
Gas prices

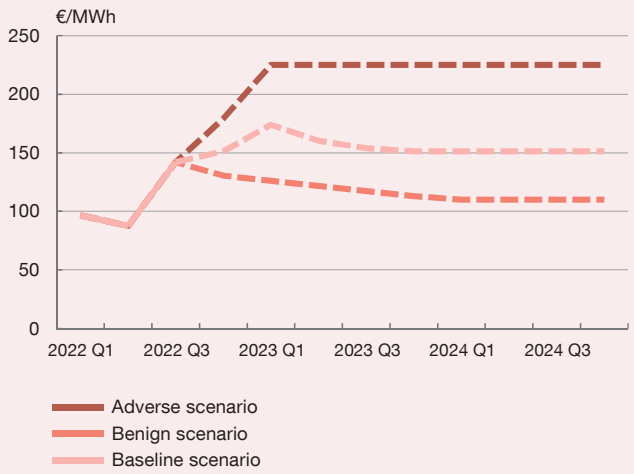
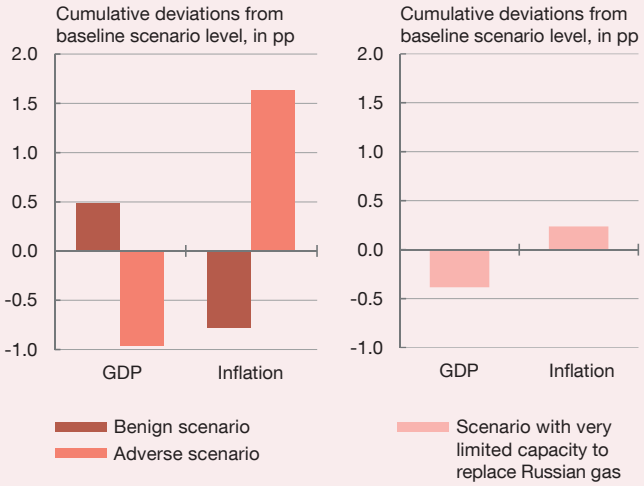


Chart 6
Cumulative impact on GDP and inflation in the period 2023-2024



SOURCES: MIBGAS and Banco de España.

8 As mentioned, the baseline scenario envisages that gas prices from November 2023 would remain constant at their October 2023 value on the futures markets. The reason for this assumption is that futures market liquidity is very low at horizons of over one year.

9 See J. Quintana (2022). "Economic consequences of a hypothetical suspension of Russia-EU trade", Analytical Articles, *Economic Bulletin* 2/2022, Banco de España.

Box 1
MACROECONOMIC PROJECTIONS FOR THE SPANISH ECONOMY (2022-2024) (cont'd)

suppliers, gas not being easily replaceable by other energy sources, or demand being high ahead of an unusually cold winter. It should be noted that, under the baseline scenario, the elasticity of substitution is assumed to be at the upper end of this range (as a result of the preparatory work undertaken by many European countries in recent months to limit the economic impact of Russian gas supplies being cut off), reflecting a relatively moderate replacement capacity in the short term.

The simulations performed using the Quarterly Macroeconometric Model of the Banco de España suggest that, under the adverse price scenario, GDP in 2024 would be 1 pp lower than that envisaged in the current projections, while inflation would be 1.1 pp and 0.5 pp higher in 2023 and 2024, respectively (see left-hand panel of Chart 6). Conversely, the sharper correction in gas prices envisaged under the benign gas price scenario would lead to a greater reduction in inflation rates and stronger rates of growth in activity from 2023 than those projected under the baseline scenario. Lastly, under the scenario that assumes a limited capacity to replace Russian gas, activity in 2023-2024 would grow 0.4 pp less than under the baseline scenario, while inflation would be 0.2 pp higher (see right-hand panel of Chart 6).

The projections are also subject to other additional risks. A first source of uncertainty is associated with the extent to which the recent rise in prices and costs is passed through to other prices in the economy and to wages. In this respect, the force with which higher production costs have been passing through to final prices in recent months has increased the likelihood of significant second-round effects or price-wage spirals and, therefore, of an exacerbation of the inflationary process, with adverse ramifications for external competitiveness and for activity and employment. Further, the persistence of the current episode of high price growth increases the risks of a deanchoring of medium-term inflation expectations, which have risen, albeit modestly, in recent months.

Looking forward, the pace with which the investment projects under the NGEU programme filter through to the economy also represents a further source of uncertainty, following the delays that seem to have occurred in recent quarters. In addition, in the current setting of high uncertainty, a potential rise in precautionary saving – weighing down household spending and aggregate consumption – cannot be ruled out.

Lastly, the combination of the monetary normalisation process and the worsening economic outlook is translating into a tightening of financial conditions in the financial markets, which could lead to a potentially disruptive episode on these capital markets. In any event, the cumulative real income losses of firms and households, together with the higher interest rates projected, increase the vulnerability of those agents in a less sound economic and financial position. This could have a greater impact on their spending levels than that envisaged in the current projections.

ANNEX 1
Assumptions underlying the projections

As compared with the June projections, the main changes to the assumptions relate to energy prices (lower for oil, but significantly higher for gas), short and long-term interest rates (both now higher), the euro exchange rate (now lower) and export markets (whose growth rate has been revised downwards in 2023 and, to a lesser extent, in 2024) (see Table 2).

In the fiscal policy arena, the new measures approved since the cut-off date for the June projections entail an increase in the general government budget deficit of 0.8 pp of GDP.[10] All these measures are temporary, except for the increase in defence spending of 0.1 pp of GDP. Overall, the temporary measures approved since the start of 2022 in relation to the rise in energy prices and the fall-out from the war are expected to amount to 1.3 pp of GDP. Nevertheless, as compared with the June projections, a sharper reduction in the budget deficit is expected this year, as, on the latest information available, the increase in tax revenue in the year as a whole will amply exceed the cost of the new measures.

For 2023 and 2024, it is estimated that the temporary taxes on the energy sector and on credit institutions and specialised lending institutions will lead to a transitory improvement in the budget balance of 0.3 pp of GDP in each year. In the absence of sufficient information, other assumptions made in the exercise include a rise in public sector wages in line with that expected in the private sector and a slight convergence of actual tax revenue towards the lower level that would be implied by its

10 The tax measures announced on 29 September have not been included, pending the specifics of the legislation and a subsequent detailed analysis.

Box 1
MACROECONOMIC PROJECTIONS FOR THE SPANISH ECONOMY (2022-2024) (cont'd)

historical relationship with the tax bases. For the other items, the projections are based on the usual technical assumptions (including the indexation of pensions to the CPI) and on the "no-policy-change" growth in the more discretionary items, entailing higher nominal increases than those projected in June owing to the upward revisions in the expected rate of change in the deflators. Lastly, the data available on the pace of NGEU implementation lead to estimated expenditure being revised down in 2022 and 2023 and slightly up in 2024.

As a result of the various temporary measures approved, the fiscal policy stance, measured by the change in the primary structural balance,[11] is expected to be moderately expansionary in 2022 and contractionary in 2023, after these measures have been withdrawn. In 2024, the increase in pensions (in line with the CPI for the prior year) above the economy's potential growth, together with a slight narrowing of the tax revenue gap, is expected to once again make for an expansionary fiscal policy stance.

11 Adjusted for EU payments and receipts, given that, although they affect the structural deficit, they have no impact on the fiscal policy stance in Spain, as they do not affect resident agents.

Box 2

MANUFACTURING IN SPAIN: RECENT DEVELOPMENTS

Alejandro Fernández Cerezo and Elvira Prades

This early-release box was published on 16 September

According to the industrial production index (IPI),[1] manufacturing output in Spain between January and July 2022 was up 2.9% on the same period in 2021. This figure contrasts with the more modest increases recorded in France and Italy (1.3% and 1.2%, respectively) and the 1.2% decline in Germany (see Chart 1.1). However, beneath the positive aggregate performance of the Spanish IPI lies a high level of heterogeneity across the different manufacturing sub-sectors. Specifically, the output of some sub-sectors, such as the manufacture of basic metals and of motor vehicles, fell in the first seven months of 2022, whereas that of some consumer goods sub-sectors, for example the manufacture of wearing apparel and of leather and related products, recorded sizeable increases (see Chart 1.2). This box analyses three factors that could explain such heterogeneity: higher energy prices against the backdrop of the war in Ukraine; changes in consumption patterns associated with contact-intensive activities returning to normal after the worst of the pandemic had passed; and global supply chain bottlenecks.

First, it stands to reason that the recent surge in energy prices has had a greater impact on the output of those sub-sectors with more energy dependent production processes. One way of quantifying such dependence is by using input-output tables to calculate the ratio of total energy spending to total output for each sub-sector.[2] According to this metric, manufacture of basic metals is the most energy dependent sub-sector, spending €0.33 on energy per euro of output. Considered overall, there is a negative correlation between manufacturing output in 2022 and energy dependence, i.e. the more energy dependent the sub-sector, the worse its output has fared over the course of 2022 (see Chart 1.3).

Second, the lifting of the pandemic restrictions has accelerated in recent months. This has led to a recovery in demand in contact-intensive activities and has boosted the output of the manufacturing sub-sectors more closely linked to such activities, such as the manufacture of wearing apparel and of leather and related products. The manufacturing sub-sectors whose output in 2020 was hardest hit by the health restrictions are precisely those which have grown the most so far in 2022 after such containment measures were lifted and mobility and contact-intensive activities recovered somewhat (see Chart 1.4).

Third, the global supply chain bottlenecks are another factor that could explain the heterogeneity across the manufacturing sub-sectors in terms of industrial output in recent months. The European Commission's Business and Consumer Surveys are useful for approximating the impact of these disruptions in each sub-sector, given that, inter alia, they quantify the percentage of manufacturing firms experiencing shortages of material and/or equipment. Both in Spain and most other European countries, these percentages have climbed to all-time highs in the past few quarters and, despite improving somewhat recently, they remain at historically very high levels, particularly in certain sub-sectors such as the manufacture of motor vehicles. These data show that there is indeed a negative correlation – albeit somewhat weaker than for the two previous factors – between the impact of the bottlenecks on the different manufacturing sub-sectors and their industrial output in 2022 (see Chart 1.5).[3]

In sum, the heterogeneous output developments across Spain's manufacturing sub-sectors so far in 2022 could be explained, at least in part, by the differences in terms of energy dependence, exposure to the recovery in contact-intensive activities and the severity of the supply shortages. A multiple regression analysis examining these three factors as determinants of the IPI performance in 2022 indicates that, overall, they could explain approximately 65% of the variation between the different sub-sectors. Specifically, energy dependence would explain 53% of the total variation, while the recovery in

1 The IPI is an index measuring monthly changes in the real output of industry, i.e. adjusting for prices, drawing on a business survey. Unlike quarterly gross value added (GVA) in the National Accounts, the IPI provides a breakdown for the different manufacturing sub-sectors. Specifically, this box analyses the IPI for the 23 manufacturing sub-sectors at two-digit level of the Spanish National Classification of Economic Activities (NACE Rev. 2).

2 In other words, for each sub-sector the ratio between the value of purchases from the energy sectors (energy supply and manufacture of coke and refined petroleum products) and its total output is calculated. The OECD Inter-Country Input-Output (ICIO) Tables are used for this analysis. The calculations are made in nominal terms for 2018.

3 For each sub-sector, the difference is calculated between the percentage of firms affected by a shortage of material and/or equipment and the 90th percentile of its historical distribution. For more details, see Box 5 "The potential impact of global supply chain bottlenecks on the Spanish economy in coming quarters", "Quarterly report on the Spanish economy", *Economic Bulletin* 4/2021, Banco de España.

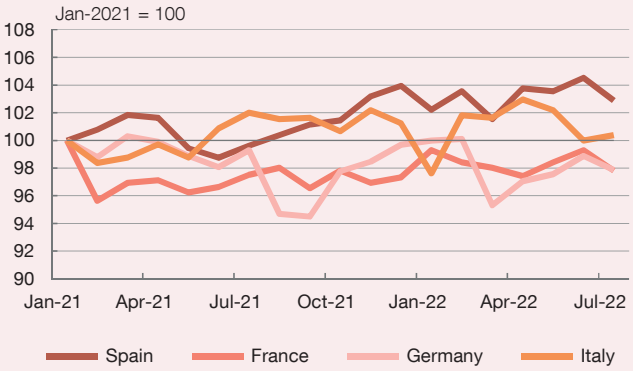
Box 2
MANUFACTURING IN SPAIN: RECENT DEVELOPMENTS (cont'd)

contact-intensive activities would account for 32% and the bottlenecks for 15% (see Chart 1.6).[4]

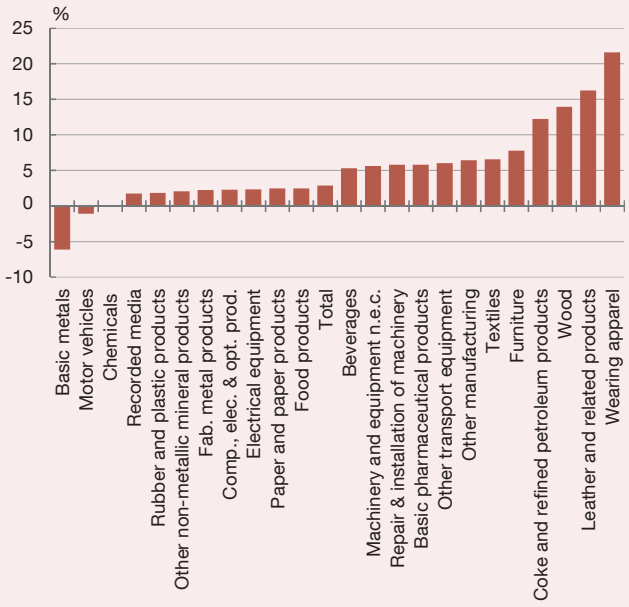
Lastly, the fact that, in aggregate terms, Spain's manufacturing sector has performed comparatively better

Chart 1
Manufacturing in Spain: recent developments

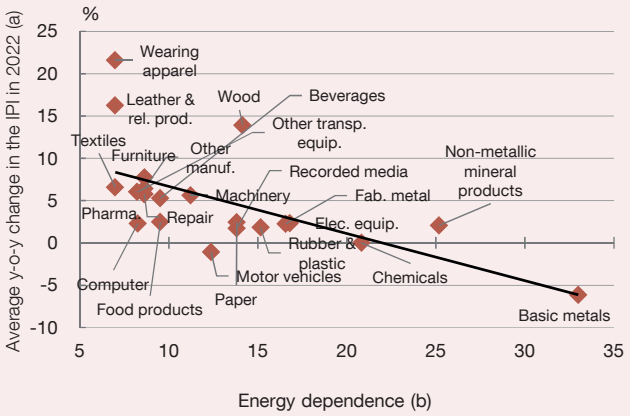
1 Manufacturing IPI



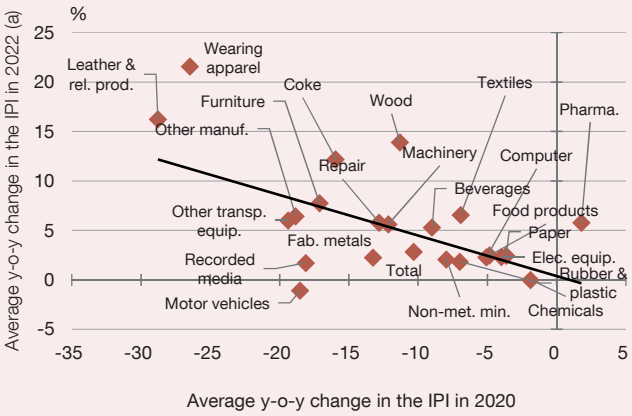
2 Average year-on-year change in the IPI in 2022, by sub-sector in Spain (a)



3 Change in the IPI in 2022 and energy dependence, by sub-sector in Spain



4 Change in the IPI in 2022 and impact of the pandemic in 2020, by sub-sector in Spain



SOURCES: INE, Eurostat, European Commission and OECD Inter-Country Input-Output tables (ICIO-2018).

a Average rate of change in the IPI between January and July 2022 compared with the same period of 2021.
b Total direct and indirect spending on energy divided by total output.

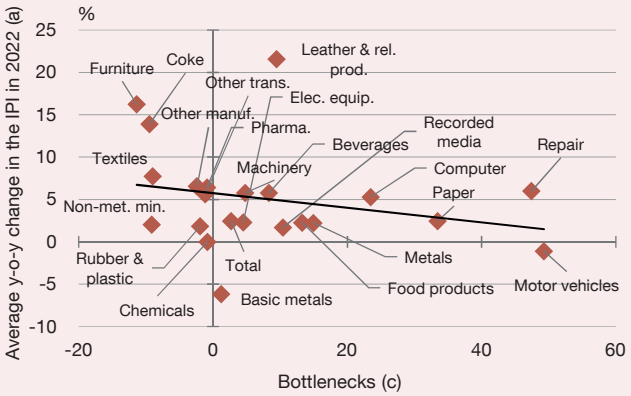
4 Calculations based on the methodology devised by F. Hüttner and M. Sunder (2011), "Decomposing R^2 with the Owen value", *Working Paper* No 100, Universität Leipzig.

Box 2
MANUFACTURING IN SPAIN: RECENT DEVELOPMENTS (cont'd)

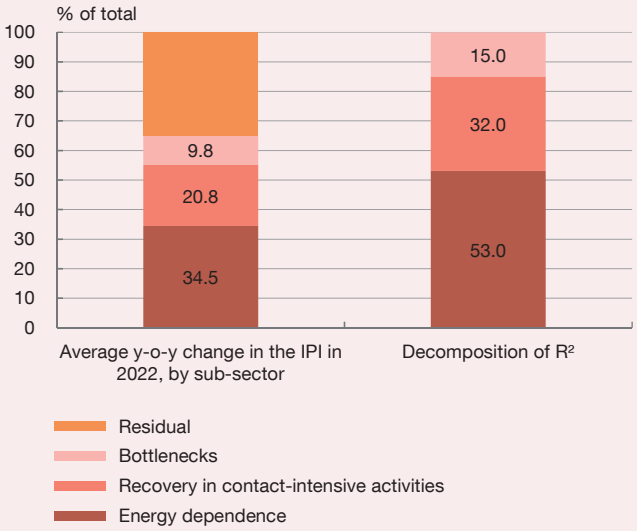
than its main European counterparts may largely owe to its specific productive structure. For instance, manufacture of textiles, of wearing apparel and of leather and related products – the best-performing sub-sectors recently thanks to the recovery in contact-intensive activities – account for 6.8% of the Spanish manufacturing sector, while in Germany, for example, that percentage is as low as 1.1%.[5] Meanwhile, the share in total Spanish manufacturing of basic metals, motor vehicles and chemicals – the hardest-hit sub-sectors in recent quarters due to their energy dependence and the bottlenecks –, stands at 21%, well below the figure of 30.7% for Germany. These compositional differences between Spanish and German manufacturing partly explain the relative buoyancy of Spanish industry in 2022. In particular, were the shares of the different Spanish manufacturing sub-sectors to match those of Germany, Spanish IPI would have grown by 1.9% between January and July 2022, as compared with the same period a year earlier, rather than the 2.9% indicated above.

Chart 1
Manufacturing in Spain: recent developments (cont'd)

5 Change in the IPI in 2022 and bottlenecks, by sub-sector in Spain



6 Breakdown of the determinants of IPI heterogeneity in 2022 (d)



SOURCES: INE, Eurostat, European Commission and OECD Inter-Country Input-Output Tables (ICIO-2018).

a Average rate of change in the IPI between January and July 2022 compared with the same period of 2021.
c Drawing on European Commission opinion surveys, for each sub-sector the difference is calculated between the percentage of firms affected by a shortage of material and/or equipment in 2022 Q3 and the 90th percentile of its historical distribution.
d Based on a regression that correlates the average year-on-year change in the IPI in 2022 by sub-sector and the three factors (energy dependence, recovery in contact-intensive activities and bottlenecks) as determinants. The R^2 of the regression is approximately 65% and each determinant's contribution to that R^2 is decomposed using the methodology devised by F. Hüttner and M. Sunder (2011), "Decomposing R2 with the Owen value", *Working Paper* No 100, Leipzig, Universität Leipzig, Wirtschaftswissenschaftliche Fakultät.

5 In 2019, the share of the manufacturing sector, measured in terms of GVA, in the total economy amounted to 12.1% in Spain, 21.7% in Germany, 11.2% in France and 16.6% in Italy.

Box 3

AN APPROACH TO THE POSSIBLE IMPACT OF THE RISE IN INTEREST RATES ON FIRMS' FINANCIAL POSITION

Maristela Mulino

This early-release box was published on 20 September

The strong inflationary pressures seen in the euro area in recent quarters have caused the process of monetary policy normalisation to gather pace, leading to a very sharp rise in reference interest rates on the financial markets. For instance, between 31 December 2021 and 12 September 2022, the 12-month EURIBOR rose by 258 basis points (bp), to 2.08%, while the 10-year OIS rate[1] climbed by 208 bp.

Such interest rate rises will progressively pass through to the average cost of debt for firms, but also to the average remuneration of some of their financial assets (such as deposits and loans), thereby pushing up their financial costs and revenues. This box aims to estimate the impact that different hypothetical increases in market interest rates would have on firms' debt burden, defined as the ratio of financial costs to the sum of operating income and financial revenue. It also assesses the effect that this would have on the share of aggregate employment and volume of corporate debt represented by firms under high financial pressure.[2]

The exercise envisaged in this box draws on granular information, covering around 800,000 firms, from the Central Balance Sheet Data Office integrated database for 2019 and 2020[3] (the latest available). It considers increases of 200 bp, 300 bp and 400 bp in market interest rates, which are fully passed through to the cost and average remuneration of certain debt and loans.[4] In the case of deposits, a partial pass-through is assumed, in line with that historically observed.[5] It is assumed that the other income statement items are unaffected by the higher interest rates. In this respect, the estimates shown below should be interpreted as an initial approach to the impact that the rise in interest rates could have on the financial position of firms operating in Spain, as these estimates are made in *ceteris paribus* terms (i.e. without taking into account how the increase in interest rates, or the macroeconomic context prompting it, could affect key variables on firms' balance sheets, such as sales and labour or supply costs). Further, the exercise estimates this impact essentially over a short time horizon, as it ignores, for example, the effects associated with the possible rollover of fixed-interest debt maturing in the long term.

When passing through the increase in interest rates to the balance sheet items whose cost and remuneration are affected by such an increase (based on the foregoing considerations), a further assumption must be made as regards what happens to debt and loans with a short-term maturity. In this respect, the results presented below envisage two extreme cases:

— *No short-term debt rollover:* it is assumed that short-term debt and loans are not renewed upon maturity and, consequently, their cost and remuneration are unaffected by the shock. By contrast, the market interest rate increases are passed through to the cost of debt and the remuneration of loans in the case of long-term operations at a floating rate[6] and to sight deposits and time deposits with a maturity of up to one year. Since this assumption does not take into account that firms may have to refinance part of their debt maturing in the short term at a higher cost, the results presented would provide a lower bound for the impact to be estimated.

— *With short-term debt rollover:* it is assumed that short-term debt and loans are fully rolled over at maturity. Market rate hikes are therefore passed through to these items in this case. Since firms tend to refinance a significant part of their financing maturing in the short term, this scenario would be somewhat more realistic than that presented above. However, given

1 The 10-year Overnight Index Swap (OIS) rate is considered the benchmark rate for euro area long-term risk-free interest rates. The OIS rate is the fixed leg of an interest rate swap contract where the floating leg is the 1-day euro short-term rate (€STR).

2 For the purposes of this box, a firm is understood to be under high financial pressure when its financial costs exceed its income from ordinary activities (gross operating profit and financial revenue).

3 In the case of gross operating profit, the 2019 figure is used, as earnings in 2020 are distorted by the impact of the COVID-19 crisis, and the data for 2019 are considered more representative of how firms' activity may potentially perform over the coming years.

4 It is assumed that all interbank market rates increase by these amounts. These rates are the most relevant for this exercise, as the intention is to estimate mainly the short-term effects of the rise in interest rates (both those linked to the rollover of short-term debt and loans and those associated with the revision of the benchmarks for assets and liabilities at a floating rate).

5 A pass-through of 15% is assumed for sight deposits and of 76% for fixed-term deposits. These percentages are obtained from equations estimated using historical data that proxy the long-term relationship between the 12-month EURIBOR and deposit interest rates.

6 The proportion of long-term debt and loans at a floating rate has been proxied, for each firm, using data from the Banco de España's Central Credit Register.

Box 3
AN APPROACH TO THE POSSIBLE IMPACT OF THE RISE IN INTEREST RATES ON FIRMS' FINANCIAL POSITION (cont'd)

that firms would not necessarily refinance all of this funding, the results under this scenario would represent an upper bound for the impact being estimated.

Chart 1 presents the impact of higher interest rates on indebted firms' median debt burden ratio. As the 12-month EURIBOR has increased by between 200 bp and 300 bp since the start of the year, the impacts estimated in the chart for these two shocks provide an approximate range for the increase that the interest rate rise so far would cause in firms' median debt burden ratio in the short term. If short-term debt and loan refinancing is not considered, this increase would range from 1.9 pp to 2.6 pp. Assuming

Chart 1
Estimated increase in the median debt burden as a result of higher interest rates (a) (b)

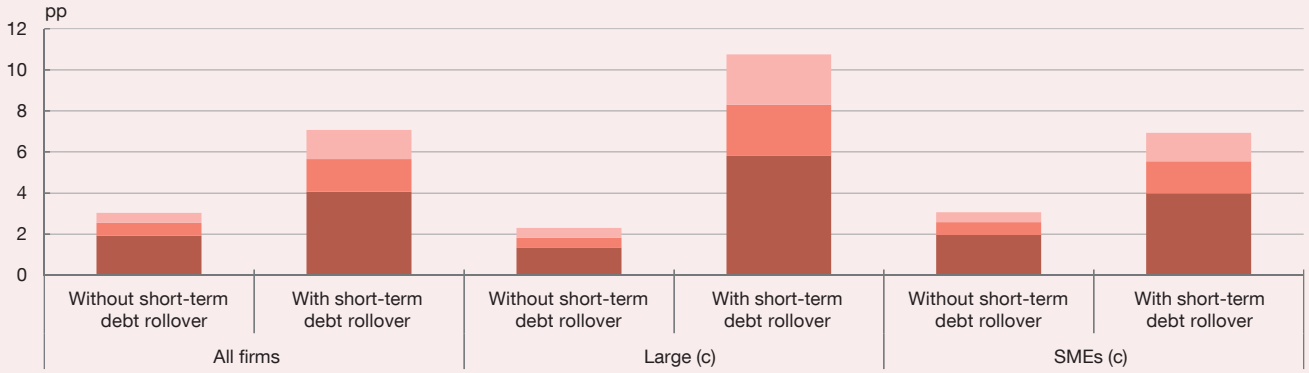


Chart 2
Estimated increase in the share of employment in firms under high financial pressure as a result of higher interest rates (b) (d)

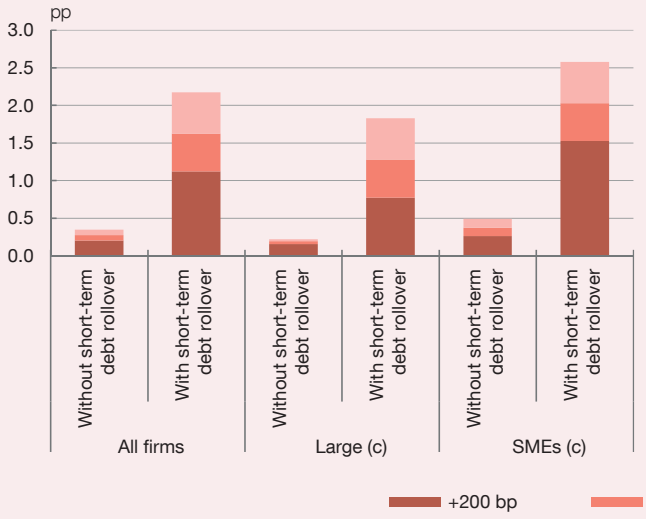
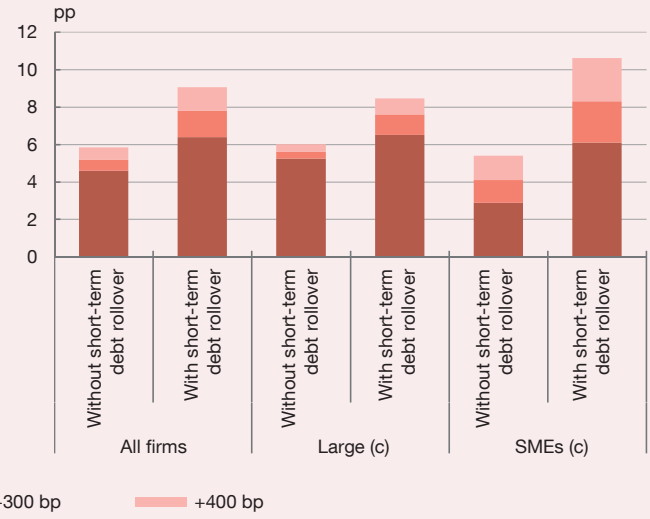
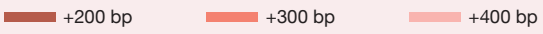


Chart 3
Estimated increase in the share of debt in firms under high financial pressure as a result of higher interes rates (b) (d)





SOURCE: Banco de España.

a The debt burden is defined as Financial costs / (Gross operating profit + Financial revenue). Firms with no financial costs are excluded from this calculation.
b In the case where no short-term debt rollover is assumed, the interest rate rise is fully passed through to long-term floating-rate debt and loans. A pass-through of 15% is considered for sight deposits and of 76% for time deposits with a maturity of up to one year. The case with short-term rollover differs from the foregoing case in that the interest rate rise is passed through also to short-term debt and loans.
c Size is defined in accordance with Recommendation 2003/361/EC.
d Firms under high financial pressure are defined as those which have a ratio of (Gross operating profit + Financial revenue) / Financial costs lower than one.

Box 3
AN APPROACH TO THE POSSIBLE IMPACT OF THE RISE IN INTEREST RATES ON FIRMS' FINANCIAL POSITION (cont'd)

that these items are fully refinanced, the median debt burden ratio would increase by between 4.1 pp and 5.6 pp. Further, should market interest rates increase by as much as 400 bp, the debt burden ratio would rise by 3 pp without short-term debt rollover and 7.1 pp with full short-term debt rollover. To set these impacts in context, it should be borne in mind that indebted firms' median debt burden ratio stood at 11.6% before the shock. The breakdown by firm size shows that, when short-term debt and loan rollover is considered, the effect would be greater for large firms than for SMEs, which is consistent with their higher indebtedness.

Chart 2 shows that the impact of these shocks on the share of employment in firms under high financial pressure would be relatively moderate. In particular, if the refinancing of short-term debt and loans is considered, this share, which stood at 9.1% at the outset, could increase by between 1.1 pp and 1.6 pp, assuming interest rate increases of 200 bp and 300 bp, respectively. However, assuming a 400 bp increase in interest rates, the impact would stand at just over 2 pp. In all these cases, the share of employment in vulnerable firms would grow more among SMEs, since their profitability before interest is lower than that of large firms, meaning they would have less room to cope with a rise in financial costs.

Chart 3 shows that the impact of an interest rate rise in terms of the proportion of debt accumulated by vulnerable firms would be substantially more acute.[7] Thus, assuming short-term debt and loans are fully rolled over, the share of these firms' debt in total corporate debt, which stood at 14.1% at the outset, would rise by 6.4 pp, 7.8 pp and 9.1 pp considering interest rate rises of 200 bp, 300 bp and 400 bp, respectively. By firm size, as in the case of employment, these increases tend to be larger for SMEs than for large firms, especially when sharper interest rate hikes are considered.

7 Note that the effects illustrated in this chart show a very marked non-linearity. In particular, the impact associated with a 200 bp interest rate rise is substantially higher than that of a further 200 bp increase. This is because the initial 200 bp rise pushes some very large firms (which therefore have a high debt volume) over the threshold determining high financial pressure, resulting in a jump in the indicator, which is measured in terms of firms' debt. An additional 200 bp rise, however, leads to a more moderate increase in the indicator, as the firms it would push into a situation of vulnerability do not include such large companies.

Box 4

THE PASS-THROUGH OF HIGHER NATURAL GAS PRICES TO INFLATION IN THE EURO AREA AND IN SPAIN

Lucía López, Susana Párraga and Daniel Santabárbara

This early-release box was published on 30 September

In recent quarters, the tensions in wholesale natural gas markets – which have intensified following Russia's invasion of Ukraine – have had a considerable impact on the Spanish economy and the euro area. These tensions have been reflected, in particular, in surging wholesale gas prices, which have doubled since January 2022 and risen ninefold since early 2021 (see Chart 1). Against this backdrop, this box aims to offer a first estimation of the impact – direct and indirect – that this rise in gas prices has had on recent inflation developments in Spain and in the euro area.

Broadly speaking, increases in wholesale natural gas prices can pass through to consumer prices via direct and indirect effects. The direct effects stem from the higher prices that consumers pay for gas used in the home. These effects can be estimated based on changes in the gas component of the harmonised index of consumer prices (HICP). The weight of this component in the HICP is 2% for the euro area as a whole and 1.4% for the Spanish economy (see Chart 2).

The indirect effects are associated with the higher prices of products that use natural gas in their production processes or whose prices are highly influenced by gas prices.[1] Importantly, wholesale natural gas prices have a very significant bearing on wholesale electricity prices, since gas is generally the marginal energy resource used in electricity production.[2] Wholesale prices ultimately also pass through to the final electricity prices paid by firms and consumers. The intensity of this pass-through varies depending on the regulations in place and the types of contract used in each country's retail electricity market.[3]

To quantify the direct and indirect effects of the recent increase in wholesale natural gas prices on inflation in Spain and in the euro area, for each region an econometric model is estimated. The model includes three variables: a measure of consumer inflation (either headline HICP or the natural gas and electricity components of HICP), wholesale natural gas prices and oil prices.[4]

When the model is estimated using headline HICP as the measure of inflation, which allows us to estimate the "total" impact of higher gas prices on consumer prices, the results suggest that a permanent increase of 10% in gas prices would be associated with a maximum rise in the euro area inflation rate of 0.19 percentage points (pp) after 19 months and of 0.16 pp after two years (see Chart 3). The effects are similar, albeit somewhat less persistent, for Spain, with inflation rising by up to 0.20 pp 14 months after the shock and by 0.13 pp after two years.

A second exercise is conducted to estimate the same econometric model, but using the natural gas component of the HICP as a measure of inflation rather than the headline index. This enables us to proxy the "direct" impact that higher gas prices have on consumer prices. The results of this alternative exercise suggest (see Chart 4) that this direct impact may account for 21% and 5% of the total effects identified, in the euro area and in Spain, respectively, after one year. The effect observed in Spain is lower because natural gas accounts for a smaller proportion of household expenditure and because, since 2008, Spain has a regulated natural gas tariff,[5] with retail gas prices being set by the Government quarterly.

In a third exercise, the econometric model presented here is estimated using the electricity component of the HICP as a measure of inflation. This approach allows us to proxy the scale of the "indirect" impact that an increase in wholesale gas prices has on consumer prices through its direct impact on retail electricity prices. As Chart 4 shows, this channel accounts for 17% of the total effects

1 See V. Gunnella, V. Jarvis, R. Morris and M. Tóth (2022), "Natural gas dependence and risks to euro area activity", Box 4, *Economic Bulletin* 1/2022, European Central Bank.

2 Under the EU's marginal pricing mechanism, the market price is determined, directly or indirectly, by the most expensive technology needed to meet demand in a specific period. See M. Pacce, I. Sánchez and M. Suárez-Varela (2021), "Recent developments in Spanish retail electricity prices: the role played by the cost of CO2 emission allowances and higher gas prices", *Occasional Paper* No 2120, Banco de España.

3 The magnitude of the indirect effects also depends on profit margin developments in the face of rising energy input costs.

4 In particular, a Bayesian Vector Autoregression (BVAR) model is estimated using a sample from July 2004 to May 2022, with the variables expressed in year-on-year changes. The natural gas price is the Dutch TTF, which has become the European benchmark price, while the oil price is the Brent barrel price. Both prices are in euro. The Brent price is included to factor into the estimates the historical relationship between natural gas and oil prices, which was very strong in the early stages of the European natural gas market. See L. López, F. Odendahl and S. Párraga (forthcoming), "The pass-through to inflation of oil and natural gas price shocks".

5 See F. Kuik, J. F. Adolfsen, E. M. Lis and A. Meyler (2022), *"Energy price developments in and out of the COVID-19 pandemic – from commodity prices to consumer prices"*, ECB *Economic Bulletin* 4/2022. This analysis finds that retail market gas prices are more highly regulated in Spain than in other euro area countries.

Box 4

THE PASS-THROUGH OF HIGHER NATURAL GAS PRICES TO INFLATION IN THE EURO AREA AND IN SPAIN (cont'd)

identified, after one year, in the euro area, and for 23% in Spain. Unlike the majority of the euro area countries, Spain has a regulated retail electricity tariff – the regulated rate for small consumers (PVPC, by its Spanish acronym), in force since 2014 – which links hourly retail electricity prices to hourly wholesale prices. This may explain why the effects are larger during the first year, and also why they are less persistent.

Combining the results of all three exercises, Chart 4 illustrates the quantitative importance of the indirect effects of higher wholesale gas prices on consumer prices in the euro area and in Spain. These indirect effects become particularly significant six months after the gas price shock, and are relatively persistent, especially in the euro area.

All the above estimates have been made based on a permanent increase of 10% in gas prices. If the same exercises are conducted, but taking the real increase in wholesale gas prices since January 2021, the results suggest that those higher prices accounted for around

Chart 1
Natural gas prices (a)

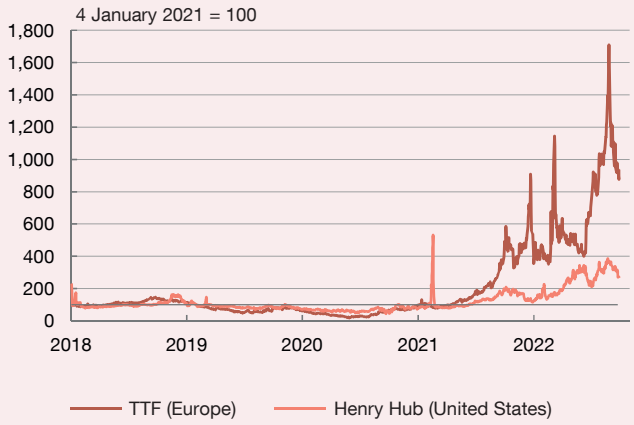


Chart 2
Weight of natural gas in the HICP (2021)

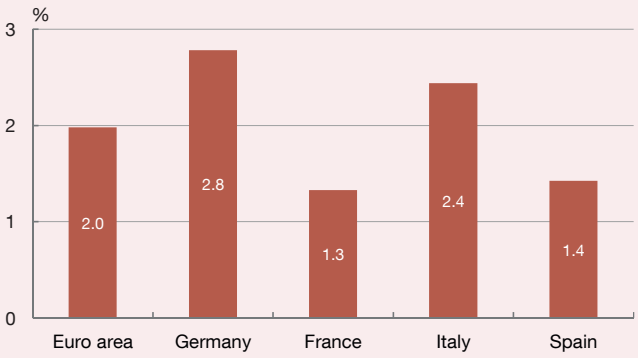
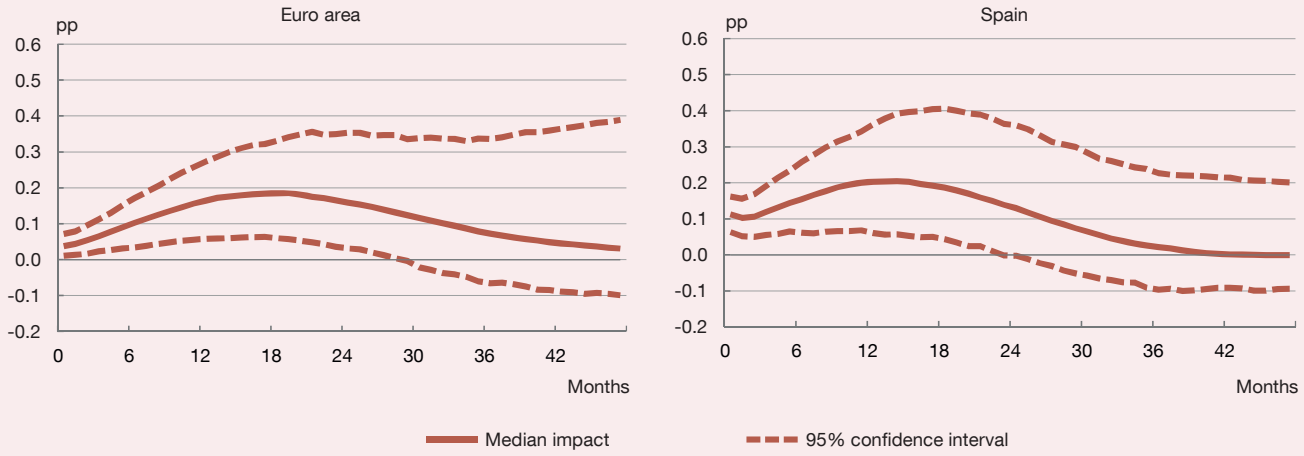


Chart 3
Effect on HICP inflation of a permanent 10% increase in natural gas prices (b)



SOURCES: Refinitiv, Eurostat and own calculations.

a Spot prices in both markets expressed in euro for comparability.
b Impulse-response functions to a permanent 10% increase in natural gas prices, expressed in euro, estimated through a Bayesian Vector Autoregression (BVAR) model that includes year-on-year changes in the HICP (in Chart 4, headline HICP, the electricity component and the gas-derived products component), in natural gas prices in Europe and in oil prices. The contributions are calculated using the HICP weights for 2022.

Box 4
THE PASS-THROUGH OF HIGHER NATURAL GAS PRICES TO INFLATION IN THE EURO AREA AND IN SPAIN (cont'd)

3.1 pp of total inflation in August 2022 in the euro area (of the 9.1% registered that month), and for around 3.4 pp of total inflation in Spain (of 10.5%) at the same date (see Chart 5).

To conclude, it is important to consider that the estimates presented in this box are based on the historical relationships between the different variables analysed over the sample period which started in 2004. However, certain specific aspects of the present situation could mean that the effects of higher gas prices on inflation may now differ in intensity from those estimated drawing on the historical relationships observed. On the one hand, the effects during the current inflationary episode could be lower, because in some jurisdictions – such as Spain – highly significant fiscal measures (in historical terms) have been introduced to contain rising consumer prices, and

Chart 4
Effects contributing to the impact on HICP inflation of a permanent 10% increase in natural gas prices (b)

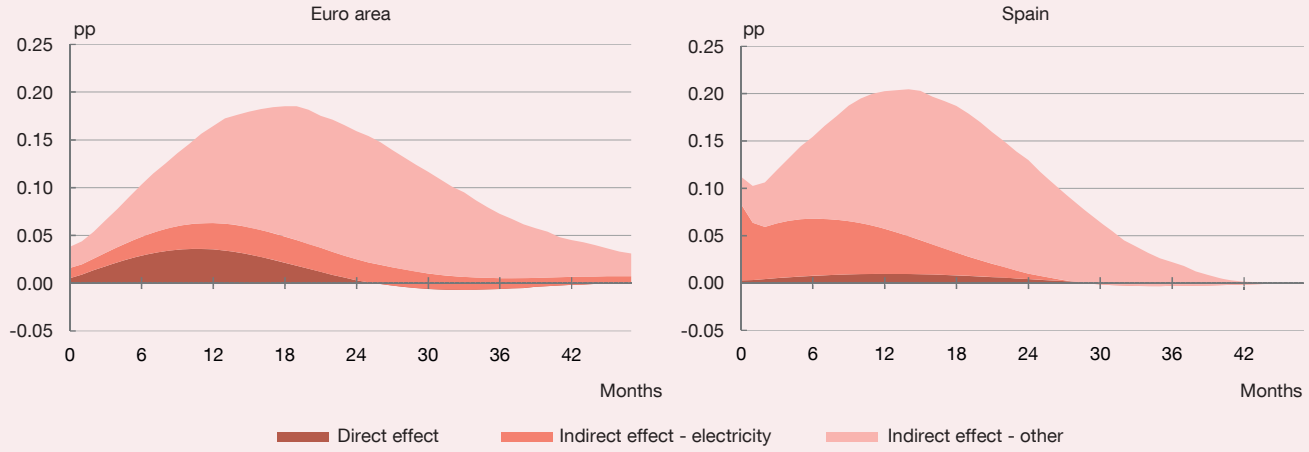
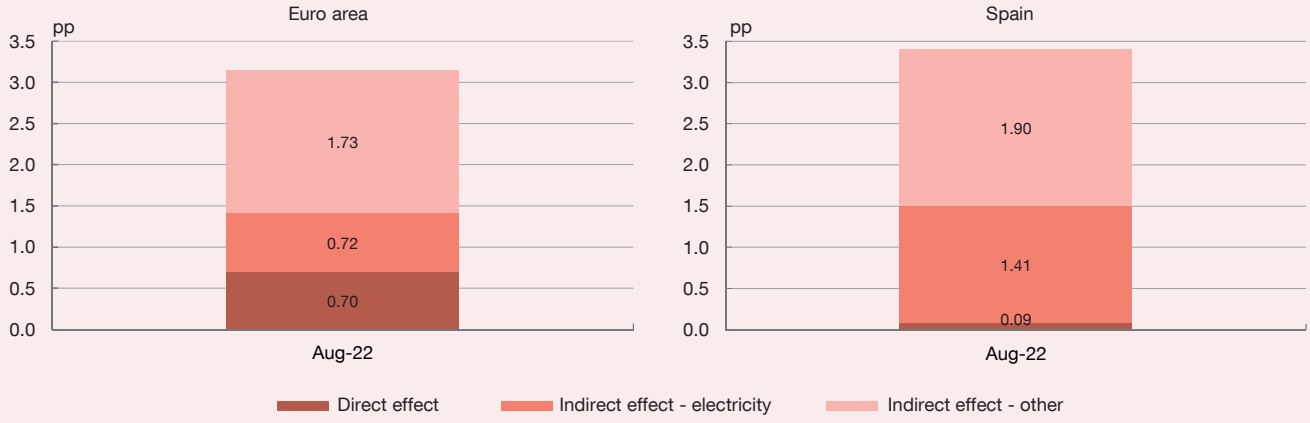


Chart 5
Effect on HICP inflation of the increase in natural gas prices observed since January 2021



SOURCE: Refinitiv, Eurostat and own calculations.

b Impulse-response functions to a permanent 10% increase in natural gas prices, expressed in euro, estimated through a Bayesian Vector Autoregression (BVAR) model that includes year-on-year changes in the HICP (in Chart 4, headline HICP, the electricity component and the gas-derived products component) in natural gas prices in Europe and in oil prices expressed in euro. The contributions are calculated using the HICP weights for 2022.

Box 4
THE PASS-THROUGH OF HIGHER NATURAL GAS PRICES TO INFLATION IN THE EURO AREA AND IN SPAIN (cont'd)

certain key regulatory aspects have been amended to temper the link between gas and electricity prices.[6] On the other hand, the effects could be greater, owing to possible non-linearities stemming from the scale and persistence of the current surge in gas prices, unprecedented in recent history. At the same time, the estimates presented here are based on the extreme assumption that the increase in gas prices is permanent. In consequence, were part of this increase to reverse in the future, the effects on inflation in the medium and long term would be correspondingly lower. Therefore, the estimates presented here should be taken with due caution, and not as a future projection of developments in either natural gas prices or inflation.

6 Notably the Iberian mechanism to cap gas prices and reduce electricity prices in Spain and Portugal.

Box 5

A PRELIMINARY ANALYSIS OF THE SENSITIVITY OF ENERGY CONSUMPTION IN SPAIN TO ENERGY PRICE RISES

Aitor Lacuesta, David López Rodríguez and María de los Llanos Matea

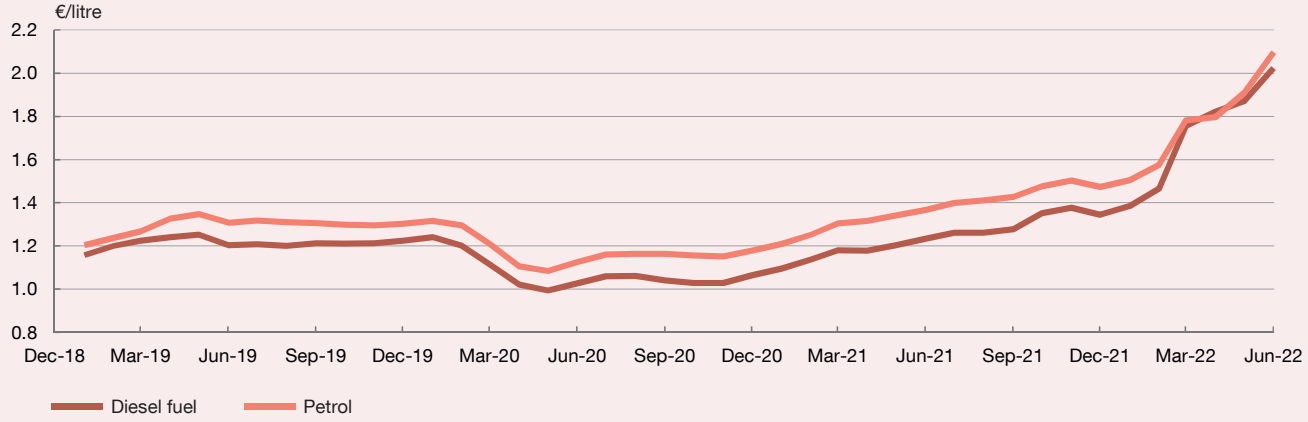
This early-release box was published on 27 September

The academic literature suggests that, compared with demand for other goods and services, energy demand is largely insensitive to short-term price changes. Thus, for example, Labandeira *et al* (2016)[1] signal that in Spain, the price elasticity of demand for diesel fuel and petrol on a short-term horizon is between -0.20 and -0.25, while over a longer time frame – more than 12 months – it is between -0.7 and -0.9. They also show that the price elasticity of total electricity demand is around -0.2 in the short term and -0.7 on a 12- to 24-month horizon.

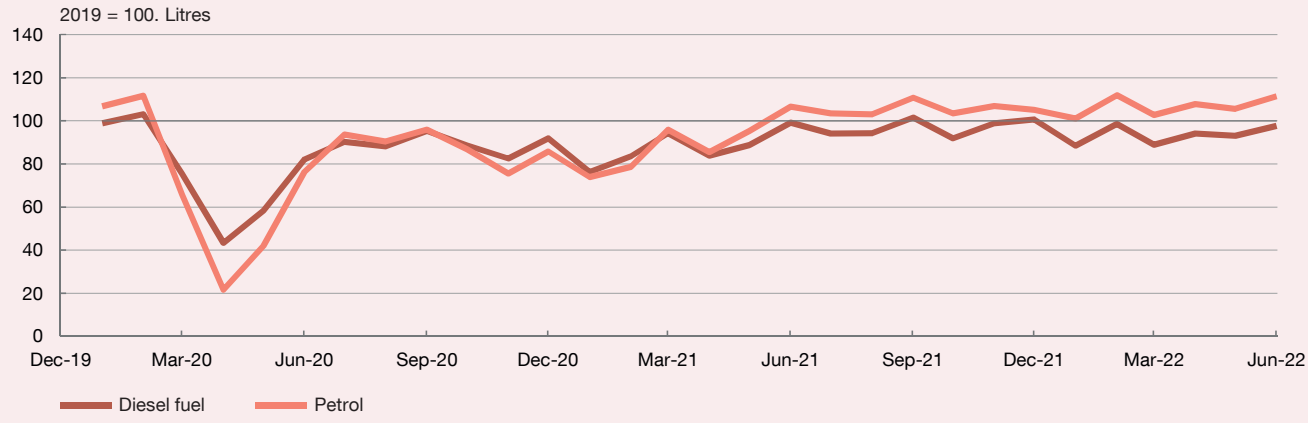
In view of the steep rise in energy prices observed since early 2021, this box analyses to what extent the recent behaviour of vehicle fuel (petrol and diesel) and electricity consumption in Spain compares with the patterns to be expected from the historical elasticities estimated in the literature.

Chart 1
Vehicle fuel price rises have not led to lower consumption, especially in the case of petrol

1 Average monthly retail price of vehicle fuel, January 2019 to June 2022 (a)



2 Changes in monthly consumption of vehicle fuel compared with 2019 (b)



SOURCES: Comisión Nacional de los Mercados y la Competencia (CNMC) and Agencia Tributaria.

a Prices previous to the €0.20/litre discount applied since 1 April 2022.
b Year-on-year change in consumption compared with corresponding month of base year 2019.

1 See the estimated price elasticity of demand for different energy goods in Spain in X. Labandeira, J. M. Labeaga and X. López (2016), "Un metaanálisis sobre la elasticidad precio de la demanda de energía en España y la Unión Europea", Papeles de Energía, N.º 2 (December), Funcas, pp. 65-93.

Box 5

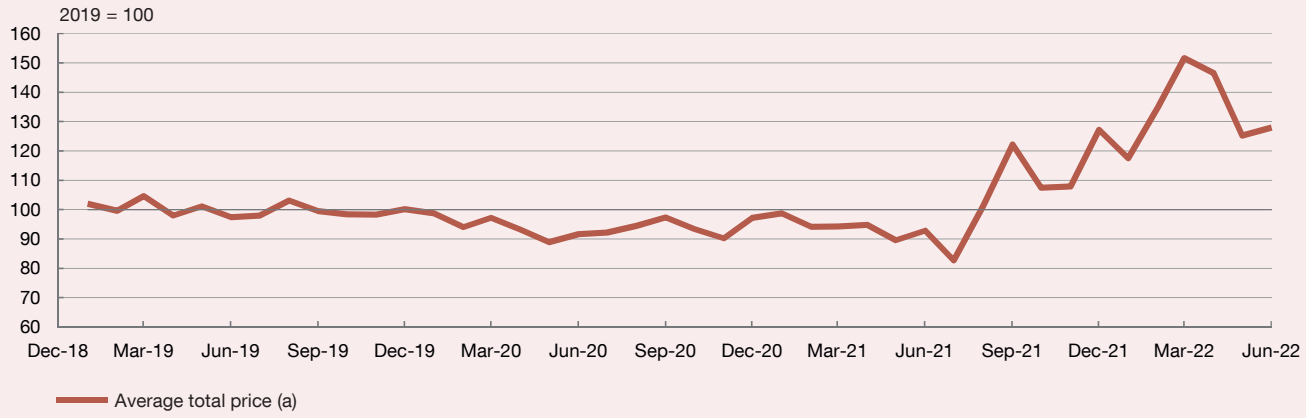
A PRELIMINARY ANALYSIS OF THE SENSITIVITY OF ENERGY CONSUMPTION IN SPAIN TO ENERGY PRICE RISES (cont'd)

Taking vehicle fuel prices first, Chart 1.1 depicts the extraordinary surge in petrol and diesel prices observed since early 2021. Yet despite this marked increase, not only has consumption of these products not decreased in recent quarters, but it has in fact increased, especially in the case of petrol (see Chart 1.2), the segment in which household consumption is concentrated.[2]

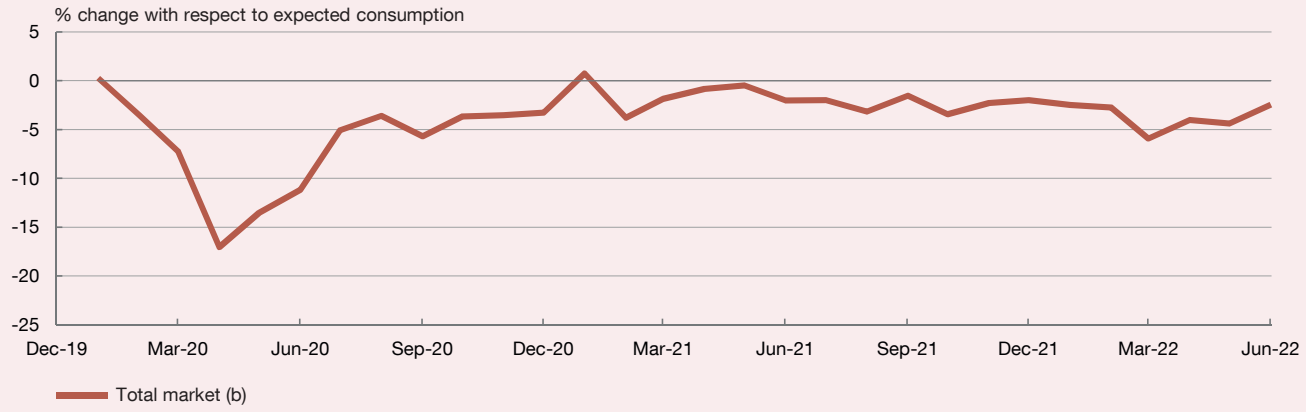
This recent dynamic may be heavily influenced by the impact of the pandemic on mobility, which fell very sharply

Chart 2
Electricity price rises have led to a moderate fall in consumption

1 Changes in average electricity prices for firms and households, January 2019 to June 2022



2 Changes in firm and household electricity consumption



SOURCE: Banco de España, drawing on information from Agencia Tributaria and Red Eléctrica Española.

a The average price for all consumers (household and non-household) is estimated based on Tax Revenue Service data relating to the tax base of the electricity tax paid by all consumers and on the figures on changes in total electricity consumption. The ratio between the two series proxies an average total electricity price before tax. The average final price charged on consumption is calculated based on this average pre-tax price, before applying to each month the relevant amount for the excise duty on electricity and VAT. The chart depicts the price in a month with respect to the average of the prices between January 2019 and December 2019 normalised to 100.

b Red Eléctrica Española publishes data on the results of the P48 hourly consumption (I3DIA02) for regulated rate retailers, free market retailers and those who purchase directly in the wholesale market. Total consumption is the sum of all three.

2 The vehicle fuel consumption data are drawn from the series published by the Agencia Tributaria (Tax Revenue Service), with information up to June 2022 for the provinces subject to the standard tax regime (which excludes the provinces with specific tax status, the Canary Islands and the city enclaves of Ceuta and Melilla).

Box 5
A PRELIMINARY ANALYSIS OF THE SENSITIVITY OF ENERGY CONSUMPTION IN SPAIN TO ENERGY PRICE RISES (cont'd)

in 2020 and has been gradually recovering since then. Accordingly, it seems more appropriate to compare monthly consumption levels in 2022 H1 with those observed in 2019 H1. This comparison suggests that, in the case of vehicle fuel, price elasticity to demand in Spain – taking no account of other aspects that could also affect consumption of these products – has recently been lower than the historical elasticities estimated in the academic literature. Thus, while in 2022 H1 average petrol and diesel prices were 30.9% and 33.5% higher, respectively, than in 2019 H1, in the same period petrol consumption was 6.7% higher while diesel consumption was 6.5% lower. Nonetheless, taking a short-term elasticity of -0.25, the consumption of these products ought to have declined by around 8% as a result of rising prices.[3]

In the case of electricity, price and consumption dynamics since last year also suggest that demand is less price sensitive than has traditionally been estimated. Thus, while the average cost of electricity for firms and households – estimated drawing on Tax Revenue Service data – has risen notably since early 2021, even factoring in the various measures rolled out by the authorities (see Chart 2.1), electricity consumption has barely fallen (see Chart 2.2).

In particular, during 2022 H1, when compared with the same period in 2019, electricity consumption appears to have been only 3.7% lower than would be suggested by a model that estimates the consumption of this input based on a broad range of factors (other than price) that are essential to understand how electricity demand behaves. These include, inter alia, temperature, public holidays and the seasonality generally associated with each month, week and day.[4]

The fact that electricity consumption, much like vehicle fuel consumption, fell less during the period under analysis than would be suggested by the price elasticities estimated in the literature – for instance, with an elasticity of -0.2, electricity consumption ought to have declined by 6.7% in the short term – could be down to a range of factors. These include the possible expectation on the part of agents (households and firms) that the price changes observed would be short-lived, the fact that certain means-tested compensatory measures have been rolled out for the most vulnerable groups, and the sizeable savings built up when the pandemic was at its height. In the case of electricity, better cost optimisation thanks to hourly rate-setting or higher household demand for electricity as a result of the increase in teleworking may also have helped to maintain consumption levels. In any event, it is important to note that it is still too soon to accurately assess the quantitative importance of any of these factors, or even to conclude that there has in fact been a structural shift in terms of the price sensitivity of energy demand in Spain. With this in mind, the evidence presented in this box should be assessed with due caution.

3 The reasons behind the differences in the behaviour of aggregate petrol and diesel consumption observed from 2021 Q2 onwards are manifold and hard to pin down in quantitative terms. For instance, one contributing factor could be certain changes in the make-up of the Spanish vehicle fleet, with petrol vehicles now accounting for a larger share.

4 See O. Bover, N. Fabra, S. García-Uribe, A. Lacuesta and R. Ramos (2020) for further details on this model: "Firms and households during the pandemic: what do we learn from their electricity consumption?", Occasional Paper No 2031, Banco de España.

Box 6

RECENT INDEXATION CLAUSES: AN ANALYSIS

Mario Izquierdo and José Luis Herrera

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Collective bargaining agreements in Spain sometimes include indexation clauses. Such clauses envisage adjustments to wages if inflation at the end of the year (or the term of the collective agreement) exceeds the initial wage settlement, and thus seek to compensate workers, fully or partially, when inflation surprises occur.

The data on collective agreements registered in Spain to August show that indexation clauses are now more prevalent in such agreements than they have been in recent years. Specifically, to August, 25% of workers who have already signed a collective agreement for 2022 are covered by such clauses,[1] up from the 16.6% observed on average in 2014–2021, although significantly lower than the figure recorded at the beginning of the 2000s (see Chart 1). In addition, the incomplete information available for 2023 points to a further increase, to just over 45% of workers who have already signed a collective agreement for that year.

In light of the growing prevalence of indexation clauses, this box provides a detailed analysis of the characteristics of such clauses included in the collective agreements effective in 2022 registered to August. To do so, we used web scraping techniques to extract detailed, case-by-case information for all collective agreements available in the Register of Collective Agreements and Equality Plans.[2]

This analysis should be understood as an initial attempt to delve deeper into the specific nature of the indexation clauses signed in Spain and to assess their possible implications, in particular for future wage developments. In this regard, we attempt to answer four main questions: what measure of inflation do the clauses typically use as a reference rate; their time horizon; how retroactive is the attendant adjustment; and how much coverage do they provide in the event of an inflation surprise.

With regard to the first question, the analysis has not identified any collective agreement that uses underlying inflation – or any other measure of inflation that excludes the energy component – as a reference rate. This is particularly relevant in the current setting where price developments and, in particular, headline inflation indices are highly distorted by the recent surge in and volatility of energy prices, as Spain is an importer of most energy products. Against the current backdrop, more general measures of inflation would not be painting a wholly accurate picture of the actual underlying and/or domestic inflationary pressures in Spain.

Turning to the second question, a case-by-case review of all the indexation clauses signed in the collective agreements effective in 2022 registered to August highlights that just over 60% of workers are covered by annual indexation clauses. In other words, a potential wage adjustment would be determined on the basis of inflation at the end of the year.[3] By contrast, 20% of workers are covered by multi-year indexation clauses. In this case, possible wage adjustments would be determined on the basis of how inflation behaves over the term of the collective agreement. In principle, in a setting where the current high inflation rates could ease considerably over the coming years, these multi-year clauses would help mitigate the impact of inflation on wage costs in the short term.

As for the third aspect, the information available suggests that somewhat more than half of workers with an agreement in force in 2022 are covered by indexation clauses that have no retroactive effect, thus continuing the upward trend that dates back to 2009 when the percentage stood at 20%. For this group of workers, the potential activation of these clauses would entail no wage adjustments associated with previous years and would only update the wage rates for the following year.

Lastly, regarding the workers with agreements in force in 2022 that include an indexation clause, in 75% of cases those clauses envisage certain caps or thresholds. These may have a very significant bearing on how forcefully possible inflation surprises ultimately feed through to wages. In other words, the wage adjustment determined by those clauses may not necessarily see

1 This percentage is somewhat lower than that observed in early 2022, when nearly 30% of workers with a collective agreement registered for that year were covered by indexation clauses. The drop in recent months would suggest that, in this most recent period, fewer newly signed collective agreements contain this type of clause.

2 This information refers to around 85% of the workers covered by collective agreements included in the official statistics published by the Ministry of Labour and Social Economy.

3 The inflation reference rate used in collective agreements tends to be the year-on-year rate at the end of each year, although in some cases average year-on-year rates for the year as a whole are used.

Box 6
RECENT INDEXATION CLAUSES: AN ANALYSIS (cont'd)

the inflation surprise (i.e. differences between actual inflation and the negotiated wage increase) fully passed through to wages; rather, in most instances this pass-through is partial.

In this respect, the historical evidence suggests that the coverage provided by indexation clauses against different inflation surprises has declined substantially in recent years. For instance, between 1994 and 2011[4] the average deviation of inflation from the negotiated wage increase was 1.1 percentage points (pp).[5] On the statistics available, the average wage adjustment determined by indexation clauses in that period was 0.56 pp. Given the prevalence of indexation clauses at the time (60.1%), their implicit coverage[6] during that period was 85% (see Chart 2). However, lower coverage is estimated for 2012-2016 (41% period average) and, especially, for 2021 (33%).

As noted above, the aim of this box is to further the understanding of the main characteristics of the indexation clauses typically included in the collective agreements registered in Spain. This exercise may be informative in terms of the potential implications of such clauses – which have become more prevalent in the agreements in force in 2022 compared with those registered in previous years – for future wage developments. However, it is important to interpret the preliminary results presented in this study with caution, among other reasons because the indexation clauses signed in the future may not follow the same historical conventions – or even the more recent ones – identified in this analysis.

Chart 1
Prevalence of indexation clauses (a)

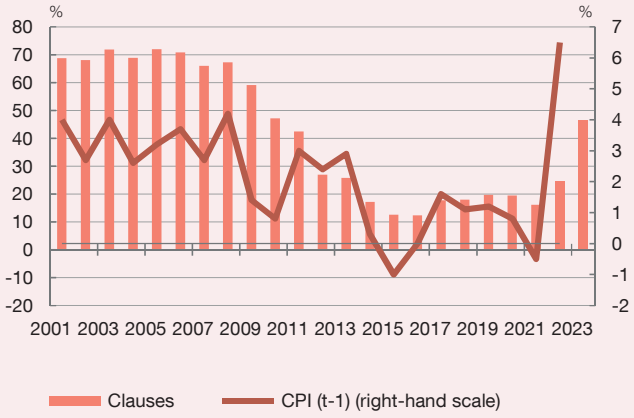
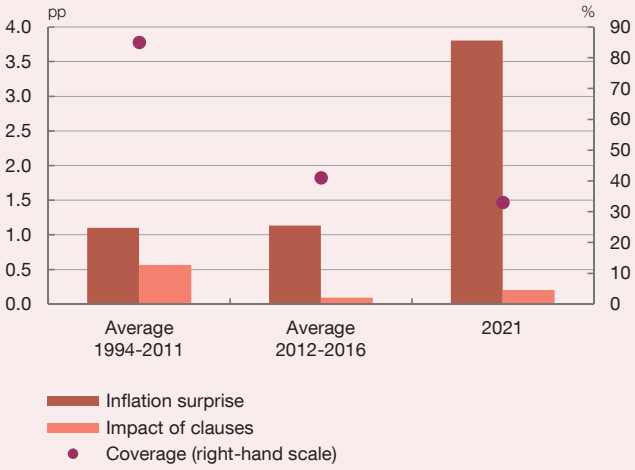


Chart 2
Impact of indexation clauses



SOURCES: Ministerio de Trabajo y Economía Social and case-by-case information on the collective agreements available at https://expinterweb.mites.gob.es/regcon/.

a The collective agreement statistics provide information on the prevalence of indexation clauses to 2022. The figure for 2023 was calculated by the authors on the basis of a perusal of the agreements registered to August 2022 and effective in 2023.

4 This exercise only considers years in which the inflation surprise was positive, since indexation clauses are asymmetric and wages are not adjusted down when the inflation surprise is negative, i.e. when inflation stands below the initial wage settlement.

5 This deviation is calculated as the actual inflation rate at year-end less the negotiated wage increase under collective agreements that included any form of indexation clause. The calculation is subject to various measurement errors and the results should therefore be interpreted with caution.

6 For a given period, this coverage may be calculated as the ratio of the actual wage adjustment to the product of the inflation surprise and the prevalence of indexation clauses in collective bargaining.