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# Macroeconomic Developments and Outlook

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## Summary

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**In the previous part of 2023, global economic activity proved to be more resilient than expected. However, signs of gradual deceleration are becoming more visible.** In the third quarter, stronger than anticipated economic activity was registered by most major economies. The Chinese economy, despite problems in the real estate sector and weak investment activity, grew by 1.3% in the third quarter of 2023 from the previous three months, and owing to acceleration in household consumption growth and to the robust labour market, the US economy boasted comparable growth. Nevertheless, the beginning of the fourth quarter showed signs of a weakening of the global economic activity. At the same time, global price pressures are easing faster than expected, although remaining high, with uncertainty associated with the recent growth of oil prices and mounting pressures from the labour market, especially in developed countries.

**Real economic activity in the euro area has mostly stagnated since the beginning of 2023.** Modest results of the first half of the year were followed by a mild contraction in economic activity over the summer months and most current projections for the last quarter of this year indicate a continuation of stagnation or possibly a mild fall. These results of euro area economy are predominantly a consequence of worsened developments in industry and the construction sector. However, this still has not had any major impact on indicators in the labour market, which remains very strong with widely spread labour shortages and a pronounced growth in nominal wages. Consumer price inflation in the euro area slowed down from 5.5% in June to 2.4% in November. Against the backdrop of reduced cost pressures, weakening demand and a favourable base effect, the inflation of the price of all major components of total inflation slowed down. The average annual inflation rate in the euro area could slow down to 5.4% in the whole of 2023, with the trend continuing over the remainder of the projection horizon.

**At its meeting in October, the ECB's Governing Council decided to keep the three key interest rates unchanged, so the €STR interest rate remained unchanged until the end of November. Yields on government bonds started decreasing early in November, returning late at the end of the same month to the levels reached at the end of August.** After ten successive increases in key interest rates that started in July 2022, the meeting in October was the first in the current ECB's monetary policy tightening cycle at which no decision to raise the key interest rates was adopted. Accordingly, the €STR did not change much until the end of November. After having been relatively stable at the beginning of the year, yields on long-term bonds in the bond market first increased noticeably in the period from August to November then returned to their previous levels. The correction was supported by more favourable data regarding the euro area and US inflation and by rising expectations that the Fed was drawing near the end of the cycle of upping its key interest rates, which caused a decline in yields on US government bonds.

**In the second half of 2023, the impact of ECB monetary policy tightening continued to spill over to corporate and household financing conditions at domestic**

**banks, with deposit interest rates also registering a rise.** Interest rates on pure new loans to corporates and households increased, although at a weaker intensity compared to the increase in the first few months of this year. Bank lending survey results also point to the tightening of financing conditions, with banks emphasising expectations regarding general economic developments and lower risk tolerance as the most important factors in the tightening of credit standards. In addition, higher interest rates are one of the basic factors in the reduction of corporate and household demand for loans. Unfavourable financing conditions and decreased demand have resulted in subdued corporate lending, while the growth of household loans remained relatively strong. The same goes for housing loans due to the loans approved as part of the government housing loans subsidy programme and in particular for general purpose cash loans. As for deposits, corporate and household time deposits grew in the second half of the year. Interest rates on time deposits continued to grow, first halting the several-year-long fall in the share of time deposits in total corporate deposits and then reversing the trend.

**Thus far, the Croatian economy has showed relative robustness to external shocks and tightened financing conditions, and economic expansion is expected to continue in the mid-term.** In 2023, the real GDP growth rate might reach 2.6%, well above the expected growth of the EU and the euro area average. This was a reflection of multiple factors including strong demand for tourist services, on which Croatia is heavily reliant, intensified utilisation of EU funds and the supporting fiscal policy. It contributed to continued favourable labour market developments and the growth in real available income that supported strong growth of personal consumption. Investments growth intensified and the growth of services exports continued, so these services visibly exceed pre-pandemic levels. On the other hand, the weakening of foreign trade demand had unfavourable effects on developments in goods exports. Next year economic growth could strengthen to 3.0% due to the expected strengthening in external demand and goods exports and still favourable developments in the labour market, which together with relatively expansive fiscal policy will continue to support personal consumption. Investment growth, on the other hand, might slow down, to the greatest extent reflecting the expected slowdown in public investments after their exceptionally strong growth in 2023, with a slowdown in expansion also expected in the exports of services considering that the numbers of foreign tourist arrivals and nights stayed are already high. In the medium term, the growth of the Croatian economy is expected to slow down to the average rate of 2.6%.

**Inflation slowed down noticeably in Croatia in 2023, so the average annual rate of inflation measured by the harmonised index of consumer prices could total 8.4%, continuing to slow down over the remainder of the projection horizon.** Overall inflation went down from 8.3% in June to 5.5% in November 2023, mainly because of the slowdown in the growth of the prices of food, owing to, among other things, the spillover of lower prices of energy, fertilisers and food raw materials on the global market to import and domestic producer prices, as well as favourable effects of the base period due to the sharp rise in food prices in 2022. Although to a lesser extent, prices of industrial products and services also contributed to a slowdown in overall inflation. However, core inflation remained elevated, mainly reflecting domestic inflationary pressures arising

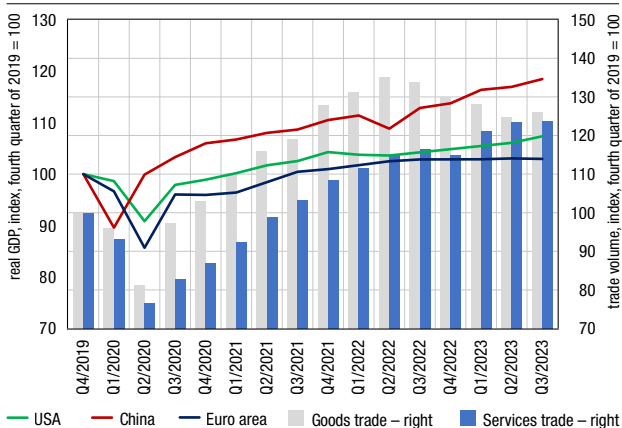
from wage growth and robust domestic demand. Nevertheless, the indicators of current developments of overall and core inflation slowed down visibly in the last three months. The easing of inflationary pressures was also seen in the reduction of inflation diffusion. The most recent projections show that in 2023 as a whole, average inflation could total 8.4%, after reaching 10.7% in 2022. The slowdown is expected to continue in 2024, when inflation might go down to 4%, reducing even further in the remainder of the projection horizon, so the average inflation expected in 2026 is 2.0%.

## 1 Global economy

**Global economic activity proved to be more resilient in the latter part of 2023 than previously expected. However, signs of gradual deceleration are becoming more visible.** Owing to the strong labour market and resilient consumer spending, especially in the services segment, economic activity remained relatively strong during the current year in most large economies. The Chinese economy, despite problems in the real estate sector and weak investment activity in the third quarter of 2023, grew by 1.3% from the average in the previous three months (Figure 1.1.1). The relatively strong activity continued at the beginning of the fourth quarter. In the same period, the US economy, despite tightened financing conditions, grew vigorously as well (1.2% in the third quarter of 2023), thanks to strong investment activity and consumer optimism that reflected the still very strong labour market. Nevertheless, the beginning of the fourth quarter showed signs of weakening in the labour market that started to affect consumer optimism and overall economic activity.

**The global composite purchasing managers' index (PMI) additionally deteriorated at the beginning of the fourth quarter, signalling the weakening of global economic activity at the end of the year.** The weakening of the services sector, which was the main growth generator in the first half of the year, contributed to the deterioration in the overall index, thus almost eliminating the gap between the activities of the services and the manufacturing sector (Figure 1.1.2). Namely, while the manufacturing sector has been in slightly negative territory since the end of last year, pressured by high manufacturing costs and worsened financing conditions, the indicator of demand for services considerably weakened, reaching the dividing line between contraction and expansion, which, at the same time, was its lowest level since the beginning of the year. The effect of the shift of demand towards services all but waned, while the simultaneous tightening of monetary policy in the fight against inflation and the withdrawal of fiscal support started to increasingly subdue personal consumption and investment activity.

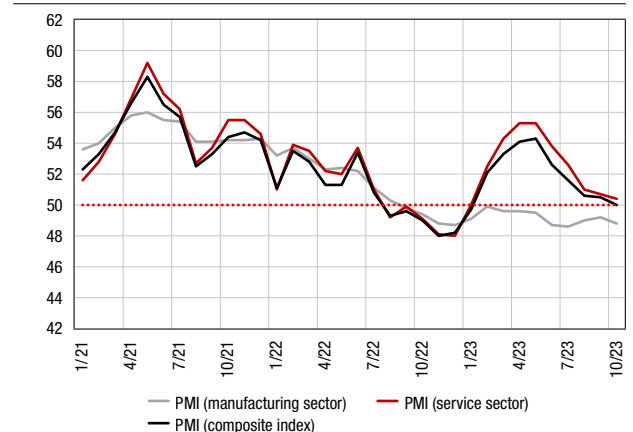
Figure 1.1.1 Economic activity in major markets and global trade



Note: The data on global trade for the third quarter of 2023 are based on UNCTAD analyses.

Sources: Eurostat, BEA, NBS and UNCTAD.

Figure 1.1.2 Confidence indicators for the global economy



Note: Index value above 50 indicates expansion, while index value below 50 indicates contraction of economic activity.

Source: S&P Global.



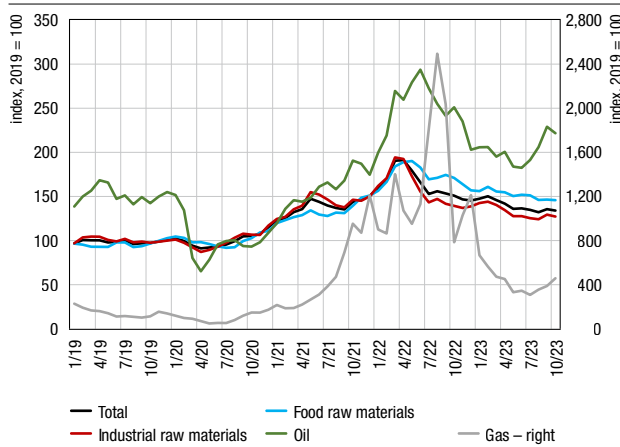
**Global trade growth slowed down considerably in 2023, compared to historical trends. However, in the last months the negative effects of structural changes in global demand, which have been suppressing it, started to slowly vanish.** The slowdown in global trade in the preceding part of 2023 primarily reflects the weakening of global demand but also mirrors changes in its structure, that is, the shifting of demand to the segment of services less traded at the international level. The appreciation of the US dollar, in which most of global trade is denominated, had an additional negative impact on global trade, together with rising trade hurdles and market fragmentation.

**After having risen by 10% in the third quarter of 2023 and almost reaching the higher levels from the middle of the last year, the price of crude oil went up additionally following the escalation of the Middle East conflict. However, it decreased quickly.** The increase in crude oil prices over the summer months was the consequence of new restrictions on the demand side which were only partially mitigated by the weakening of global demand. Production was cut the most by Saudi Arabia and Russia, with increased crude oil production in other countries only partially offsetting the cut. The additional growth in crude oil prices in October was spurred by insecurity regarding possible consequences of the escalating conflict between Hamas and Israel on the supply of oil from the Middle East. However, oil prices have been on a slightly downward path over the past weeks because the risk of the spillover of the conflict to the wider region seems less likely. Like those for oil, gas prices in the European market also decreased in the first half of 2023, stabilising at some EUR/MWh 30 in the middle of the year. After that the price grew again to some EUR/MWh 50, partly due to maintenance works on the pipeline in Norway being prolonged, strikes at LNG facilities in Australia and the closure of Israel's gas field. These factors contributed to higher volatility of gas prices, although the immediate risk to supply security in Europe has been relatively low owing to high levels of stored gas.

**The prices of other raw materials in the world market continued to decline for the most part of 2023, stabilising in the third quarter.** Prices of industrial raw materials, including metals, declined by 8% from the beginning of the year until the end of October, with their decrease being briefly halted in September due to stronger demand from China spurred by its energy transition. Food commodity prices continued to gradually decrease as well, ending October some 7% lower than at the beginning of the year. Cereal prices decreased the most, by one fifth from the beginning of the year despite the still present concern regarding the supply of grain from Ukraine via the Black Sea, as well as unfavourable weather conditions caused by El Niño. The greatest contribution to the decline in the price of cereals came from the strong growth in wheat production in the US (Figure 1.1.3). In contrast, the growth in the price of rice in the global market intensified in the third quarter due to the reduction in global supply after India imposed export restrictions on the grain.

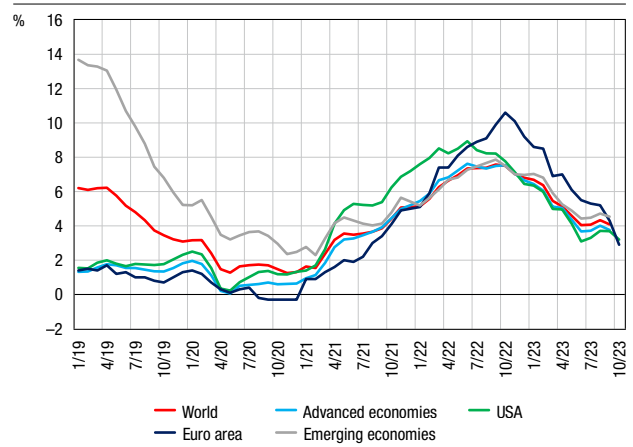
**The downward trend in global inflation slowed down in the summer months due to renewed slight growth in the prices of energy to intensify again in October.** After having fallen by almost 3 percentage points in the first half of the year, global consumer price inflation stagnated at 4.1% in the third quarter. The slowdown in the downward

Figure 1.1.3 Prices of energy and other raw materials



Source: HWWI (Euroland, EUR).

Figure 1.1.4 Global inflation



Sources: Federal Reserve Bank of Dallas (adjusted by the CNB).

trend was equally visible in developed and in emerging market economies (Figure 1.1.4). In addition to renewed growth in the prices of energy, this trend was spurred by the disappearance of the positive effects of the normalisation of global supply chains and the persistence of inflation in the prices of services and food. However, inflation dropped noticeably in October in numerous countries, as a consequence of the tightening financing of conditions and weakening of demand. Against this backdrop, central banks mostly left their benchmark interest rates unchanged, with a few starting to reduce them (Poland and Hungary, for example).

**Despite the continued slowdown, core inflation remained elevated in numerous countries, primarily due to the persistent inflation in the prices of services.** Of the components of core inflation, annual growth in the prices of goods at global level stabilised at some 2%, thanks to the reduction in the imbalance between supply and demand in the global market. The global growth in the prices of services remained elevated (4%), with only minor signs of a slowdown, while the persistence of inflation has been underpinned by pressures from the labour market, more prominent in developed countries and labour-intensive service activities. That is, the unemployment rate is currently below the pre-pandemic level in many countries and labour force shortages remain present in some activities, which, paired with requests to make up for purchasing power losses, increases the upward nominal wage pressures.

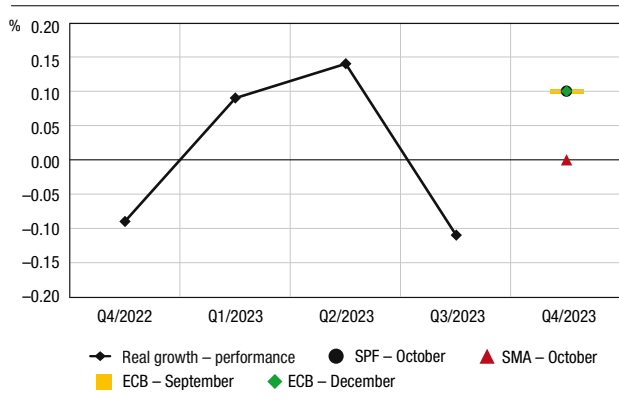
## 2 Euro area

### 2.1 Real developments

**Real economic activity in the euro area has predominantly stagnated or registered only marginal rates of change since the beginning of 2023.** After the euro area economy stagnated in the first quarter of 2023 in relation to the average of the previous three months, in the second quarter economic activity grew by 0.2% only for real activity to enter mild contractionary territory in the summer months, according to preliminary data. Most current projections for the last quarter of this year point to a continuation of the stagnation trend or to a very mild decline in economic activity (Figure 2.1.1). The geographic distribution of the dynamic of real developments is uneven. Among the economies witnessing unfavourable developments we can single out Germany, Italy and the Netherlands, while Spain, Belgium and France continued to register positive annual growth rates. With regard to smaller member states, growth was the highest in Croatia and Greece, while unfavourable developments were quite prominent in the Baltic countries, Estonia in particular.

**The modest performance of the euro area economy is predominantly a consequence of the strong slowdown in the growth of activity in the services sector paired with stagnation in the manufacturing sector and construction.** The industrial sector, especially energy-intensive activities, has been under pressure from increased energy prices ever since the Russian invasion of Ukraine, from weakened foreign demand, as is particularly visible in export results to China, as well as from the structural weaknesses of traditional European industries such as the car industry. Weaknesses in construction have grown ever more visible over the previous months, especially in Germany, under the influence of a tightening of monetary policy and deteriorating financing conditions. Confidence in the services sector, despite the weakening over the previous few months, continues to be at noticeably higher levels than in all other branches of the economy. This leads to the conclusion that the services sector is still to a degree compensating for

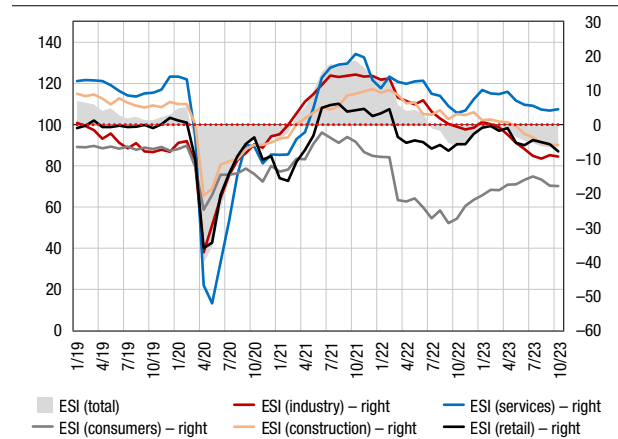
Figure 2.1.1 Quarterly rate of real GDP growth in the euro area



Notes: ECB – December and ECB – September refer to ECB December and ECB September projections respectively. Abbreviations SMA (Survey of Monetary Analysts) and SPF (Survey of Professional Forecasters) refer to the results of the October ECB survey of market participants.

Source: CBS.

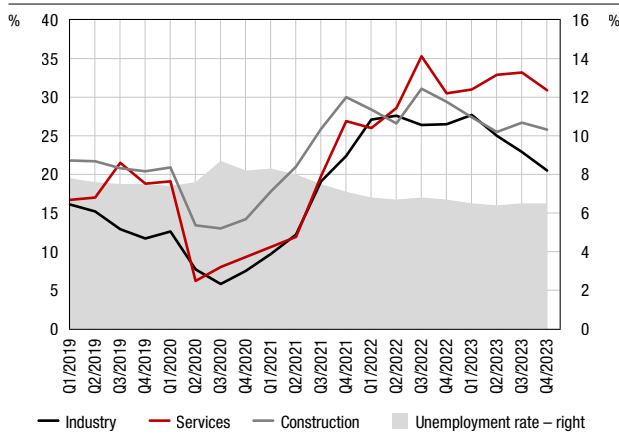
Figure 2.1.2 Euro area confidence indicators



Note: Index value above (below) 100 refers to values higher (lower) than the long-term average.

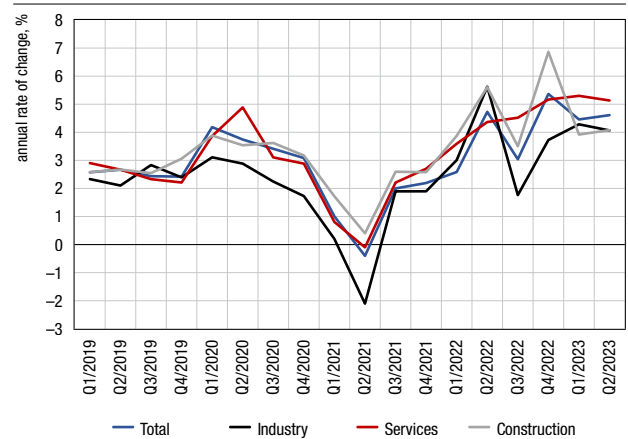
Source: Eurostat.

Figure 2.1.3 Labour shortage and unemployment rate in the euro area



Note: Labour shortage is measured by a quarterly survey and indicates the percentage of firms reporting labour shortage as the main obstacle for business activity.  
Source: Eurostat.

Figure 2.1.4 Employee compensation by individual activities in the euro area



Source: Eurostat.

weaknesses in the production sector. However, positive effects of increased demand in this segment of the economy are quickly fading (Figure 2.1.2).

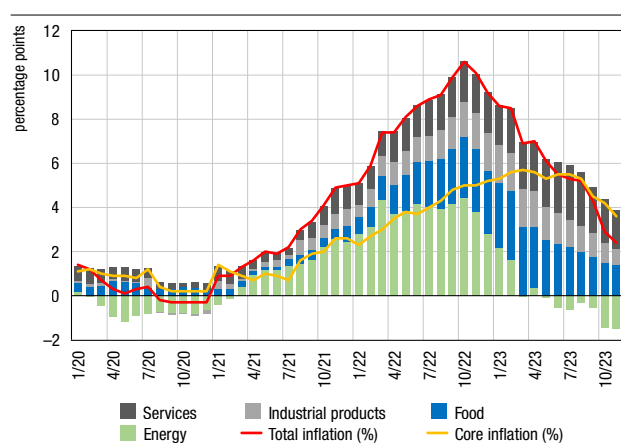
**The stagnation of euro area economic activity has for the time being no impact on indicators in the labour market, which remains very strong with widely spread labour shortages and pronounced growth in nominal wages.** Despite the stable unemployment rate, there is a visible reduction in the labour shortage in industry, which is still in contractionary territory, while construction and services continue to be marked by shortages (Figure 2.1.3). Against such a backdrop and coupled with demands by workers and unions to offset the decline in their purchasing power caused by high inflation, pressures on nominal wage growth continued. The labour market is also characterised by noticeable structural differences among different member states, so the September unemployment rate in Malta totalled 2.8%, while it was 12.1% in Spain.

## 2.2 Price developments

**The slowdown in the inflation of consumer prices in the euro area continued in the second half of 2023. It went down to 2.4%<sup>1</sup> in November, from 5.5% in June.** The slowdown in inflation was widespread (Figure 2.2.1). The increase in energy inflation slowed down to -11.5% (from -5.6% in June) largely due to the decrease in the inflation of gas and electricity prices, primarily as a result of the favourable impact of the base effect, since the high monthly increase in these prices in the second half of 2022 ceased to affect the calculation of the annual rate of energy price inflation. In contrast, the annual rate of growth of the prices of refined petroleum products accelerated, amid the increase in crude oil prices on the global market in the third quarter, spurred by supply cuts from OPEC+ countries. Against the backdrop of reduced cost pressures and the favourable base period food price inflation slowed down to 6.9% in November, from 11.9% in June, but remained elevated.

<sup>1</sup> According to Eurostat's first estimate.

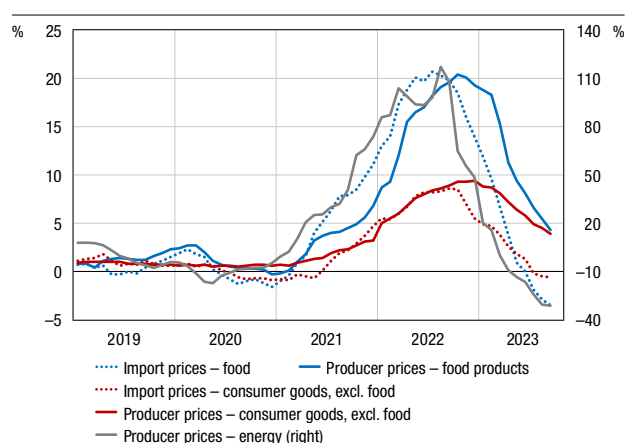
Figure 2.2.1 Euro area inflation indicators



Note: Core inflation is measured by the harmonised index of consumer prices, which excludes energy, food, alcoholic beverages and tobacco prices.

Source: Eurostat.

Figure 2.2.2 Indicators of price pressures along the pricing chain in the euro area



Notes: Producer prices refer to the domestic market. Food prices include alcoholic beverages and tobacco.

Source: Eurostat.

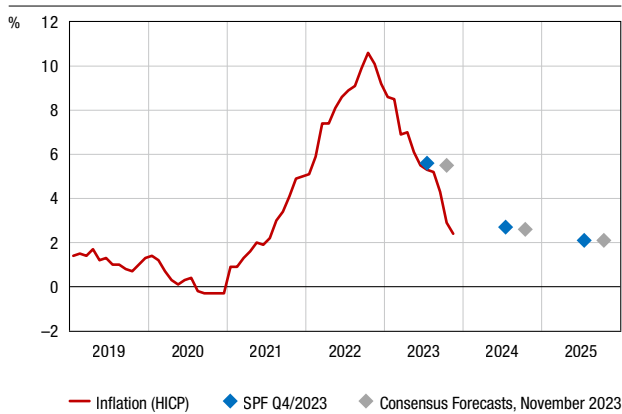
**Euro area core inflation slowed down to 3.6%<sup>2</sup> in November 2023, from 5.5% in June, due to the slowdown in both of its main components, industrial products and services.** Inflation in the prices of services totalled 4.0% in November, and, following a pattern similar to that of the previous four months, exceeded the inflation of prices of industrial products. Robust wage growth (Figure 2.1.4) and elevated inflation of prices of food and accommodation services are the main factors affecting the persistence of the inflation of prices of services in the euro area. The slowdown in core inflation was a result of the spillover of lower prices of energy and other raw materials in the global market firstly to producer and import prices and then to prices of final goods in the euro area, the normalisation of global supply chains (Figure 2.2.2) and weakening demand amid the restrictive monetary policy. The slowdown in core inflation was also aided by favourable base period effects.<sup>3</sup> In contrast, domestic inflation pressures contribute greatly to core inflation persistence and are reflected in robust euro area wage growth arising from labour shortages in the market and the fall in unemployment. In these circumstances, workers have had a favourable bargaining situation in negotiating wage increases to compensate for purchasing power decline caused by previous price increases.

**The results of the ECB's fourth quarter 2023 Survey of Professional Forecasters point to an expected slowdown in the 2023 average annual inflation in the euro area to 5.6%, from the 8.4% of 2022.** Inflation is expected to continue to decrease over the projection horizon, with the expected inflation in 2025 totalling 2.1%, i.e. returning to the target level (Figure 2.2.3) after the increase in the general level of prices of 2.7% in 2024. This is probably the result of the waning of direct and indirect effects of past supply side shocks on consumer prices and of the effect of the tightening of financing conditions on weakening demand. Additionally, professional forecasters expect the inflation of

<sup>2</sup> According to Eurostat's flash estimate.

<sup>3</sup> Most notably the strong base effect associated with subsidised transport services in Germany, a measure repealed in September of the preceding year.

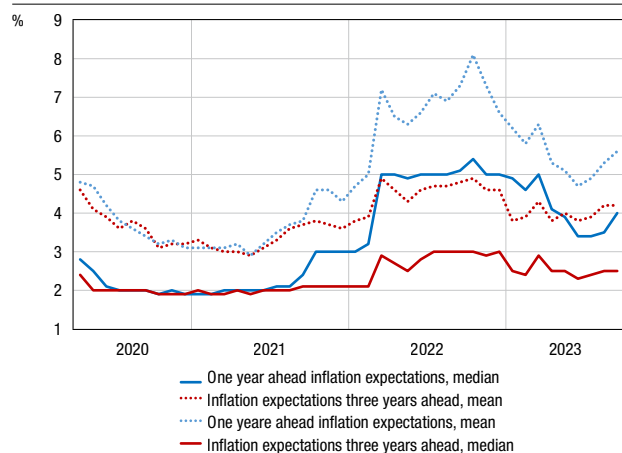
Figure 2.2.3 Short-term and mid-term inflationary expectations of professional forecasters in the euro area



Note: SPF Q4/2023 (Survey of Professional Forecasters) refer to the results of the October ECB survey of professional forecasters.

Sources: ECB Survey of professional Forecasters; Consensus Forecasts.

Figure 2.2.4 Short-term and mid-term consumer inflationary expectations in the euro area



Source: ECB Consumer Expectations Survey (CES) – September 2023, ECB; 8 November 2023.

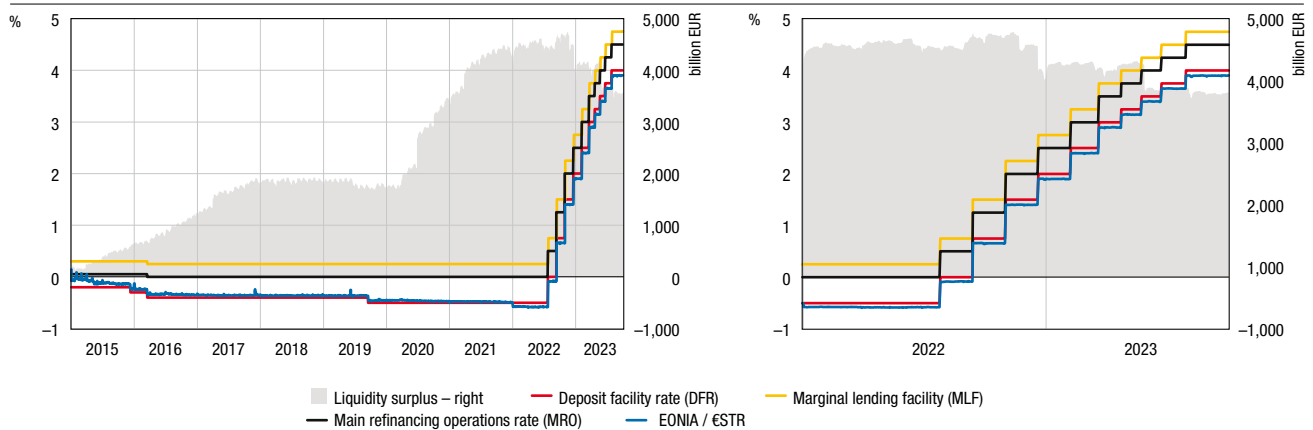
prices of services to remain higher and more persistent than the inflation of the prices of industrial products, primarily because of domestic inflation pressures arising from wage growth. According to the latest ECB survey data, short-term consumer inflationary expectations (for the year ahead, median), increased 4.0% in September, from 3.5% in August, probably as a consequence of the recent increase in the retail prices of petroleum products, a frequently purchased product, and therefore, as a rule, having a relatively strong impact on consumer expectations (Figure 2.2.4). Mid-term consumer inflationary expectations (for three years ahead, median) stayed at the level of 2.5% in September, down 0.5 percentage points from the end of 2022.

### 2.3 Monetary policy

**At its end-October and mid-December meetings, the ECB's Governing Council decided to keep the three key interest rates unchanged.** After ten successive increases in key interest rates that started in July 2022, the meeting in October was the first in the current ECB's monetary policy tightening cycle that did not result in a decision to raise the key interest rates. At the October and November meetings, the Governing Council of the ECB stressed that the key interest rates had reached levels that, maintained for a sufficiently long period, would make a substantial contribution to the timely return of inflation to its target level. The Governing Council's future decisions will ensure that the key ECB interest rates are set at sufficiently restrictive levels for as long as necessary and will continue to follow a data-dependent approach.

**The current monetary policy tightening cycle in the euro area is the strongest since the introduction of the euro as the official currency.** The increase in the ECB's key interest rates started in July 2022, with the rates rising by 250 basis points in the second half of that year and an additional 200 basis points in 2023. In the period from July 2022 to September 2023, when the last increase was registered, the ECB's key interest rates thus rose by 450 basis points. These decisions raised the deposit facility rate (DFR)

Figure 2.3.1 ECB key interest rates

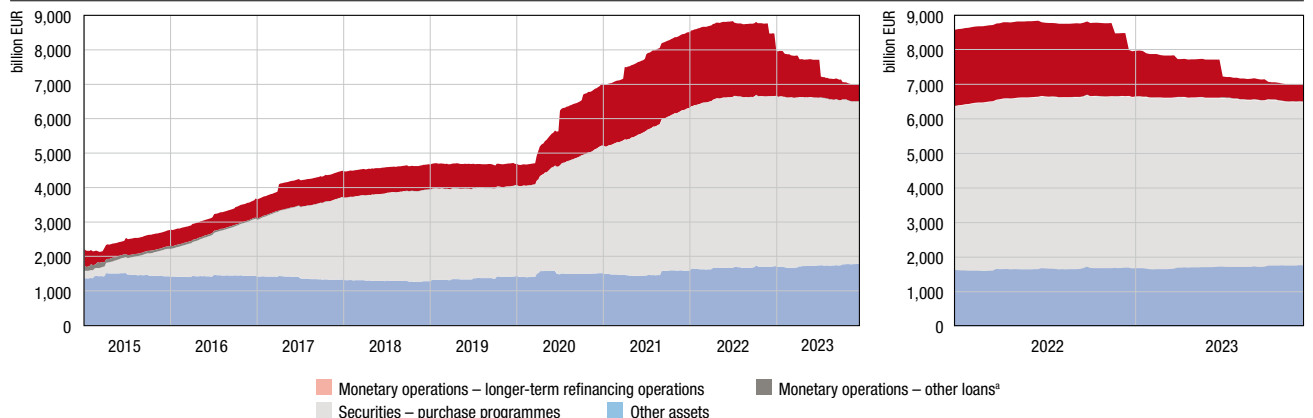


Source: ECB.

(which, due to currently high liquidity surpluses, is the Eurosystem’s benchmark interest rate) from  $-0.50\%$  to  $4.00\%$ , the main refinancing operations rate (MRO) from  $0\%$  to  $4.50\%$  and the marginal lending facility rate (MLF) from  $0.25\%$  to  $4.75\%$  (Figure 2.3.1).

At the same time, Eurosystem balance sheet continued to decrease gradually (Figure 2.3.2). The balance sheet reduction was predominantly supported by banks’ early repayment of funds from the third series of targeted longer-term refinancing operations (TLTRO III) driven by the change in financing conditions of November 2022. In addition, after ending the net asset purchases via the Asset Purchase Programme (APP) in December 2021, as of March 2023, the Eurosystem stopped reinvesting part of principal payments from maturing securities, and at the meeting in June 2023 the Governing Council confirmed that as of July reinvestment would be stopped altogether. As for the pandemic emergency purchase programme (PEPP), the ECB’s Governing Council at its mid-November meeting decided that it would continue reinvesting, in full, the principal

Figure 2.3.2 Eurosystem balance sheet



Note: The Eurosystem monetary balance sheet asset items are shown in grey and red and non-monetary in blue.

<sup>a</sup> Other loans include main refinancing operations, fine-tuning reverse operations, structural reverse operations, marginal lending facility and credits related to margin calls.

Source: ECB.

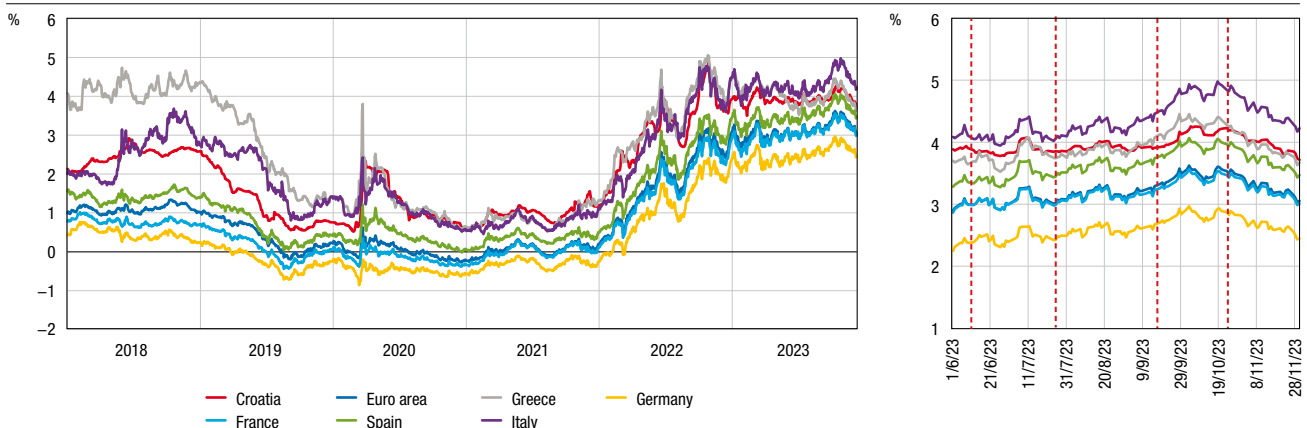
payments from maturing securities. However, in the second half of the year the PEPP portfolio is to be reduced by an average of EUR 7.5bn monthly. Reinvestments under the PEPP are to be discontinued at the end of 2024.

## 2.4 Financial markets and the banking system

**Given the decision of the ECB's Governing Council at the last meeting to hold interest rates unchanged, there were no significant changes in the euro money market.** Following the last increase in ECB key interest rates in September the €STR went up to 3.9%, and held steady at approximately the same level thereafter (Figure 2.3.1), in line with the latest decision of the ECB's Governing Council to keep the key interest rates that impact financing costs in the money market unchanged. As regards the costs of more long-term financing, in relation to which interest rates also reflect expectations regarding future developments in the ECB's key interest rates, there were no considerable changes, since markets assume that ECB interest rates have peaked. As a result, the three-month EURIBOR remained stable, after having increased in September, ending November at 4.0%.

**At the beginning of November, yields in the money market started decreasing, mostly returning to the levels reached at the end of August late at the end of the same month.** Yields in the bond market went up noticeably after August, largely spurred by expectations that the Fed's key interest rates, as well as those of other world's leading central banks, could hold steady at elevated levels for a longer period. In the euro area, government bond yields went up the most in Italy., probably due to investor concerns as regards the public finance situation (Figure 2.4.1). The Governing Council's announcement that it would maintain key interest rates at an elevated level for a longer period contributed to the rise. Yields started decreasing early in November, mostly returning to the levels reached at the end of August by the end of the month. This was supported by more favourable data regarding euro area and US inflation and rising expectations that the Fed was nearing the end of the cycle of upping its key interest rates, which brought about a decline in yields on US government bonds, which then spilled over to the euro area bond

Figure 2.4.1 Yields on long-term government bonds with the remaining maturity of approximately 10 years



Notes: Yields for the euro area have been weighted by the shares in GDP of countries included. Data from the euro area do not include those from Estonia, Latvia, Luxembourg and Malta. The red dotted lines denote ECB Governing Council meetings in June, July, September and October.

Sources: Bloomberg, Eurostat and CNB calculations.

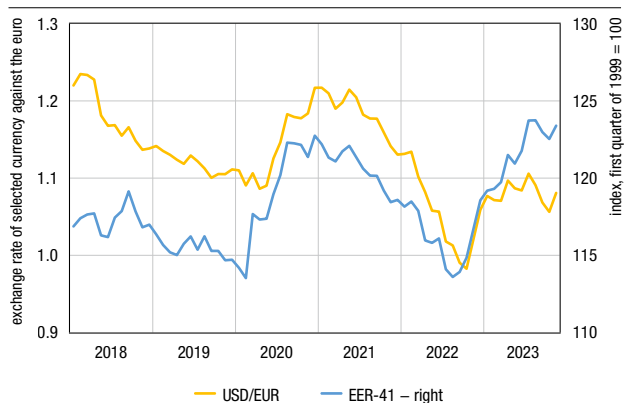


market. The euro area GDP-weighted average of long-term government bond yields stood at 3.1% at the end of November, the same as at the end of August. In the same period, the yield on long-term Croatian bonds decreased by 17 basis points, in line with market trends, ending November at 3.7%.

**The exchange rate of the euro against the US dollar started recovering after September, regaining most of the value lost in the previous several months.** The depreciation of the euro exchange rate against the US dollar in the period from mid-July to end-September was mostly impacted by expectations that key interest rates in the US could hold steady at an elevated level for a longer period of time since the US economy proved to be more resilient than expected. At the same time weaker euro area economic outlook created additional downward pressure on the euro. In November, expectations grew that because of the favourable data on US inflation published in November the Fed was close to the end of the cycle of upping its key interest rates, which reversed the trend so the USD/EUR exchange rate appreciated and returned to the level from the beginning of August by the end of November. The exchange rate of the euro to the US dollar hovered around an average value of USD/EUR 1.08 in November 2023, equalling the average realised in January 2023. Over the same period, the nominal effective exchange rate of the euro against a basket of currencies of the euro area main trading partners appreciated by around 3.5% (Figure 2.4.2).

**Bank interest rates on corporate and household loans in the euro area continued to grow, with corporate credit activity additionally weakening and household credit activity remaining quite subdued.** At the euro area level, the average interest rate on pure new loans to non-financial corporations reached 5.2% in October (Figure 2.4.3), up by 177 basis points from the end of last year, with interest rate growth intensity in the second half of the year being weaker than in the first half. The continued tightening of financing conditions was accompanied by the weakening of credit activity in this sector. Loans to non-financial corporations decreased over recent months in all countries but France, the most in Italy and Spain. Thus, the quarterly annualised rate of growth in loans to non-financial corporations entered deeper into negative territory in all major

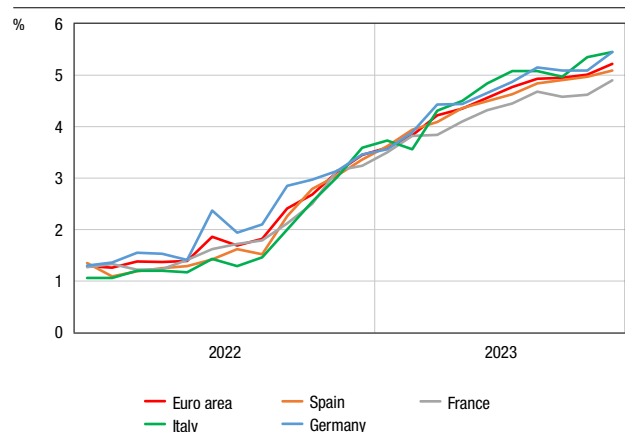
Figure 2.4.2 Exchange rates of selected currencies against the euro and the nominal effective exchange rate of the euro



Notes: EER-41 is the nominal effective exchange rate index of the euro against 41 major trading partners of the euro area. Exchange rate increase indicates euro appreciation.

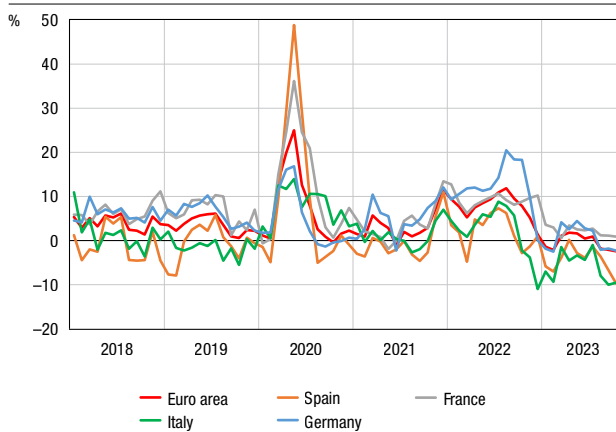
Source: ECB.

Figure 2.4.3 Interest rates on pure new corporate loans



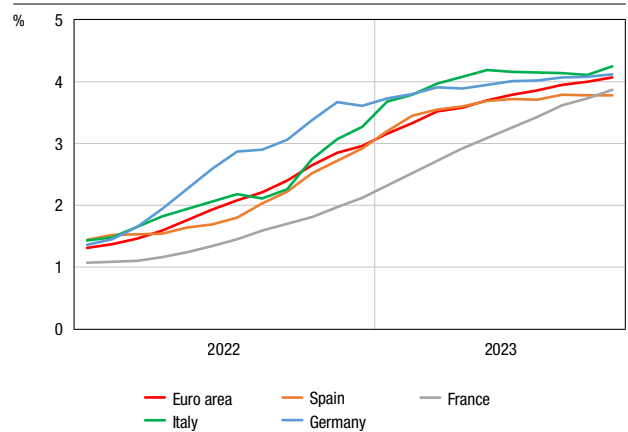
Source: ECB.

Figure 2.4.4 Lending momentum in the euro area (corporations)



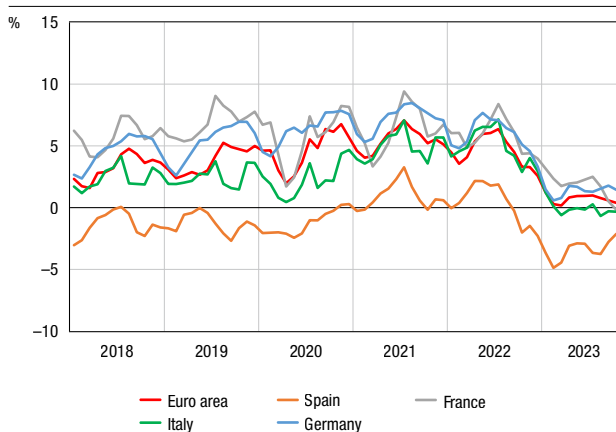
Sources: ECB and CNB calculations.

Figure 2.4.5 Interest rates on pure new household housing loans



Source: ECB.

Figure 2.4.6 Lending momentum in the euro area (housing loans to households)



Sources: ECB and CNB calculations.

countries except France where it remained slightly positive (Figure 2.4.4). As regards households, credit activity remained quite subdued but some stabilisation is visible following a noticeable weakening of lending momentum in the second half of last year and at the very beginning of this year (Figure 2.4.6). At euro area level, the average interest rate on pure new housing loans granted to households reached 4.1% in October (Figure 2.4.5), having gone up by 111 basis points from the end of the preceding year. Households have also witnessed a slower intensity of interest rate growth in the last few months than in the first half of the year.

## 3 Croatian economy

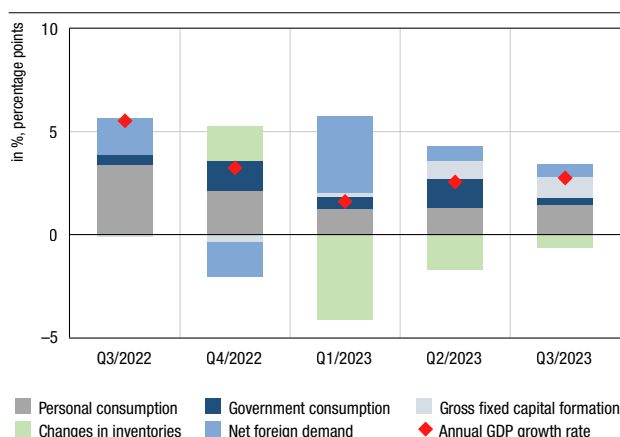
### 3.1 Real developments

After witnessing steady economic growth since the end of the previous year, in the third quarter of 2023, Croatia recorded a considerable slowdown in real GDP growth on a quarterly level. However, according to available high-frequency data, the economy is expected to grow more strongly in the last quarter of the year. The slowdown in economic growth in the middle of the year mainly mirrors the weakening of foreign demand, while domestic demand remained rather robust. As a result, GDP values on a quarterly level outperformed those in the euro area, which witnessed a small fall from the previous quarter. The annual growth rate of economic activity in Croatia accelerated and stood at a high 2.8%, reflecting also a carry-over effect, i.e. more favourable developments from the end of the previous year (see Box 1 The carry-over effect on average annual GDP growth rate). The available monthly indicators for October and November suggest an even faster growth in the last quarter, supported by continued robust domestic demand.

The growth in economic activity in the third quarter of 2023 was mostly driven by personal consumption, which may be associated with a stronger growth of real disposable income (Figure 3.1.3). Such developments were mainly the result of the persistently robust labour market, characterised by a steady growth in the number of employed persons and a fast growth in nominal wages, which, amid slowing inflation, led to a relatively fast growth in real wages. The increase in total wages was driven by a considerable positive contribution of developments in the public sector, as well as continued dynamic wage growth in the private sector. Despite relatively strong personal consumption, the savings rate continued to grow, approaching the long-term average.

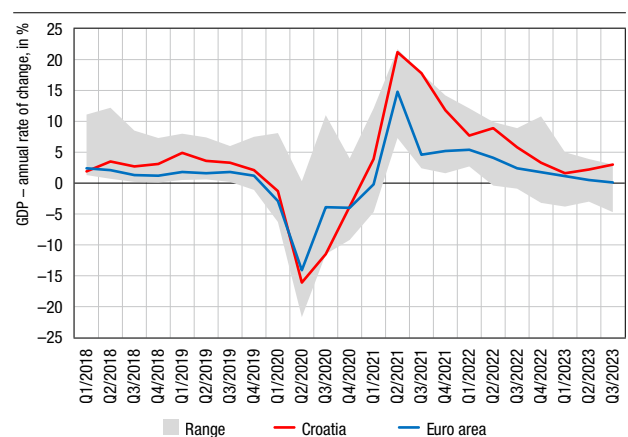
Investments also contributed to favourable economic developments in the third quarter, in contrast with a faster fall in total exports. Further investment activity growth appears to be influenced mainly by a high level of public investments, while

Figure 3.1.1 Contributions to the change in real economic activity



Source: Eurostat.

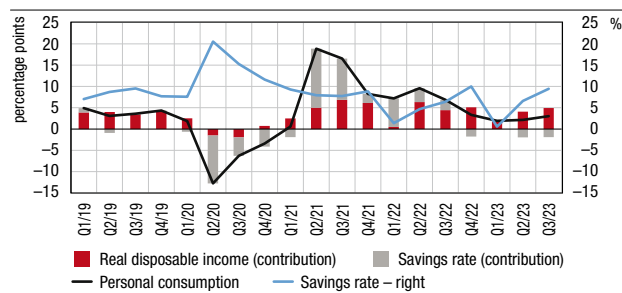
Figure 3.1.2 Trends in economic activity in Croatia and the euro area



Note: The figure shows the range of values of real GDP growth of individual euro area member states.

Source: Eurostat.

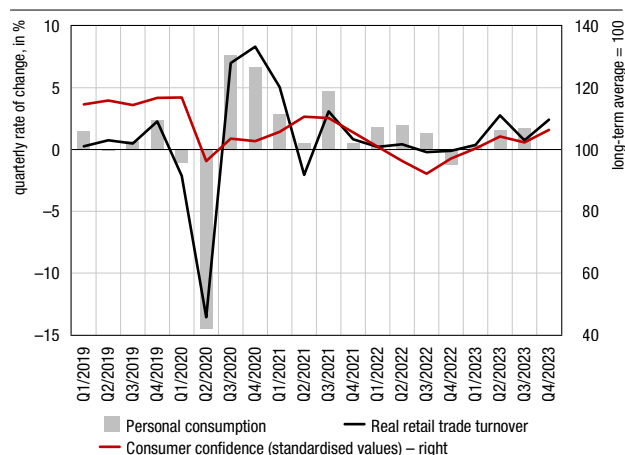
Figure 3.1.3 Contribution of disposable income and savings rate to the annual change in personal consumption



Notes: Quarterly disposable income values have been estimated using the Chow-Lin method and a series of employee compensation and gross operating surplus and mixed income as indicators. It should be noted that the calculation of disposable income in the national accounts also includes imputed sources of income, such as financial services indirectly measured and imputed housing rent, which do not have a direct impact on household purchasing power. Recent developments in interest rates and rents point to the rising relative significance of imputed sources of income; however, due to the limited data, it is difficult to estimate its extent. The savings rate is calculated as the ratio of the estimated nominal amount of savings and estimated disposable income and excludes adjustments for changes in pension rights.

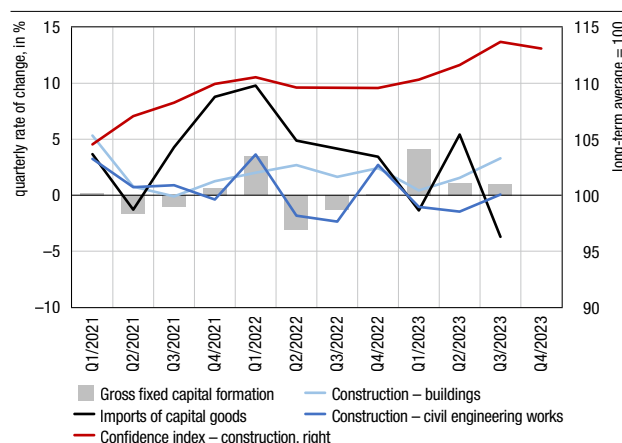
Sources: Eurostat and CNB calculations.

Figure 3.1.4 Personal consumption, retail trade and consumer confidence



Sources: CBS and Ipsos.

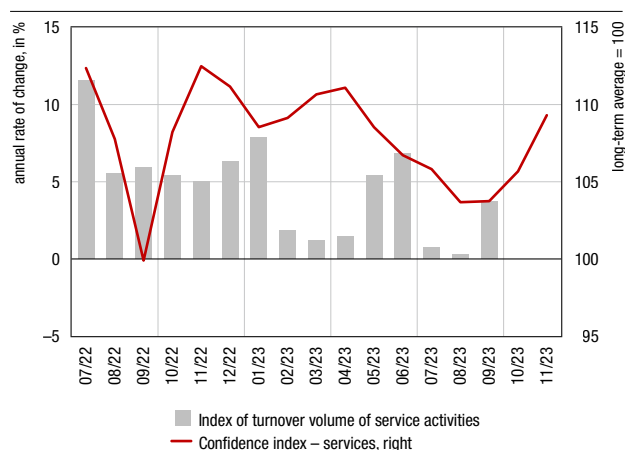
Figure 3.1.5 Investment activity indicators and confidence in the construction sector



Note: Data on confidence in the construction sector for the second quarter of 2023 refer to April and May.

Sources: CBS, Ipsos and CNB.

Figure 3.1.6 Developments in turnover volume of service activities and confidence in the services sector



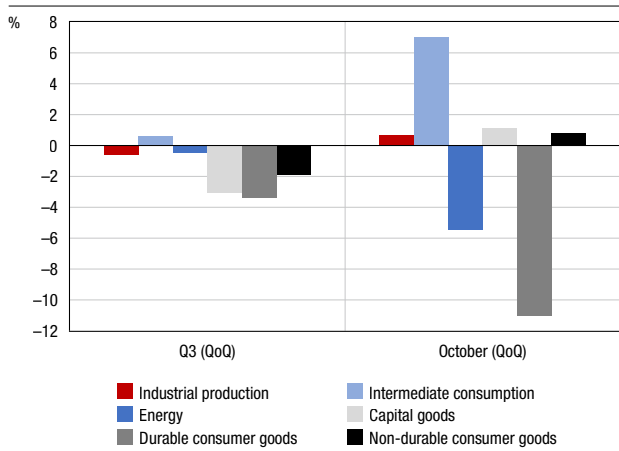
Note: Services include sectors H, I, J, L, M and N.

Sources: CBS, Ipsos and CNB.

the fall in capital goods suggests that private investments, after having fallen in the first half of the year, remain subdued. Low private investments are also due to the gradual worsening of the financing conditions. Total exports continued to contract, after having shrunk noticeably in the first half of the year. Goods exports continued to fall for the fourth consecutive quarter, although there are signs that the negative trend is subsiding. Exports of services fell on both a quarterly and an annual level, reflecting a lower level of overnight stays by foreign tourists on an annual level during the peak season, after steady growth since mid-2021. The fall in exports notwithstanding, the contribution of net foreign demand was highly positive on an annual level, given the fall in both goods and services imports during that period.

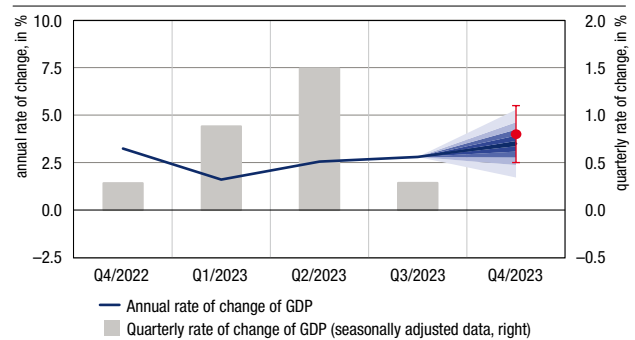
**Unfavourable developments in foreign demand had a negative impact on individual economic activities in Croatia.** This can be seen in a fall in gross value added

Figure 3.1.7 Industrial production



Note: (QoQ) signifies growth relative to the average of the preceding quarter.  
Source: CBS.

Figure 3.1.8 Quarterly GDP seasonally adjusted real values



Note: The estimate for the second quarter of 2023 refers to the Monthly indicator of real economic activity of the CNB (for more details on the calculation of the MRGA indicator, see CNB Working Paper, W-39, October 2014, Kunovac, D., and B. Špalat: *Nowcasting GDP Using Available Monthly Indicators*. The models are estimated on the basis of data published up to 29 May 2023. The red dot denotes an estimate of the quarterly change in real GDP, with historical errors of estimates within  $\pm 1$  standard deviation.  
Sources: Eurostat, CBS and CNB.

in manufacturing and individual tourism-related activities. A large negative contribution also came from financial activities. By contrast, activities largely relying on domestic demand, such as agriculture, construction, IT and real estate activities, rose sharply.

**The available monthly data point to economic growth strengthening towards the end of the year.** The CNB’s nowcasting model of economic activity, which draws on data available mostly for October, suggests an increase in Croatia’s real GDP of 0.8% in the last quarter of 2023 from the previous quarter, with the annual growth rate accelerating to 3.5%. The real retail trade turnover continued to grow at a relatively dynamic pace, with its annual growth rate accelerating to 6.6% in October. Industrial production fell from September, but its fall on the monthly level was largely influenced by a drop in energy production, developments in which are characterised by relative volatility. Confidence indicators in industry were relatively favourable with optimism in October and November exceeding the previous quarter’s average and standing close to its pre-pandemic levels. Developments in confidence were also relatively favourable in other activities, with the optimism in the services sector, after having fallen sharply in the previous quarter, almost returning to the high levels seen at the beginning of the year and with the optimism in trade also rising, while that in construction held steady at a relatively high level. In addition, consumer confidence steadily recovered driven by persistently favourable developments in the labour market, and peaked in November, reaching the highest recorded level in the last two years, considerably above the long-term average.

## Box 1 The carry-over effect on average annual real GDP growth rate

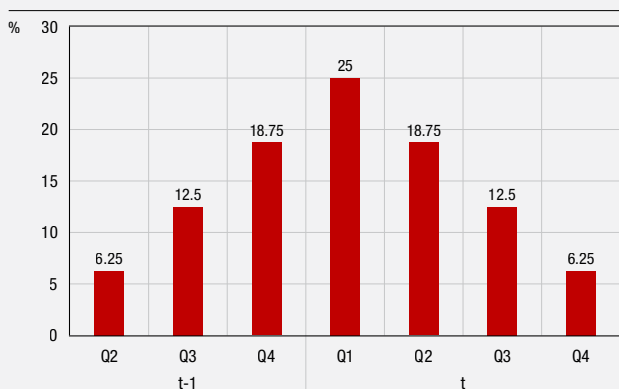
Historical developments in real GDP and its estimates for the current projection or projections for the following years are typically shown as average annual growth rates. When interpreting these figures, it should be noted that the average annual growth rate of economic activity in an individual year does not depend solely on developments in that year but also on real GDP dynamics in the preceding year. The effect on the average annual growth rate of real GDP, which arises from developments in the previous year is termed the carry-over effect. The average annual growth rates may thus give a wrong impression about current economic activity, in particular during changes in the phases of the economic cycle. This Box attempts to explain in more detail the calculation of the carry-over effect and its impact on annual real GDP growth rates in Croatia.

When monitoring current economic activity, it is important to bear in mind that the average annual growth rate in an individual year is determined not only by GDP developments in that year but also by its dynamics in the preceding year. This can have major implications for economic analysis, since growth in an individual year may largely reflect developments in the preceding and not in the current year. There are considerable differences in the contributions of current developments in an individual quarter over a relevant time horizon. Namely, the average annual growth rate may be shown as the weighted average of quarterly growth rates in four quarters of the current year and the last three quarters of the previous year, with developments in GDP at the end of the previous year and in the first two quarters of the current year having the largest impact on the average annual growth rate (Figure 1.1).

The carry-over effect shows what the average annual rate of change would be in the current year (or GDP level) if economic activity remained unchanged from the end

of the previous year, or if quarterly rates of change in the current year equalled zero. This also means that the carry-over effect fully depends on developments in real GDP in the preceding year, taking seasonal and calendar-adjusted quarterly data for its calculation. Figure 1.2 shows two assumed scenarios of developments in GDP levels in the current year ( $t$ ) and in the preceding year ( $t-1$ ) with opposite paths; in one scenario the level of GDP increases, in the other it decreases. Thus, when the level of real GDP in the last quarter of the preceding year is higher than the average level in that year (scenario 1), the carry-over effect

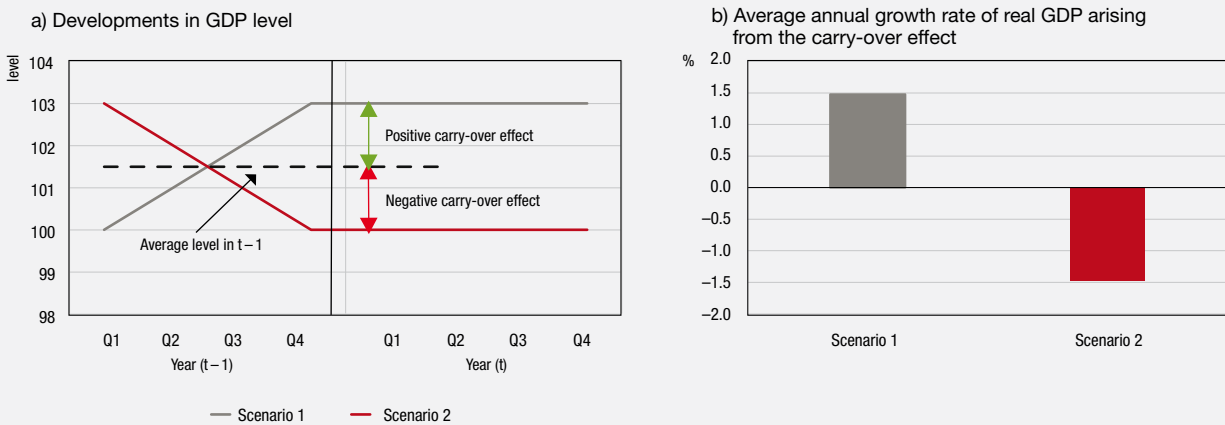
Figure 1.1 Weights of quarterly growth rates determining their impact on the average annual growth rate



Note: The methodology of weight calculation is based on Tödter, Karl-Heinz (2010): *How useful is the carry-over effect for short-term economic forecasting?*, Discussion Paper Series 1: Economic Studies No. 21, Deutsche Bundesbank.

Sources: DB and CNB.

Figure 1.2 Example of carry-over effect, different scenarios



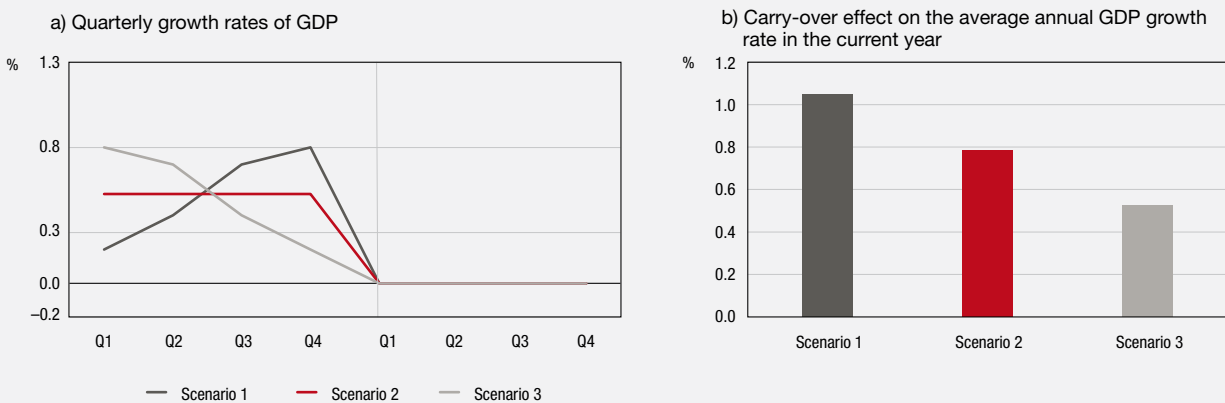
Source: CNB calculations.

on the current year will be positive and when this level is lower (scenario 2), the carry-over effect on the current year will be negative. Hence, the average annual rate of change of real GDP in the current year in scenario 1 would be positive and negative in scenario 2 (Figure 1.2.b), despite activity in both cases being stagnant in the current year.

The strength of the carry-over effect depends on current GDP dynamics in the previous year, i.e., the average rate of current growth and the distribution of the rates over the year. The higher rate of current growth in the previous year, particularly towards the end of that year, will result in a stronger carry-over effect and thus in a higher average annual growth rate in the current year (Figure 1.3).

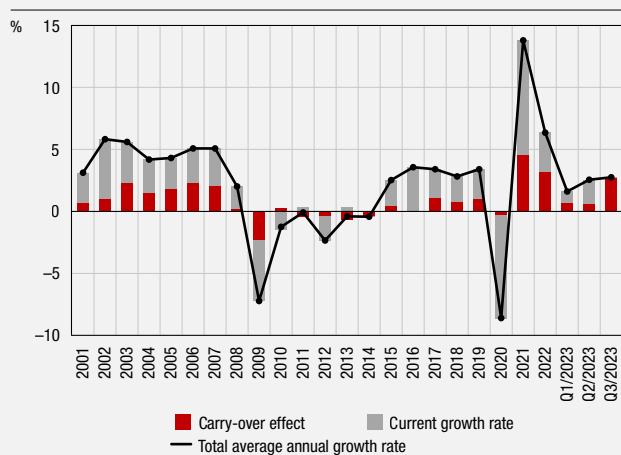
Historical data for Croatia suggest it has a relatively large importance for real GDP dynamics. Figure 1.4 shows a decomposition of the average annual growth rate of GDP to the carry-over effect and current growth in an individual year. From 2001 to the global financial crisis, the carry-over effect was positive and relatively even, accounting on average for approximately one third of the annual growth rates, which reflects the upward

Figure 1.3 Quarterly growth rates, different scenarios



Source: CNB calculations.

Figure 1.4 Decomposition of the average annual growth rate of real GDP for Croatia to the carry-over effect and current annual growth



Sources: CBS and CNB calculations.

path of economic activity and relative stability of the growth trend. At the height of the crisis, the carry-over effect became negative and in 2009 accounted for one third of the average annual fall in GDP. After 2009, the carry-over effect was negligible for several years amid the stagnant economy in Croatia but regained a positive sign with economic recovery. The sharp fall in 2020 in the wake of the COVID-19 pandemic was fully due to developments in that year. However, as this fall was mostly determined by developments in the first half of the year, with the second half of the year being marked by fast recovery that continued in 2021, the carry-over effect in

2021 and 2022 was again highly positive and in the previous year accounted for as much as one half of the average annual rate of change.

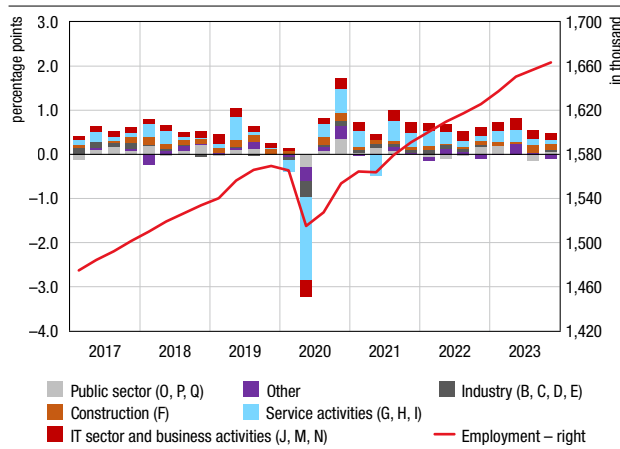
**The analysis of the carry-over effect may be applied to the annual rate of change in real GDP in an individual quarter.** The annual growth rate would then depend on developments in the current quarter and developments in the previous three quarters, with equal weights for each quarter. One may notice (Figure 1.4.) that economic activity growth of 2.8% in the recent period (third quarter of 2023) was almost entirely the result of developments in economic activity in the preceding three quarters, while in the July to September 2023 period, real GDP rose only slightly from the previous period.

### 3.2 Labour market

**Robust domestic economic activity led to a further increase in the number of employed persons in the third quarter, although at a slower pace than in the first half of the year.** In the July to September period, total employment thus rose 0.4% from the second quarter. Employment in the IT sector, construction and tourism-related service activities made the biggest contribution to overall employment growth, while the number of employed persons held steady in industry and fell in the public sector (Figure 3.2.1). If viewed on an annual level, the number of employed persons in the third quarter was up 2.5% from the same period in 2022. Data for October suggest further employment growth at an intensity similar to that in the previous quarter. Part of the demand for labour continues to be met by employment of third-country workers (from non-EU countries) and by hiring pensioners who work up to half time (Figure 3.2.2). The increase in the labour force participation rate in the age group 15-64 and the activation of the previously inactive labour force in the tight labour market, indicates an additional source of employment growth.

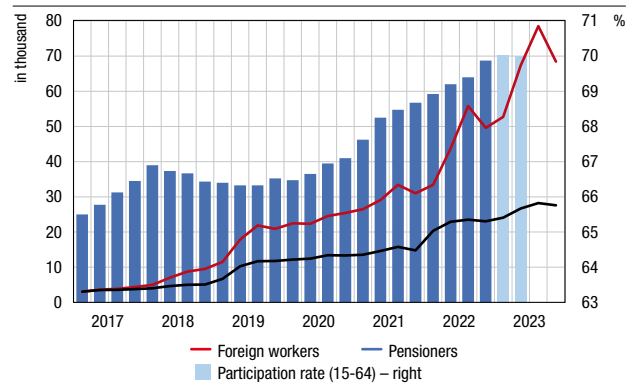


**Figure 3.2.1 Employment by NCA**  
seasonally adjusted data, contributions to the quarterly rate of change



Note: Data for the fourth quarter of 2023 refer to October.  
Source: CPIA (seasonally adjusted by the CNB).

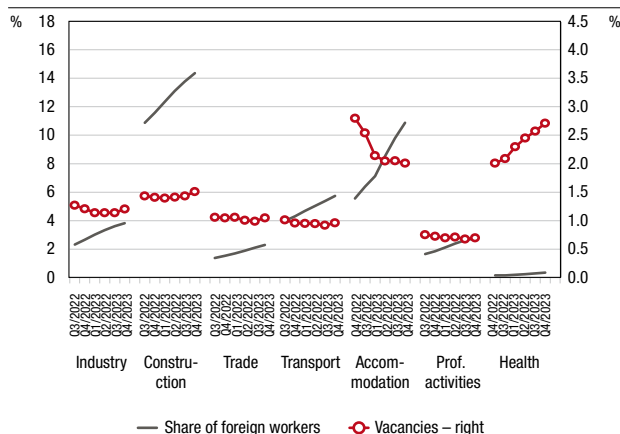
**Figure 3.2.2 Participation rate, employed pensioners and foreign workers**



Notes: Data for the fourth quarter of 2023 for third-country nationals and pensioners working up to half-time refer to October. The participation rate is calculated for the population aged 15 to 64. As regards survey data, data for the first and second quarter of 2023 are not fully comparable with previous quarters due to the shift to Census 2021 data for the calculation of the indicators.  
Sources: CBS and CPIA.

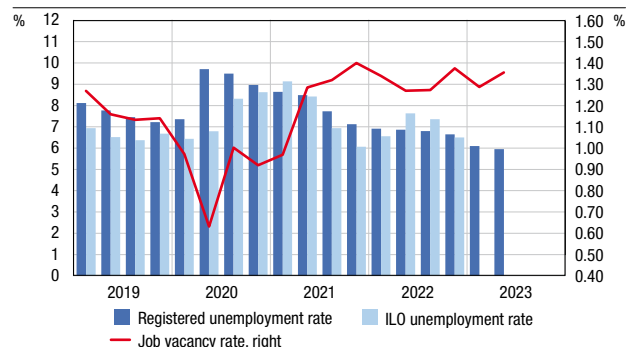
**Employment growth partially contributed to a reduction in the unemployment rate, with strong demand for labour also being reflected in the persistently high job vacancy rate.** Job vacancy rates mostly held steady except in the accommodation and food service activities, which witnessed a fall in the third quarter, albeit from a very high level and amid a pronounced employment of third-country workers. In addition to accommodation and food service activities, construction also saw a rapid growth in the employment of foreign workers, which reflects greater labour shortages in these activities and partly also the type of business and qualifications required (Figure 3.2.3). The internationally comparable ILO unemployment rate, according to the last available data in the second quarter of 2023, fell to 5.8% of the labour force, down from 6.7% in the previous three quarters. The registered unemployment rate, available for the third quarter, rose slightly to 6.4% from 6.1% in the previous quarter (Figure 3.2.4). Such developments seem to reflect a somewhat larger number of inflows into the CES register than usual at this time of the year, which might indicate a partial substitution of the domestic labour

**Figure 3.2.3 Share of foreign workers in total employment and job vacancy rate by activity**  
four-member moving averages



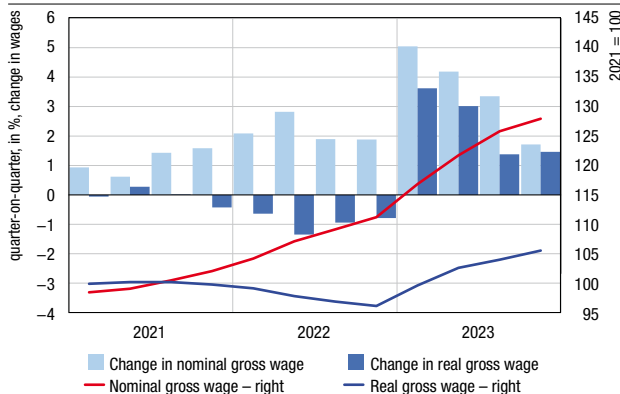
Note: Data for the fourth quarter of 2023 refer to October.  
Sources: CPII and CES.

**Figure 3.2.4 Unemployment and job vacancy rates**  
seasonally adjusted data



Notes: Data for the fourth quarter of 2023 refer to October. Since January 2015, data on employed persons from the JOPPD form have been used to calculate the registered unemployment rate. The job vacancy rate is calculated as the share of total posts that are vacant in the total demand for labour (the sum of the number of persons insured with the CPII and vacant posts). As regards the Labour Force Survey, data for the first and second quarter of 2023 are not comparable with previous quarters due to the shift to Census 2021 data for the calculation of the indicators.  
Sources: CBS, CES and CNB calculations (seasonally adjusted by the CNB).

**Figure 3.2.5 Average nominal and real wage**  
seasonally adjusted data



Notes: Data for the fourth quarter of 2023 refer to October. As of January 2016, data refer to the JOPPD form, while earlier data refer to the RAD-1 form. Data on average wages paid in February 2020 were reported in full-time equivalent. Data on wages in 2019 reported in full-time equivalent were released for analytical purposes.

Sources: CBS and CNB calculations (seasonally adjusted by the CNB).

force by the imported labour force. The unemployment rate was relatively stable in the conditions of a rising labour force participation rate and increased employment of third-country workers and retirees.

**Although pronounced in early 2023 the growth in nominal and real wages slowed down later in the year.** Mirroring low unemployment, labour force shortages and the accumulated loss of purchasing power, the beginning of the year was marked by a pronounced growth in nominal wages, whose real value increased amid a gradual easing of inflationary pressures (Figure 3.2.5). Growth acceleration in the first half of 2023 was more pronounced in

the private sector, with wage growth being widespread across different activities. According to seasonally adjusted data, in the third quarter of 2023, the growth of gross nominal wages slowed down to 3.4% from 4.2% in the previous quarter. Wage developments in the third quarter were largely influenced by a one-off wage increase in the wages of civil servants and government employees paid in July. The increase in public sector wages in the July to September period accelerated sharply from the second quarter, rising from 3.0% to 7.8%, while the increase in private sector wages slowed down from 4.8% to 1.5%. The increase in gross nominal wages and the gradual slowdown in inflation resulted in an increase in real wages in the third quarter from the previous three months. Nevertheless, real gross wages rose 1.4%, a much slower growth than that seen in the second quarter (3.0%) Real net wages also rose with a similar dynamics but at a somewhat slower rate. Data on developments in gross wages for October show a slowdown in nominal wage growth while real wages continued to rise in the same way as in the previous quarter. When compared to the same period last year, the annual growth rates of wages in the third and early fourth quarter held steady at levels seen in the first half of the year, with visibly higher growth rates in the public sector in the second half of the year.

## Box 2 The impact of the correction of the coverage of foreign workers on the estimate of the potential GDP in Croatia

Speedy recovery from the pandemic-induced recession strongly spurred demand for labour, primarily in seasonally intensive activities, such as construction and hospitality services activities. Amid unfavourable demographic developments a portion of the demand for labour was met by the employment of third-country workers (from non-EU countries). The Labour Force Survey, the usual source of data on employment necessary to assess Croatia's potential gross domestic product, most likely underestimates the number of employed foreign nationals. The correction of potential GDP estimates for the likely underestimation of the number of employed foreign workers mildly increases the growth rate of the potential gross domestic product in the period from 2018 to 2024, when the employment of foreign workers intensified. This also raises the estimated contribution of the labour factor to the potential GDP. Although it is possible that even the CPII data do not cover the overall number of foreign workers in Croatia, their productivity, taking into consideration the sectoral and educational structure, could be slightly lower than implicitly assumed, which, to a degree, reduces the deviation of the estimate from the real contribution of foreign workers.

Estimating the potential level of the gross domestic product (GDP) and the contributions of its components has an important role in assessing the cyclical position of the economy in order to tailor economic policies as precisely as possible. The key measure of the cyclical position is the domestic product gap, which is the divergence of the real from the potential GDP, expressed as a percentage of the potential GDP. When this gap is positive, inflationary pressures are often present, while a negative domestic product gap may create deflationary pressures. However, the level of the potential GDP and the domestic product gap are theoretical concepts which cannot be measured directly so these variables need to be estimated. GDP formation in Croatia is also increasingly impacted by the employment of foreign workers<sup>4</sup>. However, the usual statistical data on the labour market used for potential GDP estimate (Labour Force Survey) do not fully cover foreign workers in Croatia due to methodology and research coverage. This can lead to underestimation of the available labour factor and consequently the underestimation of potential GDP.

Against the backdrop of strong recovery after the COVID-19 pandemic and ever more prominent effects of unfavourable demographic developments, Croatian employers are faced with the great challenge of having to source an adequate workforce from the domestic labour market. To mitigate the problem, they increasingly began to rely on labour from outside Croatia and EU member states, that is from third countries (non-EU countries), the employment of whom was considerably facilitated, in administrative

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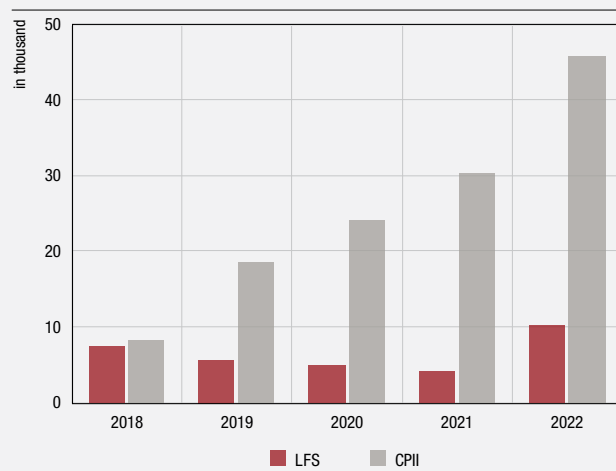
4 The analysis uses data on the average annual number of foreign workers.

terms, by the adoption of the new Law on Foreigners in 2021. In addition, the gradual increase in the price of labour has made Croatia more attractive to foreign workers<sup>5</sup>. Since 2017, the Croatian Pension Insurance Institute has a special category for foreign workers in its records of insured persons, and their statistics show a strong growth in the number of foreign workers following the mentioned labour market liberalisation when annual quotas for the employment of foreign workers in individual sectors and professions were repealed (Figure 2.1).

While CPII indicators, as well as Police Department records on the number of issued work permits point towards a strong increase in the number of foreign workers, the Labour Force Survey, the common source of data on the labour factor used when estimating the potential GDP, due to its international comparability, indicates their stagnation at a low level for the most part of the period under observation. The number of foreign workers in the 2022 Labour Force Survey thus amounted to only one fifth of the number of foreign workers registered with the CPII. There are indications that even the CPII indicators to a certain degree underestimate the real number of foreign workers because it is possible that domestic employers do not fully adhere to CPII instructions when registering foreign workers under a particular registration code in their forms and records. Nevertheless, in the absence of better indicators, this box will supplement the Labour Force Survey employment rate with the data on employed foreign workers from the CPII records in order to analyse and quantify their contribution to potential GDP of the domestic economy in more detail.

The potential GDP level may be estimated in different ways: via the production function method and/or by applying different univariate<sup>6</sup>, bivariate<sup>7</sup> and multivariate filters (such as the unobserved components method<sup>8</sup>). The approach most commonly used in international institutions is the production function method because it ensures a consistent approach and provides for comparison among individual countries, as well as for a more detailed decomposition of the potential GDP. Therefore, the level of potential GDP in this box is estimated by the production function pursuant to the methodology described in Grgurić *et al.* (2021)<sup>9</sup>.

Figure 2.1 Comparison of developments in the average number of foreign workers by different data sources



Sources: LFS and CPII.

- 5 Butković, H., Samardžija, V. and Rukavina, I. (2022): *Foreign Workers in Croatia: Challenges and Opportunities for Economic and Social Development*, Institute for Development and International Relations, IRMO, ISBN 978-953-6096-95-4.
- 6 Hodrick, R. J. and Prescott, E. C. (1997): *Postwar US business cycles: an empirical investigation*, *Journal of Money, Credit, and Banking*, 29(1), pp. 1-16.
- 7 Blanchard, O. J. and Quah, D. (1989): *The Dynamic Effects of Aggregate Demand and Supply Disturbances*, *The American Economic Review*, 79(4), pp. 655-673.
- 8 Toth, M. (2021): *A multivariate unobserved components model to estimate potential output in the euro area: a production function-based approach*, Working Paper Series 2523, European Central Bank, February 2021.
- 9 Grgurić, L., Nadoveza Jelić, O. and Pavić, N. (2021): *The interplay of supply and demand shocks: measuring potential output in the COVID-19 pandemic*, *Public Sector Economics*, Institute of Public Finance, vol. 45(4), pp. 459-493.

The potential GDP level ( $Y_t$ ) may be expressed in Cobb-Douglas form as:

$$Y_t = TFP_t^\alpha \times L_t \times K_t^{1-\alpha} \quad (1)$$

and it is determined by the factor of labour (L), capital (C) and total factor productivity (TFP). The labour factor refers to the number of paid working hours in the economy. The capital factor includes tangible and intangible assets used in the production process. Total factor productivity shows how effectively work and capital are used in the production process and at the same time reflects the impact of other production factors as technology, management skills, etc.

As regards the assessment of the potential GDP via the production function method, the weight of the labour factor ( $\alpha$ ) and capital ( $1-\alpha$ ) for Croatia have been set in accordance with the results of previous empirical research<sup>6,10</sup>, so the weight of the labour factor totalled 0.65, and the weight of the capital factor 0.35. The labour factor, that is, the total number of paid working hours in the economy, which is key for this analysis considering that employment of foreign workers directly affects this component and thus the potential GDP level, may be expressed as:

$$L_t = \text{paid working hours per employee}_t \times (1 - \text{NAWRU}_t) \times \text{participation rate}_t \times \text{working age population}_t \quad (2)$$

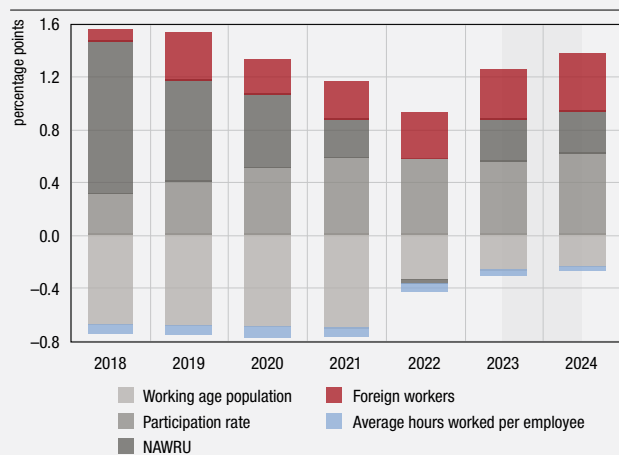
and indicates the total number of paid working hours in the economy. Employment of foreign workers is included in the model in such a way as to increase employment (affecting the participation rate) by the number of foreign workers employed in Croatia.

The potential GDP estimate is based on the comparison of the results of two model specifications, with the first one, the basic specification being based on the Labour Force Survey data, and the second, the alternative specification is broadened by the CPII data on foreign workers employed and thus includes a noticeably higher number of foreign workers employed in Croatia. In other words, in the alternative specification the labour factor is increased by the difference between the number of foreign workers in the CPII data and the number in the Labour Force Survey data. Likewise, the analysis has been extended to the projection period based on CNB macroeconomic projections, with the number of foreign workers for 2023 being assessed according to the results in the first eleven months, pursuant to which the annual growth rate totalled some 30%, which is equal to the increase in 2022, with the same growth rate of the number of foreign workers being extrapolated for 2024 as well.

Supplementing employment indicators with the increase in the number of foreign workers raises the contribution of the labour factor in the extended model (Figure 2.2.). The average increase in the contribution of the labour factor to the potential output as a result of employment of foreign workers in the period from 2018 and 2024 in the extended specification compared to the basic specification thus amounts to 0.3 p.p. As well as

10 Jovičić, G. (2017): *Estimating potential growth and GDP gap in Croatia*, Croatian National Bank surveys, S-38.

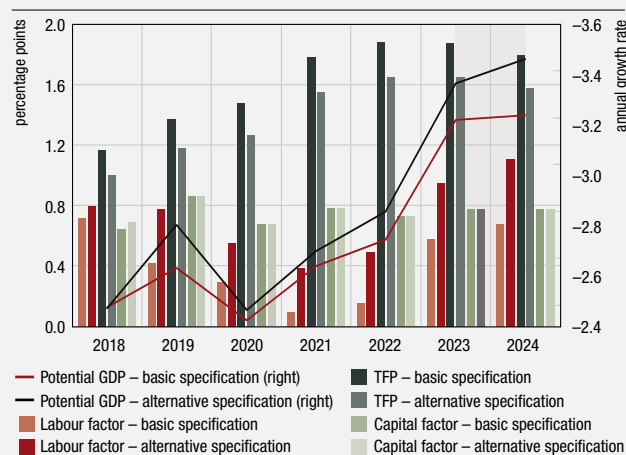
Figure 2.2 Contributions to the labour factor in the alternative model specification



Note: The grey shaded area represents the projection horizon.

Source: CNB.

Figure 2.3 Potential GDP growth rate (%) and contributions of individual components in the basic and the alternative model specification



Note: The grey shaded area represents the projection horizon.

Sources: CBS, CPII and CNB.

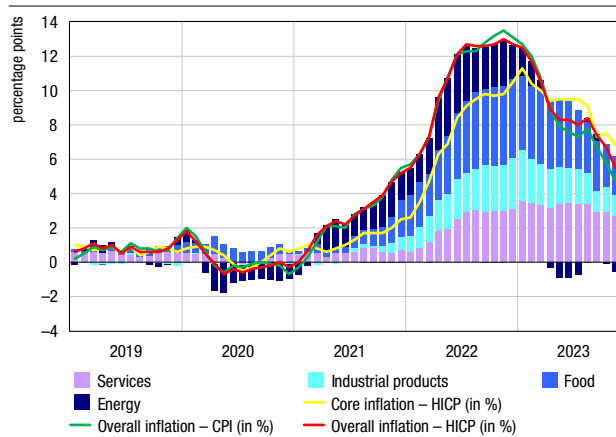
by foreign workers, the total number of working hours is positively impacted by the increasing participation of the population in the labour force, as well as by the decrease in structural unemployment. On the other hand, the decrease in the working age population reflects the negative impact of demographic developments.

Results of the analysis show that the growth rate of the potential GDP in the period from 2018 to 2024 is, on average, 0.1 p.p. higher in the specification of the model with a larger number of foreign workers than the growth rate of the potential GDP in the specification with a smaller number of foreign workers so the cumulative difference in potential GDP is some 0.8 p.p. (Figure 2.3). The greatest difference in the contribution of the labour factor between the two specifications should arise in 2024 and amount to 0.4 p.p. Nevertheless, the difference in the growth rate of the potential output between the two specifications in the same year is slightly lower and amounts to 0.2 p.p. since the contribution of total factor productivity as a residual category was revised downwards mechanically in the alternative specification.

### 3.3 Price developments

After peaking in November 2022, consumer price inflation slowed down noticeably in 2023, with the slowdown being less pronounced in the summer months due to stronger current pressures during the tourist season. According to Eurostat's first estimate, inflation measured by the harmonised index of consumer prices (HICP) fell to 5.5% in November 2023, down from 8.3% in June, and 13% at the previous year-end (Figure 3.3.1). In contrast with the first half of the year when inflation deceleration was largely due to energy prices, the favourable developments in the following five months were mostly due to food prices (including alcohol and tobacco). Food price inflation fell by more than a half to 7.7% in November 2023, from the peak 16% in the last quarter of the previous year. The fall in food price inflation mirrors a number of factors, from the

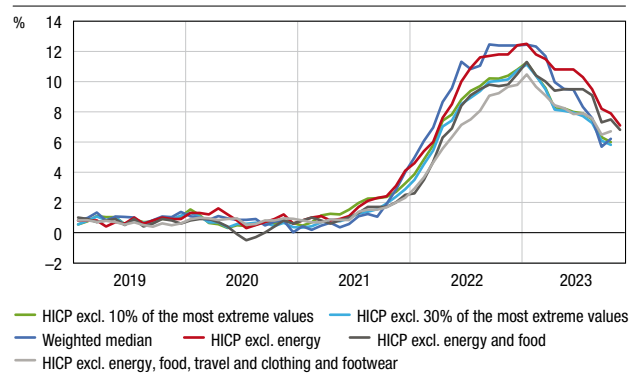
Figure 3.3.1 Inflation indicators in Croatia



Note: Core inflation is measured by the harmonised index of consumer prices, which excludes the prices of energy, food, alcoholic beverages and tobacco.

Sources: Eurostat and CNB calculations.

Figure 3.3.2 Core inflation indicators in Croatia



Notes: Trimmed mean is the measure of the central tendency calculated by eliminating 5% (15%) of components with maximum and minimum annual rates of change in a given month. The total data set refers to 87 HICP components. The weighted median is a form of median without the most extreme values, which excludes all values but the weighted median of the distribution of price change.

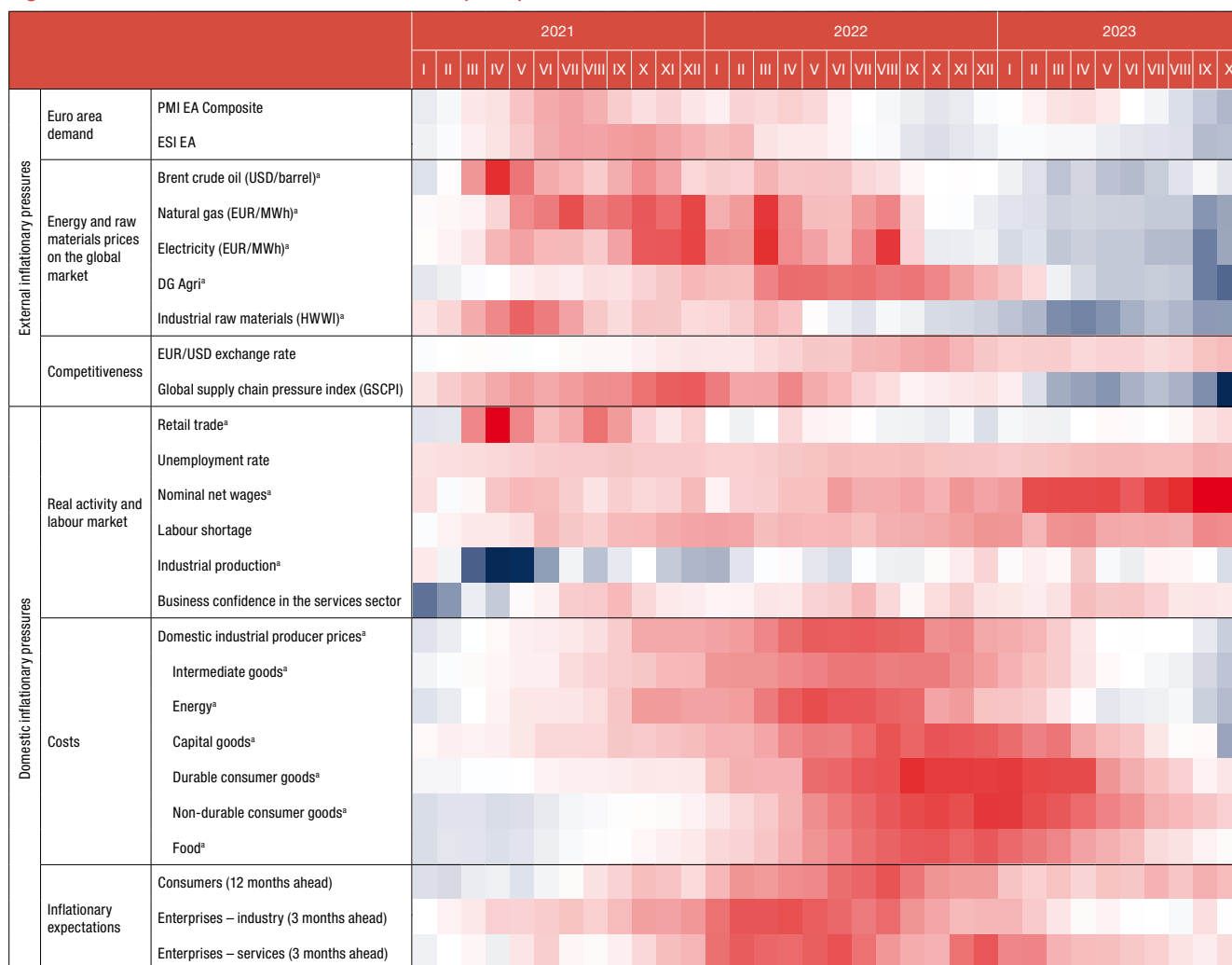
Sources: Eurostat and CNB calculations.

spillover of lower prices of energy, fertilizers and food raw materials on the global market to import and domestic-producer prices of food, normalisation in global supply chains, slowdown in food price inflation in the main trading partners, the favourable effects of the base period due to a sharp rise in food prices in 2022 to easing of the short-term dynamics of food prices.

**Although less than food prices, prices of industrial products and services also contributed to a slowdown in overall inflation.** Core inflation (measured by the index that excludes food and energy prices) slowed down from 9.5% in June to 6.8% in November 2023, owing to a fall in the annual growth rate of prices of both its components, industrial products and services. The inflation of prices of industrial products slowed down steadily from the beginning of the year amid decreased imported inflationary pressures caused by lower levels of energy and other raw materials prices on the global market relative to the year before, normalisation in the global supply chains and lower producer prices of industrial products on the domestic market. In contrast, clearer indications of a slowdown in the inflation of services prices became apparent only after the end of the main part of the tourist season. Despite the slowdown, the inflation of services prices remained high, standing at 8.6% in November and was the key component with the largest individual contribution to overall inflation in Croatia. Alternative indicators of core inflation, which exclude certain volatile components, also fell further, but remained elevated nevertheless (Figure 3.3.2). Relatively high levels of core inflation mainly reflect domestic inflationary pressures, i.e. pressures arising from the robust labour market, in particular wage growth and solid domestic demand (Figure 3.3.3).

**Short-term indicators of overall and core inflation reflecting current developments fell further in the second half of 2023, particularly those of core inflation.** The downward trend in short-term indicators of inflation (quarterly rates of change on an annual level), which started in the second half of the previous year (Figure 3.3.4) was not constant, and in the May to August period of this year these indicators rose, reflecting the current increase in the prices of energy, food and, above all, services (Figure 3.3.5). By

Figure 3.3.3 Indicators of external and domestic price pressures



<sup>a</sup> Annual rate of change

Notes: Labour shortage shows the ratio between the vacancy rate and the registered unemployment rate. The PMI EA Composite and ESI EA series have been corrected after standardisation so as to show the neutral value in white. The red (blue) colour indicates a positive (negative) deviation in the value in a given month relative to the 2010–2022 average (expressed by the number of standard deviations), where the intensity of the colour shade indicates the size of an upward (downward) deviation from the average.

Sources: ECB, Eurostat, Bloomberg, NY Fed, HWWI, CBS and Ipsos.

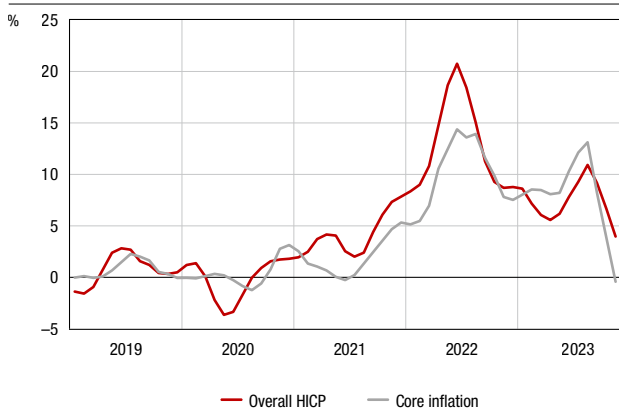
contrast, in the following three months, the short-term indicators of both overall and core inflation slowed down noticeably owing to a weaker momentum of the prices of industrial products, food and, particularly, services.

**The easing of inflationary pressures is also seen in a further reduction of inflation diffusion (Figure 3.3.6),** with the share of subcomponents in the consumer price index whose annual growth stands above 2% falling to 60%, a significant fall from the 85% recorded in the third quarter of last year. Corporate short-term inflationary expectations in industry returned in the second half of 2023 to approximately their average level in the 2017 to 2019 period, while corporate expectations in the services sector remain elevated relative to the pre-pandemic period (Figure 3.3.7).

**A less vigorous inflation slowdown in Croatia in the second half of 2023 than in the rest of the euro area led to an increased inflation differential.** In November 2023, overall and core inflation in Croatia were 3.1 and 3.2 percentage points, respectively, higher than in the euro area (Figures 3.3.8 and 3.3.9). The difference in the contributions

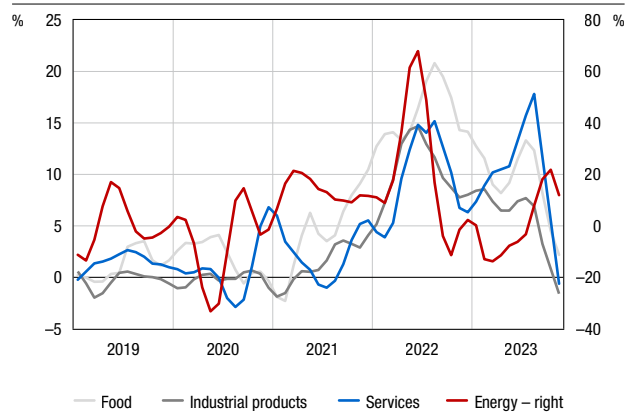


Figure 3.3.4 Momentums of overall and core inflation



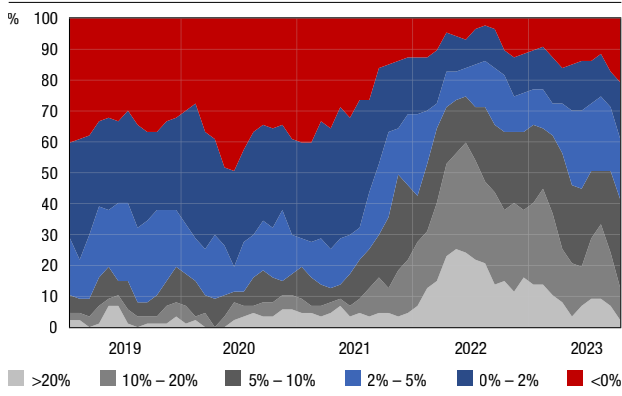
Note: The quarterly rate of change on an annual level is calculated from the quarterly moving average of seasonally adjusted harmonised consumer price indices.  
Sources: Eurostat and CNB calculations.

Figure 3.3.5 Momentums of main inflation components



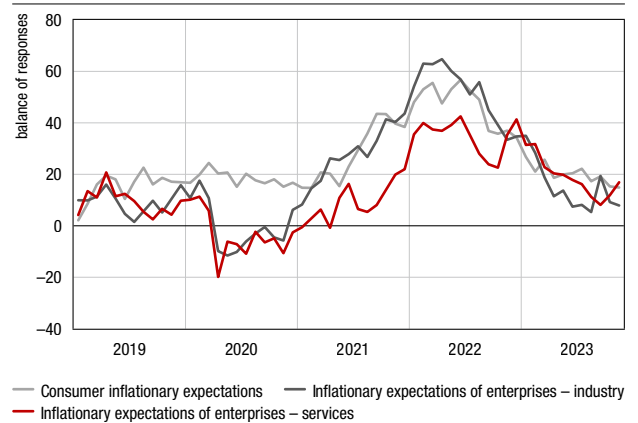
Note: The quarterly rate of change on an annual level is calculated from the quarterly moving average of seasonally adjusted harmonised consumer price indices.  
Sources: Eurostat and CNB calculations.

Figure 3.3.6 Diffusion of consumer price inflation



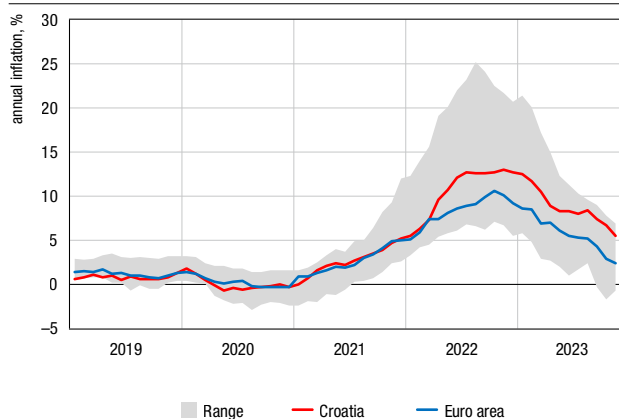
Note: The figure shows the share of products whose prices changed within a defined range in the total number of products according to quarterly moving averages of annual rates of change of seasonally adjusted price indices of 87 components of the harmonised consumer price index.  
Sources: Eurostat and CNB calculations.

Figure 3.3.7 Short-term consumer and corporate inflationary expectations



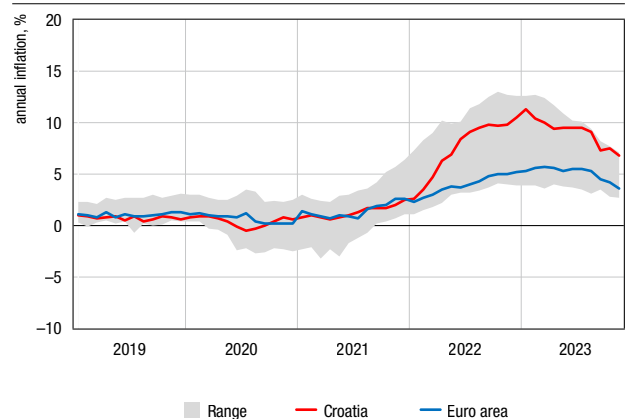
Note: Consumer expectations refer to a twelve-month period ahead and corporate expectations refer to a three-month period ahead.  
Source: Ipsos.

Figure 3.3.8 Synchronisation of overall inflation in Croatia and the euro area



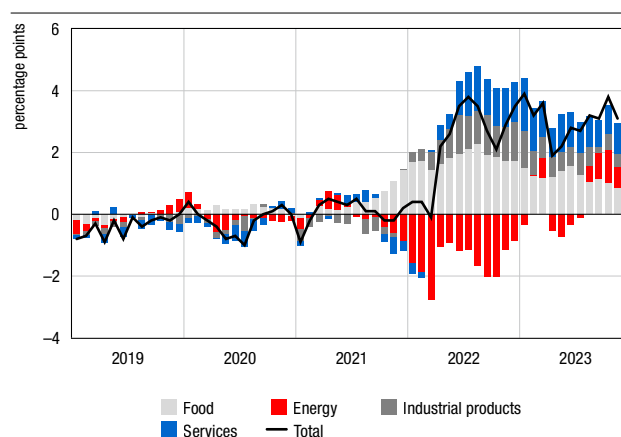
Note: Gray areas show the range of values of individual member states.  
Source: Eurostat.

Figure 3.3.9 Synchronisation of core inflation in Croatia and the euro area



Note: Gray areas show the range of values of individual member states.  
Source: Eurostat.

Figure 3.3.10 Difference between overall inflation rates and the contributions of individual components to consumer price inflation in Croatia and the euro area



Sources: Eurostat and CNB calculations.

of all individual components to consumer price inflation in Croatia and the euro area fell from the year before, with the exception of the difference in the contribution of energy, which rose (Figure 3.3.10).

### Box 3 Profits, markups and inflation in Croatia

Strong acceleration of inflation in 2022 prompted the question of the extent to which corporate profits and markups contribute to inflationary pressures. The contribution of unit profits to GDP deflator growth in 2022 was bigger than that over a longer period of time before and exceeded the contribution of unit labour costs and unit taxes. However, profit margins of non-financial corporations in Croatia, after having fallen in 2020, by 2022 returned close to the 2019 level. Econometric estimates of markups point to the same conclusion. Keeping markups at a relatively stable level seemingly eliminates corporate profits as one of the potential determinants of inflation. In the conditions of a pronounced rise in the costs of intermediate goods, which is much faster than economic activity and wage growth, stable markups are actually in line with a noticeable increase in corporate profits and a large contribution of unit profits to GDP deflator growth. And amid removal of the remaining bottlenecks in production chains and falling prices of raw materials, corporate profits may serve as a buffer for the inflationary effects of a surge in labour costs.

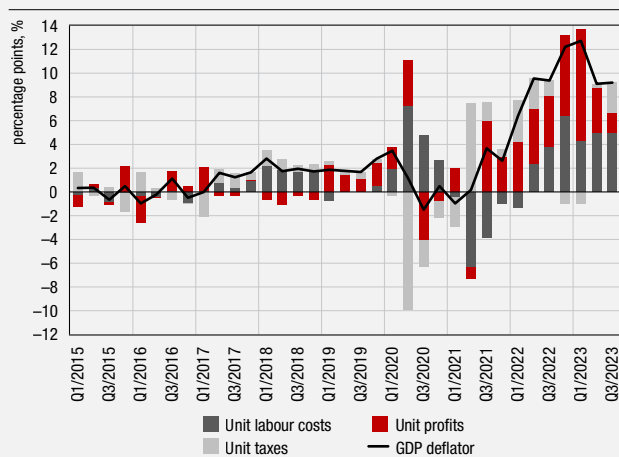
Strong acceleration of inflation on a global level in 2022 prompted a discussion on the relationship between corporate markups and developments in inflation. Regardless of the ultimate cause, to the extent that it is not “imported”, inflation is necessarily reflected in the growth of nominal wages, profits or taxes. This raises the question of the extent to which corporate profits or markups contribute to domestic inflationary pressures, particularly if we bear in mind that inflation has reached very high levels and has proven to be much more persistent than initially expected. This box examines the developments in

price and profit margins of non-financial<sup>11</sup> corporations in Croatia and attempts to delve deeper into their relationship.

The GDP deflator is one of the indicators used to monitor price developments, even though it differs conceptually from the (harmonised) index of consumer prices. In contrast with the consumer price index that monitors the prices of goods and services consumed by the households, the GDP deflator includes the prices of all final products and services produced by the domestic economy, regardless of whether they are intended for domestic consumption (final or investment) or exports. Also, while import prices are included in the consumer price index, the calculation of the GDP deflator excludes the imports deflator so GDP deflator is one of the common indicators of domestic price pressures. The increase in the GDP deflator of 9.5% in 2022 shows that inflationary pressures that year were only partially of an imported nature and the harmonised consumer price index rose by 10.7%, somewhat faster than the GDP deflator.

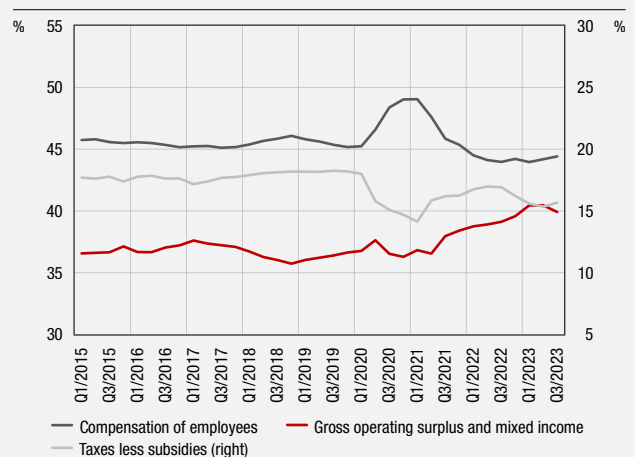
The decomposition of the change in the GDP deflator<sup>12</sup> shows that its growth in 2022 was mostly driven by unit profits, whose contribution was much bigger than the long-term average and largely exceeded the contribution of unit labour costs (Figure 3.1). Such developments reflect a growth of unit profits faster than that of unit labour costs, which resulted in a higher share of profits (approximated, for the sake of simplicity, by gross operating surplus and mixed income) in GDP (Figure 3.2). After a strong acceleration in 2022, the growth in unit profits peaked at the beginning of 2023 and in the second and third quarter of 2023, the contribution of unit profits to GDP deflator growth decreased. By contrast, the contribution of unit labour costs, which accelerated especially in the second half of 2022, remained at an elevated level.

Figure 3.1 Decomposition of GDP deflator growth



Sources: Eurostat and authors' estimates.

Figure 3.2 Structure of nominal GDP according to income approach



Note: Average of the last four quarters.

Source: Eurostat.

11 Only non-financial corporations (hereinafter: corporates, firms) are analysed in the box while financial institutions are excluded.

12 The components of income approach to nominal GDP are used, with both the nominal GDP and its three components being divided by real GDP to arrive at, on the one hand, the GDP deflator, and on the other (1) unit labour costs (more precisely, the nominal compensation of employees to real GDP ratio), (2) unit profits (more precisely, the gross operating surplus and gross mixed income to real GDP ratio) and (3) unit taxes (more precisely, the taxes net of subsidies to real GDP ratio).

The increase in unit profits does not necessarily mean that corporates increased markups and profit margins. The markup is defined as the price to marginal cost ratio, while profit margins are the profits<sup>13</sup> to sales ratio. Markups are often used as an indicator of corporate market power because they show the extent to which a firm may charge a price above the marginal cost of its product. Profit margins are an indicator of corporate profitability, i.e., profits per unit of sales. Markups and profit margins may differ, with the treatment of fixed costs being one of the key differences between them. For instance, a firm with high fixed costs must have high markups to generate any profit at all. Similarly, the share of profits in value added that is measured in national accounts<sup>14</sup> differs conceptually from markup indicators and this may result in a divergence between markup indicators and the profit share in GDP. Thus, when the costs of intermediate goods grow faster than labour costs, as was the case recently, the share of profits in GDP may rise even if markups are stagnant or falling (Hahn, 2023). Therefore, to arrive at a conclusion on the impact of corporate pricing policy on inflation, it is also necessary to assess the developments in corporate price and profit margins.

Econometric estimates of markups based on reports of corporates in Croatia do not suggest their significant increase in 2022 relative to 2019, and the same is true of developments in profit margins. Markups need to be econometrically estimated because data on prices and marginal costs of corporates are not available. To do so we used the standard econometric model designed for markup estimation (De Loecker and Warzynski, 2012<sup>15</sup>, De Loecker et al., 2021<sup>16</sup>). Twelve different versions of the model were estimated, all pointing to a similar conclusion: markups rose after a sharp fall in pandemic 2020<sup>17</sup>, but only to reach their 2019 level. The estimates of percentage change in markups from 2019 based on different models thus range from an increase in markups of 2% to a decrease of 2.5% and the median model (−0.6%) and the average of all models (−0.5%) shows a small fall in markups (Figure 3.3). Profit margins moved in parallel with markups (Figure 3.3).

Even with relatively stable markups, firms increased their nominal value of profits significantly, as seen in the growth of the contribution of unit profits to the GDP deflator. In 2022, total corporate profits<sup>18</sup> rose steeply from 2019 (net profits 63%, EBITDA

13 Three standard definitions of profits are used in this box: net profits after tax, EBITDA and operating profits. EBITDA is defined as operating income minus operating expenses plus depreciation and operating profits equal income from sale minus employee costs and material costs. It should be borne in mind that annual financial statements of corporates are available with a much bigger time lag than the national accounts.

14 According to data available in the national accounts, profits are approximated by a category of gross operating surplus and mixed income, which also comprises some elements that would not be considered profits in a narrow sense (Haskel, 2023, Hahn, 2023). Hahn, E. (2023): *How have unit profits contributed to the recent strengthening of euro area domestic price pressures?*, May 2023, link: [https://www.ecb.europa.eu/pub/economic-bulletin/focus/2023/html/ecb\\_ebbox202304\\_03~705befadac.en.html](https://www.ecb.europa.eu/pub/economic-bulletin/focus/2023/html/ecb_ebbox202304_03~705befadac.en.html); Haskel, J. (2023): *What's driving inflation: wages, profits, or energy prices?*, Speech given at the Peterson Institute for International Economics, Washington DC, 25 May 2023.

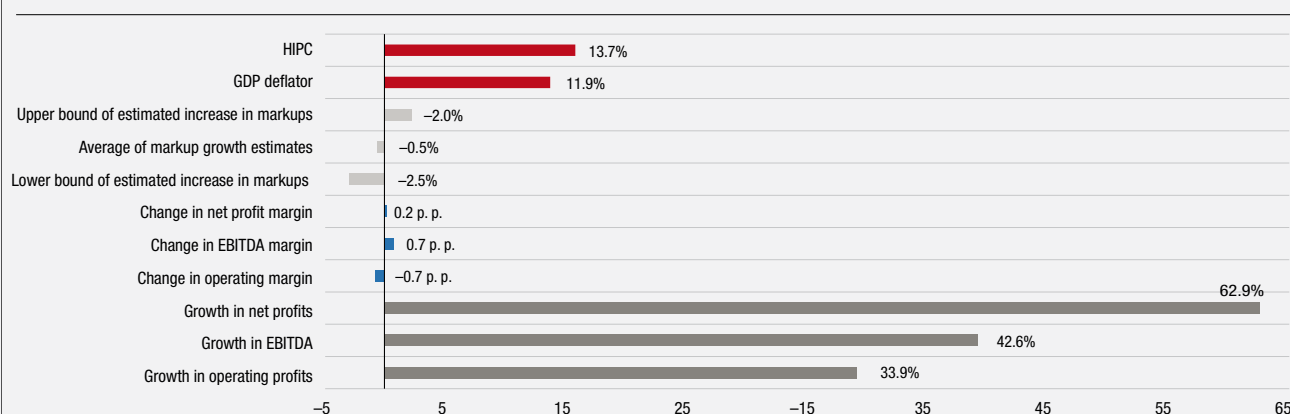
15 De Loecker, J. and Warzynski, F. (2012): *Markups and firm-level export status*, American economic review, 102(6), 2437-2471.

16 De Loecker, J., Eeckhout, J. and Unger, G. (2020): *The rise of market power and the macroeconomic implications*, The Quarterly Journal of Economics, 135(2), 561-644.

17 Note should be taken that markup estimates in 2020 and 2021 were probably influenced by government support to the economy, which made it possible for corporates to have much higher labour costs than they would have had if there had been no government support. Markups in 2020 and 2021 were probably higher than model estimates so Figure 3.3 shows only the percentage difference in markups and profit margins between 2022 and 2019.

18 The analysis excludes firms not reporting at least one of the following items: employment, employee costs, assets, tangible assets and sales. The sample also excludes firms reporting one of the listed items equal to zero. Also excluded are all activities the first two digits of which are greater than 82 such as public administration, defence, education, health, etc. These criteria are used in all the calculations in this box.

Figure 3.3 Changes in price and profit margins of corporates in Croatia, 2022 relative to 2019



Notes: p.p. – percentage points. The figure shows the percentage change of markups estimated using various models and the change in different corporate profit margin definitions in 2022 relative to 2019. Twelve different models of markups were estimated based on De Loecker and Warzynski, 2012 and De Loecker et al., 2021. Corporate-level margins were aggregated to the level of the entire economy with shares of sale of an individual corporate in total sale and the percentage change was calculated relative to 2019.

Sources: FINA and authors' estimates.

42% and operating profits 34%<sup>19</sup>), greatly outpacing labour costs (22%), which is in line with the seemingly contradictory indicators pointing to the increase in the share of profits in the national accounts statistics and constant corporate markups. Colonna et al., 2023<sup>20</sup> and Hahn, 2023 have demonstrated using different indicators of corporate profits that similar developments were present in some euro area countries, i.e. that the nominal value of profits rose sharply even with relatively stable markups. Amid strong cost pressures, stable profit margins and markups indicate that corporates raised their product prices at an intensity similar to their cost growth, which greatly outpaced GDP growth. This led to a surge in the nominal amount of profits and their share in GDP.

It appears that corporates have not fully transferred the increase in input prices to buyers, but have left part of the increase to be shouldered by employees whose wages grew slower than the costs of intermediate goods and sales, thus helping corporates to preserve their markups. As shown previously, average price and profit margins of corporates have been relatively stable over the past years. However, the shares of the costs of different production factors in sales have changed considerably (Figure 3.4). Thus, after 2020, the costs of intermediate goods to sales ratio rose steeply, suggesting that corporates raised their product prices at a pace that was slower than the growth of their input costs. At the same time, employee costs rose even slower than the costs of intermediate inputs and sales, with the ratio of employee costs to sales falling. This points to the conclusion that corporates maintained relatively stable markups by distributing the burden of higher costs of intermediate goods between employees and buyers<sup>21</sup>.

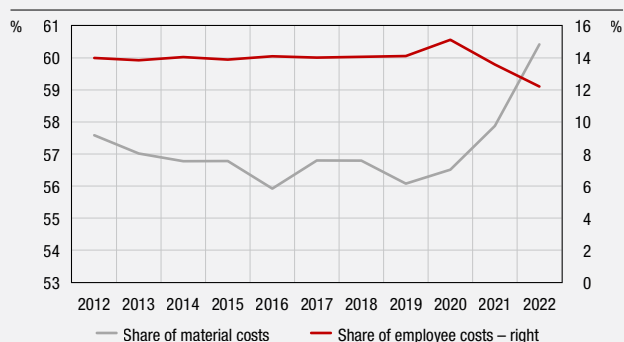
The observed corporate behaviour is in line with the simple pricing policy of stable

19 Relative to 2021, net profits rose by 23%, EBITDA by 27%, operating profits by 25% and employee costs by 14%.

20 Colonna, F., Torrini, R. and Viviano, E. (2023): *The profit share and firm mark-up: how to interpret them?* Banca D'Italia Occasional Paper No. 770, May.

21 According to economic theory, the developments in the costs of variable inputs to sales ratio are inversely proportional to developments in markups, provided there have been no recent big changes in production technology (De Loecker and Warzynski, 2012, De Loecker et al., 2021). In addition, assuming labour and intermediate inputs are variable production factors, the developments in the shares of their costs in sales are inversely proportional to developments in markups.

Figure 3.4 Developments in determinants of corporate markups



Notes: The figure shows the weighted average of the share of employee costs and costs of intermediate goods in sale. The costs of intermediate goods are defined as the sum of material costs and the costs of sold goods in line with literature on markups (De Loecker and Warzynski, 2012, De Loecker et. al., 2021). Namely, the subitem of material costs called other external costs, also comprise many other costs that may be classified as fixed and not variable costs, and are therefore excluded from the analysis.

Sources: FINA and authors' estimates.

markups, but further research is needed to establish the determinants of prices, markups and profits. On the one hand, corporates were faced with a sharp increase in input prices, which increase costs and diminish profitability. On the other hand, supply bottlenecks, product shortages and robust domestic and foreign demand have made it easier for firms to raise the prices of their products and make up for the higher input costs. Amid such a widespread increase in costs and prices, it was difficult for consumers to assess whether individual price increases were justified and they probably had fewer opportunities and little

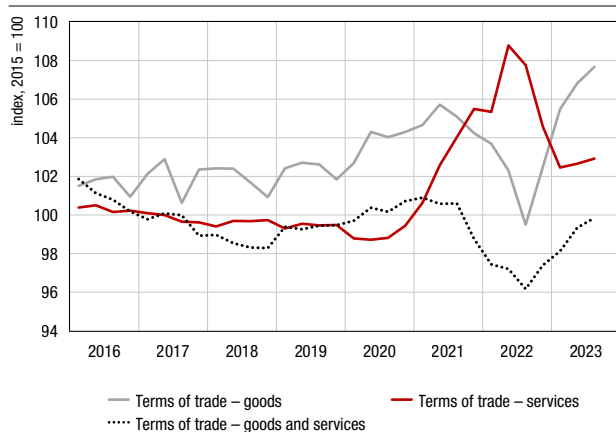
propensity to switch to other producers or traders. Wage rigidity also helped corporates to alleviate cost increases and maintain markups. Aggregate demand remained robust as households decreased their savings rate and foreign demand for services also made a big contribution. To estimate the exact contribution of each of these elements, one would need to estimate the demand elasticity, measure the firm production structure and the effects of uncertainty, which all require much more detailed data than those available currently. An important factor is also the relative strength of numerous shocks that hit the economy in the past years and their effect on inflation, which is a topic of a growing number of research studies throughout the world.

As the remaining bottlenecks in production chains are eliminated and the prices of raw materials fall, we can expect a further decline in the contribution of unit profits to GDP deflator growth. Profits could serve as a “buffer” against price pressures generated by employees seeking to offset the fallen purchasing power of wages due to the general price increase. However, any corporate effort to avoid a considerable fall in profits might lead to an increase in markups, which is one of the risks for inflation outpacing current expectations.

### 3.4 Economic relations with foreign countries

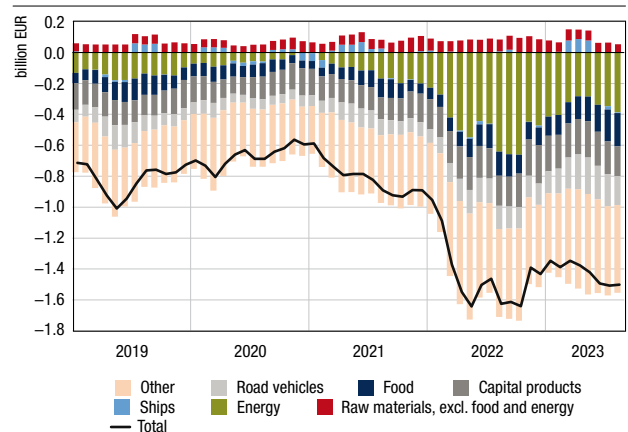
**After a strong deterioration in 2022 following a surge in the prices of energy and other raw materials in the global market, the terms of trade improved considerably in 2023.** The improvement mirrors the easing of imported price pressures, largely due to a partial normalisation of energy and raw materials prices in the global market, which resulted in an improvement in the terms of goods trade and contributed to the easing of the foreign trade deficit. In contrast, after a considerable improvement in the previous two years, the terms of trade in the services sector deteriorated noticeably in 2023 as a result of a more pronounced correction of export than import prices of services (Figure 3.4.1).

Figure 3.4.1 Terms of trade



Note: Terms of trade refer to the ratio of import to export prices.  
Sources: CBS and CNB calculations.

Figure 3.4.2 Foreign trade balance



Note: Series are shown as three-element moving averages of monthly data. Data up to August 2023.  
Source: CBS.

According to preliminary CBS data, goods exports shrank by 4.5% in the first nine months of 2023, which, coupled with an almost equal fall in goods imports of 4.9%, resulted in the 5.5% narrowing of the trade in goods deficit. This was primarily the result of a fall in the value of net imports of energy resulting from a fall in the prices in the global market (Figure 3.4.2). If trade in energy is excluded, according to available detailed data, goods exports rose by 5.3% and goods imports by 7.0% on an annual level in the first eight months of this year, while the deficit widened by 9.6%. The dynamics of the foreign trade in goods slowed down gradually over the year, falling from two-digit growth rates in the first quarter to only slightly positive growth rates in July and August. In addition to the price effect and the resulting effect of the base period, this was also largely due to the weakening of domestic and foreign demand. As regards the geographical structure, in the first eight months, goods trade with euro area countries rose slightly while that with non-euro area countries fell, mostly because the bulk of energy imports come from those countries. Worth noting is that Croatia stands out with a somewhat faster exports growth than other euro area countries, which resulted in its market share growth (see Box 4 Relative position and competitiveness of Croatian goods exports in the euro area market after the pandemic).

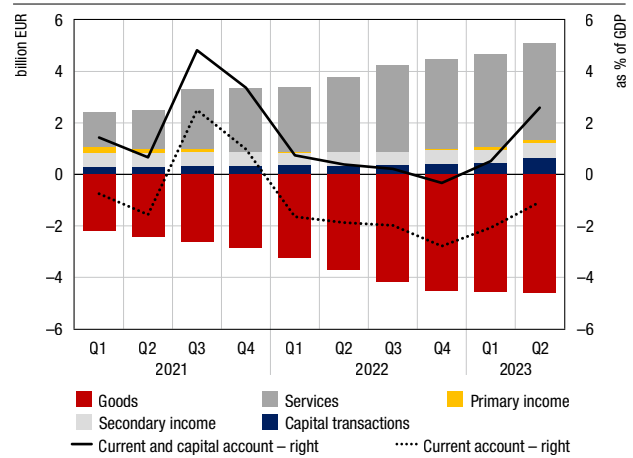
Not only foreign trade in goods but also foreign trade in services improved strongly, generating a surplus 9.2% bigger than in the same period of the year before owing to a growth in tourism consumption by foreign tourists in the first half of 2023. The volume indicators of tourist activity rose before and after the peak season, but the number of foreign tourist nights during the peak season fell slightly from the same period of the year before (Figure 3.4.3). However, with a noticeable contribution of the extended season to income growth, the monthly financial indicators point to a visible income growth due to higher prices in accommodation and food service activities during the main part of the tourist season. The increase in tourist nights in May and September and October may be associated with more favourable prices of accommodation and food service activities, less traffic congestion and the absence of temperature extremes. The

Figure 3.4.3 Indicators in tourism



Sources: CNB, CBS and eVisitor.

Figure 3.4.4 Balance of payments (b.o.p.)

Note: Series are shown as the moving average of four quarters.  
Source: CNB.

reduction of tourist arrivals during the peak season months was mostly due to a fall in the number of visitors from some of traditionally important outbound markets such as Germany and the Czech Republic. Nevertheless, owing to a pronounced rise in the prices of accommodation and food and beverages, i.e. consumption by foreign tourists, revenues from tourism again reached record highs.

**After the current and capital account of the balance of payments had recorded a deficit in 2022 for the first time in nine years, the balance improved visibly in 2023.** In the first half of the year, the current and capital account generated a surplus of 2.6% of GDP (moving average of four quarters) and, in addition to the favourable developments in goods trade and tourism, its improvement since the beginning of the year was supported by record disbursements from EU funds, particularly from the EU Solidarity Fund (Figure 3.4.4). Considering that the year 2023 is the last year of the use of funds under the financial perspective 2014-2020 and the good indicators in tourism during the peak season, the current and capital account are expected to see additional improvement by the end of the year.



## Box 4 Relative position and competitiveness of Croatian goods exports in the euro area market after the pandemic

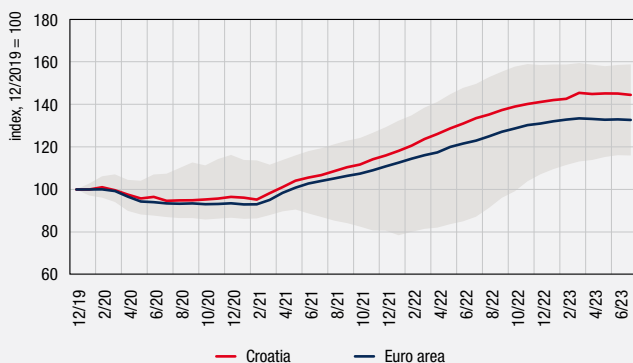
The Croatian economy recovered quickly and strongly from disturbances caused by the COVID-19 pandemic, largely supported by the domestic exports sector. A pronounced increase in Croatia’s goods exports reflects global recovery and improvement in price and cost competitiveness. Other factors were also at play during that period that greatly facilitated the recovery in Croatian exports. However, early 2023 witnessed a visible fall in goods exports, driven by a fall in foreign demand and a concomitant worsening of price and cost competitiveness.

Croatian goods exports recovered from the economic disturbances caused by the COVID-19 pandemic much faster and more strongly than the exports of most other euro area member states (Figure 4.1.a). Also, although the nominal growth in goods exports slowed down visibly from end-2022 and the Russian aggression against Ukraine, followed by the energy crisis and rising production costs and inflation differentials in euro area countries, this unfavourable trend was less pronounced than in most other member states. As a result, the share of Croatian goods exports in the euro area market continued to rise, albeit slower than in the preceding years. When energy exports are excluded from total exports, the relative share of Croatian exports to the common market of the euro area rose by some 10% between end-2019 and mid-2023. Apart from Croatia, only Latvia, Lithuania and Greece increased their shares, while the market share of most developed member states, particularly Luxembourg, Finland, Germany and France, shrank considerably (Figure 4.1.b).

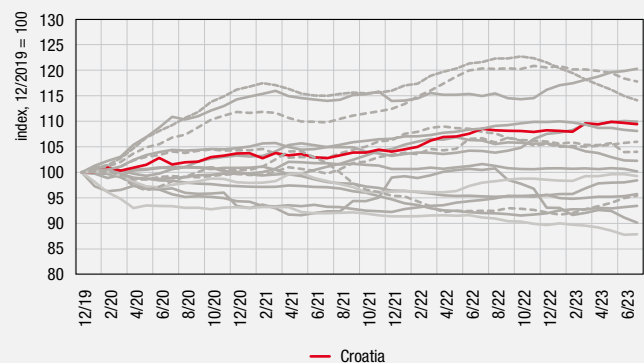
The described developments may reflect a smaller exposure of the domestic export sector to foreign shocks due to a smaller integration in supply chains or the smaller energy-intensive activity of the exports sector<sup>22</sup>, but they may also be related to the relative improvement in price and cost competitiveness of the domestic economy relative to trade partners. To estimate a possible contribution of different factors, below is an overview of

Figure 4.1 Developments in goods exports in other euro area countries and market shares

a) Goods exports in other euro area countries



b) Shares of goods exports in euro area market



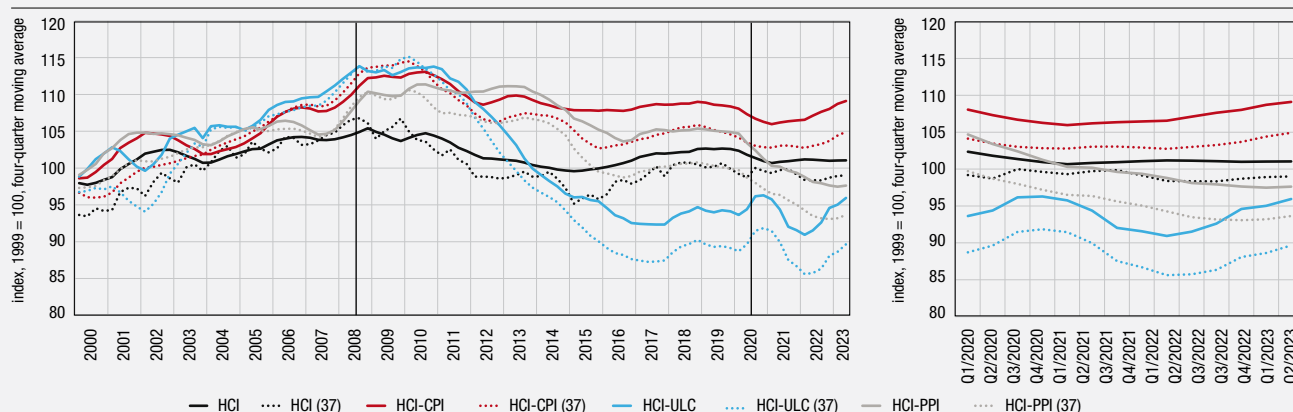
Notes: Shown are nominal indicators while energy (SITC level 3) is excluded. Grey shaded area represents maximum and minimum indicators for individual euro area member states.

Source: Eurostat.

Notes: Shown are nominal indicators while energy (SITC level 3) is excluded. Dotted lines show new and full lines old euro area member states.

Source: Eurostat.

Figure 4.2 Harmonised competitiveness indicators (HCIs) for Croatia



Notes: The increase in indicators denotes appreciation. Vertical dotted lines denote the beginning of the global financial crisis in 2008 and the COVID-19 pandemic in 2020. The basic indicators were calculated based on index developments in relation to the other 19 euro area countries, while indicators marked (37), in addition to trade partners in the euro area include 18 non-euro area partners.

Source: ESB.

developments in different indicators of price and cost competitiveness and a model estimate of the relative contribution of individual factors to developments in goods exports.

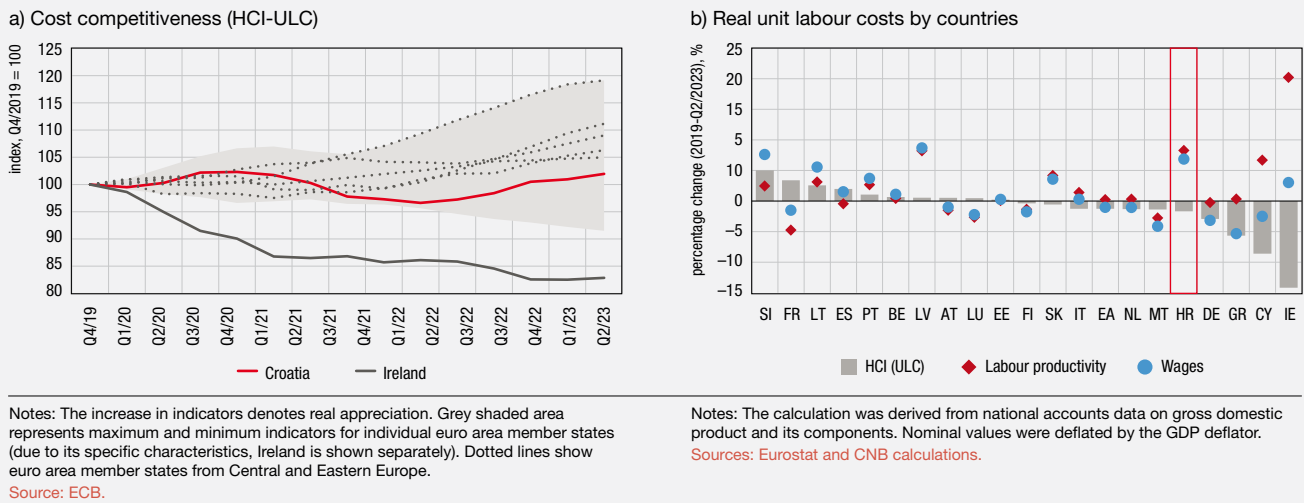
Changes in price and cost competitiveness are usually shown by indicators such as nominal and real effective exchange rates. The ECB's harmonised competitiveness indicator (HCI)<sup>23</sup> adjusts the usual methodology for the calculation of nominal and real effective exchange rates deflated by consumer and producer prices and unit labour costs for euro area member states since they do not have their own currency. Overall, the HCI indicators point to a small worsening of price and cost competitiveness of the domestic exports sector in the past two years, although there are differences between individual indicators in the intensity of the estimated worsening, with some even pointing to an improvement in competitiveness (Figure 4.2).

Such a harmonised competitiveness indicator deflated by unit labour costs (HCI-ULC) points to a small worsening in cost competitiveness of the Croatian economy in the wake of the pandemic, having fallen 2% in mid-2023 from end 2019 (Figure 4.3.a). The unfavourable developments intensified in particular in mid-2022 as a result of accelerated wage growth in Croatia that was not accompanied by a similar increase in labour productivity. However, the worsening of cost competitiveness was much milder than in other euro area member states from Central and Eastern Europe that witnessed a particularly pronounced growth in nominal wages, such as Slovenia and the three Baltic countries, particularly Lithuania where labour productivity lagged behind real wages growth considerably (Figure 4.3.b).

22 One of the reasons for poorer integration of the Croatian exports sector in global value chains lies in a relatively small inflow of foreign direct investments in the tradable sector during the transition. The low energy intensity of the exports sector is due to a relatively larger share of labour-intensive industries such as the textile industry and a smaller share of energy-intensive industries such as chemical or metal products industry.

23 The HCI is a harmonised price and cost competitiveness indicator developed for euro area countries, which is comparable to the indicator of nominal and real effective exchange rates of the euro. The HCI is a nominal harmonised competitiveness indicator, HCI-CPI is a harmonised competitiveness indicator deflated by relative consumer prices, HCI-PPI is a harmonised competitiveness indicator deflated by relative producer prices and HCI-ULC is a harmonised competitiveness indicator deflated by relative unit labour costs.

Figure 4.3 Indicators of cost competitiveness of the Croatian economy



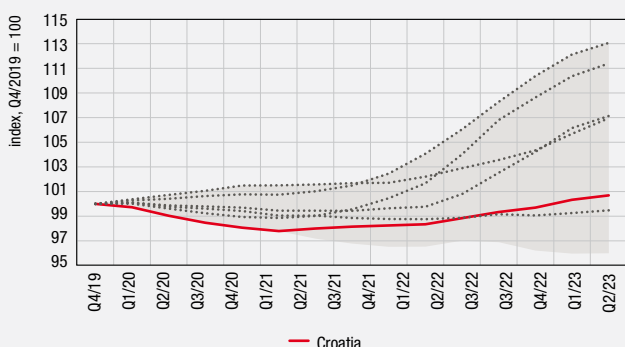
A much smaller worsening of the competitive position of the Croatian economy relative to other euro area member states from the perspective of labour costs, may be attributed to above average growth in labour productivity in Croatia (Figure 4.3.b). From end-2019 to mid-2023, real gross wages per employee in Croatia rose by some 7%, while productivity rose slightly faster (8%). By contrast, other euro area member states (Ireland excluded) witnessed a fall in real gross wages of 1%, while their labour productivity held steady. It has also been observed that the positive gap between labour productivity and real wages growth in Croatia has been falling in the past few quarters. If real wages of domestic employees continue to grow faster than wages in trade partner countries over a longer period of time, i.e. if that growth is not accompanied by a similar growth in labour productivity or structural improvement in exports through increased share of products of higher added value, such trends may result in long term cost pressures and undermine the competitiveness of the domestic economy.

The HCI indicator deflated by consumer prices (HCI-CPI) also shows a small worsening in the price competitiveness of Croatia relative to trading partners in the post-pandemic period (Figure 4.4.a). This indicator was also considerably below the peak reached on the eve of the global financial crisis, although less than the cost competitiveness indicator (HCI-ULC). As stated earlier, the worsening was associated with the spread of inflation differentials in the euro area and almost entirely reflects the positive inflation differential relative to major trading partners (Figure 4.4.b). This differential started spreading in mid-2022 while there was a relatively stable nominal effective exchange rate. As in the case of cost competitiveness indicators, the worsening of price competitiveness measured by the said indicator was much more pronounced in countries with higher cumulative inflation (such as the Baltic countries) than in Croatia.

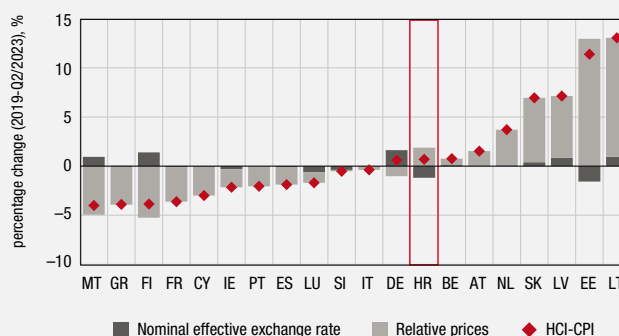
Unlike the cost competitiveness and price competitiveness indicators deflated by consumer prices (HCI-CPI), the price competitiveness indicator deflated by producer prices (HCI-PPI), which better reflects relative price pressures in the tradable goods sector, suggests an improvement in Croatia's price competitiveness relative to main trading

Figure 4.4 Indicators of price competitiveness of the Croatian economy

a) Price competitiveness (HCI-CPI)



b) HCI-CPI decomposition



Notes: The increase in indicators denotes real appreciation. Grey shaded area represents maximum and minimum indicators for individual euro area member states. Dotted lines show euro area member states from Central and Eastern Europe. Source: ECB.

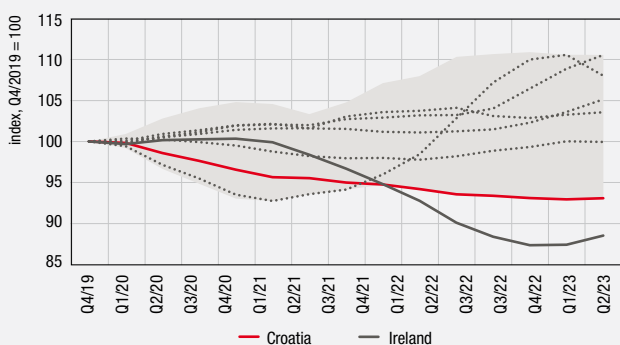
Note: The indicators show the broad HCI-CPI index vis-à-vis 37 trading partners. Source: ECB.

partners. After Ireland, Croatia recorded the largest fall in relative producer prices (Figure 4.5.a), with this indicator depreciating in real terms by some 7% between 2019 and mid-2023. In most other euro area member states, domestic producer prices grew faster than in their trading partner countries, and with the exception of the Baltic countries, producer competitiveness worsened the most in Belgium and the Netherlands (Figure 4.5.b). It should be noted that the impact of an energy shock on producer prices in some countries depends not only on the energy-intensive activity of their exports sectors but also on the strength and duration of fiscal and administrative measures introduced to alleviate the effects of energy price increases. The effect of the measures on producer prices also depends on whether they were introduced through direct price controls or in the form of subsidies that improve competitiveness but cannot be seen directly in the price index.

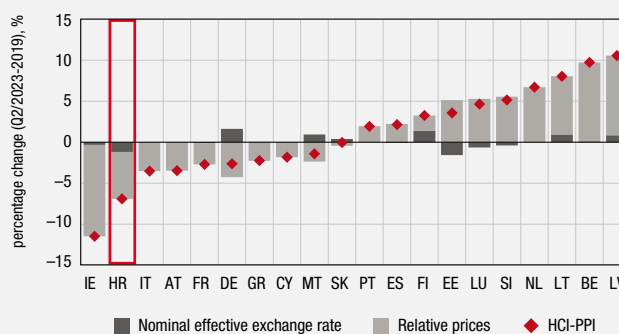
The contributions of individual factors to developments in goods exports have been estimated using the structural vector autoregressive model (SVAR) with the impact of various shocks on real Croatian goods exports being estimated based on the following

Figure 4.5 Indicators of price competitiveness of the Croatian production sector

a) Price competitiveness (HCI-PPI)



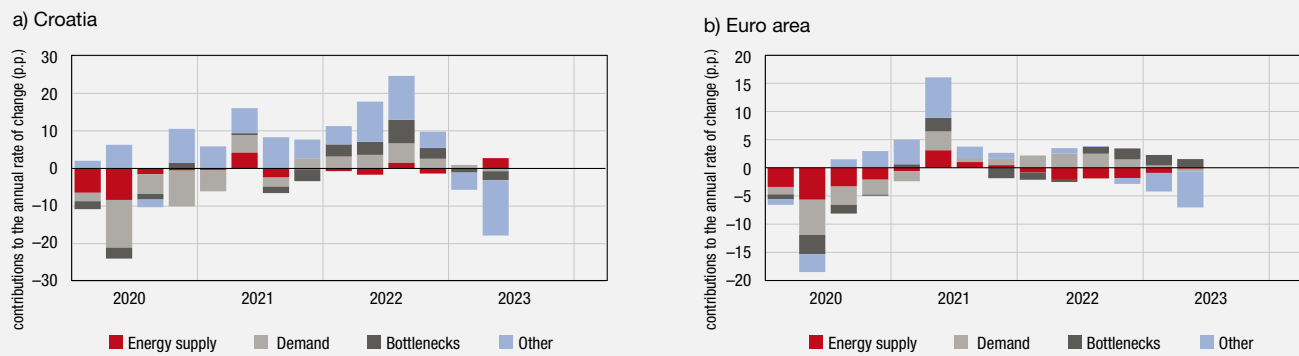
b) HCI-PPI decomposition



Notes: The increase in indicators denotes real appreciation. Grey shaded area represents maximum and minimum indicators for individual euro area member states (due to its specific characteristics, Ireland is shown separately). Dotted lines show euro area member states from Central and Eastern Europe. Source: ECB.

Note: The indicators show the broad HCI-PPI index vis-à-vis 37 trading partners. Source: ECB.

Figure 4.6 Historical decomposition of the contribution of shocks to the deviation in the annual growth rate of goods exports



Notes: The SVAR model is based on global data, data on Croatian real goods exports and real goods exports of the euro area between the first quarter of 2000 and the second quarter of 2023. Assumed sign limitations include: energy shock (energy supply) implies lower goods exports in the euro area and in Croatia (-), rise in global oil prices (+), fall in global oil production (-), smaller global imports (-) and absence of impact on supply chains (0); the demand shock implies a rise in goods exports in the euro area and Croatia (+), rise in global oil prices (+), rise in global oil production (+), rise in global imports (+), rise in global prices (+) and neutral impact on global supply chains (0); supply shock implies smaller goods exports in the euro area and Croatia (+) and presence of pressure in supply chains (+). The results show deviations from the equilibrium.

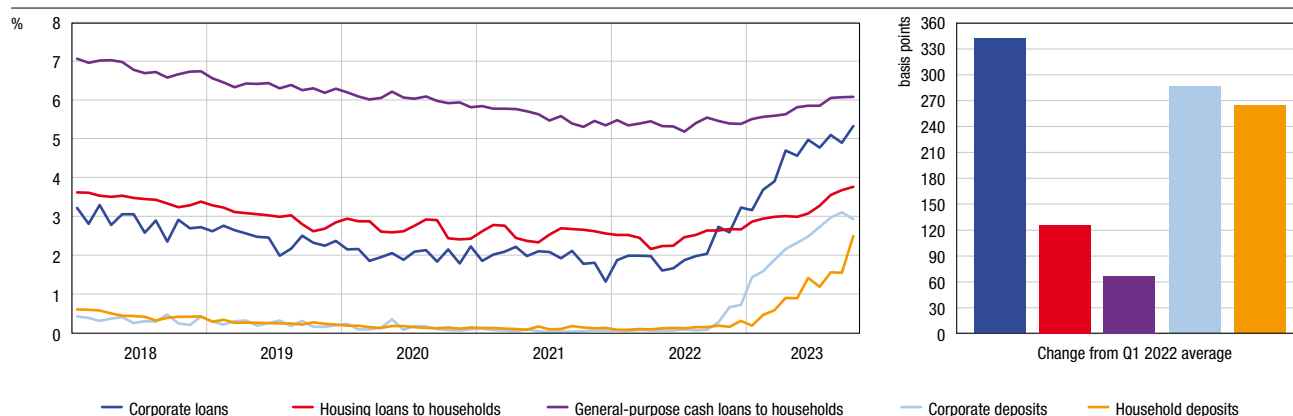
Sources: Eurostat, ECB and CNB calculations.

variables: oil price on the global market (USD/barrel), global oil production (barrel) global imports of goods and services (real annual rate of change), global inflation (CPI index) and pressures in global supply chains (GSCPI index). The results of the analysis suggest that the unfavourable effects of the fall in foreign demand during the pandemic recession and disturbances in global supply chains waned quickly. Fast recovery from the pandemic recession and the normalisation of supply chains have thus contributed to growth in exports since mid-2021 (Figure 4.6). However, these favourable effects gradually subsided over the last several quarters due to diminishing foreign demand amid rising uncertainty and the worsening of financing conditions. The analysis also points to the large impact of other (unidentified) factors, particularly in the case of Croatia, which, after providing a large boost to exports growth in 2021 and 2022, started stifling exports at the beginning of this year. The impact of these factors may probably be associated with the worsening of price and cost competitiveness and the structural deficiencies of the exports sector, such as for instance a relatively higher exposure to slower-developing countries or specialisation in products with lower value added.

### 3.5 Banking system

**In the second half of 2023, the effects of ECB monetary policy tightening continued to spill over to corporate and household financing costs in domestic banks, although at a somewhat slower intensity than in the first few months of this year.** The average interest rate on pure new loans to non-financial corporations reached 5.3% in October, up by 36 basis points from June this year (Figure 3.5.1). The costs of household financing also rose, with the average interest rate on pure new housing loans and general-purpose loans in October standing at 3.8% and 6.1%, respectively, up by 68 and 23 basis points, respectively, from their average level in June this year. The increase in the interest rate on housing loans partly also reflects the cessation of the effect of the government's

Figure 3.5.1 Interest rates on pure new loans and time deposits of corporates and households



Note: Data up to December 2022 refer to loans and deposits in kuna, in kuna with a currency clause in euro and in euro, and from January 2023 to loans and deposits in euro, with term deposits up to one month being excluded.

Source: CNB.

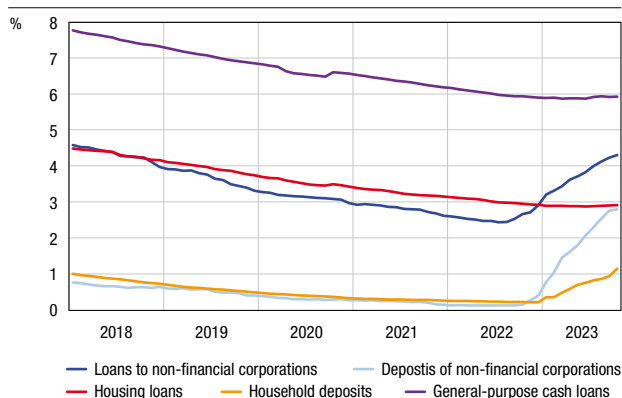
housing loans subsidy programme, which lowered interest rates in mid-year since housing loans under this programme were typically granted at lower than market average rates. Viewed in relation to the period prior to ECB monetary policy normalisation, corporates witnessed a more considerable tightening of financing conditions, having borrowed in October at a 338 basis points higher interest rate while households borrowed at a 126 basis points higher rate for housing and 67 basis points for general-purpose cash loans during the same period.

**Interest rates on time deposits also continued to grow, particularly those on household deposits.** The average interest rate on pure new household time deposits thus reached 2.5% in October, up 107 basis points from June this year, while in the corporate sector it reached 2.9%, up by 45 basis points during the same period. (Figure 3.5.1). The strong growth in the average interest rate in the household sector can also be seen in transfers of deposits, spurred by a significant rise in the interest rates on time deposits offered by some banks. The interest rates on household time deposits thus rose in October

by 240 basis points from the period leading to monetary policy normalisation, approaching the increase in interest rates on corporate time deposits of 287 basis points.

**The increase in interest rates on new transactions was accompanied by an increase in interest rates on existing loans and deposits.** The increase was particularly prominent in interest rates on existing corporate loans as a result of the increase in interest rates on new loans, which was mostly because of the widespread use of the EURIBOR as the reference parameter in loans at variable interest rates (53% of

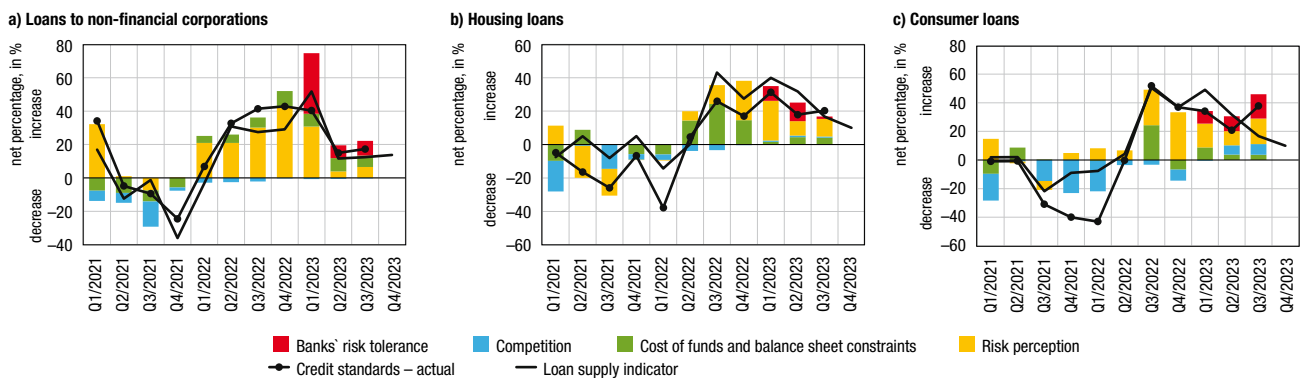
Figure 3.5.2 Interest rates on existing loans and time deposits of corporates and households



Note: Data up to December 2022 refer to loans and deposits in kuna, in kuna with a currency clause in euro and in euro, and from January 2023 to loans and deposits in euro, with term deposits up to one month being excluded.

Sources: CBS and CNB calculations.

**Figure 3.5.3 Bank lending survey**  
lending standards and factor contributions



Notes: "Risk tolerance" was introduced in the first quarter of 2023 and reflects a bank's tolerance to risk in its lending policy, which can change depending on changes in the bank's general business strategy. Cost of funds and balance sheet constraints are the unweighted average of the Impact of capital position, Impact of ability to access market financing and Impact of liquidity. Competition is the unweighted average of Impact of bank competition, Impact of non-bank competition and Impact of market financing. Risk perceptions are the unweighted average of Impact of general economic activity, Impact of industry or firm specific situation and Impact of risk on the collateral.

Source: CNB.

Notes: "Risk tolerance" was introduced in the first quarter of 2023 and reflects a bank's tolerance to risk in its lending policy, which can change depending on changes in the bank's general business strategy. Cost of funds and balance sheet constraints are the unweighted average of the Impact of capital position, Impact of ability to access market financing and Impact of liquidity. Competition is the unweighted average of Impact of bank competition and Impact of non-bank competition. Risk perceptions are the unweighted average of Impact of general economic activity, Housing market prospects and Borrowers' creditworthiness.

Source: CNB.

Notes: "Risk tolerance" was introduced in the first quarter of 2023 and reflects a bank's tolerance to risk in its lending policy, which can change depending on changes in the bank's general business strategy. Cost of funds and balance sheet constraints are the unweighted average of the Impact of capital position, Impact of ability to access market financing and Impact of liquidity. Competition is the unweighted average of Impact of bank competition and Impact of non-bank competition. Risk perceptions are the unweighted average of Impact of general economic activity, Borrowers' creditworthiness and Impact of risk on the collateral."

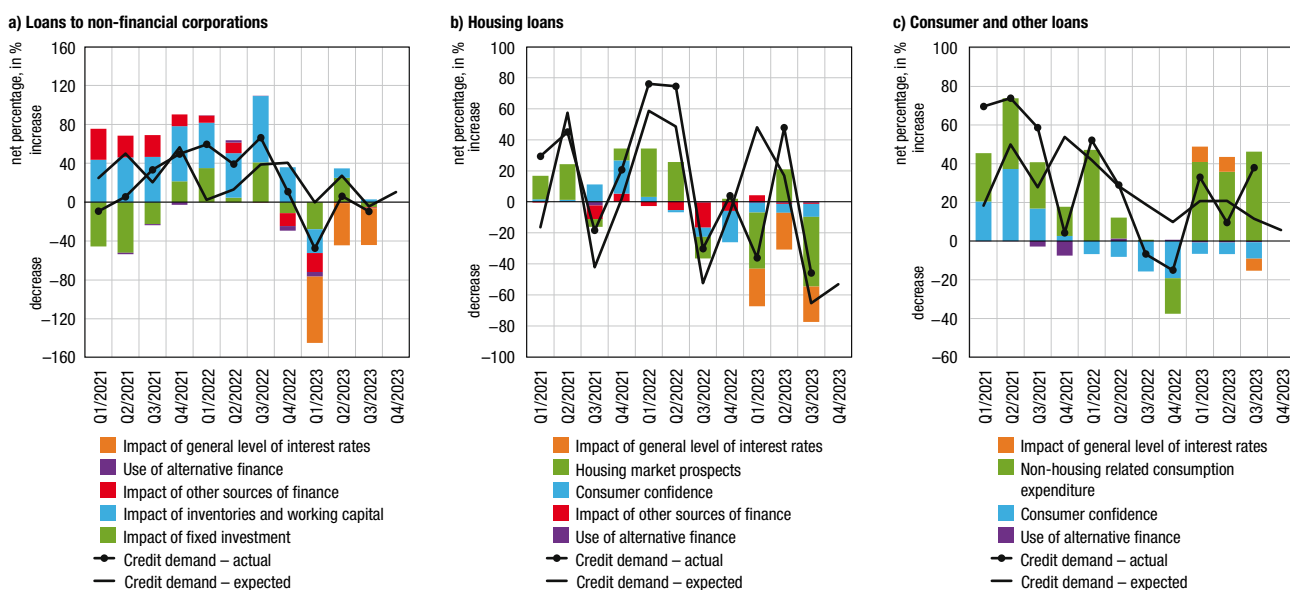
Source: CNB.

corporate loans have variable interest rates, and 75% are tied to the EURIBOR). The increase in interest rates on existing household loans is limited and deferred by longer average loan maturity, which lessens the contribution of growth in interest rates on new loans, by the considerable share of partially fixed interest rates (46% of loans are loans with a fixed interest for at least a period of time or are even fixed to maturity), the domination of the national reference rate (NRR) in the reference parameters (68%) and legal restrictions on the level of interest rates on variable interest rate loans (Figure 3.5.2).

**Bank lending survey results also point to the tightening of corporate and household financing conditions.** Corporate lending conditions continued to tighten somewhat faster than in the second quarter of 2023 (Figure 3.5.3), mostly fuelled by a lower risk tolerance of banks, the costs of funding sources and balance sheet constraints, worsening of industry or individual company outlook and the expectations regarding general economic developments. Household lending conditions also continued to tighten, faster than in the previous quarter, particularly in the segment of consumer and other loans. The factors contributing the most to lending standards include unfavourable expectations regarding general economic developments, lower risk tolerance of banks, customer creditworthiness and negative real estate market prospects. Banks expect that corporate and household lending standards will continue to tighten in the fourth quarter of 2023, albeit less intensively than in the third quarter.

**Higher interest rates also had an impact on corporate and household demand for loans** According to the results of the bank lending survey, the banks reported a small decline in the demand for corporate loans, mostly attributable to higher interest rates. The smaller demand of corporates for investment financing also had a negative impact, with only the demand for inventories and working capital financing having a positive impact

**Figure 3.5.4 Bank lending survey demand change and factor contributions**



Notes: Interest rate level is a term introduced in the first quarter of 2023. Other sources of finance are the unweighted average of Debt restructuring and refinancing and Impact of mergers and acquisitions and corporate restructuring. Use of alternative finance is the unweighted average of Impact of internal financing, Impact of loans from other banks, Impact of loans from non-banks, Impact of debt securities issuance and Impact of equity issuance.  
 Source: CNB.

Notes: Interest rate level is a term introduced in the first quarter of 2023. Other sources of finance are the unweighted average of Debt restructuring and refinancing and Regulatory and fiscal framework of the real estate market. Use of alternative sources of financing is the unweighted average of Household savings, Loans from other banks and Other sources of financing.  
 Source: CNB.

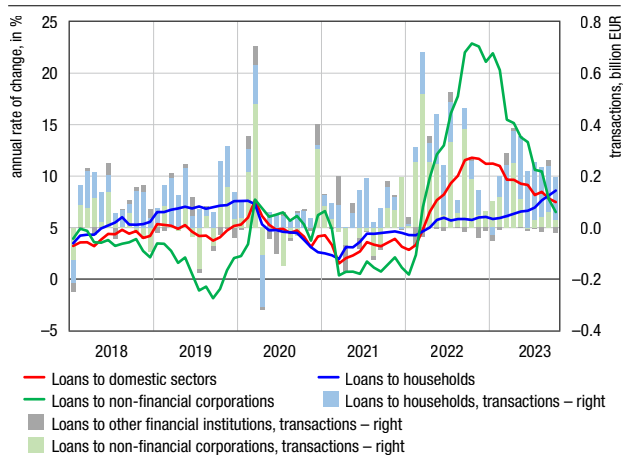
Notes: Interest rate level is a term introduced in the first quarter of 2023. Use of alternative sources of financing is the unweighted average of Household savings, Loans from other banks and Other sources of financing.  
 Source: CNB.

(Figure 3.5.4). At the same time, the demand of households for housing loans decreased, primarily due to the finalisation of the government housing loans subsidy programme but also interest rate growth. By contrast, according to banks, the increase in the demand for consumer loans stems from the increased need for financing durable consumer goods, while consumer confidence and interest rate growth acted in the opposite direction. In the last quarter of 2023, the banks expect to see a small increase in corporate demand for loans, a further increase in the demand for consumer and other loans albeit slower than in

the previous quarter, and a continued fall in the demand for housing loans.

**Unfavourable financing conditions and decreased demand resulted in subdued corporate financing, while loans to households continued to grow relatively strongly.** Corporate loans grew EUR 0.2bn in the July to October 2023 period (Figure 3.5.5). An increase in corporate loans was recorded in the energy sector and construction while as regards loan purpose, investment loans and loans for working capital grew the most. Viewed on an annual level, loan growth continued to slow down and

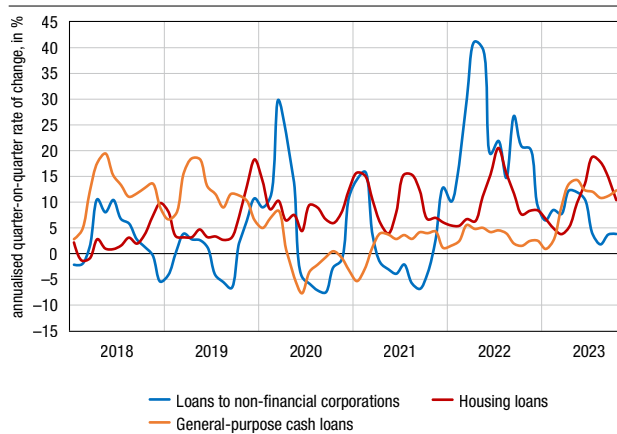
**Figure 3.5.5 Loans transactions and annual rate of change, transaction-based**



Note: Loans to domestic sectors exclude loans to the general government.  
 Source: CNB.

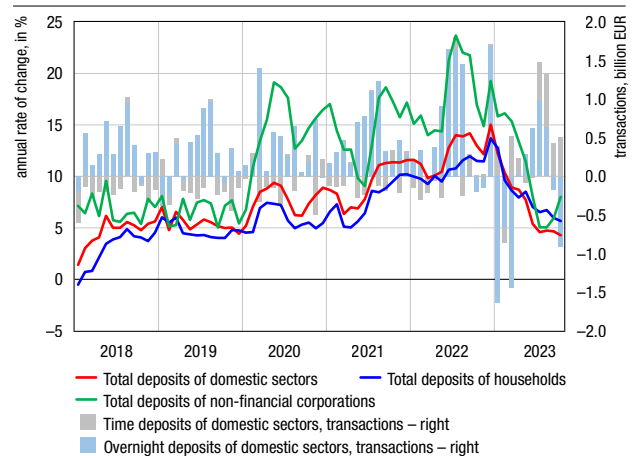


**Figure 3.5.6 Lending momentum, corporates and households transactions and annual rates of change, transaction-based**



Sources: CNB and CNB calculations.

**Figure 3.5.7 Deposits transactions and annual rates of change, transaction-based**

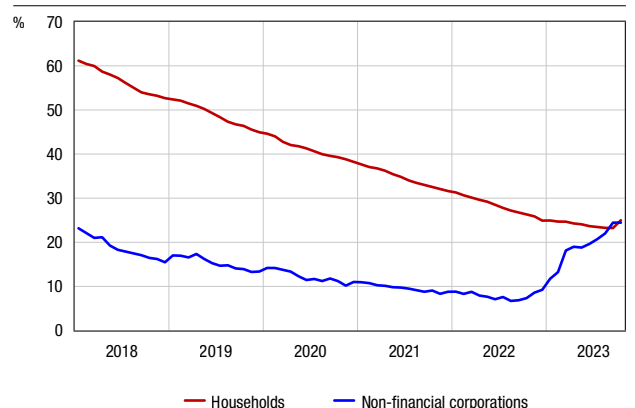


Note: Deposits of domestic sector exclude general government deposits.  
Source: CNB.

stood at 6.5% in October, half the growth seen in June (13.3%). In contrast, household loans rose 0.8bn EUR from July to October 2023, with over one half of the growth being accounted for by housing loans (EUR 0.4bn), mostly granted in the context of the new round of government housing loans subsidies, particularly during the summer months. General-purpose cash loans also rose strongly (EUR 0.3bn). The increase in lending in the segment of general-purpose cash loans is also reflected by the indicator of short-term loan dynamics, a useful early indicator of a shift in trends (Figure 3.5.6). Total household loan growth accelerated on an annual level from 6.6% in June to 8.6% in October, owing primarily to a fast acceleration in the growth of general-purpose cash loans, from 6.3% to 9.5%, while the growth in housing loans was more moderate, having accelerated from 9.2% to 10.2%.

**The increase in interest rates contributed to halting the fall in the share of time deposits in total corporate and household deposits present for many years.** From July to October 2023, corporate time deposits rose by EUR 1.0bn and overnight deposits by EUR 0.2bn. Household time deposits also rose by EUR 0.8bn and overnight deposits by EUR 0.6bn (Figure 3.5.7). Corporate time deposits grew almost fourfold while overnight deposits dropped by some 12% from October last year. In October, household time deposits also grew on an annual level (0.3%), for the first time since 2015, while overnight deposits continued to grow steadily but much slower (7.6%). Lured by higher interest, corporates seem to have been more motivated than households to shift funds from transaction accounts to time deposits, which resulted in a steady

**Figure 3.5.8 Share of time deposits in total deposits**



Note: Total deposits include overnight and time deposits, deposits redeemable at notice and repurchase agreements.  
Source: CNB.

growth in the share of time deposits in total corporate deposits over the past year (Figure 3.5.8). Due to a slower growth in interest rates in the household sector, the share of time deposits in total deposits had been falling until the second half of the year when it first stabilised at around 23% and then started growing. As a result, in October, household time deposits rose by EUR 0.7bn while overnight deposits fell by EUR 0.6bn. Households also purchased EUR 1.0bn worth of T-bills of the Ministry of Finance yielding 3.75%, which will have an impact on household deposits in November.

## 4 Projections for Croatia

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### 4.1 Baseline assumptions

**According to the assumptions on which the CNB based its December projection, economic activity in surrounding countries is expected to be subdued and continue to be accompanied by still elevated inflationary pressures.** Against the backdrop of relatively favourable recent performance in the world's major economies, expectations regarding global economic activity and global trade dynamics improved slightly from the September projection. The expected growth of the global economy (excluding the euro area) was thus raised to 3.3% in the current year and a similar dynamic is expected in the next two years. Among developed countries, the most prominent improvement was seen in the US, where recent economic developments showed to be more robust than previously expected owing to strong investment and consumer confidence. China's economic activity was also little stronger than expected. However, negative risks still prevail in the midterm due to the structural vulnerabilities of its economy. In contrast, expectations for Central and Eastern European countries, Croatia's important trading partners, have been revised downward, which might additionally subdue foreign demand for Croatian goods and services.

**The expected prices of energy and other raw materials remain relatively elevated and have changed only a little from the September projection.** In the last two months, crude oil was traded on the global market at prices slightly higher than expected in the previous projection, and the volatility of their prices over the last few weeks was additionally spurred by increased geopolitical instability in the Middle East. Nevertheless, judging by forward agreements, over the remainder of the projection horizon oil prices could go down some 2% from the September projection and decrease from the average USD 84 per barrel in 2023 to USD 77 per barrel in 2025. The prices of food raw materials in the global market are also expected to fall, but at a slower rate than in the previous projection. As for prices of industrial raw materials (mostly metal), they are still expected to grow moderately and revive the long-term trend at the end of the projection period, primarily due to restrictions on the supply side and increased demand to cater to the needs of the energy transition.

**Expectations for the euro area are slightly below those in the previous projection, indicating a somewhat more prominent weakening of inflationary pressures and subdued economic growth.** According to the most recent ECB projections, the expected level of overall inflation in the euro area in 2023 has been reduced to 5.4% (0.2 p.p. less than in the ECB September projection), primarily due to a much more favourable performance in October and November. Supported by restrictive monetary policy measures, the slowdown in inflation should continue in the upcoming period, with the effects of earlier increases in the prices of energy and raw materials slowly waning and the growth in labour cost becoming the main determinant of inflationary developments. Inflation is expected to slow down to 2.7% in 2024 and reach the 2% target in 2025. The projected economic growth of the euro area in 2023 has been corrected downwards to

Table 4.1.1 Projection assumptions regarding the international environment and prices of raw materials

	Current projection				Deviations from the previous projection			
	2023	2024	2025	2026	2023	2024	2025	
<b>International environment</b>								
Global economic growth (excl. EA)	3.3	3.1	3.2	3.2	0.1	0.1	0.0	
USA	2.4	1.7	1.5	1.7	0.4	0.9	0.2	
China	5.2	4.4	4.1	4.0	0.3	0.1	-0.1	
Global trade	1.1	3.0	3.0	3.2	0.9	-0.3	-0.2	
Foreign demand (EA)	0.8	2.6	2.9	3.1	0.7	-0.4	-0.1	
Foreign demand (HR)	-0.1	2.9	3.4	3.3	-0.9	0.0	0.1	
<b>Prices of raw materials</b>								
Prices of oil	USD	84.0	80.1	76.5	73.6	1.3	-1.7	-1.3
	EUR	77.8	73.9	70.6	67.9	1.8	-0.9	-0.6
Prices of electricity	EUR/MWh	105.0	116.5	110.8	97.7	-10.1	-26.0	-12.5
Prices of gas	EUR/MWh	41.5	47.4	44.2	36.9	-1.4	-6.8	-3.3
Prices of raw materials (excl. energy) % of change	USD	-13.2	-2.3	2.4	1.7	0.4	0.8	-0.8
prices of food raw materials	USD	-11.5	-3.7	-0.7	-1.6	1.0	2.9	-2.8
prices of other raw materials	USD	-14.6	-1.2	4.8	4.1	0.1	-0.6	0.8
<b>Euro area</b>								
Economic growth		0.6	0.8	1.5	1.5	-0.1	-0.2	0.0
Inflation		5.4	2.7	2.1	1.9	-0.2	-0.5	0.0

Note: Projection assumptions refer to the ECB's December projection cycle (December BMPE), as at 24 November 2023.

Source: ECB.

0.6% (0.1 p.p. down from the past projection) because unfavourable financing conditions and decline in confidence and competitiveness are increasingly subduing economic activity. Growth is expected to gradually increase to 1.5% at the end of the projection period. The gradual fall in inflation and recovery of real income supported by a strong labour market will spur consumer spending, while the strengthening of foreign demand and decreasing uncertainty will contribute to the recovery of the manufacturing sector.

## 4.2 Macroeconomic variable projections

**Despite the fall in foreign demand and tightened financing conditions, the Croatian economy continued to grow in 2023 well above the EU and the euro area average.** This is a reflection of multiple factors that primarily include strong demand for tourist services, on which Croatia heavily relies, intensified utilisation of EU funds and expansionary fiscal policy. In such circumstances favourable labour market developments continued, supporting continued healthy growth of personal consumption. This growth might strengthen further in 2024 due to the expected recovery of foreign demand and continuation of a relatively expansionary fiscal policy, while in the remainder of the projection horizon it is expected to slow down slightly to an average rate of 2.6%.

**This year, real economic activity might be 2.6% higher than in 2022.** Such developments are primarily a reflection of strong domestic demand and services exports. The greatest contribution to growth in 2023 might come from personal consumption supported by continued growth in employment and strong growth in nominal wages, which,

amid the slowdown in inflation, resulted in the growth of real available income. In addition, the growth in government consumption is expected to strengthen noticeably, as well as investment activity, primarily due to greater public investment resulting from more intensive utilisation of EU funds, while private investments might be subdued. Following exceptionally strong growth in 2022, the exports of goods and services might decrease on an annual level due to the fall in the exports of goods, while the exports of services might continue to grow. Despite the expected fall in total exports, the contribution of net exports to growth might be positive as a result of the expected strong fall in imports. Following the considerable accumulation of inventories in 2022, as a consequence of corporations trying to ensure adequate quantities of goods in the circumstances of disrupted supply chains and strong price growth, the contribution of changes in inventories might come in negative in the current year.

**In 2024, real GDP growth might pick up slightly, to 3%, to be followed by an expected slowdown in 2025 and 2026 to an average rate of 2.6%.** The expected

**Table 4.2.1 Key macroeconomic variable projections**  
annual rates of growth

	2022	2023	2024	2025	2026
<b>Real GDP</b>	<b>6.3</b>	<b>2.6</b>	<b>3.0</b>	<b>2.7</b>	<b>2.6</b>
Personal consumption	6.7	2.9	3.9	2.8	2.7
Government consumption	2.7	4.0	2.9	2.7	2.2
Capital investments	0.1	4.3	2.2	2.4	3.1
Exports of goods and services	27.0	-3.0	2.3	2.5	2.5
Imports of goods and services	26.5	-4.8	2.8	2.6	2.6
<b>Contributions to GDP growth<sup>a</sup></b>					
Domestic demand	4.5	3.4	3.3	2.7	2.6
Exports of goods and services	13.4	-1.8	1.3	1.3	1.3
Imports of goods and services	-13.9	3.1	-1.6	-1.4	-1.4
Inventories	2.4	-2.1	0.0	0.1	0.0
<b>Labour market</b>					
Change in employment	2.3	2.3	1.8	1.5	1.3
Unemployment rate (ILO) <sup>b</sup>	7.0	6.4	6.0	5.7	5.5
Nominal gross wage	8.3	14.5	8.7	4.5	3.5
Real gross wage	-2.4	6.1	4.7	2.0	1.5
Unit labour cost	6.7	14.2	7.4	3.3	2.2
<b>Inflation (HICP)</b>					
<b>Total</b>	<b>10.7</b>	<b>8.4</b>	<b>4.0</b>	<b>2.5</b>	<b>2.0</b>
HICP excl. energy and food	7.6	8.8	4.8	2.8	2.2
Food	13.0	11.5	4.4	2.6	2.1
Energy	19.2	0.1	-0.2	1.1	1.0

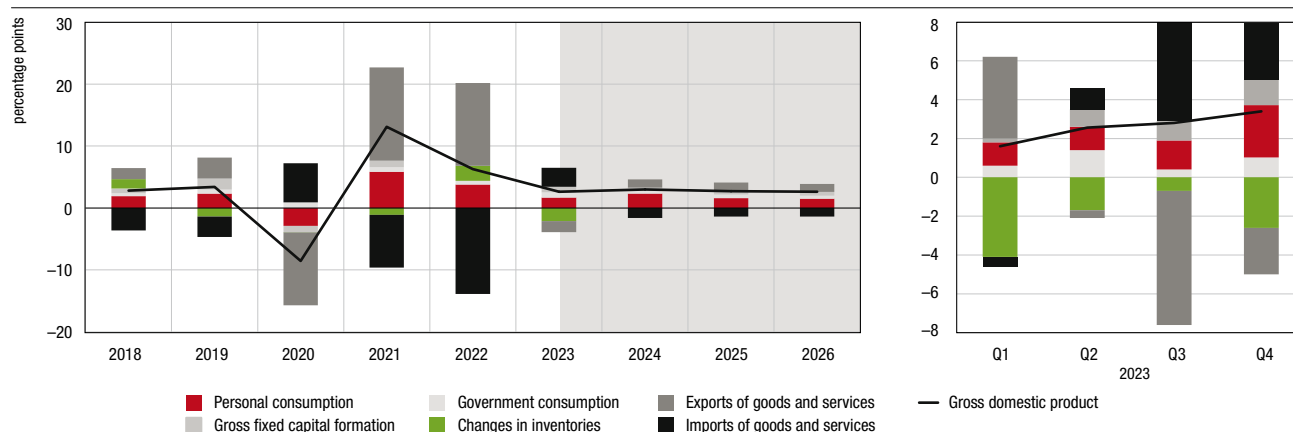
<sup>a</sup> In percentage points

<sup>b</sup> As % of labour force

Note: Table 4.2.1 provides a summary of estimated and projected values of key variables for Croatia resulting from the inclusion of baseline assumptions and historical results in short-term and medium-term macroeconomic models used by the Croatian National Bank, subject to corrections of model estimations based on the judgement of experts for individual economic areas.

Sources: CBS, Eurostat and CNB estimations and projections.

**Figure 4.2.1 GDP and GDP components contributions**



Sources: CBS and CNB estimations and projections.

growth intensification in 2024 partly reflects the projected recovery in foreign trade demand, which will favourably impact goods exports. In addition, consumer spending growth might gain momentum on an annual level due to the intensified growth of the real available income, predominantly reflecting the increase in budgetary expenditure on social benefits, as well as the continuation of the relative strong growth of real wages in the circumstances of slowdown of inflation. The savings ratio might continue to grow despite the strengthening of demand and reach pre-pandemic levels. Following the exceptionally strong growth in 2023, general government investments might partially go down next year, slowing down the growth of total investments. In addition, the growth of services exports might slow down, considering exceptionally favourable developments in tourism after 2020 and high numbers of foreign tourist arrivals and nights stayed. As a reflection of the strengthening of domestic and of only a gradual recovery in foreign demand, the contribution of net exports to total growth could be slightly negative. Over the rest of the projection horizon, growth could slow down slightly to 2.6%, with individual components growing at a relatively even pace.

**The risks associated with Croatia's central projection of real growth seem slightly negative.** The present geopolitical tensions and the possibility of their growth make economic developments in the international environment and developments in the prices of other raw materials and energy remain highly uncertain. In addition, the unfavourable effect of tightened financing conditions that reflect the need to combat the still elevated inflation on economic developments in Croatia and the euro might be stronger than currently expected. In contrast, Croatia joining the Schengen area and the euro area might in the medium term, in the circumstances of still present high demand for tourist services, result in developments in physical and financial indicators in tourism even more favourable than projected. Should geopolitical tensions relax, the developments in foreign demand might outstrip expectations and favourably impact goods exports, while the strong expected growth of the real available income might spur even greater growth of personal consumption than currently expected.

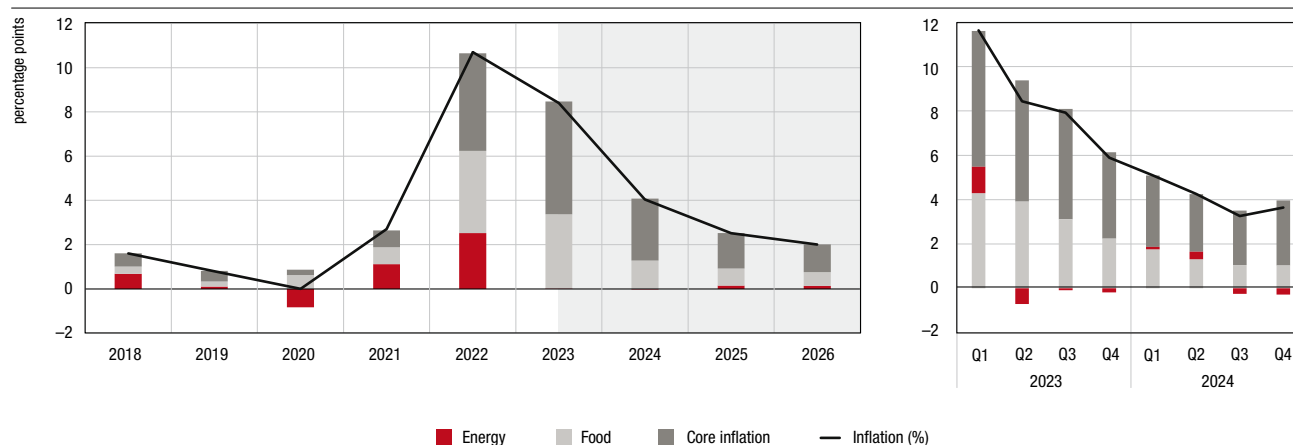
**HICP inflation might slow down to 8.4% in 2023, from 10.7% in 2022, with this slowdown expected to continue throughout 2024, when it could reach 4.0% (Figure 4.2.2).** As a result of the weakening of current inflationary pressures and the waning of the effects of the strong increase in prices of all major inflation components over the previous year, inflation slowed down uninterrupted in the first eleven months of 2023, with the same trend expected in 2024.

**The slowdown in inflation in 2023 might primarily be a result of the substantially lower inflation of energy prices, which, after totalling 19.2% in 2022, might amount to 0.1% in 2023, holding steady at a low level of -0.2% in 2024.** In 2023, the price of crude oil in the global market was mostly considerably lower than in 2022 which was reflected in the lower prices of refined petroleum products. In addition, administered prices of gas and electricity for households remained unchanged in 2023, after having risen considerably in 2022<sup>24</sup>, which contributed to a strong slowdown in the annual prices

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24 The average monthly increase in the price of gas in April 2022 was 16% and in the price of electricity 9.6%.

Figure 4.2.2 Projection of harmonised index of consumer prices



Sources: Eurostat and CNB estimations and projections.

of those two sub-components because of the fading of the base effect. Assuming that the prices of electricity and gas remain unchanged in 2024 paired with the expected slight reduction in the price of crude oil in the global market towards the end of 2024, as indicated by the prices on futures markets, inflation of energy prices might remain low in 2024 at  $-0.2\%$ .

**To a smaller extent, the decline in food price inflation from 12.9% in 2022 to 11.5% in 2023 could contribute to the slowdown in inflation in 2023, while a sharper decrease is expected in 2024, when it might reach 4.4%.** Lower prices of energy and food raw materials, the easing of pressures on the supply side and the disappearance of the statistical effect of the strong increase in prices of food in 2022, contributed to a gradual slowdown in the inflation of food prices in 2023, resulting in a lower expected average annual inflation of food prices. The slowdown in food price inflation is also expected in 2024, so food price inflation might slow down to some 3% towards the end of the year.

**The impact of the slowdown in energy and food price inflation in 2023 might partly offset the expected increase in core inflation (which does not include energy and food prices) from 7.6% in 2022 to 8.8% 2023. In contrast, a noticeable slowdown in core inflation is expected in 2024, and at an annual level might reach 4.8%.** Core inflation peaked at the beginning of the year<sup>25</sup>, gradually slowing down to 6.8% by November<sup>26</sup>. By the end of 2023 and in 2024 core inflation is expected to continue to slow down as a result of the spillover of lower prices of energy and other raw materials used in the process of production of industrial goods and provision of services to the consumer prices of these components. However, the pronounced labour market pressures (low unemployment and expected strong growth of nominal wages), as well as the expected strong personal consumption, could make the slowdown in core inflation less pronounced compared to food price inflation, keeping it at 4% in 2024. Broken down by individual components, the acceleration in core inflation in 2023 should reflect the

<sup>25</sup> Core inflation peaked in January 2023 at 11.3%.

<sup>26</sup> According to Eurostat's first estimate.

increase in the average annual services price inflation, which could partly offset the expected slowdown in the inflation of prices of industrial products. On the other hand, both components of core inflation are expected to slow down in 2024.

**Over the remainder of the projection horizon, inflation is expected to slow down to 2.5% in 2025 and 2.0% in 2026.** Lower increase in demand amid elevated interest rates might contribute to the slowdown in core inflation towards the end of the projection horizon. This could, paired with the expected return of energy and food price inflation to a low and stable level by the end of 2024 and their holding steady at these levels in the remainder of the projection horizon, result in the overall inflation returning to the target level in the medium term.

**Risks associated with the achievement of the projected inflation are still pronounced but are assessed as balanced.** Geopolitical tensions continue to pose a challenge in the supply of energy and other raw materials in the global markets and could result in price increases. In addition, unfavourable weather conditions could additionally spur an unexpected increase in prices of food raw materials, and fruit and vegetables. Given the importance of developments in the prices of food and energy on the perception of inflation and household expectations, should these prices grow, the slowdown in inflationary expectations could be less pronounced than envisaged, resulting in stronger and/or longer-lasting upward pressure on wages. Inflation could also be higher if the expected reduction in the contribution of profit to inflation does not occur; such a decrease would, to a certain extent, compensate for the impact of the strong wage growth. On the other hand, weaker economic growth and consequently weaker demand, stronger impact of monetary policy tightening and more intensive spillover of the fall in the prices of energy and other raw materials in the global market on consumer prices of goods and services than currently expected are risks that might contribute to lower than projected inflation.

**Compared to the CNB September projection, Croatia's economic growth for 2023 has been revised downwards, and for 2024 slightly upwards (Table 4.2.2).** The downward revision of GDP for 2023 almost entirely reflects the revision of historical data from October this year, when the growth of economic activity in the first half of this year was reduced by 0.6 percentage points. Considering the lower base, slightly more favourable developments expected at the end of the year and expansive fiscal policy vis-

à-vis previous expectations, GDP growth in 2024 was revised upward to 3.0% from the 2.6% projected in September, which, observed by individual components, primarily reflects the revision of personal consumption.

**In comparison with the previous projection, the average annual inflation might be 0.4 percentage points lower in 2023 and 0.6 percentage points lower in 2024.** This, to a very large extent, reflects results that were noticeably lower than

**Table 4.2.2 Deviations from the CNB projection of September 2023**

	2022	2023	2024	2025	2026
<b>Real GDP</b>					
December 2023	6.3	2.6	3.0	2.7	2.6
September 2023	6.2	2.9	2.6	2.6	
<b>difference (p. p.)</b>		<b>-0.3</b>	<b>0.4</b>	<b>0.1</b>	
<b>Inflation (HICP)</b>					
December 2023	10.7	8.4	4.0	2.5	2.0
September 2023	10.7	8.8	4.7	2.4	
<b>difference (p. p.)</b>		<b>-0.4</b>	<b>-0.6</b>	<b>0.2</b>	<b>-</b>

Sources: CBS, Eurostat and CNB estimations and projections.



those incorporated into the September projection, which was partially mitigated by the upward revision of personal consumption and nominal wages. In contrast, the inflation projection in 2025 was revised up slightly, which can be attributed to expectations of a more persistent core inflation, in line with the expected continuation of strong personal consumption and growing nominal wages.

## Abbreviations and Symbols

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### Abbreviations

APN	– Agency for Transactions and Mediation in Immovable Properties
APP	– Asset Purchase Programme
BEA	– U. S. Bureau of Economic Analysis
BLS	– bank lending survey
BMPE	– Broad Macroeconomic Projection Exercise
bn	– billion
BVAR	– Bayesian vector autoregression model
CBS	– Croatian Bureau of Statistics
CES	– Croatian Employment Service
CNB	– Croatian National Bank
CPI	– consumer price index
CPII	– Croatian Pension Insurance Institute
DFR	– deposit facility rate
EA	– euro area
EC	– European Commission
ECB	– European Central Bank
EER-41	– nominal effective exchange rate index of the euro against 41 major trading partners of the euro area
ESI	– Economic Sentiment Indicator
€STR	– euro short-term rate
EU	– European Union
EURIBOR	– Euro Interbank Offered Rate
Fed	– Federal Reserve System
G7	– advisory forum consisting of seven major industrial countries of the world
GDP	– gross domestic product
GSCPI	– Global Supply Chain Pressure Index
HICP	– Harmonised Index of Consumer Prices
HWWI	– Hamburgisches Weltwirtschaftsinstitut
HZZO	– Croatian Health Insurance Fund
ILO	– International Labour Organization
IMF	– International Monetary Fund
Ina	– Industrija nafte d.d.
ind.	– industrial
LSI	– loan supply indicator
m	– million
MLF	– medium-term lending facility
MoF	– Ministry of Finance
MRO	– main refinancing operations rate
Mwh	– megawatt hour

NCA	– National Classification of Activities
NDA	– net domestic assets
NFA	– net foreign assets
OECD	– Organisation for Economic Co-operation and Development
OPEC+	– Organisation of the Petroleum Exporting Countries
PEPP	– Pandemic Emergency Purchase Programme
PMI	– Purchasing Manager Index
pp	– percentage points
Q	– quarter
RC	– Republic of Croatia
SDR	– special drawing rights
SMA	– Survey of Monetary Analysts
SPF	– Survey of Professional Forecasters
thous.	– thousand
TLTRO III	– third round of targeted longer-term refinancing operations
TPI	– Transmission Protection Instrument
UBS AG	– United Bank of Switzerland
UNCTAD	– United Nations Conference on Trade and Development
USA	– United States of America
VAT	– value added tax

### Three-letter currency codes

CHF	– Swiss franc
CNY	– Yuan Renminbi
EUR	– euro
GBP	– pound sterling
JPY	– yen
USD	– US dollar
XDR	– special drawing rights

### Two-letter country codes

AT	– Austria
BE	– Belgium
BG	– Bulgaria
CY	– Cyprus
CZ	– Czech Republic
DE	– Germany
DK	– Denmark
EE	– Estonia
ES	– Spain
FI	– Finland
FR	– France
GB	– Great Britain

GR	– Greece
HR	– Croatia
HU	– Hungary
IE	– Ireland
IT	– Italy
LT	– Lithuania
LV	– Latvia
MT	– Malta
NL	– The Netherlands
PL	– Poland
PT	– Portugal
RO	– Romania
SI	– Slovenia
SK	– Slovakia
UK	– United Kingdom

### Symbols

–	– no entry
....	– data not available
0	– value is less than 0.5 of the unit of measure being used
a, b, c,...	– indicates a note beneath the table and figure
*	– corrected data
()	– incomplete or insufficiently verified data



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