



CROATIAN NATIONAL BANK

EUROSYSTEM

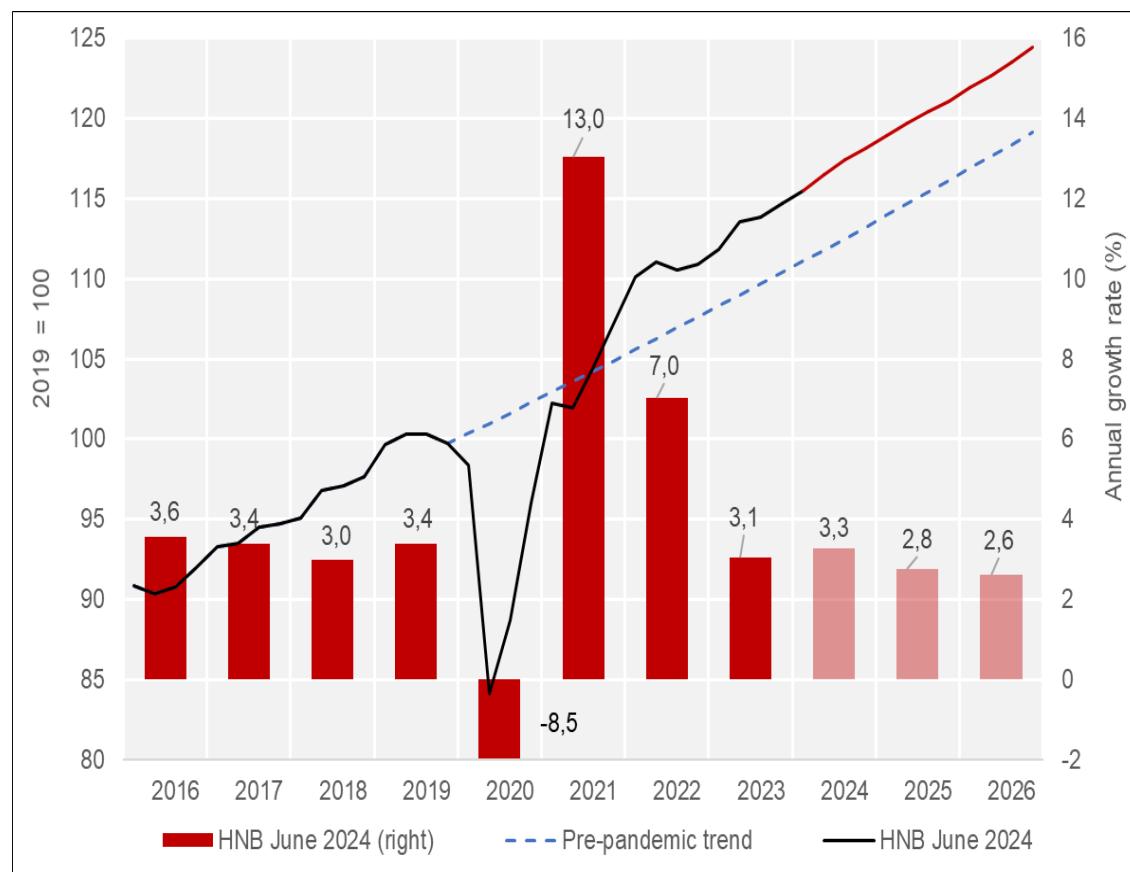
# Inflationary and Macroeconomic Developments after joining the Euro: The Croatian Experience

Boris Vujčić, Governor  
Frankfurt School of Finance, 12 June 2024



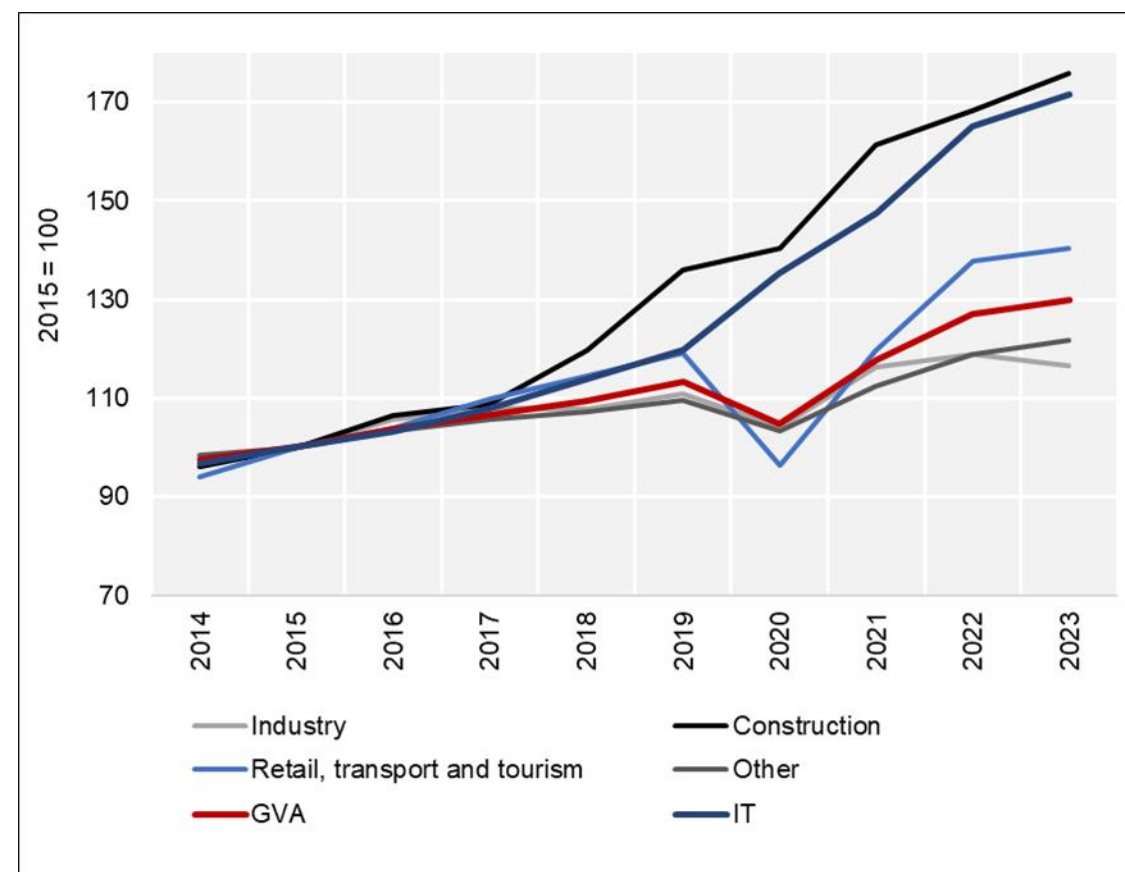
# Croatia proved relatively resilient to recent shocks and propped up real convergence after prolonged recession

## Real GDP growth and projections



Sources: CBS, CNB

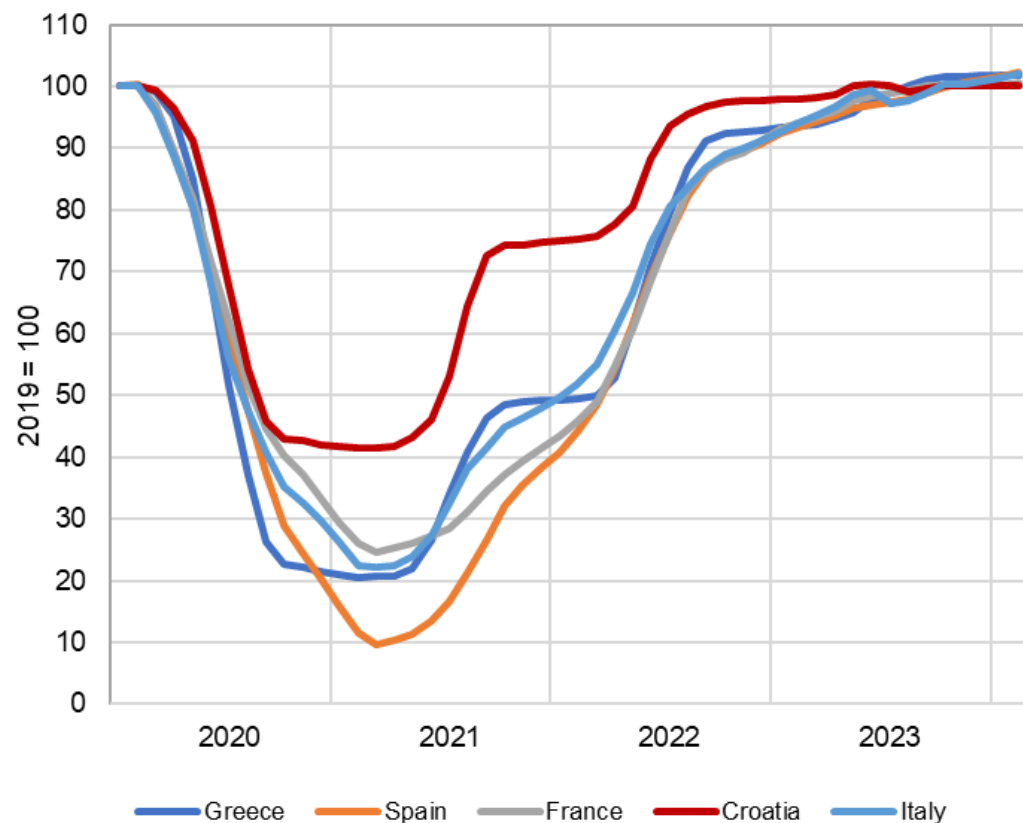
## Economic activity by sectors (2019 = 100)



Sources: CBS, CNB

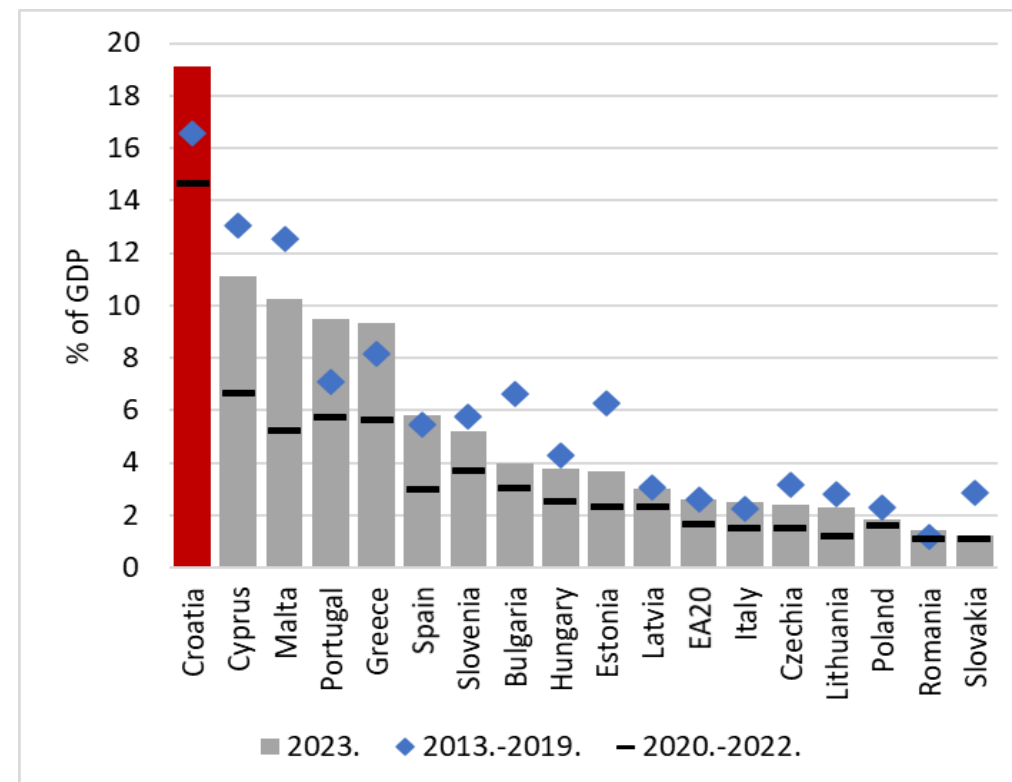
## Strong demand for tourism

### Nights spent by foreign visitors



Source: CBS, CNB calculation

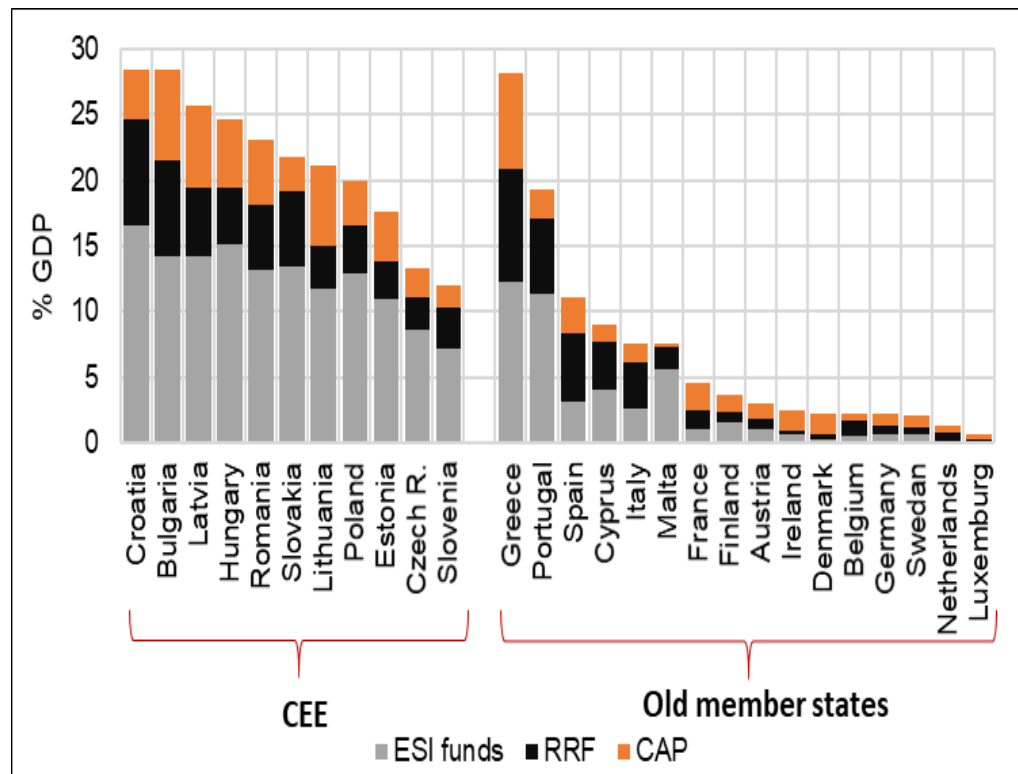
### Receipts from tourism



Source: Eurostat

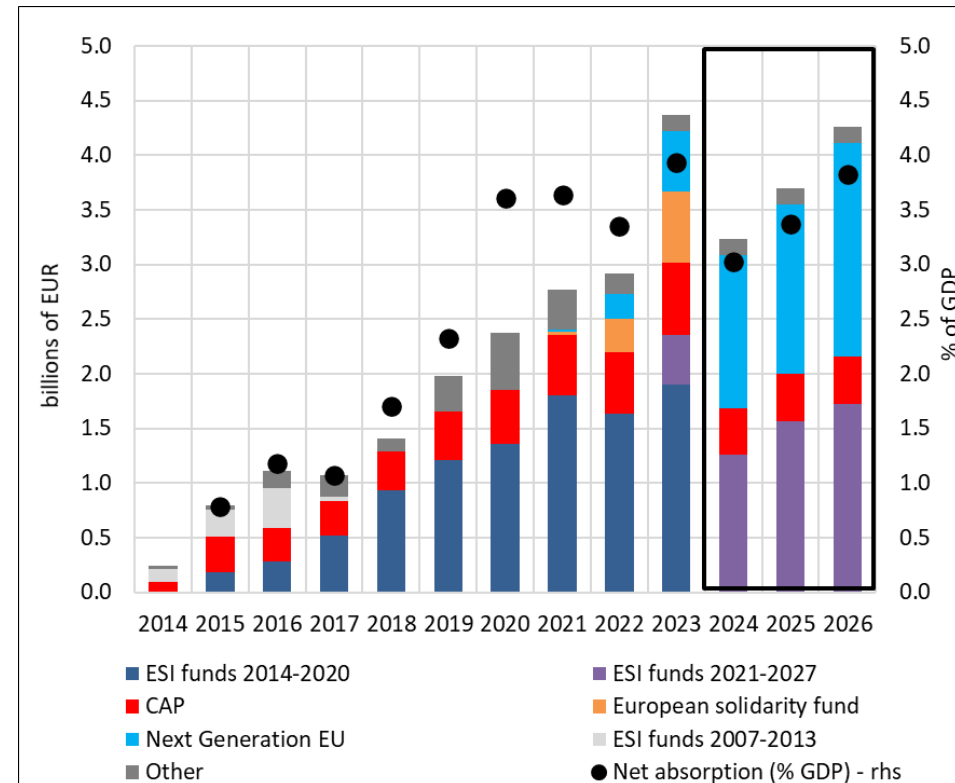
# Croatia is also benefiting from EU funds absorption

## Total EU funds allocations per member state



Note: ESI funds and CAP refer to 2021-2027 period; RRF refers to 2021-2026 period.  
Source: European Commission

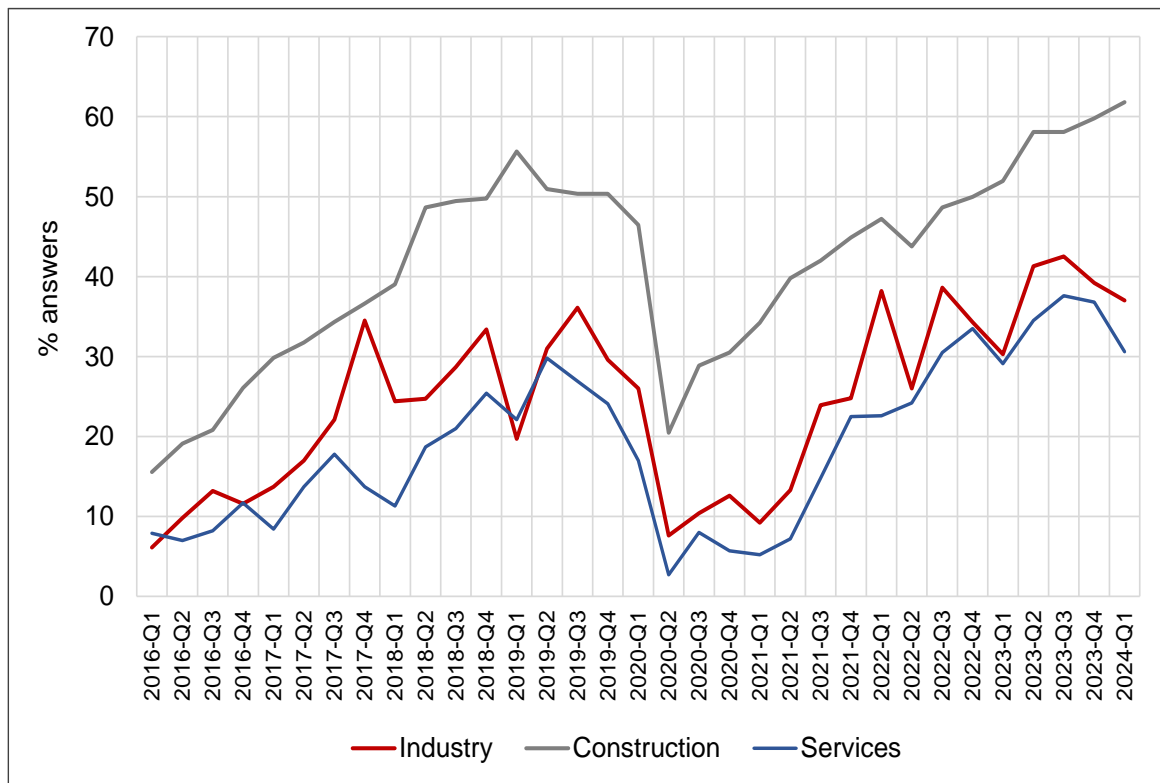
## EU funds absorption structure in Croatia



Source: CNB

# Unemployment is at lowest level for decades, while labor demand remains strong...

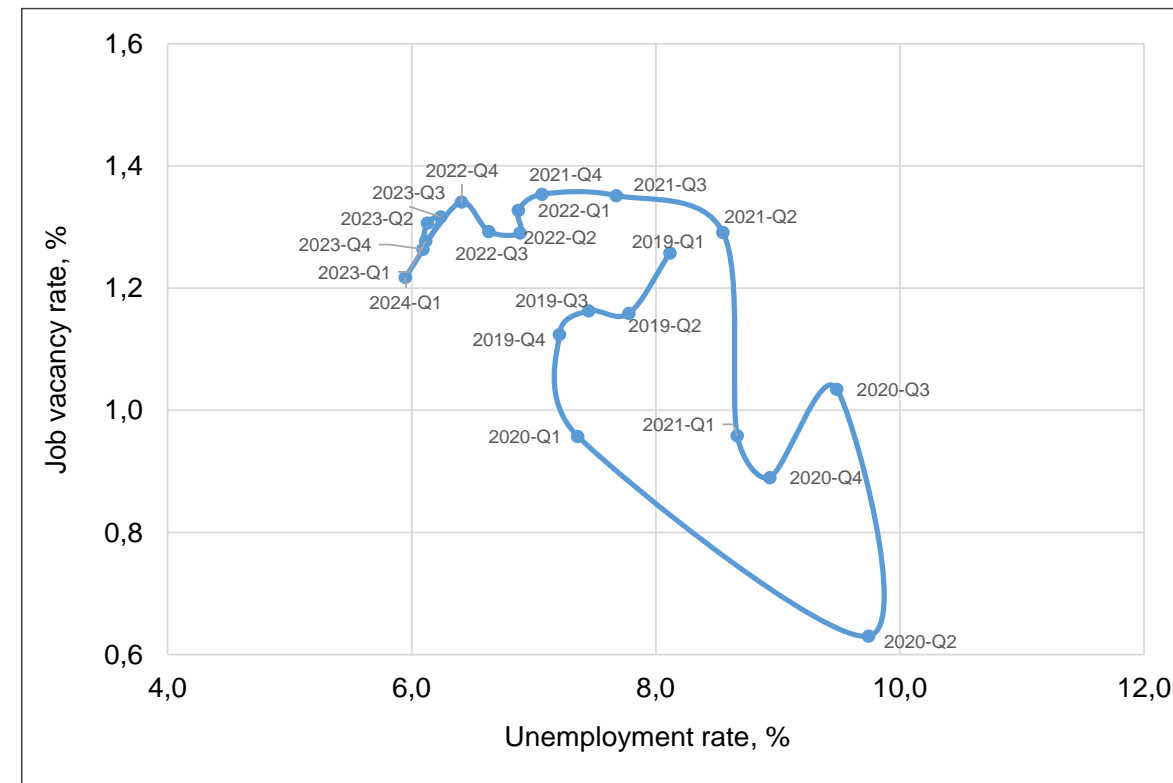
## Labor availability as a limiting factor in business operations



Note: Data refer to question „Which factors do you consider as a main limiting factor in your business?“ from Business and Consumer Confidence Survey

Source: EC

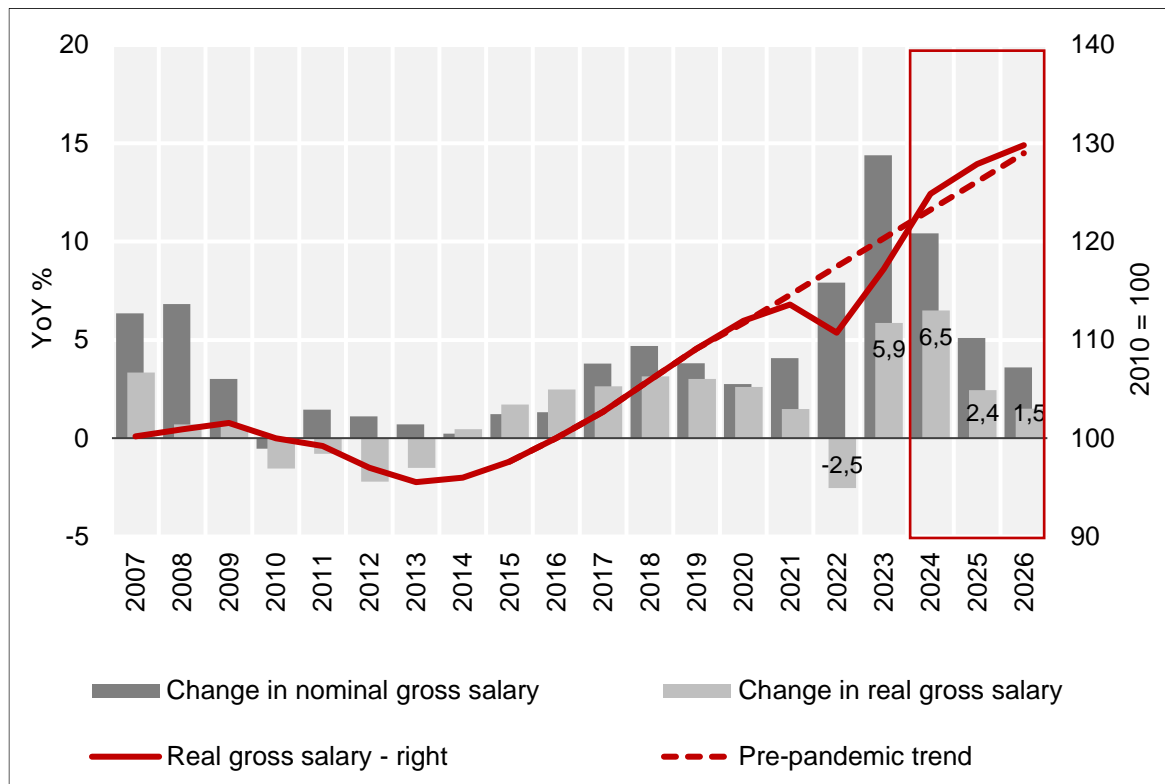
## Beveridge curve



Sources: CBS; CES; CNB calculations

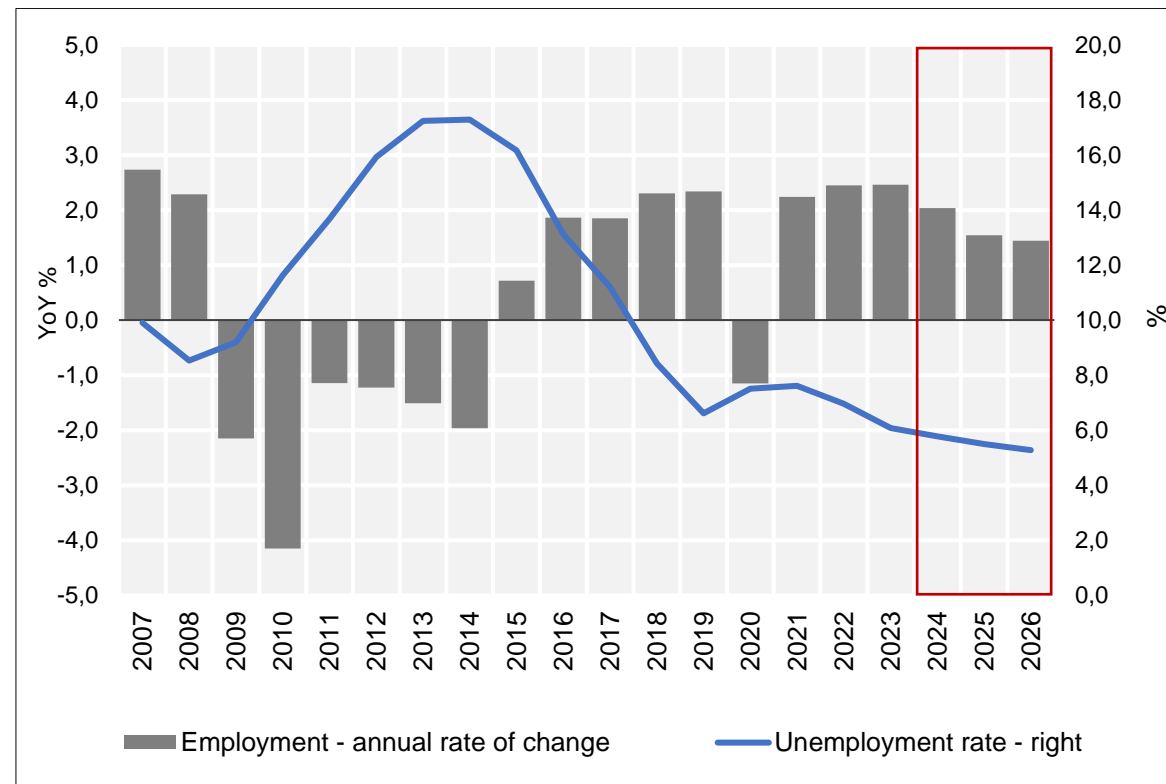
... which is pushing up real wages, after temporary decline in 2022

Nominal and real gross wages



Sources: CBS, CNB projection

Employment and unemployment



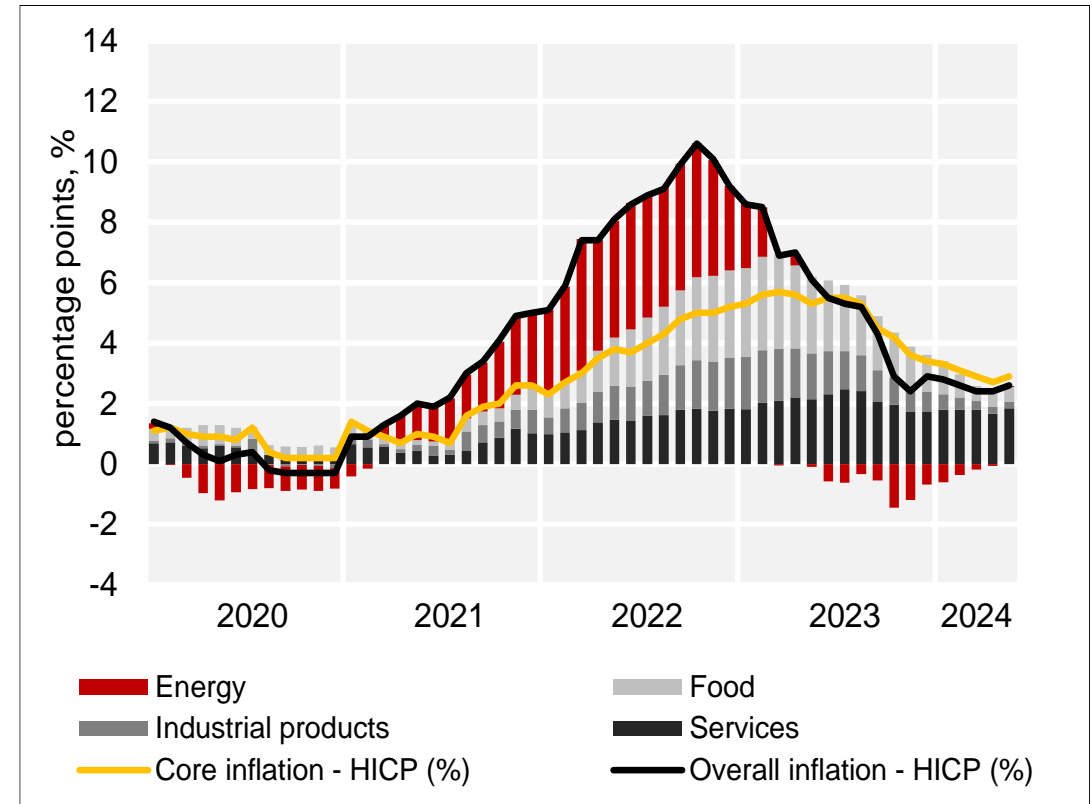
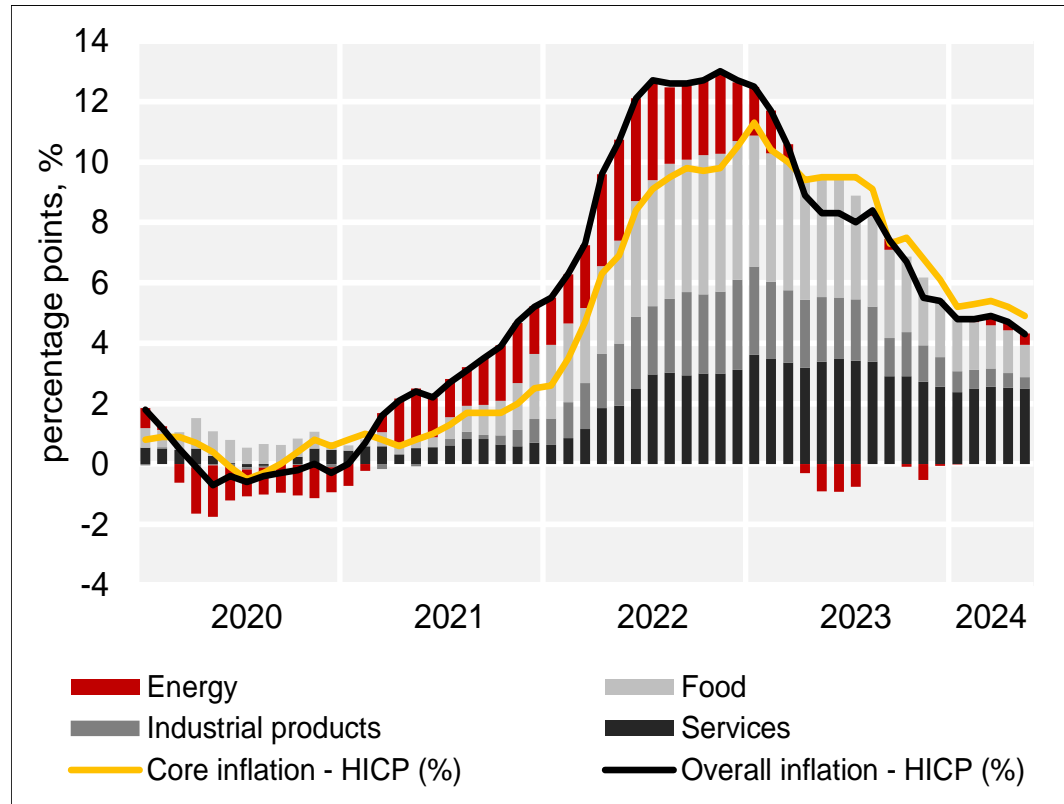
Sources: CBS; CPII; CNB projection

# Inflation is slowing down after peaking in 2022 ...

## Inflation and contributions of main sub-components

### Croatia

### Euro Area

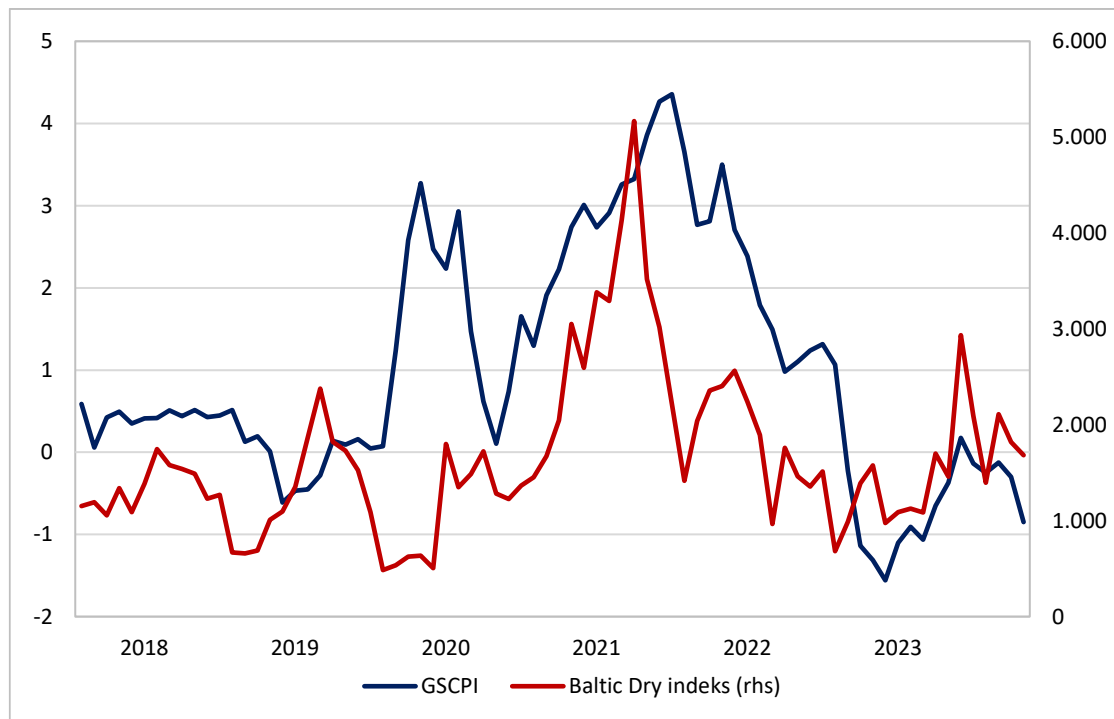


Note: Core inflation is measured by the harmonised index of consumer prices, which excludes the prices of energy, food, alcoholic beverages and tobacco. Data up to May 2024.  
Sources: Eurostat; CNB calculations.

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Sources: Eurostat; CNB calculations.

## ... reflecting in part normalization of supply chains and lower commodities prices ...

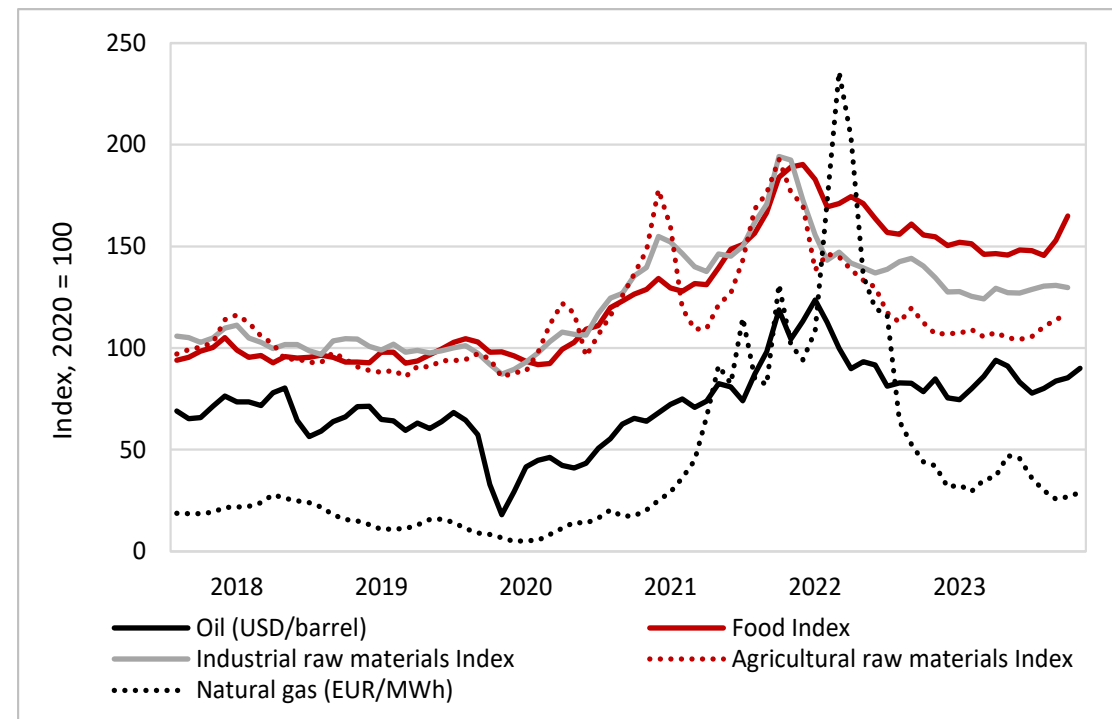
### Supply chain bottlenecks and freight rates



Notes: GSCPI integrates a number of commonly used metrics with the goal of providing a comprehensive summary of potential supply chain disruptions. Baltic Dry index represents a reference value for the cost of transporting the main raw materials by sea.

Sources: Bloomberg; New York Fed.

### Prices of commodities on global markets



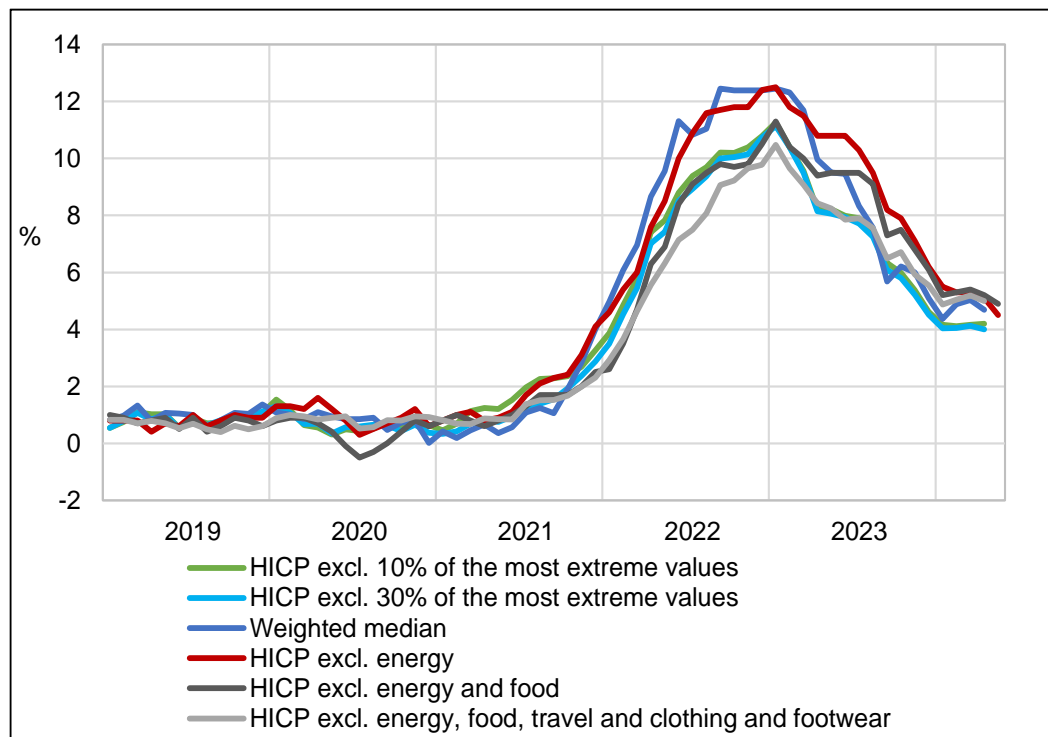
Sources: Bloomberg; HWWI.



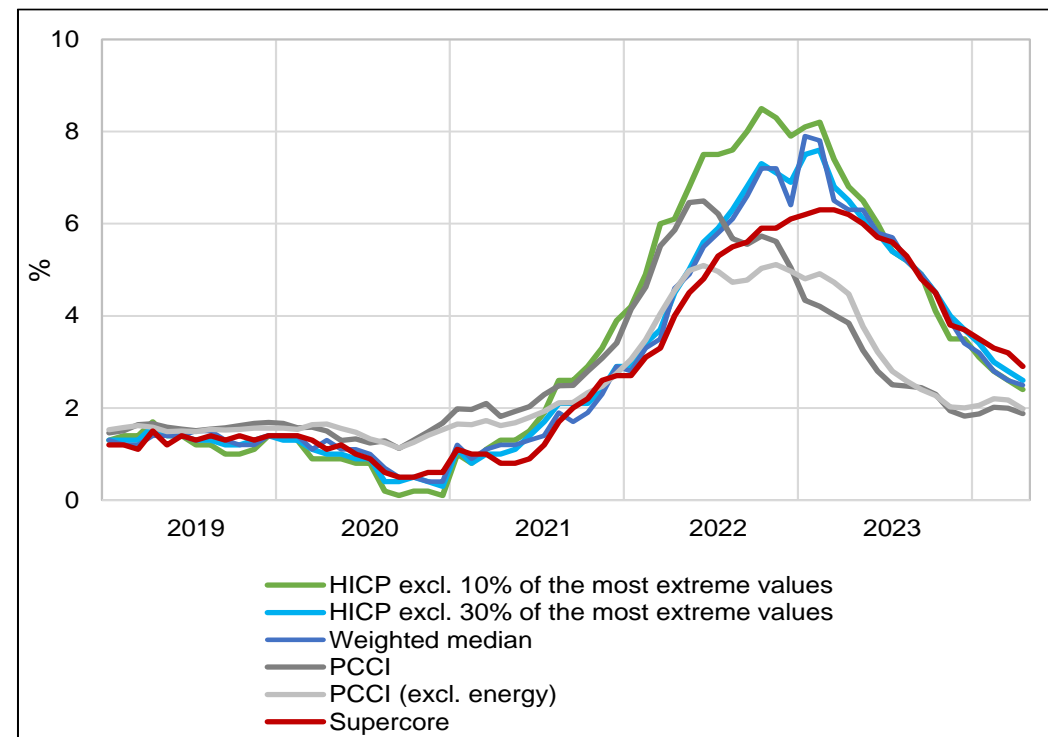
# ... but underlying pressures remain persistent, with most core inflation measures above headline

## Core inflation indicators

### Croatia



### Euro Area



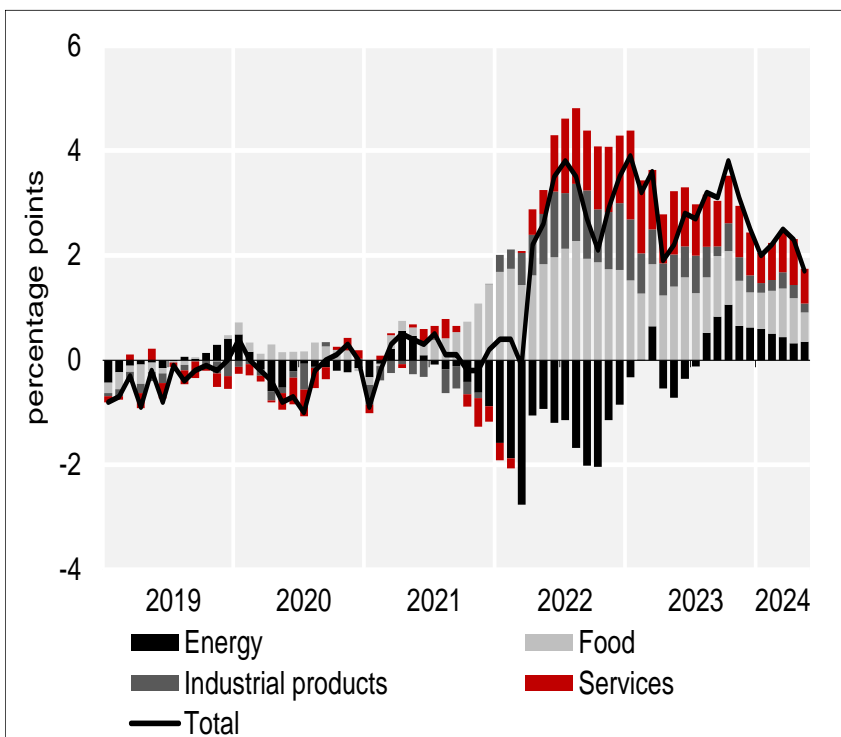
Notes: Trimmed mean is the measure of the central tendency calculated by eliminating 5% (15%) of components with maximum and minimum annual rates of change in a given month. The total data set refers to 87 HICP components. The weighted median without the most extreme values, which excludes all values but the weighted median of the distribution of price change. Data up to May 2024.

Sources: Eurostat; CNB calculations.

Source: ECB

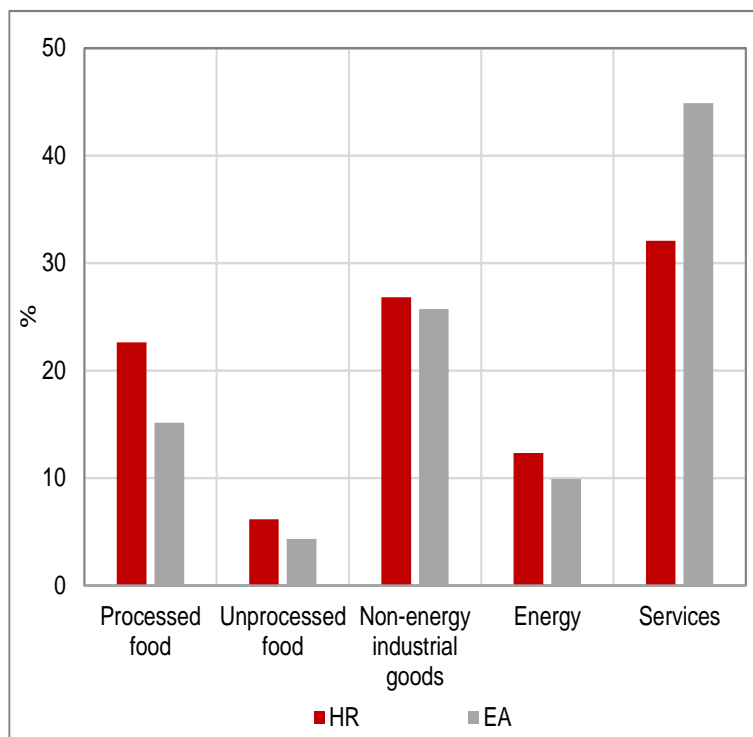
# Inflation differentials relative to euro area average reflect larger share of food in the consumer basket ....

Difference between overall inflation and the contributions of main components to inflation in Croatia and euro area



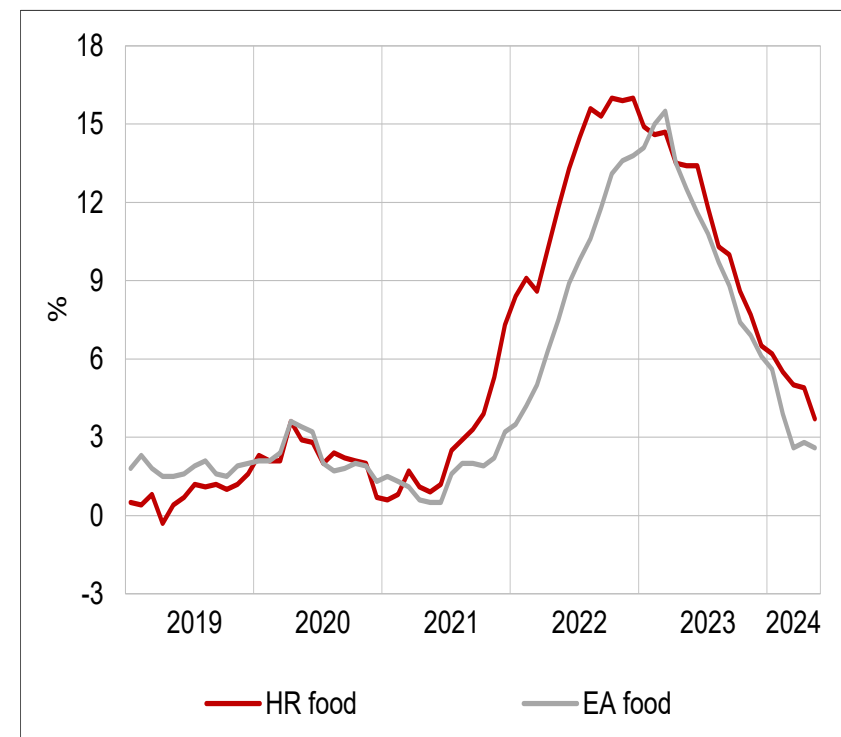
Sources: Eurostat; CNB calculations.

Shares of the main components in consumer basket



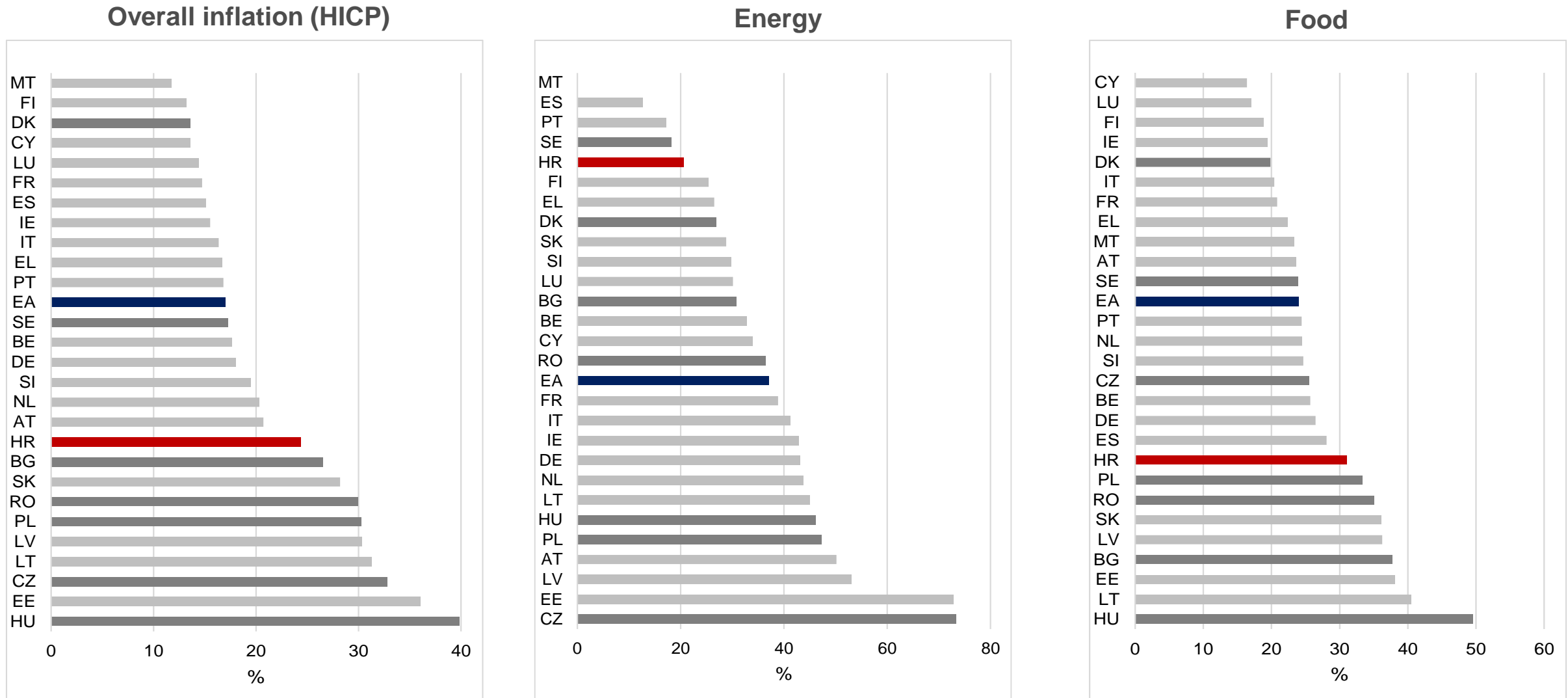
Source: Eurostat.

Food inflation



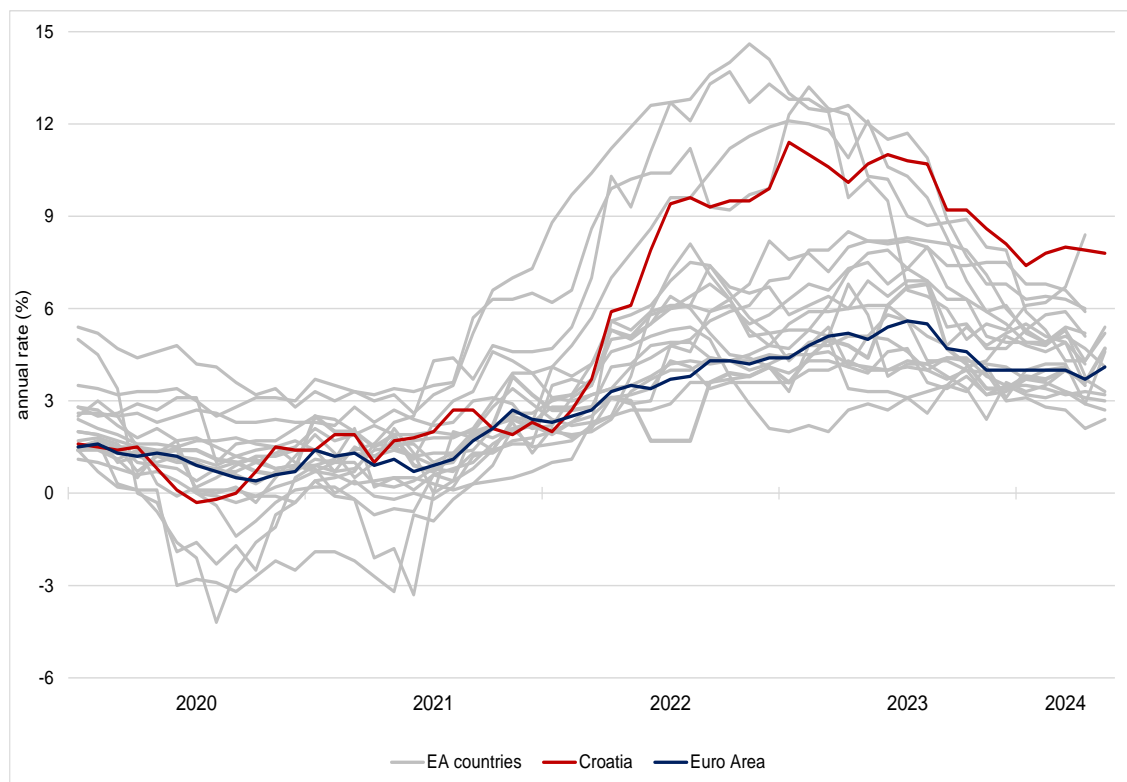
Source: Eurostat.

# Cumulative increase in consumer prices from June 2021 to April 2024 remains amongst the lowest in CEE countries



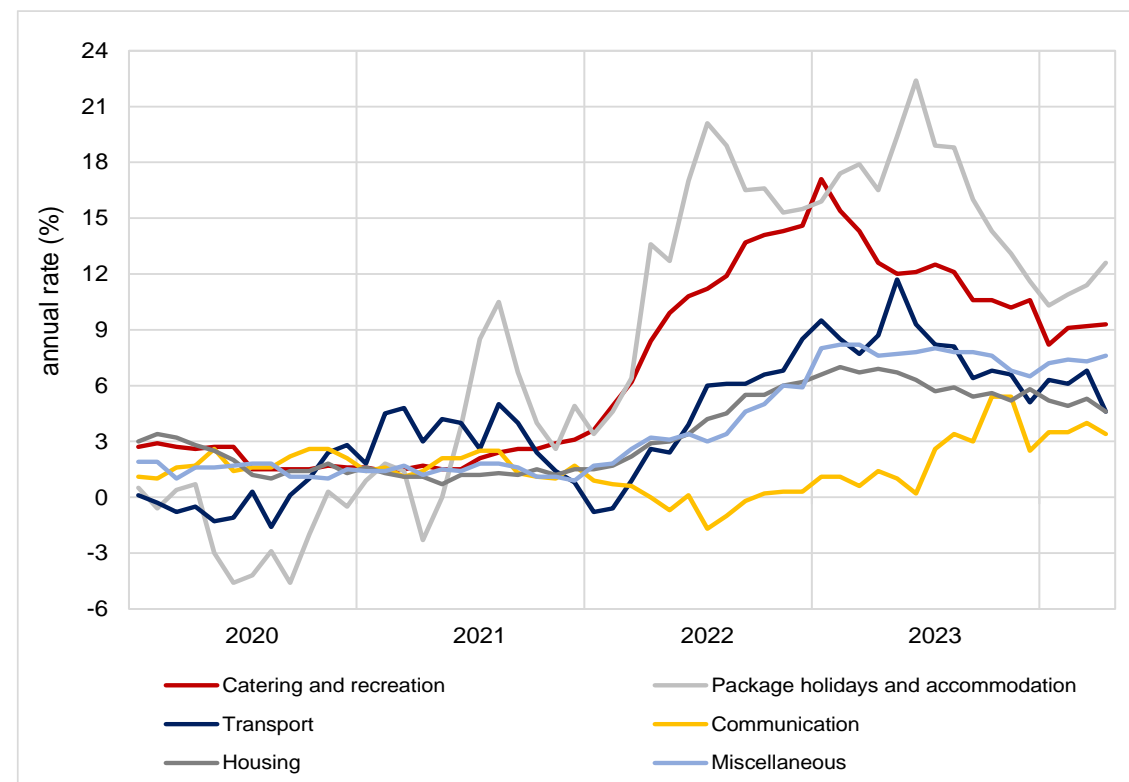
## ... in combination with elevated services inflation, especially in accommodation and catering

### Services inflation in EA countries



Source: Eurostat.

### Services inflation in Croatia, by components



Source: Eurostat.

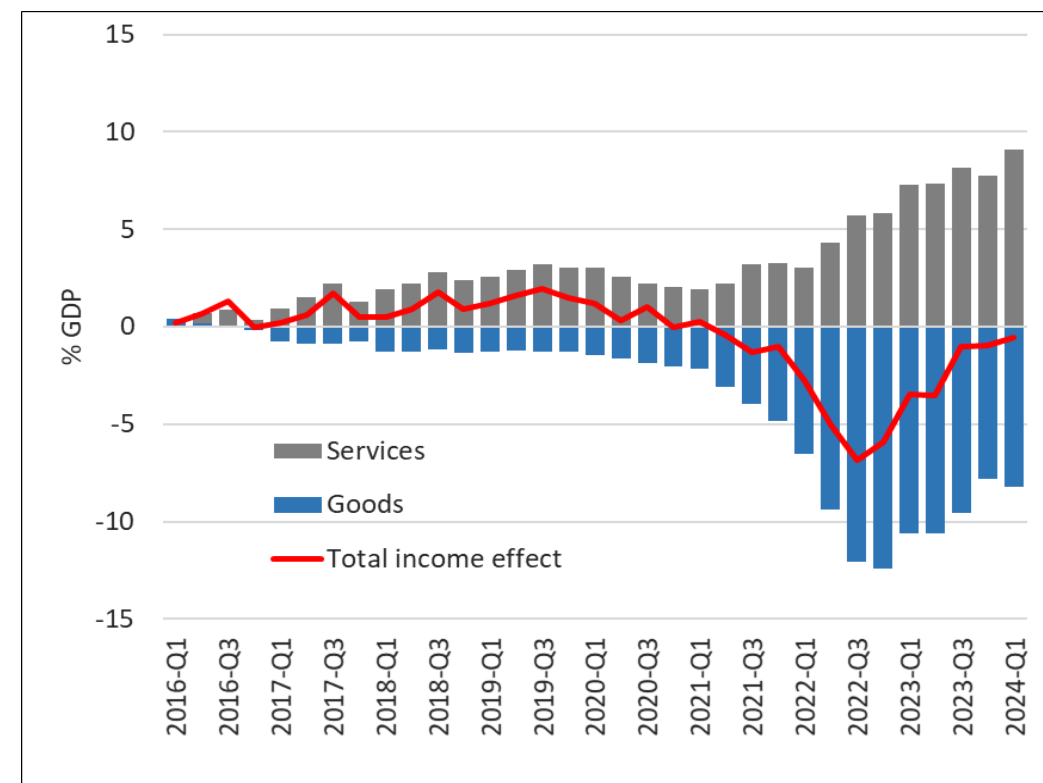
## Relatively high services inflation results in better terms of trade

### Terms of trade



Source: Eurostat, HNB

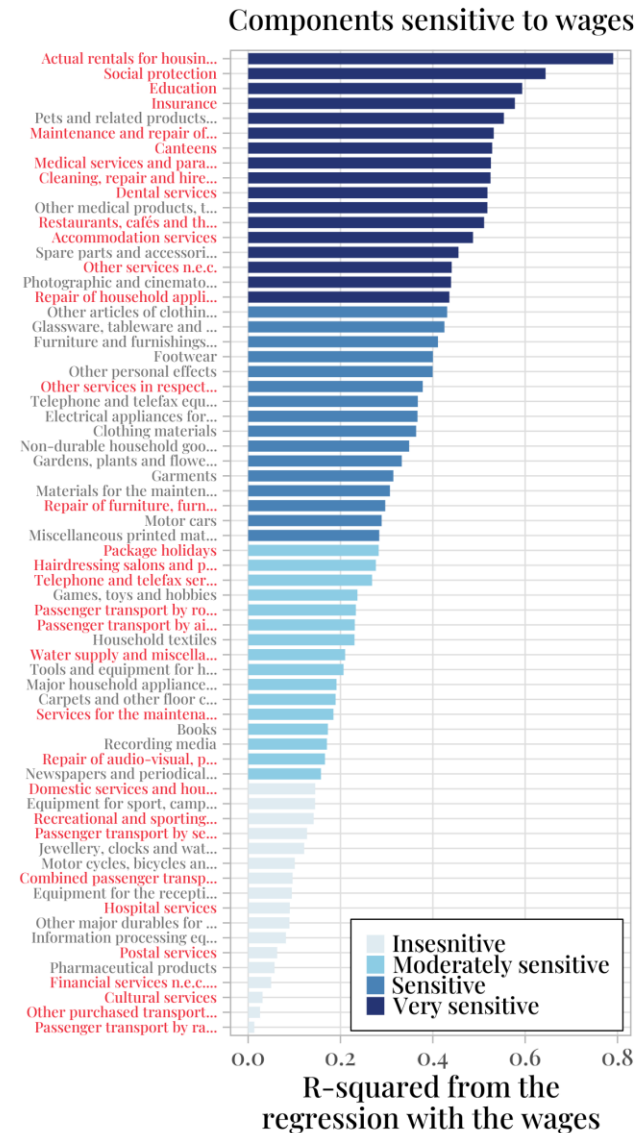
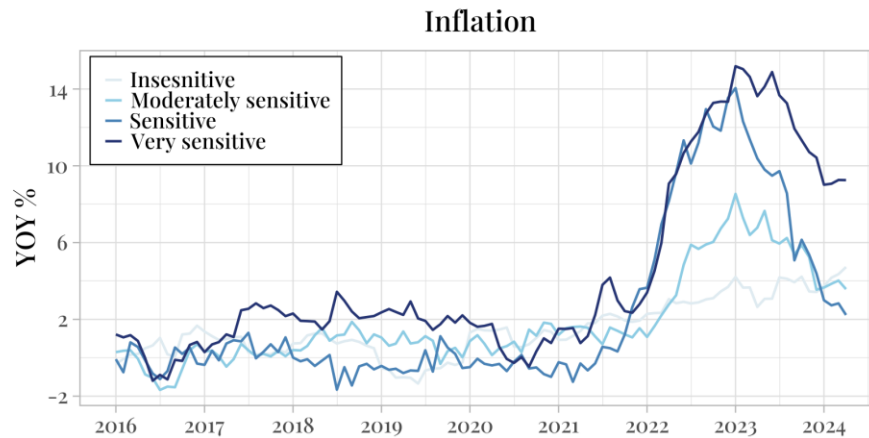
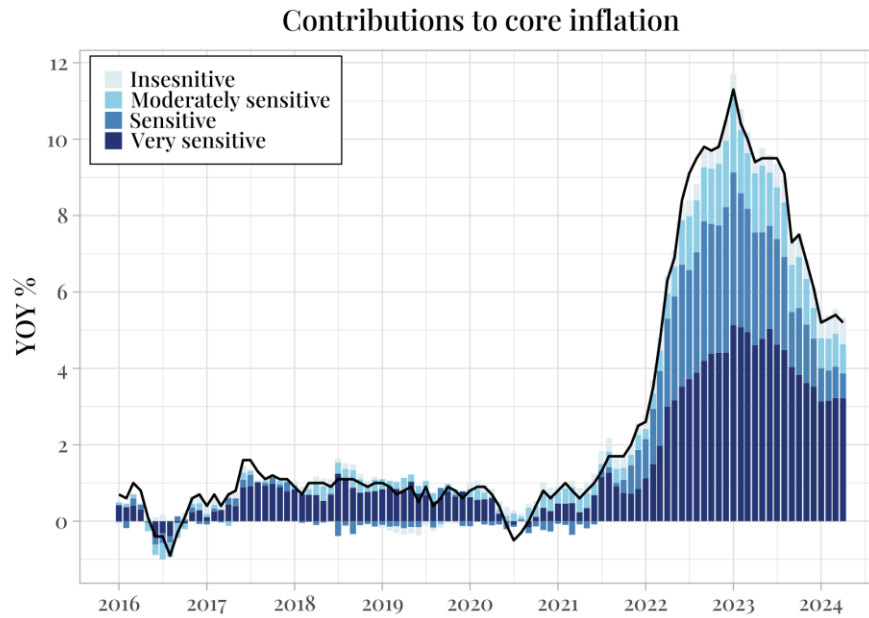
### Income effect of terms of trade changes in Croatia



Note: The income effect of the terms of trade is calculated by weighting changes in export and import prices with the corresponding values of exports and imports of goods and services, expressed as a percentage of GDP.

Source: Eurostat

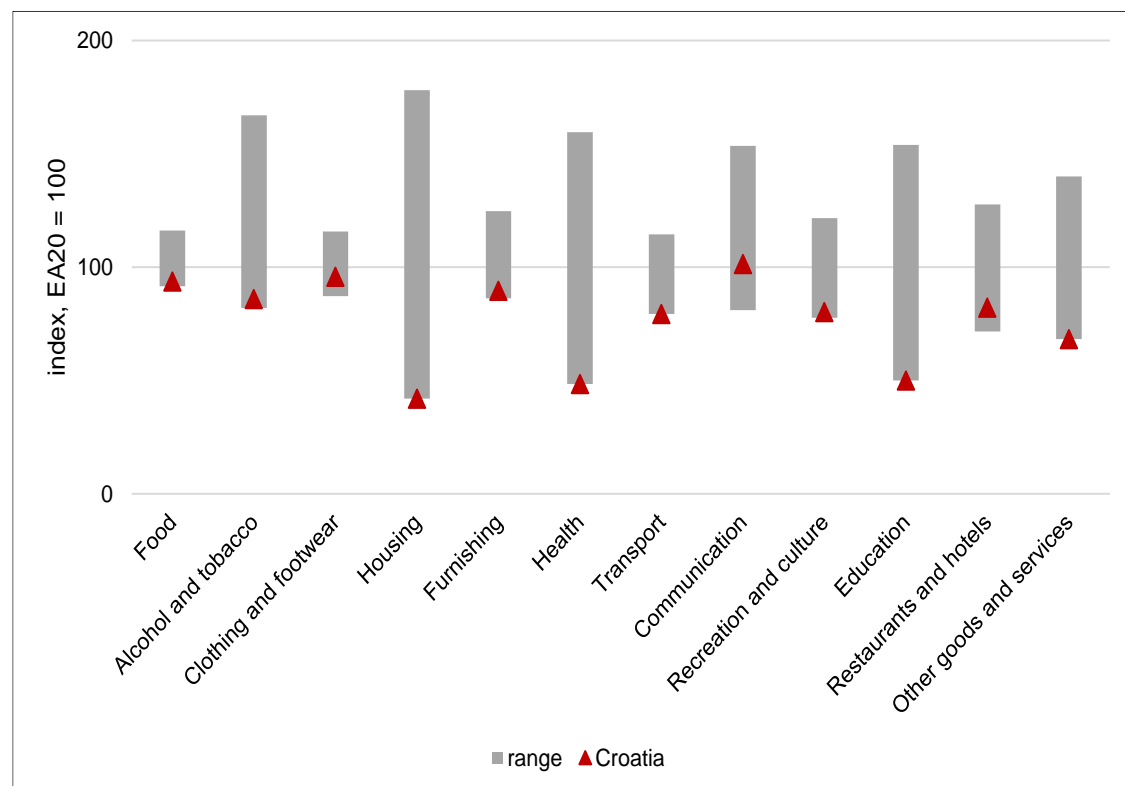
# Elevated services inflation reflects contributions of wage-sensitive items in the face of strong wage pressures ...



Red color on the right panel denotes services. Sources: Eurostat and Croatian National Bank.

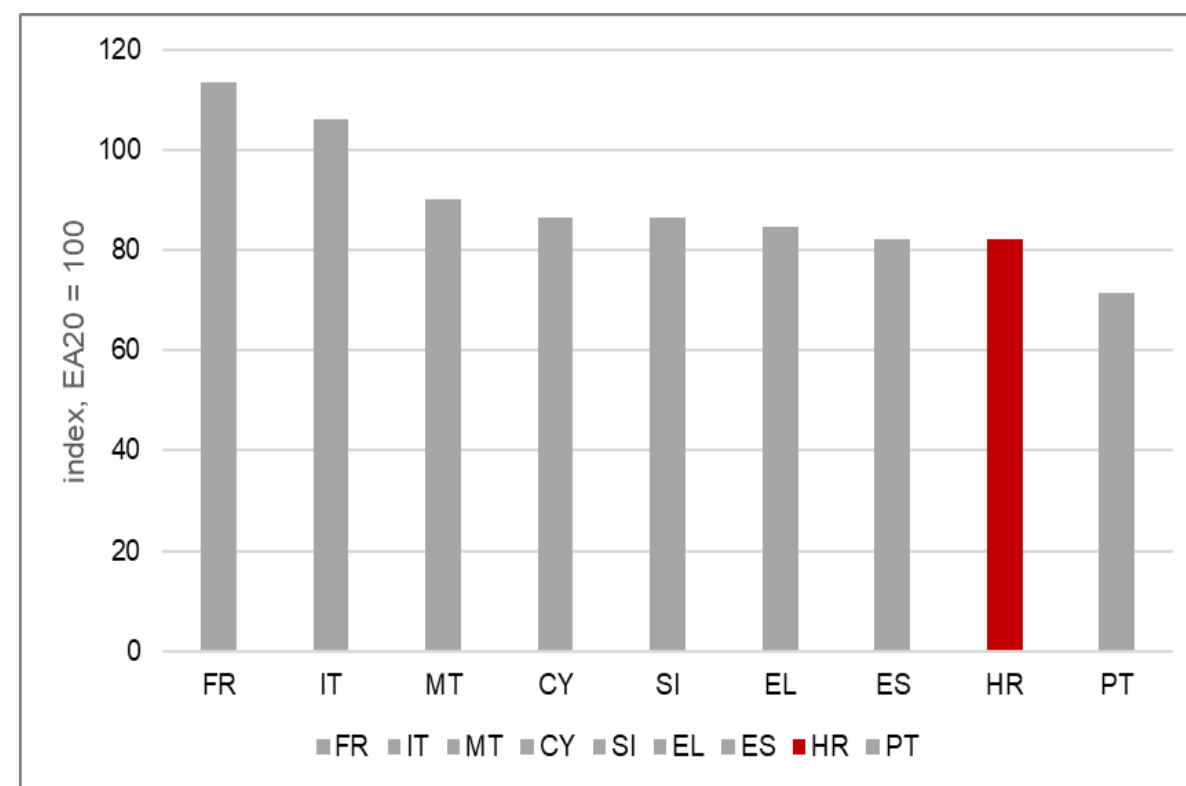
## ... with some effect of gradual price level convergence

### Price levels of the main components



Notes: The data refer to 2022. Due to clarity, Ireland has been excluded in the case of alcoholic beverages and tobacco, and Luxemburg in the case of education.  
Sources: Eurostat; CNB calculations.

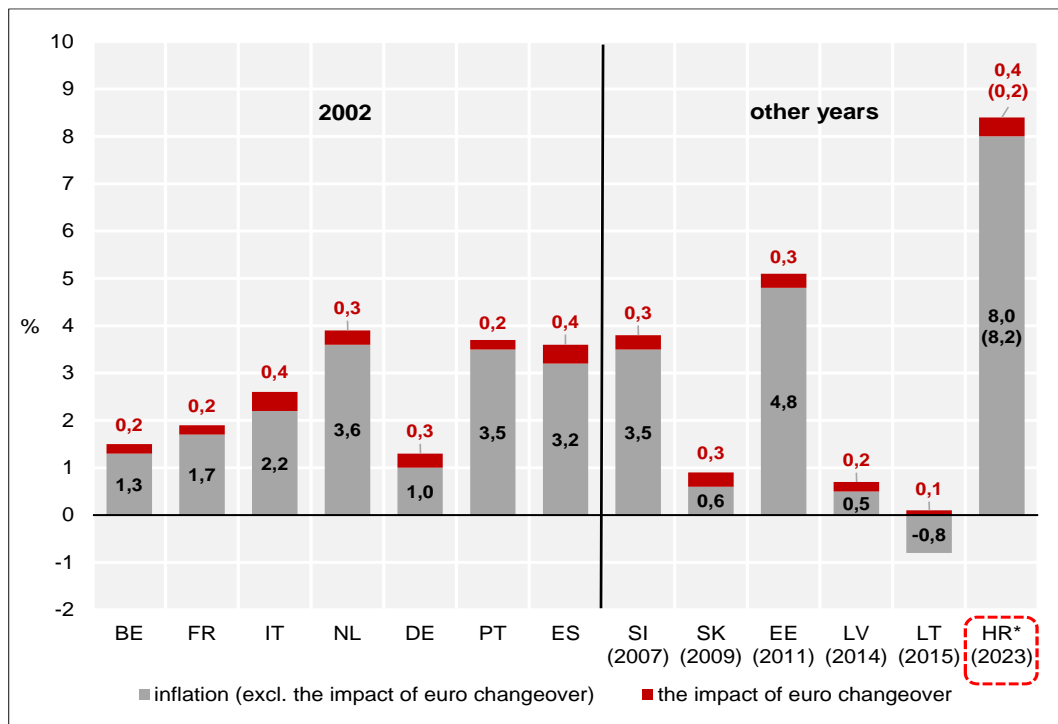
### Price levels of restaurants and hotels in Mediterranean countries



Note: The data refer to 2022.  
Sources: Eurostat; CNB calculations.

# Euro changeover had a relatively mild impact on services inflation

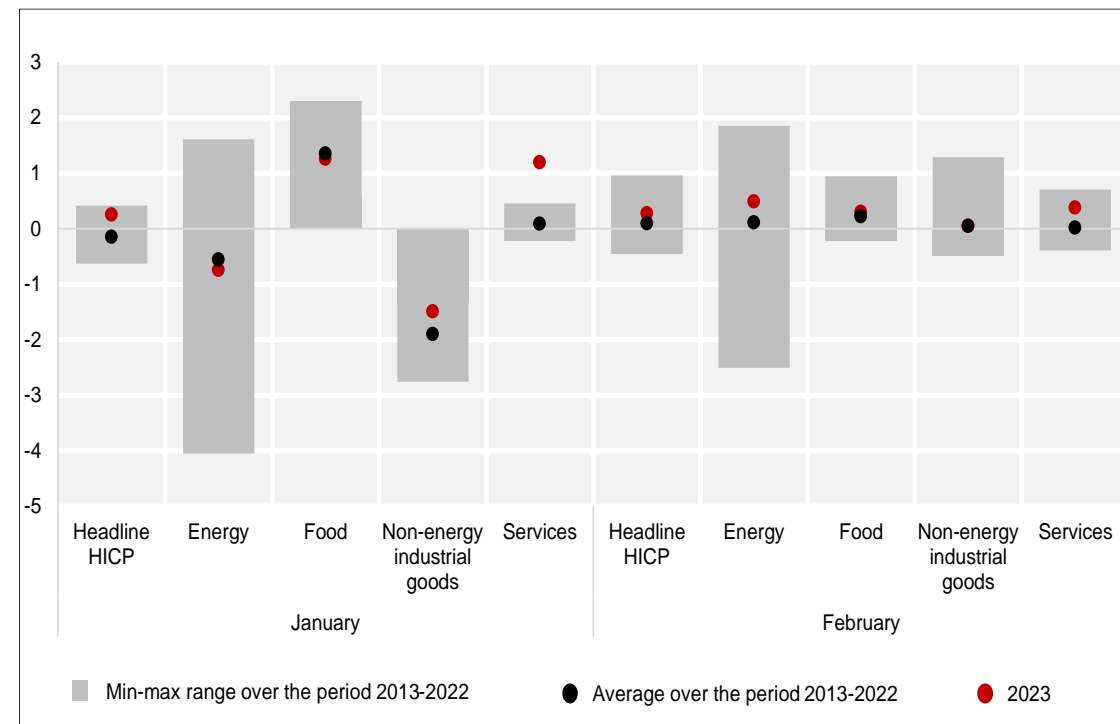
## The estimated impact of euro changeover



\*Inflation in Croatia refers to the CNB projection from December 2023. The impact of euro adoption is based on upper bound of the CNB/ECB assessment, while numbers in brackets indicate the upper bound of Eurostat's assessment.

Sources: Eurostat; CNB/ECB estimates; CNB projection

## Monthly inflation in Croatia in January and February, total HICP and the main components, %



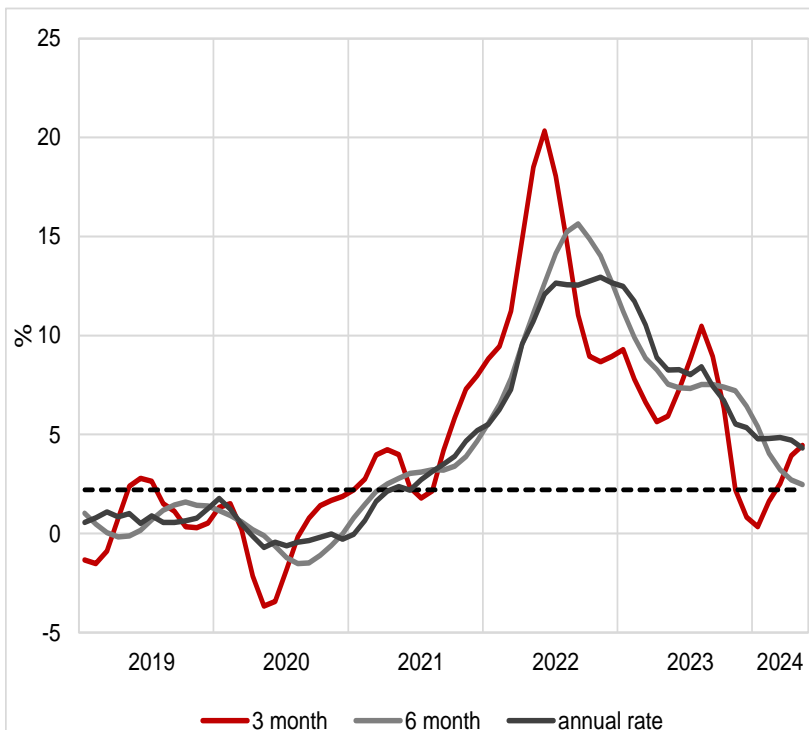
Source: Eurostat.



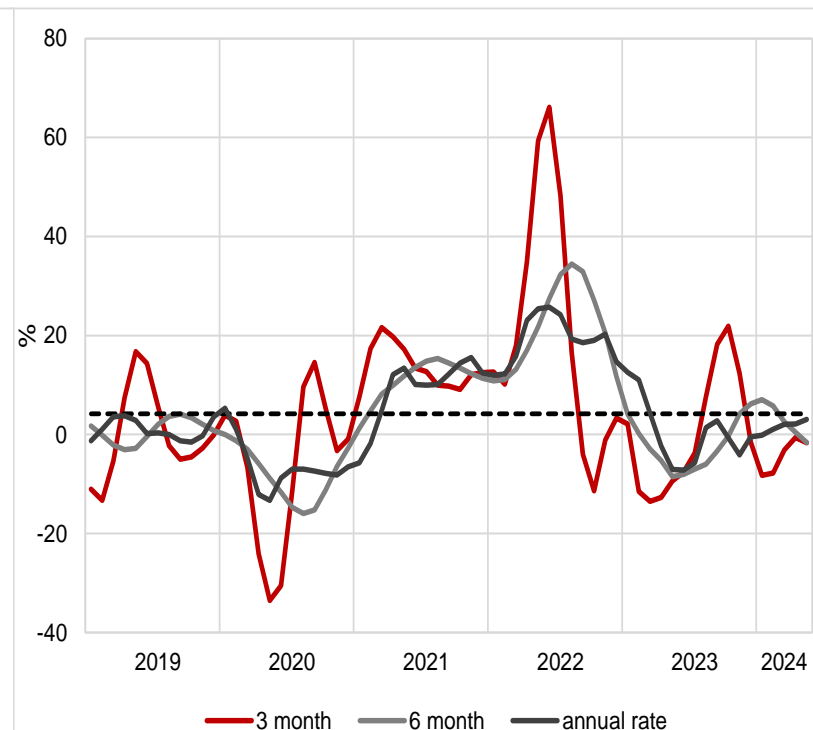
# Inflation momentums have returned to their long-term averages...

## Inflation in Croatia

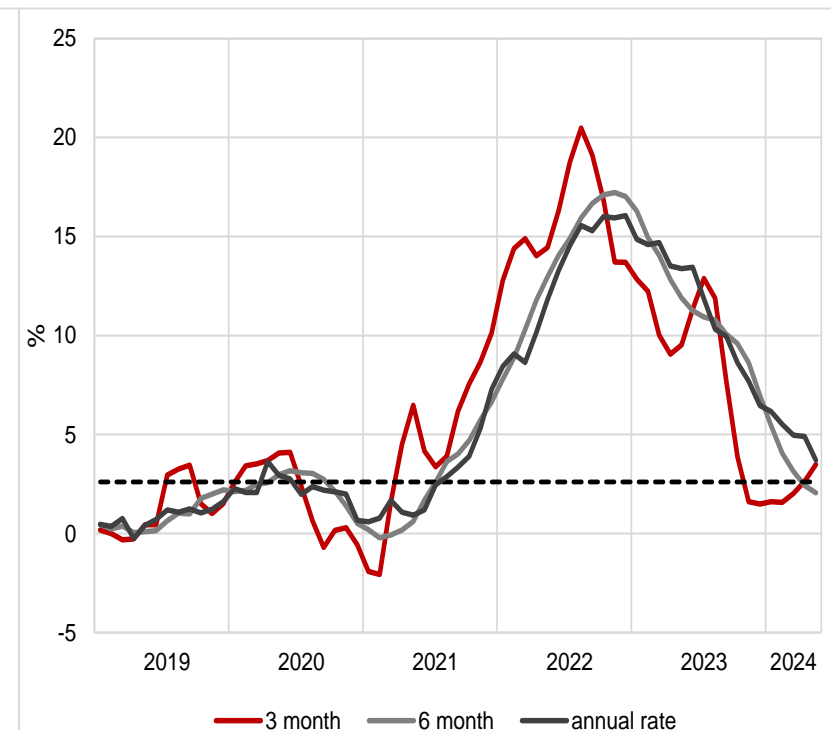
### Overall inflation (HICP)



### Energy



### Food



Notes: Momentum is defined as the quarterly rate of change on an annual level, calculated from the quarterly moving average of seasonally adjusted harmonised consumer price indices. The dashed line shows long-term average of momentum.  
Sources: Eurostat; CNB calculations.

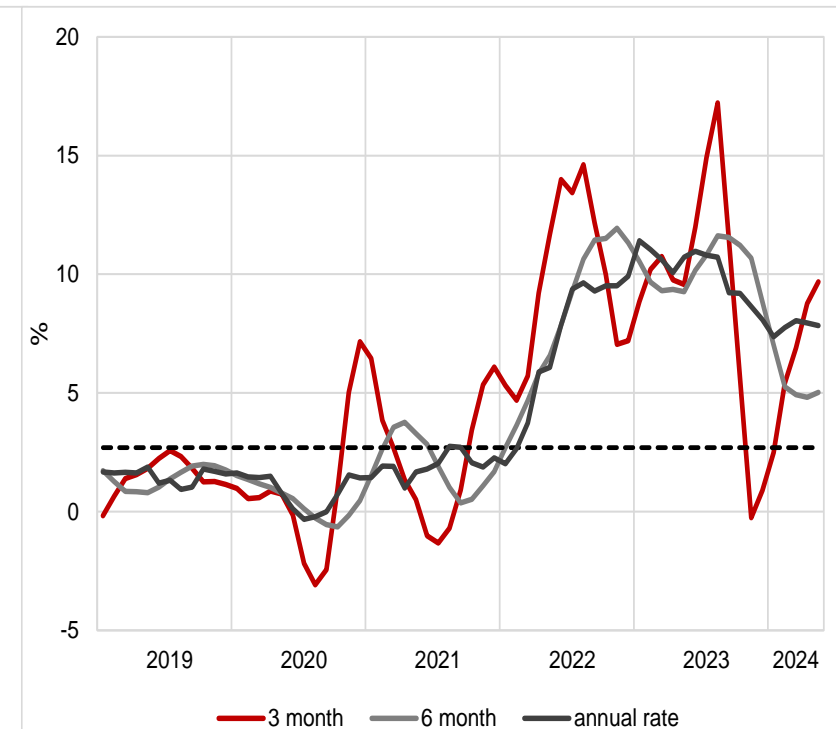
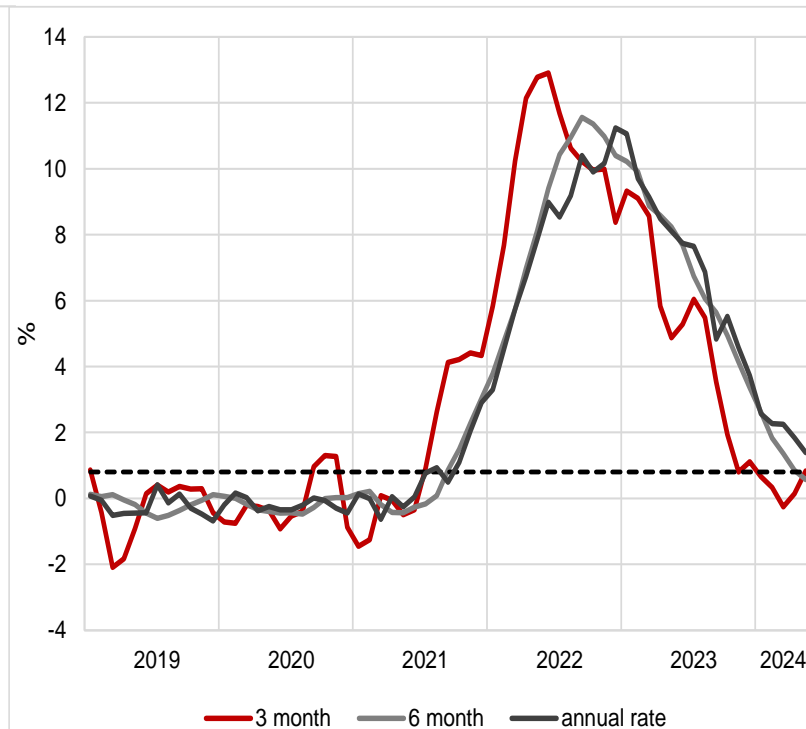
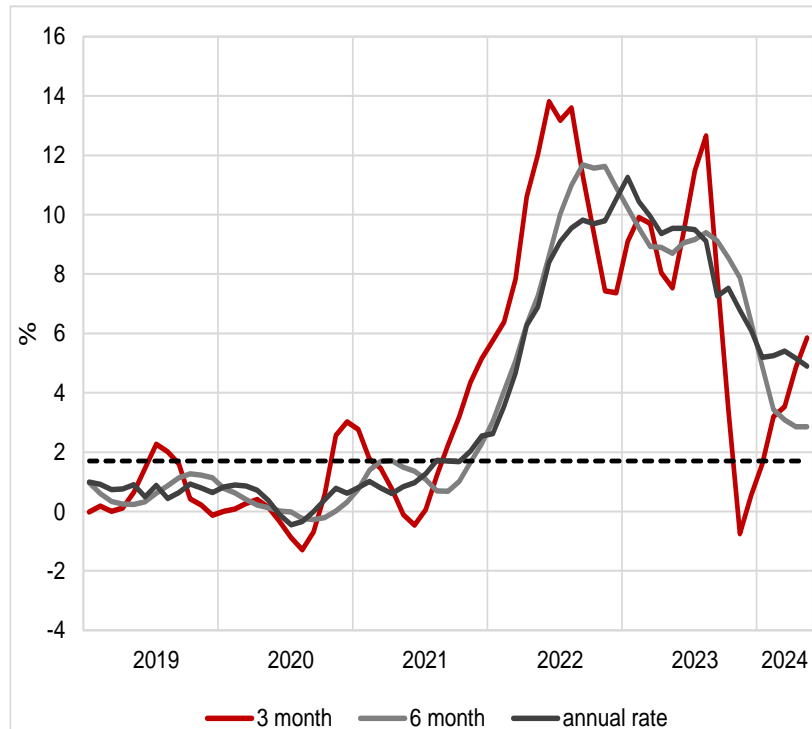
## ...with the exception of services momentum

### Inflation in Croatia

#### Core inflation

#### Non-energy industrial goods

#### Services

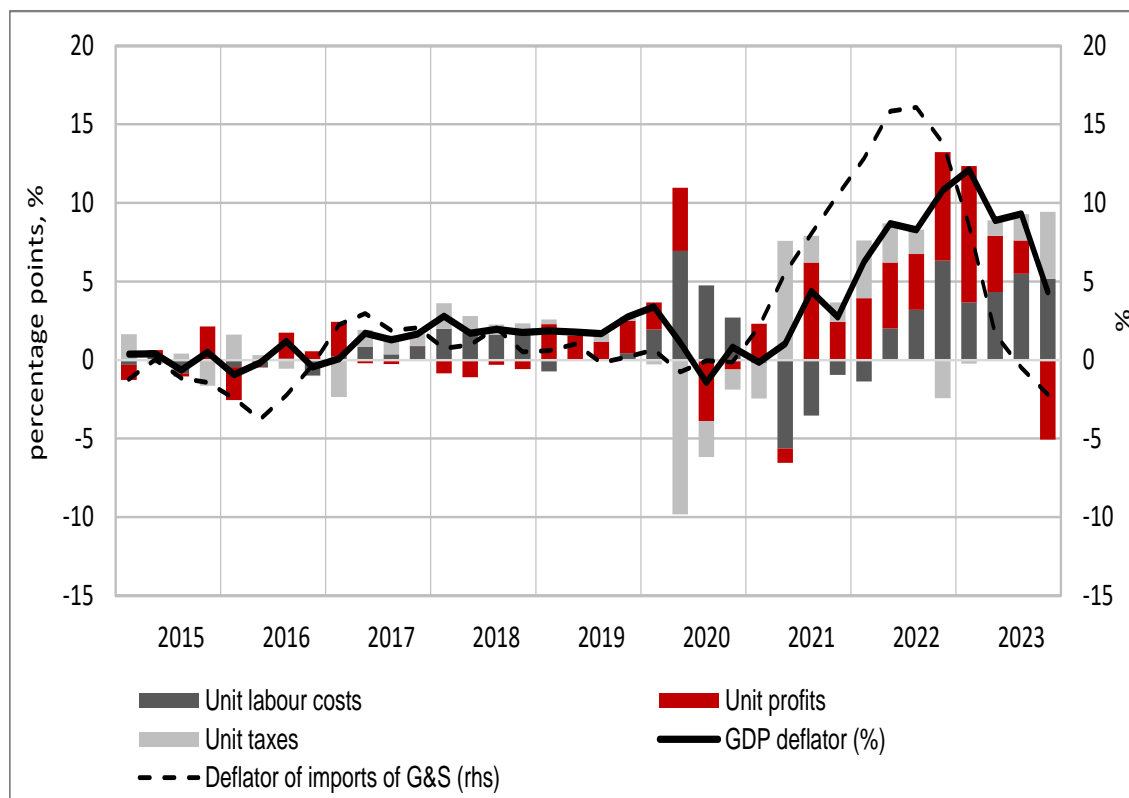


Notes: Momentum is defined as the quarterly rate of change on an annual level, calculated from the quarterly moving average of seasonally adjusted harmonised consumer price indices. The dashed line shows long-term average of momentum.  
Sources: Eurostat; CNB calculations.

# Decrease in unit profits and a reduction in import prices are somewhat mitigating inflationary pressures...

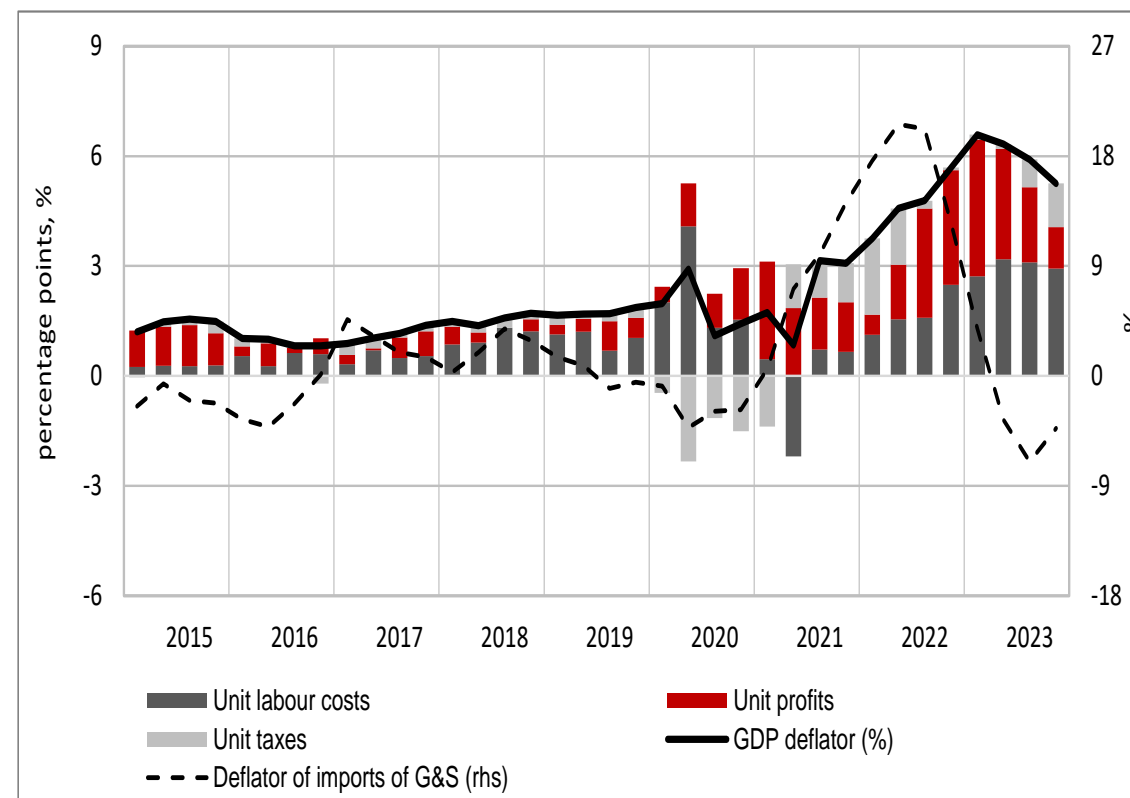
## Decomposition of GDP deflator

### Croatia



Sources: Eurostat; CNB calculations.

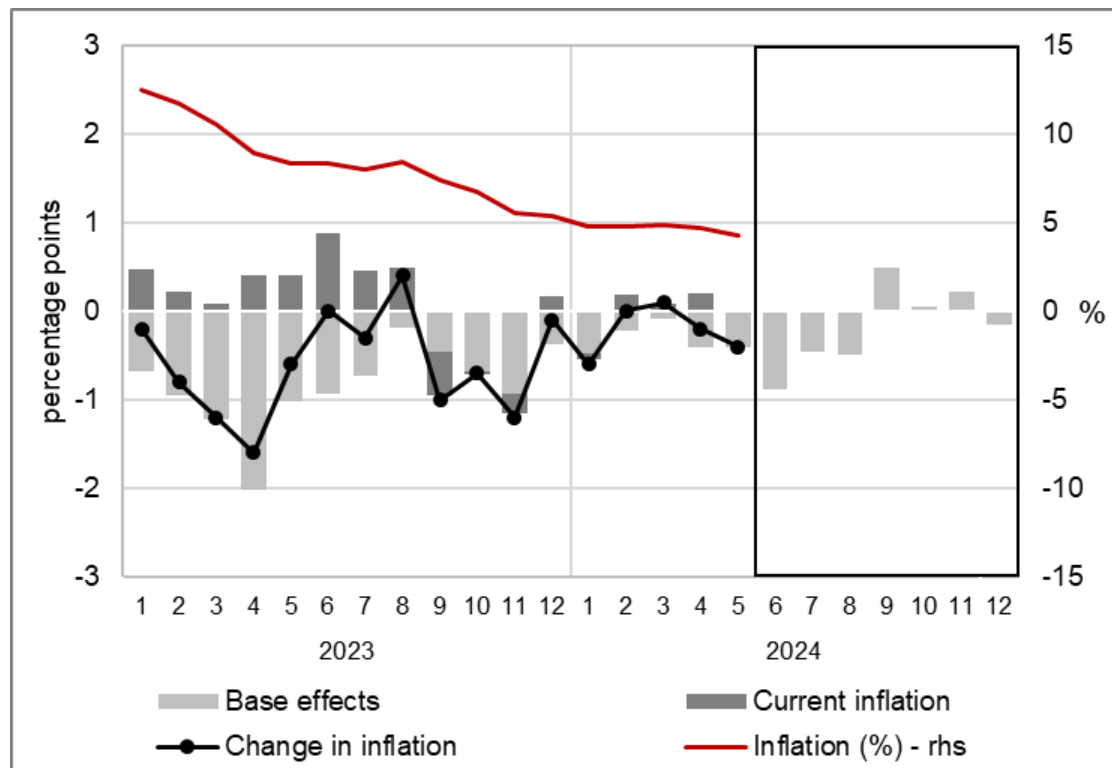
### Euro Area



Sources: Eurostat; CNB calculations

## ... while past inflation pressures have gradually washed-out of annual inflation rates ...

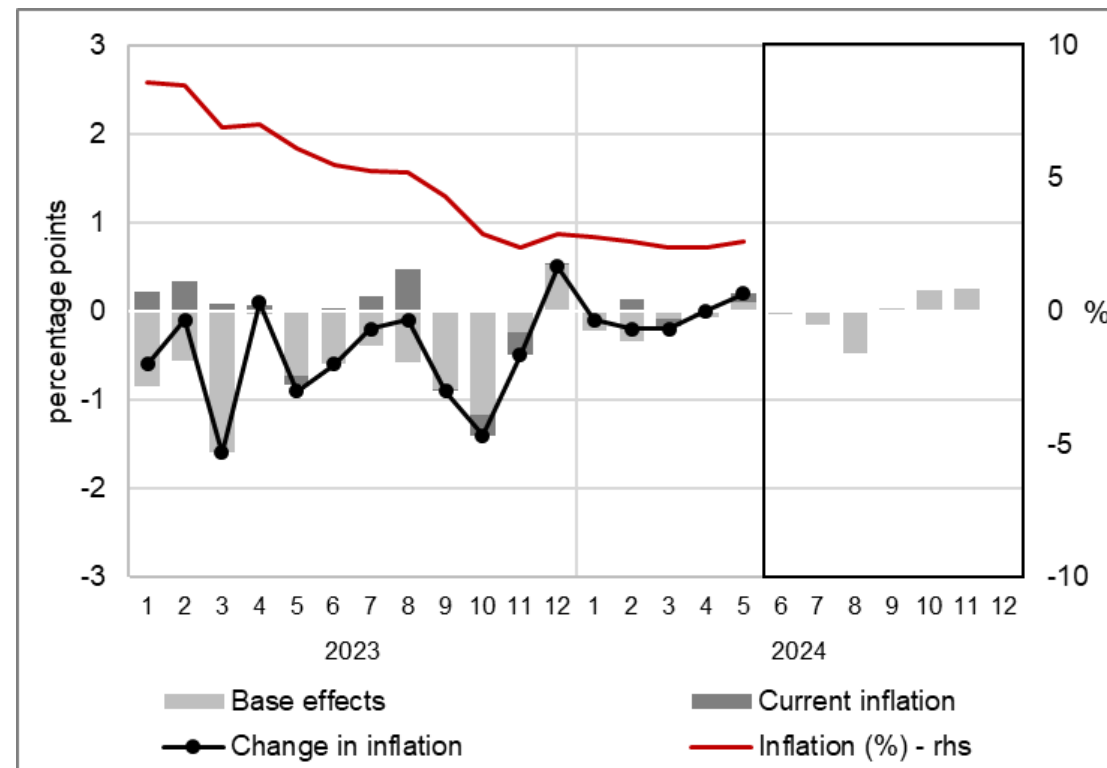
### Croatia



Note: Current inflation and base effects have been adjusted for normal developments, which are relatively stable and do not have a significant impact on annual inflation.

Sources: Eurostat; CNB calculations.

### Euro area

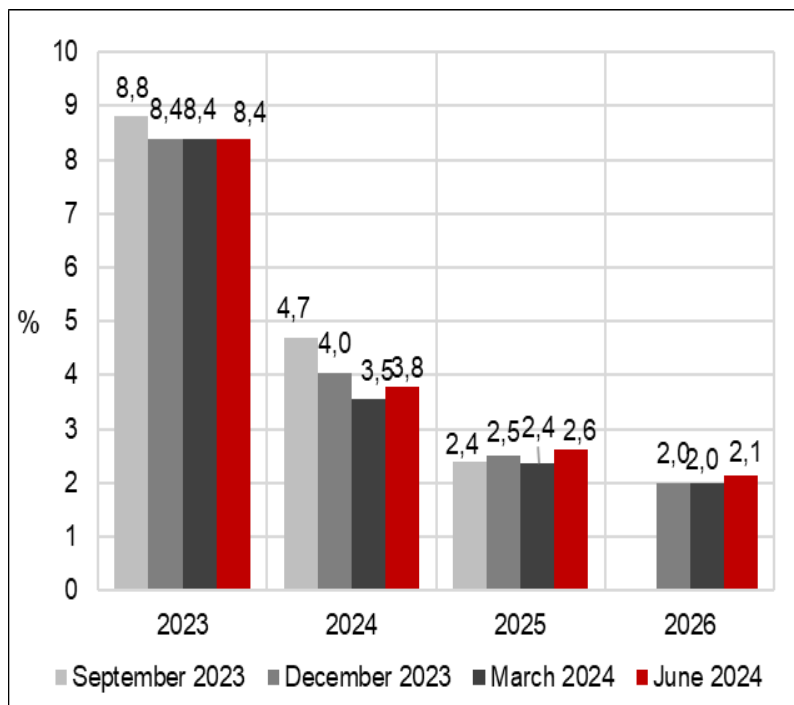


Note: Current inflation and base effects have been adjusted for normal developments, which are relatively stable and do not have a significant impact on annual inflation.

Sources: Eurostat; CNB calculations.

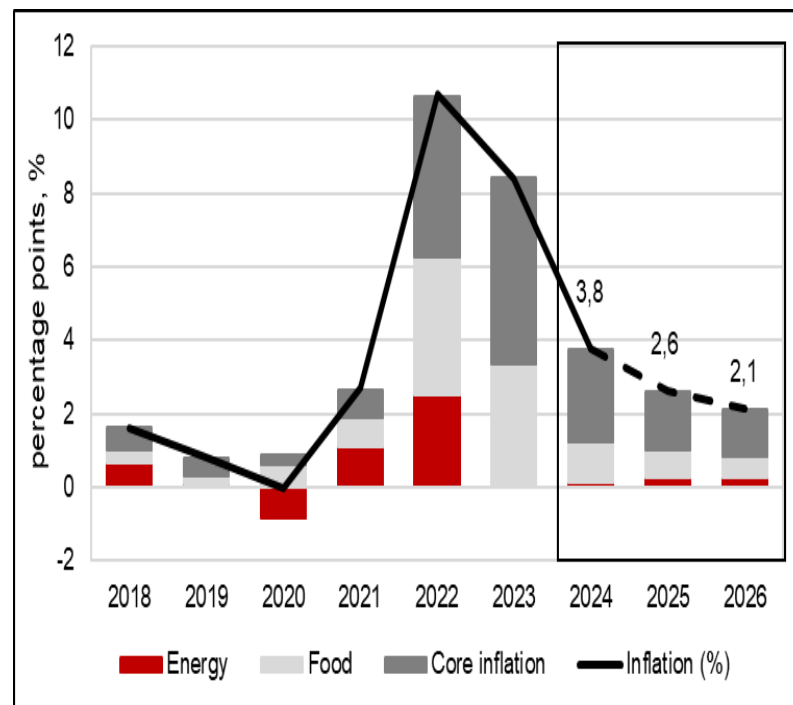
## ... facilitating return to a target over the medium term

### Inflation projections for Croatia



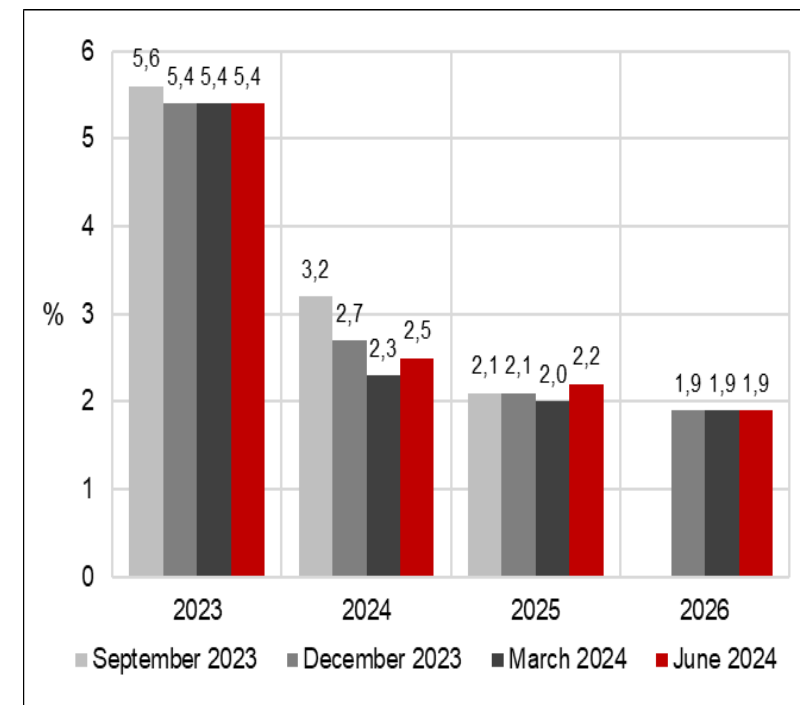
Sources: Eurostat; CNB.

### Inflation projections for Croatia, by components



Sources: Eurostat; CNB.

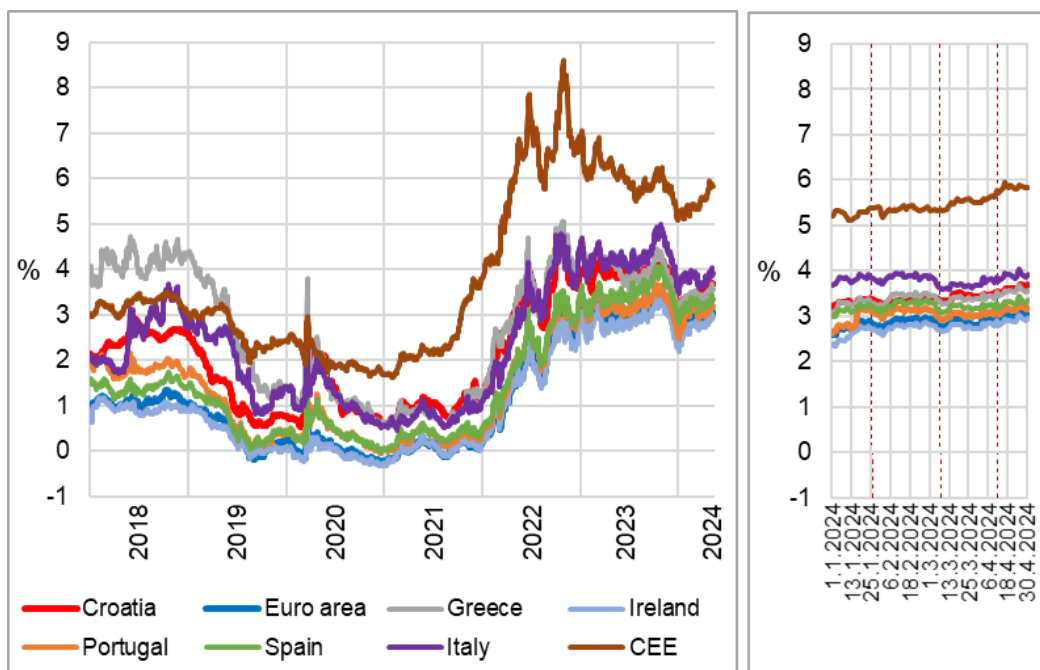
### Inflation projections for the Euro Area



Sources: Eurostat; ECB.

# Reduced country risk premium as the consequence of the introduction of the euro

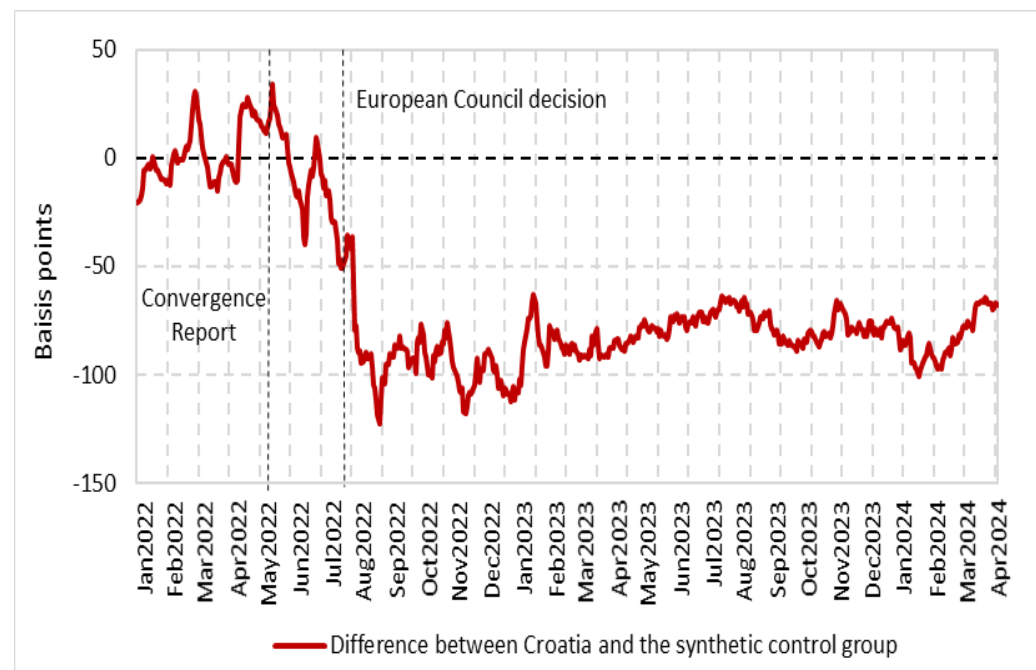
Yields on long-term government bonds with a remaining maturity of about 10 years



Note: CEE – Central and East European countries (Czechia, Hungary, Poland and Romania); yields for EA and CEE are weighted by the share in the GDP of the countries involved. Euro area does not include data for Estonia, Latvia, Luxembourg and Malta. Red dashed vertical lines indicate the meetings of the Governing Council of the ECB in January, March and April.

Source: Bloomberg; CNB calculations

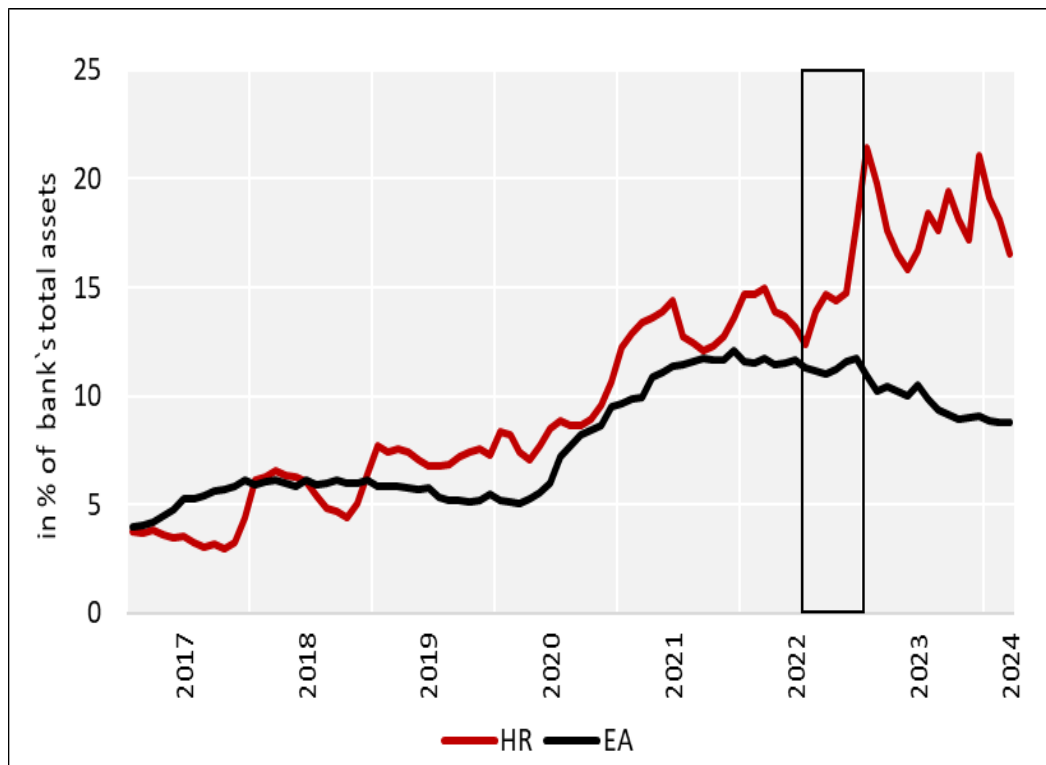
The difference in yields between the ten-year euro denominated Croatian government bond compared to the synthetic control group of countries



Source: CNB calculations.

# Adjustment of monetary policy instruments in the run-up to the euro increased excess liquidity to one of the highest levels in the EA

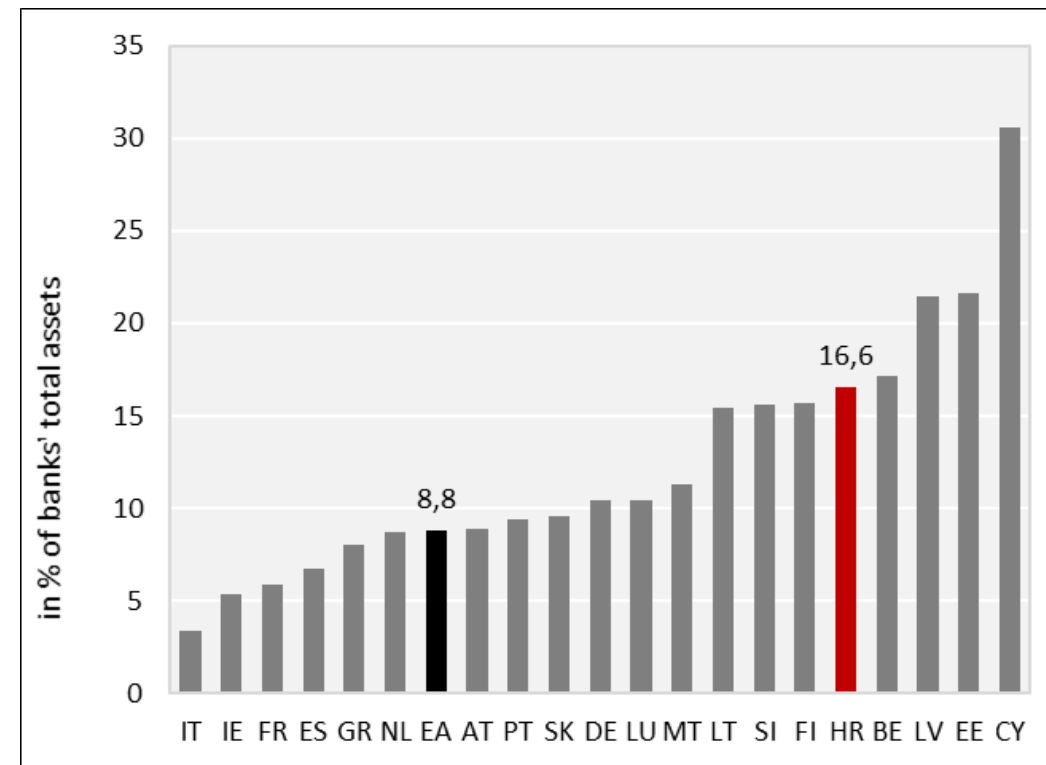
## Excess liquidity in HR and EA



Note: Marked part from August until December 2022 indicates the period of liquidity release.

Source: ECB.

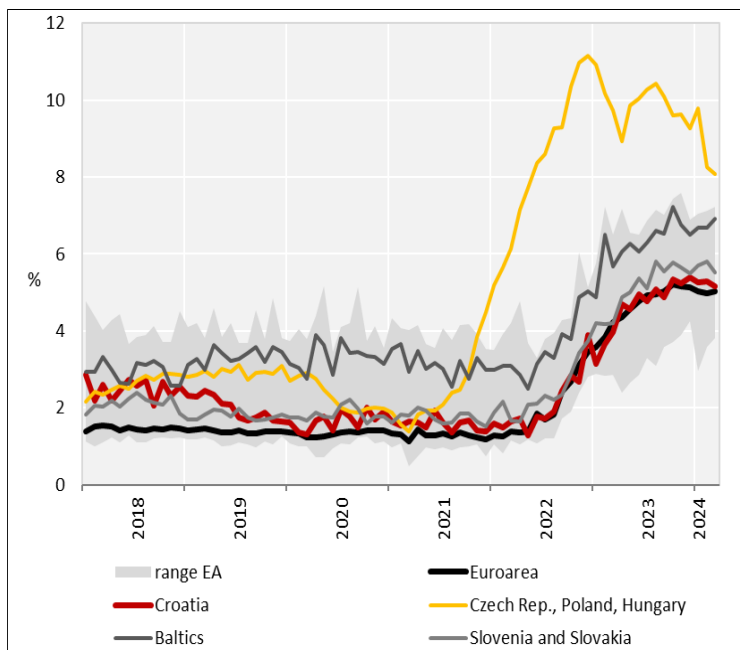
## Excess liquidity in the banking system, March 2024



Source: ECB.

# As a consequence, monetary policy transmission to lending interest rates in Croatia was somewhat muted

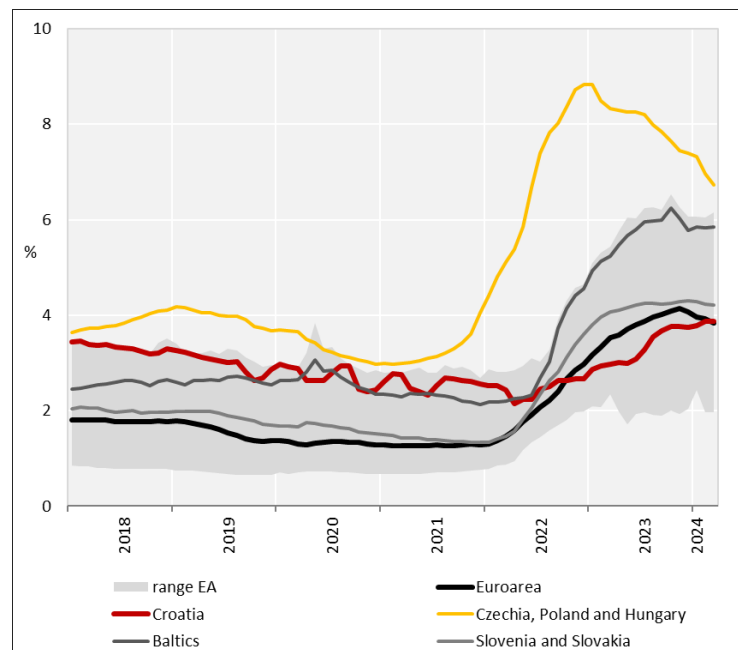
## Interest rates on loans to NFC



Note: A strong drop in the interest rate in Hungary (April 2023) due to a large amount of new business (in the category of initial fixation period from 1 to 5 years, over EUR 1 million) which were approved with a lower than average interest rate.

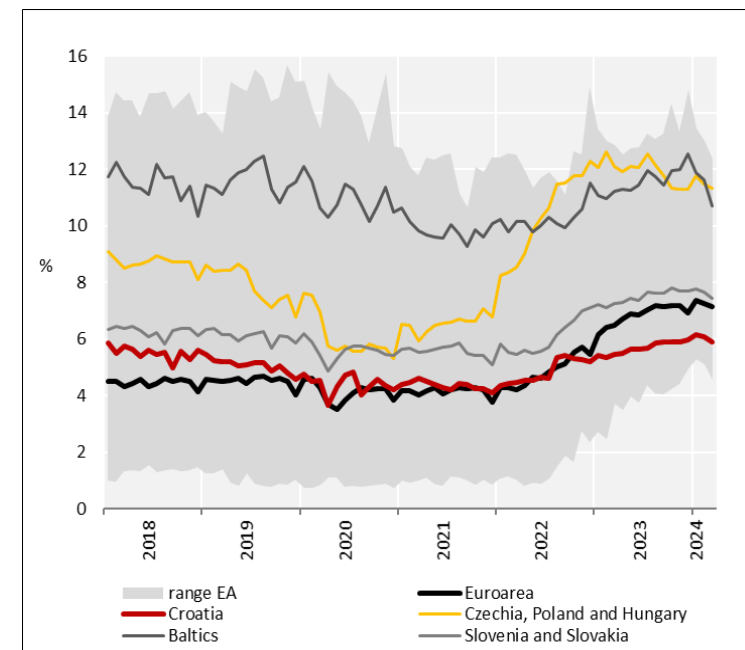
Source: ECB.

## Interest rates on housing loans



Source: ECB.

## Interest rates on consumer credit and other loans to households

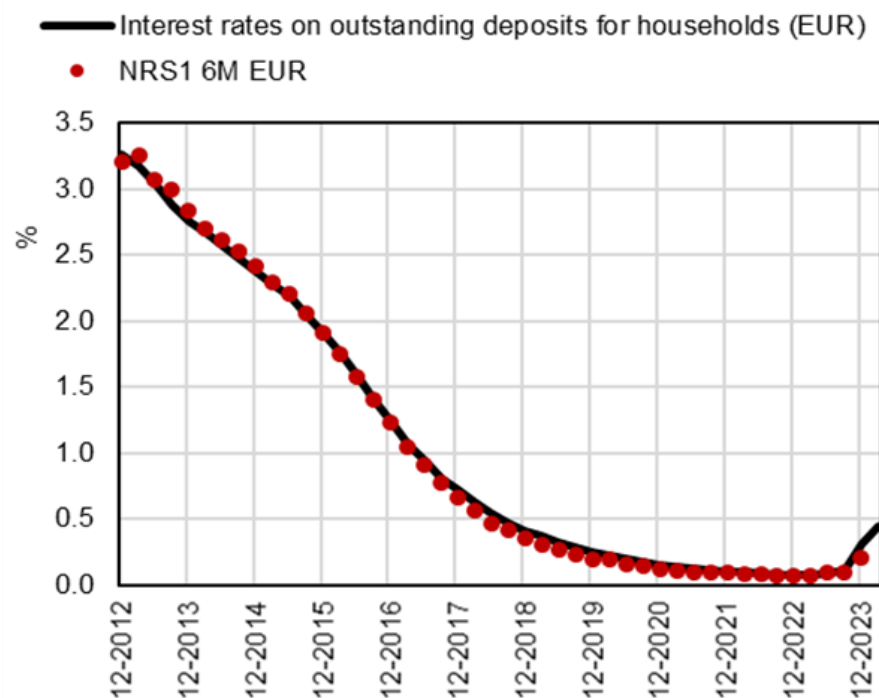


Source: ECB.



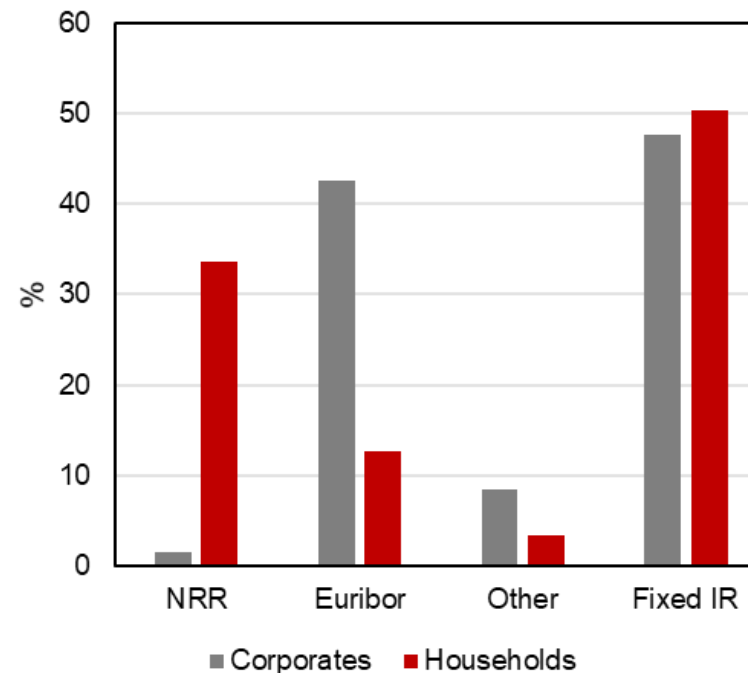
# Interest rate structure determines the transmission of tighter conditions

National reference rate (NRR) reflects cost of funding



Source: CNB.

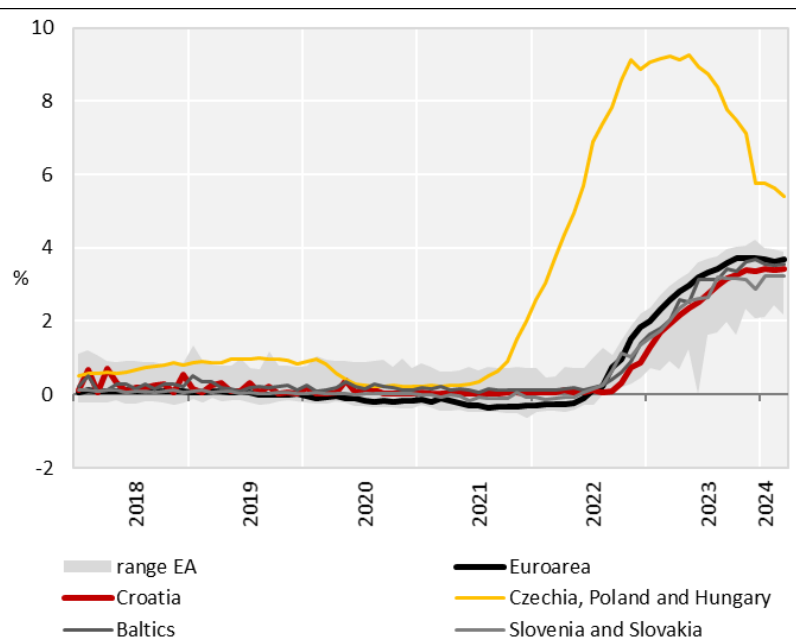
Distribution of loans by interest rate benchmark, March 2024



Source: CNB.

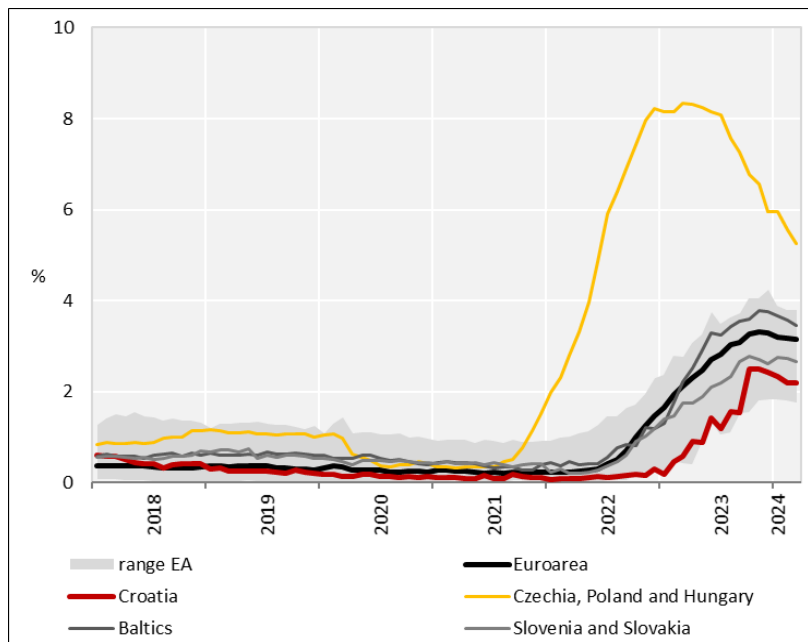
# Transmission to deposit rates was also somewhat muted

## Interest rates on NFC`s deposits



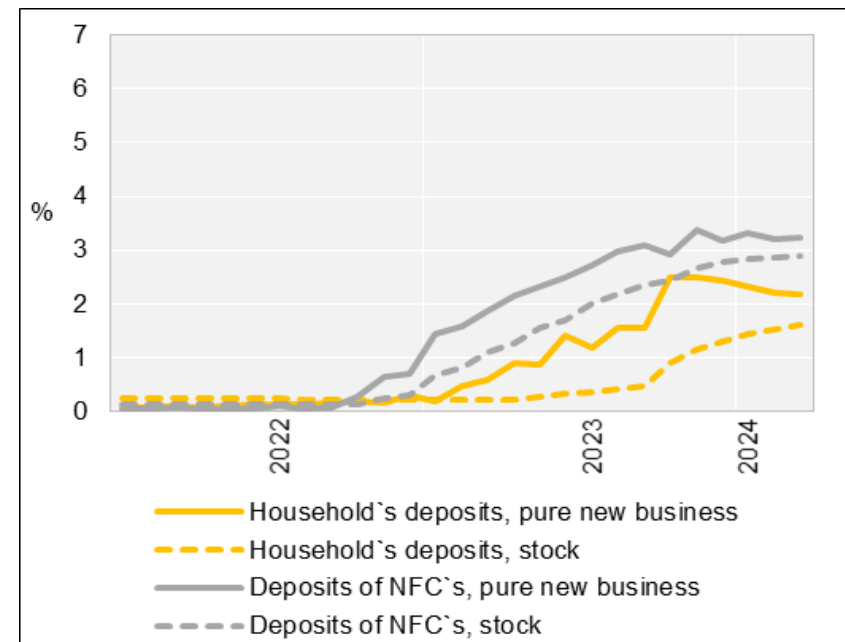
Note: Data refer to new businesses.  
Source: ECB.

## Interest rates on household`s deposits



Note: Data refer to new businesses except for Croatia where data for pure new businesses is used.  
Source: ECB.

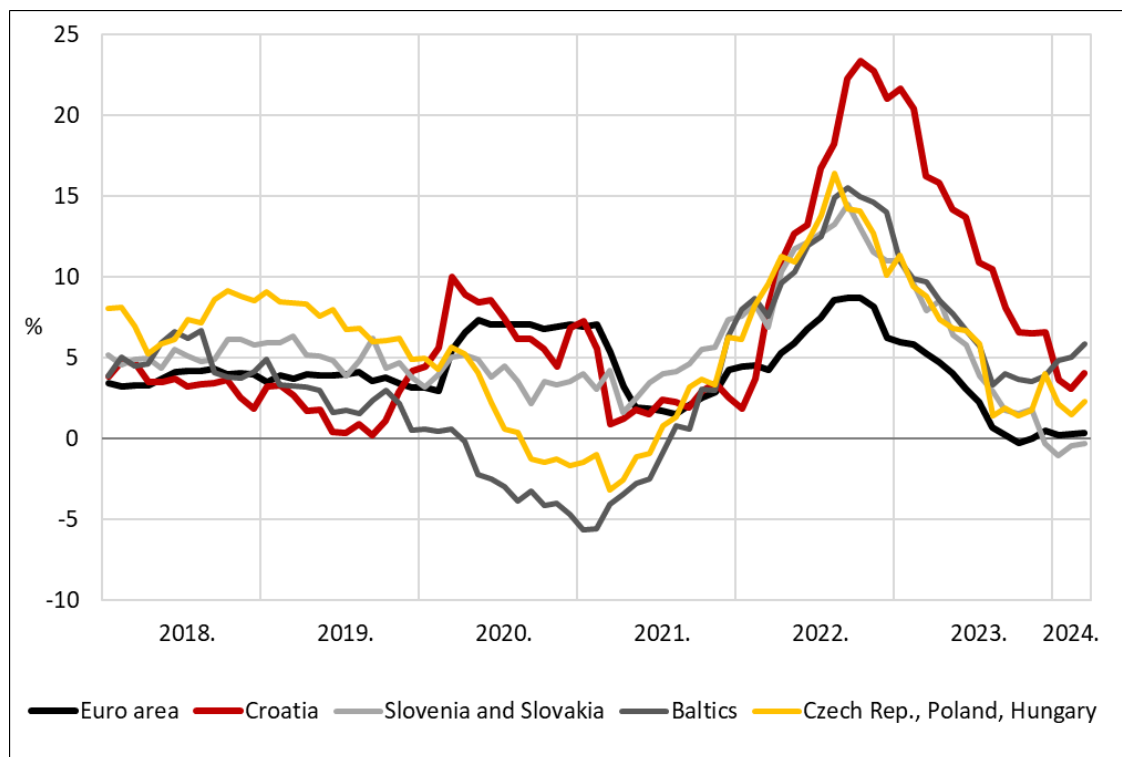
## Interest rates on *pure new deposits* and *deposit stocks* of households and NFC`s



Note: Data until December 2022 refer to loans and deposits in kuna and currencies indexed to the kuna and euros and currencies indexed to the euro, and from January 2023 to loans and deposits in euros and currencies indexed to the euro. The data refer to loans contracted for the first time, i.e. term deposits for the first time, and to loan and deposit balances, whereby term deposits up to 1 month are excluded.  
Source: CNB.

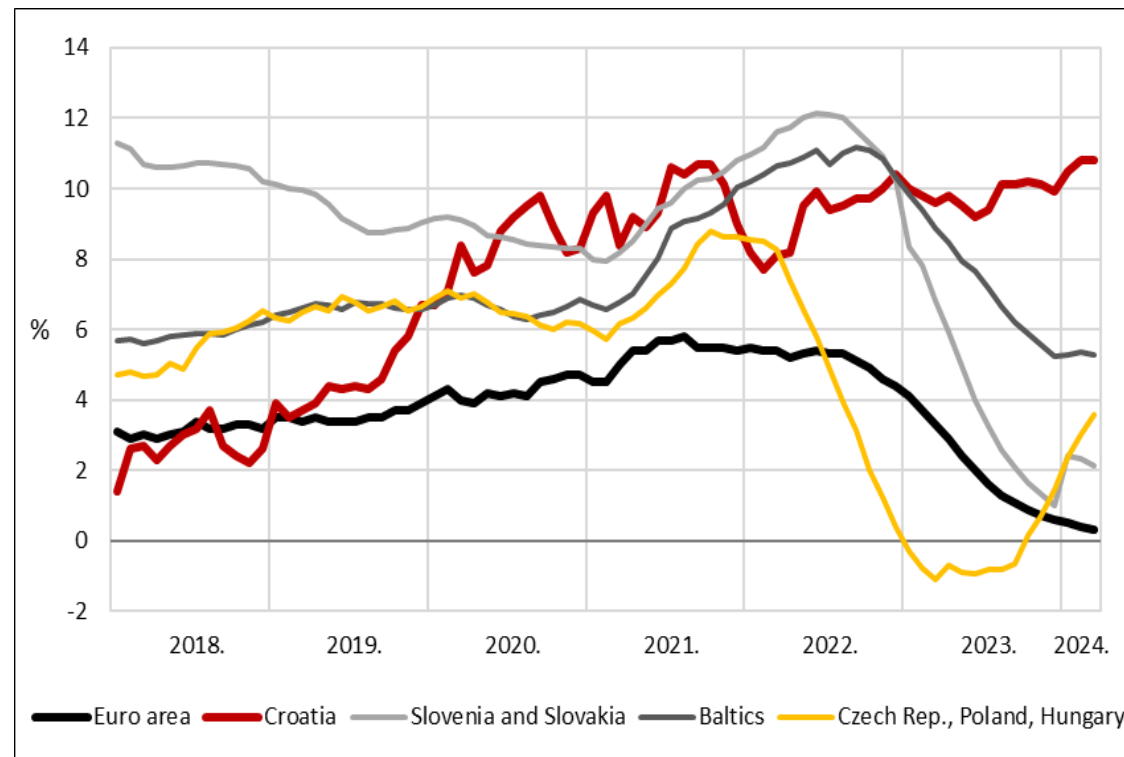
# Lending to the corporate sector has gradually slowed down, while household lending is still strong

## Loans to NFC`s



Source: ECB.

## Housing loans to households



Source: ECB.

## Key messages

- Real economic growth significantly strengthened, supported also by euro introduction
- Labor demand strong, with unemployment at historical lows
- Inflation decreased significantly from peaks recorded at the end of 2022
- Services inflation still high, mainly due to strong wage growth, strong demand for tourism and convergence of price levels in tourism-related services
- After the Euro introduction, Croatia benefits in terms of lower risk-premia, while monetary transmission effects on interest rates somewhat muted due to the high excess liquidity



**Thank you very much for your attention!**