



NARODOWY
BANK POLSKI

Economic Analysis and Research Department

Inflation and economic growth projection of Narodowy Bank Polski based on the NECMOD model

Warsaw / 14th November 2022





Outline:

Projection 2022 – 2025

- Economic conditions abroad
- Economic perspectives for Poland
- Inflation

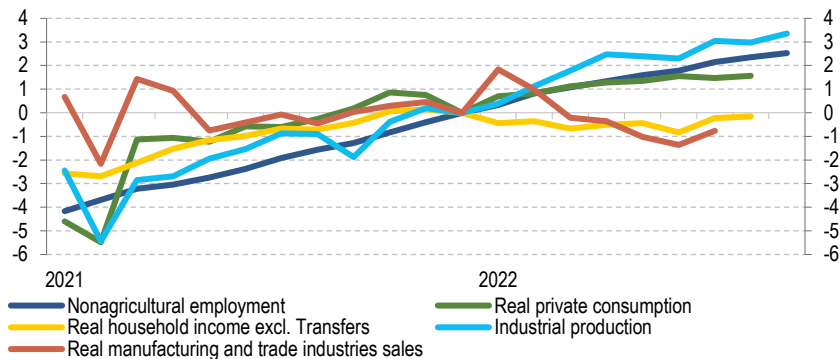
Uncertainty

Projection 2022-2025

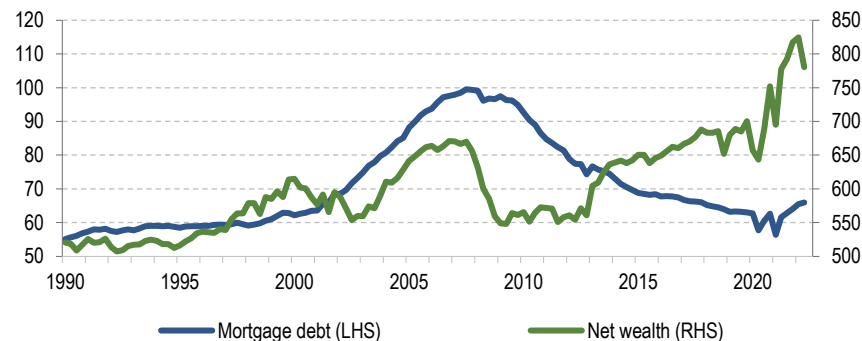
Economic conditions abroad

United States: in 2023 GDP growth will slow down considerably due to fiscal and monetary tightening, weakening of the housing activity and high inflation

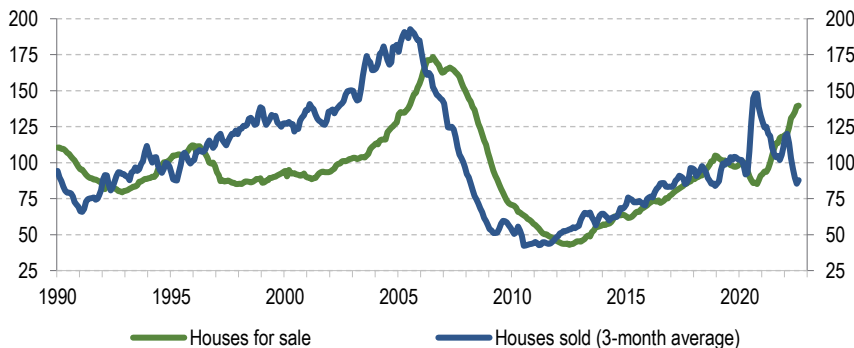
Deviation of selected macroeconomic indices from the 2021 M12 level (%)



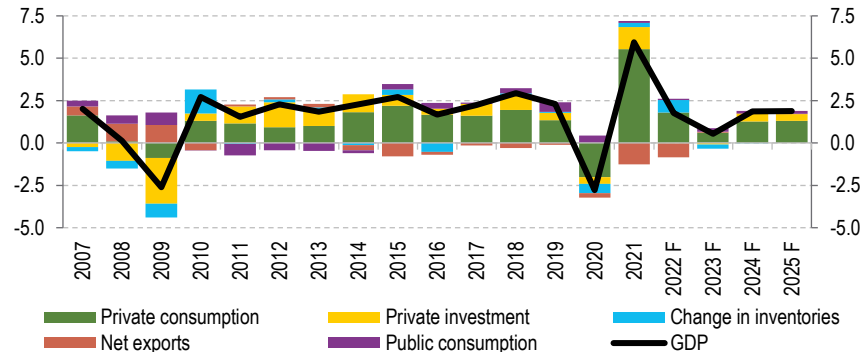
Mortgage debt and households' net wealth (% of disposable income)



Sales of single family houses on the primary market (2019 = 100)



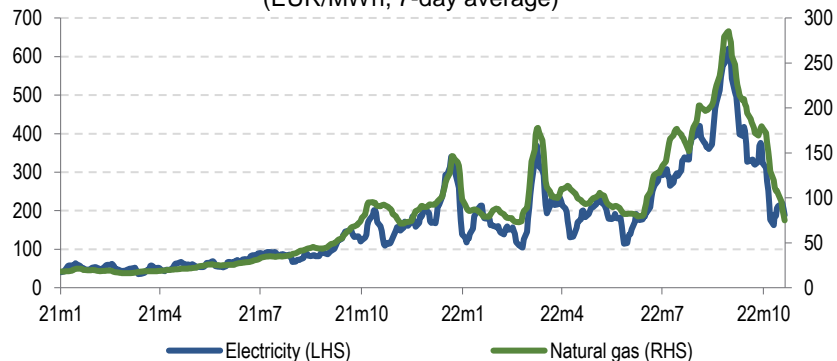
Real GDP growth decomposition (% and percentage points)



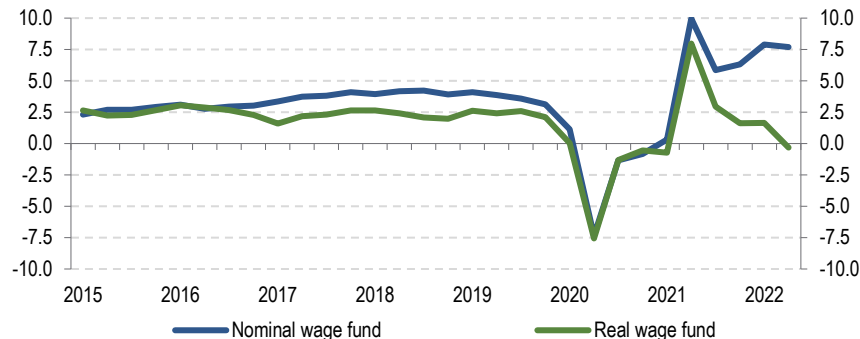
Source: BLS, BEA, FRB, Census, NBP.

Euro area: the annual growth rate in 2023 will be close to zero mainly due to high energy prices limiting the consumer spending and activity in the industry

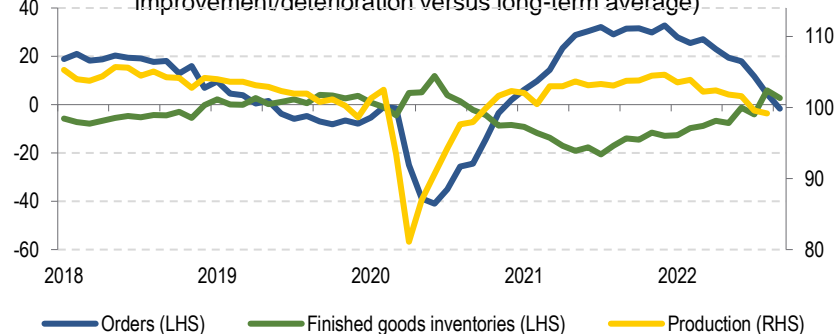
Day-ahead electricity prices and natural gas prices in Germany (EUR/MWh, 7-day average)



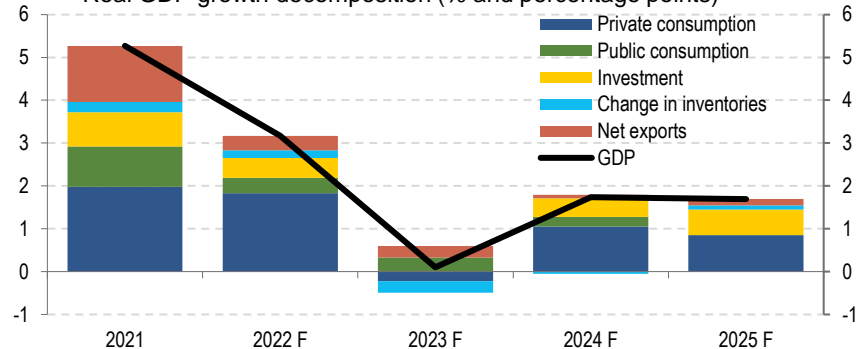
Nominal and real wage fund in the euro area (% y/y)



Energy-intensive industries in the euro area - production (pts, 2019 Q4 = 100), orders and inventories of finished products (pts, balance of responses improvement/deterioration versus long-term average)



Real GDP growth decomposition (% and percentage points)



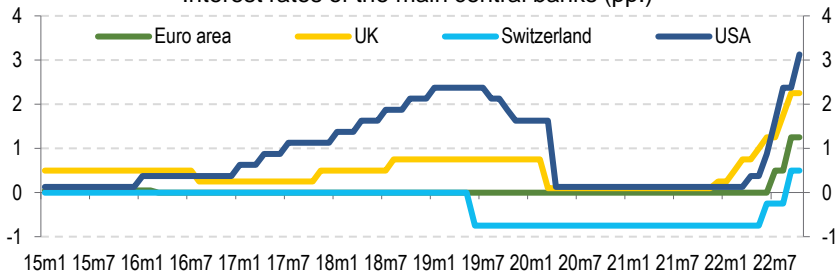
The outlook for global activity has deteriorated amid high commodity prices and inflation as well as rising financing costs

GDP growth in the main economies – NBP forecast (%)

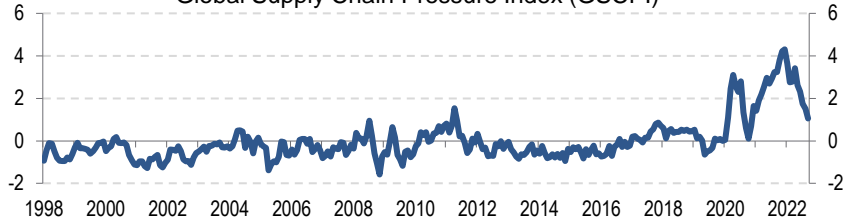
	2021	2022	2023	2024	2025
Euro area	5.3 (5.3)	3.2 (2.9)	0.1 (1.1)	1.7 (1.8)	1.7
Germany	2.6 (2.9)	1.6 (1.5)	-0.3 (0.8)	2.1 (2.0)	1.9
UK	7.5 (7.4)	4.3 (3.4)	-0.4 (0.6)	1.2 (1.5)	1.5
USA	5.9 (5.7)	1.8 (2.4)	0.5 (1.7)	1.9 (1.8)	1.9
China	8.1 (8.1)	2.9 (4.0)	4.5 (5.2)	4.6 (4.7)	4.2

Values from the July projection are given in brackets. Indicators with values higher than in the July projection are marked **green**, and indicators with lower values are marked **red**.

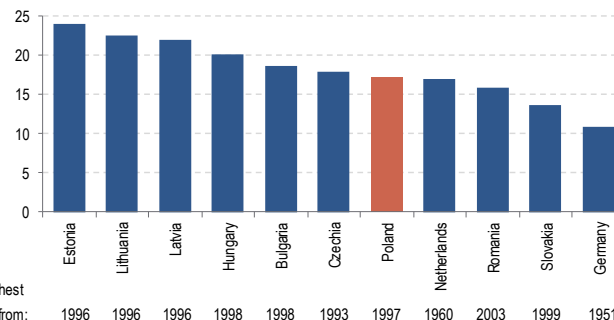
Interest rates of the main central banks (pp.)



Global Supply Chain Pressure Index (GSCPI)



Inflation in selected European economies in September 2022 (% y/y; HICP for euro area countries; CPI for Bulgaria, Czechia, Poland and Romania)



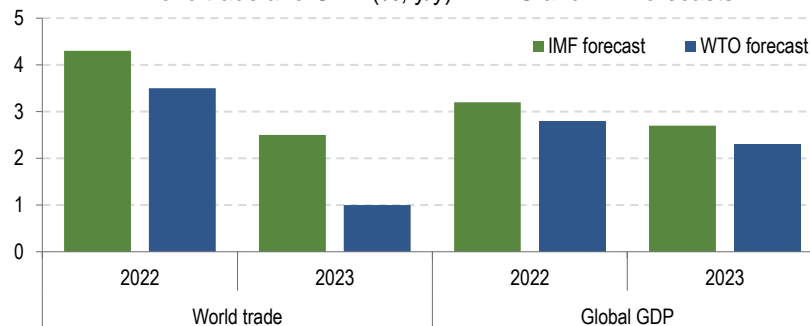
The highest

CPI up from:

1996 1996 1996 1998 1998 1993 1997 1960 2003 1999 1951

Due to the limited length of the HICP time series, CPI inflation was used to compare the maximum historical level of inflation for all countries.

World trade and GDP (% y/y) – WTO and IMF forecasts





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Uncertainty

Projection 2022-2025

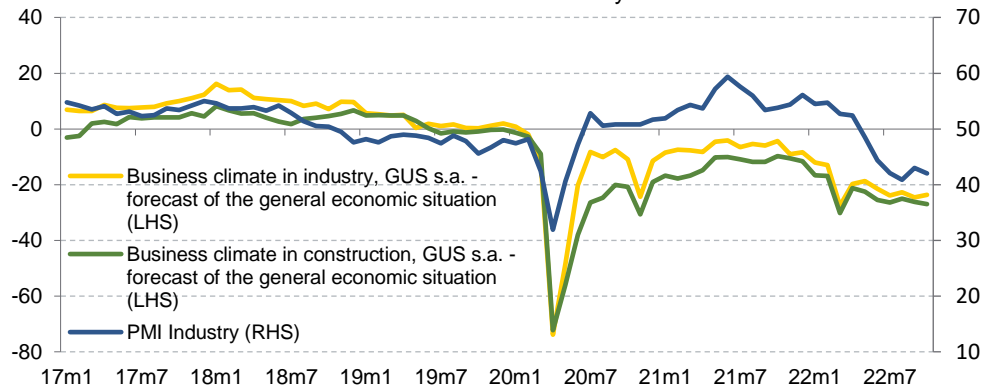
Economic perspectives for Poland

The current data indicate a slowdown in y/y GDP growth in 2022 Q3.

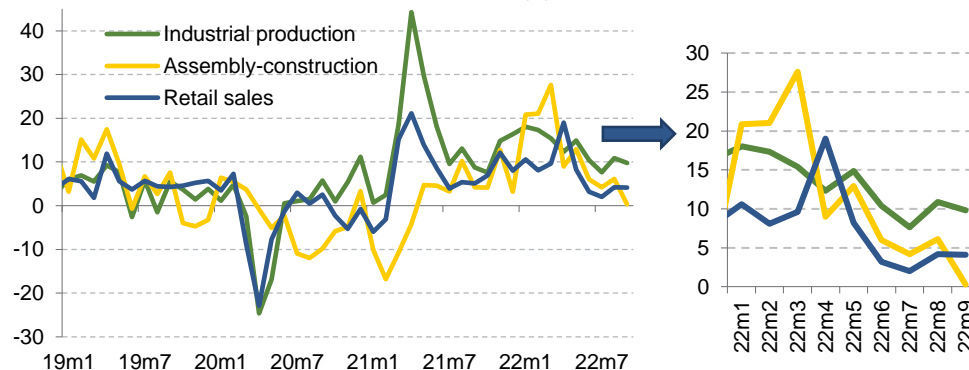
	22q2		22q3	
GDP (y/y, %)	5.5	(5.5)	3.0	(3.3)
Domestic demand (y/y, %)	7.2	(6.6)	1.8	(2.4)
Household consumption (y/y, %)	6.4	(6.0)	2.1	(2.1)
Public consumption (y/y, %)	0.8	(-3.8)	1.0	(-0.8)
Gross fixed capital form. (y/y, %)	7.1	(4.8)	4.4	(2.5)
Change in inventories contrib. (pp.)	1.9	(2.8)	-0.4	(0.8)
Net exports contribution (pp.)	-1.2	(-0.6)	1.3	(1.0)
Exports (y/y, %)	5.2	(-0.1)	4.0	(0.3)
Imports (y/y, %)	7.8	(1.0)	1.9	(-1.6)

Values from the July projection are given in brackets (seasonally adjusted). Indicators with values higher than in the July projection are marked **green**, and indicators with lower values are marked **red**.

Business climate indicators in industry and construction

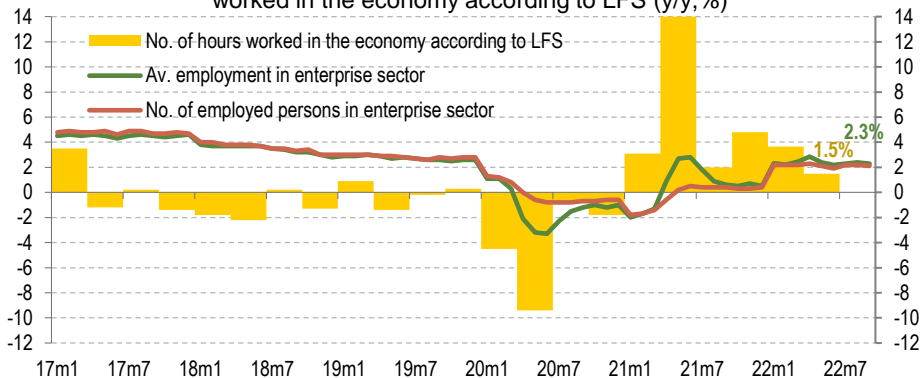


Growth rates of industrial production, assembly-construction and retail sales (constant prices, y/y, %)

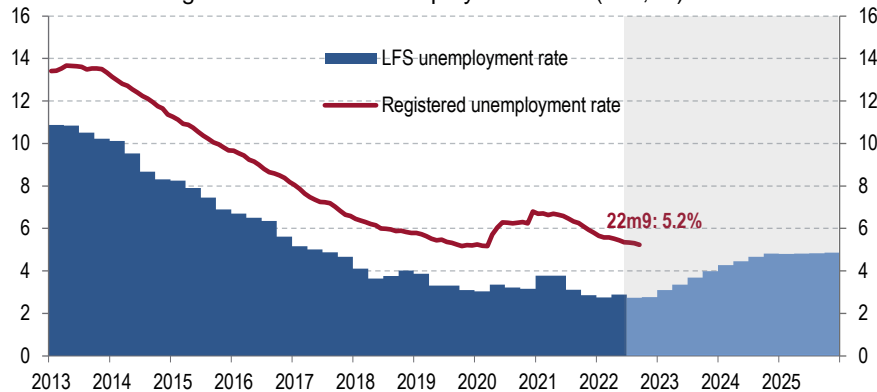


Conditions on the labour market still favourable. High nominal wage growth and moderate increase in the unemployment rate throughout the projection horizon.

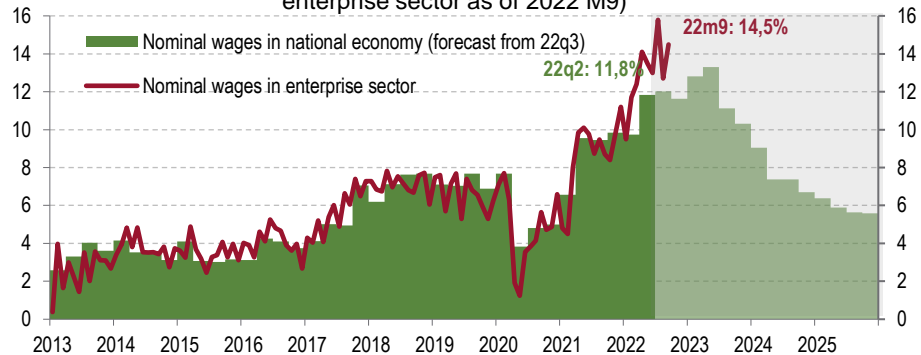
No. of employed persons, average employment in enterprise sector and hours worked in the economy according to LFS (y/y,%)



Registered and LFS unemployment rates (s.a., %)



Nominal wage growth rate (%), y/y, national economy as of 2022 Q3, data from enterprise sector as of 2022 M9

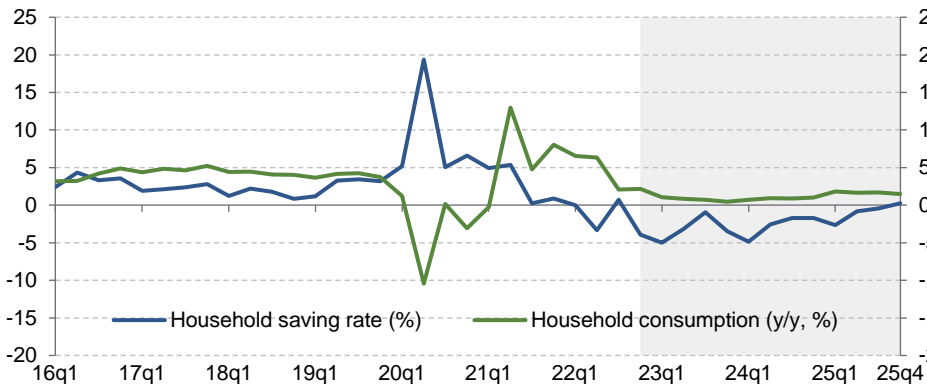


Average rating of selected factors' importance in the decision-making about price hikes in the enterprise (answer options on a scale of 0-3)

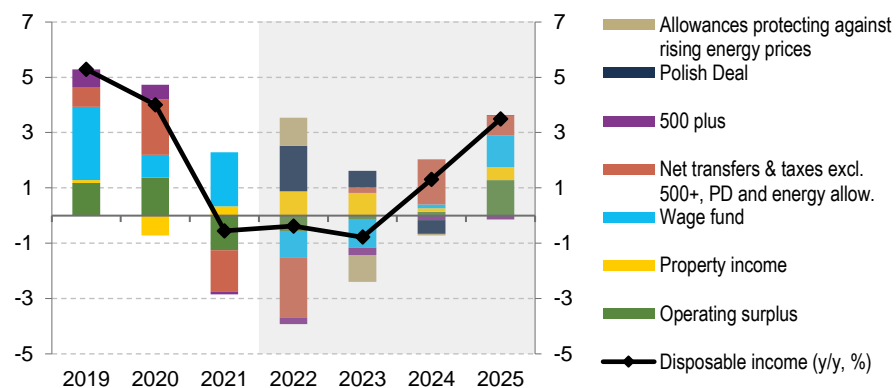


Household consumption growth is declining as compared to high values recorded in 2021 and the first half of 2022.

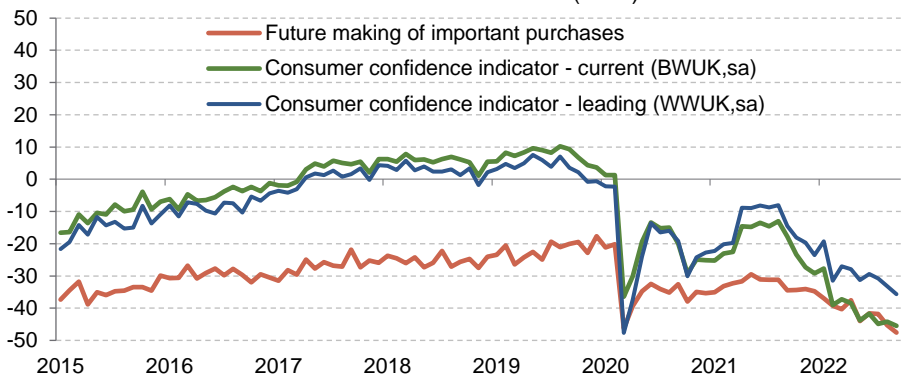
Household voluntary saving rate and household consumption forecast



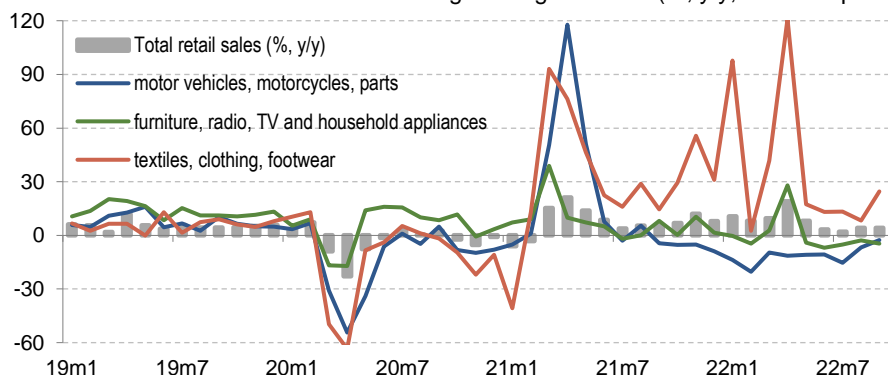
Decomposition of disposable income (constant prices, y/y, %)



Consumer confidence indices (GUS)

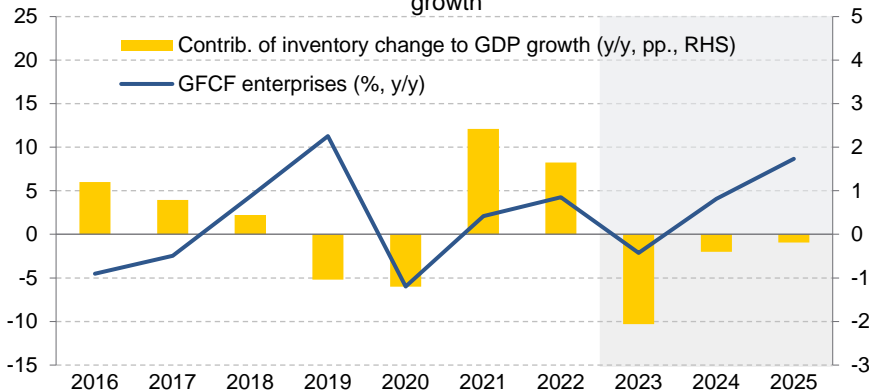


Retail sales: durable and semi-durable goods against total (% y/y, constant prices)

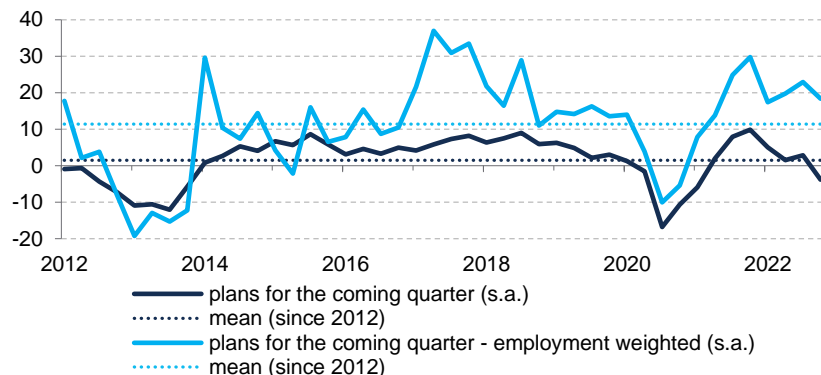


Hightened investment growth in 2022 Q2 in non-financial corporations sector, however short-term outlook deteriorates. The projection indicates a decline in corporate investment in 2023.

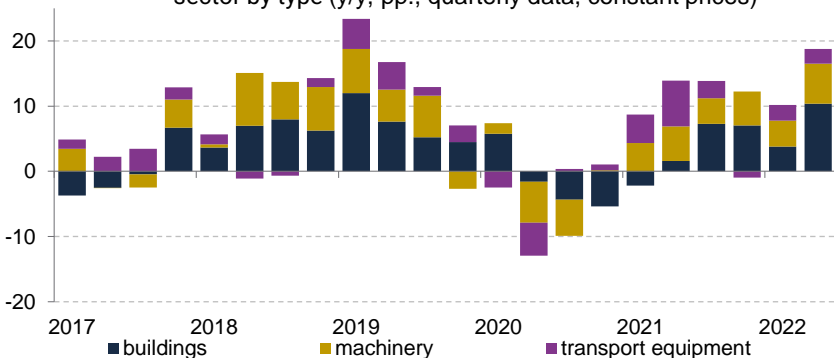
Investment growth and the contribution of change in inventories to GDP growth



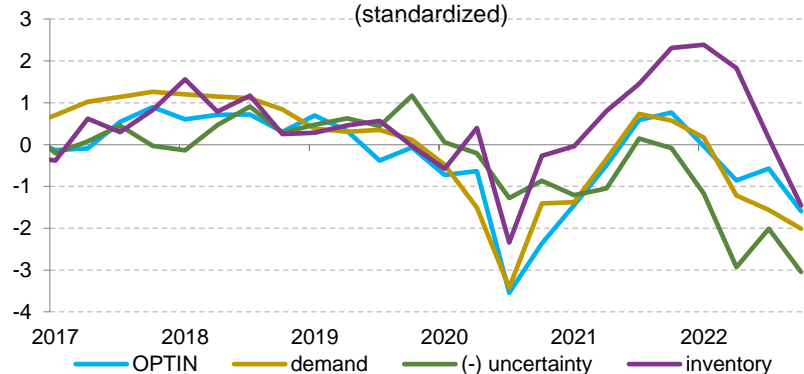
Planned change in the scale of investments in the coming quarter (balance of changes, in pp., s.a. and employment-weighted ratio)



Contribution to the growth rate of investments in the non-financial corporations sector by type (y/y, pp., quarterly data, constant prices)

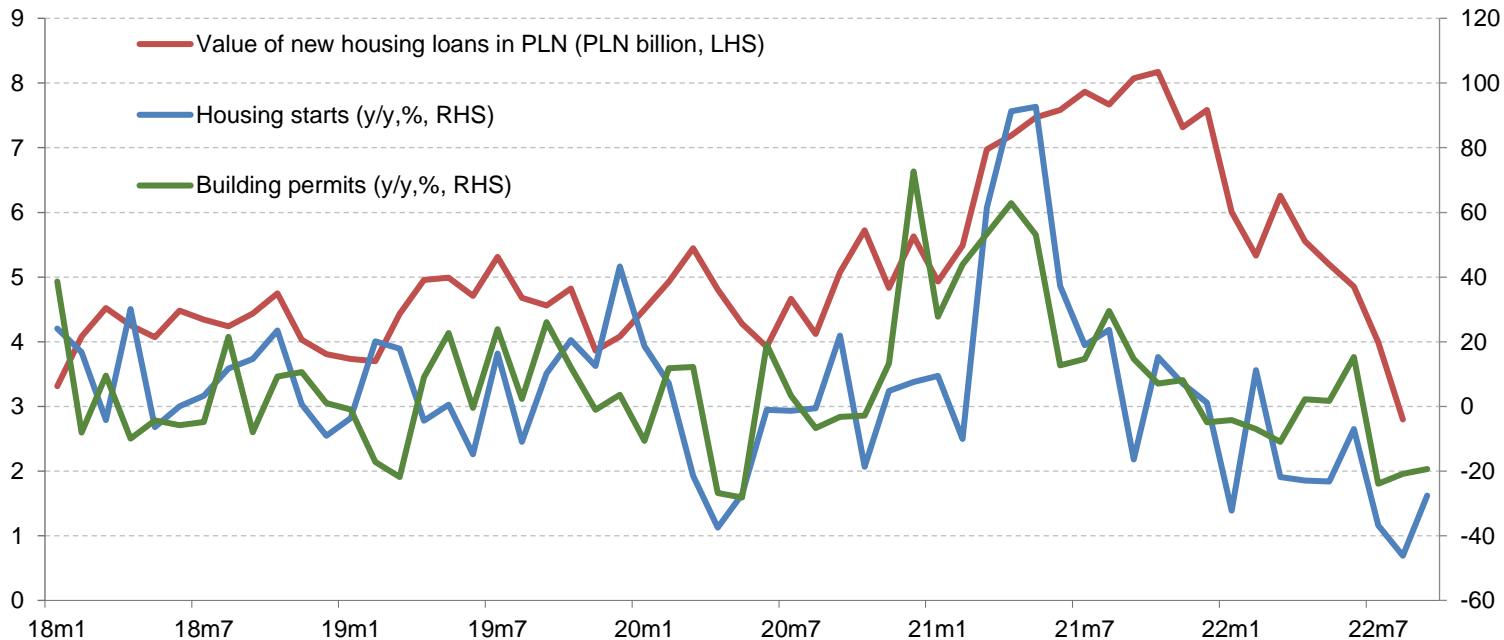


OPTIN vs demand forecast index, inventory and uncertainty assessment (standardized)



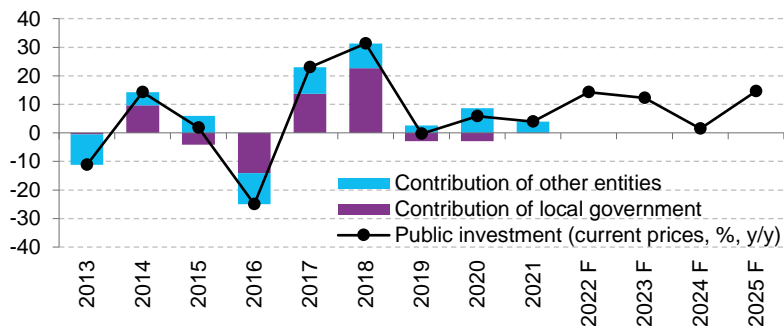
Source: GUS, NBP Quick Monitoring Survey, NBP calculations.

Interest rate hikes clearly reduce activity in the housing sector.

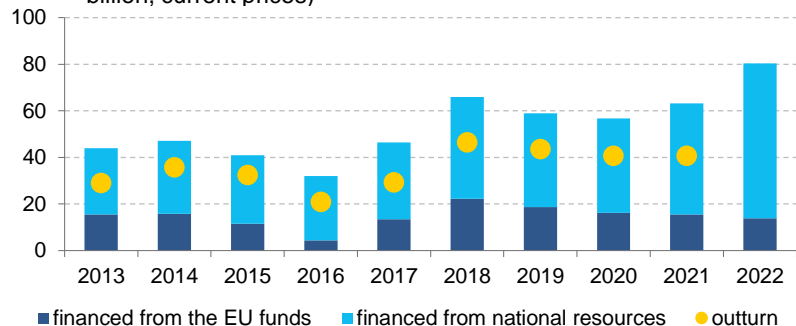


Nominal growth of public investment will slow down in 2024 as a result of lower UE funds from the traditional EU cohesion policy, but the RRF funds will attenuate the scale of this decline.

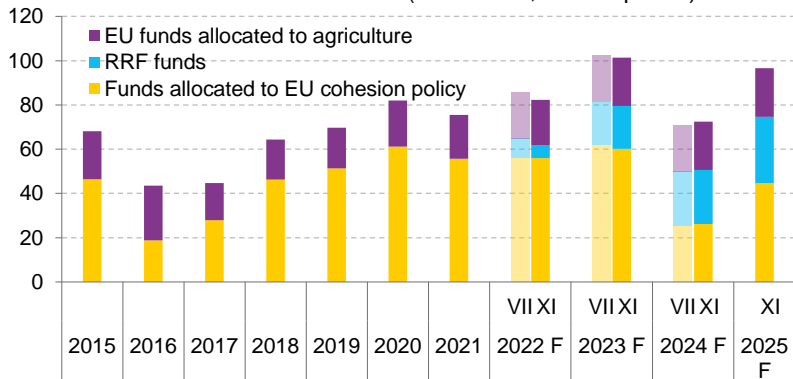
Nominal growth rate of public investment and contribution of its main components (y/y,% and pp.)



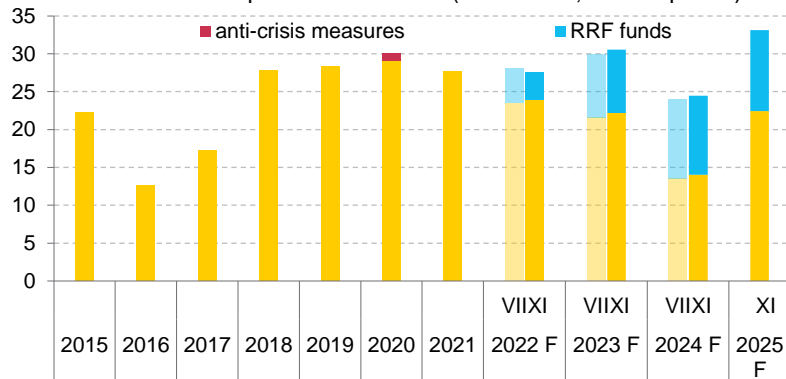
Planned local governments investment spending (as of 2022 Q2, PLN billion, current prices)



Total use of EU funds (PLN billion, current prices)

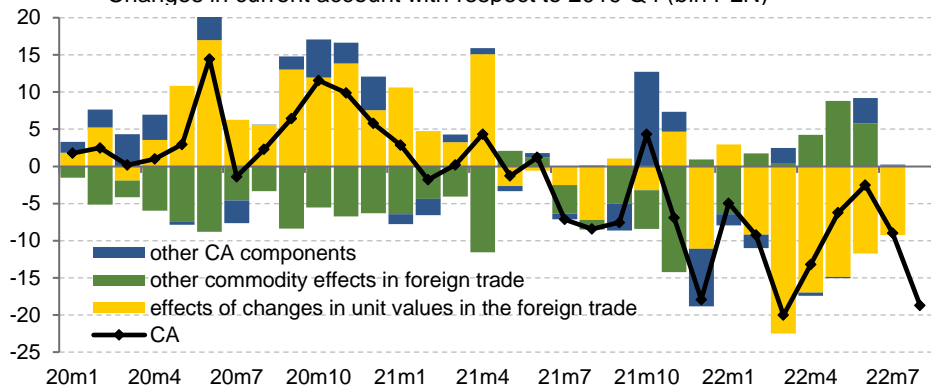


EU funds used for public investments (PLN billion, current prices)

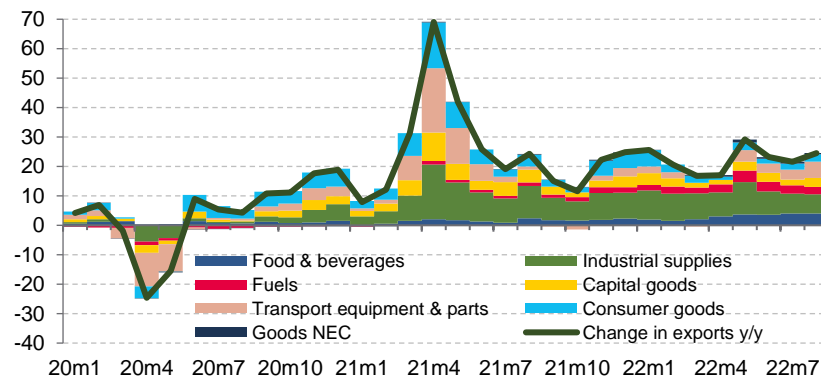


In 2023 exports growth declines as the demand from the euro area weakens. However, over the projection horizon the contribution of net exports to GDP growth is positive due to a stronger cyclical response of imports.

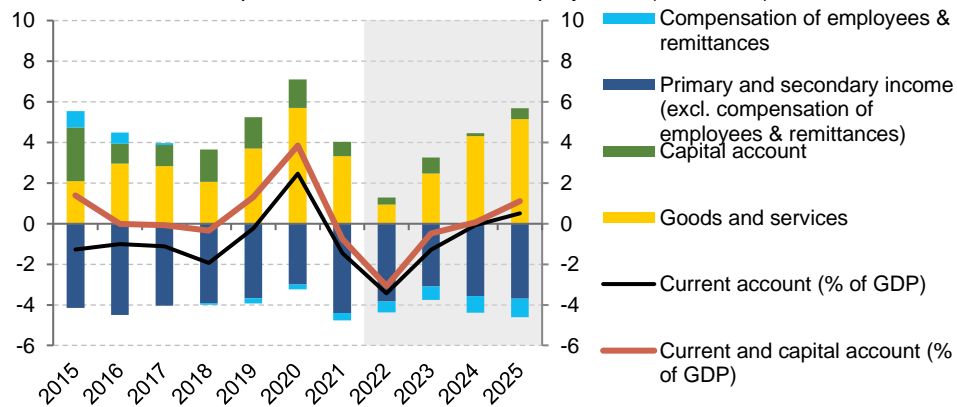
Changes in current account with respect to 2019 Q4 (bln PLN)



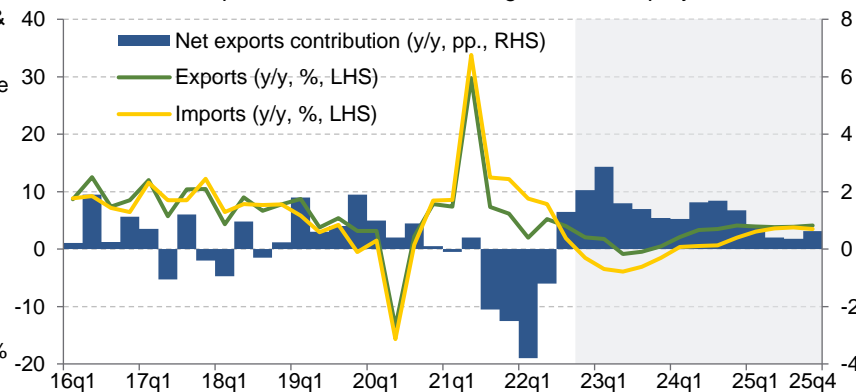
Change in exports of goods (y/y, %, BEC goods classification)



Current and capital account balance in the projection (% of GDP)



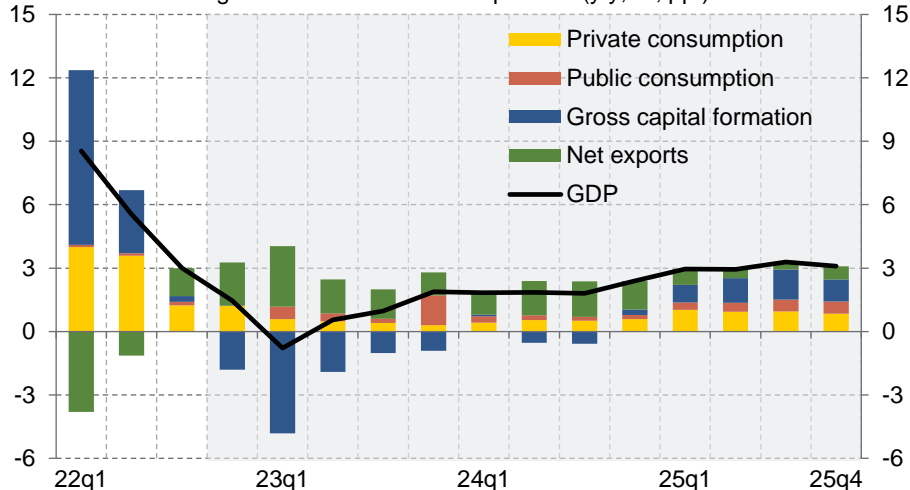
Net exports' contribution to GDP growth in the projection



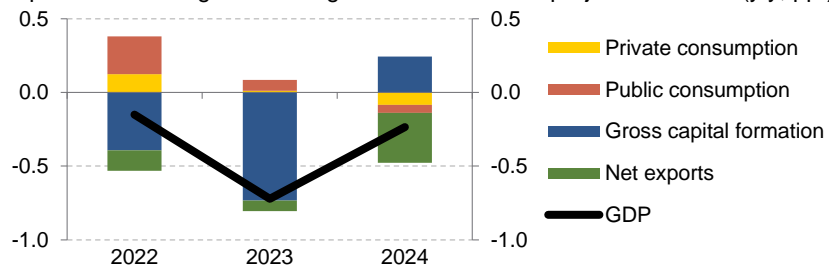
Source: GUS, Eurostat, NBP calculations.

Decline in GDP growth y/y until 2023 Q1. Limited scale of recovery in activity over the longer projection horizon.

GDP growth rate and its decomposition (y/y, %, pp.)



Decomposition of changes in GDP growth rate between projection rounds (y/y, pp.)



Factors determining domestic activity over the projection horizon:

- ⇓ strong **negative supply shock** resulting from Russia's aggression against Ukraine, reflected in a **significant increase in the global prices of many raw materials**
- ⇓ **significant economic slowdown abroad in 2023**, in particular in the **German economy**
- ⇓ **hikes of the NBP interest rates**
- ⇑ **Anti-Inflation Shield** in the part concerning **energy taxation will expire at the end of 2022**. The rest of AIS measures remain in force over the projection horizon.
- ⇑ **shielding measures against high energy prices** for households and other vulnerable energy consumers, **support for companies** (compensation for energy sellers related to the price regulation, subsidies for energy-intensive companies)
- ⇑ **economic recovery abroad in 2024-2025**, gradual fading of negative effects of supply shock
- ⇓ **in 2024 significant decrease in the influx of EU funds** related to the end of spending under the EU 2014-2020 perspective, but in 2025 increase in the UE funds absorption from the 2021-2027 perspective

GDP, y/y, %	2021	2022	2023	2024	2025
November 2022	5.9	4.6	0.7	2.0	3.1
July 2022	5.9	4.7	1.4	2.2	-



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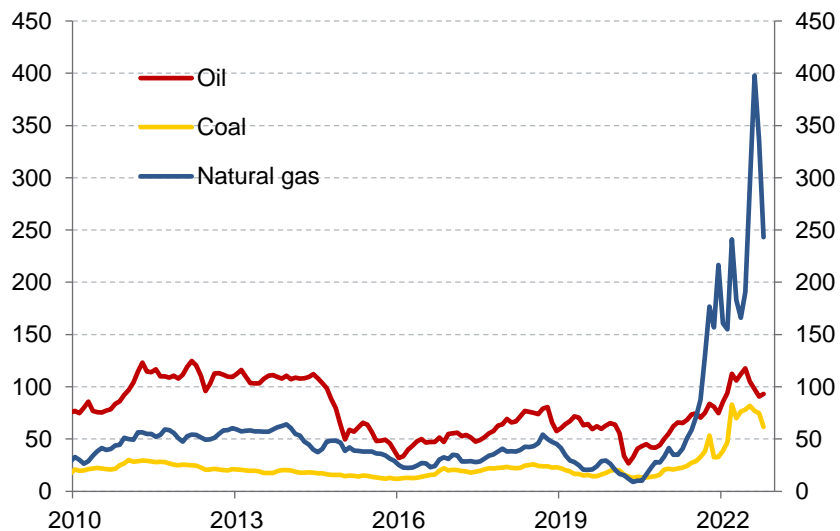
Uncertainty

Projection 2022-2025

Inflation

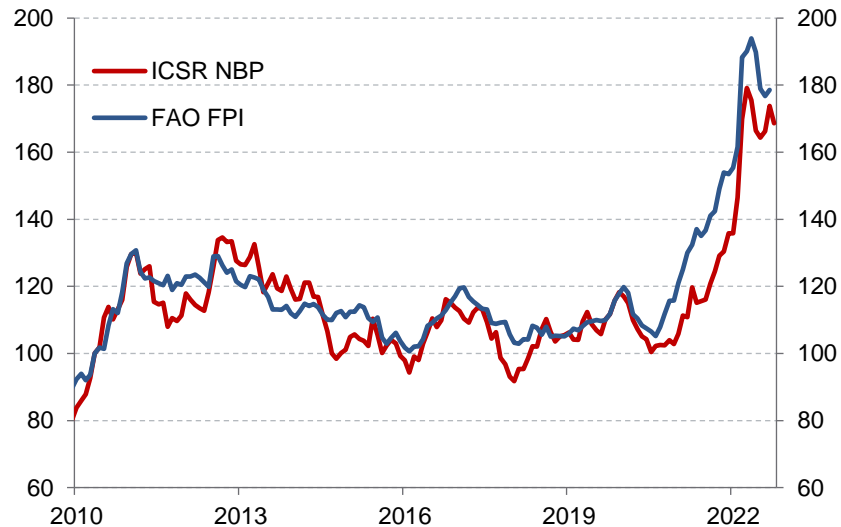
Agricultural and energy commodity prices remain high.

Prices of oil, natural gas and coal (USD/boe*, monthly data)



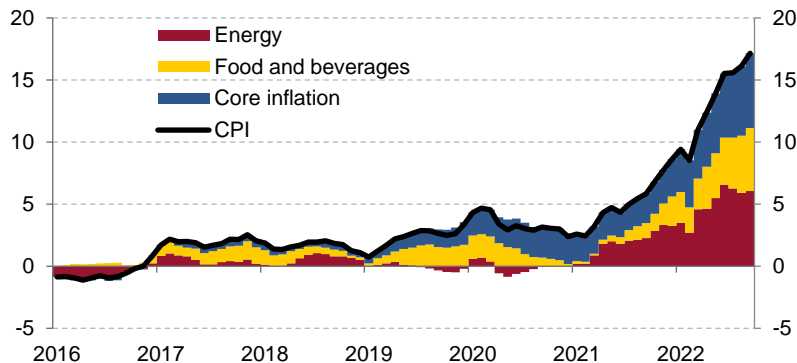
* boe: barrel of oil equivalent

ICSR NBP and FAO FPI
(indices, May 2010=100, EUR, monthly data)

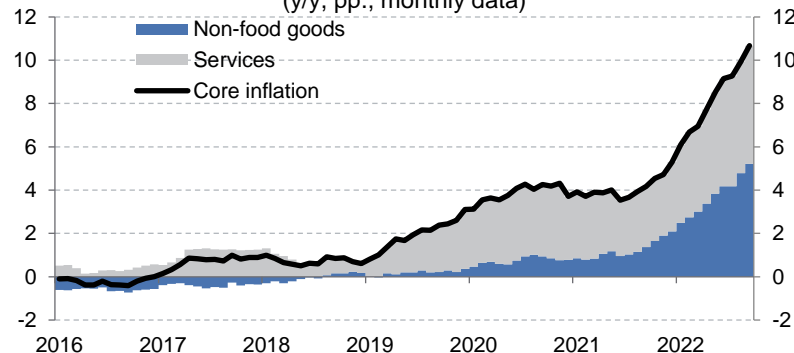


High CPI inflation in 2022 resulting from rising energy and food prices (higher commodity prices) and core inflation components (cost pressures, demand recovery under supply constraints).

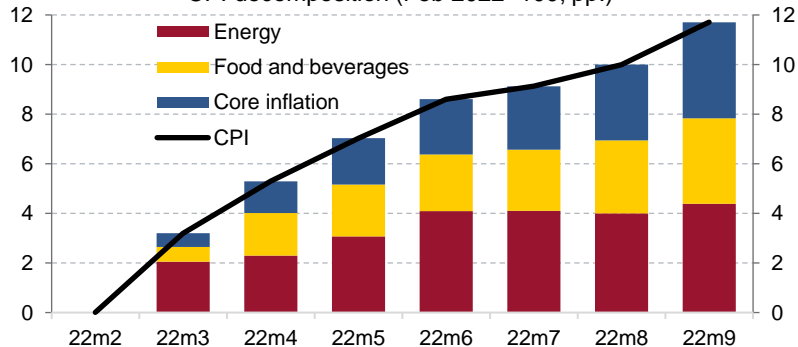
CPI decomposition (y/y, pp., monthly data)



Decomposition of core inflation (CPI inflation excl. food and energy) (y/y, pp., monthly data)



CPI decomposition (Feb 2022=100, pp.)



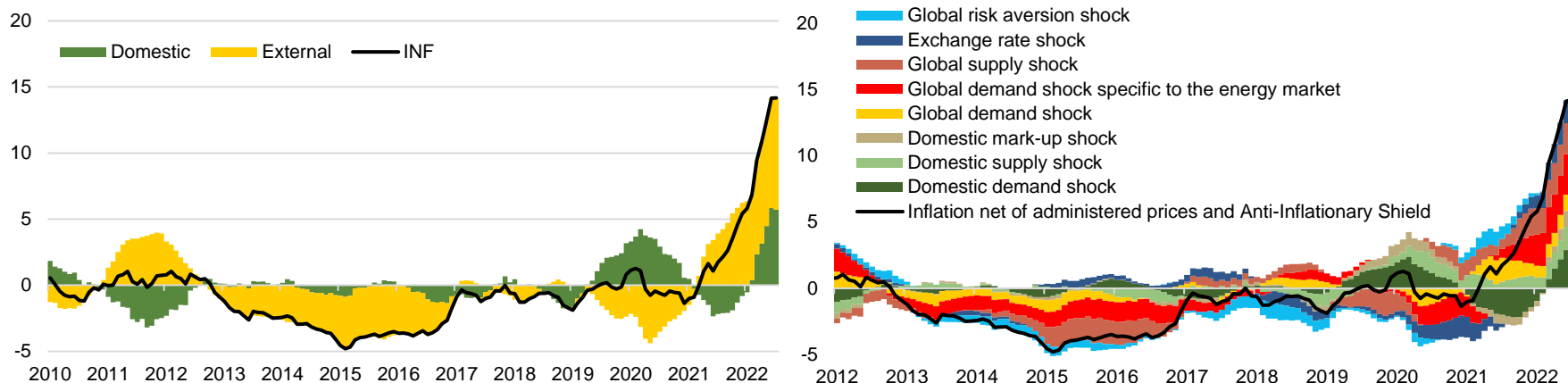
Inflation in 2022 Q3 compared to the July projection (y/y, %)

y/y, %	22q2	22q3	
CPI inflation	13.9	16.3	(15.7)
Core inflation	8.5	10.0	(10.1)
Food prices inflation	13.4	17.4	(14.0)
Energy prices inflation	33.1	35.4	(36.7)

Values from the July projection are given in brackets (seasonally adjusted). Indicators with values higher than in the July projection are marked **green**, and indicators with lower values are marked **red**.

External shocks are the main driver of inflation in Poland.

Model decomposition of CPI inflation net of administered prices and Anti-Inflation Shield effects
y/y, log changes, deviations from the mean in pp.

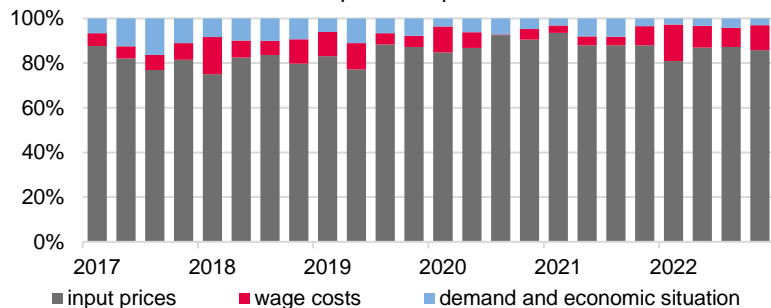


Note: The model decomposition of the logarithmic rate of change of the CPI net of administered prices and the impact of tax changes within the Anti-Inflation Shield was carried out using a structural BVAR model, in which shocks were identified based on short-run restrictions, including restrictions on the direction of response. The model was estimated using Bayesian methods for eight endogenous variables on a sample of 2000M2-2022M7 under the assumption of block exogeneity of foreign variables.

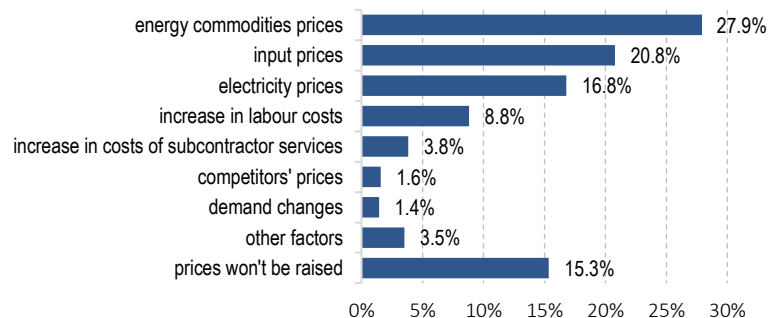
Analyses based on the SBVAR model show that the contribution of foreign shocks to the CPI net of administered prices and Anti-Inflationary Shield in July 2022 was 60%, with the contributions of energy market demand shocks, supply network disruptions, the exchange rate and global demand at 22%, 16%, 12% and 10%, respectively.

Production prices are driven mainly by rising input and energy prices. Firms' profitability, despite its decline in recent quarters, remains high, showing that companies still have room to pass on increasing costs to consumers.

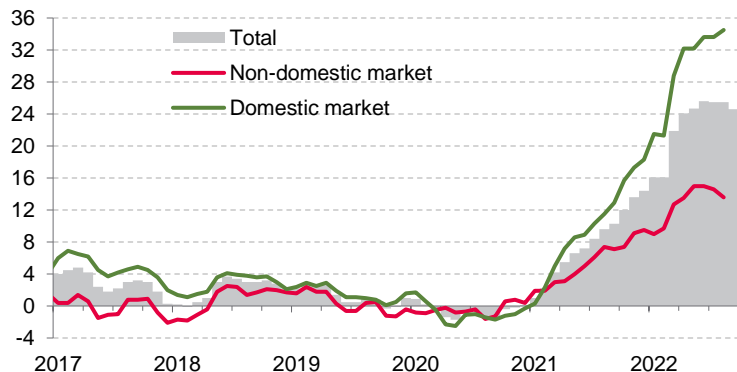
Impact of production factors' prices and demand conditions on producer price forecasts



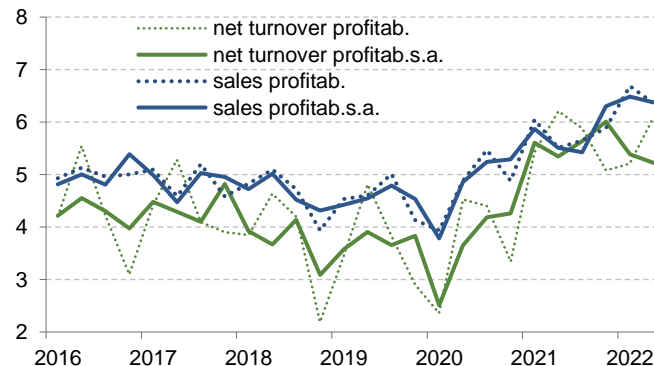
Share of entities declaring the decisive influence of a given factor on the producer price increases in 2022 Q4



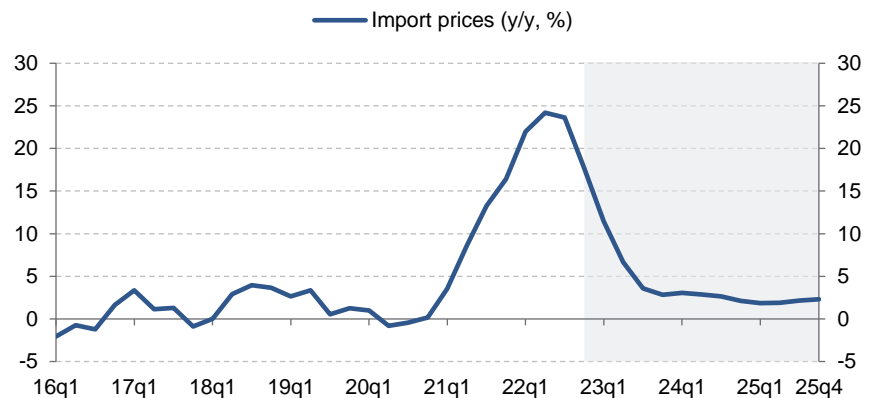
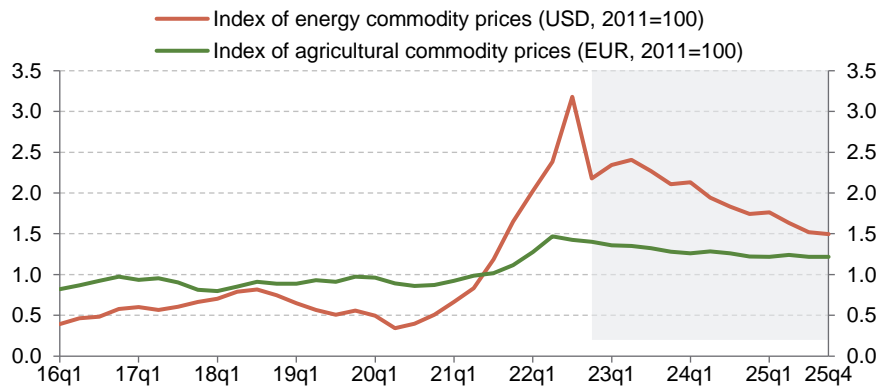
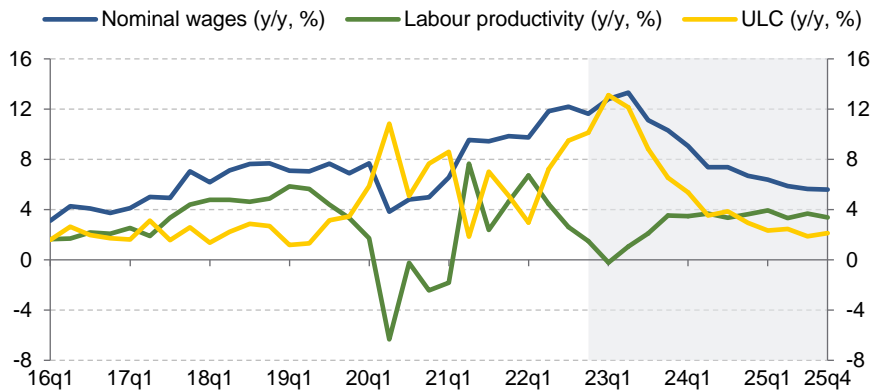
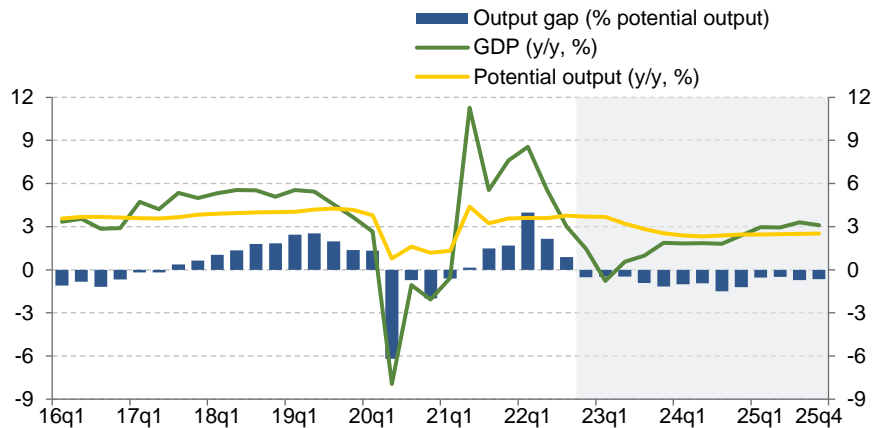
Producer prices on the domestic market and in exports (y/y, %)



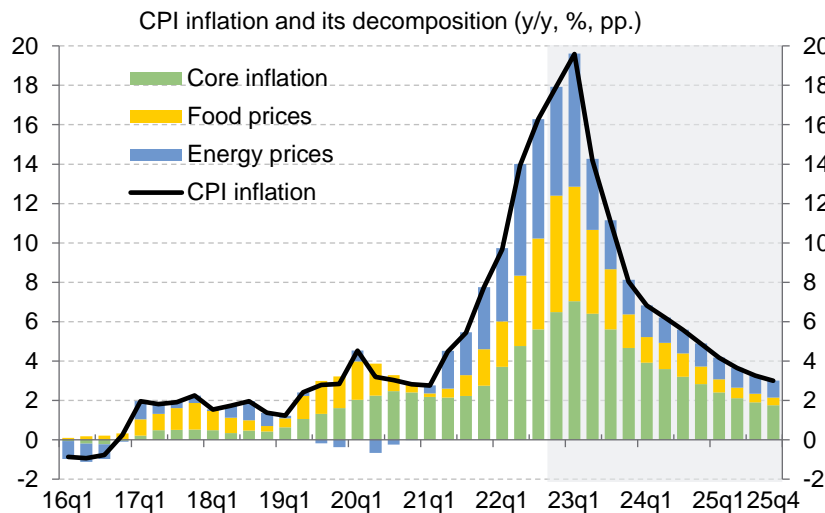
Net turnover and sales profitability indices (quarterly data)



Gradual decrease in inflation in 2023-2025 due to fading away of the factors, which increased its level in 2022.



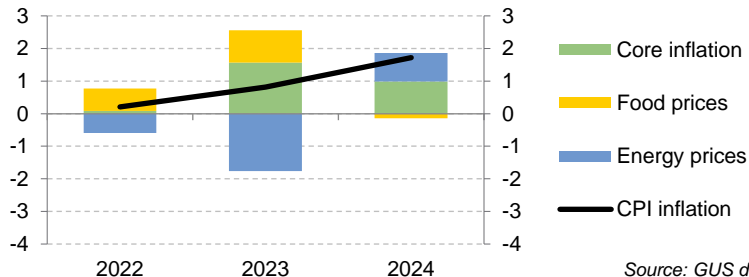
From 2023Q2 CPI inflation will decline and by the end of the projection horizon will return to the range of deviations from the NBP's inflation target.



The inflation path over the projection horizon will be affected by:

- ⇩ fading away of 2022 inflation drivers:
 - ⇩ **decline in energy and agricultural commodity prices** on global markets
 - ⇩ **slowdown in the domestic demand growth**
 - ⇩ **receding tensions in supply networks**
 - ⇩ **slowdown of inflation abroad**
 - ⇩ **declining labor cost dynamics**
- ⇩⇧ partial **freeze on electricity prices** in 2023, but **expiration of a significant part of measures** that were in place in 2022 under the **Anti-Inflation Shield**
- ⇧ **increased inflation persistence** (rise in inflation expectations translating into stronger wage pressures, increased acceptance of higher price growth)
- ⇩⇧ **impact of commodity prices on the increase of energy prices for households spread over time** (tariffing process, delayed adjustment to previous commodity price increases)
- ⇧ assumption of **unfreezing electricity prices** in 2024.

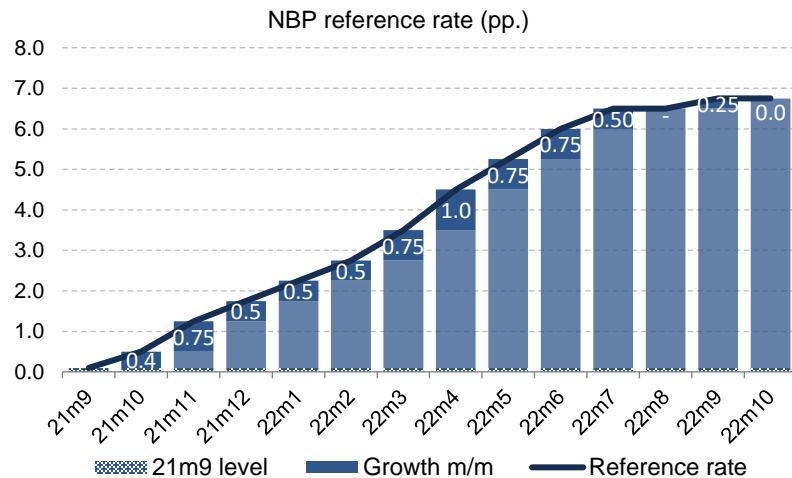
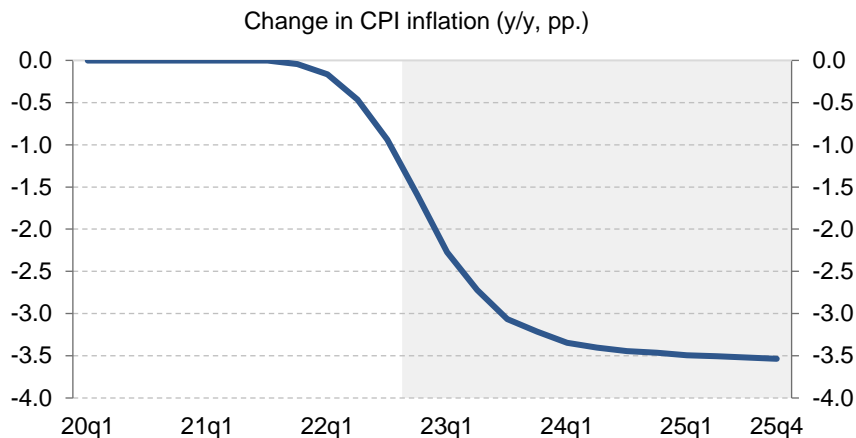
Decomposition of CPI forecast changes between the projection rounds (y/y, pp.)



Source: GUS data, NBP calculations.

CPI, y/y, %	2021	2022	2023	2024	2025
November 2022	5.1	14.5	13.1	5.9	3.5
July 2022	5.1	14.2	12.3	4.1	-

The impact of the hitherto interest rate's hikes (effected since 10.2021) on consumer price inflation in subsequent years



The impact of interest rates hikes on annual inflation (pp.)

	2022	2023	2024	2025
Change in CPI inflation	-0.8	-2.8	-3.4	-3.5



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Uncertainty

Uncertainty

- Risks
- Fan charts

Risks

- **Further course of Russia's military aggression against Ukraine**
- **Faster monetary policy tightening by ECB and FED**
- **Government's anti-inflation measures and EU transfers**
- **Further course of COVID-19 pandemic worldwide**

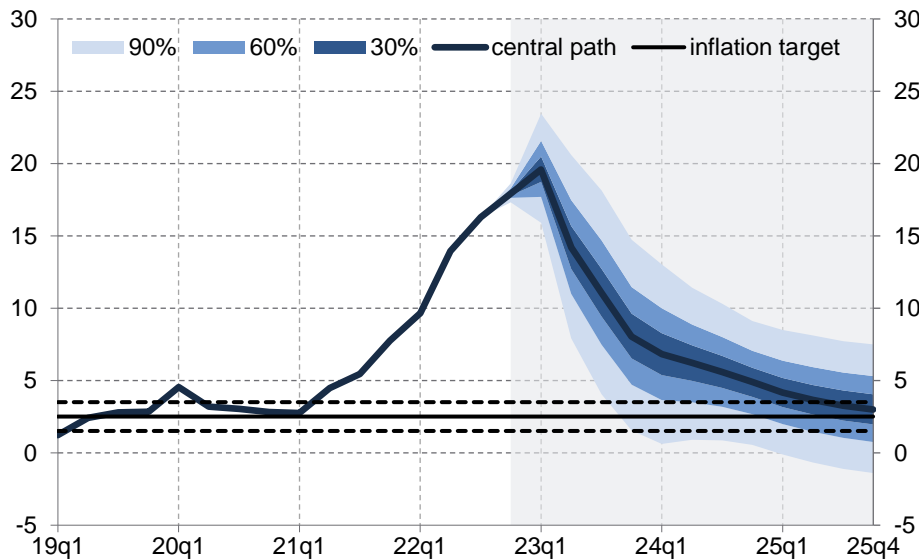
In the November projection horizon:

↔ **Close to symmetric distribution of risks to CPI inflation**

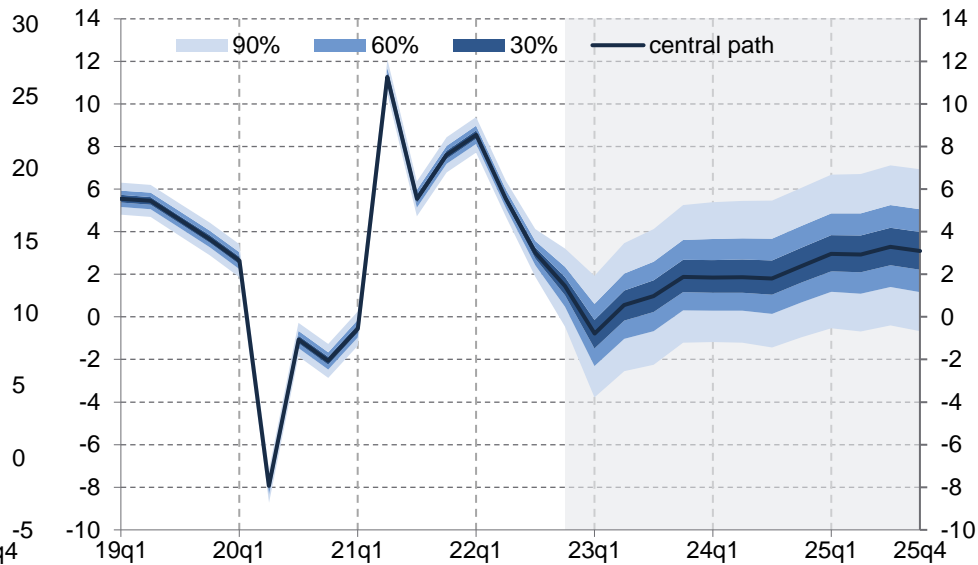
↔ **Close to symmetric distribution of risks to GDP growth**

The most important risk factor for these variables are **disruptions to the global economy triggered by Russia's military aggression against Ukraine**. In case of **inflation** another important source of risk is **the future anti-inflation policy pursued by central banks and governments**.

CPI inflation (y/y, %)



GDP (y/y, %)



CPI y/y, %	below 1.5%	below 2.5%	below 3.5%	below centr. path	within 1.5-3.5% range
2022	0%	0%	0%	46%	0%
2023	0%	0%	0%	49%	0%
2024	4%	9%	18%	50%	13%
2025	16%	30%	49%	49%	33%

CPI y/y, %	central path	50% probability interval	
2022	14.5	14.4	14.5
2023	13.1	11.1	15.3
2024	5.9	4.1	7.6
2025	3.5	2.1	4.9

GDP y/y, %	central path	50% probability interval	
2022	4.6	4.3	4.9
2023	0.7	-0.3	1.6
2024	2.0	1.0	3.1
2025	3.1	1.8	4.4

Source: GUS data, NBP calculations.



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