

## Belarus Economy Monitor: trends, attitudes and expectations

### Inflation Review Q1-2023

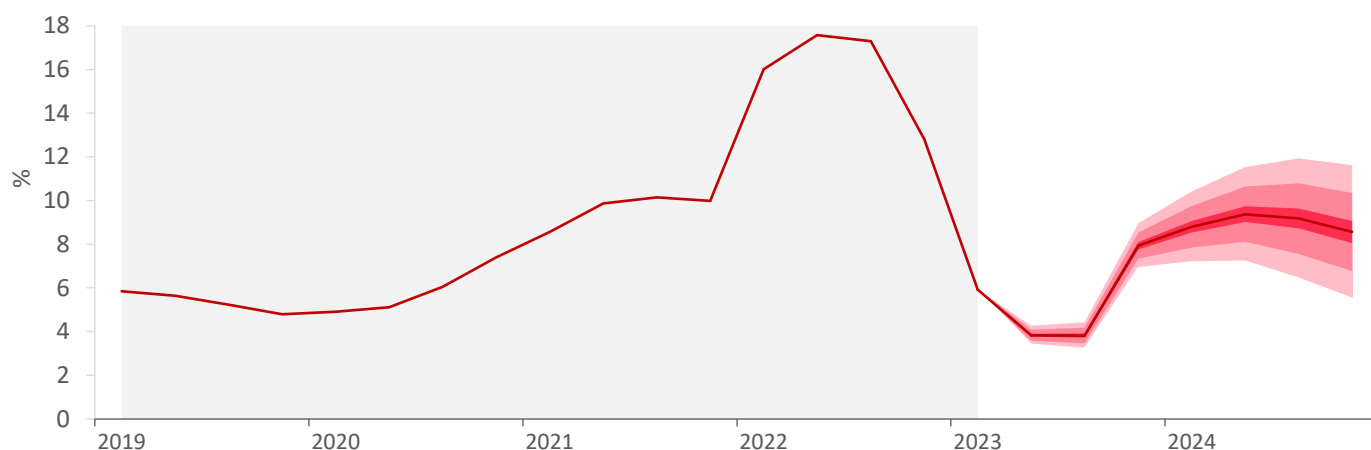
May 2023

## Consumer prices got back on a growth track in Q1-2023; and pro-inflationary factors begin to prevail

*Inflation indicators in Q1-2023 had multidirectional dynamics unusual for Belarus. On the one hand, consumer prices returned to growth on average after an administrative decline in Q4-2022: annualized inflation was 6.4% (QoQ) in Q1-2023. Pro-inflationary pressure has prerequisites for strengthening during 2023 against the backdrop of a weakening price regulation and stimulation of domestic demand by the government and the National Bank of Belarus through loose monetary and fiscal policies.*

*On the other hand, annual inflation slowed down from 12.8% (YoY) in December 2022 to  $\approx$ 5.8% (YoY) in March 2023, and it will fall below 5% (YoY) in Q2-2023 — Q3-2023 despite accelerating quarterly price increase. This is mainly due to the withdrawal of the annual indicator of the March-April 2022 price surge from the calculation, while maintaining the effect of the price decline in October-November 2022 on it. For this reason, the annual inflation rate will recover in the range of 7–9% (YoY) in Q4-2023 only (Figure 4.b).*

Figure 1. Dynamics and forecast of consumer inflation in Belarus, % (YoY)



**Source:** The calculations are based on the Quarterly Prediction Model (QPM) for Belarus.

**Note:** The figure shows a seasonally adjusted indicator. The X13 procedure in the JDemetra+ app was applied to make a seasonal adjustment. As new data are published, the indicator dynamics can be updated. The ranges in the figure correspond to the 15%, 50% and 75% confidence intervals.

The Inflation Review Bulletin is an expert analysis of inflationary processes in the consumer market. The bulletin depicts the dynamics of price indices, analyzes the drivers of inflationary processes, assesses the nature of monetary conditions, and provides a short-term inflation forecast. The methodological basis for the analysis is the Quarterly Projection Model (QPM) for Belarus.

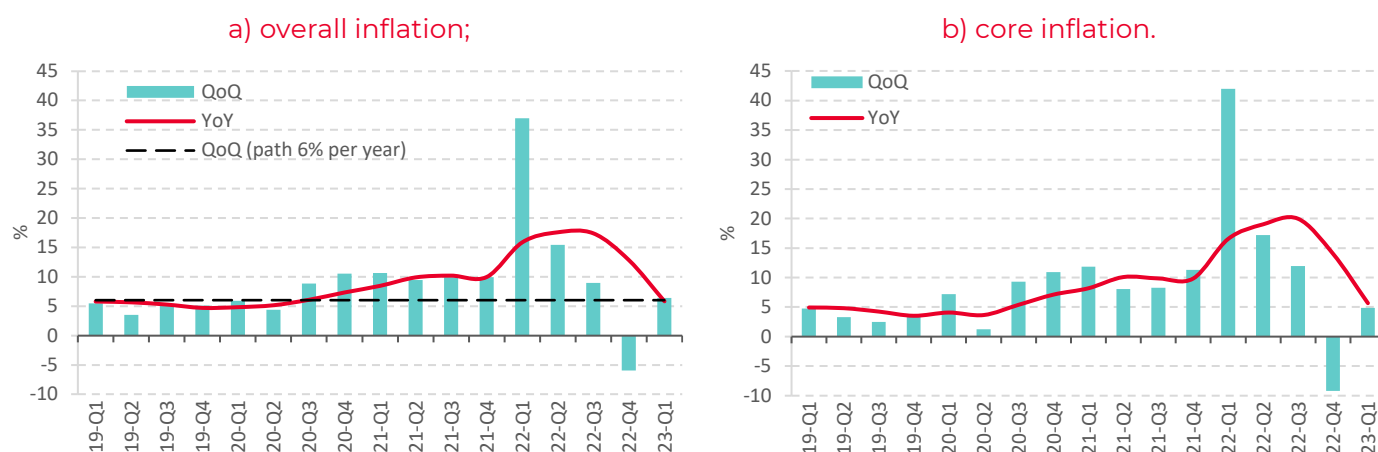
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# 1 Dynamics of inflationary processes

## Consumer prices got back on a growth track in Q1-2023

Consumer prices increased by 6.4% (annualized and seasonally adjusted) in Q1-2023 (hereinafter referred to as “%, QoQ”; [Figure 2.a](#)).<sup>1</sup> Inflation recovery after the ad-hoc price cuts in Q4-2022 indicates a gradual adaptation of businesses to the new price regulation system. Nevertheless, the impact of state regulation on the price behavior of firms remained, and it was one (but not the key one) of the factors for a sharp slowdown in annual inflation from 12.8% in December 2022 to  $\approx 5.8\%$ <sup>2</sup> in March 2023 (hereinafter referred to as %, YoY) ([Figure 2.a](#)). The key reason for the annual inflation decline was that the March 2022 price surge removed from the computation of this indicator.

Figure 2. Dynamics of overall and core inflation



**Source:** The calculations based on the Belstat data.

**Note:** Hereinafter, YoY (year-on-year) is the growth rate in the last month of the quarter versus the last month of the corresponding quarter of the previous year; QoQ (quarter-on-quarter) is the annualized growth rate in the last month of the quarter versus the last month of the previous quarter, seasonally adjusted.

**In Q1-2023, sustained price pressure indicators increased to a lesser extent versus core inflation, indicating that it was significantly impacted by the changes in the relative prices for individual items in the consumer basket**

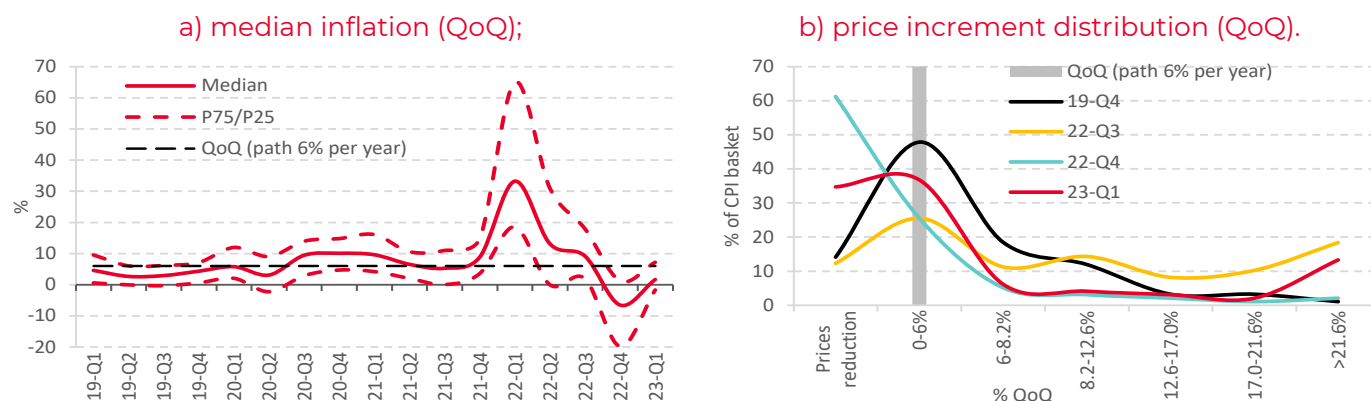
Core inflation was 4.8% (QoQ) in Q1-2023, while the median inflation was only 1.7% (QoQ) ([Figure 2.b](#); [Figure 3.a](#)). The price increment distribution of the items in the consumer basket remained “unnatural” for Belarus ([Figure 3.b](#)). 65% of the basket has risen in price: this is more than the 39% in the unique Q4-2022, but notably less than the average 79% reported in 2017-2019 and the average 88% reported in 2020-2021. Thus, the impact of the price regulation shock weakened in Q1-2023, but its effects have not been fully exhausted.

<sup>1</sup> The X13 procedure in the JDemetra+ app was applied to make a seasonal adjustment. As new data are published, the indicator dynamics in previous periods can be updated. The annualized price increase is calculated as a seasonally adjusted price increase per quarter raised to the fourth power (an annual inflation equivalent). In the bulletin, all quarterly inflation values are presented as annualized (annual equivalent).

<sup>2</sup> Belstat formally published annual inflation in March 2023: 6.03% (YoY). However, according to the calculation based on the Consumer Price Index also published by Belstat (December 2010 = 100), annual inflation was 5.84% (YoY) in March. Methodologically speaking, these values should match; however, slight deviations are likely when calculating the annual indicator due to the probable rounding of monthly inflation rates. At the same time, the maximum absolute value of such a deviation was 0.054 p.p. in January 2020 through to February 2023, while it was 0.186 p.p. in March 2023. The March inflation rate equals 5.84% (YoY) if you multiply the chain monthly inflation rates (with two decimal signs) together (the ones published by Belstat).

13% of the consumer basket increased in price by more than 21.6% (QoQ) (corresponding to 5% in a non-annualized form): a higher share of rapidly price-rising items over the past five years was observed only in Q1-2021 and in Q1-2022 – Q3-2022. Given the historically low median inflation in Q1-2023, this indicates a strong impact on overall inflation from the prices of individual goods and services.

Figure 3. Dynamics of median inflation and distribution of relative price growth



**Source:** The calculations are based on the Belstat data.

**Note:** Median inflation and price increment distribution are calculated using data from 98 aggregated commodities in the CPI basket. P75 and P25 are the 75<sup>th</sup> and 25<sup>th</sup> percentiles, respectively (prices for 25% of goods rise faster than the inflation of the 75<sup>th</sup> percentile, and prices for another 25% of goods rise slower than the inflation of the 25<sup>th</sup> percentile); QoQ is the annualized growth rate in the last month of the quarter versus the last month of the previous quarter (seasonally adjusted).

### Food prices rose by 8.9% (QoQ) in Q-2023 (Figure 4.a), providing about 4 p.p. of quarterly inflation

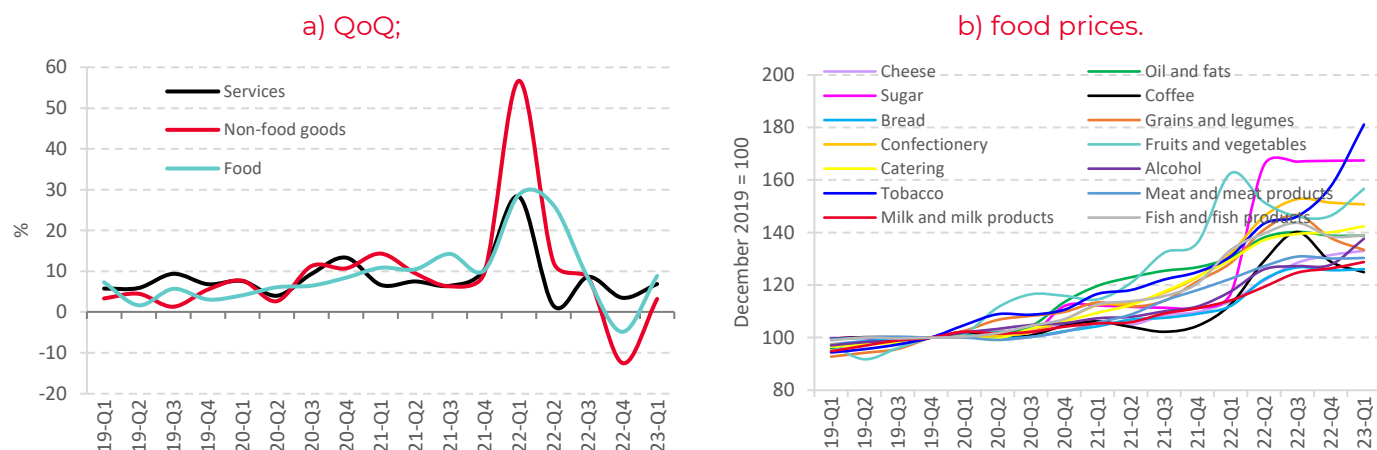
In the food segment, the effect of an increase in relative prices was clearly manifested (Figure 4.b): the median increase in food prices amounted to only 1.2% (QoQ), and 3.6 p.p. out of the 4 p.p. contribution of this segment to quarterly inflation was accounted for in aggregate for milk, dairy products and cheeses (≈0.5 p.p.), fruits and vegetables (≈1.5 p.p.), alcohol (≈1.2 p.p.), and tobacco products (≈0.5 p.p.). Alcohol and tobacco have risen in price due to the increase in excise taxes. A significant increase in prices for vegetables and fruits may be a consequence of restructuring logistics, the weakening of the Belarusian ruble, and warehousing issues. In the case of dairy products, it is possible that the effect of price equalization in the Russian and Belarusian markets has maintained (albeit to a lesser extent compared to 2022): it is more profitable for Belarusian exporters to sell their products to Russia, where prices increased significantly last year versus the prices in Belarus due to the weakening of the Belarusian ruble against the Russian ruble (Figure 12.b). Inflation in the food segment was held back by cheaper tea and coffee, which could be associated with the establishment of their supply schemes to Belarus, as well as cereals, the cost of which was affected by the effects of high yields in 2022 in Belarus and Russia.

### The dynamics of prices for non-foods remained weak in Q1-2023: inflation in the segment amounted to 3.2% (QoQ) (Figure 4.a)

Non-food prices, on average, got back on the growth track after declining in Q4-2022 (Figure 5.a), but their response to the weakening Belarusian ruble, the real wage growth and the gradual consumer demand recovery was restrained. This was probably due both to the adjustment of the logistics chains for importing goods to Belarus, and to the continued, albeit on a smaller scale, impact of tightening state price regulation in Q4-2022.

It is quite possible that due to the restriction established by Government Resolution No. 713 on the revision of selling prices when foreign exchange rates change (adjustment according to the official foreign exchange rates set by the National Bank of Belarus on the first day of the month), the weakening of the Belarusian ruble in March will affect non-food prices in Q2-2023. Non-food price rise was held back by cheaper fuel (Figure 5.a) due to the access of Belarusian oil refineries to relatively cheap Russian crude oil and the adjustment of the sales schemes for produced petroleum products.

Figure 4. Dynamics of inflation and food price components (seasonally adjusted)



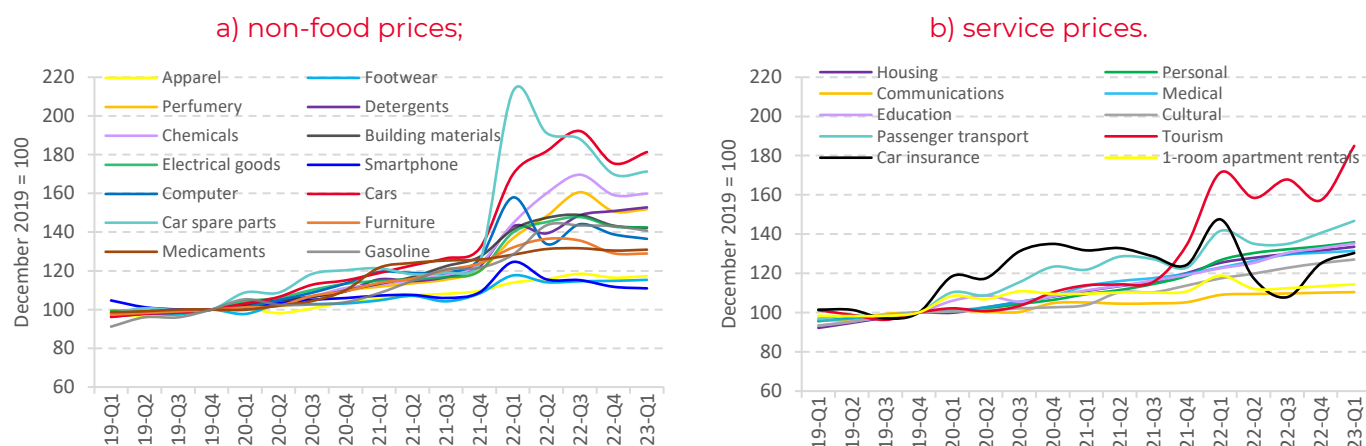
**Source:** The calculations are based on the data by Belstat and the National Bank of Belarus.

**Note:** QoQ (quarter-on-quarter) is the annualized growth rate in the last month of the quarter vs the last month of the previous quarter, seasonally adjusted.

### Growth in prices for consumer services accelerated to 6.9% (QoQ) in Q1-2023 (Figure 4.a)

In Q1-2023, high inflation was recorded in services exposed to foreign exchange rate fluctuations: tourism, transportation services, motor vehicle insurance (Figure 5.b). On the whole, services became the only segment of the consumer basket where the price for almost all items increased in Q1-2023, including less regulated household services (by 6.2% (QoQ)). This is because services have not been affected by Government Resolution No. 713, the disinflationary impact of aggregate demand has noticeably weakened, and inflationary expectations of businesses have increased (Figure 10.b).

Figure 5. Dynamics of prices for non-food products and services (seasonally adjusted)



**Source:** The calculations based on the Belstat data.

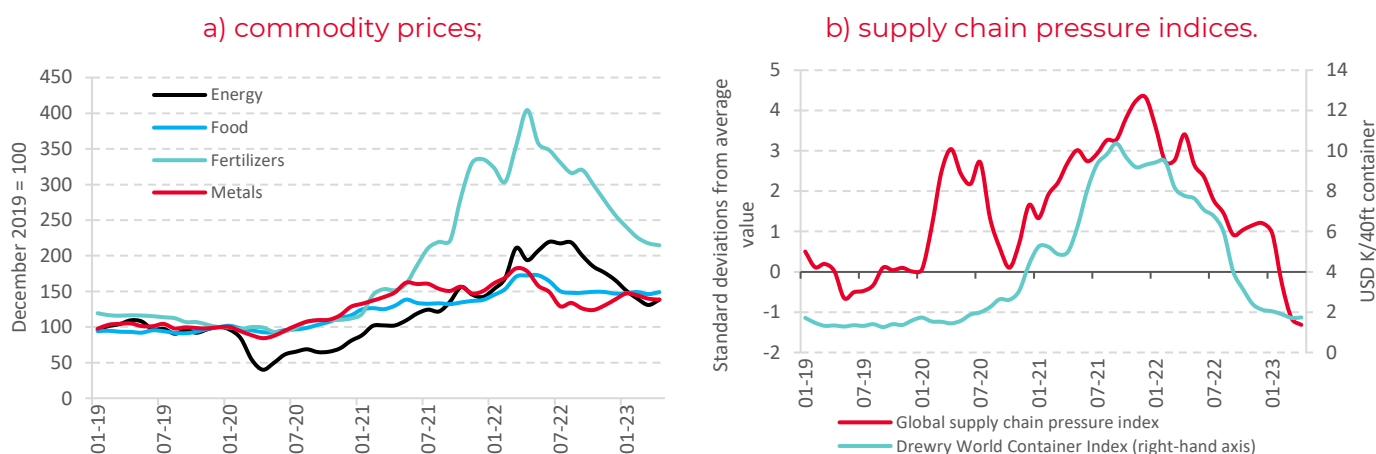
## 2 Inflation drivers

### Price pressure from the global market continued to ease in Q1-2023

Demand in the global economy remained subdued at the beginning of the year as financial conditions tightened and the post-COVID-19 recovery in major economies ended. The Manufacturing New Orders Index (PMI) remained below the 50-point threshold (separating growth from decline) in April, for the tenth consecutive month, and the New Export Orders Index remained for the fourteenth consecutive month.<sup>3</sup>

Cooling demand for goods has contributed to the normalization of global supply chains. March had the biggest improvement in supply delays across the global industry since May 2009, with the Supply Chain Price Pressure Index dropping below its historical average (Figure 6.b). The cost of container transportation decreased by 83% by the beginning of May 2023 from its peak in September 2021, and it reached the levels of early 2020 (Figure 6.b).

Figure 6. Global commodity prices and price pressures in supply chains



**Sources:** World Bank, Federal Reserve Bank of New York, Drewry World Container Index, Drewry Supply Chain Advisors.

**Note:** The World Container Index is for the last week of the month.

### Global energy price decline is a disinflationary factor for Belarus

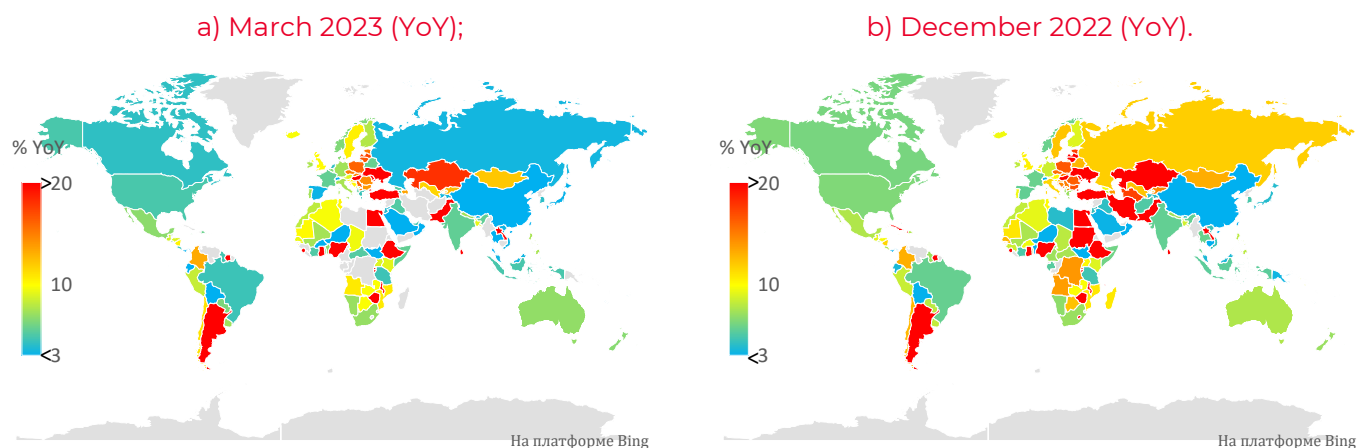
In Q1-2023, the World Bank's US Dollar Price Index for Energy Goods fell by  $\approx 20\%$  versus the level of Q4-2022. Energy prices fell by almost 21% over the year and by  $\approx 34\%$  versus the local peak reported in Q3-2022 (Figure 6.a). A mild winter in Europe and fears about the prospects for global economic growth contributed to the fall in natural gas prices in the EU and the US and lower oil prices. It was thanks to energy commodities that inflation slowed down in developed economies at the beginning of the year despite the persistence of pro-inflationary pressure from the labor market (Figure 7). In Belarus, the disinflationary impact in Q1-2023 was exerted by decreasing prices for the Russian Urals oil, which was amplified by the expansion of the Urals oil discount versus the Brent oil benchmark and the recovery of export supplies of Belarusian petroleum products.

<sup>3</sup> See details at: <https://www.spglobal.com/marketintelligence/en/mi/research-analysis/week-ahead-economic-preview-week-of-8-may-2023.html>.

## Global food prices have stabilized at an elevated level

In Q1-2023, the World Bank's US Dollar Food Price Index changed slightly versus the level of Q4-2022: it decreased by 0.6%. Food prices fell by 5.6% versus the level of Q1-2022, but remained over 56% more expensive than the average level in 2019 (Figure 6.a). Given the weakening of the Belarusian ruble against the US dollar, the dynamics of global food prices probably did not have a disinflationary effect on the Belarusian market in early 2023.

Figure 7. Global inflation



**Sources:** Trading Economics, national statistical agencies, calculations.

**Note:** YoY (year-on-year) is the growth rate in the last month of the quarter vs the last month of the corresponding quarter of the previous year.

## Russia's direct inflationary impact was weak in Q1-2023

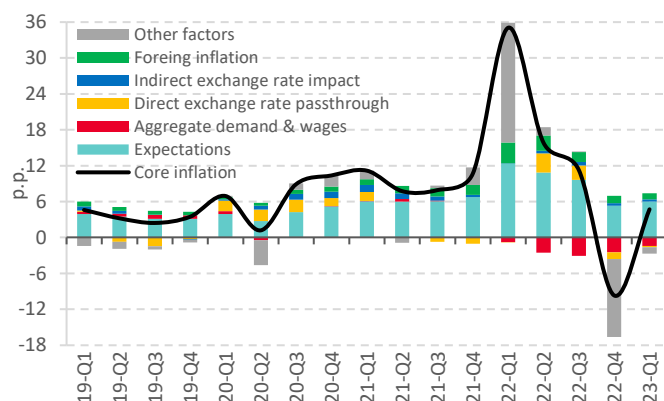
Price growth in Russia in Q1-2023 was estimated at about 3.7% (QoQ) following ca. 3.5% (QoQ) in Q4-2022 (Figure 8.b). Low inflationary pressures in the Russian economy may indicate a relatively successful reconfiguration of the import supply chains and continued subdued consumer demand. There may also be a disinflationary effect of last year's high grain harvest. In general, there was no significant pro-inflationary impact from the Russian market on price dynamics in Belarus in Q1-2023 (Figure 8.a). At the same time, the weakening of the Russian ruble against the currencies of the largest economies of the world noted in January-April, the gradual recovery of consumer demand, and the tense situation on the labor market may lead to inflation acceleration in Russia in the second half of 2023, which will affect the dynamics of inflationary processes in Belarus.

## Adjustment of businesses to the new price regulation system and some easing of it allowed the prices of most commodity items to get back to the growth track

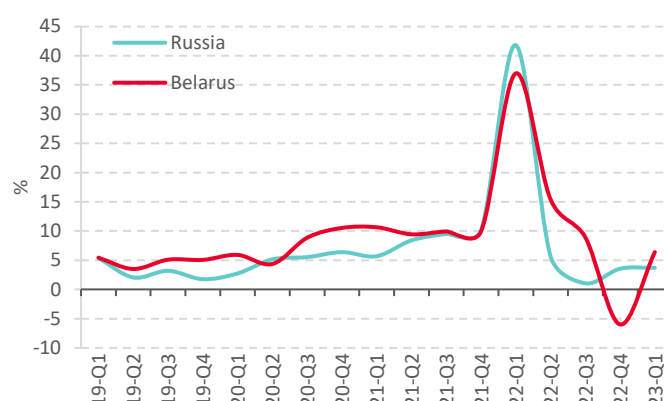
The QPM-based decomposition of core inflation indicates that the negative contribution of the factors not explained by the model to the annualized core inflation value decreased significantly in Q1-2023 (Figure 8.a). However, the effects of tightening price regulation persisted: taking momentum into account, the contribution of unexplained factors to inflation remained negative, although it was much less pronounced compared to Q4-2022.



Figure 8. Decomposition of core inflation in Belarus and inflation in Russia

a) core inflation decomposition, QPM-based  
(QoQ, logarithmic data);

b) inflation (QoQ) in Belarus and Russia.



**Source:** The calculations are based on the Quarterly Projection Model (QPM) for Belarus and the Belstat data.

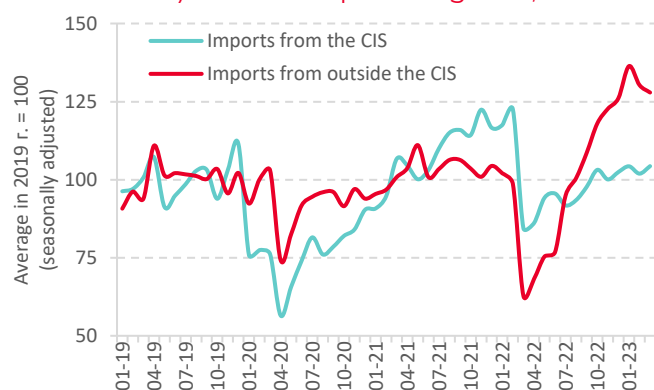
**Note:** The contributions of the factors are calculated taking momentum into account; QoQ (quarter-on-quarter) is the annualized growth rate in the last month of the quarter vs the last month of the previous quarter, seasonally adjusted.

### Delivery routes to Belarus have been improving, but the pro-inflationary impact of increased costs remains

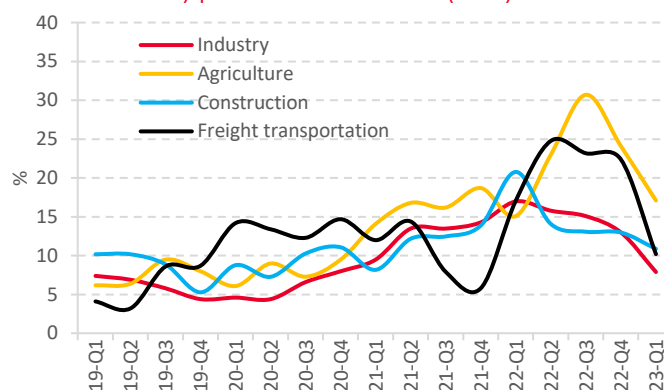
A likely improvement in the logistics situation is indicated by a significant acceleration in the dynamics of imports (primarily consumer non-food products) to Belarus in late 2022 — early 2023 (Figure 9.a). At the same time, business surveys indicate that logistical issues were still the main obstacles for business activities of firms in Q1-2023. The concern of entrepreneurs with logistics challenges may indirectly indicate the lack of resilience and stability of the existing supply chains, as well as increased costs (Figure 9.b) due to new transportation routes. Thus, based on the data of the National Bank, the prices of consumer goods' imports to Belarus were almost 20% higher in January 2023 versus January 2022, while the prices of all imports of goods decreased by 2.9% (YoY) by reducing the cost of intermediate imports (probably the latter was due to a lower price of crude oil supplied from Russia).

Figure 9. Imports of goods and changes in producer prices in Belarus

a) value of imports of goods;



b) producer inflation (YoY).

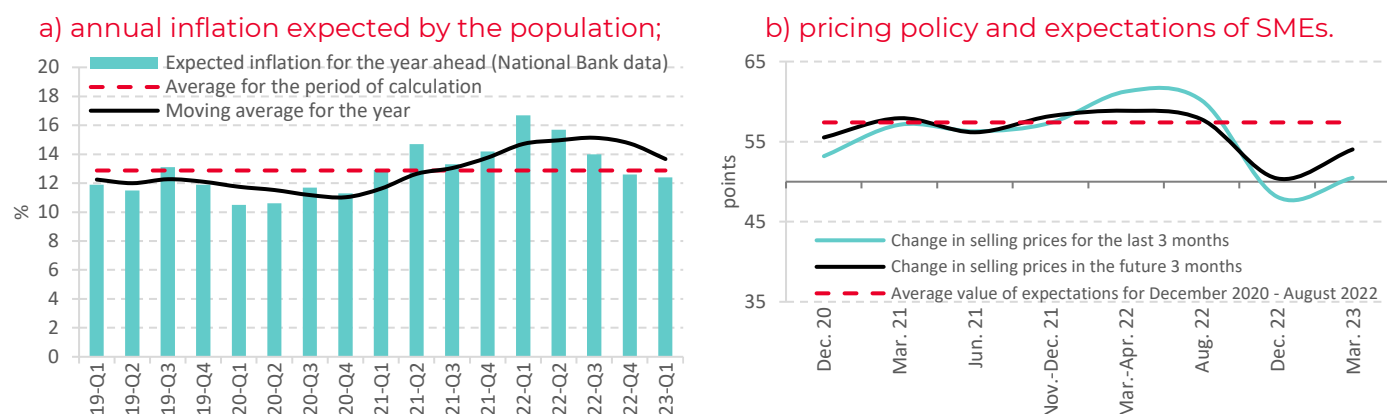


**Source:** The calculations are based on the Belstat data.

## Inflationary expectations did not provoke accelerated price growth in Q1-2023

The annual price increase expected by the population was 12.4% in March 2023, thus lowering from 12.6% in December 2022 (Figure 10.a). Household inflation expectations fell below their average level reported since 2019, but remained above the less-inflationary values of 2019-2020. Surveys of small and medium-sized businesses recorded a recovery in price growth expectations in Q1-2023; however, the Expectations Index remained significantly below the values of 2021-2022 (Figure 10.b). Similar results were obtained through QPM, too: the contribution of expectations (estimated within the model) to core inflation increased in Q1-2023, and it was at the level of the first half of 2021, which was much lower than in 2022 (Figure 8.a).

Figure 10. Inflationary expectations of the population and businesses



**Sources:** The calculations based on the data from the National Bank, Belarus Economy Monitor.

**Note:** Figure 10.b refers to the BCI index: the scale of the index is from 0 to 100, where values less than 50 indicate a price decrease, and values greater than 50 indicate a price increase.

## Domestic demand has been gradually leaving the list of disinflationary factors

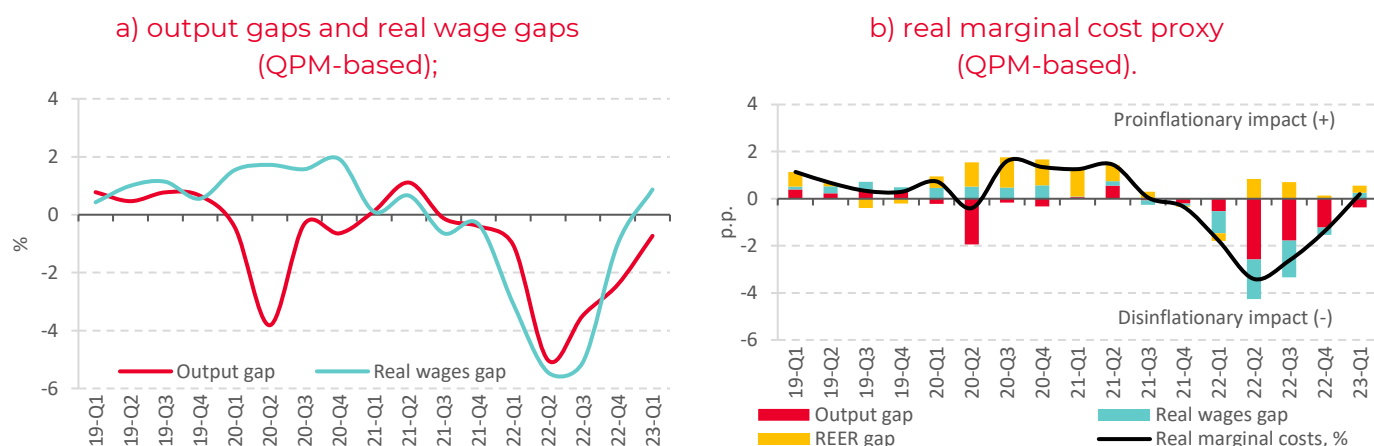
In Q1-2023, GDP, according to preliminary estimates, grew by 1.7–1.9% compared to the previous quarter (seasonally adjusted). The recovery dynamics was facilitated by the adjustment of logistics chains for the imports and exports of goods coupled with the implementation of a loose monetary and fiscal policy. Corrective GDP growth led to narrowing the negative output gap to about 0.7% in Q1-2023 (QPM-based; Figure 11.a). As a result, the disinflationary effect of aggregate demand noticeably weakened (Figure 11.b).

## Wages became a pro-inflationary factor in Q1-2023

Declining employment rate resulting from unfavorable demographic trends and outbound migration increases competition for skilled workers among employers. Taking into account the support provided to the public sector, a real wage grew actively in this environment in the second half of 2022 — early 2023, and its size (according to the QPM-based estimates) exceeded the inflation-neutral level in Q1-2023 (Figure 11.a; Figure 11.b). Due to inertia, the cumulative contribution of the output and wage gap to inflation remained negative in Q1-2023; however, it significantly decreased compared to 2022 (Figure 8.a); and it may become positive during the current year.



Figure 11. Dynamics of indicators of internal inflationary pressure



**Source:** The calculations are based on the Quarterly Projection Model (QPM) for Belarus.

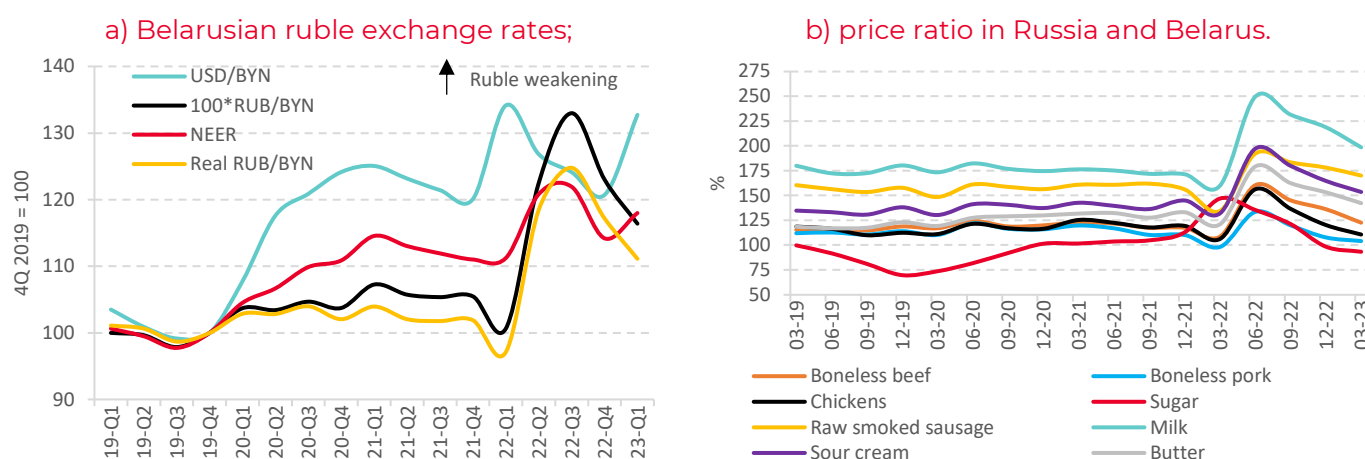
**Note:** The gaps are re-evaluated once data arrives. The real effective exchange rate gap (REER gap) is adjusted for the deviation of relative prices (the ratio of the core CPI to the composite CPI) from the trend.

### The pro-inflationary impact of the Belarusian ruble exchange rate began to recover

The Belarusian ruble depreciated by 3.3% in nominal terms (measured through the nominal effective exchange rate) in Q1-2023 on average versus Q4-2022 (Figure 12.a). The Belarusian ruble weakened due to the seasonal net demand for foreign currency at the beginning of the year. The depreciation of the national currency had a limited direct impact on price dynamics in Q1-2023 due to the inertia of the Belarusian ruble strengthening effect in the second half of 2022 (and due to the peculiarities of state price regulation) (Figure 8.a). At the same time, the risks of pro-inflationary impact from the foreign exchange rate have been growing.

The indirect pro-inflationary impact of the foreign exchange rate on price dynamics associated with the leveling of the disparity in prices for traded goods inside Belarus and in the countries, which were the trading partners of Belarus, continued in Q1-2023 (Figure 8.a). At the same time, the strengthening of the Belarusian ruble against the Russian ruble in real terms (Figure 12.a) and the gradual decrease in the difference in prices in Russia and Belarus (Figure 12.b) are the prerequisites for decreasing the indirect contribution of the foreign exchange rate to inflation in 2023.

Figure 12. Dynamics of the Belarusian ruble exchange rates and price disparity in Russia and Belarus



**Source:** The calculations based on the data by the National Bank of Belarus, Belstat, Rosstat.

**Note:** NEER is the nominal effective exchange rate of the Belarusian ruble. The price disparity is calculated as the ratio of the average price in Russia — recalculated at the average official foreign exchange rate of the Belarusian ruble to the Russian ruble — to the average price of goods in Belarus, multiplied by 100.

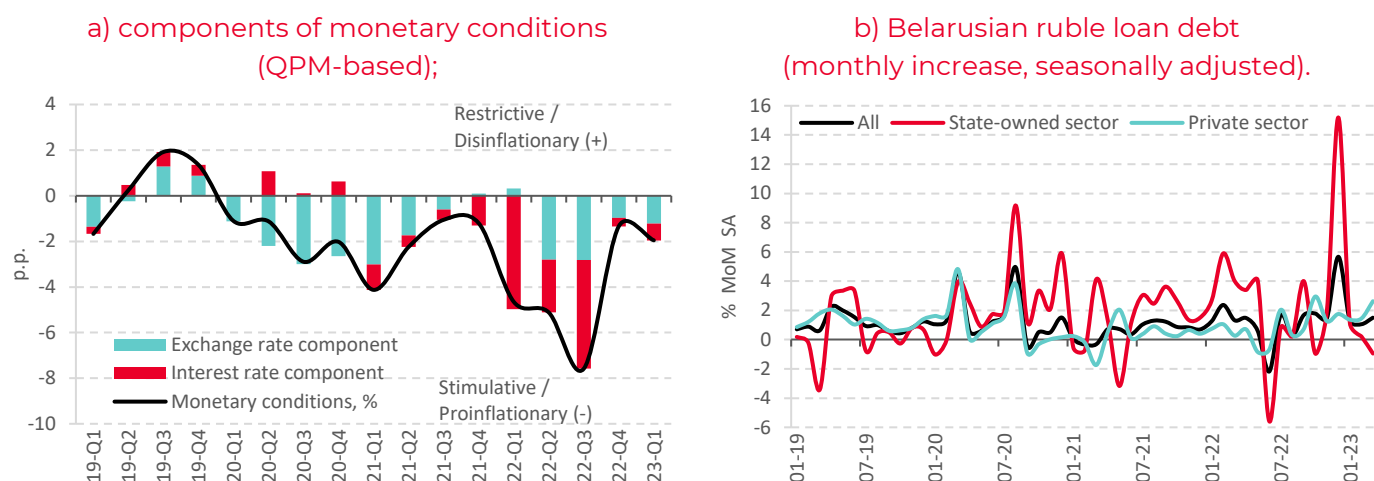
### 3 Monetary conditions

#### Monetary conditions remained pro-inflationary in Q1-2023

In Q1-2023, the National Bank retained restrictions on bank liquidity management operations and reduced the refinancing rate three times by a total of 1.5 p.p. Since the banking system continued to operate in the context of structural liquidity surplus, such actions of the National Bank of Belarus resulted in maintaining the nominal rate of the Belarusian ruble interbank market close to 1%, while the nominal lending interest rates and nominal deposit interest rates in Belarusian rubles decreased slightly, rewriting historical lows again. In real terms, interest rates remained below their QPM equilibrium levels on average (Figure 13.a).<sup>4</sup>

Loose interest rates are not conducive to creating incentives for long-term savings. As a result, the trend of increasing share of cash and current accounts in the structure of the Belarusian ruble money supply continued in Q1-2023: this share reached 59.7% in March 2023 (seasonally adjusted), which was a new multi-year high. The structure of the Belarusian ruble money supply has been becoming increasingly fragile to shocks, which can increase the inflationary effects of shocks when they occur. Accommodative monetary policy helped maintain lending activity in early 2023, but lending rates have declined after a surge at the end of last year (Figure 13.b). It is likely that the credit market is still affected by the increased uncertainty of the economic outlook and the instability of the recovery process in the economy.

Figure 13. Monetary conditions



**Source:** The calculations based on the QPM for Belarus; data by the National Bank of Belarus.

**Note:** The dynamics of monetary conditions may change once new data arrives.

#### The Belarusian ruble remained somewhat undervalued in Q1-2023 (Figure 13.a)

The undervaluation of the Belarusian ruble was estimated at  $\approx 2.4\%$  on average in Q1-2023 (relative to the equilibrium of the real effective exchange rate under the QPM). In general, such an underestimation scale can be interpreted as the Belarusian ruble being close to its equilibrium.

<sup>4</sup> The QPM estimates of real interest rates in Q1-2023 continued to be affected by an ad-hoc price decline in Q4-2022, which led to a significant reduction in rational inflation expectations for the next quarter used to calculate real interest rates. As a result, the QPM-based estimates indicate that real interbank rates for fixed-term Belarusian ruble deposits remained below the equilibrium in Q1-2023, while they were higher for Belarusian ruble loans.

On the one hand, this means that the indirect pro-inflationary impact of the foreign exchange rate factor (the equalization of prices for tradable goods in Belarus and in its trading partner countries) was small in Q1-2023. On the other hand, competitiveness support provided by the foreign exchange rate to Belarusian producers has noticeably weakened compared to last year, which will lead to the fading of the price impulse to increase exports, primarily to Russia.

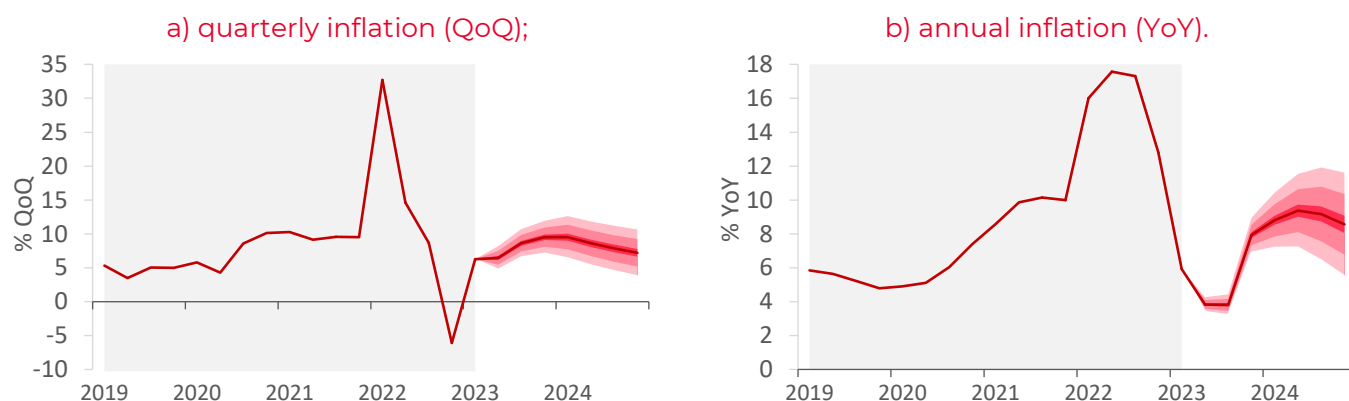
## 4 Short-term forecast

**Annualized quarterly inflation can reach 6-7% (QoQ) in Q2-2023, which will be in line with annual inflation deceleration slightly below 4% (YoY) by the middle of the year**

Wage growth, weak incentives to deposit Belarusian rubles amid low interest rates, and the pass-through of the weaker Belarusian ruble to prices are the prerequisites for the quarterly inflation to accelerate (Figure 14.a). Lower fuel prices on the domestic market will facilitate partial leveling of the pro-inflationary impact of these factors.

Despite the quarterly inflation recovery, annual consumer price growth will fall below 5% (YoY) in Q2-2023, and it may get close to 4% (YoY) in June (Figure 14.b). A large-scale surge in March 2022 was excluded from the calculation of the annual indicator already in March 2023; and the high price growth rates of Q2-2022 will also be excluded from this calculation in Q2-2023. In addition, the restraining effect of price regulation on quarterly inflation may weaken by the middle of the year, while in annual terms, the effect of the price reduction in October-November 2022 will continue until Q4-2023.

Figure 14. Inflation forecast for Belarus



**Source:** The calculations are based on the Quarterly Projection Model (QPM) for Belarus.

**Note:** YoY (year-on-year) is the growth rate in the last month of the quarter versus the last month of the corresponding quarter of the previous year; QoQ (quarter-on-quarter) is the annualized growth rate in the last month of the quarter versus the last month of the previous quarter, seasonally adjusted. The Figure shows seasonally adjusted indicators. The ranges in the figure correspond to the 15%, 50% and 75% confidence intervals.

**Pro-inflationary pressure has prerequisites for strengthening in the second half of the year**

A loose monetary policy combined with salaries getting to the pro-inflationary track and neutralization of the last year's disinflationary impact of domestic demand can return the annualized price growth closer to 10% (QoQ) in the second half of this year (Figure 14.a). The pro-inflationary impact of the Belarusian ruble exchange rate is likely to remain, and the pressure from rising prices in Russia may return by the end of the year.

At the same time, annual inflation will remain around 4–5% (YoY) in Q3-2023 due to the previously identified effects of a high statistical base and lower prices in October-November 2022, and it is expected to recover to the range of 7–9% (YoY) only in Q4-2023 (Figure 14.b).

## 5 Forecasting risks

### **The scale of demand stimulus can be excessively inflationary**

Fulfillment of the planned objectives to promote investment demand may require the National Bank of Belarus and the government to strengthen incentives for economic activity by lowering interest rates, expanding fiscal support and non-market lending even more actively than it is envisaged in the baseline scenario. If such a scenario materializes, inflationary pressures will increase significantly in the second half of 2023. This is fraught with the fact that the Belarusian economy will enter a recession again in 2024, combined with increased inflation and devaluation expectations, even without new sanctions manifestations and while maintaining adapted supply chains.

### **The strength and stability of the supply chains of goods coming to/from Belarus are not guaranteed**

Both the tightening of approaches to such supplies by intermediary countries and the weakening of the financial performance of Belarusian firms due to the deterioration in the price conditions of foreign trade can lead to decreasing both imports and exports. If new logistical gaps emerge, inflationary pressure on the Belarusian market may increase.

### **Faster depreciation of the Russian ruble amid a large-scale drop in Russian oil exports will have pro-inflationary consequences for Belarus**

When implementing this scenario, the National Bank of Belarus will have to choose between allowing the Belarusian ruble to further strengthen against the Russian ruble and thus partially mitigate the weakening against the US dollar and the threat of financial destabilization, and preventing a serious strengthening of the Belarusian ruble against the Russian ruble due to the accelerated weakening against the US dollar in order to support price competitiveness of Belarusian exporters on the Russian market. Both options are very likely to increase inflationary pressure, and the choice of the National Bank will depend on the scale of the Russian ruble weakening and the risks of a banking crisis in Belarus.

### **Preservation of restrained consumer demand for goods and conservative credit policy of banks are disinflationary risks**

Moreover, lower inflation is possible in 2023 if strict price regulation continues. However, this will negatively affect the range and quality of goods, as well as the financial standing of producers and the trade sector.

## Explainers

### Quarterly Projection Model (QPM)

This is a semi-structural macroeconomic model based on the principles of new Keynesianism; it belongs to the class of dynamic stochastic general equilibrium models. The QPM has been widely used for macroeconomic analysis, forecasting and monetary policy designs in central banks, including [the National Bank of the Republic of Belarus](#).

### QPM indicators

#### Monetary conditions

This is an indicator of the state of monetary conditions. It is a combination of gaps between the real effective exchange rate (with the opposite sign) and real interest rates. Positive values of monetary conditions indicate their constraining nature for economic activity, and their negative values indicate their stimulating nature for economic activity.

#### Output gap

This is a deviation of a real GDP from its potential value. A potential GDP is such a GDP value that leads neither to additional inflationary nor disinflationary pressures. A positive output gap indicates excess demand in the economy, and it is an indicator of inflationary pressure. The opposite is true for a negative output gap.

#### Wage gap

This is deviation of real wages from their equilibrium level. A positive gap indicates that wages are above the level corresponding to the potential GDP, and it is an indicator of inflationary pressure. The opposite is true for a negative gap.

#### Interest rate gap

This is a deviation of the real interest rate from its neutral level. A positive gap in the interest rate indicates that the nature of the interest rate policy is restraining to economic activity, while a negative gap in the interest rate indicates that the nature of the interest rate policy is stimulating to economic activity.

#### Real effective exchange rate gap (REER gap)

This is a deviation of the real effective exchange rate of the Belarusian ruble from its equilibrium level. A positive real effective exchange rate gap indicates an undervaluation of the Belarusian ruble, while a negative real effective exchange rate gap indicates an overvaluation of the Belarusian ruble.

#### Real marginal costs

This is approximation of the incremental costs of producing an additional unit of output. Real marginal costs are a combination of output, wages, and real effective exchange rate gaps. Output and wage gaps approximate the costs of domestic producers, while the real effective exchange rate gap approximates the costs of importers. Positive values indicate a pro-inflationary pressure, and negative values indicate a disinflationary pressure.