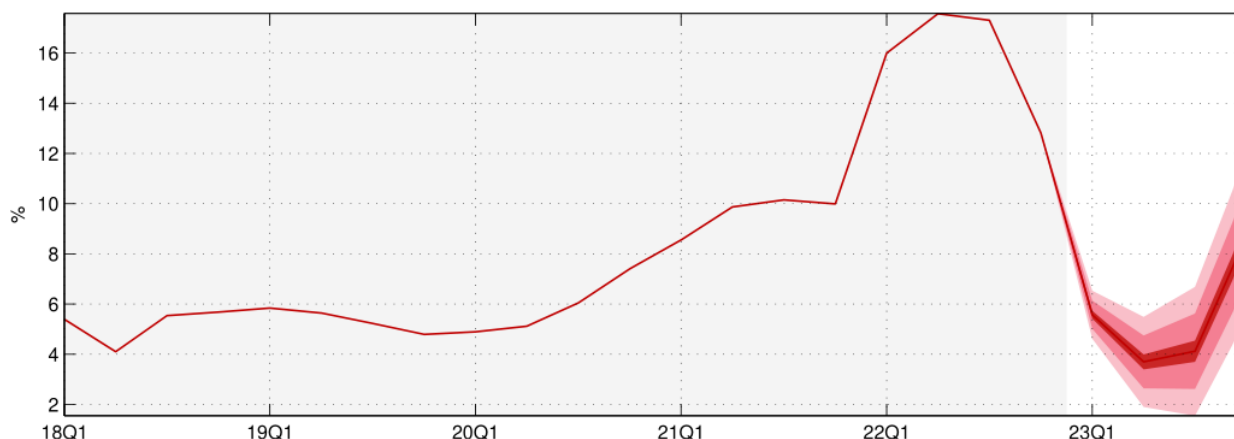


Inflation will slow down temporarily below 5% (YoY) in spring-summer 2023, but it may accelerate to 7-11% (YoY) by the year end

In 2022, for the first time in the history of Belarus, there was a decrease in consumer prices in Q4: by 6% (QoQ) (*annualized seasonally adjusted change*). Tightening of the State Price Regulation System lowered prices. Eventually, annual inflation slowed down to 12.8% (YoY) in December 2022. Prerequisites for inflation slowdown shaped prior to strengthening administrative monitoring: restrained domestic demand and corrective strengthening of the Belarusian ruble lowered inflationary pressure in the economy in August-September 2022 and retained their impact in Q4-2022. Annual inflation will slow down sharply in March 2023 and may temporarily drop below 5% (YoY) in the spring-summer period due to the March-April 2022 price spike being removed from the calculation (**Figure 1**). At the same time, a monthly price growth is likely to recover during the year due to the weakening effects of price regulation and due to other triggering price pressure factors. Eventually, annual inflation will accelerate towards the end of the year, and it is projected to be in the range of 7-11% (YoY) at the year end.

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



Source: The BEROC's calculations are based on the BEROC's 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 the Belarusian economy. See: WP BEROC no. 82 «[Quarterly Projection Model for Belarus: Methodological Aspects and Practical Applications](#)».

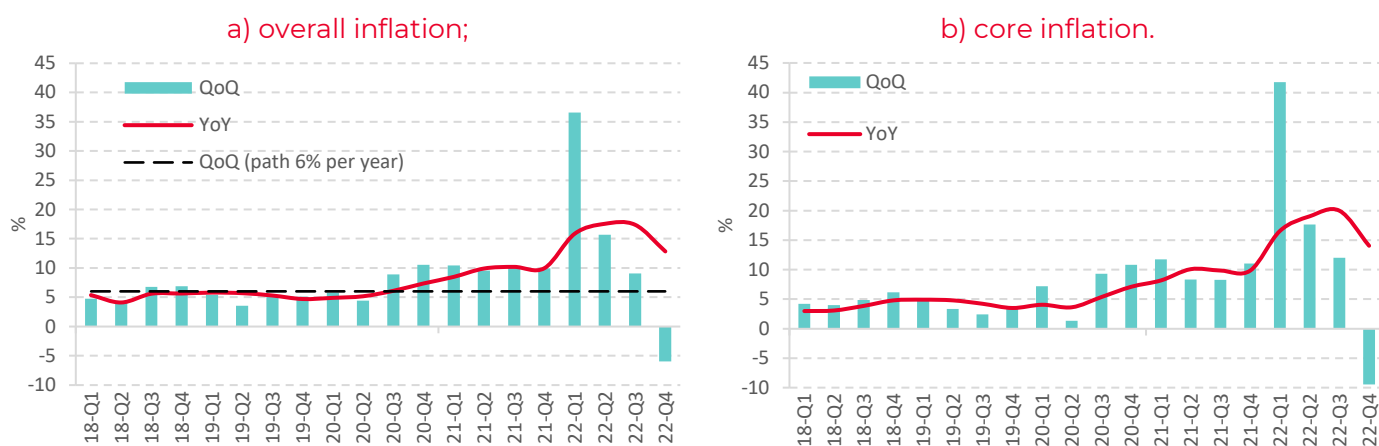
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1 Dynamics of inflationary processes

Price regulation affected inflation more than had been estimated

Consumer prices decreased by 6% (annualized and seasonally adjusted) in Q4-2022 (hereinafter referred to as “% QoQ”; [Figure 2.a](#)).^{1,2} Price reduction in Q4 was recorded for the first time. Prior to 2022, the lowest Q4 inflation of about 5% (QoQ) was reported in 2009 and 2019. The decline (not a growth slowdown) in prices in Q4-2022 is primarily due to the introduction of a new – broader and more stringent – price regulation system. The impact of administrative measures on inflation turned out to be more pronounced compared to initial estimates, as a result of which annual inflation slowed down from 17.4% in September 2022 to 12.8% in December 2022 (hereinafter referred to as “% YoY”).

Figure 2. Dynamics of overall and core inflation



Source: BEROC’s calculations based on the Belstat data.

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

State regulation mainly affected the goods in the Core Consumer Price Index

The Core Consumer Price Index in Q4-2022 decreased by 9.5% (QoQ), and the Median Consumer Price Index decreased by 7.1% (QoQ) ([Figure 2.b](#); [Figure 3.a](#)). Inflation affected individual consumer basket items in a unique way for Belarus: in Q4-2022, prices for more than 60% of the consumer basket items decreased, and prices for over 20% of the consumer basket items increased by less than 6% (QoQ) ([Figure 3.b](#)). Such a synchronized price decline has not been recorded after inflationary shocks in 2011 and 2014-2015.

Non-foods fell in price by 12.8% (QoQ) in Q4-2022 ([Figure 4.a](#)) providing >4 p.p. of the quarterly decline in the Composite Consumer Price Index

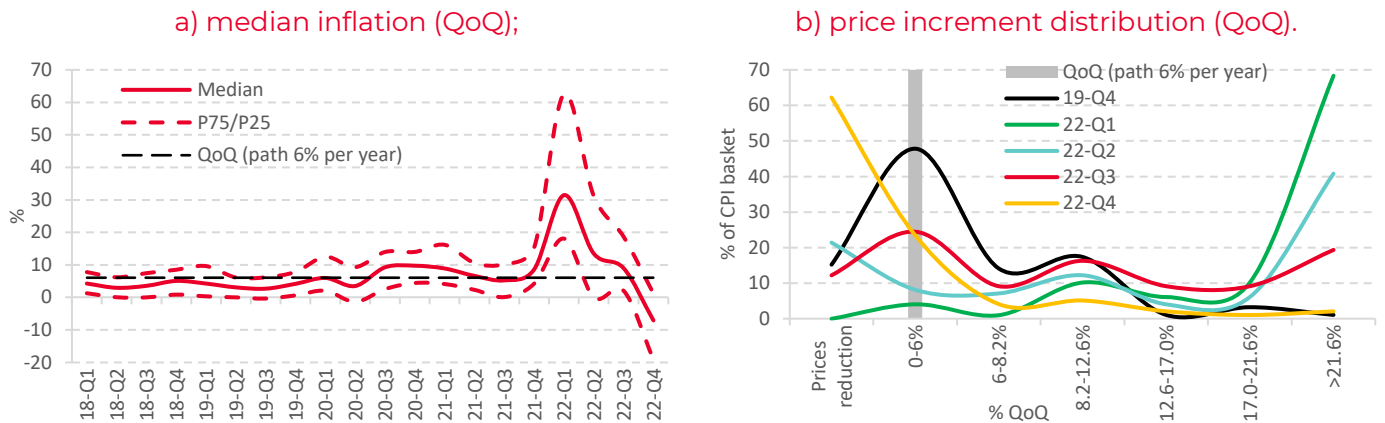
The price of 40 out of 48 consolidated non-food items in the consumer basket decreased (seasonally adjusted) due to tightened price monitoring in Q4-2022. Prices for the goods that rose in price significantly after the February shock adjusted proactively: consumer electronics and house appliances, cars, cosmetics, home care products, etc. ([Figure 5.a](#)).

¹ 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).

² The average quarterly price level in Q4 was 0.9% lower than in Q3-2022, which was equal to the annualized price decline rate of 3.9% in Q4 versus Q3 (seasonally adjusted).

In addition to price regulation, prices for a number of goods that rose in price in 2022 experienced a dampening effect associated with weakened domestic demand, corrective strengthening of the Belarusian ruble, gradual adjustment of supply chains, reducing external price pressures, and lower inflationary expectations of the population (Figure 4.b). At the same time, the cost of such goods remained significantly higher in December 2022 than in February (Figure 5.a), which indicates an overall increase in the costs associated with their production and imports. Attention is also drawn to the significant discrepancy in the relative prices of non-foods in 2022 (Figure 5.a), which may change their consumption structure in 2023.

Figure 4. Dynamics of median inflation and distribution of relative price growth



Source: BEROC’s calculations based on the Belstat data.

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

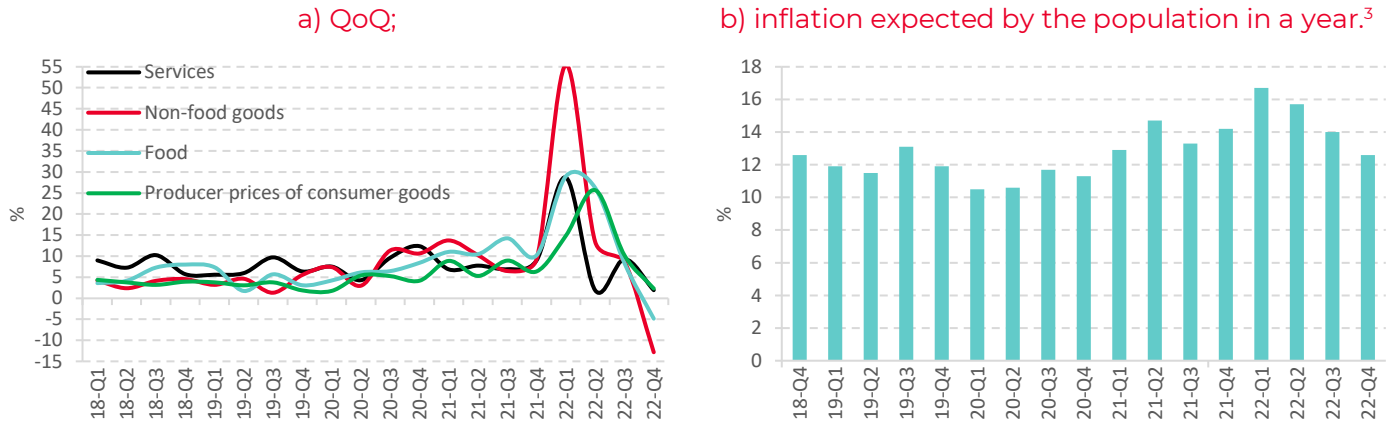
Food prices fell by 4.9% (QoQ) in Q4-2022 (Figure 4.a)

The seasonally adjusted price index fell for 20 out of 28 aggregated food products in the consumer basket. In addition to state regulation, the price dynamics in this segment was influenced by the higher harvest and the adjustment of global food prices. At the same time, cheese, milk and dairy products exported to Russia in large volumes continued to rise in price in Q4-2022. This indicates continued inflationary pressure on the Belarusian market due to the remaining and significant price gap between Russia and Belarus (Figure 10.b); the gap opened up due to the weakening of the Belarusian ruble against the Russian ruble in 2022H1.

Consumer services continued price-rising in Q4-2022

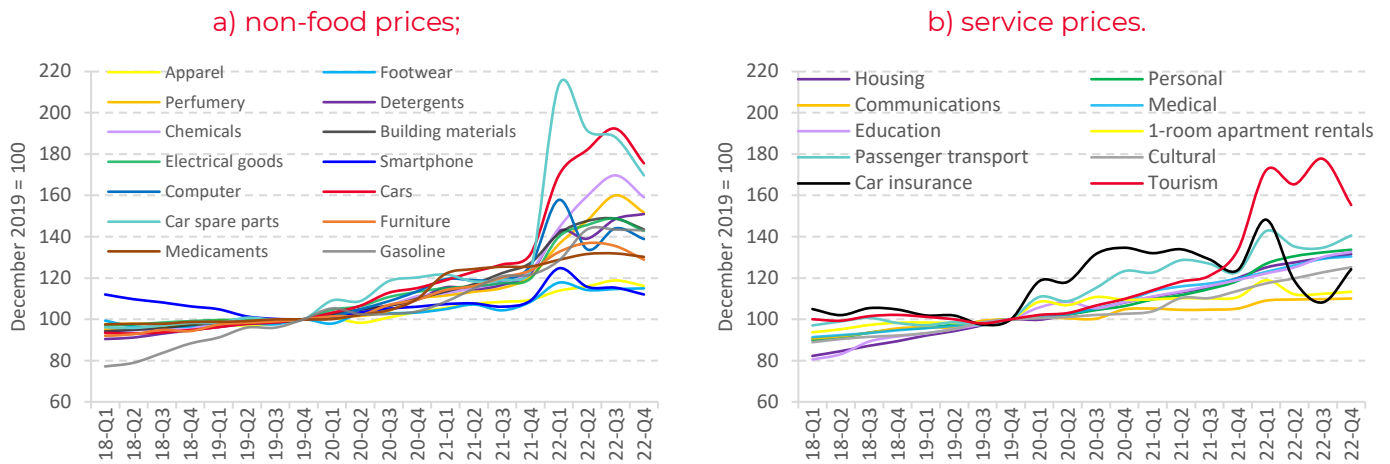
Inflation in services was estimated at about 1.9% (QoQ) in October-December 2022, which was noticeably lower than the rate in Q3-2022 (Figure 4.a). Prices for services were de jure affected by the new government regulation measures to the minimum extent and for a short period. However, de facto confusion and uncertainty in law enforcement practices have led to the impact of state regulation on them. Relatively high volatility was observed in the items dependent on exchange rate fluctuations and changes in demand: passenger transportation, insurance, tourism (Figure 5.b).

Figure 4. Dynamics of inflation components and inflation expectations



Source: BEROC’s calculations based on the Belstat and the National Bank of the Republic of Belarus data.
Note: QoQ is the annualized growth rate in the last month of the quarter versus the last month of the previous quarter, seasonally adjusted.

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



Source: BEROC’s calculations based on the Belstat data.

2 Inflation drivers

Price pressure from the global economy eased in Q4-2022

Shrinking monetary and fiscal stimuli are more and more clearly constraining global economic dynamics. Global business activity weakened in Q4-2022, and new production orders have remarkably declined, thus signaling a serious “cooling” in demand (Figure 6.b). Weaker demand and softer coronavirus restrictions in China facilitated improvement of supply chains: the frequency of shipment delays dropped to the lowest level since January 2020 (Figure 6.b).

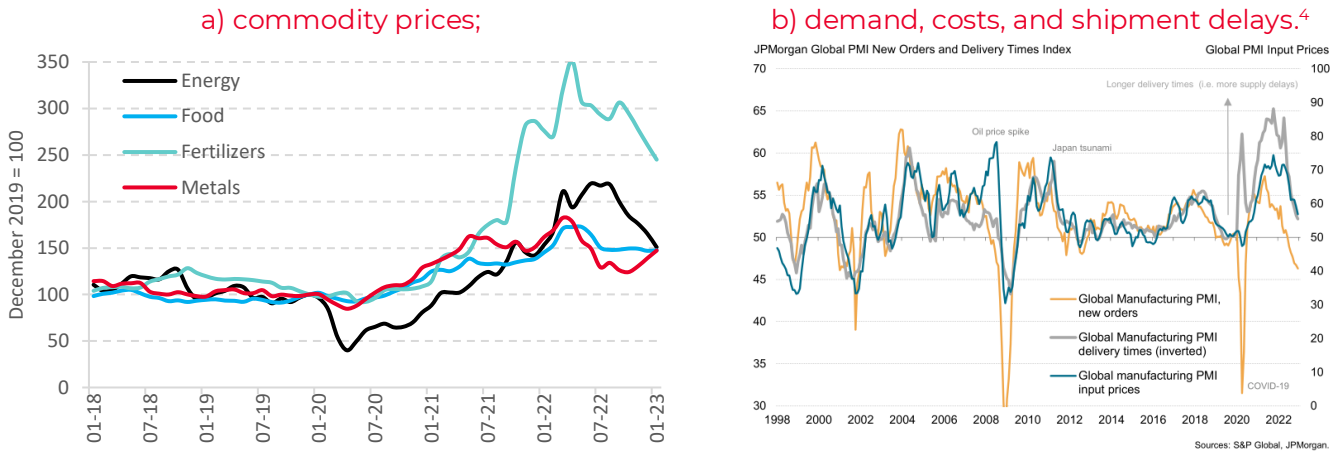
While global manufacturing activity declined, global commodity prices continued adjusting downward in Q4-2022

The World Bank US Dollar Price Indices for energy and non-energy goods fell by 17.1% and 1.5%, respectively, versus Q3-2022. This resulted in the global commodity costs getting back to the levels of late 2021 — early 2022 (Figure 6.a).

³ The values for the 2022 periods are referred to in: https://www.nbrb.by/top/pdf/doklad_kalechits_26-01-2023.pdf.

The improvement in the supply chain situation and lower commodity prices resulted in a slowdown in the global growth rates of costs and selling prices of producers in late 2022 to the lowest levels since Q4-2020 (Figure 6.b). At the same time, one should consider that easing producer price pressures will gradually translate into consumer inflation, and its pace may remain elevated in the near future due to the accumulated cost increase (Figure 7.a).

Figure 6. World commodity prices and global supply delays

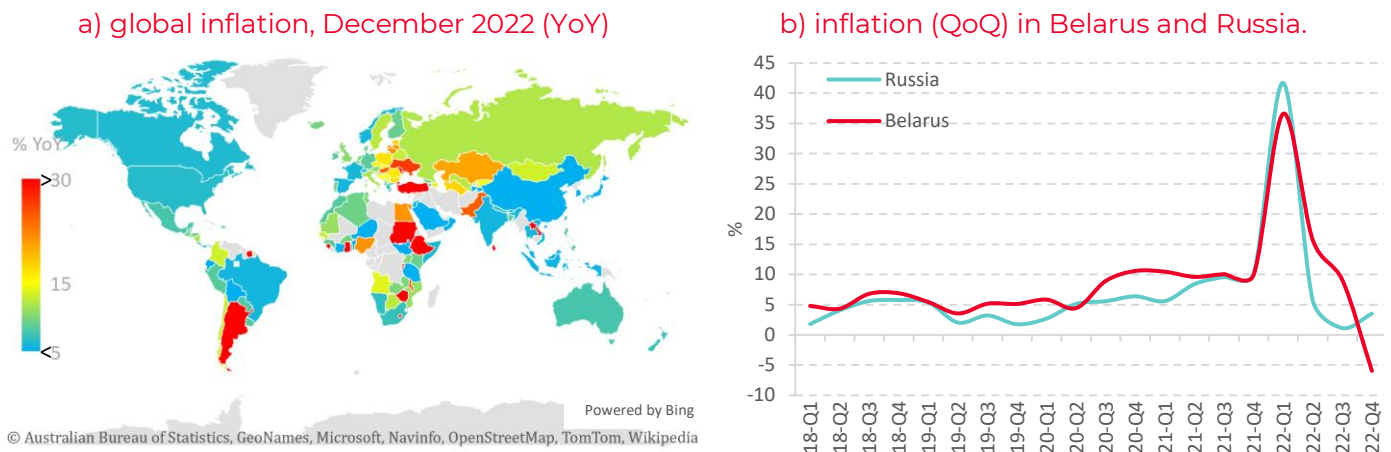


Source: World Bank, S&P Global, JPMorgan.

Inflation in Russia remained subdued in Q4-2022

Price growth in Russia in Q4-2022 was estimated at about 3.5% (QoQ) following ca. 1.1% (QoQ) in Q3-2022 (Figure 7.b). Higher utility bills explain accelerating inflation in December 2022, while core inflation slowed down to zero on the back of weak consumer demand. Russia had a limited direct inflationary impact on price dynamics in Belarus in Q4-2022 for this reason.

Figure 7. Global inflation dynamics



Source: Trading Economics, national statistical agencies, BEROC's calculations.

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

⁴ PMI (Purchasing Managers Index) is a survey-based indicator of a business environment in a particular industry. PMI and its sub-indices are calculated based on monthly surveys of purchasing managers. PMIs are calculated as diffuse indices, and they range from 0 to 100, where readings above 50 indicate an increase versus the previous month, and readings below 50 indicate a decrease versus the previous month. Data source: S&P Global, JPMorgan (<https://www.spglobal.com/marketintelligence/en/mi/research-analysis/week-ahead-economic-preview-week-of-9-january-2023.html>)

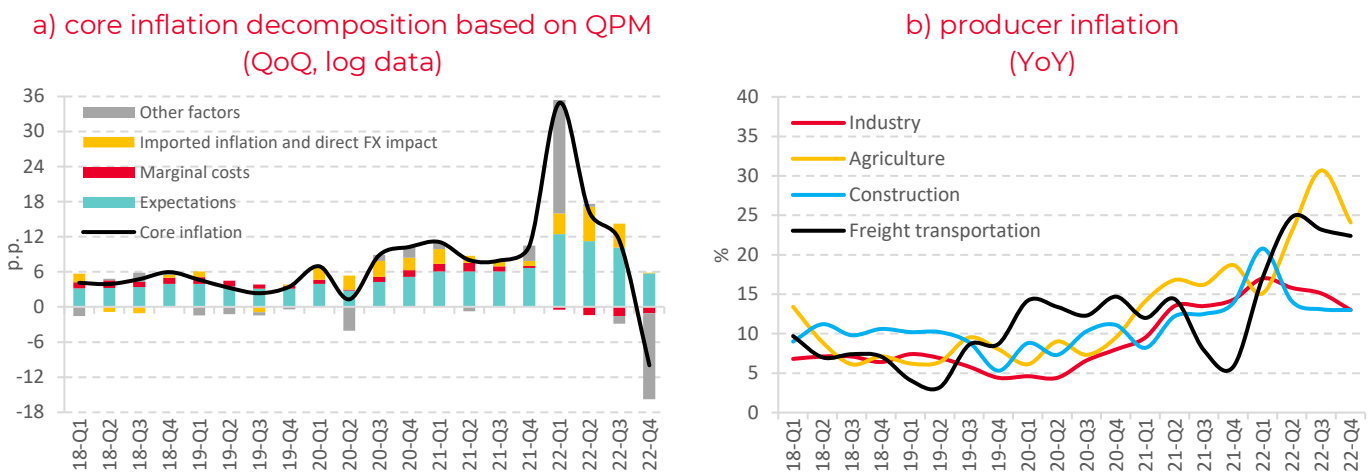
Tighter price regulation is a key internal factor of inflationary dynamics in Q4-2022

The government of Belarus approved a new price regulation system by Resolution No. 713 in October 2022. Now, authorities shall approve higher selling prices of producers, and maximum markups have been introduced to importers, wholesalers and retailers regardless of the number of intermediaries.

The requirement to align the current prices for goods with the updated price regulation system led to a structural shift in price dynamics: Belstat recorded a unique — for Belarus — decrease in the cost of foods and non-foods in Q4-2022. The flip side of tighter price monitoring was a shrinking product range reported by 48.5% of households surveyed in November 2022.⁵

The QPM-based decomposition of core inflation (Figure 8.a) indicates that the contribution of the factors — that are not explained by the model — to the annualized core inflation value in Q4-2022 (which amounted to -9.5% (QoQ)) is estimated at about -14-15 p.p. This value can be considered as a minimum estimate of the price regulation impact on inflation.

Figure 8. Decomposition of core inflation and changes in producer prices in Belarus



Source: BEROC’s calculations based on the QPM BEROC for Belarus and the Belstat data.

Note: in Figure 8.a, the contributions of the factors have been calculated considering inertia.

Disinflationary impact of domestic economic activity decreased

The economy of Belarus was in the process of adapting to new environment in Q4-2022. The volume of seasonally adjusted GDP⁶, according to preliminary estimates, increased by 0.6-0.7% versus Q3-2022, but remained 5.1-5.2% below the average quarterly value of 2021.

The GDP’s adjustment was facilitated by larger harvest, partially refocusing trade flows on Russia and some other countries, loose monetary policy and, probably, expending military industry output.

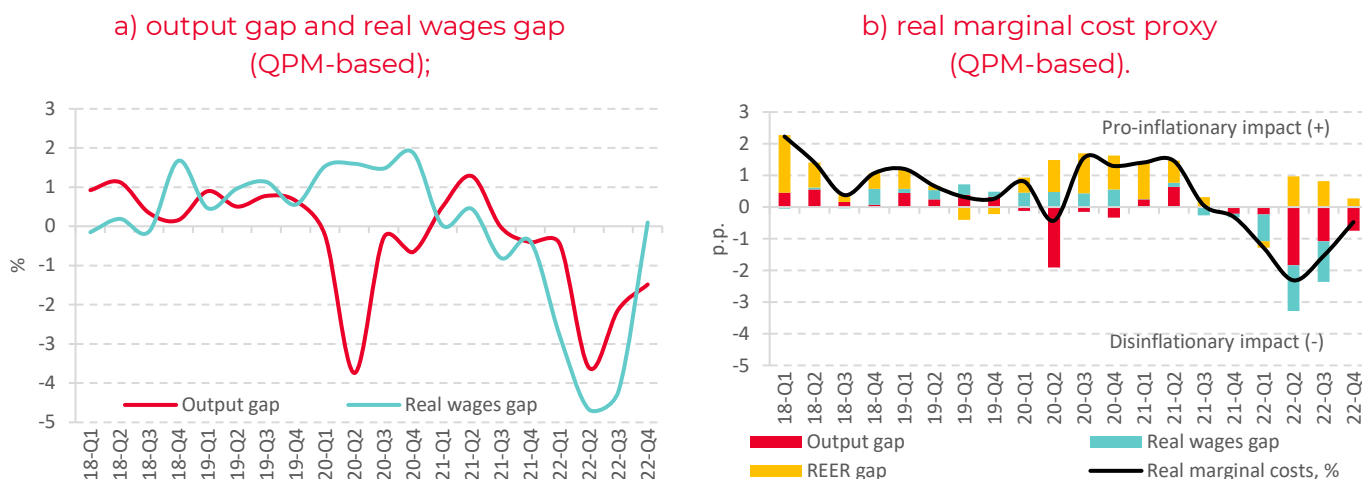
⁵ See: [Presentation of Material of the Belarus Economy Monitor. December. 2022](#) (BEROC, 2022).

⁶ Near the turning points (i.e., a reversal of the GDP dynamics), various seasonal adjustments can lead to different diagnostics of the GDP dynamics on the recent observations. The GDP growth in Q3 and Q4-2022 is estimated using the X13 procedure in the JDemetra+ software application. The corresponding procedure is applied for the seasonal adjustment of variables in QPM BEROC, and the corresponding seasonally adjusted GDP series is used in this bulletin. However, other seasonal adjustment procedures can generate different results near turning points. E.g., the seasonal adjustment procedure used under the BEROC quarterly economic review indicates a continuing GDP decline in Q3 and Q4-2022.

Corrective GDP growth led to narrowing the negative output gap from about 2% in Q3-2022 to about 1.5% in Q4-2022 (based on QPM; [Figure 9.a](#)). Eventually, although the disinflationary effect of aggregate demand remained at the end of last year, its intensity decreased ([Figure 9.b](#)). It should be noted that weakened demand retained its primacy among the barriers to the growth of business activity of SMEs in Belarus according to the Q4-2022 survey.⁵

Real wages increased by over 5% in Q4 versus Q3 (seasonally adjusted). As a result, real wages approached the equilibrium level: the disinflationary effect of wages significantly weakened ([Figure 9.b](#)). Falling prices, as well as, possibly, measures to support the public sector and shrinking employment facilitated the rise in real wages.

Figure 9. Dynamics of indicators of internal inflationary pressure



Source: BEROC’s calculations based on the QPM BEROC 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.

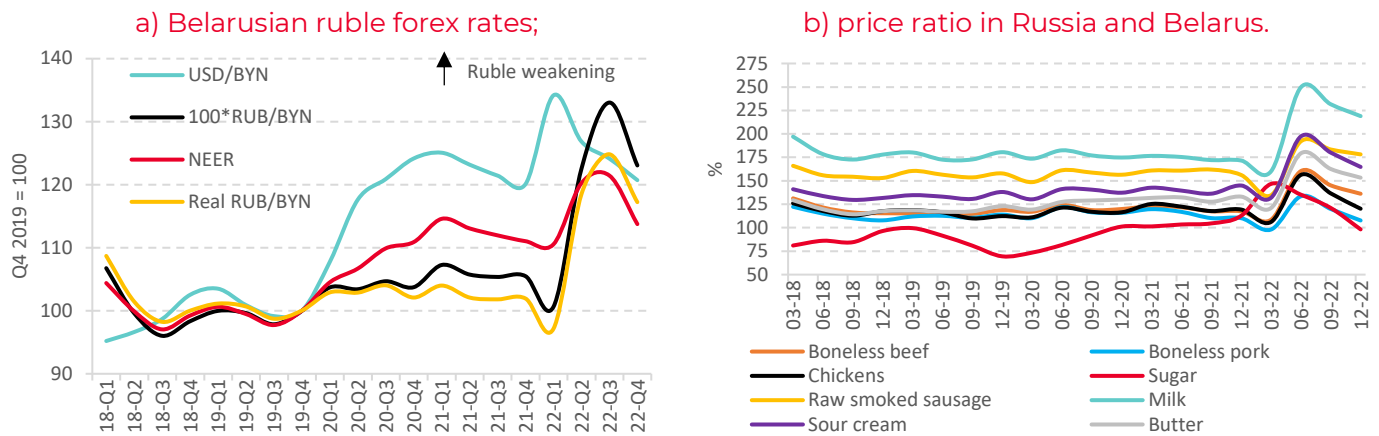
Contribution of the exchange rate factor to inflation decreased in Q4-2022

The Belarusian ruble appreciated by 6.3% in nominal terms (measured through the nominal effective exchange rate) in Q4-2022 on average versus Q3-2022, which was primarily due to its strengthening against the Russian ruble ([Figure 10.a](#)). This helped reduce the direct contribution of the exchange rate to price dynamics in Belarus ([Figure 8.a](#)). At the same time, the Belarusian ruble in Q4-2022 was 14.4% cheaper in real terms against the Russian ruble than in 2021 on average, and price disparity in Russia and Belarus remained significant ([Figure 10.a](#); [Figure 10.b](#)). Persisting significant discrepancy in prices generates prerequisites for their accelerated increase in Belarus and prioritization of supplies to the Russian market.

Inflation expectations declined to the level of early 2021 in Q4-2022

According to the National Bank data, the population expected a price increase of 12.6% within the following 12 months in December 2022. Expectations fell by ≈1.4 p.p. since the previous survey in September and by ≈4.1% since their peak value in Q1-2022 ([Figure 4.b](#)). Inflation expectations of SMEs decreased in Q4-2022, too.⁵ Expectation dynamics was likely influenced by some adaptation to the sanctions environment and by the price regulation measures. However, inflation expectations remained elevated versus their average value of ≈11.6% in 2019-2020.

Figure 10. Dynamics of the Belarusian ruble exchange rates and price disparity in Russia and Belarus



Source: BEROC’s calculations based on the data by Belstat, Rosstat, National Bank.

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.

Restrictions on engagement with Belarusian counterparties maintained their pro-inflationary impact

Challenged supplies, shortages of raw materials and components, and financial problems remained a significant impediment to the business activity growth of SMEs in Q4-2022.⁵ There is a high probability that these barriers are a consequence of the sanctions, and they continue to have a pro-inflationary effect on the Belarusian market through increasing costs for importers and producers (Figure 8.b).

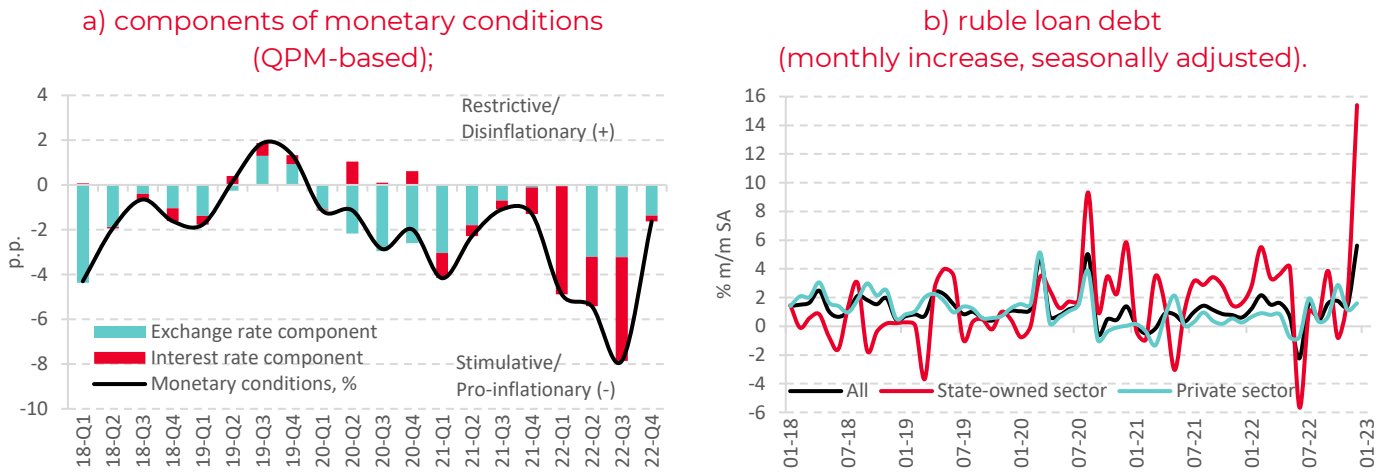
3 Monetary conditions

Monetary conditions remained soft in Q4-2022

The National Bank of Belarus was not proactive in monetary policy in Q4-2022: the refinancing rate remained unchanged (it lowered by 0.5 p.p. on January 23, 2023); banks’ liquidity was not regulated through permanently available and auction operations. Against the backdrop of a liquidity surplus in the banking system, which became stable, the nominal rates of the Belarusian ruble credit and deposit market continued to decline, and in real terms, on average, they remained below their equilibrium levels estimated through the QPM (Figure 11.a). The softness of interest rates contributed to lending revival (Figure 11.b) and a change in the structure of the Belarusian ruble money supply in favor of cash and current accounts, the share of which increased by 7.9 p.p. in 2022 (December 2022 versus December 2021) to the record breaking 57.5% in December 2022 since the transition to monetary targeting in 2015.

It should be noted that the results of applying the QPM indicate a diminishing interest rate softness in Q4-2022 and even an average interest rate exceeding the neutral level in lending. This is explained by increasing real interest rates due to a strong ad-hoc inflation slowdown. Since the scale of the impact of the administrative price reduction on inflation expectations is not obvious, and since nominal interest rates have fallen to their historic low, evaluations of the Q4-2022 interest rate policy should be treated somewhat conservatively.

Figure 11. Monetary conditions



Source: BEROC’s calculations based on the QPM BEROC for Belarus and National bank data.

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

Undervaluation of the Belarusian ruble decreased significantly in Q4-2022

The corrective strengthening of the Belarusian currency against the currencies of the countries that are the main trading partners, primarily against the Russian ruble, helped reduce the undervaluation of the Belarusian ruble from about 6–7% in Q3-2022 to about 2.5–3% in Q4-2022 (relative to the equilibrium level of the real effective exchange rate according to the QPM). As a result, the pro-inflationary impact of the exchange rate factor has significantly weakened, and the support ensured by the exchange rate to the price competitiveness of Belarusian producers has diminished.

4 Short-term forecast

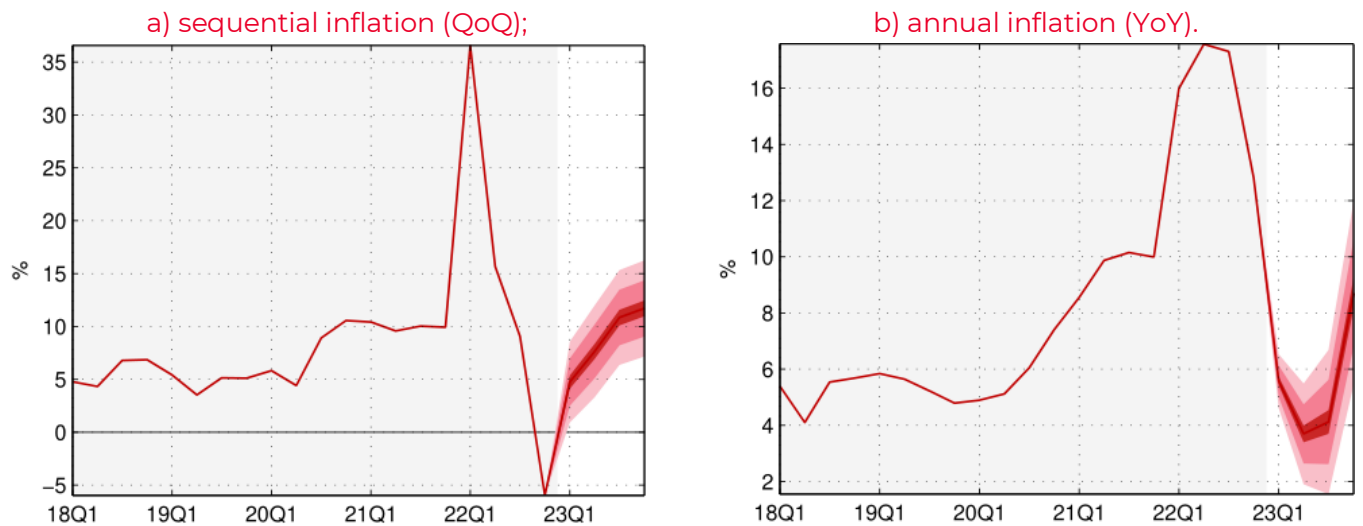
Monthly inflation will recover while annual price growth will slow down sharply in the spring months

There was a structural shift in the Consumer Price Index dynamics in Q4-2022: trade organizations were forced to lower prices for their goods to align them with the new regulation system. In 2023, manufacturers and resellers are likely to start raising their prices following rising costs. One should not rule out a gradual weakening of price monitoring by the state in order to smooth out its negative effects on the product range and the financial standing of businesses.

As a result, consumer prices are very likely to continue rising this year: there will be a sequential inflation recovery⁷ (Figure 12.a). At the same time, annual inflation will slow down sharply below 5% (YoY) in the spring months (Figure 12.b): the calculation of the indicator will result in a price rise in March-April 2022, but the administrative price decline in October-November 2022 will be taken into account.

⁷ Sequential inflation refers to the rise in prices over successive time periods, e.g. a month or a quarter. The annualized inflation (QoQ) figures presented in this bulletin can be considered as examples of sequential inflation.

Figure 12. Inflation forecast for Belarus



Source: BEROC's calculations based on the QPM BEROC for Belarus.

Note: The figure shows a seasonally adjusted indicator. The ranges in the figure correspond to the 15%, 50% and 75% confidence intervals.

The disinflationary impact of domestic economic activity may decrease in 2023, and prices are projected to rise in the range of 7-11% by the year end

The paramount prerequisites for the scenario under consideration are the prevention of direct involvement of Belarus in military operations in Ukraine, the absence of new significant sanctions restrictions, as well as a gradual decrease in external inflationary pressure. In this case, one can expect a systematic increase in non-market lending to the economy, maintaining loose monetary conditions, and expanding the budget deficit in the government's attempt to ensure GDP growth.

Eventually, the Belarusian ruble can weaken, and the negative output gap can narrow in 2023. This will mean a gradual recovery of the direct exchange rate pass-through effect on prices and a reducing downward pressure of economic activity on inflation. The pro-inflationary impact may remain due to inflationary expectations because of high uncertainty and due to the costs associated with reconfiguring value chains. As a result, annual inflation will begin to accelerate by the year end, and it is projected to be around 7–11% by late 2023 (Figure 12.b).

5 Forecasting risks

Excessively loosening monetary policy and the likelihood of expanding the budget deficit are primary pro-inflationary threats this year

The sources for ensuring the targets of the socio-economic development forecast of Belarus for 2023⁸ are not clear especially in the context of the expected weak dynamics of Russia's GDP and a slowdown in global economic growth. A scenario of active stimulation of domestic demand by the government seems likely: maintaining low interest rates, non-market lending and other quasi-fiscal operations combined with the expanding budget deficit. If the scale of stimulating domestic demand is significant, this can lead to a double-digit inflation again.

⁸ Target indicators for 2023: real GDP growth is 3.8%, growth in real disposable income of the population is 4.1%; growth in real investment in fixed assets is 22.3%; growth in exports of goods and services is 5.5%.

“Exit” from strict price regulation may provoke an accelerated inflation rise

The combination of emission financing of the economy and strict price monitoring can have negative consequences for the macroeconomic and financial situation. It is quite possible that the government will ease price regulations this year; however, such actions may trigger accelerated inflation through compensating administrative price cuts in Q4-2022.

Strong escalation of hostilities in Ukraine is a threat to the stability of supply chains and prices in commodity markets

For Belarus, such developments are fraught with a deepening economic recession and a concurrent intensification of inflationary processes due to challenged supply routes, higher inflationary expectations and exchange rate volatility.

The likelihood of materializing the scenario of a significant weakening of the Russian ruble against the US dollar in 2023 poses the risks of a serious devaluation of the Belarusian currency

Devaluation of the Russian ruble close to 80 RUB per USD or more is probable in the event of a large-scale drop in Russian oil and gas exports due to the sanctions policy of the EU, the US, the UK, and other countries. If such a scenario comes true, the Belarusian ruble may strongly weaken against the US dollar and the euro leading to corresponding inflationary consequences. In addition, this can generate a new wave of depreciation of the Belarusian ruble against the Russian ruble due to the need to maintain the achieved price competitiveness in the stagnating/shrinking Russian market.

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, used to draft this document was developed by the BEROc experts. See: [«Quarterly Projection Model for Belarus: Methodological Aspects and Practical Applications»](#).

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.

Wages 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 wages 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.