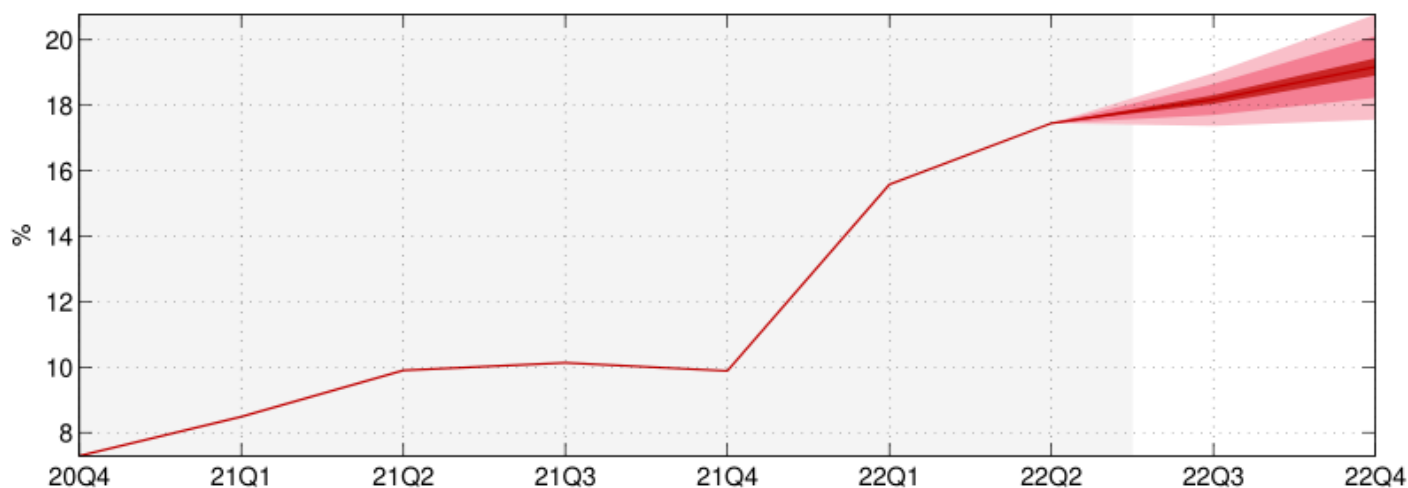


## **In Q2, inflation in Belarus remained elevated, and it is forecasted to be around 19% at the year-end**

June's inflation was 17.6% (YoY), elevating from March's 15.9% (YoY). High global commodity prices and the complication of supply chains increase the costs of organizations and have a pro-inflationary impact. Inflationary expectations remained elevated in Q2, while the weakening of the Belarusian ruble against a basket of currencies continued to be translated into prices. In Q2, the disinflationary impact increased through domestic demand, including due to the reduction in real wages. At the current year-end, inflation is projected at about 19%, YoY (Figure 1). Supply chain uncertainties and the probability of excessive monetary policy easing remain to be key pro-inflationary risks. Given the uncertainty, a range of 17–21% (YoY) seems realistic for inflation at the year-end in 2022.

Figure 1. Consumer price index dynamics and forecast in Belarus, % (YoY)



**Source:** BEROC's calculations based on the BEROC's Quarterly Projection 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 dynamics of the indicator in previous periods 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. QPM was developed by the BEROC experts, and, as of July 2022, it was in the testing phase.

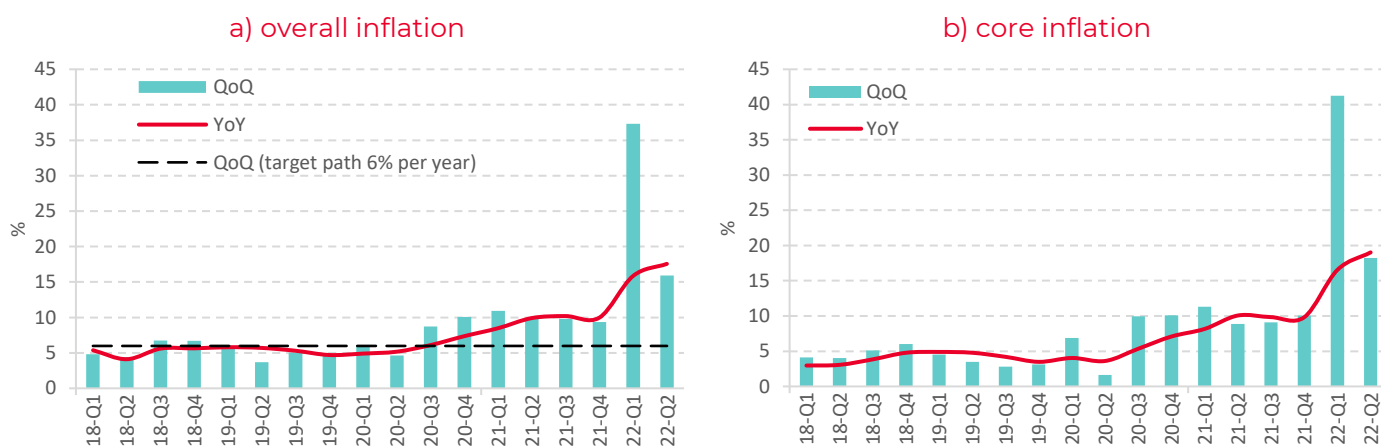
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## 1 Dynamics of inflationary processes

### In Q2-2022, inflationary pressure in Belarus remained elevated, but there have been signs of its weakening

In Q2, annualized inflation was 15.9%, seasonally adjusted (hereinafter referred to as “%, QoQ”).<sup>1</sup> Compared to the shocking Q1, price growth slowed down, but remained above the 2021 values, and it was significantly above the trajectory corresponding to the target of 6% per year (Figure 2.a). As a result, annual inflation rose to 17.6% in June from 15.9% in March (hereinafter referred to as “%, YoY”) largely due to the core inflation component (Figure 2.b).

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 vs the last month of the corresponding quarter of the previous year; QoQ is the annualized growth rate in the last month of the quarter vs the last month of the previous quarter, seasonally adjusted.

### High rise in food prices “fuels” inflation

In Q2, food inflation was estimated at 25.9% (QoQ) following 29.4% (QoQ) in January-March (Figure 3.a). As far as the vast majority of consolidated positions are concerned, quarterly price growth accelerated, which may be the result of a low grain yield last year, high global prices, as well as the weakening of the Belarusian ruble against the Russian ruble. Inflation in the food segment was held back by a  $\approx 24\%$  (QoQ) decrease in highly volatile fruit and vegetable prices after their rise in Q1.

### Growth in non-food prices slowed down in Q2, though remaining high

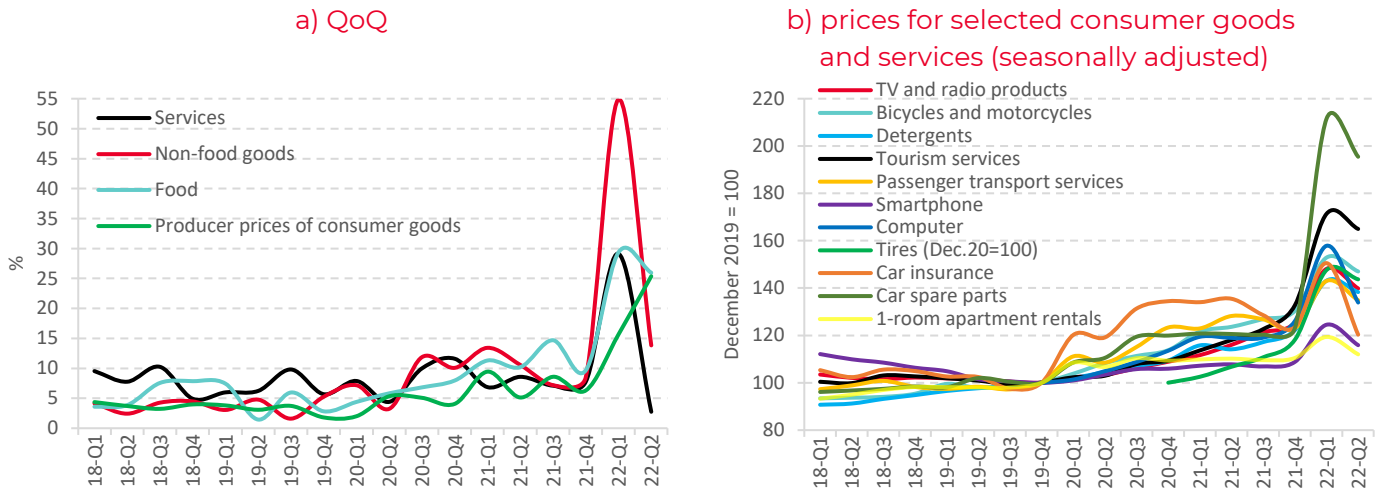
In Q2, non-food inflation was estimated at 13.8% (QoQ) following 54.9% (QoQ) in Q1 (Figure 3.a). In the context of falling consumer demand and the strengthening of the Belarusian ruble against the dollar and the euro, prices for a number of goods adjusted downward, including computers and smartphones, television and radio products, footwear, detergents, tires, car spare parts, etc. (Figure 3.b). At the same time, it was not a blanket adjustment, and most commodity groups continued getting more expensive in the context of logistics restructuring and the weakening of the Belarusian ruble against the Russian ruble. Acceleration of quarterly growth in consumer goods producer prices indicates the persistence of elevated inflationary cost pressures (Figure 3.a).

<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 get 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).

**In Q2, prices for consumer services increased by 2.8% (QoQ) following a price rise by 29.1% (QoQ) in Q1**

Inflation slowdown in this segment is explained by a downward price adjustment for a number of services that depend on the dynamics of the Belarusian ruble exchange rate against the dollar and the euro. These include apartment rentals, transport insurance, tourism and passenger transport services (Figure 3.b). As far as most other consolidated positions are concerned, prices for services continued growing.

Figure 3. Dynamics of inflation components and consumer goods producer prices

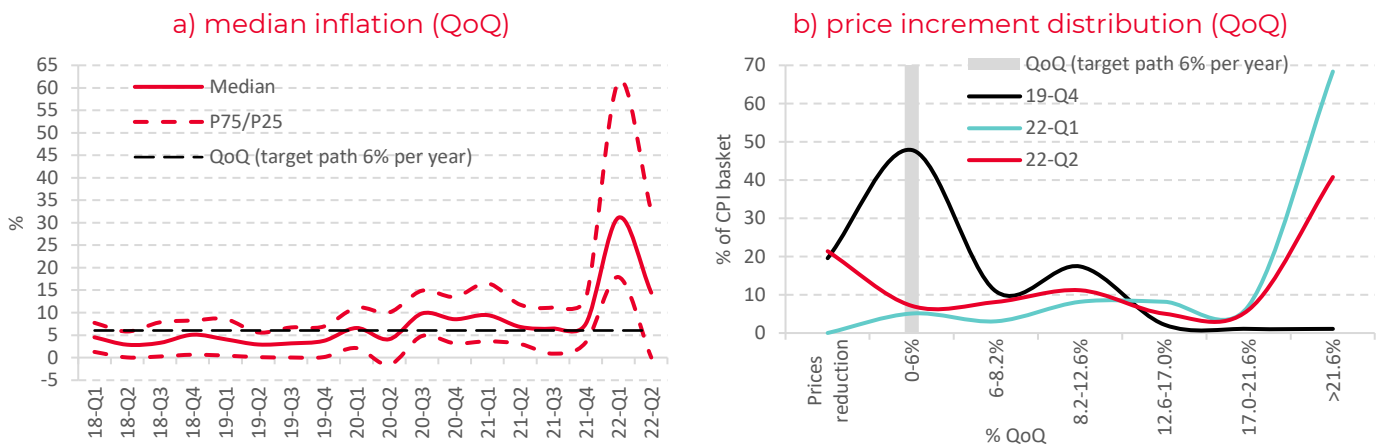


Source: BEROC's calculations based on the Belstat data.

**In Q2, core and median inflations remained elevated vs the “target” trajectory, which may indicate price pressure persistence**

In Q2, core inflation was estimated at 18.2% (QoQ), and median inflation was estimated at 14.4% (QoQ), which was significantly higher compared to the last year inflation rates (Figure 2.b; Figure 4.a). In Q2, price increment distribution across aggregated positions was far from being “optimal”: the value of over 70% of the basket grew faster than the target CPI rate (Figure 4.b). At that, price adjustment correction after a March surge resulted in slightly more than a 20% consumer basket price decrease in Q2.

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



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

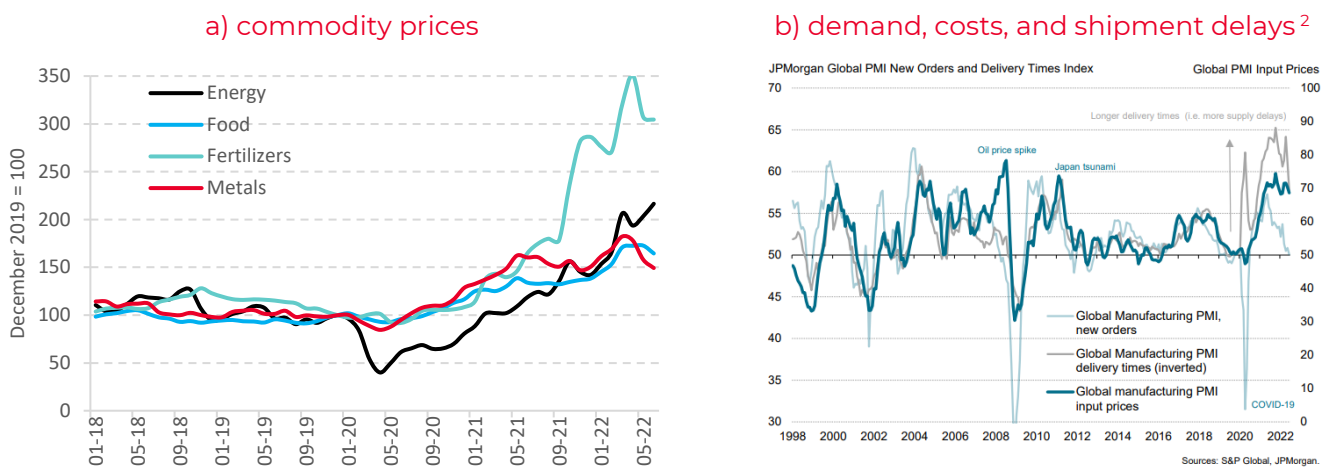
Note: Median inflation and price increment distribution are calculated using data from 98 aggregated positions in the consumer price basket. P75 and P25 are the 75th and 25th percentiles, respectively (prices for 25% of goods rise faster than the inflation for the 75th percentile, and prices for another 25% of goods rise slower than the inflation of the 25th percentile).

## 2 Inflation drivers

### Price pressure from global commodity markets eased somewhat in Q2

Global commodity prices in May-June had signs of stabilization after a sharp rise in early spring. Global economic activity growth starts to slow down as the post-COVID recovery ends, monetary policy tightens, market sentiment deteriorates, and supply chains are disrupted. The fading momentum in the global economy holds back oil and metal prices, even as Russia threatens to cut their supply substantially. In Q2, there was a partial food price adjustment in the global market, which was facilitated by the improved expectations for the global grain yield. At the same time, the cost of commodities remained high in Q2 (+86%, YoY and +18.3%, YoY according to the World Bank energy and non-energy commodity indices, respectively), continuing to cause a pro-inflationary impact on the Belarusian market (Figure 5.a).

Figure 5. World commodity prices and global supply delays



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

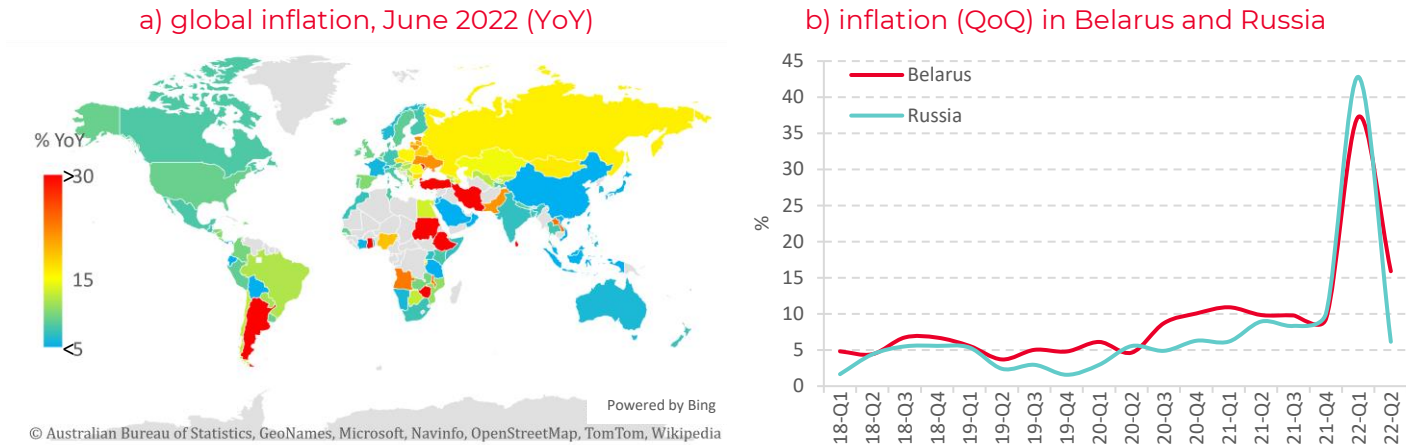
Costs of industrial goods producers in the world increased in Q2: the PMI of input costs was 68.6 points in June, which was well above 50 that separated growth from decline. Lead times continued getting longer due to the global production and supply chain disruptions. At that, the growth of costs and delays in deliveries has stopped accelerating in recent months (Figure 5.b).

### Belarus's key trade partner — Russia — saw a significant inflation slowdown in Q2

Price growth in Russia declined to ≈6% (QoQ) in Q2 from ≈43% (QoQ) in Q1, approaching the target of 4% (Figure 6.b). At that, deflation was noted in June: it happened for the first time in June in the entire history of observations. The inflation dynamics was correctional after a surge in March. However, disinflationary pressure was exerted by weak consumer demand and the strengthening of the Russian ruble. However, import of deflation is unlikely for Belarus due to the significant weakening of the Belarusian ruble against the Russian ruble.

<sup>2</sup> 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 vs the previous month, and readings below 50 indicate a decrease vs the previous month. Data source: S&P Global, JPMorgan (<https://ihsmarkit.com/research-analysis/week-ahead-economic-preview-week-of-04-july-2022.html>).

Figure 6. Global inflation dynamics

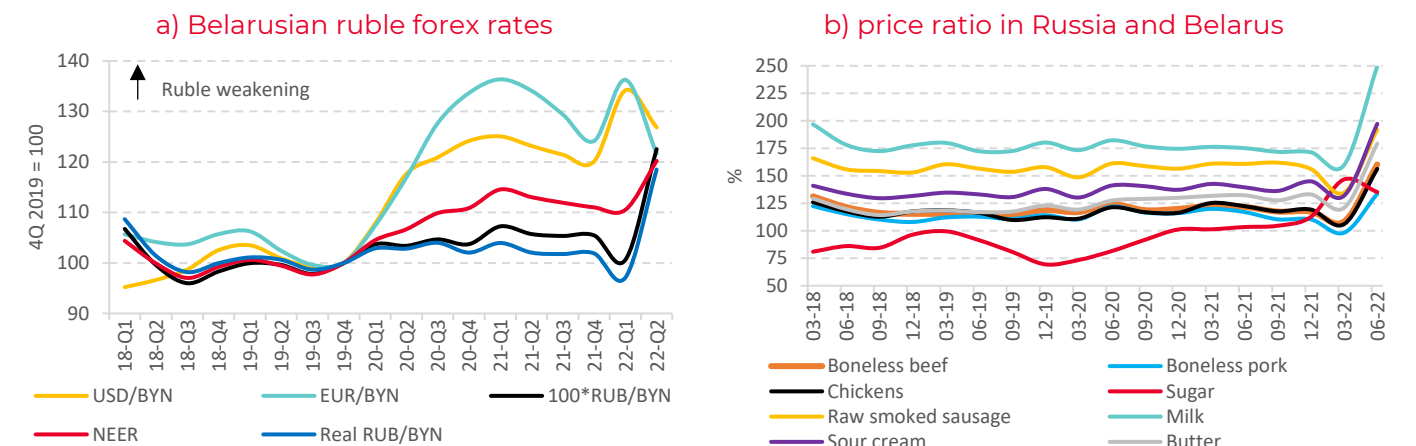


**Source:** Trading Economics, national statistical agencies, BEROC's calculations.

**The weakening of the Belarusian ruble against the Russian ruble compensated the disinflationary impact of the ruble strengthening against the dollar and the euro**

The Belarusian ruble noticeably weakened in Q2: on average, in April-June, the value of a basket of currencies exceeded the level of Q1 by 6.1%, while the nominal effective exchange rate (NEER) added 8.8%.<sup>3</sup> Such dynamics is explained by the strong depreciation of the Belarusian ruble against the Russian ruble (by 21.7%), which more than just offset the strengthening against the dollar and the euro (by 5.5% and 10.7%, respectively) (Figure 7.a). As a result, the Belarusian ruble became noticeably weaker against the Russian ruble in real terms in Q2 (Figure 7.a), which could pressure domestic prices in Belarus through two main channels. Firstly, this is through the rise in the price of imported goods: over 50% of goods in Belarus are supplied from Russia and paid for in Russian rubles. Secondly, this is through the rise in the prices of exports of Belarusian goods in the Belarusian ruble equivalent. There are growing incentives to expand the supplies of manufactured products to the Russian market, which can stimulate an increase in domestic prices to equalize them with export prices (Figure 7.b).

Figure 7. 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.

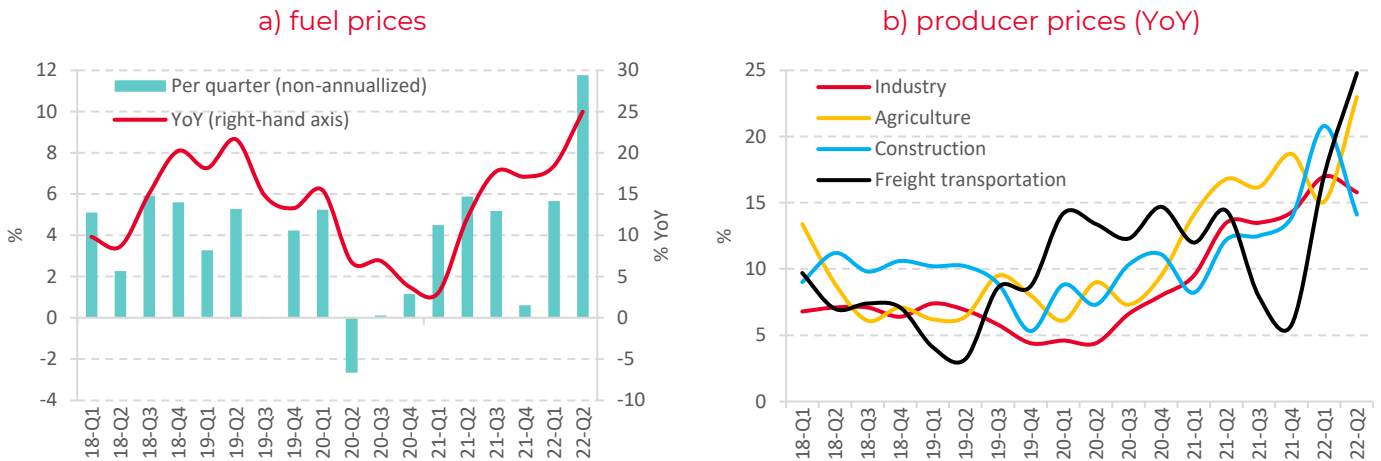
<sup>3</sup> This is the composition of the currency basket — US dollar, Euro, Russian ruble — up to July 15, 2022. The basket and the nominal effective exchange rate (NEER): Belarusian rubles per unit of foreign currency.

### Reducing exports of petroleum products can provoke their price increase in the domestic market

In Q2, fuel price rose by almost 12%, and its annual price rose by 25% (YoY) (Figure 8.a). Most of the oil products produced by Belarusian oil refineries (ORs) had been exported until March 2022. The high-margin market lost in Ukraine in March and a significant reduction in supplies to other export destinations has provoked a price increase in the domestic market. The rise in fuel prices has both a direct inflationary effect and an indirect effect through affecting the costs of producers and carriers (Figure 8.b). Direct contribution of fuel to quarterly annualized consumer price growth is estimated at 1.6 p.p. in Q2, and its indirect contribution is close to 5.5 p.p.

The weakening of the Belarusian ruble against the Russian ruble also puts pressure on the costs of oil refineries. The costs to import commodities from Russia go up as well as the costs of servicing loans due to their “turning over” into Russian rubles. So, over the five months of 2022, the loan debts of oil refineries increased from 7.2 to 63.7 billion Russian rubles, and the debts in USD and EUR reduced from 128.1 million to 8 million US Dollars, and from 512.2 to 123.6 million euros.

Figure 8. Dynamics of fuel prices in the domestic market and producer price indices



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

### Inflation expectations declined in Q2, but remained elevated

According to the National Bank estimates, inflation expected by the population for the next 12 months amounted to 15.7% in June 2022, having decreased from 16.7% in March 2022. Despite decreasing expectations, their Q2 level exceeded the values of previous years significantly: 13.8% on average according to the National Bank surveys in 2021; 11% in 2020; 12.1% in 2019. Survey indicators of inflation expectations should be treated with caution, especially as far as absolute values are concerned. At that, the expectations dynamics is generally consistent with the inflation dynamics. Thus, a large-scale jump in the consumer price index with a significantly smaller growth in the consumer goods producer price index could indicate a surge in expectations in Q1. In Q2, these dynamics of the indices reversed, which could signal lower inflation expectations amid continued cost pressures (Figure 3.a).



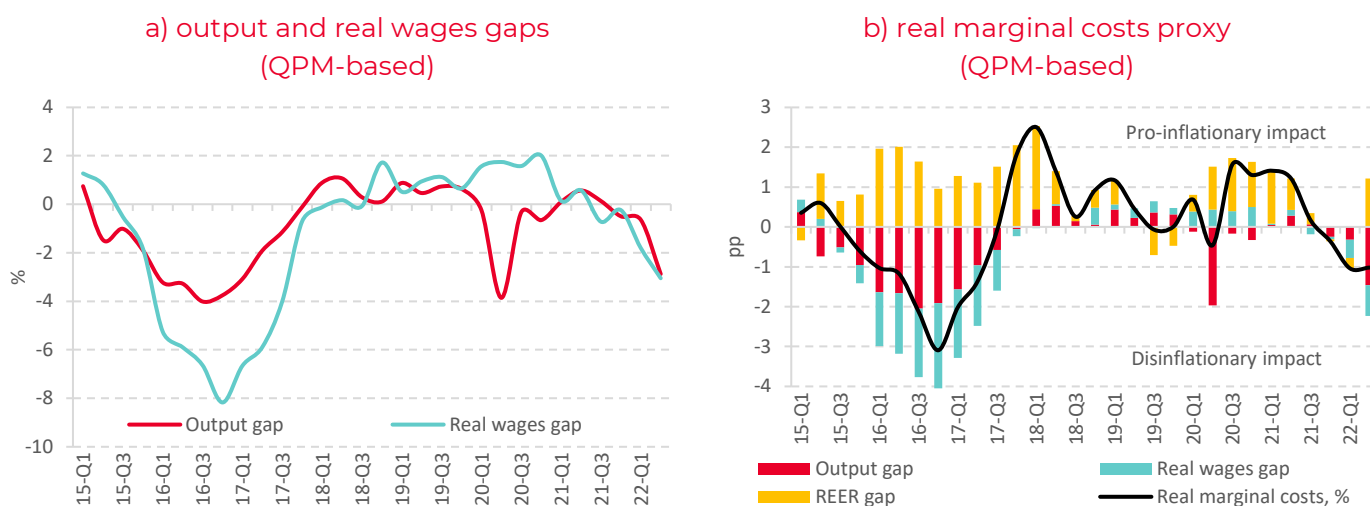
### Disinflationary impact of domestic economic activity intensified

The recession of the Belarusian economy deepened in Q2-2022 due to sanctions. According to preliminary estimates, seasonally adjusted GDP decreased by 6-7% compared to its value in Q1-2022. This is the fourth consecutive quarterly contraction of the economy. As a result, Belarusian GDP lost 7.8% in Q2-2022 against the peak in Q2-2021 and got back to what it was in 2017.

Weakening economic activity led to an expanding negative output gap (QPM-based): GDP in Q2 was estimated to be ~3% below its potential value (Figure 9.a). The descent of the indicator into a deeply negative zone indicates the weakness of an aggregate demand and its disinflationary impact (Figure 9.b).<sup>4</sup>

In the context of falling output, real wages also decreased in Q2 by ~4% vs the seasonally adjusted Q1 value. Eventually, wages dropped below their equilibrium level, which signaled the emergence of disinflationary pressure from labor costs (Figure 9.b).

Figure 9. Dynamics of indicators of internal inflationary pressure<sup>5</sup>



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

<sup>4</sup> Cyclical recession of the Belarusian economy in Q2-2022 is estimated to be smaller than in 2015–2016 (Figure 9.a). This is explained by the underlying assumption about a structural recession: a long-term loss of potential GDP due to the prolonged impact of sanctions on the economy.

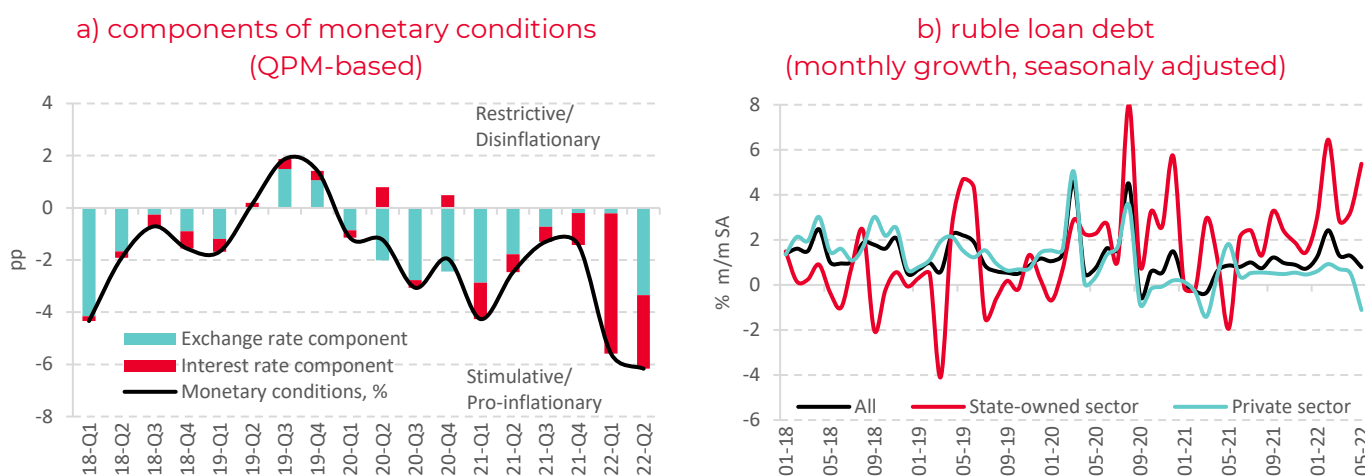
<sup>5</sup> Estimating unobservable indicators (such as the output gap, real wages gap, and REER gap) is subject to an extremely high degree of uncertainty in the current context since it is complicated to isolate structural and cyclical factors of change in macro variables. More accurate estimates can be made in a few quarters, when the economic activity recovery trajectory becomes clearer.

### 3 Monetary conditions

#### Monetary conditions in Q2 were pro-inflationary, and the actions of the National Bank indicated the priority of supporting economic activities over pro-active inflation curbing

The response of the National Bank to the surge in inflation was very restrained; and in Q2, the monetary policy softened by an incompletely sterilized issue of rubles through the National Bank's purchasing of foreign currency at the stock exchange ( $\approx$ \$0.7 billion in Q2). Due to that, the liquidity surplus grew in the banking system and the interbank market rate approached zero in June (8.7% on average in Q2), while its neutral level amid increased inflationary expectations was estimated (based on QPM) at about 19% in Q2. Interest rates for the ruble market loans and term deposits at the end of Q2 began to decline amid a liquidity surplus, and they remained below their equilibrium values estimated through QPM (Figure 10.a). So far, stimulating interest rates could hardly impact the lending dynamics (Figure 10.b), which — mainly in the private sector — could be constrained by the limited supply of credit by banks amid high risks, tight non-price conditions, and elevated uncertainty of investments in business expansion in the current context.

Figure 10. Monetary conditions



Source: BEROC's calculations.

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

#### The Belarusian ruble entered the area of undervaluation in Q2 due to its strong weakening against the Russian ruble

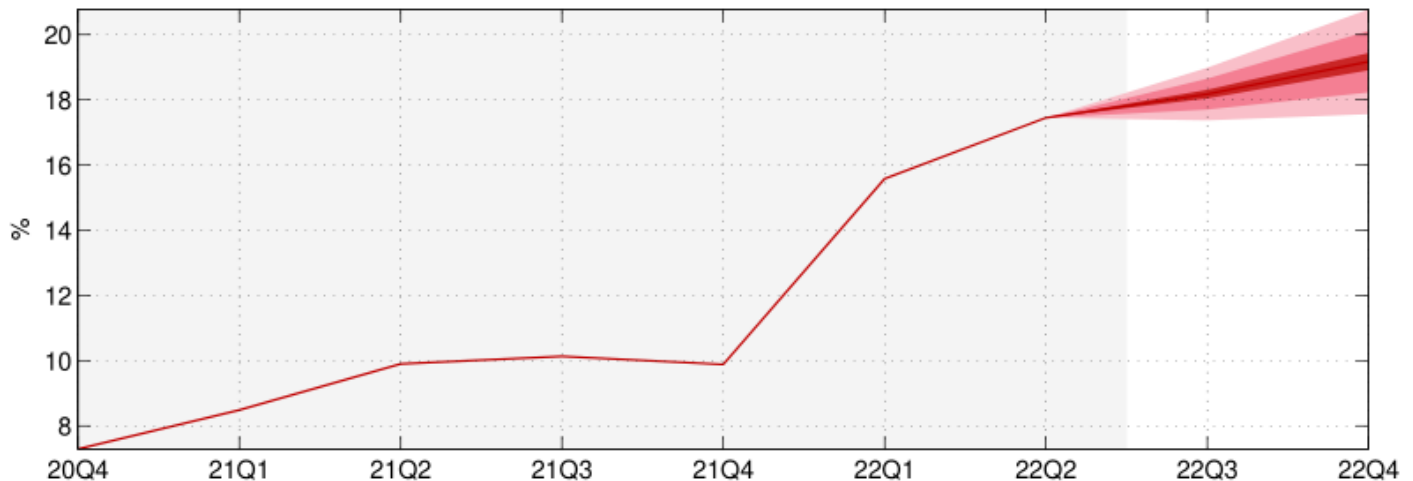
There was a significant weakening of the ruble against a basket of currencies with a net supply of foreign currencies in the market in May-June. This forex behavior was atypical and gave reason to believe that the National Bank prevented the strengthening of the Belarusian ruble against the US dollar below 2.50 USD/BYN against the backdrop of a strong and rapid strengthening of the Russian ruble against the US dollar (Figure 7.a). The National Bank allowed an excessive weakening of the Belarusian ruble against the Russian ruble (at the peak it was almost to 5 BYN per 100 RUB) and against the basket in May-June in order to smooth out the potential impact of the high volatility of the USD/BYN exchange rate on the behavior of the population and organizations. The actions of the National Bank resulted in undervaluation of the Belarusian ruble in Q2 against the equilibrium level of the real effective exchange rate estimated through QPM (Figure 10.a). The undervalued ruble supported net exports, but had a pro-inflationary effect.



## 4 Short term forecast

**Consumer inflation is projected at around 18% (YoY) in Q3, and it can reach ≈19% (YoY) by the year-end**

Figure 11. Consumer price index dynamics and forecast in Belarus, % (YoY)



**Source:** BEROC's calculations based on the BEROC's Quarterly Projection 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 dynamics of the indicator in previous periods can be updated. The ranges in the figure correspond to the 15%, 50% and 75% confidence intervals.

**The key factor of the potential pro-inflationary impact in the second half of 2022 was building new chains to supply goods to Belarus**

This process is associated with longer delivery times and increased costs, including due to the constraints in financial transactions. Fuel price may continue rising in the domestic market amid limited fuel exports.

**The pro-inflationary impact of the Belarusian ruble exchange rate and inflation expectations will continue in the second half of the year**

If the current approaches of the National Bank to the foreign exchange rate policy continues and if the Russian ruble against the US dollar remains to be in the range of 50–70 USD/RUB, the Belarusian ruble may remain undervalued in terms of the real effective exchange rate. The degree of this undervaluation may decrease by the year-end; however, the pro-inflationary effect of the foreign exchange rate factor will remain, albeit on a smaller scale compared to the first half-year.

**Domestic demand will continue causing a disinflationary impact**

The currently observed drop in output is largely due to its decreasing capacity. Therefore, it is most likely that the negative output gap will remain within 3–5%, which is comparable to the 2015–2016 values. Due to that, the disinflationary impact of domestic demand will be limited. One should also take into account that the impact of the output gap on inflation in Belarus is non-linear, and it decreases during the periods of weak economic activity due to downward price rigidity.

### **External price pressures may ease as global economic activity weakens**

A decline in global oil and food prices is possible by the year-end if there is a high global grain yield and if an instant termination of oil and gas supplies from Russia to the EU is avoided. However, commodity pricing will remain at levels significantly higher than usual in recent years. In the base case, we expect inflation in Belarus's key trading partner — Russia — to slow down to 13-15% (YoY) by the end of 2022 amid subdued domestic demand and an overvalued Russian ruble. At the same time, due to the undervaluation of the Belarusian ruble against the Russian ruble, the disinflationary impact of the Russian economy on the Belarusian market will be limited.

## **5 Forecasting risks**

### **The likelihood of excessive monetary easing is a key pro-inflationary risk**

Monetary conditions in Belarus remain to be pro-inflationary. The decision of the National Bank to suspend auctions — effective since July 6 — to regulate the liquidity of banks in the face of a liquidity surplus may increase the pro-inflationary effect of the monetary conditions. The interbank rate is likely to continue being close to zero, while the interest rates for ruble loans and deposits will continue declining. It is also possible that banks will gradually soften their requirements to borrowers, since a large liquidity surplus is associated with the possibility of losses. Active monetary policy easing in the midst of a structural downturn and elevated inflationary expectations is a threat of inflation acceleration and its fixation at high levels.

### **Prospects of rapid deployment of new supply chains are uncertain**

In Belarus, the domestic consumer market is highly dependent on imports: the share of imported goods in the food segment exceeds 20%, and it is about 60% in the non-food segment. Constrained interactions with foreign counterparties forces businesses to build new schemes to supply goods to Belarus, which is associated with high uncertainty and risks. The probability of deepening supply problems with the gradual depletion of stocks of imported goods and components is a threat of the second wave of increased consumer price growth closer to the year-end.

### **The threat of another round of increase in global energy and food prices is tangible**

These risks will materialize if oil and gas supplies from Russia to the EU are terminated abruptly and if there is a smaller-than-expected global harvest of grain and oilseeds, and disrupted grain supplies from Ukraine and Russia.

## Explainers

### Quarterly Projection Model (QPM)

This is a New Keynesian semi-structural macroeconomic model; it belongs to the class of dynamic stochastic general equilibrium models. 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](#). The QPM applied to draft this document was developed by the BEROc experts, and, as of July 2022, it was in the testing phase.

### QPM indicators

#### Interest rate gap

This is 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.

#### Monetary conditions

This is an indicator of the state of monetary conditions. It is a combination of the real effective exchange rate (with the opposite sign) and real interest rates gaps. 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 real GDP from its potential value. 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.

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

This is 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.

#### Wages gap

This is deviation of real wages from its 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.