



MACROECONOMIC FORECAST

MARCH 2023



BULGARIAN NATIONAL BANK

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The quarterly publication of the BNB *Macroeconomic Forecast* provides annual projections of major macroeconomic indicators for Bulgaria in the current and next two years. The macroeconomic forecast is prepared by the BNB Economic Research and Forecasting Directorate and does not necessarily reflect the views of the members of the BNB Governing Council about the prospects for the development of the Bulgarian economy. Information regarding the forecast preparation procedure, as well as technical details on the macroeconomic forecasting model can be found in Economic Review, BNB Forecasting Function section, issue 4 of 2015: https://www.bnb.bg/bnbweb/groups/public/documents/bnb_publication/pub_ec_r_2015_04_en.pdf.

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Abbreviations

BNB	Bulgarian National Bank
CPI	Consumer Price Index
ECB	European Central Bank
EU	European Union
EWRC	Energy and Water Regulatory Commission
HICP	Harmonised Index of Consumer Prices
NRRP	National Recovery and Resilience Plan

SUMMARY

The BNB forecast of key macroeconomic indicators is prepared as of 4 April 2023 based on assumptions about global economic developments and price dynamics of main commodity groups in international markets as of 16 March 2023. The forecast does not take into account the effects of a potential further escalation of the military conflict in Ukraine and the impact of the political uncertainty in Bulgaria on economic activity and inflation. In addition, it is assumed that financial market disruptions in the United States and Switzerland observed in the beginning of March 2023 would not spill over and lead to negative effects on global economic activity and Bulgaria's economic growth over the projection horizon.

The growth outlook for the external demand for Bulgarian goods and services improved in 2023 compared to the December 2022 outlook due to reduced risks of energy supply shortages in Europe and the significant decline in energy prices in recent months. Assumptions suggest that external demand for Bulgarian goods and services will slow from 2022 (6.6 per cent) to 3.3 per cent in 2023 and 2024, and to 3.5 per cent in 2025. Market participants expect that euro prices of all main commodity groups in international markets and in particular of energy products will decrease from the previous year, but most prices will remain higher than in 2021. Euro prices of commodities important for Bulgaria are assumed to stabilise in 2024 and to increase by around 2.5 per cent on average in 2025, driven by non-energy commodities. Market participants expect an increase in short-term interest rates in the euro area until the third quarter of 2023, followed by a gradual drop over the rest of the forecast horizon.

In 2023, real GDP growth is expected to moderate considerably to 1.0 per cent compared to 3.4 per cent in 2022, reflecting primarily the transition from a positive to a negative contribution of changes in inventories in the economy. Other factors that will limit the growth of Bulgaria's economic activity in 2023 include the projected decline in government consumption in real terms and the expected significant slowdown in the growth of goods exports. Both lower growth of external demand and Bulgaria-specific factors will contribute to the slower growth of goods exports. The expected increase in private consumption is a factor that will continue to support as much as possible the economic activity in 2023. Fixed capital investment is also expected to contribute positively to real GDP growth in line with the projected technical assumption of EU funds absorption profile. Real GDP growth is projected to rise to 3.2 per cent in 2024, mostly reflecting the less negative contributions of changes in inventories and net exports, and to 4.1 per cent in 2025 owing to the expected acceleration in investment growth.

Annual inflation measured by the Harmonised Index of Consumer Prices (HICP) is expected to slow down gradually to 5.6 per cent at end-2023 (compared to 14.3 per cent at end-2022) and average annual inflation to be 8.8 per cent. The moderation in inflation is expected to reflect mainly lower energy product prices and the formation of a base effect in other major groups of goods, where firms are expected to continue to display low propensity to pass on the decline in international prices of agricultural and energy commodities (oil, natural gas and electricity) to final consumer prices amid continued robust consumer demand. Growth in unit labour costs is projected to continue being a strong pro-inflationary factor. As a result, average annual core inflation is projected to accelerate in the current year as compared to 2022, with the group expected to have the highest positive contribution to the overall inflation at the end of 2023, followed by the groups of food and goods and services with administratively controlled prices. In line with the technical assumptions about oil and food price dynamics in international markets, the HICP growth rate is expected to slow to 3.4 per cent at the end of 2024 and to stand at 3.0 per cent at the end of 2025. Over the medium term, the positive contribution of core components to overall inflation is expected to remain strong.

Risks to the real GDP growth forecast are assessed as balanced for 2023, while risks of lower growth compared to that in the baseline scenario prevail for 2024 and 2025. Risks of lower economic activity stem mainly from the elevated uncertainty due to the ongoing military conflict in Ukraine and the likelihood of higher and persistent global inflation, which would imply faster and stronger interest rate increases by the leading central banks compared to the baseline scenario. This, in turn, could lead to renewed and heightened tensions in international markets, as well as to strengthening the extent of pass-through of higher interest rates on to monetary conditions in Bulgaria. In addition, there are significant risks of slower than projected implementation of investment projects under the National Recovery and Resilience Plan (NRRP) and absorption of EU funds other than those under the NRRP. In the short term, Bulgaria's real GDP growth is likely to be higher, in case of a smaller than projected decline in the stock of inventories in the economy and a lower negative impact of country-specific factors included in the baseline scenario, which are expected to limit exports growth in 2023.

With regard to the inflation forecast, there are mainly risks of a stronger increase in prices *vis-à-vis* the baseline scenario for the whole projection horizon. These risks are related to developments in energy and food prices in in-

ternational markets, to the extent to which changes in international prices are passed through on to final consumer prices, as well as to the possibility of further strengthening the link between unit labour costs and final consumer prices. Other risks arise from potentially larger rises in administratively controlled prices compared to those set in the forecast.

FORECAST OF KEY MACROECONOMIC INDICATORS FOR 2023–2025

External Environment

The BNB forecast of key macroeconomic indicators is prepared as of 4 April 2023 based on assumptions about global economic developments and price dynamics of main commodity groups in international markets as of 16 March 2023. The forecast does not take into account the effects of a potential further escalation of the military conflict in Ukraine and the impact of the political uncertainty in Bulgaria on economic activity and inflation. In addition, it is assumed that financial market disruptions in the United States and Switzerland observed in the beginning of March 2023 would not spill over and lead to negative effects on global economic activity and Bulgaria's economic growth over the projection horizon.

Economic growth in Bulgaria's major trading partners slowed significantly in the last quarter of 2022, but to a lesser extent than expected. The growth outlook for the external demand for Bulgarian goods and services improved in 2023 compared to the December 2022 forecast due to decreasing concerns about problems related to the provision of energy supplies in Europe, the significant decline in energy prices over the last months and the expectations of stronger demand by Turkey. It is assumed that growth of external demand for Bulgarian goods and services will slow from 2022 (6.6 per cent), staying at 3.3 per cent in 2023 and 2024, and at 3.5 per cent in 2025. The assumptions about the dynamics of external demand for Bulgarian goods and services do not take into account potential negative effects of financial market disruptions in the United States and Switzerland in early March 2023, as they are based on the latest projections¹ of the European Central Bank (ECB), which include information on developments in the global economy as of 16 February 2023 and on the evolution

of economic activity in the euro area as of 1 March 2023.

Assumptions about the change in prices of energy commodities (crude oil, natural gas, electricity)² and non-energy commodities (metals³, food⁴ and other commodities⁵)⁶ take into account prices of futures contracts concluded in international markets as of 16 March 2023, with these prices showing high volatility since the beginning of the war in Ukraine.

Market participants expect that in 2023 euro prices⁷ of all major commodities in international markets, and in particular of energy, will decrease from the previous year, but most prices (especially of energy and food) will remain higher than in 2021. Euro prices of commodities important for Bulgaria are assumed to stabilise in 2024 and to

² The assumption about price dynamics of petroleum products for the whole projection horizon is based on data on futures contracts traded in international markets. As regards natural gas, prices of futures contracts for delivery until the first quarter of 2024 (inclusive) are also used, after which a technical assumption is made that prices will remain unchanged at the attained level until the end of 2025. Assessments of electricity price movements are based on market information from futures contracts concluded in the German market, covering the period up to the first quarter of 2024 (inclusive), followed by a technical assumption that prices will remain unchanged at the level attained until the end of 2025.

³ Including steel, copper, aluminium, lead, zinc, nickel and tin, weighted in accordance with Bulgaria's foreign trade flows.

⁴ Including pigmeat, coffee, wheat, maize, rice, soybeans, sugar, cocoa, milk and livestock, weighted in accordance with Bulgaria's foreign trade flows.

⁵ Including rubber, timber and cotton, weighted in accordance with Bulgaria's foreign trade flows.

⁶ Futures contracts concluded for trading of relevant commodities in international markets are used, with data available until the end of the first quarter of 2024. Public information on sufficient volumes and number of futures transactions for these commodities in international markets is not available for the remainder of the forecast horizon. Therefore, price dynamics is assessed by taking into account the historical correlation with the global trade dynamics set forth in forecast's external assumptions.

⁷ The forecast for euro prices of commodities is based on a technical assumption about the euro/US dollar exchange rate, which is fixed for the whole forecast horizon at its average value for January and February 2023 and for the last ten days as of the date when the external environment assumptions were made (16 March 2023). In line with this technical assumption, in 2023 the euro appreciates *vis-à-vis* the US dollar by 1.5 per cent.

¹ For further details, see [ECB Macroeconomic Projections](#) of March 2023.

increase by around 2.5 per cent on average in 2025, led by non-energy commodities.

Technical assumptions of crude oil suggest a decline in its euro prices over the whole projection horizon, with this decline most pronounced in 2023. The downward slope of the futures contracts curve, indicating price declines of crude oil, may not fully reflect the long-term effects on these prices stemming from structural changes, a result of the war in Ukraine and escalation of geopolitical tensions worldwide.⁸ In addition, after the cut-off date of external assumptions, OPEC+ members announced cuts in oil production by more than 1 million barrels *per day*.⁹ These two factors may be considered as a factor for higher price levels of petroleum products in the medium term compared to the projected level. The assumptions suggest that the quarterly decline in natural gas and electricity prices in euro in the European market will continue until the middle of 2023, followed by a slight rise until the end of March 2024 and stabilisation at the attained levels for the remaining part of the forecast horizon. Under such assumptions, euro prices of energy products are expected to decrease in all years of the projection period, except for 2024, with this decrease most pronounced in 2023.

The assumptions of non-energy commodity prices in euro suggest a moderate decline in 2023, probably reflecting mainly historically high price levels attained in 2022 and market participants' concerns about lower growth in global economic activity, which would limit demand for these commodities. The strongest decline in euro prices of non-energy commodities in international markets over 2023 is expected in food. In 2024 euro prices of non-energy commodities are assumed to stabilise, thereafter increasing in 2025 in line with the growth in global economic activity and trade.

Forecast assumptions include market expectations as of 16 March 2023 of a continued

increase in short-term interest rates in the euro area money market until the third quarter of 2023, followed by a gradual decline over the rest of the forecast horizon.

Economic Activity in Bulgaria

Available economic indicators¹⁰ for January–February 2023 pointed to a slowdown of the quarterly growth in economic activity of Bulgaria. Taking into account these data and the technical assumptions described, real GDP growth is expected to slow down to 1.0 per cent in 2023 (against 3.4 per cent in 2022), and this slowdown by final consumption expenditure component will be primarily driven by declines in accumulated inventories and, to a lesser degree, by a projected drop in government consumption in real terms. The negative contribution of changes in inventories to real GDP dynamics is in line with the weakening of incentives by firms to maintain high stocks of commodities, raw materials and finished products based on assumptions of a year-on-year decline in euro prices of much of the raw materials in international markets and expected slowdown of both global economic activity and growth in Bulgarian goods exports. Anticipated lower government final consumption expenditure in 2023 reflects a projected decline in intermediate consumption expenses after their significant increase in 2022.¹¹ The forecast of government consumption uses an assumption of a time-limited duration of validity of the Law on the Implementation of Provisions of the State Budget Law for 2022¹² in the current year, with additional technical assumptions about dynamics of individual components making up the government consumption. At the same time, public sector wage growth is expected to accelerate, but this is partly reflected also in the forecast of the annual growth of government consumption deflator, and thus higher wages contribute to a limited

⁸ The downward slope of the price curve of futures contracts for commodities can be explained by a market condition called *backwardation*, meaning the implicit benefit of owing a physical commodity for future use compared to being available for use after the implementation of the contract. This means that at the time of concluding a futures contract, economic agents tend to discount the value of the commodity to be delivered in a more distant future, and thus, the futures price signals a commodity price decline in the long run, although this price dynamics may not materialise in the spot market, and the commodity prices may rise.

⁹ For further information, see the [OPEC press release](#) of 3 April 2023.

¹⁰ This refers to the indicators tracking consumer confidence, business climate, production indices in industry, and manufacturing and retail trade turnover indices.

¹¹ A breakdown of government consumption components in the fourth quarter of 2022 was not available as of the cut-off date of the forecast. The macroeconomic forecast uses an assumption for individual components based on information from the Consolidated Fiscal Programme (CFP).

¹² This refers to the Law on the Implementation of Provisions of the State Budget Law for 2022, Law on the Budget of Public Social Security for 2022 and Law on the Budget of the National Health Insurance Fund for 2022, published in the *Darjaven Vestnik*, issue 104 of 30 December 2022.

extent to the government consumption change in real terms during 2023. We expect the contribution of net exports to the change in real GDP to remain negative in 2023 to an amount similar to that in the previous year, driven by projected weaker growth in exports compared to imports of goods and services. Goods exports growth in 2023 will be constrained by both assumptions of slowing growth in demand for goods and services by Bulgaria's major trading partners and country-specific factors related to the prohibition on exports to countries other than Ukraine of oil and oil products produced from Russian oil¹³, as well as planned refurbishments in some of the largest enterprises in manufacturing¹⁴ and electricity generation sectors.¹⁵ These factors are projected to have an adverse effect also on imports of goods, as Bulgarian imports of oil products and base metals are characterised by a high share of imported added value¹⁶. In addition, the projected decline in inventories accumulated in the economy, which are also characterised by a high import component, is another factor expected to limit the growth of real goods imports and thus to reduce the negative contribution of net exports to the GDP change in 2023. At the same time, the growth rate of domestic demand is projected to accelerate in 2023, reflecting anticipated increases in fixed capital investments after the 2022 decline and continued strong growth in private consumption. Growth in fixed capital investment corresponds to the technical assumption used in the forecast for the absorption profile of the EU funds by both the private and public sectors. We expect growth of public investments to be determined by the completion of projects in the last year of the 2014–2020 programming

period and by assumptions of launching part of the NRRP investment projects in 2023. Concurrently, taking into account the decision taken on 12 January 2023¹⁷ by the National Assembly to oblige the Council of Ministers to change the NRRP in the energy segment, a change has been made to the assumptions for the absorption profile of these funds, and accomplishment of part of the investments for 2023–2024 laid down in the BNB's December 2022 forecast has been shifted to the end of the forecast horizon. Private sector investment which is not linked to co-financing and NRRP grants is projected to remain at the previous year's level amid a heightened uncertainty, weakening prospects for growth in external demand and deterioration of financing conditions. Factors that will support private consumption are the projected acceleration of household real disposable income growth in the face of expected increases in real labour income, growth in net fiscal transfers to households and consumer credit, as well as a persistent weak household propensity to save in the context of still low nominal interest rates. As a result of this development, private consumption is projected to be the GDP component with the highest positive contribution to the growth in economic activity over 2023.

Economic activity growth is projected to accelerate to 3.2 per cent in 2024 and 4.1 per cent in 2025, with the contraction of negative contributions of changes in inventories and net exports adding to the higher real GDP growth in 2024. The contraction of the negative contribution of net exports is a consequence of the projected acceleration in the growth of goods exports in line with the technical assumption of external demand dynamics and completion of repairs limiting exports of the Bulgarian economy in 2023. Economic growth acceleration in 2025 will mainly reflect fixed capital investment dynamics, which is expected to be supported by the implementation of NRRP-funded projects.¹⁸ Final consumption expenditure is projected to increase at an accelerating rate over the 2024–2025 period, to which the projected increase in government consump-

¹³ The prohibition is effective from 5 February 2023 and is published in [Official Journal of the European Union, L 322, 16 December 2022](#). The current forecast maintains the approach used in [Macroeconomic Forecast \(December 2022\)](#) on assessing the effects of the prohibition on exports of oil products.

¹⁴ In the second quarter of 2023, processed copper volumes are expected to decline in one of the largest metallurgical plants in Bulgaria [due to repairs](#). For further information about the effects on goods exports, see [Macroeconomic Forecast \(December 2022\)](#).

¹⁵ In 2023, Kozloduy nuclear power plant is expected to operate at reduced capacity for 70 days (compared to 50 days in 2022) due to planned repairs. For further information about the effects on goods exports, see [Macroeconomic Forecast \(December 2022\)](#).

¹⁶ The foreign value added used in exports of oil products and metals from Bulgaria is assessed at 81.1 and 58.8 per cent against 36.8 per cent on average for exports of goods and services. The estimate uses OECD Supply and Use tables (*TiVA database 2021*) for 2018.

¹⁷ For more details, see the [Decision](#) (available in Bulgarian only) of the National Assembly to oblige the Council of Ministers to change the NRRP in the energy segment.

¹⁸ The expected acquisition of new fighter planes for the Bulgarian Air Force is expected to be another factor supporting investment activity growth in 2025. In the forecast, acquisition of fighter planes has a neutral contribution to real GDP growth, as acquisition costs are the same size in reporting government investment and goods imports.

tion will contribute, following the assumed halt to the fall in intermediate government consumption after 2023. While we expect a slight slowdown in private consumption growth, this component of GDP will continue to grow at a high pace, making the largest positive contribution to the increase in economic activity in 2024 and 2025. Labour market developments have a leading role in the projected private consumption dynamics, as the expected further increase in labour shortages for firms will put an upward pressure on labour income growth at a rate, which is higher than that of labour productivity and inflation. Changes in inventories over 2024–2025 are projected to have a low negative contribution to real GDP growth, reflecting an expected decline in stocks accumulated in 2021 and 2022 by firms to historical average levels.

Balance of Payments

The current account balance is expected to remain close to zero per cent of GDP over the entire forecast horizon. The trade deficit in 2023–2025 is projected to shrink as a percentage of GDP compared to its 2022 level and to reach 3.6 per cent of GDP in 2025, with favourable trading conditions contributing most significantly to this. At the same time, we expect the surplus on trade in services as a share of GDP to increase somewhat from 2022 over the forecast horizon, reflecting the continued recovery of tourist visits to the country following the COVID-19 pandemic, the strong growth in computer and information services exports and the projected stronger increase in prices of services exports compared to imports. Given the expectations of a continuing rise in interest rates during the current year and an acceleration of economic growth after 2023, we expect the net primary income deficit as a percentage of GDP to increase gradually between 2023 and 2025 from its 2022 level due to larger outflows of dividends to non-residents. According to the forecast, the surplus under the net secondary income will gradually decrease as a percentage of GDP in the 2023–2025 period, mainly through incoming transfers to the general government sector. Over the whole forecast horizon, the capital account surplus as a percentage of GDP is expected to increase significantly from its 2022 level owing to the assumption of higher incoming capital transfers under the NRRP.

Labour Market

In 2023, employment growth is expected to be curbed by the slowing economic growth in Bulgaria and the number of employed to remain close to that recorded in 2022. The projected economic activity growth over the rest of the forecast period will have a favourable effect on the labour market, but employment is expected to increase only slightly by 0.1 per cent in 2024 and 0.2 per cent in 2025 due to adverse demographic trends in Bulgaria leading to a decline in working-age population. Higher GDP growth and lower working-age population will result in a gradual decrease in the unemployment rate from 3.5 per cent in 2023 to 2.6 per cent in 2025. Concurrently, real labour productivity growth is anticipated to slow down to 0.9 per cent in 2023 and to reach 3.2 per cent in 2024 and 3.9 per cent in 2025 in line with projected dynamics in economic activity and limited increases in employed persons. The projected slowdown in inflation is expected to lead to weaker growth of compensation *per* employee over the forecast horizon compared to that recorded in 2022. At the same time, tighter labour market conditions will continue to exert pressure to raise wages above labour productivity growth, thus contributing to the growth of households' real disposable income, but also that of firms' unit labour costs. We expect nominal unit labour costs to grow by 11.6 per cent in 2023, before slowing to 5.6 per cent in 2024 and 5.2 per cent in 2025 as a result of higher productivity and more moderate wage growth.

Monetary Sector

Under the existing currency board arrangements in Bulgaria, the ongoing and increasing process of tightening monetary policy by major central banks, and in particular by the ECB, is a prerequisite for raising both deposit and lending rates in Bulgaria. The ECB's increase in key interest rates in the euro area since the second half of 2022 were passed rapidly on interbank money market interest rates in Bulgaria. Concurrently, amid persisting significant inflows of attracted funds, high banking system liquidity and strong competition, the extent and speed of pass-through on deposit and lending rates remain very limited. Based on market expectations of further monetary tightening in the euro area, the gradual upward trend in lending and deposit rates

is expected to intensify and to reach its peak in mid-2024, and then stabilise at the attained levels.

The projected increase in deposit rates and the continued wage growth will contribute to the retention of the relatively high growth rate in non-government sector deposits in the banking system over the forecast horizon. At the same time, the expected easing in the growth of profits of corporations in sectors related to the production and distribution of energy products will contribute to a slowdown in the growth of deposits of non-financial corporations. Private sector credit growth is expected to slow down from 12.5 per cent on an annual basis at the end of 2022 to 6.4 per cent at the end of 2023 and to 4.7 per cent in 2024. This dynamics will be driven by the projected increase in nominal lending rates, combined with the expected gradual weakening of inflationary pressure, firms' weak investment activity that is not linked to co-financing and NRRP grants, as well as the expected decrease in firms' demand for bank resources required for working capital and inventories. The increase in the countercyclical capital buffer to 1.5 per cent, effective from 1 January 2023, and to 2.0 per cent, effective as of 1 October 2023, announced by the BNB is expected to have a potential limiting effect on lending activity in Bulgaria. A certain acceleration of the annual credit growth is foreseen in 2025 supported by the accelerated economic growth in Bulgaria.

Inflation

The inflation forecast measured by the HICP change for the 2023–2025 period depends to a large extent on the underlying technical assumptions about both the developments of international food and energy prices and the effects of the implemented fiscal measures intended to support households and firms. On the basis of the information available as of 31 March 2023, the forecast envisages the following governmental measures: the increase in the excise duty rates on tobacco products as per the Law on Excise Duties and Tax Warehouses¹⁹; restoration of the standard VAT rate of 20 per cent for supplies of district heating

and natural gas as of 1 July 2023²⁰; the extension of the reduced VAT rates on the supply of bread and flour (zero per cent) and on restaurant and catering services (9 per cent) respectively until 31 December 2023²¹. The forecast includes an assumption that the measure for providing compensation to business electricity consumers²² will remain in place throughout the forecast horizon in line with external assumptions implying a persistent retention of electricity prices above the threshold defined for the compensation.

Annual inflation is expected to moderate to 5.6 per cent at the end of 2023 (within the range of 1.7 per cent to 10.6 per cent with a 60 per cent probability). The main factors that are expected to contribute to the decline in inflation will be the base effect of high price growth rates in 2022 and the assumed decrease of energy and food prices in euro in international markets in 2023. In view of the latest reported data on consumer price inflation as of February 2023, we expect that in the context of sustained strong consumer demand, the pass-through of lower international prices of energy and non-energy commodities on the prices of food and core components in Bulgaria will continue to be delayed and incomplete, with inflation in these groups remaining more resilient than the external assumptions imply. By HICP component, the group of services followed by non-food goods and food are expected to have the largest contribution to inflation at the end of 2023. Administered prices and tobacco products are also expected to have a comparatively high positive contribution to headline inflation by December 2023, mainly due to projected increases in excise duties on tobacco products in accordance with the adopted excise duty calendar. Inflation is expected to remain high (8.8 per cent) on average in 2023, with produc-

¹⁹ The excise duty calendar was adopted by the [Law on Amendment to the Tax and Social Insurance Procedure Code](#), published in the Darjaven Vestnik, issue 100 of 16 December 2022 (available in Bulgarian only).

²⁰ The time limit until 1 July 2023 for the reduced VAT rate of 9 per cent was adopted by the Law on the Value Added Tax, published in the Darjaven Vestnik, issue 52 of 5 July 2022.

²¹ The period for the reduced VAT rate was extended to the end of 2023 by the [Law on Amendment of the Law on the Value Added Tax](#) (available in Bulgarian only).

²² The compensation in the amount of 100 per cent of the difference between the price of electricity on the Bulgarian Independent Energy Exchange and the revised threshold of BGN 200 (BGN 250 in the second half of 2022) was extended until 31 December 2023. For more information, see the following two National Assembly decisions: <https://dv.parliament.bg/DVWeb/showMaterialDV.jsp?sessionId=C-9CBE963EA64B1DEB25B614E75BCD7BB?idMat=180034> and <https://dv.parliament.bg/DVWeb/showMaterialDV.jsp?id-Mat=181202> (available in Bulgarian only).

tion cost pressure as a result of delayed and secondary effects of higher international prices of major energy and agricultural products in 2022 and the rise in firms' labour costs due to labour shortages contributing to it. Average core inflation is expected to accelerate in 2023 compared to 2022.

The growth rate of consumer prices is projected to slow down to 3.4 per cent by end-2024 (within the range of -1.4 per cent to 9.2 per cent with a probability of 60 per cent) and to 3.0 per cent by end-2025 (within the range of -2.6 per cent to 11.0 per cent with a probability of 60 per cent), these developments reflecting the dynamics in food and energy commodity prices in international markets laid down in the technical assumptions.

Core components and food products will continue to have the largest positive contribution to inflation in 2024 and 2025 in line with the projected strong consumer demand in Bulgaria,

continued unit labour cost growth and assumptions of rising industrial goods prices in Bulgaria's main trading partners and food commodities in international markets in 2025. In 2024 and 2025, the forecast envisages an increase in administratively controlled prices in line with the projected dynamics of firms' labour costs, with an exception to this approach made for the regulated price of central gas supply which is assumed to follow the dynamics of natural gas prices in international markets. In addition, the forecast reflects tobacco product price rises approved in the excise calendar and increased prices of water-supply and sewage services in line with their projected values in the business plans for the development of water-supply and sewerage companies in Bulgaria²³ approved by the Energy and Water Regulatory Commission (EWRC) in 2022.

²³ For further details, see the EWRC [press release](#) of 30 December 2022 (available in Bulgarian only).

F FORECAST REVISIONS

Compared with the [December 2022 macroeconomic forecast](#), our current expectations are for higher real GDP growth in 2023 and 2025, while the forecast for 2024 remains unchanged.

Real GDP growth for 2023 has been revised upwards by 0.6 percentage points mainly due to the projected smaller negative contribution of net exports and stronger private consumption. The main drivers behind the higher private consumption growth in 2023 were new reporting data, the upward revision of private and public sector wage growth for 2023, as well as the projected increase in employment (compared to a slight decline in the previous forecast). Net exports revision is largely due to the projected growth in exports of goods in 2023 (compared to a decline in the December 2022 forecast), reflecting more favourable assumptions about external environment developments and external demand for Bulgarian goods and services. These revisions to the GDP components are only partially offset by the projected larger negative contribution of changes in inventories, lower growth in fixed capital investment and the projected negative contribution of government consumption in the current forecast (compared with a neutral contribution of this component in the December 2022 macroeconomic forecast). Changes in inventories in the current forecast are projected to have a higher negative contribution to the real GDP dynamics in 2023, driven by the new reporting data on firms' behaviour at the end of 2022, as well as changes in the assumptions of the dynamics of international prices of major commodity groups, implying lower prices across all major groups compared to the December 2022 forecast. The revision in investment reflects the changes made in the technical assumptions for the absorption profile under the NRRP related to the postponement of the implementation of some projects under the plan to the end of the forecast horizon. The revision in real government consumption mainly reflects the expectations of higher growth in the government consumption deflator in 2023 in the current forecast compared with the December 2022 macroeconomic forecast.

The forecast for economic activity growth in 2024 remains unchanged from the December 2022 macroeconomic forecast, reflecting revisions to the GDP components with a mutual offsetting effect. In particular, in the current forecast, the growth of fixed capital investment is slightly higher in 2024, due to changes in the assumptions on the implementation of projects financed under NRRP. The contribution of inventories in 2024 has been revised towards a smaller negative amount, as the expected process of a reduction in the economy's stocks of raw materials and finished products is largely concentrated in 2023. At the same time, private consumption growth in 2024 has been revised downwards mainly as a result of a downward revision in the growth rate of households' real disposable income in the current forecast, as compared with that of December 2022. The growth of government consumption in 2024 is also lower than in the previous forecast, as determined by the forecast of a higher government consumption deflator and an upward revision in core inflation. As regards net exports, this component is expected to have a slightly negative contribution to the change in real GDP in 2024, compared with a positive contribution in the previous forecast. This is due mostly to the downward revisions in exports growth made in line with the changes in the assumptions on external demand dynamics and stronger imports, given higher growth in investments and the less pronounced decline in inventories over the review year.

Real GDP growth for 2025 has been increased by 0.6 percentage points, due to estimated higher growth in fixed capital investments and a lower negative contribution of changes in inventories compared to the December 2022 macroeconomic forecast. The higher level of fixed capital investment in the current forecast is determined by both the private and government sectors and is largely due to changes in the assumptions on the performance of capital expenditure under the NRRP.²⁴

²⁴ For further details, see the Economic Activity in Bulgaria Section in this Chapter.

The end-2023 inflation forecast has been revised towards a higher increase in consumer prices (up 1.4 percentage points), determined mainly by the substantial upward revision in food price inflation. The annual rates of change in prices of core components and energy products have been revised towards higher growth and a lower decline, respectively, at the end of 2023, compared with the December 2022 macroeconomic forecast, thereby also contributing positively to the revision of headline inflation. Revisions reflect reported data on the rate of change in HICP in Bulgaria since early 2023, pointing to a lower than expected spillover effect of international commodity prices on food price inflation. The

main factors behind the revision in inflation in the core components are the projected more pronounced increase in unit labour cost growth and stronger growth in private consumption. Compared to the December 2022 forecast, inflation at the end of 2024 has been increased by 0.1 percentage points, with the largest positive revision being made in the services and non-food goods groups. Concurrently, the food group inflation has been revised downwards as a result of technical assumptions about food prices in euro in international markets. Expectations of headline consumer price inflation in Bulgaria for 2025 remain unchanged compared with the December 2022 forecast.

GDP and Inflation Forecast Revisions (4 April 2023 *vis-à-vis* 12 January 2023)

Annual rate of change, per cent	Forecast as of 4 April 2023				Forecast as of 12 January 2023				Revision (percentage points)			
	2022	2023	2024	2025	2022	2023	2024	2025	2022	2023	2024	2025
GDP at constant prices	3.4	1.0	3.2	4.1	3.4	0.4	3.2	3.5	0.0	0.6	0.0	0.6
Private consumption	4.8	4.9	4.2	4.1	4.0	3.3	4.4	4.2	0.8	1.6	-0.2	-0.1
Government consumption	6.5	-2.2	1.4	3.0	6.5	0.0	1.9	3.0	0.0	-2.2	-0.5	0.0
Gross fixed capital formation	-4.3	10.2	1.9	14.6	-4.6	11.1	1.8	12.2	0.3	-0.9	0.1	2.4
Exports (goods and services)	8.3	1.4	4.5	3.9	8.4	-0.4	4.8	4.4	-0.1	1.8	-0.3	-0.5
Imports (goods and services)	10.5	2.8	4.1	5.5	11.1	2.9	4.0	5.9	-0.6	-0.1	0.1	-0.4
HICP at end of period	14.3	5.6	3.4	3.0	14.3	4.2	3.3	3.0	0.0	1.4	0.1	0.0
Core inflation	11.9	8.3	5.9	4.2	11.6	7.9	5.5	4.1	0.3	0.4	0.4	0.1
Energy products	15.9	-3.1	-0.4	-1.7	17.5	-5.8	-0.3	-1.8	-1.6	2.7	-0.1	0.1
Food	25.0	5.9	1.8	3.8	25.9	2.0	2.1	3.8	-0.9	3.9	-0.3	0.0
Goods and services with administratively controlled prices and tobacco products	6.9	2.9	1.6	1.5	6.0	2.9	1.6	1.5	0.9	0.0	0.0	0.0

Source: BNB.

RISKS TO THE FORECAST

The baseline scenario of the forecast is characterised by a very high uncertainty about the changes in the external environment, even in the short run, due to the ongoing military conflict between Russia and Ukraine and the turbulence in financial markets in the United States and Switzerland observed in early March 2023. An additional uncertainty to the current forecast arises from the political situation in Bulgaria, which is reflected in the absence of adopted state budget for 2023 and a medium-term budgetary forecast. Therefore, the government expenditure dynamics over the projection horizon could be mainly based on technical assumptions. Taking into account the assumptions underlying the baseline scenario, risks to the real GDP growth forecast are assessed as balanced for 2023, while for 2024 and 2025, risks of lower real GDP growth in Bulgaria prevail.

Risks of lower economic activity are largely due to the heightened uncertainty stemming mainly from the ongoing military conflict in Ukraine and the possibility of aggravating bottlenecks in the functioning of regional supply chains, as well as to the likelihood of higher international prices of raw materials for a more extended period of time than the one projected in the baseline scenario. Higher and more persistent global inflation is likely to trigger a faster and stronger increase in interest rates by leading central banks compared to the baseline scenario, which could lead to renewed and heightened tensions in international financial markets, as well as to a stronger pass-through of higher interest rates to monetary conditions in Bulgaria. This in turn implies lower lending and economic activity in Bulgaria. A significant risk to the economic activity forecast arises also from the political uncertainty in Bulgaria and the possible slower implementation of investment projects under the NRRP and slower absorption of European funds other than those under the NRRP against the time profile set out in the baseline scenario. In the short term, real GDP growth in Bulgaria is likely to be higher, given a smaller than projected decline in the stock of inventories in the economy and a lower nega-

tive impact of country-specific factors included in the baseline scenario, which are expected to limit exports growth in 2023.

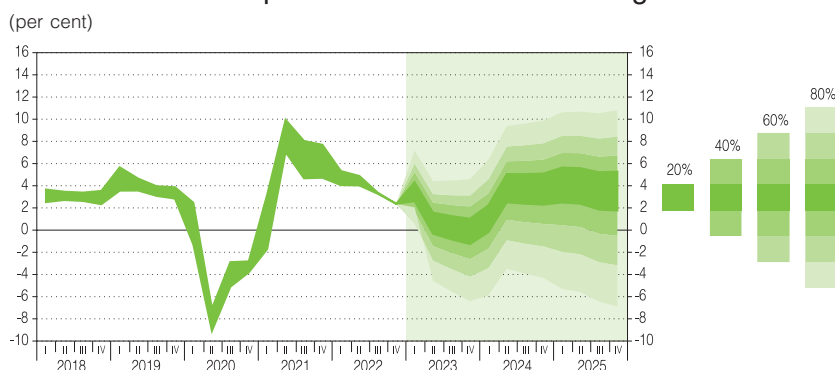
The uncertainty about the forecast for a particular indicator may be graphically illustrated by means of a fan chart. Chart bands coloured with specific colour set an interval in which with a certain probability the projected value²⁵ is expected to fall (for further details, see the note to the following chart). Usually, each interval widens with the increase in the forecast horizon, reflecting the increasing uncertainty further into the future. The middle band of the chart depicted in the darkest colour includes the baseline scenario of the annual rate of change of real GDP, and the probability distribution shows a 20 per cent probability for the actual value to fall within this band in each of the quarters. Given the heightened uncertainty stemming from the future interest rate dynamics, the war in Ukraine and the political situation in Bulgaria, the uncertainty interval in the current forecast is broader than usual, even in the short term, which is evident by the profile of the fan chart since the first quarter of 2023. According to the probability distribution for 2023, with a 60 per cent probability the annual rate of change of real GDP is expected to be in the range of -2.8 per cent to 3.7 per cent.

Risks to the inflation outlook are assessed to be oriented towards stronger growth in final

²⁵ The fan chart is constructed on the basis of the so-called asymmetric exponential distribution. To present the forecasting team's estimate of the uncertainty of projected values, it is necessary to estimate the general uncertainty of the forecast (by determining the dispersion σ of the distribution) and the so-called balance of risks (by determining the asymmetry parameter v of the distribution), indicating in which direction the realised value is more likely to deviate from the projected value. The balance of risks is determined subjectively by the forecasters on the basis of possible changes in the structure of the economy, inaccuracies in the information available at the time of the forecast production, imperfections in forecasting methods employed, forthcoming economic policy decisions, etc. Historical data on the average forecast error made by the BNB experts when preparing previous forecasts are used to determine the general uncertainty to the forecast. In the currently constructed fan charts, the forecast error is overestimated by 40 per cent for the first two years and by 50 per cent for the third year relative to normal. For further details on producing the fan chart, see the highlight entitled *Measurement and Presentation of Uncertainty in Forecasting Economic Indicators*, [Economic Review](#), issue 1 of 2012.

consumer prices compared to the baseline scenario for the whole projection horizon. Such risks stem from the potential materialisation of higher energy and food commodity prices in international markets than those set out in the technical assumptions. Higher inflation in goods and services with administratively controlled prices may also materialise in the event of possible changes in regulated prices of electricity, water and sewerage services and heating for household consumers in view of the steady increase in their production costs. Another factor pointing to higher than projected inflation is the slower and limited pass-through of the downward revisions of the international prices of raw materials in 2023 on consumer prices of food and energy products than those set out in the external assumptions, given the strong domestic consumer demand. A stronger and frequent indexation of wages and social benefits based on inflation compared with the baseline scenario, including due to labour shortages and political cycle in Bulgaria, would further increase private consumption and unit labour costs' growth, which is a prerequisite for a more pronounced pass-through of production costs to final consumer prices. An additional pro-inflationary risk in the medium term stems from the possible discontinuation of the measure to compensate business electricity consumers, which was extended until 31 December 2023 and assumed to remain effective throughout the forecast horizon. The fan chart of inflation suggests that with a probability of 60 per cent, annual inflation in consumer prices is expected to range between 1.7 and 10.6 per cent at the end of 2023.

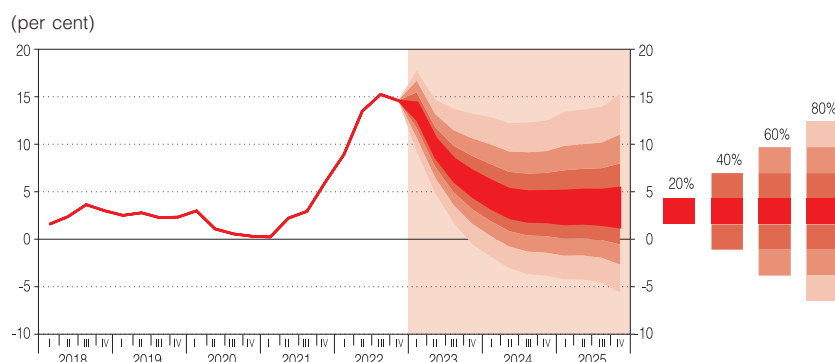
Fan Chart of the Expected Annual Rate of Change in Real GDP



Note: The chart provides historical series and annual real GDP growth forecast according to non-seasonally adjusted data. The fan chart shows expert views of the forecasters on the uncertainty surrounding the projected value based on a probability distribution. The reporting period includes revised GDP growth estimates, with the latest reporting periods revised on fewer occasions, thus narrowing the band. The middle band of the projected horizon chart, depicted in the darkest colour, includes the central projection and the probability distribution shows a 20 per cent probability for the actual value to fall in this band in each of the quarters. If neighbouring bands (in the same brighter colour) are added to the middle band, there would be a 40 per cent coverage of the probability mass. Thus, by adding each same colour couple of bands, the probability for the value to fall there would be increased by 20 percentage points to reach 80 per cent. The probability for the value to remain outside the coloured part of the chart is 20 per cent based on the distribution chosen.

Source: BNB.

Fan Chart of the Expected Annual Rate of Change in Inflation at the End of the Period



Notes: The fan chart shows expert views of the forecasters on the uncertainty surrounding the projected value based on a probability distribution. The middle band of the chart, depicted in the darkest colour, includes the central projection and the probability distribution shows 20 per cent probability for the actual value to fall in this band in each of the quarters. If neighbouring bands (in the same brighter colour) are added to the middle band, there would be a 40 per cent coverage of the probability mass. Thus, by adding each same colour couple of bands, the probability for the value to fall there would be increased by 20 percentage points to reach 80 per cent. The probability for the value to remain outside the coloured part of the chart is 20 per cent based on the distribution chosen.

Source: BNB.

Forecast of Key Macroeconomic Indicators for 2023–2025

(per cent)

	2022	2023	2024	2025
Annual rate of change				
GDP at constant prices	3.4	1.0	3.2	4.1
Private consumption	4.8	4.9	4.2	4.1
Government consumption	6.5	-2.2	1.4	3.0
Gross fixed capital formation	-4.3	10.2	1.9	14.6
Exports (goods and services)	8.3	1.4	4.5	3.9
Imports (goods and services)	10.5	2.8	4.1	5.5
HICP at end of period	14.3	5.6	3.4	3.0
Core inflation	11.9	8.3	5.9	4.2
Energy products	15.9	-3.1	-0.4	-1.7
Food	25.0	5.9	1.8	3.8
Goods and services with administratively controlled prices and tobacco products	6.9	2.9	1.6	1.5
Employment	1.3	0.0	0.1	0.2
Unit labour costs	16.0	11.6	5.6	5.2
Labour productivity	2.1	0.9	3.2	3.9
Unemployment rate (share of labour force, %)	4.3	3.5	2.9	2.6
Claims on the non-government sector	12.5	6.4	4.7	5.1
Claims on corporations ¹	10.2	4.8	3.5	3.8
Claims on households	14.6	8.3	6.5	7.0
Deposits of the non-government sector	14.3	10.4	8.4	7.5
Share of GDP				
Balance of payments current account	-0.7	-0.2	0.4	-0.3
Trade balance	-5.8	-4.4	-3.3	-3.6
Services, net	6.3	6.6	6.7	6.5
Primary income, net	-2.9	-4.1	-4.4	-4.4
Secondary income, net	1.7	1.6	1.3	1.1
Annual rate of change				
External assumptions				
External demand	6.6	3.3	3.3	3.5
Average annual Brent oil price (in USD)	41.7	-18.7	-5.7	-5.0
Average annual price of non-energy products (in USD) ²	4.5	-0.5	0.2	3.3
Brent oil price at the end of period (in USD)	11.0	-10.2	-5.5	-4.7
Prices of non-energy products at the end of period (in USD)	-2.0	3.4	3.3	3.3

¹ Data refer to non-financial corporations.

² Prices of non-energy products are weighted according to the structure of Bulgarian imports of goods.

Source: BNB.

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THE SCULPTURAL COMPOSITION BY KIRIL SHIVAROV DEPICTING HERMES AND DEMETER ON THE SOUTHERN FAÇADE OF THE BULGARIAN NATIONAL BANK BUILDING IS USED IN COVER DESIGN.