



# MACROECONOMIC FORECAST



**BULGARIAN NATIONAL BANK**

# MACROECONOMIC FORECAST

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БЪЛГАРСКА НАРОДНА БАНКА

The quarterly publication of the BNB Macroeconomic Forecast provides annual projections of key 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 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](https://www.bnb.bg/bnbweb/groups/public/documents/bnb_publication/pub_ec_r_2015_04_en.pdf).

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# SUMMARY

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The BNB forecast of key macroeconomic indicators is prepared as at 24 June 2022 based on assumptions about global economic developments and price dynamics of main commodity groups in international markets as of 10 June 2022. The fallouts from the war in Ukraine create higher than usual uncertainty in the projected values for the main macroeconomic indicators, the dynamics of which is strongly influenced by the technical assumptions set in the forecast.

To produce the forecast, assumptions for the change in external demand for Bulgarian goods and services were used based on the most recent projections of the European Central Bank (ECB), including information as of 24 May 2022. Taking into account the unfavourable developments in the growth prospects of economic activity, financing conditions and price levels in Bulgaria's main trading partners after this date, the assumptions of the ECB baseline scenario have been adjusted according to the BNB assessment towards weaker external demand growth for Bulgarian goods and services over the entire forecast horizon. These assumptions imply that foreign demand for Bulgarian goods and services will grow by 1.0 per cent in 2022, followed by a slowdown to 0.1 per cent in 2023 and an acceleration to 3.6 per cent in 2024. Since the outbreak of the war in Ukraine, prices of raw materials commodity prices on international markets have been highly volatile, with futures contract prices included in the assumptions as of 10 June 2022 indicating that prices of most commodities will remain persistently above their 2021 levels for the entire forecast horizon. Market expectations for natural gas prices in euro are for these prices to continue rising strongly on an annual basis until the end of 2022, while crude oil prices will keep increasing until the first quarter of 2023 and electricity prices until the third quarter of 2023. Technical assumptions suggest that energy commodity prices in euro will decline on an annual basis but remain above their 2021 levels over the rest of the forecast horizon. The projected decrease in these prices in 2023 and 2024, largely reflecting the prices of futures contracts concluded by market participants, might not fully take into account the structural changes in the energy market, which should be considered as a factor for higher price levels of energy products in the medium and long term. Non-energy product prices and primarily food prices are assumed to grow substantially in euro on an annual basis in 2022, to stabilise somewhat in 2023 and to increase in 2024 in line with the assumptions of a rise in global trade.

The assumptions about economic activity in Bulgaria's main trading partners and the forecast for Bulgaria do not include negative effects on the production side of the economy due to possible shortages of energy resources such as natural gas, oil and nuclear fuel. However, the likelihood that the EU countries' energy needs will not be met during the winter months is increasing, posing risks to the prospects of economic activity growth in the region. These risks are also amplified by a possible rapid tightening of the monetary policy by the US Federal Reserve System which may trigger a significant deterioration of the economic environment in the USA. This, coupled with the expected tightening of the ECB monetary policy and negative effects of the war in Ukraine, could result in a further slowdown or contraction of economic activity in Bulgaria's main euro area trading partners in the second half of 2022 or in 2023. The forecast does not take into account the potential impact of political uncertainty in Bulgaria on economic activity.

Based on the assumptions described above, the baseline scenario of the forecast projects Bulgaria's real GDP growth to slow to 1.9 per cent in 2022 and 1.7 per cent in 2023 before accelerating to 3.7 per cent in 2024. This dynamics will be mainly determined by net exports, the negative contribution of which is expected to increase in 2022 and 2023 and subsequently to decrease significantly in 2024, largely affected by the time profile of external demand for Bulgarian goods and services. Domestic demand is projected to make a significant positive contribution to economic activity in Bulgaria over the entire forecast horizon. In 2022 domestic demand growth will be driven largely by private consumption in line with the projected increase in real disposable income of households. In 2023 the positive contribution of domestic demand to GDP growth is expected to increase compared to 2022 mainly due to the projected faster absorption of

funds under the National Recovery and Resilience Plan (NRRP). Labour productivity growth and labour shortages are expected to continue to support real wage growth in the medium run, which, coupled with the expectations of lower economic uncertainty in Bulgaria after 2023, will boost household consumption expenditure and will contribute most strongly to domestic demand dynamics in 2024.

According to the baseline scenario of the forecast the annual inflation is projected to be 14.7 per cent at the end of 2022, with all major groups of goods and services contributing to this effect. Accelerated inflation in 2022 will be driven by direct and indirect effects of higher international prices of agricultural products, and energy and other non-energy commodities, which will continue to push up firms' production costs. Other factors with a pro-inflationary effect are expected to be the projected strong rise in unit labour costs and private consumption, as well as accelerated inflation of industrial goods in major trading partners of Bulgaria. Administratively controlled prices are also expected to make a significant positive contribution to headline inflation, mainly due to price rises included in the forecast for electricity, heat, and water and sewerage services from 1 July 2022. The growth rate of HICP is expected to slow down to 3.8 per cent by end-2023 and 3.1 per cent by end-2024 owing mainly to technical assumptions about price declines in energy commodities in international markets and a substantial slowdown in the rates of growth in international food prices.

Given the technical assumptions in the baseline scenario, risks of lower real GDP growth in Bulgaria prevail over the entire forecast horizon. These risks stem mainly from the probability of a further deterioration of the international environment, a shortage of energy products in Bulgaria and our main trading partners, as well as the likelihood of a continued rise in commodity prices on international markets. A significant risk to the forecast of investment activity in Bulgaria arises from the political uncertainty in Bulgaria, which is likely to result in a slower absorption of funds under EU programmes and implementation of investment projects under the NRRP against the time profile set in the baseline scenario.

There are risks to the inflation forecast of a stronger increase in prices *vis-à-vis* the baseline scenario over the entire forecast. These risks are associated mainly with international price dynamics of raw materials compared with the external assumptions in the current forecast. Other risks arise from possibly stronger increases in regulated prices compared to those projected in the baseline scenario of the forecast, as well as from the incomplete pass-through to final consumer prices of the zero VAT rate for bread supply and the compensation of individuals for fuel prices, as set out in the draft revision of the 2022 State Budget Law.

# FORECAST OF KEY MACROECONOMIC INDICATORS FOR 2022-2024

## External Environment

The BNB forecast of key macroeconomic indicators was prepared as at 24 June 2022 and based on assumptions about global economic developments and price dynamics of main commodity groups in international markets as of 10 June 2022. The fall-outs from the war in Ukraine have created higher than usual uncertainty in the projected values for the main macroeconomic indicators, the dynamics of which is strongly influenced by the projected technical assumptions. The forecast does not take into account the potential impact of political uncertainty in Bulgaria on economic activity and inflation over the 2022–2024.

The forecast is built on the assumptions for the change in external demand for Bulgarian goods and services based on the most recent projections of the ECB, including information as of 24 May 2022. Taking into account the unfavourable developments in the growth prospects of economic activity, financing conditions and price levels in Bulgaria's main trading partners after this date, the assumptions of the ECB baseline scenario have been adjusted according to the BNB assessment towards weaker growth of external demand for Bulgarian goods and services over the entire forecast horizon.<sup>1</sup> These assumptions imply that foreign demand for Bulgarian goods and services will grow by 1.0 per cent in 2022, followed

by a slowdown to 0.1 per cent in 2023 and an acceleration to 3.6 per cent in 2024. By the end of the forecast horizon external demand is expected to remain lower than that projected in the March 2022 forecast.

The assumptions about economic activity in Bulgaria's main trading partners and the forecast for Bulgaria do not include negative effects on the production side of the economy due to possible shortages of energy resources such as natural gas, oil and nuclear fuel.<sup>2</sup> However, the likelihood that the EU countries' energy needs will not be met during the winter months is increasing, posing risks to the prospects for economic activity growth in the region. These risks are also amplified by a possible rapid tightening of the monetary policy by the US Federal Reserve System which may trigger a significant deterioration of the economic environment in the USA. This, coupled with the expected tightening of the ECB monetary policy and the negative effects of the war in Ukraine, could result in a further slowdown or contraction of economic activity in Bulgaria's main euro area trading partners in the second half of 2022 or in 2023.

The price assumptions for the change in energy commodities (crude oil, natural gas, electricity)<sup>3</sup> and non-energy commodities (metals<sup>4</sup>, food<sup>5</sup> and other commodities<sup>6</sup>)<sup>7</sup> are mostly based on prices of

<sup>1</sup> Demand for Bulgarian goods and services from euro area countries in 2022, 2023 and 2024 is reduced in line with the adverse GDP growth scenario in the [ECB macroeconomic projections of June 2022](#), in the part related to the effects of higher commodity prices, heightened uncertainty, subdued global trade and worsened financing conditions. The scenario does not include negative effects related to a potential disruption of production processes in the euro area due to energy shortages. In addition, a technical assumption is made that after 2022 Ukraine will have a neutral contribution to the change in external demand for Bulgarian goods and services.

<sup>2</sup> An assessment of the potential magnitude of direct and indirect effects of disrupted natural gas supplies on individual sectors of the Bulgarian economy is presented in the research topic titled Bulgaria's Economic Connectedness with Russia, Ukraine and Belarus and Dependency of the Bulgarian Economy on the Use of Natural Gas, [Economic Review](#), issue 1 of 2022.

<sup>3</sup> 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 second quarter of 2023 are also used, followed by a technical assumption that prices will remain unchanged at the level attained until the end of 2024. Assessments of electricity price movements are based on market information from futures contracts concluded in the German market until the second quarter of 2023, followed by a technical assumption that prices will remain unchanged at the level attained until the end of 2024.

<sup>4</sup> Including ferrous metals, copper, aluminium, lead and zinc weighted in accordance with Bulgaria's foreign trade flows.

<sup>5</sup> Including pigmeat, coffee, wheat, maize, rice, soybeans, sugar and cocoa weighted in accordance with Bulgaria's foreign trade flows.

<sup>6</sup> Including rubber, timber and cotton weighted in accordance with Bulgaria's foreign trade flows.

<sup>7</sup> Futures contracts concluded for trading of relevant commodities on international markets were used, with data available until the

futures contracts concluded in international markets by 10 June 2022, with these prices showing high volatility since the beginning of the war in Ukraine.

The assumptions thus built imply that over the entire forecast horizon prices of most commodities will remain persistently above their 2021 levels, with crude oil, electricity, natural gas and food prices in euro<sup>8</sup> showing significant increases in 2022. Broken by quarter, natural gas prices will continue to report annual growth until the end of 2022, while crude oil prices will continue to rise until the first quarter of 2023 and those of electricity, until the end of the third quarter of 2023. The downward slope of the price curve of futures contracts<sup>9</sup> for natural gas and crude oil, indicating price declines in these commodities, may not fully take into account structural changes stemming from the war in Ukraine, transition to carbon neutrality in EU countries and stated intentions to reduce their dependence on energy imports from Russia,<sup>10</sup> as well as announced lower volumes of Russian natural gas to Germany<sup>11</sup> which pushed up significantly energy price levels in the European market after the cut-off date of the assumptions. This could be considered as a factor for maintaining higher price levels of energy products over medium to long-term horizons. Non-energy product prices and mostly food prices are assumed to grow significantly in euro on an annual basis in 2022. In 2023 assumptions suggest certain stabilisation of non-energy euro prices, though displaying divergent developments by sub-group: an increase in food prices on an annual basis and a decrease in the remaining groups. It is assumed for 2024 that prices of non-energy products will rise in line with set expectations of global trade growth.

Assumptions in the forecast include market expectations of an increase in short-term interest rates

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end of the second quarter of 2023. For the rest of the forecast horizon there is no public information on the volume and number of futures transactions for these commodities on international markets. Therefore, the price dynamics is assessed by taking into account the historical correlation with the global trade dynamics in line with forecast's external assumptions.

<sup>8</sup> The forecast of euro commodity prices 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 April and May 2022 and for the last ten days as of the date when the external environment assumptions were made (10 June 2022). Reflecting this technical assumption, in 2022 the euro will depreciate against the US dollar by 8.4 per cent.

<sup>9</sup> The downward slope of the price curve of futures contracts for commodities can be explained by a market condition called back-

in the euro area money market over the whole projection horizon, most pronounced in the second half of 2022 and the first half of 2023. In addition, these assumptions reflect largely the ECB intention announced in June 2022 to raise by 25 basis points key interest rates in July 2022 and signals about more significant increases in September, if the inflation outlook remains unchanged or worsens.

### **Economic Activity in Bulgaria**

In the first quarter of 2022 annual growth of real GDP decelerated from the previous quarter to 5.0 per cent, according to non-seasonally adjusted data of the NSI (from 5.6 per cent in the fourth quarter of 2021). In terms of the structure of growth, an essential negative contribution of net exports (-4.8 percentage points) was formed along with an increase in the positive contribution of domestic demand (to 3.6 percentage points) and a strong rise of inventories in the economy (6.2 percentage points) compared to the end of 2021. Changes in inventories over the first quarter of 2022 were at the historically highest level (7.7 per cent of GDP). There may be two explanations for this. According to the NSI methodology, on the one hand, the leading approach in calculating GDP is the output method, and the high amount of inventories could partially reflect the preliminary nature of information used for compiling GDP by final use method, which in the future to result in a revision of the GDP structure and interpretation of economic developments. On the other hand, growth in inventories can be explained by work in progress (*e.g.* in construction and processing industry) and/or targeted accumulation of higher stocks of raw materials due to expectations of a further increase in prices and deepening disturbances in global supply chains. The high contribution of inventories to growth of real GDP in the beginning of the year and factors behind it are

wardation, 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.

<sup>10</sup> For details, see: <https://eur-lex.europa.eu/legal-content/BG/TXT/?uri=CELEX:52022DC0108>.

<sup>11</sup> For further information, see the communication by Bundesnetzagentur: <https://www.bundesnetzagentur.de/EN/Areas/Energy/Companies/SecurityOfSupply/GasSupply/start.html>.



sources of an uncertainty in the economic activity forecast over 2022.<sup>12</sup> Available economic indicators<sup>13</sup> for April–May 2022 provide predominantly signals about a continuous slowdown of annual growth in Bulgaria’s economic activity over the second quarter of 2022.

Reflecting these developments and based on above technical assumptions about the global situation, growth in domestic economic activity for 2022 and 2023 is projected to slow down to 1.9 and 1.7 per cent, respectively, thereafter accelerating to 3.7 per cent in 2024. The lower rate of growth in real GDP over 2022 will be driven by the increased negative contribution of net exports, which will be only partially compensated by the projected acceleration of growth in domestic demand. Exports of goods and services in 2022 will be limited by the assumptions of a significant slowdown of growth in external demand for goods and services, while imports will rise in line with upward dynamics of domestic demand. By sub-component of domestic demand, private consumption growth is expected to slow down from 2021, though retaining its main positive contribution to the GDP change in 2022. Factors underpinning household consumption expenditure are projected strong growth in nominal remunerations in the private sector and net fiscal transfers to households. Nevertheless, real growth in private consumption over 2022 will slow down from 2021, reflecting both the limiting effect of inflation acceleration on households’ purchasing power, as measured by real disposable income, and the negative effects of the war in Ukraine on consumer sentiment. Based on information of the draft Law amending the State Budget Law of the Republic of Bulgaria for 2022<sup>14</sup> of 6 June 2022 providing for higher expenses on intermediate consumption, healthcare and public sector remunerations, the growth rate of government consumption is expected to accelerate slightly

to 4.1 per cent in real terms over 2022. In addition, the main portion of the projected increase in budget expenditure under the consolidated fiscal programme, presented with the draft amendments to the State Budget Law for 2022, is in the form of pension expenses which are included in the baseline scenario of the forecast. Projected 3.5 per cent growth in total investments in the economy for 2022 will be mainly driven by government investments as a result of the final phase of the 2014–2020 programme period and related expectations of a higher rate of absorption of EU funds, as well as an expected gradual recovery of national investments, given their low base level in the previous year. Public and private investments, which are expected to be implemented under the National Recovery and Resilience Plan,<sup>15</sup> will contribute, to a lower extent, to the overall change in gross fixed capital formation. As regards firms, the increased economic uncertainty and worsened managers’ sentiment about the future production activity are expected to limit further investment activity of the private sector in 2022. A factor which will support firms’ investment activity is the need to improve the effectiveness and optimise production costs in view of managers’ expectations about a continuous increase in commodity and energy prices.

In 2023 GDP growth is expected to continue slowing down, and then in 2024 this trend will be reversed towards acceleration in economic activity growth. This dynamics will mainly reflect the profile of net exports whose negative contribution will increase significantly in 2023 and decrease in 2024 in line with the assumptions about external demand for Bulgarian goods and services. The positive contribution of domestic demand to real GDP growth is expected to rise in the 2023–2024 period, and changes in its driving factors will be observed by sub-component. In 2023 domestic demand will be

<sup>12</sup> The interpretation of inventories dynamics set out in the forecast suggests that their accumulation is targeted and concentrated in the first quarter of 2022, followed by a decline in their amount. As a result, changes in inventories in the forecast for 2022 have a neutral contribution to real GDP growth.

<sup>13</sup> This refers to the indicators tracking consumer confidence, business climate, production indices in industry, manufacturing and retail trade turnover indices.

<sup>14</sup> For details, see:

<https://www.minfin.bg/bg/legislation7/392>

<sup>15</sup> Information on the amount of expected EU grants and private national co-financing under the NRRP, used in preparing the macroeconomic forecast, is based on the final version of the plan of April 2022, whereas assumptions of the implementation of the

plan by year over the projection horizon have been made by the BNB. In line with the information contained in the Convergence Programme of the Republic of Bulgaria for 2022–2025, the bulk of expected EU grants is projected to be in the form of fixed capital investment of the general government sector, a smaller portion to be utilised as capital transfers to the private sector, whereas the amount of expected current transfers and public consumption is significantly lower.

primarily driven by growth in fixed capital investment, while in 2024 an increase in domestic demand will be largely due to growth in private consumption. Dynamics of total fixed capital investment over the projection horizon reflects mainly the technical assumption of the implementation schedule of NRRP projects which are expected to be in the form of public investments and, to a lesser extent, capital transfers to the private sector, under the additional effect of the planned private national project co-financing. The macroeconomic forecast assumes that the most significant growth in public and private investments financed under the NRRP over the forecast horizon will be reported in 2023. In the 2023–2024 period investments financed by EU funds, other than those under the NRRP, are expected to have a limiting effect on growth of total investments in the economy as a result of the completion of the 2014–2020 programme period.<sup>16</sup> At the same time, expected slowdown in implementing large infrastructure projects financed by national funds will also contribute to weaker growth in total fixed capital investment. Private sector investments, other than those under the NRRP, are expected to remain low, but tending to gradually increase in 2023–2024. This will be driven by projected growth of final demand, the partial improvement in managers' sentiment after its expected significant deterioration in 2022, as well as by structural factors related to negative demographic developments in Bulgaria, implying a replacement of the labour factor by capital. In 2023 household consumption growth is projected to decelerate in line with lower growth in real disposable income compared to 2022 and expected slowdown in consumer credit growth and increased incentives for savings in the context of rising interest rates. In 2024 the growth rate of private consumption will accelerate as a result of a stronger rise in real labour income due to the simultaneous effect of inflation deceleration and an upward pressure on nominal remunerations, given the labour shortage

<sup>16</sup> The macroeconomic forecast for 2024 assumes a decline in the funds which Bulgaria expects to receive from the EU, other than those under the NRRP, due to the initial phase of the new multi-annual financial framework for 2021–2027.

<sup>17</sup> On 24 February 2022 the BNB decided to suspend the restriction on distributions of bank profits for 2019 and 2020. As of 24 June 2022 some foreign banks in Bulgaria announced dividend distributions.

<sup>18</sup> Ukrainian refugees in Bulgaria are recorded in the national accounts statistics as residents and are excluded from the statistics on visits of foreign nationals to Bulgaria. However, since the beginning of the war there has been a significant flow of visits by Ukrain-

ian citizens to Bulgaria, who do not fall within the statistical definition of refugees, but were reported as visits of foreign nationals to the country. In order to include Ukrainian citizens in the statistics on visits of foreign nationals to the country, any foreign national, upon entering the country, should indicate (without however being obliged) the essential criterion of 'purpose of entry to Bulgaria'. The forecast includes a technical assumption about the number of Ukrainian citizens' visits to Bulgaria in 2022, assuming that over the remaining forecast horizon there will not be such visits. The revenue from visits of foreign nationals from Russia is excluded from total revenue of Bulgaria from exports of services over the whole projection horizon.

### **Balance of Payments**

The balance of payments current account is projected to report a deficit of -1.1 per cent of GDP in 2022, from -0.4 per cent of GDP in 2021. The higher deficit in 2022 will be largely driven by the expanded trade balance deficit, reflecting mainly stronger growth in the real volume of goods imports compared with goods exports, whereas expected favourable terms of trade for Bulgaria in 2022 will partially curb the deficit increase. Another driving factor, though to a lesser extent, will be the increasing negative balance on net primary income, reflecting the contribution of distributed banking sector dividends outside the country.<sup>17</sup> In 2023 the current account deficit is expected to increase to -1.3 per cent of GDP, which will be triggered mainly by a projected rise in the trade balance deficit and a decreased surplus in services trade<sup>18</sup> in line with the significant slowdown in the growth of external demand. In 2024 current account deficit is projected to contract to -0.5 per cent of GDP under the main influence of a lower trade deficit, given the assumed acceleration of growth in external demand for Bulgarian goods and services. In 2022, the capital account surplus is expected to remain close to the levels of 2021 and to rise more significantly in 2023 and 2024 mainly due to an increase in transfers under the NRRP.

### **Labour Market**

Employment growth is expected to be limited to 0.8 per cent in 2022 and 0.3 per cent in 2023 as a

result of the uncertain external environment and lower GDP growth in Bulgaria. Continued adverse demographic trends represent another key factor that will dampen the increase in the number of employed over the whole projection horizon and is expected to result in a slowdown in the employment growth rate to 0.1 per cent in 2024. These developments will also lead to a gradual decline in the unemployment rate from 4.7 per cent in 2022 to 4.3 per cent in 2024. Concurrently, real labour productivity growth will decelerate to 0.9 per cent in 2022, before gradually increasing to 3.7 per cent in 2024, in line with the projected GDP increase. Compensation *per* employee in nominal terms is expected to grow by 14.3 per cent in 2022, thus outpacing average annual price rises and supporting growth of households' real disposable income. Growth of nominal compensation *per* employee in 2022 is expected to be largely driven by the increase in private sector wages as a result of higher inflation and growing labour shortages, which create an incentive for employers to compete for employees on a wage basis. The above developments were already reflected in the data for the first quarter of 2022, which indicate that the compensation *per* employee for the total economy grew by 15 per cent year on year, exceeding the consumer price growth rate. The projected gradual deceleration in inflation over the coming years will result in slower growth of nominal compensation *per* employee. At the same time, limited labour supply will continue to exert pressure on wages to rise in real terms at a faster pace than that of labour productivity growth. Consequently, the nominal growth rate of compensation *per* employee is expected to remain high over the projection horizon, standing at 6.5 per cent in 2023 and 7.5 per cent in 2024. Strong income growth in 2022, which is not in line with labour productivity growth, will result in an increase of 13.2 per cent of nominal unit labour costs. Lower income growth and gradual increase in productivity will limit growth in nominal unit labour costs to 5.0 per cent in 2023 and 3.7 per cent in 2024.

## Monetary Sector

The outlook for the monetary sector of the economy reflects market expectations of strong upward dynamics in euro area interbank money market rates in the second half of 2022 and the first half of 2023. Due to the currency board arrangements, the expected increase in the euro area interest rates is a prerequisite for rising interest rates in Bulgaria from currently historically low levels. Amid ample liquidity and sustained high inflow of attracted funds from residents in the banking system in Bulgaria, transmission to deposit rates in the country may be expected to be relatively slower than transmission to lending rates over the projection horizon.

Credit growth to the non-government sector is expected to moderate slightly to 8.4 per cent at the end of 2022, entirely driven by loans to households amid slower private consumption growth and heightened uncertainty in the economic environment. The significant acceleration in consumer price inflation and the sustained negative real interest rates on housing loans, despite their projected increase, are likely to further stimulate demand for housing loans, while still strongly negative real deposit rates constitute an additional factor fostering demand for such loans. The rapid acceleration in credit growth to non-financial corporations that began in early 2022 mainly reflects the significant price increase in raw materials for production and the needs for credit resources to ensure working capital and inventories. By the end of the year growth in credit to corporations is projected to remain higher than at the end of 2021. In 2023 loans to both households and non-financial corporations are expected to slow more significantly, driven by the increase in lending rates coupled with projected lower inflation and further moderation in private consumption growth. An additional factor that is expected to have a potential dampening effect on credit activity on the supply side is BNB increases in the countercyclical capital buffer rate from 0.5 per cent to 1.0 per cent, effective as of 1 October 2022 and from 1.0 per cent to 1.5 per cent, effective as of 1 January 2023, and its retention at that level in the second and third quarters of 2023. In 2024 credit growth is projected to accelerate slightly, mainly pushed up by the expected pick-up in domestic demand. Deposits will continue to grow at relatively high rates over the projection horizon, supported by nominal wage growth in the economy and projected increases in deposit interest rates.

## Inflation

The annual growth rate of consumer prices continued to accelerate since the beginning of the year, reaching 13.4 per cent in May 2022, with prospects of higher and steady inflation in the following months. The upward pressure on consumer prices is expected to remain high in the short-term, reflecting the assumptions of price developments in food, oil, electricity for business customers and natural gas in international markets. Concurrently, the transition to carbon neutrality in EU countries and stated intentions to reduce their dependence on energy imports from Russia are the reasons for inflationary pressures to remain relatively high in the medium term.

According to the forecast baseline scenario annual inflation is projected to be 14.7 per cent at the end of 2022 (6.6 per cent at the end of 2021), reflecting the contribution of all major groups of goods and services<sup>19</sup>. The constructed probability distribution suggests that the actual value of inflation will lie in a comparatively wide range at the end of the year (from 11.4 per cent to 20.2 per cent, with the probability estimated at 60 per cent), which results from: 1) continued strong volatility of international commodity prices, including due to the impact of the military conflict in Ukraine; 2) uncertainty about the extent and timing of increases in certain administratively controlled prices, which are indirectly affected by the prices of energy sources; 3) indications that the link between price and wage developments in the economy is reinforced; 4) government proposed cuts in some indirect taxes, whose final effect on consumer prices will depend on firms' behaviour and pricing. According to the macroeconomic projection, inflation at the end of 2022 will be driven mainly by the occurrence of direct and indirect supply-side effects related to assumptions of ongoing year-on-year growth in food, oil, gas and electricity

<sup>19</sup> At the end of 2022 inflation measured by consumer price index (CPI) is likely to be higher than HICP inflation. For more information, see highlights titled Comparison of Inflation According to the CPI and the HICP published in the BNB Macroeconomic Forecast, September 2021.

<sup>20</sup> Assessments of electricity price dynamics in Bulgaria are made on the basis of technical assumptions, while taking into account measures announced by the government to compensate domestic firms until the end of June 2022.

<sup>21</sup> All other things being equal, BNB estimates show that the reduction in the VAT rate is a prerequisite for a decrease in the global food price index in HICP by -1.18 per cent on a quarterly basis in the third quarter of 2022.

prices for business customers in international markets<sup>20</sup>. Other factors with a pro-inflationary effect are expected to be the projected strong increase in unit labour costs, private consumption growth and accelerated inflation in industrial goods in major trading partners of Bulgaria. By HICP component, the food group followed by services and non-food goods are expected to have the largest contribution to inflation at the end of 2022. Although prices of transport fuels are expected to remain comparatively high and to keep rising on a quarterly basis, their contribution to the annual inflation at the end of the year will decrease as a result of a base effect of their significant rise at the end of 2021. The following measures proposed by the government are included in the forecast baseline scenario to become effective as of 1 July 2022, with an assumption of their full pass-through to final consumer prices: reduction in the VAT rate for supplies of bread (from 20 per cent to 0 per cent) for a period of one year ahead<sup>21</sup>; compensation of individuals (end-users) for fuel prices of BGN 0.25/l for a period of six months ahead<sup>22</sup>; excise duty exemption for electricity and natural gas until 30 June 2025, reduction in the VAT rate for supplies of natural gas and district heating for a period of one year ahead. Despite the projected changes in VAT rates and excise duties for the energy products listed above, administratively controlled prices are also expected to have a relatively high positive contribution to headline inflation at the end of 2022. This is mainly due to the price increases in household electricity, heat and water-supply and sewerage services from 1 July 2022, which are included in the forecast based on public information from the EWRC on planned changes<sup>23</sup>. The baseline scenario of the forecast also includes price rises in tobacco products from October 2022,

<sup>22</sup> All other things being equal, BNB estimates show that the compensation for fuel prices is a prerequisite for a decrease in the global energy product price index in HICP (excluding administratively controlled prices) by -6.46 per cent on a quarterly basis in the third quarter of 2022.

<sup>23</sup> Forecast baseline scenario foresees an increase as of 1 July 2022 in the regulated price of electricity for households by 3.3 per cent, of heating by 26 per cent and in the package price of water-supply and sewerage services (water supply, disposal and treatment) by 19.8 per cent. The assumption about the price of water-supply and sewerage services is made on the basis of public information from EWRC' public discussions (as of 10 June 2022) on pricing factors of water-supply and sewerage companies for the period 2022–2026.

in accordance with the proposed increase in the excise duty rate for cigarettes provided for in the Law amending the State Budget Law for 2022.

The growth rate of consumer prices is projected to slow down to 3.8 per cent by end-2023 (within the range of -0.2 per cent to 10.3 per cent with a probability of 60 per cent, according to constructed probability distribution) and 3.1 per cent by end-2024 (within the range of -2.2 per cent to 11.3 per cent with a probability of 60 per cent, according to constructed probability distribution) under the main influence of the technical assumptions about international price declines in energy resources (oil, natural gas, electricity) and a substantial slowdown in the growth rates of international food prices. At the time of preparing the forecast, external assumptions imply a year-on-year decrease in energy product prices in euro at the end of 2023 and 2024, which may not fully reflect ongoing structural changes in the EU energy market and thus the inflationary pressure might be underestimated. It is expected that the groups of core components and food products will continue to have the highest positive contribution to inflation in 2023 and 2024 in line with the projected growth in unit labour costs and private consumption, and assumptions about a further increase in international food prices. Although by the time of preparing the forecast no information on the level of administratively controlled prices in 2023–2024 was available (excluding tobacco products), the baseline scenario assumes that in the medium run these prices will increase in tune with the projected labour cost dynamics of firms producing such goods and services.<sup>24</sup> An exception of this approach is made for the regulated price of central gas supply which is projected to follow the dynamics of technical assumptions about natural gas prices in international markets. With regard to tobacco products, it is assumed that their prices will continue to rise, effectively from 1 July 2023 and 1 July 2024 in line with the projected increase in excise duty.

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<sup>24</sup> Adopting an approach to keep administratively controlled prices unchanged throughout the whole projection horizon is a prerequisite to underestimating the underlying inflation, especially in periods of steady increase in nominal labour income in the economy,

accounting for a significant part of firms' production costs. Information at micro level from Orbis database of Bureau van Dijk and NSI Supply-Use tables have been used in identifying the production cost structure of these firms.

# FORECAST REVISIONS

Compared with the macroeconomic forecast published in March 2022, our current expectations are for lower growth in real GDP in 2022 and 2023. In 2024 the growth rate in the current forecast remains similar to that in the March forecast. Cumulative GDP growth for 2022–2024 in the current forecast is lower than that in the March 2022 forecast.

The downward revision of real GDP growth for 2022 compared to the March 2022 forecast is -0.2 percentage points, reflecting lower growth in fixed capital investment and, to a lesser extent, a higher negative contribution of net exports of goods and services compared to the indicators in the previous forecast. These revisions are only partially offset by higher growth in private consumption. The downward revision in investment is due to the expected lower level of gross fixed capital formation of the general government sector as a result of expected weaker implementation of investments financed by EU funds and capital expenditure financed by national funds, taking into account current data, which show a significant year-on-year decline in capital expenditure<sup>25</sup>. The higher negative contribution of net exports in the current forecast is driven by trade in goods, mostly by the upward revision of goods imports in line with higher growth in private consumption, taking into account data on the first quarter of 2022. The upward revision in private consumption growth in 2022 compared to the March forecast is owing to the expected stronger increase in real disposable income of households, mainly in line with the upward revision in private sector wages. Among domestic demand components, only government consumption remains unchanged from the March 2022 forecast.

The downward revision in real GDP growth in 2023 at -2.2 percentage points is more significant than in 2022. It is largely due to the stronger negative contribution of net exports and, to a much lesser extent, to the lower positive contribution of domestic demand to economic activity growth. The revision of net exports reflects lower growth of

goods and services exports than that projected in March, mainly due to a change in technical assumptions of external demand dynamics. The downward revision in domestic demand is driven almost entirely by lower private consumption growth compared to the March forecast, while fixed capital investment and government consumption remains broadly unchanged from the previous forecast. Projected slower growth in real disposable income is the main factor behind weaker growth in private consumption.

In 2024 economic activity growth remains similar to that of the macroeconomic forecast in March 2022, reflecting revisions in real GDP components with a compensatory effect: a higher positive contribution of private consumption and a stronger negative contribution of net exports. The upward revision in private consumption reflects higher growth in real household disposable income in the current forecast. Concurrently, weaker growth in external demand for Bulgarian goods and services in 2024 limits growth of goods and services exports, making the contribution of net exports more negative compared with the March 2022 forecast.

The forecast of inflation has been revised significantly upwards at the end of 2022 (by 5.1 percentage points), reflecting mainly additional reporting data on price developments in Bulgaria and globally, the revision of technical assumptions about commodity price developments in international markets, and information on upcoming changes in high-weight administratively regulated prices in the consumer basket. An additional factor behind the revision in core inflation and mainly in services inflation involves the projected stronger increase in unit labour costs, with data reported for the first quarter of 2022 indicating a strong pass-through of inflation to growth of compensation *per* employee. By HICP sub-component, inflation in the group of energy products (excluding those with administratively controlled prices) has been most substantially revised upwards at the end of 2022, followed by food,

annual basis. National capital expenditures fell by 23.3 per cent year on year by April.

<sup>25</sup> The analysis employs data about the implementation of the Consolidated Fiscal Programme at the end of April 2022, showing a decline in EU-funded capital expenditure of 19.9 per cent on an

administratively controlled prices and core inflation. Annual inflation for the end of 2023 is revised insignificantly toward lower price growth (by -0.1 percentage points), mainly due to the higher base of the previous year and the revision of the technical assumptions about oil prices in international markets. At the end of 2024 the projected headline inflation was similar to that of the previous macroeconomic forecast, with revisions made for HICP sub-

components with a mutually compensatory effect: the core components and the administratively controlled prices have been revised upwards, while energy products and food have been revised downwards. These revisions reflect the changed structure of GDP growth and revision in the technical assumptions.

### GDP and Inflation Forecast Revisions (24 June 2022 *vis-à-vis* 29 March 2022)

(per cent)

Annual rate of change	Forecast as of 24 June 2022				Forecast as of 29 March 2022				Revision (percentage points)			
	2021	2022	2023	2024	2021	2022	2023	2024	2021	2022	2023	2024
GDP at constant prices	4.2	1.9	1.7	3.7	4.2	2.1	3.9	3.7	0.0	-0.2	-2.2	0.0
Private consumption	8.0	3.4	2.7	3.9	8.0	2.7	3.0	3.5	0.0	0.7	-0.3	0.4
Government consumption	4.0	4.1	0.0	2.0	4.0	4.1	0.1	2.0	0.0	0.0	-0.1	0.0
Gross capital formation	-11.0	3.5	12.8	4.7	-11.0	5.6	12.8	4.7	0.0	-2.1	0.0	0.0
Exports of goods and services	9.9	2.9	1.4	3.9	9.9	0.4	4.9	5.3	0.0	2.5	-3.5	-1.4
Imports of goods and services	12.2	5.0	4.6	3.7	12.2	2.5	5.1	4.6	0.0	2.5	-0.5	-0.9
HICP at end of period	6.6	14.7	3.8	3.1	6.6	9.6	3.9	3.1	0.0	5.1	-0.1	0.0
Core inflation	3.2	13.0	5.8	4.7	3.2	9.4	5.7	4.4	0.0	3.6	0.1	0.3
Energy products	35.0	26.0	-1.8	-2.6	35.0	8.0	-0.7	-1.8	0.0	18.0	-1.1	-0.8
Food	8.1	22.6	4.5	3.9	8.1	18.3	4.8	4.7	0.0	4.3	-0.3	-0.8
Goods and services with administratively controlled prices and tobacco products	3.0	5.8	1.0	1.0	3.0	1.5	0.9	0.8	0.0	4.3	0.1	0.2

Source: the BNB.

# RISKS TO THE FORECAST

The baseline scenario of the forecast is characterised by very high uncertainty about external environment developments even in the short run due to the ongoing military conflict between Russia and Ukraine. Given the technical assumptions in the baseline scenario, risks of lower real GDP growth in Bulgaria prevail over the entire forecast horizon. These risks are mainly related to the likelihood of adverse developments in the global environment. Such risks are likely to materialise in case of a more prolonged and/or stronger than expected commodity price increases in international markets as a result of a possible escalation of the military conflict between Russia and Ukraine and the formation of shortages of commodities in the EU, including natural gas and oil due to the suspension of supplies from Russia. Under such a scenario stronger negative shocks can be expected in terms of both external and domestic demand for the Bulgarian economy and its production capacity. This risk is also amplified by a possible rapid tightening of the monetary policy by the US Federal Reserve System which may trigger a significant deterioration of the economic situation in the USA. This, coupled with the expected tightening of the ECB monetary policy and the negative effects of the war in Ukraine, could result in a further slowdown or contraction of economic activity in Bulgaria's main euro area trading partners in the second half of 2022 or in 2023. In addition, stronger than projected increase in interest rates on loans and deposits, driven by a more essential tightening of the ECB monetary policy compared to the baseline scenario on the basis of market expectations, is a prerequisite for lower growth in private consumption and investment. A significant risk to the forecast arises from the political uncertainty in Bulgaria, which is likely to result in a slower

absorption of funds under EU programmes and implementation of investment projects under the NRRP against the time profile set in the baseline scenario. The lack of clarity on the final version of the revision of the 2022 State Budget Law, which should be reviewed by the National Assembly after the completion of the current forecast, also poses a significant risk to the forecast due to the fact that the proposed measures are set in its baseline scenario.

The uncertainty over the outlook 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 value<sup>26</sup> 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 nature of the severe shock caused by the war in Ukraine and the uncertainty surrounding its development over time, the uncertainty interval under the current forecast is wider than usually even in the short term, which is evident by the profile of the fan chart since the first quarter of 2022. According to the probability distribution for 2022 with 60 per cent probability the annual rate of change of real GDP is expected to be in the range of -1.2 to 4.2 per cent.

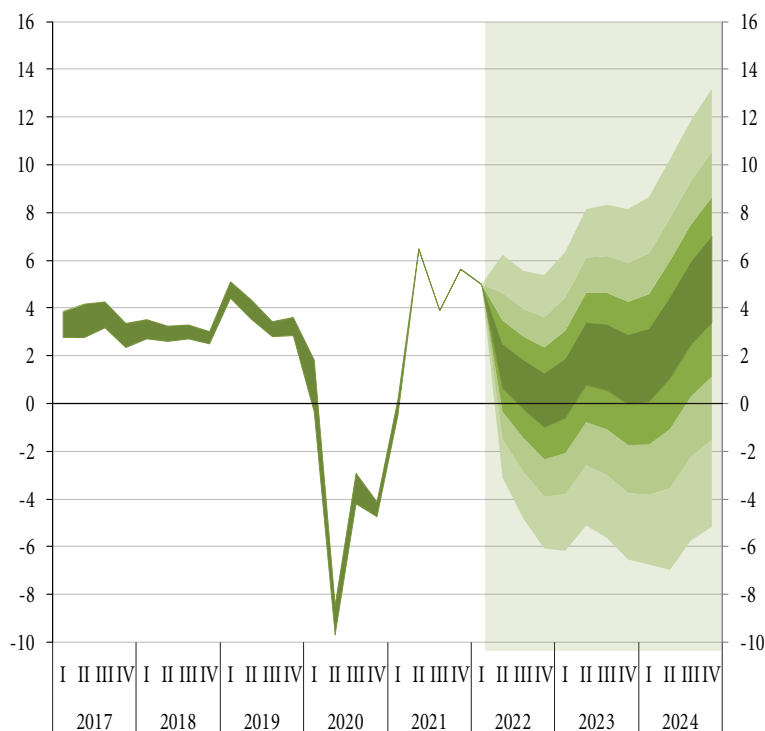
<sup>26</sup> The fan chart is constructed on the basis of the so-called asymmetric exponential distribution. To present the forecasting team's estimate of the uncertainty of projected values, it is necessary to estimate the general uncertainty of the forecast (by determining the dispersion  $\sigma$  of the distribution) and the so-called balance of risks (by determining the asymmetry parameter  $\nu$  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 infor-

mation 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 box titled Measurement and Presentation of Uncertainty in Forecasting Economic Indicators, [Economic Review, issue 1 of 2012](#).



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

(per cent)



**Notes:** 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: the BNB.

There are risks of a stronger increase in prices *vis-à-vis* the baseline scenario in materialising the inflation forecast for the whole projection horizon.

These risks are associated mainly with international commodity price dynamics compared with the external assumptions technically set in the current forecast. In particular, there is a significant risk that energy prices will not fall in 2023 and 2024, as seen from the market expectations at the time of preparing the forecast, due to ongoing structural changes in EU countries: the transition to carbon neutrality and the plans declared by these countries to reduce Russia energy dependency. Uncertainty over Bulgaria's inflation forecast related to the prices of imported gas and its impact on firms' production costs stems from the lack of a long-term contract to fully cover Bulgaria's needs and the low level of filling of the Chiren gas storage facility at the end of June<sup>27</sup>. The possibility

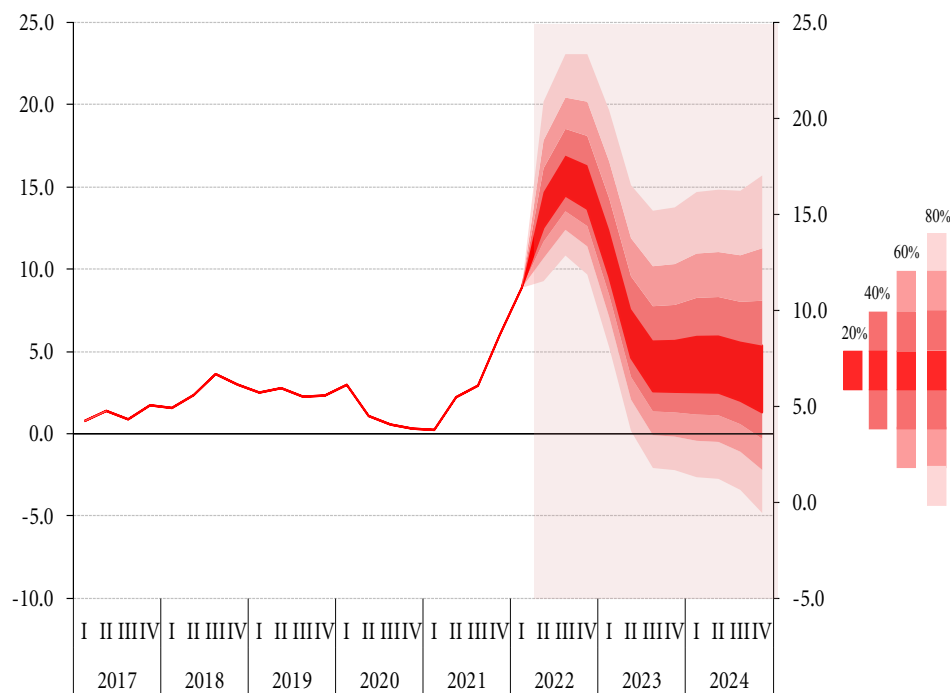
that cuts of indirect taxes, effective as of 1 July 2022, included in the baseline scenario, will not be fully passed onto final consumer prices, poses an additional pro-inflationary risk. Uncertainty over the forecast also arises from the possibility that the changes to indirect taxes provided for in the draft revision of the 2022 State Budget Law will not be adopted as initially proposed. Higher than projected inflation is also likely to be observed in case of higher increases in regulated electricity prices for households, heating and water-supply and sewerage services compared to the baseline scenario, in view of the steadily increased production costs. 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 be a prerequisite for stronger growth in private consumption and unit labour costs. Under such a scenario, a change in firms' pricing behaviour (including in the speed and extent of pass-through of their increased production costs to final consumer prices) could be expected compared to current estimates based on the macroeconomic model used to produce the forecast. The fan

<sup>27</sup> As of 27 June 2022, the gas storage facility in Chiren is up to 34.3 per cent full compared to an average of 57 per cent in the EU. For details, see: <https://agsi.gie.eu/>

chart of inflation suggests that with a probability of 60 per cent, annual inflation in consumer prices is expected to range between 11.4 and 20.2 per cent at the end of 2022.

**Fan Chart of the Expected Annual Inflation at the End of the Period**

(per cent)



**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 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: the BNB.

## Forecast of Key Macroeconomic Indicators for 2022–2024

(per cent)

<u>Annual rate of change</u>	2021	2022	2023	2024
GDP at constant prices	4.2	1.9	1.7	3.7
Private consumption	8.0	3.4	2.7	3.9
Government consumption	4.0	4.1	0.0	2.0
Gross fixed capital formation	-11.0	3.5	12.8	4.7
Exports of goods and services	9.9	2.9	1.4	3.9
Imports of goods and services	12.2	5.0	4.6	3.7
HICP at end period	6.6	14.7	3.8	3.1
Core inflation	3.2	13.0	5.8	4.7
Energy products	35.0	26.0	-1.8	-2.6
Food	8.1	22.6	4.5	3.9
Goods and services with administratively controlled prices and tobacco products	3.0	5.8	1.0	1.0
Employment	0.2	0.8	0.3	0.1
Unit labour costs	5.4	13.2	5.0	3.7
Labour productivity	4.0	0.9	1.4	3.7
Unemployment rate (share of labour force)	5.3	4.7	4.6	4.3
Claims on the non-government sector	8.8	8.4	6.1	6.3
Claims on corporations <sup>1</sup>	4.7	6.5	4.3	4.6
Claims on households	13.4	10.8	8.4	8.5
Deposits of the non-government sector	9.1	9.7	7.2	7.1
<u>Share of GDP</u>				
Balance of payments current account	-0.4	-1.1	-1.3	-0.5
Trade balance	-4.9	-6.1	-6.9	-5.7
Services, net	6.6	7.9	7.5	7.3
Primary income, net	-3.3	-4.0	-3.2	-3.5
Secondary income, net	1.1	1.1	1.4	1.4
<u>Annual rate of change</u>				
External assumptions				
External demand	10.4	1.0	0.1	3.6
Average annual Brent oil price (in USD)	66.5	56.1	-8.9	-11.5
Average annual price of non-energy products (in USD)	43.2	6.0	-4.4	3.9
Brent oil price at the end of period (in USD)	78.7	40.1	-14.7	-10.2
Prices of non-energy products at the end of period (in USD) <sup>2</sup>	14.3	5.7	3.2	3.1

### Notes:

<sup>1</sup> Data refer to non-financial corporations.

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

Source: the 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