

# BULGARIAN NATIONAL BANK



## MACROECONOMIC FORECAST

JUNE 2021





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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's 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).

The Macroeconomic Forecast publication (June 2021) was presented to the BNB Governing Council at its 22 July 2021 meeting. It employs statistical data and information available as of 25 June 2021. The estimates and projections published in this issue should not be regarded as advice or recommendation. The information in the publication should be used exclusively at the user's risk.

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## Abbreviations

<b>BNB</b>	Bulgarian National Bank
<b>ECB</b>	European Central Bank
<b>EWRC</b>	Energy and Water Regulatory Commission
<b>GDP</b>	Gross Domestic Product
<b>HICP</b>	Harmonised Index of Consumer Prices
<b>NSI</b>	National Statistical Institute

# SUMMARY

The BNB forecast of key macroeconomic indicators is based on information published by 25 June 2021 and employs assumptions about global economic developments and price dynamics of main commodity groups in international markets as of 11 June 2021. This forecast does not seek to reflect any potential effects of the political cycle in Bulgaria on the economic activity.

A main assumption while preparing the forecast is that vaccination campaigns in the EU Member States will accelerate in accordance with the planned provision of vaccines, and the containment measures against the spread of COVID-19 will be phased out in the second half of 2021 and finally lifted in early 2022. This assumption and the expected positive effects on the economic activity in the EU Member States as a result of the Recovery and Resilience Facility and the large-scale US fiscal stimulus package determine a higher growth rate of external demand for Bulgarian goods and services in 2021 and 2022 compared with the previous forecast.

Under the baseline forecast scenario, real GDP of Bulgaria is expected to grow 4.1 per cent in 2021, then to accelerate to 4.6 per cent in 2022 and to moderate to 3.5 per cent in 2023. Real GDP developments reflect largely the allocation of resources to be received under the National Recovery and Resilience Plan and the change in net exports. As regards the growth structure domestic demand is anticipated to have the main positive contribution over the projection horizon, which will be mostly attributable to the private sector. The lower positive contribution of the government sector to GDP growth will reflect the gradual lift of anti-crisis measures during the COVID-19 pandemic, which will be offset to a certain extent by increased public expenditure funded by the National Recovery and Resilience Plan, mostly in the form of fixed capital investment. Net exports is projected to contribute positively to GDP growth in 2021 and 2022 in line with the assumptions for improving the economic activity in Bulgaria's main trading partners and for a partial recovery in exports of services. In 2023 net exports will have a negative contribution to real GDP growth, reflecting largely the projected strong domestic demand.

Annual inflation is expected to accelerate to 3.5 per cent at the end of 2021 from 0.0 per cent at the end of 2020. The upward dynamics in inflation will be largely driven by the projected significant rise of energy prices and higher food inflation in line with the assumption for an increase in euro international prices of these products. Concurrently, the assumptions for a fall in international prices over the rest of the projection horizon will be a precondition for a slowdown in headline inflation in Bulgaria in 2022 and 2023 compared to 2021. Core inflation is expected to accelerate over the projection horizon compared with 2020 consistent with projected growth in private consumption and unit labour costs.

Risks to the baseline scenario of the macroeconomic projection are assessed as oriented towards a weaker increase in the economic activity over the entire projection horizon. The main risk is associated with the spread of the COVID-19 pandemic and, in particular, with the possible re-tightening of containment measures worldwide in case of insufficient progress toward herd immunity at global level or spread of virus variants against which vaccines are less effective. The possibility of lower growth in 2022 and 2023 also stems from a potential delay in the implementation of programs and investment expenditures under the National Recovery and Resilience Plan, and also due to the political cycle in Bulgaria. The inflation forecast is subject to balanced risks for 2021 and largely oriented towards a stronger increase in prices over 2022 and 2023 compared with the baseline scenario.

# FORECAST OF KEY MACROECONOMIC INDICATORS FOR 2021–2023

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## External Environment

The BNB forecast of key macroeconomic indicators is based on information published as of 25 June 2021 and employs ECB, EC and IMF assumptions on global economic developments and international price dynamics of main commodity groups available as of 11 June 2021.

A main assumption for preparation of the forecast is that vaccination campaigns in the EU Member States will accelerate in accordance with the planned provision of vaccines, and the containment measures against the spread of COVID-19 will be phased out in the second half of 2021 and finally lifted in early 2022. Compared with the March 2021 macroeconomic forecast, this projection includes an assumption of a faster phase-out of anti-epidemic measures in the second half of 2021.

The PMI dynamics in advanced economies signals that the economic activity is undergoing a robust recovery process in the services and manufacturing sectors in the second quarter of 2021. These signals coupled with the potential positive effects on the economic activity from the fiscal measures launched in the EU Member States and the USA prompted a revision of the ECB latest macroeconomic projections towards higher growth in global trade and global GDP. The assumptions for the external demand for Bulgarian goods and services used in the forecast are based on the ECB macroeconomic projections as of June 2021. These include the expected favourable, albeit heterogeneous, impact on the economies of individual Member States from the implementation of the Recovery and Resilience Facility (a key component of the Next Generation EU), as well as the expected economic effects of the fiscal stimulus package (the so-called American Rescue Plan), worth USD 1.9 trillion<sup>1</sup>, approved by the House of Representatives of the US Senate on 10 March

2021 and the two additional plans announced in the second quarter of 2021. Based on these assumptions the annual growth rate of external demand for Bulgarian goods and services will amount to 9.0 per cent in 2021, 6.0 per cent in 2022 and 3.7 per cent in 2023, and the growth rate for 2021 and 2022 will be higher than that projected in the March 2021 macroeconomic forecast.

In line with the external assumptions energy and non-energy prices both in dollars and euro<sup>2</sup> are expected to rise significantly in 2021 and consequently to fall on an annual basis until the end of the projection horizon. Higher prices of raw materials in 2021 will largely reflect a projected rebound in the global economic activity and consequent strong demand for raw materials along with temporary difficulties in global supply chains and limited supply of some commodities.

## Economic Activity in Bulgaria

Despite the continuous spread of COVID-19 at global level, in the first quarter of 2021 real GDP increased by 2.5 per cent on a quarterly basis. Economic indicators available as of 25 June show a continued improvement of the economic activity in Bulgaria over the second quarter of the year.<sup>3</sup> Reflecting favourable economic trends observed since early 2021 and assumed dynamics of external demand for Bulgarian goods and services, in 2021 real GDP is expected to post 4.1 per cent growth, which would accelerate to 4.6 per cent in 2022,

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<sup>2</sup> The forecast of euro raw material prices is based on a technical assumption about the euro/dollar exchange rate, which is fixed for the whole forecast horizon at its average value for April and May 2021 and for the last ten days prior to 11 June 2021, the date when the external environment assumptions were made. Reflecting this technical assumption, the euro exchange rate will increase against the US dollar by 5.9 per cent in 2021 *vis-à-vis* 2020.

<sup>3</sup> This refers to the indicators tracking consumer confidence, business climate, production indices in industry and services, manufacturing and retail trade turnover indices.

<sup>1</sup> Referred to as the US dollar below.



thereafter slowing down to 3.5 per cent at the close of the projection horizon. Economic activity is predicted to reach its average annual pre-COVID levels in 2022. Real GDP developments over the projection horizon reflect largely allocation over time of the resources, which Bulgaria expects to receive under the Recovery and Resilience Facility, as well as changes in net exports. According to the information<sup>4</sup> available as of the moment of forecast preparation, Bulgaria expects to receive BGN 12.6 billion for the implementation of the National Recovery and Resilience Plan in the 2021–2026 period in the form of EU grants which would be supplemented by national co-financing and private investments to the total amount of BGN 2.5 billion. The bulk of expected EU grants is projected to be in the form of fixed capital investment of the general government sector, and a smaller portion would be utilised as capital transfers to the private sector and current transfers. The nominal value of investment-related funds under the National Recovery and Resilience Plan is anticipated to rise comparatively gradually over the projection horizon, with the largest growth in rates predicted for 2022.

By component of real GDP, projected growth in 2021 will be driven by the simultaneous acceleration in growth of domestic demand and a switch from a negative to a positive contribution of net exports. Private consumption is projected to increase by 3.5 per cent in 2021 in line with the forecast of wage growth and improving consumer confidence after the easing of containment measures over the second quarter of the year. Government consumption is expected to increase by 5.6 per cent in real terms, which would be attributable to increased remunerations of employees in the public sector and higher healthcare payments in line with the budgetary framework parameters for 2021. Following the decline reported in 2020, in 2021 fixed capital investments are anticipated to recover partially and rise by 1.0 per cent. Private investment will contribute to this dynamics, with its value projected to be stimulated by a decreased

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<sup>4</sup> Assumptions about the amount and allocation by years of the funds expected under the Recovery and Resilience Facility are based on information from the Convergence Programme of the Republic of Bulgaria (2021–2023), published in May 2021, and the latest available public version of the National Recovery and Resilience Plan of April 2021.

uncertainty, improved prospects to demand for Bulgarian goods and services and growth in credit to the non-financial sector. The level of government fixed capital investment is expected to be lower than that in 2020 when significant expenses were reported, some of them appearing to be of one-off nature.<sup>5</sup> As regards foreign trade flows, we project net exports in 2021 to start contributing positively to economic activity growth in Bulgaria, reflecting entirely the services component. The upward dynamics in services exports will be driven by the expected gradual recovery of transport services and foreign citizens' visits with a purpose different than holidays or excursions, while the recovery of tourist services will remain limited in 2021.

In 2022 economic activity growth is projected to accelerate to 4.6 per cent, reflecting a stronger positive contribution of both domestic demand and net exports. The improvement of domestic demand will be accompanied by a change in its structure. Part of the anti-crisis fiscal policy measures are expected to phase out, mainly due to a decrease in healthcare expenditure and the lack of public sector wage increases set in the budgetary framework, which will push down government consumption over the year (by -0.9 per cent in real terms). Concurrently, total investments are anticipated to rise significantly on an annual basis due to the implementation of projects financed under the National Recovery and Resilience Plan and an expected higher pace of absorption of EU funds during the last phase of the 2014–2020 programme period, as well as ongoing implementation of large infrastructure projects funded by the national budget. In 2022 the growth rate of private consumption is expected to slow down from 2021, which will reflect a slowdown of the growth rate of real disposable income of households as a result of the wage dynamics in the public sector and smaller net fiscal transfers. The stronger positive contribution of net exports to GDP growth will be driven by a projected more sizeable recovery of foreign visits into Bulgaria in 2022 and stronger growth of goods exports compared to goods imports.

In 2023 real GDP growth is expected to slow down to 3.5 per cent. This dynamics will be

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<sup>5</sup> See the Forecast Revisions Section.

entirely driven by a negative contribution of net exports due to higher growth of imports compared to exports, largely under the influence of projected strong domestic demand. Economic activity growth will be underpinned by an increase in all components of domestic demand, with private consumption and fixed capital investments having the highest contributions and their dynamics reflecting acquisition of new fighter aircrafts<sup>6</sup> and accelerated implementation of projects under the National Recovery and Resilience Plan. At the same time, investments of the general government sector funded by resources of the 2014–2020 programme period are expected to decline, as 2023 is the last year for project implementation during this period.<sup>7</sup>

## Balance of Payments

The current account is projected to post a surplus over the whole projection horizon, with the surplus value anticipated to gradually increase to 3.4 per cent of GDP in 2023 (against a deficit of -0.7 per cent of GDP in 2020). The rise will primarily reflect the increased surplus in services trade item which is projected to improve most significantly in 2021 thanks to phase-out of the majority of containment measures in Bulgaria and its major trading partners over the second half of 2021 and to more favourable assumptions about the growth of external demand over the year. The forecast has taken into account the partial recovery of visits of foreign citizens to Bulgaria in April 2021, in particular of visits not related to holidays or excursions. The surplus on the net secondary income item will increase between 2021 and 2023 as a percentage of GDP compared to 2020 as a result of both projected higher incoming current transfers to the government under EU programs and increased amount of remittances from Bulgarian emigrants. In 2022 and 2023 the increase in

<sup>6</sup> In line with the information of the medium-term budget forecast for the 2021–2023 period published in December 2020, this forecast includes the expected acquisition of new fighter aircrafts in 2023 to the value of BGN 1.1 billion. Delivery of equipment is reflected in the level of public investment in 2023 and in the amount of goods imports over the same year.

<sup>7</sup> The macroeconomic forecast does not include an estimated potential effect on economic activity of the funds which Bulgaria will receive under the multiannual financial framework for 2021–2027 due to the lack of sufficiently specific information at the time of finalising this forecast.

the current account surplus will be limited by higher deficit on net primary income compared to 2020, which is in line with the projected improving economic activity in the country and the expected higher dividend payments to non-residents.

## Labour Market

Easing of containment measures against the spread of COVID-19 in the second quarter of 2021, the improvement of external environment and enhanced economic activity in Bulgaria are expected to result in a gradual recovery in employment in the second half of the year and to limit the decline in the number of employed to -0.2 per cent compared to 2020. Employment is projected to increase by 1.2 per cent in 2022 and to continue to rise gradually in 2023 without, however, reaching 2019 level. Concurrently, the unemployment rate will slightly rise to 5.3 per cent in 2021 mostly as a result of changes in the methodology of Labour Force Survey related to the definitions of employment and unemployment introduced by the NSI in early 2021, which are, however, not reflected in the data for previous years. Over the remaining projection horizon the unemployment rate will gradually fall to 4.6 per cent in 2022 and 4.4 per cent in 2023 in line with the improving macroeconomic environment. Steady recovery in the economic activity in Bulgaria will lead to an increase in labour productivity by 4.8 per cent in 2021, while the employment rise will moderate labour productivity growth between 2022 and 2023. Compensation *per* employee is projected to accelerate to 7.3 per cent in 2021, underpinned by an increase in wages in both public and private sectors. At the same time, the slower wage rises in the public sector in the following two years will limit growth of compensation *per* employee to about 6.0 per cent. As a result of the labour productivity recovery, growth in nominal unit labour costs will slow down to 2.4 per cent in 2021 following an increase of 7.9 per cent in 2020. Weaker labour productivity growth until the end of the forecast period and the expected moderate increase in compensation *per* employee will result in higher growth in nominal unit labour costs of 3.0 per cent in 2023.

## Inflation

Inflation is projected to accelerate significantly to 3.5 per cent by end-2021 (0.0 per cent by end-2020), reflecting the assumption of a substantial increase in international euro prices of energy and food products. Core inflation is also expected to accelerate at the end of the year, reflecting both services and non-energy industrial goods components. The upward price dynamics of core HICP components will be in line with the diminishing negative effects from the containment measures against the COVID-19 on domestic demand and the indirect impact of price rises in fuels and food on the prices of some services. Assumptions of decline in international euro oil and food prices are essential for the projected slowdown of inflation to 0.8 per cent at end-2022. Consequently, overall inflation is expected to accelerate slightly to 1.1 per cent at the end of 2023, reflecting both acceleration of core inflation and a slower oil price decline. Slightly accelerating core inflation in 2023 will be driven by projected growth in private consumption and unit labour costs, with prices of services posting higher growth compared to non-food goods.

## Monetary Sector

Loans to the non-government sector are expected to rise year on year by 5.9 per cent in 2021, from 4.5 per cent at the end of 2020 and to follow a gradual upward trend until the end of the forecast horizon. The expected increase in the share of non-performing loans in bank portfolios and the projected moderate rise in interest rates on new loans in the second half of 2021 due to the expiry of the extended private moratorium on bank loan repayments are anticipated to have only a slightly moderating effect on credit growth. Domestic demand growth, still low lending rates on loans and positive housing market prospects will favour growth of credit to the private sector over the projected horizon. The newly launched Recovery programme in support of the business through guarantees from the Fund of the Funds aimed at overcoming the effects of the COVID-19 pandemic may also be expected to have a stimulating effect on credit dynamics. Bank deposits are anticipated to increase further at relatively high rates

amid positive trends in the labour market and projected growth of wages, but slowing down gradually. A portion of households' additional income will probably be used to boost private consumption or to be maintained in the form of cash. Factors fostering the demand for cash include extremely low interest rates on deposits and deposit service expenses in the context of the current policy of certain banks to charge fees for large deposit and transformation of time deposits into demand deposits. Lower uncertainty based on the assumption that the COVID-19 pandemic would be overcome, will contribute to gradually limit precautionary savings.

# FORECAST REVISIONS

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Compared with the forecast published in March 2021, currently real GDP is expected to post higher growth in all years of the forecast horizon. The GDP upward revision for 2021 by 0.3 percentage points is driven by stronger growth in private consumption. Revision of the private consumption forecast reflects both its more significant annual growth in the first quarter than expected in the previous forecast, and the projected higher disposable income of households along with stronger credit growth. A factor limiting the upward revision of 2021 GDP is the projected lower growth rate of fixed capital investment, almost entirely due to the published reports of non-government sector for the fourth quarter of 2020<sup>8</sup>. Data show a relatively stronger increase in investment financed by national resources in 2020 than those under EU programmes, which is probably attributable to one-off national investment expenditures, whose amount is expected to be lower in 2021.

Real GDP growth in 2022 is revised upwards by 0.7 percentage points mainly due to the expected higher investment activity in Bulgaria and a lower decline in government consumption. Revision of investment largely reflects the funds included in the forecast which Bulgaria is expected to absorb under the National Recovery and Resilience Plan in line with the information contained in the Convergence Programme of the Republic of Bulgaria (2021–2023) of May 2021<sup>9</sup>. Net exports are revised to a lower positive contribution as a result of both weaker exports growth and stronger imports growth, the latter reflecting the revision of components of domestic demand and mainly of fixed capital investment, which is characterised by the largest import component.

In 2023 economic activity growth is expected to be higher by 0.3 percentage points than the March projections. This is ascribable to stronger growth in final consumption expenditure of households and private sector's investment expenditure<sup>10</sup>. These developments are consistent with the projected dynamics in household labour income, credit growth of non-financial sector, and the inclusion of funds which Bulgaria is expected to utilize under the National Recovery and Resilience Plan.

The forecast of HICP inflation is revised upward at the end of 2021 and 2022 compared with the previous macroeconomic forecast, while in 2023 the expected growth rate of consumer prices is lowered. Assumptions for a stronger increase in international petroleum products and food prices in 2021 and a more limited decrease in 2022 than the assumptions used in the March forecast are of key significance for the revision of the forecast for 2021–2022. Similarly to the previous forecast, international oil and food prices are assumed to follow a downward path in 2023, but the decline is stronger in the current projection, resulting in a downward revision of inflation of the respective HICP components. Inflation dynamics of core component prices is revised upwards at the end of 2021 mostly due to projected higher growth in private consumption and the expected indirect effects of price increases in domestic transport and food prices on some services components. Core inflation by end-2022 and 2023 is also revised upward compared with the previous forecast, reflecting the expected stronger rise in unit labour costs.

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<sup>8</sup> Reporting data used in calculating the amount of public investment on an accrual basis become accessible by the dissemination of NSI quarterly non-financial accounts of the general government sector 25 days following the GDP data. Therefore, forecast data for the fourth quarter of 2020 are used when preparing the projections for March 2021.

<sup>9</sup> The effects of these funds were not taken into account in the March 2021 forecast due to the lack of sufficiently detailed information at the time of finalising this forecast.

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<sup>10</sup> Although government investment expenditure in the current projection (in real terms) in 2023 is revised upward, its growth on 2022 is lower than the projection in March. This reflects mainly the funds profile laid down in the National Recovery and Resilience Plan, which are projected to result in a strong growth of public investments in 2022.

**GDP and Inflation Forecast Revisions**  
**(25 June 2021 *vis-à-vis* 26 March 2021)**

Annual rate of change (per cent)	Forecast as of 25 June 2021				Forecast as of 26 March 2021				Revision (percentage points)			
	2020	2021	2022	2023	2020	2021	2022	2023	2020	2021	2022	2023
GDP at constant prices	-4.2	4.1	4.6	3.5	-4.2	3.8	3.9	3.2	0.0	0.3	0.7	0.3
Private consumption	0.2	3.5	2.4	3.1	0.2	2.0	2.4	2.7	0.0	1.5	0.0	0.4
Government consumption	7.5	5.6	-0.9	1.6	7.5	6.3	-1.4	2.0	0.0	-0.7	0.5	-0.4
Gross fixed capital formation	-5.1	1.0	12.4	7.6	-5.1	4.5	6.3	6.6	0.0	-3.5	6.1	1.0
Exports of goods and services	-11.3	9.2	7.5	4.9	-11.3	6.2	7.8	4.6	0.0	3.0	-0.3	0.3
Imports of goods and services	-6.6	7.6	5.7	5.2	-6.6	5.0	5.3	4.6	0.0	2.6	0.4	0.6
HICP at end of period	0.0	3.5	0.8	1.1	0.0	3.0	0.7	1.3	0.0	0.5	0.1	-0.2
Core inflation	0.5	1.6	1.6	2.0	0.5	1.2	1.4	1.9	0.0	0.4	0.2	0.1
Energy products	-13.4	18.5	-4.1	-0.2	-13.4	18.3	-4.8	0.5	0.0	0.2	0.7	-0.7
Food	2.0	5.9	1.3	1.0	2.0	4.9	1.4	1.8	0.0	1.0	-0.1	-0.8
Goods and services with administratively controlled prices and tobacco products	1.2	0.2	0.1	0.0	1.2	0.1	0.1	0.0	0.0	0.1	0.0	0.0

Source: the BNB.

# RISKS TO THE FORECAST

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Risks to the baseline scenario of the macroeconomic projection are assessed as oriented towards weaker growth in the economic activity in all years of the forecast horizon.

For 2021 the main risk continues to be associated with the COVID-19 pandemic and, in particular, the potential re-tightening of containment measures worldwide in case of insufficient progress toward herd immunity at global level or spread of virus variants against which vaccines are less effective. Under this scenario, prospects to demand for Bulgarian goods and services and economic sentiment in Bulgaria could worsen, which would lead to a maintenance of higher precautionary savings in the economy and postponement of investment projects. There are risks related to the country's political cycle that could further lead to postponement of investment expenditure by corporations and the government. Another risk to the forecast that may result in weaker growth of the economic activity in Bulgaria is the potential slower recovery of visits of foreign citizens to Bulgaria in the event of lower-than-projected volume of international travel compared to the baseline scenario.

In the 2022–2023 period risks of a lower growth rate of real GDP than projected in the baseline scenario arise from a potentially delayed implementation of projects and investment expenditure financed under the Recovery and Resilience Facility in the framework of NextGenerationEU Recovery Plan. In addition, there is an uncertainty about the overall effect of projects financed by EU funds, as the possible change in their structure and implementation by year compared to the baseline scenario could lead to different growth of real GDP and the potential output level. The possibility of a slower recovery than the average for the economy in some sectors, such as hotels and restaurants, presents a risk of weaker economic activity growth over the medium term.

The main risk of a potential higher increase in real GDP stems from the possibility of stronger

growth of private consumption in the 2022–2023 period in view of relatively low indebtedness of households in Bulgaria and precautionary savings accumulated in 2020.

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 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.

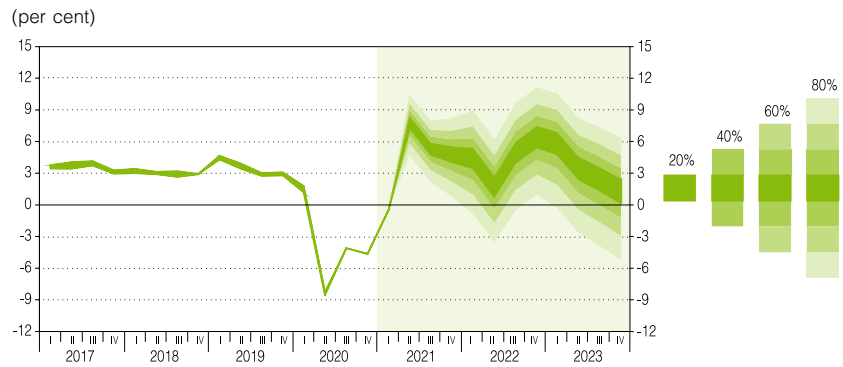
Given the unprecedented nature of the economic shock resulting from the COVID-19 pandemic and the containment measures, the uncertainty interval under the current forecast is wider than usual even in the short term. The middle band (see the chart above on the next page), depicted in the darkest colour, 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. According to the chart the probability distribution for 2021 shows a 60 per cent probability for the real GDP annual rate of change to move within the range of 2.8 per cent to 6.1 per cent.

Risks to the inflation forecast (see the chart below) are assessed as balanced for 2021 and as oriented towards a stronger increase in prices compared to the baseline scenario in the 2022–2023 period. Lower than expected core inflation at the end of 2021 could be seen in core HICP components in case of more unfavourable than projected private consumption dynamics in the event of possible extension of anti-epidemic measures in Bulgaria. There is a risk of higher consumer price inflation related to administratively controlled prices of heating and electricity in line with the higher prices of these services announced by the Energy and Water

Regulatory Commission (EWRC) effective since early July 2021, which have not been included in this forecast<sup>11</sup>. Higher-than-expected international commodity prices in 2022–2023 compared to the assumption in the baseline scenario would be a precondition for both higher inflation in energy and food products and in some services groups and administratively controlled prices, including transport services, catering, electricity and heating prices.

Concurrently, in case of stronger growth in private consumption and unit labour costs than projected in the baseline scenario, core inflation is likely to accelerate faster than expected. The balance of risks regarding inflation is graphically shown in the fan chart as well. The chart of inflation suggests that with a probability of 60 per cent annual inflation in consumer prices is expected to range between 2.6 per cent and 4.4 per cent at the end of 2021.

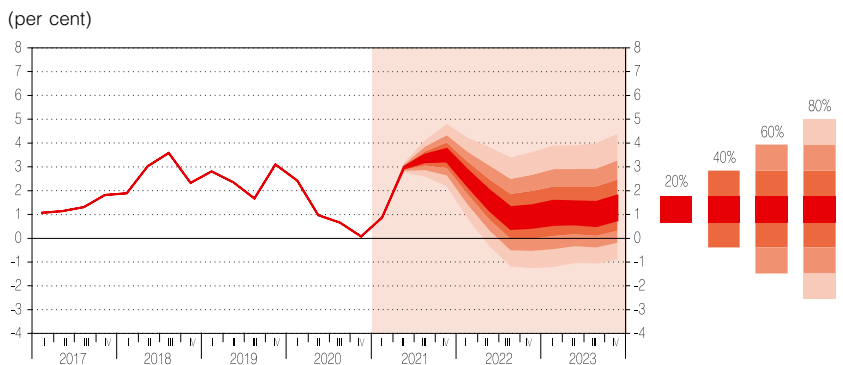
### Fan Chart of the Expected Annual Rate of Change in Real GDP



**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.

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



**Note:** 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.

<sup>11</sup> In early July 2021 regulated prices of electricity increased by 4.4 per cent on average, while heating prices rose 16.2 per cent on average. The change will come into effect for a period of one year. For further information, see the EWRC press release.

## Forecast of Key Macroeconomic Indicators for 2021–2023

(per cent)

	2020	2021	2022	2023
<b>Annual rate of change</b>				
GDP at constant prices	-4.2	4.1	4.6	3.5
Private consumption	0.2	3.5	2.4	3.1
Government consumption	7.5	5.6	-0.9	1.6
Gross fixed capital formation	-5.1	1.0	12.4	7.6
Exports of goods and services	-11.3	9.2	7.5	4.9
Imports of goods and services	-6.6	7.6	5.7	5.2
HICP at end period	0.0	3.5	0.8	1.1
Core inflation	0.5	1.6	1.6	2.0
Energy products	-13.4	18.5	-4.1	-0.2
Food	2.0	5.9	1.3	1.0
Goods and services with administratively controlled prices and tobacco products	1.2	0.2	0.1	0.0
Employment	-2.3	-0.2	1.2	0.3
Unit labour costs	7.9	2.4	2.3	3.0
Labour productivity	-1.9	4.8	3.5	3.1
Unemployment rate (share of labour force)	5.2	5.3	4.6	4.4
Claims on the non-government sector	4.5	5.9	6.1	6.4
Claims on corporations*	2.3	3.7	4.4	4.8
Claims on households	6.6	8.5	8.3	8.6
Deposits of the non-government sector	9.7	9.8	8.1	7.5
<b>Share of GDP</b>				
Balance of payments current account	-0.7	1.8	2.8	3.4
Trade balance	-3.1	-3.7	-3.2	-2.8
Services, net	4.9	6.7	7.5	7.9
Primary income, net	-3.5	-3.4	-4.4	-4.1
Secondary income, net	1.0	2.2	2.9	2.5
<b>Annual rate of change</b>				
External assumptions				
External demand	-8.4	9.0	6.0	3.7
Average annual Brent oil price (in USD)	-33.9	58.3	-0.4	-5.1
Average annual price of non-energy products (in USD)	3.5	37.7	-0.1	-8.0
Brent oil price at the end of period (in USD)	-28.9	56.4	-6.4	-4.4
Prices of non-energy products at the end of period (in USD)	12.2	29.8	-5.5	-9.6

\* Data refer to non-financial corporations.

Source: the BNB.



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