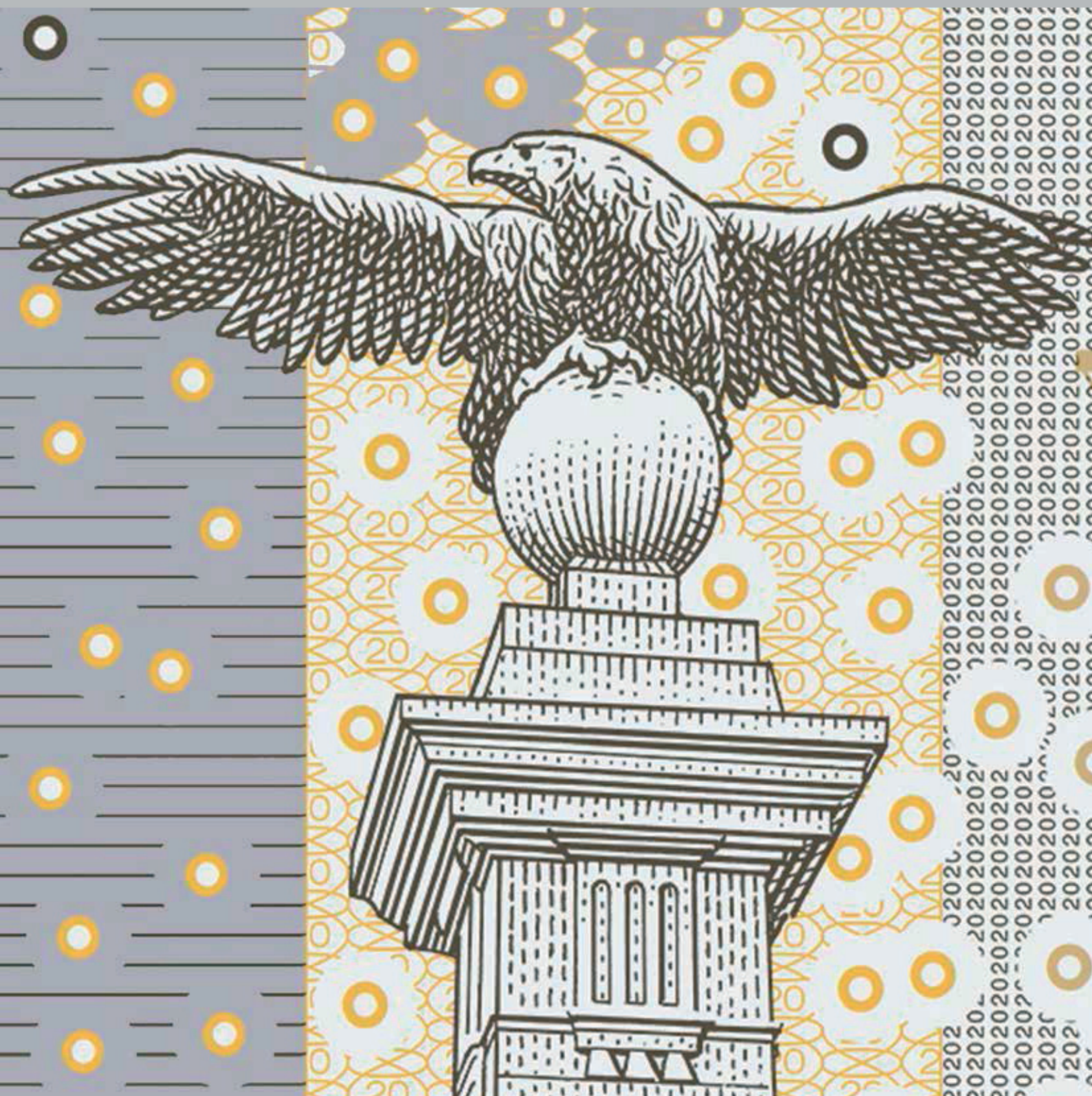


BULGARIAN NATIONAL BANK



MACROECONOMIC FORECAST

SEPTEMBER 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.

The Macroeconomic Forecast publication (September 2021) was presented to the BNB Governing Council at its 20 October 2021 meeting. It employs statistical data and information available as of 28 September 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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This issue includes materials and data received up to 18 October 2021.

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ISSN 2738-7666 (online)

CONTENTS

SUMMARY	5
FORECAST OF KEY MACROECONOMIC INDICATORS FOR 2021–2023	6
External Environment	6
Economic Activity in Bulgaria	6
Balance of Payments	8
Labour Market	9
Inflation	9
Monetary Sector	10
FORECAST REVISIONS	11
RISKS TO THE FORECAST	13

HIGHLIGHTS

Comparison of Inflation According to the CPI and the HICP	16
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CHARTS

- Fan Chart of the Expected Annual Rate of Change in Real GDP
- Fan Chart of the Expected Annual Rate of Change in Inflation at the End of the Period
- *Chart 1.* Level and Annual Rate of Change of the Price Level According to the CPI and the HICP
- *Chart 2.* Weights of Major Groups of Goods and Services in the CPI and the HICP

TABLES

- GDP and Inflation Forecast Revisions (28 September 2021 *vis-à-vis* 25 June 2021)
- Forecast of Key Macroeconomic Indicators for 2021–2023

Abbreviations

BNB	Bulgarian National Bank
CPI	Consumer Price Index
EC	European Commission
ECB	European Central Bank
EU	European Union
EWRC	Energy and Water Regulatory Commission
GDP	Gross Domestic Product
IMF	International Monetary Fund
HICP	Harmonised Index of Consumer Prices
NSI	National Statistical Institute

SUMMARY

The BNB forecast of key macroeconomic indicators is based on information published by 28 September 2021 and employs assumptions about global economic developments and price dynamics of main commodity groups in international markets as of 10 September 2021. This forecast does not seek to reflect any potential effects of the political cycle in Bulgaria on the economic activity.

The main assumption used in preparing the forecast relates to the development of the COVID-19 pandemic and is based on the ECB's baseline forecast scenario as of September 2021 which implies a phasing out of containment measures against the spread of COVID-19 in the euro area countries in the second half of 2021 and their full lifting in early 2022.

Under the forecast baseline scenario, real GDP of Bulgaria will post 3.9 per cent growth in 2021, which would accelerate to 4.7 per cent in 2022, slowing down thereafter to 3.8 per cent in 2023. Real GDP developments reflect largely changes in net exports and allocation of funds over time, which are projected to be granted to Bulgaria for the implementation of projects under the National Recovery and Resilience Plan. Domestic demand is expected to make the largest positive contribution to the growth over the projection horizon, which will be mostly attributable to the private consumption amid a strong growth of household disposable income. Investment in fixed capital will contribute substantially to GDP growth in 2022 and 2023 mainly due to the expected significant public expenditure under the National Recovery and Resilience Plan. In the context of strong domestic demand, net exports are set to have mostly negative contribution in the period 2021–2023.

Annual HICP inflation rate is projected to accelerate to 3.8 per cent at the end of 2021, reflecting the expected significant increase in production costs of firms driven by the strong growth of commodity prices in euro, increased unit labour costs and price hikes in electricity. Increased private consumption is expected to be another factor influencing inflation, especially in core HICP components. Technical assumptions about significant moderation of the growth rate of international prices in euro in 2022 and their decline in 2023 will be a precondition for a slowdown in headline inflation, while core inflation will continue to follow the upward trend.

Risks to the baseline scenario of GDP growth are assessed as balanced for 2021 and broadly oriented towards weaker growth in 2022 and 2023. Major risks for the whole projection horizon continue to be the spread of COVID-19 in Bulgaria and related containment measures, as well as the country's political cycle that could result in postponement of the implementation or changes in the scope and amount of investment spending by corporations and government compared to what is projected in this forecast. A factor likely to affect the relevance of the forecast baseline scenario is the revision of historical GDP data, which is scheduled to be published by the NSI on 22 October 2021. Risks to the inflation forecast are assessed as oriented towards a stronger increase in prices compared to the baseline scenario. Such risks are likely to materialize in case of stronger commodity price increase in international markets for a longer period compared to what external assumptions constructed by 10 September in the current forecast suggest and in case the upward trend of some administratively controlled prices *i.e.* of natural gas, electricity and heating is sustained.*

* After the cut-off date of the forecast, the Energy and Water Regulatory Commission (EWRC) approved a 36 per cent rise in natural gas prices for October, which have not been embodied in the baseline scenario.

FORECAST OF KEY MACROECONOMIC INDICATORS FOR 2021–2023

External Environment

The BNB forecast of key macroeconomic indicators is based on information published as of 28 September 2021 and employs ECB, EC and IMF assumptions on global economic developments and international price dynamics of main commodity groups available as of 10 September 2021.

The main assumption used in preparing the forecast is based on the ECB's baseline forecast scenario which implies a phasing out of containment measures against the spread of COVID-19 in the euro area in the second half of 2021 and their final lifting in early 2022. An additional assumption which is included in the forecast and is in line with the ECB's baseline macroeconomic projections, relates to a gradual dissipation of global supply chain bottlenecks in early 2022.

A stronger than expected recovery in economic activity in euro area countries reported in the first half of 2021, coupled with positive signals from sentiment indicators for the third quarter in these countries, were at the core of the revision of the ECB macroeconomic projections as of September 2021 towards higher growth of real GDP in the euro area. The assumptions of external demand for Bulgarian goods and services used in the forecast are based on the ECB macroeconomic projections as of September 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 measures launched in the USA. Based on these assumptions external demand growth for Bulgarian goods and services will amount to 8.9 per cent in 2021, 6.2 per cent in 2022 and 4.0 per cent in 2023, and the growth rate for 2022 and 2023 will be slightly higher than that projected in the June 2021 macroeconomic forecast.

In line with the external assumptions, energy and non-energy prices both in dollars and euro¹ are expected to rise significantly in 2021 and to continue to rise at considerably lower rates in 2022. Higher prices of raw materials in 2021 will largely reflect the projected rebound in global economic activity and the ensuing stronger demand for raw materials along with temporary longer-lasting global supply chain bottlenecks than assumed in the previous forecast.² The forecast includes an assumption that energy and non-energy prices will fall in 2023.

Economic Activity in Bulgaria

In the first half of 2021 real GDP increased by 3.1 per cent from the first half of 2020 according to non-seasonally adjusted data³, growth being entirely driven by domestic demand and to the largest extent by the increase in private and government consumption, while net exports had a significant negative contribution. Available economic indicators⁴ for the third quarter of 2021 signal a further improvement in consumer confidence, while the improvement in firms sentiment observed in the first half of the year tends to end. The forecast baseline scenario assumes that the deterioration of the epidemiological situation in Bulgaria, which began in August 2021, will be addressed by more localized and targeted measures that will have a limited impact on economic activity. As

¹ The forecast of euro raw material 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 July and August 2021 and for the last ten days prior to 10 September 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 4.6 per cent in 2021 *vis-à-vis* 2020.

² In line with the ECB staff macroeconomic projections of September 2021: https://www.ecb.europa.eu/pub/pdf/other/ecb_projections202109_ecbstaff~1f59a501e2.en.pdf

³ According to NSI seasonally adjusted data, real GDP in the first half of 2021 rose by 3.7 per cent on an annual basis.

⁴ This refers to the indicators tracking consumer confidence, business climate, production indices in industry and services, manufacturing and retail trade turnover indices.

a result of these factors and the assumptions about external environment developments, real GDP is expected to post 3.9 per cent growth in 2021, which would accelerate to 4.7 per cent in 2022, slowing down thereafter to 3.8 per cent in 2023. Economic activity is predicted to reach in 2022 its average annual pre-COVID-19 levels. Real GDP growth profile will mainly reflect the projected dynamics of net exports and allocation of funds over time, which are expected to be granted to Bulgaria for implementation of projects under the Recovery and Resilience Facility. According to the information included in the forecast⁵, Bulgaria expected to receive a total of BGN 12.6 billion for the implementation of the National Recovery and Resilience Plan in the period 2022–2026 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 spent in the form of fixed capital investment of the general government sector and a smaller portion to 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 relatively gradually over the projection horizon.

By component of real GDP, projected growth in 2021 is expected to be driven by the increase in private and, to a lesser extent, government consumption. Private consumption is anticipated to rise by 4.7 per cent in 2021 in line with the projected wage growth (in both private and public sectors), increased fiscal transfers to households (mainly in the form of higher pension expenditure), growth of consumer loans and further improvement of consumer confidence. Government consumption is expected to increase by 5.1 per cent in real terms, which would be mainly attributable to increased remunerations of employees in the public sector and higher healthcare payments in line with budgetary framework parameters for 2021 and

⁵ Assumptions about the Recovery and Resilience Plan used in preparing the macroeconomic forecast reflect largely the amount and allocation in years of the expected funds set out in the Convergence Programme of the Republic of Bulgaria (2021–2023), published in May 2021 and the version of the National Recovery and Resilience Plan of April 2021.

the update of the state budget⁶. Investment in fixed capital is expected to contribute negatively to the change in real GDP over 2021 as a result of the projected fall in public investment in the second half of the year, which will be mainly driven by lower public expenditure for implementation of infrastructure projects financed by national funds⁷. At the same time, amid continuing uncertainty surrounding the development of COVID-19 pandemic, private investment will recover only partially following the significant decline in 2020, expecting that this investment would be mainly in construction⁸. Factors supporting firms' investment activity include improvement of external and domestic demand, sustained low interest rates environment and active supply of lending resources by banks. As regards foreign trade flows, the negative contribution of net exports is projected to decline significantly in 2021 compared to that reported in 2020 (from -3.2 percentage points in 2020 to -0.3 percentage points in 2021). This will reflect the projected stronger growth in services exports compared to imports, driven by the expected gradual rebound in travel services exports of which the country is a net exporter.⁹ With respect to the trade in goods, the exports growth is projected to follow the external demand dynamics and to remain lower than that of imports which will be significantly supported by strong private consumption.

In 2022 economic activity growth is projected to accelerate to 4.7 per cent, reflecting both a higher positive contribution of domestic demand and a switch from a negative to a slightly positive contribution of net exports. We project private consumption to continue to make the largest contribution to real GDP, though its growth rate will slow down compared to the previous year. This will reflect weaker increase in real

⁶ This refers to the Law amending the State Budget Law of the Republic of Bulgaria for 2021 of 16 September 2021 and the Law amending the Law on the Budget of the National Health Insurance Fund for 2021 of 16 September 2021.

⁷ The assumption is based on monthly reports on cash-based performance of the Consolidated Fiscal Programme by end-July 2021.

⁸ This reflects monthly data on the investment breakdown by asset type for the first half of 2021 and available data for the first quarter of 2021 on household sentiment for home purchase.

⁹ Foreign citizens' visits whose purpose is other than holidays or excursions are projected to recover more significantly, while the recovery of tourist services will remain considerably more limited in 2021.

disposable income of households consequent to the assumption of slower wage growth in the public sector and lower net fiscal transfers to households compared to 2021. Investment in fixed capital in the total economy is expected to increase substantially on an annual basis in 2022 and to be another component contributing significantly to GDP growth. This will be largely driven by the implementation of projects financed under the National Recovery and Resilience Plan as well as by the expected higher pace of absorption of EU funds during the last phase of the 2014–2020 programming period. The slightly positive contribution of net exports to real GDP growth will reflect mainly the more significant slowdown in imports growth than that in exports of goods given the high imports basis in 2021. Economic activity in 2022 will be partially limited by the projected decline in government consumption due to the expected lower healthcare costs and projected weaker staff expenditure rise than in the previous year given the lack of public sector wage increases set in the updated medium-term budgetary forecast¹⁰.

In 2023 real GDP growth is expected to slow down to 3.8 per cent owing primarily to the negative contribution of net exports. This will reflect slower growth of exports of goods in line with assumptions about external environment developments, while imports of goods are projected to retain their strong growth amid growing domestic demand. Real GDP growth would continue to be underpinned by an increase in private consumption and investments in fixed capital though at slower pace than in 2022. One of the major factors behind investment activity dynamics will be the acquisition of new fighter aircrafts¹¹ and accelerated implementation of projects under the National Recovery and Resilience Plan. At the same time, in the last year of the 2014–2020 programming period investment of the general government sector funded by

EU resources are expected to decline.¹² Public investment will be further supported by the ongoing implementation of large infrastructure projects funded by the national budget.

Balance of Payments

According to the baseline scenario of the macroeconomic forecast, a balance of payments current account surplus is expected over the entire projection horizon, accounting for 1.0 per cent of GDP for 2021 (against a deficit of 0.3 per cent of GDP in 2020) and reaching its highest share of GDP in 2022 (1.4 per cent of GDP). The current account surplus in 2021 will primarily reflect the increased surplus in net services trade, with other services¹³ and travel-related sub-items expected to contribute most and thereby continuing the trend observed in the January–July 2021 period. Assuming that the pandemic will be overcome in 2022 and economic activity in Bulgaria's major trading partners will improve accompanied by the continuous rise in external demand for Bulgarian goods and services, the current account surplus as a share of GDP for 2022 is projected to increase compared with 2021, mainly driven by a higher trade in services surplus and projected growth in the net secondary income surplus. In 2023 the current account surplus is expected to decrease slightly compared with 2022 mainly due to an increase in the trade balance deficit. The surplus on the net secondary income item will increase between 2021 and 2023 as a share of GDP compared to 2020 both in terms of projected higher incoming current transfers to the government under EU programs and the increased amount of remittances from Bulgarian emigrants. In the 2022–2023 period the current account surplus will be limited by a higher deficit on net primary income compared to 2020, which is in line with the projected higher dividend payments to non-residents amid the improving economic activity in the country.

¹⁰ The analysis employs data on the updated medium-term budget forecast for the 2021–2023 period of 23 December 2020 approved by Decision of the Council of Ministers No 963.

¹¹ In line with the information of the updated medium-term budget forecast for the 2021–2023 period published in December 2020, this forecast includes expected acquisition of new fighter planes 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.

¹² 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.

¹³ It should read other services in balance of payments statistics published by the BNB.

Labour Market

Easing of containment measures against the spread of COVID-19 and higher economic activity in Bulgaria led to employment growth on an annual and a quarterly basis over the second quarter of 2021. Employment is expected to grow further on a quarterly basis in the second half of the year, which will limit the decline in the number of employed to 0.3 per cent in 2021. Employment is projected to increase by 1.3 per cent in 2022, but the growth to slow down to 0.3 per cent in 2023 due to the unfavourable demographic developments in Bulgaria without, however, reaching the 2019 level until the end of the projection horizon. The unemployment rate will slightly rise to 5.5 per cent in 2021 mostly as a result of changes in the methodology of Labour Force Survey in early 2021, which are not reflected in the data for previous years. Concurrently, strengthening economic activity in Bulgaria will lead to a decrease in the unemployment rate to 4.9 per cent in 2022 and 4.6 per cent in 2023. Labour productivity is expected to grow by 4.8 per cent in 2021, but employment rise will limit the growth to 3.3 per cent in 2022 and 3.5 per cent in 2023. Compensation *per* employee is projected to increase by 8.2 per cent in 2021 as a result of the improvement in economic activity, increased minimum wage from the beginning of the year and higher public sector wages. Growth in nominal labour income *per* employee will moderate to 6.8 per cent in 2022 assuming that the increase in public sector wages will be weaker, while economic activity growth and limited labour supply in Bulgaria will push up the growth to 7.4 per cent at the end of the projection horizon. Growth in nominal unit labour costs will decelerate to 3.2 per cent in 2021 as a result of labour productivity recovery, but it will accelerate in the following two years driven by the expected wage increases.

Inflation

Inflation measured by HICP¹⁴ is projected to accelerate considerably to 3.8 per cent at the end of 2021 (0.0 per cent by end-2020),

¹⁴ For more information on inflation indicators in Bulgaria, see the highlight Comparison of Inflation According to the CPI and the HICP, p. 16.

reflecting the contribution of all major groups of goods and services. Transport fuels and foods are anticipated to have the highest positive contribution to overall inflation (1.4 and 1.1 percentage points respectively), reflecting the substantial rises in international oil, food and other commodity prices in euro. Core inflation is also projected to accelerate at the end of the year and to contribute by 0.9 percentage points to the growth rate of consumer prices, reflecting both the services and non-food goods components. The upward price dynamics of core HICP components will be driven by the indirect impact of price rises in fuels and food on the prices of some services and firms' higher unit labour, electricity and gaseous fuels costs.¹⁵ As regards demand, increased private consumption is expected to be another factor influencing inflation, especially in core HICP components. Administratively controlled prices are projected to contribute by 0.4 percentage points to the inflation in consumer prices at the end of the year, which will mainly reflect highest prices of electricity (by 4.4 per cent) and heating (by 16.2 per cent) approved by the EWRC¹⁶ effective as of 1 July 2021 for a period of one year.

ECB assumptions of 10 September for significant moderation of the growth rate of international prices in euro in 2022 and their subsequent rapid decline over the rest of the projection horizon are crucial for the slowdown in headline inflation in Bulgaria in 2022 and 2023 (to 1.5 per cent at the end of 2022 and 1.6 per cent at the end of 2023). Core inflation is expected to accelerate further over the projection horizon in line with the projected growth in unit labour costs and private consumption, while by sub-component services group is projected to post a higher growth compared to

¹⁵ The European Network of Transmission System Operators for Electricity (ENTSO-E) data show that in the first nine months of 2021 the average market price of electricity in the Day ahead market segment of the Independent Bulgarian Energy Exchange EAD rose by 111.4 per cent compared to the same period of 2020. Concurrently, the price (excluding VAT and excise duty) at which the public supplier Bulgargas EAD sells natural gas to final suppliers, increased by 52.3 per cent in the first nine months of the year. According to data from supply and use tables, economic sectors with highest share of electricity and gaseous fuel costs in the produced output value are 'Water collection, treatment and supply, D35' (19.7 per cent), 'Mining and quarrying, B' (7.4 per cent), 'Wholesale and retail trade; repair of motor vehicles and motorcycles, G' (5.3 per cent) and 'Manufacturing, C' (3.4 per cent).

¹⁶ For further information, see the EWRC press release.

non-food goods. Although at the time of preparing the forecast no information on the level of administratively controlled prices at the end of 2022 and 2023 is available, there was a technical assumption in the baseline scenario that in the medium run regulated prices of goods and services will increase in line with the projected growth in production costs (primarily unit labour costs).¹⁷

Monetary Sector

In 2021 the annual growth of credit to the non-government sector is projected to accelerate to 7.3 per cent (4.5 per cent at end-2020) driven mainly by the strong rise in credit to households. Increasing demand for consumer and, in particular, for housing loans amid a continuing economic activity recovery and favourable housing market prospects, low interest rates¹⁸ and eased credit standards by banks will contribute to the acceleration of household credit growth. In 2022 and 2023 the annual growth of credit to non-financial corporations is expected to gradually accelerate, consistent with the projected increase in private investment and corporations' demand for bank resources for investment purposes in the context of low interest rates. The anticipated slower growth rate in private consumption will limit household credit growth in 2022 and 2023. A possible moderate rise in the share of non-performing loans in banks' portfolios, associated with the expiry of the extended private moratorium on bank loan repayments and the increase in the countercyclical capital buffer rate announced by the BNB, effective from October 1, 2022, also

constitute factors with a potentially limiting effect on the dynamics of credit to the private sector. Amid continuous wage growth over the projection horizon, deposits in the banking system are expected to continue growing at comparatively high rates though tending to gradually slow down. Part of households' additional income is expected to be used for increasing private consumption or maintained by households in cash. Lower uncertainty based on the assumption of curbing the COVID-19 pandemic will contribute to the gradual reduction of precautionary savings.

¹⁷ The approach adopted in previous macroeconomic forecasts to use a technical assumption that administratively controlled prices will remain unchanged throughout the whole projection horizon, is a prerequisite to underestimating the underlying inflation, especially in periods of strong upward dynamics of oil and natural gas international prices, and of nominal labour income in the economy, accounting for a significant part of firms' production costs. This forecast uses the assumption that administratively controlled prices will follow the dynamics of costs of firms producing such goods and services in the period 2022–2023. Information at a micro level from Orbis database of Bureau van Dijk and NSI Supply-Use tables have been used in identifying the production structure of these firms.

¹⁸ Preparing the forecast on interest rates in Bulgaria the BNB takes into account market expectations of unsecured deposit rates in the interbank money market in the euro area (EUROBOR), which have been revised downwards for 2022 and 2023 compared with the June 2021 forecast.

FORECAST REVISIONS

Compared with the forecast published in June 2021, currently the expectations are for lower real GDP growth in 2021 and higher growth in the rest of the projection horizon.

Real GDP growth for 2021 has been revised downward by 0.2 percentage points, attributable largely to the projected fall in fixed capital investment compared with expected growth in the June forecast. This is largely due to the expected lower public investment in the current forecast, reflecting the assumption of postponing the implementation of infrastructure projects financed by national funds for the period after 2022, as well as the projected lower absorption of funds on capital expenditure under EU programmes in the current year given the lower rate of absorption compared with the 2007–2013 programming period. Moreover, private investment has been revised downward which is partly due to reporting data on the general government sector published for the first quarter of 2021.¹⁹ Consequently, the investment activity of corporations for the first half-year has been re-estimated toward lower values.²⁰ As a result of this and given the short-term economic indicators developments, corporations are expected to remain more cautious in respect of investment expenditure in the second half of the year. Concurrently, some of private investments, which in the June forecast were expected to be financed in 2021 with funds from the National Recovery and Resilience Plan, are assumed to be implemented in the coming years.

¹⁹ Data on the amount of public investment on an accrual basis and data on government consumption sub-components become accessible with the dissemination by the NSI of quarterly non-financial accounts of the general government sector 25 days following the publication of GDP data. Therefore, forecast data for the first quarter of 2021 were used in preparing the June projections.

²⁰ The NSI does not provide official data on the breakdown of total investments into private and public. The series on private investment is constructed by the BNB as a difference between total investment and the estimated amount of public investment on an accrual basis in real terms. The estimate on public investment is based on data from quarterly non-financial accounts of the general government sector and reports on the implementation of the consolidated fiscal programme published by the NSI and the MF accordingly.

Another important factor for the downward revision of real GDP growth in 2021 is the projected negative contribution of net exports of goods and services (a positive contribution expected in the June forecast). The revision of net exports is in line with the published reporting data for the first half of 2021, indicating significantly higher growth in imports compared to exports of goods. Based on the reporting data for the half-year, government consumption for 2021 has also been revised downward due to lower-than-expected growth in the first half of the year, whereas for the second half of 2021 the nominal amount of government consumption has been revised upward as a result of the September budgetary framework update and projected higher public health expenditure and remunerations. A factor limiting the downward revision of real GDP growth in 2021 is the forecast for higher private consumption growth, reflecting both its stronger annual growth in the first half of the year and the projected much higher rates of increase in real disposable income of households and credit.

Real GDP growth for 2022 has been revised upward by 0.1 percentage points due to the expected stronger household consumption. The revision of private consumption reflects higher growth in nominal labour income *per* employee and the stronger employment dynamics compared with the June macroeconomic forecast. The positive contribution of net exports of goods and services has been lowered compared with the previous forecast due to the expected stronger rise in imports driven by the upward revision of domestic demand and, particularly, in private consumption, which has a relatively high import component. The fall in government consumption in 2022 is expected to be stronger than in the June forecast. This results from the assumption that higher expenditure on health-care and public sector remunerations projected by the Law amending the State Budget Law of the Republic of Bulgaria for 2021 will be temporary and will not be made in 2022.

In 2023 economic activity growth is expected to be 0.3 percentage points higher compared with the June forecast. This is mainly due to projected stronger growth of the government sector spending on investment and, to a lesser extent, to higher growth in final consumption expenditure of households and government. The revision of the government investment forecast is mainly attributable to the assumption for the implementation in 2023 of the infrastructure projects financed with national funds, which were postponed from 2021. The upward revision in final consumption expenditure is in line with the projected dynamics of nominal labour income *per* employee and growth in credit to the non-financial sector.

The inflation dynamics forecast has been revised upward for the entire projection horizon. As regards basic components, this reflects mainly the projected stronger increase in private consumption and unit labour costs. Inflation of administratively controlled prices is also

higher than in the previous forecast, which is due to both new information received in the June–August 2021 period (mostly on prices of electricity, heat and natural gas) and the technical assumptions made for the change in these prices in the medium run. Inflation of energy products was revised upward for 2021 and downward for the rest of the projection horizon, reflecting the new assumptions for international oil prices in euro. The food inflation forecast for 2021 is lower than the June forecast due to the weaker pass-through of international prices to end-use consumer prices of food in the June–August period. An additional factor for the revision involves an assumption for a weaker increase in international prices of high-weight food in the consumer basket over the second half of 2021 compared with the June forecast. Inflation in the food group for the 2022–2023 period has been revised upward in line with the new external assumptions and the projected stronger increase in labour costs compared with the June forecast.

GDP and Inflation Forecast Revisions (28 September 2021 *vis-à-vis* 25 June 2021)

Annual rate of change (per cent)	Forecast as of 28 September 2021				Forecast as of 25 June 2021				Revision (percentage points)			
	2020	2021	2022	2023	2020	2021	2022	2023	2020	2021	2022	2023
GDP at constant prices	-4.2	3.9	4.7	3.8	-4.2	4.1	4.6	3.5	0.0	-0.2	0.1	0.3
Private consumption	0.2	4.7	3.8	3.4	0.2	3.5	2.4	3.1	0.0	1.2	1.4	0.3
Government consumption	7.5	5.1	-1.6	1.9	7.5	5.6	-0.9	1.6	0.0	-0.5	-0.7	0.3
Gross fixed capital formation	-5.1	-4.0	13.4	11.0	-5.1	1.0	12.4	7.6	0.0	-5.0	1.0	3.4
Exports of goods and services	-11.3	9.6	7.6	5.2	-11.3	9.2	7.5	4.9	0.0	0.4	0.1	0.3
Imports of goods and services	-6.6	9.4	6.9	6.0	-6.6	7.6	5.7	5.2	0.0	1.8	1.2	0.8
HICP at end of period	0.0	3.8	1.5	1.6	0.0	3.5	0.8	1.1	0.0	0.3	0.7	0.5
Core inflation	0.5	2.1	2.1	2.2	0.5	1.6	1.6	2.0	0.0	0.5	0.5	0.2
Energy products	-13.4	20.0	-5.5	-0.9	-13.4	18.5	-4.1	-0.2	0.0	1.5	-1.4	-0.7
Food	2.0	4.5	2.2	1.7	2.0	5.9	1.3	1.0	0.0	-1.4	0.9	0.7
Goods and services with administratively controlled prices and tobacco products	1.2	1.8	1.7	1.1	1.2	0.2	0.1	0.0	0.0	1.6	1.6	1.1

Source: the BNB.

RISKS TO THE FORECAST

Risks to the baseline scenario of the macroeconomic projection on economic activity growth are assessed as balanced for 2021 and oriented toward weaker GDP growth in the rest of the projection horizon.

The major risk to lower growth is again related to the spread of COVID-19 and a possible tightening or extension of containment measures in Bulgaria and abroad compared with those at the time of preparing the forecast. Under this scenario, prospects to the economic sentiment in Bulgaria and demand for Bulgarian goods and services could worsen, which would result in maintaining a higher rate of precautionary savings in the economy and postponing investment projects. A serious risk arises also from the political cycle in Bulgaria, which could lead to delays in the implementation of corporate and government investment projects (projects financed by national funds and those financed under the Recovery and Resilience Facility, as part of NextGenerationEU). Moreover, the overall effect of projects financed by EU funds is surrounded by uncertainty, since a possible change in their structure and implementation by year compared to the baseline scenario could lead to different growth of real GDP and the level of potential output.

At the same time, the risk of higher real GDP growth in 2021 stems from a possibly stronger rise in private consumption given the relatively high amount of accumulated savings in the economy and higher average consumption propensity of households as a result of significant fiscal transfers (mainly in the form of pension supplements) to low-income households²¹. Concurrently, significantly higher inflation in the

medium run compared to the baseline scenario (mainly due to a possible prolonged rise in prices of electricity and other energy products) would limit household real income, which is a factor for lower private consumption growth.

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.

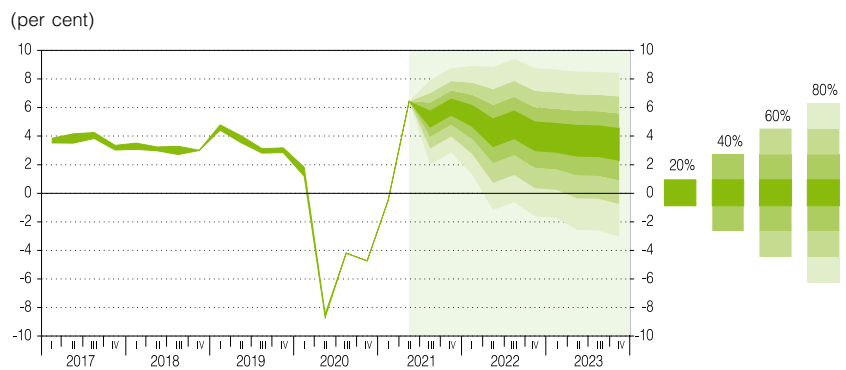
Given the unprecedented nature of the economic shock resulting from the COVID-19 pandemic and the containment measures, the uncertainty interval under the current forecast is wider than usual even in the short term. The middle band of the chart, depicted in the darkest colour, includes the baseline scenario 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. 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 from 3.3 per cent to 5.5 per cent.

Risks to the inflation forecast are assessed as oriented towards a stronger increase in prices compared to the baseline scenario for the 2021–2023 period. These risks stem largely from a likelihood that the strong upward trend in electricity prices of early 2021 would be maintained over a medium term due to factors of a structural nature. Concurrently, in case of stronger growth in private consumption and unit labour costs than that projected in the baseline scenario, core inflation may accelerate faster than expected. In addition, materialisation of higher international commodity prices

²¹ The NSI household budget data show that lower-income households (between first decile and fifth decile) have a significantly larger share of pension income in total earnings compared to higher-income households. At the same time, Eurostat data suggest that households with the lowest income are traditionally more inclined to consume than higher income households, which is a precondition for significant fiscal transfers to boost the average consumption propensity for the economy.

for 2021–2023²² as compared to those included in the assumptions would be a precondition for higher inflation in both energy products and food and in some services groups and administratively controlled prices, including transport services, catering, natural gas, electricity and heating prices. After the cut-off date of the forecast, the Energy and Water Regulatory Commission (EWRC) approved a 36 per cent increase in natural gas prices for October, which have not been embodied in the baseline scenario.²³ This is recognised as a prerequisite for higher than projected end-year inflation in both administratively controlled prices and goods and services with high shares of natural gas in total production costs. The balance of risks regarding inflation is graphically shown in the fan chart here. It suggests that with a probability of 60 per cent, annual inflation in consumer prices is expected to range between 3.6 and 4.5 per cent at the end of 2021.

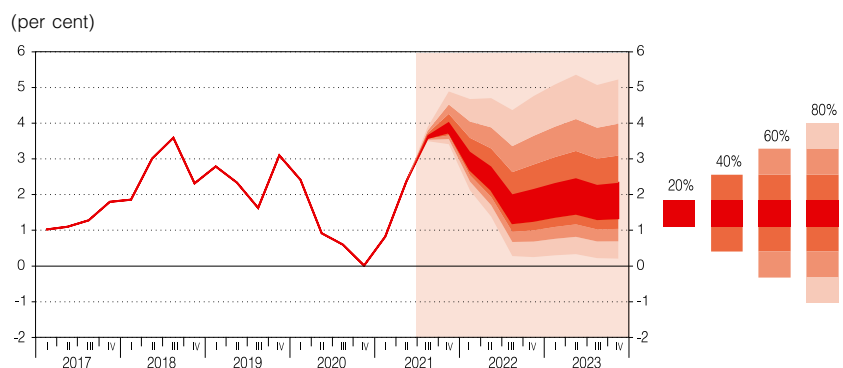
Fan Chart of the Expected Annual Rate of Change in Real GDP



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.

²² The baseline scenario suggests technical assumptions about international commodity price developments on the basis of futures contract prices as of 10 September.

²³ For further information, see [the press release](#) of the EWRC.

Forecast of Key Macroeconomic Indicators for 2021–2023

(per cent)

	2020	2021	2022	2023
Annual rate of change				
GDP at constant prices	-4.2	3.9	4.7	3.8
Private consumption	0.2	4.7	3.8	3.4
Government consumption	7.5	5.1	-1.6	1.9
Gross fixed capital formation	-5.1	-4.0	13.4	11.0
Exports of goods and services	-11.3	9.6	7.6	5.2
Imports of goods and services	-6.6	9.4	6.9	6.0
HICP at end period	0.0	3.8	1.5	1.6
Core inflation	0.5	2.1	2.1	2.2
Energy products	-13.4	20.0	-5.5	-0.9
Food	2.0	4.5	2.2	1.7
Goods and services with administratively controlled prices and tobacco products	1.2	1.8	1.7	1.1
Employment	-2.3	-0.3	1.3	0.3
Unit labour costs	7.9	3.2	3.4	3.9
Labour productivity	-1.9	4.8	3.3	3.5
Unemployment rate (share of labour force)	5.2	5.5	4.9	4.6
Claims on the non-government sector	4.5	7.3	6.6	6.7
Claims on corporations*	2.3	3.1	4.5	4.9
Claims on households	6.6	12.0	9.3	8.9
Deposits of the non-government sector	9.7	10.9	8.7	7.8
Share of GDP				
Balance of payments current account	-0.3	1.0	1.4	1.2
Trade balance	-3.2	-4.4	-4.5	-5.4
Services, net	5.0	7.0	7.7	8.3
Primary income, net	-3.5	-3.7	-4.5	-4.1
Secondary income, net	1.4	2.1	2.7	2.4
Annual rate of change				
External assumptions				
External demand	-8.3	8.9	6.2	4.0
Average annual Brent oil price (in USD)	-33.9	61.6	0.5	-5.4
Average annual price of non-energy products (in USD)	3.5	35.8	3.9	-3.0
Brent oil price at the end of period (in USD)	-28.9	62.1	-7.0	-5.1
Prices of non-energy products at the end of period (in USD)	12.2	29.1	-0.8	-1.7

* Data refer to non-financial corporations.

Source: the BNB.

COMPARISON OF INFLATION ACCORDING TO THE CPI AND THE HICP

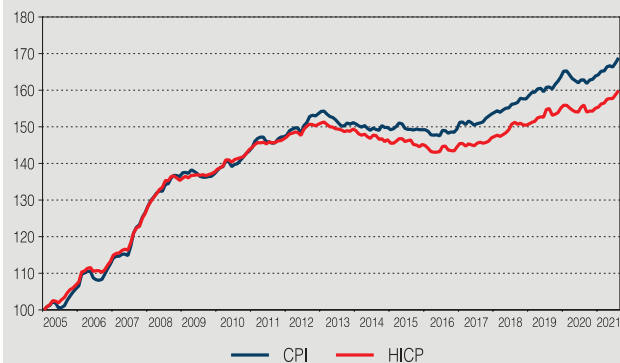
The National Statistical Institute publishes two indices of the general price level in Bulgaria: a Consumer Price Index (CPI) and a Harmonised Index of Consumer Prices (HICP). This Section aims to introduce the main differences between the two indices, given their frequent public use. The CPI is the official measure of inflation in the country, while the HICP is calculated using a common Eurostat methodology in all EU Member States, thus ensuring the full comparability of data between individual countries. The HICP series for Bulgaria based on the Eurostat methodology has been constructed since 2005, while the CPI data is available since 1990.²⁴ The BNB monitors, analyses and projects the HICP following a resolution of the BNB Governing Council, according to which in its activities towards the primary objective, namely to maintain price stability, the BNB has been using the HICP since the beginning of 2007 as the main measure of the dynamics of price level in Bulgaria.²⁵

In a long-term period, the CPI and the HICP have shown a similar upward trend in the level of consumer prices in Bulgaria, with this being more pronounced in the CPI, especially in the period after 2012 (see Chart 1). As of August 2021 annual inflation according to the CPI was 3.7 per cent compared to 2.5 per cent based on HICP data. The differences in the dynamics of the CPI and the HICP depends on different weights of individual groups of goods and services in the consumer basket, which are used for aggregation of prices to the total index.

Chart 1. Level and Annual Rate of Change of the Price Level According to the CPI and the HICP

A) Level of prices

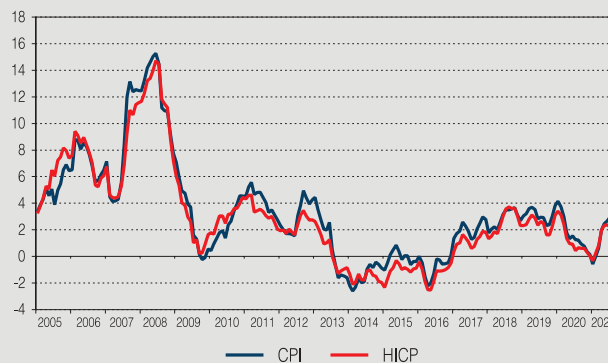
(index, January 2015 = 100)



Source: the NSI, own calculations.

B) Annual rate of change

(rate of change, per cent)



The size of the weights reflects consumption patterns of households and the structure of final consumption expenditure. Although the CPI and the HICP are calculated on the basis of the same basket of goods and services and the same prices, divergent sources of information are used for both indices in constructing the weights. As regards the CPI, the main source of information on the structure of expenditure is the regular budget survey of resident households in Bulgaria. At the same time, the HICP is calculated using weights representing relative shares by group of goods and services of consumption of all households (including institutional and non-resident) on the economic territory of Bulgaria.²⁶ Thus, the HICP introduces the so-called 'domestic' concept for measuring consumer prices, which is affected by the consumption of both residents and non-residents

²⁴ From May 1990 to December 1994 the NSI published only a total CPI, and since January 1995, also a CPI by commodity group. For 1997–2004, the NSI published historical data series of a HICP, which are identical with that of a CPI.

²⁵ Resolution No 22 of the BNB Governing Council of 15 February 2007.

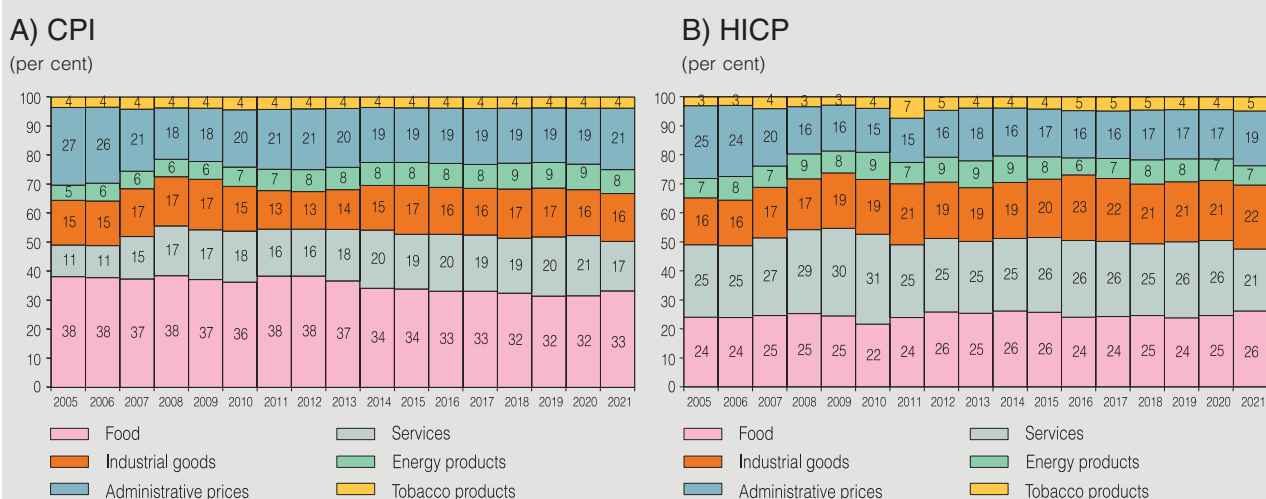
²⁶ More information on the methodology used can be found on the NSI website.

in Bulgaria. The main source of information on HICP weightings are national accounts data.

Different sources of information determine also different time periods of data for calculating the weights of goods and services prices in both indices. In a CPI, weights in year t are calculated on the basis of the structure of household expenditure in year $t-1$. In the HICP, weights in year t are calculated on the basis of the structure of household expenditure in year $t-2$ since final data derived from national accounts are published with a certain lag and are subject to revisions. This implies that in periods of significant changes in consumption patterns, a different reference period for determining the weights may be expected to contribute to differences in inflation measured by the two indices. Such a structural change occurred in 2020 as a result of the COVID-19 pandemic and imposed containment measures. In line with Eurostat's methodological recommendations regarding the construction of HICP weights in case of large changes of consumer expenditure, when calculating the weights in the HICP for 2021, the NSI applied a hybrid approach by using national accounts data on final monetary consumption expenditure of households (a domestic concept) for 2019 (*i.e.* period $t-2$), which are adjusted in order to be representative of household consumption in the context of a pandemic.

For the period 2005–2021, a comparatively sustainable difference was observed over time between the weights of prices of relevant goods and services used in constructing a CPI and a HICP (see Chart 2). As regards the CPI, the groups of food and energy products, which are affected significantly by international commodity price dynamics, occupied an average share of around 43 per cent for 2005–2021 compared to 32 per cent in the HICP. Administratively controlled prices also had a relatively higher share in the CPI, mainly due to utilities (electricity, heat and water supply).²⁷ On the other hand, services and non-food goods occupied a lower share in the CPI compared to the HICP. Regarding the group of services, this was largely due to accommodation and catering services, which possibly had a higher share in total consumer expenditure of foreign citizens. In the non-food goods group, differences in weights were mainly due to goods related to transport (motor vehicles and related accessories) and to leisure, entertainment and culture.

Chart 2. Weights of Major Groups of Goods and Services in the CPI and the HICP



Note: This structure corresponds to the Eurostat classification, with tobacco products and goods and services with administratively controlled prices shown separately. The index of goods and services with administratively controlled prices is calculated by weighing the relevant elementary aggregates of the consumer basket.

Source: the NSI, own calculations.

The comparison of annual rates of inflation measured by the CPI and the HICP suggests a trend to a faster rise in consumer prices in the first index, especially in the period after 2012, which was due to different weights of individual goods and services used in constructing the two indices.

²⁷ For 2021, these three sub-groups of administratively controlled prices had a weight of 6.1 per cent in the HICP *vis-à-vis* 10.7 per cent in the CPI.

ISSN 2738–7666 (online)

Elements of the 20 lev banknote, issues 1999, 2007 and 2020 are used in cover design.