

# BULGARIAN NATIONAL BANK



## MACROECONOMIC FORECAST

DECEMBER 2020



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FORECAST  
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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 (December 2020) was presented to the BNB Governing Council at its 15 January 2021 meeting. It employs statistical data and information available as of 22 December 2020. 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 13 January 2021.

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ISSN 2738-7666 (online)

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## Abbreviations

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

# SUMMARY

The BNB forecast of key macroeconomic indicators is based on information published by 22 December 2020 and employs assumptions about global economic developments and price dynamics of main commodity groups in the international markets by 11 December 2020.

The increased number of new COVID-19 cases over the last quarter of 2020 led to re-tightening of containment measures in other EU countries and Bulgaria, which will affect negatively the economic activity during the quarter, though to a lesser extent than in the spring of 2020. When making the forecast, it has been assumed that containment measures imposed in the fourth quarter in other EU countries and Bulgaria would be extended until the end of the first quarter of 2021. Under the baseline forecast scenario, real GDP of Bulgaria will decrease by 4.4 per cent in 2020, reflecting mainly a negative contribution of net exports and, to a lesser degree, private investment declines. The fiscal policy is expected to have a strong countercyclical effect, contributing positively to the economic activity through higher national government consumption and investment and increased net transfers to households. Private consumption will also have a positive contribution to real GDP in 2020, with NSI data showing its considerable resilience throughout the first nine months against the background of the registered economic activity declines. In line with the assumptions about external environment developments and gradual containment of the pandemic in 2021–2022, economic activity is predicted to rise by 3.7 per cent in 2021 and 3.6 per cent in 2022, reaching its annual pre-pandemic level in 2022. Projected resumption of real GDP growth in 2021 would reflect mainly a transition from a negative to a positive contribution of net exports and fixed capital investment, while private consumption would continue to be the sub-component with the largest positive contribution to GDP changes throughout the year. GDP growth in 2022 will be primarily driven by positive contributions of private consumption and fixed capital investment.

Annual inflation is expected to be 0.3 per cent at the end of 2020 (3.1 per cent at the end of 2019). The decrease in inflation from December 2019 is due to all major sub-groups of goods and services, with slowdown most pronounced in energy prices in line with downward dynamics of international oil prices on an annual basis. Headline inflation is expected to accelerate to 2.0 per cent at end-2021, reflecting largely increased oil prices and higher inflation in domestic food prices and core inflation, thereafter slowing during 2022 to 0.9 per cent in the context of stabilising international commodity prices.

Risks to the baseline scenario of the macroeconomic projection are assessed as oriented towards a larger decline in economic activity in 2020 and a slower subsequent recovery over the remainder of the forecast horizon. A probable failure to effectively cope with the COVID-19 spread globally and in Bulgaria poses the most significant risk to materialisation of weaker economic activity during the whole projection horizon compared to the baseline scenario. This would subdue for a longer than projected period foreign trade flows and expenditure on consumption and investment of households and corporations. Risks to the inflation outlook are considered as largely oriented towards lower inflation, and are related to probable weaker inflation in energy products and core HICP components.

# FORECAST OF KEY MACROECONOMIC INDICATORS FOR 2020–2022

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## External Environment

The increased number of new COVID-19 cases over the last quarter of 2020 led to re-tightening of containment measures in other EU countries and Bulgaria, which will affect negatively Bulgaria's economic activity during the quarter, notwithstanding that the global economic indicator dynamics until November 2020 signalled a continuous improvement in economic activity, primarily in the manufacturing sector.

The BNB forecast of key macroeconomic indicators is based on information published by 22 December 2020. It employs assumptions of the European Central Bank, the European Commission and the International Monetary Fund on global economic developments and price dynamics of main commodity groups in the international markets by 11 December 2020. A major assumption is that the containment measures imposed during the fourth quarter in other EU countries and Bulgaria would be extended until the end of the first quarter of 2021, though their negative effect on the economic activity is expected to be smaller than that of the spring 2020 measures. In line with the ECB and EC assumptions, the BNB forecast incorporates an assumption that trade relations between the United Kingdom and the EU will be based on the World Trade Organization's most-favoured nation terms from 1 January 2021, though the EU–UK Trade and Cooperation Agreement was reached after the cut-off date of the forecast.

The external demand for Bulgarian goods and services in 2020 is assumed to decrease by 9.7 per cent on 2019, thereafter rising by 8.2 and 5.4 per cent in 2021 and 2022 respectively.

In 2020 energy prices posted a significant year-on-year drop in both US dollars and euro under the influence of decreased demand amid the global COVID-19 spread and the initiated containment measures. At the same time, non-ener-

gy prices rose during 2020 in both US dollars and euro. Metal prices increased in dollars and euro over 2020, with price rises in the group stimulated by China's demand for metals. In 2020 food prices in US dollars and euro also picked up on an annual basis.

In line with the external assumptions, energy and non-energy prices in dollars and euro<sup>1</sup> are anticipated to rise significantly in 2021 and consequently stabilise in 2022, reflecting primarily the market expectations of the trajectory of recovery in global demand for raw materials.

## Economic Activity in Bulgaria

Following the quarterly drop of 10.1 per cent in real GDP during the second quarter of 2020, a partial economic activity recovery was observed in the third quarter (growth of 4.3 per cent quarterly), driven largely by private consumption which was in line with easing of containment measures on COVID-19 and discretionary fiscal measures introduced to support vulnerable households and firms.

Based on GDP data for the first nine months of 2020, available economic indicators for the fourth quarter of the year, partial tightening of anti-epidemic measures abroad and in Bulgaria by year's end and the outlined external assumptions, real GDP of Bulgaria's economy is projected to fall by 4.4 per cent in 2020. There is, however, a high degree of uncertainty around the forecast, even in a short-term horizon. This uncertainty stems from continuing COVID-19 spread in Bulgaria and worldwide, tightening of existing containment measures

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<sup>1</sup> The forecast of raw materials prices in euro is based on a technical assumption about the EUR/USD exchange rate, which is fixed for the whole forecast horizon at its average value for October and November 2020 and the last ten days up to 11 December 2020 – the cut-off date of the external environment assumptions. In line with the technical assumption, in 2021 the euro will appreciate *vis-à-vis* the US dollar by 4.3 per cent compared to 2020.

without a clear horizon for their phase out and the uncertain duration, scope and efficiency of existing fiscal measures and introduction of new ones. The GDP decline in real terms for 2020 is projected to be driven mainly by a negative contribution of net exports, while domestic demand will have a close to neutral contribution. The negative contribution of net exports to the GDP fall in 2020 is estimated at -2.7 percentage points, reflecting a higher rate of decline in goods and services exports than imports. Economic activity declines in our major trading partners are expected to reduce goods and services exports by 12.1 per cent on 2019, with exported tourist services being more severely affected. Goods and services imports are predicted to drop by 8.1 per cent on 2019 under the main influence of downward dynamics in investments which are characterised by the largest import component. In 2020 fixed capital investment is expected to decrease by 8.1 per cent in real terms (contributing -1.5 percentage points to the GDP fall), reflecting entirely an anticipated drop in private investment.<sup>2</sup> This decline will be driven by factors such as deteriorated prospects of demand for Bulgarian goods and services, increased uncertainty in the economy and worsened financial performance of most of the firms. In 2020 fiscal policy is expected to have a positive contribution to real GDP growth through a higher amount of national and EU co-financed expenditure on government consumption and investment related mainly to increased remunerations of employees involved in addressing health and economic implications of COVID-19 spread, higher health insurance payments and continued implementation of large infrastructure projects. Fiscal measures initiated in 2020 also led to an increase in net transfers to households. Private consumption is expected to rise by 1.2 per cent in 2020, driven largely by its performance in the first nine months of the year, and to contribute 0.8 percentage points to the change in GDP. In 2021–2022 we foresee that the economy will resume its growth and real GDP will rise by 3.7 per cent in 2021

<sup>2</sup> The analysis employs a BNB estimate of fixed capital investment distribution between private and public sectors. Reporting data derived from quarterly non-financial accounts of the general government sector and consolidated fiscal programme are used in calculating the amount of public investment.

and 3.6 per cent in 2022. Projected real GDP growth in 2021 is due primarily to a transition from a negative to a positive contribution of net exports (from -2.7 percentage points in 2020 to 0.5 percentage points in 2021) and of fixed capital investment (from -1.5 percentage points in 2020 to 1.1 percentage points in 2021), while private consumption will continue to be the sub-component with the largest positive contribution to the GDP change during the year (1.3 percentage points). In 2022 GDP growth will be largely driven by positive contributions of private consumption and fixed capital investment, and 2022 is the year in which the economic activity is expected to reach its pre-pandemic level.

Private consumption developments over the projection horizon will reflect a gradually subsiding uncertainty, improved consumer confidence, moderate employment growth and continuous wage increases. Discretionary anti-crisis measures announced by the government in 2021 will increase social payments, wage and subsidised employment costs, supporting household disposable income. In 2021 we project that government consumption will retain its comparatively high positive contribution to real GDP changes, driven by higher expenses on public sector remunerations and healthcare retained in the state budget. Part of the government anti-crisis measures is expected to be phased out in 2022, which will be a key factor behind slowing growth in real GDP during this period. During 2021–2022 public investment is anticipated to continue contributing positively to GDP growth, underpinned by a higher pace of absorption of EU funds in the last phase of the 2014–2020 programme period and ongoing implementation of large infrastructure projects financed by the national budget.<sup>3</sup> The private investment recovery rate is expected to be comparatively weak and its amount at the end of the forecast horizon to remain below the 2019 level. Exports of goods and services in 2021–2022 are projected

<sup>3</sup> The macroeconomic forecast does not include assessments of a potential effect of the funds which Bulgaria will receive under the Recovery and Resilience Facility, the key instrument at the heart of NextGenerationEU, and the multiannual financial framework for 2021–2027 on economic activity due to the lack of sufficiently specific information at the time of finalising this forecast. The forecast includes only an assumption of the funds expected from the REACT-EU instrument (BGN 820 million in 2021 and BGN 480 million in 2022).



to grow at higher rates than those of imports in line with external demand dynamics, which will determine a positive contribution of net exports to GDP changes in the remainder of the forecast horizon.

### Balance of Payments

In 2020 Bulgaria's BOP current account surplus is expected to decrease as a share of GDP compared to 2019. This dynamics will be mainly driven by the projected falls in surpluses on the services trade balance and on net secondary income. Since Bulgaria is a net exporter of tourist services and services related to passenger transport, which are among the sectors most severely hit by the measures against the COVID-19 pandemic, net revenue of these sectors are expected to remain strongly limited until the pandemic is effectively resolved globally. The lower surplus on the net secondary income item will reflect mainly decreased remittances by emigrants to Bulgaria. Concurrently, the fall in the current account surplus is projected to be partly curbed by lower deficits (as a share of GDP) on the trade balance and net primary income for 2020. The dynamics of the flows on the net primary income account will be driven by the projected decrease in dividend payments and distributed profits to non-residents amid heightened uncertainty and worsened economic activity in Bulgaria, as well as by the measures initiated by the BNB for capitalising all banking system profits due to the COVID-19 pandemic.

In 2021 and 2022 the current account surplus is expected to increase as a share of GDP compared to 2020. This increase will be driven mainly by the projected higher net revenue from services trade and the increased surplus on the net secondary income account. The higher surplus on the net secondary income amount will be attributable to higher net receipts of the general government sector and gradually increasing remittances by emigrants amid the improving economic activity with the potential resolution of the global health crisis.

### Labour Market

The worsened macroeconomic environment is projected to result in a 2.6 per cent decline in the number of employed in the total economy in 2020. This fall is significantly lower than the fall in the economic activity, reflecting the favourable effect of the government measures in support of the persons employed in the sectors most severely hit by the pandemic. Employment is expected to start to recover slightly recovering in 2021 but its growth will be strongly subdued by the containment measures over particular businesses in the beginning of the year and by the sustained heightened uncertainty for the future economic activity of corporations. In 2022 employment is anticipated to increase further at low rates, failing to reach its 2019's level. Concurrently, the unemployment rate is expected to rise to 5.4 per cent in 2020 consistent with the increased number of unemployed in the economy and decreased labour force due to the switch towards inactivity of part of employees. The improvement in the external environment and the recovery of the economic activity in Bulgaria in 2021 and 2022 will lead to a gradual decrease in the unemployment rate. The lower decline in employment compared to the expected fall in the economic activity will, in turn, result in a decline in labour productivity by 2.2 per cent in 2020. Over the remaining forecast horizon, productivity growth will recover and follow largely real GDP developments. Concurrently, the lower number of hours worked *per* person due to containment measures will result in slower growth of compensation *per* employee (5.9 per cent in 2020 from 6.9 per cent in 2019)-. An opposite effect will have factors such as the increase in the minimum wage and minimum insurance thresholds from 1 January 2020, the increase in public sector wages and those of people working at the front line in the fight against the spread of COVID-19, as well as the stronger decline in the number of employed in the sectors with lower wages than the average for the economy. Growth in compensation *per* employee is expected to accelerate in 2021 supported by the recovery in the economic activity, the planned public sector wage rise and the

increase in the minimum wage from 1 January 2021. In 2022 the growth rate will slow down after the effect of some of these factors has been exhausted. The lower labour productivity and higher wages will push up nominal unit labour costs by 8.2 per cent in 2020, but with the recovery of productivity their growth will start slowing down in the medium-term horizon.

## Inflation

Annual inflation is projected to be 0.3 per cent at the end of 2020 (3.1 per cent at the end of 2019). The decrease in inflation compared to December 2019 is due to all major sub-groups of goods and services, with the slowdown reflecting mainly the strong fall in energy product prices in line with the downward dynamics of international oil prices on an annual basis. Core inflation is expected to slow down at the close of the year, reflecting mainly the negative effect of the containment measures on domestic demand. Therefore, we foresee lower inflation in services and a decrease in the year-on-year non-food price index. A significant deceleration of inflation is expected in the food group. This dynamics will be most strongly pronounced in the group of meat and meat products due to exhausted effects of temporary supply-side factors, which contributed to the price hike in this group in 2019.<sup>4</sup> Significantly lower prices of natural gas and heating approved by the Energy and Water Regulatory Commission (EWRC) in the second quarter of 2020, which were only partly offset by the price rises in the second half year, played a key role for the slower inflation in goods and services with administratively controlled prices compared to end-2019.

Assumptions about international market price developments of oil and food in euro are of key significance for the projected acceleration of inflation to 2.0 per cent at end-2021 and its subsequent slowdown to 0.9 per cent at end-2022. At the end of 2021 and in 2022 core inflation is expected to be higher than at the end of 2020, reflecting mainly the projected

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<sup>4</sup> Increased prices in the group of meat and meat products in 2019 was attributable mainly to reduced supply and higher import prices, reflecting the African swine fever spread worldwide and in Bulgaria.

accelerated rate of increase in services prices and a gradual turnaround in the downward trend in non-food prices amid growth in private consumption and indirect effects of price rises in energy commodities and food. Inflation in the food group is projected to accelerate at the close of 2021 and to slow at the end of 2022 in line with the assumptions about international food prices.

## Monetary Sector

Until the end of 2020 and in the first half of 2021 non-government sector's deposits in the banking system are expected to continue growing at comparatively high rates. The main factors which will contribute to this dynamics involve precautionary savings maintained by economic agents amid heightened uncertainty about future developments of the macroeconomic environment and the projected rise in labour income. Assuming that the pandemic will be gradually overcome, deposit growth from the second half of 2021 until the end of the forecast horizon period is expected to slightly slow down in line with the projected gradual recovery in the economic activity, mitigated uncertainty and decreased precautionary savings, accordingly. The continuing high inflows of attracted funds in the banking system will contribute to the maintenance of deposit rates at historically low levels. Until the end of 2020 loans to non-financial corporations and households are expected to increase at rates close to those reported in the third quarter of the year. Slower credit growth is expected in 2021, reflecting mainly the expiry of the private moratorium on bank loan payments and the repayment of deferred loans. Following the expiry of the deadline for deferring obligations of bank clients, the share of non-performing loans in bank portfolios may increase, which will probably result in higher interest rates on new loans and tightening of other credit conditions. These developments coupled with relatively subdued investment activity in Bulgaria will limit credit growth in 2021. With the gradual recovery of private consumption and investment the growth rate of loans to corporations and households is expected to accelerate in 2022 but to remain lower than in 2019.

# FORECAST REVISIONS

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Compared with the forecast published in September 2020, currently, real GDP is expected to post a lower decline in 2020 followed by lower rates of growth in the economic activity in 2021 and 2022. The revision towards a lower GDP fall in 2020 is due to domestic demand sub-components and mostly to private consumption, whereas the negative contribution of net exports to the change in GDP is projected to be more negative compared with the September forecast. As regards private consumption, the revision in the 2020 forecast accounts for the stronger than expected performance of final consumption expenditure of households in the first nine months of 2020. This is ascribable both to the regular revision of NSI national accounts data in October 2020, which resulted in a lower decline in real consumer expenditure in the first half of 2020, and to a stronger than projected private consumption recovery in the third quarter of 2020 (both on a quarterly and annual basis) compared with that projected by 25 September 2020<sup>5</sup>. As a result of these developments private consumption in real terms rose by 2.0 per cent on an annual basis between January and September 2020. The lower decline in gross fixed capital investment in 2020 in the current forecast compared to the previous one reflects the more favourable performance than expected in the third quarter of 2020, the lower decline in external demand in line with current assumptions for the international environment and higher growth of credit to the non-government sector. Government capital expenditure growth in 2020 is lower in the current forecast. This reflects mainly the NSI national accounts data revision in October 2020 as a result of which the amount of government investment in 2019 was increased. The forecast of government consumption in 2020 has been revised towards higher real growth due to more favourable performance in the first nine months of the year

and the extended government measures against the spread of COVID-19 in the fourth quarter. The higher negative contribution of net exports to the change in real GDP in 2020 in the current forecast compared with that of September reflects both a stronger fall in exported goods and services and a lower decline in imported goods and services.

In 2021 and 2022 real GDP growth is revised downwards compared to the previous forecast. Private consumption growth has been revised downwards, reflecting mainly the base effect of the higher level in 2020. Fixed capital investment is expected to grow at lower rates in 2021 and 2022 compared with the previous forecast, a result mainly of slower public investment growth due to a prevailing increase in government current expenditure in 2021, intended to address the implications of the COVID-19 pandemic, and the assumption of shifting a portion of capital expenditure in the years beyond the forecast horizon. Government consumption in 2022 has been revised from growth in the previous forecast to a decline in the current forecast, reflecting the assumption that a portion of temporarily increased health and maintenance expenditure projected in the 2021 state budget will be phased out. In 2021 and 2022 the contribution of net exports to real GDP growth is higher in the current than in the September forecast, in line with current assumptions of a stronger increase in external demand for Bulgarian goods and services.

The overall inflation forecast for end-2020 and for 2021 remains almost unchanged compared with the September macroeconomic forecast, while the projected growth rate of consumer prices at the end of 2022 has been revised downwards. Inflation of goods and services with administratively controlled prices and tobacco products at the end of 2020 has been increased due to an inclusion of additional information on prices of natural gas and heating announced by the EWRC in the fourth quarter,

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<sup>5</sup> For details on the change in private consumption throughout the year, see the Highlights entitled Dynamics of Private Consumption in Bulgaria between January and September 2020.

which was not available by the time of preparing the September forecast.

The upward revision in the inflation forecast of goods and services with administratively controlled prices and tobacco products at end-2020 is offset by the downward revision in the remaining main inflation sub-components. Assumptions of a stronger increase in international prices of petroleum products and food

in 2021, followed by a slight decrease in the prices of these commodities in 2022 are of key significance for the revision of the annual inflation rate at the end of 2021 and in 2022, whereas the assumptions in the September 2020 forecast supposed more gradual and longer recovery of international prices within the forecast horizon. The core inflation dynamics remains close to that of the previous forecast.

### GDP and Inflation Forecast Revisions (22 December 2020 *vis-à-vis* 25 September 2020)

Annual rate of change (per cent)	Forecast as of 22 December 2020				Forecast as of 25 September 2020				Revision (percentage points)			
	2019	2020	2021	2022	2019	2020	2021	2022	2019	2020	2021	2022
GDP at constant prices	3.7	-4.4	3.7	3.6	3.4	-5.5	4.0	3.8	0.3	1.1	-0.3	-0.2
Private consumption	5.5	1.2	1.9	2.6	5.8	-3.0	2.6	3.0	-0.3	4.2	-0.7	-0.4
Government consumption	2.0	5.3	5.1	-0.2	5.5	2.4	2.2	2.3	-3.5	2.9	2.9	-2.5
Gross fixed capital formation	4.5	-8.1	5.9	5.7	2.2	-9.5	8.2	9.2	2.3	1.4	-2.3	-3.5
Exports of goods and services	3.9	-12.1	7.7	6.7	1.9	-11.0	6.9	5.0	2.0	-1.1	0.8	1.7
Imports of goods and services	5.2	-8.1	6.5	5.0	2.4	-9.1	6.2	5.2	2.8	1.0	0.3	-0.2
HICP at end of period	3.1	0.3	2.0	0.9	3.1	0.3	1.9	1.6	0.0	0.0	0.1	-0.7
Core inflation	1.8	0.5	0.9	1.4	1.8	0.6	1.0	1.4	0.0	-0.1	-0.1	0.0
Energy products	4.1	-13.6	6.3	-0.1	4.1	-13.2	2.6	1.4	0.0	-0.4	3.7	-1.5
Food	6.2	3.1	4.5	1.1	6.2	3.3	4.2	3.1	0.0	-0.2	0.3	-2.0
Goods and services with administratively controlled prices and tobacco products	2.0	1.2	0.1	0.0	2.0	0.8	0.1	0.0	0.0	0.4	0.0	0.0

**Note:** The revision of real GDP data in 2019 is due to the NSI revision of historical data for GDP and its components from 2009 to the first half of 2020. New data were published on 19 October 2020.

**Source:** the BNB.

# RISKS TO THE FORECAST

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Risks to the baseline scenario of the macroeconomic forecast are assessed as mainly oriented towards a weaker economic activity over the whole projection horizon.

As regards 2020, uncertainties surrounding the development of COVID-19 pandemic along with the effects of tightening containment measures on domestic and external demand dynamics and economic agents' expectations in Bulgaria, remain the major negative risk.

Assessments point that risks of slower recovery of economic activity in Bulgaria *vis-à-vis* the baseline scenario prevail for the 2021–2022 period. Such risks could arise in the event of a failure to contain the spread of COVID-19 globally in an effective and timely manner despite the available vaccines, and extending the anti-epidemic measures after the first quarter of 2021, which will constrain the recovery of Bulgaria's domestic and external demand and further deteriorate economic agents' expectations. There is also uncertainty related to the country's political cycle that could lead to postponement of investment expenditure by corporations. Another risk to the forecast that may result in a slower recovery of economic activity is the potential delay in the implementation of investment projects co-financed by EU or national funds over the projection horizon compared to the baseline scenario.

The end of the transition period after Brexit with a deal on the future relationships between the UK and the EU, providing for more favourable terms and conditions than World Trade Organisation's principles of 'most-favoured-nation' represents a risk towards a higher economic growth than projected in the baseline scenario for 2021 and 2022. This would have mainly an indirect positive impact on Bulgarian economy, in particular on the euro area, which is Bulgaria's major trading partner.

Concurrently, weak trade linkages between Bulgaria and the United Kingdom would limit the direct positive effects on Bulgarian economy.

Risk of a higher growth rate of real GDP than projected in the baseline scenario of the forecast, also arises from potential implementation of government measures financed under the Recovery and Resilience Facility in the framework of the NextGenerationEU Recovery Plan.

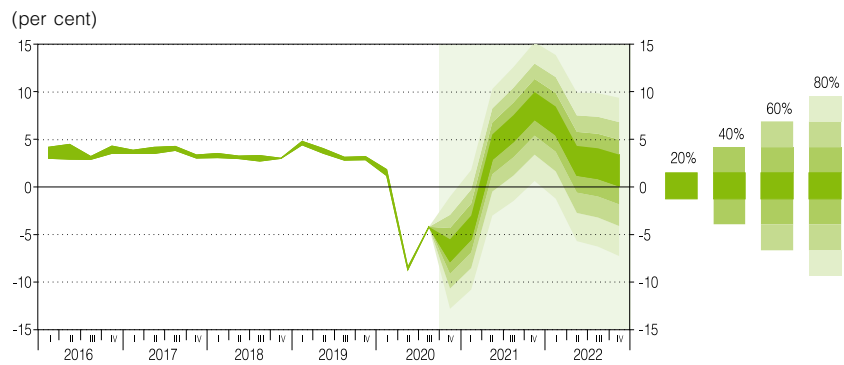
The high degree of uncertainty to the 2021–2022 forecast about the impact of government's discretionary expenditure on domestic demand remains. Such uncertainty exists both in terms of duration of the implemented measures intended to mitigate the impacts of COVID-19, and in terms of their efficiency. Another source of uncertainty to the forecast is the country's political cycle and its impact on government expenditure dynamics over the forecast horizon.

Uncertainty surrounding the baseline scenario of the forecast also exists in terms of firm and households behaviour after the expiry of the current measures implemented by the government to support economic agents' liquidity and reduce their financial vulnerabilities. As regards measures implemented by the BNB, the uncertainty about the future behaviour of firms and households stems from the expiry of the extended moratorium period on loan repayments. 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). 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, which is evidenced by the profile

of the fan chart since the fourth quarter of 2020. The middle band of the chart, depicted in the darkest colour, includes the baseline scenario of 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 2020 shows a 60 per cent probability for the real GDP annual rate of change to fall within the interval from -3.7 per cent to -5.8 per cent.

Risks to the inflation forecast are assessed as largely oriented towards lower increase in prices compared with the baseline scenario. Lower than expected inflation could be seen in energy products and core HICP components. Materialisation of international oil prices in euro, which are lower than those set out in the assumptions, would be a precondition for both lower inflation in energy products and administratively controlled prices of some services including electricity and heating prices. In case of longer extension of anti-epidemic measures than projected in the baseline scenario, and weaker domestic demand core inflation is likely to moderate for a longer than expected period. Risks to the food inflation forecast are defined as balanced, largely reflecting the uncertainty about international market price dynamics and the harvest conditions in Bulgaria. The balance of risks regarding inflation is graphically shown in the fan chart below. The chart of inflation suggests that with a probability of 60 per cent annual inflation in consumer prices is expected to range between 0.1 per cent and 0.4 per cent at the end of 2020.

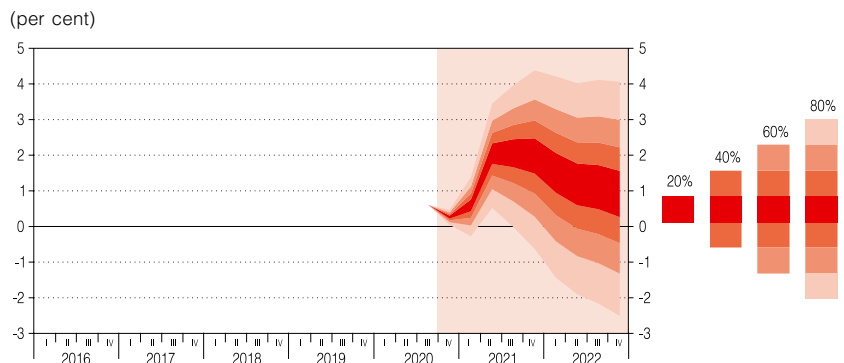
### Fan Chart of the Expected Annual Rate of Change in Real GDP



**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.

## Forecast of Key Macroeconomic Indicators for 2020–2022

(per cent)

	2018	2019	2020	2021	2022
<b>Annual rate of change</b>					
GDP at constant prices	3.1	3.7	-4.4	3.7	3.6
Private consumption	4.4	5.5	1.2	1.9	2.6
Government consumption	5.3	2.0	5.3	5.1	-0.2
Gross fixed capital formation	5.4	4.5	-8.1	5.9	5.7
Exports of goods and services	1.7	3.9	-12.1	7.7	6.7
Imports of goods and services	5.7	5.2	-8.1	6.5	5.0
HICP at end period	2.3	3.1	0.3	2.0	0.9
Core inflation	2.5	1.8	0.5	0.9	1.4
Energy products	1.0	4.1	-13.6	6.3	-0.1
Food	2.4	6.2	3.1	4.5	1.1
Goods and services with administratively controlled prices and tobacco products	2.3	2.0	1.2	0.1	0.0
Employment	-0.1	0.3	-2.6	0.1	0.7
Unit labour costs	6.3	3.5	8.2	2.4	2.2
Labour productivity	3.2	3.3	-2.2	4.1	2.7
Unemployment rate (share of labour force)	5.3	4.3	5.4	5.3	4.8
Claims on the non-government sector	8.9	9.7	4.7	3.2	4.2
Claims on corporations*	6.4	6.6	2.9	1.4	2.7
Claims on households	11.2	9.5	6.8	5.1	5.8
Deposits of the non-government sector	7.3	9.7	9.2	8.0	7.2
<b>Share of GDP</b>					
Balance of payments current account	1.0	3.0	0.5	2.6	3.3
Trade balance	-4.8	-4.7	-2.5	-2.6	-2.3
Services, net	7.4	8.0	4.2	5.1	5.6
Primary income, net	-4.8	-3.1	-2.4	-2.2	-2.9
Secondary income, net	3.2	2.9	1.3	2.4	2.9
<b>Annual rate of change</b>					
External assumptions					
External demand	3.6	1.8	-9.7	8.2	5.4
Average annual Brent oil price (in USD)**	30.7	-9.9	-33.9	15.5	-1.0
Average annual price of non-energy products (in USD)**	4.1	-3.7	3.6	8.4	0.4
Brent oil price at the end of period (in USD)**	9.6	-7.0	-28.9	11.9	-0.7
Prices of non-energy products at the end of period (in USD)**	-1.1	0.6	12.5	1.3	1.2

\* Data refer to non-financial corporations.

\*\* Reporting data for 2020.

Source: the BNB.

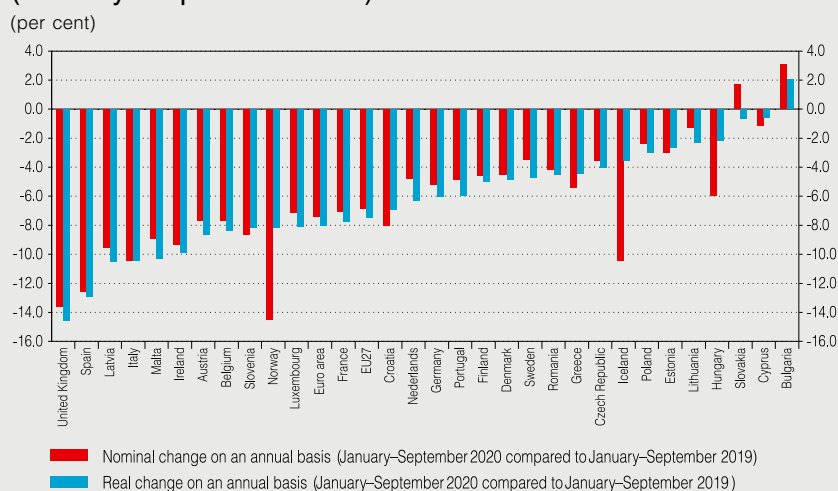
# DYNAMICS OF PRIVATE CONSUMPTION IN BULGARIA BETWEEN JANUARY AND SEPTEMBER 2020

According to NSI data, private consumption in Bulgaria in the first nine months of 2020 increased by 2.0 per cent in real terms compared with the same period of 2019. The resilient dynamics of private consumption given the negative shock from the spread of the COVID-19 pandemic and containment measures related to it is the main factor for the upward revision (lower decline in real GDP) in the forecast for economic activity in Bulgaria in 2020 compared with the September 2020 and June 2020 projections.<sup>6</sup> The purpose of this short analysis is to present the extent to which the dynamics of private consumption could be explained by the effects of factors related to the stringency of anti-epidemic measures, consumer sentiment, the amount of fiscal support for the economy and the change in employment and household income. The analysis suggests that the positive dynamics of private consumption in Bulgaria in the first nine months of 2020 could not be fully explained by the above factors. In addition, the analysis of the dynamics of high frequency indicators implies a decline in household consumption over the period. It is likely that the resilience of private consumption in Bulgaria in the first nine months is due to the specificities of the methodology used for compilation of statistics, rather than to country's economic developments.

## Dynamics of Private Consumption in the EU Member States in the First Nine Months of 2020

NSI data on private consumption in Bulgaria in the first three quarters of 2020 show a significant resilience to the negative shock from the spread of the COVID-19 pandemic and containment measures. However, such resilience is not observed in the other European countries. During the period January–September 2020, Bulgaria was the only country in the European Union (EU), where private consumption increased in real terms (by 2.0 per cent) compared to the same period of 2019, while in the EU and the euro area this component declined by 7.4 per cent and 8.0 per cent respectively. The growth of private consumption in Bulgaria in the first nine months was even higher in nominal terms (3.0 per cent), with only one more EU Member State (Slovakia) posting

**Chart 1. Annual Rate of Change in Private Consumption (January–September 2020)**



Source: Eurostat, own calculations.

<sup>6</sup> Private consumption accounts for about 59 per cent of nominal GDP for 2019 by final consumption expenditure component and therefore any change in the expected dynamics of this component leads to a substantial revision of the economic activity forecast in Bulgaria.



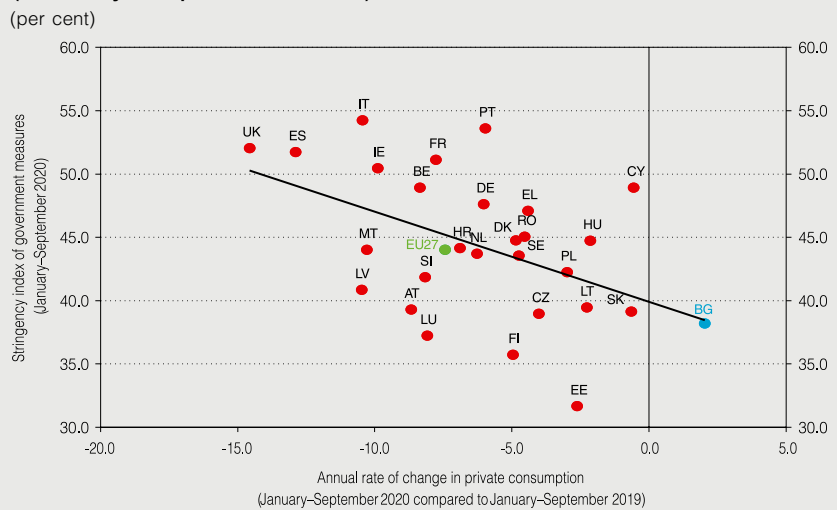
a positive annual change in household final consumption expenditure at current prices.

From January to September 2020 household final consumption expenditure in the EU was more negatively affected in countries where more stringent anti-epidemic measures against the spread of COVID-19 were introduced. In Bulgaria, the stringency of anti-epidemic measures in the period January–September 2020 was lower than the EU average but was comparable with that in other countries such as Austria, the Czech Republic, Lithuania and Slovakia. Unlike Bulgaria, these countries posted an annual decline in real private consumption ranging from -0.6 per cent to -8.7 per cent in the period under review.

The change in consumer confidence indicator also did not correspond to the more resilient dynamics of private consumption in Bulgaria compared to the other EU Member States in the first nine months of 2020 as the deviation of the consumer confidence indicator in Bulgaria from its long-term average was close to the average for the euro area and the EU.

In response to the pandemic all EU Member States introduced discretionary fiscal measures to support most vulnerable households and firms and preserve employment. In Bulgaria, fiscal stimuli announced as of October 2020 amounted slightly under 4 per cent of GDP<sup>7</sup>, which is below the average level for EU Member States. At the same time, Bulgaria reported a lower decline on an annual basis in hours worked per person by 4.9 per cent compared to the EU average (decline by 6.9 per cent) in the first nine months

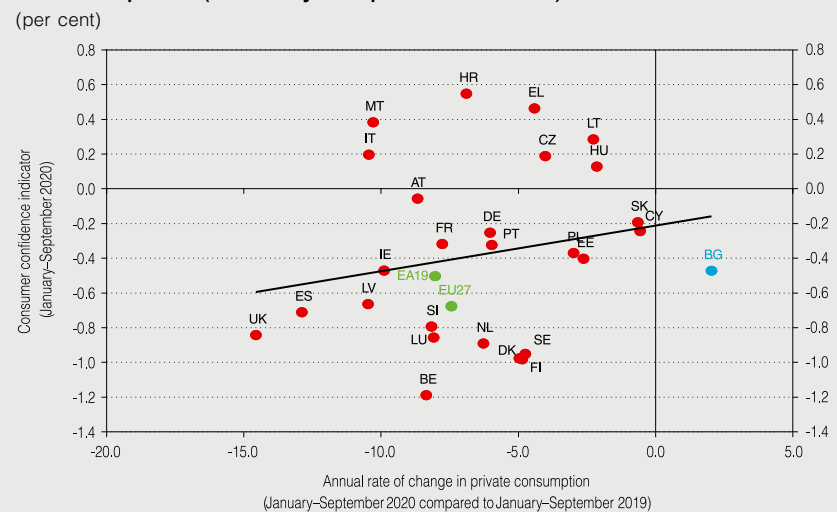
**Chart 2. Stringency of COVID-19 Containment Measures and Dynamics of Real Private Consumption (January–September 2020)**



**Notes:** Higher values of the stringency indicator of COVID-19 containment measures point to a more restrictive measures and *vice versa*; the linear regression relationship between the variables in both scales for the review period is presented by a line in the chart.

**Sources:** Eurostat, own calculations, Hale, Thomas, Sam Webster, Anna Petherick, Toby Phillips, and Beatriz Kira (2020). Oxford COVID-19 Government Response Tracker.

**Chart 3. Consumer Confidence and Dynamics of Real Private Consumption (January–September 2020)**



**Note:** Consumer confidence indicator is standardised; the linear regression relationship between the variables in both scales for the review period is presented by a line in the chart.

**Sources:** Eurostat, own calculations

<sup>7</sup> Discretionary measures are calculated as a share of GDP for 2019.

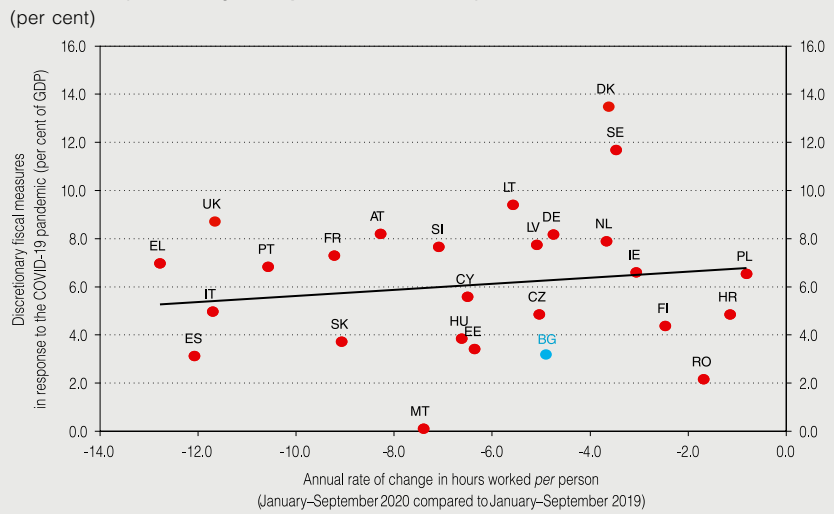
of 2020, which, probably, could be explained by less restrictive anti-epidemic measures and firms' policy of employee recruitment and lay-offs.

Despite the relatively low decline in worked hours, Bulgaria is the only country in the EU, where an opposite change in this indicator and real private consumption is observed. Given that hours worked declined at a rate similar to that in Bulgaria, the annual decline in private consumption in real terms registered in other EU Member States in this period ranges from -2.3 per cent (Lithuania) to -10.5 per cent (Latvia).

A factor, which may have contributed to the more favourable dynamics of household disposable income in Bulgaria and respectively private consumption compared to most EU Member States, is the increase in the compensation per employee over the January–September 2020 period by 5.4 per cent on an annual basis (compared to a decline of -1.2 per cent in the euro area and 0.9 per cent in the EU). Bulgaria's reported growth is the second highest in the EU, behind Lithuania. Concurrently, in Latvia and Lithuania while hours worked declined and compensation per employee increased at a rate similar to that in Bulgaria, private consumption fell by -2.3 and -10.5 per cent respectively compared to January–September 2019.

Based on BNB calculations the reported increase in the compensation *per* employee of 5.4 per cent on an annual basis in Bulgaria between January and September 2020 was not sufficient to offset the pandemic's negative effects on consumers' financial position, with household real

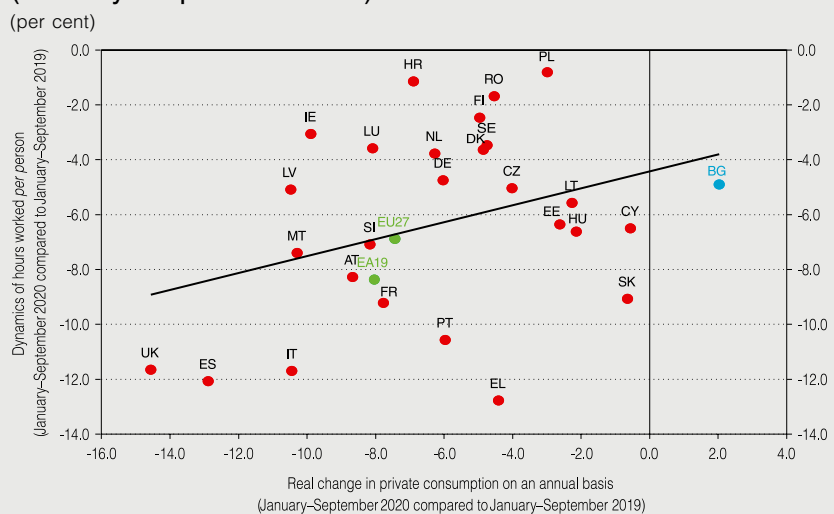
**Chart 4. Discretionary Fiscal Expenditure in Response to the COVID-19 Pandemic and Annual Rate of Change in Hours Worked (January–September 2020)**



**Notes:** Discretionary measures of each country are calculated as a share of GDP for 2019 due to the high uncertainty surrounding the economic activity in 2020; the linear regression relationship between the variables in both scales for the review period is presented by a line in the chart.

**Sources:** Eurostat; IMF database of Country Fiscal Measures in Response to the COVID-19 Pandemic (October 2020), own calculations.

**Chart 5. Dynamics of Private Consumption and Hours Worked (January–September 2020)**

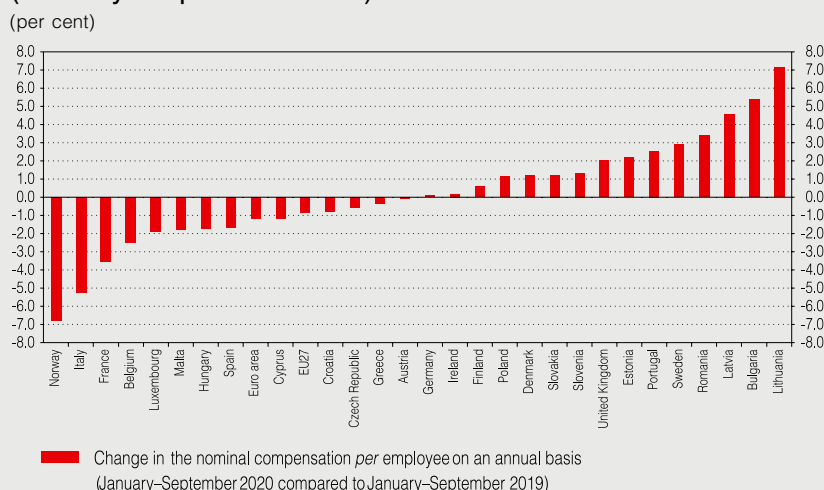


**Note:** The linear regression relationship between the variables in both scales for the review period is presented by a line in the chart.

**Sources:** Eurostat, own calculations.

disposable incomes<sup>8</sup> falling by 1.8 per cent from January to September 2019. The private moratorium on loan repayments allows households to maintain higher consumption rate than that assumed on the basis of macroeconomic factors, as it temporarily defers loan repayments and leaves the households with more free resources for consumption. However, this factor is not specific for Bulgaria, as private and/or public moratoria have also been imposed in the other EU Member States<sup>9</sup>. At the same time, an increase in household savings rate was observed in Bulgaria<sup>10</sup> in the review period, which is also a prerequisite for a decline in consumption on an annual basis.

**Chart 6. Change in Compensation per Employee (January–September 2020)**

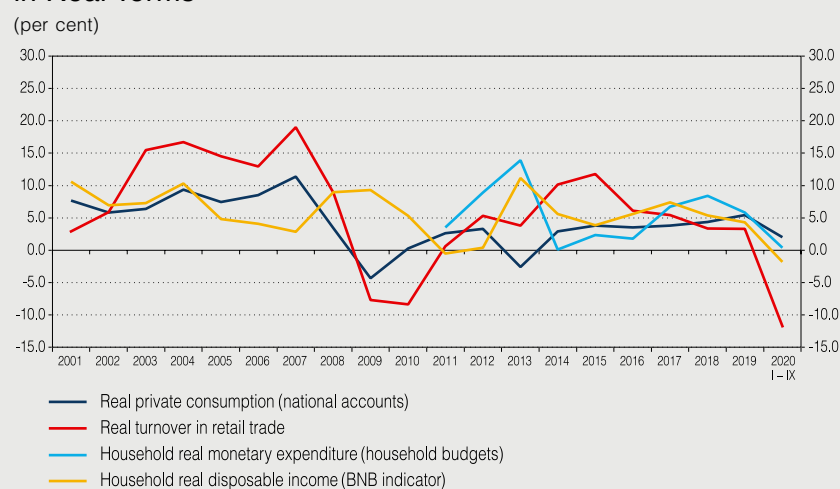


Sources: the NSI, own calculations.

## Dynamics of Private Consumption in Bulgaria and Estimated Historical Correlations to Selected Indicators

Private consumption resilience (according to NSI national accounts data) to the negative shock from the spread of the COVID-19 pandemic and containment measures in the first nine months of 2020 may be studied in the light of high frequency monthly and weekly indicators that are used for short-term forecasting of consumer expenditure. Such indicators are, for example, the turnover indices of sector retail trade, excluding the trade of motor vehicles and motorcycles

**Chart 7. Annual Rate of Change in High Frequency Indicators Related to Final Household Consumption Expenditure in Real Terms**



Sources: the NSI, the BNB, own calculations.

<sup>8</sup> Household real disposable income is calculated by deflating household nominal disposable income with the private consumption deflator. Household nominal disposable income is constructed by the BNB in two steps. The first step includes the calculation of gross disposable income as a sum of the following components 1) wage bill adjusted for the employed to employees ratio; 2) income from employment of Bulgarian residents working temporarily abroad (net); 3) remittances to households in Bulgaria (mainly Bulgarian emigrants); 4) social payments from government to households. The second step includes the decrease in gross disposable income by the amount of 1) social contributions due by employees, and 2) personal income tax.

<sup>9</sup> See the European Banking Authority Report of December 2020 on the use of moratoria across the EU banking sector: <https://www.eba.europa.eu/banks-report-significant-use-covid-19-moratoria-and-public-guarantees>.

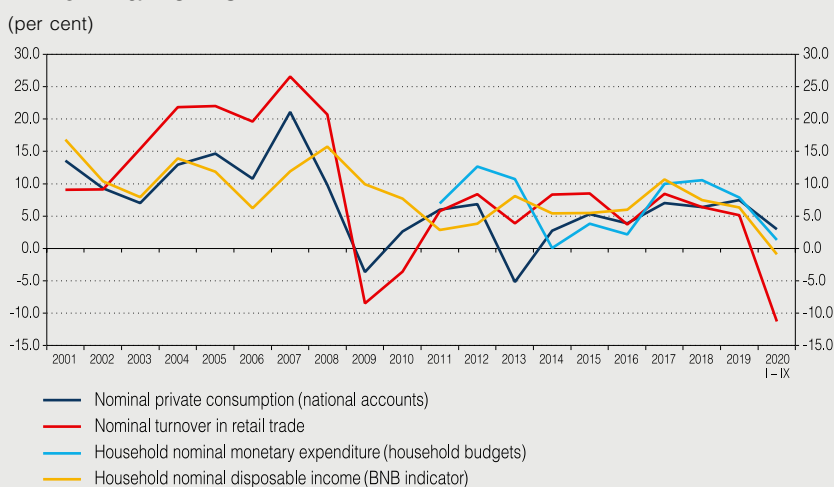
<sup>10</sup> According to the NSI household budget survey average savings rate per household member came to 16.1 per cent in the first nine months of 2020 compared to 8.7 per cent in 2019. Household savings are measured by the difference between total nominal income and total nominal expenditure average *per* household member under the same survey. Household income, to which savings have been compared, is calculated by deducting from total household nominal income (according to the NSI household budget survey), the expenditure for taxes, social contributions and regular transfers to other households. The obtained household savings to income ratio is seasonally adjusted by the BNB.

and the nominal amount of card transactions via POS and ATM terminals.<sup>11</sup> In the second and third quarters of 2020, these high frequency indicators indicate a significantly more subdued dynamics of private consumption compared to that registered according to NSI national accounts.

Charts 7 and 8 compare the dynamics of private consumption in the period after 2001 with that of retail trade turnover indices, the disposable income indicator constructed by the BNB, and the average expenditure *per* household member according to the NSI household budget survey. Data give indications of significantly higher resilience of private consumption according to national accounts compared to the alternative indicators both in real and nominal terms. Almost all indicators of household expenditure show a strong decline on an annual basis in the first nine months of 2020. Between January and September 2020 only the average expenditure *per* household member increased in real and nominal terms on an annual basis according to the quarterly NSI household budget survey, but the growth is lower than that of private consumption according to NSI national accounts. According to Borica AD data the nominal value of card payments decreased by 7.1 per cent in the first nine months of 2020.<sup>12</sup>

Correlations estimated based on historical series also imply that during the same period there is a mismatch in the dynamics of private consumption according to NSI national accounts and alternative high frequency indicators of household consumption, reflecting higher than expected household consumption according to NSI national accounts compared to the high frequency indicators.

**Chart 8. Annual Rate of Change in High Frequency Indicators Related to Final Household Consumption Expenditure in Nominal Terms**



**Table 1. Historical Correlations between Private Consumption and Selected Indicators**

	Annual Change (January–September 2020 compared to January–September 2019)	Correlation of Real Private Consumption with Specific Series
Household real disposable income	-1.8	0.03
Real retail trade volume	-11.7	0.59
Hours worked <i>per</i> person	-4.9	0.59
Employment	-2.4	0.50
Real volume of card payments	-8.1	0.11
Household real monetary expenditure	0.4	-0.18
Real private consumption	2.0	1.00

<sup>11</sup> BORICA AD non-public data are used.

<sup>12</sup> Including all POS and ATM transactions, for which a payment card managed by BORICA AD has been used. Transactions refer both to the territory of Bulgaria and abroad. The indicator is calculated in million levs at current prices.

	Annual Change (January–September 2020 compared to January–September 2019)	Correlation of Real Private Consumption with Specific Series
Household nominal disposable income	-0.8	0.39
Nominal retail trade volume	-11.2	0.71
Hours worked <i>per person</i>	-4.9	0.57
Employment	-2.4	0.50
Nominal volume of card payments	-7.1	0.10
Household nominal monetary expenditure	1.4	0.19
Nominal private consumption	3.0	1.00

**Notes:** The private consumption deflator from NSI national account data is used to convert household monetary expenditure, card payments volume and household disposable income from nominal into real terms.

The correlation is calculated on the basis of annual growth by quarter of non-seasonally adjusted series for the period between the first quarter of 2001 and the third quarter of 2020, excluding household monetary expenditure series (calculated for the period between the first quarter of 2011 and the third quarter of 2020) and the series for nominal volume of card payments (calculated for the period between the first quarter of 2012 and the third quarter of 2020).

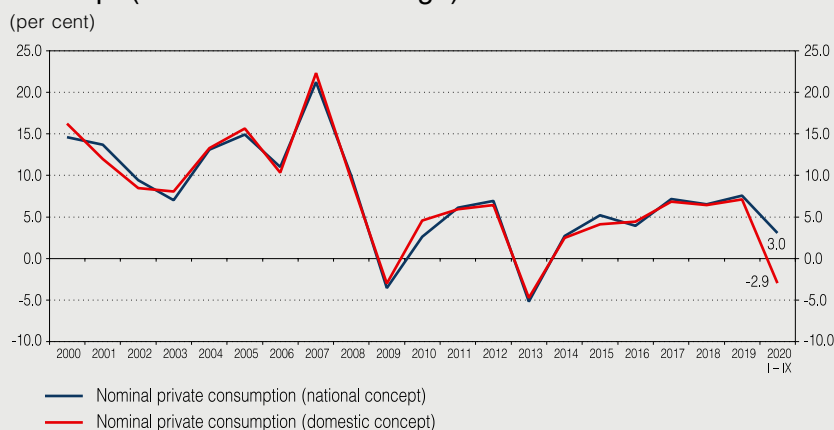
**Sources:** Eurostat, the BNB, the NSI, own calculations.

It is likely that methodological specificities also contributed to the resilience of private consumption in Bulgaria in the first nine months of 2020. Private consumption statistics are compiled using two alternative concepts: domestic and national. The domestic concept of private consumption includes the expenditure of resident or non-resident households in Bulgaria, while private consumption national concept includes the consumption of residents abroad, but excludes the consumption of non-residents in Bulgaria.<sup>13</sup> Private consumption according to the national concept is used as a GDP sub-component.<sup>14</sup>

Historically, the two concepts lead to a very similar annual growth of private consumption, but the data for the first nine months of 2020 show a significant difference in consumption dynamics according to the two concepts.

While according to the national concept private consumption used for calculating GDP remained resilient to the pandemic shock growing on an annual basis both in nominal and real terms, private consumption, according to the domestic concept, reported a decline on annual basis both in nominal terms (-2.9 per cent) and in real terms (-4.1 per cent) in line with the dynamics of most alternative indicators for measuring consumer

**Chart 9. Nominal Private Consumption: National to Domestic Concept (Annual Rate of Change)**



**Notes:** The domestic concept of private consumption includes the expenditure of resident or non-resident households in Bulgaria, while private consumption national concept includes the consumption of residents abroad and excludes the consumption of non-residents in Bulgaria. Private consumption according to the national concept is used as a GDP sub-component.

**Sources:** the NSI, own calculations.

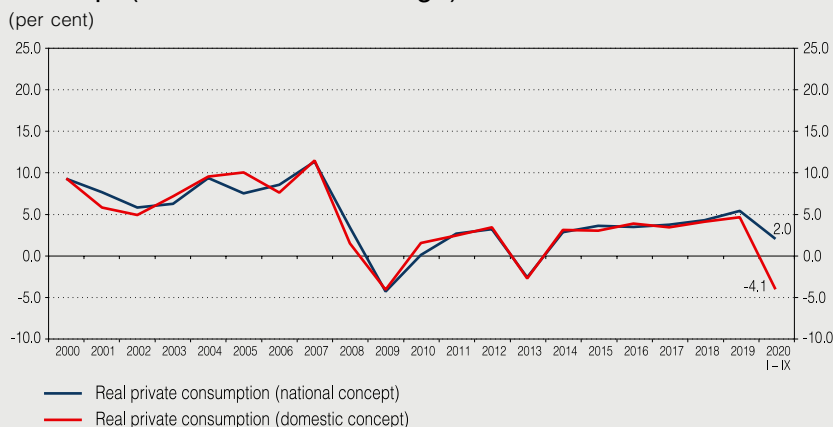
<sup>13</sup> For details, see the methodology for compiling data: [https://www.nsi.bg/sites/default/files/files/metadata/GDP\\_1.2.3\\_Methodology.pdf](https://www.nsi.bg/sites/default/files/files/metadata/GDP_1.2.3_Methodology.pdf)

<sup>14</sup> The implementation of the national concept does not change GDP level, as it has an impact both on estimates for final consumption and on goods and services foreign trade balance. However, the breakdown of expenditure by resident and non-resident household in Bulgaria is important for the forecasting process, as it sets the baseline of private consumption and net exports of services related to travel.

expenditure in the review period.

The analysis of household dynamics in Bulgaria between January and September 2020 shows that the growth of private consumption reported by the NSI according to the national accounts does not correspond to the developments of most EU Member States<sup>15</sup> over the review period and differs from historical correlation to alternative indicators for households' income and expenditure. Therefore, it may be assumed that private consumption resilience observed in Bulgaria in the first nine months of 2020 to the negative shock from the spread of the COVID-19 pandemic and containment measures may reflect methodological specificities in preparing national account data. This in turn introduces a high degree of uncertainty to the forecast of this GDP component, as its dynamics could not be fully explained by economic indicator developments and the macroeconomic environment in Bulgaria.

**Chart 10. Real Private Consumption: National to Domestic Concept (Annual Rate of Change)**



**Notes:** The domestic concept of private consumption consists of the expenses of resident or non-resident households in Bulgaria, while private consumption national concept includes the consumption of residents abroad and excludes the consumption of non-residents in Bulgaria. Private consumption according to the national concept is used as a GDP sub-component.

**Sources:** the NSI, own calculations.

<sup>15</sup> Even after taking into account the effect of factors, such as the stringency of anti-epidemic containment measures, consumer sentiment, the amount of fiscal support for the economy and the change in employment and household income.

ISSN 2738–7666

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