BULGARIAN NATIONAL BANK

ECONOMIC REVIEW

1/2019

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The BNB quarterly Economic Review presents information and analysis of balance of payments dynamics, monetary and credit aggregates, their link with the development of the real economy, and their bearing on price stability. Processes and trends in the external environment are also analysed since the Bulgarian economy is directly influenced by them. This publication contains also quantitative assessments of the development in major macroeconomic indicators in the short run: inflation, economic growth, exports, imports, trade balance and BoP current account, foreign direct investment, monetary and credit aggregate dynamics.

The Economic Review, issue 1/2019 was presented to the BNB Governing Council at its 24 April 2019 meeting. It employs statistical data published up to 1 April 2019.

The estimates and projections published in this issue should not be regarded as advice or recommendation. Exclusively the information user is liable for any consequences thereof.

The Economic Review is available at the BNB website, Research and Publications menu, periodical Publications sub-menu. Please address notes, comments and suggestions to the BNB Economic Research and Projections Directorate at 1000 Sofia, 1, Knyaz Alexander I Square.

1, Knyaz Alexander I Square
1000 Sofia, Bulgaria
Tel.: (+359 2) 9145 1351, 9145 1209, 9145 1806

Website: www.bnb.bg

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Abbreviations

ABSPP	Asset-Backed Securities Purchase Programme
APP	Asset Purchase Programme
APRC	Annual percentage rate of charge
BIR	Base interest rate
BOP	Balance of Payments
BTC	Bulgarian Telecommunications Company
b.p.	basis points
CBPP3	Covered Bond Purchase Programme
CEECs	Central and East European countries
CEFTA	Central European Free Trade Association
CFP	Consolidated Fiscal Programme
CIF	Cost, insurance, freight
CNY	Chinese Yuan
CPI	Consumer Price Index
DXY	an index measuring the exchange rate of the US dollar against the basket of six major currencies
EA	Employment Agency
EC	European Commission
ECB	European Central Bank
EIB	European Investment Bank
EMBI	Emerging Markets Bond Index
EONIA	Euro OverNight Index Average
EU	European Union
EURIBOR	Euro Interbank Offered Rate
EWRC	Energy and Water Regulatory Commission
FDI	Foreign Direct Investment
FOB	Free on Board
FRS	Federal Reserve System
GDP	Gross Domestic Product
GFMS	Gold Fields Mineral Services
HICP	Harmonized Index of Consumer Prices
HRW	Hard Red Wheat
HUF	Hungarian forint
IEA	International Energy Agency
IMF	International Monetary Fund
ISM	Institute for Supply Management
LEONIA	LEv OverNight Index Average
LIBOR	London Interbank Offered Rate
M1	narrow money
M2	M1 and quasi-money
M3	broad money
MF	Ministry of Finance
MFIs	Monetary Financial Institutions
mt	metric tons
NPISHs	Non-profit institutions serving households
NSI	National Statistical Institute
OPEC	Organization of Petroleum Exporting Countries
OTC	over-the-counter
PBoC	People's Bank of China
PMI	Purchasing Managers' Index
p.p.	percentage points
PPP	Purchasing Power Parity
PSPP	Public Sector Purchase Programme
RON	Romanian new leu
SITC	Standard International Trade Classification
WTI	West Texas Intermediate

Summary

The downward trend in global PMIs was retained in the beginning of 2019 and continued signalling a slowdown in global economic growth. The slowdown was more pronounced in manufacturing, resulting in world trade moderation. Downward dynamics is likely to be linked to the increased global uncertainty stemming from international trade disputes, unfavourable financial market developments in some emerging economies, slowing economic growth in China and lack of clarity over Brexit. Global inflation rates slowed down in early 2019, reflecting lower oil and some food prices.

In the first quarter of 2019 the ECB Governing Council left unchanged euro area interest rate levels, as expected, while changing the forward guidance on reference rates which are expected to remain at their current levels at least until the end of 2019. New series of Targeted Longer-term Refinancing Operations (TLTRO III) was announced. The US Federal Open Market Committee retained its target range for the federal funds rate at 2.25–2.50 per cent. Information on decreased expectations of FOMC members regarding the level of the benchmark interest rate in 2019–2021 and the changed plan for US Federal Reserve balance sheet normalisation signalled a much more prudent approach regarding the monetary policy.

In line with global situation deterioration, external demand for Bulgarian goods and services is expected to decrease its growth rate in the second and third quarters of 2019. Factors driving these expectations relate mainly to the economic activity slowdown in Turkey, worsening prospects to the economic growth in some euro area countries, which are important trading partners of Bulgaria, the increased uncertainty stemming from ambiguities over Brexit and the negative effects on the world trade due to ongoing international trade conflicts.

The upward year-on-year trend in the overall current and capital account surplus continued in January 2019, reflecting largely declining net primary income deficit. In the second and third quarters of 2019 the positive current account balance is expected to decrease as a share of GDP on an annual basis compared to the end of 2018, resulting mainly from an expected higher deficit on net primary income and, to a lesser extent, an increase in trade balance deficit.

In the context of rising labour income and corporate profits amid a heightened uncertainty stemming from the external environment, and the lack of a sufficiently safe alternative to bank savings, in the first two months of 2019 broad money increased its annual rate of growth. The favourable macroeconomic environment, persistently high levels of consumer confidence and comparatively low lending rates contributed to the retention of the upward trend in total loans to non-financial corporations and households.

In the second and third quarters of 2019 non-government sector's deposits are expected to accelerate further at comparatively high rates Projections of holding lending rates at the achieved low levels will support demand for loans. Factors which will limit credit growth are associated with an expected lower growth rate of domestic demand, continued government repayments on National Programme for Energy Efficiency of Multi-family Residential Buildings loans and decreased volumes of new loans under this programme along with the exhausted one-off effect of a new reporting unit included in the scope of monetary statistics over the second quarter. Reflecting the simultaneous effect of above factors, credit to non-financial corporations and households is expected to increase further, though at weaker rates compared with current ones.

In 2018 Bulgaria's real GDP growth stood at 3.1 per cent, remaining lower than that in 2017 as a result of the increased negative contribution of net exports. In the fourth quarter of 2018, quarter-on-quarter real GDP growth accelerated to 0.8 per cent with gross fixed capital formation, net exports and government consumption contributing positively, whereas the contribution of private consumption was negative.

In the fourth quarter of 2018 the seasonally adjusted number of employed decreased for the total economy mainly due to agriculture and industry. Concurrently, the unemployment rate further declined reaching 4.8 per cent, while labour force decreased from the previous quarter. The nominal compensation per employee rose on average by 1.7 per cent on a quarterly basis.

Short-term economic indicators in the beginning of 2019 give mostly positive signals about the economic development. In the second and third quarters of 2019 real GDP is expected to grow further quarter on quarter, with domestic demand contributing most to this effect. This will mainly reflect the increase in private consumption and to a lesser extent in government investment. The external environment will continue to be a source of uncertainty dampening investment activity of corporations and limiting export growth. At the same time, the increase in imports in line with the projected growth of domestic demand will boost the negative contribution of net exports to GDP growth from the end of 2018.

Over the first two months of 2019 annual inflation slightly accelerated compared to the end of 2018 reaching 2.4 per cent in February. Core HICP components and food had a major positive contribution to inflation. Concurrently, in the context of lower international oil prices energy products and transport services contributed negatively. In January and February 2019 goods and services with administratively controlled prices and tobacco products continued contributing positively to annual inflation.

In the second and third quarters of 2019 the inflation rate is expected to slow down compared to that reported in the first two months of the year. The increased negative contribution of energy products in line with the expected downward dynamics in international oil prices in euro and the exhaustion of base effects in services will be the decisive factors for this trend.

1. External environment

In the first two months of 2019 the downward trend in global PMIs was retained and continued signalling a slowdown in global economic growth. Manufacturing PMI experienced a more substantial slowdown than that of the services sector. World trade also declined on an annual basis as of December 2018. Global annual inflation rates slowed down in early 2019, reflecting lower oil and some food prices.

As expected, the ECB Governing Council left unchanged euro area interest rate levels over the first quarter. The forward guidance on reference rates was changed and the ECB Governing Council expected interest rates to remain at their current levels at least until the end of 2019. New series of Targeted Longer-term Refinancing Operations (TLTRO III) would be launched in September 2019. At its first quarter's meetings, the US Federal Open Market Committee retained its target range for the federal funds rate at 2.25–2.50 per cent. Information on decreased expectations of FOMC members regarding the level of the benchmark interest rate in 2019–2021 and the changed plan for US Federal Reserve balance sheet normalisation signalled a much more prudent approach regarding the monetary policy.

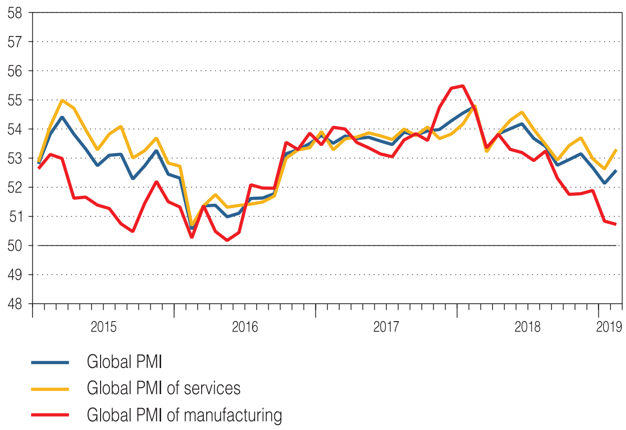
In line with global situation deterioration, external demand for Bulgarian goods and services is expected to decrease its growth rate in the second and third quarters of 2019. Factors driving these expectations relate mainly to the economic activity slowdown in Turkey, worsening prospects to the economic growth in some euro area countries, which are important trading partners of Bulgaria, the increased uncertainty stemming from ambiguities over Brexit and the negative effects on the world trade due to ongoing international trade conflicts.

Current Business Situation

On average for the first two months of 2019 the global economic indicator (global PMI) decreased below its average value for the last quarter of 2018 and continued signalling a moderation in global economic activity growth. The downward dynamics of the overall index by sectors was mainly driven by the drop in PMI manufacturing sector and to a lesser degree by that in the services sector. Across regions, the decrease in PMI compared to the end of 2018 was higher in emerging market economies including China, than in developed economies. The downward dynamics is likely to be linked to the increased global uncertainty stemming from international trade disputes, unfavourable financial market processes in some emerging economies, slowing economic growth in China and lack of clarity over Brexit.

Industrial production in major Asian emerging market countries slowed down, resulting mainly in substantial moderation in the annual growth rate of world trade volumes[1] by the end of 2018. In January 2019 it recovered somewhat, reflect-

Global PMIs



Source: JP Morgan.

[1] *CPB Netherlands Bureau for Economic Policy Analysis* data as of 25 March 2019.

ing the positive contribution of USA, emerging market economies beyond Asia and the euro area. Concurrently, world trade growth was limited by the decline in foreign trade of some of the largest Asian countries, including China, and of the other developed economies.

In the beginning of 2019 global inflation slightly decreased from the end of 2018, reaching 1.9 per cent in February.[2] This dynamics was driven by the year-on-year decline in oil and some food prices in US dollars[3] in the beginning of the year. Lower inflation was attributable to developed economies, while inflation in developing economies accelerated slightly from the end of 2018.

In line with global situation deterioration, external demand for Bulgarian goods and services is expected to decrease its growth rate in the second and third quarters of 2019. Factors driving these expectations relate mainly to the economic activity slowdown in Turkey, worsening prospects to the economic growth in some euro area countries, which are important trading partners of Bulgaria, the increased uncertainty stemming from ambiguities over Brexit and the negative effects on the world trade due to ongoing international trade conflicts.

Euro Area

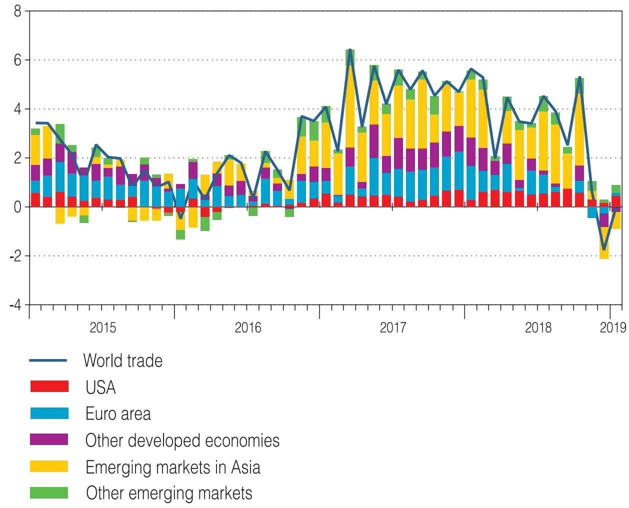
In the fourth quarter of 2018 quarterly growth of euro area real GDP rose to 0.2 per cent against 0.1 per cent in the previous quarter. All major GDP components, excluding inventories, contributed positively to the growth on a quarterly basis. The drop in inventories was an adjustment of their accumulation in the previous quarter due to temporary factors, which affected the euro area car industry[4]. Germany's real GDP remained unchanged quarter on quarter (down by 0.2 per cent in the third quarter of 2018), while Italy's GDP fell by 0.1 per cent for a second consecutive quarter. France and Spain maintained their growth rates, real GDP rose by 0.3 per cent and 0.6 per cent on a quarterly basis.

The downward trend in euro area leading economic indicators, including PMI and EC

[2] Based on the World Bank data as of 29 March 2019.
[3] Hereinafter referred to as the US dollar.
[4] See *Economic Review*, 4/2018.

World Trade

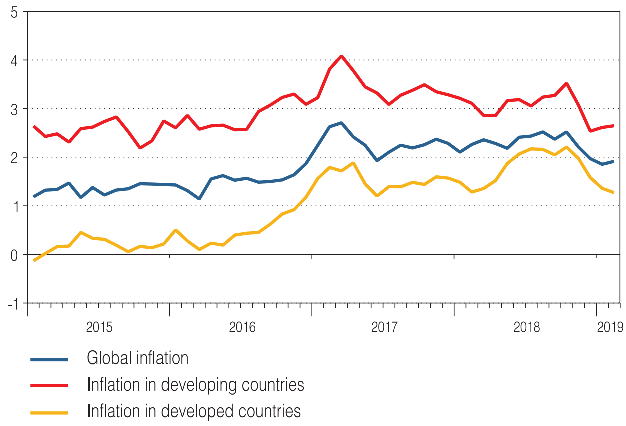
(annual rate of change in volumes, per cent, contribution of individual economies, percentage points)



Source: CPB Netherlands Bureau for Economic Policy Analysis.

Inflation Measured through CPI

(per cent, annual rate of change, seasonally adjusted data)

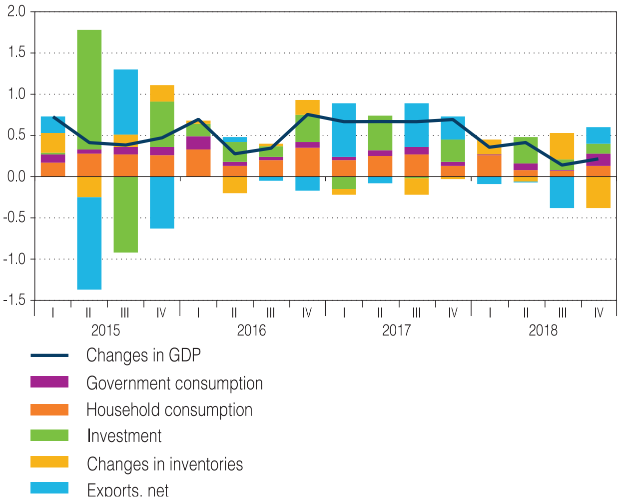


Note: The World Bank measures the change of CPI in individual groups as a weighted average of CPI changes in the countries of the group. Real GDP based on purchasing power parity is used to calculate country weights. Groups include only World Bank Member States classified by the World Bank as developing and developed countries.

Source: the World Bank.

Contribution to the Change in Real GDP in the Euro Area by Component

(per cent; percentage points; quarter-on-quarter)



Source: Eurostat.

indices was sustained over the first quarter of 2019. Overall, it suggest relatively low economic growth rates in the euro area over the first three months of 2019. The sub-index of manufacturing PMI fell below 50 points, indicating a downturn in the economic activity in this sector.

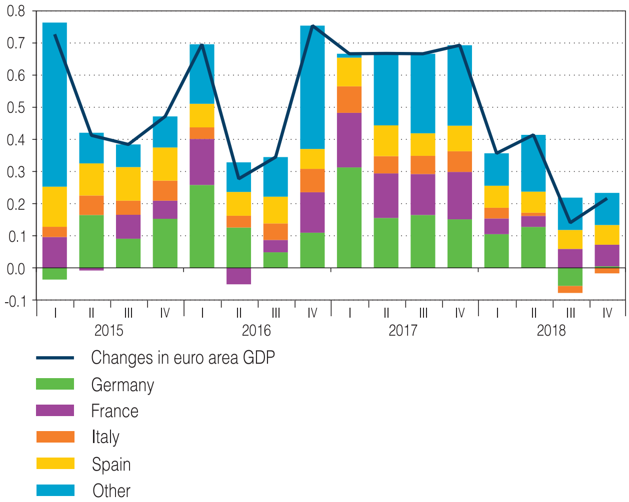
Labour market indicators continued to improve gradually, with unemployment rate in the euro area reaching 7.8 per cent in February, which is the lowest level since October 2008. The indicator of expected unemployment rate over the following 12 months included in the EC consumer confidence index showed a slight improvement in consumer expectations of labour market developments.

HICP inflation in the euro area decelerated in the first quarter of 2019, amounting to 1.4 per cent on average on an annual basis against 1.9 per cent on average for the fourth quarter of 2018. This development reflected mainly the decline in energy product prices.

In March 2019 the ECB revised downwards its forecast for euro area real GDP growth in 2019 and 2020 (by 0.6 and 0.1 percentage points respectively), leaving its growth expectations for 2021 unchanged. According to the ECB there are still risks to a lower than projected growth in the euro area due to continuing uncertainty related to geopolitical factors, possible launch of new protectionist measures in international trade and the vulnerability of some emerging market economies.

Contribution to the Change in Real GDP in the Euro Area by Country

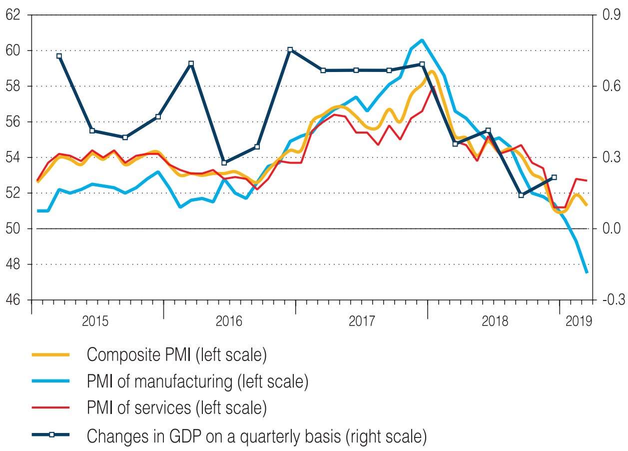
(per cent; percentage points; quarter-on-quarter)



Sources: Eurostat and BNB calculations.

GDP Change and Manufacturing and Services PMIs in the Euro Area

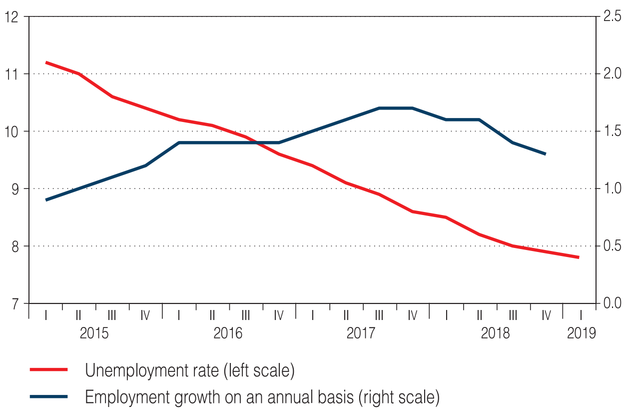
(per cent)



Sources: Eurostat, Markit.

Euro Area Unemployment Rate and Employment Growth

(per cent) (per cent)



Note: The chart on unemployment in the first quarter of 2019 does not include data for March.

Source: Eurostat.

Projections of the Annual Rate of Change of Euro Area Real GDP

(per cent)

Institution	Date of release	2019		2020		2021	
		latest	previous	latest	previous	latest	previous
the ECB	March 2019	1.1	1.7	1.6	1.7	1.5	1.5
EC	February 2019	1.3	1.9	1.6	1.7	-	-

Sources: the ECB, the EC.

The ECB revised downwards its forecasts for euro area inflation in 2019 and the following two years to 1.2 per cent, 1.5 per cent and 1.6 per cent (previous forecast: 1.6 per cent, 1.7 per cent and 1.8 per cent). According to the ECB in 2019 overall inflation in the euro area will decelerate, reaching 1.0 per cent in the last quarter. Core inflation forecasts for the current year and the following two years were also revised downwards. However, its rate is expected to raise in the medium-term, driven by the sustained ECB's accommodative monetary policy, the projected gradual recovery of the economic growth and increasing wage growth.

At its meeting of 7 March 2019 ECB Governing Council on monetary policy made no changes to the interest rates. The forward guidance on reference rates was changed and the ECB Governing Council expected interest rates to remain at their current levels at least until the end of 2019. ECB's management decided to launch in September 2019 a new series of Targeted Longer-Term Refinancing Operations (TLTRO III), which would be carried out quarterly, would end in March 2021 and each operation would be with a maturity of two years. Eurosystem credit operations will continue to be conducted as fixed rate tender procedures with full allotment for as long as necessary, and at least until the end of the bank reserves maintenance period, starting in March 2021.

As of 29 March 2019 the excess liquidity in the euro area banking system rose to EUR 1819.1 billion against EUR 1785.9 billion at the end of December 2018 and the Eurosystem balance sheet figure reached EUR 4696 billion.

The average value of EONIA rate fell slightly to -0.37 per cent for the 2 January to 29 March 2019 period from -0.36 per cent in the fourth quarter of 2018. The trade volume of overnight deposits on the euro area interbank market in the same period came to EUR 2.9 billion

Projections of Euro Area Annual Inflation Rate

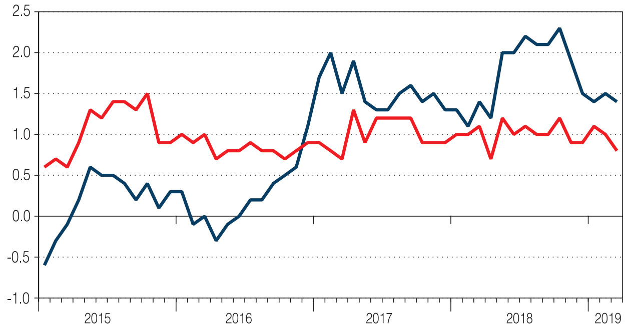
(per cent)

Institution	Date of release	2019		2020		2021	
		latest	previous	latest	previous	latest	previous
the ECB	March 2019	1.2	1.6	1.5	1.7	1.6	1.8
EC	February 2019	1.4	1.8	1.5	1.6	-	-

Sources: the ECB, the EC.

Euro Area Inflation Rate

(per cent, on an annual basis)



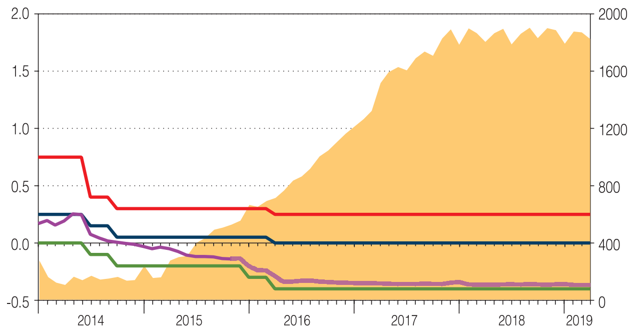
Consumer price inflation

Inflation (excluding price changes in energy, food, alcohol and tobacco products)

Source: Eurostat.

ECB Interest Rates, EONIA and Excess Liquidity in the Euro Area Banking System

(per cent) (EUR billion)



Main refinancing rate (left scale)

EONIA (left scale)

Lending rate (left scale)

Deposit rate (left scale)

Excess liquidity (right scale)

Note: Average EONIA data for the month.

Source: the ECB.

against EUR 2.8 billion for the fourth quarter of 2018. EURIBOR unsecured deposit rates slightly changed. On 29 March 2019 one-month deposit rates were -0.37 per cent against -0.36 per cent by end-December 2018, while six-month and twelve-month deposit rates were -0.23 per cent and -0.11 per cent respectively (against -0.24 per cent and -0.12 per cent by end-December 2018).

United States

In the fourth quarter of 2018 the US real GDP growth moderated on a quarter-on-quarter basis to 0.5 per cent from 0.8 per cent in the third quarter, which was mainly due to the much slower growth in inventories and to a lesser degree to the weaker growth in household consumption and public sector consumption and investment.

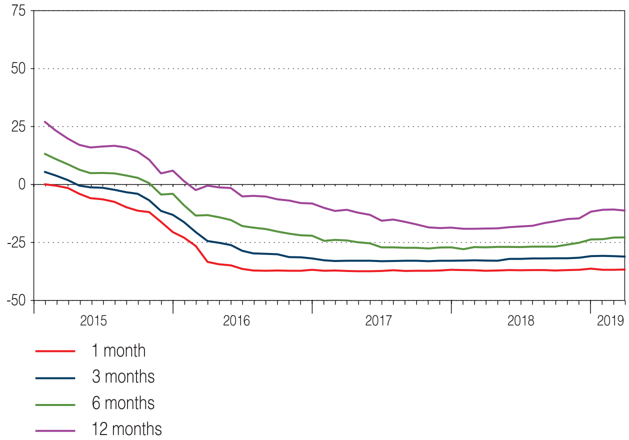
For 2018 as a whole, US real GDP rose by 2.9 per cent from 2.2 per cent in 2017. The significant growth acceleration in 2018 was largely driven by the economic effects of the supportive fiscal policy over the year and the tax reform by the end of 2017, contributing to the increase in business investment and consumption and public sector consumption and investment.

In the first quarter of 2019 the US leading economic indicators showed divergent dynamics. In February the ISM manufacturing PMI went down, while ISM services PMI increased. Both indices remained above the 50 percentage point limit. In January consumer confidence indicators recorded a significant fall as a result of US administration's partial shutdown from 22 December 2018 to 25 January 2019. After US government resumed work consumer confidence indicators went up, however falling again at the end of the period. In the first quarter of 2019 monthly data on US household consumption and retail sales showed similar dynamics to that of consumer confidence indicators, while construction indicators pointed to a cautious increase in the economic activity in the sector as compared to the end of 2018. Overall, end-March data signal a moderation in US GDP growth in the first quarter of 2019.

In the fourth quarter of 2018 and the first two months of 2019 annual inflation slowed down falling below the target rate of 2 per cent, set by the US central bank. In January 2019 the

EURIBOR Dynamics

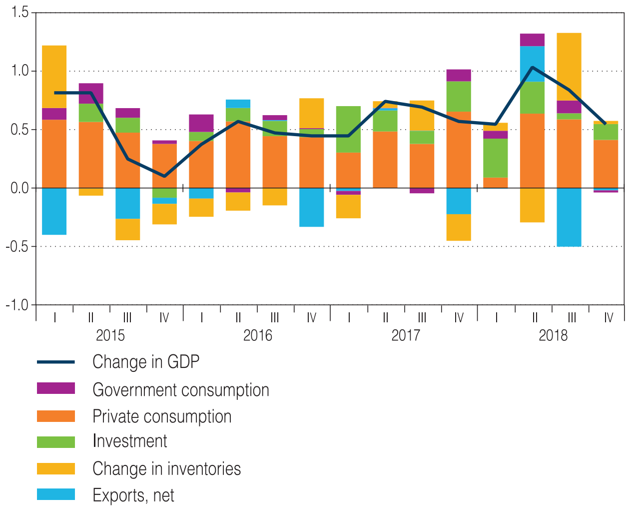
(basis points)



Source: the ECB.

Contribution to US GDP Growth by Component (Quarterly)

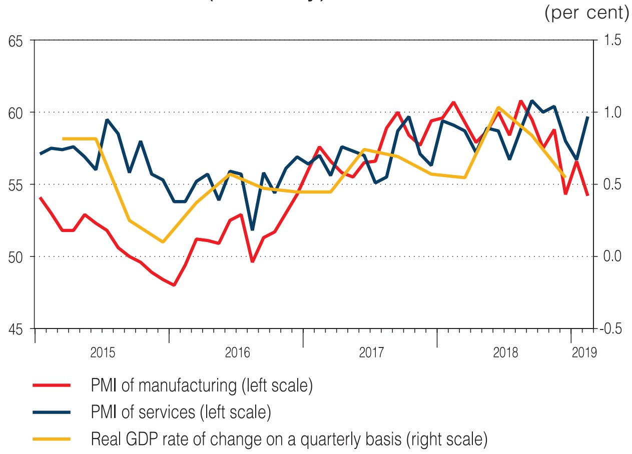
(per cent; percentage points)



Source: Bureau of Economic Analysis.

US Manufacturing and Services ISM-PMIs and GDP Growth (Quarterly)

(per cent)



Sources: Institute for Supply Management, Bureau of Economic Analysis.

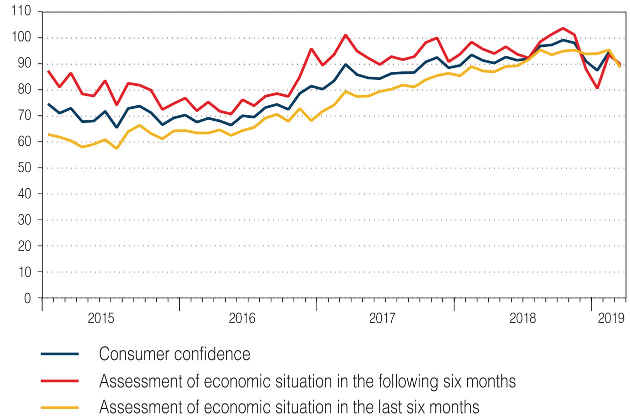
personal consumption expenditure deflator (PCE) dropped on an annual basis to 1.4 per cent against 1.8 per cent in December 2018. Core inflation (excluding food and fuel prices) decreased on an annual basis to 1.8 per cent against 2.0 per cent in the previous month. February CPI data – the other key US inflation indicator – show that the annual inflation rate continued to slow down, reaching 1.5 per cent against 1.6 per cent in January and 1.9 per cent in December 2018. The annual growth rate of the core PCE index (excluding food and energy) slightly declined, coming to 2.1 per cent in February against 2.2 per cent in December 2018. Data for the first quarter of 2019 concerning expectations about the change in consumer prices in one to five year horizon, which are part of the consumer confidence index of the University of Michigan, showed a substantial decrease in short-term inflation expectations and relatively persistent inflation expectations over the long-term.

In the first two months of 2019 the US labour market conditions did not change substantially compared to the last quarter of 2018. The average quarterly number of new employees in the non-farm sector declined from the fourth quarter of 2018. On the other side, in February the US unemployment rate was 3.8 per cent, the same as its average in the third and fourth quarters of the previous year, while the US economically active population rate rose to 63.2 per cent, reaching its peak since September 2013. Current employment data show that US labour market conditions will remain favourable.

At its January and March meetings, the Federal Open Market Committee (FOMC) decided to maintain the current target range for the federal funds rate at 2.25–2.50 per cent. As stated in the press release of the March meeting the US economic development outlook worsened compared with the 2018 fourth quarter forecast. FOMC members' summarised forecasts on economic growth and inflation in 2019 were revised downwards in comparison with those of December 2018. The median of members' individual forecasts shows a decline in the expected level of federal funds rate at the end of 2019, 2020 and 2021 by 50 basis points from the forecasts of December 2018, reflecting expectations to maintain the target rate unchanged in 2019

US Consumer Confidence Indices

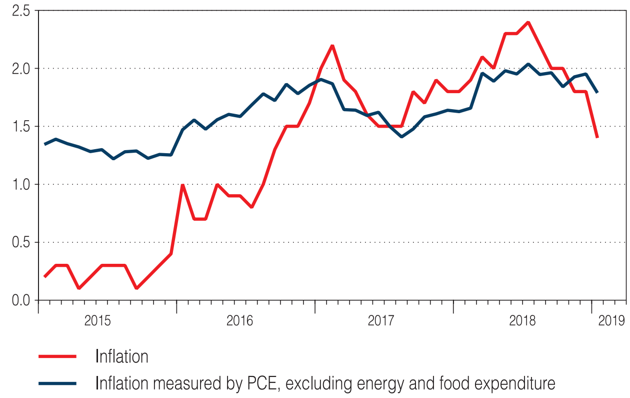
(2000 = 100)



Source: The Conference Board.

US Inflation Rate

(per cent; on an annual basis)

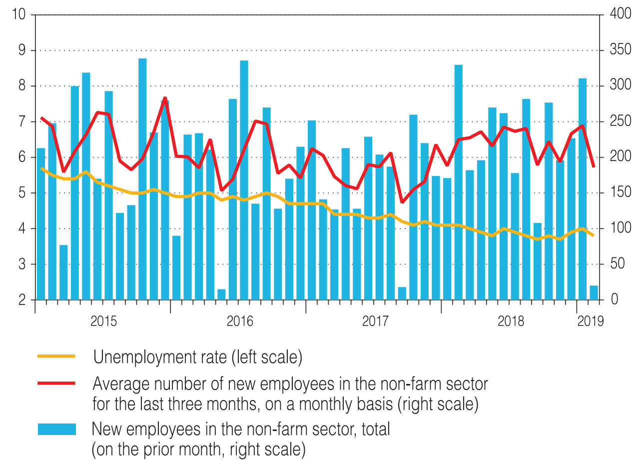


Note: Inflation is measured by the personal consumption expenditure deflator.

Source: Bureau of Economic Analysis.

US Unemployment Rate and Number of New Employees in the US Non-Farm Sector

(per cent) (new employees, thousand)



Source: Bureau of Labour Statistics.

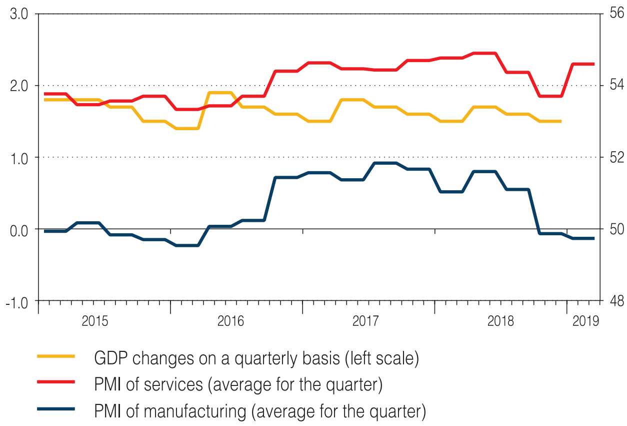
(instead of two rises according to the previous forecast), one rise in 2020 and no rise in 2021 (no change compared to the previous forecast for the two years). The estimate of the long-run equilibrium level of federal funds rate remained at 2.75 per cent. After March FOMC meeting the updated Federal Reserve's balance sheet normalisation plan was published. It provides for a reduction of the Federal Reserve's US government securities portfolio from USD 30 billion to USD 15 billion per month beginning in May 2019, so that the process of normalizing the size of the Federal Reserve's government securities holdings portfolio is concluded at the end of September 2019. Concurrently, the process of reducing the size of Federal Reserve's agency debt and agency mortgage-backed securities portfolio will continue. Beginning in October 2019 principal payments received from securities held will be reinvested in US government securities to a maximum amount of USD 20 billion per month. At the press conference after the meeting, Jerome H. Powell, the Chairman of the Board of Governors of the Federal Reserve System, made it clear that after completion of the balance sheet normalisation programme, the amount of Federal Reserve's securities portfolio at the end of September would reach approximately 17 per cent of GDP or slightly above USD 3.5 trillion.

China

In the first quarter of 2019 the average levels of services and manufacturing PMI in China showed divergent developments: average PMI manufacturing sector declined on average to 49.7 from 49.9 for the fourth quarter of 2018, while services PMI rose to 54.6 from 53.7 in the previous quarter. One of the main factors behind the divergent changes in indices was the seasonal effect of Chinese New Year holidays, when services consumption increases and enterprises suspend operations. The new orders index, a sub-component of manufacturing PMI, also displayed divergent dynamics, with new export orders index declining in the first quarter of 2019 from the previous quarter, while new orders total index increased. Overall, PMIs dynamics in China suggests a continuous slowdown in economic activity in the first quarter. The major risks to the Chinese economy relate possibly to the launch of protectionist measures by US with

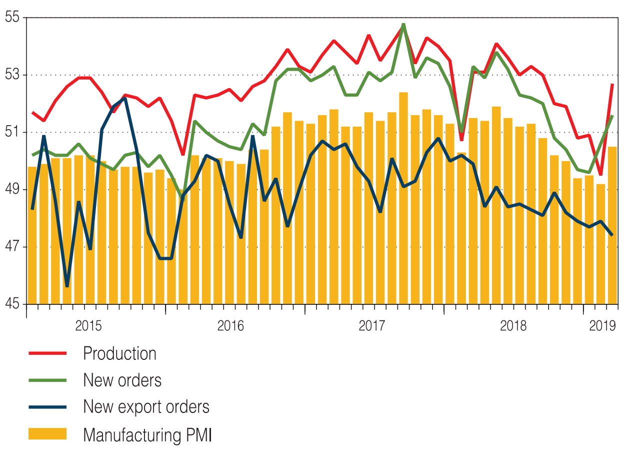
Manufacturing and Services PMIs and GDP Growth (Quarterly) in China

(per cent)



Sources: National Bureau of Statistics of China and China Federation of Logistics and Purchasing.

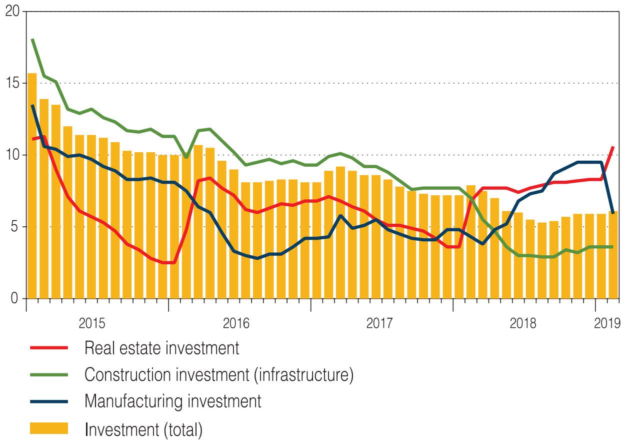
Manufacturing PMI in China and Major Components



Source: China Federation of Logistics and Purchasing.

Fixed Capital Investment (Total) and in Selected Sectors in China

(per cent; on an annual basis)



Source: National Bureau of Statistics of China.

respect to products imported from China and a possible further slowdown in domestic demand.

Over the first quarter of 2019 Chinese CPI dynamics was largely driven by the moderating rise in food and fuel prices. In February annual inflation rate decelerated to 1.5 per cent compared to 2.2 per cent on average in the last quarter of 2018. Producer price rises slowed down significantly in the beginning of 2019 with February inflation rate measured by producer price index reaching 0.1 per cent on an annual basis. The moderation in annual inflation was mainly driven by lower petroleum product and ferrous metal prices. An additional factor behind the decline in the indicator were the weakened measures to limit the overproduction of certain raw materials.

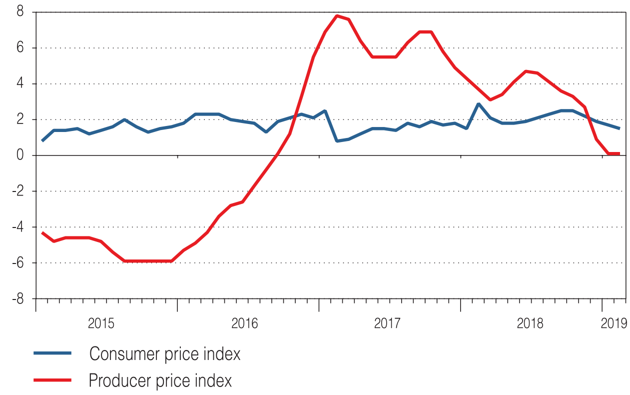
Over the first quarter of 2019 the annual growth in house prices in China continued to accelerate due to house price rises in smaller towns and to a lesser extent in larger cities.

After the People's Bank of China cut the rate of its minimum required reserves of the largest banks by 100 basis points to 13.5 per cent in the beginning of January 2019, no further measures were undertaken in February and March.

At the last meeting of China's National People's Congress held in early March 2019 the government presented its expectations regarding economy development in 2019. The economic growth slowdown in 2019 is foreseen to be in the range of 6.0–6.5 per cent compared to the reported growth of 6.6 per cent in 2018. The

China's Inflation Rate

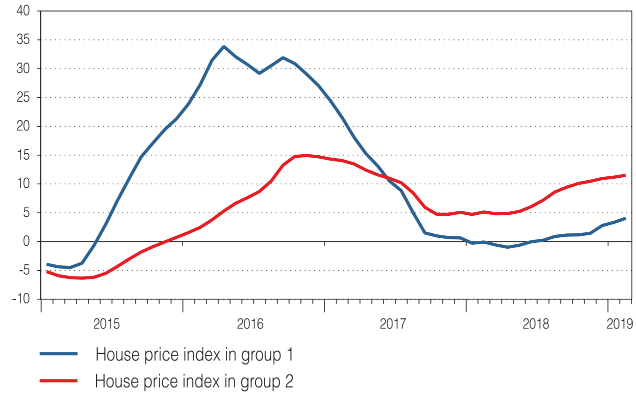
(per cent, on an annual basis)



Source: National Bureau of Statistics of China.

House prices in China

(per cent; on an annual basis)

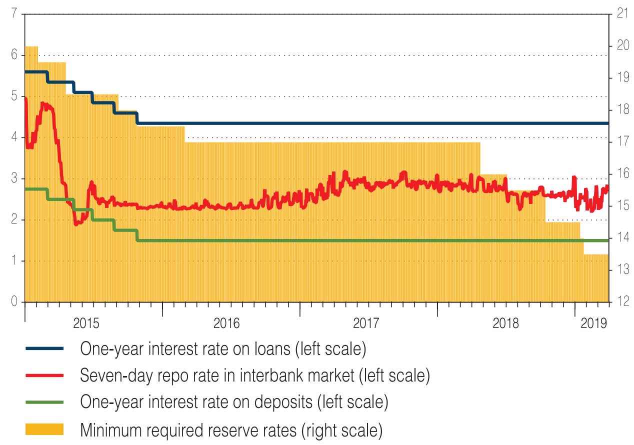


Note: Group 1 includes the four largest cities: Beijing, Shenzhen, Guangzhou, and Shanghai. Group 2 includes the capitals of the rest provinces.

Source: National Bureau of Statistics of China.

People's Bank of China Reference Rates and Minimum Required Reserve Rate

(per cent) (per cent)



Source: People's Bank of China.

government is expected to introduce more fiscal policy measures over the current year, including a reduction in the value added tax rate for manufacturing sector from 16 per cent to 13 per cent, transport and construction sector from 10 per cent to 9 per cent, and reduction in certain income and corporate taxes. As a result the budget deficit for 2019 is projected to rise to 2.8 per cent of GDP against 2.6 per cent in 2018.

International Commodity Prices

Crude Oil

Since early 2019 Brent crude oil price in US dollars increased from the end of 2018, reaching 64.1 USD *per* barrel (56.5 EUR *per* barrel) in February, mainly as a result of the agreement signed in December 2018 between OPEC and other leading oil-producing countries on production cuts, for an initial period of six months, in force as of January 2019.[5] The oil price rise was also driven by some unplanned disruptions in oil supplies and concerns about lower than expected oil supply by US.

Despite a temporary increase in the oil price on a quarterly basis in the beginning of 2019, it remained lower than that recorded in early 2018 due to the weaker global economic activity, which had a dampening effect on oil demand. Concurrently, International Energy Agency data indicate that the trend of oil supply exceeding demand since the second quarter of 2018 was sustained and even deepened considerably in the fourth quarter of last year.

Given the measures launched to cut production, market expectations in March of oil prices for the second and third quarters of 2019 were significantly higher than prevailing expectations in December 2018 and accounted for around USD 66.0 *per* barrel.

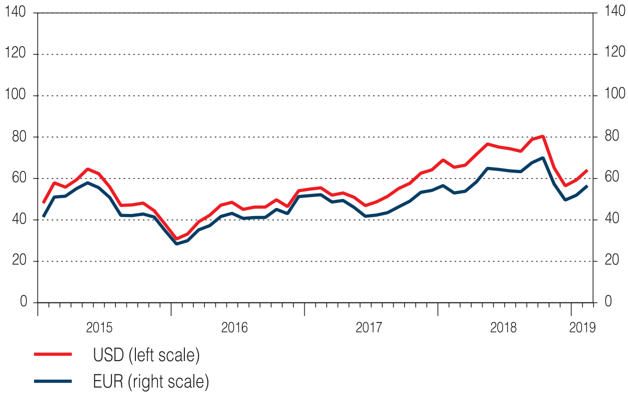
Commodity and Food Prices

In the beginning of 2019 international metal prices both in USD and in euro tended to rise slightly compared to the end of 2018 when weakened economic activity in China and pro-

[5] On 6 December 2018 OPEC and Russia agreed on decreasing daily oil production by 1.2 million barrels for a period of 180 days.

Brent Crude Oil Price

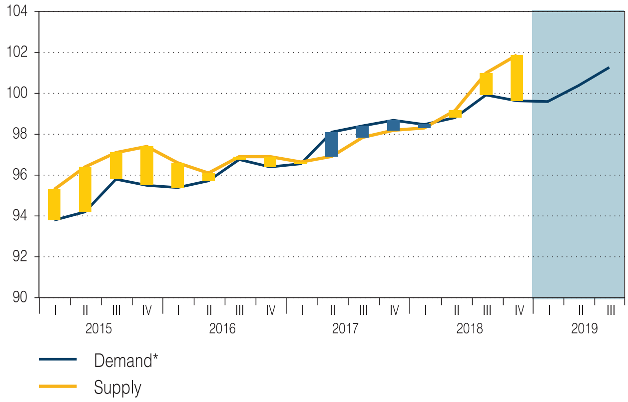
(USD *per* barrel) (EUR *per* barrel)



Source: the World Bank.

World Crude Oil Supply and Demand* (Quarterly)

(million barrels *per* day)

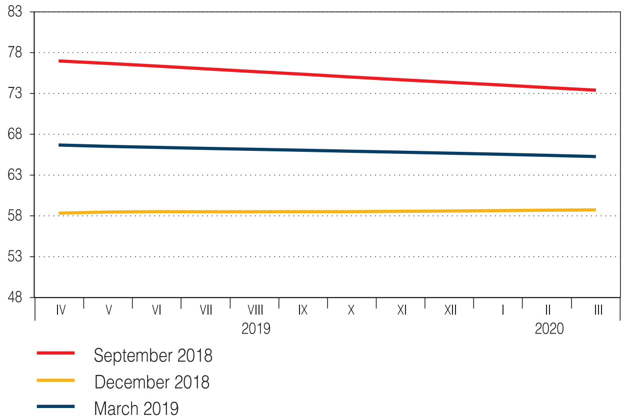


*Including IAE latest available data on crude oil demand in March 2019.

Source: the IAE.

Brent Crude Oil Futures Prices

(average monthly price of contract, USD *per* barrel)



Source: JP Morgan.

tectionist measures in world trade had a limiting effect on metal prices. The reported growth was mainly driven by the expected fiscal incentives in China and the limited global supply by iron ore mines (especially in Brazil). There was a divergent dynamics across metal price index sub-components. The incident with the dam collapse near the world's largest iron ore mine in Brazil resulted in a decline in the production and led to price rises in iron ore and nickel. At the same time, aluminium price dropped from end-2018 after US lifted sanctions on the second world's largest aluminium producer located in Russia. The price of copper, which is of key importance to Bulgarian goods exports, also declined in early 2019 largely reflecting concerns of lower demand from China.

Metal prices in the second and third quarters of 2019 are expected to recover further their annual growth rates both in US dollar and euro.

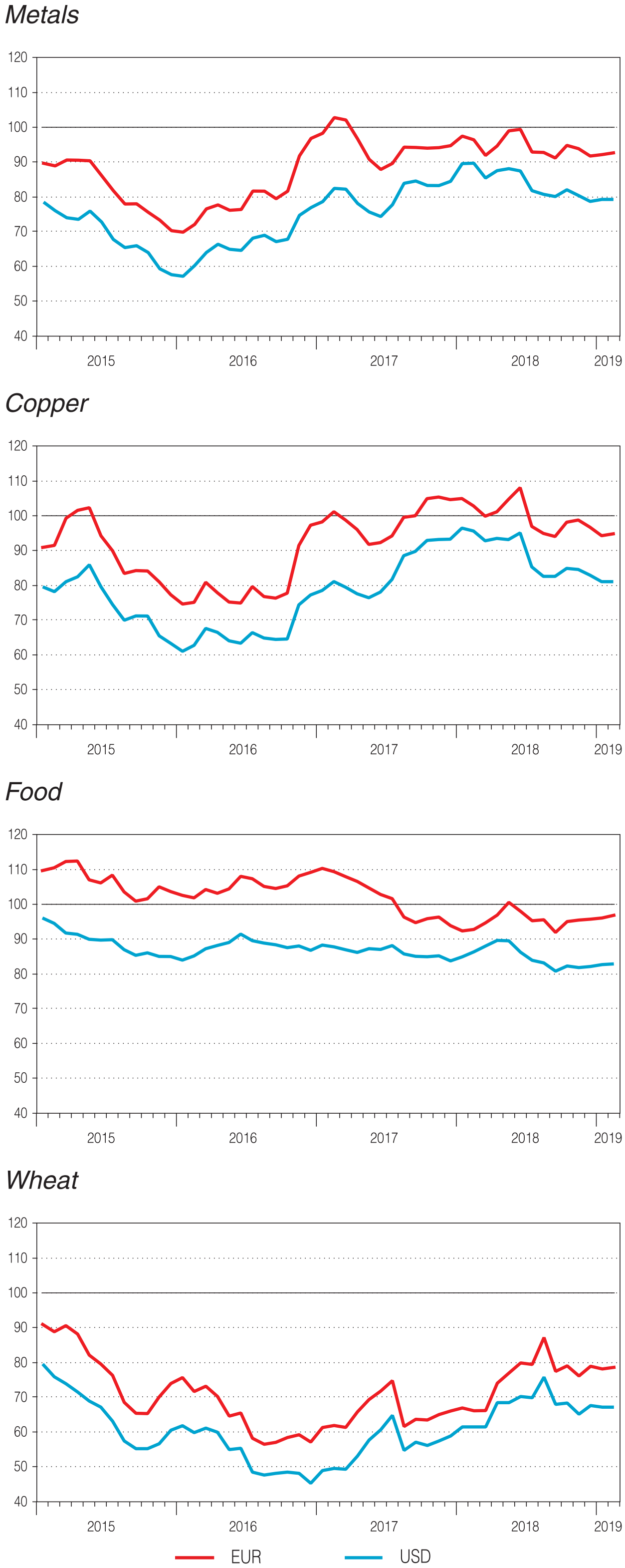
In the January to February 2019 period, the global food price index in US dollars and euro slightly increased from end-2018, remaining, however, below its level for the corresponding period of last year. The price rise was mainly driven by factors limiting the supply of certain food groups such as sugar, diary products and vegetable fats and oils. The price of wheat, which is of key importance for Bulgarian goods exports, posted a decline in early 2019 from the end of 2018 both in US dollars and euro. This was attributable to the higher yields of wheat at the global level and the expectations of higher wheat stocks in certain countries such as the US and India.

Over the projection horizon food prices in US dollars and in euro are anticipated to increase on an annual basis.

If market expectations of international fuel, commodity and food price dynamics materialise, the terms of trade for Bulgaria are expected to remain close to neutral in the second and third quarters of 2019.

Price Indices of Major Raw Materials and Commodity Groups

(2013 = 100)



Sources: the ECB and BNB calculations.

2. Financial flows, money and credit

The upward year-on-year trend in the overall current and capital account surplus continued in January 2019, reflecting largely declining net primary income deficit. The financial account remained positive driven by the stronger increase in foreign assets than in foreign liabilities. In the second and third quarters of 2019 the positive current account balance is expected to decrease as a share of GDP on an annual basis compared to the end of 2018, resulting mainly from an expected higher deficit on net primary income and, to a lesser extent, an increase in trade balance deficit. Capital account surplus as a share of GDP is anticipated to grow with EU project implementation for the 2014–2020 period entering a more advance stage.

In the context of rising labour income and corporate profits amid a heightened uncertainty stemming from the external environment, and the lack of a sufficiently safe alternative to bank savings, in the first two months of 2019 broad money increased its annual rate of growth. The favourable macroeconomic environment, persistently high levels of consumer confidence and comparatively low lending rates contributed to the retention of the upward trend in total loans to non-financial corporations and households.

In the second and third quarters of 2019 non-government sector's deposits are expected to accelerate further at comparatively high rates. Projections of holding lending rates at the achieved low levels will support demand for loans. Factors which will limit credit growth are associated with an expected lower growth rate of domestic demand, continued government repayments on National Programme for Energy Efficiency of Multi-family Residential Buildings loans and decreased volumes of new loans under this programme along with the exhausted one-off effect of a new reporting unit included in the scope of monetary statistics over the second quarter. Reflecting the simultaneous effect of above factors, credit to non-financial corporations and households is expected to increase further, though at weaker rates compared with current ones.

External Financial Flows

In 2018 the overall current and capital account balance was positive at EUR 3145 million, with a surplus increase observed against 2017 due mainly to the higher current account surplus.[6] The increase in the current account positive balance in 2018 reflected primarily the lower deficit on the net primary income, a result of lower payments to non-residents related to dividends and distributed profits, and smaller outflows under and reinvested earnings item.[7] Year-on-year real exports of goods declined in 2018, which coupled with increased real imports of goods and neutral terms of trade for the Bulgarian economy resulted in a significantly higher trade balance deficit than in 2017. Annual growth of services exports outstripped that of imports due mainly to higher earnings from visits of foreign nationals to Bulgaria compared with the previous year.[8] Higher revenue

Flows on Major Balance of Payments Accounts

(EUR million)

	2017	2018	On an annual basis as of January 2019
Current account	**1 578.2**	**2 547.5**	**2 775.7**
Trade balance	-765.8	-2 264.1	-2 123.1
Services, net	2 858.4	3 407.4	3 425.6
Primary income, net	-2 368.5	-547.2	-468.7
Secondary income, net	1 854.2	1 951.4	1 941.9
Capital account	**530.3**	**597.5**	**654.4**
Financial account	**1 252.0**	**627.4**	**72.3**
Change in reserves	**-98.9**	**1 361.6**	**2 005.0**

(per cent of GDP)

	2017	2018	On an annual basis as of January 2019
Current account	**3.1**	**6.5**	**4.4**
Trade balance	-1.5	-4.1	-3.8
Services, net	5.5	6.2	6.2
Primary income, net	-4.6	-1.0	-0.8
Secondary income, net	3.6	3.5	3.5
Capital account	**1.0**	**1.1**	**1.2**
Financial account	**2.4**	**1.1**	**0.1**
Change in reserves	**-0.2**	**2.5**	**3.6**

Source: the BNB.

[6] The analysis of balance of payments flows employs information from its analytical reporting. Preliminary data.

[7] Preliminary data subject to revision; revisions usually show an increase in outflows to residents.

[8] For a more detailed analysis of foreign trade flows and services trade, see Chapter 3, the Exports and Imports of Goods and Services Section.

from implemented EU programmes and exhaust emission allowances in 2018 compared with the previous year contributed most substantially to the increased net secondary income surplus and capital account surplus.

In January 2019 the total current and capital account surplus accumulated for the last 12 months continued to follow the upward trend, observed in 2018. The increase from end-2018 reflected mainly the lower trade deficit (as a result of higher growth in exports of goods than that in imports) and a continuous decrease in deficit under the net primary income item (due mainly to lower income payments to non-residents on direct investment).

In the second and third quarters of 2019 the positive current and capital account balance is expected to decrease as a share of GDP on an annual basis[9] compared to the end of 2018, which will be mainly attributable to a higher deficit on net primary income and, to a lesser extent, to a stronger trade balance deficit. The increase in the net primary income negative balance is expected to reflect the accelerated gross operating surplus in overall economy in 2018. Concurrently, the higher trade balance deficit as a share of GDP compared with end-2018 will be driven by expected stronger growth in real exports of goods than in imports. Higher imports of goods will be supported by the projected increase in exports and accelerated investment growth. Lower external growth over the forecast horizon would have a limiting effect on growth of exported goods. Capital account surplus as a share of GDP is anticipated to grow further with the progress of EU project implementation for the 2014–2020 period.

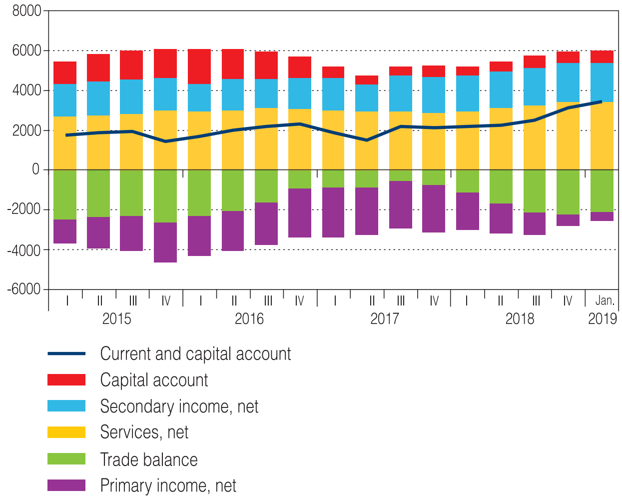
In 2018 the financial account balance was positive driven by Bulgarian residents' foreign assets increasing stronger than foreign liabilities. Foreign assets developments reflected mainly other sectors transactions[10] and those of banks which boosted their foreign assets through other and portfolio investment. An increase in foreign liabilities on the financial account over the year was reported mainly due to direct investment

[9] It should read the current and capital account balance for the last four quarters.

[10] Sectors other than general government, banks and the central bank.

Current and Capital Account Dynamics and Contribution by Component (on an Annual Basis)

(EUR million)

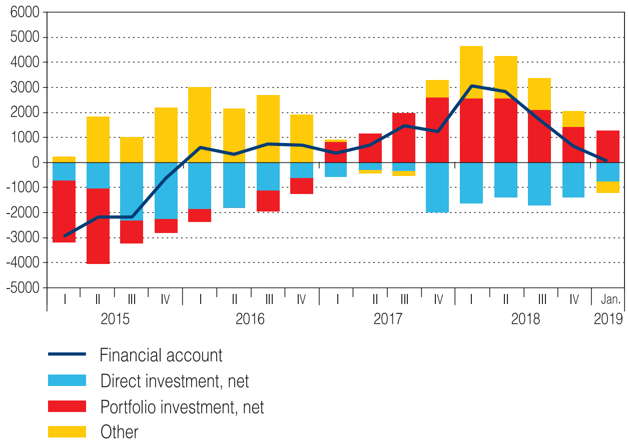


Notes: For each quarter, the chart shows item balances accumulated in the last four quarters. Chart data as of January 2019 are accumulated for the last 12 months.

Source: the BNB.

Financial Account Dynamics and Contribution by Component (on an Annual Basis)

(EUR million)



Notes: The Other item includes Other Investments, Net, and Financial Derivatives (Other than Reserves) and Employee Stock Options, Net. For each quarter, the chart shows item balances accumulated in the last four quarters. Chart data as of January 2019 are accumulated for the last 12 months.

Source: the BNB.

attracted by other sectors and, to a lesser extent, by banks. The financial account balance accumulated for the last 12 months remained positive in January 2019 but posted a decrease compared to December 2018.

In 2018 foreign direct investment liabilities (reporting FDI inflows into Bulgaria) decreased on 2017 to EUR 2232 million (EUR 2461.4 million in 2017).[11] In January 2019 inflows on direct investment liabilities accumulated for the last 12 months declined from December 2018.

Reflecting balance of payments net current, capital and financial account flows, Bulgaria's gross international reserves[12] accumulated in the last 12 months increased by EUR 2005 million in January 2019. The international reserve coverage of the average nominal imports of goods and non-factor services for the last 12 months remained high in January 2019 (8.4 months against 8.7 months in December 2018).

In December 2018 Bulgaria's gross external debt declined by EUR 509 million from the end of 2017 and came to EUR 33,343 million, with a foreign debt decrease reported in all sectors except for banks. Intercompany loans exhibited the strongest fall from the end of 2017. A decline was also reported in other sectors, which was largely due to redemption of debt securities issued in international capital markets. In January 2019 the downward trend in gross external debt continued, amounting to EUR 33,292 million. The share of long-term debt in Bulgaria's total gross external debt was 75.4 per cent in January, remaining broadly unchanged from the end of the previous year.

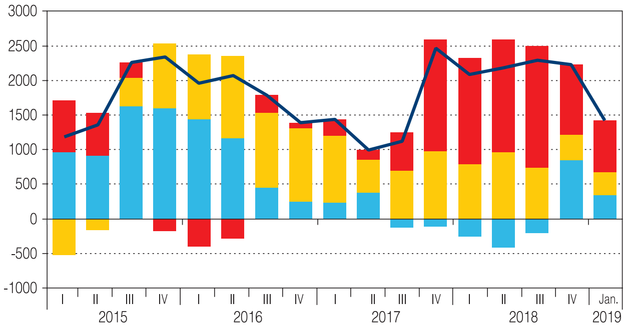
The new external debt held by Bulgarian residents in 2018 increased compared with 2017 due primarily to the higher new external debt of other sectors. Over 2018 the low share of interest payments in total external debt service costs remained unchanged. The January 2019 data signal that this trend continues and favourable terms for servicing Bulgarian residents' foreign obligations are sustained.

[11] Preliminary data subject to revisions which usually show an increase in foreign direct investment liabilities.

[12] Valuation adjustments and price revaluation excluded.

Direct Investment Liabilities by Type of Investment (on an Annual Basis)

(EUR million)



Notes: For each quarter, the chart shows item balances accumulated in the last four quarters. Chart data as of January 2019 are accumulated for the last 12 months.

Source: the BNB.

Gross External Debt in January 2019

(EUR million)

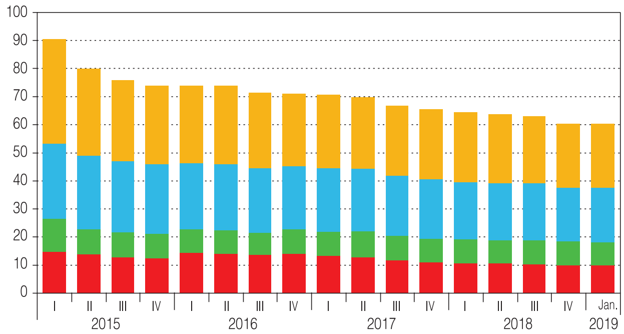
	Amount	Change	
		Since December 2017	For the last 12 months
General government	5 531.6	-18.9	-134.7
Central bank	0.0	0.0	0.0
Banks	4 558.4	-44.5	356.4
Other sectors	10 622.7	-7.4	-311.5
FDI – intercompany loans	12 578.9	19.7	-450.2
Total	33 291.5	-51.2	-539.9

Note: Further details on individual institutional sectors are available on the BNB website, Statistics, External sector/Gross External Debt.

Source: the BNB.

Gross External Debt as a Share of GDP

(per cent of GDP)



Source: the BNB.

Monetary and Credit Aggregates

Favourable labour market developments in Bulgaria such as increasing labour income and decreasing unemployment continued to contribute to the higher household disposable income. Concurrently, the gross operating surplus of the total economy accelerated its growth rate. In the context of higher uncertainty stemming from the external environment and the lack of a sufficiently safe alternative to bank deposits, these trends had a positive effect on the savings rate in the economy, which was key for the M3 dynamics.

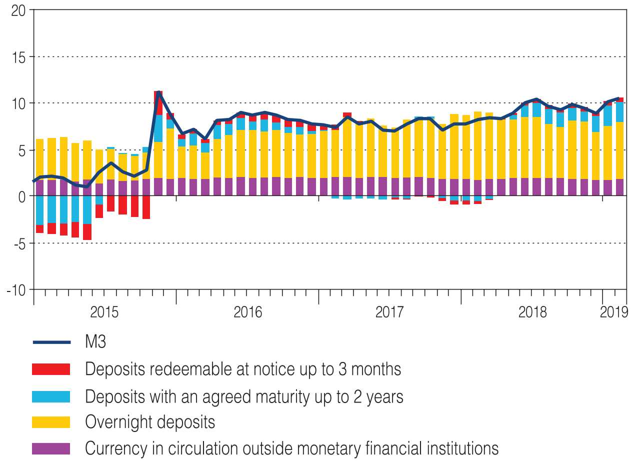
Over the first two months of 2019 annual broad money growth accelerated from the end of the prior year accounting for 10.4 per cent in February (8.8 per cent in December 2018). Overnight deposits continued to contribute most significantly to broad money growth, remaining a preferred form of saving for both households and non-financial corporations due to easier access and flexible use of funds. In the first two months of 2019 the higher contribution of quasi-money observed since April 2018 was sustained. These dynamics reflected stronger growth of deposits with an agreed maturity of up to two years both for non-financial corporations and households. The contribution of money outside MFI to broad money growth almost matched previous year's levels.

Non-government sector's deposits[13] continued to occupy the bulk of the total amount of funds attracted from banks, their share reaching 86.9 per cent on average for the first two months of the year. Over the review period their growth rate accelerated somewhat, accounting for 9.1 per cent in February (7.3 per cent at the end of 2018). Stronger growth of household deposits and accelerated growth of non-financial corporation deposits were the two major factors behind this dynamics. Accelerated credit growth probably also contributed to the faster increase in deposits on annual basis. In the first two months of 2019 corporations and households continued to save mostly in national currency. In February the share

[13] Non-government sector's deposits include deposits of households, non-financial corporations and financial corporations. Deposits of households and non-financial corporations comprise the largest share of non-government sector's deposits (96.3 per cent on average for the last 12 months in February 2019) and therefore the analysis is focused on these two sectors.

Annual Rate of Change in M3 and Contribution by Component

(per cent, percentage points)

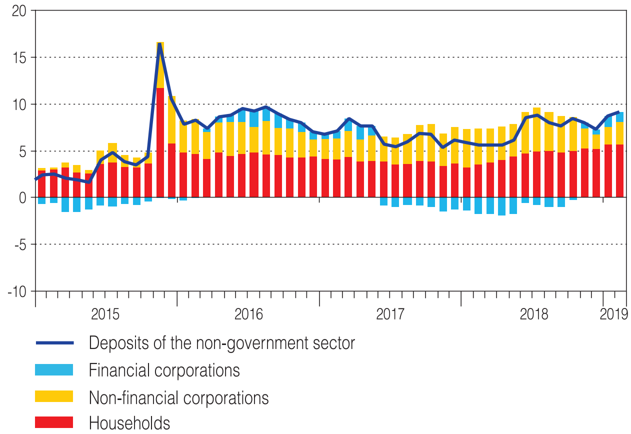


Notes: The marketable instruments component is not shown on the chart due to its insignificant contribution to broad money growth. The annual growth rate of M3 in November 2015 reflected the exhausted base effect of KTB removal as a reporting unit from the monetary statistics in November 2014.

Source: the BNB.

Annual Growth of Non-government Sector's Deposits and Contribution by Sector

(per cent, percentage points)



Note: The annual growth rate of non-government sector deposits in November 2015 reflected the exhausted base effect of KTB removal as a reporting unit from the monetary statistics in November 2014.

Source: the BNB.

of deposits in levs accounted for 62.5 per cent of total non-government sector deposits.

The effective implicit rate of minimum required reserves[14] remained at levels similar to the previous year's average levels, reflecting the retained high inflow of attracted funds from residents in the banking system in January and February 2019. In February it was 9.40 per cent matching the average for 2018, with bank deposits with the BNB comprising 8.38 percentage points in the fulfilment of minimum required reserves, and the remaining 1.02 percentage points forming recognised cash balances.

In February 2019 reserve money exhibited a year-on-year rise of 16.2 per cent (10.1 per cent at end-2018), accelerated growth reflecting the higher contribution of the currency in circulation and banks' deposits at the BNB. In February 2019 excess funds on banks' minimum reserve accounts over the required minimum of reserve assets under Ordinance No 21 was 30.7 per cent on an average daily basis, from 33.1 per cent in December 2018. The slight decrease in bank excess reserves in the first two months of 2019 compared with the average for 2018 was entirely offset by the increased minimum required reserves as a result of rising deposit base and higher bank funds in TARGET2-BNB.

In January and February 2019 banknotes and coins in circulation continued to increase at comparatively high rates, with the annual rate of growth amounting to 11.6 per cent (10.3 per cent at the end of 2018). The rising labour income, which supported stronger demand for goods and services and cash payment amid low interest rates, continued to have a favourable effect on the currency in circulation dynamics.

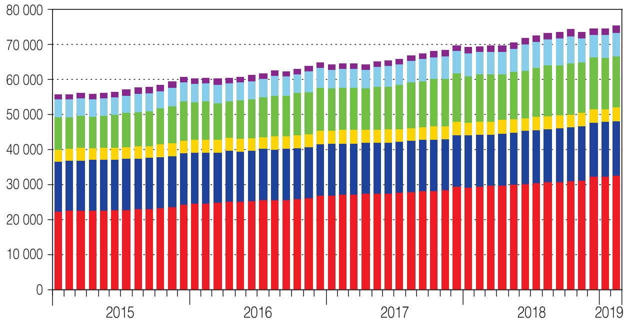
Under currency board arrangements, foreign currency trade with the BNB is the main tool to manage bank liquid resources. In February 2019 net BNB purchases of euro from banks amounted to EUR 2282.5 million on an annual basis.

Bank assets grew 9.4 per cent on an annual basis in February 2019. Claims on the non-

[14] According to Article 3 of BNB Ordinance No 21 on the Minimum Required Reserves Maintained with the Bulgarian National Bank by Banks, the rate of minimum required reserves on funds attracted from residents is 10 per cent of the deposit base, from non-residents 5 per cent and from the state and local government budgets 0 per cent.

Currency Structure of Deposits of Non-financial Corporations and Households

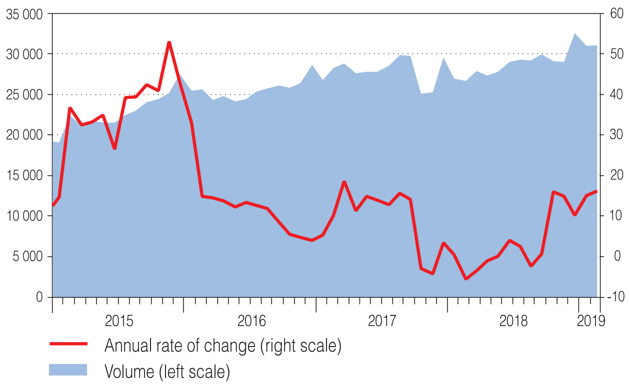
(BGN million)



Source: the BNB.

Reserve Money

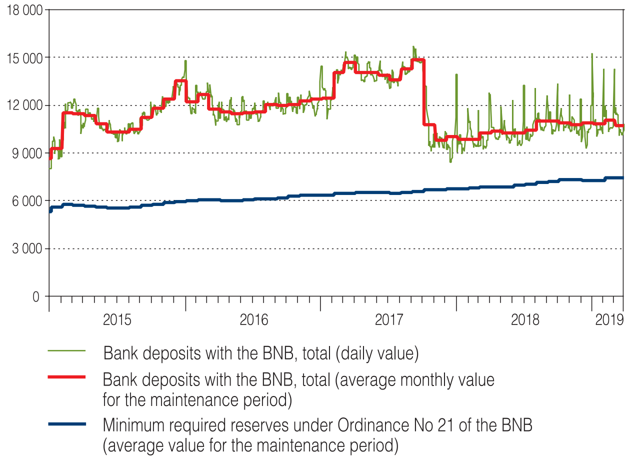
(BGN million) (per cent)



Source: the BNB.

Bank Deposits with the BNB

(BGN million)



Source: the BNB.

government sector and, to a lesser extent, growth in bank deposits with the BNB contributed most substantially to growth of bank assets. Concurrently, a decline was observed in claims on the general government sector. Over the review period banks' foreign assets grew stronger than foreign liabilities. As a result net foreign assets increased by BGN 0.2 billion on an annual basis.

In the first two months of 2019 the prior year's trend toward an accelerated annual growth of credit to non-financial corporations and households[15] was sustained, in February accounting for 7.9 per cent (7.7 per cent at the end of 2018). The favourable macroeconomic environment, persistently high levels of consumer confidence and low lending rates played a decisive role in this dynamics.

The annual growth rate of loans to non-financial corporations accelerated to 6.2 per cent in February 2019 from 5.4 per cent at the end of 2018. Stronger growth was reported both in loans (except overdrafts) and overdrafts. Therefore, both sub-components contributed positively to overall growth. Concurrently, in the first two months of 2019 volumes of new[16] loans to non-financial corporations remained at levels close to those of end-2018.[17] In terms of the currency structure, a slight increase was recorded in the share of newly extended loans to corporations in euro at the expense of levs. Accordingly, the share of lev-denominated loans (for the last 12 months on average) was 48.0 per cent of total new corporate loans, that of euro loans 51.0 per cent and USD-denominated loans 1.0 per cent.

Loans to households continued to increase at comparatively high rates in the first two months of 2019, their annual growth accounting for 10.7 per cent in February (11.2 per cent in December 2018). The slight annual decrease was entirely

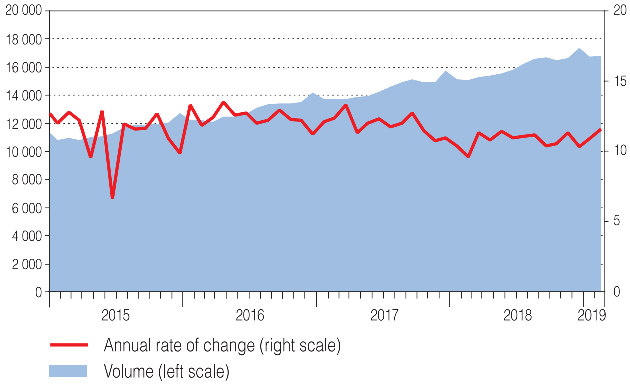
[15] Loans represent the bulk of bank claims on the non-government sector with a share of 97.7 per cent on average for the last 12 months in February 2019, and the analysis is therefore focused on them. In addition to loans, claims include also repurchase agreements, securities other than shares, and shares and other equity instruments. Non-government sector's deposits, in turn, include loans to households, non-financial corporations and financial corporations. The share of loans to households and non-financial corporations in total loans to the non-government sector accounted for 95.3 per cent on average in the last 12 months as of February 2019, and therefore developments in these two sectors are addressed.

[16] The terms 'new' and 'newly extended' hereinafter referred to as the statistical category 'new business'.

[17] Based on 12-month moving average.

Currency in Circulation

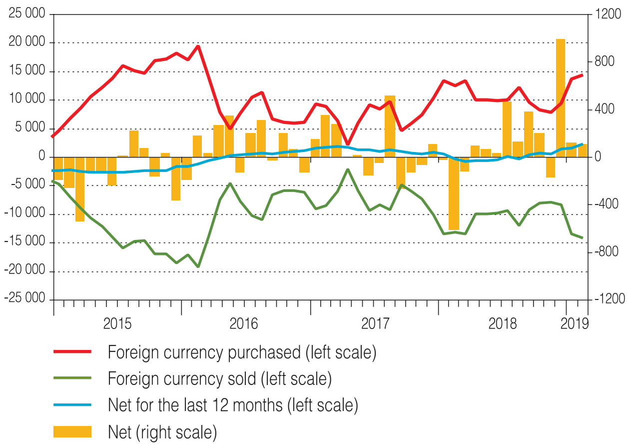
(BGN million) (per cent)



Source: the BNB.

Foreign Currency Purchases and Sales between the BNB and Banks (on a Monthly Basis)

(EUR million) (EUR million)

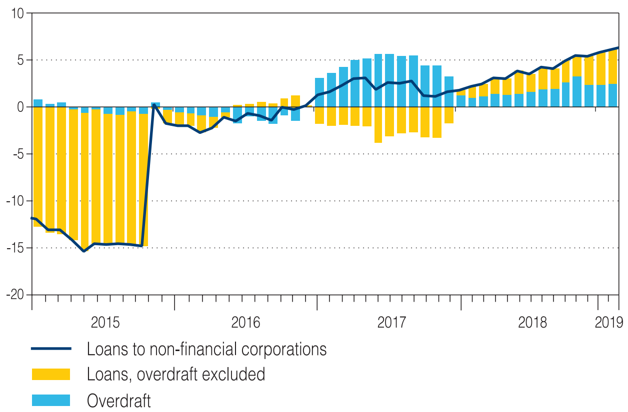


Notes: Net means currency purchased minus currency sold by the BNB. Data refer to all bank transactions in foreign currency including liquidity management operations related to the transfer of own funds from lev accounts with the BNB to own accounts with the BNB in euro and *vice versa*.

Source: the BNB.

Annual Growth of Credit to Non-financial Corporations and Contributions of Individual Types of Loans

(per cent, percentage points)



Note: The annual growth rate of loans to non-financial corporations in November 2015 reflected the exhausted base effect of KTB removal as a reporting unit from the monetary statistics in November 2014.

Source: the BNB.

due to the higher negative contribution of other loans to households. This can be explained to a large extent by government repayments on National Programme for Energy Efficiency loans, which exceeded the volumes of new loans under this programme. Concurrently, consumer and housing loans rose further at rates close to those at the end of 2018. The consumer loan dynamics continued to be strongly influenced by the inclusion of a new reporting unit in the scope of monetary statistics from April 2018. Over the first two months of 2018 the upward dynamics of newly extended consumer loans was sustained, while new housing loans remained at their end-2018's levels.

The summarised weighted results of the quarterly lending survey[18] for the fourth quarter of 2018 suggest a slight tightening of credit standards[19] on consumer, housing and corporate loans compared with the July–September 2018 period. Concurrently, banks reported further easing of credit conditions[20] for corporations and households in terms of interest rates. Credit conditions and required fees and commissions for corporate loans were eased, while for housing loans banks reported tightening of collateral requirements and the maximum term of loans. The lower risk assessment and the competition in the banking sector were the main factors behind the eased lending policy (lending standards and conditions) to corporations and households in the last quarter of 2018. In particular, the risk assessment reflected the higher assessment of borrowers' solvency, lower risk related to collateral, overall improvement of the macroeconomic environment and favourable outlook in the housing market. Concurrently, bank risk aversion was a factor for tightening lending policies to corporations and households in the October–December 2018 period. Banks' expectations in the first quarter

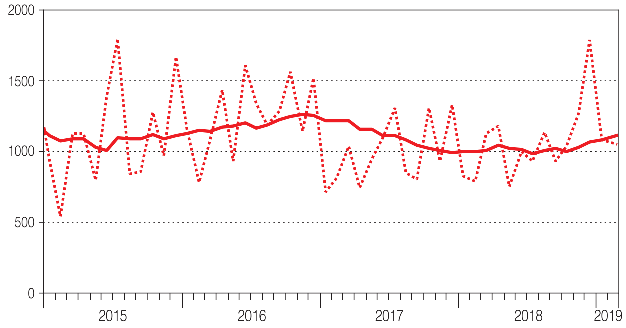
[18] Summarised results of the bank lending survey are presented through weighting bank responses by their market share in the relevant credit segment.

[19] Credit standards are understood as internal bank guidelines or criteria for loan approvals established prior to negotiating the terms of extended loans. Credit standards determine the type of the loan and collateral considered admissible by banks, taking into account specific priorities by sector, etc. Credit standards specify also all relevant conditions to be met by a borrower.

[20] Credit conditions typically involve the reference interest rate surcharge, the loan amount, conditions for its utilisation and other conditions, fees and commissions, collateral or guarantees to be provided by a borrower.

New Loans to Non-financial Corporations (Monthly Volumes)

(BGN million)

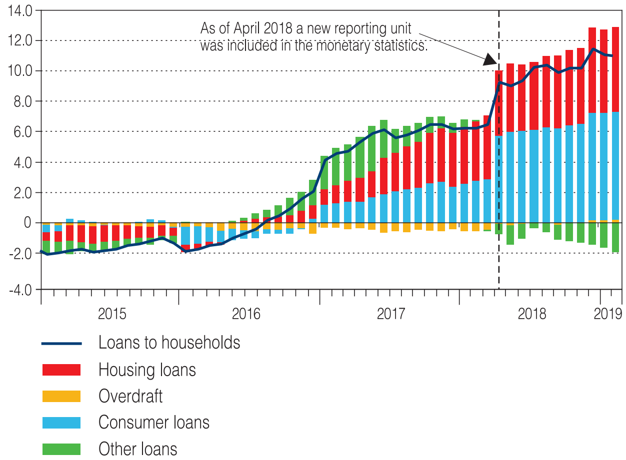


Note: For data characterised by significant volatility, additionally moving averages computed for suitably selected periods are provided in order to smooth the fluctuations in corresponding time series and present the trends in their development.

Source: the BNB.

Annual Growth of Household Credit and Contributions of Individual Types of Loans

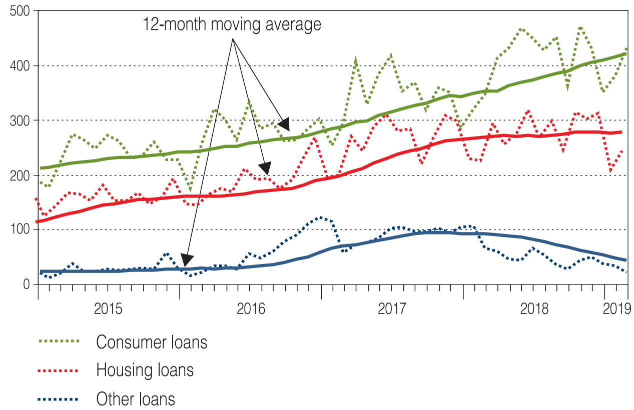
(per cent, percentage points)



Source: the BNB.

New Loans to Households (Monthly Volumes)

(BGN million)



Source: the BNB.

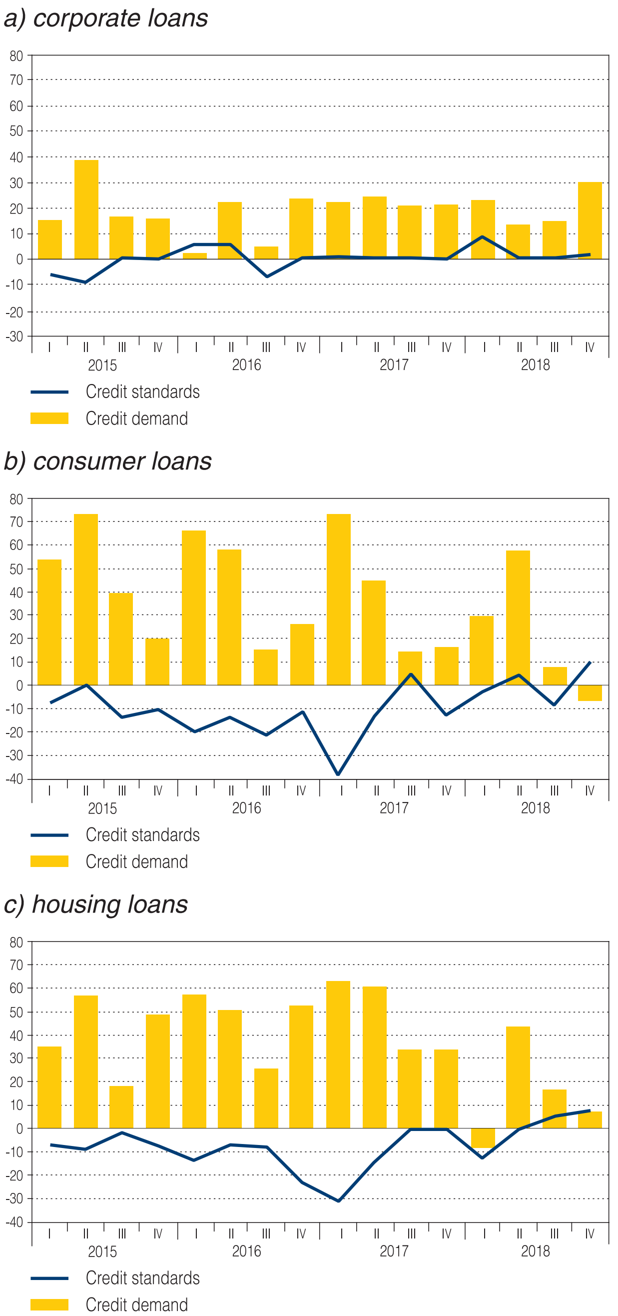
of 2019 are for lending standards applied to corporate, consumer and housing loans to remain almost unchanged from the previous quarter.

As regards credit demand banks reported a further increase in corporate and housing loans, while the weighted balance of opinions indicated a slight decrease in consumer loans from the previous quarter. Low interest rates contributed most markedly to enhanced demand for bank funds by corporations over the fourth quarter of 2018. Demand for resources for working capital and inventories, for investment purposes, refinancing, restructuring or renegotiating debts, and for mergers and acquisitions also weigh on the rising demand for corporate loans. In addition to low interest rates, the overall improvement in the macroeconomic environment and household demand for funds for purchasing first home contributed to the higher demand for housing loans over the quarter. The use of own funds/savings pushed down the demand for consumer and housing loans over the quarter. Between January and March 2019 bank expectations point to higher demand for loans by corporations and households compared with the last quarter of 2018, with stronger growth anticipated in corporate lending.

In the second and third quarters of 2019 non-government sector's deposits are expected to grow further at comparatively high rates amid continuously increasing labour income and gross operating surplus in the economy. Low interest rates are expected to have a dampening effect on growth of savings at banks, but this will be offset by the lack of enough safe alternative to bank deposits, as well as by the uncertainty of external environment which will limit corporations' investment activity. The expected lower growth rate of domestic demand for goods and services in the economy over the second and third quarters of 2019 compared with that reported in 2018 will be the major factor limiting lending growth. Additional factors which will depress credit growth are associated with continued government repayments on National Programme for Energy Efficiency loans and decreased volumes of new loans under this programme along with exhaustion in the second quarter of 2019 of the one-off effect of a new reporting unit included in the scope of monetary statistics. Concurrently, the expected

Changes in Demand and Credit Standards

(balance of opinions; percentage points)



Notes: As regards credit standards, charts present banks' balance of opinions defined as a difference in percentage points between the percentage of banks responding 'tightened' ('considerably' and 'somewhat'), and the percentage of banks responding 'eased' ('considerably' and 'somewhat'). As regards credit demand, the balance of opinions is defined in percentage points as a difference between the percentage of banks responding 'increased' ('considerably' and 'somewhat') and the percentage of banks responding 'reduced' ('considerably' and 'somewhat'). All opinions are weighted by the bank's market share in the relevant credit segment.

Source: the BNB.

keeping of lending rates at the achieved low levels will support demand for loans. Reflecting the simultaneous effect of above factors, credit to non-financial corporations and households is expected to increase further, though at slower rates than those reported in February 2019.

Interest Rates

Amid historically low interest rates in the euro area, high banking system liquidity in Bulgaria and continuous inflow of attracted funds from residents in the first two months of 2019, interbank money market rates in Bulgaria and interest rates on time deposits remained almost unchanged from the end-2018. Concurrently, the strong inflow of attracted funds, favourable macroeconomic environment, banks' lowered risk assessment of credit borrowers and banking sector competition helped maintain the gradual decrease in interest rates on new corporate and housing loans.

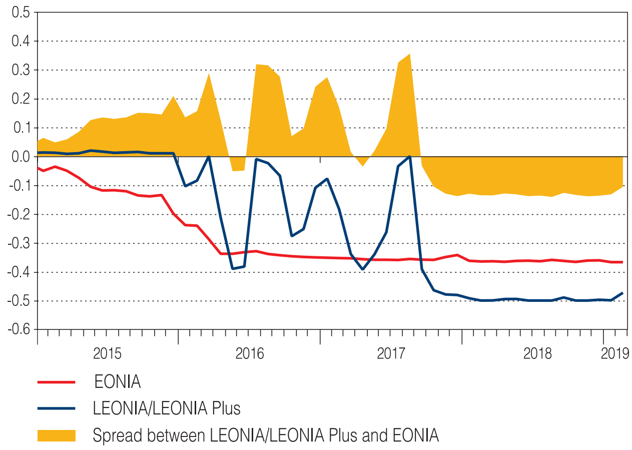
In February 2019 LEONIA Plus index[21] stood at -0.47 per cent, indicating an insignificant increase of 2 basis points from end-2018. EONIA showed no fluctuations either. As a result the spread between the two indices remained close to that in 2018 (-11 basis points in February). In the first two months of 2019 volumes on the lev interbank market declined from the 2018 average, amounting to BGN 2.8 billion on an average daily basis.

The dynamics of interest rates on time deposits continued to be driven mainly by high banking liquidity and the significant inflow of attracted funds. In February 2019 the average weighted interest rate on new time deposits of non-financial corporations and households matched its end-2018 level and stood at 0.3 per cent. Low interest rates were sustained both in the non-financial corporation and household sectors, with rates on corporate deposits being higher. In terms of currency, interest rates on new time deposits in both euro and levs slightly declined, while those in US dollars retained their upward trend observed since early 2018. The increase in interest rates on USD-denominated deposits may reflect the US Federal Reserve monetary policy normalisation and increases in the federal funds rate. Deposit

[21] LEONIA Plus (LEv OverNight Interest Average Plus) is a reference rate of unsecured overnight deposit transactions in Bulgarian levs on the interbank market.

Overnight Interbank Money Market Rates (Average Monthly Value)

(per cent, percentage points)



Notes: LEONIA Plus replaced LEONIA on 1 July 2017. LEONIA Plus monthly values are calculated as an arithmetic average for days when overnight unsecured lending transactions are concluded in the interbank market in levs.

Sources: the BNB, the ECB.

rate rises are likely to affect the early-2018 upward trend in the volume of non-financial corporations' new time deposits in US dollars.

In February 2019 the breakdown by bank of average weighted interest rates on new time lev deposits of households showed a decrease on end-2018 in the number of banks with average interest rates ranging from 0.25 to 0.50 per cent and from 0.75 to 1.00 per cent, while the number of banks with average rates ranging from 0.50 to 0.75 per cent increased. The standard deviation measuring the variation of interest rates offered by banks remained close to its December 2018 level.

The gradual decrease in interest rates on new corporate and housing loans was retained in the first two months of 2019. According to the BNB lending survey the major factors behind interest rate developments include a lower risk assessment, banking sector competition and the increasing volume of attracted funds. Risk assessments reflected the increased borrowers' solvency, the overall macroeconomic environment, favourable prospects in the housing market and lower collateral risk.

In February interest rates on new loans to non-financial corporations were 3.7 per cent for lev-denominated, 3.1 per cent for EUR-denominated and 4.4 per cent for USD-denominated loans.[22] Compared to the end of 2018, a decline by 4 basis points in lev rates was reported, while euro rates remained unchanged. The interest rate on USD-denominated loans rose by 26 basis points, probably reflecting the higher rates on deposits in US dollars.

The annual percentage rate of charge (APRC) on new housing loans continued to decrease slightly, reaching 3.8 per cent in February.[23] The interest rate component of charges had the largeat contribution to this dynamics, while the implicit rate of non-interest service charges was maintained at the end-2018 level. In February 2019 the interest rate component of charges on consumer loans slightly increased from the end of the prior

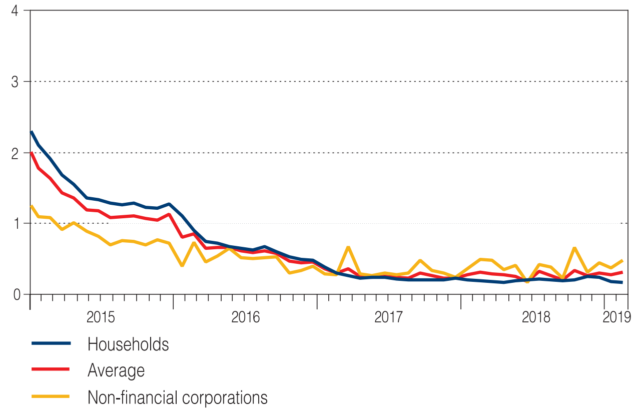
[22] These are the weighted average values of the interest rates on loans to non-financial corporations on a 12-month basis.

[23] Values indicating the APRC and interest rates are weighted averages of the interest rates on household consumer and housing loans on a 12-month basis.

Interest Rates on New Time Deposits

a) by sector

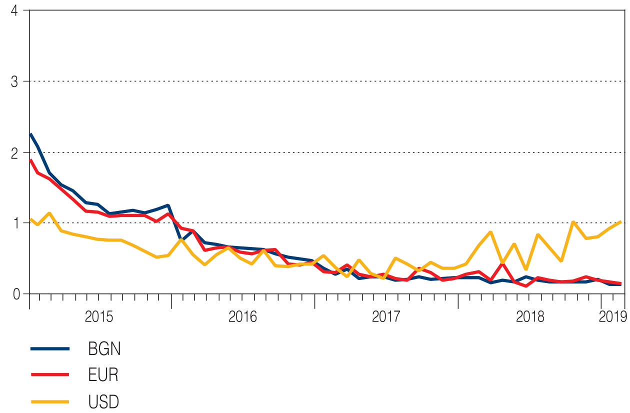
(per cent)



Notes: The average interest rate is calculated for all sectors, maturities and currencies weighted by the relevant volumes of new deposits. Average deposit rates for non-financial corporations and households are based on interest rates for all maturities and currencies weighted by relevant volumes of new business.

b) by currency

(per cent)

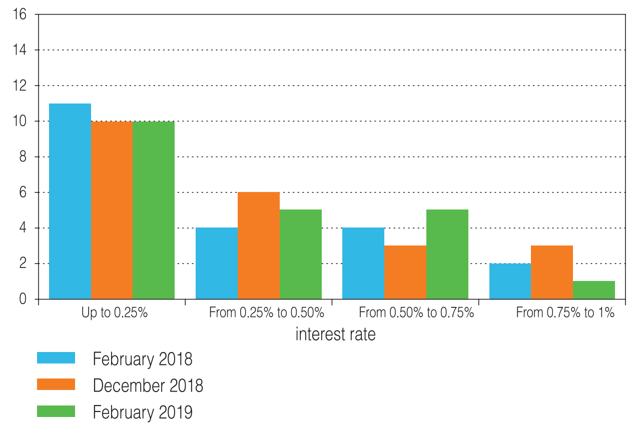


Note: The average interest rate by currency is based on rates for all sectors and maturities weighted by relevant volumes of new business.

Source: the BNB.

Distribution of Interest Rates on New Household Time Lev Deposits

(frequency – number of banks)



Source: the BNB.

year and the implicit rate of non-interest service charges decreased somewhat. Both effects neutralised each other and the APRC on consumer loans remained unchanged from December 2018 at 10.5 per cent.

In February 2019 the breakdown by bank of average weighted interest rates on new housing euro loans showed a monthly increase from end-2018 in the number of banks offering average interest rates of up to 3.0 per cent and between 3.0 and 4.0 per cent, while the number of banks with higher rates remained unchanged. The standard deviation reflecting variation of interest rates offered by banks decreased by 27 basis points to 0.92 per cent.

Spreads between lending rates on new corporate and housing loans in Bulgaria and the corresponding euro area rates continued to contract to reach historical lows in February of 190 and 157 basis points, respectively.[24]

In the second and third quarters of 2019 new time deposit and lending rates are expected to remain at the current low levels. This will reflect ECB Governing Council expectations for keeping euro area interest rates unchanged at least until the end of 2019, the continuous inflow of attracted funds from residents, high liquidity and competition in the banking sector in Bulgaria.

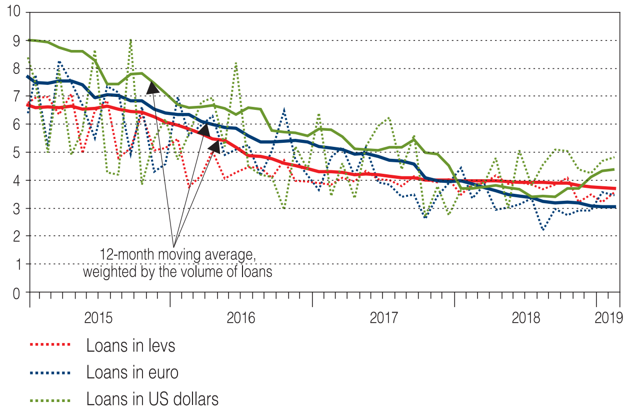
In the first quarter of 2019 again no government securities auctions were held in the primary market. The lack of government securities supply on the primary market since the end of 2017 continued to contribute to the higher demand than supply on the government securities secondary market. In February the long-term interest rate used for assessing the degree of convergence fell by 4 basis points on the end of 2018 to reach 0.68 per cent.[25] Bulgarian Eurobond yields issued in international capital markets over the previous years also followed a downward movement in the

[24] Spreads are calculated as a difference between average interest rates in Bulgaria and in the euro area in all maturities for the relevant type of loan, overall in national currency and euro, weighted by the relevant volumes of new loans for a 12-month period.

[25] Due to the lack of new government securities issues in 2018 and in early 2019, the residual maturity of the benchmark bond selected for calculating the long-term interest rate fell under the eight and a half years at the end of the first quarter of 2019, which also had a downward effect on the issue's yield.

Lending Rates on New Loans to Non-financial Corporations by Currency

(per cent)

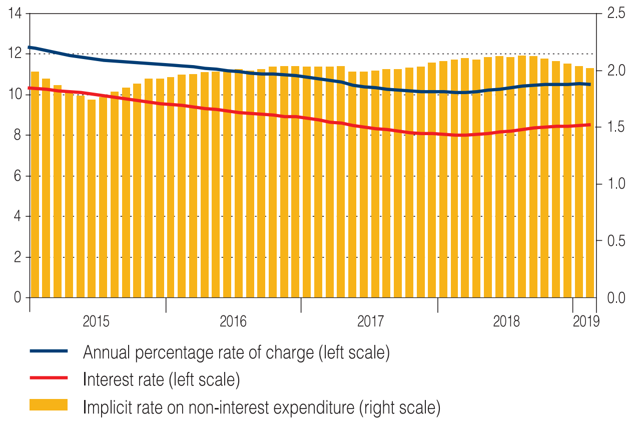


Source: the BNB.

Interest Rates and Annual Percentage Rate of Charges on New Household Loans

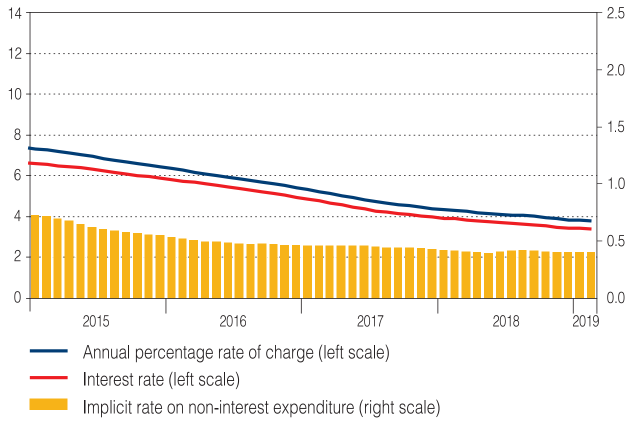
a) consumer loans

(per cent) (percentage points)



b) housing loans

(per cent) (percentage points)

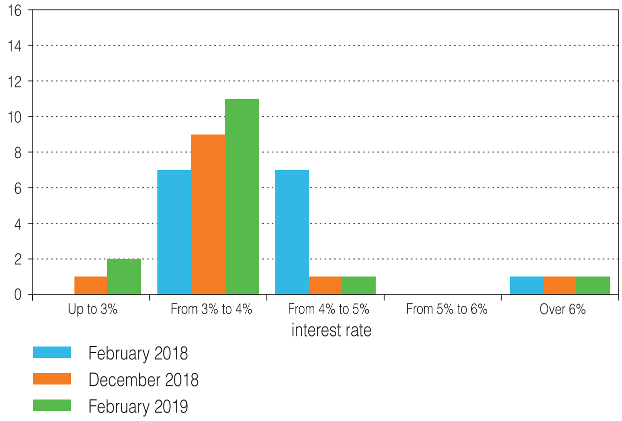


Notes: Interest rates in all maturities and currencies are weighted by the relevant volumes of new loans for a 12-month period. Implicit per cent is the difference between the APRC and the relevant interest rates and reflects the approximate per cent of all non-interest service charges on loans (including fees and commissions).

Source: the BNB.

Distribution of Interest Rates on New Housing Loans in Euro

(frequency – number of banks)



Source: the BNB.

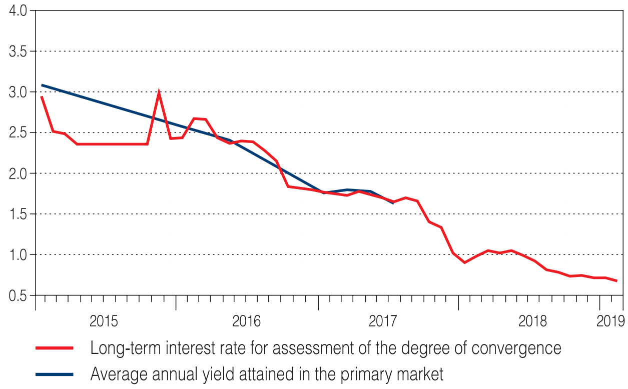
first quarter of 2019. Spreads between yields of Bulgarian and German bonds decreased in all maturities. These favourable trends could reflect both increasing investor preferences to Bulgarian bonds due to Bulgaria's stable macroeconomic and fiscal indicators, and effects of the decreasing risk premium common to most EU countries following higher levels in the second half of 2018.

In the second and third quarters of 2019 Bulgarian government bond yields will further be affected by external and internal factors. Externally, the ECB Governing Council expectations for keeping interest rates unchanged at least until the end of the year and more pessimistic outlooks on euro area economic growth will contribute to maintaining risk-free government bond yields at the currently low levels, which, other things being equal, would lead to analogous developments in Bulgarian bond yields. Higher interest rate spreads compared with German government securities may be possibly prompted by heightened political uncertainty in leading EU economies. Internal factors including the improved end-March outlook to Bulgaria's long-term credit rating[26], and limited supply of government securities and ample banking liquidity are expected to continue limiting yield growth of Bulgarian government securities.

[26] On 23 March 2019 Fitch Ratings upgraded Bulgaria's long-term credit rating outlook from stable to positive.

Ten-Year-and-Six-Month Government Bond Rates on the Primary and Secondary Markets

(per cent)

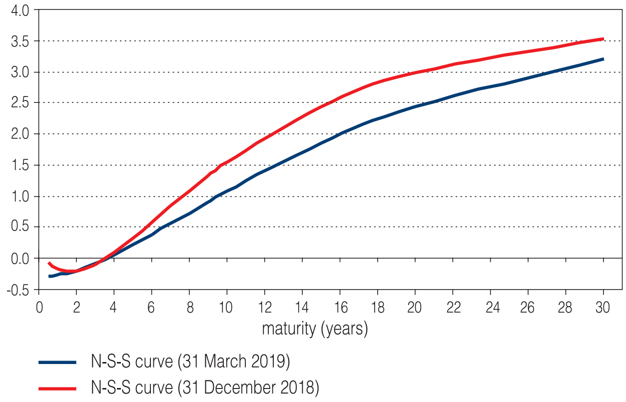


Notes: The chart shows the yields reported on the primary and secondary markets on government bonds with ten-year-and-six-month original maturity. The last primary market offering of an issue with this maturity was in July 2017 (issue BG2040017217 maturing in July 2027).

Source: the BNB.

Reference Government Securities Yield Curve in Bulgaria

(per cent)



Notes: The reference yield curve of Bulgarian government securities is based on BNB own calculations under the extended version of Nelson–Siegel–Svensson model (1994). The yield change refers to the previous quarter.
The chart employs daily yield data on Bulgarian government securities issued and traded in international capital markets, published in the MF Central Government Debt and Guarantees Monthly Bulletin.

Sources: the MF, BNB calculations.

Financial Flows between the General Government and Other Sectors of the Economy

The government's revenue and expenditure policy and budget financing operations affect the allocation of liquidity across economic sectors.

In the last quarter of 2018 the non-government non-bank sector was the main beneficiary of liquidity from the budget. This sector received funding to the amount of 7.5 per cent of GDP for the quarter, reflecting non-interest expenditure made on the consolidated fiscal programme and EU subsidies paid to farmers.[27] The fiscal policy had a weaker positive effect on the liquidity of the financial sector (excluding the BNB) at 0.7 per cent of the GDP for the quarter attributable mainly to payments on maturing government securities (BGN 191 million) in October. Concurrently, the external sector remained a net source of liquidity for the budget accounting for 1.7 per cent of GDP for the quarter, reflecting the excess of grants received under EU programmes (BGN 775 million) over the contribution to the EU budget (BGN 260 million). At the end of 2018 the government deposit with the BNB fell by BGN 1941 million (6.5 per cent of GDP for the quarter) compared with end-September, reflecting primarily redirected liquidity to the non-government non-bank sector.

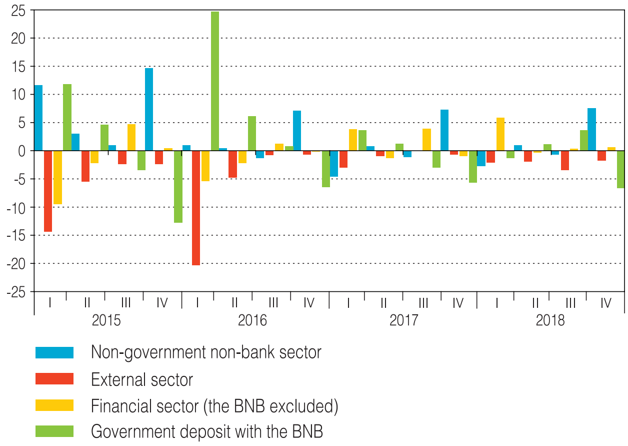
Funds on the government deposit with the BNB were partially recovered by the end of March 2019, posting an increase by BGN 968 million from December 2018. This increase should reflect financial flows from the external and non-government non-bank sectors to the budget, while the financial sector (the BNB excluded) is expected to be a net beneficiary of liquidity due to early 2019 bulk of principal payments on maturing government securities (BGN 920 million) and the lack of new bond issues in the primary market.

Developments in financial flows generated in the process of external and internal economic factor interaction contributed to an insignificant decrease in gross international reserves. By the end of

[27] Advance payments made at the expense of the EU budget in the October–December 2018 period totalled BGN 790 million, the bulk of them including agricultural subsidies under the single area payment scheme paid in December.

Consolidated Budget Effect on Other Sectors' Liquidity (Quarterly)

(as a percentage of GDP, per cent)



Sources: the MF, the BNB.

March 2019 the market value of international reserves (including valuation adjustments and price revaluations), an asset on the BNB Issue Department balance sheet, was EUR 25.0 billion (BGN 48.9 billion), posting a minimal decrease by EUR 46 million (BGN 89 million) on end-2018. According to the currency board principles, the decline in international reserves corresponds to the drop in the balance sheet value of the Issue Department liabilities. In the first quarter of 2019 banks' reserves and banknotes and coins in circulation exhibited a fall from the end of December 2018, which was partially offset by the increase in the government deposit with the BNB.

In the second and third quarters of 2019 bank reserves with the BNB are expected to remain broadly unchanged compared to the average reserves reported for the first quarter. The value of the government deposit with the BNB will depend mainly on the implementation of the consolidated fiscal programme and the government issuing policy. The annual growth rate of currency in circulation is expected to slightly slow down over the forecast horizon due to the projected gradual weakening of private consumption growth, but to remain comparatively high amid deposit rates maintained at the currently low levels.

3. Economic activity

In 2018 Bulgaria's real GDP growth stood at 3.1 per cent, remaining lower than that in 2017 as a result of the increased negative contribution of net exports. In the fourth quarter of 2018, quarter-on-quarter real GDP growth accelerated to 0.8 per cent with gross fixed capital formation, net exports and government consumption contributing positively, whereas the contribution of private consumption was negative.

In the fourth quarter of 2018 the seasonally adjusted number of employed decreased for the total economy mainly due to agriculture and industry. Concurrently, the unemployment rate further declined reaching 4.8 per cent, while labour force decreased from the previous quarter. The nominal compensation per employee rose on average by 1.7 per cent on a quarterly basis.

Short-term economic indicators in the beginning of 2019 give mostly positive signals about the economic development. In the second and third quarters of 2019 real GDP is expected to grow further quarter on quarter, with domestic demand contributing most to this effect. This will mainly reflect the increase in private consumption and to a lesser extent in government investment. The external environment will continue to be a source of uncertainty dampening investment activity of corporations and limiting export growth. At the same time, the increase in imports in line with the projected growth of domestic demand will boost the negative contribution of net exports to GDP growth from the end of 2018.

Current Economic Environment

In 2018 Bulgaria's real GDP growth slowed down to 3.1 per cent compared with 3.8 per cent in 2017. Domestic demand accelerated significantly, while the negative contribution of net exports increased on 2017. Private consumption had the main positive contribution to growth, followed by gross fixed capital formation and government consumption. Exports of goods and services in 2018 fell by 0.8 per cent, contributing most to the moderation in real GDP growth compared to the previous year.[28]

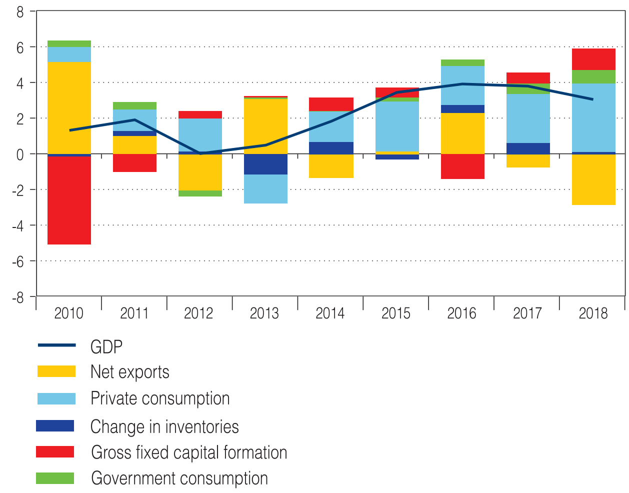
The broad-based and robust economic developments observed in domestic demand components, the improvement of labour market and NSI business survey indicators suggest that in 2018 the economy was in the expansion phase.

The BNB's estimates of the cyclical position of the economy show that in 2018 the economic activity in Bulgaria exceeded its potential level. This suggests that in terms of supply, part of the resources in the economy are employed above their potential level, which is in line with the long-term trend of high capacity utilisation by companies and the rapid decline in unemployment.

[28] For details, see Exports and Imports of Goods and Services Section in this Chapter.

Contribution to Annual GDP Growth by Final Use Component

(per cent, percentage points)



Sources: the NSI, BNB calculations.

According to seasonally adjusted NSI national account data, in the fourth quarter of 2018 real GDP accelerated to 0.8 per cent on a quarterly basis. Domestic demand continued to contribute positively to economic activity growth driven by the increased gross fixed capital formation and government consumption, while private consumption contributed negatively. Net exports had a positive contribution to real GDP growth reflecting the higher growth rate of goods and services exports than that of imports.

At the end-2018, according to seasonally adjusted data consumer confidence index remained at its current level, while according to non-seasonally adjusted data it declined slightly. Changes in consumer sentiment may also have contributed to the quarter-on-quarter decline in private consumption reported in the fourth quarter of 2018. Other potential factors behind the fall in private consumption included the drop in employment and the increased share of households, expecting the economic situation in Bulgaria to worsen[29], that is a precondition for postponing consumption. In the fourth quarter of 2018 gross fixed capital formation rose on the previous quarter contributing positively to the domestic demand growth. BNB estimates[30] indicate that investment increase is mainly due to the recovery in private investment following the decline reported in the third quarter of the year. However, private investment dynamics remained relatively subdued driven by both weaker external demand for Bulgarian goods and services recorded in the course of 2018 and worsening firms' expectations about future economic activity in the second half of the year as reported by NSI.

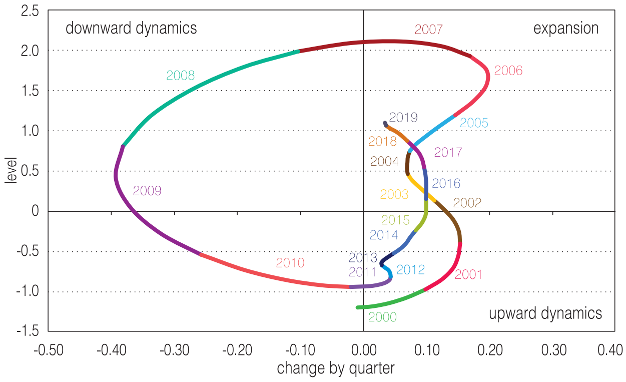
Short-term economic indicators in the beginning of 2019 give mostly positive signals about the economic development, however, also indicating potential risks to the economic activity growth in Bulgaria in the following quarters. In the first quarter of 2019 the business climate indicator tracking business sentiment went up *vis-à-vis* the fourth quarter of 2018, reflecting more favourable assessments of managers on the expected business situation in Bulgaria[31]. In addition,

[29] BNB seasonally adjusted data.

[30] The analysis employs data from quarterly non-financial accounts of the general government sector and reports on the implementation of the Consolidated Fiscal Programme, published by NSI and MF respectively.

[31] Seasonally adjusted data.

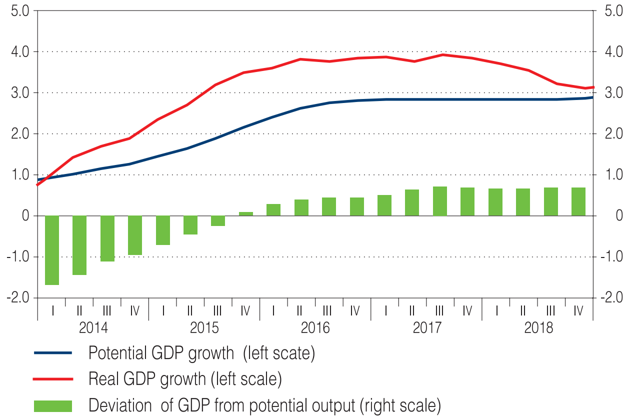
Business Climate Indicator Dynamics



Notes: The chart compares the business climate level (the vertical axis) and its quarterly change (the horizontal axis). The business climate series has been transformed using the HP filter (with a parameter λ = 100) in order to eliminate short-term fluctuations, after which it has been standardised.
The four chart grids allow to distinguish the four phases of the business cycle:

Sources: the NSI, BNB calculations.

Potential GDP Growth and Deviation of Economic Activity from Potential Output



Notes: Results are obtained through the application of a multivariate model with unobserved components presented in the research topic on Methods for Estimating the Cyclical Position of the Economy. The output gap is the deviation of the current level of economic activity and potential output measured as a percentage of potential output.

Sources: the NSI, BNB calculations.

according to the NSI survey firms in industry, construction, trade and services maintained the attained relatively high levels of production activity and production assured with orders, coupled with higher expectations about the activity in the following three months. These developments are a prerequisite for accelerating real GDP growth in the second and third quarters of 2019. Concurrently, previous year's upward trend in the uncertainty indicator constructed by the BNB was retained, which is likely to dampen the economic activity growth in Bulgaria.

The NSI Consumer Survey of January 2019 reported a slight increase in the composite consumer confidence indicator according to seasonally adjusted data, while non-seasonally adjusted level remained unchanged compared with the previous quarter. However, NSI survey shows further worsening of consumer expectations about the economic situation in Bulgaria in the following 12 months[32]. These trends are likely to reflect the enhanced uncertainty in the international environment, including the drop in employment in specific economic sectors in the fourth quarter of 2018. More negative sentiment of some consumers was in line with the slowdown in quarterly growth of retail sales at comparative prices in January 2019 and the increase in household deposits and hence their improved net position in the banking system[33].

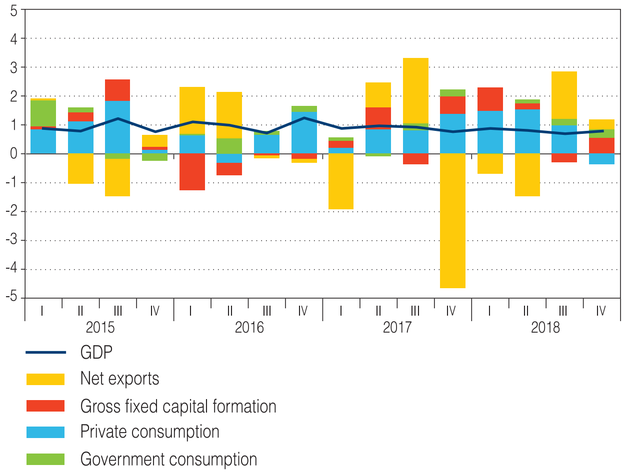
In the second and third quarters of 2019 real GDP is projected to grow further both on a quarterly and on an annual basis, at rates similar to those reported at the end of 2018. Quarter-on-quarter private consumption growth is expected to recover and to make a major positive contribution to the GDP growth. The factors behind this trend include the increase in household labour income and low interest rates, which continue to stimulate demand for consumer loans. However, the worsened household assessments about the future economic situation in Bulgaria are likely to result in a gradual moderation of annual growth in private consumption in the following quarters. In addition, government consumption and projected increase in public investment will contribute positively to higher domestic demand in the projection

[32] BNB seasonally adjusted data.

[33] For details on developments in nominal retail trade turnover and household propensity to save, see the Household Behaviour Section in this Chapter.

Contribution to GDP Growth by Final Use Component

(per cent; percentage points; quarter-on-quarter)

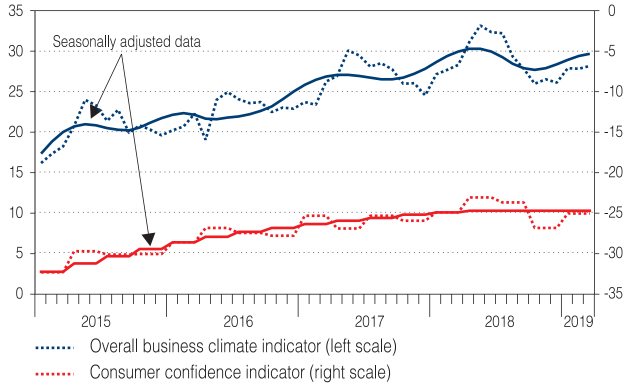


Note: Non-additive data due to direct chain-linked and seasonal adjustment of GDP and its components; the contribution of the change in inventories has not been included.

Sources: the NSI, BNB calculations.

Business Climate and Consumer Confidence

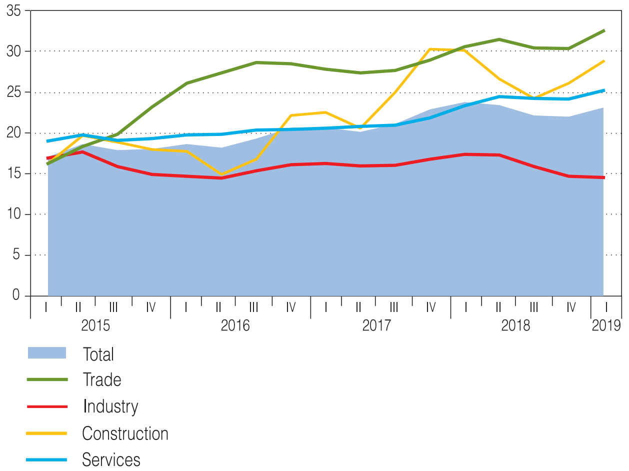
(per cent) (per cent)



Sources: the NSI, BNB calculations.

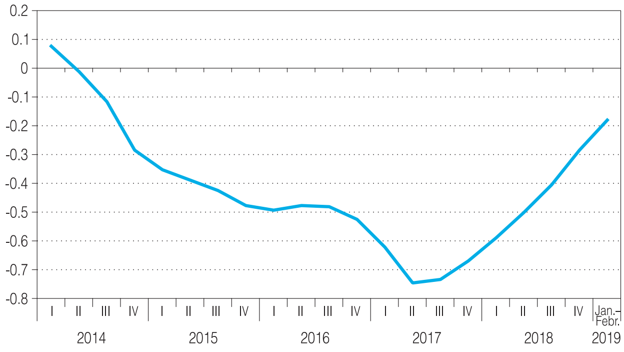
Expectations about Future Economic Activity

(balance of opinions, per cent; seasonally adjusted data)



Sources: the NSI, BNB calculations.

Uncertainty Indicator in the Economy (Corporations and Households)



Notes: Higher values of this indicator should be interpreted as an increase in uncertainty. Positive/negative values indicate that the uncertainty is above/below its long-run level. This indicator is constructed under a methodology presented in: *Ivanov, E. 'Constructing an Uncertainty Indicator for Bulgaria', BNB Discussion Papers 109/2018*, and corresponds to the indicator *U1* constructed in the paper.

Sources: EC, BNB calculations.

horizon. Private investment dynamics is expected to remain relatively subdued, constrained mainly by the continuous uncertainty in international environment and the moderated growth of external demand for Bulgarian goods and services on an annual basis.

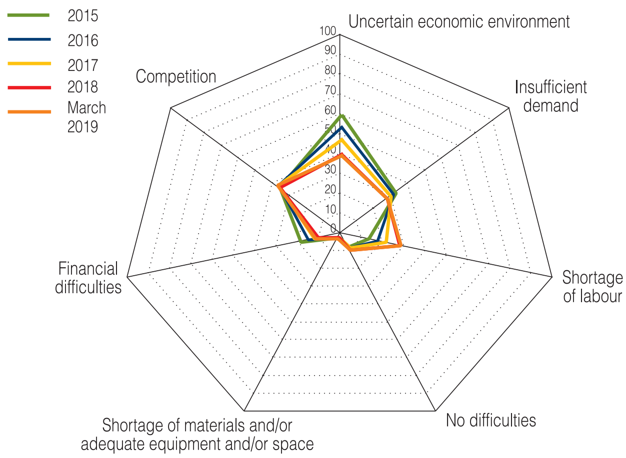
Real exports of goods and services is anticipated to increase at relatively slow quarterly rates in the second and third quarters of 2019, while the growth will be higher on an annual basis due to the exhaustion of certain one-off factors.[34] Concurrently, the growth in domestic demand and exports will contribute to accelerating the increase in goods and services imports. As a result the contribution of net exports to quarter-on-quarter and annual GDP growth is anticipated to become more negative in the projection horizon compared to the end of 2018.

Risks to the forecast point to a lower real GDP growth reflecting primarily the external environment and government investment. Potentially less favourable development in Turkey's economic situation and other important trading partners for Bulgaria compared to the baseline scenario of projected external demand along with increasing uncertainty over Brexit, are the main sources of risks to external demand for Bulgarian goods and services. Possible delay in the implementation of planned government investment is another factor for achieving weaker than expected economic growth over the projection horizon.

[34] For details, see Exports and Imports of Goods and Services Section in this Chapter.

Factors Limiting Economic Activities of Corporations

(relative share of all corporations)

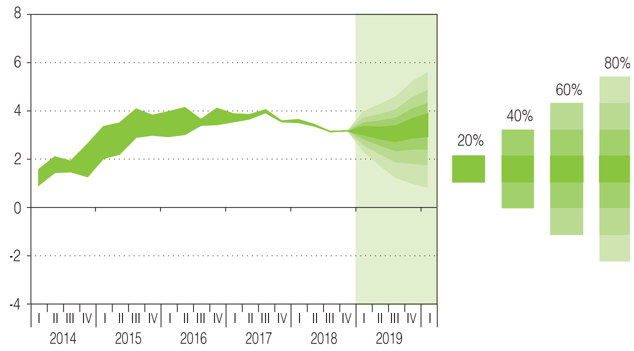


Note: Average for the period calculated as sector-weighted (industry, construction, trade and services).

Sources: the NSI, BNB calculations.

Real GDP Growth Forecast

(%; seasonally adjusted data)



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

Source: the BNB.

Real GDP Growth by Final Use Component

(per cent, quarter-on-quarter; seasonally adjusted data)

	2015				2016				2017				2018			
	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV
Consumption	1.4	1.4	2.0	0.2	0.9	0.4	0.7	1.8	0.5	1.1	1.4	1.7	1.8	1.8	1.4	-0.1
incl.																
Household consumption	1.2	1.7	2.8	0.2	1.0	-0.5	1.0	2.2	0.3	1.3	1.2	2.1	2.3	2.2	1.4	-0.6
Government final consumption expenditure	2.0	2.3	-0.9	-0.5	-0.9	3.2	0.0	2.2	1.3	-1.9	1.4	0.3	1.0	0.1	0.5	0.0
Collective consumption	5.0	-1.2	0.7	-0.1	-0.5	2.6	1.3	1.1	1.0	0.3	1.9	1.7	-0.1	1.0	1.0	2.0
Gross fixed capital formation	0.5	1.5	3.5	0.4	-5.9	-2.2	-0.3	-0.9	1.2	4.0	-1.9	3.2	4.1	1.1	-1.5	2.8
Exports of goods and non-factor services	2.2	-0.8	-3.3	3.9	3.0	4.0	0.7	1.9	0.7	1.4	3.5	-2.1	-1.7	-1.6	1.7	3.1
Imports of goods and non-factor services	2.1	0.8	-1.3	3.1	0.4	1.5	0.8	2.1	3.5	0.1	0.2	4.8	-0.7	0.7	-0.8	2.4
GDP	0.9	0.8	1.2	0.8	1.1	1.0	0.7	1.2	0.9	1.0	0.9	0.7	0.9	0.8	0.7	0.8

Source: the NSI.

Exports and Imports of Goods and Services

In 2018 nominal exports of goods increased by 1.2 per cent on an annual basis and nominal imports of goods by 6.2 per cent.[35] According to non-seasonally adjusted national account GDP data, real exports of goods fell by 1.9 per in 2018, while real imports of goods rose by 4.6 per cent in line with the reported significant acceleration of domestic demand. The comparison of exports and imports of goods in nominal and real terms suggests that the dynamics of global prices in 2018 has contributed positively to their growth in nominal terms.

In 2018 growth of nominal exports of goods was limited due to the weaker exports of mineral products and fuels, as a result of scheduled refurbishment of production facilities in March and April.[36] With completion of refurbishment works in the second half of the year the growth of exports in the group recovered on an annual basis. All other commodity groups under the Combined Nomenclature posted an increase on an annual basis in 2018 with machines making the largest positive contribution[37]. BNB calculations[38] show that in addition to mineral fuels, base metals also contributed negatively to the real change in exports in 2018 probably due to one-off factors. According to non-

Net Exports of Commodity Groups by Use, January–December 2018

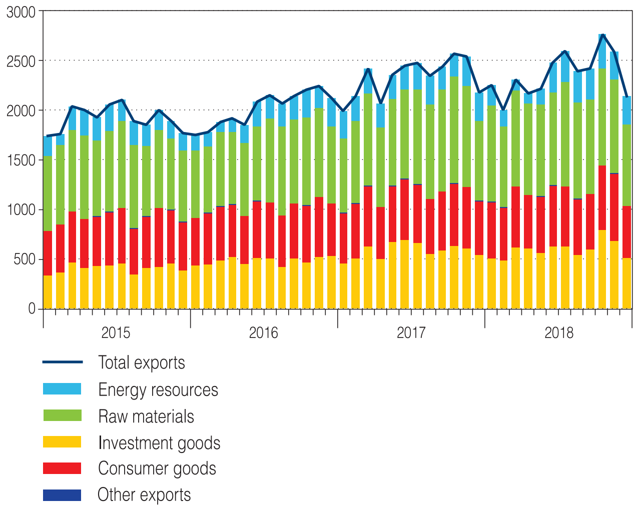
	Balance (EUR million)	Change* (EUR million)	Growth of exports** (per cent)	Growth of imports** (per cent)
Consumer goods	46.2	-276.2	2.0	6.4
Raw materials	-637.9	-357.5	2.9	6.1
Investment goods	-1455.9	-642.6	1.3	9.4
Energy resources	-1768.1	-268.3	-7.1	1.0
Other exports	-105.7	-7.1	5.6	6.6
Total	-3921.3	-1551.6	1.2	6.2

* Balance change on same period of previous year.
** Exports and imports growth for the period on an annual basis.

Source: the BNB.

Exports of Commodity Groups by Use

(EUR million)



Source: the BNB.

[35] Foreign trade data.
[36] NSI data on production and supplies of oil and oil products.
[37] In this chapter, it should read the machines, vehicles, appliances, instruments and weapons group under the Combined Nomenclature.
[38] Real volumes of imports have been constructed under the commodity groups of Standard International Trade Classification (SITC) by using NSI data on imports prices and nominal values of imports under SITC.

Exports by Commodity Group, January–December 2018

	Value (EUR million)	Change* (EUR million)	Growth** (per cent)	Contribution** (percentage points)
Wood products, paper, ceramics and glass	1 303.8	15.3	1.2	0.1
Machines, vehicles, appliances, instruments and weapons	7 572.9	243.5	3.3	0.9
Mineral products and fuels	3 252.4	-168.5	-4.9	-0.6
Base metals and related products	4 953.6	50.5	1.0	0.2
Animal and vegetable products, food, drinks and tobacco	4 242.7	70.9	1.7	0.3
Textiles, leather, clothing, footwear and other consumer goods	3 425.6	31.8	0.9	0.1
Chemical products, plastics and rubber	3 496.3	87.9	2.6	0.3
Total exports	28 247.3	331.5	1.2	-

* Change on the corresponding period of previous year.
** Growth/contribution to growth of total exports over the period on an annual basis.

Source: the BNB.

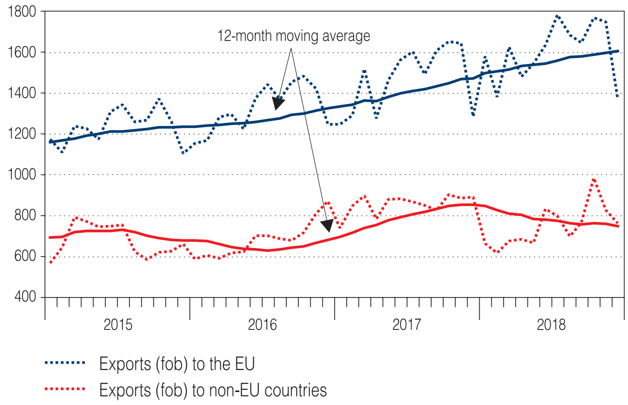
seasonally adjusted national account GDP data, real exports of goods fell most in the second and third quarters of the year, while in the fourth quarter of 2018 the exports recovered their growth on an annual basis.

In 2018 exports of goods to EU Member States increased further by 9.1 per cent on an annual basis, with exports to Germany making the major contribution. A relatively sustained rate of growth was reported quarterly with a slight slowdown only in the fourth quarter which may be explained by weaker economic activity in some major euro area countries. Exports to EU in all commodity groups posted year-on-year growth in 2018 with machines and animal and vegetable products making the largest positive contribution.[39] Exports to non-EU countries declined by 12.5 per cent on an annual basis in 2018 due almost entirely to lower exports to Russia (base metals), Turkey (mineral products and fuels) and Egypt (mineral products and fuels). In 2018 the share of exported goods to EU Member States in total exports of goods increased by 5.0 percentage points from 2017 to 68.2 per cent.

In 2018 nominal goods imports picked up on an annual basis. By use, growth was reported in all sub-groups. Investment goods followed by raw materials contributed most substantially to the growth of total imports. BNB calculations[40] show that in 2018 negative contribution to the growth of goods imports in real terms had mineral fuels

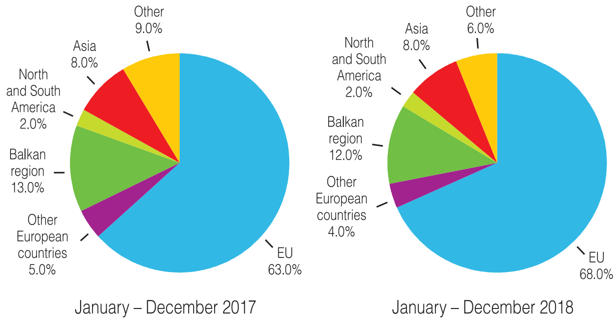
Dynamics of Goods Exports to the EU and non-EU Countries

(EUR million)



Source: the BNB.

Exports of Goods: Geographical Breakdown



Source: the BNB.

[39] In this chapter, it should read the animal and vegetable products, food, drinks and tobacco group under the Combined Nomenclature.

[40] Real volumes of imports have been constructed under the commodity groups of SITC by using NSI data on imports prices and nominal values of imports under SITC.

(mostly in the first half of the year) and metal ores (in the second half), while imports of the remaining commodity groups increased in real terms.

In 2018 imports of goods from EU Member States rose by 6.3 per cent on 2017. Imports from Germany and Italy contributed most strongly to growth. Imports from non-EU countries also rose (by 6.2 per cent) on an annual basis with imports from China and Brazil making the largest positive contribution to this dynamics. The share of imports from EU remained almost unchanged at 51.1 per cent.

The balance of payments data for January 2019 indicate a continuous growth on annual basis of nominal exports and imports of goods in the beginning of 2019 with growth of exports significantly exceeding that of imports.

In the second and third quarters of 2019 real exports of goods are expected to increase on an annual basis. This will reflect both the recovered exports of mineral products and the continuous rise in external demand, though at lower rates than in the same period of 2018.

Over the projection horizon, real imports of goods are expected to increase further on an annual basis, with an accelerated growth rate compared to 2018. Major factors behind this trend are the projected recovery of goods exports and the investment growth.

In the second and third quarters of 2019, the year-on-year increase in the imports and exports prices will have a positive contribution to the nominal change in foreign trade flows.

According to balance of payments data for 2018, exports and imports of services increased on an annual basis, with growth of exported services outpacing that of imported services. According to national account data, in 2018 growth of nominal exports and imports of goods was largely driven by rising prices on an annual basis, while in real terms imports of services posted a decline.

In 2018 services exports increased by 9.1 per cent year on year in nominal terms, with other services and travel sub-items contributing most to the growth. Travel earnings from visits of foreign tourists in Bulgaria rose by 6.5 per cent on an annual basis. According to NSI data, visits of

Imports of Commodity Groups by Use, January–December 2018

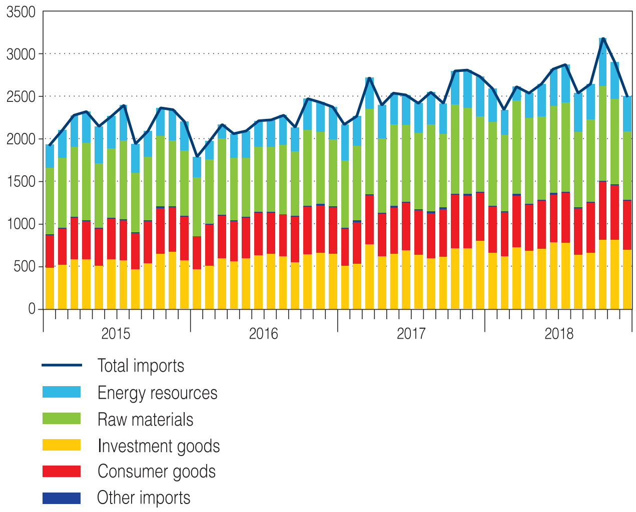
	Value (EUR million)	Change* (EUR million)	Growth** (per cent)	Contribution** (percentage points)
Consumer goods	6 941.2	414.7	6.4	1.4
Raw materials	11 834.9	676.1	6.1	2.2
Investment goods	8 571.7	735.2	9.4	2.4
Energy resources	4 655.8	46.8	1.0	0.2
Other imports	165.0	10.2	6.6	0.0
Total	32 168.6	1 883.1	6.2	-

* Change on the corresponding period of previous year.
** Growth/contribution to total import growth over the period on an annual basis.

Source: the BNB.

Imports of Commodity Groups by Use

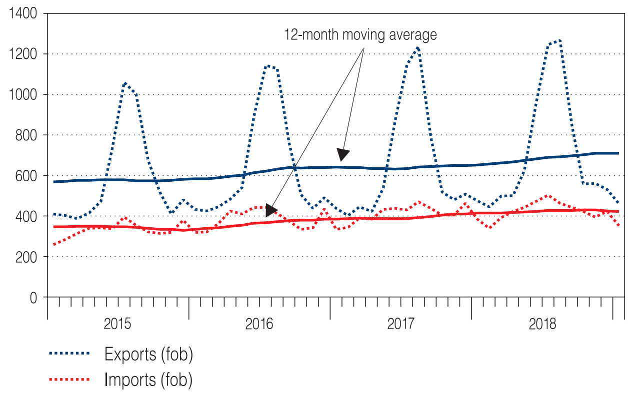
(EUR million)



Source: the BNB.

Dynamics of Exports and Imports of Services

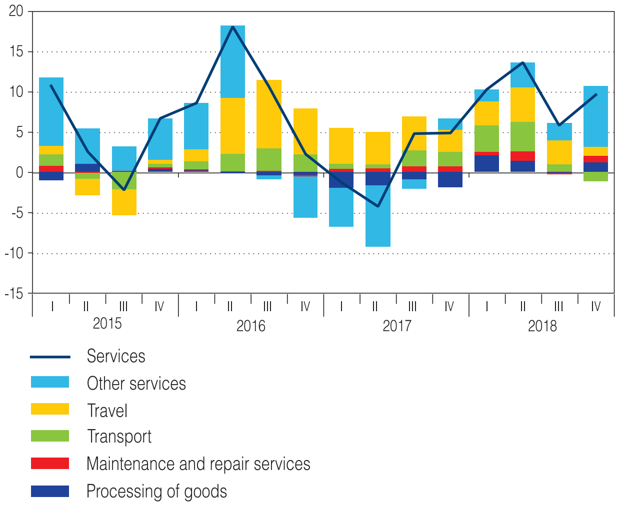
(EUR million)



Source: the BNB.

Annual Change of Services Exports and Contribution by Sub-component

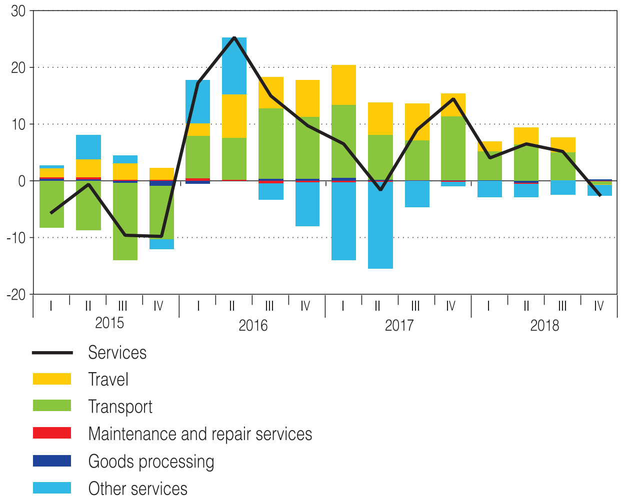
(per cent, percentage points)



Source: the BNB.

Annual Change of Services Imports and Contribution by Sub-component

(per cent, percentage points)



Source: the BNB.

foreign tourists to Bulgaria in 2018 increased by 6.7 per cent on 2017, with visits from Turkey and Ukraine making the largest contribution.

Services imports increased by 3.3 per cent year on year, mainly driven by transport services and to a lesser extent travel expenditure. According to NSI data, in 2018 Bulgarians' visits abroad increased by 7.6 per cent on an annual basis, with those to Turkey having the most significant contribution to this growth.

In the second and third quarters of 2019 exports and imports of services are expected to continue increasing on an annual basis in nominal terms. This will be driven by both the retained trend towards annual increase in price components and the projected rise in real trading volumes amid growing external and domestic demand.

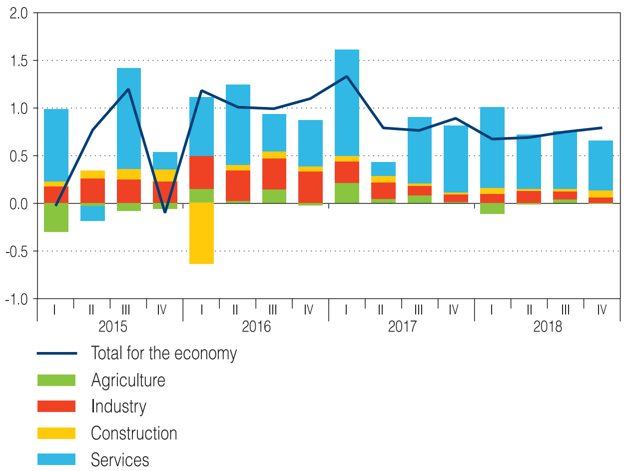
Behaviour of Firms and Competitiveness

In the fourth quarter of 2018 real value added for the total economy accelerated its growth rate reporting a 0.8 per cent increase on a quarter-on-quarter basis against 0.7 per cent in the previous quarter. Services sector continued to make the major positive contribution to value added growth, followed by manufacturing and construction, while the agricultural sector had a slight negative contribution.

Real value added in industry went up by 0.5 per cent on a quarterly basis in the fourth quarter

Value Added Growth in Real Terms and Contribution by Sector

(per cent, percentage points, quarter-on-quarter; seasonally adjusted data)



Note: Non-additive data on contributions due to direct seasonal adjustment of value added and its components.

Sources: the NSI, BNB calculations.

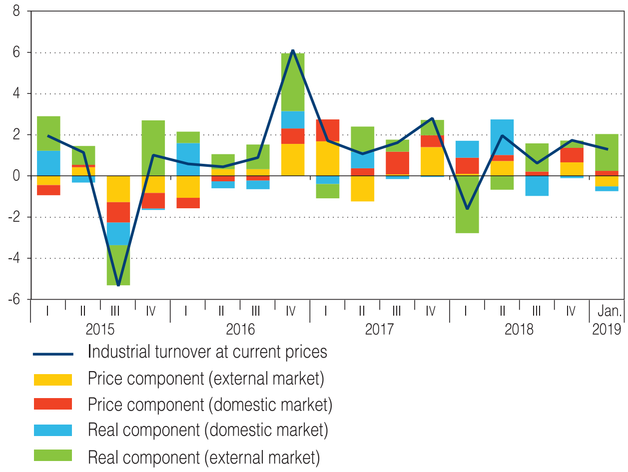
driven by the increased economic activity in both industry and construction. The NSI short-term business statistics data show a similar upward trend in industrial turnover and construction production (in real terms) on a quarterly basis in the last quarter of 2018. The quarter-on-quarter growth of the industrial turnover (at constant prices) in the fourth quarter of 2018 reflected the turnover realised on international markets in line with national accounts data on exports of goods. The increase in construction production was mainly driven by growth of building construction supported by the upward trend in house prices since the beginning of 2014. Civil/engineering construction also contributed positively to construction production output possibly reflecting the strong growth of public investment in 2018.

Services value added continued its upward dynamics since early 2018, increasing by 0.8 per cent on a quarterly basis in the fourth quarter. Financial and insurance activities, real estate activities and trade, transport and accommodation and food service activities made the most sizeable contribution to its growth over this period. Value added growth in trade was accompanied by the continuous upward trend in the retail trade turnover, though at slower rates than in the previous quarters due to the higher uncertainty in household assessments of the economic environment. Value added growth in the other services sub-sectors was in line with the NSI data on turnover in services in the fourth quarter, signalling a further increase in sales revenue generated by accommodation and food service activities, information and communication, telecommunications and transportation, storage and posts.

The NSI short-term business statistics data on production and turnover in industry, trade and construction production in January 2019 give grounds to expect gross value added growth in the respective sub-sectors in the first quarter of 2019. Nominal industrial turnover increased in January on the fourth quarter of 2018 owing mainly to the real component on external markets and to a lesser extent to the price component on the domestic market. Concurrently, the price component on international market and the volume of domestic market sales made a negative contribution. In January retail trade

Industrial Turnover Dynamics

(per cent, percentage points, quarter-on-quarter; seasonally adjusted data)

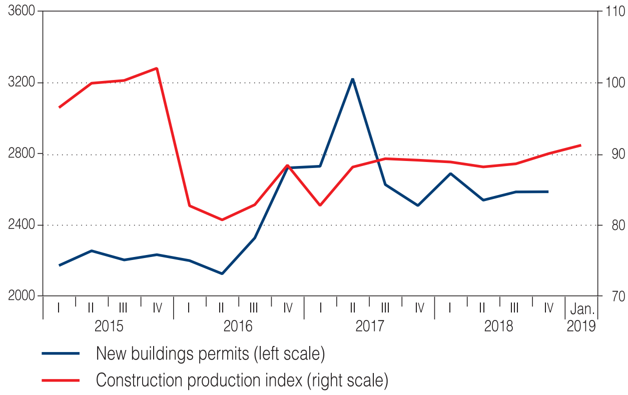


Note: Data for the first quarter of 2019 refer to January.

Sources: the NSI, BNB calculations.

Construction Production Dynamics and New Buildings Permits Issued

(number of buildings; seasonally adjusted data | (2015 = 100; seasonally adjusted data)

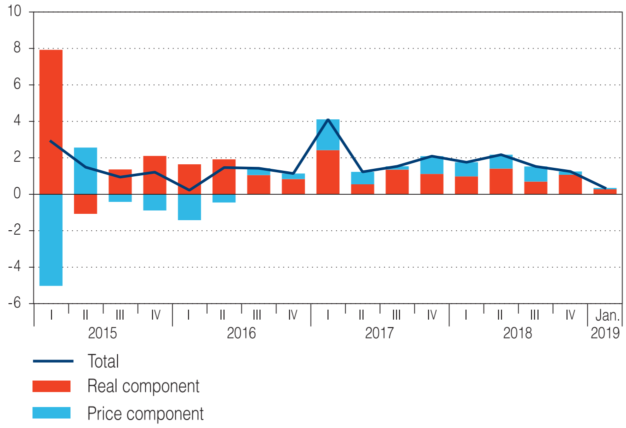


Note: Data for the first quarter of 2019 refer to January.

Sources: the NSI, BNB calculations.

Dynamics of Nominal Retail Trade Volumes

(per cent, percentage points, quarter-on-quarter; seasonally adjusted data)

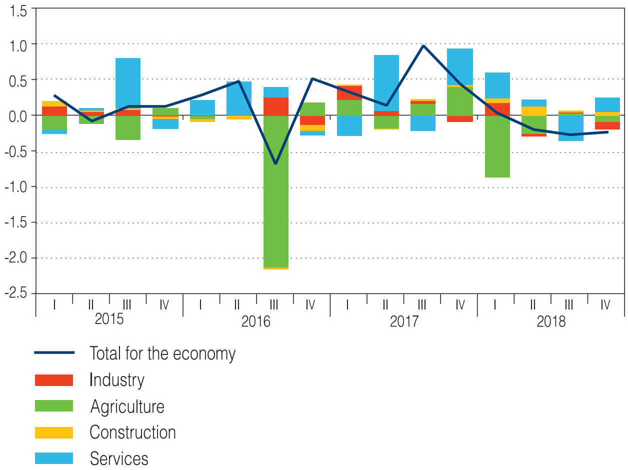


Notes: Non-additive data on contributions due to direct seasonal adjustment of the total amount and its components.
Data for the first quarter of 2019 refer to January.

Sources: the NSI, BNB calculations.

Employment Growth Rate for the Total Economy and Contribution to Changes in the Number of Employed by Economic Sector

(per cent, percentage points, quarter-on-quarter; seasonally adjusted data)



Note: Non-additive data on contributions due to direct seasonal adjustment of the total amount and its components.

Sources: the NSI, BNB calculations.

turnover increased further on a quarterly basis but moderately compared with the end of 2018 at constant and current prices. The construction output index also rose in January 2019 from the previous quarter with a positive contribution of building and civil/engineering construction.

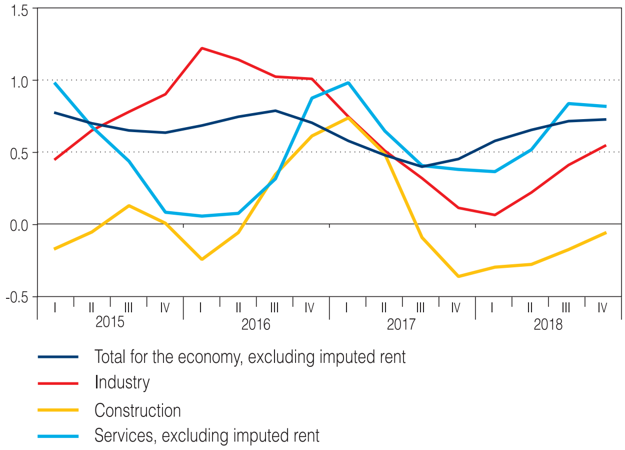
In the fourth quarter of 2018 employment in the total economy fell quarter on quarter according to seasonally adjusted NSI data. Industry and agriculture had the major negative contribution to the change in employment over that quarter, while the number of employed rose in services and construction. The decline in employment in the export-oriented industry could be explained by the moderated growth of external demand for Bulgarian goods and services in the second half of the year[41]. In 2018 employment fell in the total economy as a result of the lower number of self-employed in agriculture, while employment in services and industry accelerated its growth. In the second and third quarters of 2019 employment is expected to increase gradually quarter on quarter, due to the weakened negative contribution of agriculture to the total growth of employed.

Value added growth in the context of declining employment was the reason behind the continuous increase in labour productivity in the total

[41] For details, see Exports and Imports of Goods and Services Section in this Chapter.

Labour Productivity Developments (Value Added *per* Employee)

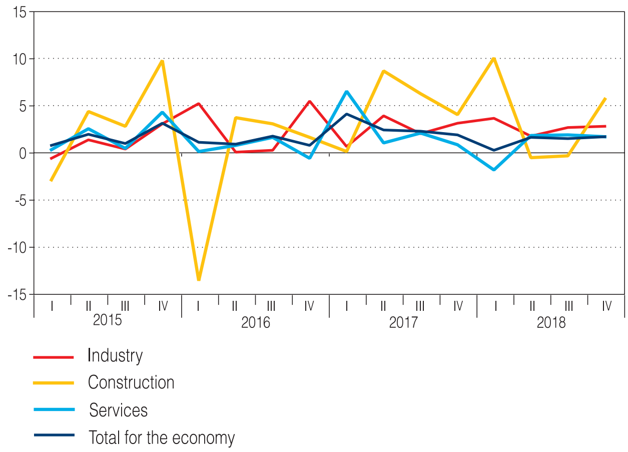
(per cent, quarter-on-quarter; seasonally adjusted data)



Sources: the NSI, BNB calculations.

Compensation *per* Employee at Current Prices

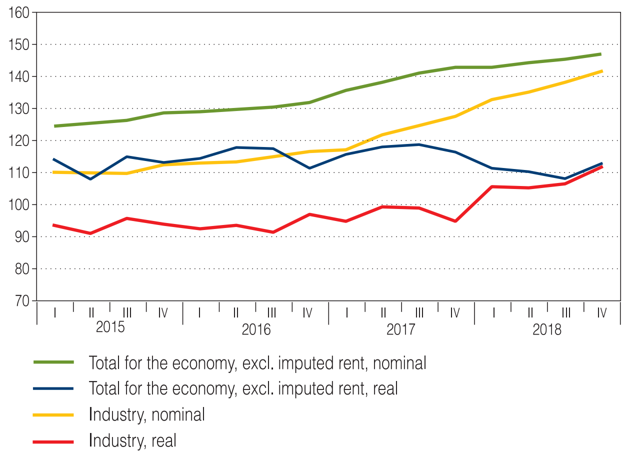
(per cent, quarter-on-quarter; seasonally adjusted data)



Sources: the NSI, BNB calculations.

Unit Labour Costs

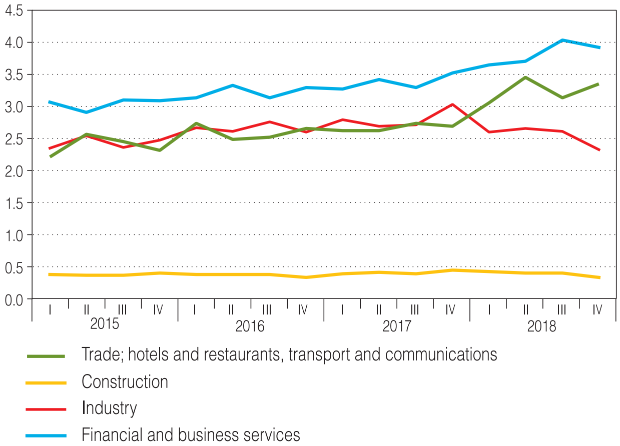
(2010 = 100; seasonally adjusted data)



Sources: the NSI, BNB calculations.

Gross Operating Surplus at Current Prices

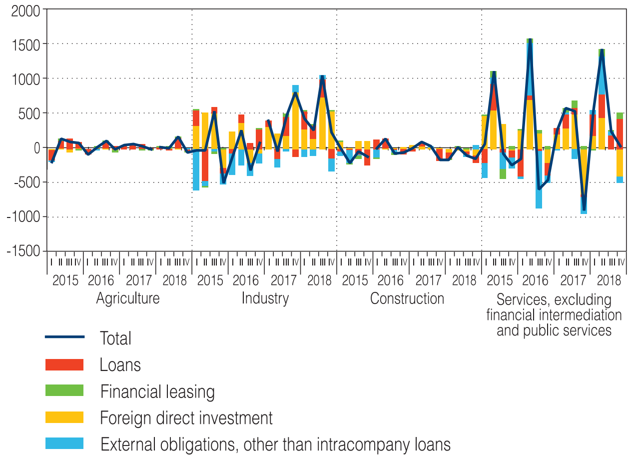
(BGN billion; seasonally adjusted data)



Sources: the NSI, BNB calculations.

Financing Sources*

(BGN million, quarter-on-quarter volume change)

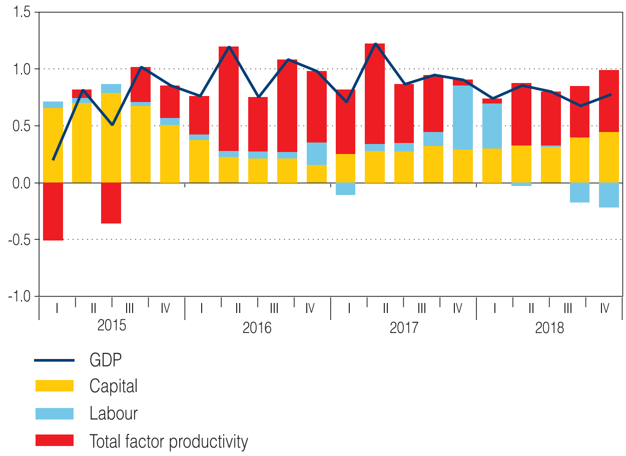


* Sourced of financing other than gross operating surplus.

Source: the BNB.

Contribution of Changes in Production Factors to GDP Growth

(per cent, percentage points, quarter-on-quarter; seasonally adjusted data)



Sources: the NSI, BNB calculations.

economy at the end of 2018. The improved labour productivity throughout the past year was favoured by private investment growth reflecting the increased share of managers who point to production expansion and rationalization as investments' primary aim[42]. In the fourth quarter of 2018 productivity increase on a quarterly basis was reported in all major sectors of the economy with accelerated growth rates in the industry, while productivity growth in the construction and services slowed down on the previous quarter.

In the fourth quarter of 2018 the compensation *per* employee in nominal terms accelerated its growth rate compared with the previous quarter due to construction and industry dynamics. Concurrently, in the services sector the growth of compensation *per* employee slowed down slightly. Corporations' positive expectations of hiring new employees in the following three months[43] coupled with lower labour supply measured by the number of unemployed create conditions for further growth of wages and salaries. Other factors that will have a positive impact on wage rises include public sector wage growth and increased minimum wage since the beginning of 2019 as projected in the budgetary framework. Under the influence of the above factors the compensation *per* employee is expected to increase further on a quarter-to-quarter basis in the second and third quarters of 2019 at rates close to those in 2018.

[42] The analysis employs data derived from EC investment surveys.

[43] NSI, Survey of Business Developments.

Gross Value Added Growth

(per cent, quarter-on-quarter; real rate, seasonally adjusted data)

	2015				2016				2017				2018			
	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV
Agriculture, forestry and fishing	-6.6	-0.8	-1.9	-1.4	3.5	0.5	3.3	-0.6	4.9	1.0	1.8	0.3	-2.7	-0.4	0.9	-0.2
Mining and quarrying; manufacturing; electricity, gas, steam and air conditioning supply; water supply; sewerage, waste management and remediation activities	0.8	1.2	1.1	1.0	1.6	1.4	1.5	1.5	1.0	0.7	0.4	0.3	0.4	0.6	0.4	0.3
Construction	0.7	1.3	1.9	2.1	-10.2	1.1	1.2	1.0	1.0	1.2	0.4	0.4	1.0	0.4	0.5	1.3
Wholesale and retail trade; repair of motor vehicles and motorcycles; transportation and storage; accommodation and food service activities	2.7	-0.2	2.1	-0.8	0.1	1.8	0.5	1.2	0.6	0.6	0.2	0.8	1.0	0.4	0.5	0.5
Information and communication	0.2	0.3	0.9	1.0	15.3	-1.7	-0.4	1.0	1.7	2.1	1.7	1.6	1.2	1.6	0.8	0.9
Financial and insurance activities	-1.7	-4.6	6.0	1.6	1.9	2.9	-0.3	-1.3	1.9	-2.4	1.0	0.7	4.2	-0.3	0.6	3.0
Real estate activities	0.4	0.9	1.0	0.8	1.5	1.4	1.6	1.7	1.9	1.8	1.6	1.9	1.7	1.7	2.7	0.8
Professional, scientific and technical activities; administrative and support service activities	3.6	0.9	1.5	2.1	-1.4	1.3	0.3	-0.6	1.2	-0.3	0.6	1.4	0.5	1.3	0.4	0.2
Public administration, education, human health and social work activities	0.1	0.0	0.0	-0.6	-3.2	0.8	1.2	0.5	3.4	-1.2	1.4	0.6	0.8	0.8	0.2	0.2
Culture, sport and entertainment; other activities; activities of households as employers; non-identified activities of households producing goods and services for own use; activities of extraterritorial organisations and bodies	2.1	2.0	-2.2	1.4	-1.9	0.2	-0.9	1.5	2.1	-0.1	3.5	-0.1	-2.6	0.8	0.1	-0.2
Gross value added, total for the economy	0.0	0.8	1.2	-0.1	1.2	1.0	1.0	1.1	1.3	0.8	0.8	0.9	0.7	0.7	0.7	0.8

Source: the NSI.

Slower growth rates of labour productivity in the total economy compared to the growth rates of compensation *per* employee resulted in higher unit labour cost both in nominal and real terms in the fourth quarter of 2018. Industry and financial and insurance activities services sub-sector posted the highest growth compared to the previous quarter.

In the fourth quarter of 2018 gross operating surplus remained unchanged from the previous quarter, while decline in industry and agriculture profits was offset by a growth in services sector. Funding attracted by firms from sources other than the gross operating surplus revealed divergent sector developments. Industry reported an increase in attracted foreign direct investment[44], while services were financed mainly through loans. Concurrently, in the fourth quarter of the year the volume of funding of firms with external debt remained almost unchanged on a quarterly basis.

Growth decomposition by production factor suggests that total factor productivity, followed by capital was the main contributor to growth in the fourth quarter of 2018. At the same time, labour

[44] Preliminary data subject to revision.

contributed negatively to GDP growth due to employment decline over the quarter.

Household Behaviour

In the fourth quarter of 2018 household consumption fell quarter on quarter probably constrained by the reported drop in employment and the increased share of households, expecting the economic situation in Bulgaria to worsen.

The NSI Labour Force Survey shows that in the fourth quarter of 2018 labour supply, as measured by the labour force[45], fell due to outflow from labour force and decline in working-age population. However, the long-term downward trend in the number of discouraged persons continued in the fourth quarter of 2018. As a result, the economic activity rate[46] declined from the prior quarter, but on average for 2018 it was higher than that in 2017.

The Labour Force Survey shows that in the fourth quarter of 2018 unemployment[47] continued to decrease, reaching 4.8 per cent (non-seasonally adjusted data: 4.7 per cent). Short-term unemployment (up to one year) and, to a lesser extent, persons unemployed more than a year contributed to the decline in the unemployment rate. The seasonally adjusted unemployment rate[48] calculated using the Employment Agency data also continued to decrease, reaching 5.6 per cent in February 2019 (6.2 per cent according to non-seasonally adjusted data).

In the fourth quarter of 2018, wages continued to increase (both annually according to non-seasonally adjusted data on the wage bill and average wage *per* employee and quarterly according to seasonally adjusted national accounts data) driven by the strong demand and limited labour

[45] The labour force (currently economically active population) comprises persons aged 15 and older who provide the supply of labour for the production of goods or services. Labour force includes both employed and unemployed persons.

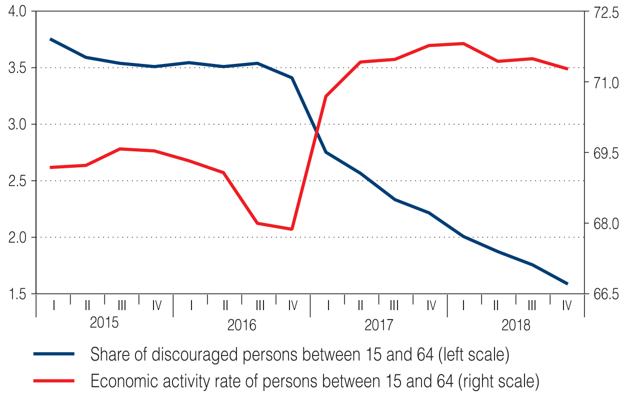
[46] The labour force participation rate is the proportion between economically active persons (labour force) and population of the same age.

[47] The unemployment rate is the proportion between the number of unemployed and the labour force based on Labour Force Survey data.

[48] The definition of the unemployment rate according to the Employment Agency corresponds to that referred to in the previous footnote, but using a constant rate of labour force comprising the number of persons in the respective age group since the last census of the population.

Economic Activity and Share of Discouraged Persons

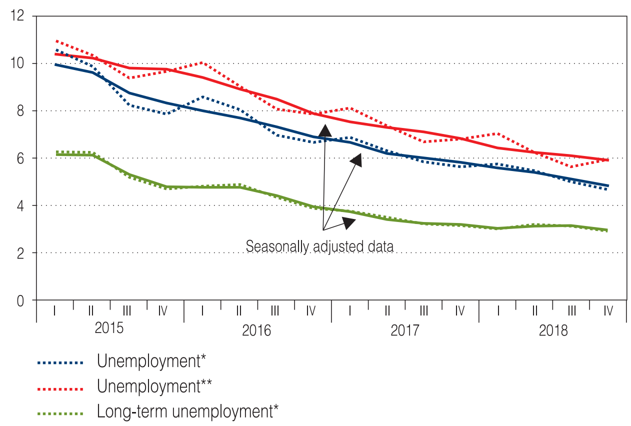
(per cent, seasonally adjusted data) (per cent, seasonally adjusted data)



Sources: NSI Labour Force Survey, BNB calculations.

Unemployment Rate

(per cent, share of labour force)

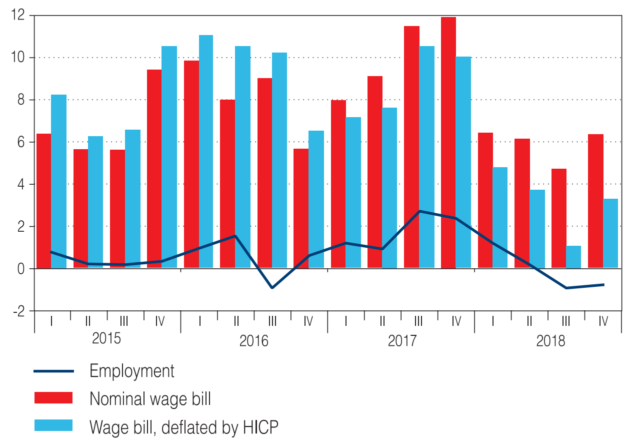


* NSI data.
** Employment Agency data.

Sources: NSI Labour Force Survey, Employment Agency, BNB calculations.

Employment and Nominal Wage Bill

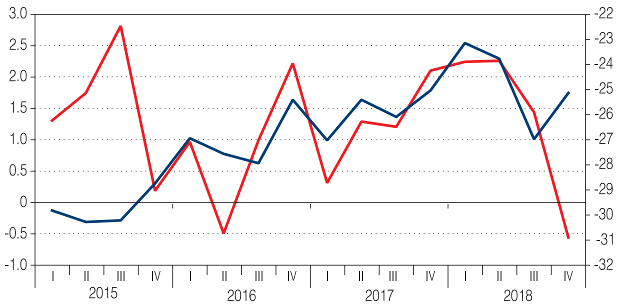
(annual change, per cent)



Sources: the NSI–SNA, BNB calculations.

Private Consumption and Consumer Confidence

(quarterly change, per cent; seasonally adjusted data) (balance of opinions)



Sources: the NSI, BNB calculations.

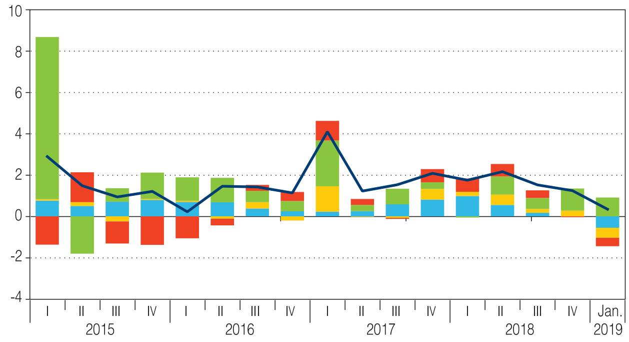
supply. The year saw a slower wage bill growth and an increasing difference between wage growth rates in nominal and real terms due to higher inflation in 2018.[49]

Given the quarter-on-quarter employment fall in the second half of 2018 consumer confidence worsened, with household expectations about overall economic situation in Bulgaria and their financial position having the largest negative contribution to the lower indicator. The NSI Consumer Survey[50] of January 2019 reported a sustained level of consumer confidence according to seasonally adjusted prices.

Worsened household expectations and slower growth of real wages due to lower employment in the fourth quarter of 2018 reflected on consumer demand. According to seasonally adjusted national accounts data private consumption decreased quarter on quarter. These developments corresponded to the dynamics of nominal retail trade turnovers which slowed down their growth at the end of 2018. January 2019 data indicate lower private consumption growth than that reported in early 2018.

Retail Trade Turnover

(seasonally adjusted data at current prices, per cent, on the previous quarter)

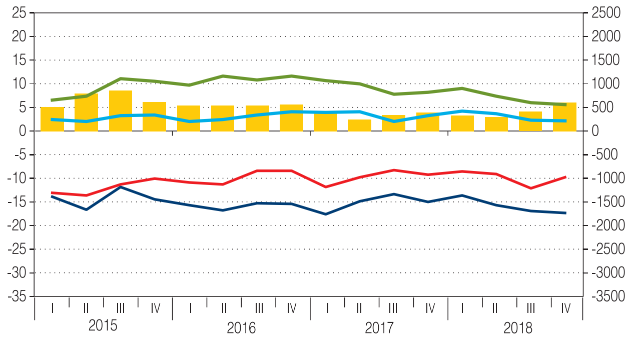


Notes: Non-additive data on contributions due to direct seasonal adjustment of the total amount and its components.
Data for the first quarter of 2019 refer to January.

Sources: the NSI, BNB calculations.

Household Propensity to Save and Expectations

(per cent; seasonally adjusted data) (BGN million; seasonally adjusted data)



* BNB data.
** NSI data.

Sources: NSI Household Budget Survey, NSI Consumer Survey, BNB.

[49] Preliminary data subject to revision.

[50] Final results of the Consumer Survey represent balances of opinions calculated as a difference between the relative shares of positive and negative opinions on raised issues. The composite consumer confidence indicator is calculated as the arithmetic mean of expectation balances in the following 12 months for the development of: financial position and savings of households, the overall economic situation in the country and unemployment (the latter with the sign reversed).

Employment and Income Dynamics

	2015				2016				2017				2018			
	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV
(per cent, quarter-on-quarter; seasonally adjusted data)																
Employed persons	0.3	-0.1	0.1	0.1	0.3	0.5	-0.7	0.5	0.3	0.1	1.0	0.4	0.0	-0.2	-0.3	-0.2
Nominal wage *per* employee*	0.9	2.0	1.3	3.1	1.6	0.8	1.7	0.8	3.6	2.6	2.1	1.8	0.2	1.4	1.6	1.6
Real wage *per* employee**	1.3	1.8	1.8	3.6	2.0	1.3	1.3	0.7	3.2	2.1	2.5	0.5	-0.5	0.6	0.7	0.9
Wage bill, nominal terms	1.6	2.0	1.7	3.2	1.6	1.5	1.9	1.4	3.5	2.3	2.4	2.0	0.8	1.6	1.2	2.0
Wage bill, real terms**	2.0	1.9	2.2	3.8	2.0	2.1	1.6	1.3	3.2	1.8	2.7	0.7	0.1	0.9	0.2	1.4
(per cent, on corresponding quarter of previous year, non-seasonally adjusted data)																
Employed persons	0.8	0.2	0.2	0.3	0.9	1.5	-1.0	0.6	1.2	0.9	2.7	2.4	1.2	0.2	-0.9	-0.8
Nominal wage *per* employee*	5.5	5.1	4.2	8.1	8.2	5.9	7.4	3.6	6.9	9.3	11.3	11.7		4.7	4.7	5.8
Real wage *per* employee**	7.4	5.8	5.2	9.2	9.4	8.4	8.6	4.4	6.1	7.8	10.4	9.8	3.4	2.3	1.0	2.7
Wage bill, nominal terms	6.4	5.7	5.6	9.5	9.9	8.0	9.1	5.7	8.0	9.1	11.5	12.0	6.4	6.2	4.7	6.4
Wage bill, real terms**	8.3	6.3	6.6	10.6	11.1	10.6	10.3	6.5	7.2	7.6	10.6	10.1	4.8	3.7	1.1	3.3

* The wage is calculated according to NSI data (SNA), with social security contributions paid by the employer deducted from the compensation per employee. The difference is divided by the number of employees.
** Data deflated by HICP.

Sources: the NSI–SNA, BNB calculations, Eurostat.

Retail Trade Turnover

(per cent, quarter-on-quarter; seasonally adjusted data at constant prices)

	2015				2016				2017				2018				2019
	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	January
Retail trade, excluding motor vehicles and motorcycles	**7.9**	**-1.1**	**1.4**	**2.1**	**1.6**	**1.9**	**1.1**	**0.8**	**2.4**	**0.5**	**1.4**	**1.1**	**1.0**	**1.4**	**0.7**	**1.1**	**-0.8**
incl.																	
Food, drinks and tobacco products	2.1	1.4	1.9	2.2	1.9	1.9	1.0	0.7	0.6	0.7	1.6	2.2	2.7	1.5	0.5	0.0	-3.9
Textile, clothing, footwear and leather	-0.8	0.1	3.9	2.9	2.5	2.9	1.3	-0.2	12.6	-2.7	-5.3	0.5	-0.8	2.6	1.0	2.6	1.1
Household appliances, furniture and other household goods	0.7	-0.1	1.8	-0.2	2.3	0.3	1.2	2.0	1.0	2.9	1.5	1.2	0.7	2.5	2.8	-1.0	13.9
Computer and communication equipment	16.4	-5.5	0.3	-2.7	-1.8	5.3	1.9	7.7	-1.8	0.5	0.5	2.1	-4.2	1.1	-1.8	-3.6	6.5
Pharmaceutical and medical goods, cosmetics and toiletries	2.4	1.6	1.9	2.5	2.0	3.5	3.6	0.9	0.9	2.4	1.3	1.3	6.4	2.0	2.9	5.3	-13.4
Unspecialised shops with different kinds of goods	1.3	0.4	1.5	2.3	0.0	1.2	2.5	1.4	4.2	2.0	2.1	0.3	-1.2	1.6	1.1	-1.0	6.8
Automobile fuels and lubricants	38.6	-6.5	-0.4	5.4	0.8	1.5	-2.2	-3.0	6.8	-2.3	1.2	-1.1	-2.3	2.3	0.1	5.5	3.2

Source: the NSI, short-term business statistics.

The NSI Household Budget Survey data show that the share of savings in household disposable income declined slightly due mainly to lower growth in disposable income in 2018. Nonetheless, the proportion of households intending to increase their savings in the following 12 months (according to the NSI Consumer Survey of January 2019) remained high. Household assets measured by their net position in the banking system grew strongly in the fourth quarter of 2018 in line with higher households' uncertainty regarding the macroeconomic environment.

In the second and third quarters of 2019 unemployment is expected to continue decreasing though at a slower pace than the one reported in 2018 due to subdued labour demand. Corporations' positive sentiment about hiring new employees coupled with limited labour supply are expected to result in further wage growth, which could encourage new persons to join the labour force.

Fiscal Policy Effects on the Economy

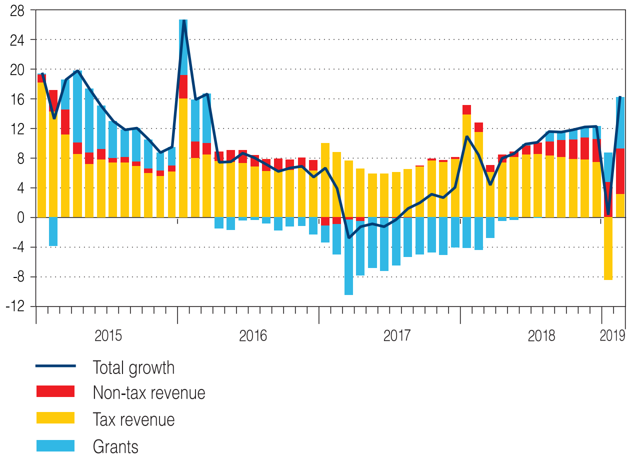
In 2018 the fiscal policy supported economic growth due to higher public investment, government consumption and transfers to households. The increase in current and capital expenditure on the consolidated fiscal programme was entirely financed by higher revenue, the budget balance on the consolidated fiscal programme being positive at BGN 137 million (0.1 per cent of GDP).

Tax revenue continued to contribute most significantly to annual growth of total revenue in 2018, reflecting the strong domestic demand, robust labour income growth and changes to tax and social security policy. Simultaneously changes to the budget of the Security of the Electricity System Fund increased both the revenues and expenditure sides of the budget, which should have an almost neutral effect on the overall economic activity.

Over the year the implementation of EU co-financed projects accelerated, which resulted in an increase of both grants revenue and capital expenditure, with capital expenditure under EU programmes contributing most substantially to reported public investment growth. Concurrently, capital expenditures under the national budget were reimbursed, reflecting to a large degree the infrastructure expenditure approved at the end of the year[51] with an expected positive effect on public investment in this year and in the following several years. Social payments and current personnel costs and operating expenditure also contributed strongly to the growth in budget expenditure over 2018, with their

Contributions of Major Revenue Groups to Growth of Total Revenue and Grants, Cumulatively (on an Annual Basis)

(per cent; percentage points)



Sources: the MF, BNB calculations.

[51] In December the Council of Ministers approved expenses for the construction of a Hemus motorway section to the amount of BGN 1.3 billion. These funds were earmarked in a dedicated account of the national Road Infrastructure Agency. The Agency's information as of end-December 2018 shows that no payments have yet been made for work actually performed.

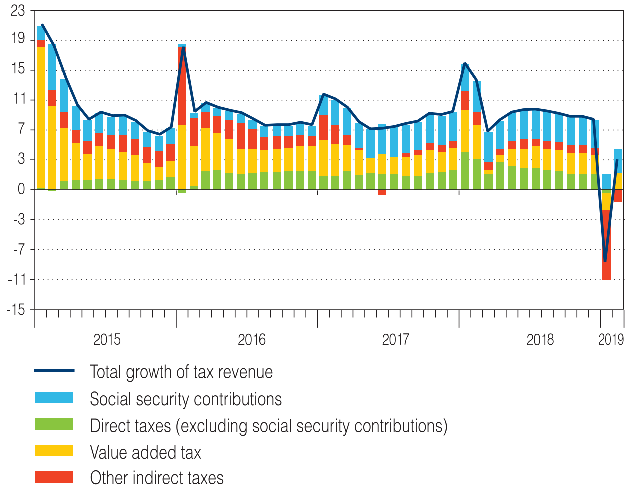
dynamics reflecting mainly government measures to increase pensions and compensation of employees.

As of the end of February 2019 the CFP surplus amounted to BGN 1513 million or 1.3 per cent of projected GDP,[52] representing a BGN 761 million rise from the same period of 2018.

In January–February 2019 total budget revenue grew by 16.2 per cent annually, resulting mainly from the high growth rates in non-tax revenue and grants which, in turn, reflected budget changes in the Security of the Electricity System Fund[53] and larger EC reimbursements on expenditure incurred by EU programmes.[54] At the same time, divergent dynamics in CFP revenue over the first two months of the year reflected the fluctuations in tax revenue changes. With the gradual unwinding of one-off factors in excise revenue,[55] in February the annual growth in tax revenue recovered to reach 3.6 per cent after the substantial drop reported in the previous month. Retention of a still negative contribution of excise duties and a decreased positive contribution of direct taxes[56] were the main drivers for a temporary moderation in tax revenue growth as of February compared with the end of 2018. At the same time, VAT revenue rose by 5.9 per cent annually, reflecting household consumption developments at the end of 2018. Social and health insurance contributions maintained their high growth rate (11.1 per cent),

Contributions of Major Tax Groups to Tax Revenue Growth, Cumulatively (on an Annual Basis)

(per cent; percentage points)



Sources: the MF, BNB calculations.

[52] GDP forecasts of the Ministry of Finance for 2018 based on the autumn macroeconomic forecast for the 2018–2021 period, published in October 2018.

[53] As from 1 July 2018 revenue received into the Security of the Electricity System Fund's budget included income from public service obligations under Article 30, paragraph 1, item 17 of the Law on Energy (through which all participants connected to the electrical power system participate in the compensation of expenses referred to in Articles 34 and 35 of the Law on Energy). Growth in this revenue reflects also the increased market price of exhaust emission allowances since early 2018.

[54] Grants received in the first two months were BGN 467 million, or a BGN 431 million rise *vis-à-vis* the very low receipts in the same period of 2018.

[55] In early 2018 there was excessive stockpiling in the commercial network of cigarettes subject to lower excise rates applicable since 2017 (from 1 January 2018 the overall excise duty on cigarettes was raised from BGN 168 to BGN 177 *per* 1000 cigarettes).

[56] Personal income tax increased by 4.8 per cent on an annual basis, with growth accelerating in February due to the unwinding of base effects of the NRA control campaign over business entities and non-profit institutions with sizeable cash balances reported in their 2016 financial statements. Corporate tax revenue remained traditionally low for the first two months of the year and continued to record declines.

driven by the increased maximum social security income, minimum wage and minimum insurance income as from early 2019.

In the first two months of 2019 the annual growth in total CFP expenditure slowed down significantly from the end of the previous year (14.6 per cent) to reach 4.5 per cent while personnel costs (3.1 percentage points) had the major contribution to this growth, wage growth did not reflect the full degree of the effects of approved measures to increase public sector's incomes.[57] Expenditure on Bulgaria's contribution to the EU budget also contributed substantially to the growth in total CFP expenses (2.8 percentage points), while social payments contributed to a lesser extent, as growth slowed significantly from the end of 2018 due mainly to weaker health insurance payments. In addition, pension and other cash benefit costs continued to grow, suggesting they will continue to contribute positively to household disposable income growth in early 2019. Subsidy payments had a negative contribution to total expenditure growth (-1.8 percentage points) which reflects the lack of subsidies paid by the Security of the Electricity System Fund.

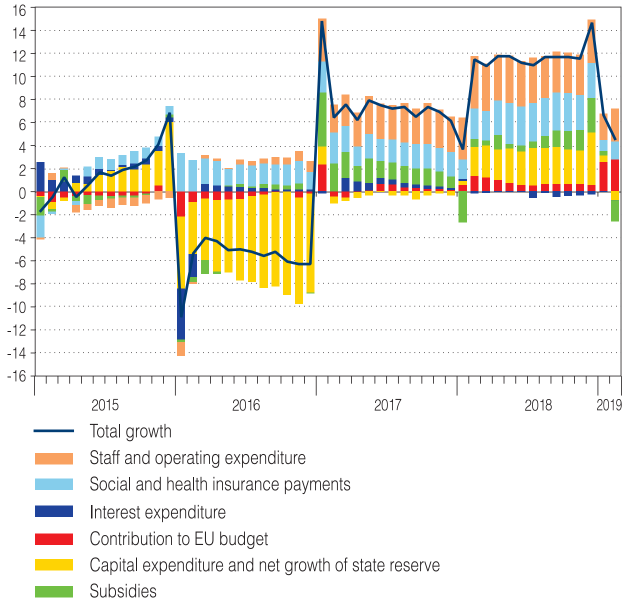
In the October–December 2018 period government consumption continued to contribute positively to real GDP growth on a quarterly basis. Government consumption growth reflected mainly higher wage, operating and health insurance costs over the last quarter of the year. Budget performance data as of February 2019 indicate that government consumption will continue to contribute positively to real GDP growth in the first quarter of the year, and increased staff costs will be sufficient to offset the reported decline in operating and healthcare costs.

Capital expenditure declined by 12.4 per cent in the first two months of 2019, reflecting mainly lower EU co-financed investment (-16.7 per cent) and, to a lesser extent, lower national investment (-6.6 per cent).

[57] According to a MF press release, by February 2019 the income policy for 2019 has not yet been reflected in most budgetary systems due to a delay in annual assessments of public sector employees. Projected increases in remunerations for January and February will be paid in March.

Contribution of Major Expenditure Groups to Total Expenditure Growth, Cumulatively (on an Annual Basis)

(per cent; percentage points)

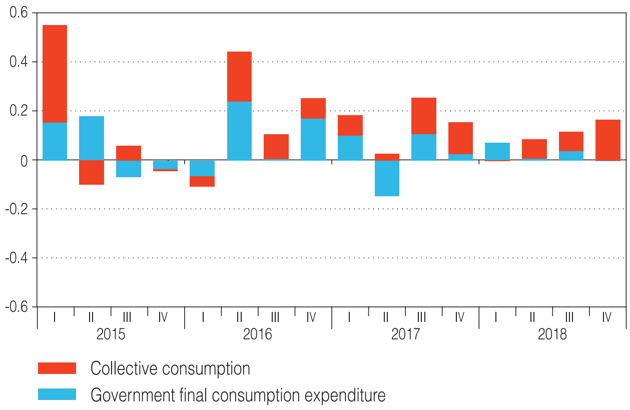


Notes: In the Consolidated Fiscal Programme reports of early January 2016, staff expenditure includes wage, insurance and other remuneration expenditure, while in the reports for past periods, the latter are included in operating expenditure. To prevent data inconsistencies prior to and after January 2016 resulting from the methodological change, staff and operating expenditure are presented aggregately in the chart and separately in the table Key Budget Indicators Performance for 2018 and 2019.

Sources: the MF, BNB calculations.

Contribution of Government Consumption Components to Real GDP Growth

(percentage points, quarter-on-quarter, seasonally adjusted data)



Sources: the NSI, BNB calculations.

In the second and third quarters of 2019 annual growth in tax revenue is expected to be lower than the relatively high levels seen in 2018, reflecting projections of a slowdown in private consumption growth. Tax revenue growth will be further driven by changes in tax insurance legislation,[58] with the increase in non-tax revenue reflecting changes to the budget of the Security of the Electricity System Fund implemented in July 2018. Over the second and third quarters of 2019 budget revenue is expected to continue to provide sufficient resources to facilitate the implementation of expenditure policies planned by the government.

The contribution of government consumption to real GDP growth is expected to remain close to its 2018 level in line with public sector wage expenditure growth, as projected in the budgetary framework, and expected increases in operating and health insurance payments. Social payments will also continue to contribute to the growth in household disposable income, with their influence expected to be more significant in the third quarter as the planned pension increase of 5.7 per cent enters into force.

With the progress of EU project implementation, we anticipate a positive contribution of EU co-financed investment to the growth in total government investment. Gross capital formation growth is expected to be largely driven by national capital expenditure on the construction of a Hemus motorway section, as approved by the government at end-2018, despite the risks of delays in implementing large infrastructure projects. If these risks materialise, lower growth in public investment may be expected along with lower GDP growth in the second and third quarters of 2019.

[58] For further information, see the box *Basic Parameters of the 2019–2021 Budgetary Framework*, Economic Review, 4/2018.

Key Budget Indicators Performance for 2018 and 2019

Consolidated Fiscal Programme	2018 January – February[1]		2019 January – February[1]	
	BGN million	per cent[2]	BGN million	per cent[2]
Total revenue and grants	**6 212**	**8.4**	**7 220**	**16.2**
Tax revenue	5 381	14.0	5 577	3.6
incl. social security and health insurance contributions	1 452	15.9	1 613	11.1
Non-tax revenue	795	9.5	1 176	47.9
Grants	36	-87.3	467	1 191.4
Total expenditure (incl. the contribution to EU budget)	**5 460**	**11.4**	**5 706**	**4.5**
Staff	1 304	12.6	1 473	13.0
Operating expenditure	577	15.0	560	-2.9
Interest	105	-11.1	103	-2.2
Social expenditure, scholarships[3]	2 595	5.2	2 681	3.3
Subsidies	331	12.5	231	-30.3
Capital expenditure and government reserve growth	327	58.7	286	-12.6
incl. capital expenditure	327	44.1	286	-12.4
Contribution to general budget of the European Union	220	42.6	372	68.9
	BGN million	difference[4] (BGN million)	BGN million	difference[4] (BGN million)
Budget balance on a cash basis	**752**	**-80**	**1 513**	**761**

Tax revenue under the state budget	2018 January – February[5]		2019 January – February[5]	
	BGN million	per cent[2]	BGN million	per cent[2]
Tax revenue	**3 791**	**13.2**	**3 843**	**1.4**
Corporate tax	93	37.4	78	-16.1
Income tax for individuals	615	28.9	645	4.8
Value added tax	2 074	10.9	2 196	5.9
Excise duties	938	6.6	855	-8.9
Customs duties and taxes	43	51.3	40	-7.1
Insurance premia tax	9	10.1	11	23.3
Other taxes	19	1.5	19	-0.4

Note: The difference between the sum of individual components and total sum is due to rounding.
[1] Based on monthly reports on cash-based performance of the Consolidated Fiscal Programme.
[2] Annual rate of change on the same period of previous year.
[3] Including also expenses on current and capital transfers, which in 2018 are presented in monthly reports on cash-based performance of the Consolidated Fiscal Programme as a separate item in the expenditure side of the budget.
[4] The change of the budget balance on the same period of previous year.
[5] Based on monthly reports on cash-based performance of the state budget.

Source: the MF.

4. Inflation

Over the first two months of 2019 annual inflation accelerated slightly compared to the end of 2018 reaching 2.4 per cent in February. Core HICP components and food had a major positive contribution to inflation. Concurrently, in the context of lower international oil prices energy products and transport services contributed negatively. In January and February 2019 goods and services with administratively controlled prices and tobacco products continued contributing positively to annual inflation.

In the second and third quarters of 2019 the inflation rate is expected to slow down compared to that reported in the first two months of the year. The increased negative contribution of energy products in line with the expected downward dynamics in international oil prices in euro and the exhaustion of base effects in services will be the decisive factors for this trend.

Over the first two months of 2019 annual inflation accelerated slightly from the end of 2018 to 2.4 per cent in February (2.3 per cent in December 2018).[59] Core HICP components and food had a major positive contribution to the overall inflation, with their inflation increasing from December 2018 under the influence of higher international food prices in euro and poorer domestic cereal harvests in 2018.

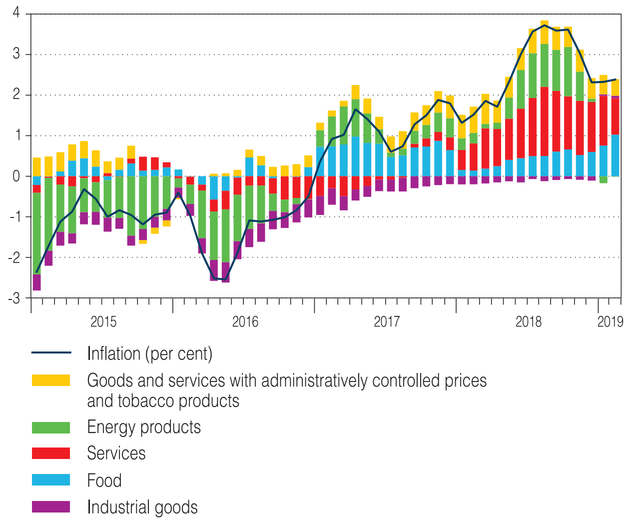
Overall inflation acceleration in early 2019 was also driven by the reversed long-term deflation dynamics in industrial goods. Goods and services with administratively controlled prices had a relatively large positive contribution to annual inflation, mainly reflecting price rises in 2018 and the increased prices of water supply and natural gas in early 2019.

Overall inflation dynamics in the first two months of 2019 was limited by the negative contribution of energy products and transport services. This was supported by the temporary year-on-year decline in international oil prices, which was transmitted through the supply chain to producer prices and HICP.

The effect of international prices of fuels, food and commodities on inflation may be seen through price developments of goods imported into Bulgaria. According to national accounts data, annual growth in the price deflator for imported goods slowed down to 1.0 per cent in the fourth quarter of 2018 (against 2.3 per cent

Inflation and Contribution of Major Commodity and Services Groups to It

(per cent; percentage points; on an annual basis)



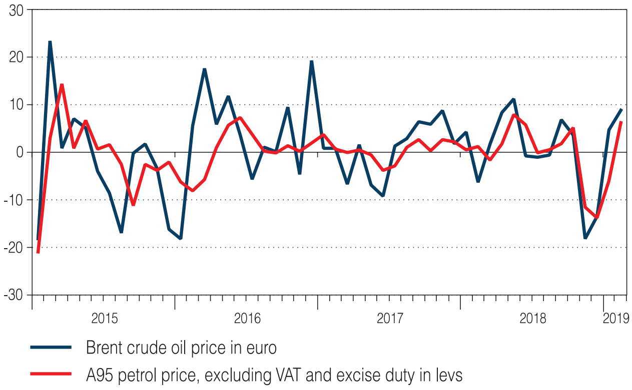
Notes: This structure corresponds to the Eurostat classification; tobacco products and goods and services with administratively controlled prices are presented separately. The index of goods and services with administratively controlled prices is calculated through the elementary aggregates level in the consumer basket.

Sources: the NSI, BNB calculations.

[59] The analysis in this Section employs NSI data on HICP.

Rate of Change in Brent Crude Oil and A95 Petrol Prices

(per cent; on an monthly basis)



Sources: the ECB, the NSI, BNB calculations.

on average for the year).[60] Although this development corresponded to the end-2018 trend toward inflation slowdown, individual components of imported prices and HICP experienced divergent dynamics. For instance, the downward trend in imported food prices continued in the fourth quarter of 2018,[61] their end prices measured by HICP increasing further. This indicates that there are internal factors driving the positive inflation in food products.

In early 2019 the annual growth rate of the total producer price index (PPI) accelerated to reach 4.1 per cent in February (2.9 per cent in December 2018). Sub-sectoral breakdown shows that the increase in producer prices was mainly driven by production and distribution of electricity and heating sub-sector[62], which was in line with the natural gas price increase since early 2019.[63] Manufacturing also had a comparatively high positive contribution, driven by industrial product prices relating to production of food, beverages and tobacco products. The February rise in international oil prices also contributed to the accelerated annual growth in manufacturing producer prices.

In line with these developments, as of February 2019 producer prices of non-durable consumer goods continued to increase rapidly on an annual

[60] Based on Standard International Trade Classification (SITC) import data.

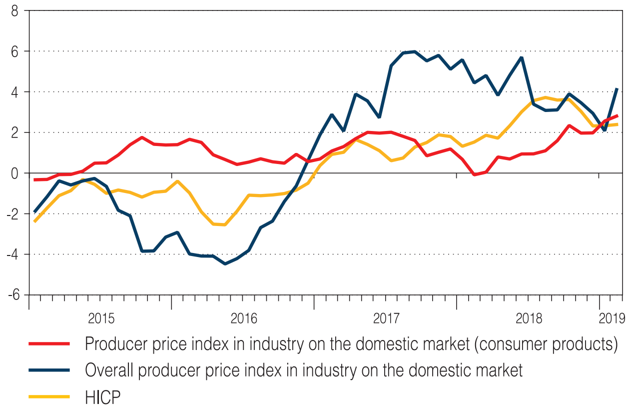
[61] This refers to the groups of food and live animals and animal and vegetable fats, oils and waxes under the SITC.

[62] This refers to the group of production and distribution of electricity, heating, and gaseous fuels.

[63] For details, see: http://www.dker.bg/news/293/65/komisiyata-za-energijno-i-vodno-regulirane-utvrdi-tsenata-na-prirodniya-gaz-za-prvoto-trimesechie-na-2019-g.html

Rate of Change in Industrial PPI and HICP

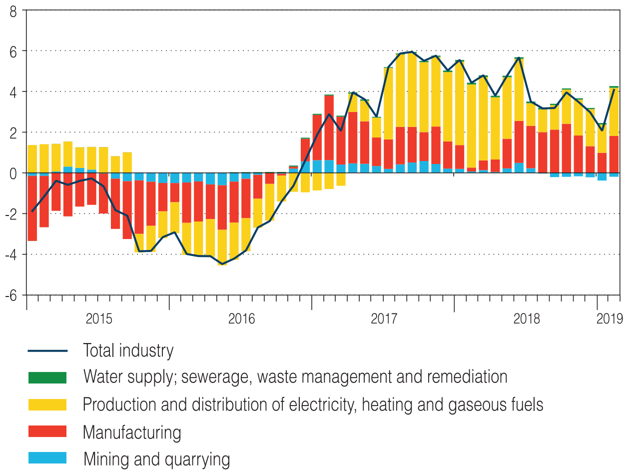
(per cent; on an annual basis)



Source: the NSI.

Rate of Change in PPI on the Domestic Market and Contribution by Major Sub-sectors

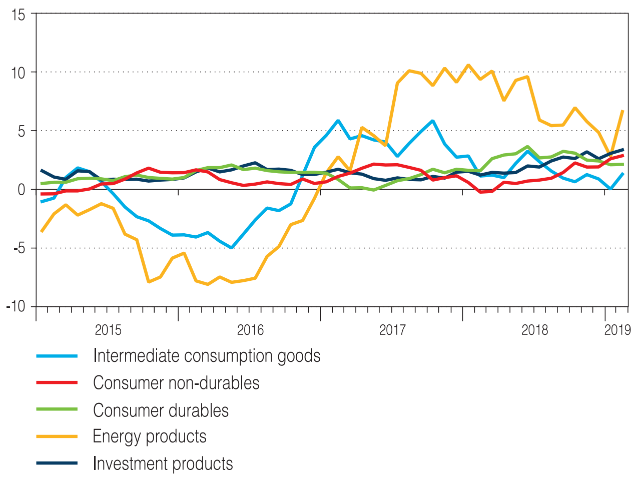
(per cent; percentage points; on an annual basis)



Source: the NSI.

Rate of Change in Producer Prices on the Domestic Market by Major Industrial Groupings

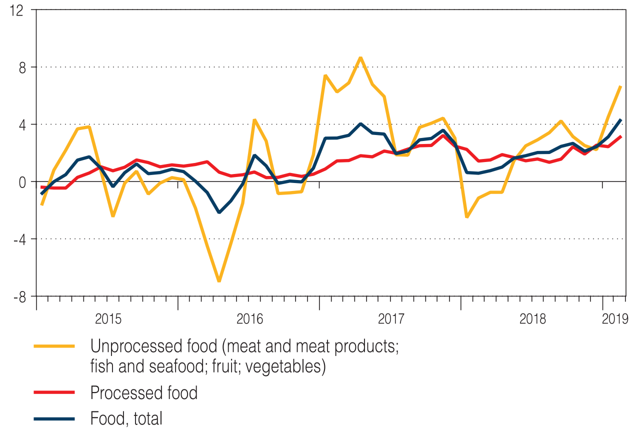
(per cent; on an annual basis)



Source: the NSI.

Rate of Change of Food Price Index

(per cent; on an annual basis)



Sources: the NSI, BNB calculations.

basis, with manufacture of bakery and farinaceous products group contributing substantially to this. This dynamics was quickly passed on to final consumer prices of processed food, with its inflation rising to 3.1 per cent on an annual basis (from 2.5 per cent by December 2018).

Since early 2019 HICP processed food inflation accelerated its annual rate, driven mainly by bread and cereals group which recorded an annual price rise of 11.0 per cent in February. This development is in line with higher euro international prices of wheat on an annual basis and a poorer wheat harvest in Bulgaria. At the same time, retention of the early 2017 upward trend in producer prices of energy products was a condition for the continuing price increase in cereals.

In February 2019 non-processed food inflation also accelerated to 6.6 per cent on an annual basis. These prices reflect to a significant extent the respective international prices and weather conditions in Bulgaria affecting production costs and supply of locally produced goods. Vegetables had the highest contribution to the group inflation which corresponded to the end-2018 rise in producer prices[64] of these products and poorer domestic harvests.[65]

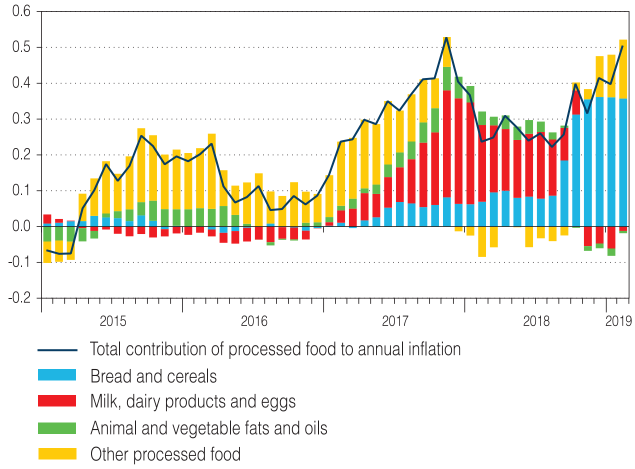
In early 2019 core inflation (including services and non-food prices) slowed down from the end of 2018 (2.1 per cent in February 2019 *vis-à-vis*

[64] NSI data on prices and producer price indices of agricultural produce for the fourth quarter of 2018.

[65] NSI data derived from Economic Accounts for Agriculture are used in the analysis.

Contribution of Major Sub-groups of Processed Food to Overall Inflation

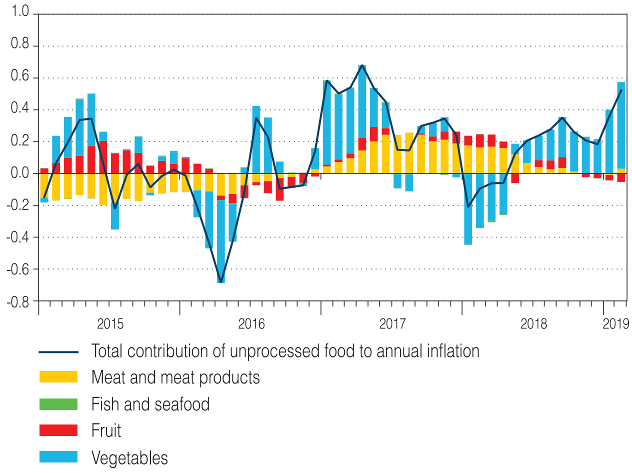
(percentage points; on an annual basis)



Sources: the NSI, BNB calculations.

Contribution of Major Sub-groups of Unprocessed Food to Overall Inflation

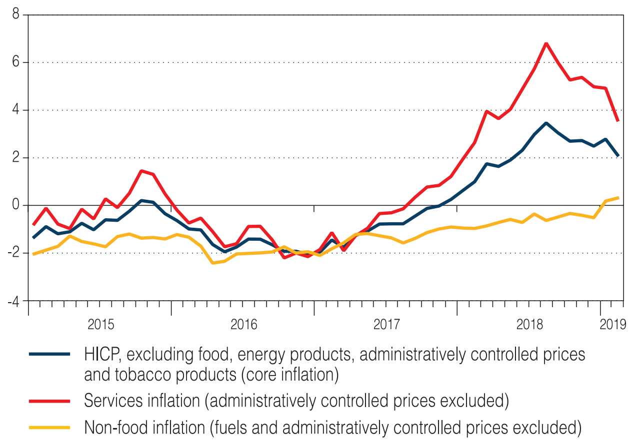
(percentage points; on an annual basis)



Sources: the NSI, BNB calculations.

Core Inflation

(per cent; on an annual basis)



Sources: the NSI, BNB calculations.

2.5 per cent in December 2018) entirely due to the weaker growth rate in services prices.

Since the beginning of 2019 non-food deflation which started in early 2010 was reversed, with this group reporting low year-on-year inflation of 0.3 per cent in February (-0.5 per cent at the end of 2018). Non-durable goods had a major positive contribution to the upward dynamics in this group. Durable goods prices continued to decline, though at slower rates, reflecting the reversed car deflation. Developments in nominal volumes of retail trade indicate retention of the positive trends in household demand, with nominal non-food retail trade turnover posting annual growth of 7.3 per cent in January, driven largely by the increase in traded volumes.[66]

In February 2019 services inflation slowed down to 3.6 per cent, from 5.0 per cent by end-2018, reflecting mainly cheaper transport services in the context of lower fuel prices on an annual basis and cheaper telecommunication services. By services component, catering (in line with increased processed food prices), insurance connected with travel and accommodation services had the largest positive contributions to overall inflation. In February insurance connected with travel remained high year on year following the base effect of summer 2018 when the Supreme Court of Cassation[67] extended the circle of persons entitled to claim compensation for death of a relative. Another potential factor behind the price increase in insurance connected with travel was the enhanced demand resulting from termination of an insurance company's activities in August 2018.[68]

In early 2019 prices in the group of goods and services with controlled prices and tobacco products slowed their growth rate, reaching in February 1.9 per cent annually, from 2.3 per cent in December 2018. Inflation deceleration in this group was entirely driven by the decreased positive contribution of tobacco products which reflected the exhausted base effect of the increase in excise duties on cigarettes in early

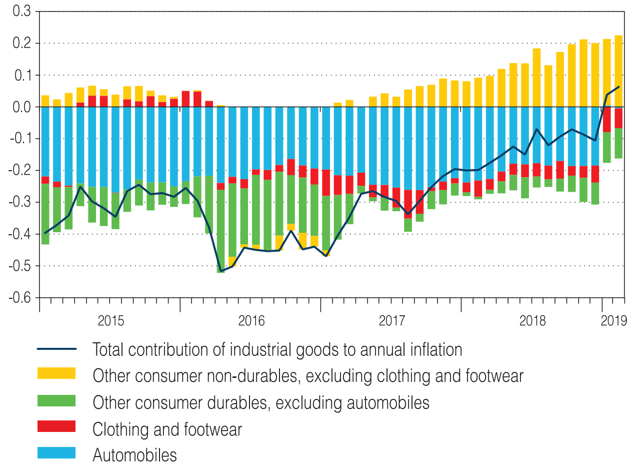
[66] Retail trade in non-food goods, excluding automobile fuels and lubricants.

[67] For details, see: http://www.vks.bg/vks_p02_0500.htm

[68] For details, see: http://www.fsc.bg/bg/novini/dogovorite-po-grazhdanska-otgovornost-sklyucheni-s-klona-na-zk-olimpik-shte-badat-avtomatichno-prekrateni-9044.html

Contribution of Major Non-food Goods Sub-groups (Excluding Energy Products) to Overall Inflation

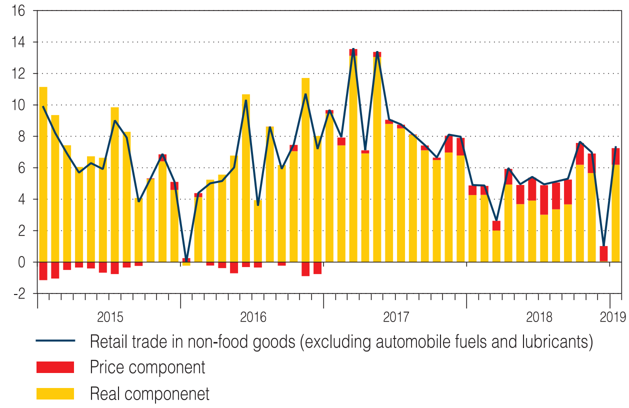
(percentage points; on an annual basis)



Sources: the NSI, BNB calculations.

Growth Rate of Nominal Retail Trade in Non-food Goods, Excluding Trade in Motor Vehicles and Lubricants

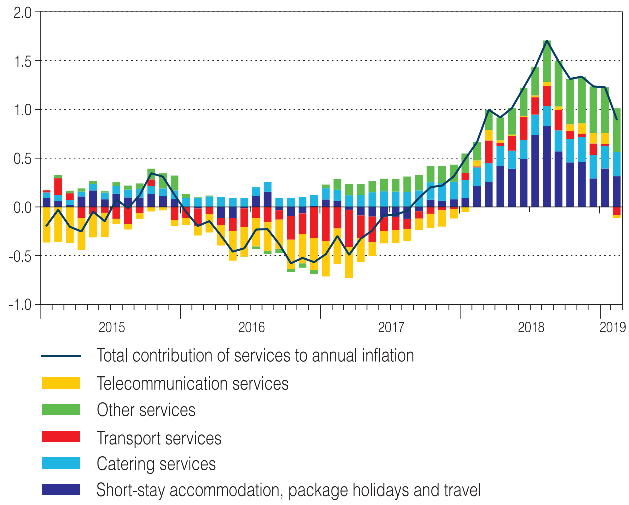
(per cent; percentage points; on an annual basis; working-day adjusted data)



Sources: the NSI, BNB calculations.

Contribution of Services and Major Services Sub-groups to Overall Inflation

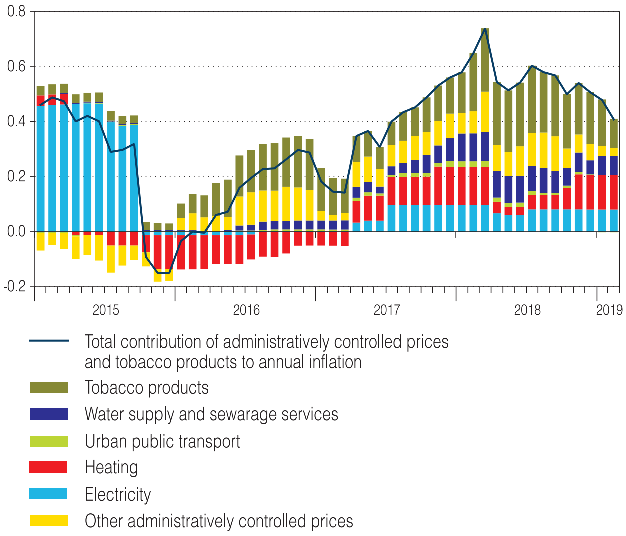
(percentage points; on an annual basis)



Sources: the NSI, BNB calculations.

Contribution of Major Sub-groups of Administratively Controlled Prices and Tobacco Products to Overall Inflation

(percentage points; on an annual basis)



Sources: the NSI, BNB calculations.

2018.[69] In the beginning of 2019 the Energy and Water Regulatory Commission (EWRC) approved the increase in the prices of water and sewerage services in Bulgaria,[70] which contributed to an accelerated growth rate of water supply prices. The EWRC's decision to raise the regulated natural gas price[71] over the first quarter was an additional factor contributing to the increase in administratively controlled goods and services inflation.

In February 2019 the diffusion index, showing the share of groups of goods and services with rising prices on an annual basis, remained close to the end-2018 level at 71.3 per cent. At the same time, the number of goods and services sub-groups with inflation higher than 2 per cent decreased, which is a prerequisite for downward HICP inflation dynamics in the coming months.

According to the NSI business survey, in March 2019 most managers in industry (90.4 per cent), services (87.8 per cent) and retail trade

[69] An increase in the specific tobacco excise duty from BGN 101 to BGN 109 *per* 1000 cigarettes, a decrease of the *ad volarem* excise duty from 27 to 25 per cent, and an increase in the minimum overall excise duty (specific and *ad volarem*) from BGN 168 to BGN 177 *per* 1000 cigarettes became effective from the beginning of 2018.

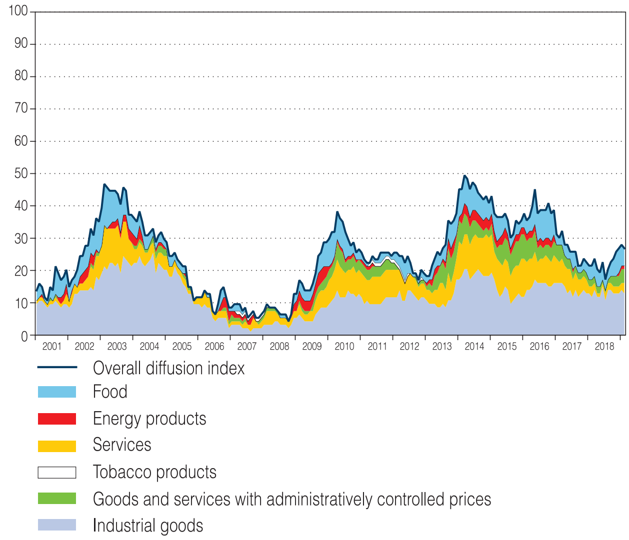
[70] For details, see: http://www.dker.bg/news/294/65/kevr-prie-reshenie-za-izmenenie-na-odobrenite-s-biznesplanovete-tseni-na-uslugi-na-vik-druzhestvata-za-2019-g.html

[71] For details, see: http://www.dker.bg/news/293/65/komisiyata-za-energijno-i-vodno-regulirane-utvrdi-tsenata-na-prirodniya-gaz-za-prvoto-trimesechie-na-2019-g.html

Diffusion Index of Major Goods and Services Groups

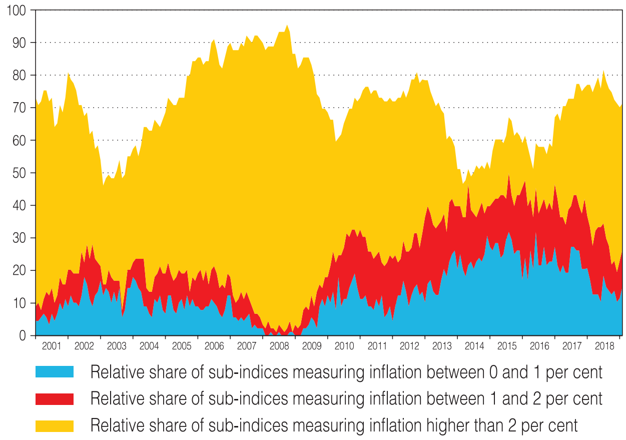
a) relative shares of declining HICP sub-indices on an annual basis

(per cent)



b) relative shares of increasing HICP sub-indices on an annual basis)

(per cent)



Sources: the NSI, BNB calculations.

(84.5 per cent) expect selling prices to remain stable over the next three months. Most of the managers expecting a change in selling prices anticipate price increases, which is the reason for the balance of opinions to continue rising in early 2019. This trend was most pronounced in services and retail trade, the closest sectors to end users along the supply chain.

In the fourth quarter of 2018 the House Price Index (HPI) continued increasing on an annual basis, though tending to decrease its growth rate from the same period of 2017 to 5.5 per cent (8.2 per cent by end-2017). This trend was driven by the prices of both existing and new dwellings. In the fourth quarter of 2018 higher year-on-year house prices were reported in each of the six largest cities in Bulgaria (whose population is over 120,000 inhabitants). Despite the continuous price growth, by end-2018 house prices remained 18.0 per cent lower than the maximum values recorded in the third quarter of 2008.

House price growth was consistent with the trend of the second half of 2017 towards improving home purchase sentiment of households in the following 12 months.[72] At the same time, the APRC on new mortgage loans continued to decline, reaching 3.9 per cent in the fourth quarter of 2018 (against 4.4 per cent on average for 2017)[73] thus further improving housing affordability. Low levels of new time deposit rates were also a driver for the enhanced household demand for housing as they motivate households to look for alternative investment opportunities in the form of real estate purchases. According to the BNB quarterly lending survey results,[74] in the third and fourth quarters of 2018 credit standards applied to housing loans tightened slightly.[75] If banks retain this policy, the increase in house prices would continue to slow down.

House price dynamics influenced also the behaviour of firms in the construction sector. Higher growth rates in house prices than in building

[72] The analysis employs NSI survey data on household sentiment for home purchase in the following 12 months.

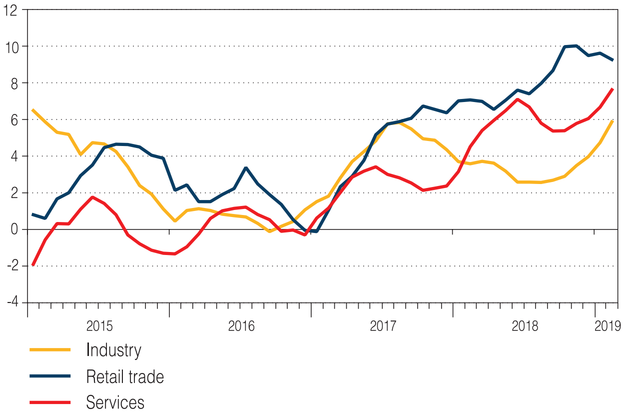
[73] Data on the APRC on housing loans to households are averages weighted by the relevant volumes of new business for a 12-month period.

[74] For details, see Interest Rates Section in Chapter 2.

[75] For details, see Monetary and Credit Aggregates Section in Chapter 2.

Expectations of Selling Prices in Industry, Retail Trade and Services in the Next Three Months

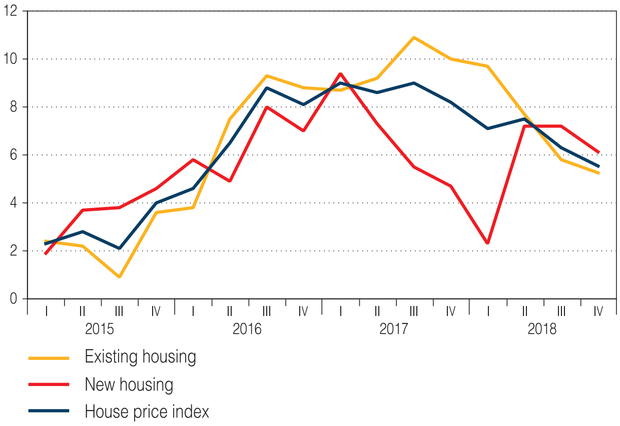
(balance of opinions, per cent, six-month moving average)



Source: the NSI.

Rate of Change of the House Price Index

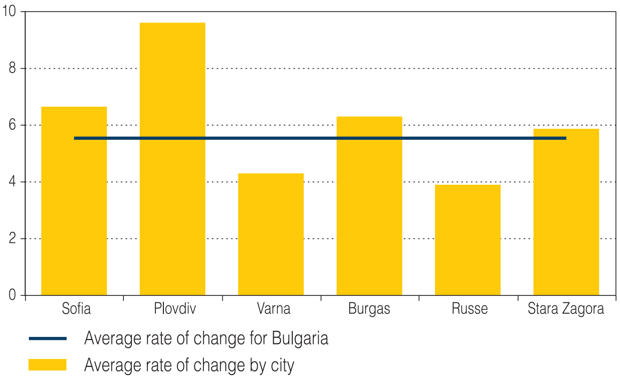
(per cent; on an annual basis)



Source: the NSI.

Changes in House Prices in Cities of More Than 120,000 Inhabitants over the Fourth Quarter of 2018

(per cent; on an annual basis)



Source: the NSI.

Key indicators of the Housing Market in Bulgaria

(per cent; year-on-year change)

Indicators	2015	2016	2017	2018	2018 I	2018 II	2018 III	2018 IV
Price developments								
House price index, total	2.8	7.0	8.7	6.6	7.1	7.5	6.3	5.5
New dwellings	3.5	6.4	6.7	5.7	2.3	7.2	7.2	6.1
Existing dwellings	2.3	7.3	9.7	7.0	9.7	7.7	5.8	5.3
Inflation (HICP)	-1.1	-1.3	1.2	2.6	1.6	2.4	3.6	3.0
House rentals, paid by tenants (HICP)	0.7	0.6	1.0	1.9	1.3	1.6	2.2	2.4
Lending								
New housing loans	39.2	17.0	38.1	15.5	31.6	18.2	10.3	5.5
APRC on new housing loans (per cent, at end of period)	6.4	5.4	4.4	3.9	4.3	4.1	4.0	3.9
Housing loans balances	-1.8	0.6	5.3	9.7	8.7	9.0	9.9	11.4
Construction and investment								
Permits issued for the construction of new residential buildings (square meters)	13.0	4.8	32.5	39.0	37.1	31.0	25.6	61.1
Value added in construction (at average annual prices for 2010)	2.8	-6.8	4.4	4.0	9.1	0.7	2.1	6.6
Constriction production Index, building construction	8.9	-16.1	10.9	2.6	11.7	1.2	-2.6	1.4
Fixed investment; residential buildings	-10.3	102.1	19.2	15.0	19.7	15.4	11.2	15.1
Construction cost index for new buildings	1.3	0.8	2.5	2.9	2.0	3.6	4.0	2.0

Note: Values indicating the amount of new housing loans and the APRC on housing loans to households are averages weighted by the relevant volumes of new business for a 12-month period.

Sources: the NSI, the BNB, Eurostat.

construction costs over 2018 still remained a precondition for improving economic activity in this sector. By end-2018 real value added in this sector reported year-on-year growth of 6.6 per cent (from 4.4 per cent on average for 2017).[76] Concurrently, residential building permits issued in the fourth quarter of 2018 (measured by building floor area) increased by 61.1 per cent on the corresponding quarter of the previous year. These developments indicate that increased supply of new dwellings may be expected in the following months, which is likely to result in a further slowdown of the annual housing price growth.

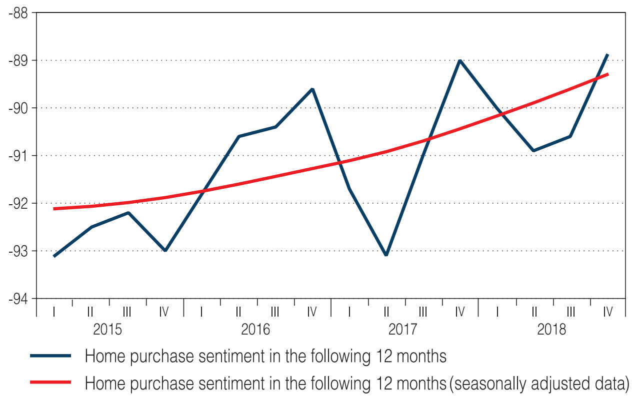
Inflation expectations for the second and third quarters of 2019 and related uncertainty are presented in the fan chart of the annual rate of HICP changes.[77] In the second and third quarters of 2019 inflation is projected to slow down, reflecting largely energy product prices. Projected lower international oil prices in euro will determine the increase in the negative contribution of energy products to the overall inflation. The food

[76] For details, see Behaviour of Firms and Competitiveness Section in Chapter 3.

[77] For further details, see the box entitled 'Measurement and Presentation of Uncertainty in Forecasting Economic Indicators', *Economic Review*, 1/2012.

Households' Home Purchase Sentiment in the Following 12 Months

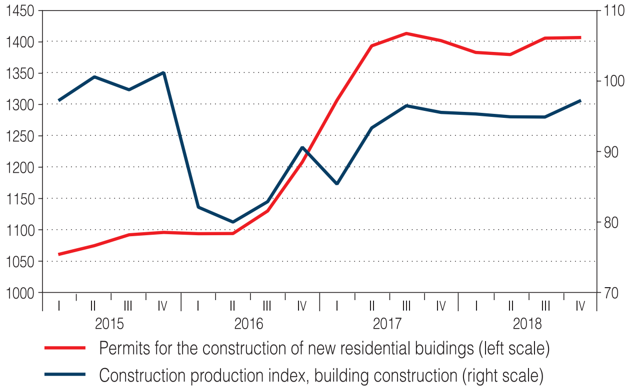
(balance of opinions)



Sources: the NSI, BNB calculations.

Construction Production Dynamics and New Residential Building Permits Issued

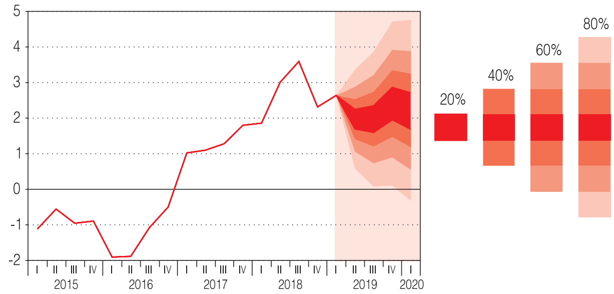
(number of buildings; seasonally adjusted data) (2015 = 100; seasonally adjusted data)



Sources: the NSI, BNB calculations.

Expected Annual Rate of Change in Inflation at the End of the Corresponding Period

(per cent)



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

Source: the BNB.

Rates of Change in Major Goods and Services Groups Prices and Contribution of These Groups to Inflation

	Inflation accumulated as of February 2018 (December 2017 = 100)		Inflation accumulated as of February 2019 (December 2018 = 100)		Annual rate of inflation as of February 2019 (February 2018 = 100)	
Inflation (per cent)	0.4		0.5		2.4	
	inflation rate by group (per cent)	contribution (percentage points)	inflation rate by group (per cent)	contribution (percentage points)	inflation rate by group (per cent)	contribution (percentage points)
Food	**0.9**	**0.2**	**2.7**	**0.63**	**4.3**	**1.02**
Processed food	0.0	0.0	0.5	0.09	3.1	0.50
Unprocessed food	2.6	0.2	6.9	0.55	6.6	0.52
Services	**1.0**	**0.3**	**-0.3**	**-0.09**	**3.6**	**0.90**
Catering	0.6	0.0	0.8	0.04	4.5	0.25
Transport services	-4.1	-0.1	-10.7	-0.34	-3.5	-0.08
Telecommunication services	2.0	0.1	-0.9	-0.04	-0.5	-0.03
Other services	2.3	0.3	2.0	0.25	6.4	0.77
Energy products	**0.8**	**0.1**	**-0.3**	**-0.03**	**-0.1**	**-0.01**
Transport fuels	0.7	0.0	-0.5	-0.03	-1.5	0.00
Industrial goods	**-1.0**	**-0.2**	**-0.2**	**-0.03**	**0.3**	**0.06**
Goods and services with administratively controlled prices*	**0.2**	**0.0**	**0.0**	**0.01**	**1.8**	**0.30**
Tobacco products	**1.8**	**0.1**	**0.0**	**0.00**	**2.3**	**0.11**

* The index of goods and services with administratively controlled prices is calculated through weighting the relevant elementary aggregates in the consumer basket.

Sources: the NSI, BNB calculations.

group will further contribute positively to overall inflation as a result of projected higher international food prices in euro. Core inflation is also expected to have a positive contribution, driven mainly by services, in line with a projected rise in final consumption expenditure of households and labour costs over the projection horizon. At the same time, exhaustion of base effects in accommodation services and insurance connected with travel is expected to have a limiting effect on services inflation.

Risks to the inflation outlook in the second and third quarters of 2019 are assessed as balanced. The uncertainty around international oil prices affecting directly energy prices and indirectly transport services and some administratively controlled prices is among the main sources of risks to the forecast. A stronger than projected increase in labour costs is also likely to contribute to higher services inflation. At the same time, lower than projected consumer demand growth could potentially decrease firms' propensity to transfer higher production costs onto consumer prices.

Methods for Estimating the Cyclical Position of the Economy

The cyclical position of the economy can be determined on the basis of estimates about the potential economic growth and the output gap. These estimates are of prime importance to the central banks for the following reasons. First, the cyclical position of the economy has an impact on wage and price dynamics and therefore on price stability maintenance. Second, determining the state of the business cycle is crucial for assessing risks to financial system stability and implementing macro-prudential policy to timely counter the potential accumulation of such risks[1]. Third, the estimates of the cyclical position of the economy are used to measure the cyclical and structural component of the budget balance, to evaluate the role of the fiscal policy for economic activity stabilisation and to assess the outlooks on short- and long-term public finance sustainability[2]. Not least, the estimates of the potential output allow for analysing and forecasting the real convergence processes of the Bulgarian economy and assessing the effects of the implemented structural reforms.

I. Possible Methods for Estimating the Cyclical Position

Alternative definitions of potential output are used in the economic literature and therefore various methods are applied to decompose a GDP time series into a trend and a cyclical component, that, in essence, are unobservable variables. These methods could be classified in two broad groups: univariate and multivariate methods[3]. The first group includes the univariate statistical filters or models where the GDP time series is filtered based on statistical assumptions about the characteristics of the unobserved trend and cyclical components. These techniques do not use additional information on the state of the economy, except that contained in the time series which is decomposed. Typical examples of univariate filters are the tools developed by Hodrick and Prescott[4], Baxter and King[5], Christiano and Fitzgerald[6]. The assessment of the cyclical position by these filters is sensitive to the selected parameters, based on which it is assumed that the length of the business cycle is within predefined ranges (most often between 1.5 and 8 years). Univariate unobserved components models are increasingly used, whereby it is assumed that the trend of the time series follows a stochastic process, without imposing an additional parametric restriction on the business cycle length. The local linear trend model is an example of such an approach.

[1] For further information on the relation between the business cycle and the financial cycle in Bulgaria, see the research topic Methods for Assessment of the Financial Cycle in Bulgaria, *Economic Review*, issue 2/2018, and the article: Karamisheva, T., G. Markova, B. Zahariev and S. Pachedzhiev. Financial Cycle in the Bulgarian Economy and Its Interaction with the Business Cycle, Bulgarian National Bank, *Discussion Papers,* No 113, 2019.

[2] The estimation of the structural budget balance and the consistency between budget expenditure and GDP potential growth is also important in terms of compliance with the requirements of both European framework for economic policy coordination and national legislation.

[3] Álvarez, Luis J. and Ana Gómez-Loscos, A menu on output gap estimation methods, *Journal of Policy Modeling,* vol. 40(4), pp. 827–850, 2018.

[4] Hodrick, R. J. and E. Prescott, Post-war U.S. business cycles: An empirical investigation, *Journal of Money, Credit and Banking,* vol. 29(1), 1997.

[5] Baxter M. and R. King, Measuring business cycles: Approximate bandpass filters for economic series, *NBER Working Paper,* No. 5022, 1995.

[6] Christiano, Lawrence C. and Terry J. Fitzgerald, The Band Pass Filter, *Federal Reserve Bank of Cleveland working paper*, No 9906, published in: *NBER working paper* No 7257, 1999.

The second group of methods for estimating the cyclical position includes the multivariate methods, which are based on theoretically justified economic relationships and use additional information on other variables besides GDP. The most commonly used models are those based on a particular functional form of the production function or empirically established relationships such as Phillips curve[7], Okun's law[8], equilibrium interest rate[9]. Concurrently, more complicated stochastic general equilibrium models and models based on real business cycles paradigm are also applied.

Each of the above methods for assessing the state of the business cycle has its advantages and disadvantages. Therefore, the results obtained from the application of different approaches often differ substantially. Additional source of uncertainty is the relatively strong sensitivity of estimates to new observations or statistical revisions in any of the analysed time series. This uncertainty motivates the central banks to use simultaneously several alternative methods to measure the potential output level and the deviations from it. Some of the univariate and multivariate models currently used by the BNB are presented in the next section of this study.

II. Models Used by the BNB and Results

Empirical studies of the cyclical position of the Bulgarian economy are diverse and a wide range of the above univariate and multivariate methods are used in the literature[10]. The multivariate methods currently used by the BNB are selected with a view of the possibility to assess the contribution of the individual factors of production (labour, capital, total factor productivity) to the growth. From the univariate methods we present the results of Hodrick and Prescott filter which provides the starting point for comparison due to its wide use and easy application.

1. Univariate Models

One of the most widely applied univariate statistical filter for estimating the cyclical position of the economy is the Hodrick and Prescott filter. With this filter, the decomposition of GDP time series (y_t) into a trend μ_t and a cyclical component c_t is based on pre-defined preferences on the smoothness of the trend series. These preferences are set by the parameter value λ in expression (2). The greater the value of this parameter is, the greater weight in the optimization problem is given to the minimization of fluctuations in the potential GDP time series (second component of expression (2)) and consequently less weight is given to the deviation of potential from real GDP in absolute terms (first component of expression (2)). According to the literature, the most commonly used value of λ for time series with quarterly frequency is λ = 1600[11], where, under such parameterisation, a cycle with a length of up to eight years is usually identified.

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[7] Kuttner, K. N., Estimating potential output as a latent variable, *Journal of Business and Economic Statistics*, vol. 12(3), pp. 361–368, 1994.

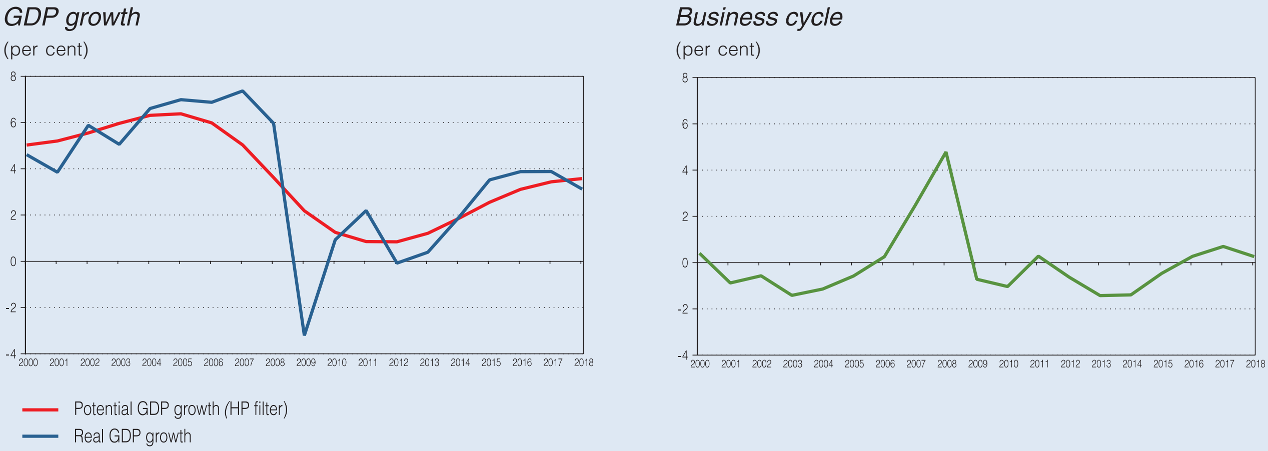
[8] Evans, G., Output and unemployment dynamics in the United States 1950-85, *Journal of Applied Econometrics*, No. 4, pp. 213–237, 1989.

[9] Laubach, T. and J. Williams, Measuring the Natural Rate of Interest, *Review of Economics and Statistics*, vol. 85(4): pp. 1063–1070, 2003.

[10] See, for instance: Avramov, R., Cycles in the Bulgarian economy: theoretical and methodical foundations of the analysis, *Economic Thought,* vol. 6: pp. 25–37, 1990; Ivanov, L., The Bulgarian Business cycle 1994–2002: a look through the decomposition of Nelson and Beverage. Available only in Bulgarian, Statistica 2003, No. 1: pp. 60–74; Ganev, K., Statistical Estimates of the Deviations from the Macroeconomic Potential: An Application to the Economy of Bulgaria, Agency for Economic Analysis and Forecasting, 2004; Tsalinski, Ts., Two Approaches to Estimating the Potential Output of Bulgaria. Bulgarian National Bank, *Discussion Papers,* No. 57, 2006; Stattev, S., Financial Development and Economic Growth in Bulgaria (1991–2006): An Econometric Analysis Based on the Logic of the Production Function. Bulgarian National Bank, *Discussion Papers,* No 72, 2009; Ganev, K., A Small Model for Output Gap and Potential Growth Estimation: An Application to Bulgaria, *Bulgarian Economic Papers*, No. BEP 04, 2015; Kasabov, D., P. Kotseva, A. Vassilev and M. Yanchev, Relationship between Inflation, Potential Output and Structural Unemployment in Bulgaria, Bulgarian National Bank, *Discussion Papers,* No 104, 2017.

[11] Álvarez, Luis J. and Ana Gómez-Loscos, A menu on output gap estimation methods, *Journal of Policy Modeling,* vol. 40(4): pp. 827–850, 2018.

Chart 1: Estimations of the Business Cycle by Using the HP Filter



Note: The business cycle is the deviation of GDP from potential output measured as a percentage of potential output (output gap).
Sources: the NSI, the BNB.

$$y_t = \mu_t + c_t \tag{1}$$

$$\min_{\{\mu_t\}^T_{t=1}} [\Sigma^T_{t=1}(y_t - \mu_t)^2 + \lambda\Sigma^T_{t=1}[(\mu_t - \mu_{t-1}) - (\mu_{t-1} - \mu_{t-2})]^2] \tag{2}$$

The main advantage of the Hodrick-Prescott filter is that it allows for an easy assessment and uniform application to different economies or economic sectors without requiring specific knowledge about these economies. Concurrently, well known drawbacks in the application of this method are the sensitivity of obtained estimates to both the selected value of the parameter λ and the inclusion of new observations as it is a two-sided filter (this drawback is also known as an end-of-sample problem).[12] Despite the drawbacks, this filter continues to serve as a starting point for comparing alternative estimates of the cyclical position.[13]

According to the results of HP filter application (see chart 1), in the 2000–2007 period potential growth of the Bulgarian economy followed a sustainable upward trend. Up to 2003 inclusive, real GDP increased at lower rates than potential output which leads to a deterioration in the economy's cyclical position and to a negative output gap. High GDP growth reported after 2004 is a reason behind a gradual closure of the negative output gap and entering an expansionary phase, with the maximum positive output gap of 4.8 per cent achieved in 2008.

Over the 2009–2011 period, the potential output growth slowed down under the negative effects of the global financial crisis and worsened economic growth prospects. The exhaustion of these negative effects is a condition for a recovery of the potential growth over the following years. In the post-crisis period, the economy's cyclical position passes through the so-called double dip, with cyclical position deterioration in 2009–2010 followed by a short-term improvement in 2011 and a new, more substantial widening of the negative output gap over 2012–2014. With reporting high growth rates of real GDP after 2015, the economy has been gradually entering a phase of economic expansion, thereby forming a positive output gap.

[12] For more information on HP filter drawbacks, see: Hamilton, James D., Why You Should Never Use the Hodrick-Prescott Filter, *The Review of Economics and Statistics*, vol. 100(5): pp. 831–843, 2016.

[13] You can find an alternative estimate of Bulgarian economy' cyclical position based on an univariate unobserved components model in 'Methods for Assessment of the Financial Cycle in Bulgaria', *Economic Review*, issue 2/2018. Results obtained on the basis of the univariate model do not differ significantly from the HP filter estimate, and accordingly this model remains beyond the scope of the current study.

2. Multivariate Models

Economic literature generally takes the view that economy's growth potential in the long run is determined by supply side factors. On a conceptual level, the economic model which best represents the potential output concept, thereby helping its understanding and defining, is the macroeconomic production function.[14] It links the macroeconomic potential with the available production resources grouped into three main categories: labour input, physical capital and total factor productivity (TFP). The latter category summarises such characteristics of the economy as the state of production technologies, the quality of education, the institutions and other characteristics that are relatively difficult to measure directly. The production function of Cobb-Douglas type is a specific functional form of a production function, which is widely used to show the technological link between available resources and potential output:

$$Y_t = A_t.L^{\beta}_t.K^{\alpha}_t \tag{3}$$

where:

Y_t is the potential output level in period t;

L_t are available human resources;

K_t are available means of production in the economy in period t;

A_t is total factor productivity in period t;

α and β are parameters measuring the output elasticity to capital and labour. In a production function with constant returns to scale $\alpha + \beta = 1$.

2.1. Multivariate Production Function Model

The first multivariate model used by the BNB is constructed on the basis of a Cobb-Douglas production function with constant returns to scale. The proportion of production factors is constant in time and is calibrated on the basis of national accounts data about the share of the compensation of employees and gross operating surplus in gross value added: $\alpha = 0.6$, $\beta = 1–\alpha = 0.4$.

Potential GDP is estimated in two steps. The first step includes a measurement of the current level of capital, labour resources and total factor productivity in the economy by using the accounting decomposition in equation (3). By its nature, the TFP is calculated as a residual. The capital amount (K) is estimated according to the perpetual inventory method.[15] Available labour resources in the economy (L) are represented by employment measured through the total number of hours worked *per* employee:

$$L = HW_t.(1–UNR_t).PART_t.POP_t \tag{4}$$

where:

HW_t is the number of hours worked *per* employee in period t;

UNR_t is the unemployment rate in period t;

$PART_t$ is the economic activity rate in period t;

POP_t is the working age population (15–69 years) in period t.

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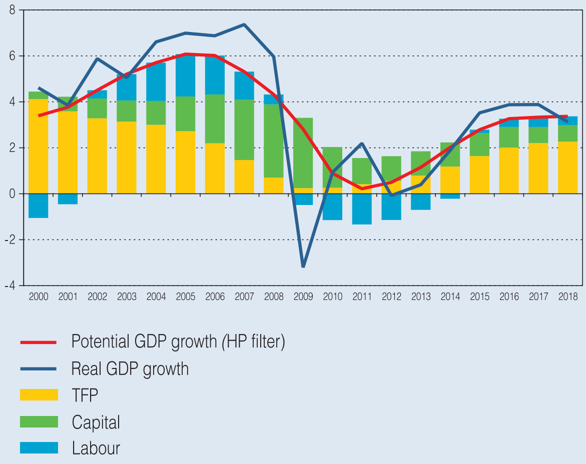
[14] Tsalinski, Ts. *Op. cit.*; Hodrick, R. J. and E. Prescott. *Op. cit.*

[15] The English term *perpetual inventory method* suggests that capital dynamics is based on the level of net investment (gross fixed capital formation less consumption of fixed capital). The initial estimate includes an assumption about a constant depreciation rate of 5.2 per cent, which is similar to the estimated depreciation rate in the following periods.

Chart 2: Multivariate Production Function Model

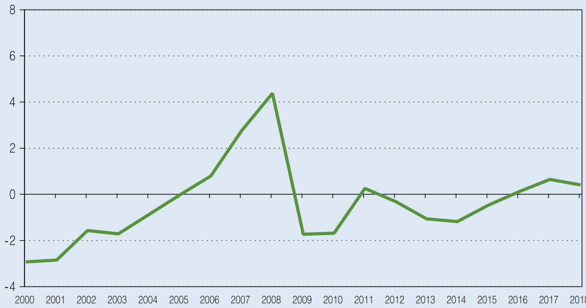
GDP Growth and Contribution by Input Factor

(per cent; percentage points)



Business Cycle

(per cent)



Note: The business cycle is the deviation of GDP from potential output measured as a percentage of potential output (output gap).

Sources: the NSI, the BNB.

The second step in estimating potential GDP involves finding the trends in production factors by using HP filter and their aggregation up to the total potential of the economy. The results of this method are displayed in Chart 2.

The graphical analysis shows that the state of the economy in 2000 is characterised by a negative output gap due to sub-optimal utilisation of production factors. In the following years there was a long-term trend toward opening a positive output gap, with real GDP in 2008 exceeding potential output by 4.4 per cent. The global financial crisis of 2008–2009 reversed this trend, resulting in a serious deterioration in the business cycle with simultaneous negative consequences on potential growth. The most significant negative output gap was reported in 2009, and the redeterioration of the cyclical position in the 2012–2015 period was longer but weaker in size. In the following three years the economy functioned above the potential output, with the largest positive output gap observed in 2017 (0.6 per cent). With the slowdown of the economic growth in 2018, the positive output gap also declined.

Chart 2 illustrates also which production factors drive the change in potential GDP growth. For instance, a significant decrease in the positive TFP contribution was observed in the period after the global financial crisis, which is likely to reflect lower inflows of foreign direct investment and investment for upgrading and improving efficiency in the context of an increased global uncertainty, as well as lower public investment and sub-optimal capacity utilisation.[16] TFP growth has started to accelerate since 2012, contributing most significantly to the potential GDP growth in 2018.

Throughout 2009–2014 the contribution of labour to potential GDP growth remained negative, driven mainly by the sharp rise in the unemployment rate. After 2014, a more essential recovery has been observed on the labour market coupled with a declining unemployment trend, offsetting the negative demographic trends and decreased working age population. As a result, the contribution of labour to the growth rate of potential output has turned positive. The contribution of capital to the potential growth declined significantly in the 2010–2014 period, reflecting the negative effect

[16] Chart 2 shows that the TFP contribution to the potential GDP growth began declining already in 2005–2008 when the economic expansion probably allowed the survival of even less performing firms.

of the global financial crisis on corporate and government investment activity. Although the investment activity remains persistently at lower levels compared to the pre-crisis period, factors underpinning accumulation of capital in the post-crisis period include the enhanced implementation of EU projects in 2013–2015 and increasing private investment after 2016 in the context of rising external demand for Bulgarian goods and services, general easing of the uncertainty in the international environment and continuous improvements in financing conditions.

2.2. Multivariate Model with Production Function, Phillips Curve and Okun's Law

In traditional production function models, production factors are filtered individually by means of univariate filters. A possible drawback of this method is that the obtained estimate of potential GDP may resemble in many aspects the estimate derived from an univariate filter applied only to the GDP time series. Therefore, the second multivariate model used by the BNB for business cycle measurement combines the production function with behavioural equations of the Phillips curve and Okun's law[17]. The Phillips curve equation aims to empirically estimate the relationship derived in the literature between the output gap and inflation dynamics[18], while Okun's law links the output gap to the unemployment gap[19].

The model is solved in several steps. The first step requires to create a system of equations in an appropriate form[20], characterising the individual unobserved components and the relationships between them. The second step involves calibration and/or estimation of model parameters, which may be based on maximum likelihood or using Bayesian estimation methods. The third step is to identify the path of unobservable variables based on estimated parameters and model structure using the so-called Kalman filter.

Based on the foregoing two main advantages of this type of structural models may be outlined. First, this type of structural models allow for better identification of unobserved components as more information about the state of the economy is used (in the form of more observable variables and a built-in design on the dynamics of their cyclical and trend components). Second, the long-term trends in GDP and unemployment developments derived using these models get closer to the concepts of potential output and natural rate of unemployment defined in the literature[21]. In line with the design of the model the economic activity is at its potential level provided there is no upward or downward price pressure in the economy, *i.e.* inflation is at its long-term level. The model and its main components are graphically shown in Figure 1. Observable variables are depicted in dark blue, unobserved components in light blue and main economic relationships in orange:

[17] The model used is similar to that in: Andersson, M., B. Szörfi, M. Tóth and N. Zorell, An unobserved components model for euro area potential output, *ECB Economic Bulletin*, Issue 7, 2018.

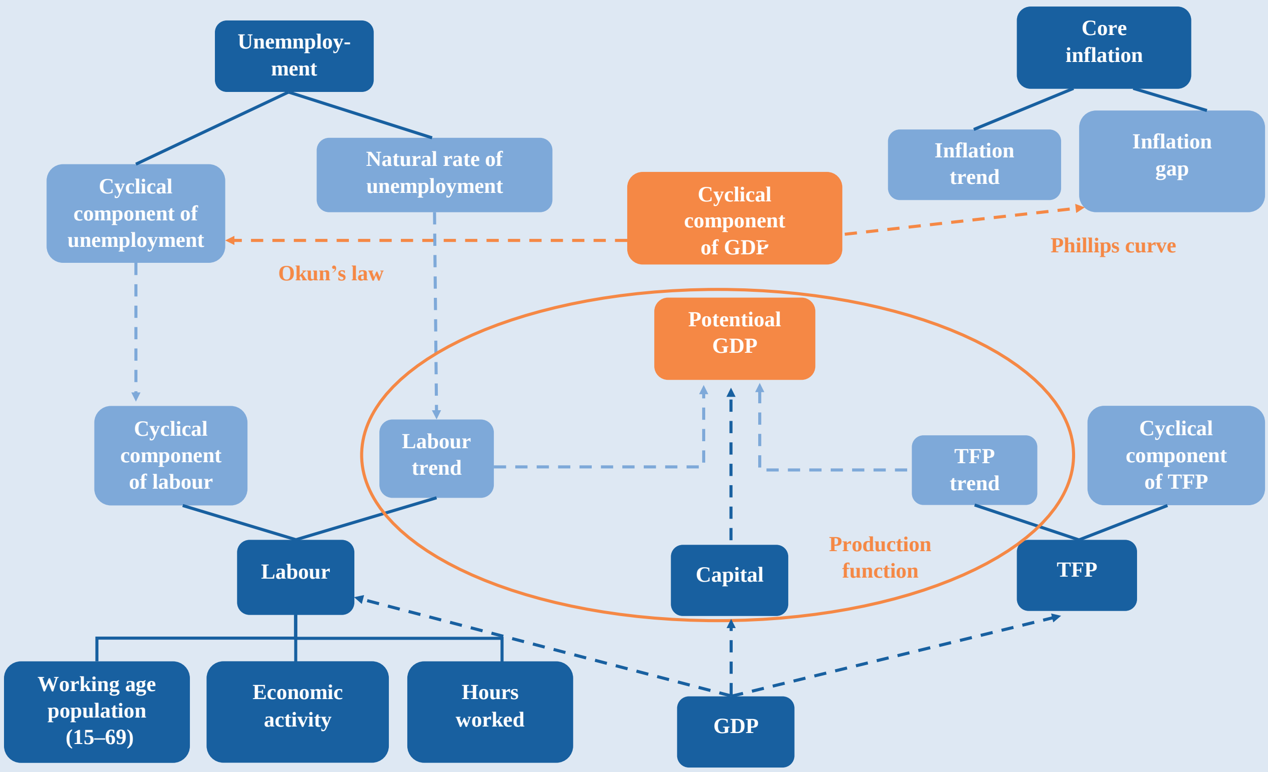
[18] We use the definition of core inflation, which is consumer prices excluding food, energy products and goods and services with administratively controlled prices.

[19] A modification of the model in this study without a production function is presented in: Kasabov, D., P. Kotseva, A. Vassilev and M. Yanchev, Relationship between Inflation, Potential Output and Structural Unemployment in Bulgaria, *Discussion Papers*, No 104, 2017.

[20] This is the so-called *state space* model presentation.

[21] The long-term trends in GDP and unemployment developments derived by univariate filters get close to the statistical concept of trend.

Figure 1. Multivariate Model with Production Function, Phillips Curve and Okun's Law



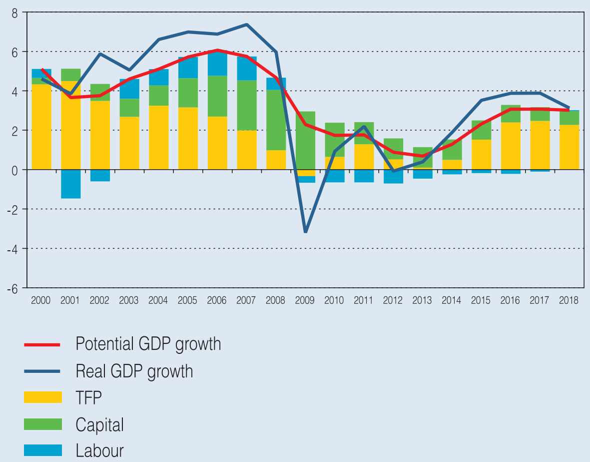
Note: The figure is an adapted version of that proposed by: Andersson, M., B. Szörfi, M. Tóth and N. Zorell. *Op. cit.*

The results of the estimated cyclical position of the Bulgarian economy using the presented model are shown in Chart 3.

Chart 3: Multivariate Model with Production Function, Phillips Curve and Okun's Law

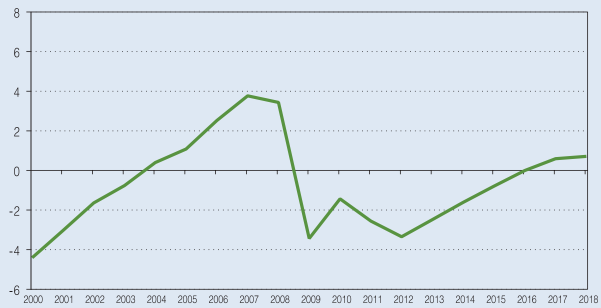
GDP Growth and Contribution by Input Factor

(per cent; percentage points)



Business Cycle

(per cent)



Note: The business cycle is the deviation of GDP from potential output measured as a percentage of potential output (output gap).
Sources: the NSI, the BNB.

The graphical analysis shows that the estimated cyclical position using this model differs from that obtained by applying the first two methods in terms of business cycle amplitude.[22] The use of a multivariate production function model and behavioural equations results in a higher negative output gap in the beginning of the review period compared with previous methods.

This can be explained by the fact that the estimate is strongly impacted by the significant negative unemployment gap in the 2000–2002 period. Similar to the second method the model signals an upward dynamics of the business cycle between 2003 and 2008, with the largest positive output gap reported in 2007. Growth of potential output slowed down in the post-crisis period, with the stronger downward adjustment in GDP growth resulting in a negative output gap. In contrast to the other methods in this model the cyclical position deteriorates stronger and for a longer time in the 2009–2015 period. This reflects both the sustained unemployment gap and the subdued dynamics of core inflation over the period, which within the model is interpreted as a signal that production factors are not optimally used in the economy. After 2015 the economic activity increased by over 3 per cent annually exceeding potential GDP growth. As a result after 2016 the business cycle entered an expansion phase. Unlike other approaches this model does not indicate closing of the positive output gap at the end of the review period, which reflects mainly the sustained negative unemployment gap.

Turning to factors determining growth opportunities in the economy Chart 3 illustrates that accelerated potential growth in the 2014–2018 was mainly due to the TFP and to a lesser extent to capital. Concurrently, the contribution of labour was negative in this period. This reflects the negative effects of the decline in working age population (15–69), which is only partly compensated by the decrease in the natural rate of unemployment and the long-term upward trend in the participation rate.

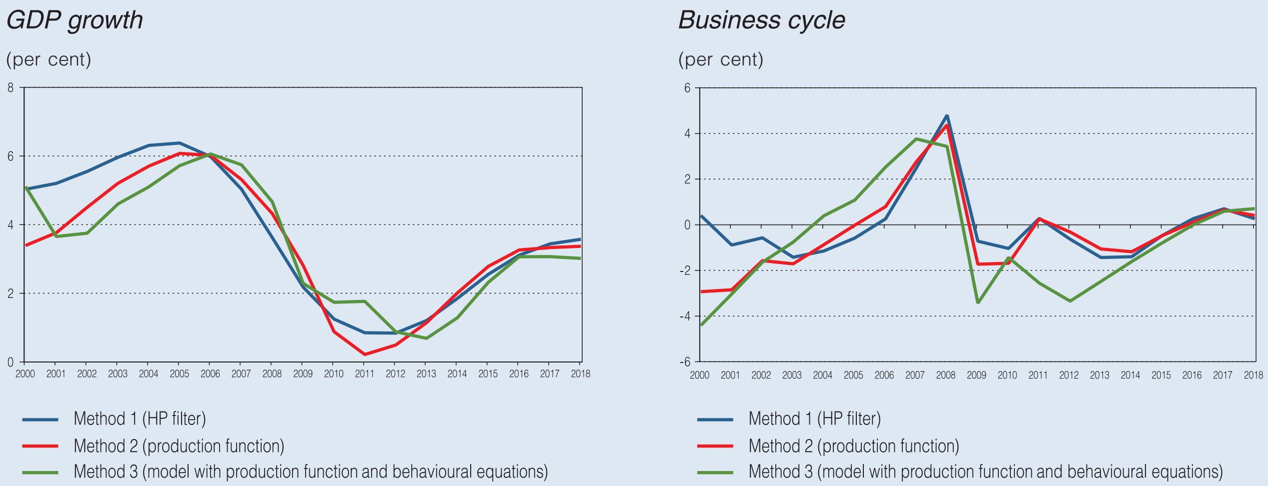
III. Conclusions

The study presents two multivariate models used by the BNB to assess potential growth and the business cycle. The results of these models have been compared by the HP univariate statistical filter which serves as a starting point for comparing alternative estimates. The three approaches give an indication that since 2016 Bulgaria's economy has been in a moderate expansion (see Chart 4). The output gap in the 2016–2018 period was under 1 per cent, while in two of the approaches (the HP filter and production function) the gap decreased in 2018 in line with the reported slower real GDP growth. All approaches applied indicated acceleration of the potential GDP growth after 2013 to the range of 3–3.6 per cent in 2018. Both multivariate approaches based on the production function indicate that TFP contributed most strongly to accelerated growth of potential GDP in the period after 2013.

Historically, the strongest differences in the business cycle estimates were recorded in the 2000–2002 period and in the post-crisis period. The inclusion of additional information on the relationship between the cyclical components of unemployment and GDP in the third approach resulted in a higher negative output gap in these two periods. An additional factor behind the more strongly pronounced and longer deterioration of cyclical developments in the post-crisis period, estimated by the multivariate unobserved components model, was the subdued core inflation dynamics signalling a sub-optimal use of production factors.

[22] Differences stem from the fact that the estimated equilibrium dynamics of some of the time series (particularly unemployment) in this model is less procyclical compared with the trend derived by univariate filters.

Chart 4: Comparison of Potential GDP Growth Estimates
and the Business Cycle by Three Alternative Approaches Used by the BNB



Note: The business cycle is the deviation of GDP from potential output measured as a percentage of potential output (output gap).

Source: the BNB.

The results of the described methods for assessment of potential GDP growth and the cyclical position of the economy demonstrate the benefits of using several alternative approaches, particularly in periods when reversals of the state of the economic cycle occur. These results, though subject to a particular degree of uncertainty, are essentially important for any central bank in exercising its main functions.

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