National Bank of the Republic of North Macedonia

Quarterly Report
February 2019

Contents

Introduction

In the last quarter of 2018, in conditions of favorable external position and stable expectations of the economic agents, the National Bank once again, for third consecutive time during the year, lowered the policy rate, reducing it to 2.5%. The monetary easing was assessed as adequate to the current economic and financial conditions, amid sound economic fundamentals and absence of imbalances in the economy. Favorable developments on the foreign exchange market continued also in the fourth quarter of the year, so the National Bank continued to intervene with net purchase of foreign exchange, while the foreign reserves registered an increase. According to all adequacy indicators, the foreign reserves remained in the safe zone. Favorable developments have been registered in the banks' deposit base as well, with the growth exceeding the expectations in October projections.

Regarding the sources of risks, currently there are no significant changes compared to October forecasts. The external environment risks remain unfavorable and are associated with rising trade protectionism on a global scale, the high volatility of oil prices on world stock markets, rising political and geopolitical problems in several regions of the world, the effects of the uncertainty over normalization pace of the monetary policy of the central banks in the developed countries, as well as the uncertainty associated with current developments on the announced exit of the United Kingdom from the European Union. Thus, compared to October, the risks were slightly more pronounced, which also reflected on the expected global growth, which was slightly revised downwards. The risks related to the domestic environment remained, but they are assessed as less pronounced compared to the previous period.

The comparison of the latest macroeconomic indicators with their forecasted dynamics within the October forecasting round does not indicate significant deviations in the individual segments of the economy. According to the published estimates for GDP, economic activity in the third quarter registered solid growth (3.0%), slightly higher than the projected rate in the October projections (2.5%). This upward deviation is mainly explained by the higher export growth and, consequently, the more favorable net export demand, as well as the higher growth of public and private consumption relative to the expectations in the October projections, while the fall in gross investments is higher than expected. The annual GDP growth of 3.0% n the third quarter of 2018 was supported by both net exports and domestic demand. Namely, in conditions of enhanced activity of the export industrial capacities with foreign capital, the export still shows significant growth and the highest individual contribution, thus being the main factor for the high positive contribution of the net exports to the total economic growth. The positive contribution of domestic demand is driven by the growth of private and public consumption, while gross investments continued to decrease, although slower, given further poor realization of some of the public infrastructure projects. The currently available high frequency data for the fourth quarter indicate continuation of favorable movements in the economy. The October projection[1] envisages economic growth of 2.3% in 2018 and gradual growth intensification to 3.5% in 2019 and 3.8% in 2020. The exports are expected to be the main source of growth, while within domestic demand components, a solid positive contribution is expected from the consumption of households. At the same time, unlike 2018, in 2019 and 2020, it is expected that the contribution of the investments will be in the positive zone and will significantly affect the economic growth in conditions of stable environment, further growth of foreign investments and the continuation of the public capital investments.

The annual increase in domestic prices decelerated from 1.6% in the third, to 1.2% in the fourth quarter. The inflation in this period is below the expectations for the quarter within the October projection. By component, the deviation is mostly related to the lower growth in food and energy components compared to the forecasts, while the increase in the core inflation matches the expectations. **During the entire 2018, the annual inflation rate was 1.5%, and generally moved within the October forecast (projected inflation rate of 1.6%).** In addition to the growth of the core component, the energy and food component had a positive contribution to the inflation in 2018. In conditions of a performance currently deviating slightly from the projection, the risks in terms of the expected inflation for 2019 and 2020 of around 2% for now are assessed as balanced. However, the future movement of the prices of primary products on the world markets, and primarily oil prices, is uncertain.

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[1] In October 2018, the expected economic growth for 2018 was corrected downwards from 3.2% to 2.3%. The growth expectations in 2019 remained unchanged (3.5% annually).

The balance of payments data indicate better performance in the current transactions than planned, while the realized flows in the financial account were somewhat smaller than expected. In the third quarter, a surplus of Euro 202.2 million (1.9% of GDP) was realized on the current account, which is higher compared to the October projection, mainly due to the better trade balance. At the same time, the financial account registered net outflows of Euro 115.5 million (1.1% of GDP), which are somewhat higher than expected in October. The comparison of the current account on an annual basis shows an improvement in the current transactions surplus, in conditions of higher surplus in goods and services in the secondary income, as well. Annually improvement have also been registered in the flows in the financial account, where lower net outflows have been registered compared to the third quarter of 2017. The latest available data on gross foreign reserves for the fourth quarter of 2018 point to quarterly growth, as opposed to the expected moderate fall in the October forecasts. The available external sector data for the last quarter are not sufficient yet to draw conclusions about the reasons for such convergence. The data on the foreign trade of goods, as of November, indicate better performance than expected, while the latest data on the net purchased foreign currency on the currency exchange market indicate net inflows from private transfers within the expectations in October. **According to October forecast for the period 2019 - 2020, the foreign reserves will increase on a cumulative basis, and the adequacy indicators will hover in a safe zone.**

In the fourth quarter, the lending activity of the banking sector accelerated, typical for the credit market at the end of the year, especially in December. Sector-by-sector analysis shows that the accelerated credit growth stems from the increased credit support to the corporate sector, accounting for most of the new lending in the last quarter, which is common for this period of the year. The household loans continued to increase also in the fourth quarter, with a similar dynamics as in the preceding period, with the housing loans, besides consumer loans, having positive contribution to the growth. On annual basis, total loans in December grew by 7.3%, which is within the expected growth rate in October forecast of 8.4%. Analyzing the drivers of credit market, surveys show positive movements on both the demand side and the supply side of credits. Thus, in conditions of growth dynamization of economic activity and favorable terms of lending by the banking sector, the private sector continued to increase demand for loans. Sound solvency and liquidity position of banks and increased competition in the banking sector are factors that continue to have a stimulating effect on the supply of loans. **The total deposits registered significant increase in the last quarter of the year**[2], because of which the annual growth rate in December equaled 12.1% and exceeded the projection for the end of the year (of 10.2%). The total deposits growth in the last quarter, from a sectoral aspect, arises mostly from household deposits, with a small positive contribution also by corporate deposits. In the following period, the bank deposit base is expected to further increase in the period ahead, ensuring stable sources of financing of credit growth, which according to the October forecast are expected to be around 8% in 2019 and 2020.

However, the latest macroeconomic indicators and assessments do not deviate much from the projected dynamics. The environment for conducting monetary policy remains stable, with sound economic bases and absence of imbalances in the economy. The banks' credit activity is expected to further support the domestic economy, in the absence of inflationary pressures and favorable external position, which will enable maintenance of foreign reserves in the safe zone. The realized economic growth in the third quarter is solid and slightly higher than expected, which gives prospects for achieving the projected economic growth for the entire 2018 year. The NBRM will continue to closely monitor the developments in the domestic economy, especially in the external environment, as a source of potential risks, due to the timely and appropriate adjustment of the monetary policy for successful achievement of the monetary goals.

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[2] Data refer to non-government deposits in banks and savings houses, transferable denar deposits of other financial institutions and transferable denar deposits of local self-government. They are consistent with the methodological changes of the NBRM from June 2018.

I. Macroeconomic developments

1.1. International economic surrounding[3]

*The global economy registered further growth intensification in the third quarter of 2018. In conditions of solid performance of the US economy, the slowdown in global economic growth was largely the result of the slower growth of Japan, the euro area and some of the emerging countries. Thus, in the third quarter, the euro area, as our largest trading partner, registered an increase of 1.6%, which is a slowdown in relation to the growth of 2.2% in the previous quarter. The current ratings of international financial institutions point to relatively solid global performance in 2018, while an economic slowdown is expected in the medium run. The expectations for the global growth deceleration mostly reflects the larger slowdown of the economic growth than previously expected in the developed countries, given simultaneous growth deceleration of the emerging countries and the developing countries. Thus the latest projections of the International Monetary Fund indicate global economic growth of 3.7% in 2018 and deceleration to 3.5% and 3.6% in 2019 and 2020, respectively. As risks that could have adverse effects on the world economy in the upcoming period, the possible escalation of trade tensions, the high level of public and private debt, the UK exit from the European Union without a prior agreement, and the slowdown in growth from previously expected in China. In the third quarter, there was certain acceleration of inflation in the world compared to the second quarter, with higher inflation rates being registered in both developed and developing countries. Higher inflation rates in this period largely resulted from the higher oil prices. However, the expectations for stabilization of the energy prices in the next period will contribute to gradual stabilization of the inflation rate.*

Global GDP growth
(year-on-year rates of change, annual data)

Source: IMF, WEO October 2018.
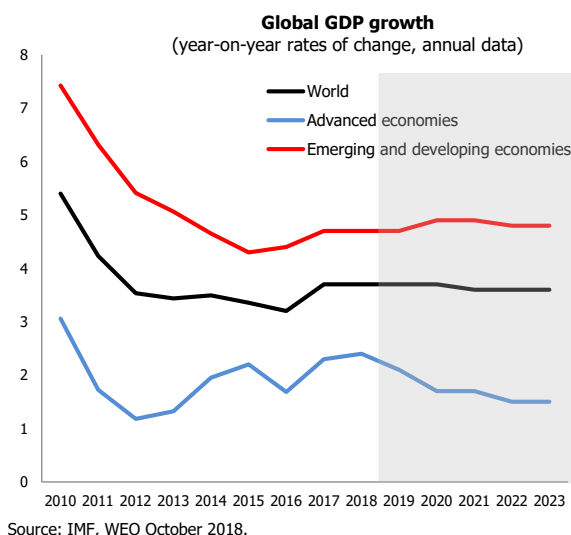
Global economic activity continued to grow in the third quarter of 2018. By country, the intensified economic activity accelerates in the United States and the United Kingdom, while in the euro area and in Japan there has been a slowdown in growth rates compared to the second quarter of 2018. Thus, the annual growth in the euro area of 1.6% in the third quarter is the lowest in the last four years, and such achievements mostly relate to trade tensions of the United States with China and Europe, the uncertainty about the Brexit process and political instability in some of the euro area countries. On the other hand, in conditions of significant fiscal stimulus from tax cuts, the US economy recorded a solid growth rate of 3% in the third quarter on an annual basis, fueled by increased private consumption and investment. The acceleration of the annual growth of the British economy from 1.2% in the second to 1.5% in the third quarter is a result of stronger domestic demand, with accelerated growth of real wages and

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[3] The analysis is based on the IMF's "World Economic Outlook", update October 2018; ECB's Economic Bulletin; the announcements of Markit Economics; World Bank's Global Economic Outlook; the reports of Bloomberg, Capital Economics, Reuters and the Trading Economics, the monthly reports of the International Energy Agency and the weekly reports of the National Bank of Greece.

Real GDP growth in emerging economies
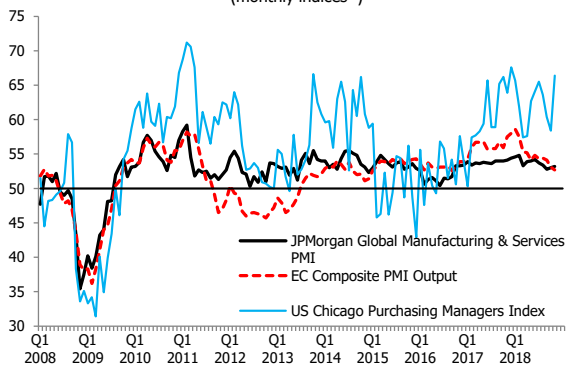(year-on-year percentage changes; quarterly data)
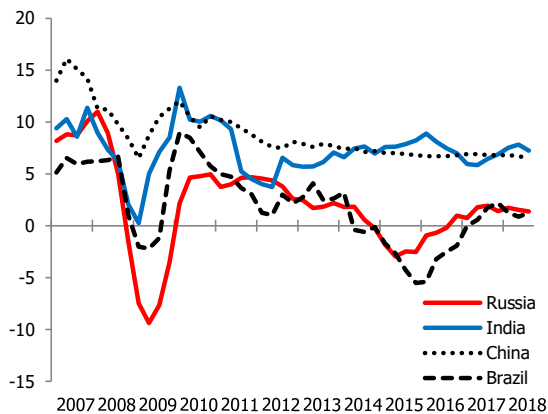
Source: OECD and IMF.

Real GDP growth in emerging economies
(year-on-year percentage changes; quarterly data)
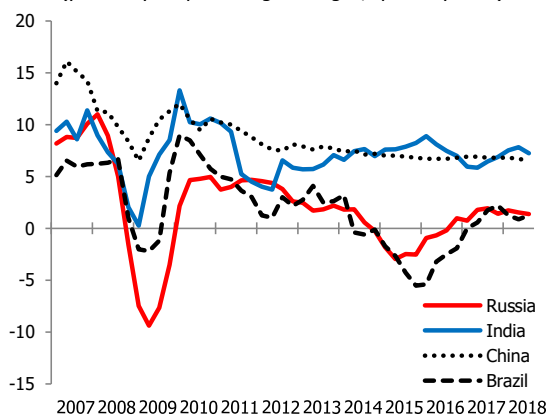
Source: OECD and IMF.

Global economic activity indicators
(monthly indices*)

*The PMI index reflects the percentage of respondents that reported better bussiness conditions compared to the previous month and it can take values between 0 and 100. PMI=50 is considered as a reference value, indicating unchanged economic conditions. A PMI value over 50 is taken to indicate that the economy is expanding, while a PMI value below 50 suggests that the economy is contracting.
Source: Markit, ISM-Chicago.

higher public investments, as well as better performance in the external sector. Regarding the countries in the group of emerging economies, the growth generally slows down, which is most pronounced in the Chinese economy, given the reduced China's growth in conditions of global increase of the trade protectionism. The weaker growth in private consumption has led to a slowdown in India's economic growth. Russia recorded a similar growth rate as in the second quarter, while Brazil noted accelerated economic growth driven by private consumption and investments.

The high frequency survey indicators - PMI in the fourth quarter are slightly below the average value in the third quarter. The average of the PMI index in the period October - November equals 53.0 (53.3 in the third quarter), which probably points to small deceleration of the global economic activity in this period.

According to the latest IMF perceptions from January 2019, it is estimated that the global growth in 2018 will equal 3.7%, while for 2019 and 2020 its deceleration to 3.5% and 3.6%, respectively is expected. The growth projections for 2019 and 2020 are revised downwards compared to October[4], primarily as a result of the expectations for transmission effects of the lower economic growth realized in the second half of 2018 in Germany and Italy and larger deceleration than previously expected in Turkey.

The risks for the global economic activity remain unfavorable. The most noticeable unfavorable risks are the tightened global financial conditions, the possibility of the UK's exit from the European Union without a negotiated agreement, a greater slowdown in economic growth than previously anticipated in China, and the possible escalation of trade tensions that would have negative repercussions on the global growth.

On global scale, **in the third quarter of 2018 the inflation accelerated slightly, reaching 4.6%** (3.6% in the second quarter). As one of the main reasons for the acceleration is the increase in the world oil prices in this period. The acceleration has been registered in both, developed and emerging economies. Thus the inflation rate in developed countries reached 2.2% (2.0% in the

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[4] The IMF projections in October 2018 envisaged global growth of the real GDP in 2019 and 2020 of 3.7% per year.

Global inflation
(annual percentage changes, monthly data)

Unemployment in advanced economies
(in percent; seasonally adjusted monthly data)

Inflation in advanced economies
(annual percentage changes; monthly data)
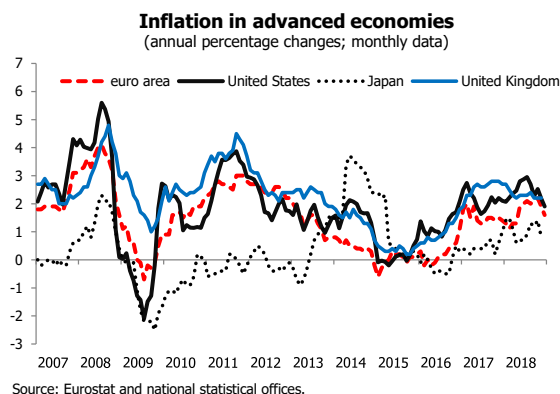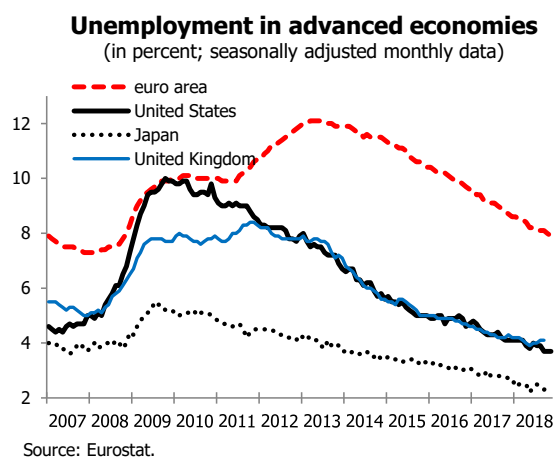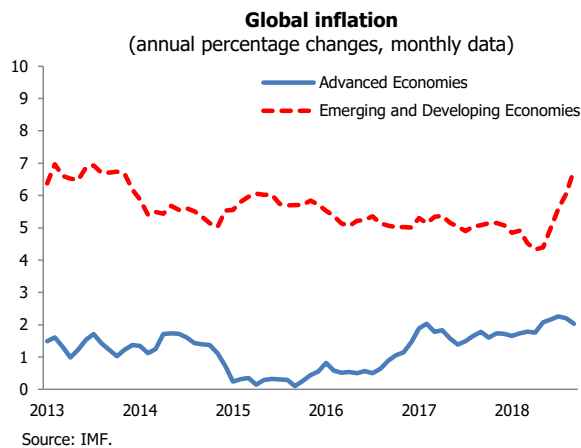
second quarter), while in the emerging economies it equaled 6.1% (4.6% in the second quarter).

In the euro area, the increase in the economic activity in the third quarter of 2018 continued with a decelerated dynamics. Thus in the third quarter the euro area registered an increase of only 0.2% on a quarterly basis, which is a deceleration compared to the increase of 0.4% in the second quarter. The growth slowdown is mostly due to the reduced activity in Germany and the decelerated growth of Italy. Annually, the real GDP increased by 1.6%, which is smaller increase compared to the second quarter, when the euro area growth equaled 2.2%. Generally, the growth deceleration of the economy in the euro area reflects the unfavorable external environment and smaller domestic demand, in conditions of more pronounced political uncertainty. On the other hand, in the labor market, positive movement was registered in the fourth quarter of 2018, i.e. the unemployment rate in November in the euro area was reduced to the lowest level in the last 10 years and amounted to 7.9%. In the mid-term, according to the latest December projections of the ECB, a gradual slowdown in the economic activity in the euro area is expected to slow, predicting that the real GDP growth in the euro area will be 1.9% in 2018, 1.7% in 2019 and 2020 and 1.5% in 2021.[5]

In the fourth quarter of 2018, there was a slight slowdown in the annual inflation rate in the euro area, which reduced to 1.9%, largely due to the fall in oil prices. Observed in the medium run, smaller inflation growth is expected. According to the recent ECB projections in December, it would be 1.6% for 2019, 1.7% for 2020 and 1.8% for 2021. In comparison with the September 2018 forecast,[6] the inflation for 2019 has been revised downwards, reflecting the lower core inflation (given lower expected economic growth) and lower expected energy prices, while for 2020, no revisions have been made.

The divergent monetary policy setup in developed economies continued in the fourth quarter of 2018. Thus, at the regular meeting held in December, FED adopted a decision on increasing the policy rate by 0.25

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[5] In December, the ECB made downward revision to the September projections, according to which the real GDP growth in the euro area was projected to be 2% in 2018, 1.8% in 2019 and 1.7% in 2020.
[6] The September 2018 forecasts envisaged an inflation rate of 1.7% in 2019 and 2020.

Policy rates in advanced economies
(in %)

Source: Central banks.

USD/EUR Exchange rate
(monthly data, average)

Source: Bundesbank.

Price of crude oil
(monthly data)

Source: WB monthly database.
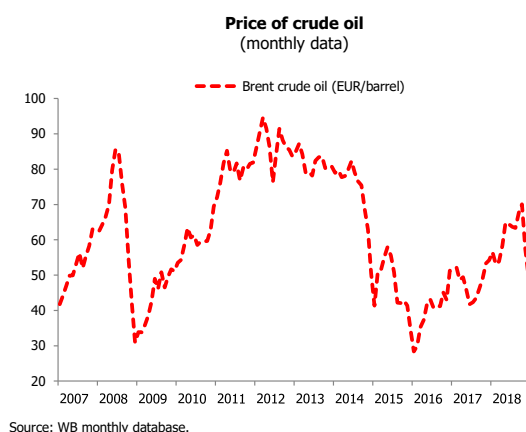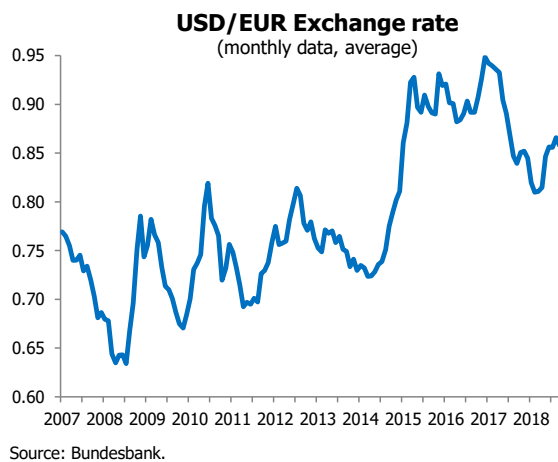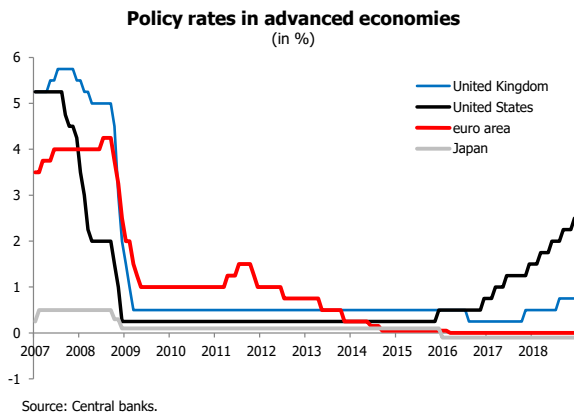
percentage points. This is fourth consecutive rise in the policy rate in 2018 and ninth in the last three years. As a result, the current nominal interest rate of FED ranges from 2.25 to 2.5%. The increase in the interest rate is largely due to the FED's estimates for improved performance on the labour market and the strong economic growth. In the fourth quarter of 2018, the ECB continued to gradually contracting the accommodative monetary policy, given the narrowing of the quantitative easing policy scope[7], which ended in December 2018. At the same time, at the regular meeting in December the ECB decided to preserve the same interest rate, It was emphasized that the monetary policy in 2019 remains relatively accommodative, and the liquidity kevel in the banking sector will be maintained through further reinvestment of due securities. The Bank of England and the Bank of Japan did not alter the monetary policy setup, keeping the interest rate at 0.75% and -0.1, respectively.

In the fourth quarter of 2018, appreciation of the US currency against the euro of 1.9%, on average, was registered compared to the third quarter of 2018. Annually, in the fourth quarter, the value of the US dollar against the euro increased by 3.2%, and in December 2018, one US dollar was exchanged for 0.878 euros, on average. The increase is largely due to the ECB's tightened monetary policy and the political risks within the euro area.

In the fourth quarter of 2018, the oil price decreased relative to the price in the third quarter of 2018. Thus in the fourth quarter, the average oil price in euros equaled Euro 59 per barrel, which is a decrease of 9.1% on a quarterly basis. The decrease in the oil price mostly reflects the expectations for for higher level of inventories and lower world demand, because of which the

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7 At the ECB's regular meeting in December, the European Central Bank, decided to maintain the current interest rate and to continue the ECB's quantitative easing program until December 2018 with a reduced volume (Euro 15 billion monthly).

Prices of food and metals
(monthly data)

Source: WB monthly database.

Real GDP growth in countries from the region
(annual percentage changes, quarterly data)
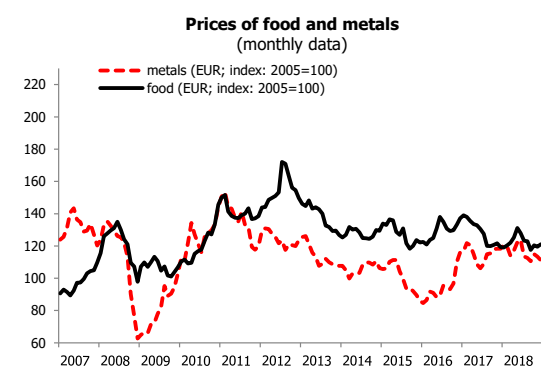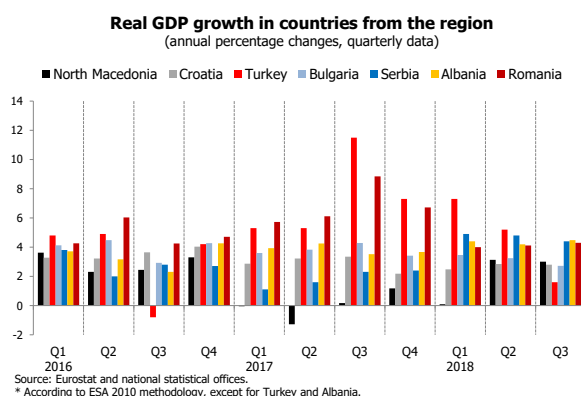
Source: Eurostat and national statistical offices.
* According to ESA 2010 methodology, except for Turkey and Albania.

Inflation in countries from the region
(annual percentage changes)
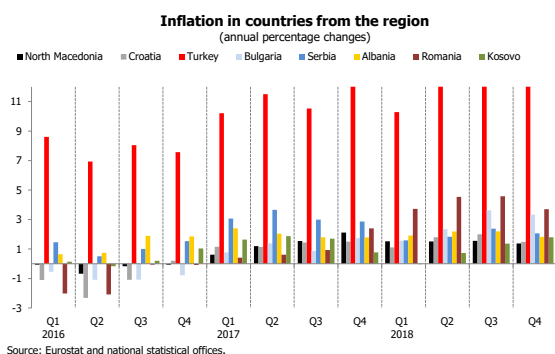
Source: Eurostat and national statistical offices.

OPEC decided to reduce the oil production.[8] On annual basis, the oil price in euro currency increased by 13%.

The prices of non-energy primary products in the fourth quarter registered quarterly increase of 0.4% (denominated in euros).[9] Analyzed by groups of products, growth was largely due to the increase in metal prices, which augmented quarterly by 0.9%, mainly reflecting the eased trade tensions between the USA and China[10]. On the other hand, food prices fell by 0.8% compared to the previous quarter, as a result of higher food inventories. Observed on an annual basis, the euro prices of primary non-energy products declined by 0.6%.

In the third quarter of 2018, the countries of the region registered positive economic growth. The highest growth in the region in this quarter was recorded by Albania (4.5%) and Serbia (4.4%), largely as a result of the growth of consumption and investments. A solid growth rate driven primarily by private consumption was registered by Romania (4.3%). On the other hand, Turkey (1.6%), Bulgaria (2.7%) and Croatia (2.8%) experienced a slowdown in economic growth. The slowdown in growth in Turkey and Croatia is largely due to the slower growth of private consumption, while in Bulgaria this is due to the decrease in exports.

The movements of the inflation rate in the countries of the region in the period October-November 2018 were mainly downward. Thus, in Croatia, Bulgaria, Serbia, Albania and Romania, price growth in the fourth quarter of 2018 decelerated. The slowdown in Croatia's inflation is largely due to the lower growth in core inflation, while the slower rise in prices in Bulgaria, Serbia, Albania and Romania is due to the smaller rise in the

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[8] As a result of the sharp drop in oil prices in November, on 7 December 2018, a meeting of OPEC member states was held in Vienna, where it was decided to reduce oil production by an additional 1.2 million barrels a day in the first 6 months of 2019. The latest OPEC decision could cause upward pressures on the oil price in the following period.

[9] The prices of non-energy primary products in denars registered quarterly drop of 1.5% in the fourth quarter. These differences between prices in euros and US dollars result from the changes in the euro/US dollar exchange rate.

[10] In December 2018, the USA and China agreed on 90-day truce and to hold a meeting for resolving trade issues between these two countries.

food prices. Only Turkey and Kosovo registered accelerated inflation in the fourth quarter of 2018. Higher inflation in Kosovo reflects the food component of inflation, while high growth in the general level of prices in Turkey is largely associated with the significant depreciation of the Turkish lira.

1.2. Domestic supply

Domestic economy growth continued in the third quarter of 2018, as well. According to the estimated SSO data, the GDP in the third quarter registered a real growth of 3% annually, identically as in the previous quarter. Observed from the aspect of certain activities, for several consecutive quarters, the activities "trade, transport and catering" have a dominant contribution to the overall growth of the economy. Moreover, in the last two quarters, industry as well has solid positive contribution. On the other hand, the activity in agriculture and construction decreased, but with a significantly lower negative contribution of the construction, compared to the beginning of the year. Regarding the movements in the fourth quarter, the expectations of the managers in construction enterprises, in retail and processing industries, as well as the largest part of the available data, indicate more favorable movements in the individual sectors compared to the third quarter.

In the third quarter of 2018, the gross domestic product registered a real growth rate of 3% on an annual basis, i.e. 1.4% on a quarterly basis (seasonally adjusted). The positive developments in the domestic economy in the third quarter are mainly due to the positive contribution of the group from the activities "trade, transport and catering", with industry, arts and other service activities registering a positive contribution. On the other hand, agriculture registers negative contribution in the total GDP growth, while the negative contribution in construction significantly reduced compared to the beginning of the year.[11].

	annual growth rates, in %								contribution in GDP growth, in p.p.							
	2013	2014	2015	2016	2017	Q1 2018	Q2 2018	Q3 2018	2013	2014	2015	2016	2017	Q1 2018	Q2 2018	Q3 2018
Agriculture	8.6	3.1	1.9	-0.4	-13.5	-4.7	-12.4	-4.8	0.8	0.3	0.2	0.0	-1.2	-0.3	-0.9	-0.4
Industry	3.7	11.5	4.9	-3.0	1.8	0.0	5.6	3.6	0.6	1.7	0.8	-0.5	0.3	0.0	1.0	0.6
Manufacturing	9.6	21.5	5.0	-1.5	1.5	6.4	5.8	4.1	1.0	2.1	0.5	-0.2	0.2	0.7	0.8	0.5
Construction	12.8	5.1	8.0	-2.8	-4.4	-19.3	-2.0	-2.6	0.7	0.4	0.6	-0.2	-0.3	-1.1	-0.1	-0.2
Trade and transport	11.1	3.1	1.4	8.7	4.9	7.9	11.6	9.4	1.9	0.6	0.3	1.6	0.9	1.5	2.3	2.0
Information and communication	4.8	3.4	13.4	7.2	13.9	-9.1	-3.0	-1.7	0.2	0.1	0.4	0.2	0.4	-0.3	-0.1	-0.1
Financial and insurance activities	-1.4	13.5	8.7	1.5	-1.3	1.8	0.8	2.3	0.0	0.4	0.3	0.0	0.0	0.1	0.0	0.1
Real estate activities	-1.3	0.0	2.7	-3.2	-0.7	1.7	2.1	0.4	-0.2	0.0	0.3	-0.4	-0.1	0.2	0.2	0.0
Professional, scientific and technical activitiess	9.6	6.3	5.9	11.5	5.7	19.2	10.8	7.7	0.3	0.2	0.2	0.4	0.2	0.7	0.4	0.3
Public administration	-7.5	3.2	6.5	3.5	-2.1	-5.0	-5.5	-1.8	-1.1	0.4	0.8	0.4	-0.3	-0.7	-0.7	-0.2
Other service activities	12.7	11.5	4.5	7.2	3.5	23.0	21.1	17.0	0.3	0.3	0.1	0.2	0.1	0.7	0.6	0.5
Gross Domestic Product	2.9	3.6	3.9	2.8	0.2	0.9	3.0	3.0	2.9	3.6	3.9	2.8	0.2	0.9	3.0	3.0

*From the release for GDP of 06.12.2018
Source: State Statistical Office and NBRNM calculations.

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[11] Beside the agriculture and construction sector, negative contribution has been registered in "information ans communication", "public administration and defense and compulsory social insurance, education and activities of health and social care".
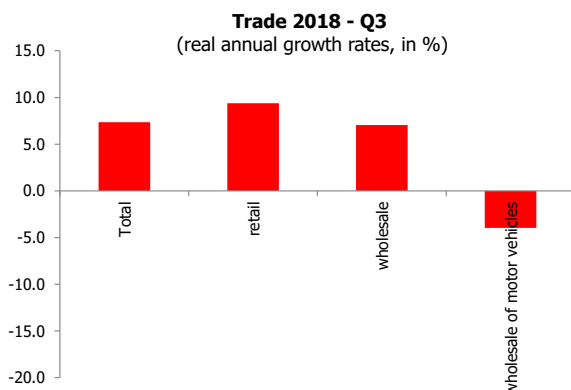
Trade 2018 - Q3
(real annual growth rates, in %)

Source: State Statistical Office and NBRNM.

Trade and expectations of managers of business entities engaged in retail

— Expectations for economic state in retail (left axis, balances of answers)
---- Turnover in retail and wholesale trade

Source: State Statistical Office and NBRNM.

Transports in 2018 - Q3
(real annual growth rates, in %)
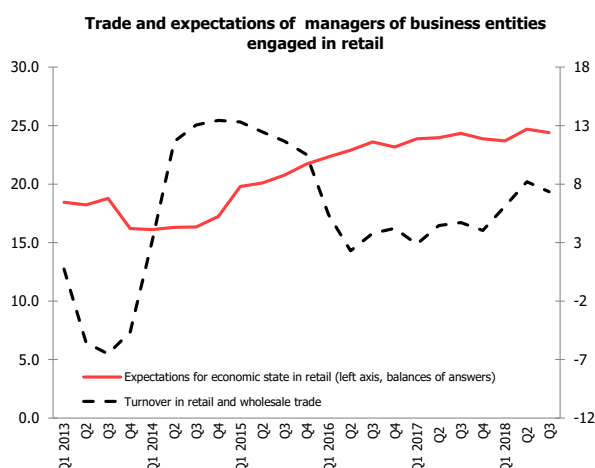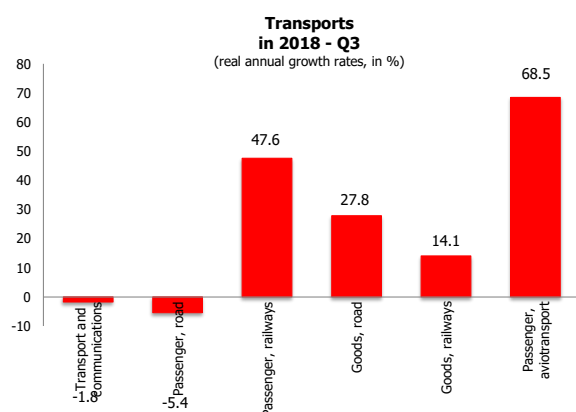
Source: State Statistical Office.

The main economic growth generator in the third quarter of 2018 is the group of activities "trade, transport and catering", which is a structural feature present in the few previous years. According to the data on the internal trade turnover, in the third quarter a sold annual growth rate of the total trade activity has been registered. In the third quarter, activities acceleration is also registered in retail trade and wholesale trade, while the trade with motor vehicles registers a decrease in the total annual turnover. Also in the period October - November 2018, the turnover in the total trade registered acceleration of the annual growth underpinned by the growth in both the retail trade and the wholesale trade turnover[12]. Regarding the expectations for the fourth quarter of 2018, the managers of the enterprises in the sector "retail trade" have generally favorable expectations regarding demand, consumer prices, number of employees and business conditions[13].

Favorable performance in the third quarter continued. However, the detailed data indicate positive performance in most of the traffic types. Thus, significant acceleration of the annual growth dynamics is observed for all types of freight traffic (road, rail and air traffic), in conditions of favorable performance in industry, fueled primarily by the activity of foreign export capacities. On the other hand, the passenger air traffic registered decelerated growth dynamics, while a slight decline was registered in the passenger road and passenger rail traffic.

Industry registered positive contribution to the GDP growth in the third quarter. The total industrial output registered solid annual growth rate in the third quarter compared to the previous quarter, in conditions of further increase in the utilization of the business agents' capacity. The favorable movements in the total industrial output are generally due to the growth in the manufacturing industry, with the energy sector having moderate share, as well. On the other hand, mining has a negative contribution to the overall growth rate of industrial output for several consecutive quarters, although the unfavorable effect is lower compared to the previous quarter. Within the processing industry, the main growth generators are the activities in the operative major foreign export capacities, as well as the activity "production of metals", with an additional positive

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[12] In the trade with motor vehicles, solid growth was registered in October, while in November there is a slight decline.
[13] The expectations of the managers of construction enterprises, in retail sale and manufacturing industry for the fourth quarter are taken from the Business Tendencies Survey for the respective sector conducted in the third quarter of 2018.

Contributions of selected industries to the total industrial production, annual rate of change
(in percentage points)

■ 2Q 2018   ■ 3Q 2018

Source: State Statistical Office and NBRNM.

Industry, capacity utilization and managers' expectations for production volume

— Expectations for the volume of production during the next 3 months
-- Industrial production (annual rate of change, in %)
— Level of capacity utilization of the business entities (in %)

Source: State Statistical Office.

Completed construction works
(contributions to the real growth, in p.p.)

■ Buildings   ■ Civil engineering   — Total

Source: State statistical office

Construction and expectations of the construction sector

— Expectations for the total orders (agreements) during the next 3 months
— Assessment of the present business situation in the business entities
— Construction, real growth rates, in % (right scale)

Source: State Statistical Office.

contribution of the production of furniture and textiles and production of chemical products, being registered. On the other hand, after the significant positive contribution in the previous quarter, minor movement in "production of fabricated metal products, except machinery and equipment" has been registered, while negative changes have been registered also in the production of tobacco products, beverages and clothing. In the fourth quarter, the growth in industry is expected to continue, according to the favorable expectations of the managers in this sector for production, prices and the number of employees. Also, the data on the the industrial output in October - November period point to solid performance and further acceleration of the annual growth in the fourth quarter, predominantly caused by the growth in manufacturing industry.

In the third quarter of 2018, the activity in construction kept decreasing, although the fall is significantly smaller than at the beginning of the year. Compared to the high frequency data, they indicate fall in the completed construction operations, in both the civil engineering (related to the slower realization of part of the public infrastructural projects) and buildings construction. On the other hand, in comparison with the beginning of the year, the decrease in construction is significantly smaller, as a result of the significantly decelerated activity reduction in civil engineering. On the other hand, high annual growth in **construction** is registered in October, generally due to the increase in buildings construction, which indicates possible improvement of the situation of this sector in the fourth quarter after the unfavorable performance in the past period. In general, the managers in this sector have favorable expectations from the aspect of the number of employees, orders and selling prices for the fourth quarter of 2018.

1.3. Aggregate demand

From the aspect of the demand, the annual GDP growth of 3.0% in the third

quarter of 2018 was supported by both net exports and domestic demand. Regarding the individual components, exports continue to register significant growth and the highest contribution, because of which it is the main factor for the high positive contribution of net exports to the total economic growth. Favorable developments in the export sector are mainly related to the activity of export-oriented industrial capacities with foreign capital. The positive contribution of domestic demand is driven by the growth of personal and public consumption, the gross investments continued to fall. The observed decrease in gross investments, although with slower dynamics compared to the annual fall in the previous quarter, is mainly related to the poorer realization of some of the public infrastructure projects.

Contribution to real annual GDP growth
(in percentage points)

- Net-exports
- Gross investments
- Government consumption
- Private consumption
- GDP
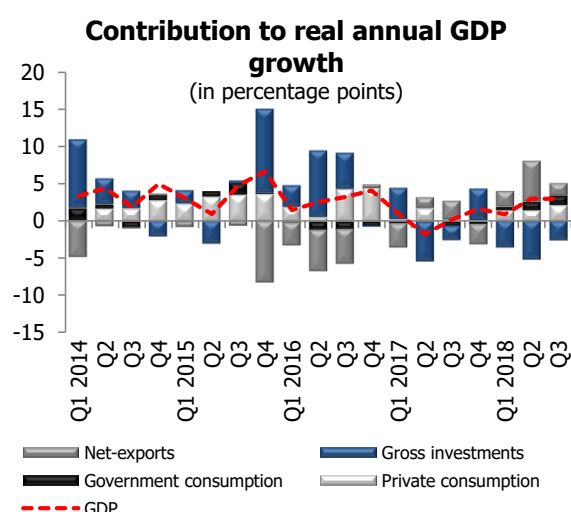
Source: State Statistical Office and NBRNM calculations.

The structural analysis of the GDP [14] from the aspect of the demand shows that unlike the first half of the year, in the third quarter of 2018, both the domestic and the net demand had positive contribution to the domestic economy growth. However, the export remains the main component with the highest positive contribution of the economy, which for a longer period is a structural feature of the domestic economy. Out of the domestic demand components, the solid growth of the personal and public consumption continues, while gross investments further decrease, although less intensive. The increase in private consumption and export demand affected imports that grew rapidly during the third quarter.

	Real annual growth rates (%)												Contributions to real annual growth (in p.p.)											
	2013	2014	2015	2016	2017	2017-Q1	2017-Q2	2017-Q3	2017-Q4	2018-Q1	2018-Q2	2018-Q3	2013	2014	2015	2016	2017	2017-Q1	2017-Q2	2017-Q3	2017-Q4	2018-Q1	2018-Q2	2018-Q3
Private consumption	1.9	2.2	4.4	3.9	0.7	0.2	2.3	0.2	0.0	2.0	1.9	3.0	1.4	1.6	3.1	2.7	0.5	0.2	1.5	0.2	0.1	1.3	1.2	2.0
Government consumption	0.5	3.0	3.9	-4.9	-2.5	-1.8	-0.8	-4.6	-2.8	3.0	7.7	9.6	0.1	0.5	0.7	-0.8	-0.4	-0.3	-0.1	-0.7	-0.4	0.5	1.2	1.3
Exports of goods and services	6.1	16.5	8.5	9.1	8.1	6.3	8.1	6.8	11.0	12.8	14.1	12.0	2.8	7.2	4.0	4.4	4.1	3.1	4.1	3.6	5.6	6.5	7.8	7.1
Imports of goods and services	2.2	14.1	9.9	11.1	6.4	9.0	3.7	1.9	11.2	6.2	3.4	7.5	-1.4	-8.7	-6.5	-7.2	-4.2	-5.8	-2.4	-1.3	-7.4	-4.2	-2.4	-5.0
Gross capital formation	0.5	10.7	8.3	12.5	0.8	12.2	-14.6	-6.1	11.0	-9.3	-16.4	-8.5	0.1	3.1	2.5	3.8	0.3	3.9	-4.9	-1.7	3.8	-3.3	-4.8	-2.5
Domestic demand	*1.3*	*4.4*	*5.4*	*5.1*	*0.4*	*3.4*	*-3.0*	*-2.1*	*3.2*	*-1.4*	*-2.2*	*0.6*	*1.6*	*5.2*	*6.3*	*5.6*	*0.3*	*3.7*	*-3.5*	*-2.2*	*3.4*	*-1.5*	*-2.4*	*0.8*
*Net exports**	*-7.0*	*8.0*	*14.1*	*16.7*	*2.1*	*15.4*	*-6.1*	*-15.1*	*11.5*	*-8.8*	*-23.5*	*-11.9*	*1.3*	*-1.5*	*-2.4*	*-2.8*	*-0.1*	*-2.7*	*1.7*	*2.3*	*-1.8*	*2.3*	*5.4*	*2.1*
Statistical discrepancy													*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*
GDP	**2.9**	**3.6**	**3.9**	**2.8**	**0.2**	**1.0**	**-1.8**	**0.1**	**1.6**	**0.9**	**3.0**	**3.0**	**2.9**	**3.6**	**3.9**	**2.8**	**0.2**	**1.0**	**-1.8**	**0.1**	**1.6**	**0.9**	**3.0**	**3.0**

*decrease represents lower deficit
Source: SSO and NBRNM calculations.

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[14] The quarterly GDP changes and its components are calculated by using the seasonally adjusted data.

Private consumption indicators
(real y-o-y growth, in %)

Imports of consumption goods
Retail trade
Private Consumption
Domestic production of consumption goods
Disposable income

Source: State Statistical Office , Ministry of Finance and NBRNM calculations.

Consumer confidence indicator

Financial situation
General economic situation
Unemployment expectations
Savings
Confidence Indicator

Source: European Commision and NBRNM's calculation.

1.3.1.Private consumption

In the third quarter of 2018, household consumption registered a quarterly increase of 1.9% and intensification of the real annually growth to 3.0%. Such positive contribution was supported by all components of disposable income (although there was a slight slowdown in their growth), while the increase in the bank's lending to households also had positive contribution. Also, the observations from consumer surveys on consumer confidence in the third quarter point to increased consumer optimism[15] with more favorable expectations regarding the economic and financial situation, as well as the possibility of reducing unemployment.

The signals of the available high frequency mostly indicate growth[16] of private consumption in the fourth quarter of 2018. Thus, in the period October - November, growth was registered in the retail trade, domestic production of consumer goods, import of consumer goods, real wages and the retirement amount, with the lending to households also registering a solid increase, which corresponds with the Lending Survey results, thus indicating further easing of the total lending conditions and a small net increase in the demand for loans to the households in this period. On the other hand, signals from consumer confidence surveys conducted in the fourth quarter point to certain fall in the consumer optimism.

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[15] European Commission's Consumer Survey as of December 2018. The chart shows the consumer confidence index as a net percentage of responses. This index is an integral component of the total index of economic confidence.
[16] Regarding the high frequency indicators for private consumption, only the private transfers registered a decrease in October 2018.

Expenditures for Wages and salaries and Goods and services
(y-o-y change, in %)

Gross investment and indicative series
(real annual growth rates, %)

1.3.2. Public consumption
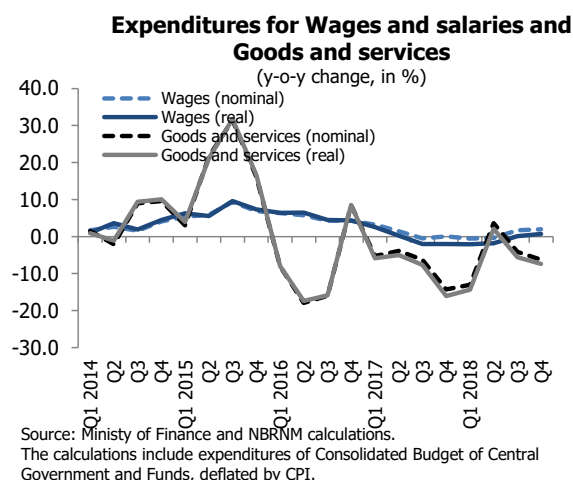
According to the latest estimates, public consumption has been growing since the beginning of 2018, and in the third quarter it registered an annual growth of 9.6%, with a slight decline on a quarterly basis of 0.1%. At the same time, such performances on an annual basis in public spending are the result of higher transfers for health care[17], as well as higher expenditures for salaries and transfers to local governments.

The data on October and November 2018 show slight annual decrease in the **public consumption**, mainly as a result of the lower expenses for goods, services and health transfers.

1.3.3. Investment consumption
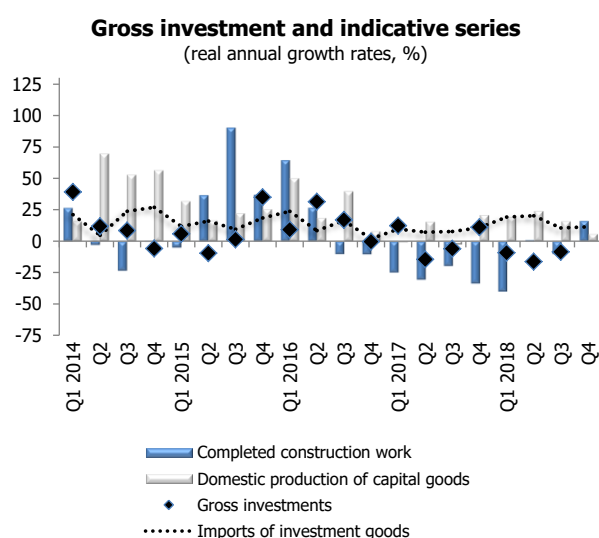
The unfavorable performance of gross investments since the beginning of the year continued in the third quarter, although with a less intensive decline of 8.5% on annual basis, while on quarterly basis, it increased by 8.8%. Such unfavorable movements in gross investments are mainly related to the lower realization of the added value in the construction sector, which in part relates to the poor realization of some of the planned public infrastructure projects and the lower realization of the government capital investments. In the same direction is the high frequency indicator of completed construction works, which in the third quarter registered a real annual decrease. The other high frequency indicators for gross investments are mainly favorable (growth of the import of products for investments and domestic production of capital goods), with an additional growth of foreign direct investments and long-term lending to enterprises by domestic banks also being registered.

Regarding the movement of the investments in the fourth quarter of 2018, the high frequency data mainly indicate favorable movements. Namely, out of the short-term investments indicators, annual growth has been registered by the domestic production of capital goods, the import of investment products, as well as for foreign direct investments. At the same time,

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[17] Most of these assets relate to expenditures on goods and services of the Health Insurance Fund.
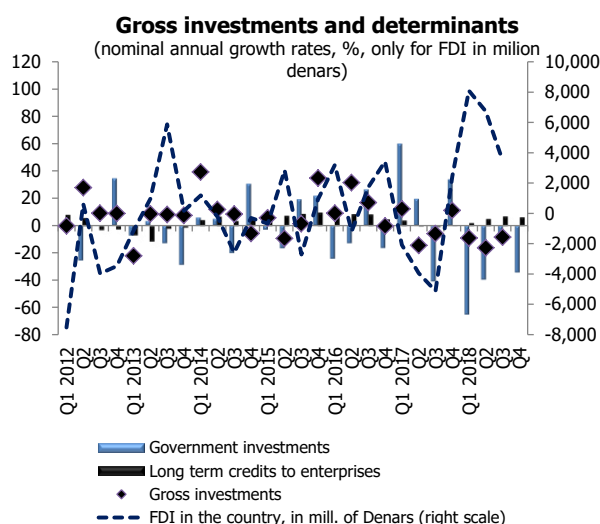
16

Gross investments and determinants
(nominal annual growth rates, %, only for FDI in milion denars)

Government investments
Long term credits to enterprises
Gross investments
FDI in the country, in mill. of Denars (right scale)

Source: State Statistical Office, Ministry of Finance and NBRNM calculations.

Exports and Imports, real annual growth rates
(y-o-y , in %)

Export
Import

Source: State Statistical Office.

Iron and steel export, base metals production and price of nickel
(index, 2010=100)

Price of nickel
Basic metals production
Export of iron and steel
Manufacture of fabricated metal products
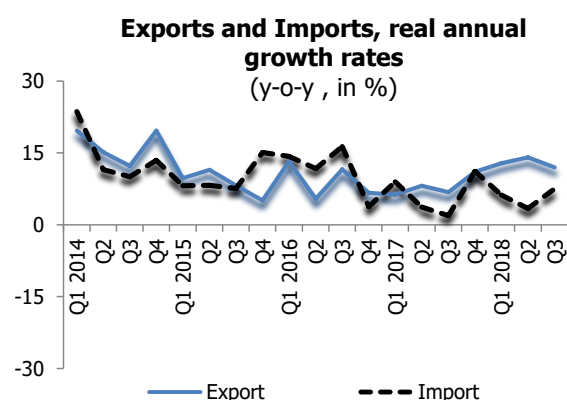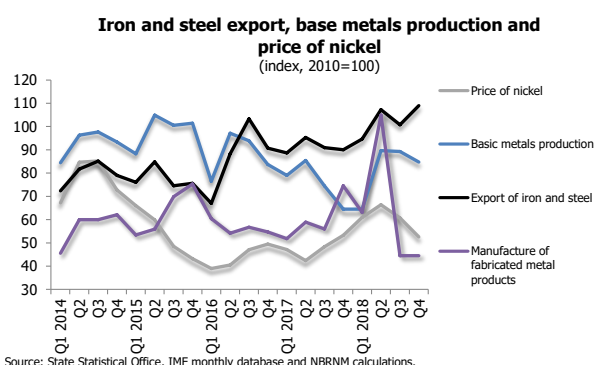
Source: State Statistical Office, IMF monthly database and NBRNM calculations.

corporate lending for the period October - November 2018 continues to grow, given moderate increase in loan demand and net easing of credit conditions in this period, in accordance with the results of the bank's survey surveys. Also in October, larger activity in the construction sector has been registered, which is in line with the mostly favorable perceptions of the managers in the construction sector for the situation in the sector during the fourth quarter. On the other hand, decline in high frequency indicators has been registered only in government capital investments (although in November there is a slowdown in the fall dynamics).

1.3.4.Net external demand

In the third quarter of 2018, the positive contribution of net exports to the growth of the domestic economy continues. Thus, the exports registered quarterly and annual growth of 1.0% and 12.0%, respectively, as a result of which also in this quarter this component registers the highest positive contribution to the GDP growth. Analyzed according to the high frequency foreign trade statistics, the growth of the nominal export was mostly supported by the solid performances of the new export-oriented industrial capacities, but also from the export activity of the metal-processing industry. In the third quarter, the real import increased by 7.5% annually, while on a quarterly basis in increased by 5.0%

The nominal **foreign trade** data for the period October - November 2018 **point to a potential trade deficit expansion in the fourth quarter** compared to the same period last year.

1.4. Employment and wages

In the third quarter of 2018, the labor market indicators point to further improvements of this market segment. Thus, the number of employed persons increases, with similar intensity as in the previous quarter. At the same time, the unemployment rate reduced to 20.8%, which is a new historical minimum. The business tendency surveys point to increased optimism about employment for the next three months. On the supply side, the annual growth of the active population, which began in the last quarter of 2016, continued. Regarding the competitiveness

indicators, labor productivity registered a slight positive shift on an annual basis. On the other hand, further increase was recorded also in the unit labor costs, but at a more moderate pace.

Employment and unemployment rate
(in %)

— employment rate (not seasonaly adjusted)
— unemployment rate (not seasonaly adjusted)
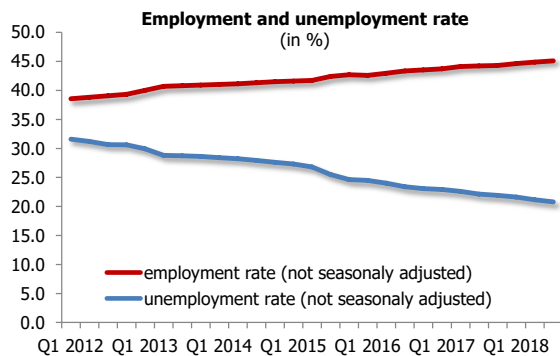
Source: State Statistical Office, Labour Force Survey.

Employed by economic status
(y-o-y changes, persons)

unpaid family worker
self-employed
employer
employed
total
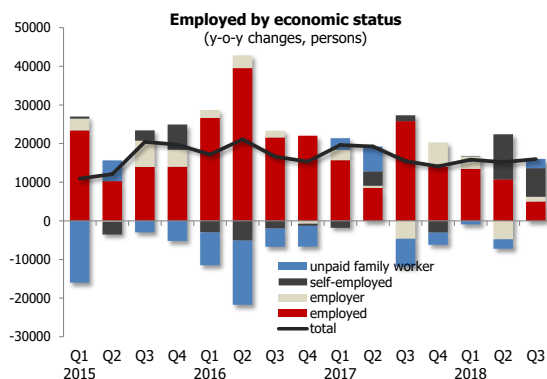
The employment growth continued in the third quarter of 2018, with similar intensity as in the previous quarter. Thus, the number of employees increased by 2.2%, annually, while quarterly, decrease of 0.4% was registered[18]. Observed by activity, movements are divergent. The manufacturing industry, transport and storage and professional, scientific and technical activities made the largest contribution to the increase in the number of employees. On the other hand, one third of the activities registered reduction in employment, and a sharper decline was registered in the accommodation facilities and catering services, arts, entertainment and recreation, financial and insurance activities and administrative and auxiliary services. In terms of the economic status[19], the category own-account workers recorded the largest growth of the number of employees.

In the third quarter of 2018, the employment rate amounted to 45.1%, which is an annual growth of 0.9 percentage points. Simultaneously, **the aggregated signals from business tendency surveys[20] generally suggest increased optimism** among managers of business entities regarding the employment for the next three months. In the third quarter **the job vacancy rate[21] equals 1.7%** (1.5% in the same period of 2017). Analyzed on a longer-term basis, the job vacancy rate is relatively stable, which, in conditions of decrease in the unemployment rate, points to possible improvement of the connection process of the supply with the demand for skills in the labor market. Observed by comparison, by sectors of activity, the highest job vacancy rate was registered in administrative and auxiliary services (5.1%), accommodation facilities and catering

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[18] The analysis of quarterly dynamics of employment, unemployment and total economically active population was made using seasonally adjusted data.

[19] The classification by economic status applies to the following groups: **employers** - persons who operate their own business entity or engages independently in their own shop, or farm owners who hire other employees; **employees** - persons who work in government institutions, business entities in public, mixed, cooperative and undefined ownership or for private employer; **own-account workers** - persons who operate their own business entity, company, engage independently in their own business and work on a farm in order to generate income, while not hiring other employees; **unpaid family workers** - persons who work without pay in a business entity, shop or farm (owned by a family member).

[20] Source: State Statistical Office, business tendency surveys in manufacturing industry (October and November 2018), construction (third quarter of 2018) and trade (third quarter of 2018).

[21] The job vacancy rate is defined as the ratio between the number of job vacancies and the total number of jobs. Usually, the job vacancy rate is considered along with the unemployment rate (a relationship known as the Beveridge Curve). The placement of these two indicators gives information on labor market performance in terms of potential mismatches between demand profiles and those available on the job market at a given moment (skill mismatches). In particular, if both indicators are moving simultaneously, they are temporary, cyclical fluctuations, while in the case of the unemployment rate decreasing, with a stable vacancy rate, these are structural changes, that is, improving the efficiency of the labor market.

Labour force, inactive population and participation rate
(in %)

- activity rate
- labour force (y-o-y changes, right scale)
- Inactive population (y-o-y changes, right scale)
- Job vacancies rate (right scale)

Source: State Statistical Office,.

Employed by sectors of activities
(contributions to annual growth, in p.p.)

- Agriculture
- Industry
- Construction
- Trade
- Transportation and storage
- Accommation and food service activities
- Other services*
- Total

* In other services are included the activiteis from J+K+L+M+N+O+P+Q+R+S
Source: State Statistical Office

Nominal average gross and net-wages
(annual real changes in %)

- gross wages
- net-wages
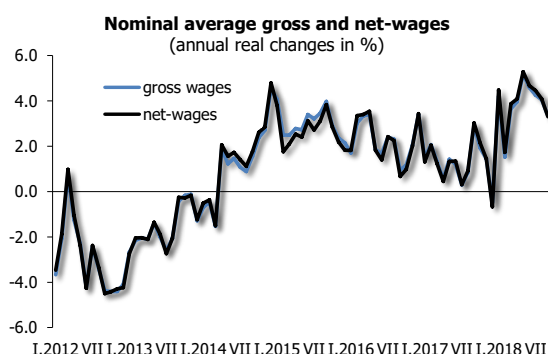
Source: State Statistical Office.

services (3%), as well as in transport and storage (2.4%).

As for the movements on the side of labor supply, the growth trend observed since the last quarter of 2016, continued in the third quarter, as well. Thus in the third quarter, the total labor force increased by 0.4% annually, while the activity rate equaled 57%.

The stronger rise in the demand relative to supply of labor force in the third quarter of the year resulted in further fall in unemployment. The number of unemployed in the third quarter decreased by 5.7% on an annual basis, while the unemployment rate reduced to the level of 20.8% (annual and quarterly fall of 1.3 and 0.3 percentage points, respectively).

The average net and gross wages paid in the third quarter registered an annual growth of 5.6% and 5.5%, respectively, in part reflecting the growth of the legally determined minimum net wage from September 2017[22], as well as the further growth of 1.4% in July 2018[23]. Wage growth was registered in most of the economic activities, mostly in the information and communication, mining, manufacturing industry, agriculture and accommodation facilities and catering services. In addition, the third quarter registered growth in certain segments in the public sector, such as health and social work and education[24]. On a quarterly basis, nominal net wages remained unchanged, while real net wages recorded a slight decrease compared to the previous three months. **In the third quarter, given the growth of consumer prices of 1.6%, the real annual growth of net and gross wages amounted to 3.9%.**

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[22] On 19 September 2017, the Assembly of the Republic of Macedonia adopted the amendments to the Minimum Wage Law of the Republic of Macedonia. According to the amendments, the minimum wage in the Republic of Macedonia, starting with the payment of the wage for September 2017, was determined for all sectors in the economy at a gross amount of Denar 17,130 or Denar 12,000, net. Prior to these amendments, the minimum net wage amounted to Denar 10.080, with the exception of the departments of manufacture of textiles, manufacture of clothing and manufacture of leather and similar leather products, where it is lower and amounted to Denar 9.000 in 2016.

[23] The amount of minimum wage according to the Minimum Wage Law (Official Gazette of the Republic of Macedonia No. 126/18), paid for the period July 2018 to March 2019 equals Denar 17,370 in a gross amount or Denar 12,165 net wage according to the adjustment with the increase for the previous year of the average paid wage in the Republic of Macedonia, the consumer price index and the real GDP growth (with one third of the increase from each indicator, respectively).

[24] On 22 September 2018, the Government announced its decision on increasing wages by 5% of the employees in kindergartens, schools and hospitals, starting with the payment of the wage for September 2018.
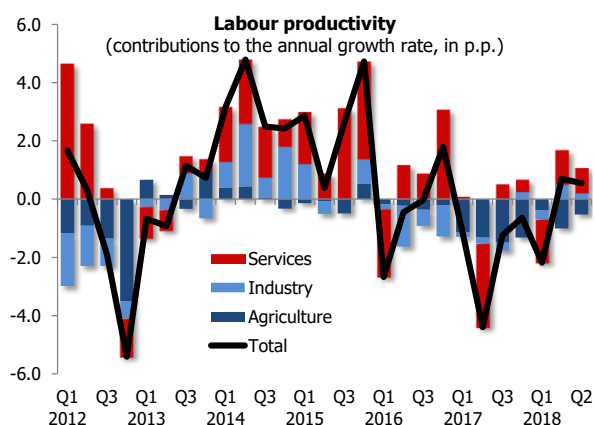
Labour productivity
(contributions to the annual growth rate, in p.p.)

Source: State Statistical Office and NBRNM calculations

Unit labour cost
(contributions to the annual growth rate, in p.p.)
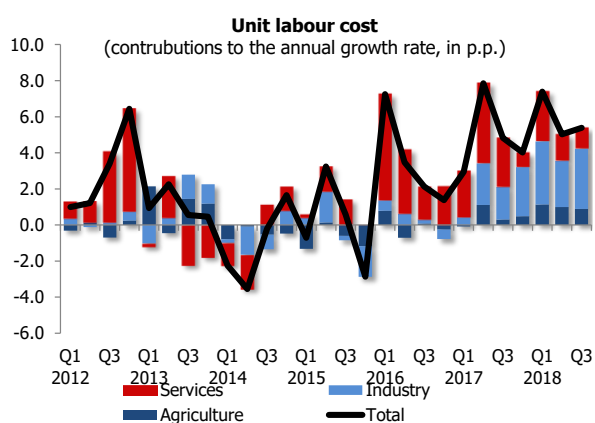
Source: State Statistical Office and NBRSM Calculations

The favorable trend in labor productivity started in the second quarter of 2018, at a similar pace, continued in the third quarter of the year, as well. In circumstances of solid growth of value added, but amid further growth of employment, labor productivity[25] increased by 0.6%, similar to the second quarter, when a growth of 0.7% was registered (for the first time after the continuous decrease since the beginning of 2017). Observed by sector, this is largely explained by the productivity growth in the services sector and the industry, but also by the significant deceleration in the productivity fall in the agriculture sector. **The higher wage growth, compared to the productivity growth, contributed to growth of the unit labor costs of 5.4%** (5% in the second quarter of 2018), but with more moderate intensity compared to the beginning of the year. Most of the growth is explained by the higher unit labor costs in the industry, amid simultaneous more moderate contribution by the services and agriculture sectors.

1.5. Inflation

In the fourth quarter of the year, the annual domestic price growth decelerated from 1.6% in the third quarter to 1.2% in the fourth quarter. In terms of the structure of the key components, the slower annual price growth reflects the slower growth in energy prices, in accordance with the movements in oil prices and oil derivatives in world markets, as well as the slower movement of core inflation. On the other hand, the food component of inflation registered a slight acceleration in the growth. For the entire 2018, the inflation rate amounted to 1.5%, mostly as a result of the shifts in the core component, and less of the positive contribution of the energy and food component. Regarding the future short-term dynamics of consumer prices, the current movements in imported inflation and the producer prices of domestic producers mainly do not point to significant upward pressures on the price level, and the movement in labor costs, whose growth accelerated in the third quarter of this year, is a possible risk. In terms of the expectations for the inflation rate in the next two-year period, according to the NBRM Survey, economic analysts expect that it will be moderate and around 2%, similar to the NBRM forecast and the forecasts of international institutions.

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[25] The total productivity is calculated as weighted sum of the calculated productivity at an individual sector level. Within each sector, the productivity is calculated as a ratio between the value added in that sector and the number of employees.

Inflation rate

Core inflation (contribution, p.p.)
Energy (contribution, p.p.)
Food (contribution, p.p.)
Total inflation (annual changes, %)

Source: State statistical office and NBRNM calculations.
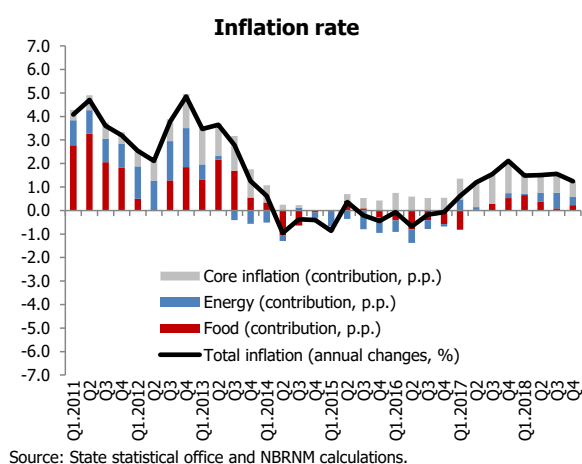
	(annual changes, in %)						(contribution to annual changes, in p.p.)					
	2017	2018				2018	2017	2018				2018
		Q1	Q2	Q3	Q4			Q1	Q2	Q3	Q4	
Consumer price index - all items	1.4	1.5	1.5	1.6	1.2	1.5	1.4	1.5	1.5	1.6	1.2	1.5
Food	0.0	1.7	1.0	0.2	0.6	0.9	0.0	0.7	0.4	0.1	0.2	0.3
Energy	1.4	0.5	2.7	4.8	2.6	2.6	0.2	0.1	0.4	0.7	0.4	0.4
Electricity	-0.2	-0.2	-0.2	0.0	0.0	-0.1	0.0	0.0	0.0	0.0	0.0	0.0
Heat energy	-7.6	-2.5	-2.5	-2.8	-2.9	-2.7	-0.1	0.0	0.0	0.0	0.0	0.0
Fuels and lubricants	6.7	2.0	11.1	19.6	10.7	10.7	0.2	0.1	0.4	0.6	0.4	0.4
Food and energy (volatile prices)	0.4	1.4	1.5	1.5	1.1	1.4	0.2	0.7	0.8	0.8	0.6	0.7
Core inflation calculated by the NBRM (total index - food and energy (categories 01.1, 04.5, 07.2.2))	2.3	1.6	1.5	1.7	1.3	1.5	1.1	0.8	0.7	0.8	0.6	0.7
Overall index excluding energy, liquid fuels and lubricants and unprocessed food (SSO)	1.5	1.3	1.1	1.1	0.6	1.0						
Overall index excluding energy, liquid fuels and lubricants (for transport), unprocessed food, tobacco and alcoholic beverages (SSO)	1.2	1.0	0.7	0.9	0.3	0.7						

Source: State Statistical Office and NBRNM calculations.

Food prices
(annual rates of change, in %)

Domestic food prices
Food producer prices
Foreign effective food prices
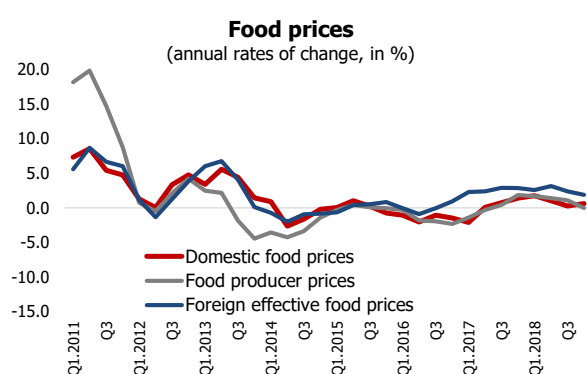
* Foreign effective food prices are calculated as weighted sum of food prices in countries that are major trade partners with North Macedonia.
Source: State statistical office, Eurostat and NBRNM calculations.

1.5.1. Current inflation

In the fourth quarter of 2018, the annual growth of domestic consumer prices registered a deceleration (annual inflation rate of 1.2%[26] versus 1.6% in the previous quarter). This period registered a deceleration in the annual growth of energy prices and core inflation, and a slight acceleration in the growth was registered in food prices (compared to the growth of the previous quarter).

The core inflation rate in the fourth quarter amounted to 1.3% (versus 1.6% in the previous quarter) whereby the deceleration largely reflects the annual decline in the prices of air traffic and the prices of vehicles (after growth in the previous quarter), as well as the deceleration in the annual growth of the prices of non-durable goods for home maintenance. Analyzing structure, the highest positive contribution to the annual growth of core inflation was made by the prices of tobacco[27], the prices of hotel and restaurant services, as well as the prices of package tours. Similar to the core inflation rate, growth deceleration was registered in all other inflation sub-indices, which exclude the most variable prices. Thus, the total index, excluding energy[28], liquid fuels and lubricants (for transport) and unprocessed food, has an annual growth of 0.6% (1.1% in the previous quarter), while the total index excluding energy, liquid fuels and lubricants (for transport), unprocessed food, tobacco and alcoholic beverages, indicates annual growth of 0.3% (0.9% in the previous quarter).

In the fourth quarter of the year, the annual increase in **food prices** registered a slight acceleration (annual growth of 0.6% compared to 0.2% in the previous quarter), reflecting the increase in the prices of vegetables and meat. The small annual growth of consumer food prices is in accordance with the movements of foreign effective food prices, as well as with the stable movement of the prices of domestic producers of food. Unlike food prices, **energy prices** in the fourth quarter grow at a slower pace compared to the annual growth of the previous quarter, which is mainly explained by the movement of domestic prices of

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[26] On a quarterly basis, consumer prices increased by 0.2%, while on a seasonally adjusted basis they increased by 0.3%.

[27] The annual growth of tobacco price in the fourth quarter reflects the base effect of the increase in the prices of cigarettes in April, May and July 2018, in consistence with the annual planned increase in excise duties on cigarettes by Denar 0.20 per piece as of 1 July 2023.

[28] The category "energy" refers to electricity, gas, liquid and solid fuels for heating and central heating.

21

oil derivatives. This shift in domestic consumer energy prices is in line with the movement in the price of crude oil and derivatives on the world market, whose growth slowed down significantly during the fourth quarter.

The prices of producers of industrial products on the domestic market, as one of the factors that influence the dynamics of consumer prices, register a small annual decline in the fourth quarter. Namely, the total index decreased by 1.1%[29] (in the previous quarter, the decrease amounted to 0.8%), while the producer prices of energy and consumer goods decreased by 2.0% (a decrease of 2.1% in the previous quarter).
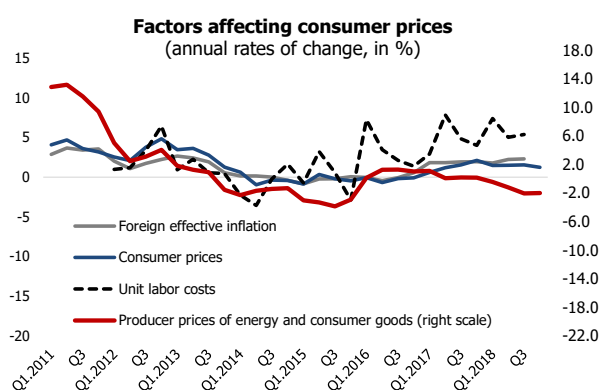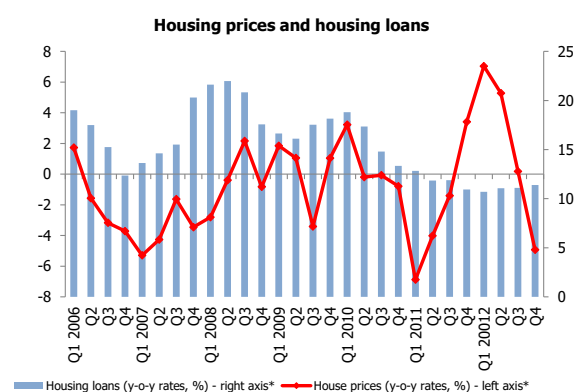
Foreign effective inflation[30], as an indicator of imported inflation, in the fourth quarter of the year grows with the same dynamics compared to the previous quarter (annual growth of 2.3%). Despite the absence of potential pressures on domestic prices through the foreign prices and producer prices channel, the **unit labor costs** continue to increase (5.4%, versus 5.0% in the second quarter of 2018), amid faster growth of wages than the growth of productivity. Given the estimates for small positive output gap[31], the continuous increase in labor costs could contribute to upward pressures on the prices of final products in the upcoming period.

In the fourth quarter of the year, apartment prices, as measured by the Hedonic index[32], registered an annual decline of 4.9% (as opposed to a minimal annual growth of 0.2% in the previous quarter). Observing the supply, the value of the constructed buildings continued with the positive movements also in the third quarter of 2018, when a very high growth was registered, while the increase in the value of the issued approvals for construction of buildings continued with an accelerated dynamics[33] (compared to the growth of the previous quarter). Analyzing the demand, also in the fourth[34] quarter of 2018, the demand for

Factors affecting consumer prices
(annual rates of change, in %)

- Foreign effective inflation
- Consumer prices
- Unit labor costs
- Producer prices of energy and consumer goods (right scale)

Source: State statistical office and NBRNM calculations.

Housing prices and housing loans

Housing loans (y-o-y rates, %) - right axis*   House prices (y-o-y rates, %) - left axis*

Source: NBRNM. Index of housing prices is calculated by the employees of the NBRNM based oo the data from the daily newspapers.
*Annual changes for 2009 are not calculated due to changes in methodology.

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[29] The analysis refers to the first two months of the quarter.
[30] The calculation of foreign effective inflation derives from the weighted sum of consumer price indices of the countries that are major partners of the Republic of Macedonia in the field of import of consumer goods. The weight structure is based on the normalized shares of nominal imports from each country in the total nominal imports in the period 2010-2012. The calculation of this indicator includes Bulgaria, Germany, Greece, France, Italy, Austria, Slovenia, Croatia and Serbia. The analysis refers to the first two months of the quarter.
[31] The NBRM assessments show that domestic production is above the potential level (positive output gap) throughout the period of forecast (until 2020). However, it is estimated that the positive output gap throughout the period is relatively small and stable.
[32] Hedonic index of housing prices, prepared by the NBRM on the basis of the notices of sale in the capital city, and published by the agencies dealing with trade in real estate. The apartment price is a function arising from the size of the apartment, the neighborhood in which it is located, the floor, whether the apartment has central heating and whether the apartment is new.
[33] The analysis refers to the first two months of the fourth quarter.
[34] Available data for the first two months of the quarter.

Indicators of housing supply
(annual rates of change, in %)

■ Issued Permits for residential buildings ■ Construction of residential buildings
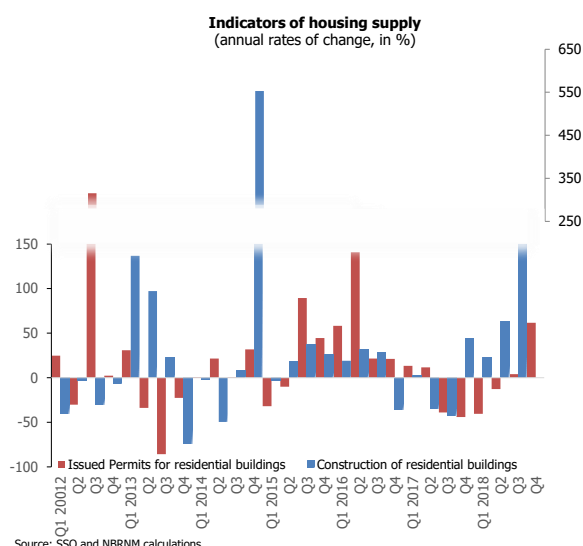
apartments was supported by the solid rise in the housing loans.

1.5.2.Inflation expectations

In the following period, no significant changes in the dynamics and the path of movement of the inflation rate are expected.

Economic analysts expect a moderate inflation rate that would follow a path of minimal acceleration in the next two-year period. According to the research from the **Survey on Inflation Expectations and Expectations for the Movement of the Real GDP**[35] conducted in December, in 2018 inflation will equal 1.5%. During the next two years, according to economic analysts, the inflation rate will gradually accelerate to 1.8% in 2019 and 2.0% in 2020. Other institutions also predict similar dynamics of the prices in the domestic economy.

When it comes to the short-term expectations of consumers and corporate managers (period up to 12 months), in terms of the price movement, the surveys point to similar movements.

In the fourth quarter of 2018, the indicator **"consumers' expectations for the price changes in the next 12 months"**[36] suggests retention of the expectations for price growth i.e. a larger number of persons still believe that prices will rise in the next 12-month period, relative to the number of respondents who expect unchanged or reduced prices.

Forecasts and expectations for the inflation rate

	2018	2019	2020
Economic analysts	1.5	1.8	2.0
IMF	1.8	2.0	2.0
Consensus Forecast	1.7	2.0	/
Ministry of Finance of the RNM	1.7	2.0	2.2
National Bank of the RNM	1.6	2.0	2.0

Consumer inflation expectations
(balance of answers)

— Consumer views of price trends over last 12 months
— Consumer expectation of price trends over next 12 months

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[35] Starting from October 2017, the NBRM changed the current Inflation Expectations Survey. The new Survey on Inflation Expectations and Expectations for the Movement of the Real GDP is conducted on a sample of economic analysts, and the subject of the Survey has also been expanded, according to the practice of the European Central Bank (ECB).
[36] European Commission's Consumer Survey as of December 2018.

Inflation expectations of managers of enterprises
(balance of answers)

Selling price expectations for the months ahead (industry)
Expectations of the prices over the next 3 months (services)
Prices expectations over the next 3 months (retail)
Prices expectations over the next 3 months (construction)
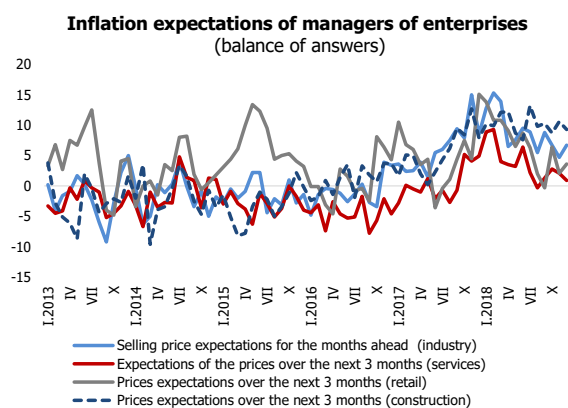
Source: European Commission.

As for the **short-term expectations of the corporate sector[37],** in the managers of companies in industry, construction, retail trade and services sector, the expectations for growth of their prices in the next few months, prevail. However, their expectations for price growth are less optimistic compared to the expectations from September 2018, with the exception of the expectations among the managers of companies in the retail trade.

1.6. Balance of payments[38]

In the third quarter of 2018, the current account of the balance of payments recorded a surplus, which is a common seasonal movement for this time of year. The surplus in the current account remained at the same level as in the previous year. The balance of trade of goods and services registered a slight improvement, while the balances of the primary and secondary income are somewhat less favorable. On a cumulative basis, favorable developments are visible in the first three quarters, in conditions of realized current account surplus, as opposed to the deficit registered in the same period last year. This favorable change is mainly driven by the decrease in the trade deficit in goods and services, while other components registered a slight deterioration. During the third quarter, the financial account registered net outflows in almost all components, with the exception of financial loans which registered positive flows. However, on a cumulative basis for the first three quarters of 2018, the financial account is characterized by net inflows primarily due to the high inflows on the basis of the government borrowing in the international financial markets and foreign direct investments, unlike the realized net outflows in the financial account in the same period in the previous year. Given such movements in the individual components of the balance of payments, in the third quarter, as well as on a cumulative basis since the beginning of the year, the foreign reserves registered an increase.

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[37] European Commission's business tendency surveys in industry, retail trade, construction and services sector as of December 2018.
[38] Starting from the Quarterly Report, October 2014, the analysis of the movements in the balance of payments is based on data compiled under the *Manual on the Balance of Payments and International Investment Position, sixth edition (IMF, 2009) (IMF, 1993)*. For more information on the methodological changes, visit the NBRM website
(http://nbrm.mk/WBStorage/Files/Statistika_Informacija_za_promenite_vo_platniot_bilans_megunarodnata_investiciska_pozicija_i_na_dvoresniot_dolg_koisto_proizleguvaat_od_primenata_na_novite_megunarodni_statisticki_standardi.pdf).

	2017				2018				2017				2018			
	Q1	Q2	Q3	I-IX	Q1	Q2	Q3	I-IX	Q1	Q2	Q3	I-IX	Q1	Q2	Q3	I-IX
	in EUR mil.								% of GDP							
I. Current account	**-135.4**	**-90.8**	**189.4**	**-36.8**	**-140.7**	**29.6**	**202.2**	**91.2**	**-1.4**	**-0.9**	**1.9**	**-0.4**	**-1.3**	**0.3**	**1.9**	**0.9**
Goods and services	**-364.1**	**-375.2**	**-221.9**	**-961.1**	**-361.4**	**-289.0**	**-209.6**	**-859.9**	**-3.6**	**-3.7**	**-2.2**	**-9.6**	**-3.4**	**-2.7**	**-2.0**	**-8.2**
Credit	1250.7	1350.5	1462.0	4063.3	1405.2	1562.4	1689.7	4657.3	12.5	13.5	14.6	40.6	13.4	14.9	16.1	44.3
Debit	1614.8	1725.7	1683.9	5024.4	1766.5	1851.4	1899.3	5517.2	16.1	17.2	16.8	50.2	16.8	17.6	18.1	52.5
Goods	-462.0	-417.4	-405.1	-1284.5	-463.0	-406.2	-395.7	-1264.9	-4.6	-4.2	-4.0	-12.8	-4.4	-3.9	-3.8	-12.0
Services	97.9	42.2	183.3	323.4	101.7	117.2	186.1	404.9	1.0	0.4	1.8	3.2	1.0	1.1	1.8	3.9
Primary income	**-98.5**	**-101.4**	**-101.6**	**-301.5**	**-108.6**	**-106.2**	**-111.2**	**-326.0**	**-1.0**	**-1.0**	**-1.0**	**-3.0**	**-1.0**	**-1.0**	**-1.1**	**-3.1**
Secondary income	**327.1**	**385.7**	**512.9**	**1225.8**	**329.2**	**424.9**	**523.1**	**1277.2**	**3.3**	**3.9**	**5.1**	**12.2**	**3.1**	**4.0**	**5.0**	**12.1**
II. Capital account	**4.0**	**5.2**	**2.9**	**12.1**	**0.3**	**0.2**	**0.0**	**0.5**	**0.0**	**0.1**	**0.0**	**0.1**	**0.0**	**0.0**	**0.0**	**0.0**
Net lending (+) / net borrowing (-) (balance from current and capital account)	-131.4	-85.7	192.3	**-24.7**	-140.3	29.9	202.2	**91.7**	-1.3	-0.9	1.9	**-0.2**	-1.3	0.3	1.9	**0.9**
III. Financial account	**-55.0**	**-36.7**	**290.6**	**199.0**	**-411.2**	**-18.5**	**115.8**	**-313.9**	**-0.5**	**-0.4**	**2.9**	**2.0**	**-3.9**	**-0.2**	**1.1**	**-3.0**
Direct investment	-96.5	22.3	63.0	**-11.2**	-229.1	-87.4	5.9	**-310.5**	-1.0	0.2	0.6	**-0.1**	-2.2	-0.8	0.1	**-3.0**
Portfolio investment	-20.3	7.2	39.6	**26.5**	-368.6	1.4	35.0	**-332.2**	-0.2	0.1	0.4	**0.3**	-3.5	0.0	0.3	**-3.2**
Currency and deposits	34.4	19.6	158.1	**212.1**	80.3	72.8	72.9	**225.9**	0.3	0.2	1.6	**2.1**	0.8	0.7	0.7	**2.1**
Loans	29.1	-23.9	44.1	**49.3**	47.0	-59.4	-35.3	**-47.7**	0.3	-0.2	0.4	**0.5**	0.4	-0.6	-0.3	**-0.5**
Trade credit and advances	-1.8	-61.4	-14.1	**-77.2**	59.3	54.0	37.1	**150.4**	0.0	-0.6	-0.1	**-0.8**	0.6	0.5	0.4	**1.4**
Other accounts receivable/payable	0.0	-0.1	0.0	**0.0**	0.0	0.0	0.2	**0.1**	0.0	0.0	0.0	**0.0**	0.0	0.0	0.0	**0.0**
Special drawing rights (Net incurrence of liabilities)	0.0	-0.4	0.0	**-0.4**	0.0	0.0	0.0	**0.0**	0.0	0.0	0.0	**0.0**	0.0	0.0	0.0	**0.0**
IV. Net errors and omissions	**9.9**	**-12.2**	**-2.3**	**-4.6**	**-14.2**	**11.9**	**4.8**	**2.5**	**0.1**	**-0.1**	**0.0**	**0.0**	**-0.1**	**0.1**	**0.0**	**0.0**
V. Reserve assets	**-66.5**	**-61.3**	**-100.6**	**-228.4**	**256.6**	**60.9**	**91.6**	**409.1**	**-0.7**	**-0.6**	**-1.0**	**-2.3**	**2.4**	**0.6**	**0.9**	**3.9**

Source: NBRNM.

1.6.1. Current account

Current and Capital account
(as % of GDP)

Source: NBRNM.
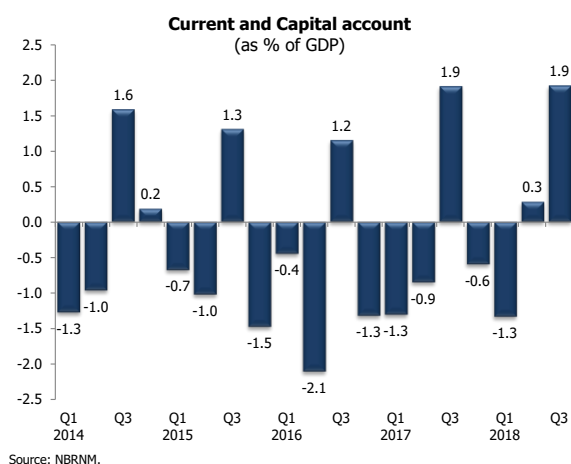
In the third quarter of 2018, the balance of payments current account registered a surplus of Euro 202.2 million, or 1.9% of GDP[39]. The analysis of the current transactions through the relative share in GDP, shows that the balance is almost unchanged compared to the same period last year. Moreover, within the current account, the balance of goods is the only component which recorded an improvement on an annual basis. Namely, the intensive growth of exports, driven mainly by the favorable export performances of the industrial capacities with foreign capital, exceeded the growth of imports, causing an annual decline in the trade deficit. On the other hand, services and secondary income made a small negative contribution to the annual changes in the current account. The surplus of services recorded an insignificant annual decline. Within the secondary income, the moderate annual decline in official transfers was partly mitigated by the higher net inflows in the transfers of the private sector, amid growth in the foreign currency purchased on the currency exchange market, as an indicator of private transfers in

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[39] The calculations use the projected amount of the nominal GDP (from October 2018).

Contribution of current account components in its annual change
(in p.p. of GDP)

Legend: Q3 2017, Q4 2017, Q1 2018, Q2 2018, Q3 2018

Categories: Goods, Services, Primary income, Secondary income

Source: NBRNM.
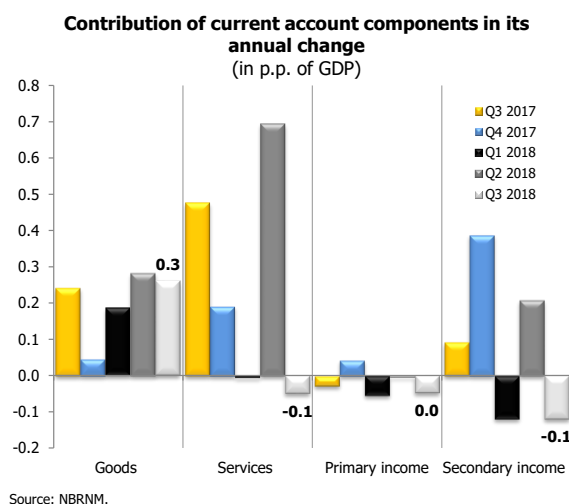
cash. Primary income remained almost unchanged compared to the third quarter of 2017.

Cumulatively, for the first nine months of the year, the current account improved by 1.2 percentage points of GDP on an annual basis, registering surplus, contrary to the deficit registered in the same period last year. These favorable developments are entirely influenced by the favorable performances of the balance of goods and services, amid minimal increase in the deficit in the primary income and stable secondary income balance.

Balance of goods and services
(annual change, in EUR million)

Legend: Credit, Debit, Goods and services

* Postive change in the import of goods mean it's decrease.
Source: NBRNM.
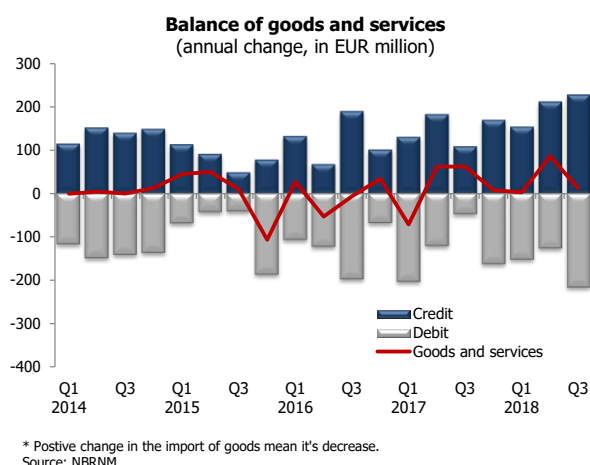
Box 1: Foreign trade of goods and movement of the Nominal and the Real Effective Exchange Rate (NEER and REER)[40]

In the third quarter of 2018, foreign trade amounted to Euro 3,308.5 million, i.e. 31.5% of GDP, which is higher by 13.6% (or 2.4 percentage points of GDP) compared to the same period last year. The annual growth in total trade stems from the solid growth of its two components.

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[40] According to the Foreign Trade Methodology, data on the export of goods are published on an f.o.b. basis, and on the import of goods, on a c.i.f. basis.

Exports, imports and trade deficit
(in EUR million)

Source: SSO and NBRNM.

Exports, imports and trade deficit
(yearly rate of change, in %)

Source: SSO and NBRNM.
* Negative change in the trade balance indicates contraction of the deficit.
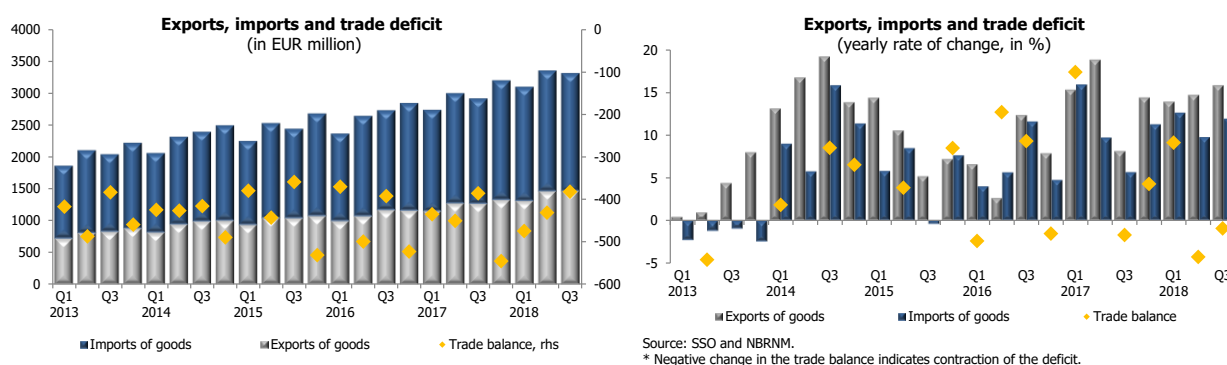
The export of goods in the third quarter of 2018 recorded a high annual growth of 15.8% (14.7% in the previous quarter), which is still mostly due to the favorable performance of the new export-oriented facilities. Structurally speaking, this is largely perceived through the increased placement of chemical products and machines and transport equipment. Within the traditional export sectors, the increased exports of iron and steel has significant impulse to the annual growth for the second consecutive quarter, which is a combined effect of the higher volumes exported and the higher prices, in line with the growth of metal prices on world markets. On the other hand, the export of tobacco is lower on an annual basis, fully reflecting the lower volumes exported. **The import of goods in the third quarter increased annually by 11.9%** (growth of 9.8% in the previous quarter). The increase in imports is mostly due to the increased import of raw materials for the new industrial facilities, i.e. the category machinery and transport equipment and chemical products, amid additional impulse from the higher imports of non-metal minerals and non-ferrous metals. A significant contribution to the total growth of imports is also made by the higher energy imports, which dominantly reflects the more substantial increase in the imports of oil derivatives. Moreover, the annual growth of the imports of oil derivatives is largely a price effect, as a result of the increase in the price of oil on world markets, amid simultaneously higher imported quantities. **Such trends of the foreign trade components in the third quarter of 2018 slightly narrowed the trade deficit by 0.9% on an annual basis.** This change is due to the lower deficit in non-energy component, amid worsening of the energy deficit.

Export, by SITC
(contributions to the annual change, in p.p.)

Source: SSO and NBRNM.

Import, by SITC
(contibutions to the annual change, in p.p.)

Source: SSO and NBRNM.
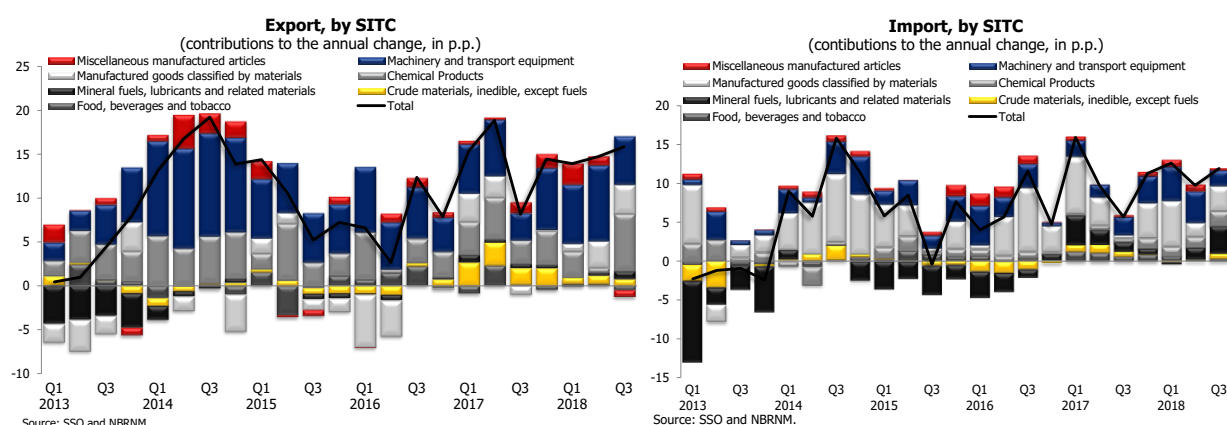
The analysis of the import of goods under the System of National Accounts (SNA) shows that around half of the increase in total imports in the third quarter arises from the higher imports of the intermediate products, but a significant contribution to the growth is also made by energy imports. The contribution of the other components to the total growth is more moderate. In terms of imports for private consumption, the annual growth of this component reflects the higher imports of consumer goods, coupled with the higher imports of food for private consumption. Analyzed dynamically, the growth of imports for personal consumption in the third quarter of 2018 continues to decelerate and does not indicate significant pressures on

the imports from the growth of private consumption.

The latest available data on foreign trade during October and November 2018 indicate solid annual growth of both the exports and the imports. Export of goods increased by 24.6% on an annual basis, mostly due to the favorable performances of the new export-oriented facilities, amid additional impulse from the higher exports of metal industry. Imports of goods registered an annual growth of 19.5%, as a result of the increase in the import of almost all import segments, primarily the import of equipment and machinery, non-ferrous metals, chemical products, as well as of the higher energy imports.

Imports of goods, SNA*
(contributions to the annual change, in p.p.)

Legend: Personal consumption, Capital goods, Energy, Intermediary goods, Other

* Classification: System of national accounts (SNA).
Source: NBRNM.

Imports of goods for personal consumption
(contributions to the annual change, in p.p.)

Legend: Consumption goods, Food for personal consumption, Passenger motor cars, Personal consumption

Source: NBRNM.

The analysis of foreign trade by trading partners shows that the European Union remains the most important trading partner of the domestic economy (accounting for 69.6% of total trade), **with which in the third quarter of 2018 trade surplus was achieved for the first time so far**. In terms of individual countries on the export side, a key driver of the growth is the exports of equipment and machinery to Germany, as a market to which the export activity of the new facilities in the economy is largely targeted. Intensified export activity of these facilities also led to higher exports of equipment and machinery to Austria and higher exports of vehicles to Belgium. At the same time, a more significant positive contribution to the export growth was also made by the export of iron and steel to the Netherlands, while the reduced export of tobacco to Greece acted in the opposite direction. The analysis of the import shows that the energy imports from Greece makes the largest contribution to the total growth, amid simultaneous increase in the import of ores from Indonesia, the import of pharmaceutical products and energy from the USA, and the higher import of raw materials for the needs of the new industrial facilities from Germany. The reduced import of precious metals from the UK and the imports of iron and steel from Russia acted in the opposite direction. Analyzing balances, the small narrowing of the trade deficit in the third quarter largely reflects the favorable performances in the trade with countries of the European Union, with which trade surplus was achieved for the first time, mainly through the higher surplus in the trade with Germany, Austria[41] and Belgium, amid simultaneously lower deficit with the UK. The higher negative balance of the trade with Greece, the USA and Serbia acted in the opposite direction, compared to the same period last year.

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[41] In the second quarter of 2018, historically, the trade with Austria registered a small surplus for the first time.

Export of goods, by countries in the third quarter of 2018
(share, in %)

Bulgaria 5.3, Germany 46.1, Greece 2.9, Italy 3.4, Belgium 4.0, Kosovo 4.0, Serbia 3.8, Other counties 30.5

Bulgaria ■ Germany ■ Greece ■
Italy ■ Belgium ■ Kosovo ■
Serbia ■ Other counties ■
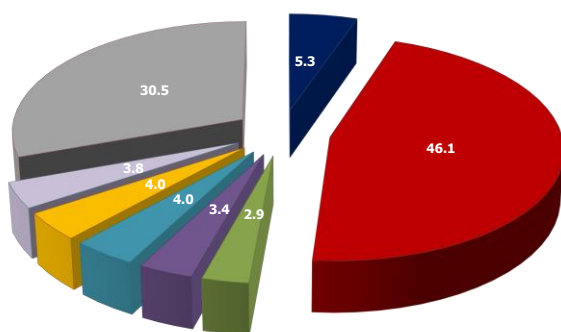
Source:SSO.

Import of goods, by countries in the third quarter of 2018
(share, in %)

Bulgaria 4.5, Germany 11.4, Greece 9.6, Italy 5.3, Great Britain 7.6, Turkey 4.4, China 5.7, Serbia 7.4, Other counties 44.1

Bulgaria ■ Germany ■ Greece ■
Italy ■ Great Britain ■ Turkey ■
China ■ Serbia ■ Other counties ■
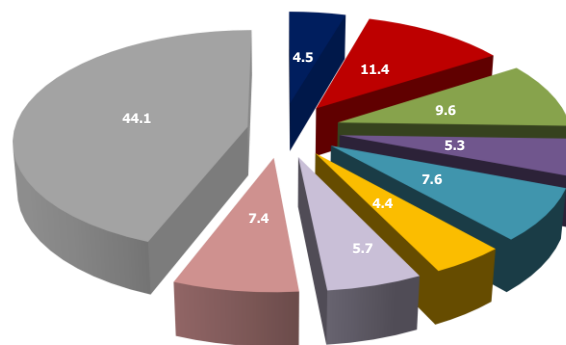
Source: SSO.

In the third quarter of 2018, price competitiveness indicators of the Macedonian economy registered divergent movements compared to the same period last year. Namely, the REER deflated by consumer prices appreciated by 1.5%, while the REER deflated by producer prices depreciated by 3.9%. The downward pressures, as before, result from the relative prices, i.e. the relative consumer prices declined by 1.5% on an annual basis, while the decline in the relative producer prices was sharper and amounted to 6.8%. On the other hand, the upward pressures result from the NEER, which registered an annual appreciation of 3.1%, caused by the appreciation of the Denar against the Turkish lira and the Russian ruble.

NEER and REER
(according to CPI and PPI, 2015=100)

appreciation

NEER — REER_CPI — REER_PPI
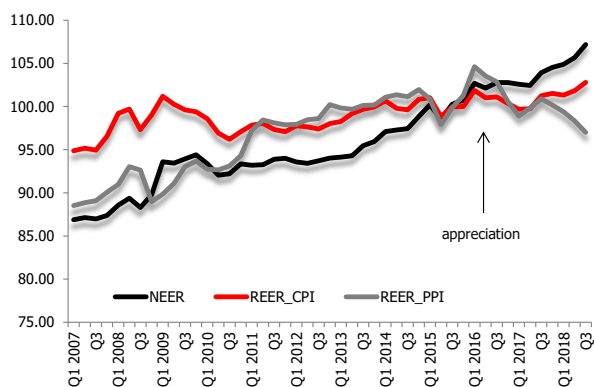
Source: NBRNM.

Relative prices
(2015=100)

appreciation

Relative prices (domestic/foreign inflation) 2015=100
Relative prices(domestic/foreign producer prices), 2015=100
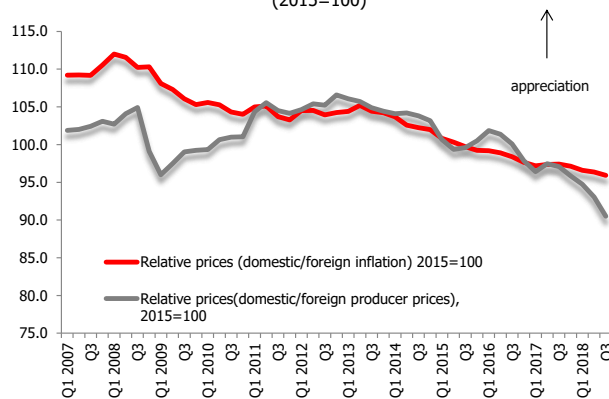
Source: NBRNM.

The analysis of REER indices, as measured using weights based on the foreign trade without primary commodities[42], also indicates divergent changes. Namely, the REER deflated by consumer prices appreciated by 1.6%, while the REER deflated by producer prices depreciated by 3% on an annual basis. The NEER index appreciated by 3.2% on an annual basis, given the decline in the relative consumer prices and the relative producer prices (of 1.6% and 6%, respectively).

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[42] Primary products not included in the calculation are: oil and oil derivatives, iron and steel, ores and imported raw materials for the new industrial facilities. For more detailed information on the methodology for calculating the real effective exchange rate visit: http://nbrm.mk/WBStorage/Files/Statistika_REDK_Informacija_za_promenite_na_metodologijata_za_presmetuvanje_na_realnio t_efektiven_devizen_kurs_na_denarot_mak.pdf

Such movements of REER indices basically correspond to the current trend of appreciation of the REER index deflated by consumer prices started at the beginning of 2016[43] and depreciation of the REER index deflated by producer prices started since the end of 2016 as a result of the continuous appreciation of the NEER index, amid depreciation of the relative prices. Similar trends, but with lower intensity, were also registered in REER indices as measured using weights based on the foreign trade without primary commodities.

The latest data on price competitiveness for the period October-November 2018 indicate divergent movements of the REER as measured using weights of the total trade of goods. In circumstances of appreciation of the NEER (by 2.4%), the REER deflated by consumer prices slightly appreciated by 0.4%, while the REER deflated by producer prices depreciated by 4.7%. From the viewpoint of REER with weights based on the foreign trade without primary products, the REER calculated according to consumer prices appreciated by 0.4%, and the REER deflated by producer prices depreciated by 4%.

NEER and REER, excluding primary commodities
(according to CPI and PPI, 2015=100)

appreciation

— NEER   — REER_CPI   — REER_PPI

Source: NBRNM.

Relative prices, excluding primary commodities
(2015=100)

appreciation

— Relative prices (domestic/foreign inflation) 2015=100
— Relative prices(domestic/foreign producer prices), 2015=100
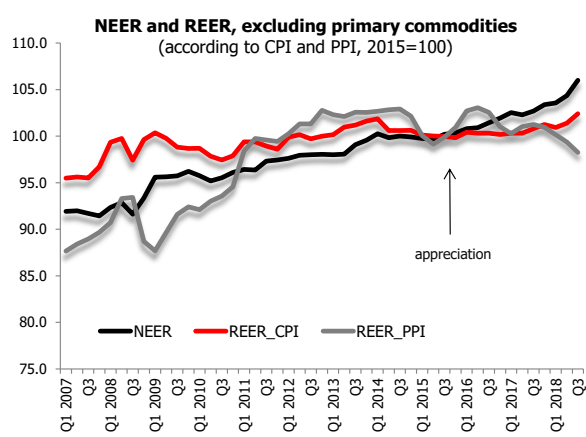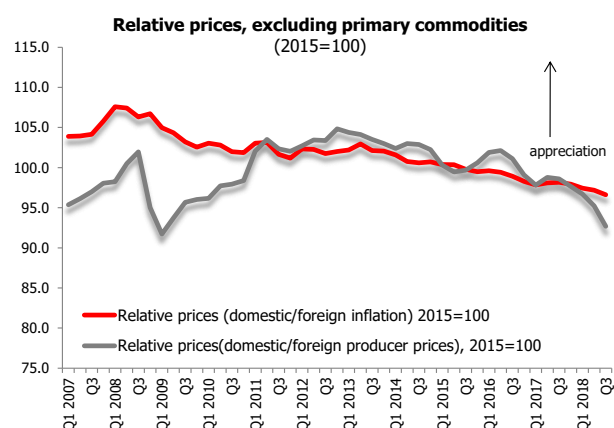
Source: NBRNM.

In the third quarter of 2018, the analysis of REER indices calculated according to the unit labor costs[44] indicates deterioration in the price competitiveness of the domestic economy. The REER index calculated by weights based on total foreign trade appreciated by 4.1%. The relative labor costs registered an annual growth of 0.9%, while the NEER appreciated by 3.1%. Annual appreciation was registered in the REER index calculated by using weights based on the foreign trade without primary products (by 3.6%), determined by the appreciation of the NEER (by 3.3%) and the growth of the relative labor costs (by 0.3%).

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[43] With the exception of the first and the second quarter of 2017 when a moderate depreciation was registered.

[44] The REER indices based on the unit labor costs indices are NBRM internal calculations and do not represent a formal statistical survey. The calculation uses data on the unit labor costs indices for the entire economy, published by the ECB and the Bureau of Labor Statistics for the United States. Data based on internal calculations are exceptions, such as the data for Switzerland, as well as for Turkey and Serbia, whereby the calculated indices refer only to the industrial sector.

REER
(according to ULC index, 2015=100)

Relative ULC (domestic costs / foreign costs)
NEDK (2015=100)
REER (2015=100)

appreciation

Source: NBRNM.

REER, excluding primary commodities
(according to ULC index, 2015=100)

Relative ULC (domestic costs / foreign costs)
NEDK (2015=100)
REER (2015=100)

appreciation

Source: NBRNM.

Financial account
(excluding reserve assets, in % of GDP)

Source: NBRNM.

Financial account structure (as % of GDP)

Direct investment
Portfolio investment
Loans
Trade credit and advances
Currency and deposits
Other accounts receivable/payable
Financial account, net

Source: NBRNM.

1.6.2. Financial account

In the third quarter of 2018, the financial account of the balance of payments registered net outflows of Euro 115.4 million or 1.1% of GDP. Net outflows were typical for most financial account components, with the exception of loans. In the third quarter, currency and deposits remain the most important outflow category, largely reflecting the negative trends in the other sectors in the economy, coupled with small net outflows in depository institutions. Deleveraging of the private sector through the further repayment of accumulated trade credits acted in the same direction, but at a more moderate pace. Outflows on the basis of portfolio investments also have an additional negative impact on the position of the financial account. Small net outflows were registered in foreign direct investments, due to debt instruments, largely offset by the positive flows on the basis of equity capital and reinvested earnings. On the other hand, the moderate net inflows based on financial loans contributed towards mitigating the negative flows in the financial account. The inflows in loans almost equally reflect the increase in short-term liabilities of depository institutions abroad, as well as the borrowing of other sectors in the form of long-term loans.

The annual analysis shows lower net outflows in the financial account compared to the performances in the third quarter of 2017. Such shifts in this period are a result of the smaller net outflows in currency and deposits

31

Contributions to the annual change in the financial account
(in p.p. of GDP)

Source: NBRNM.

Factors of change of the foreign reserves, in quarters
(in EUR mil)

Source: NBRM.

Factors of change of the foreign reserves in 2018
(in EUR mil)

Source: NBRM.
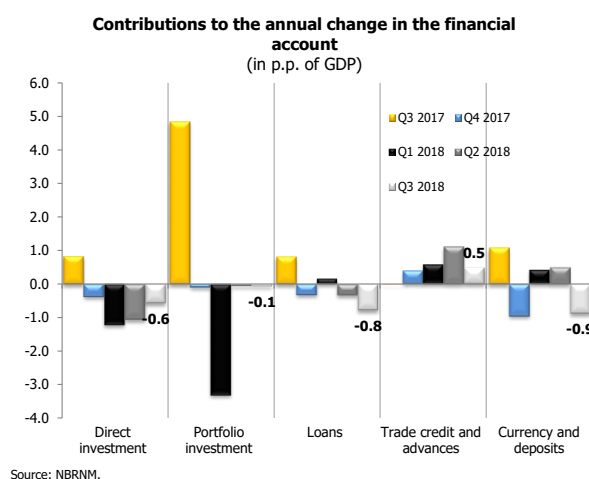
and direct investments, as well as of the realized inflows of financial loans (instead of the net outflows in the same period in the previous year). On the other hand, trade credits registered net outflows, instead of the last year's net inflows.

Summary for the January - September 2018 period, the financial account recorded solid net inflows, unlike the net outflows registered the same period last year. Portfolio investments[45] and foreign direct investments are the main sources of financing, and financial loans also make a smaller positive contribution. In the analyzed period, the net outflows based on currency and deposits and trade credits act in the opposite direction.
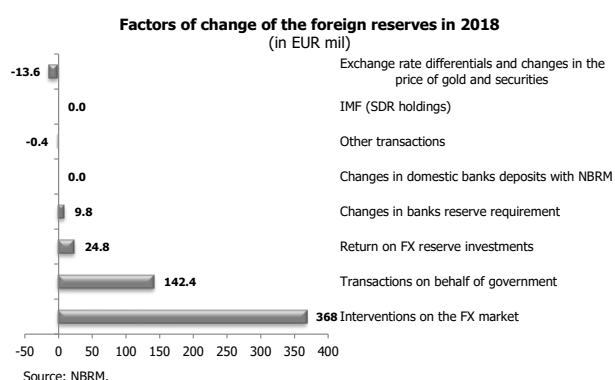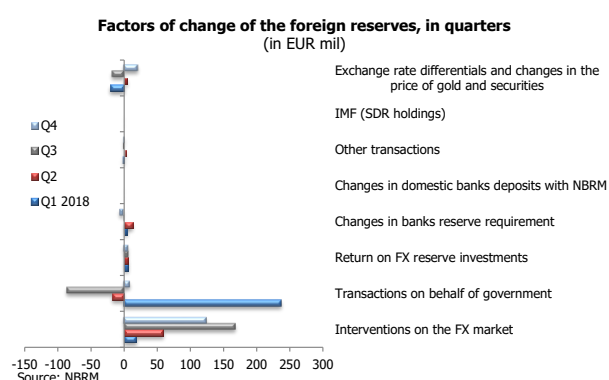
At the end of the third quarter of 2018, the gross foreign reserves amounted to Euro 2,709.1 million, which is a quarterly growth of Euro 66.9 million. The increase in the foreign reserves mainly arises from the NBRM interventions on the foreign exchange market toward a significant net purchase of foreign currency. Transactions on behalf of the government act in the opposite direction, while the other flows had a more moderate effect on the changes in the foreign reserves in the analyzed period. *According to the latest available data, as of 31 December 2018, the gross foreign reserves stood at Euro 2,867.1 million,* up by Euro 530.9 million compared to the end of 2017. Almost all factors contributed to the growth of foreign reserves, whereby the contribution of the net transactions on behalf of the government was the largest, as a result of the sixth Eurobond issued on the international financial markets, coupled with the significant NBRM interventions on the foreign exchange market.

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[45] Inflows in portfolio investments in this period predominantly result from the government borrowing in the international financial markets through the issuance of the sixth Eurobond in January 2018, in the amount of Euro 500 million with a maturity of 7 years and an interest rate of 2.75%.

1.6.3. International investment position and gross external debt

International investment position
(% of GDP)

Source: NBRM.

Changes in the IIP
(contributions to the quarterly change, in p.p. of GDP)

(contributions to the annual change, in p.p. of GDP)

■ Government, net ▨ Central bank, net
▨ Deposit-taking corporations, net ■ Other sectors, net
◆ IIP, net

Source: NBRSM.
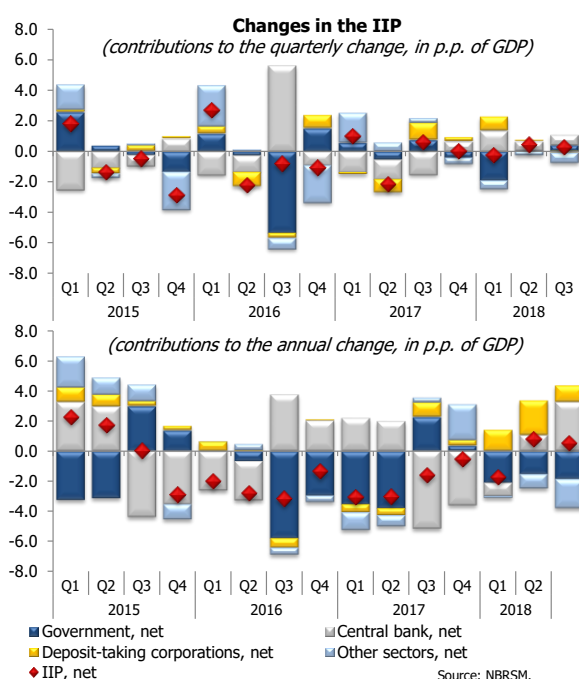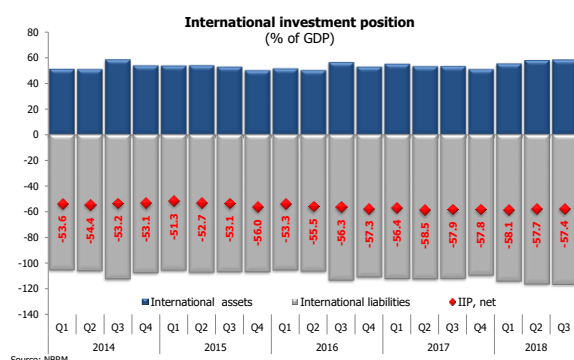
At the end of the third quarter of 2018, the negative international investment position[46] of the Republic of Macedonia amounted to Euro 6,031.1 million, or 57.4% of GDP, which is a quarterly drop of 0.3 percentage points of GDP, amid higher growth of international assets relative to the growth of international liabilities. Sector-by-sector analysis of the IIP shows that the quarterly shift dominantly stems from the higher net position of the central bank, as a result of the growth of foreign reserves, as well as of the more favorable shifts in the government net position as a result of the reduction of the liabilities based on debt securities. On the other hand, the net position of other sectors[47] acted in the opposite direction, amid growth in the net liabilities based on long-term loans and reduced net assets based on trade credits. The net position of depository institutions registered no significant changes compared to the previous quarter.

On an annual basis, international assets and international liabilities increased by 4.8 and 4 percentage points of GDP, respectively, indicating improvement of the negative international investment position of 0.8 percentage points of GDP. Sector-by-sector analysis shows that such change is mostly due to the favorable movements in the net position of the central bank (increase in the foreign reserves) and depository institutions (increase in the net assets based on currency and deposits and decrease in the net liabilities based on portfolio investments and long-term loans). Changes in the government net position acted in the opposite direction, due to higher net liabilities based on debt securities (based on the Eurobond, issued in the first quarter of the year). Increase in net liabilities on an annual basis was registered also in other sectors, based on direct investments

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[46] In the second quarter of 2011, the NBRM began concluding repo and reverse repo transactions. These transactions represent an investment opportunity to use portfolio securities to provide additional income. Conclusion of repo transactions incurs liabilities. At the same time, claims created from reverse repo agreements tend to increase gross claims. The NBRM simultaneously carries out matched repo and reverse repo agreements in nearly identical amounts. In general, as they are concluded concurrently, these transactions have a neutral net effect, i.e. they appear in almost identical amount on both liabilities and assets side, and therefore do not affect the total net IIP nor the total net external debt.

[47] Refers to other financial institutions, non-financial corporations, households, and NPISHs.

Gross external debt, by debtors
(in % of GDP)

	Кв.1	Кв.2	Кв.3	Кв.4	Кв.1	Кв.2	Кв.3	Кв.4	Кв.1	Кв.2	Кв.3	Кв.4	Кв.1	Кв.2	Кв.3	Кв.4	Кв.1	Кв.2	Кв.3
Gross external debt	62.2	63.6	70.5	70.0	66.9	67.1	66.7	69.3	66.9	67.6	73.4	74.2	73.0	74.0	72.8	73.2	75.8	77.3	77.6

2014 · 2015 · 2016 · 2017 · 2018

☐ Public debt ■ Private debt ◆ Gross external debt

* Excluding repo-transactions.
Source: NBRSM.

Changes in private sector debt
(contributions to the quarterly change, in p.p. of GDP)

2015 · 2016 · 2017 · 2018

(contributions to the annual change, in p.p. of GDP)

2015 · 2016 · 2017 · 2018

Source:NBRSM.

■ Banks ☐ Non-banking private sector ■ Intercompany lending

Gross external debt, by institutional sectors
(in % of GDP)

2014 · 2015 · 2016 · 2017 · 2018

☐ Government ■ Central bank ■ Deposit-taking corporations ☐ Other sectors ■ Intercompany lending

* Excluding repo-transactions.
Source: NBRSM.

and long-term loans. Analysis of IIP expressed in absolute terms shows a slight expansion of 3.5% on an annual basis, amid faster growth of international liabilities relative to the growth of international assets.

At the end of the third quarter of 2018, the gross external debt stood at Euro 8,399.8 million, or 79.9% of GDP, which is a decrease of 0.2 percentage points of GDP, on a quarterly basis. If we exclude the effect of the repo transactions of the NBRM[48], the gross external debt stands at 77.6% of GDP and is higher by 0.2 percentage points of GDP, on a quarterly basis. The higher gross external debt mainly arises from the quarterly increase in private debt, amid simultaneous reduction of public debt. Moreover, analyzing the private debt, the growth was driven by the increase in the liabilities of the private banks based on loans as well as the higher liabilities of the non-banking private sector based on trade credits and long-term loans. Regarding the public debt, the change was mostly due to the lower government liabilities on debt securities.

On an annual basis, the gross external debt increased by 4.5 percentage points of GDP, amid growth of both the private and the public debt (of 2.9 and 1.6 percentage points, respectively). The increase in the private sector debt is due to the growth in intercompany debt, as well as to the higher liabilities of the non-banking private sector. Analyzing the debt position of the public sector, the growth was driven by the increase in government liabilities on the basis of debt securities and the higher long-term liabilities of public enterprises based on loans.

At the end of the third quarter of 2018, the net external debt stood at Euro 2,914.9 million, or 27.7% of GDP, which is a quarterly decrease of 0.7 percentage points of GDP. Lower net external debt is due to the reduction in public net debt, while private net debt increased.

The analysis of external indebtedness

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[48] The overall analysis below relates to gross external debt without the central bank liabilities based on repo transactions.

Net external debt
(in % of GDP)

35.0
30.0
25.0
20.0
15.0
10.0
5.0
0.0

29.1 28.4 27.7

15.6 15.3 15.7

13.5 13.1 12.0

Q1 Q2 Q3 Q4 | Q1 Q2 Q3 Q4 | Q1 Q2 Q3 Q4 | Q1 Q2 Q3 Q4 | Q1 Q2 Q3
2014 | 2015 | 2016 | 2017 | 2018

☐ Public debt, net   ■ private debt, net   ◆ Net external debt

* Excluding repo-transactions.
Source: NBRSM.
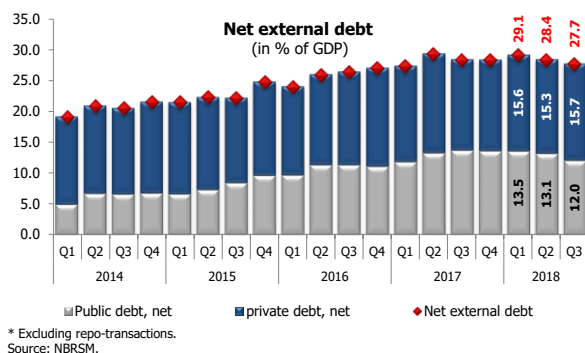
indicators of the domestic economy indicates no significant changes, whereby most of the indicators still include the gross external debt in a so-called "safe zone". The only indicator that classifies the economy in the group of highly indebted countries is the gross external debt to GDP ratio, which registers worsening on an annual basis. Other indicators still point to low indebtedness and register small annual changes.

Indicators for external indebtness	Solvency				Liquidity		
	Interest payments/ Export of goods and services and other inflows	Gross debt/ Export of goods and services and other inflows	Gross debt/ GDP	Debt servicing/ Export of goods and services and other inflows	Foreign reserves/ Short-term debt	Foreign reserves/ Short-term debt, with residual maturity**	Short-term debt/ Overall debt
	in %				ratio	ratio	in %
31.12.2004	2.41	129.3	47.3	12.4	1.14	0.89	30.3
31.12.2005	2.66	147.0	54.2	11.1	1.67	1.04	26.7
31.12.2006	3.44	131.3	49.8	21.7	1.95	1.34	29.0
31.12.2007	2.78	119.3	51.3	19.4	1.35	1.08	39.8
31.12.2008	2.66	116.9	54.1	10.2	1.29	0.95	35.2
31.12.2009	2.43	131.0	57.8	11.8	1.29	0.94	32.9
31.12.2010	3.22	140.4	59.7	13.9	1.49	0.99	27.9
31.12.2011	3.12	148.4	64.6	16.8	1.78	1.18	25.2
31.12.2012	2.92	142.1	67.6	13.1	1.64	1.03	26.7
31.12.2013	2.51	137.3	67.3	15.8	1.64	1.08	23.3
31.12.2014	3.01	149.1	74.0	17.2	1.82	1.13	22.3
31.03.2015	2.69	138.8	70.6	20.0	1.66	1.09	23.4
30.06.2015	2.69	139.3	70.9	20.0	1.56	1.03	23.8
30.09.2015	2.69	138.4	70.4	20.0	1.57	1.03	23.1
31.12.2015	2.69	143.9	73.2	20.0	1.69	1.13	21.3
31.03.2016	2.37	134.76	71.38	14.89	1.51	1.05	23.05
30.06.2016	2.37	136.09	72.09	14.89	1.41	0.98	23.24
30.09.2016	2.37	147.73	78.25	14.89	1.74	1.16	21.72
31.12.2016	2.37	149.39	79.13	14.89	1.65	1.16	21.93
31.03.2017	2.69	138.64	76.36	12.72	1.47	1.00	23.53
30.06.2017	2.69	140.65	77.47	12.72	1.33	0.88	24.19
30.09.2017	2.69	138.20	76.12	12.72	1.26	0.86	24.57
31.12.2017	2.69	139.14	76.63	12.72	1.32	0.89	23.94
31.03.2018	2.51	136.33	78.96	14.57	1.29	0.92	25.01
30.06.2018	2.51	139.13	80.58	14.57	1.27	0.96	25.50
30.09.2018	2.52	138.55	80.77	15.00	1.30	0.98	25.59
Moderate indebtedness criterion*	*12 - 20%*	*165 - 275%*	*30 - 50%*	*18 - 30%*	*1.00*		

*The moderate indebtedness criterion is accordng to the World bank's methodology of calculationg indebtedness indicators, which implies 3-year moving averages of GDP and exports of goods and services in the calculation of the indicators.
In compliance with "External debt statistics: Guide for compilers and users," published by the IMF.
*According to the "Greenspan-Guidotti rule", a country should maintain full coverage of short-term debt at remaining maturity with gross foreign reserves. Short-term debt at remaining maturity is calculated by addition of the long-term external debt (original maturity), with final contractually scheduled payment of less than a year, to the short-term debt (original maturity).
Source: NBRM.

II.   Monetary policy

During the fourth quarter of 2018, the NBRM eased the monetary policy by cutting the policy rate from 2.75% to 2.50%. The decision to cut the NBRM policy rate by 0.25 percentage points, for the third time since the beginning of the year was made amid favorable foreign exchange market developments, which point to a solid external position and stable expectations of the economic agents. Namely, having an improved foreign exchange position of the corporate sector, as well as favorable currency exchange market developments, in the fourth quarter, the

National Bank continued to purchase foreign currency on the foreign exchange market, thus increasing the foreign reserves. All adequacy indicators has still been maintained in the safe zone. The growth of banks' deposit base and lending activity continued in the fourth quarter, signaling stable expectations and increased confidence. Yet, the conclusion remains that there are risks arising from both the domestic and the external environment, which can shift the favorable trends. The NBRM will continue to closely monitor the trends in the period ahead, in the context of the monetary policy setup.

Policy interest rate of NBRNM - interest rate on CB bills
(in %)

Source: NBRNM.

Inflation
(annual change, in %)

Source: SSO.

Interventions on the foreign exchange market by NBRNM and banks` FX deposits at NBRNM
(snnusl snd quarterly changes, in EUR million)

Source:NBRNM
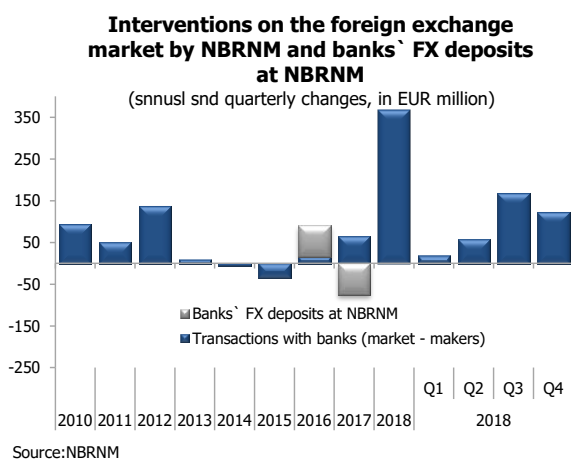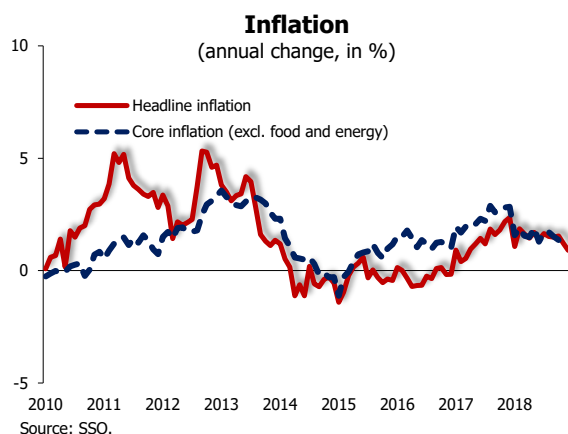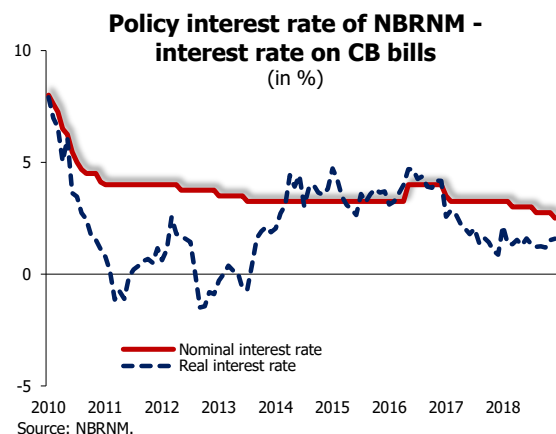
During the fourth quarter[49] of 2018, the NBRM eased the monetary policy by cutting the policy rate from 2.75% to 2.50%. The decision to cut the policy rate by 0.25 percentage points for the third time since the beginning of the year[50], was made in the monthly OMPC meeting on 11 December, where it was assessed that the current economic and financial conditions confirm the sound economic fundamentals and the absence of imbalances, while the perceptions of the monetary policy environment are somewhat more favorable. This primarily referred to the foreign exchange market, where the NBRM continued purchasing foreign currency given the improved foreign exchange position of the corporate sector, as well as the favorable movements on the currency exchange market. The assessment of both the domestic and the external environment showed continuous presence of risks. Thus, in the period ahead, the NBRM will continue to monitor the situation closely and adjust the monetary policy as appropriate.

The comparison of the main macroeconomic indicators with their forecast dynamics in the October forecasts did not indicate significant deviations in the individual segments of the economy. Inflation growth in the period October-November was moderate and averaged 1.4% on an annual basis. Given the upward correction of import prices and lower inflation than forecast, risks surrounding the inflation forecast of 1.6% for 2018 were assessed as balanced. According to the estimated GDP data for the third quarter, the economy registered solid growth of 3.0%, slightly higher than expected in the October forecast. The foreign reserves increased in the fourth quarter, given the favorable foreign exchange market

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[49] It refers to the decisions of the Operational Monetary Policy Committee (OMPC) passed in the period October-December.
[50] In March, the NBRM cut the policy rate from 3.25% to 3.00%, and to 2.75% in August.

Interest rate spread
(in percentage points)

— between NBRNM CB bills interes rate (28 days) and ECB policy rate for main refinancing operations
- - - between SKIBOR-one month and EURIBOR-one month

Source: NBRNM, ECB (www.ecb.int).

Spread between interest rates of denar and foreign currency deposits (new business)
(data as of end of year/month)

- Interest rate spread, in p.p. (RHS)
— Interest rate of denar deposits, in %
— Interest rate of foreign currency deposits, in %

Source: NBRNM.

Spread between interest rates of denar and foreign currency deposits
(data as of end of year/month)

- Interest rate spread, in p.p. (RHS)
— Interest rate of denar deposits, in %
— Interest rate of foreign currency deposits, in %

Source: NBRNM

developments and the net purchase of foreign currency by the NBRM. Foreign reserves adequacy ratios continue to show that their level is appropriate and maintained in the safe zone. The banks' deposit base and lending activity continued increasing in the fourth[51] quarter, signaling stable expectations and increased confidence. Credit market developments matched the results of the Lending Survey in the third quarter, where the banks expressed their expectations for further easing of the overall credit standards and growth in the demand for loans by both sectors for the fourth quarter of the year. In the period October-November, the deposit and loan flows are as expected for this period, as forecasted in October.

In December, the European Central Bank announced the completion of the asset purchase programme, expecting the main refinancing operations rates, deposit facilities rate and central bank loans rate to be kept at the current level at least until the end of summer 2019. Given the NBRM policy rate cut and the unchanged ECB rate[52] in the fourth quarter of 2018, the spread between these interest rates moderately narrowed. Regarding the interbank offered rates, no changes were noted in the one-month SKIBOR and one-month EURIBOR compared to September, keeping their interest spread stable.

In the domestic economy, the total received deposits in November did not show a change in the interest rates on the denar and foreign currency deposits compared to September, thus keeping the interest rate at 1.2 percentage points. With the newly received deposits, the interest rate on foreign currency deposits was moderately reduced by 0.2 percentage points, which, amid unchanged interest rate on denar deposits53 compared to September contributed to the expansion of the interest spread to 1.1 percentage points at the end of November (0.9 percentage points in September).

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[51] As of November
[52] Main refinancing operations rate.
[53] The interest rates on newly received deposits are marked by volatility, which can result in frequent and temporary adjustments of the interest spread.

Banks liquidity*
monthly changes, in million of denars

Autonomous factors, net
Monetary instruments, net
Banks' accounts with the NBRNM

annual changes, in million of denars

Source: NBRNM.
* positive change: liquidity creation, negative change: liquidity withdrawal

Monetary policy instruments*
monthly changes, in million of denars

annual changes, in million of denars

CB Bills
7 day deposit facility
ON deposit facility
Repo transactions

Source: NBRNM .
* positive change: liquidity creation, negative change: liquidity withdrawal

Autonomous factors*
monthly changes, in million of denars

annual changes, in million of denars

FX interventions
OAF
Government transactions
Currency in circulation
Autonomous factors, net

Source: NBRNM.
* positive change: liquidity creation, negative change: liquidity withdrawal

2.1. Banks' liquidity

In the fourth quarter of 2018, the banks' liquid assets[54] on the accounts with the NBRM registered a significant growth.

The banks' liquidity growth in the fourth quarter of the year mostly reflects the reduction of the stock of monetary instruments. The stock of monetary instruments in the fourth quarter of the year decreased by Denar 10,995 million, which is entirely due to the decrease in the stock of banks' short-term deposits (mostly with overnight deposits), while the stock of CB bills remained at Denar 25,000 million[55].

Autonomous factors acted towards creating liquidity. On a net basis, the total effect of the autonomous factors in the fourth quarter of the year amounted to Denar 2,277 million. According to the analysis of the individual autonomous factors, the foreign exchange interventions of the NBRM (purchase of foreign currency on the foreign exchange market) were the dominant factor for creating liquid assets in the banking system, while government transactions and currency in circulation acted towards withdrawing liquidity from the system.

In the fourth quarter of 2018, the banks' accounts with the NBRM maintained a higher level of liquid assets than reserve requirement. The balance of banks' denar liquid assets on the accounts with the NBRM in the fourth quarter was by 11.0% higher than the denar reserve requirement calculated as an average of the three reserve maintenance periods in the last quarter of the year.

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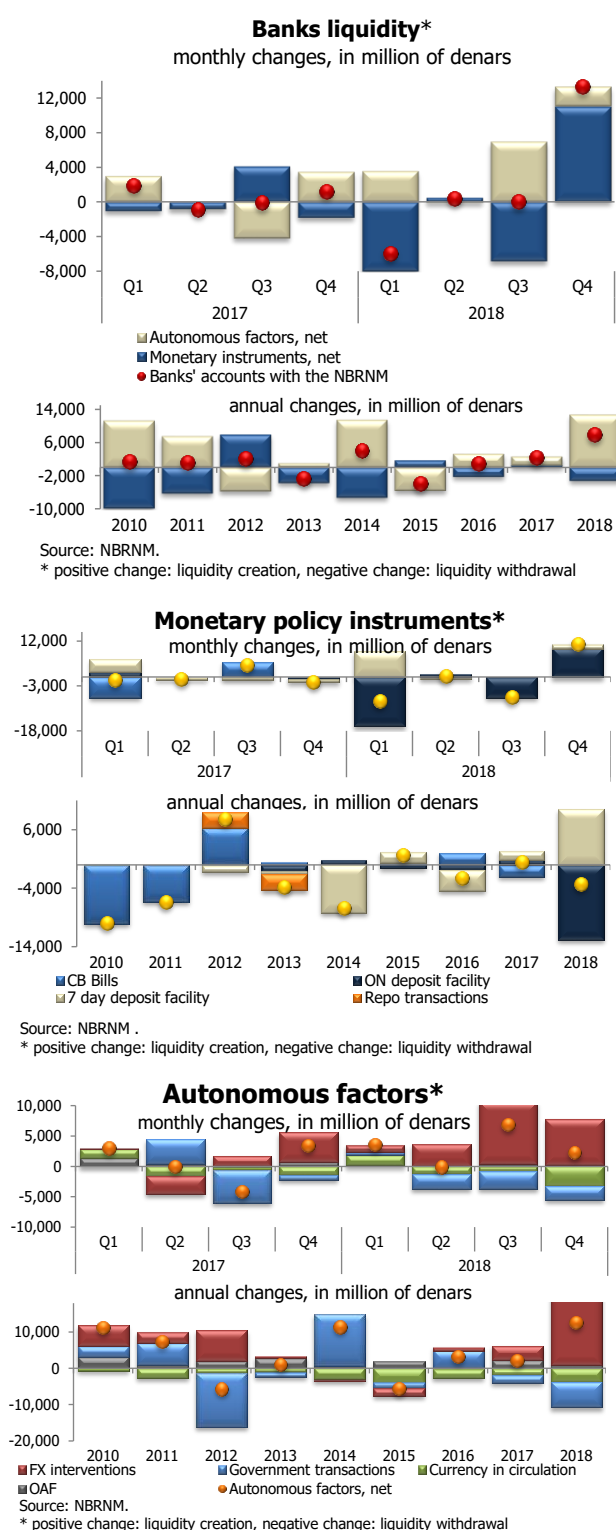
[54] Refers to changes in banks' account balances with the NBRM.
[55] A CB bill auction was held in the fourth quarter of 2018, at which CB bills in the amount of Denar 25,000 million were offered and sold.

CB bills
(stocks, in MKD milion)

Source: NBRNM
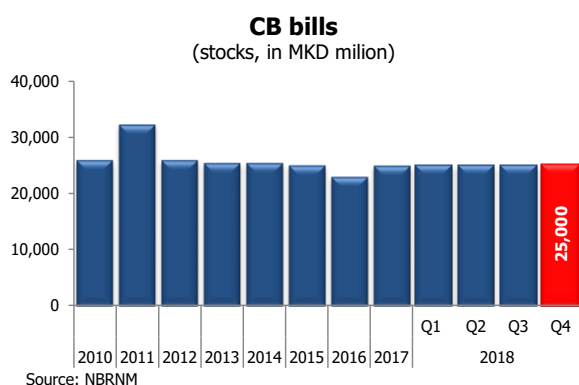
In the fourth quarter of the year, primary money56 increased by 1.7% on annual basis despite the annual decline of 1.3% in the previous quarter.

Fulfilment of reserve requirment years/quarters
(end of period average, in %)

Source: NBRNM

Reserve money
(contribution to annual change, in p.p.)

(contribution to annual change, in p.p.)

■ Currency in circulation ■ Banks' accounts ● Reserve money (y-y change, in %)

* as of end of November
Source: NBRNM
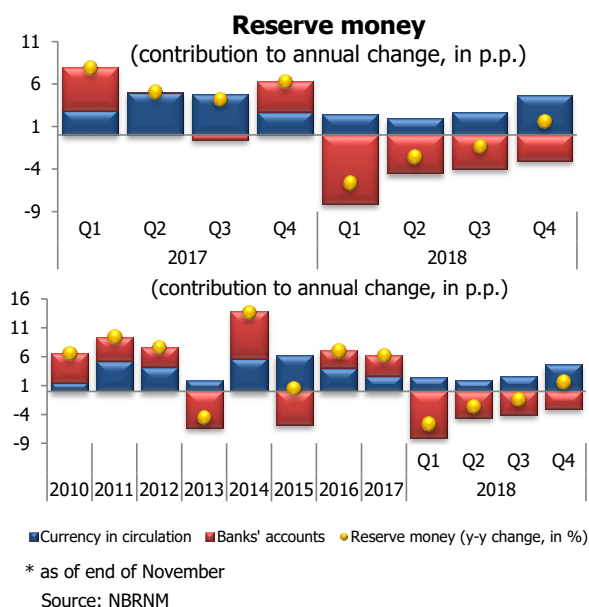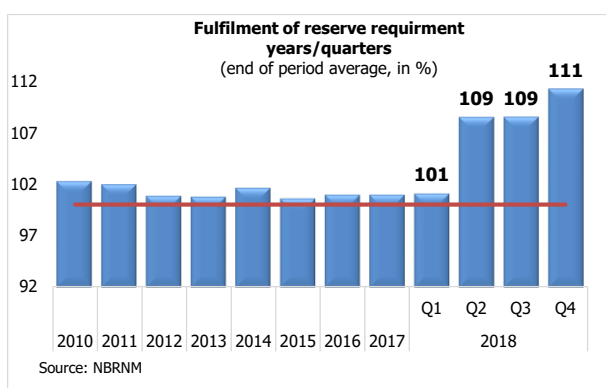
III.   Financial market developments

During the fourth quarter of 2018, the Skopje Interbank Offered Rate (SKIBOR) went down, without any significant changes in the interbank rate on the deposit market. The cut in the NBRM policy rate in early December was followed by slight

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[56] Includes reserve requirement in foreign currency. Data are as of November

decrease in the SKIBOR quotations of almost all maturities. On the primary government securities market, the new securities were mostly issued in longer terms, with a combined currency structure (in domestic currency and foreign currency clause) and with lower interest rates. The secondary market registered trade in government bonds, mostly government bonds with residual maturity up to one year. On the Macedonian Stock Exchange, the value of MBI-10 slightly declined same as in most of the stock exchanges in the region. On the international financial markets, the financial conditions indexes moved upward, pointing to a moderate increase in uncertainty, given the increased risks of the global trade protectionism. Macedonian Eurobond yields increased, thus widening the spread compared to the yields on the German government bonds.

Interest rates
in %

Source: NBRNM.

SKIBOR and CB bills interest rate
in %

Source: NBRNM

Interbank deposits market
(turnover in million of denars)

* Liquidity coefficient is calculated as a ratio between the banks' liquid assets at NBRNM and the interbank deposits turnover.
Source: NBRNM
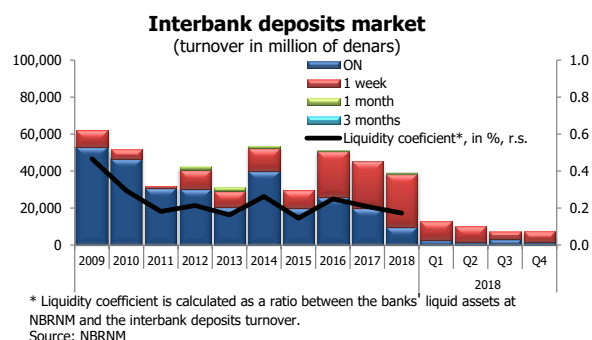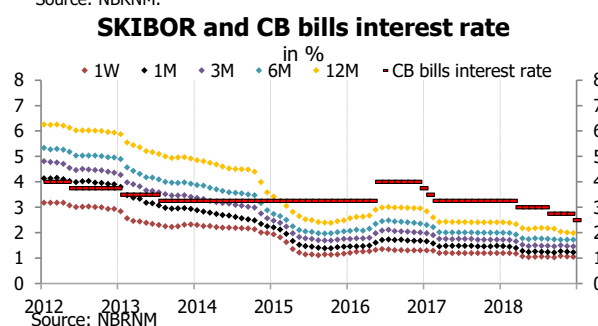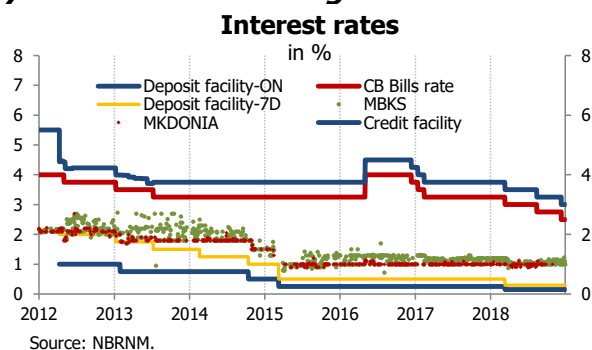
3.1. Interbank market for uncollateralized deposits

The interbank deposit market in the fourth quarter was marked by relatively low trading activity and further downward movement of SKIBOR quotations[57]. The total turnover on the interbank unsecured deposit market in the fourth quarter of the year amounted to Denar 7,833 million, being lower by 0.4% compared to the previous quarter. The interbank rate of all transactions (MBKS) for the fourth quarter was 1.1% on average, registering a small growth compared with the previous quarter (1.0%). The increase in the interest rate arises from the higher share of interbank transactions with maturity up to 7 days in the trade (76% versus 51% in the previous quarter). The cut in the NBRM policy rate in early December was followed by slight decrease in the SKIBOR quotations. The interbank transactions rate on the shortest maturity bucket (MKDONIA) did not change and amounted to 1%.

3.2. Government securities market

On the primary government securities market, the due securities continued to be redirected to longer maturities. In the fourth quarter of the year, the stock of government securities increased solely due to the increase in government bonds. Observed by maturity categories, growth was registered in the 2-year, 3-year, 15-year and 30-year

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[57] Interbank offered rates calculated using quotations of reference banks with maturities: 1 week, 1, 3, 6, and 12.

Goverment Securities
(stocks, in million of denars)

Source: MoF

GS maturity composition
(stocks, in million of denars)

Source: MoF

GS currency composition
(stocks, in million of denars)

Source: MoF

GS ownership composition
(stocks, in million of denars)

Source: MoF
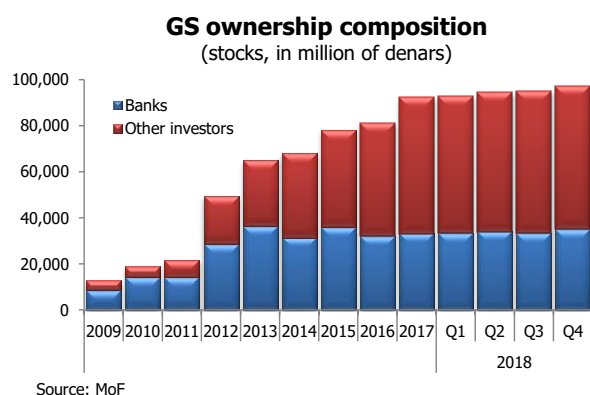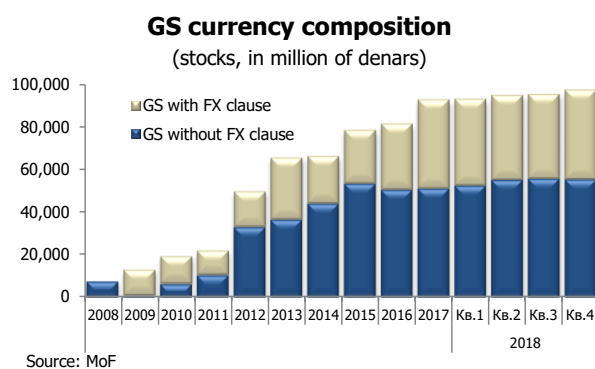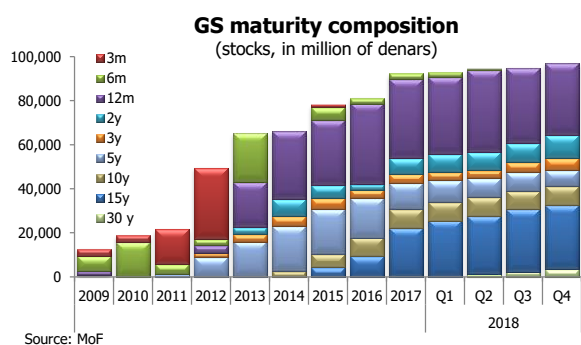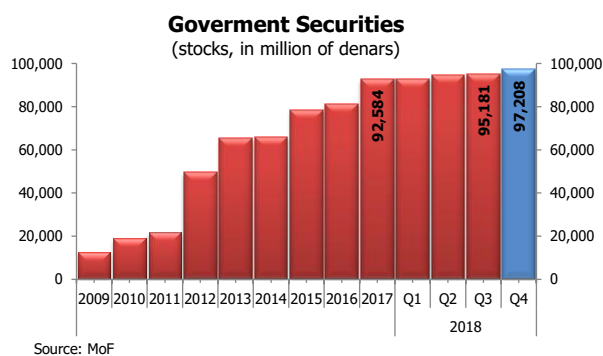
government bonds, while the reduction in shorter-term securities (up to 1 year) reflects the lower stock of 12-month treasury bills. At the end of 2018, the twelve-month treasury bills and fifteen-year government bonds were the most common shares in the total amount of government securities with a share of 33% and 30%, respectively.

The new issues of government securities had a combined currency structure (denar and with currency clause). In the fourth quarter of the year, the share of securities with currency clause in the total stock of government securities increased from 42% to 43%, while the share of denar securities in the total amount of government securities decreased (from 58% to 57%).

The most of the increase in the total amount of government securities reflects the increase in banks' portfolio. The majority of the total issued government securities at the end of the fourth quarter of the year remained in the ownership of other investors (64%, compared to 65% in the third quarter), primarily pension funds, while 36% are securities in bank ownership (35% in the previous quarter).

41

Interest rates on government securities without FX clause
(averege, in %)

Legend:
- 1m T-Bills
- 3m T-Bills
- 6m T-Bills
- 12m T-Bills
- 2y T-bonds
- 3y T-bonds
- 5y T-bonds
- 10y T-bonds
- 15y T-bonds

Interest rates on government securities with FX clause
(average, in %)

Legend:
- 1m T-Bills with FX clause
- 3m T-Bills with FX clause
- 6m T-Bills with FX clause
- 12m T-Bills with FX clause
- 2y T-bonds with FX clause
- 3y T-bonds with FX clause
- 5y T-bonds with FX clause
- 10y T-bonds with FX clause
- 15y T-bonds with FX clause
- 30y T-bonds with FX clause

2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 | Q1 Q2 Q3 Q4 2018

Source: MoF

Trading on secondary market
(turnover, in million of denars)

Legend:
- Repo transactions
- Turnover with T-bonds
- Turnover with T-bills
- Turnover with CB-bills

2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 | Q1 Q2 Q3 Q4 2018

Source: NBRNM

Yields on secondary market CB bills — Yield to
average for the period, in %

Legend:
- CB bills - 7 days
- CB bills - 14 days
- CB bills - 21 days
- CB bills - 26 days
- CB bills - 27 days
- CB bills - 28 days
- CB bills - 34 days

T-bills

Legend:
- TBills up to 1m
- TBills 1-3m
- TBills 3-6m
- TBills 6-12m

T-bonds

Legend:
- TBonds up to 1y
- TBonds 1-2y
- TBonds 2-3y
- TBonds 3-5y
- TBonds 5-10y
- TBonds 10-15y

2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 | Q1 Q2 Q3 Q4 2018

Source: NBRNM and Ministry of finance.

The interest rates on the primary securities market continued to decrease. During the last quarter of the year, the Ministry of Finance cut the interest rates on 6-month, 15- and 30-year securities with currency clause.

The secondary securities market registered trade in government bonds. The trade in securities on the secondary market, primarily in government bonds, was higher (Denar 951 million) in the fourth quarter compared to the previous quarter (Denar 181 million). Analyzing the maturity buckets of trade, most of the transactions in government bonds (66%) were with the residual maturity up to 1 year. There was also trade in treasury bills with residual maturity of 3 to 6 months and in government bonds with residual maturity of 10 to 15 years and from 15 to 30 years. **The yields on securities transactions on the secondary market remained generally stable compared to the previous quarter.**

Macedonian stock exchange, by trading segments
(turnover, in million of denars)

Source: Macedonian Stock Exchange

MBI-10 and OMB
in index points

- MBI-10 (stocks)
- OMB (bonds) - r.s.

Source: Macedonian Stock Exchange

Regional stock exchange indices

- BELEX15 - Belgrade
- BET - Buchurest
- CROBEX - Zagreb
- MBI-10 - Skopje
- SASX-10 - Sarajevo
- SBITOP - Ljubljana
- SOFIX - Sofia
- WSE WIG20 - Warsaw
- BUX - Budapest

Source: Macedonian Stock Exchange and national stock

Volatility indexes on stocks and bond markets

- MOVE index (bonds)-l.h.s.
- VIX index (stocks)-r.h.s.

Source: Chicago Board Options Exchange (CBOE)

On the Macedonian Stock Exchange, MBI-10 slightly declined on a quarterly basis. The total turnover on the Macedonian Stock Exchange in the fourth quarter of the year amounted to Denar 1,720 million and was moderately lower compared to the previous quarter, mostly as a result of the lower volume of blockchain. MBI-10 had a volatile movement during the fourth quarter, amounting to 3,469 at the end of the year, which is by 1.7% lower compared to the end of the previous quarter. Within the MBI-10, the value of majority index-constituting shares decreased. In the fourth quarter, the bond index (OMB) registered slight growth (of 1.4%) reaching 131.3 at the end of the year (129.5 at the end of the third quarter).

The stock exchange indices on the regional stock exchanges moved in various directions. From the stock markets in the region, a significant upward movement was registered with the Hungarian Stock Exchange Index, which increased after a long period and registered a quarterly growth of 5%. The Belgrade stock market also grew (by 5%), while all other regional stock markets (Sarajevo, Ljubljana, Zagreb, Sofia and Warsaw) experienced a moderate decline (of 1.4%, 3.8%, 1.9%, 4.8% and 0.4%, respectively), with the most noticeable being in the Romanian stock exchange index, which in the last quarter of the year declined by 12%.

Volatility indices in bond and equity markets during the fourth quarter indicated a moderate increase in the financial markets uncertainty. The MOVE and VIX indices[58], despite the volatile movement during the quarter, remained at a higher level on average compared to the previous quarter. The growth of volatility indices is mostly related to the risks arising from the possibility of further escalation of trade protectionism on a global scale.

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[58] The MOVE index (Merrill Lynch Option Volatility Estimate) shows the volatility of the US government bond markets. The VIX index (Volatility Index) is constructed based on the implied volatility of S&P500 index options. Investors use both indices as indicators of the conditions and expectations for the financial markets volatility. Downward path in the indices indicates a decrease in volatility.

GS yields in USA and eurozone
in %

Source: Bloomberg.
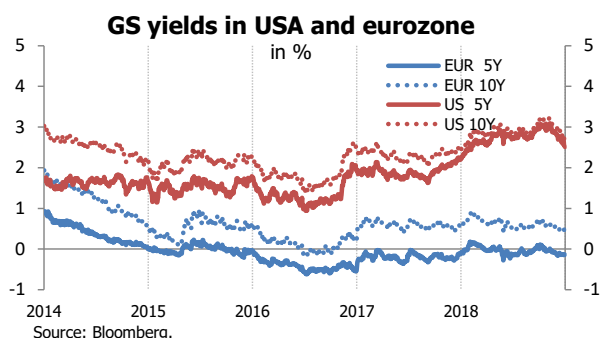
The yields on long-term government bonds in the United States and the euro area remained relatively stable. The yields on the US 10-year government bonds[59] during the fourth quarter decreased, but averaged around 3.0% (2.9% in the third quarter), amid further normalization of the monetary policy by the Fed[60]. On the other hand, yields on 10-year government securities in the euro area averaged 0.6% (0.5% in the third quarter)[61] and remained at a relatively low and stable level.

Yields and spreads between Macedonian eurobonds and German government securities

Source: Bloomberg.
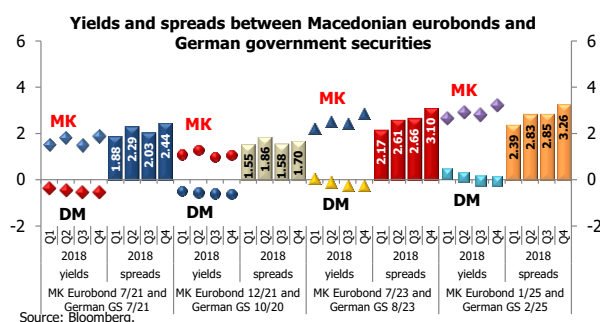
The Macedonian Eurobond yields[62] increased, thus widening the spread relative to the German government bonds. The spread between the yields on the issued Macedonian Eurobonds and the the yields on the German government bonds widened and averaged 2.44 percentage points, 1.70 percentage points, 3.10 percentage points, and 3.26 percentage points, respectively in the fourth quarter. (2.03 percentage points, 1.58 percentage points, 2.66 percentage points and 2.85 percentage points in the third quarter), respectively.

IV.   Monetary and credit aggregates

In the fourth quarter of 2018, the broad money aggregate M4 registered a significant growth acceleration. Structurally, money growth was driven by demand deposits, with positive yet lower contribution of deposits. The deposit analysis from a maturity perspective indicates positive contribution of both short-term and long-term deposits in the growth of the money supply. Such movements partially reflect the seasonal effects and are common for this time of the year, but at the same time signal stabilization of expectations and confidence of the entities. Similar developments were registered in the credit market. Namely, the lending activity accelerated in the fourth quarter of the year, driven by the corporate loans, which account for the most of the new landing, with positive yet lower contribution of the household loans. Such performance is also underpinned by the results of the Bank Lending Survey for the fourth quarter, indicating a net increase in the demand for corporate and household loans.

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[59] Those are generic yields derived from the yield curve of government bonds of the United States.

[60] Since December 2015, the FED has increased the market interest rate target nine times (from 0.00% -0.25% to 2.25% -2.50%), i.e. by 2.25 percentage points in total.

[61] Generic government bonds derived from the yield curves of government bonds of Germany and France.

[62] It refers to the Macedonian Eurobonds issued in July 2014, December 2015, July 2016 and in January 2018. The Eurobonds were issued in the nominal amount of Euro 500 million, Euro 270 million, Euro 450 million, and Euro 500 million, respectively, with a maturity of 7, 5, 7 and 7 years, respectively, and annual interest rates of 3.975%, 4.875%, 5.625% and 2.75%, respectively.

4.1. Monetary aggregates

M4, composition
(quarterly data, contributions in percentages points)

(annual data, contributions in percentage points)

- ▬ Currency in circulation   ▬ Demand deposits   ▬ Short-term deposits
- ▬ Long-term deposits   ● M4, annual change (in %)

Source: NBRNM.

Total deposits
(contributions to quarterly changes, in percentage points)

(contribution to annual changes, in percentage points)

Source: NBRNM.

The broad money M4 in the last quarter of 2018 registered a quarterly growth of 5.3%, which outperformed the growth in the previous quarter (2.4% growth). Structurally observed, the growth was mainly due to the most liquid component (cash in circulation and demand deposits) with contribution of 3.4 percentage points, prevailed by the contribution of the demand deposit (3.0 percentage points), with lower positive contribution of the deposits (1.9 percentage points). The deposit analysis from a maturity perspective indicates positive contribution of both short-term and long-term deposits in the growth of the money supply, which is accelerating compared to the previous quarter. The intensified pace of growth of the broad money is common for this time of year, but also shows stabilization of expectations and confidence of the entities. Analyzing the currency, both currency components make a positive contribution, particularly denar deposits (with demand deposits). At the end of the fourth quarter, the share of foreign currency deposits in M4 (36.0%) was lower compared to the end of the previous quarter (36.8%). **On an annual basis,** the growth of broad money was 11.8% at the end of the fourth quarter (11.7% at the end of the previous quarter).

The total banks' deposit potential in the fourth quarter continued to increase rapidly compared to the previous quarter (from 2.4% in September to 4.7% in December). Analysis of the sector structure indicates higher contribution of household deposits (3.5 percentage points), with positive contribution of corporate deposits (1.1 percentage points) to the quarterly growth of total deposits. Deposits of other financial institutions[63] also made positive contribution to the quarterly growth of total deposits. The analysis of the currency structure of total

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[63]Other financial institutions include investment funds, pension funds, insurance companies, investment funds management companies and pension funds management companies, financial companies and finance leasing companies.

Total deposits

	2017				2018			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
quarterly change, in %								
Total deposits	-1.29	0.2	0.8	5.7	0.2	2.8	2.4	4.7
contributions to quarterly growth, p.p.								
Deposit money	-1.3	1.0	0.7	3.0	-0.7	0.7	1.7	2.6
Denar deposits	0.0	-0.4	0.0	0.9	0.5	0.7	0.6	0.8
FX deposits	0.0	-0.4	0.2	1.9	0.5	1.4	0.1	1.2
Short-term deposits	-0.3	-0.8	-0.5	1.3	0.1	1.6	-0.4	1.5
Long-term deposits	0.3	0.1	0.7	1.4	0.9	0.6	1.0	0.6
Households	0.0	0.6	0.6	2.9	0.8	1.0	0.9	3.5
Enterprises	-1.5	-0.5	-0.2	2.8	-1.0	1.3	1.0	1.1
Other financial corporations (nondepository)	0.2	0.1	0.3	0.1	0.4	0.4	0.4	0.2

Source: NBRNM.

Household deposits

	2017				2018			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
quarterly change, in %								
Total household deposits	0.1	0.9	0.9	4.1	1.2	1.4	1.4	5.2
contribution to quarterly change of total deposits. in p.p.								
Deposit money	-0.5	1.4	-0.1	2.5	-0.1	0.3	0.4	3.4
Denar deposits	0.1	-0.4	0.2	0.5	0.5	0.1	0.2	0.7
FX deposits	0.5	-0.1	0.9	1.1	0.8	1.1	0.8	1.1
Short-term deposits	0.2	-0.7	0.6	0.6	0.5	0.7	0.2	0.8
Long-term deposits	0.4	0.2	0.5	1.0	0.8	0.5	0.8	0.9

Source: NBRNM.

Enterprise deposits

	2017				2018			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
quarterly change, in %								
Total household deposits	-5.7	-1.9	-0.7	11.1	-3.9	5.3	3.9	4.2
contribution to quarterly change of total deposits. in p.p.								
Deposit money	-3.6	-0.2	2.3	5.8	-2.7	1.7	5.6	0.6
Denar deposits	-0.8	-1.0	-1.2	0.7	-1.2	1.2	0.0	1.4
FX deposits	-1.3	-0.6	-1.8	4.6	0.0	2.3	-1.7	2.2
Short-term deposits	-2.1	-1.9	-3.3	3.9	-1.4	3.7	-2.0	3.8
Long-term deposits	-0.1	0.2	0.3	1.4	0.2	-0.1	0.2	-0.2

Source: NBRNM.

Interest rates of newly received deposits of households
(end of period, in %)

Interest rate spread
Denar interest rate
FX interest rate

2.1   2.5
1.0   0.8
1.1   1.6

2010 2011 2012 2013 2014 2015 2016 2017   Q1 Q2 Q3 Q4*
2018
*end of November
Source: NBRNM.

deposits points to further quarterly growth of denar deposits (with demand deposits), which mostly derives from deposit money, amid solid contribution of foreign currency deposits to the growth of total deposits. Analyzing the maturity structure, the growth was mostly due to the higher short-term deposits, amid positive contribution of long-term deposits.

Annually, the growth of total banks' deposits slowed down to 10.5% in December (11.6% at the end of September).

Total household deposits in the last quarter of 2018 increased rapidly (quarterly rate of 5.2%). The growth of household deposits is a result of the higher deposits in domestic currency (primarily demand deposits), amid solid growth of foreign currency deposits. In the fourth quarter, there was almost equal positive contribution of the long-term and short-term deposits to the total quarterly growth of household deposits.

On an annual basis, the growth of total household deposits accelerated to 9.5% in December (8.4% at the end of September).

The total corporate deposits in the fourth quarter continued to increase rapidly compared to the previous period (from 3.9% growth in the third quarter to 4.2% in the fourth quarter). Observing the currency structure, the quarterly growth was mainly due to the foreign currency deposits, with solid contribution of the denar deposits (including demand deposits). Analyzing the maturity structure, the growth entirely reflects the short-term deposits, amid negative contribution of long-term deposits.
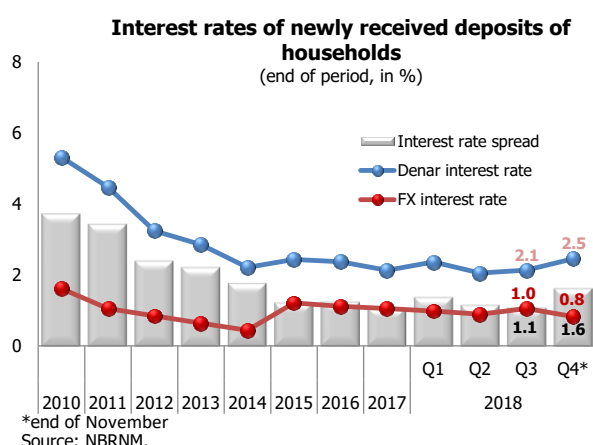
On an annual basis, corporate deposits increased by 9.5% at the end of December, which is a deceleration compared to the annual growth in the previous quarter (16.8%).

Interest rates of newly received deposits of enterprises
(in %)

- Interest rate spread
- Denar interest rate
- FX interest rate

1.60 1.54
0.95 0.76
0.65 0.78

2010 2011 2012 2013 2014 2015 2016 2017 Q1 Q2 Q3 Q4*
2018

*end of November
Source: NBRNM.
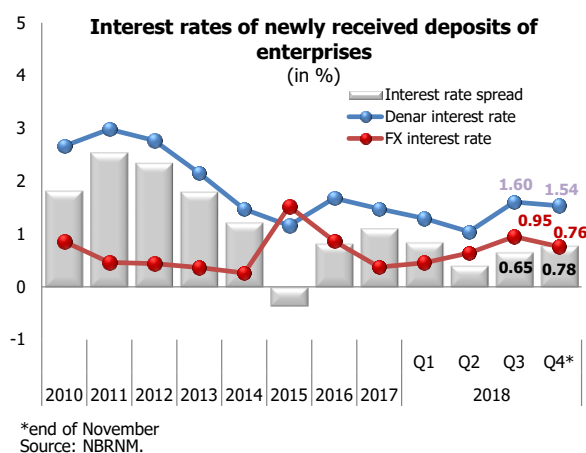
Analyzing the new savings[64] yields, in November, the interest rates on the newly accepted[65] denar deposits of households were 2.5%, which is higher by 0.4 percentage points compared to September, while interest rates on new foreign currency household deposits accounted for 0.8% and were lower by 0.2 percentage points, compared to September. In such conditions, the interest rate spread between the new denar and foreign currency savings of households in November widened by 1.1 percentage points in the previous quarter, to 1.6 percentage points at the end of November. **In the corporate sector, interest rates on newly accepted denar and foreign currency deposits decreased** by 0.1 percentage points and 0.2 percentage points respectively compared to September to 1.5% and 0.8%, respectively at the end of November. The interest rate spread between the newly accepted denar and foreign currency corporate deposits in November widened from 0.7 percentage points in September to 0.8 percentage points in November.

As for the total accepted deposits, the interest rates on (denar and foreign currency) corporate and household deposits in November registered no changes compared to September (1.7% and 1.4%, respectively).

4.2. Lending activity

Credit activity in the last quarter of 2018 continued to increase, at a faster pace compared to the previous quarter, at a quarterly growth rate of 3.4%. Such performances are also supported by the results of the fourth quarter Bank Lending Survey[66] that show a net increase in corporate and household credit demand amid further net easing of total credit standards. For the first quarter of 2019, banks expect a net increase in total credit demand by both sectors, amid

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[64] Data on interest rates are in accordance with the methodological changes of the NBRM from June 2018. For more information on the methodological changes visit:
http://www.nbrm.mk/monetarna_statistika_i_statistika_na_kamatni_stapki.nspx.
[65] One should have in mind that the interest rates on the newly accepted deposits are volatile. Volatility of interest rate on newly accepted deposits results from the fact that they are driven by the volume of newly accepted deposits (which can vary from month to month) and their interest rate.
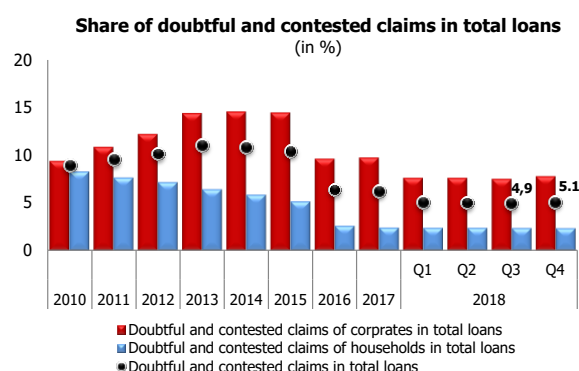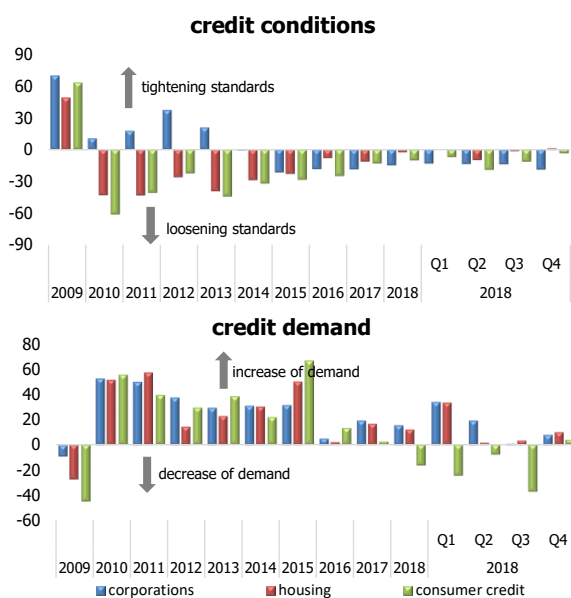[66] For more information, also see Bank Lending Survey at http://nbrm.mk/?ItemID=F7AC78DEE498764FBAF39049F726CE3C.

Total credits of private sector								
	2017				2018			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
quarterly change, in %								
Total credits of private sector	-1.0	2.2	0.2	3.9	-0.7	2.7	1.8	3.4
Contribution in quarterly change of total credits (in p.p)								
Denar credits	-0.9	1.7	1.4	3.1	-0.6	1.6	1.1	3.4
Foreign currency credits	0.0	0.5	-1.1	0.8	-0.2	1.1	0.7	0.0
Short-term credits	-1.4	0.5	-0.6	2.1	-0.8	0.6	0.0	1.5
Long-term credits	0.8	1.1	0.9	2.0	1.3	2.0	1.7	1.6
Households	1.0	1.4	1.0	0.8	1.1	1.6	1.2	0.9
Corporations	-1.9	0.8	-0.8	3.1	-1.8	1.1	0.6	2.4

Source: NBRNM.

Share of doubtful and contested claims in total loans
(in %)

- Doubtful and contested claims of corprates in total loans
- Doubtful and contested claims of households in total loans
- Doubtful and contested claims in total loans

Source: NBRNM.

credit conditions

tightening standards

loosening standards

credit demand

increase of demand

decrease of demand

- corporations
- housing
- consumer credit

Source: Bank lending Survey, NBRNM.

further easing of the overall credit standards.

From a sectoral perspective, the acceleration of lending to the private sector on a quarterly basis is largely explained by the increased lending to the corporate sector, which is common in the last quarter of the year, given the moderately lower contribution of lending to households. In terms of **currency structure**, the growth of total loans to the private sector in the fourth quarter was entirely due to the growth of denar loans, amid neutral contribution of foreign currency loans[67]. Analyzing the **maturity structure**, the quarterly growth of total loans is almost equally due to short-term and long-term loans.

The share of doubtful and contested claims in total loans slightly increased at the end of December compared to the previous quarter and amounted to 5.1% (4.9% in September).

Annually, in December, total loans registered an increase of 7.3%, which was slightly slower, compared to September (7.9%).

During the fourth quarter, total loans to total deposits ratio was 83.8% (85.3% in the previous quarter), due to the higher deposit base growth compared to the increase in lending.

The slowdown in the quarterly growth of household loans in the fourth quarter of 2018 (from 2.5% to 1.8%) is a result of the decline in the amount of credit cards and overdrafts, as well as the slower quarterly growth of consumer loans, amid stable and positive contribution of housing loans. According to the Bank Lending Survey, in the fourth quarter, there was a slight net increase in the demand for housing and consumer loans. Analyzing the currency structure, the growth of household loans predominantly resulted from denar loans, amid increase in foreign currency loans. Analyzing the maturity structure, the growth was entirely due to the higher long-term loans, amid fall in short-term

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[67] According to the new Methodology, foreign currency loans also include denar loans with currency clause.

Total credits of households

	2017				2018			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
quarterly change, in %								
Total credits of households	2.1	3.0	2.1	1.6	2.308	3.3	2.5	1.8
Contribution in quarterly change of household credits (in p.p)								
Denar credits	1.0	2.1	1.5	0.7	1.38	2.4	1.7	1.1
Foreign currency credits	1.1	0.9	0.7	1.0	0.9	0.9	0.8	0.7
Short-term credits	0.3	0.1	0.1	-0.4	0.3	0.3	0.2	-0.3
Long-term credits	1.8	2.8	1.8	2.3	2.0	2.9	2.3	2.1

Source: NBRNM.

Household credits
(quarterly data, contributions in percentage points)

(annual data, contributions in percentage points)

- Other loans
- Credit cards and overdrafts
- Auto loans
- Consumer loans
- Lending for house purchase
- quarterly/annual change of households credits, in %

*Total loans to households do not include loans to self-employed individuals.
Source: NBRNM.
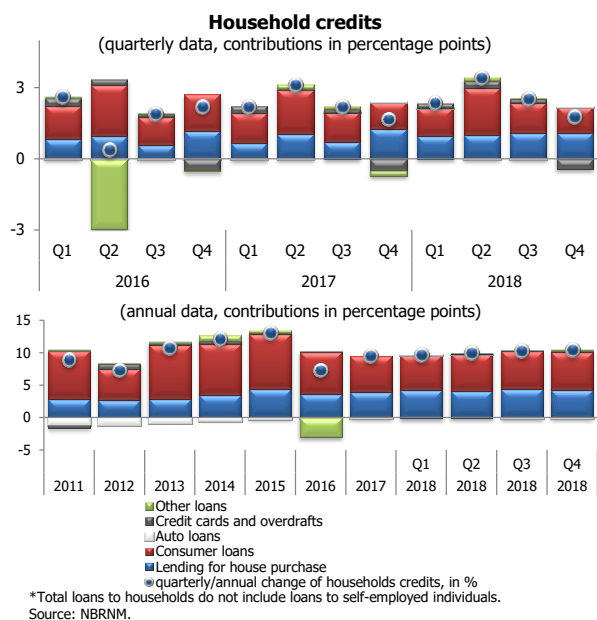
Total credits of corporations

	2017				2018			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
quarterly change, in %								
Total credits of corporations	-3.6	1.5	-1.5	6.1	-3.5	2.1	1.1	4.8
Contribution in quarterly change of corporation credits (in p.p)								
Denar credits	-2.6	1.4	1.2	5.4	-2.4	0.9	0.5	5.5
Foreign currency credits	-1.0	0.1	-2.8	0.7	-1.1	1.2	0.6	-0.7
Short-term credits	-2.8	0.9	-1.3	4.4	-1.8	0.8	-0.1	3.3
Long-term credits	-0.1	-0.4	0.1	1.8	0.7	1.1	1.2	1.0

Source: NBRNM.

Interest rate of total newly granted household credits
(end of period, in %)

- interest rate spread
- denar interest rate
- foreign-currency interest rate

*End of November
Source:NBRNM.
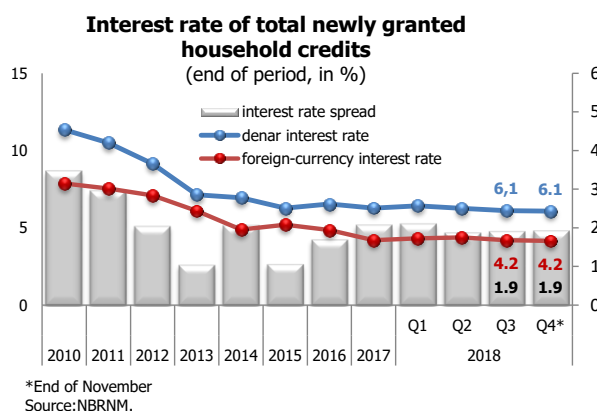
loans.

Annually, at the end of December, total loans to households increased by 10.3% (10.1% at the end of September).
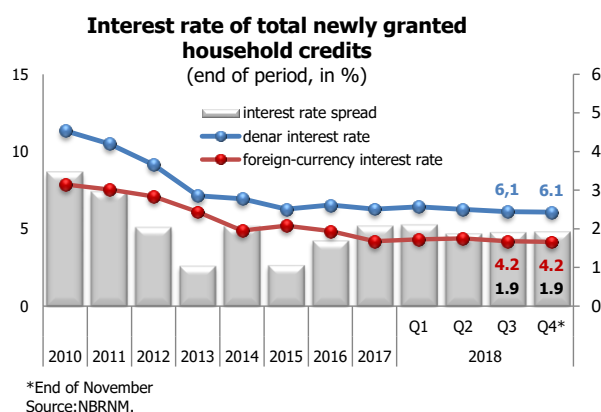
Total loans to the corporate sector during the last quarter of 2018 registered a rapid quarterly growth of 4.8% (1.1% in the previous quarter). Such performance was also underpinned by the results of the Bank Lending Survey for the fourth quarter, which indicated a net increase in the demand for corporate loans. According to the currency structure, the increase solely stemmed from the growth of denar loan, with negative contribution of foreign currency loans. Analyzing the maturity, the increase in corporate loans mostly derived from the higher short-term loans, with positive contribution of long-term loans.

On an annual basis, total corporate loans increased by 4.5% at the end of December, which is slower compared to the end of September (5.7%).

According to the data[68] **on interest rates on new loans**[69]**, in November,** the interest rates on denar and foreign currency loans to households did not change compared to September and remained at 6.1% and 4.2%, respectively. In such circumstances, the interest rate spread between the new denar and foreign currency lending remained the same (1.9 percentage points). Interest rate on new denar loans to the corporate sector was 4.5%, which was a decrease of 0.3 percentage points compared to September, while the interest rate on new foreign currency loans remained at 4.2%. In such circumstances, the interest rate spread narrowed (from 0.6 percentage points to 0.3 percentage points).

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[68] Data on interest rates are in accordance with the methodological changes of the NBRM from June 2018. For more information on the methodological changes visit: http://www.nbrm.mk/monetarna_statistika_i_statistika_na_kamatni_stapki.nspx.
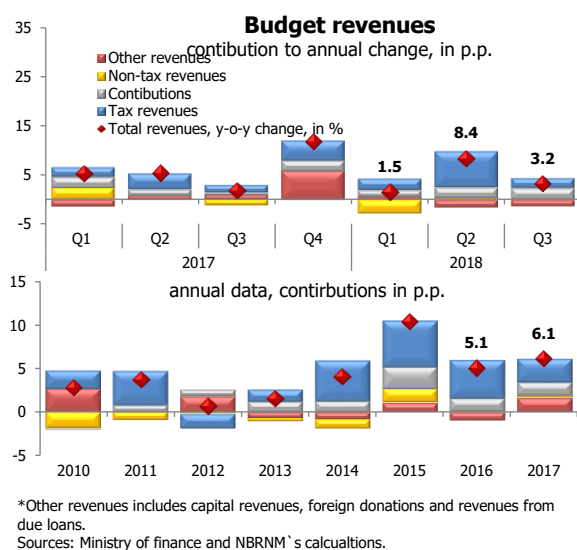[69] One should have in mind that the interest rates on newly approved loans are volatile. Volatility of interest rate on newly approved loans results from the fact that they are driven by the volume of newly approved loans (which can vary from month to month) and their interest rate.

Interest rate of total newly granted household credits
(end of period, in %)

- interest rate spread
- denar interest rate
- foreign-currency interest rate

*End of November
Source:NBRNM.

The interest rates on the total household and corporate loans (both denar and foreign currency) at the end of November decreased intangibly compared to September and equaled 6.1% and 4.7%, respectively.

V.   Public finances

In the third quarter of 2018, budget revenues and expenditures increased on an annual basis. The largest contribution to the growth of budget revenues was made by taxes and contributions, while the growth of budget expenditures entirely derived from the higher current expenditures. In the third quarter of 2018, the budget deficit was 0.4% of GDP, which is the same as last year. In the period January-November, the budget deficit was 1.5% of GDP (2.1% in the same period of 2017), accounting for 53% of the budget deficit forecast for 2018, after the budget revision. In this period, the budget deficit was financed mostly by part of the inflows from the Eurobond of the Republic of Macedonia issued in January 2018, and to a small extent through a new issue of government securities on the domestic financial markets. At the end of the third quarter of 2018, total public debt was 48.9% of GDP, which is the same as in the previous quarter.

Budget revenues
contibution to annual change, in p.p.

- Other revenues
- Non-tax revenues
- Contibutions
- Tax revenues
- Total revenues, y-o-y change, in %

annual data, contirbutions in p.p.

*Other revenues includes capital revenues, foreign donations and revenues from due loans.
Sources: Ministry of finance and NBRNM`s calcualtions.

In the third quarter of 2018, the total revenues in the Budget of the Republic of Macedonia[70] increased by 3.2%, on an annual basis. The better performance mostly reflects higher inflows of revenues and contributions, which contribute 2.0 percentage points and 2.2 percentage points, respectively to the annual growth. Non-tax revenues also made positive yet lower contribution (0.2 percentage points), while the contribution of other revenues[71] was negative (1.2 percentage points).

In the third quarter of 2018, total tax revenues[72] were higher by 3.4% on an annual basis. The increase in tax revenues was mainly due to the better performance in

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[70] Central budget and budgets of funds.
[71] Other revenues include capital revenues, donations from abroad and revenues from recovered loans.
[72] It also includes own revenue accounts (SSP).

Tax revenues
contibution to annual change in p.p.

annual data, contributions in p.p.

Source: Ministry of finance and NBRNM`s calculations

Budget expenditures
contibutions to annual change, in p.p.

contirbutions in annual change, in p.p.

Source: Ministry of finance.

Current expenditures
contibutions to annual change in p.p.

annual data, contributions in p.p.

Source: Ministry of finance and NBRNM`s calcualtions.

profit tax, with contribution of 4.0 percentage points, with positive yet smaller contribution of income tax and excise tax revenues (1.7 percentage points and 0.9 percentage points, respectively). VAT revenue contribution was negative (3.9 percentage points)[73]

Total expenditures in the Budget of the Republic of Macedonia in the third quarter of 2018 were by 2.4% higher on an annual basis. The budget expenditures were higher in the third quarter of the year solely due to the higher current expenditures with contribution of 3.0 percentage points, with negative contribution of capital expenses (0.6 percentage points). The annual growth of current expenditures was 3.1% and mostly derived from the category of transfers. Of the other budget expenditures, the category of wages and allowances made small positive contribution of 0.2 percentage points, while the categories of interest payments, and goods and services made small negative contribution to the annual growth of current expenditures, of 0, 7 percentage points and 0.3 percentage points, respectively.

In the third quarter of 2018, the Budget of the Republic of Macedonia registered a deficit of Denar 2,473 million, or 0.4% of GDP[74], which is the same as last year. The deficit was financed mostly from the government deposit account with the National Bank, and less through government borrowing on the domestic financial market.

In the period January-November 2018, total budget revenues were higher by 5.4% compared to the same period last year. The growth of budget revenues was mostly affected by the better performance of taxes and contributions, with a contribution of 4.7 and 2.1 percentage points, respectively. **Total budget expenditures increased by 2.9% annually** in the same period. Analyzed by category, the growth of budget expenditures entirely derived from the higher

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[73] Lower annual net VAT revenues in the third quarter of 2018 reflect the higher payment of VAT refunds (by 50.6%).
[74] The analysis uses the NBRM October forecast for the nominal GDP for 2018.

Budget balance financing
(in million of denars)

(annual data, in Denar million)

- Change in deposits*
- External financing, net
- Domestic financing, net
- Privatisations inflows
- Budget balance
- Budget balance, as % of nominal GDP (r.s.)

* Positive change - deposits withdrawal; negative change - deposits accumulation.

Source: Ministry of finance

Budget of RNM
(central budget and funds)
January-August 2018

- realization to the planned Budget 2018, in %
- annual change, in %

Source: Ministry of Finance and NBRNM's calculations

current expenditures, with a contribution of 5.9 percentage points, while the contribution of capital expenditures was negative (3.0 percentage points).

In the period January - November 2018, the budget deficit was Denar 9,502 million, which is 1.5% of GDP, or 53% of the deficit forecast for 2018, after the budget revision. **Budget deficit** in this period was mostly financed by external borrowing, through the issuance of the Eurobond[75] where a portion of the inflows was retained on the government account with the National Bank. Smaller portion of the budget deficit was financed by domestic sources through net issue of government securities on the domestic financial markets.

At the end of the third quarter of 2018, total public debt[76] was 48.9% of GDP[77], which is the same as in the previous quarter. The external public debt still dominates the total debt. Observing the sector structure, total government debt[78] and debt of public companies[79] (backed by the government) remained unchanged at the end of the third quarter compared to the previous quarter, accounting for 40.9% and 8.0%, respectively of GDP.

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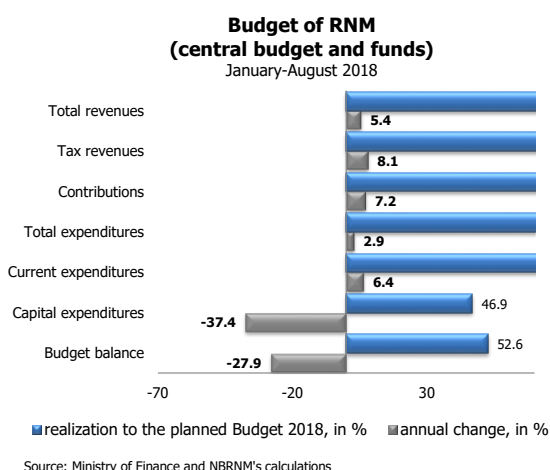
[75] In January 2018, the sixth Macedonian Eurobond in the nominal amount of Euro 500 million, a maturity of 7 years and an annual interest rate of 2.75% was issued. One part of these foreign assets was used for early repayment of part of the external liabilities that fall due in 2020.

[76] The public debt is defined under the Law on Public Debt (Official Gazette of the Republic of Macedonia No. 165/14) according to which it is the sum of the government debt and the debt of public enterprises established by the state or municipalities, municipalities within the city of Skopje and the city of Skopje, and companies that are entirely or predominantly owned by the state or by the municipalities, the municipalities within the city of Skopje and the city of Skopje, for which the Government has issued a state guarantee.

[77] The total public debt equals Euro 5,144 million at the end of the third quarter. The analysis uses the NBRM October forecast for the nominal GDP for 2018.

[78] Government debt is defined as a sum of debts of the central and the local government.

[79] Refers to guaranteed debt of public enterprises and joint stock companies owned by the state, according to the public debt definition under the Law on Public Debt (Official Gazette of the Republic of Macedonia No. 165/14).

Public debt
in % of GDP
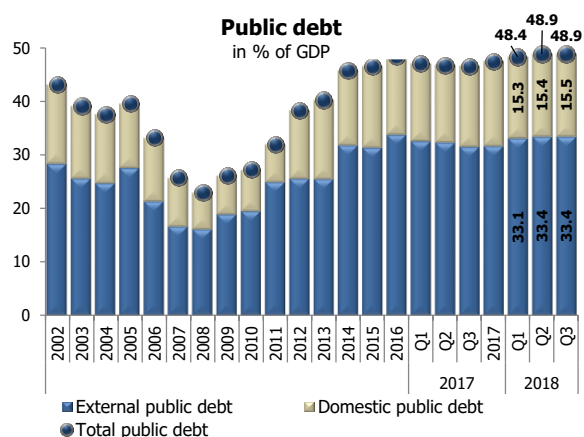
Source: MoF and NBRNM calculations.

BUDGET OF REPUBLIC OF NORTH MACEDONIA (Central budget and budgets of funds)

|	Budget for 2018		Q1 2018	Q2 2018	Q3 2018	Jan.-Nov.	Annual changes, perod in 2018 over the same period in the previous year, in %			Contributions in annual changes, perod in 2017 over the same period in the previous year, in %			Annual changes, perod in 2018 over the same period in the previous year, in %	Contributions in annual changes, perod in 2018 over the same period in the previous year, in %
							Q1 2018	Q2 2018	Q3 2018	Q1 2018	Q2 2018	Q3 2018	Jan.-Nov.	Jan.-Nov.
	Realization, in mil. denars													
TOTAL REVENUES	**193,512**	**192,484**	**43,369**	**47,279**	**46,006**	**169,434**	**1.5**	**8.4**	**3.2**	**1.5**	**8.4**	**3.2**	**5.4**	**5.4**
Tax revenues and contributions	170,200	170,781	38,916	43,534	41,454	153,747	4.2	10.4	4.8	3.7	9.4	4.2	7.9	7.0
Taxes	112,828	112,638	25,529	29,146	26,858	101,330	3.8	11.9	2.9	2.2	7.1	1.7	8.1	4.7
Contributions	55,403	56,215	13,058	13,930	14,045	50,843	4.7	7.2	7.7	1.4	2.1	2.2	7.2	2.1
Non-tax revenues	17,201	14,929	3,197	2,743	3,035	11,046	-27.3	6.8	0.2	-2.8	0.4	0.0	-9.8	-0.7
Capital revenues	1,510	1,881	456	355	927	2,034	276.9	49.2	25.1	0.8	0.3	0.4	64.6	0.5
Foreign donations	4,201	4,793	788	632	574	2,552	-7.9	-51.6	-52.3	-0.2	-1.5	-1.4	-43.7	-1.2
Revenues from repayments of loans	400	100	12	15	16	55	0.0	-84.8	-71.4	0.0	-0.2	-0.1	-76.0	-0.1
TOTAL EXPENDITURES	**211,745**	**210,536**	**46,502**	**48,684**	**48,476**	**178,936**	**0.5**	**0.6**	**2.4**	**0.5**	**0.6**	**2.4**	**2.9**	**2.9**
Current expenditures	187,698	192,017	44,708	46,457	45,900	170,253	8.5	3.8	3.1	7.5	3.5	2.9	6.4	5.9
Capital expenditures	24,047	18,519	1,794	2,227	2,576	8,683	-64.5	-38.6	-9.4	-7.0	-2.9	-0.6	-37.4	-3.0
BUDGET DEFICIT/SURPLUS	**-18,233**	**-18,052**	**-3,133**	**-1,405**	**-2,470**	**-9,502**	**-11.6**	**-70.4**	**-10.2**					
Financing	18,233	18,052	3,133	1,405	2,470	9,502								
Inflow	**40,897**	**46,487**	**21,709**	**4,859**	**4,187**	**36,211**								
Privatisation receipts	0	152	0	107	172	279								
Foreign loans	34,839	32,956	30,462	628	169	31,825								
Deposits	-11,642	-4,297	-15,032	774	2,184	-11,389								
Treasury bills	17,700	17,671	6,279	3,345	1,662	15,479								
Sale of shares	0	5	0	5	0	17								
Outflow	**22,664**	**28,435**	**18,576**	**3,454**	**1,717**	**26,709**								
Repayment of principal	22,664	28,435	18,576	3,454	1,717	26,709								
External debt	10,418	16,218	12,793	1,113	708	15,556								
Domestic debt	12,246	12,217	5,783	2,341	1,009	11,153								

Source: Ministry of Finance and NBRNM calculations.

VI.   Analytical appendices

Box 1: The impact of the new export-oriented facilities with foreign capital on the change of foreign trade structure.

This box aims to review the changes in the foreign trade structure caused by the entry of the new[80] foreign companies in the export sector[81]. This issue has been analyzed on several occasions, but this time we analyze the changes in the structure of the imports and exports on a granular basis, using data from the import and export of twenty larger companies with foreign capital, which for the purposes of this analysis have been aggregated to a double-digit tariff code. The share of these companies in total exports has increased steadily in the past years, reaching 53.2% of total export of goods in the first six months of 2018. Also, given that these companies import raw materials and equipment, the share of imports of these facilities in total import of goods also continued growing, but at a slower pace compared the growth of exports - share of 44.2% in the total exports, in first half of 2018. Such developments in the export and import of goods of the selected companies, in the period from 2011 until the first half of 2018 points to a continuous growth of the trade surplus, on one hand and increase of the value added of the new companies on the other. Thus, on an average, the net exports of the new facilities expressed as a share of GDP that stood at 0.4% of GDP for the period 2011-2013, reached 3.8% of GDP in 2017, while for the first half of 2018 only, the same was 2.4% of GDP.

Chart 1
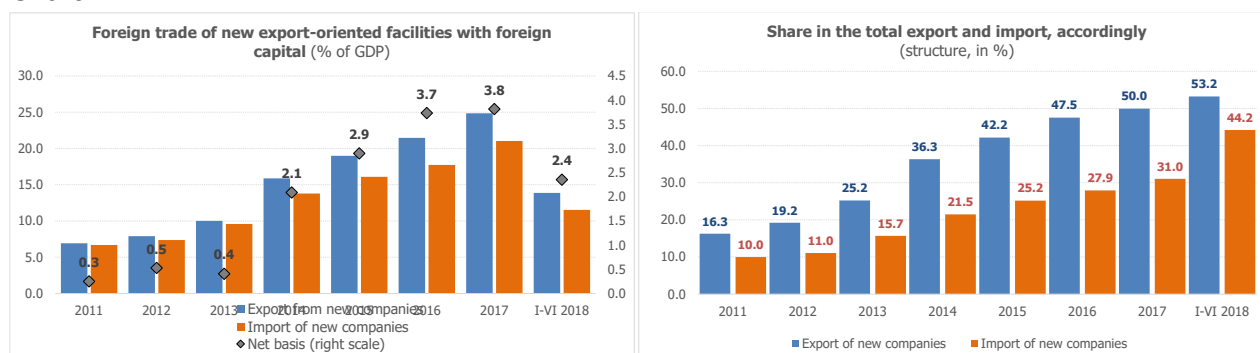
Source: NBRM.

The detailed analysis of the export structure of the new facilities in the domestic economy suggests that two categories of products initially dominate. This refers to the products of the chemical industry[82] and equipment and machinery[83] that account for around 90% of their export, on average during the analyzed period. **However, in the last two years, other categories of products that register an increasing share in the export of**

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[80]Refers to relatively new companies with foreign capital that have entered the Macedonian economy after 2009.
[81]More details regarding these companies and their effects to the economy can be found in the following link:
http://www.nbrm.mk/ns-newsarticle-analiza-na-efektite-od-novite-izvozno-orientirani-kompanii-vo-domasnata-ekonomija.nspx
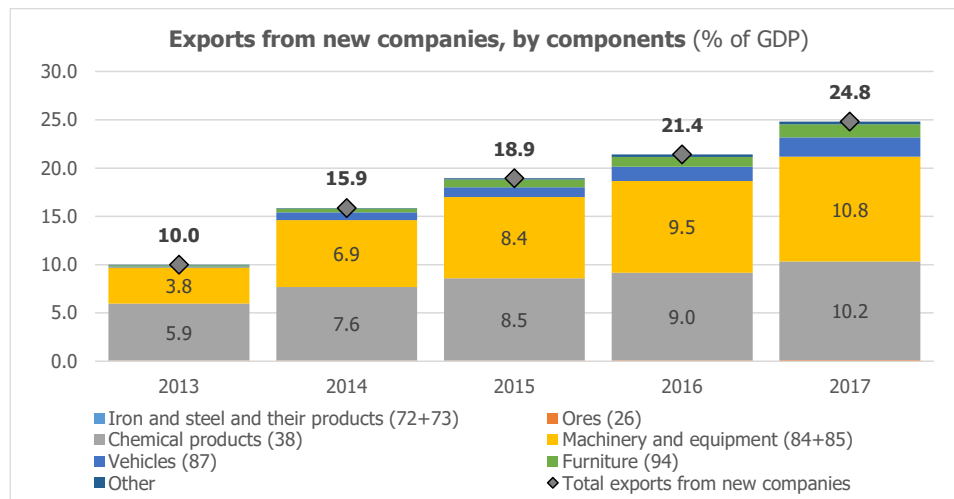[82]Various products of the chemical industry, tariff code 38.
[83]Nuclear reactors, boilers, machinery and mechanical appliances and parts thereof (tariff code 84) and electrical machinery and equipment and parts thereof, sound recorders and reproducers, television image and sound recorders and reproducers, and parts and accessories of such articles (tariff code 85)

these companies have been identified, which amount to around 9% on an average and refer to the vehicles[84] and furniture[85]. The export structure of the new companies significantly differs from the structure of the traditional export in the domestic economy. Such change in the structure, in favor of the products with a higher level of processing, which are less sensitive to the changes in the stock prices, certainly leads to the decrease of its vulnerability to price shocks. The technological intensity of this production type is also higher.

Chart 2

Exports from new companies, by components (% of GDP)

Legend:
- Iron and steel and their products (72+73)
- Ores (26)
- Chemical products (38)
- Machinery and equipment (84+85)
- Vehicles (87)
- Furniture (94)
- Other
- Total exports from new companies

Source: NBRM.

In terms of individual product categories (according to tariff codes) within which they are exported, it can be concluded that in all the above-mentioned product categories the export of the new companies prevails. Thus, in both major categories, products of the chemical industry and equipment and machinery, the share of exports from new facilities amounts to 99% and 86%, respectively, on an average for the 2013-2017 period. At the same time, the exported vehicles and furniture from the new companies continuously increase their share and at the end of 2017, the same amounted to 88% and 69%, respectively of the total exported vehicles and furniture from the domestic economy. Thus, it should be noted that the products in the above-mentioned export categories represent a specific product type which are part of the global production chain in the automobile industry.

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[84]Tariff code 87 which includes vehicles other than railway or tramway rolling stock, and parts and accessories thereof
[85]Tariff code 94

Chart 3

Chemical products, tariff code 38 (% of GDP)

	2013	2014	2015	2016	2017
Exports from new companies	5.9	7.6	8.5	9.0	10.2
Total exports	5.9	7.7	8.6	9.1	10.3

Machinery and equipment, tariff codes 84 and 85 (% of GDP)

	2013	2014	2015	2016	2017
Exports from new companies	3.8	6.9	8.4	9.5	10.8
Total exports	4.7	8.0	9.7	10.8	12.3

Vehicles, tariff code 87 (% of GDP)

	2013	2014	2015	2016	2017
Exports from new companies	0.1	0.8	1.0	1.5	2.0
Total exports	0.4	1.1	1.2	1.7	2.3

Furniture, tariff code 94 (% of GDP)

	2013	2014	2015	2016	2017
Exports from new companies	0.1	0.4	0.8	1.0	1.3
Total exports	0.6	0.9	1.3	1.6	2.0

Source: NBRM.

Such shifts also have certain implications on the currency structure of the export of goods from the domestic economy to the rest of the world. Namely, in 2007, the export of traditional export activities prevailed within the export structure i.e. metal processing, textile and food industry, with a share of almost 70% in the total exported goods. Since 2010 onwards, the entry of the new direct investors in the domestic economy prompted a restructuring production process, and thus to exports and the orientation towards products with higher level of processing i.e. with higher level of sophistication. Thus, the export of traditional activities was reduced to around 26%, while export of new industrial facilities dominates at the moment i.e. export of equipment and machinery and products from chemical industry, with a joint share of around 45% in the total exports for 2017 (3.4% in 2007), and the share of the export of furniture and vehicles also increases, which in 2017 reached 8.5% for both categories (1.8% in 2008).

Chart 4

Total exports, by components (structure, in %)
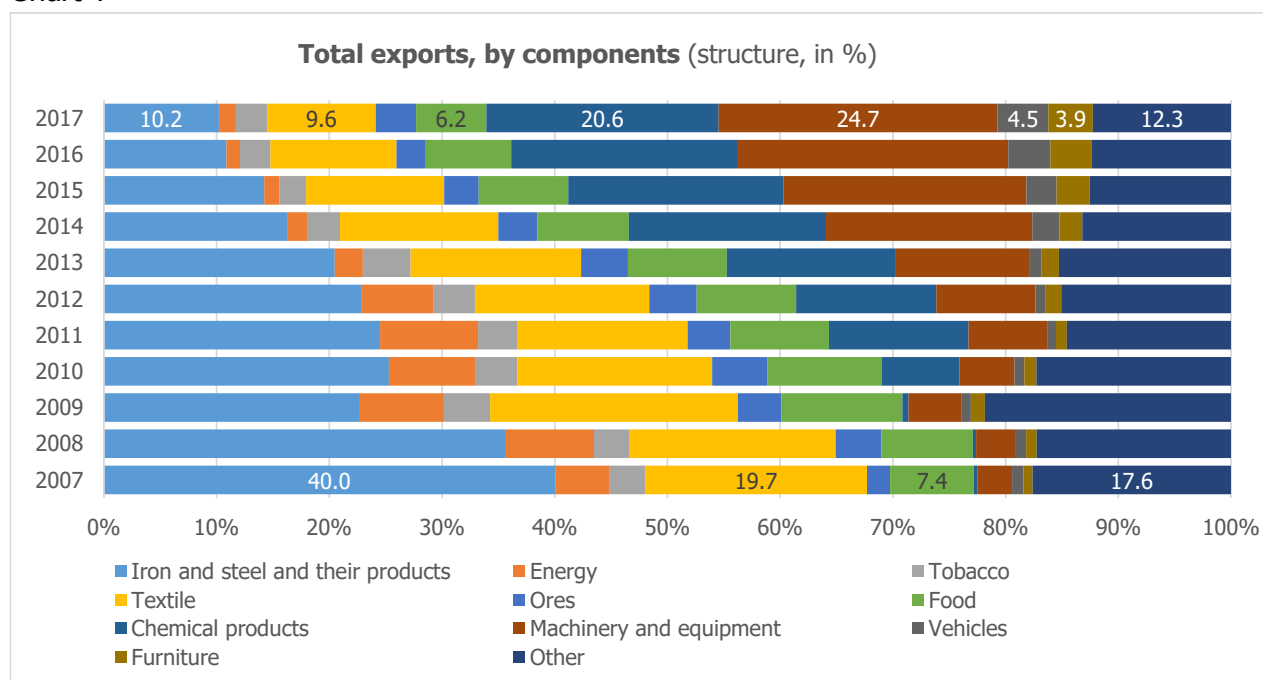
Source: NBRM.

On the other hand, the structure analysis of the import of goods of new companies suggests that the imported component is dispersed between several categories, among which, the import of precious metals and equipment and machinery has the most important share of around 67% on an average, during the analyzed five-year period. In addition, increased imports due to the exports of new companies are also registered in several other categories, such as ceramic products[86], chemical industry products, plastics[87] and raw materials for the textile industry[88]

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[86]Tariff code 69
[87]Tariff code 39
[88] Tariff codes 50-60.

Chart 5

Import of new companies, by components (% of GDP)
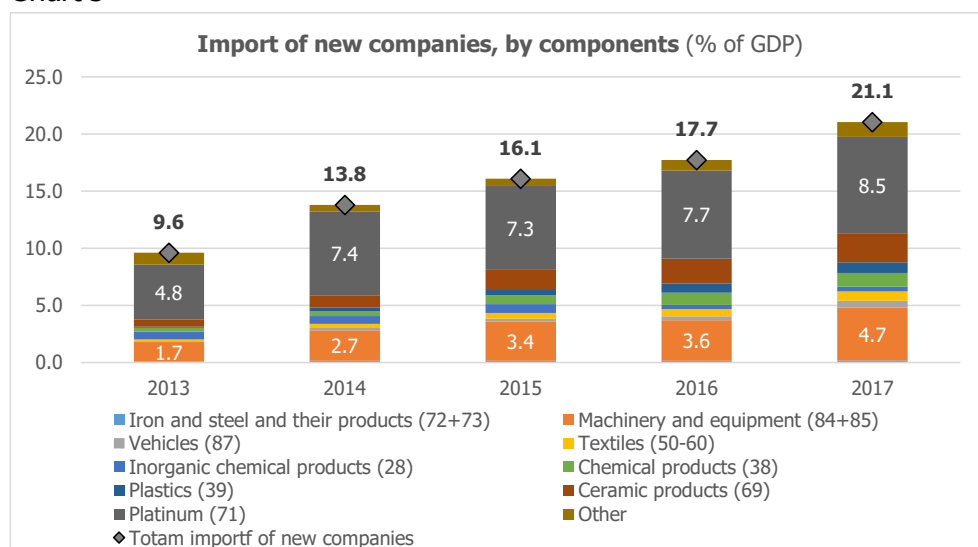
Source: NBRM.

In terms of individual product categories (groups of tariff codes) within which they are imported, it can be concluded that in all the above-mentioned product categories, except the import of equipment and machinery, the import of raw materials from the new companies prevails. Namely, the import of precious metals is entirely for the needs of the new export-oriented companies, while the imported products of the chemical industry and ceramic products for the needs of the new companies account for around 59% i.e. 76%, on an average in the total import within the relevant tariff codes. The import of equipment and machinery for the needs of the new facilities in the total import of this category is around 32% on an average for the analyzed period. It should be noted that here the structural share of the imported equipment and machinery of the new companies continuously increases i.e. from 21% in 2013 doubled for a period of five years and reached 41% in 2017. Thus, the import of equipment and machinery is partially initiated by the needs of the new companies, and part of it also covers capital products i.e. means for work for continuous production processes in the overall domestic economy. A more pronounced investment import in fixed assets is registered in certain short-periods, depending on the phases of the investment cycle of business entities.

Chart 6
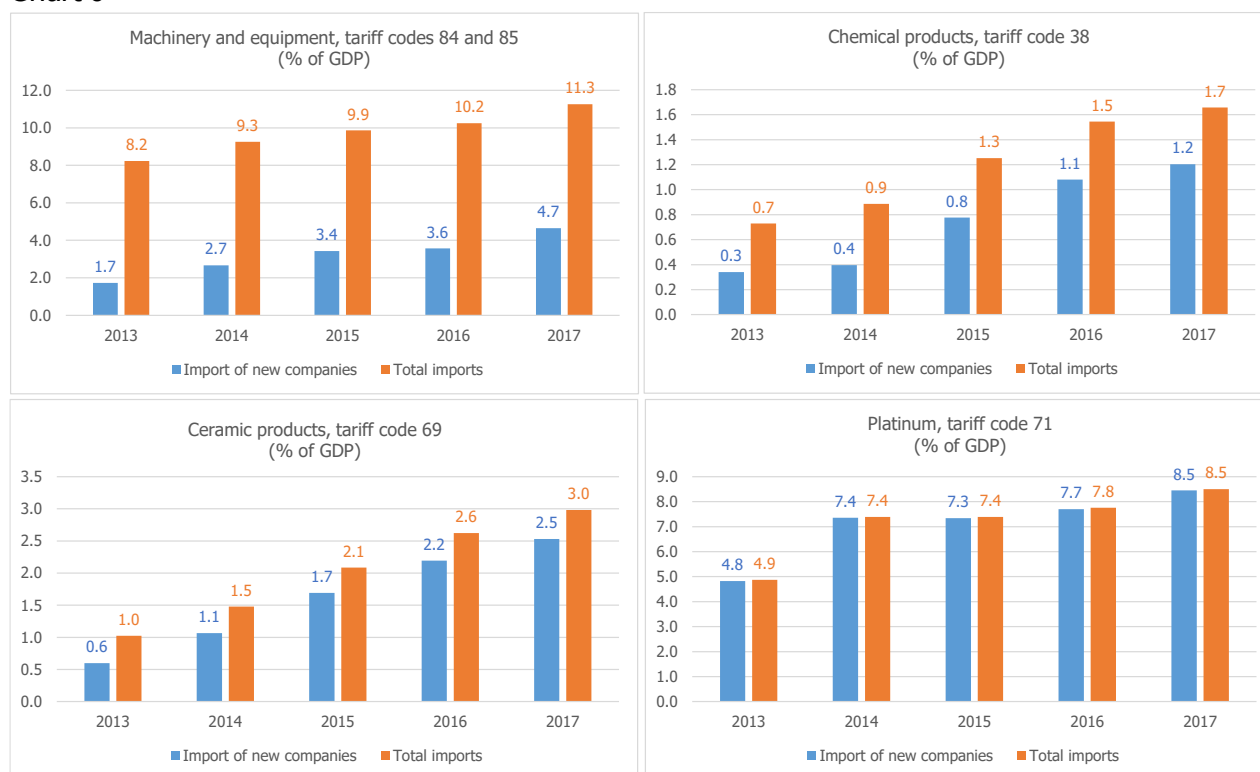
Source: NBRM.

Such changes in certain categories are properly reflected on the current structure of the import of goods from abroad, in the direction of a greater dispersion. Namely, a decade ago, in 2007, 72% of the structure of the total imports, was distributed between energy import (18.4%), and the import of intermediary products (equipment and machinery, iron and steel and textile with a 34.6% cumulative share) thereafter, as well as import of goods for final consumption (consumer goods and food with 19.3% cumulatively). In 2017, the cumulative share of the above-mentioned import categories decreased to 58%. Such reduction is due to all individual production groups (mostly to the import of energy and import due to the export of iron and steel[89] and of textile to a lesser extent), except the import of equipment and machinery, whose share registers an increase (of 3.2 percentage points). On the account of the structural decline of the above-mentioned categories, the share of the import of raw materials increases in part of the new companies - import of precious metals, chemical industry products and ceramic products (cumulative share of 19.4% in the total import of goods).

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[89] The reduced import in energy and iron and steel and their products is mostly due to the downward correction and gradual stabilization of primary commodity prices on the world stock markets, and primarily due to the prices of crude oil and oil derivatives after the initial shock in 2007 and 2008. An additional factor for the import of energy is the reduced quantity import of crude oil for the needs of domestic refinery (since 2012 onwards).

Chart 7

Total imports of goods, by components (structure, in %)

2017	7.6	4.9	16.6		9.8	8.2	9.5	6.4	2.4 4.4	12.5	16.8

2007 row: 12.6 | 6.3 | 13.4 | 18.4 | 8.5 | 10.8 | 8.5 | 16.6

Legend:
- Iron and steel and their products
- Vehicles
- Machinery and equipment
- Ores
- Energy
- Consumption goods
- Food
- Tobacco
- Textiles
- Chemical products
- Ceramic products (69)
- Platinum (71)
- Other
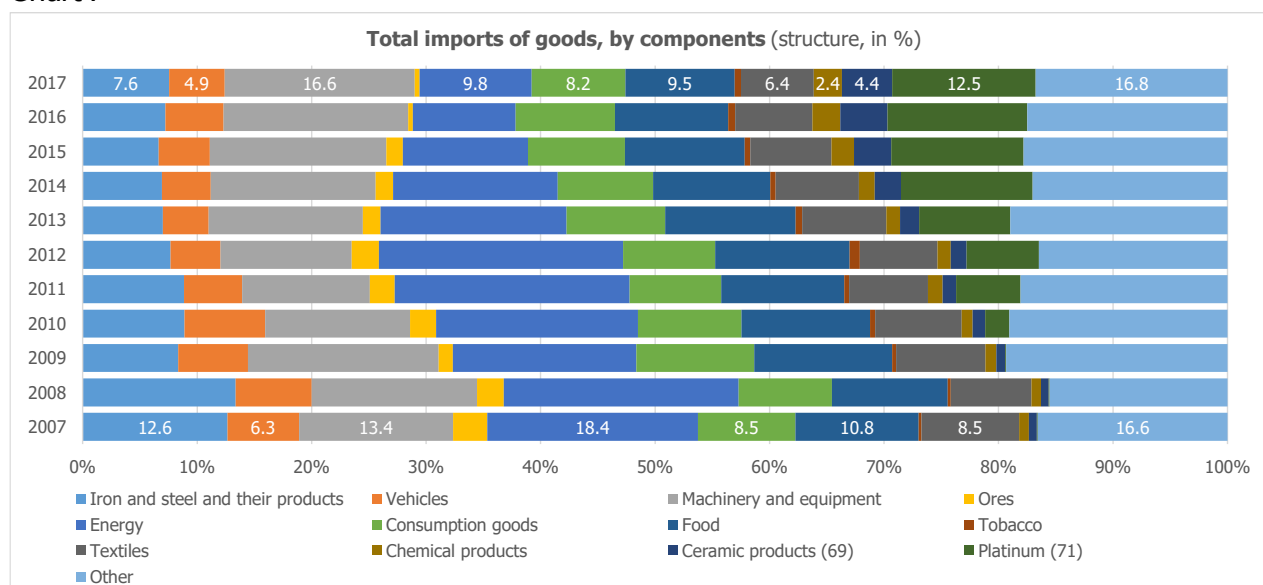
Source: NBRM.

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The analysis points to the conclusion that the new export-oriented companies with foreign capital contributed in **restructuring the foreign trade** in the past ten years. Namely, since 2010 onwards, the entry of new direct investors in the domestic economy prompted a process of change primarily in the production and then in the export structure and **the orientation towards products with higher level of processing and technical intensity, which have a larger value and are mainly associated to automobile industry development and growth.** At the same time, in line with the changes in the export of goods, the structure of import also registers a change, where a greater dispersion of the product categories is registered, but continue to prevail in the segment of the import of raw materials. **Such restructuring contributes for a greater and faster growth of value of (the new structure of) exports, compared to the growth of (the new structure of) the import of raw materials,** which has direct positive effect on the total balance from the exchange of goods with abroad.

Box 2: "Sectoral decomposition of the dynamics of labor productivity and unit labor costs

Labor productivity and labor costs are important factors that largely affect the competitiveness of an economy. This analysis gives a review of the dynamics of both these indicators[90] in the

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[90]Labor productivity within this appendix is measured as a real value added per employee, while unit labor cost is identified as nominal labor compensation per unit value added. For the purposes of this appendix, both categories (labor productivity and labor costs) represent a weighed sum of productivity and labor costs in individual economic sectors, whereby weights are equal to the share of employees in each sector in the total employment (in productivity) and share of value added in each sector in the total value added (in unit labor costs). Hence, the sector's contribution to the overall category includes two elements - changes in labor productivity/costs and changes in the relative share of that sector.

Macedonian economy in the period 2006 - first half of 2018, with special emphasis on the current state of these indicators (first half of 2018) compared to their pre-crisis level. Thus, the analysis was conducted for the entire economy and for the main economic activity sectors.

Labor productivity

The analysis of labor productivity in the total economy points to a moderate average annual productivity growth of 0.3% for the period of 2006-2018[91], amid continuous growth of employment. Observed by individual sub-periods, different productivity dynamics is registered i.e. productivity increases faster in the pre-crisis period (growth rate of 1.8% in the period 2006-2008) which was interrupted during the global crisis amid the value added decrease due to the crisis, productivity registered a decline. After the decline in 2009, labor productivity generally increases, but still, the growth rate is relatively low, amounting 0.3%, on an average, in the period 2010-2018. Significant acceleration of the growth has been registered since 2013 onwards, a trend interrupted in 2017 and first half of 2018, when productivity declined once again, amid temporary deceleration of the economic activity, partially impacted by the prolonged uncertainty in the domestic environment and in conditions of continuous growth of employment. In the first half of 2018, the productivity level is very close to the pre-crisis level, amid similar cumulative growth of around 23% of total employment and value added.

Chart 1
Labor productivity

Labour productivity (growth rates, in %)

Source: State statistical office and calculations of NBRNM.

Average annual and cumulative change (in %)

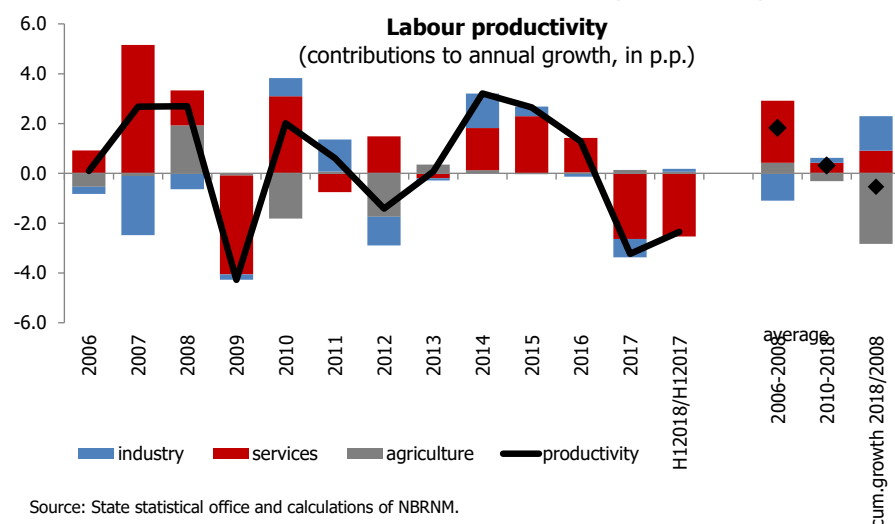Source: State statistical office and calculations of NBRNM
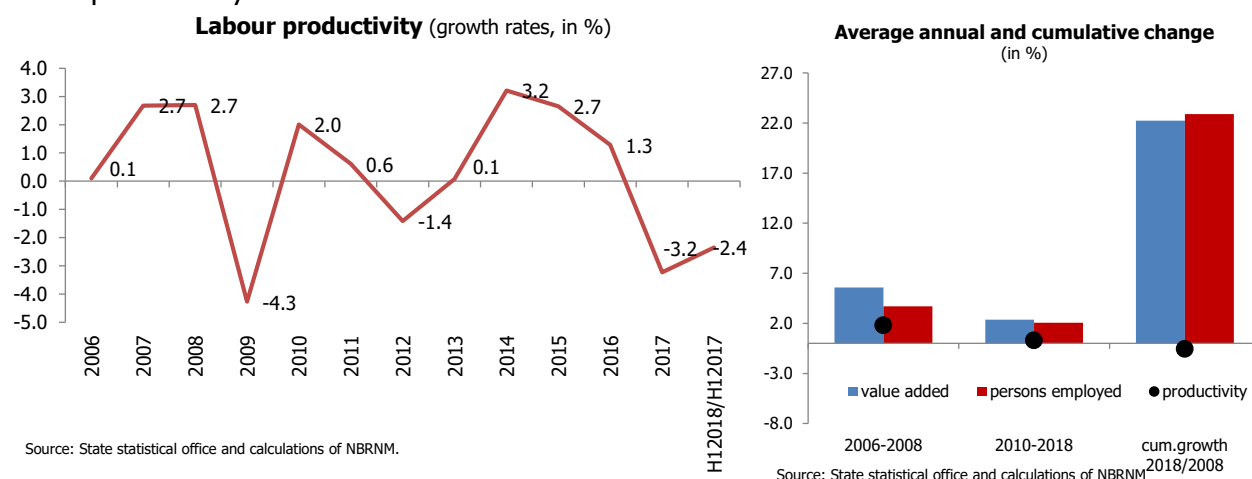
The following paragraphs are focused on reviewing the sectoral dimension of changes in productivity by monitoring the contribution of three key sectors: agriculture, industry and service sector.

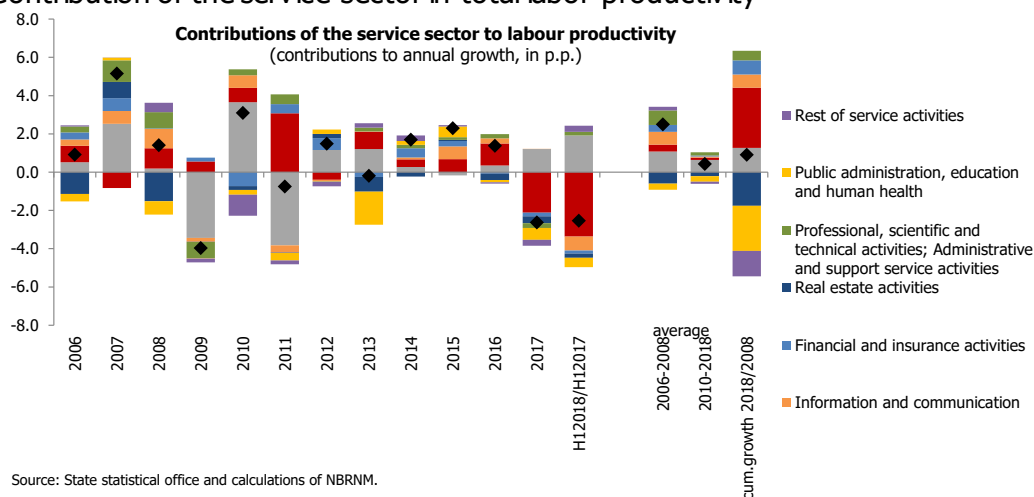[91]Refers to the first half of 2018, as the last analyzed period.

Chart 2
Contribution of individual sectors in total labor productivity

Labour productivity
(contributions to annual growth, in p.p.)

Legend: industry — services — agriculture — productivity

Source: State statistical office and calculations of NBRNM.

Overall, the analysis shows that productivity changes over the entire period is mostly driven by the service sector. This sector had a significant contribution to the total growth of productivity in the pre-crisis period, a trend interrupted in 2009. After the crisis-ridden 2009, the service sector continued to positively contribute to the growth of total productivity, but, on average, the growth pace was significantly weaker compared to the one in the pre-crisis period and in the last two years the growth is negative.

Given the heterogeneity of the service sector, the perception for the sources of change of productivity in the service sector through the prism of different types of service activities is an important analytical aspect. In the pre-crisis period, productivity in the service sector in a significant part is explained by these activities: trade, transport and catering, that collectively have the largest positive contribution to the growth in this period. The following activities also register a positive contribution: professional, scientific and technical activities, information and communication, financial and insurance activities as well as construction. For these activities, productivity growth continues after 2009, but the observed growth pace, on average for the whole post-crisis period, is weaker.

Chart 3
Contribution of the service sector in total labor productivity

Contributions of the service sector to labour productivity
(contributions to annual growth, in p.p.)

Legend:
- Rest of service activities
- Public administration, education and human health
- Professional, scientific and technical activities; Administrative and support service activities
- Real estate activities
- Financial and insurance activities
- Information and communication

Source: State statistical office and calculations of NBRNM.

62

Unlike the service sector, the contributions of agriculture and industry are small, and are negative on average, for the whole analyzed period. However, during the post-crisis recovery, favorable developments in **industry** are registered, whereby its average contribution to the total productivity growth in the period 2010-2018 is slightly positive. The main driver of such developments is the manufacturing industry, which is mostly associated with the operation of new companies integrated in the global production chains, which generate greater export sophistication and have a greater capacity for innovation. By the end of the period (2017 and the first half of 2018), once again there was a decrease in productivity which reflects the reduced level of production, in one part probably as a consequence of restraint, given the still present uncertainty in the domestic economy. However, compared to 2008, productivity in the industry sector in 2018 is higher by 16.3%. **Productivity in agriculture** is variable and shows no high synchronization with the cyclical movement of the domestic economy. Compared to 2008, productivity in agriculture is lower by 6.8% in 2018.

Chart 4
Contribution of tradable and non-tradable sectors in total labor productivity

Source: State statistical office and calculations of NBRNM.
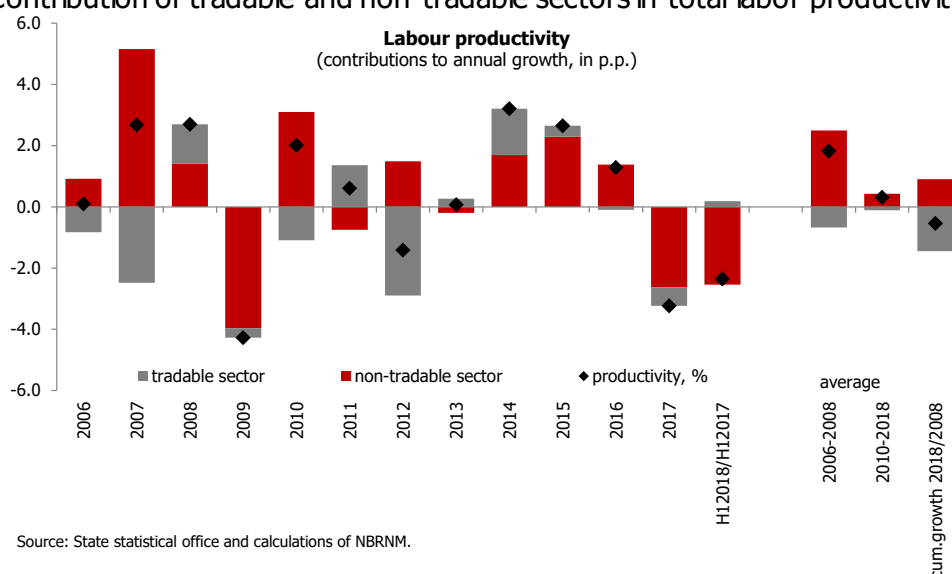
Considering the shifts in agriculture and industry as tradable sectors, on one hand, and the movements in the service sector as a non-tradable sector, on the other, it is clear that the shifts in productivity, on average for the entire period, are in favor of the sector of non-tradable goods. However, it should be noted that the negative contribution of the traded-goods sector significantly narrows in the post-crisis period, which could be related to the structural changes in the domestic economy i.e. the operation of foreign companies already integrated in the global production chains. A room for continued structural changes, expected to provide further support to the overall productivity through the channel of tradable goods and to improve competitiveness is still available.

Unit labor costs

Unit labor costs are often viewed as a concept closely associated to labor productivity. In this part of the analysis, similar as in productivity, the issue of the movement of total unit labor costs is analyzed dynamically, but also in terms of sectoral contribution in total labor costs. Unit labor costs are considered as one of the indicators of cost competitiveness of the economy, whose change shows whether the employee-related expenses are dynamically aligned with the changes in productivity. Wage growth, which is not followed by a corresponding increase of productivity in the economy contributes to the

deterioration of the competitive profile of the economy. However, labor costs may grow a lot faster than productivity does, in cases when wages are initially set at very low levels, which is especially true in the part of non-market services, such as government-to-citizens services provided by government to business entities, administrative services, public education and health services, social protection services, defense etc., which if not spilled over to other segments in the economy, does not necessarily impose adverse competitiveness risks.

The dynamic analysis of total unit labor costs shows that they generally have an upward trend in almost the entire analyzed period, amid faster wage growth compared to production growth. Thus, the largest part of the growth is concentrated in the first several years of the analyzed period (cumulative growth of unit labor costs in the period 2006-2018 is 32.1% and around 45% of this adjustment took place in the period 2006-2009[92]), amid a high growth of wages in this period, which was partially due to the upward adjustment of wages in the public sector with certain transfer effects on the wage policy of the private sector. In the following period, gross wages and productivity generally moved in the same direction, amid slightly higher growth in wages (Chart 5). In accordance to the continuous growth in almost the entire period, labor costs in 2018 are higher by 31.2% compared to the post-crisis level in 2008, amid a high growth of gross wages of almost 31% and unchanged productivity level (rate of change of around 0%) in the same period.

Chart 5
Unit labor costs
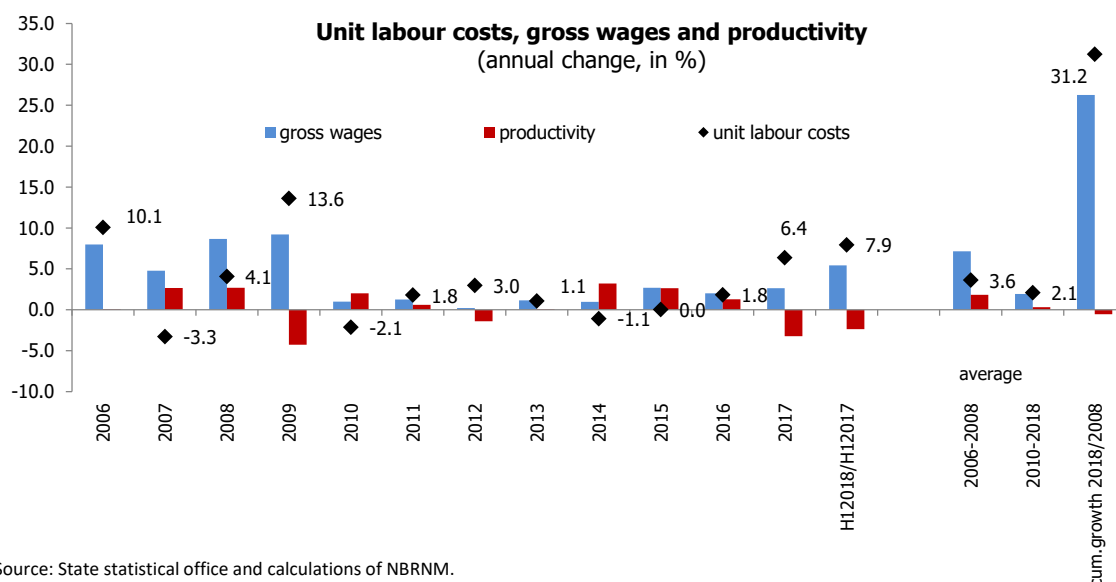
Source: State statistical office and calculations of NBRNM.

Observed by sectors, generally in all three sectors (agriculture, industry and services) there is a trend of increasing costs. Observed in terms of contributions to the change of total labor costs, on average, in the period 2006-2018, the effect of labor costs in the service sector is the greatest, which accounts for around 64% of the increase of total costs.

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[92]In 2009, the concept of gross wage was introduced, according to which food and transport allowance became taxable. Although the analysis uses gross wage series that is adjusted for the effects of this methodological change, the risk for incomplete isolation of this effect from wage growth in 2009 still remains.

Chart 6
Contributions of individual sectors in total unit labor costs

Unit labour costs
(contributions to annual growth, in p.p.)

Legend: services, industry, agriculture, ◆ unit labour costs

Source: State statistical office and calculations of NBRNM.
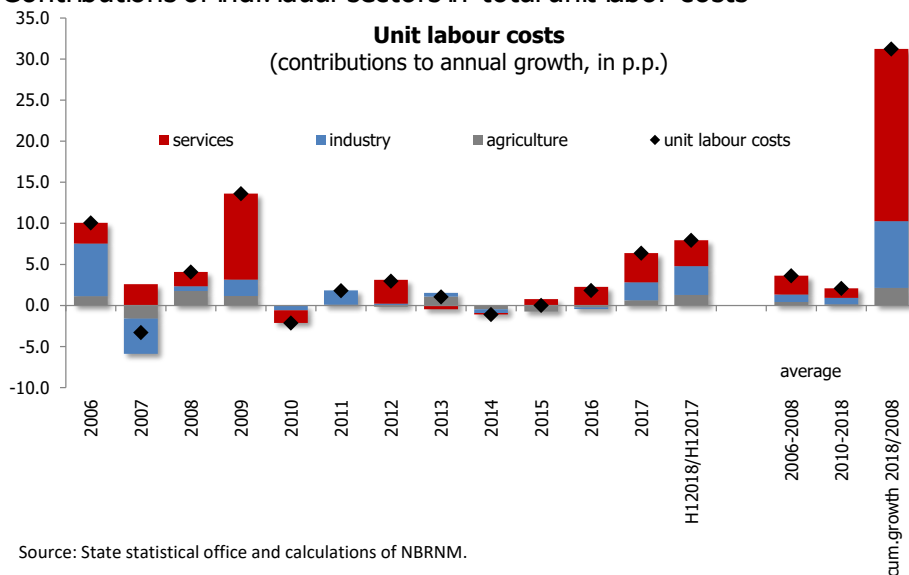
The analysis of the changes in unit labor costs in the service sector in terms of individual service activities shows a relatively high concentration of the growth in several activities. Thus, in the pre-crisis period, during the crisis and in the post-crisis period, the activities trade, transport and catering (which jointly have a high contribution to the growth of productivity) have the highest cumulative contribution. Likewise, a significant positive contribution is associated with the public administration activities. However, in the post-crisis period, when the growth of total labor costs was stabilized, a significant narrowing of the positive contribution of these activities was registered. Among all remaining activities, after 2009, construction displays a bigger positive contribution. Compared to 2008, labor costs in the service sector are higher by 33.7% in 2018, a growth which is mostly associated with trade, transport and catering, as well as public administration and construction activities.

Chart 7
Contributions of service sector in total unit labor costs

Contributions of the service sector to unit labour costs
(contributions to annual growth, in p.p.)

Legend:
- Rest of service activities
- Public administration, education and human health
- Professional, scientific and technical activities; Administrative and support service activities
- Real estate activities
- Financial and insurance activities
- Information and communication
- Construction
- Trade, transport, tourism
- ◆ unit labour costs

Source: State statistical office and calculations of NBRNM.

**In the analyzed period, industry on average has a moderate positive contribution to the growth of total unit labor costs at the overall economy level, except in 2006 and the end of the observed period, when the positive contribution was more pronounced.** Namely, the growth of unit labor costs in industry until 2009, on an average, arises from the solid growth of wages and the decline in productivity (amid decline of value added and growth of employment), while in the post-crisis period, the pattern of costs is quite volatile and largely determined by the changes in productivity. Compared to 2008, labor costs in the industry sector are higher by 16.7% in 2018. **A positive contribution to the growth of unit labor costs in the entire period, although with much lower intensity, comes from the agriculture sector**, amid moderate growth of productivity compared to the dynamic of the growth of wages in this sector. Thus, relative to 2008, the growth of labor costs in this sector is actually the highest recorded (growth of 49.7% in 2018 compared to 2008), but however, concerning the smaller weight of the sector in the overall calculation, its contribution is relatively small.

The decomposition of the growth rate of unit labor costs from a methodological standpoint of tradable and non-tradable goods (Chart 8) shows that the growth of costs is largely determined by the growth of costs in the non-tradable sector. The tradable goods sector contributes positively to the growth as well, but with a relatively lower intensity. However, in 2017 and first half of 2018, there is trend reversal i.e. the contribution tradable goods sector in the growth of unit labor costs amplifies. To this end, industry sector is ranked as a top contributor.

Chart 8
Contribution of tradable and non-tradable sector in total labor costs

Unit labour costs
(contributions to annual growth, in p.p.)

■ tradable sector ■ non-tradable sector ◆ unit labour costs
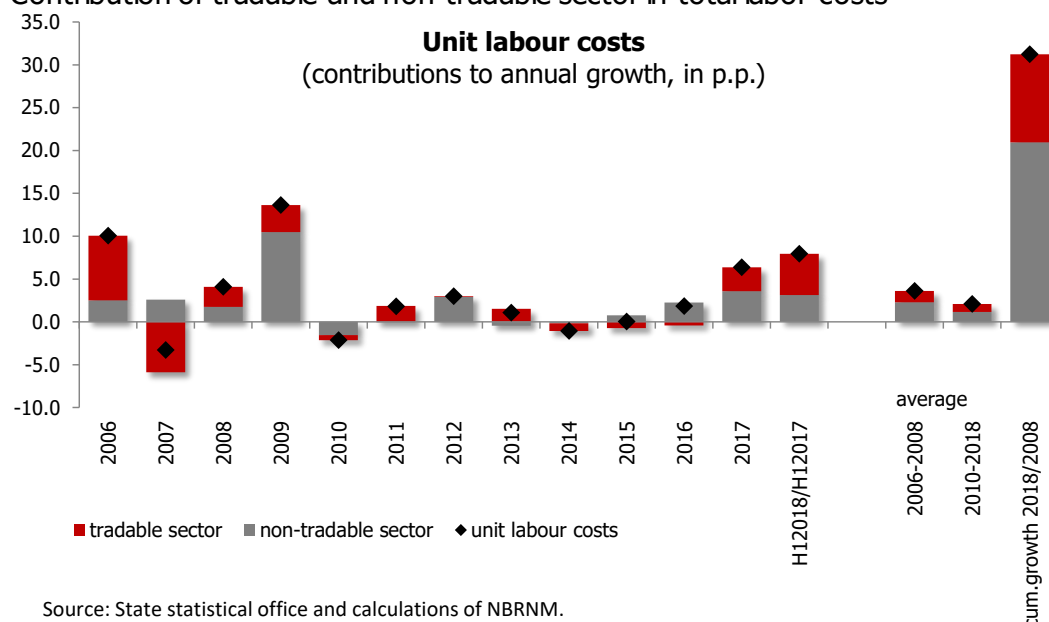
Source: State statistical office and calculations of NBRNM.

Conclusion

The dynamics analysis of productivity changes in the domestic economy in the period 2006-first half of 2018 points to a certain cyclicality in its pattern, with a moderate average growth in the pre-crisis period, as well as a productivity growth rate diminishing during the crisis period. After the crisis, productivity shows a moderate recovery, trend interrupted in 2017, after which it fell again. In the first half of 2018,

the productivity was positioned close to its pre-crisis level, amid similar cumulative growth of around 23% of total employment and value added. Observed by sectors, the largest portion of changes in total productivity is explained with the service sector i.e. non-tradable goods sector, while the changes in the tradable goods sector are moderate. However, after 2010 there is an upturn in the contribution of industry, which from a sector with a high negative contribution in the pre-crisis period, became a sector with a small positive contribution on productivity growth in the post-crisis period.

Unit labor costs display an upward trend, in general, whereby a significant part of the growth in 2006-first half of 2018 i.e. around 45% is associated with the period 2006-2009, amid more intensive wage growth relative productivity growth. In this period, the growth of wages was partially a consequence of the cyclical position of the economy, but is also partially as a result of the growth of wages in the public sector. In the post-crisis period, the labor costs follow a volatile pattern, but on average they register a moderate growth rate. Having in mind the upward trend, unit labor costs in the first half of 2018 exceed the pre-crisis level of 2008 by 31.2%. In terms of the three key sectors, the growth of total labor costs, in the pre and post-crisis period, is mainly determined by the growth of costs in the service sector i.e. the non-tradable goods sector, which in turn indicates that the largest portion of the growth of costs is not expected to have an adverse effect on the overall competitiveness of the economy. Also, the comparison of the foreign unit labor costs shows relatively moderate average growth of relative unit costs in the period 2006-first half of 2018 (shown in Supplement 2 to Box 2).

Supplement 1 to Box 2.
Productivity and unit labor costs per unit of product by sector activity

Table 1. Value added by sectors, rates of change, in %

	Value added (from GDP)	Value added (sum of activities)	Agriculture	Industry	Of which: manufacturing	Construction	Trade, transport, tourism	Information and communication	Financial and insurance activities	Real estate activities	Professional, scientific and technical activities; Administrative and support service activities	Public administration, education and human health	Rest of service activities	Service sector-total
			A	B, C, D and E	C	F	G, H and I	J	K	L	M and N	O, P and Q	R, S and T	
2006	4.5	4.5	-0.5	2.7	12.6	19.0	7.3	12.5	17.7	-2.9	23.0	2.0	6.0	5.8
2007	5.9	6.1	2.3	-10.9	-12.9	-8.9	17.0	18.1	25.0	9.1	59.1	4.2	3.5	10.7
2008	5.7	6.2	22.5	-1.2	-2.0	21.5	4.3	23.5	4.4	-6.7	31.1	-1.1	16.0	5.3
2009	-0.3	-1.0	2.7	1.8	4.1	11.8	-13.7	-0.1	8.9	3.4	-19.4	3.4	-1.4	-2.0
2010	3.4	3.3	-13.5	6.6	-0.2	11.0	21.8	12.3	-16.9	-0.1	11.3	-0.3	-23.9	5.5
2011	1.9	1.7	1.8	10.2	12.1	38.3	-17.1	-4.6	15.9	0.9	16.5	-1.5	-5.0	0.1
2012	-0.7	-0.6	-16.0	-6.7	-1.2	-2.7	7.5	-0.6	17.4	2.4	0.1	2.4	-6.6	2.8
2013	3.9	4.4	8.6	3.7	9.6	12.8	11.1	4.8	-1.4	-1.3	9.6	-7.5	12.7	4.1
2014	5.0	5.0	3.1	11.5	21.5	5.1	3.1	3.4	13.5	0.0	6.3	3.2	11.5	4.0
2015	4.4	5.0	1.9	4.9	5.0	8.0	1.4	13.4	8.7	2.7	5.9	6.5	4.5	5.4
2016	3.1	3.7	2.8	1.4	4.1	11.9	4.2	6.5	0.9	-0.5	7.7	1.5	0.0	4.2
2017	0.0	-0.8	4.1	-2.5	-4.0	-13.7	9.0	2.6	-1.8	-0.6	-3.3	-2.3	-7.4	-1.0
H12018/H12017	1.6	-0.3	3.0	2.9	5.7	-26.5	11.7	-8.2	-1.3	0.2	6.5	-1.6	13.0	-1.2
average growth rate by subperiods														
2006-2008	5.4	5.6	8.1	-3.1	-0.8	10.5	9.5	18.1	15.7	-0.2	37.7	1.7	8.5	7.3
2010-2018	2.5	2.4	-0.5	3.6	5.8	4.9	5.9	3.3	3.9	0.4	6.7	0.0	-0.1	2.6
cumulative change relative to pre-crisis level (2008)														
	23.6	22.2	-6.1	35.5	65.1	78.9	30.4	37.0	47.3	7.1	39.0	3.8	-13.8	24.4

Source: SSO and NBRM calculations.

Table 2. Employment by sectors *, rates of change, in%

	Total employees - LFS	Total employees - a sum of sectors	Agriculture	Industry	Of which: manufacturing	Construction	Trade, transport, tourism	Information and communication	Financial and insurance activities	Real estate activities	Professional, scientific and technical activities; Administrative and support service activities	Public administration; Education and Health	Other service activities	Service sector-Total
			A	B, C, D and E	C	F	G, H and I	J	K	L	M and N	O, P and Q	R, S and T	
2006	4.4	4.4	7.7	1.2	2.1	22.2	0.9	0.0	12.2	0.0	3.7	3.9	0.9	4.8
2007	3.5	3.3	-6.2	2.8	2.5	-12.0	12.5	0.0	27.7	0.0	3.6	3.2	39.3	7.0
2008	3.2	3.4	11.2	2.9	2.2	3.6	6.0	0.0	-14.4	0.0	2.6	0.0	-16.8	1.1
2009	3.4	3.5	-2.6	-3.2	-1.7	3.5	9.7	0.0	11.8	0.0	20.9	8.3	6.9	8.6
2010	1.3	1.3	4.4	-1.4	-2.0	0.5	-1.4	-5.6	2.9	-34.3	9.1	2.9	9.1	1.3
2011	1.1	1.1	-0.7	6.4	0.7	-2.4	1.3	-9.3	18.9	54.9	7.5	-1.5	-11.2	-0.4
2012	0.8	0.8	-6.9	-0.1	1.5	2.3	1.3	17.0	-14.0	19.3	21.4	2.6	12.0	3.7
2013	4.3	4.4	13.0	3.8	3.5	14.9	4.4	-1.7	1.8	16.2	-6.6	1.6	-19.8	2.1
2014	1.7	1.7	0.2	1.3	1.1	2.5	2.3	25.8	-9.4	-5.6	8.0	0.8	-1.1	2.4
2015	2.3	2.3	-1.0	2.5	3.2	3.6	2.0	4.6	20.8	41.8	-10.6	3.2	20.3	3.2
2016	2.5	2.3	-4.6	1.0	0.3	4.6	4.0	-6.4	7.7	27.7	14.8	4.8	8.4	5.0
2017	2.4	2.5	0.0	3.4	4.1	2.4	5.4	-0.1	-1.0	24.1	-2.0	1.7	0.9	2.9
H12018/H12017	2.4	2.1	0.7	3.8	4.5	9.9	0.2	-18.1	-28.2	14.8	19.1	1.9	2.1	1.8
average growth rate by subperiods														
2006-2008	3.7	3.7	4.2	2.3	2.3	4.6	6.5	0.0	8.5	0.0	3.3	2.4	7.8	4.3
2010-2018	2.1	2.1	0.6	2.3	1.9	4.2	2.2	0.7	-0.1	17.6	6.7	2.0	2.3	2.4
cumulative change relative to pre-crisis level (2008)														
	22.9	22.9	0.8	16.5	13.5	42.0	32.7	9.7	18.5	219.7	90.8	28.0	22.4	33.6

Source: SSO and NBRM calculations. Starting in 2011, activities are shown in accordance to the National Classification of Economic Activities - NAC Rev.2, harmonized with NACE Rev 2. Data on employment per activity prior to 2011 are adopted in order to obtain longer consistent series. Regarding activities for which we lack data before 2011 (real estate activities, information and communication), the general assumption is that there were no significant changes in relation to the first available data (first quarter 2011) and hence the rates of changes in these sectors are equal to zero.

Table 3. Gross wages by sectors, rates of change, in%

	Gross salary (SSO)	Gross salary (weighted average of wages by activity; weights = participation in employment)	Agriculture	Industry	Of which: manufacturing	Construction	Trade, transport, tourism	Information and communication	Financial and insurance activities	Real estate activities	Professional, scientific and technical activities; Administrative and support service activities	Public administration; Education and Health	Other service activities	Service sector-Total
			A	B, C, D and E	C	F	G, H and I	J	K	L	M and N	O, P and Q	R, S and T	
2006	8.0	10.1	4.7	26.6	-4.7	2.3	4.4	5.7	1.8	2.2	0.1	5.5	4.6	4.1
2007	4.8	-0.7	0.3	-10.8	15.5	4.8	0.7	7.4	2.0	-1.1	2.8	5.5	5.4	3.9
2008	8.7	6.9	8.5	5.2	6.9	10.1	8.2	5.4	5.3	-3.8	6.4	10.9	4.4	8.2
2009	9.2	8.8	10.0	9.7	7.9	-1.2	7.9	14.6	12.6	-5.0	7.8	8.2	10.4	7.6
2010	1.0	-0.2	-1.5	2.6	5.0	-2.7	-1.0	-1.3	-0.5	3.1	0.2	0.2	-1.9	-0.7
2011	1.2	2.4	3.2	2.0	3.2	2.1	0.6	6.3	5.2	2.2	1.9	0.1	13.1	2.0
2012	0.2	1.6	5.5	0.3	0.7	2.2	0.4	0.0	-1.7	2.5	3.7	0.9	-2.5	0.6
2013	1.2	1.1	0.1	2.2	2.7	5.3	3.3	-0.2	0.3	0.9	-1.1	1.1	1.1	1.6
2014	1.0	2.1	1.3	1.9	2.5	7.2	1.2	-1.4	3.3	4.7	4.6	1.6	1.5	2.3
2015	2.7	2.7	0.3	2.4	2.8	4.7	0.0	2.6	3.6	-6.8	2.3	3.3	11.7	3.0
2016	2.0	3.2	6.7	1.9	2.8	10.3	2.3	3.5	-0.3	-2.4	2.1	1.2	0.6	2.4
2017	2.6	2.9	4.2	3.9	6.1	-2.0	4.3	5.1	1.8	1.1	1.6	1.3	3.7	2.0
H12018/H12017	5.4	5.4	9.4	8.8	13.1	3.9	3.5	11.7	3.5	9.2	1.2	3.8	5.8	2.9
average growth rate by subperiods														
2006-2008	7.1	5.4	4.5	7.0	5.9	5.7	4.4	6.2	3.0	-0.9	3.1	7.3	4.8	5.4
2010-2018	1.9	2.4	3.2	2.9	4.3	3.5	1.6	2.9	1.7	1.6	1.8	1.5	3.7	1.8
cumulative change relative to pre-crisis level (2008)														
	26.3	30.5	39.5	35.7	47.6	30.7	22.5	39.9	28.3	4.2	26.0	21.4	46.7	24.5

Source: SSO and NBRM calculations.

Table 4. Productivity by sectors, rates of change, in%

	Productivity (Value Added / Employees from SSO)	Productivity (weighted sum by sector productivities)	Agriculture	Industry	Of which: manufacturing	Construction	Trade, transport, tourism	Information and communication	Financial and insurance activities	Real estate activities	Professional, scientific and technical activities; Administrative and support service activities	Public administration; Education and Health	Other service activities	Service sector-Total
			A	B, C, D and E	C	F	G, H and I	J	K	L	M and N	O, P and Q	R, S and T	
2006	0.1	0.1	-7.6	1.5	10.3	-2.7	6.3	12.5	4.9	-2.9	18.5	-1.8	5.1	0.9
2007	2.4	2.7	9.0	-13.3	-15.1	3.5	4.0	18.1	-2.1	9.1	53.6	0.9	-25.7	3.4
2008	2.5	2.7	10.2	-3.9	-4.1	17.2	-1.6	23.5	21.9	-6.7	27.9	-1.1	39.4	4.2
2009	-3.6	-4.3	5.4	5.1	5.9	8.1	-21.4	-0.1	-2.6	3.4	-33.3	-4.6	-7.7	-9.8
2010	2.1	2.0	-17.1	8.1	1.8	10.4	23.5	19.0	-19.3	52.1	2.0	-3.2	-30.3	4.1
2011	0.8	0.6	2.6	3.5	11.3	41.7	-18.1	5.2	-2.5	-34.8	8.4	0.0	6.9	0.5
2012	-1.5	-1.4	-9.9	-6.6	-2.6	-4.9	6.1	-15.0	36.4	-14.1	-17.5	-0.2	-16.7	-0.8
2013	-0.4	0.1	-3.9	-0.1	5.9	-1.9	6.4	6.6	-3.2	-15.1	17.4	-8.9	40.6	2.0
2014	3.3	3.2	2.9	10.1	20.2	2.5	0.8	-17.8	25.3	5.9	-1.6	2.3	12.7	1.6
2015	2.1	2.7	2.9	2.3	1.7	4.3	-0.6	8.4	-10.0	-27.6	18.4	3.3	-13.2	2.1
2016	0.6	1.3	7.8	0.4	3.8	7.0	0.2	13.7	-6.3	-22.0	-6.2	-3.2	-7.7	-0.7
2017	-2.3	-3.2	4.1	-5.7	-7.8	-15.7	3.4	2.7	-0.8	-19.9	-1.3	-4.0	-8.2	-3.8
H12018/H12017	-0.4	-2.4	2.3	-0.9	1.1	-33.1	11.4	12.1	37.4	-12.7	-10.6	-3.5	10.6	-3.0
average growth rate by subperiods														
2006-2008	1.6	1.8	3.9	-5.2	-3.0	6.0	2.9	18.1	8.2	-0.2	33.3	-0.7	6.3	2.9
2010-2018	0.5	0.3	-0.9	1.2	3.9	1.1	3.7	3.9	6.3	-9.8	1.0	-1.9	-0.6	0.2
cumulative change relative to pre-crisis level (2008)														
	0.6	-0.5	-6.8	16.3	45.5	26.0	-1.7	24.9	24.4	-66.5	-27.2	-18.9	-29.6	-6.9

Source: NBRM calculations.

Table 5. Unit labor costs, by sectors, rates of change, in%

	Total (Gross Salary-SSO / Productivity (Value Added / Employees from SSO))	Total (weighted sum by sectoral costs)	Agriculture	Industry	Of which: manufacturing	Construction	Trade, transport, tourism	Information and communication	Financial and insurance activities	Real estate activities	Professional, scientific and technical activities; Administrative and support service activities	Public administration; Education and Health	Other service activities	Service sector-Total
			A	B, C, D and E	C	F	G, H and I	J	K	L	M and N	O, P and Q	R, S and T	
2006	7.9	10.1	13.4	24.7	-13.6	5.1	-1.8	-6.1	-3.0	5.3	-15.6	7.4	-0.5	3.2
2007	2.4	-3.3	-8.0	3.0	36.0	1.3	-3.2	-9.0	4.2	-9.4	-33.1	4.5	41.9	0.4
2008	6.0	4.1	-1.5	9.5	11.4	-6.1	9.9	-14.7	-13.6	3.1	-16.8	12.2	-25.1	3.8
2009	13.3	13.6	4.3	4.3	1.9	-8.6	37.2	14.7	15.6	-8.2	61.6	13.4	19.6	19.3
2010	-1.1	-2.1	18.9	-5.0	3.1	-11.9	-19.8	-17.0	23.3	-32.2	-1.7	3.5	40.6	-4.6
2011	0.4	1.8	0.6	-1.5	-7.2	-28.0	22.9	1.0	7.8	56.8	-6.0	0.1	5.8	1.5
2012	1.7	3.0	17.0	7.4	3.4	7.5	-5.4	17.7	-28.0	19.3	25.8	1.2	17.0	1.4
2013	1.6	1.1	4.2	2.3	-3.0	7.3	-2.9	-6.3	3.6	18.9	-15.8	11.1	-28.1	-0.4
2014	-2.2	-1.1	-1.6	-7.4	-14.8	4.6	0.4	19.9	-17.5	-1.2	6.2	-0.7	-9.9	0.7
2015	0.6	0.0	-2.6	0.2	1.0	0.4	0.6	-5.3	15.1	28.8	-13.6	0.0	28.6	0.9
2016	1.4	1.8	-1.0	1.5	-0.9	3.1	2.0	-9.0	6.4	25.1	8.8	4.5	9.0	3.2
2017	5.1	6.4	0.1	10.3	15.1	16.3	0.9	2.4	2.6	26.3	2.9	5.5	13.0	6.0
H12018/H12017	5.9	7.9	7.0	9.8	11.8	55.2	-7.1	-0.4	-24.7	25.1	13.1	7.5	-4.4	6.1
average growth rate by subperiods														
2006-2008	5.4	3.6	1.3	12.4	11.3	0.1	1.7	-9.9	-4.1	-0.4	-21.8	8.1	5.4	2.5
2010-2018	2.7	3.2	4.7	2.2	1.0	4.6	2.9	1.8	0.4	15.9	8.1	4.6	9.1	3.4
cumulative change relative to pre-crisis level (2008)														
	25.5	31.2	49.7	16.7	1.5	3.8	24.6	12.0	3.2	211.1	73.0	49.7	108.4	33.7

Source: NBRM calculations.

Табела 6. Вработеност по сектори (структура, %)

	Земјоделство	Индустрија	Од кои: преработувачка индустрија	Градежништво	Трговија, транспорт и угостителство	Информации и комуникации	Финансиски дејности и дејности на осигурување	Дејности во врска со недвижен имот	Стручни, административни и помошни услужни дејности	Јавна управа, образование и здравство	останати услужни дејности	Услужен сектор - вкупно
	A	Б, В, Г и Д	В	Ѓ	Е, Ж и З	S	И	J	К и Л	Љ, М и Н	Њ, О и П	
2006	20.2	25.1	21.6	7.6	19.5	2.0	1.2	0.1	2.6	18.5	3.3	54.8
2007	18.3	25.0	21.4	6.5	21.2	1.9	1.5	0.1	2.6	18.5	4.4	56.7
2008	19.7	24.9	21.2	6.5	21.7	1.8	1.3	0.1	2.6	17.9	3.6	55.5
2009	18.5	23.3	20.1	6.5	23.0	1.8	1.4	0.1	3.0	18.7	3.7	58.2
2010	19.1	22.6	19.5	6.4	22.5	1.7	1.4	0.1	3.2	19.0	4.0	58.2
2011	18.8	23.8	19.4	6.2	22.5	1.5	1.6	0.1	3.4	18.5	3.5	57.4
2012	17.3	23.6	19.6	6.3	22.6	1.7	1.4	0.1	4.1	18.9	3.9	59.0
2013	18.8	23.5	19.4	6.9	22.6	1.6	1.4	0.1	3.7	18.4	3.0	57.7
2014	18.5	23.4	19.3	7.0	22.7	2.0	1.2	0.1	3.9	18.2	2.9	58.1
2015	17.9	23.5	19.5	7.1	22.7	2.1	1.4	0.2	3.4	18.4	3.4	58.6
2016	16.7	23.2	19.1	7.2	23.0	1.9	1.5	0.2	3.9	18.8	3.6	60.2
2017	16.3	23.4	19.4	7.2	23.7	1.8	1.5	0.3	3.7	18.6	3.6	60.4
H12018	16.2	23.6	19.6	7.5	23.5	1.6	1.1	0.3	4.2	18.5	3.5	60.2
просечна учество по подпериоди												
2006-2008	19.4	25.0	21.4	6.8	20.8	1.9	1.4	0.1	2.6	18.3	3.8	55.6
2010-2018	17.7	23.4	19.4	6.9	22.9	1.8	1.4	0.2	3.7	18.6	3.5	58.9
кумулативна промена во однос на пред-кризното ниво (2008 година)												
	-3.5	-1.2	-1.6	1.0	1.8	-0.3	-0.2	0.2	1.6	0.6	-0.1	4.8

Source: SSO and NBRM calculations.

Table 7. Value added by sectors (structure,%)

	Agriculture	Industry	Of which: manufacturing	Construction	Trade, transport, tourism	Information and communication	Financial and insurance activities	Real estate activities	Professional, scientific and technical activities; Administrative and support service activities	Public administration; Education and Health	Other service activities	Service sector- Total
	A	B, C, D and E	C	F	G, H and I	J	K	L	M and N	O, P and Q	R, S and T	
2006	10.8	17.2	12.2	7.0	19.1	4.7	3.2	15.1	2.1	16.6	4.2	72.0
2007	10.4	14.5	10.0	6.0	21.1	5.2	3.8	15.6	3.1	16.3	4.1	75.1
2008	12.0	13.5	9.2	6.9	20.7	6.0	3.7	13.7	3.9	15.2	4.4	74.5
2009	12.5	13.9	9.7	7.8	18.0	6.1	4.1	14.3	3.1	15.9	4.4	73.7
2010	10.4	14.3	9.4	8.4	21.3	6.6	3.3	13.8	3.4	15.3	3.3	75.3
2011	10.4	15.5	10.3	11.4	17.3	6.2	3.7	13.7	3.9	14.8	3.0	74.1
2012	8.8	14.5	10.3	11.1	18.7	6.2	4.4	14.1	3.9	15.3	2.9	76.6
2013	9.2	14.4	10.8	12.0	19.9	6.2	4.2	13.3	4.1	13.5	3.1	76.4
2014	9.0	15.3	12.5	12.0	19.6	6.1	4.5	12.7	4.2	13.3	3.3	75.7
2015	8.7	15.3	12.5	12.4	18.9	6.6	4.7	12.4	4.2	13.5	3.3	75.9
2016	8.7	15.0	12.5	13.3	19.0	6.8	4.5	11.9	4.4	13.2	3.1	76.3
2017	9.1	14.7	12.1	11.6	20.9	7.0	4.5	12.0	4.3	13.0	2.9	76.2
H12018/H12017	8.2	14.9	12.4	8.9	22.9	6.7	4.6	12.4	4.7	13.3	3.5	76.9
average contribution by subperiods												
2006-2008	11.1	15.1	10.5	6.6	20.3	5.3	3.6	14.8	3.0	16.0	4.2	73.9
2010-2018	9.2	14.9	11.4	11.2	19.8	6.5	4.3	12.9	4.1	13.9	3.1	75.9
change compared to the pre-crisis level (2008)												
	-3.8	1.4	3.1	2.0	2.2	0.7	0.9	-1.3	0.9	-1.9	-1.0	2.4

Source: SSO and NBRM calculations.

Supplement 2 to Box 2.
Relative unit labor costs

Given that unit labor costs are considered as cost competitiveness indicators of the economy, a comparative analysis of the movements of domestic and foreign labor costs[93] through relative labor costs was conducted. The relative labor costs, in our case, represent the ratio between domestic and foreign labor costs, whereby the growth of relative costs implies an unfavorable change in competitiveness.

The analysis of relative unit labor costs per unit of product for the period from 2006 until the first half of 2018 suggests a moderate annual average growth of 1.7% with stronger domestic prices growth relative to the foreign ones. Observed in terms of pre-crisis level (2008) relative costs are higher by around 15%. However, observed in terms of quality, this growth does not point out major deteriorations in the competitiveness of the domestic economy. Namely, as previously stated, the growth of domestic labor costs is mostly related to the period 2006-2009 in conditions of the growth of wages, which in a significant part is due to the upward adjustment of wages in the public sector. Thus, given that the public sector is part of the sector of non-tradable goods, and amid moderate spill-over effects on other sectors, such a change does not, in essence lead to significant negative effects on the competitiveness of the economy. The growth of domestic unit labor costs is more moderate in the post-crisis period. On the other hand, foreign unit labor costs register a strong growth in the pre-crisis period, mostly due to the growth of costs in Bulgaria, Turkey and Italy. However, their growth is lower compared to the domestic one, whereby the relative costs registered a growth of 2.7% on average in the period 2006-2008. In the period 2010 onwards, the relative costs are quite volatile, but they register a small growth on average, amid more intensive growth of domestic relative to foreign unit labor costs. Such changes are relative to the strong growth of domestic costs registered in 2017 and the first months of 2018.

Chart 1
Domestic, foreign and relative unit labor costs

Source: NBRNM.

Source: NBRNM.

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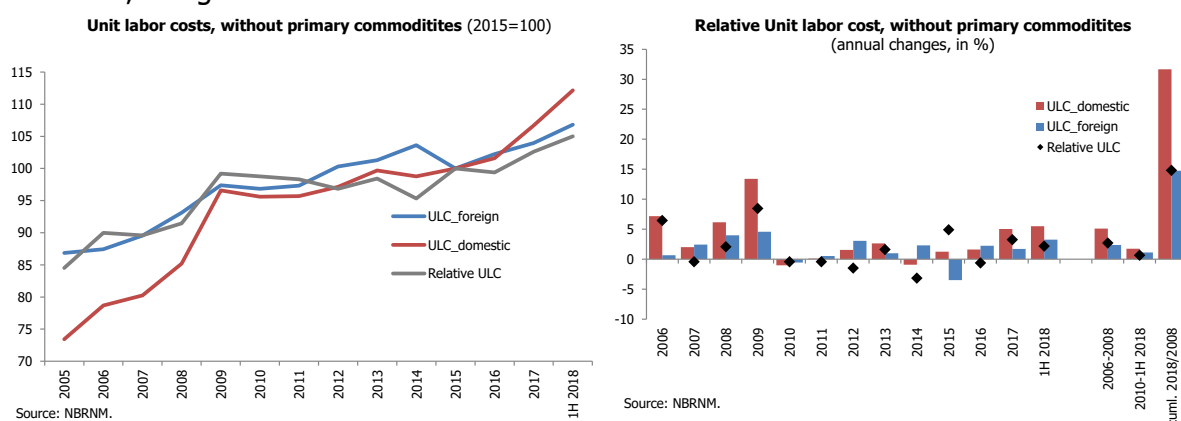
[93]Foreign labor cost index is taken from the calculation of real effective exchange rate, which is a weighted index of foreign labor cost indices of fourteen larger foreign trade partners of the Republic of Macedonia (Bulgaria, Croatia, Turkey, Serbia, USA, Slovenia, Austria, Germany, Greece, Netherlands, Great Britain, France and Poland), with a base 2015=100 and weights based on foreign trade in the period 2010-2012.
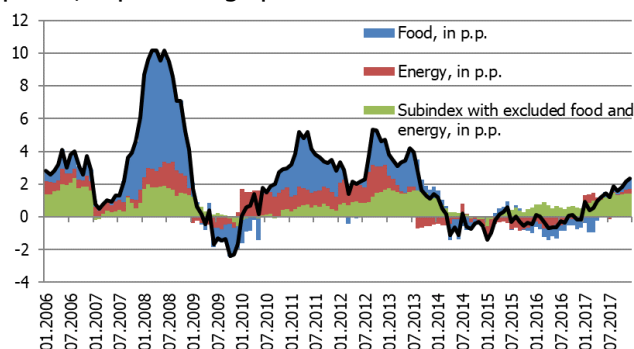
Decomposition of the annual growth rate on weighted foreign ULC, without primary commoditites (in p.p.)

Legend: Poland, France, United Kingdom, Netherlands, Italy, Greece, Germany, Austria, Slovenia, USA, Serbia, Turkey, Croatia, Bulgaria

* The data for Turkey and Serbia refer to ULC for the industry sector.
Source: NBRNM.
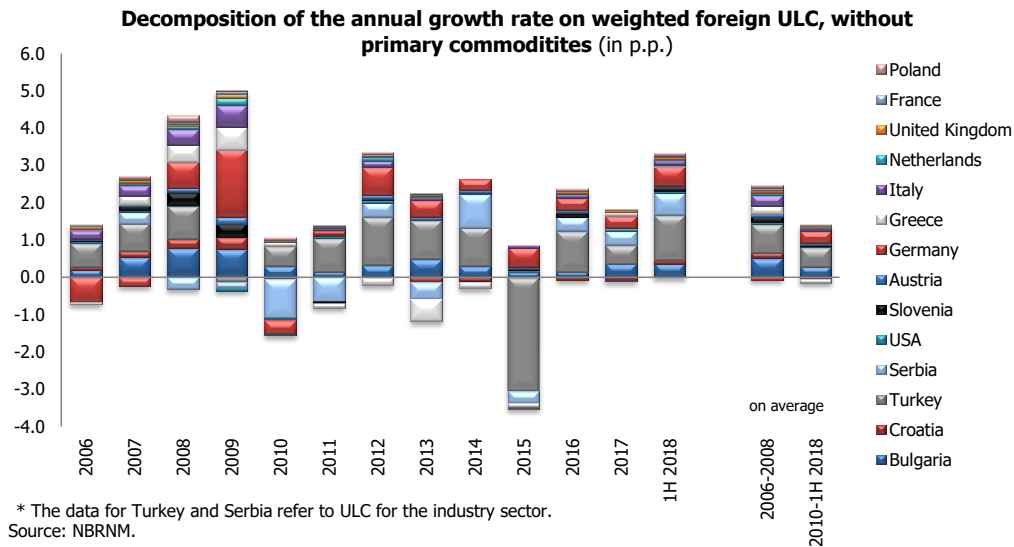
Box 3: Calculation of the core inflation using the trimmed mean method.

      This box gives an overview of an alternative calculation of core inflation i.e. calculation based on statistical methods[94], in this case the trimmed mean method (TM). These alternative calculations complement the portfolio of price indices that the central bank can monitor and take into account in monetary decision-making. This appendix includes a comparison of the calculated indicator with the subindex of inflation calculated with permanent exclusion of categories that a priori are considered to be highly volatile. More specifically, the comparison is made with respect to the price subindex from which the food and energy categories have been excluded, which is prepared and published by the State Statistical Office[95].

      Trimmed mean method aims to identify and exclude a certain percent of price categories of inflation with pronounced changes in each time period. According to the methodology of Dolmas[96] and Mayer and Ventaku[97] TMM is defined as weighed average inflation that excludes certain percentage (expressed through α and β) of categories with the larges annual changes (i.e. percentage of those values that are on the left (α) and right (β) of the distribution, weighed from the lowest to the highest value[98]). Using this approach, the average core inflation in each month is calculated based on excluding different types of price categories, depending on the size of their annual change. The ultimate goal, as in all core inflation concepts is obtaining an indicator close to the long-term trend of the inflation rate. In the literature, while calculating the trimmed mean and determining the appropriate (optimal) percentage of volatile price categories that shall be excluded, long-term trends of prices calculated with different approaches (statistical filters for time series, moving averages or centered moving averages) are used for different period. This appendix uses the Hendrick-Prescott filter, in order to calculate the core inflation and determine which combination of α and β is the closest to the long-term price trend.

Chart 1 Contributions of components in total consumer prices, in percentage points

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In the following part of the appendix, we focus on individual steps in calculating the obtained results. In the first step of the calculations, the annual rates of various consumer price indices $\{x_1, x_2, ..., x_n\}$ are sorted with their weights accordingly $\{w_1, w_2, ..., w_n\}$ where the sum of all weights is equal to 100. In the next step, using sorted data, we exclude product categories whose sum of weights is lower or equal to α or higher or equal to β, where $\alpha \; and \; \beta = \{0,1,2,...,50\}$. This way we exclude the contribution of variable prices, $\alpha + \beta$ from the calculation of total inflation. The trimmed mean, $\bar{x}_{\alpha,\beta}$, is calculated as a weighed average from the remaining components,[99], therefore:

$$\bar{x}_{\alpha,\beta} = \frac{1}{1-\alpha-\beta} \sum_{i=\alpha}^{1-\beta} w_n x_n$$

In order to determine the percent of indices that is appropriate to be excluded, 2600 combinations of TM (chart 2) were calculated using all the combinations[100] of percentage trims for α and β, from 0% to 50%. In the next step, such calculated average rates of inflation are compared to the long-term inflation rate trend, calculated using the Hodrick-Prescott filter, in order to determine which combination α and β deviates less from the price trend i.e. we calculate the root mean square error (RMSE) for the entire sample.

Chart 2 Display of all TM combinations
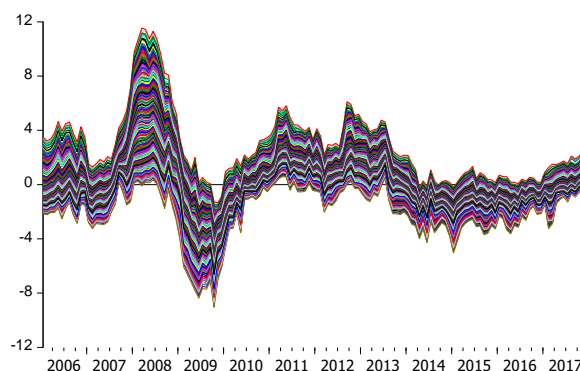
Source: NBRNM calculations.

Chart3 Contour plot of errors
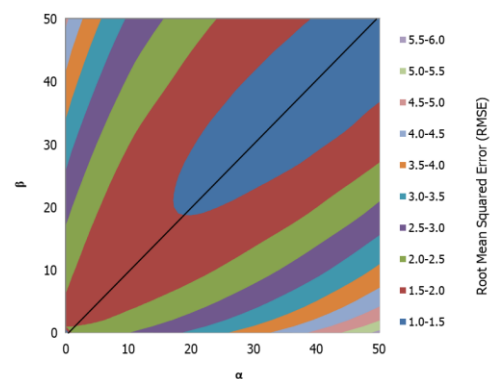
Source: NBRNM calculations.

The calculations show that the error is the smallest (1.32) with TM ₃₉.₃₈ i.e. if 39% are excluded from the changes in the left side and 38% from the changes in the right of the distribution, weighted average inflation would be optimal and closest to the long-term trend of total inflation. In such case, the trimmed mean inflation would be calculated with 23% of inflation price index, which is a significant reduction measure. Taking into account the numerous combinations of trimming percentages, Chart 3 shows that a large number of combinations (almost 22%) have similar values of RMSE and move in the interval from 1.3 to 1.5. Additionally, the graphical presentation shows that in this interval most trimming combinations of the volatile annual indices suggest asymmetric trims, greater exclusion of price categories that register the highest growth, but on the other hand, as in the Meyer and Venkatu research, in the same interval are covered symmetric trimming combination, as well as the weighted trimmed median. The trimmed median represents the strongest exclusion of variable indices (49.99% of both extremes) and effectively represents a single price index whereby, while sorting the

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[99]Here we analyze the calculated monthly trimmed means of inflation, from January 2006 until December 2017, using 77 annual consumer price indices, available at the lowest level of disaggregation.

In this calculation we have excluded the combination 0% and 0% because it represents total inflation.

weights in the first step, sum of the sorted weights reached 50% of the structure of consumer prices i.e. is in the middle of sorted price indices.

In order to verify if TM $_{39,38}$ or any other combination of the same interval is optimal, in the next step using the Dibol d-Mariano (DM) test statistic, we verify whether there is a statistically significant difference between the combination with the lowest RMSE and other TM combinations within the same interval (from 1.3 to 1.5). **The calculated DM statistics suggest that 68% of the alternative TM combinations, including the median, have the same precision compared to that with the lowest RMSE, TM$_{39,38}$.** The absence of a statistically significant difference at 5% graphically depicted in Chart 4, in the further analysis allows us, in addition to TM $_{39,38}$ to use a TM that is clearer for communication, as the weighted trimmed median or a TM with symmetric trims, for example with 25, 30 or 40 percents exclusion in both sides of the smallest and largest changes.
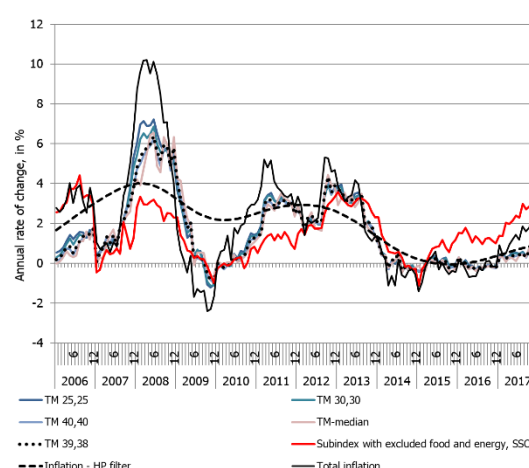
Source: NBRNM calculations.   *Source: SSO and NBRNM calculations.*

Chart 4 Contour plot of statistical significance at 5% and 10%
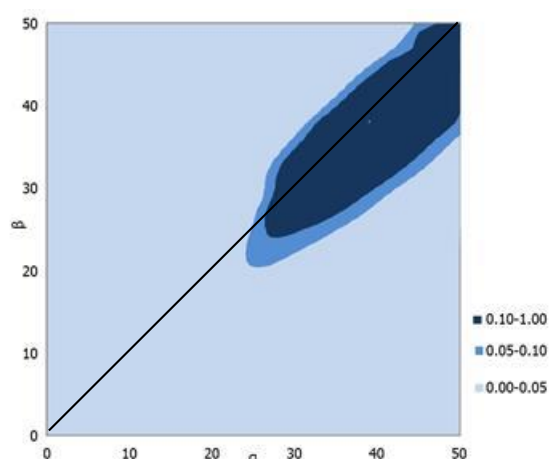
Chart 5 Annual inflation rates and TM combinations

Source: NBRNM calculations.

Source: SSO and NBRNM calculations.

In the last part of the analysis, a comparative analysis of part of the calculated TM combinations and the subindex of inflation with permanent exclusion of food and energy has been made, compared to the long-term trend (calculated through HP filter). The same shows that a calculation with a temporary exclusion of volatile price categories depicts the long-term trend of inflation more precisely (Chart 5). This is verified with the squared errors of alternative TM and subindices with permanent exclusion of food and energy in relation to the long-term inflation trend, which suggest that there is a statistically significant difference between the indicator calculated with permanent exclusion of food and energy and indicators calculated with the trimmed mean model. Namely, the comparison shows that the indicator calculated with the TM method is closer to the HP inflation trend, as the chosen benchmark i.e. that the same more accurately follows the long-term inflation trend.

Given that there is no universally accepted and unified monetary policy relevant approach of calculating core inflation, it is of interest to the policy-makers to monitor a range of alternative long-term inflation trends. These indicators, in combination with the overall economic context, may provide additional information for the central bank when making monetary decision. This appendix was intended to give an overview of a long-term alternative method of calculating core inflation, by using the statistical trimmed mean

method. The comparison of such calculated indicator and the indicator calculated with permanent exclusion of food and energy prices, shows that the first is closer to the HP inflation trend, as the chosen benchmark. The presented calculation method will contribute to enriching the existing core inflation set of indicators that are currently monitored by the central bank.