



CENTRAL BANK OF  
MONTENEGRO



# Price Stability Report

# 2018



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<b>TRANSLATED BY</b>	Translation Services Division
<b>PRINTED BY</b>	DOO „PRO FILE“ Podgorica
<b>PRINTED IN</b>	70 copies

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## LIST OF ABBREVIATIONS

ARIMA	Autoregressive Integrated Moving Average
CBCG	Central Bank of Montenegro
CPI	Consumer Price Index
ECB	European Central Bank
EU	European Union
EUR	Euro
FDI	Foreign Direct Investments
GDP	Gross Domestic Product
HICP	Harmonised Index of Consumer Prices
IMF	International Monetary Fund
MONSTAT	Statistical Office of Montenegro
OPEC	Organisation of the Petroleum Exporting Countries
U.S.	United States of America
UN	United Nations
USD	American Dollar
VAT	Value Added Tax



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# 1. INFLATION INDICATORS

## 1.1. Inflation trend in Montenegro

Observed in terms of annual rates, consumer prices in Montenegro had a positive sign in all months for the second year in a row. The positive inflation in 2018 was largely influenced by the movement of fuel prices, excise duties on alcoholic beverages and tobacco, electricity prices and prices in the category of *clothing and footwear*. Positive annual rates were also recorded in the countries of the region and most of the countries of the European Union, mostly as a result of global oil price rises and the increase in prices of certain food products. In December, the annual inflation measured at consumer prices was 1.6%, while the inflation measured by the HICP equalled 1.5%. The consumer prices' growth in 2018 averaged to 2.6%.

Table 1

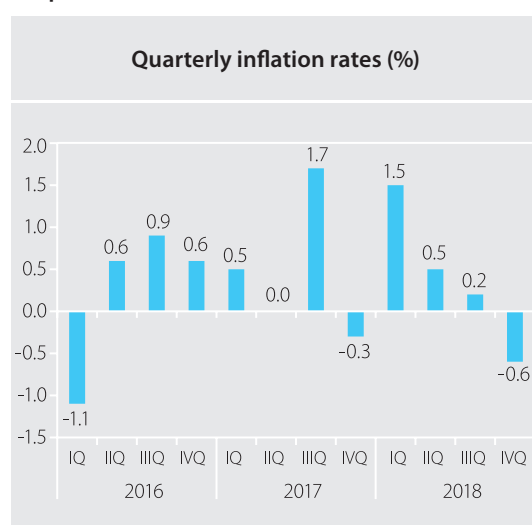
Inflation, %								
	2017				2018			
	III	VI	IX	XII	III	VI	IX	XII
Change in relation to the previous year-end	0.5	0.5	2.2	1.9	1.5	2.0	2.2	1.6
Annual change	2.7	2.1	2.8	1.9	2.9	3.4	1.9	1.6

Source: MONSTAT

Observed by quarters, prices growth in 2018 was recorded in Q1 (1.5%), Q2 (0.5%) and Q3 (0.2%), yet recording decline in Q4 (-0.6%). Observed by months, the highest consumer prices growth was recorded in January (1%), while the highest price decline was recorded in December (-0.6%).

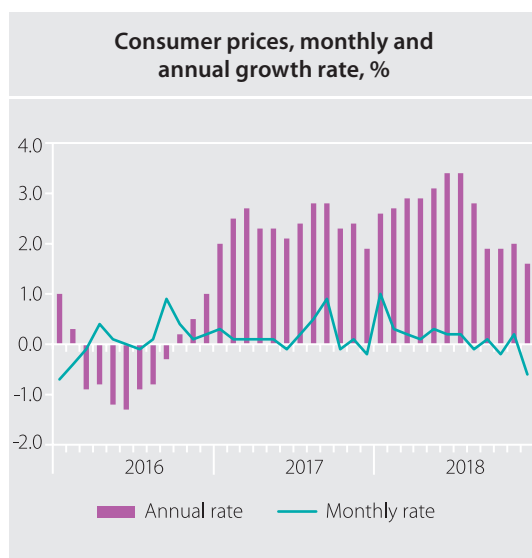
The largest contribution to the growth of the annual inflation rate (0.6 percentage points) was recorded in prices from the category *food and non-alcoholic beverages* with a growth of 1.5% (Table 2). The increase in prices in this category is mostly the result of a rise in prices of vegetables of 11.8%, non-alcoholic beverages of 5.7%, milk, cheese and eggs of 1.6%, and meat of 0.5%. Significant contribution to annual inflation (by 0.3 percentage points) gave

Graph 1



Source: MONSTAT and CBCG calculations

Graph 2



Source: MONSTAT

prices from the category *alcoholic beverages and tobacco* and *transport* with growth of 6.4% and 2.3% respectively. Tobacco prices increased by 6.2% and prices of alcoholic beverages by 5.9%, while the increase in prices of fuels and lubricants for motor vehicles (2.5%) contributed most to the increase in prices in the category *transport*. The rise in prices was also recorded in the category *hotels and restaurants* (3.2%), due to the increase in the prices of catering services in the hospitality industry of 2%, as well as the *housing, water, electricity, gas and other fuels* (2%), mostly due to an increase in electricity prices by 2.6% and solid fuels by 4.5%. Annual growth in prices was also recorded in the following categories: *other goods and services* (1.5%), *furniture, household equipment and routine maintenance of apartments and communications* (0.9% each). The annual fall in prices was recorded in the categories of *health* (-0.4%), *recreation and culture* (-1.1%), and *clothing and footwear* (-1.4%) while prices in the category of *education* remained unchanged when compared to December 2017.

Table 2

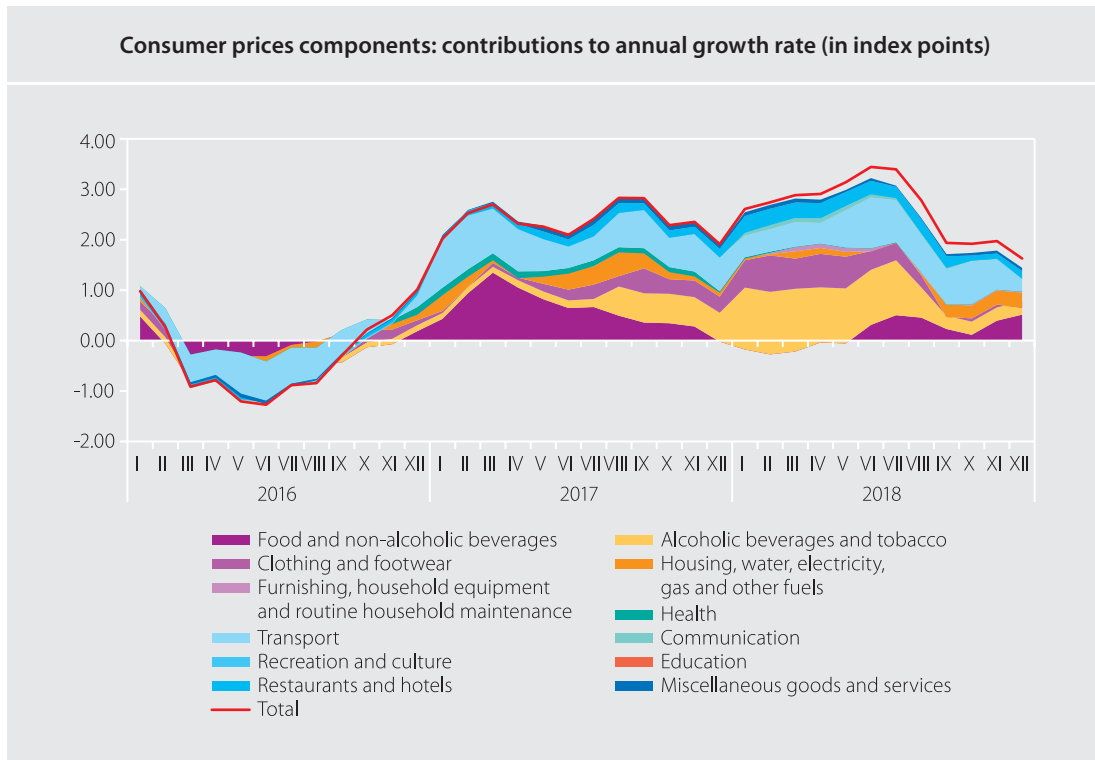
Annual growth rate and contributions of individual categories in total inflation (%) <sup>1</sup>				
	Weights	XII 2018/XII 2017	Growth rate	Contribution
TOTAL	1000	101.6	1.6	1.6
Food and non-alcoholic beverages	341.1	101.5	1.5	0.6
Alcoholic beverages and tobacco	40.4	106.4	6.4	0.3
Clothing and footwear	86.1	98.6	-1.4	-0.1
Housing, water, electricity gas and other fuels	154.0	102.0	2.0	0.3
Furnishing, household equipment and routine household maintenance	39.4	100.9	0.9	0.0
Health	40.8	99.6	-0.4	0.0
Transport	109.4	102.3	2.3	0.3
Communication	48.5	100.9	0.9	0.1
Recreation and culture	32.0	98.9	-1.1	0.0
Education	18.7	100.0	0.0	0.0
Restaurants and hotels	47.6	103.2	3.2	0.2
Miscellaneous goods and services	42.0	101.5	1.5	0.1

Source: MONSTAT and CBCG calculations

<sup>1</sup> Regardless of the index changes, due to the weight structure, the contribution of the share of certain categories is not recorded before the second, i.e. third decimal.



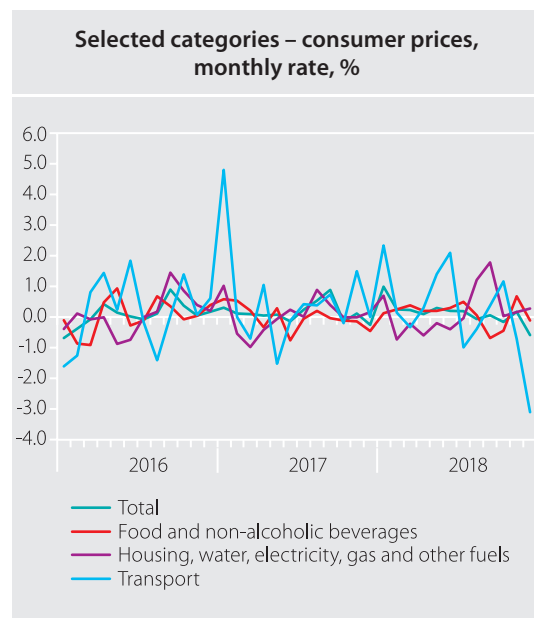
**Graph 3**



Source: MONSTAT and CBCG calculations

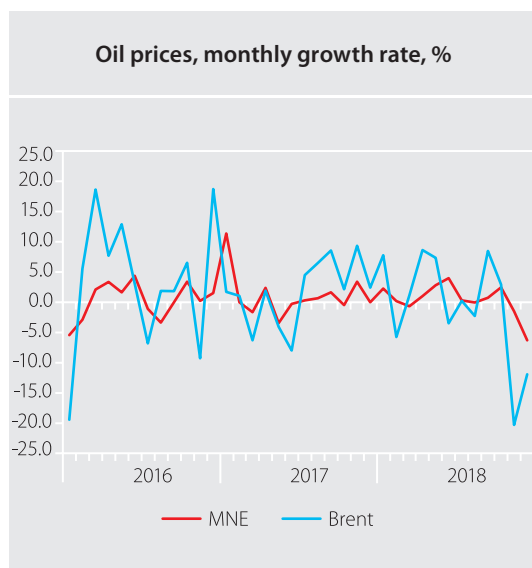
In the global market in 2018, the upward trend in the price of oil from the previous year continued, after the fall in the price of this fuel in the period 2013-2016. The rise in oil prices is the result of balancing the global oil market due to the adjustment of production in line with the Agreement on the Reduction of Oil Production between the OPEC Member States and certain countries that are not members of this cartel and the growth of demand for this fuel. The price of the OPEC reference basket averaged to 69.5 USD/barrel in 2018, being 32.4% higher than the 2017 average. The price of Brent averaged to 70.9 USD/barrel, being 30.8% more than the 2017 average. Observed at the monthly level, the highest level of the average Brent price was recorded in October 2018 (81.12 USD/barrel), which is the highest recorded level since October 2014 (87.41 USD/barrel).

**Graph 4**



Source: MONSTAT

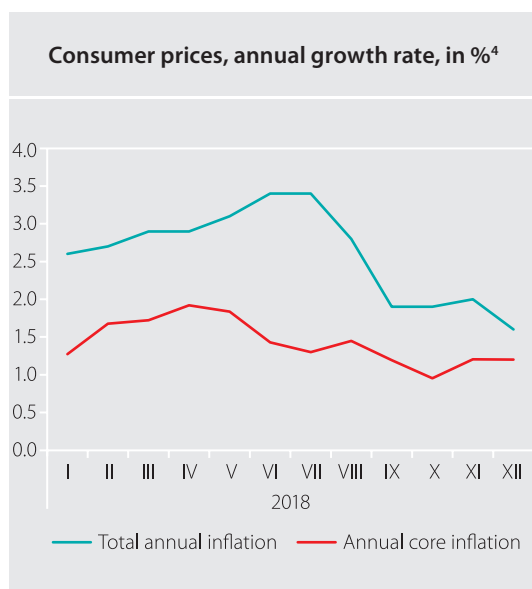
**Graph 5**



Source: MONSTAT and “Monthly Oil Market Reports”, OPEC

The last two months of 2018 saw a significant drop in oil prices as a result of a faster growth in oil supply than expected, due to the rise in trade tensions between the U.S. and China and signs of slowing global economic growth, which could stop the growth of demand for this fuel in 2019. Most international institutions reduced the original oil price forecast for 2019. According to the latest IMF report<sup>2</sup>, the average oil price will be slightly below 60 USD/barrel in 2019 and 2020, while the European Commission expects in its report for 2019 and 2020 that the average oil prices will amount to 61.2 USD/barrel.<sup>3</sup>

**Graph 6**



Source: MONSTAT and CBCG calculations

The annual core inflation rate in December 2018 stood at 1.2% or by 0.4 percentage points below the total annual inflation. Throughout 2018, the annual core inflation rate was positive and lower than total inflation (Graph 6). The largest spread between total annual and core inflation was recorded in July and June due to changes in the prices of certain products that are normally excluded from the calculation of core inflation, such as prices of electricity, fuel, certain agricultural products, etc.

In the UN *World Economic Situation and Prospect 2019* report it is stated that inflation in developed economies amounted to 2% in 2018, which was more than in the previous year, when it equalled 1.7%. Developing countries also recorded inflation growth (from 4.4% in 2017 to 5.2% in 2018) due to price rises in certain regions of Asia (especially South and West Asia), Central Africa and South America and the Caribbean. In the transition countries, a lower level of inflation than the inflation recorded in 2017 (from 5.1% to 4% in 2018) was recorded, especially after a significant decrease in the level of inflation in Azerbaijan, Moldova, Ukraine, Belarus, Georgia, and Russia.

<sup>2</sup> IMF: *World Economic Outlook Update* – January 2019

<sup>3</sup> European Commission: *European Economic Forecast*, Winter 2019

<sup>4</sup> In the period 2012-2017, data on annual change in prices were not available for all products included in the core inflation basket, i.e. for the products excluded from the basket for the calculation of the core inflation.

As the Report indicates<sup>5</sup>, the inflation in the developed economies for 2019 could amount to 2.2%, 5.1% in developing countries and 4.9% in transition economies.

**The producers' prices of manufactured products** in December 2018 recorded y-o-y increase of 2.4%. Growth in prices was recorded in all three sectors: electricity, gas and steam supply by 4.4%, manufacturing industry by 2% and mining and quarrying by 0.1%. The average growth in the producers' prices of manufactured products amounted to 1.7% in 2018, whereby an average growth in prices was recorded in electricity, gas and steam supply (4.4%), manufacturing industry (0.9%), while mining and quarrying recorded average prices decline (-2.1%).

**Export producers' prices of manufactured products**<sup>6</sup> recorded the y-o-y decrease of 1.4% in December 2018, while the average annual price growth was 1.3%. Manufacturing industry reported an average growth in prices of 1.8%, while the prices in mining and quarrying declined by 1.2%.

**Import prices of manufactured products**<sup>7</sup> recorded y-o-y increase by 0.1% in December 2018, and the average annual rate showed an increase of 1.5%. Average annual growth was recorded in prices from both sectors: manufacturing industry (1.5%) and mining and quarrying (0.1%).

## 1.2. Inflation trends in the region and the EU

The annual inflation in all countries of the region in December 2018 was positive and amounted to 2% in Serbia, 1.8% in Albania, 1.6% in Bosnia and Herzegovina, 1.4% in Slovenia, 1% in Croatia and 0.9% in Macedonia.

The annual inflation rate in the euro area in December 2018 was 1.5% being higher by 0.1 percentage point than the annual rate recorded in December 2017. The annual price growth of services (1.3%), food, alcoholic beverages and tobacco (1.8%) and energy (5.4%) had the highest impact on inflation. The inflation recorded in the euro area was positive during whole 2018. Growth in prices of food, tobacco, oil and electricity, gas and other fuels affected the highest annual price growth in 2018 to be registered in October (2.2%), while the smallest annual inflation rate was recorded in February (1.1%). A significant drop in energy prices was recorded in December 2018 which, together with a decline in oil prices, had the most impact on the fall in the annual inflation rate in euro area. The European Commission expects average inflation to fall to 1.4%<sup>8</sup> in 2019, bearing in mind the high inflation base in 2018 and the expected lower oil prices, while they forecast inflation in the euro area of 1.5% for 2020.

<sup>5</sup> Detailed data on inflation trends for individual regions and countries are listed in the Report Annex *World Economic Situation and Prospect 2019*, in Tables A.4, A.5 and A.6.

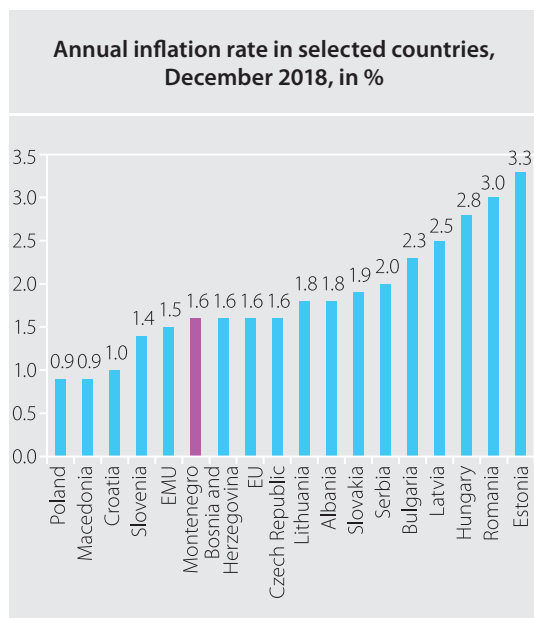
<sup>6</sup> The exports prices index represents monthly changes in the prices of manufactured products made by companies and sold at foreign markets. It is an important economic indicator that can be used as time series deflator, particularly for national account purposes.

<sup>7</sup> Import price index refers to the monthly change in prices of imported manufactured products. It can be used as a time series deflator, especially for the needs of national accounts and as a means of harmonizing prices at the conclusion of different sales contracts.

<sup>8</sup> Source: European Commission: *European Economic Forecast*, Winter 2019

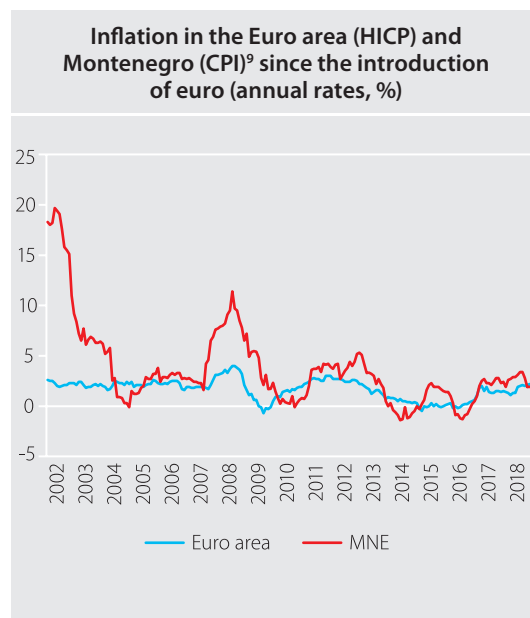
The annual inflation rate recorded in the EU, measured by the Harmonized Index of Consumer Prices was 1.6% in December 2018. Of the EU Member States, the highest annual rate was recorded in Estonia (3.3%), Romania (3%) and Hungary (2.8%).

**Graph 7**



Source: National statistical offices and Eurostat

**Graph 8**



Source: MONSTAT and Eurostat

<sup>9</sup> Cost of living were used for measuring inflation in Montenegro until 2009, after which consumer prices were introduced.

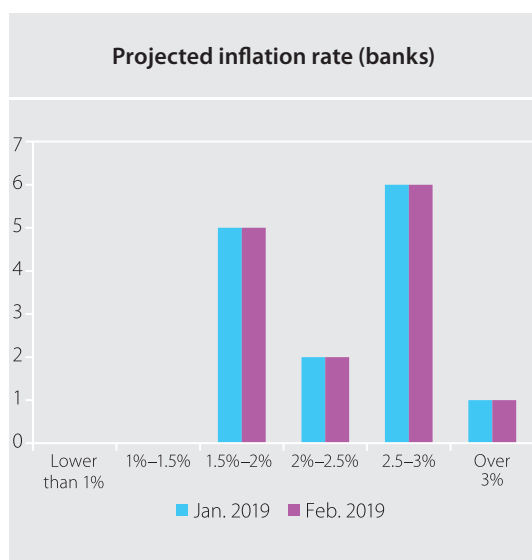
## 2. INFLATION EXPECTATIONS OF THE BANKING SECTOR AND ECONOMY

### 2.1. Banks' expectations

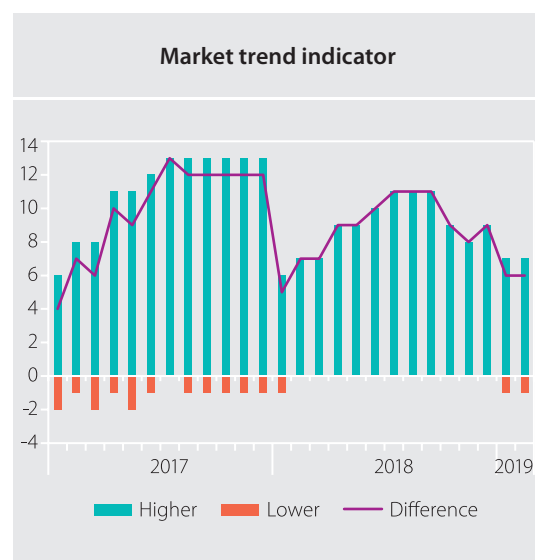
When it comes to inflationary expectations of banks, according to a survey conducted in February 2019, six banks expect inflation in 2019 to range from 2.5% to 3%, five banks expect inflation between 1.5% and 2%, two banks expect inflation from 2% to 2.5%, while one bank expects inflation higher than 3%.

For the purpose of calculating inflation forecasts we use market trend indicator (line in Graph 10). It is calculated as the difference between the number of banks expecting inflation growth and the number of banks expecting inflation decrease. If the market trend indicator has a negative value, a decrease in the inflation rate is expected in the upcoming period. If it has a positive value, then an increase in the inflation rate can be expected. If it has a zero value, an unchanged inflation rate can be expected in the upcoming period. The more negative its value is, the lower the inflation forecast is, and vice versa, higher positive value means higher inflation level forecasts. Therefore, Graph 10 shows that inflation expectations were at a high level throughout the whole 2018. Inflation expectations in the first two months of 2019 pointed to the inflation increase.

**Graph 9**

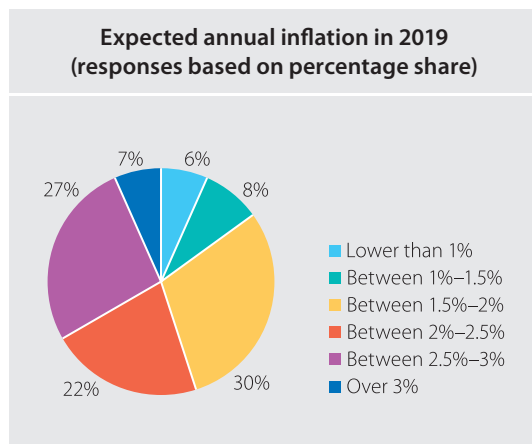


**Graph 10**



## 2.2. Expectations of corporate sector (except banks)

Graph 11



### *Inflation*

Of the total number of the surveyed economic entities, most of them (30%) think that the annual inflation rate in 2019 will range between 1.5% and 2%, 27% forecasts the annual inflation rate of 2.5% to 3% while 22% of respondents think that inflation will be between 2% and 2.5%. Inflation in the range between 1% and 1.5% is expected by 8% of respondents, and 7% of the total number of surveyed companies believe that inflation will be higher than 3%, while 6% expect inflation to be lower than 1%.

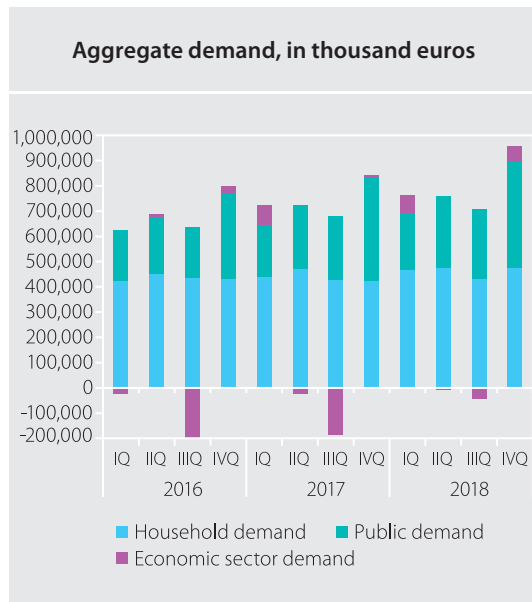
## 3. INFLATION DETERMINANTS

### 3.1. Demand<sup>10</sup>

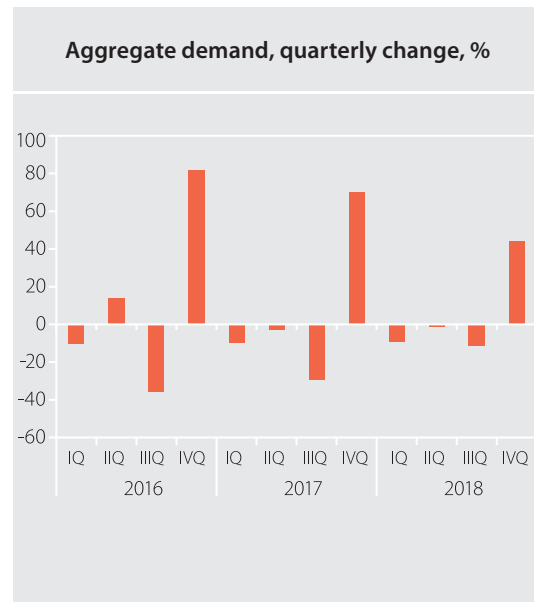
The total demand in the fourth quarter of 2018 is higher than demand from the first three quarters, which is the most common phenomenon given the payment of overdue liabilities by the companies and the budget, which are being conducted in this period. It is also higher than the corresponding demand from the same quarter of the previous year. In the structure of total demand in Q4 2018, in relation to the same quarter of the previous year, the share of the corporate sector demand increased, while both household demand and public spending were reduced.

The aggregate demand rate in Q4 2018 was higher than in the previous three quarters, and lower compared to the rate recorded in the last quarter of 2017.

**Graph 12**



**Graph 13**



<sup>10</sup> Preliminary data

### Box 1 – Aggregate demand calculation methodology

For the purpose of a more complete monitoring of aggregate demand as a determinant of inflation, the CBCG developed the aggregate demand calculation methodology. The starting point of this methodology states that the aggregate demand represents the sum of the demand of three sectors: personal spending (households), investment spending (corporate sector), and public spending. However, taking into account the lack of numerous data necessary for calculating the aggregate demand, the existing data should not be treated as the indicator of the exact amount of aggregate demand, but as an indicator showing the aggregate demand trend. In the existing methodology, a number of substantial data were not available, such as: corporate investments, revenues from the sale of shares, non-market income, non-observed economy revenues, and the like. Methodology of aggregate demand calculation is expressed by the following equation:

$$AD = C + I + G$$

AD – aggregate demand

C – personal spending = sum of paid salaries + sum of paid pensions + paid frozen foreign currency deposits + net compensations to households – net household savings (savings – loans granted).

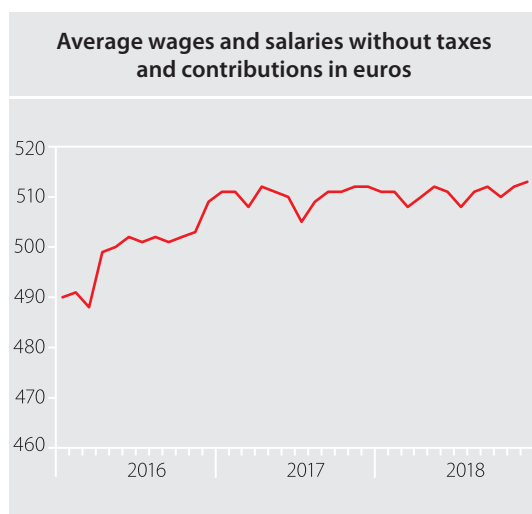
I – investment spending = - corporate net savings (deposits – loans)

G – public spending = public spending – paid pensions – salaries paid from the budget – net Government savings (deposits – loans – Treasury bills)

#### 3.1.1. Salaries and other available demand determinants

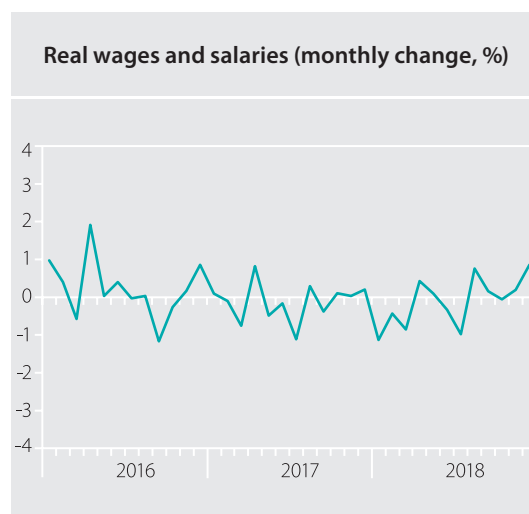
The average gross salary in Montenegro amounted to 766 euros in 2018 and it increased by 0.1% in relation to the average in 2017. An average salary without taxes and contributions totalled to 511 euros, also showing the y-o-y increase of 0.2%. Real wages and salaries without taxes and contributions in 2018 were 2.3% lower compared to the average wages and salaries without taxes and contributions in 2017.

Graph 14



Source: MONSTAT

Graph 15



Source: MONSTAT



Observed by months, the highest nominal growth in wages and salaries without taxes and contributions was recorded in August (0.6%), while the lowest nominal growth of 0.2% was recorded in September and December. The highest nominal drop in wages and salaries without taxes and contributions was recorded in March and July (-0.6% each).

Taking into account the consumer prices, i.e. trends in wages and salaries in real amounts, it can be concluded that real wages and salaries reported the highest drop in July, while the highest real growth was reported in December.

Retail sector loans reported positive trend in 2018. On average, loans to this sector grew at a monthly rate of 0.9%, being 0.8% in 2017. Total retail sector loans amounted to 1,250.2 million euros at 2018 year-end, which indicated a growth of 133.3 million euros or 11.9% more in relation to 2017 year-end (Graph 16).

The average indebtedness of this sector grew over the one-year period. Thus, debt *per capita*<sup>11</sup> amounted to 2.009 euros at end-2018, and it was 214 euros higher than at end-2017.

Total MFIs loans disbursed to households amounted to 62.8 million euros at end-2018 which was by 5.1 million euros or 8.9% more than at end-2017.

Retail sector deposits were mainly on an uptrend in 2018 and they recorded an average monthly growth of 0.6% (an average monthly growth of 0.9% was recorded in 2017). Deposits of this sector amounted to 1,327.5 million euros at end-2018, which represented a y-o-y increase of 95.7 million euros or 7.8%.

Loans to deposits ratio for this sector amounted to 0.94 at end-2018, being at the higher level year-on-year (0.91).

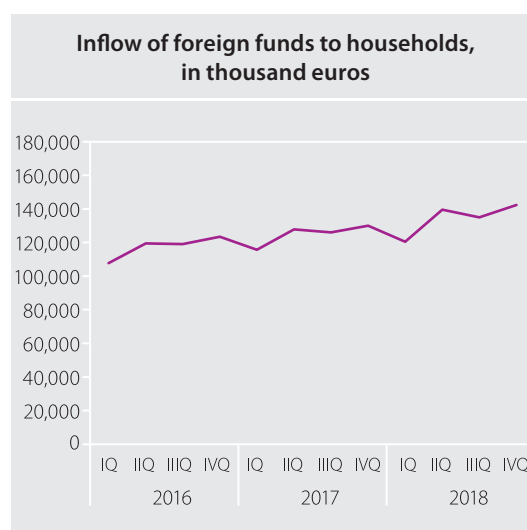
Retail sector reported total net savings in the amount of 77.3 million euros at end-2018, which represented a y-o-y decrease of 37.6 million euros or 32.7%.

Graph 16



Source: CBCG

Graph 17



Source: CBCG

<sup>11</sup> Population estimate for 2018: Estimate as at 1 January (2018), Source: Monstat

Graph 18



The balance of payment statistics showed that the y-o-y increase in 2018 was recorded in the inflow of cash based on compensations to employees and household remittances from abroad.

According to preliminary figures, the total demand of the retail sector in Q4 2018 was higher compared to the level of demand for the same quarter in 2017, as well as in relation to the level of demand in the first and third quarters of 2018, while being lower in relation to the household demand in the second quarter of 2018.

### 3.1.2. Public sector demand

#### *Montenegro's public finance*

According to the Ministry of Finance preliminary data, **public spending** in 2018 amounted to 2.14 billion euros or 46.4% of the estimated GDP for 2018.<sup>12</sup> Compared to the previous year, public spending was higher by 6.5%, whereas the planned amount was exceeded by 56.8 million euros or 2.7%. The main reason for the deviation compared to 2017 is the increase in transfers to institutions, individuals, NGOs and the public sector by 48.6 million euros, capital expenditures in the current budget by 20.3 million euros and capital budget by 20 million euros. The recorded level of public spending was financed by tax revenues (1.22 billion euros), contributions (524.4 million euros), other revenues (85.9 million euros), fees (75.7 million euros), revenues from donations (30.2 million euros), duties (22.5 million euros), receipts from loan repayment and funds transferred from the previous year (11.1 million euros).

Current public spending (public spending reduced by capital expenditures) amounted to 1.83 billion euros or 39.5% of GDP and it grew y-o-y by 6.4%, while capital budget amounted to 318 million euros or 6.9% of GDP.

According to individual economic classification, current expenditures accounted for the main share in the structure of public expenditures (42.8%), followed by transfers (37.6%), capital expenditures (14.8%), while 4.8% referred to other expenditures.

**Preliminary public revenues** amounted to 1.97 billion euros or 42.6% of estimated GDP, being 10.3% higher y-o-y, yet slightly lower in relation to the plan. As for the structure of public revenues, tax revenues accounted for the main share of 61.9%, followed by contributions (26.6%), whereas the all other revenues accounted for 11.5%.

<sup>12</sup> Estimated GDP for 2018 amounted to 4.62 billion euro.

In 2018, according to Ministry of Finance preliminary data, **public spending** recorded a deficit in the amount of 173.3 million euros or 3.8% of GDP, or 53.8 million euros more compared to a cash deficit and 69.7 million euros compared to adjusted deficit from 2017.<sup>13</sup>

### ***Budget of Montenegro***

According to Ministry of Finance preliminary data, total revenues<sup>14</sup> of the Budget of Montenegro amounted to 2.88 billion euros in 2018.

**The source revenues** amounted to 1.75 billion euros or 37.8% of the projected GDP. Compared to the plan<sup>15</sup>, they were lower by 0.6%, and in relation to 2017, they were 11.5% higher. In the structure of source revenues, tax revenues accounted for the main share of 61.2%, followed by contributions with 30%, other revenues with 4.1%, donations with 1.6%, fees with 1.5%, duties with 1%, receipts from loan repayment and funds transferred from the previous year with 0.6%.

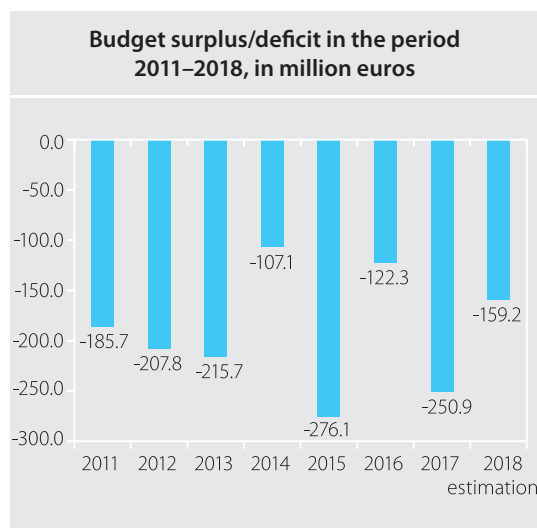
Tax revenues amounted to 1.1 billion euros, recording a 0.9% decrease relative to the plan and a 10.1% y-o-y increase. The most significant positive deviations from the previous year were recorded in the collection of value added tax by 68.2 million euros (12.4%) and corporate income tax by 18.9 million euros (38.5%). The increase in these revenues is the result of an increased standard VAT rate of 2.0 percentage points and the growth of economic activity.

Revenues from contributions amounted to 524.4 million euros being slightly higher in relation to the plan for 2018, recording a 6% y-o-y increase due to rescheduling of the remaining tax debt.

**Consolidated budget expenditures** amounted to 1.91 billion euros in 2018, or 41.3% of the GDP. The recorded expenditures in relation to the planned slightly increased, and compared to the previous year they were higher by 5.7%. Current budget expenditures amounted to 836.3 million euros or 2.9% more than planned. Social protection transfers amounted to 544.5 million euros or 11.8% of GDP. Montenegro's capital budget amounted to 264.7 million euros or 5.7% of GDP.

**Montenegro's budget deficit** is estimated at 159.2 million euros or 3.4% of GDP, and is higher by 77.6 million euros than the cash deficit, and 91.6 million euros higher than adjusted deficit from 2017. Debt repayment amounted to 696.3 million euros.

**Graph 19**



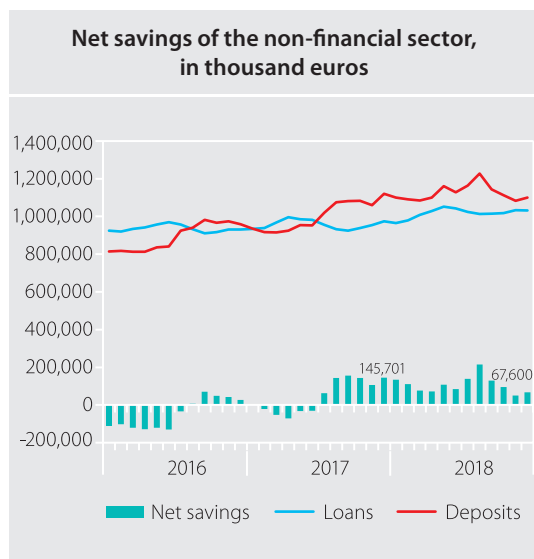
Source: Ministry of Finance

<sup>13</sup> Adjusted deficit for 2018 will be published once the Law on Budget Execution for 2018 is adopted.

<sup>14</sup> Revenues include source revenues (direct and indirect taxes and non-tax revenues), borrowings and loans from domestic and foreign sources, and revenues from sale of property.

<sup>15</sup> Plan for budget implementation according to the budget rebalance is implemented pursuant to the Law amending the Budget Law for 2018.

Graph 20



Source: CBCG

### 3.1.3. Nonfinancial sector<sup>16</sup>

Due to the lack of data on the non-financial sector investments, we can use the sector's net indebtedness as an approximation.

At end-2018, loans to non-financial sector were lower than this sector's deposits. The net savings of the nonfinancial sector amounted to 67.6 million euros at end-2018, which was 78.1 million euros or 53.6% less than a year earlier (Graph 20).

Long-term loans accounted for the main share in the structure of loans to the sector (76%), which indicates that these loans were mainly used for the increase in the volume of economic activity.

### 3.1.4. External demand and the current account

According to preliminary data, current account deficit increased, fuelled by the goods account deficit widening and the primary income account surplus narrowing. The current account deficit amounted to 793 million euros and increased by 14.7% compared to the previous year, as a result of significantly higher absolute growth of imports in relation to visible exports.

The goods account deficit in 2018 amounted to 2 billion euros and was 10.2% higher than in the previous year. Total visible exports amounted to 435.9 million euros recording an increase of 14% in relation to 2017. At the same time, visible imports (2.5 billion euros) was 10.8% higher. Large infrastructure projects in our country in 2018 caused the increase in visible imports.

In the observed period, the services account ran a surplus in the amount of 936.1 million euros, or by 9.9% more year-on-year. Total revenues from services amounted to 1.6 billion euros or 13.1% more in relation to 2017, while the expenditure amounted to 627 million euros (18.2% increase). The increase in travel/tourism revenues by 8.6% (1 billion euros) contributed significantly to an increase in total revenues from services.

Primary income account surplus amounted to 56 million euros, narrowing by 36.6% y-o-y. Revenues from primary income amounted to 304.8 million euros, which is 11% more compared to the previous year, while total expenses in the amount of 248.8 million euros recorded an increase of 33.6% due to higher outflows arising from compensation to employees, dividends and interest paid.

Secondary income account ran a surplus of 264.8 million euros, or 15.9% more than in 2017. The total inflow of transfers to Montenegro was 12.7% higher than in 2017, amounting to 342.4 million euros,

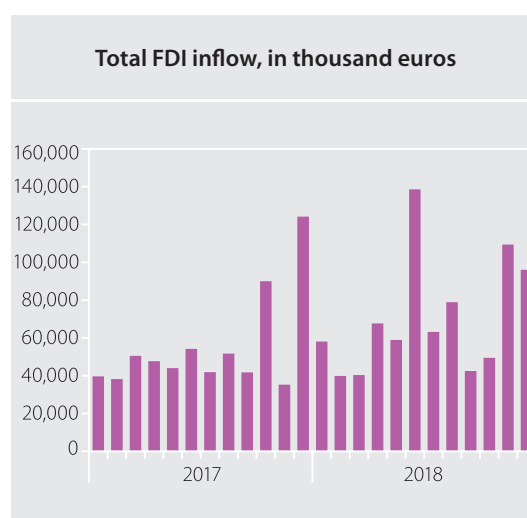
<sup>16</sup> The non-financial sector includes state companies and private companies.

of which the largest part is consisted of personal transfers from abroad in the amount of 228.1 million euros. In the same period, total outflow from secondary income to abroad amounted to 77.6 million euros, which is 2.9% more than in 2017.

According to preliminary data, the net FDI inflow amounted to 327.6 million euros in 2018, recording a y-o-y decrease of 32.4%. Such trend was caused by a considerable decrease in the outflow arising from intercompany debt repayment, as well as in the withdrawal of one large company's equity investments. The decrease in the net FDI inflow was significantly subdued by the increase in the total FDI inflow (by 27.9%) recorded at the same time.

Total FDI inflow stood at 843.1 million euros in 2018, with equity investments amounting to 519.9 million euros (38.3% increase), and the inflow in the form of intercompany debt adding up to 300.1 million euros or 21% more year-on-year. In the structure of equity investments, investments in companies and banks amounted to 337.2 million euros (growth by 47.4%), while real estate investments amounted to 182.6 million euros (growth of 24.1%). In the structure of the total inflow of FDI, investments in companies and banks accounted for 40%, followed by the share of inflows arising from intercompany debt (35.6%), while 21.7% of total inflows were invested in real estate. The inflow of monetary assets arising from the withdrawal of residents' funds invested abroad amounted to 23.2 million euro (2.7% of the total inflow).

Graph 21



Source: CBCG

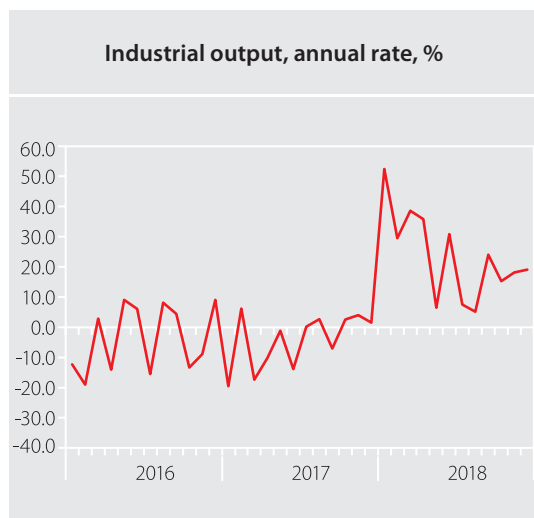
Total FDI outflow amounted to 515.5 million euro, being significantly higher compared y-o-y (174.9 million euro). In the outflow structure, outflow from residents' investments abroad amounted to 110.4 million euro, while withdrawal of non-residents' funds invested in Montenegro amounted to 405.1 million euro.

In 2018, *portfolio investments* account recorded net inflow of 135 million euro, while the net inflow in the *other investments* account amounted to 451.8 million euro. The developments in the other investments account included the increase in liabilities arising from loans taken as well as non-residents deposits with domestic banks.

### 3.2. Supply and demand

In 2018, industrial output recorded y-o-y increase of 22.4%. Electricity, gas and steam supply and manufacturing industry sectors recorded respective output increase of 62.1% and 12.1%, while mining and quarrying recorded output decline of 21.3%. Observing monthly data on industrial output, the highest monthly growth was recorded in November (14.1%), while the highest decrease was recorded in May (17%).

Graph 22



Source: MONSTAT

Some 2.2 million tourists visited Montenegro in 2018, which represented the y-o-y increase of 10.2%. The number of domestic tourists arrivals increased by 4.3%, while the number of foreign tourists grew by 10.6%. Tourist overnights amounted to 12.9 million, which is a y-o-y increase of 8.2%.

The total **production of forest assortments** amounted to 288,606 cubic metres of wood products in 2018, which is 15.6%<sup>17</sup> less than in 2017.

According to preliminary Monstat data, the total value of executed **construction works** amounted to 724 million euros in 2018 recording y-o-y growth of 24.9%, whereas measured by the effective working hours, it increased by 10.9%.

Compared y-o-y, air passenger transport recorded an increase of 12.3%, road passenger transport increased by 0.6%<sup>18</sup>, while railway passenger transport increased by 7% in 2018<sup>19</sup>. At the same time, cargo air transport increased by 6.3%, it decreased by 3.5%<sup>20</sup> in road transport, while in railway transport it increased by 39.7%<sup>21</sup>. Total turnover in ports in 2018 amounted to 2 million tonnes and was lower by 6.3% compared to the previous year, while exports accounted for 39.5% and imports for 60.1%<sup>22</sup>. Exports in this period declined by 35.9% while imports increased by 33.5%.

<sup>17</sup> Presented through weighted index, while presented through non-weighted index production declined by 14.3% over the same period.

<sup>18</sup> Presented through number of passengers, while it increased by 1% expressed through passenger kilometres.

<sup>19</sup> Presented through number of passengers in thousands, while it increased by 11.5% presented through passenger kilometres.

<sup>20</sup> Presented through transported goods in thousand tonnes, while it decreased by 18.1% presented in tonne kilometres.

<sup>21</sup> Presented in thousand tonnes, while it decreased by 33.2% presented in tonne kilometres.

<sup>22</sup> Exports and imports do not sum to 100 due to residual referring to transit of goods.

## 4. MONETARY POLICY

The Central Bank of Montenegro is responsible for monetary policy, encouraging and preserving the stability of the financial system, including encouraging and maintaining sound banking system and secure and efficient payment transactions. One of primary CBCG monetary policy objectives is contributing to achieving and maintaining price stability in the country.

The Central Bank of Montenegro Law lays down the following CBCG's primary monetary policy instruments: open market operations, credit operations, and reserve requirement. However, it should be stated that all available monetary policy instruments of the CBCG have very limited impact on inflation trends.

In 2018, there were no changes to the existing decisions, nor were new ones passed regarding the Central Bank of Montenegro monetary policy instruments.

### 4.1. Monetary policy measures for suppressing inflation

The Central Bank of Montenegro did not take any monetary policy measure for suppressing inflation in 2018.

## 5. INFLATION FORECAST FOR 2019

### 5.1. Model assessment

Montenegro's inflation *fan chart* is a graphic representation of inflation rate forecast probability distribution presented by the consumer price index. In that respect, instead of determining specific points, the fan chart also takes into account potential risks and uncertainties through probability distribution that might influence the inflation trend in the following period. The purpose of the fan chart is to indicate and consider the uncertainties in the real economy flows, which are consequently reflected in the inflation rate trend (increase in energy prices, increase/decrease in the foreign trade deficit, etc.).

Montenegro's Fan Chart for 2019 was based on the following three estimated components:

1. **Central projection values** – the values of the fan chart central projection are derived from the ARIMA (Autoregressive Integrated Moving Average) model;
2. **Degree of uncertainty** – determines the fan chart width. The uncertainty degree ratios are obtained through analytical assessment and calculation of the relative impact of potential internal and external shocks that are possible in the Montenegrin economy over the one-year period and which are reflected through the “thickness” of the band around the central projection.
3. **Fan chart skewedness** – based on the level of skewedness of the distribution of inflation projection, the fan chart is adjusted to the forecast to show whether the values of the central projections have “overestimated” or “underestimated” inflation rates. The position of the mean value of inflation distribution will depend on this.

#### *Central projection of fan chart - ARIMA model 2019*

With a view to developing a fan chart, an ARIMA model of time series of inflation of Montenegro presented via Consumer Price Index was developed<sup>23</sup>.

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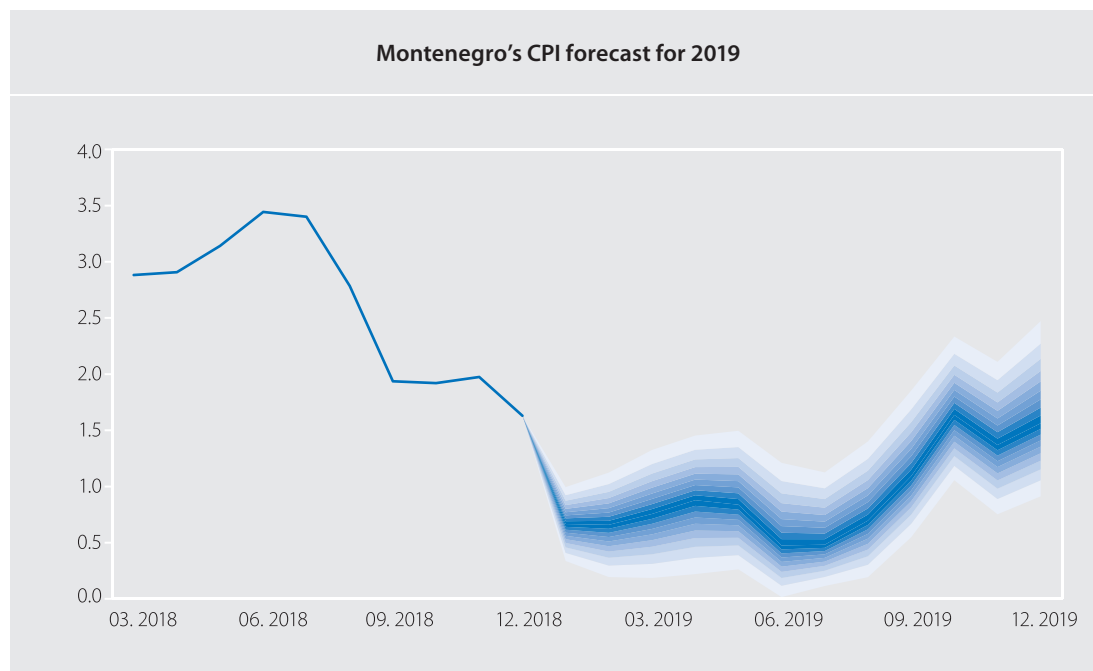
<sup>23</sup> A detailed explanation of the ARIMA model of Montenegro was presented in the working study of the Central Bank No.11 "Inflation Forecast: Empirical research on the retail price index trend of Montenegro for 2007 - applying the ARIMA model".



ARIMA model was used for short term forecasts (12 months), whereby several iterations of ARIMA models were made, which were ranked based on their efficiency and quality of diagnostics. The selected ARIMA model, ARIMA (2, 1, 2)<sup>24</sup> has sufficient confidence level for forecasts.

The monthly forecasts value was used as the value of central projection of the CPI graph for 2019. Obtained values represent the distribution mode, i.e. values with the highest frequency in the distribution of this time series.

**Graph 23**



Source: CBCG, 2019

Mean value of the obtained model is 0.9. The value of the coefficient of asymmetry varies in the range of 0.5 to 1, and the relative standard deviation is 0.25. Model projection of inflation is located in the central span of the distribution. The fan chart describes 90% probability of inflation distribution. The central projection is usually in the deepest shade of the fan chart, i.e. in the central 10% of probability.<sup>25</sup> The fan chart has an equal number of bands (eight) on either side of the central band whereby every band of the same colour, both above and below the central band, cumulatively describes the next 10% of inflation trend probability. As uncertainty grows over time, the fan chart spreads.

<sup>24</sup> ARIMA model is generally referred to as an ARIMA (p,d,q) where p represents the number of autoregressive variables, d refers to the level of dependent variable that needs to be made stationary, and q is the number of variables, moving averages, in the certain model.

<sup>25</sup> The mode values (central projection) are usually in the deepest band shade, but in case of a significant risk level, it can happen that the central projection does not cover either of these values. (Britton, E, Fisher, P.G. and Whitley, J.D. (1998), 'The Inflation Report Projections: Understanding the Fan Chart', Bank of England, Quarterly Bulletin, 38, pp. 30–37).

The Fan Chart of inflation in Montenegro, based on the ARIMA model assessment for 2019, indicates that there is a **90% probability that the CPI inflation, depending on the certain month, will range between 0% and 2.5%, with the central trend of 0.9%. At the same time, inflation for December 2019 is forecasted to range between 0.8% and 2.4%, with the central trend of 1.4%.** The Fan Chart central projection (the darkest part) represents a 10% probability span (Graph 23).

### *The starting assumptions for forecasting inflation in 2019*

The projection is based on projections of energy generating products and food prices, inflation projections in the euro area, and the announced excise duties calendar (for alcoholic beverages and coal). The risks related to the projected inflation rate shown on the fan chart are symmetrically set. Inflation rate above projected could be induced by a more vigorous growth in oil prices in the international market due to geopolitical tensions and strengthening of trade protectionism. Price growth could also be fuelled by bad weather conditions, which affect the food and electricity price growth. On the other hand, the risks that would contribute to a lower inflation rate relate to a stronger decline in oil prices, as well as the euro area inflation growth below the projections.

#### **Internal factors:**

- Excise duties on cigarettes remain the same by the end of 2019,
- From the beginning of 2019, excise duties on coal of 15 cents per GJ gross heat value is introduced,
- As of January 2019, the excise duties on alcohol grew to 1,250 euros per hectolitre of pure alcohol, while excise duties on carbonated water grew to 25.0 euros per hectolitre of carbonated water.
- Fluctuation of +/-5% in the agricultural product prices, caused by weather conditions.
- A standstill in wages and real estate prices.

#### **External factors:**

- Forecasts for 2019 suggest that average price of crude oil in the international market will decline mainly due to supply factors, as well as the announced U.S. output increase.
- Stabilisation and moderate growth of prices of food products in the international market is expected in 2019.
- The expansion of economic activity in the euro area of 1.1% in 2019 did not exert inflationary pressures, thus the European Central Bank (ECB) stands by its expectations of the inflation rate being just below the target (1.2%).<sup>26</sup> Moreover, the ECB announced that it will not change its key interest rates, at least until the end of 2019 with a view to reaching the targeted inflation rate of close to 2%. In reference to the above said, we currently do not expect more significant inflationary pressures from the euro area.

Deviation of any of these parameters would require the forecast to be adjusted.

<sup>26</sup> Source: ECB staff macroeconomic projections for the euro area, March 2019

## 5.2. Expert assessment

A survey conducted among businessmen indicates that growth in economic activity can be expected in 2019. The CBCG projection suggests that GDP growth of nearly 3% can be expected in 2019. Projections of all relevant international financial institutions also indicate that solid economic growth can be expected in 2019. Output growth will certainly work counter-inflationary. The anticipated decline in oil prices in the world market will also be as such.

On the other hand, there are factors that will influence the growth of inflation in 2019. They primarily relate to an increase in excise duties as part of fiscal consolidation measures. Also, there is an increase in aggregate demand. When it comes to food prices, their stabilization is expected with a slight increase.

There are still inflationary expectations for both banks and the corporate sector. The largest number of banks surveyed expects inflation in the range of 2.5% to 3%, while the corporate sector has lower inflation expectations, and the largest number of respondents expect inflation in the range of 1.5% to 2%.

*The model assessment projected inflation in the range of 0.8% to 2.4%, with the central trend of 1.4%. Our expert assessment is similar to a model estimate and we expect that in 2019 inflation will range from 0.5% to 2.5%.*

**Table 3**

Inflation rate estimation for 2019		
Optimistic projection	Central projection	Realistic projection
0.5	1.5	2.5

This assessment is based on the same assumptions as the econometric assessment and the deviation of the mentioned assumptions would require the revision of the inflation forecast.

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Централна народна библиотека Црне Горе, Цетиње

338.5

Price Stability Report 2018 / Central bank of Montenegro - 2012- . - Podgorica (Bu-  
levar Sv. Petra Cetinjskog br. 6) : Central bank of Montenegro, 2019 (Podgorica: PRO FILE,  
d.o.o). - 28 cm

Godišnje  
ISSN 1800-9603 = Price Stability Report  
COBISS.CG-ID 20357648