



CENTRAL BANK OF  
MONTENEGRO



# Price Stability Report

## 2016



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## LIST OF ABBREVIATIONS

ARIMA	Autoregressive Integrated Moving Average
GDP	Gross Domestic Product
CBCG	Central Bank of Montenegro
CPI	Consumer Price Index
EMU	Economic and Monetary Union
EU	European Union
HICP	Harmonised Indices of Consumer Prices
MONSTAT	Statistical Office of Montenegro
OPEC	Organization of the Petroleum Exporting Countries
FDI	Foreign Direct Investments
UN	United Nations
USD	US dollar



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# 1. INFLATION INDICATORS

## 1.1. Inflation Trend in Montenegro<sup>1</sup>

After a positive inflation in 2015, prices in Montenegro during 2016 were negative in most months, observed by the annual rates. However, the annual inflation rate at the end of December was positive. Given that Montenegro is highly import-dependent economy, heavily influenced by developments at the international market, negative inflation was mostly affected by the oil prices at the world market, as well as the prices of some food products.

Table 1

	Inflation, %							
	2015				2016			
	III	VI	IX	XII	III	VI	IX	XII
Change relative to the previous year-end	1.2	2.2	2.1	1.4	-1.1	-0.5	0.4	1.0
Annual change	1.6	1.9	1.7	1.4	-0.9	-1.3	-0.3	1.0

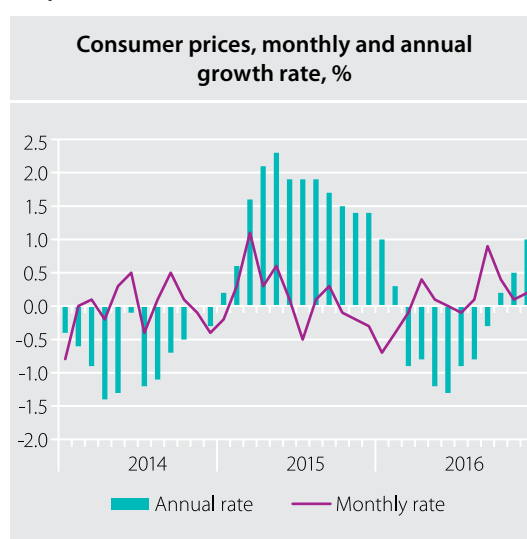
Source: Monstat

In December 2016, annual inflation, measured by consumer prices, amounted to 1.0%, the same as the inflation measured by the harmonized index of consumer prices (HICP). Annual inflation during the year was positive in the first two and last three months. A slight increase in consumer prices within the last three months was largely a result of the rise in price of solid fuels in this period.

Observed by quarters, the fall in prices in 2016 was recorded only in the first quarter

<sup>1</sup> In February 2017, Monstat released revised data for 2016 due to the return of the data series from 2010 to the new reference index period 2015 = 100 and harmonization with the European classification of individual consumption by purpose (ECOICOP).

Graph 1



Source: Monstat

(-1.1%), while in the second (0.6%), the third (0.9%) and fourth quarter (0.6%) prices rose<sup>2</sup>. Observed by months, the largest decline in consumer prices was recorded in January (-0.7%), while the largest price increase was recorded in September (0.9%). Decline of consumer prices in 2016 averaged to 0.3%.

**Table 2**

Growth rate (annual, %), and contribution of individual categories in total inflation <sup>3</sup>				
	Weights	XII 2016 XII 2015	Growth rate	Contribution
TOTAL	1000.0	101.0	1.0	1.0
Food and non-alcoholic beverages	351.7	100.5	0.5	0,2
Alcoholic beverages and tobacco	38.6	103.0	3.0	0.1
Clothing and footwear	85.1	101.2	1.2	0.1
Housing, water, electricity gas and other fuels	155.3	101.1	1.1	0.2
Furnishing, household equipment and routine household maintenance	41.2	98.6	-1.4	-0.1
Health care	40.9	103.7	3.7	0.2
Transport	107.0	102.0	2.0	0.2
Communication	49.9	100.3	0.3	0.0
Recreation and culture	33.2	100.0	0.0	0.0
Education	19.3	100.0	0.0	0.0
Restaurants and hotels	31.3	102.7	2.7	0.1
Miscellaneous goods and services	46.5	99.6	-0.4	0.0

Source: Monstat and CBCG calculations

The highest annual growth in 2016 was recorded by the prices under *health care* category (3.7%), with the highest increase in prices of pharmaceutical products (6.2%). Prices growth was recorded in the category *transport* (2%), wherein prices of fuels and lubricants for motor vehicles by 3.3%, as well as in the category *housing, water, electricity gas and other fuels* (1.1%), where there was a price growth of solid fuels by 7.5%. In the category *food and non-alcoholic beverages*, whose share in the total weighting structure of consumer prices is 35.2%, recorded an annual price growth of 0.5%. In this category the following prices recorded growth: bread and cereals (0.5%), fish and seafood (5.6%), milk, cheese and eggs (1.8%), oils and fats (0.3%), fruits (3.1%), sugar, jam, honey, chocolate and sweets (3.6%), food products<sup>4</sup>(1.7%) and non-alcoholic beverages by 1.2%, while prices of vegetable decreased by 6.9%. Growth in prices was recorded in category *alcoholic beverages and tobacco* (3.0%), mainly due to higher prices of tobacco by 3,2%, while the rise in prices of accommodation services by 9.2% mostly contributed to the price increase in the category *hotels and restaurants* (2.7%). Annual price growth in December was also recorded in the category *clothing and footwear* (1.2%), due to increase in prices of clothing by 0.3% and footwear by 2.2%. Prices of *communications* recorded the lowest annual price growth of 0.3% in December 2016. The annual price decline was recorded in the category *furnish-*

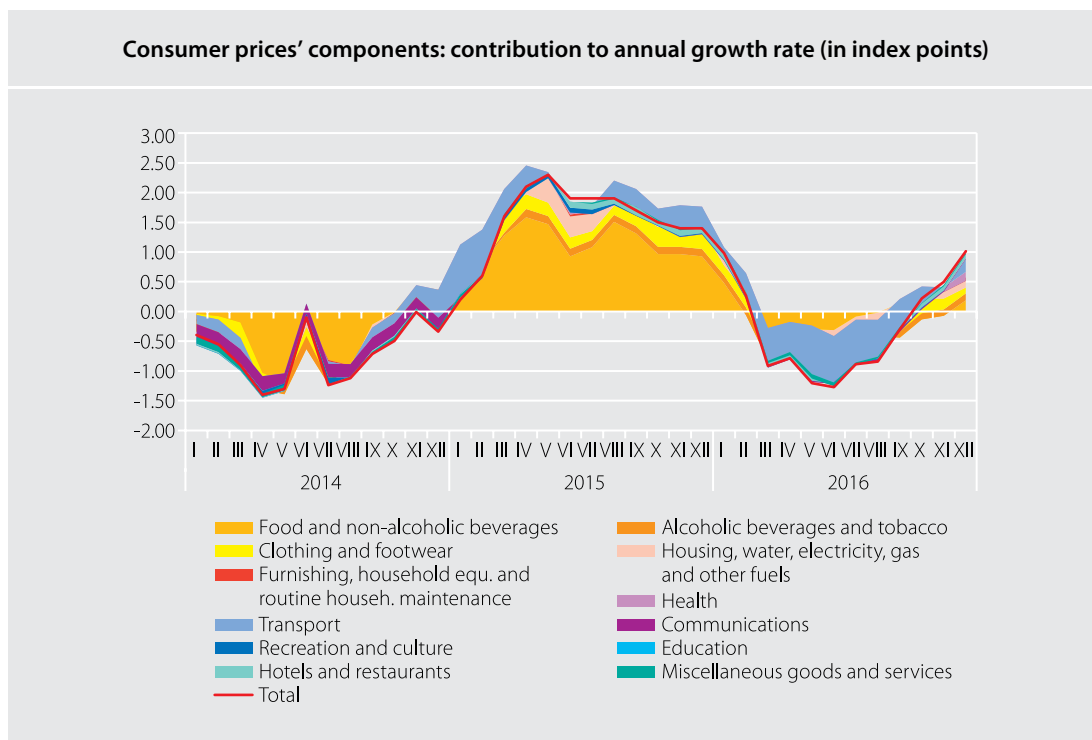
<sup>2</sup> Due to rounding of figures, when calculating quarterly inflation, the sum of rates insignificantly differs from total annual inflation.

<sup>3</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.

<sup>4</sup> Nowhere else classified.



**Graph 2**

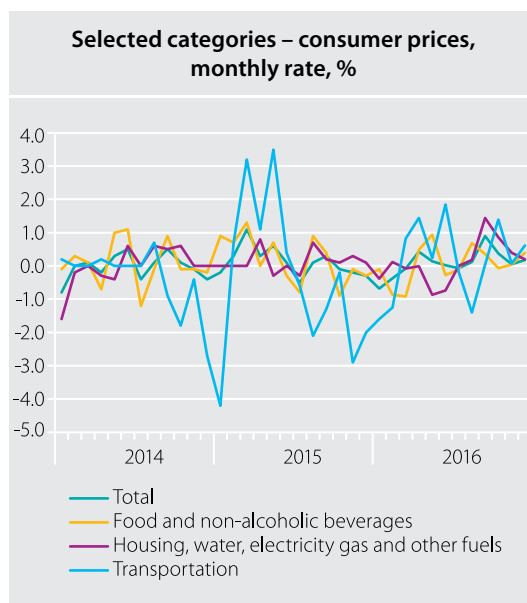


Source: Monstat and CBCG calculations

ings, household equipment and routine household maintenance by 1.4% (mainly due to decrease in prices of goods and services for routine household maintenance by 2.2%) and category *other goods and services* by 0.4%, while the prices in the category *education and recreation and culture* remained unchanged compared to December 2015.

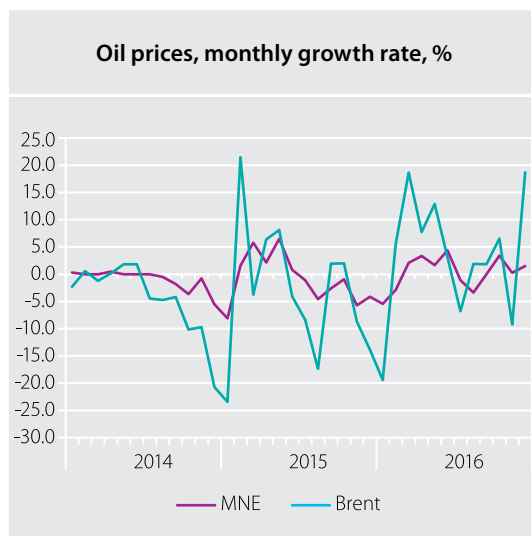
The largest contribution to the growth of the annual inflation rate by 0.2 percentage points was recorded by the prices of *food and non-alcoholic beverages, housing, water, electricity, gas and other fuels, health care and transport*, while the contribution to the increase of 0.1 percentage points was provided *alcoholic beverages and tobacco, clothing and footwear, and hotels and restaurants*. Contribution to the overall decline in the annual rate of inflation was given by the prices of *furnishings, household equipment and routine maintenance of the house* (-0.1 percentage points).

**Graph 3**



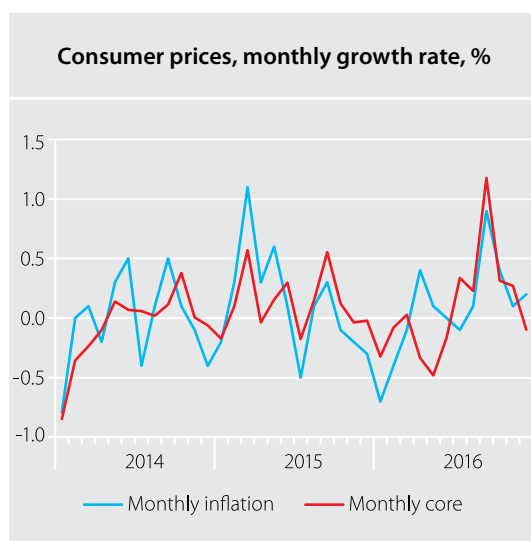
Source: Monstat

Graph 4



Source: Monstat and "Monthly Oil Market Reports", OPEC

Graph 5



Source: Monstat and CBCG calculations

The prices of liquid fuels and lubricants in Montenegro, which were mostly affected by the changes in the global oil prices, recorded the annual increase of 3.3%. The price of the OPEC reference basket averaged to 40.7 USD/barrel in 2016, being 17.8% lower than in 2015. The average price of Brent oil, which in 2016 recorded the lowest average value for the past twelve years, was 43.7 USD/barrel or 16.7% lower than the average price in 2015. Observed on a monthly level, the lowest average price of Brent oil was recorded in January (30.75 USD/barrel), and the highest in December (53.57 USD/barrel). The growth of oil prices at the end of the year was influenced by the decision of OPEC, as well as certain countries which are not members of the cartel, primarily the Russian Federation, to reduce oil production in the next half-year period. According to forecasts of the World Bank<sup>5</sup>, it is expected that in 2017 the average price of oil will amount to 55 USD/barrel, which would be 26% higher than the average prices in 2016. Oil price trends in the coming period will depend on the degree of compliance and respect the signed contract, demand for this fuel, as well as the level of production of countries that are not OPEC members which are excluded from the agreement (Libya and Nigeria).

In 2016, monthly<sup>6</sup> **core inflation** rate was below the official monthly inflation for five months (April, May, June, October, December), while it was higher than the level of total monthly inflation during the remaining seven months (due to the changes in prices of certain products which are otherwise excluded from the core inflation calculation, such as electricity, agricultural products, fuel, and the like).

The UN report *World Economic Situation and Prospect 2017* states that during 2016, inflation in advanced economies remained below 1%, although there was a slight increase compared to the previous year. Developing countries recorded inflation growth due to higher prices in certain regions of Africa, Latin America and the Caribbean. Transition countries recorded a lower inflation compared to the

<sup>5</sup> Source: World Bank: Commodity Markets Outlook, January 2017

<sup>6</sup> In 2016, as in the previous four years, 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; therefore it was not possible to calculate annual core inflation by months.

inflation recorded in the previous year, especially after the significant decrease in the level of inflation in Russia and Ukraine. After a rise in oil prices in late 2016, it is expected that in early 2017 there will be an inflation growth recorded in most countries. As the Report states<sup>7</sup>, inflation in advanced economies for 2017 could amount to 1.6% (growth from 0.7% from 2016), and 4.7% in developing countries (decline from 5.2% from 2016) and economies in transition 7% (decline from 8.1% from 2016). Due to the dependence on import, changes in prices of oil, food and consumer goods will affect prices in Montenegro and the overall inflation in the upcoming period.

**The producers' prices of manufactured products** recorded y-o-y decline of 0.3%. Prices decline of 1% was recorded in electricity, gas and steam supply sector, while prices of mining and quarrying recorded growth of 0.7%. Manufacturing industry prices remained unchanged. Average decline of the producers' prices of manufactured products in 2016 amounted to 0.1%, wherein the average decline in prices was recorded in the supply of electricity, gas and steam supply (-1%), and the average growth rate was observed in the mining and quarrying (1.7%) and manufacturing industry (0.4%).

**Export producers' prices of manufactured products**<sup>8</sup> recorded y-o-y increase of 6.4% in December 2016, while the average annual price decline was 1.5%. Manufacturing industry reported y-o-y increase in prices of 6.6%, while the prices in mining and quarrying declined by 0.8%.

**Import prices of manufactured products**<sup>9</sup> recorded y-o-y increase of 0.6% in December 2016, and the average annual rate showed a decrease of 1.1%. Annual increase was reported in the manufacturing industry prices (0.6%), while mining and quarrying prices reported annual decline of 4.4%.

## 1.2. Inflation Trends in the Region and the EU

Annual inflation in the region was positive in Albania (2.2%), Serbia (1.6%), Croatia (0.7%) and Slovenia (0.6%), while a negative rate is observed in Macedonia, and Bosnia and Herzegovina (-0.2%).

The annual rate in the euro area in December 2016 was 1.1% being 0.9 percentage points higher than the annual rate recorded in December 2015. The largest influence on inflation was recorded by the annual price growth of transport fuel (6%), vegetables (5.2%), as well as heating oil (9.6%), i.e. an annual decrease in prices of gas (4.3%), telecommunication (0.5%) and personal care products (0.9%). During 2016, inflation recorded in the euro area was negative or at a very low level, mainly as a result of low commodity prices in neighbouring countries. Growth in energy prices at the end of the year affected the highest annual price increase in December (1.1%), while the largest negative inflation was recorded in February and April (-0.2%, respectively). The European Commission expects that in 2017 growth in oil prices and a rise in real wages and domestic demand will impact on inflation

<sup>7</sup> Detailed data on inflation trends for individual regions and countries are listed in tables: A.4, A.5 and A.6 of the Annex to the *World Economic Situation and Prospects 2017* report.

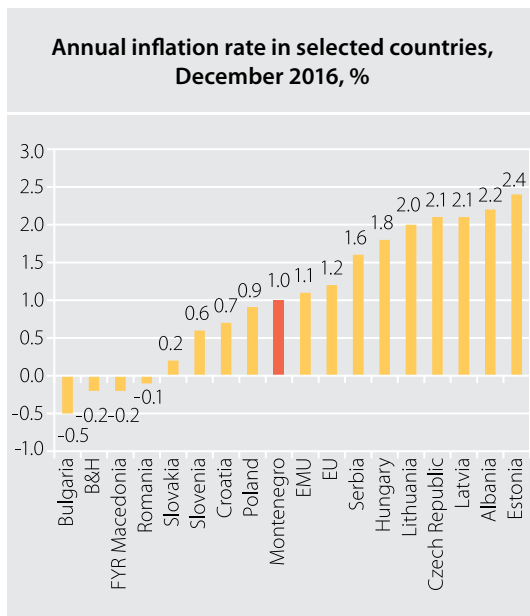
<sup>8</sup> The exports prices index represents the monitoring of monthly changes in the prices in industrial products made by companies and sold at foreign markets. It is an important economic indicator that can be used as time series deflator, particularly for national account purposes.

<sup>9</sup> Import price index refers to the monthly change in prices of importing industrial 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.

growth in the euro area, which will amount to 1.7%<sup>10</sup>, while in 2018 it expects stabilization of prices and inflation of 1.4%.

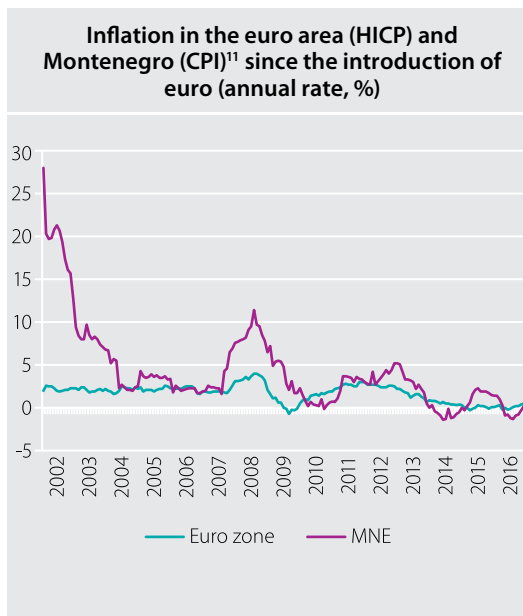
The annual inflation rate in the EU, measured by the harmonized index of consumer prices was 1.2%. Of the EU countries, negative rates were recorded in Bulgaria (-0.5%) and Romania (-0.1%), while other countries recorded a positive inflation rate. The highest annual rate is recorded in Estonia (2.4%), Latvia, and the Czech Republic (by 2.1%) and Lithuania (2%).

Graph 6



Source: National Statistical offices and Eurostat

Graph 7



Source: Monstat and Eurostat

<sup>10</sup> Source: European Commission: *European Economic Forecast, winter 2017*

<sup>11</sup> Cost of living was used for measuring inflation in Montenegro until 2009, after which consumer prices were introduced.

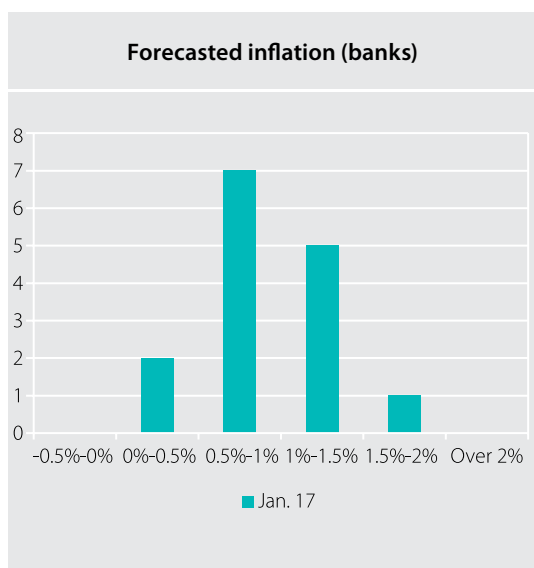
## 2. INFLATION EXPECTATIONS OF THE BANKING SECTOR AND ECONOMY

### 2.1. Banks' Expectations

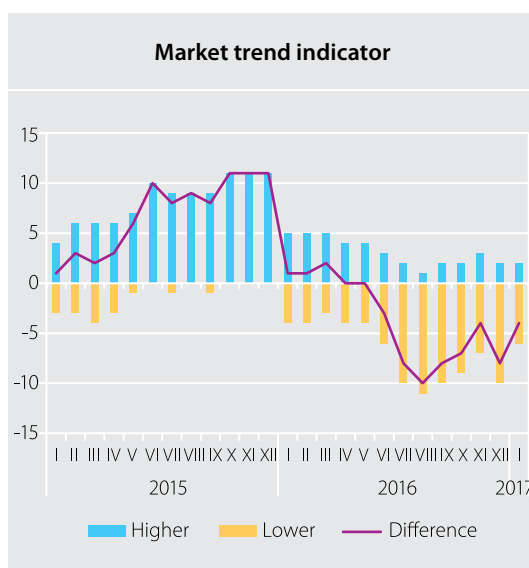
When it comes to inflation expectations of banks, based on a survey conducted in January 2017, seven banks expect inflation in the range of 0.5% - 1%, five banks expect inflation between 1% and 1.5%, two banks expects inflation to range between 0% and 0.5%, while one bank expects inflation between 1.5% and 2%. None of the surveyed banks expects inflation between -0.5% and 0% and over 2%.

For the purpose of calculating inflation forecasts we use market trend indicator (line in Graph 9). It is calculated as the difference between the number of banks expecting an 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 9 shows that inflation expectations, with minor variations, were at low level throughout the whole 2016. Low inflation expectations, with minor variations, were at low level throughout the whole 2016. Low inflation expectations, with minor variations, were at low level throughout the whole 2016.

**Graph 8**



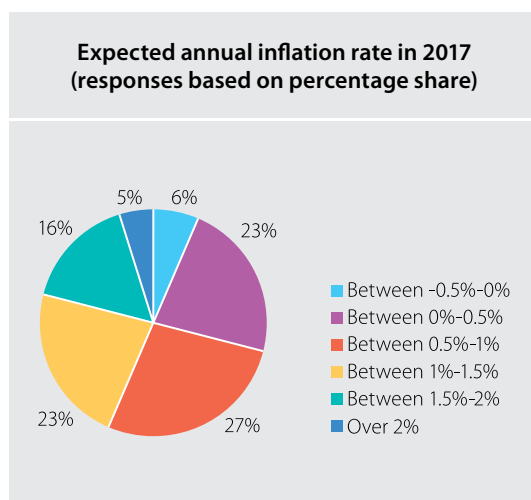
**Graph 9**



tations in 2016 were particularly expressed in the third quarter when most banks expected inflation decline. Inflation expectations in January 2017 pointed to the inflation decrease.

## 2.2. Expectations of Economy (Except Banks)

Graph 10



### Inflation

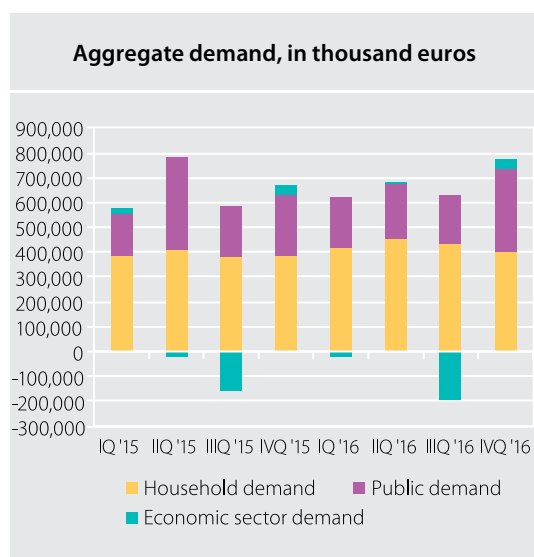
Out of total surveyed companies, the largest number (27%) expected that inflation in 2017 would range between 0.5% and 1%. Some 23% of the surveyed companies expect inflation to range between 0% and 0.5%, while 16% of companies expect inflation between 1.5% and 2%. Some 5% of respondents expected that inflation will range between -0.5% and 0%, while 5% of respondents opined that inflation will be over 2%.

## 3. INFLATION DETERMINANTS

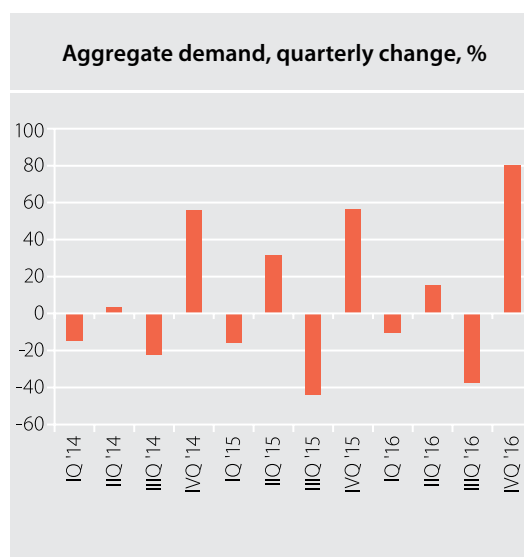
### 3.1. Demand<sup>12</sup>

The level of aggregate demand is usually the largest in the last quarter, resulting from the payment of arrears by companies and budget. Total demand in Q4 2016 was higher compared y-o-y. Observing the overall level of demand in the fourth quarter of 2016, compared to the fourth quarter last year, the demand of households and the country has increased, while the consumption decreased.

Graph 11



Graph 12



#### Box 1 - Aggregate demand calculation methodology

For the purpose of complete monitoring of aggregate demand as the inflation determinant, the CBCG has developed the aggregate demand calculation methodology. The starting point of this methodology stems that the aggregate demand is the total 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

<sup>12</sup> Preliminary data

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 selling shares, non-market income, non-observed economy revenues, and the like. Methodology of calculation of the aggregate demand is expressed by the following equation:

$$AD = C + I + G$$

AD – aggregate demand

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

I = - net savings of economy (deposits – loans)

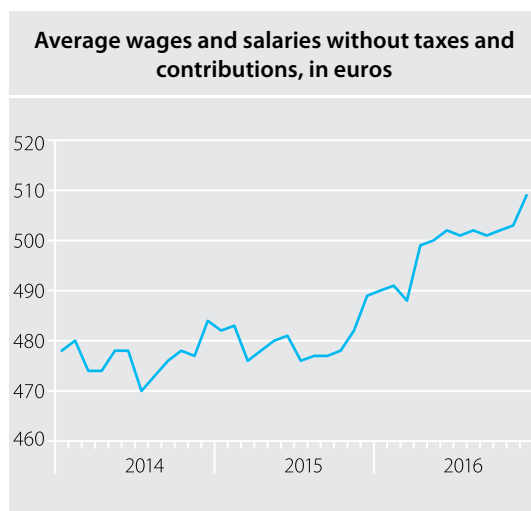
G = public consumption – paid pensions – salaries paid from the budget – net savings by the Government (deposits – loans – Treasury bills)

### 3.1.1. Salaries and other Available Demand Determinants

Monstat data showed that an average salary in Montenegro was 751 euros in 2016 and it increased by 3.6% in relation to the average in 2015. An average salary without taxes and contributions totalled to 499 euros, also showing the year-on-year increase of 4.0%. Real wages and salaries without taxes and contributions in 2016 were 4.2% higher compared to the average wages and salaries without taxes and contributions in 2015.

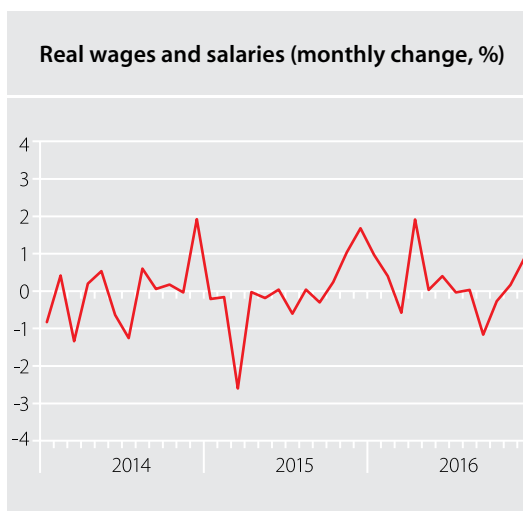
Observed by months, the highest nominal growth in wages and salaries without taxes and contributions was recorded in April (2.3%), while the lowest nominal growth with the identical rate of 0.2% was recorded in January, February, May, June, August, October and November. The highest nominal decline of wages and salaries without taxes and contributions was recorded in March (0.6%).

Graph 13



Source: Monstat

Graph 14



Source: Monstat



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 growth in April, while the highest real decline was reported in September.

Households' loans reported positive trend in 2016.<sup>13</sup> The average monthly growth of loans granted to this sector was 0.8%, while the growth at the average rate of 0.3% was recorded in 2015. Total banks' loans and other receivables from the household sector amounted to 1,018 million euros at 2016 year-end, which indicated a growth of 96.7 million euros or 10.5% in relation to 2015 year-end.

The average indebtedness of this sector grew over the one-year period. *Per capita* debt<sup>14</sup> amounted to 1,636 euros at end-December 2016, and it was 155 euros higher than at end-2015.

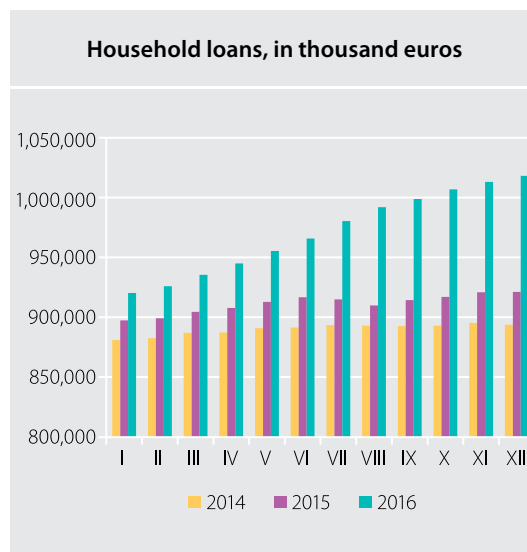
Total MFIs loans disbursed to households amounted to 51.4 million euros at end 2016 which was 5.6 million euros or 12.2% more than at end-2015.

Household deposits were mainly on an upward trend in 2016 and they recorded an average monthly growth of 0.5% (an average monthly growth of 0.7% was recorded in 2015). Deposits of this sector amounted to 1,534.1 million euros at end-2016, which represented a y-o-y increase of 94.3 million euros or 6.6%.

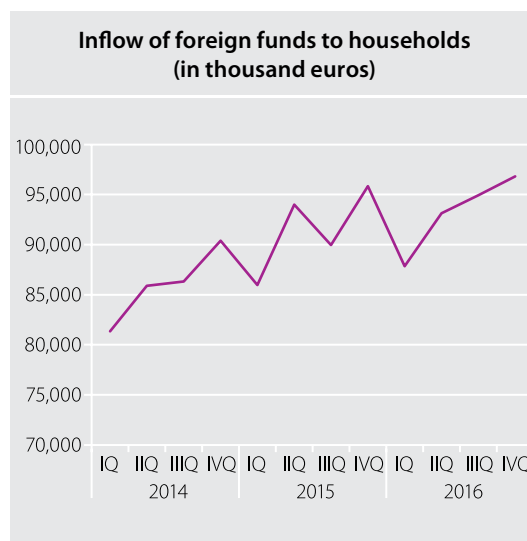
Loans to deposits ratio for this sector amounted to 0.84 at end-2016, being at a lower level than in the previous year (0.91). Household sector reported total net savings in the amount of 516.1 million euros at end-2016, which represented a y-o-y decrease of 2.4 million euros or 0.5%.

The balance of payment statistics showed that the y-o-y increase in 2016 was recorded in the inflow of cash based on compensations to the employees and remittances to households from abroad.

Graph 15



Graph 16

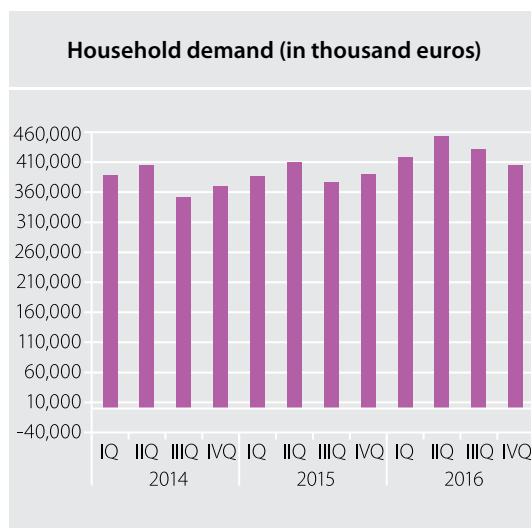


Source: CBCG

<sup>13</sup> Data for December 2016 are preliminary.

<sup>14</sup> Source: MONSTAT - estimated population as at 1 January 2015 and 2016

Graph 17



According to preliminary figures, the total demand of the household sector in Q4 2016 was higher compared to the level of demand for the same quarter in 2015, while this level was lower than the household demand recorded in the first three quarters of 2016.

### 3.1.2. Public Sector Demand

#### Montenegro's public finance

According to the Ministry of Finance preliminary data, **public spending** in 2016 amounted to 1.82 billion euros or 48.3% of the estimated GDP.<sup>15</sup> Compared to the previous year, public spending was lower by 0.5% and compared to the plan is higher by 2.3%. Recorded level of public spending was financed by tax revenues (1.01 billion euros), contributions (462.9 million euros), fees (120.2 million euros), other revenues (47.3 million euros), duties (18.9 million euros), donations (17.3 million euros) receipts from loan repayment and funds transferred from the previous year (4.3 million euros).

Current public spending (public spending reduced by capital expenditures) amounted to 1.71 billion euros or 45.4% of GDP and it grew by 9.9% y-o-y. Increase in current public spending is the result of an increase in gross salaries and wages paid by the employer by 9.1%, and an increase in spending for the rights of social protection for 86.8%. Capital budget amounted to 105.9 million euros or 2.8% of GDP, which is 60.5% lower compared to the previous year, which is explained by a weaker pace of implementation of priority sections of the highway Bar-Boljare.

According to individual economic classification, current expenditures accounted for the main share in the structure of public expenditures (44.6%), followed by transfers (42.3%), capital expenditures (5.8%), while 7.3% referred to other expenditures.

Preliminary **public revenues** amounted to 1.68 billion euros or 44.6% of estimated GDP, being at the level of planned, yet 10.3% higher in relation to 2015. In the structure of public revenues tax revenues, with a share of 60.2%, are still dominant.

<sup>15</sup> Estimated GDP for 2017 amounts to 3.77 billion euros.

According to preliminary data from the Ministry of Finance, in 2016 there was a **deficit of public spending** in the amount of 136.7 million euros<sup>16</sup> or 3.6% of GDP and was lower than the deficit in 2015 by 166.1 million euros, and compared to adjusted deficit in 2015 by 128.4 million euros. According to the IMF<sup>17</sup> estimates a deficit of public spending in 2016 amounted to 5.3% of GDP.

### **Budget of Montenegro**

According to Ministry of Finance preliminary data, total revenues<sup>18</sup> of the Budget of Montenegro amounted to 2.13 billion euros in 2016.

**Source revenues** amounted to 1.49 euros or 39.4% of estimated GDP, and they increased by 1.9% in relation to the plan, and they showed a y-o-y increase of 12%. In the structure of source revenues, tax revenues accounted for the main share of 59.6%, followed by contributions with 31.1%, other revenues 2.3%, fees 31.1%, duties 0.9%, donations 0.8%, and revenues from loan repayments and funds transferred from the previous year 0.3%.

Tax revenues amounted to 886.5 million euros, recording growth both relative to the plan and compared y-o-y by 4.5% and 10.1%, respectively. The most significant growth compared to the previous year was recorded in the collection of Value Added Tax (500.7 million euros), showing an increase of 9.5% or 43.5 million euros. The increase in these revenues is a result of higher collection of import VAT in 2016. Personal income tax increased compared to the previous year to 17.5% due to the implementation of the new Law on salaries of employees in the public sector, which increased salaries to officials and employees, while for the purpose of harmonization of domestic legislation with EU regulations, excise duties increased by 7.4% or 12.7 million euros.

Fee income also recorded significant y-o-y growth. An increase of 149.6% or 44.3 million is the result of one-off charge of the digital dividend for the purchase of radio-frequency spectrum.

On the other hand, revenues decreased on the basis of receipts from the repayment of loans and funds transferred from the previous year by 46%.

Revenues from contributions amounted to 462.9 million euros being 4.2% lower than the plan for 2016, recording a 5.9% y-o-y increase.

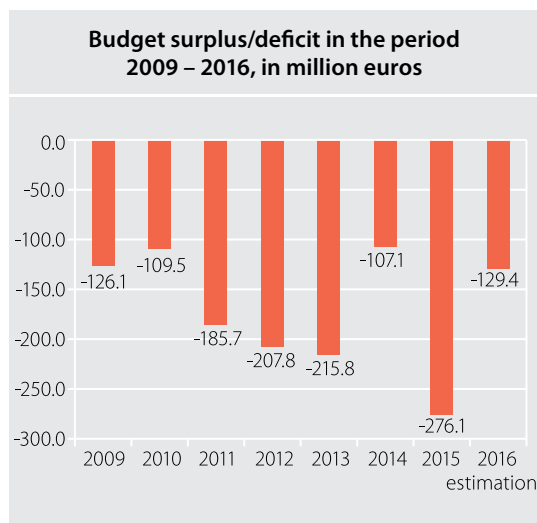
**Consolidated budget expenditures** amounted to 1.62 billion euros in 2016, or 42.8% of the estimated GDP. Recorded expenditure compared to the planned declined by 6.7%, while compared to the previous year were lower by 0.1%. Current expenditures in the reporting period amounted to 733.2 million euros and were higher than the planned by 4.4%. Social welfare transfers amounted to 555 million euros or 14.7% of GDP. Montenegro's capital budget amounted to 64.8 million euros or 1.7% of GDP.

<sup>16</sup> Adjusted deficit will be published by adopting the Law on Final Statement of Accounts of the State Budget for 2016.

<sup>17</sup> The IMF estimates in the statement of the IMF mission on consultations for 2017 in conjunction with Article IV, February 2017

<sup>18</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.

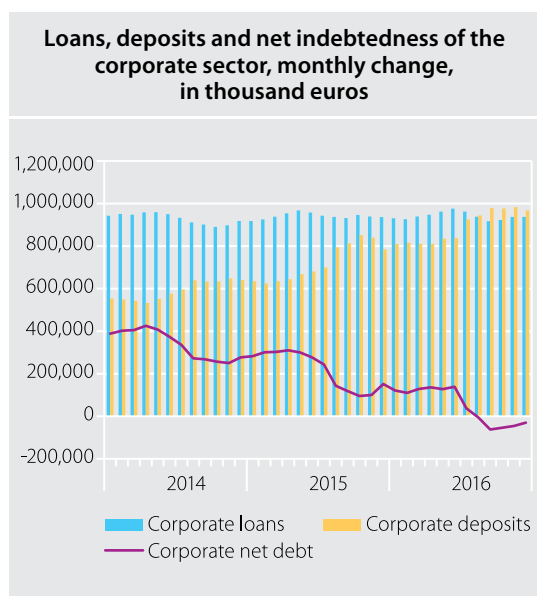
Graph 18



Source: Ministry of Finance

**Budget deficit** of Montenegro was estimated at 129.4 million euros<sup>19</sup> or 3.4% of GDP and was lower than the deficit in 2015 by 161.8 million euros, compared to adjusted deficit in 2015 by 146.7 million euros. Debt repayment amounted to 533.1 million euros.

Graph 19



### 3.1.3. Economy

Due to the absence of data on investments by the corporate sector, net corporate sector indebtedness can be used for approximation.

Loans granted to the economy since August 2016 were lower than the deposits of this sector. Thus, the net savings of the corporate sector amounted to 30.5 million euros at the end of 2016, while at the end of last year there was a net debt of 151.6 million euros. The structure of loans in this sector, at the end of 2016, have been dominated by long-term loans with 76.4% indicating that the loans to the corporate sector were dominantly used for increasing the volume of economic activity.

### 3.1.4. External Demand and the Current Account

The increase in visible imports and services, as well as increased outflow of primary income had a negative impact on the overall current account balance. Preliminary data show that the current account deficit amounted to 711.9 million euros or 18.9% of GDP, which is 5.6 percentage points higher than in 2015.

<sup>19</sup> Adjusted deficit will be published by adopting the Law on Final Statement of Accounts of the State Budget for 2016.

As a result of the increase in domestic demand, in 2016, a growth of visible imports amounted to 12% annually. At the same time visible exports increased by 3.5%. Goods and services account balance was negative and amounted to 23.5% of GDP, which is by 5 percentage point more than in 2015.

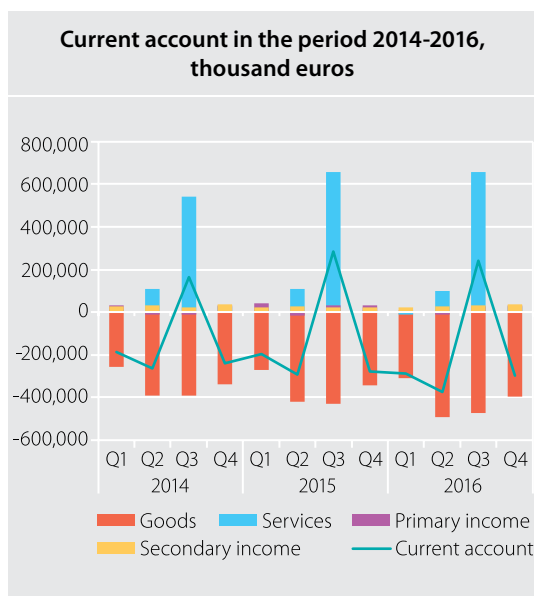
The foreign trade deficit amounted to 1.7 billion euros or 44% of GDP. The growth of foreign trade deficit of 13.5% on an annual basis is the result of higher growth in imports than exports. The import of goods (two billion euros or 53% of GDP) was 11.8% higher than in 2015, while at the same time exports (338.8 million or 9% of GDP) was up by 4.1%.

The surplus at the services account amounted to 775.6 million euros or 20.6% of GDP and was 1.7% lower than in 2015. Reducing the surplus for the most part contributed to the increase in expenditures of 12.8%.

The surplus at the primary income account amounted to 53.6 million euros, which represents an increase of 42.3% compared to 2015. The total inflow of primary revenues amounted to 257.8 million euros or 6.8% of GDP, which is by 4.1% more than in 2015. Secondary income account recorded surplus amounting to 120.4 million euros, or 21.9% more than in 2015.

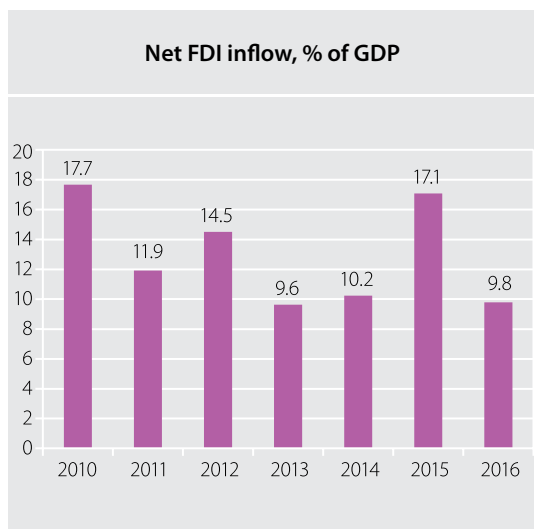
In 2016, there was a decrease in net foreign direct investment inflow. According to preliminary data, net foreign direct investments amounted to 9.8% of GDP, which is seven percentage points less than in 2015. The decrease in net inflow results from a decrease in the inflow of equity investments and inter-company debt and higher outflow arising from dividends from a company's accumulated profits from the previous year.

Graph 20



Source: CBCG

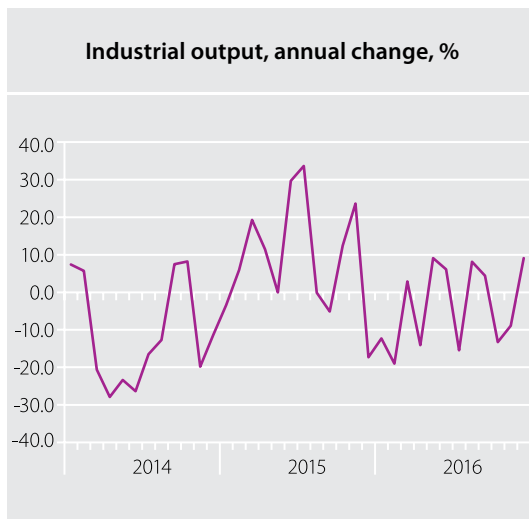
Graph 21



Source: CBCG

## 3.2. Supply and Production

Graph 22



Source: Monstat

In 2016, industrial output recorded y-o-y decrease of 4.4%. Manufacturing industry recorded output decline in the sector mining and quarrying of -18.1%, and manufacturing industry of -7.8% while electricity, gas and steam supply recorded respective output growth of 3.5%. Observing monthly data on industrial output, the highest monthly decline was recorded in April (-21.6%), while the highest increase was recorded in March (33.8%).

Some 1.8 million tourists visited Montenegro in 2016, which represents the y-o-y increase of 5.9%. The number of domestic tourist arrivals decreased by 1%, while the number of foreign tourists increased by 6.6%. Tourist overnights amounted to 11.3 million euros, which is a y-o-y increase of 1.8%.

The total **production of wood products** amounted to 377.043 cubic metres of wood products in 2016, which is 22.4%<sup>20</sup> less than in 2015.

According to preliminary Monstat data, the total value of performed **construction works** amounted to 382.7 million euros in 2016 recording y-o-y growth of 31.5%, whereas measured by the effective working hours it increased by 16.7%.

Compared y-o-y, air passenger transport recorded an increase of 12.9%, road passenger transport increased by 8%<sup>21</sup>, while railway passenger transport increased by 3.9%<sup>22</sup> in relation to 2015.

In 2016, air, road, and railway freight transport recorded respective y-o-y growths of 2.4%, 10.9%<sup>23</sup> and 41.2%<sup>24</sup>.

Total turnover in ports in 2016 amounted to 1.6 million tonnes or 10.6% more than in the previous year, whereby exports was 49.2% and imports was 49.1%.<sup>25</sup> In this period, export decreased by 3.3% and import increased by 24.3%.

<sup>20</sup> This is shown as weighted index, while non-weighted output was 22.1% lower for the same period.

<sup>21</sup> Presented through number of passengers, it increased by 3.8% presented through passenger kilometres.

<sup>22</sup> Presented through number of passengers in thousands, it increased by 4.1% presented through passenger kilometres.

<sup>23</sup> Presented in thousand tonnes, transported goods decreased by 13.7%

<sup>24</sup> Presented in thousand tonnes, it decreased by 0.5%

<sup>25</sup> The sum of exports and imports does not give 100, due to the difference referring to the 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 fostering and maintaining a sound banking system and safe and efficient payment system. One of primary CBCG monetary policy objectives is contributing to achieving and maintaining price stability in the country.

The Central Bank of Montenegro Law<sup>26</sup> lays down the primary monetary policy instruments: open market operations, credit operations, lender of last resort and reserve requirements. However, it should be stated that all available monetary policy instruments of the CBCG have very limited impact on inflation trends.

In May 2016, the CBCG Council adopted the Decision Amending the Decision on Bank Reserve Requirement to Be Held with the Central Bank of Montenegro<sup>27</sup>, which stipulates that banks that allocated and maintained up to 25% of the reserve requirements in T-bills until 31 December 2016, may continue to hold these T-bills as a part of the reserve requirement until their maturity, but not longer than 31 March 2017. This amendment stipulates that banks must submit reports on reserve requirement of the appropriate forms to the Central Bank by 28 March 2017.

### 4.1. Monetary Policy Measures for Suppressing Inflation

The Central Bank of Montenegro had not taken any monetary policy measure for suppressing inflation in 2016.

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<sup>26</sup> "OGM 40/10, 46/10, 6/13"

<sup>27</sup> "OGM 33/16"

## 5. INFLATION FORECAST FOR 2017

### 5.1. Model Assessment

Montenegro's inflation *Fan Chart* represents a graph of probability distribution of inflation rate presented by the consumer price index (CPICG). 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 movement in the following period. The Fan Chart is aimed at considering uncertainties in the real economy flows, which result in the inflation rate movement, and periodically reflected in inflation rate trend (increase in energy prices, increase/decrease in the foreign trade deficit and the like).

Montenegro's Fan Chart for 2017 is based on the following three estimated components:

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

#### ***Fan Chart* central projection - ARIMA model for 2017**

With a view to developing a Fan Chart, an ARIMA (Auto Regressive Integrated Moving Average) model was developed of time series of inflation of Montenegro showed through the Consumer Price Index.<sup>28</sup>

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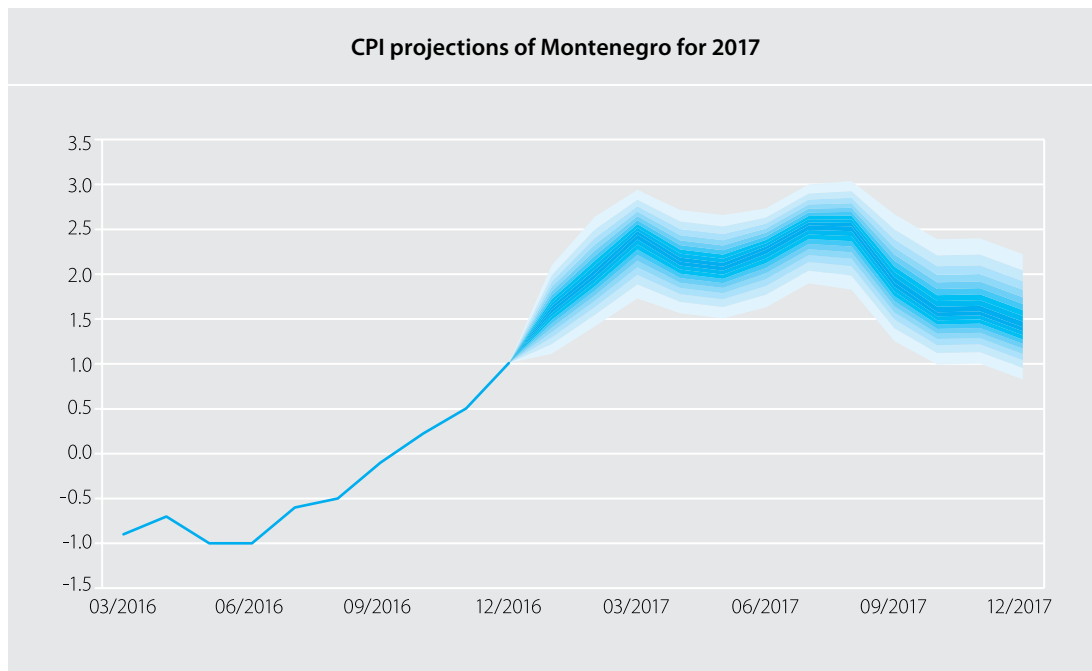
<sup>28</sup> More detailed explanation of ARIMA model of Montenegro was presented in the Central Bank Working Paper 11 “Inflation forecasting: Empirical research of retail price index of Montenegro for 2007 – implementation of ARIMA model”.



ARIMA model was used for short term forecasts (12 months), whereby iteration of 533 ARIMA models was made, which were ranked based on their efficiency and quality of diagnostics. The selected ARIMA model, ARIMA (1, 1, 16)<sup>29</sup> has sufficient confidence level for forecasts.

The monthly forecasts value was used as the value of central projection of the CPI graph for 2017. The obtained values represent the distribution mode, i.e. values with the highest frequency in the distribution of this time series.

**Graph 23**



Source: CBCG

Mean value of the obtained model is 2%. Value of central projection' asymmetry ratio ranged from 0.5 to 1, while standard deviation was 0.3%. The model-based inflation projection is located in the central part of the distribution. This indicates that the corresponding range of uncertainty of future inflation is symmetrically placed. Fan Chart explained the 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>30</sup> The Fan Chart has an equal number of bands (eight) on either side of the central band whereby every band is of the same colour, both above and below the central band, cumulatively takes the inflation projection to the next 10% of probability. As the degree of uncertainty grows over time, so the Fan Chart spreads.

<sup>29</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>30</sup> The mode value (central projection) is, by construction, always in the deepest band shade, but in case of a heavily unbalanced risk, the central projection may 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 2017, indicates that there is a **90% probability that the CPI inflation will range between 0.8% and 3%, depending on the month. At the same time, inflation at the end of 2017 is forecasted to range between 0.8% and 2.2%, with the central tendency 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 2017 are:

1. The increase in crude oil prices at the international market to 7%, which combined with the increase in excise duties on mineral oils 9%, should result in increasing of the overall inflation;
2. During 2017, expected growth in food prices at the international market. In addition, the projections have assumed the fluctuation of prices of agricultural products of +/-5% conditioned by their seasonal character;
3. Potential increase in electricity prices by 5%;
4. Wages and salaries in 2017 will be at the same level as in 2016;
5. Stagnation in real estate prices.

Deviation of any of abovementioned parameters would require the correction of the forecast.

## 5.2. Expert Assessment

The previous year was marked by a low inflation rate of 1%, which was almost the same as in the euro area. Low inflation rate was not only Montenegrin specificity, but the global trend.

Expectations for next year also indicate that we should expect a low inflation rate. Our survey showed that 80% of banks and 50% of the surveyed companies expect that in 2017 inflation will be within the range from 0.5% to 1.5%.

Next year we will be influenced by a number of factors that will act in the opposite direction when it comes to the expected rate of inflation. The continuation of restrictive monetary policy measures the ECB is expected. Implementation of fiscal consolidation measures will impact on the decline in aggregate demand. These measures will act anti-inflationary and should be added to the expected growth in economic activity, which will also act in the same direction.

On the other hand the increase in inflation will be affected by factors such as the expected increase in oil prices at the world markets, food and consumer goods, as well as the increase in certain of the fiscalities. Also, global expectations are that in 2017 inflation will be somewhat higher than in 2016.

Therefore, our forecast is that in 2017 we should expect a somewhat higher rate of inflation over the previous year. With the probability of 90% for the end of 2017, our model estimate projects inflation to range from 0.8% to 2.2%, with a central tendency of 1.4%. Our expert assessment which projects the inflation in the range from 1% to 3% is similar.

**Table 3**

<b>Estimated inflation rate at end-2017</b>		
<b>Optimistic assessment</b>	<b>Realistic assessment</b>	<b>Pessimistic assessment</b>
1%	2%	3%

This assessment is based on the same assumptions as the model assessment, thus the deviation of any parameters used for this forecast would require the revision of the forecast.

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