



PRICE STABILITY REPORT 2015

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LIST OF ABBREVIATIONS

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

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1. INFLATION INDICATORS

1.1. Inflation Trend in Montenegro

Most of European countries generally recorded low or negative inflation, resulting from lower price of oil at the global market, and lower prices of some food products. After deflation in 2014, prices in 2015, observed through the annual rates, recorded a positive sub-sign in all months. Annual inflation in Montenegro in December 2015 was 1.4%, while annual HICP inflation was 1.7%. Observed by quarters, prices growth in 2015 was reported during Q1 and Q2 (1.2% and 1.0%, respectively), remaining unchanged in Q3, yet recording price decline in Q4 (-0.7%).¹ Observed by months, the highest consumer prices growth was recorded in March (1.1%), while the highest price decline was recorded in July (-0.5%). The CPI growth in 2015 averaged to 1.5%.

Table 1

	Inflation, %							
	2014				2015			
	III	VI	IX	XII	III	VI	IX	XII
Change relative to the previous year-end	-0.8	0.0	0.0	-0.3	1.2	2.2	2.1	1.4
Annual change	-0.9	-0.1	-0.7	-0.3	1.6	1.9	1.7	1.4

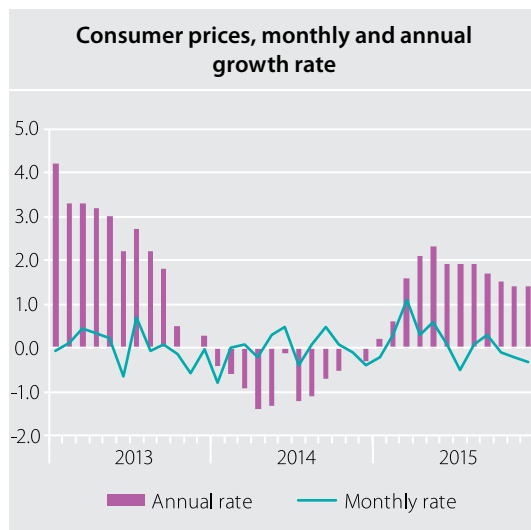
Source: Monstat

Prices under *clothing and footwear* recorded the highest annual decline in 2015 of 5%, with the highest increase in *prices of clothing* (6%). However, the annual inflation was mostly affected by prices under *food and non-alcoholic beverages* (2.4%) accounting for 38.6% in total CPI weighting structure. Within this category, increase was recorded in prices of bread and cereals (1%), meat (1.4%), fish (2.5%), milk, cheese and eggs (0.4%), oils and fats (14.2%), fruit (7.9%), vegetables (2.1%), sugar, jam, honey, chocolate and confectionary products (3%), other food products (5.7%), and non-alcoholic beverages (3%). *Hotels and restaurants* also recorded price increase of 3.4%, mostly resulting from increased prices of accommodation (7.1%), while increase in prices of tobacco by 3.6% due to increased excise duties on tobacco products in April 2015 contributed to the increase in prices under *alcoholic beverages and tobacco* of 3.3%. Increase in services for maintenance and repair of apartments of 8.9% resulted in increased prices under *housing, water, electricity, gas and other fuels* of 1.6%, recording

¹ Due to rounding of figures, when calculating quarterly inflation, the sum of rates insignificantly differs from total annual inflation.

the same increase as in prices under *health* due to increased prices of medical products, devices and equipment of 2.1%. Prices under *furnishing, household equipment and routine household maintenance* recorded annual price growth of 1.1%, due to increased prices of furnishing (1.5%), while prices under *recreation and culture and other products and services* increased both by 0.5%. Prices under communications recorded the lowest annual price growth of 0.1% in December 2015. The highest annual decline in 2014 was recorded by the prices under transport (4.6%), mostly due to decline in prices of fuels and lubricants by 11.1%, while prices under *education* remained unchanged relative to December 2014.

Graph 1



Source: Monstat

The *UN World Economic Situation and Prospects 2016 report* states that, over the last two years, prices of most basic commodities recorded a downward trend in advanced economies while some economies in transition, like Russia and Ukraine, recorded excessive price growth. Developing countries recorded inflation growth in 2015, due to higher prices in regions of Africa and Latin America and the Caribbean. Moderate global price increase is expected in 2016, although mitigation of price pressures and inflation decrease is forecasted for some countries in transition.

Table 2

Share of individual categories in total inflation ²				
	Weights	XII 15/XII 14	Growth rate	Contribution
TOTAL	1000.0	101.4	1.4	1.4
Food and non-alcoholic beverages	386.4	102.4	2.4	0.9
Alcoholic beverages and tobacco	37.9	103.3	3.3	0.1
Clothing and footwear	70.7	105.0	5.0	0.4
Housing, water, electricity gas and other fuels,	153.1	101.6	1.6	0.2
Furnishing, household equipment and routine household maintenance	46.9	101.1	1.1	0.1
Health	38.2	101.6	1.6	0.1
Transport	101.0	95.4	-4.6	-0.5
Communication	57.1	100.1	0.1	0.0
Recreation and culture	27.2	100.5	0.5	0.0
Education	15.7	100.0	0.0	0.0
Hotels and restaurants	23.0	103.4	3.4	0.1
Other products and services	42.8	100.5	0.5	0.0

Monstat and CBCG calculations

² 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.

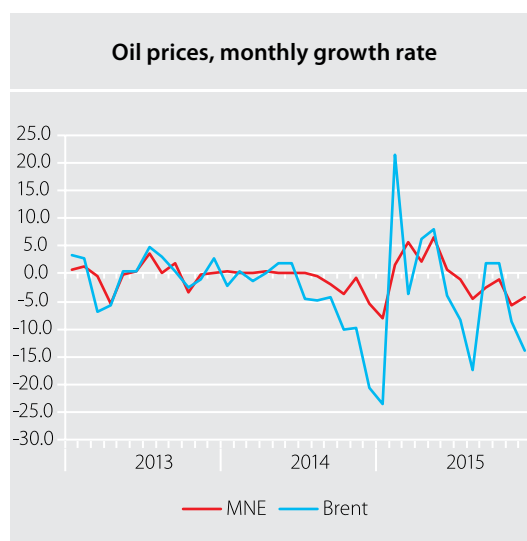
As the Report indicates³, inflation in advanced economies for 2016 could amount to 1.2% (growth from 0.3% from 2015), 8.3% in developing countries (growth from 7.7% from 2015) and economies in transition (decline from 16.1% from 2015). Due to the dependence on import, changes in prices of oil, food and consumer goods will affect prices in Montenegro and the overall inflation in the upcoming period.

The prices of liquid fuels and lubricants, which were mostly affected by the changes in the global oil prices, recorded the annual decline of 11.1%. The price of the OPEC reference basket averaged to 49.5 USD/barrel in 2015, being 48.5% lower than in 2014. The price of Brent averaged to 52.4 USD/barrel in 2015, being 47% lower than in 2014. Observed during the year, the highest average Brent price was recorded in May (64.32 USD/barrel), while the lowest one was recorded in December when the average price of Brent reached a level of 38.16 USD/barrel, being 39% less than the average price of Brent in December 2014, and also the lowest price since June 2004 (when it amounted to 35.21 USD/barrel). The decline in oil prices mostly resulted from an increase in supply compared to demand, more signs of weakening Chinese economy, fluctuations on global stock exchanges and the appreciation of US dollar. The World Bank⁴ forecasts expect that prices of oil will average to 37 USD/barrel in 2016, being 27% lower than the average price in 2015. The Report⁵ indicates that decrease of forecasted oil prices may result in larger-than expected increase in Iran's exports and a possible recovery of exports from Libya.

The largest contribution to inflation (0.9 percentage points) was recorded by the prices of *food and non-alcoholic beverages*, while *clothing and footwear* contributed with 0.4 percentage points. The largest negative contribution of -0.5 percentage points was recorded by the prices of *transport*. Graph 3 shows the shares of individual components of consumer prices in annual inflation.

In 2015, the monthly⁶ **core inflation** rate was below the official monthly inflation for four months (February, March, April, and May), while it was higher than the level of total monthly inflation during the remaining eight months (due to the changes in prices of certain products otherwise excluded from the core inflation calculation - electricity, agricultural products, fuel, and the like). Graph 4 shows the trend in the total and core inflation rate.

Graph 2



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

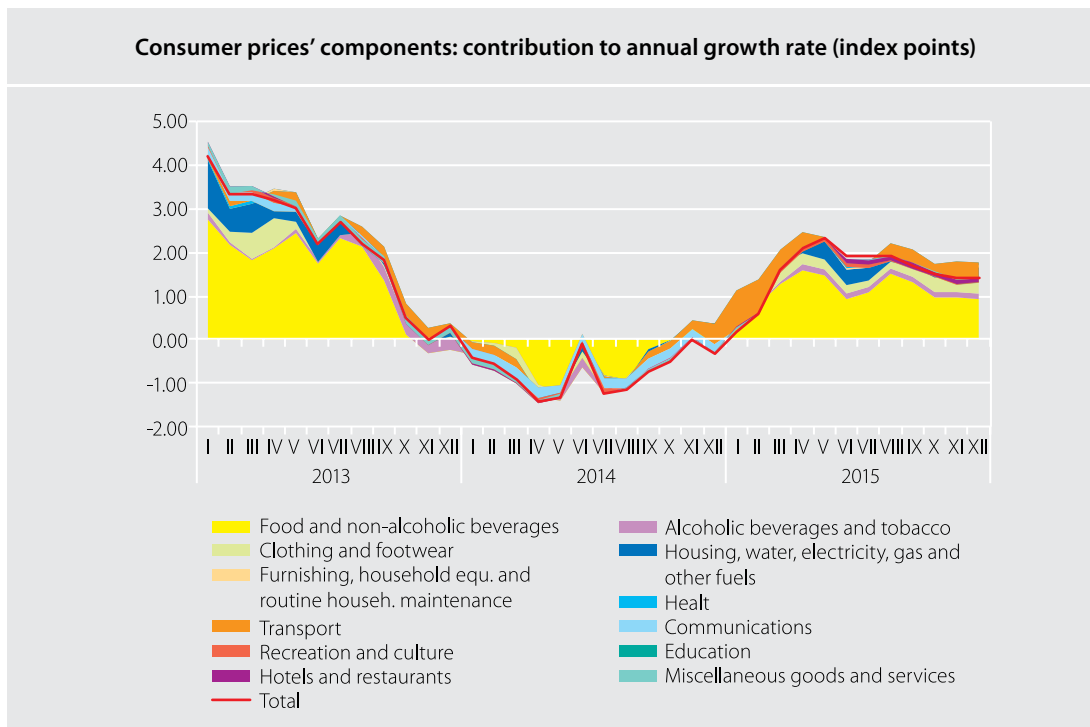
³ Detailed data on inflation trends for individual regions and countries are listed in tables: A.4, A.5 and A.6 of the Annex to the World Economic Situation and Prospects 2016 report.

⁴ Source: World Bank: Commodity Markets Outlook, January 2016

⁵ Source: Ibid.

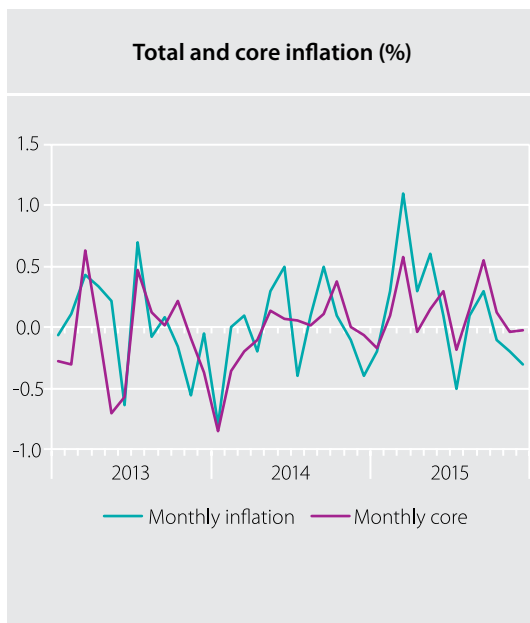
⁶ In 2015, as in the previous three years, data on annual change in prices were not available for all products included in the core inflation basket, i.e. for the products excluded from the basket for the calculation of the core inflation; therefore, it was not possible to calculate annual core inflation by months.

Graph 3



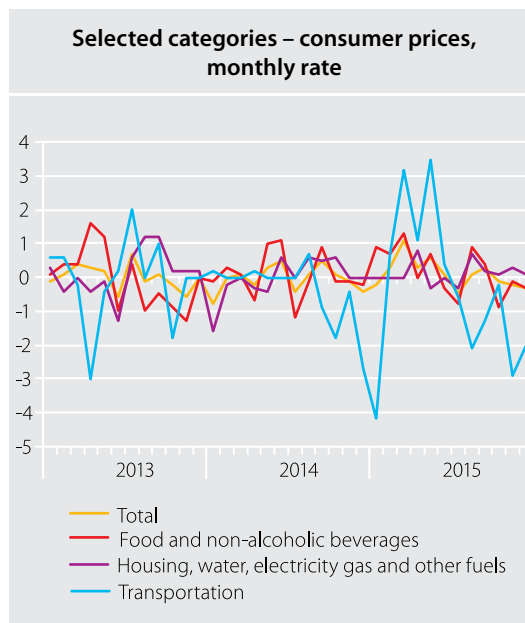
Monstat and CBCG calculations

Graph 4



Monstat and CBCG calculations

Graph 5



Source: Monstat

The producers' prices of manufactured products remained unchanged compared to December 2014. Prices in mining and quarrying, electricity, gas and steam supply, and manufacturing industry remained unchanged. The average growth in the producers' prices of manufactured products amounted to 0.3% in 2015, whereby an average growth in prices was recorded in electricity, gas and steam supply, mining and quarrying, and electricity, gas and steam by 0.9%, 0.2% and 0.1%, respectively.

Export producers' prices of manufactured products⁷ recorded the y-o-y decrease of 12.2% in December 2015, while the average annual price growth was 0.2%. Manufacturing industry reported y-o-y decline in prices of 12.5%, as well as prices in mining and quarrying of 6.3%.

Import prices of manufactured products⁸ declined y-o-y by 1.2% in December 2015, and the average annual rate showed a decrease of 2.1%. Annual decline was reported by the manufacturing industry prices (-1.2%), while mining and quarrying prices reported annual growth of 5.5%.

1.2 Inflation Trends in the Region and the EU

Observing annual inflation in some countries of the region, it can be seen that the positive rate recorded in Serbia (1.5%) and Albania (2%), while negative rate was recorded in Macedonia (-0.3%), Croatia (-0.3%), Slovenia (-0.6%) and Bosnia and Herzegovina (-1.3%).

The annual rate in the Euro area in December 2015 was 0.2% being higher by 0.4% than the annual rate recorded in December 2014. The Euro area recorded negative or low inflation rate in 2015, mostly resulting from the significant decline in prices of oil at the world market. The highest annual rate was recorded in May (0.3%), while the highest negative inflation was recorded in January (-0.6%). The monetary measures of the ECB from 2015 did not affect the inflation trend adjustments, in line with the newly established objective of reaching inflation rate of close to 2%. The initial inflation forecasts for the Euro area for 2016 reduced, so it would amount to 0.5%⁹, while it is expected to reach 1.5% in 2017, resulting from the increase in real wages and salaries and domestic demand as well as the assumption of moderate growth in oil price.

When it comes to inflation in the EU member states, a negative rate was recorded in twelve member states, whereby the lowest annual rate was recorded in Bulgaria (-0.9%), Romania (-0.7%), Slovenia (-0.6%), and Cyprus (-0.6%). The highest annual rate was recorded in Belgium (1.5%), Malta (1.3%) and Austria (1.1%). The annual rate in the Euro area amounted to 0.2%, and the components that recorded the largest positive contribution to annual inflation were restaurants and bars (0.10 percentage points), tobacco (0.06 percentage points) and vegetables (0.06 percentage points), while fuels for transport (-0.40 percentage points), heating oil (-0.19 percentage points), and gas (-0.10 percentage points) recorded the highest negative contribution.

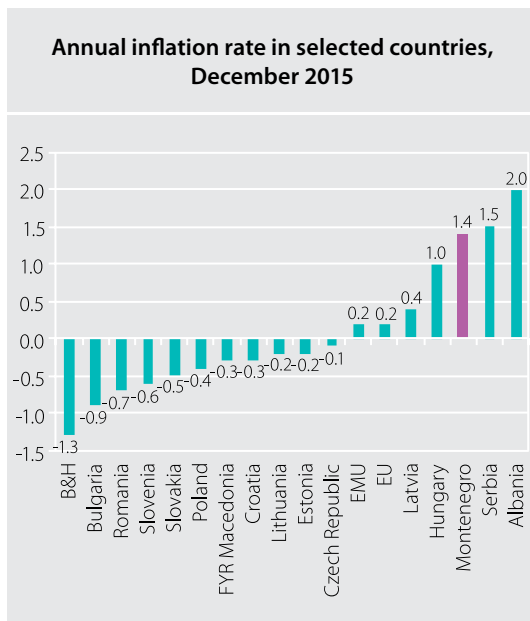
⁷ The exports prices index represents the monitoring of monthly changes in the prices in industrial products made by companies and sold at foreign markets. It is an important economic indicator that can be used as time series deflator, particularly for national account purposes.

⁸ Import price index refers to the monthly change in prices of imported 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.

⁹ Source: European Commission: European Economic Forecast, winter 2016

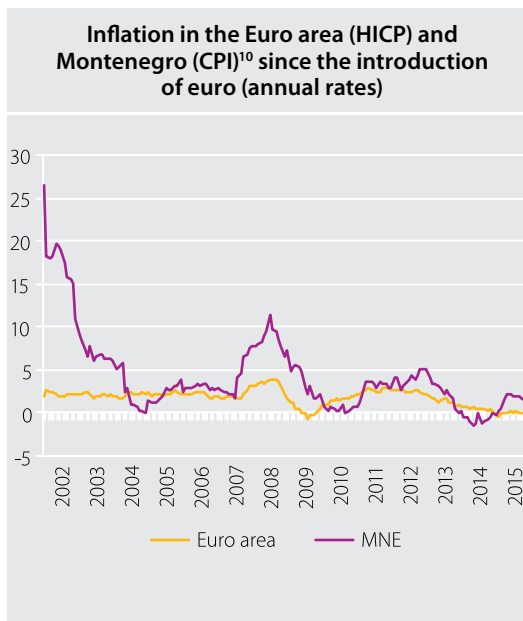
The annual rate reported in the EU amounted to 0.2% in December 2015, the same as in in the Euro area, while CPI and HICP inflation in Montenegro amounted to 1.4% and 1.7%, respectively.

Graph 6



Source: National Statistical offices and Eurostat

Graph 7



Source: Monstat and Eurostat

¹⁰ Costs of living were used for measuring inflation in Montenegro until 2009, after which consumer prices were introduced.

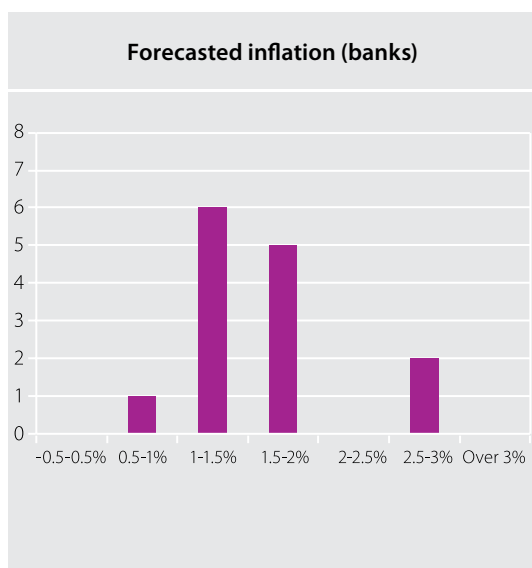
2. INFLATION EXPECTATIONS OF THE BANKING SECTOR AND ECONOMY

2.1. Banks' Expectations

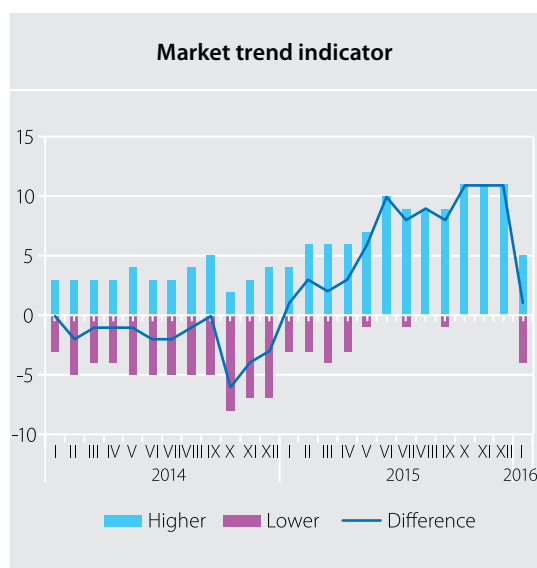
When it comes to inflation expectations of banks, based on a survey conducted in January 2016, six banks expect inflation in the range of 1% -1.5%, five banks expect inflation between 1.5% and 2%, two banks expects inflation to range between 2.5% and 3%, while one bank expects inflation between 0.5% and 1%.

Market trend indicator is used (blue line in Graph 9) for calculating inflation forecasts. 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, 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

Graph 8



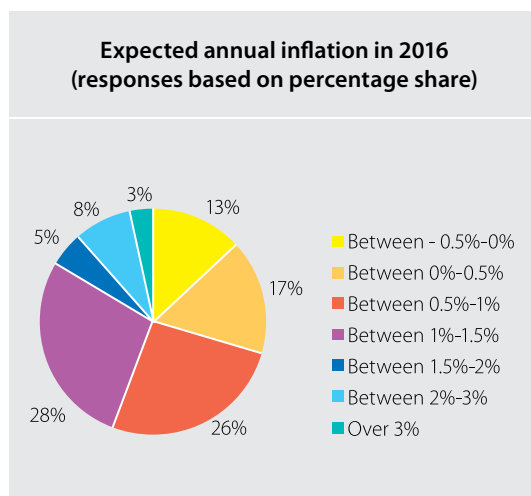
Graph 9



expectations, with minor variations, were at a high level throughout the whole 2015. In particular, low inflation expectations were expressed in the last quarter of the 2015 when most banks expected inflation growth. Inflation expectations in January 2016 pointed to the mild inflation increase.

2.2. Expectations of Economy (Except Banks)

Graph 10



Inflation

Out of total surveyed companies, the largest number (28%) expected that inflation in 2016 would range between 1% and 1.5%. Some 26% of the surveyed companies expect inflation to range between 0.5% and 1%, while 17% of companies expect inflation between 0% and 0.5%. Inflation between -0.5% and 0% is expected by 13% of surveyed companies, while 8% expected inflation between 2% and 3%. Some 5% of respondents expected that inflation in 2015 would range between 1.5% and 2%, while 3% of respondents opined that inflation would be over 3%.

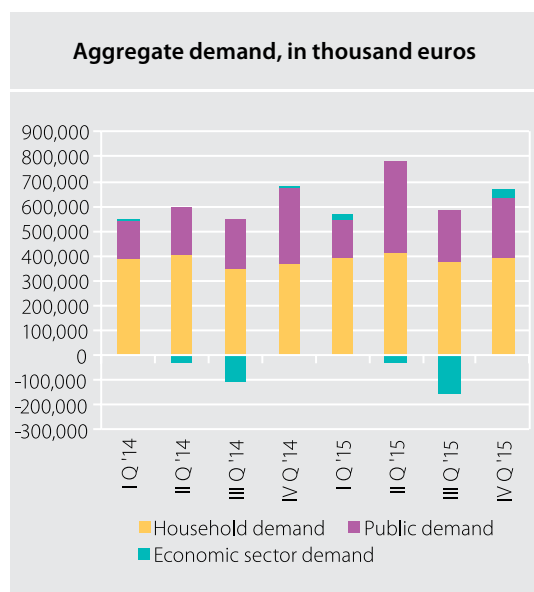
3. INFLATION DETERMINANTS

3.1. Demand¹¹

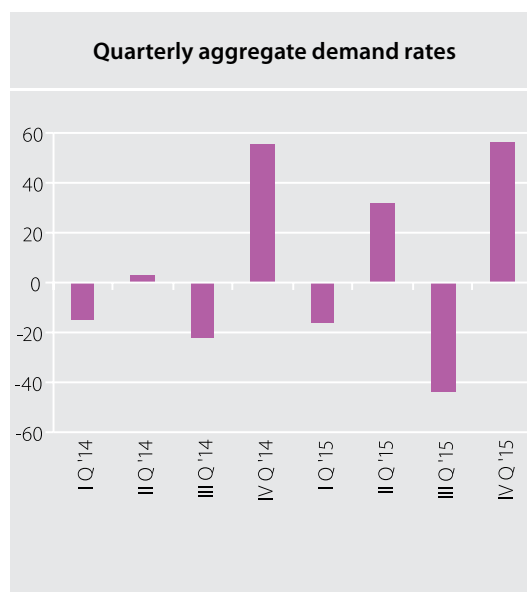
The level of aggregate demand is usually the largest in the last quarter, resulting from the payment of arrears by companies and budget. According to preliminary data, the highest level of aggregate demand during 2015 was recorded in Q2, mostly resulting from public spending. Total demand in Q4 2015 was slightly lower compared y-o-y. Observing the structure of total demand in Q4 2015, compared y-o-y, the share of household demand increased, while public spending component decreased.

The aggregate demand rate in Q4 2015 was higher than in the previous three quarters, and slightly higher compared to the level recorded in the last quarter of the previous year.

Graph 11



Graph 12



¹¹ Preliminary data

Box 1 - Aggregate demand calculation methodology

With a view to 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 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:

$$AD = C + I + G$$

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)

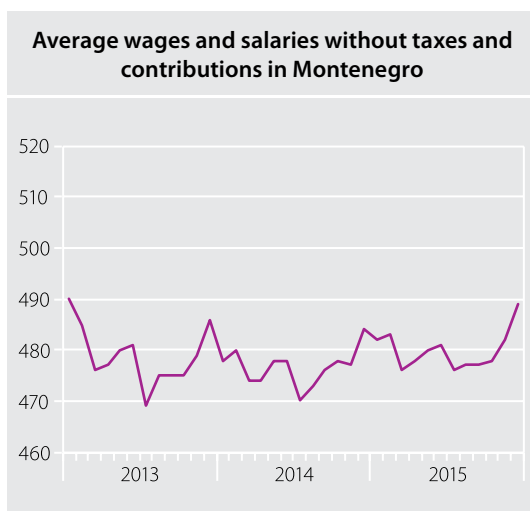
G = public consumption – paid pensions – salaries paid from the budget – net savings by the Government (deposits – loans – Treasury bills)

AD – aggregate demand, C – personal spending, I – investment spending, G – public spending

3.1.1. Salaries and other Available Demand Determinants

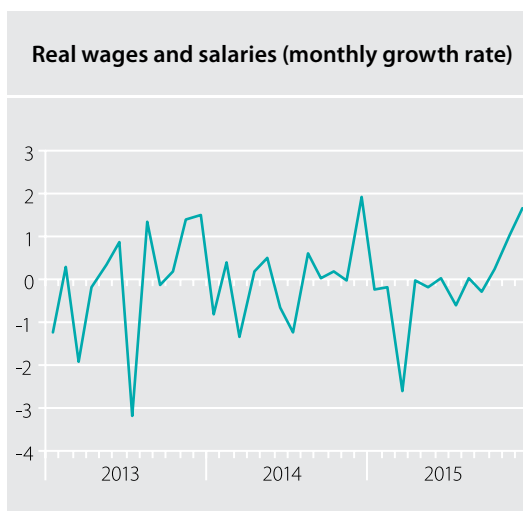
Monstat data showed that an average salary in Montenegro was 725 euros in 2015 and it increased by 0.3% in relation to the average in 2014. An average salary without taxes and contributions totalled to 480 euros, also showing the year-on-year increase of 0.6%. Real wages and salaries without taxes and

Graph 13



Source: Monstat

Graph 14



Source: Monstat

contributions in 2015 were 0.9% lower compared to the average wages and salaries without taxes and contributions in 2014.

Observed by months, the highest nominal growth in wages and salaries without taxes and contributions was recorded in December (1.5%), while the lowest nominal growth with the identical rate was recorded in February, June, August, and October. The highest nominal decline of wages and salaries without taxes and contributions was recorded in March (-1.4%).

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 December, while the highest real decline was reported in March.

Households' loans reported positive trend in 2015. The average monthly growth of loans granted to this sector was 0.3%, while the growth at the average rate of 0.1% was recorded in 2014. Total banks' loans and other receivables from the household sector amounted to 921.4 million euros at 2015 year-end, which indicated a growth of 27.6 million euros or 3.1% in relation to 2014 year-end.

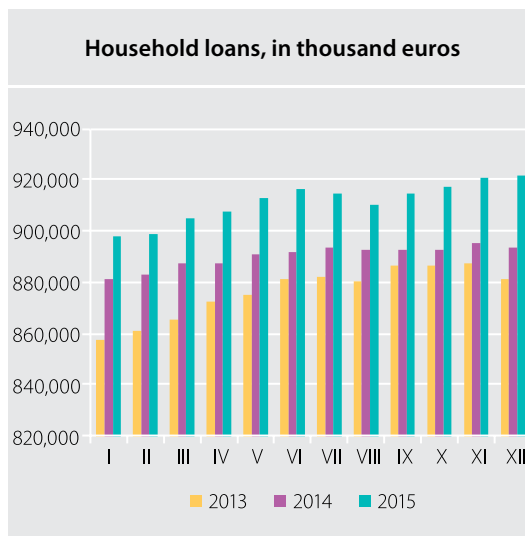
The average indebtedness of this sector grew over the one-year period. Thus, debt per capita¹² amounted to 1,481 euros at end-December 2015, and it was 44 euros or 3.1% higher than at end-2014.

Debt to micro-credit financial institutions amounted to 45.8 million euros at end-2015 and was 9.7 million or 27% higher than a year ago.

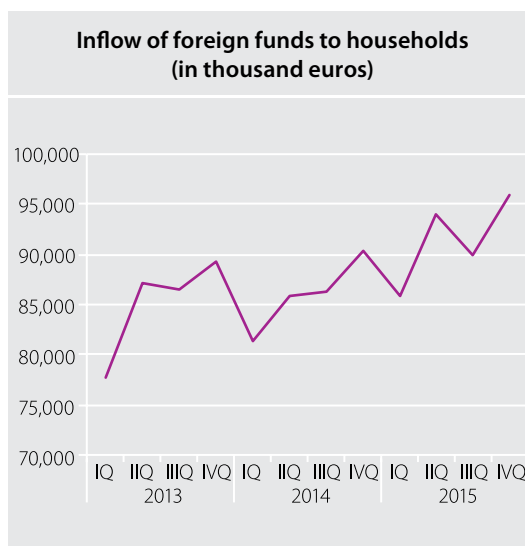
Household deposits were mainly on an uptrend in 2015 and they recorded an average monthly growth of 0.7% (an average monthly growth of 0.6% was recorded in 2014). Deposits of this sector amounted to 1,439.8 million euros at end-2015, which represented a y-o-y increase of 108 million euros or 8.1%.

Loans to deposits ratio for this sector amounted to 0.64 at end-2015, being at a lower level than in the previous year (0.67). Household sector re-

Graph 15



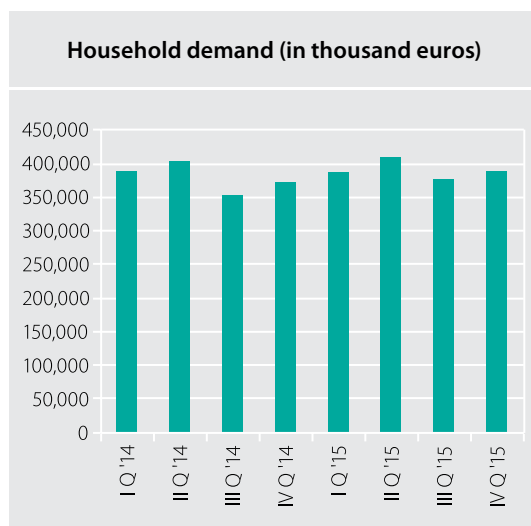
Graph 16



Source: CBCG

¹² Population - estimate as at 1 January 2015

Graph 17



ported total net savings of 518.5 million euros in end-2015, which represented a y-o-y increase of 80.5 million euros or 18.4%.

The balance of payment statistics showed that the inflow of cash based on money remittances recorded y-o-y increase in 2015.

According to preliminary figures, the total demand of the household sector in Q4 2015 was higher compared to the level of demand for the same quarter in 2014, as well as in relation to the level of demand in Q1 and Q3 2015, while the level was lower than the household demand recorded in Q2 2015.

3.1.2. Public Sector Demand

Montenegro's public finance

According to the Ministry of Finance preliminary data, **public spending** in 2015 amounted to 1.83 billion euros or 50.9% of the estimated GDP¹³ for 2015. Compared to the previous year, public spending was higher by 10.4%, with the planned amount exceeded by 118.3 million euros or 6.9%. The main reason for deviation was the increase in capital expenditures by 151 million euros referring to financing the construction of the priority route (Smokovac – Mateševac) of Bar - Boljari highway. Tax revenues (925.6 million euros), contributions (437.3 million euros), fees (83.7 million euros), duties (18.4 million euros), other revenues (39.1 million euros), receipts from loan repayment and funds transferred from the previous year (8.2 million euros) and revenues from donations (13.5 million euros) financed the recorded level of public spending.

Current public spending (public spending reduced by capital expenditures) amounted to 1.59 billion euros or 43.4% of GDP and it grew y-o-y by 1.4%, while capital budget amounted to 268.1 million euros or 7.5% of GDP.

According to individual economic classification, current expenditures accounted for the main share in the structure of public expenditures (41%), followed by transfers (36.1%), capital expenditures (14.7%), while 8.2% referred to other expenditures.

Preliminary public revenues were estimated at 1.53 billion euros or 42.4% of estimated GDP, being 1.5% lower y-o-y, yet 0.3% higher in relation to the plan. As for the structure of public revenues, tax revenues accounted for the main share of 60.7%, followed by contributions (28.7%), whereas the remaining public revenues accounted for 10.6%.

¹³ Estimated GDP for 2015 amounts to 3,595 million euros.

In 2015, according to Ministry of Finance preliminary data, **public spending** ran a **deficit** in the amount of 303.9 million euros or 8.5% of GDP, or 196.4 million euros more compared to a deficit at the end of 2014.

Budget of Montenegro

According to Ministry of Finance preliminary data, total revenues¹⁴ of the Budget of Montenegro amounted to 2.17 billion euros in 2015.

Source revenues amounted to 1.33 billion euros or 36.9% of estimated GDP, and they decreased by 5.9% in relation to the plan, and they showed a y-o-y decrease of 2%. In the structure of source revenues, tax revenues accounted for the main share of 60.7%, followed by contributions with 33%, fees with 2.2%, other revenues with 2%, duties with 1%, revenues from loan repayments with 0.6%, and donations with 0.5%.

Tax revenues amounted to 805.5 million euros, recording a 3.3% decrease relative to both the plan and compared y-o-y. The most significant growth compared to the previous year was recorded in the collection of excise duties (170 million euros), showing an increase of 8.7% or 13.5 million euros. The increase of these revenues resulted from increase in excise duties on mineral oils and their derivatives (some 9 million euros) and increase in excise duties on cigarettes (some 4.5 million euros), in line with the “excise duties calendar”, aimed at the harmonisation of national legislation with the EU acquis.

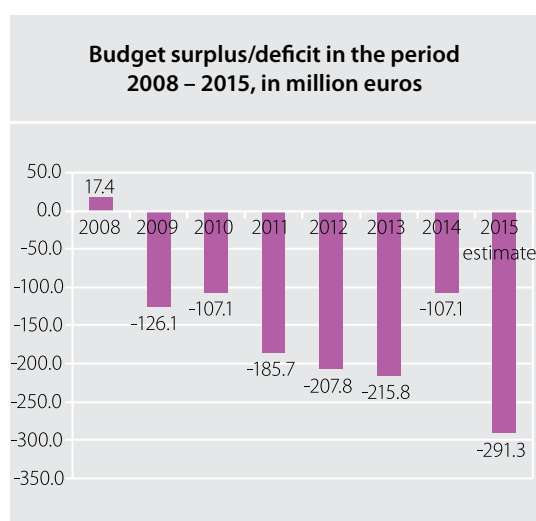
Fee income also recorded significant y-o-y growth. The increase of 70.9% or 12.3 million euros resulted from temporary introduction of fee for highway and financing of representative sport (of 0.07 euros) paid per litre of fuel, abolished in November 2015 following the Decision of the Constitutional Court.

On the other hand, significant decrease in revenues from VAT was recorded, which amounted to 457.1 million euros, recording nominal y-o-y decline by 40.5 million euros (8.1%) resulting from decline in collection of import VAT in 2015.

Revenues from contributions amounted to 437.3 million euros being 4.7% over the plan for 2015, and recording a 1.6% y-o-y decrease.

Consolidated budget expenditures amounted to 1.62 billion euros in 2015, or 45% of the estimated GDP. In relation to 2014, recorded expenditures increased by 10.8%, exceeding the plan by 3.4%. Current budget expenditures amounted to 669.7 million euros or 6% more than planned.

Graph 18



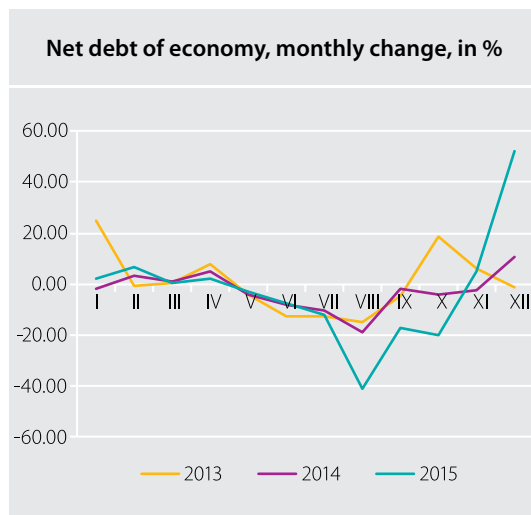
Source: Ministry of Finance

¹⁴ 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.

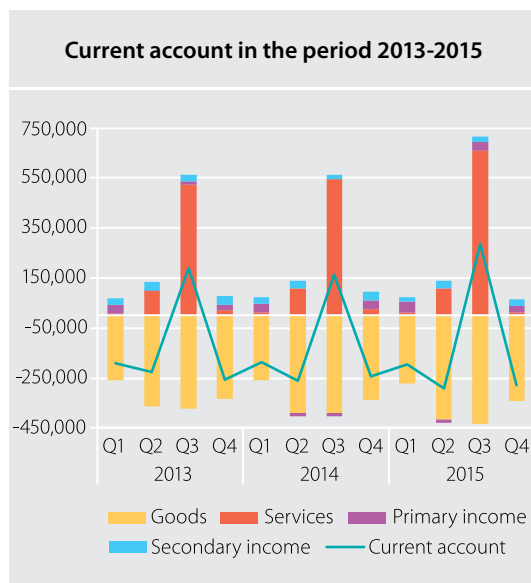
Social welfare transfers amounted to 487 million euros or 13.5% of GDP. Montenegro's capital budget amounted to 228 million euros or 6.3% of GDP.

According to Ministry of Finance preliminary data, Montenegro's **budget deficit** amounted to 291.3 million euros or 8.1% of GDP, and it was by 184.1 million euros higher than the deficit recorded in 2014. Debt repayment amounted to 541.7 million euros.

Graph 19



Graph 20



Source: CBCG

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.

Corporate sector loans were significantly over corporate bank deposits in 2015, thus this sector was net debtor also in 2015. Net corporate sector's debt was 151.6 million euros at end-2015, being 125.6 million euros or 45.3% lower compared y-o-y. Long-term loans accounted for the main share in the structure of loans to the corporate sector (72.2%), which indicates that these loans were mainly used for increasing the volume of economic activity.

3.1.4. External Demand and the Current Account

In 2015, a y-o-y decrease in the current account deficit was recorded, resulting mostly from positive trends at the services and primary income accounts. Preliminary data show that the current account deficit amounted to 481.9 million euros or 13.4% of GDP, which is by 1.8 percentage points lower than in 2014. Increased export of services, and increased inflow and declining outflow from primary income had a positive impact on the total current account balance in 2015.

According to preliminary data, visible imports made up 49.7% of GDP in 2015, which resulted in still high foreign trade deficit of 40.7% of GDP amounting to 1.5 billion euros. The foreign trade deficit growth of 6.32% resulted from of a mild increase in imports and a slight decrease in exports of goods compared to 2014. The value of

visible trade in 2015 declined by 9% and its share in GDP was 9%. Such export trend was mostly affected by decrease in exports of meat and meat-processing products (76.7%), electricity (21.4%), and mineral ores and metal scraps (17.3%). Total import of goods amounted to 1.8 billion euros, and it was 3.1% higher than in 2014. The increased imports of electric power machinery and apparatus (26.2%), road vehicles (17.9%), and telecommunications equipment, parts and accessories (23.1%) had the most significant effect on import growth.

Positive trends were noted at the services account, which resulted in a surplus of 789,2 million or 22% of GDP, i.e. showing the y-o-y increase of 2 percentage points. The realization of the surplus at the services account in 2015 was mostly affected by the increase in tourist demand. Goods and services account balance was negative and amounted to 18.7% of GDP, which is by 1 percentage point less than in 2014.

The surplus recorded on the primary revenues account amounted to 92.8 million euros, which represents an increase of 102.2% compared to 2014. The total inflow of primary revenues amounted to 247.7 million euros or 6.9% of GDP, which was at the approximately same level as in 2014. Surplus on the secondary income account amounted to 98.8 million euros in 2015, recording a 13.7% y-o-y decrease.

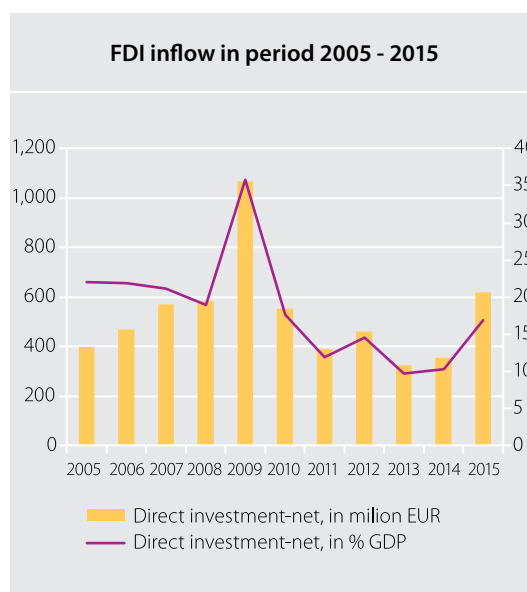
An increasing trend in FDI inflow was recorded in 2015. According to preliminary data, the net FDI inflow amounted to 619.3 million euros, recording a y-o-y growth of 75%. The increase of net inflow mostly resulted from significant increase of inflow based on investments in domestic companies and banks, as well as lower withdrawal of foreign investments compared y-o-y.

Total FDI inflow in the reporting period amounted to 757.4 million euros, while the outflow of 138.2 million euros was recorded in the same period. Of total FDI inflow, equity investments amounted to 490.3 million euros, while the inflow in the form of intercompany debt amounted to 255.2 million euros. In the structure of equity investments, investments in companies and banks accounted for 349.2 million euros, while inflow arising from the investments in real estates amounted to 141.1 million euros. The inflow of monetary assets arising from the withdrawal of residents' funds invested abroad amounted to 11.9 million euros.

3.2 Supply and Production

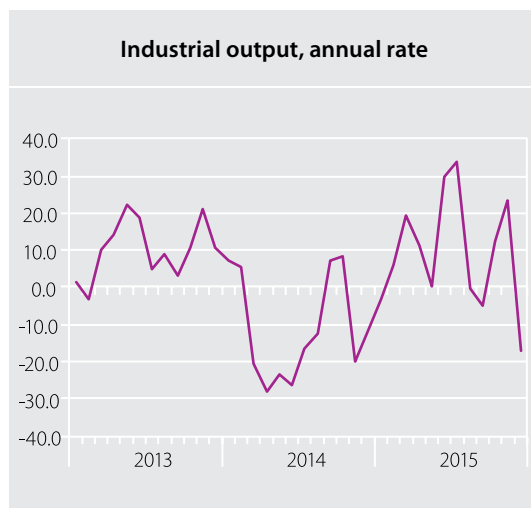
In 2015, industrial output recorded y-o-y increase of 7.9%. Manufacturing industry recorded output growth of 15.6%, while electricity, gas and steam supply and mining and quarrying sectors recorded

Graph 21



Source: CBCG

Graph 22



Source: Monstat

respective output declines of 5.9% and 8.1%. Observing monthly data on industrial output, the highest monthly growth was recorded in July (32.9%), while the highest decrease was recorded in May (24.3%).

Some 1.7 million tourists visited Montenegro in 2015, which represented the y-o-y increase of 12.9%. The number of domestic tourist arrivals decreased by 8.3%, while the number of foreign tourists increased by 15.5%. Tourist nights amounted to 11.1 million, which is a y-o-y increase of 15.7%.

The total **production of wood products** amounted to 377.043 cubic metres of wood products in 2015, which is 17.6%¹⁵ more than in 2014.

According to preliminary Monstat data, the total value of performed **construction works** amounted to 291 million euros in 2015 recording y-o-y growth of 5.8%, whereas measured by the effective working hours, it increased by 4.7%.

Compared y-o-y, air passenger transport recorded an increase of 2%, road passenger transport increased by 1.4%, while railway passenger transport increased by 10.2% in 2015.

In 2015, air, road, and railway freight transport recorded respective y-o-y growths of 3.1%, 20.2% and 9.4%.

Total turnover in ports in 2015 amounted to 1.5 million tonnes or 19.9% more than in the previous year, whereby exports increased by 56.9% and imports declined by 8%.

¹⁵ This is shown as weighted index, while non-weighted output was 22.3% higher for the same period.

4. MONETARY POLICY

The Central Bank of Montenegro Law lays down the following primary monetary policy instruments of the CBCG: open market operations, credit operations, lender of the last resort, and reserve requirement. One of primary CBCG monetary policy objectives is contributing to achieving and maintaining price stability in the country.

The Central Bank of Montenegro Law (OGM 40/10, 46/10, 6/13) lays down the following CBCG's 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 February 2015, a Decision Amending the Decision on Bank Reserve Requirement to Be Held with the Central Bank of Montenegro (OGM 7/15) was adopted allowing banks to keep up to 25% of their reserve requirements in the form of Montenegro's treasury bills of any maturity and up to 10% in the form of Montenegro's 182-day treasury bills. This option was available to banks until 31 December 2015.

At the end of 2015, a new Decision on Reserve Requirement of Banks with the Central Bank of Montenegro (OGM 73/15) was adopted and became effective as of 1 January 2016. The new Decision did not change the base and calculation rate of reserve requirements¹⁶, the possibility of using reserve requirements for banks' liquidity, the rate at which the Central bank pays a fee to banks for holding the reserve requirement¹⁷, while a method of issuing a reserve requirement was amended. Namely, it lays down that the calculated reserve requirement should be allocated to the reserve requirement account in the country and/or the Central Bank accounts abroad, and cannot be allocated in another form. At the same time, it is envisaged that banks can allocate up to 25% of the reserve requirement in the form of T-bills of Montenegro of any maturity as a temporary solution with the application until the end of 2016. This temporary solution affects the part of the reserve requirement on which the Central Bank pays interest to banks, and it is envisaged that the Central Bank should pay to banks the compensation on the amount representing the difference between 50% of the total funds of allocated reserve requirement and the amount of funds allocated in the form of Treasury bills, with the maximum of 25% of the reserve requirement, by 31 December 2016.

¹⁶ Banks calculate reserve requirement at the rate of 9.5% to the base comprised of demand deposits and deposits with maturity up to one year and the rate of 8.5% applied to the base comprised of deposits with maturity over one year. The rate of 9.5% is implemented on deposits with maturity over one year with the clause allowing their cancellation in less than one year.

¹⁷ The Central Bank pays banks a fee calculated at the rate of EONIA reduced by 10 basis points on an annual basis on 50% of allocated reserve requirement per month, provided that this rate cannot be less than zero.

4.1. Monetary Policy Measures for Suppressing Inflation

The Central Bank of Montenegro had not taken any monetary policy measure for suppressing inflation in 2015.

5. INFLATION FORECAST FOR 2016

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).

Montenegro's Fan Chart for 2016 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 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 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 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 2016

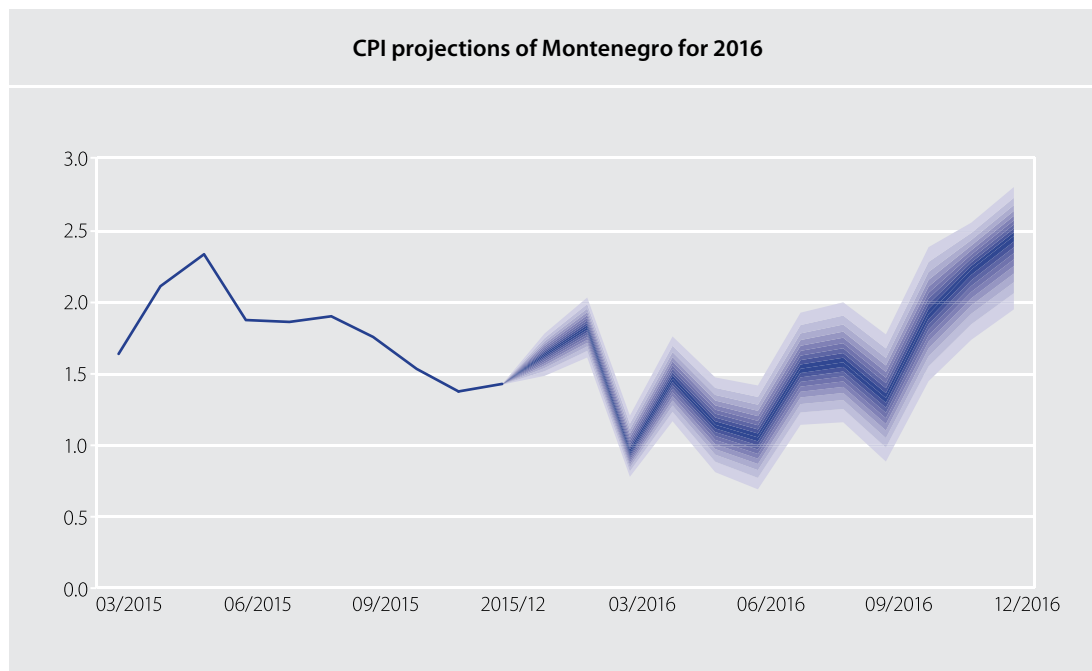
With a view to developing a *Fan Chart*, an ARIMA (AutoRegressive Integrated Moving Average) model was developed of time series of inflation of Montenegro showed through the Consumer Price Index¹⁸.

¹⁸ 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“, 2007.

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 (1,1,27)¹⁹ has sufficient confidence level for forecasts.

The monthly forecasts value was used as the value of central projection of the CPI graph for 2016. 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, 2016

Mean value of the obtained model is 1.59%. Value of central projection' asymmetry ratio was 0.36%, while standard deviation was 0.46%. The central band was placed in lower part of distribution, i.e. the corresponding degree of uncertainty was concentrated towards higher inflation levels, which are reflected in the graph above central "the deepest shade of blue" band. The Fan Chart presents a 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.²⁰ 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.

¹⁹ 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.

²⁰ 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 2016, indicates that there is a **90% probability that the CPI inflation will range between 0.7% and 2.8%, depending on the month. The inflation at 2016 year-end is forecasted between 1.9% and 2.8%**. The Fan Chart central projection (the darkest part) represents a 10% probability span (Graph 23).

The starting assumptions for forecasting inflation in 2016 are:

1. Investment growth and more intensive economic activity in 2016;
2. Increased price of electricity by 5% (including the forecasted increase of price in August 2016);
3. Real salaries will grow mildly compared to 2015;
4. Stagnation in real estate prices;
5. Mild decline in prices of oil and gas;
6. Unfavourable weather conditions might result in higher growth in prices of food products.

Reasonably, deviation of any of the abovementioned parameters would require the forecast correction.

5.2. Expert Assessment

Bearing in mind the insufficient level of reliability of statistical data, insufficiently long time series as well as often present one-off shocks, the CBCG is adding expert's assessment of the inflation development to the model assessment.

After negative inflation rate in 2014, inflation recorded low positive value in 2015. Low inflation rate was also present in the EU as well as in the region, whereas some of countries still face the deflation. Similar trend in these countries is also expected in 2016. Moreover, still slowed global economic growth may be expected, not "pressuring" price growth. On the other hand, the continued trend of accelerated growth started last year may be expected in Montenegro, which will result in the increased offer and should have the anti-inflation effect.

The largest number of surveyed banks and companies expected inflation rate similar to 2015, i.e. in the range from 1% to 1.5%. The Fan Chart of inflation in Montenegro, based on the ARIMA model assessment for 2016, indicates that there is a **90% probability that the CPI inflation will range between 0.7% and 2.8%, depending on the month. The inflation at 2016 year-end is forecasted between 1.9% and 2.8%**.

Our expert assessment indicates that the inflation in 2016 will range between 0.6% and 2.6%.

Table 3

Estimated inflation rate at end-2016		
Optimistic assessment	Realistic assessment	Pessimistic assessment
0.6%	1.6%	2.6%

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

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