CENTRAL BANK OF MONTENEGRO

INFLATION REPORT
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1. INFLATION INDICATORS

Consumer prices increased 0.1% in Q3 2014. The highest increase was recorded in prices under *recreation and culture* (2.5%), *housing, water, electricity and other fuels* (1.1%), and *clothes and footwear* (0.9%). Observed monthly, the price increase in Q3 2014 was recorded in August (0.1%) and September (0.5%), while prices in July 2014 declined by 0.4%. The annual rate in September was -0.7%, while the average rate (period to period) was -0.9%.

Table 1

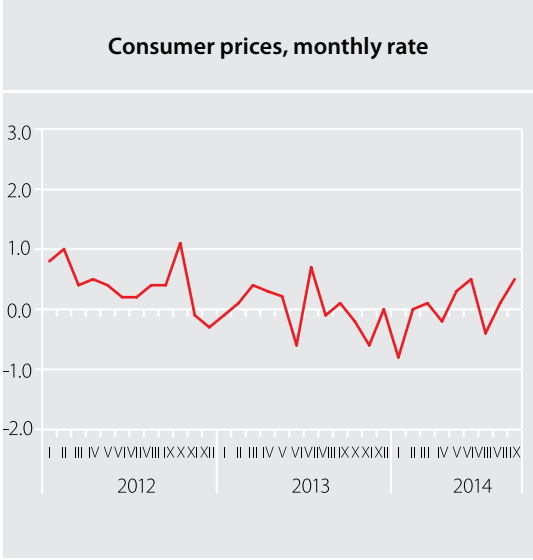
Inflation, %							
	2013				2014		
	III	VI	IX	XII	III	VI	IX
Change in relation to 2013-end	0.5	0.4	1.1	0.3	-0.8	0.0	0.0
Annual change	3.3	2.2	1.8	0.3	-0.9	-0.1	-0.7

Source: Monstat

During the Q3 3014, prices under *recreation and culture* increased by 2.5%, primarily due to increase in prices of books by 10.8%. Prices also increased in the category *housing, gas and other fuels* by 1.1%, primarily due to higher price of electricity by 1% and prices of solid fuels by 2.2%, which resulted in the highest positive contribution of this category (by 0.2 percentage points) in total inflation. Prices under *clothes and footwear* increased 0.9% mostly due to increased prices of clothes by 2.4%. During the reporting period, prices under *health* and *alcoholic beverages and tobacco* increased by 0.3% each, while prices under *furnishing, household equipment and routine household maintenance* increased by 0.2%. Price decrease during the reporting period was recorded in *food and non-alcoholic beverages* by 0.5%, whereby the highest decline was recorded in prices of fruits, oils and fats, vegetables, bread and cereals, and milk, cheese and eggs by 5.1%, 1.2%, 0.8%, 0.5%, and 0.1%, respectively. This category recorded the highest negative contribution (by -0.2 percentage points) in total inflation. Prices under *transportation*, and *hotels and restaurants* decreased 0.2% and 1.5%, respectively. In Q3 2014, there were no change in prices under *communication and education*.

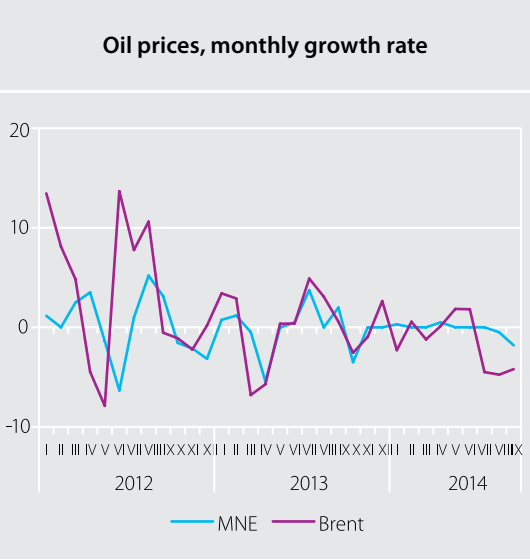
Monthly **core inflation** amounted to 0.1%. Since the beginning of 2014, except in April and July, core inflation was lower than the official monthly inflation, and it was negative in the first four months.

Graph 1



Source: Monstat

Graph 2



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

Table 2

Share of individual categories in total inflation*

	weights	IX 14/VI 14 index	rate	contribution
UKUPNO	1000	100.1	0.1	0.1
Food and non-alcoholic beverages	386.4	99.5	-0.5	-0.2
Alcoholic beverages and tobacco	37.9	100.3	0.3	0.0
Footwear and clothes	70.7	100.9	0.9	0.1
Housing, water, electricity, gas and other fuels	153.1	101.1	1.1	0.2
Furnishing, household equipment and routine household maintenance	46.9	100.2	0.2	0.0
Health	38.2	100.3	0.3	0.0
Transport	101.0	99.8	-0.2	0.0
Communications	57.1	100.0	0.0	0.0
Entertainment and culture	27.2	102.5	2.5	0.1
Education	15.7	100.0	0.0	0.0
Restaurants and hotels	23.0	98.5	-1.5	-0.1
Other goods and services	42.8	100.0	0.0	0.0

* We would like to note that, despite the index changes, the share of certain categories is recorded only at the second or the third digit, due to the weighting structure.

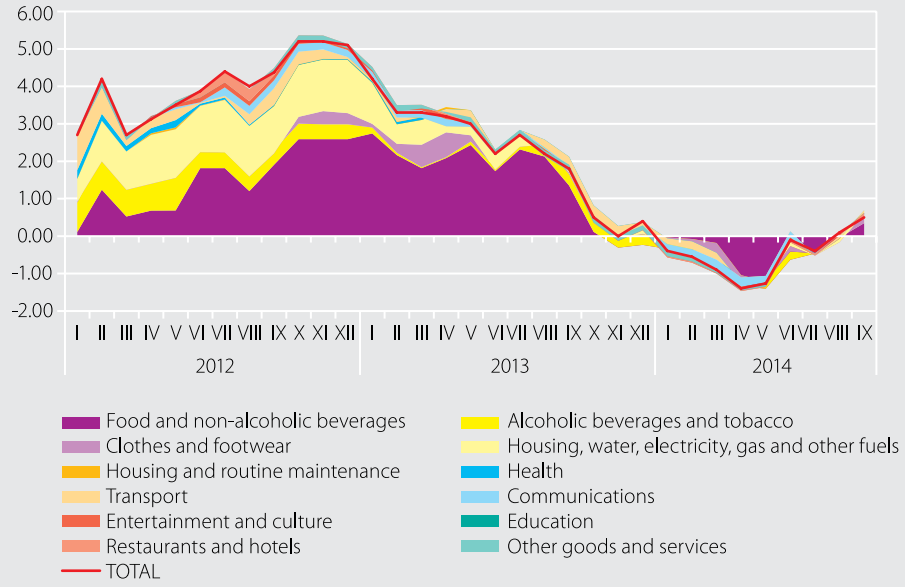
Source: MONSTAT and CBCG calculations

In Q3 2014, average price of OPEC reference basket was 100.8 US dollars/barrel or 4.8% less than the average price from Q2 2014. In Q3 2014, average price of Brent was 101.8 US dollars/barrel or 7.1% less than the average price from Q2 2014. The lowest price of Brent since June 2012 (when it amounted to 95.2 US dollars/barrel) was recorded in September 2014 (97.3 US dollars/barrel). Prices declined in Q3 2014 due to a slowdown in global demand for this fuel, increased supply, and the lower economic growth in Europe and China.

Prices under fuels and lubricants in Montenegro decreased by 2.3% in Q3 2014.

Graph 3

Consumer prices' components: contribution to annual growth rate (in index points)



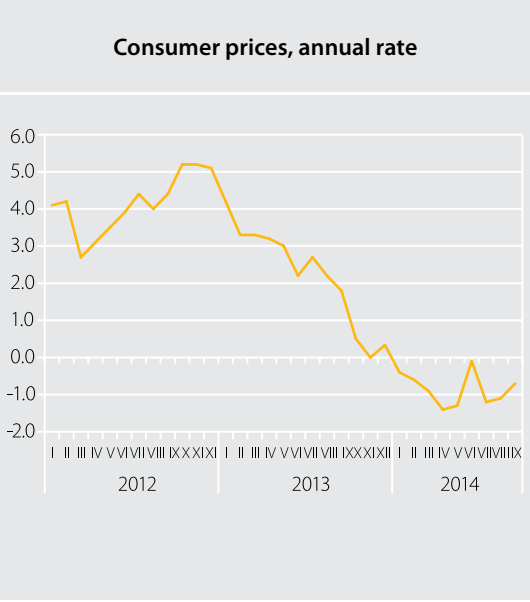
Source: MONSTAT and CBCG calculations

Annual CPI inflation in September amounted to -0.7%, and it was by 0.6 percentage points higher relative to the annual rate from June 2014. The highest annual decline in prices was recorded in the category of communication (-3.9%), *transport* (1.6%), *household equipment and routine household maintenance* (-1.4%), and *food and non-alcoholic beverages* (-1%), while prices under *health* (2.7%) and *clothes and footwear* recorded annual price increase of 2.2% and 1.8%, respectively.

In relation to end-2013, **producers' prices of manufactured products** increased by 0.9% in Q3 2014, thereby recording respective increase in all three sectors (manufacturing, electricity, gas and steam supply, and mining and quarrying) by 0.3%, 1.6%, and 4.2%. Producers' prices of manufactured products recorded y-o-y increase of 0.9% in September 2014.

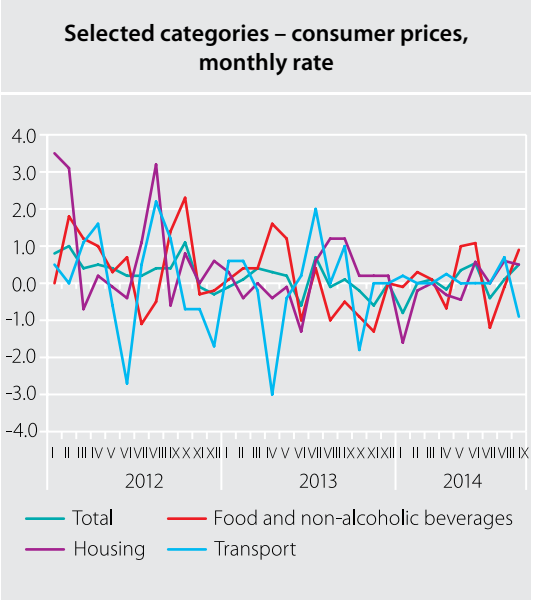
The comparison of annual inflation recorded in Montenegro with the inflation in selected countries shows that seven countries recorded negative inflation rate: Bulgaria (-1.4%), Macedonia (-0.7%), Hungary (-0.5%), Poland (-0.2%), Bosnia and Herzegovina, Slovenia and Slovakia (by -0.1% each). The highest annual inflation in the region was recorded in Serbia (2.1%) and Albania (1.5%).

Graph 4



Source: Monstat

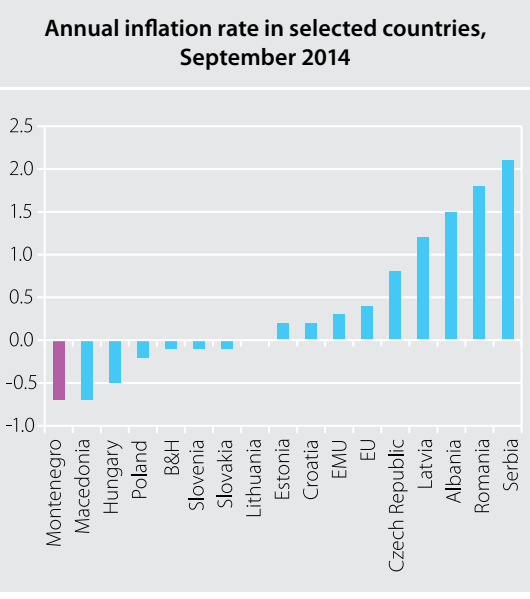
Graph 5



Source: Monstat

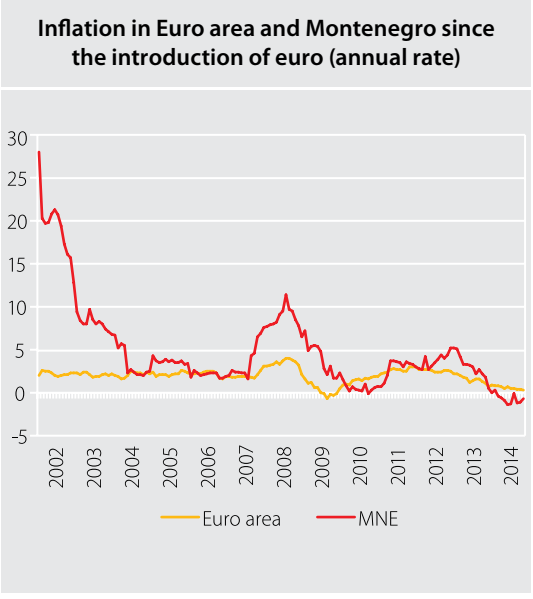
Measured by Harmonized Index of Consumer Prices (HICP), annual inflation growth rate recorded in Euro area amounted to 0.3%. Inflation in Montenegro measured by consumer prices index (CPI) was negative amounting to -0.7%, while annual inflation in September, measured by HICP amounted to -0.9%.

Graph 6



Source: National Statistical Offices and Eurostat

Graph 7



Source: Monstat and Eurostat

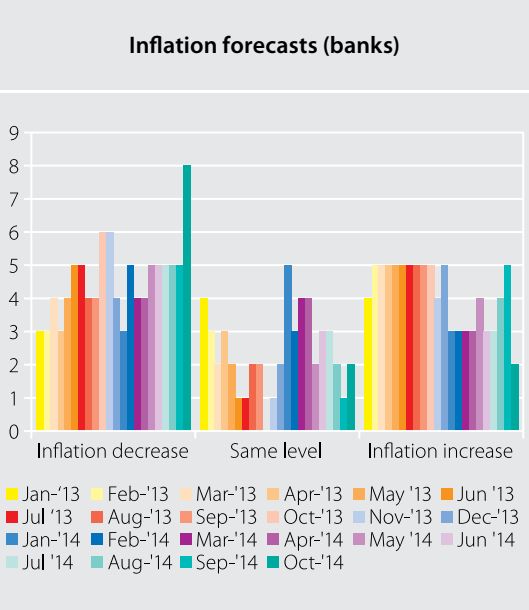
2. INFLATION FORECASTS OF BANKS

Regarding inflation forecasts of banks[1], based on the survey conducted in October 2014, eight banks expected lower inflation rate, while the same inflation rate and higher inflation rate was expected by two banks each relative to 2013 (Graph 8).

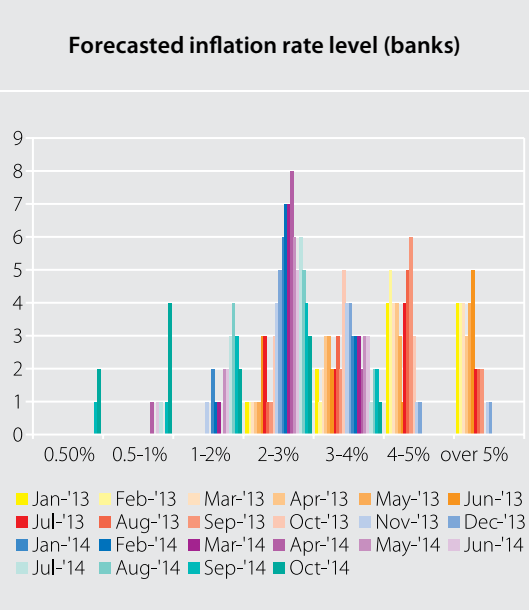
There were different expectations of banks with regards to the inflation. Four banks expected the inflation to range from 0.5% and 1%. Three banks expected inflation to range from 2% to 3%, while two banks each expected the inflation to range from 1% to 2% and below 0.5%. Only one bank expected inflation to range from 3% to 4%.

Concerning the forecasts on lending interest rates, eight banks expected decline, while four banks expected unchanged levels of lending interest rates. On the other hand, seven banks expected decline in effective interest rates, one bank expected increase, while four banks expected unchanged level of effective lending interest rates.

Graph 8

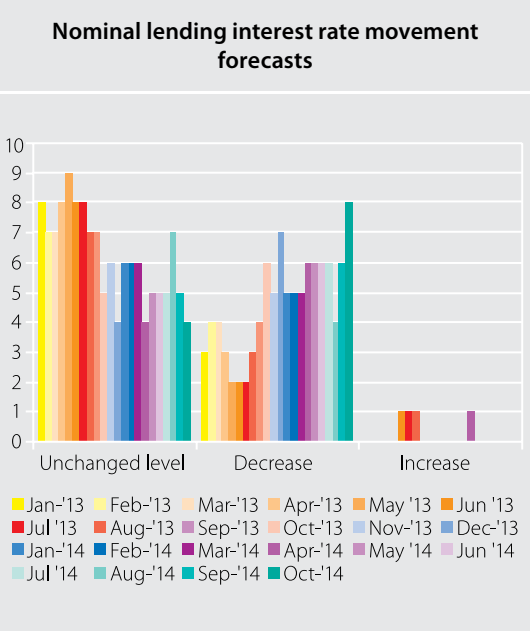


Graph 9

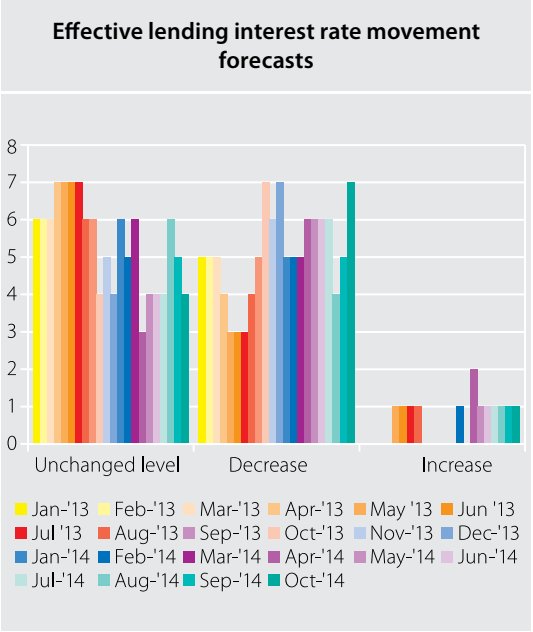


[1] The new Lovćen has been included in the survey since October 2014.

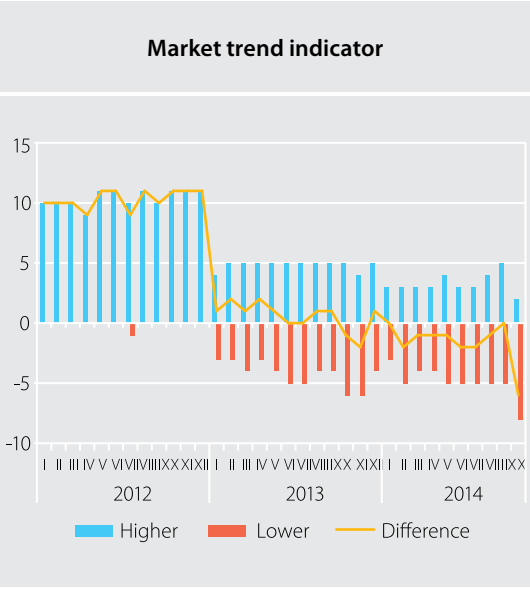
Graph 10



Graph 11



Graph 12



Regarding the deposit interest rates, ten banks expected a decline in deposit interest rates, two banks expected unchanged level, while none of banks expected their increase.

For the purpose of calculating inflation forecasts we use market trend indicator (black line in Graph 12). It is calculated as the difference between the number of banks expecting an inflation growth (blue columns) and the number of banks expecting inflation decrease (red columns). 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, while higher positive value means higher inflation level forecasts. The market trend indicator suggest forecasts that lower inflation rate may be expected in 2014 relative to 2013.

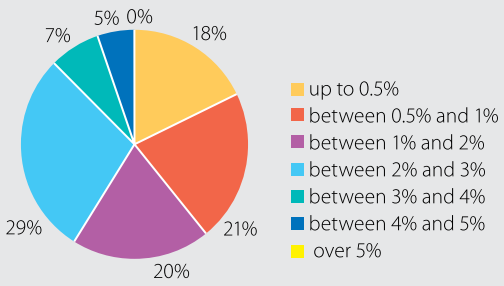
Expectations of Economy (Except Banks)

Inflation

Of the total number of surveyed companies, 29% of them considered that inflation would range between 2% and 3% in 2014. Some 21% of respondents expected that the inflation would range from 0.5% to 1%, while 18% of respondents expected that the inflation would be lower than 0.5%. Some 7% of respondents expected the inflation between 3% and 4%, while 5% of the surveyed companies expected inflation from 4% to 5%. None of interviewed companies expected inflation over 5%. Some 12% of surveyed companies expected lower level of earnings, 74% expected that earnings will not change in 2014 compared to 2013, and the increase is expected by 14% of surveyed companies. The majority of surveyed companies (68%) expected the same level of prices of production inputs, and 84% respondents expect the same prices of its products (services) in 2014. As for the number of employees in the same period, 60% of respondents believe that the number will not change, 26% expected the increase, and 14% forecasted the decline in the number of employees compared to 2013.

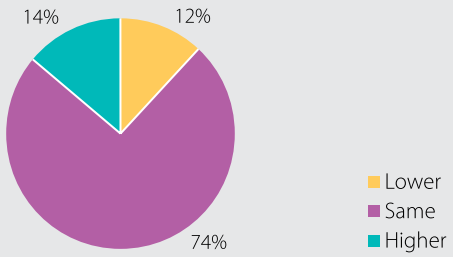
Graph 13

Forecasted inflation in 2014 in relation to 2013



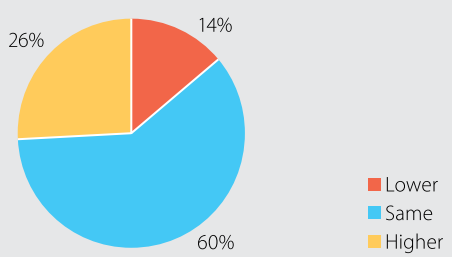
Graph 14

Expected level of earnings in 2014 in relation to 2013

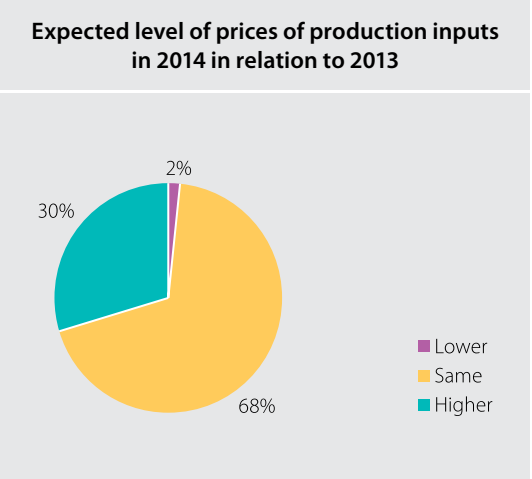


Graph 15

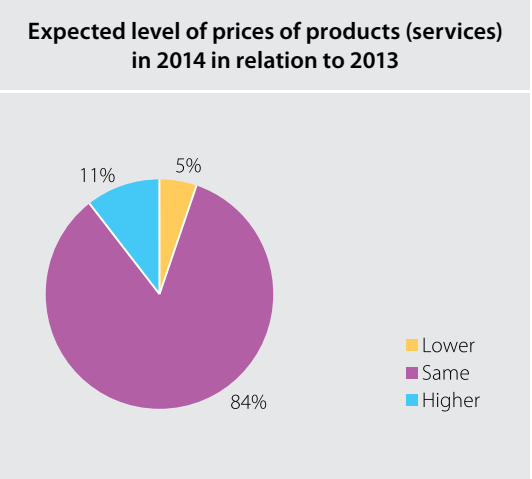
Expected level in number of employees in 2014 in relation to 2013



Graph 16



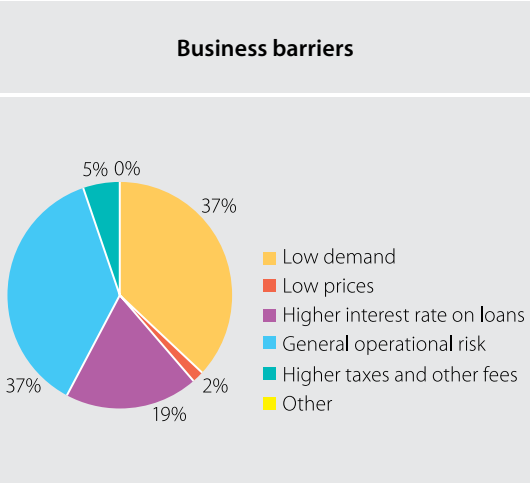
Graph 17



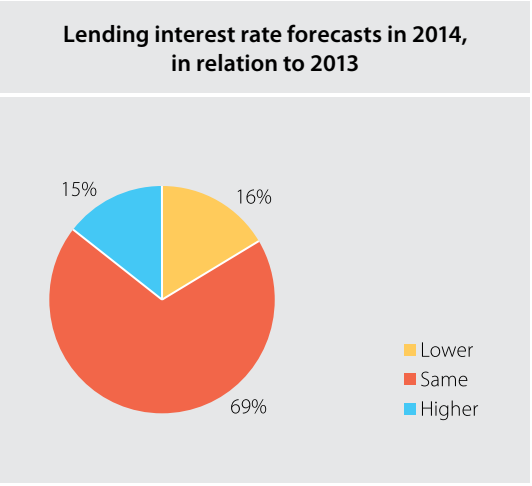
Business Environment

The survey results showed that most of the surveyed companies saw general operational risks (37%), low demand (37%), high lending interest rates (19%), high taxes and other fees (5%), and lower prices (2%) as a red tape. In addition, 69% of surveyed companies expected unchanged levels, 15% higher level, while 15% of them expected lower lending interest rates in 2014 relative to 2013.

Graph 18



Graph 19

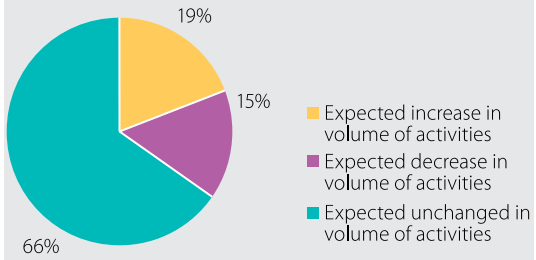


Investments

Out of the total number of surveyed companies, 66% did not plan the increase in volume of activities by the end of 2014, while 33% planned new investments. Most investments (42%) referred to the increase in fixed assets, while low demand (37%), other obstacles (33%), and insufficient exploitation of existing capacities (22%) were described as largest barriers to new investments.

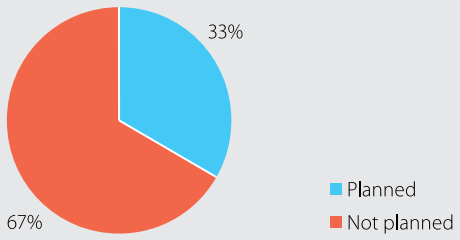
Graph 20

Forecasted volume of activities in 2014



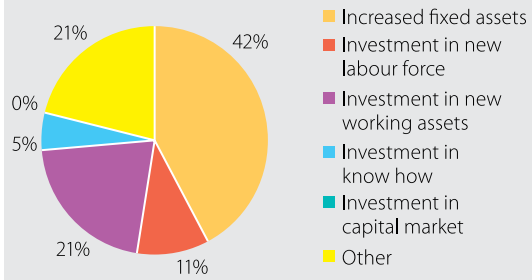
Graph 21

New investments in 2014



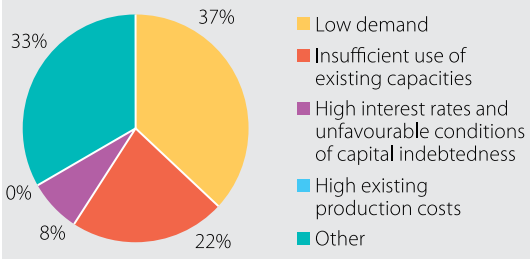
Graph 22

Types of forecasted new investments in 2014



Graph 23

Obstacles to new investments in 2014



3. INFLATION DETERMINANTS

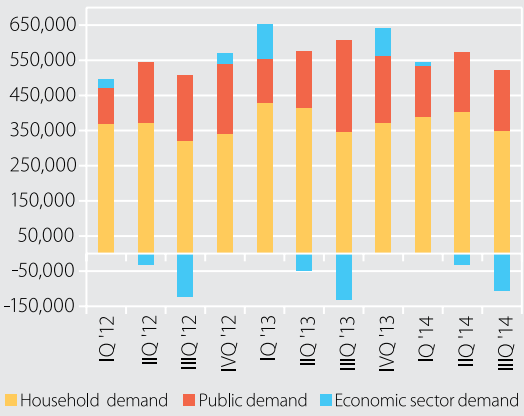
3.1. Demand

According to preliminary data, aggregate demand recorded quarterly decrease in Q3 2014. Observed by sectors, public spending was somewhat higher relative to Q2, while household demand decreased. Compared to Q2 2014, the share of households' sector increased, while the share of public demand decreased.

Aggregate demand recorded decrease in Q3 2014 compared to the one recorded during the previous two quarters and compared to the level recorded in Q3 2013.

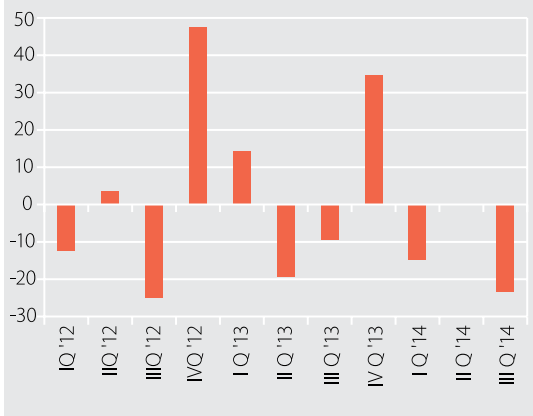
Graph 24

Aggregate demand, in thousand euros



Graph 25

Quarterly aggregate demand growth rates



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: (household) personal consumption, (corporate sector) investment consumption, 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 incomes, non-observed economy revenues, and the like. Methodology of calculation of the aggregate demand is expressed by the following equation:

$$AD = C + I + G$$

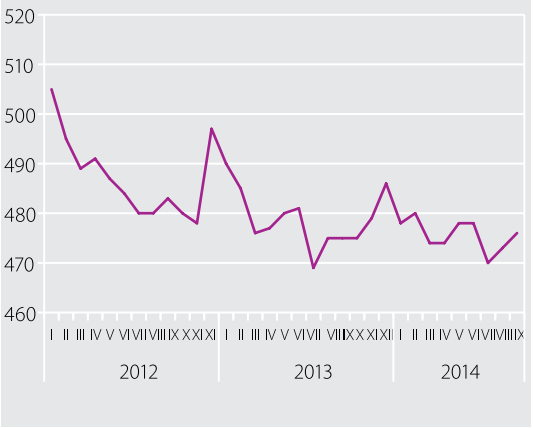
C = sum of paid salaries + sum of paid pensions + paid frozen foreign currency deposits + net compensations to households – net savings by households (savings – loans granted)
I = net savings of economy (deposits – loans)
G = public consumption – paid pensions – salaries paid from the budget – net savings by the Government (deposits – loans – Treasury bills)

3.1.1. Salaries and other Available Demand Determinants

The average gross salary in Montenegro amounted to EUR 718 in 2013, while average salary without taxes and contributions amounted to EUR 473. Average salary and average salary without taxes and contributions recorded q-o-q decrease by 0.8% each.

Graph 26

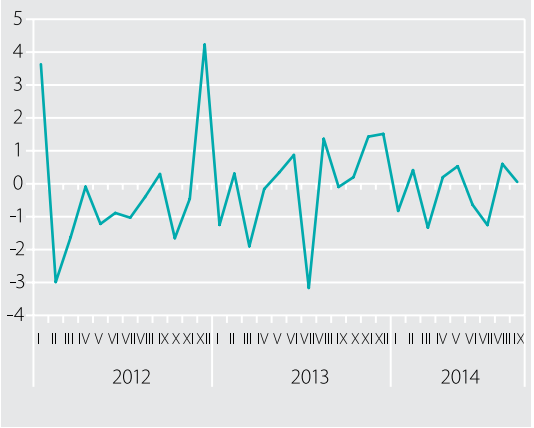
Average salaries without taxes and contributions in Montenegro



Source: Monstat

Graph 27

Real salaries (monthly growth rate)



Source: Monstat

If consumer prices are taken into account, i.e. salaries in real amounts, it can be concluded that real salaries in Q3 2014 recorded decrease only in July, while they recorded increase in August and September.

Lending to the household sector in first three quarters of 2014 mostly recorded a positive trend. The average monthly growth of loans granted to this sector was 0.1%, while the growth at the average rate of 1% was recorded in 2013. At end-Q3 2014, total loans to the household sector amounted to 892.7 million euros, which is 11.4 million euros or 1.3% more than at the end-2013 or 5.8 million euros (0.7%) more than in the same period of the previous year.

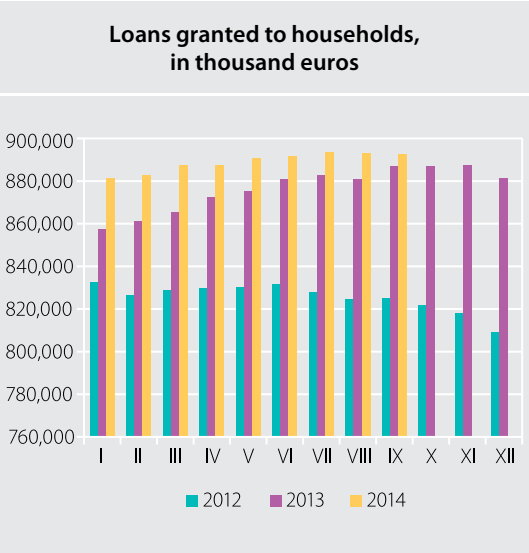
Debt per capita[2] amounted to 1.435 euros at end-September 2014 or 1.3% higher than at end-2013 and by 0.7% higher than at the end of Q3 2013.

Total MFIs loans disbursed to households amounted to 34.2 million euros at end-September 2014 which was 170 thousand or 0.5% more than at the end of 2013, and 849 thousand euros or 2.5% higher than a year ago.

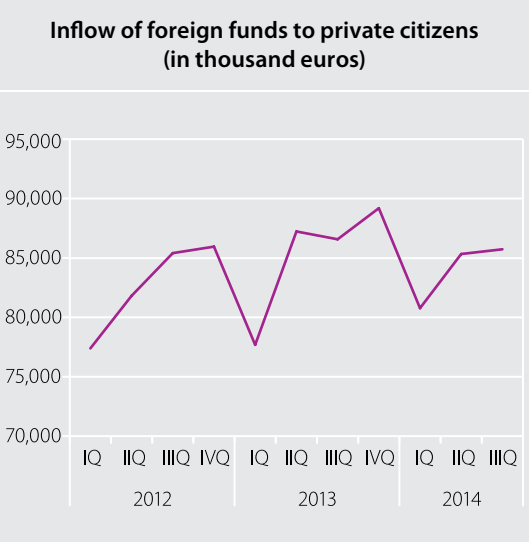
During the first nine months of 2014, deposits to household recorded average monthly growing trend of 0.6% (the growth of 0.7% was recorded in the same period of 2013). At end-Q3 2014, total deposits to the household sector amounted to 1,300 million euros, which is 62.5 million euros or 5.1% more than at the end-2013 or 77.2 million euros (6.3%) more than in the same period of the previous year.

Loans to deposits ratio for this sector amounted to 0.69 at end-September 2014. It was at a lower level than in the previous year (0.71), as well as in relation to the same period of the previous year (0.73). Households' sector reported total net savings in the amount of 407.3 million euros, which represented an increase of 51.1 million euros or 14.4% relative to 2013 year-end, and by 71.3 million euros (21.2%) relative to Q3 2013.

Graph 28



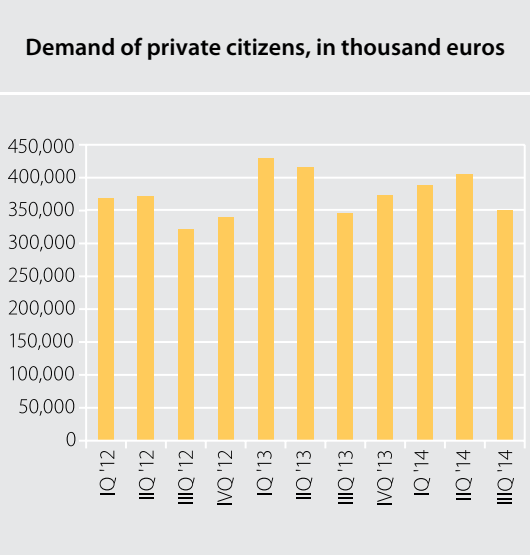
Graph 29



Source: CBCG

[2] Data on population is Monstat estimate from the middle of 2012.

Graph 30



Balance of payments statistics for Q3 2014 showed an increase in the inflow of remittances from abroad for the benefit of natural persons, as well as from pensions, disability allowances and other social welfare benefits compared to the previous quarter.

Total demand of household sector by quarters showed lower demand in Q3 2014 relative to the two previous quarters, yet slightly higher relative to Q3 2013.

3.1.2. Budgetary Analysis

According to Ministry of Finance preliminary data, Budget of Montenegro recorded total revenues[3] amounting to 1.23 billion euros in the first nine months of 2014.

Source revenues amounted to 939.9 million euros or 27.7% of estimated GDP[4], and in relation to the plan, they increased by 2.6%, and they showed a y-o-y increase of 6.4%. Tax revenues recorded the highest share in the structure of current revenues (64.3%), followed by contributions (30.3%), other revenues (2.3%), fees (1.3%), duties (1.2%), donations (0.3%) and receipts from loan repayment (0.3%).

Tax revenues amounted to 604.2 million euros and were by 1.3% higher than planned, as well as showing y-o-y growth of 7.9%. Nominally, the highest increase in revenues compared to the same period of the previous year was recorded in the VAT (34.1 million euros or 10.7%). Such growth in VAT collection was the result of grey economy suppression measures.

Negative deviation in relation to the same period of the previous year was recorded in excise duties and international trade tax, fees, and revenues from loan repayment and funds transferred from 2013.

Revenues from contributions amounted to 284.8 million euros or 7.9% more in relation to plan for Q2 2014, and they showed y-o-y growth of 7.7%.

In Q3 2014, **budget expenditures** amounted to 963.2 million euros or 28.4% of GDP. Realized expenditures in relation to the plan for the first nine months of this year declined by 4% and in relation to Q3 2013 by 4.9% or 49.8 million euros.

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[3] Revenues include source revenues (direct and indirect taxes and non-tax revenues), borrowings, and revenues from privatization and sale of properties.

[4] Source: Ministry of Finance. Estimated GDP for 2014 amounts to 3.39 billion euros.

Compared to the previous year, increase was recorded in expenditures for gross wages and salaries paid by employer (8.5 million euros), funds for redundancy (8 million euros), pensions (5 million euros), transfers to institutions, individuals and the NGO sector (4.7 million euros), interest (2.7 million) and subsidies (2 million euros).

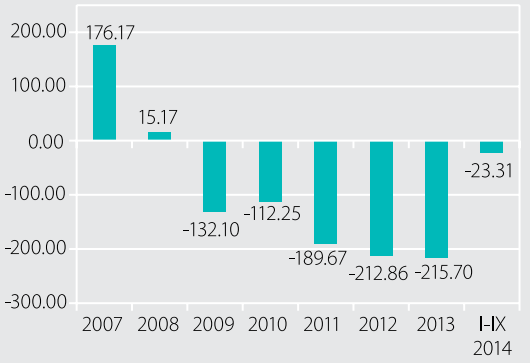
Current budget spending amounted to 921.4 million euros or 27.2% of GDP, while capital budget amounted to 41.8 million euros or 1.2% of GDP.

Current expenditures amounted to 458.4 million euros or 2.3% lower than planned. Almost all current expenditures, excluding expenditures for interest, borrowings, loans, and services were below planned.

Montenegrin budget deficit was estimated to 23.3 million euros or 0.7% of GDP, and it was by 106.6 million euros lower than the deficit recorded in Q3 2013.

Graph 31

Budget surplus/deficit in the period 2007 – September 2014, in million euros



Source: Ministry of Finance

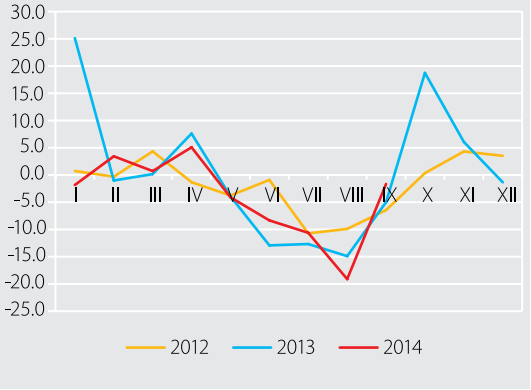
3.1.3. Economy

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

During Q3 2014, loans to the corporate sector significantly exceeded the deposits to the sector. Thus, net debt of the corporate sector amounted to 267.5 million euros at the end of the reporting period, and it was 128.4 million euros or 32.4% lower than at end-2013, and by 51.1 million euros or 16% lower compared to Q3 2013. Long-term loans accounted for the main share in the structure of loans and other receivables to the corporate sector (70.7%), which indicates that loans to this sector were mainly used for the increase in the volume of economic activity.

Graph 32

Net debt of economy, monthly change, in million euros



3.1.4. External Demand and The Current Account

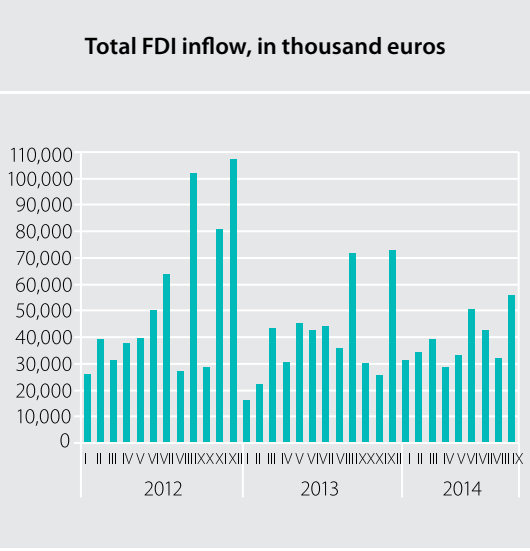
In the period January-September 2014, an increase in the current account deficit was recorded, resulting mostly from negative trends at the goods and factor income sub-accounts. According to preliminary data, current account deficit amounted to EUR 267.6 million, showing a y-o-y increase of 16.4%. During the reporting period, there was an increase in the goods sub-account (3.2%), as a result of

decline in goods export by 10.3%. Such trend was mostly the result of a decline in export of electricity and metal industry products.

Montenegro recorded growth in the international trade of services in the reporting period of 2014, a surplus amounting to 666.5 million or 5.4% more than in the same period of 2013. The primary income account recorded a y-o-y decrease in surplus by 66.1% or 15 million euros as a result of the increased outflow from compensation for employees and paid dividends. The secondary transfers (income) account recorded a surplus amounting to 78.6 million euros or 11.9% less than in same period of 2013.

In the first nine months of 2014, FDI inflow decreased. According to preliminary data, the net FDI inflow in the period January - September 2014 amounted to 256.4 million euros or 7% less than in the same period of 2013. Total FDI inflow amounted to 347 million euros, while the outflow amounted to 90.6 million euros. During the reporting period, the largest inflow was based on equity investments in the amount of 158.4 million euros or 45.7% of total FDI inflow, while inflow from intercompany debt amounted to 184.2 million euros or 18.6% more than in the same period of 2013.

Graph 33



Source: CBCG

Portfolio investments account recorded a net inflow amounting to 110.1 million euros, as a result of country's borrowings from issuing of Eurobonds at the international capital market. Trends at the other investments sub-account are characterised by decreased liabilities of state and bank sector for taken loans, while liabilities of other sectors (economy) increased. As a result of such trends at other investments sub-account in the first nine months of 2014, net outflow of 299.7 million euros was recorded.

3.2. Supply and Production

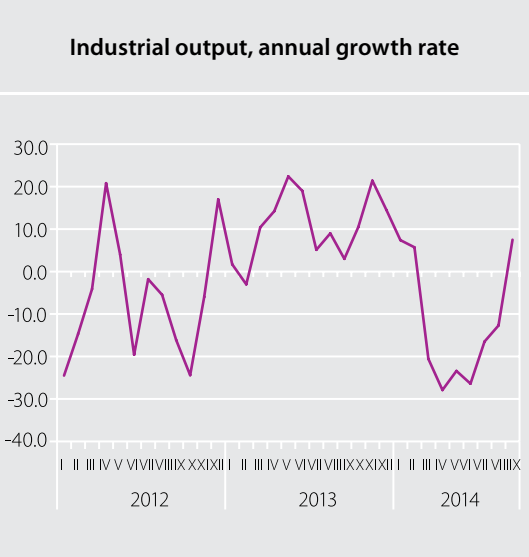
In Q3 2014, industrial output declined by 12.9% compared to the same period of 2013. Output decline of 24.9% and 3.7% was recorded in electricity, gas and steam supply and manufacturing sector, while output growth of 6.6% was reported in mining and quarrying sector. Observing the monthly data on industrial output in Q3, the increase was recorded in July, August and September amounting to 29.2%, 5.4%, and 10.6%, respectively.

During the first nine months of 2014, Montenegro was visited by 1.4 million tourists, which represents an increase of 1.3% compared to the same period of 2013. The number of domestic tourists arrivals decreased by 2.2%, while foreign tourists' arrivals increased by 1.7%. The number of overnights in the observed period amounted to 9.2 million, showing y-o-y increase of 1.3%.

The total **production of wood products** in the first nine months of 2014 amounted to 191.289 cubic metres of forest products, being at the same level[5] as in the same period of the previous year.

In the first nine months of 2014, the value of executed **construction works** was 60.3% higher in relation to the same period of the previous year, while, measured by effective working hours, construction activity decreased by 5.4%.

Graph 34



Source: Monstat

Railway and road passenger transport recorded respective increase of 27.4% and 14.7% in number of passengers relative to the same period of 2013, while air passenger transport recorded 0.9% less passengers during the same period.

Railway and air freight transport[6] recorded respective increase of 1.2% and 4.1%. in number of passengers relative to the same period of 2013, while air passenger transport recorded 0.9% less passengers during the same period. Total turnover in ports decreased 5.5% relative to the first nine months of 2013.

3.3. Stock Exchange Indices

After negative trend in H1 2014, stock exchange indexes recorded significant growth during the whole Q3, and they recorded their highest values since September 2011 (MONEX20) and October 2012 (Monex PIF).

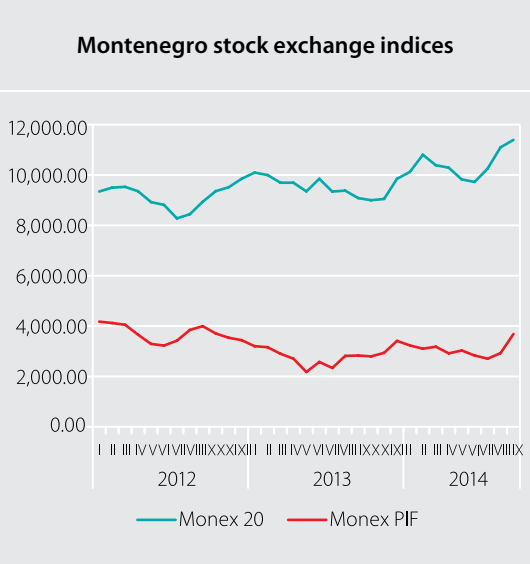
Compared to the 2013 year-end, Monex20 recorded an absolute increase of 1,544.05 index points or 15.7%, while Monex PIF grew by 272.16 index points or 8% in Q3 2014.

Compared y-o-y, Monex 20 grew by 25.4%, while Monex PIF recorded a growth of 30.1%.

[5] Expressed by weighted index, while according to non-weighted index the growth was 1.6%.

[6] Data on road freight transport were not available at the time of compiling the report.

Graph 35



Source: Montenegro stock exchange

Stock exchange indices are still below their historical maximum values reached in 2007. Compared to their historical maximum values Monex 20 and Monex PIF indices declined by 4.3 times and 13.8 times, respectively at end-March 2014.

Table 3

General Data on Indices

	MONEX 20		MONEX PIF	
Value as at 30 September 2014	11,394.23		3,684.40	
Absolute change of index in 2014	1,544.05		272,16	
Initial index value	1000.00	March 2003	1,000.00	March 2003
Maximum value in 2014	11,672.17	25 Sept 2014	3,871.42	26 Sept 2014
Maximum historical value	48,617.88	7 May 2007	50,780.54	17 Aug 2007
Minimum historical value	918.57	14 Feb 2003	959,53	2 Apr 2003
Growth (decline) in 2014	15.7%		8%	

Source: Montenegro stock exchange

4. MONETARY POLICY

During first nine months of 2014, there were neither change in existing, nor new decisions were passed referring to the CBCG monetary policy instruments.

5. INFLATION FORECAST FOR 2014 AND THREE QUARTERS OF 2015

5.1. Model Assessment

Montenegro's inflation *Fan Chart* represents a graph of probability distribution of inflation rate presented by the consumer price index. In that direction, instead of determining concrete points, using the distribution of probability the *Fan Chart* includes potential risks and uncertainties that would, in the future period, influence the movement of inflation. 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 (higher food and energy prices, increase/ decrease in the foreign trade deficit).

Montenegro's *Fan Chart* for 2014 and three quarters of 2015 was based on the following three estimated components:

1. **Central projection values** – of the *Fan Chart* were derived from ARIMA model.
2. **Degree of uncertainty** – determines the *Fan Chart* width. The degree of uncertainty ratio is obtained through analytical assessment and calculation of a relative impact of potential internal and external shocks which are possible in Montenegrin economy during one-year period, and which are read through "thickness" of the band around 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 "overestimated" or "underestimated" the inflation rates. This will also influence the position of the mean value of inflation distribution.

Fan Chart central projection - ARIMA model for 2014 and three quarters of 2015

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 Index[7].

[7] A detailed explanation of the ARIMA model of Montenegro is given in the working study of the Central Bank of Montenegro No. 11 „Inflation Forecast: Empirical Research of Retail Price Index Movements in Montenegro in 2007 –Application of ARIMA Model".

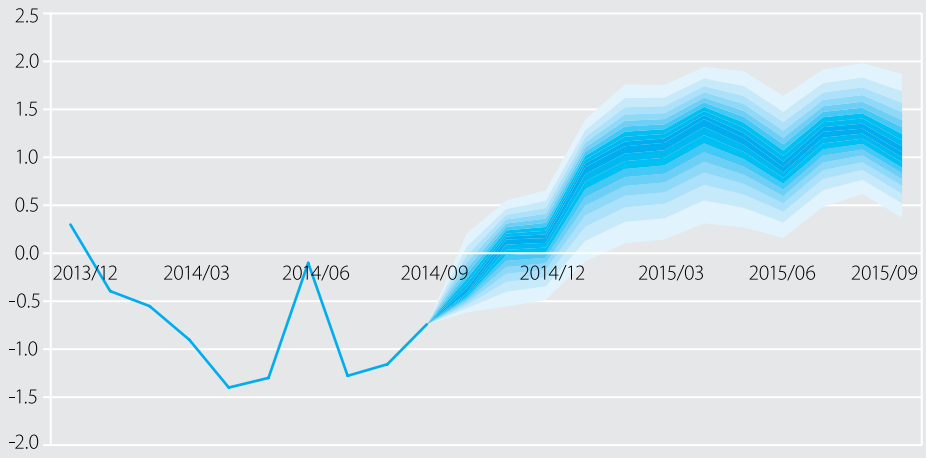
ARIMA model was used for short term forecasts (12 months), whereby iteration of several ARIMA models was made, which were ranked based on their efficiency and quality of diagnostics. The selected ARIMA model (11,1,22)[8] has sufficient confidence level for forecasts.

The monthly forecasts value was used as the value of central projection of the CPI *Fan Chart* for 2014 and three quarters of 2015. The obtained values represent the distribution mode, i.e. values with the highest frequency in the distribution of this time series.

Mean value of the obtained model was 0.9, the curve (skewedness) varied between 0.5 and 1.5, while standard deviation values was 0.25. The central projection is usually in the deepest shade of the *Fan Chart*, i.e. in the central 10% of probability. In the projection presented in the graph, the central band is placed in higher part of distribution, particularly for 2015. This indicates that the corresponding degree of uncertainty was concentrated towards lower inflation levels, which is reflected in the graph through "thicker" band concentrated above central "the deepest shade of blue" band. The central projection is usually in the darkest shade of the *Fan Chart*, i.e. in the central 10% of probability.[9] 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.

Graph 36

CPI projections of Montenegro for 2014 and three quarters of 2015



Source: CBCG, 2014.

[8] 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.

[9] The mode value (central projection) is, by construction, always in the deepest band shade, but in the 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)

Montenegro's inflation *Fan Chart* for 2014 and three quarters of 2015 based on the ARIMA model projection for 2014 shows, **with a 90% probability that, depending on month, CPI inflation will vary between -0.6% and 2%. Namely, the increase of time horizon for projection increases the uncertainty, which consequently spreads the range of forecast**.

The central projection shows that the **average inflation in 2014 will amount to -0.6%, while forecast for December 2014 was from -0.47% to 0.6% with central tendency of 0.1%. Central projection for the first nine months points that the inflation will amount to 1.1%**.

The following basic assumptions have been taken into account when forecasting the inflation in 2014 and three quarters of 2015:

1. increase in the prices of oil and petroleum products by 5%, due to geopolitical tensions;
2. a potential price increase of food products by 5% in 2015;
3. growth in electricity prices by 5% (potential growth in August 2014 is included);
4. growing investments and more intensive economic activity in 2015;
5. Real wages in 2015 will be the same as in 2014;
6. Stagnation in real estate prices;
7. VAT growth or other tax liabilities are not foreseen.

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

6. EXPECTED INFLATION

Annual inflation rate is still negative. Consumer prices increased 0.1% in Q3 2014. Annual CPI inflation in September amounted to -0.7% in September 2014, and it was by 0.6 percentage points higher relative to the annual rate from June 2014. Monthly **core inflation** amounted to 0.1%. Since the beginning of 2014, except in April and July, core inflation was lower than the official monthly inflation, and it was negative in the first four months.

Aggregate demand is declining. Aggregate demand recorded decrease in Q3 2014 compared to the one recorded during the previous two quarters and compared to the level recorded in Q3 2013, which "pressures" the prices. The recession environment in Europe and the region is reflected in the same manner.

Market indicator points to inflation decline. The most of surveyed banks expected the inflation rate between 0.5% and 1%. Economic growth is also acting in a deflation manner.

Therefore, the model estimation shows that the inflation ranging between -0.47% and 0.6% is expected at the 2014 year-end, with the central tendency of 0.1%. Our expert estimation of inflation is similar to the model estimation, so we expect it to range between -0.5% and 0.5%.

Table 4

Inflation rate forecast		
Optimistic estimate	Realistic estimate	Pessimistic estimate
-0.5%	0%	0.5%

Experts' assessment is based on the same assumptions as the model assessment. The change in any parameter used for this forecast would require the revision of the forecast.