



CENTRAL BANK OF  
MONTENEGRO

# PRICE STABILITY REPORT 2020

Podgorica, 2021

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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
COVID-19	COronaVirus Disease-19 (coronavirus SARS-CoV-2)
ECB	European Central Bank
EU	European Union
HICP	Harmonised Index of Consumer Prices
IMF	International Monetary Fund
MONSTAT	Statistical Office of Montenegro
OPEC	Organisation of the Petroleum Exporting Countries
FDI	Foreign Direct Investments
UN	United Nations
USD	American Dollar



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# 1. INFLATION INDICATORS

## 1.1. Inflation trend in Montenegro

Following the outbreak of the COVID-19 epidemic in Montenegro in April 2020, consumer prices recorded negative annual rates in all months except September (when the rate equalled 0.1%). The largest decline was recorded in the categories *transport* and *hotels and restaurants*. The drop in oil prices in the international market led to a reduction in fuel and lubricant prices for motor vehicles in Montenegro as well, whereas measures aimed at containing the spread of virus related to travel restrictions, occasional closing of catering facilities, and worsening of the epidemiological situation reduced the demand for accommodation services and the fall in their prices. In December, annual inflation measured by consumer prices was -0.9%, while inflation measured by the harmonized index of consumer prices (HICP) stood at -1.3%. The consumer prices' decline in 2020 averaged to -0.3%. Observed by months, the highest consumer prices decline (-0.7%) was recorded in April, while the highest prices growth (0.7%) was recorded in September (Graph 1).

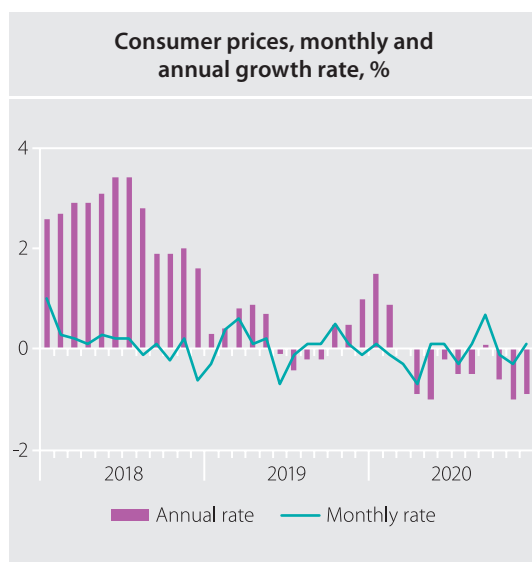
Table 1

	Inflation, %							
	2019				2020			
	III	VI	IX	XII	III	VI	IX	XII
Change in relation to the previous year-end	0.7	0.3	0.4	1.0	-0.4	-0.9	-0.5	-0.9
Annual change	0.8	-0.1	-0.2	1.0	0.0	-0.2	0.1	-0.9

Source: Monstat

The largest contribution to the fall in the annual inflation rate (-0.9 percentage points) was made by prices from the category *transport* with a drop of 7.8% (Table 2). The closing of borders and a complete or partial ban on travel, as one of the measures used to combat the spread of the coronavirus in many countries of the world, significantly affected the reduction in oil prices on a global scale. In Montenegro as well, the fall in prices of fuels and lubricants for motor vehicles of 15.7% had the greatest impact on the decrease in prices in the category *transport*. The drop in prices was also recorded in the category of *hotels and restaurants* (-2.8%), which is mostly a result of the decrease in prices of accommodation services by 6.4%. Consumer prices were also reduced in the following categories: *clothing and footwear* (-2.2%), *housing, water, electricity, gas and other fuels* (-1.1%), *furnishing, household equipment and routine household maintenance* (-1%), *miscellaneous goods and services* (-0.8%) and *communications* (-0.2%).

Graph 1



Source: Monstat

The annual price growth was recorded in the category *alcoholic beverages and tobacco* (3%), as a result of the growth of prices of tobacco (3.3%) and alcoholic beverages (2.3%), while the growth of prices of pharmaceutical products of 2.3% mostly contributed to the growth of prices in the category *health* (1.5%). The largest positive contribution to the annual rate (0.3 percentage points) was made by the 1% increase in prices in the category *food and non-alcoholic beverages*. The increase in this category is mostly the result of the increase in prices of oil and fats of 6.1%, fruit of 1.5%, meat of 1.4%, non-alcoholic beverages of 0.6%, bread and cereals of 0.4%, milk, cheese and eggs of 0.3%. Of the other categories, growth was recorded in the category *recreation and culture* (0.3%), while prices in the category *education* remained unchanged in relation to December 2019.

Table 2

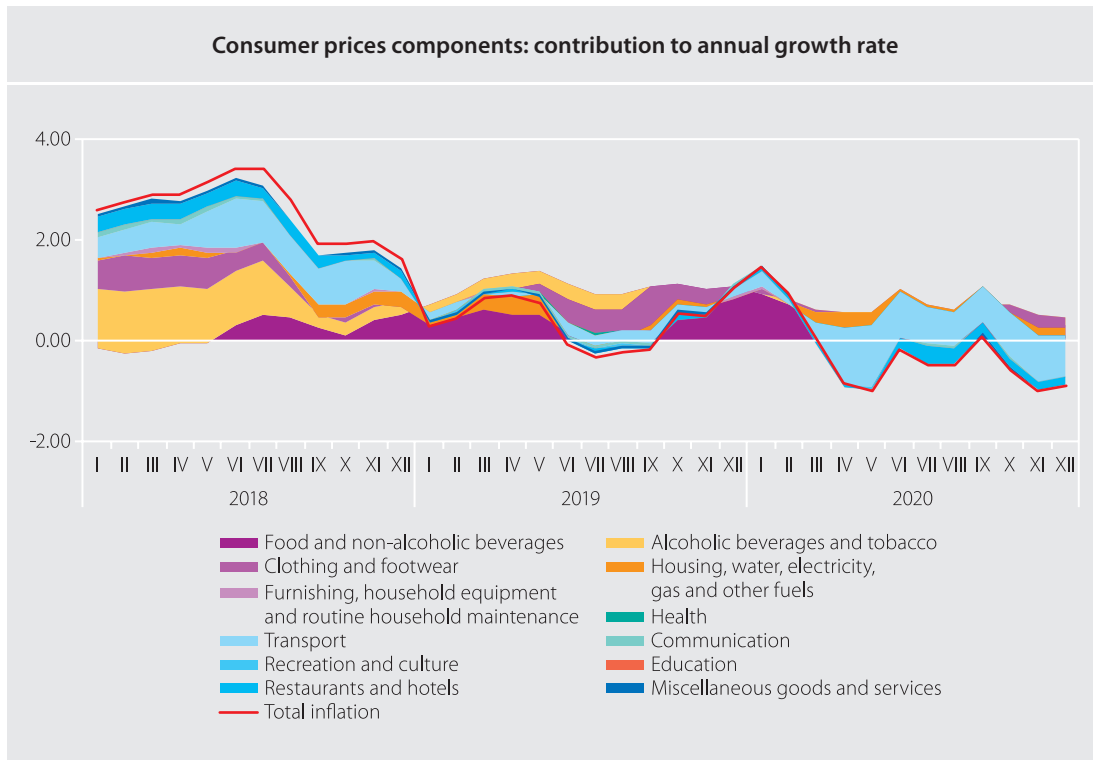
Annual growth rate and contributions of individual categories in total inflation (%) <sup>1</sup>				
	Weights	XII 2020 XII 2019	Growth rate	Contribution
TOTAL	1000	99.1	-0.9	-0.9
Food and non-alcoholic beverages	341.1	101.0	1.0	0.3
Alcoholic beverages and tobacco	40.4	103.0	3.0	0.1
Clothing and footwear	86.1	97.8	-2.2	-0.2
Housing, water, electricity gas and other fuels	154.0	98.9	-1.1	-0.2
Furnishing, household equipment and routine household maintenance	39.4	99.0	-1.0	0.0
Health	40.8	101.5	1.5	0.1
Transport	109.4	92.2	-7.8	-0.9
Communication	48.5	99.8	-0.2	0.0
Recreation and culture	32.0	100.3	0.3	0.0
Education	18.7	100.0	0.0	0.0
Restaurants and hotels	47.6	97.2	-2.8	-0.1
Miscellaneous goods and services	42.0	99.2	-0.8	0.0

Source: Monstat and CBCG calculations

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



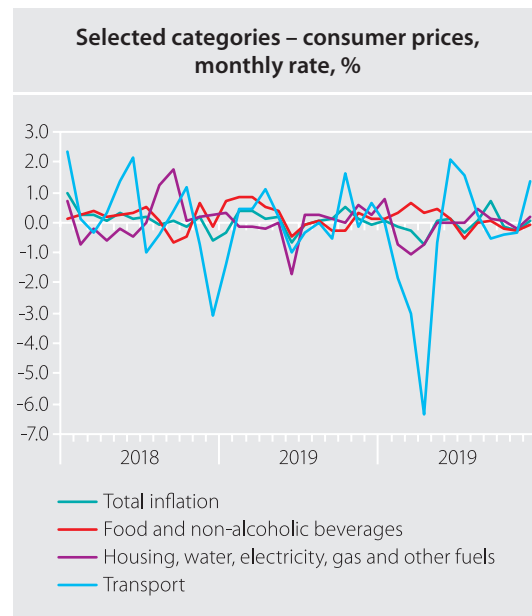
**Graph 2**



Source: Monstat and CBCG calculations

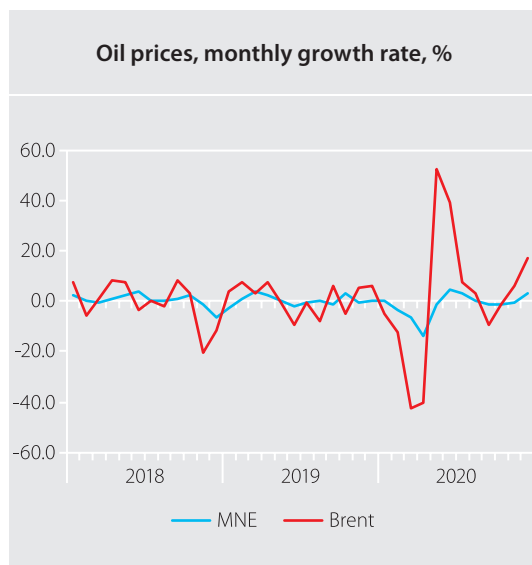
In 2020, the price of oil fell significantly in the global market compared to the previous year. Although a decline in price for this energy generating product was recorded in 2019 and forecasts for 2020 were in favour of its growth, the global COVID-19 pandemic had impact on the temporary closure of borders and travel restrictions, which significantly affected the demand for oil and the fall in prices. Following a large drop in prices in March and April, there was a slight recovery due to a significant reduction in oil production in the OPEC+ countries. The price of the OPEC reference basket averaged to 41.4 USD/barrel in 2020, being 35.4% lower than the 2019 average. The price of Brent averaged to 41.6 USD/barrel, being 35.2% lower than the previous year average. Observed at the monthly level, the lowest level of the average Brent price was recorded in April 2020 (18.83 USD/barrel). The highest price (49.74 USD/barrel) was recorded

**Graph 3**



Source: Monstat

Graph 4



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

in December after the March decline, as a result of a significant reduction in the oil production in OPEC+ countries and Saudi Arabia’s decision to reduce production by an additional 1 million barrels per day in February and March 2021. The year-end saw a drop in oil stocks and a slight recovery in demand for this energy generating product. According to the latest IMF report<sup>2</sup>, the oil price will increase by around 21% in 2021 compared to the low base in 2020, but will nevertheless remain at a lower level than the 2019 average. In the mentioned report, the average price for 2021 was estimated at 50.03 USD/barrel, and 48.82 USD/barrel in 2022. In its 2021 report<sup>3</sup>, the European Commission expects that the average oil price will reach 54.2 USD/barrel, and 51.9 USD/barrel in 2022.

Graph 5



Source: Monstat and CBCG calculations

The annual core inflation rate in December 2020 was -0.4%, being higher by 0.5 percentage points than the total annual inflation. Throughout 2020, the annual core inflation rate, with the exception of January, was higher than the total inflation (Graph 5). The largest spread between total annual and core inflation was recorded from April to June, as a result of changes in the price of certain products that are otherwise excluded from the calculation of core inflation, e.g. prices of certain agricultural products, electricity, fuels, lubricants, and the like.

In the *UN World Economic Situation and Prospect 2021* report it is stated that inflation in developed economies amounted to 0.9% in 2020, which was lower than in the previous year, when it equalled 1.5%. In the transition countries, a lower level of inflation than the inflation recorded in 2019 (from 5% to 4.1% in 2020) was recorded, especially after a decline in the level of inflation in the region of Southeast Europe, as well as in Russia and Ukraine. However, developing countries recorded inflation growth (from 5.5% in 2019 to 5.9% in 2020) due to price rises in North, East,

<sup>2</sup> IMF: *World Economic Outlook Update* – January 2021

<sup>3</sup> European Commission: *European Economic Forecast*, Winter 2021

South and Central Africa, West Asia, Mexico and Central America. As the Report<sup>4</sup> indicates, inflation in developed countries for 2021 could amount to 1.4%, 4.9% in transition economies, and 4.7% in developing countries.

**The producers' prices of manufactured products** in December 2020 recorded the y-o-y decline of 0.7%. The respective prices decline of 2.7% and 0.3% was recorded in *mining and quarrying* and *manufacturing industry*, whereas prices in *electricity, gas and steam supply* sector remained unchanged. The average decline in the producers' prices of manufactured products amounted to 0.1% in 2020, whereby an average drop in prices was recorded in *mining and quarrying* (-1.4%) and *manufacturing industry* (-0.6%), while *electricity, gas and steam supply* sector recorded a growth of 1.5%.

**Export producers' prices of manufactured products**<sup>5</sup> recorded the y-o-y increase of 0.7% in December 2020, while the average annual price decline was 2.8%. *Manufacturing industry* reported an average decrease in prices of 2%, while the prices in *mining and quarrying* declined by 7.1%.

**Import prices of manufactured products**<sup>6</sup> recorded the y-o-y decline of 3.1% in December 2020, and the average annual rate showed a decrease of 1.5%. Average annual decline was recorded in prices from both sectors: *manufacturing industry* (1.5%), and *mining and quarrying* (10%).

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

The annual inflation in countries of the region in December 2020 was negative and amounted to -1.6% in Bosnia and Herzegovina, -1.2% in Slovenia, and in Croatia -0.3%, while the positive inflation rate was recorded in Albania (1.1%), in Serbia (1.3%), and in North Macedonia (2.3%).

The annual inflation rate in the euro area in December 2020 was -0.3% being 1.6 percentage points lower than the annual rate recorded in December 2019, while the annual decline in energy prices of -6.9% made the largest contribution to this (-0.68 percentage points). After January (1.4%) and February (1.2%), lower annual inflation rates were recorded in the euro area, while negative rates were recorded as of August. This was mostly a result of the fall in prices of fuels for motor vehicles, prices in the group of electricity, gas and other fuels, as well as the prices of accommodation. The average annual rate in 2020 was 0.3%. The European Commission expects the inflation to grow, and they forecast the average inflation in the euro area of 1.4%<sup>7</sup> and 1.3% for 2021 and 2022, respectively.

<sup>4</sup> Detailed data on inflation trends for individual regions and countries are listed in the Report Annex *World Economic Situation and Prospect 2021*, in Tables A.5, A.6 and A7.

<sup>5</sup> The exports prices index represents monthly changes in the prices of manufactured products made by companies and sold at foreign markets. It is an important economic indicator that can be used as time series deflator, particularly for national account purposes.

<sup>6</sup> Import price index refers to the monthly change in prices of imported manufactured products. It can be used as a time series deflator, especially for the needs of national accounts and as a means of harmonizing prices at the conclusion of different sales contracts.

<sup>7</sup> Source: European Commission: *European Economic Forecast, Winter 2021*

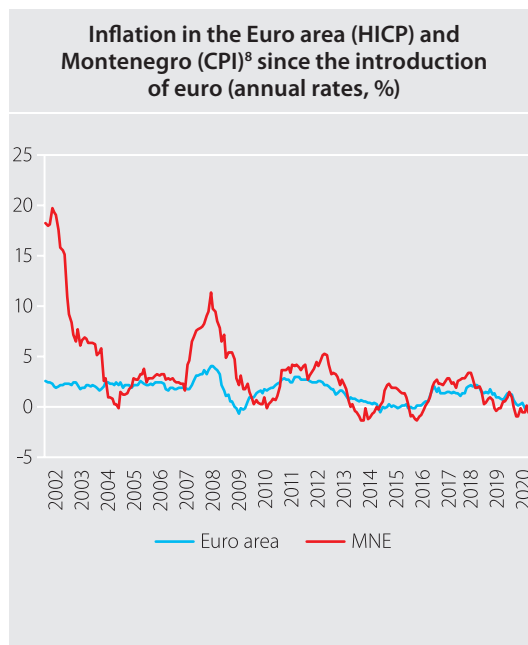
The annual inflation rate recorded in the EU, measured by the Harmonized Index of Consumer Prices was 0.3% in December 2020. Of the EU Member States, the highest annual rate was recorded in Poland (3.4%), and Hungary (2.8%), while the lowest was recorded in Greece (-2.4%).

**Graph 6**



Source: National statistical offices and Eurostat

**Graph 7**



Source: Monstat and Eurostat

<sup>8</sup> Cost of living were used for measuring inflation in Montenegro until 2009, after which consumer prices were introduced.

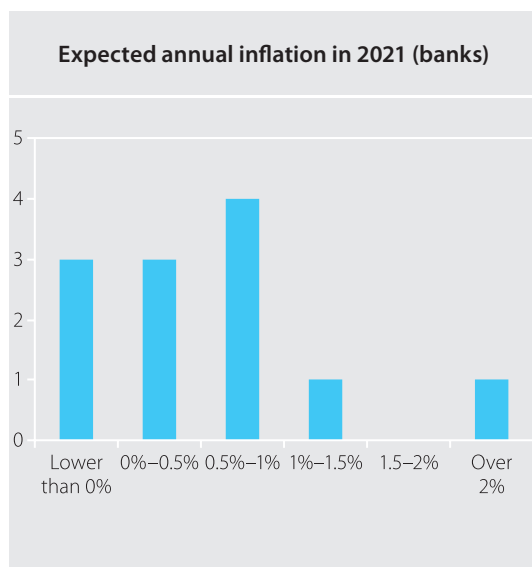
## 2. INFLATION EXPECTATIONS OF THE BANKING AND CORPORATE SECTOR

### 2.1. Banks' expectations

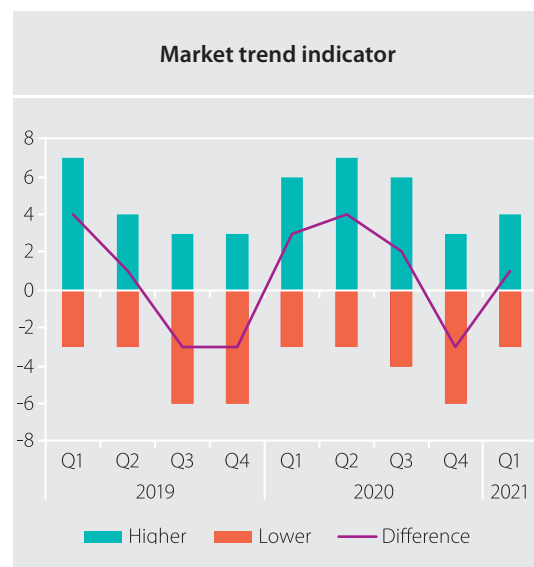
When it comes to inflationary expectations of banks, according to a survey conducted in February 2021, four banks expect inflation in 2021 to range from 0.5% to 1% (Graph 8), six banks expect inflation between 0% and 0.5% and lower than 0%, while two banks expect inflation between 1% and 1.5% or higher than 2%. None of the banks expects inflation in the range from 1.5% to 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 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 banks' inflation expectations were at a higher level in the first three quarters of 2020, while they were reduced in the last quarter. A survey conducted in Q1 2021 indicates an increase in banks' inflation expectations for the level of inflation in 2021.

**Graph 8**

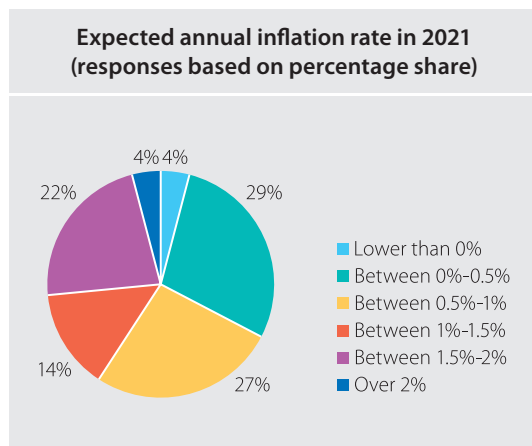


**Graph 9**



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

Graph 10



### *Inflation*

Of the total number of the surveyed economic entities, most of them (29%) think that the annual inflation rate in 2021 will range between 0% and 0.5% (Graph 10), 27% forecasts the annual inflation rate of 0.5% to 1% while 22% of respondents think that inflation will be between 1.5% and 2%. Inflation in the range between 1% and 1.5% is expected by 14% of respondents, while 4% of the surveyed economic entities expect inflation lower than 0% and higher than 2%.

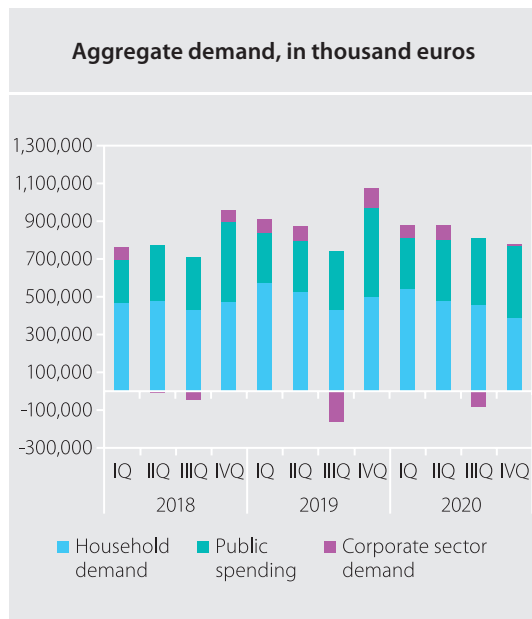
## 3. INFLATION DETERMINANTS

### 3.1. Demand<sup>9</sup>

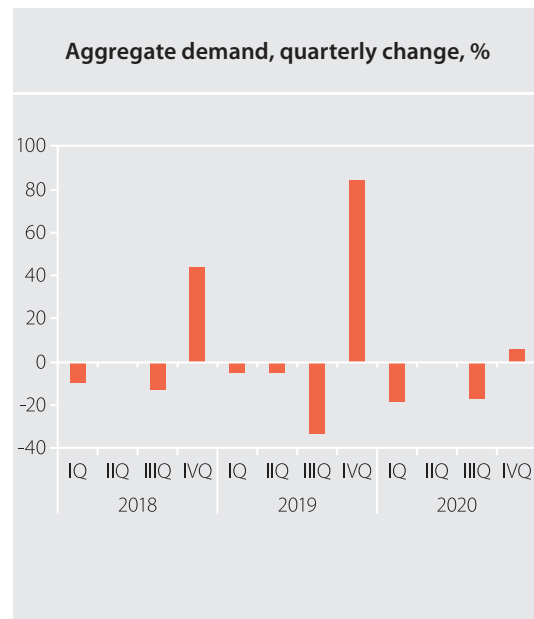
According to preliminary indicators, the total demand in the fourth quarter of 2020 is higher than demand from the third quarter, and lower compared to the first and second quarters, as well as the fourth quarter of the previous year. In the structure of total demand in Q4 2020, in relation to the same quarter of the previous year, the share of the corporate sector demand declined, while both household demand and public spending increased.

The aggregate demand rate in Q4 2020 was higher than in the previous three quarters, and lower compared to the rate recorded in the last quarter of the previous year.

Graph 11



Graph 12



<sup>9</sup> Preliminary data

### Box 1 - Aggregate demand calculation methodology

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

$$AD = C + I + G$$

AD – aggregate demand

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

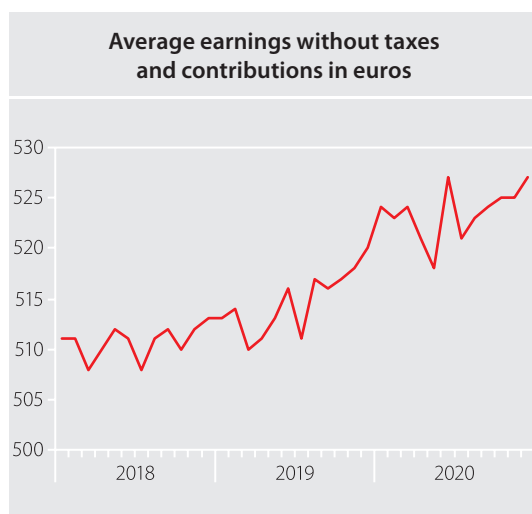
I - investment spending = - corporate net savings (deposits – loans)

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

### 3.1.1. Earnings and other available demand determinants

Monstat data showed that the average gross earnings in Montenegro was 783 euros in 2020 and it increased by 1.3% in relation to the average in 2019. An average earnings without taxes and contributions totalled to 524 euros, also showing the y-o-y increase of 1.7%. Real earnings without taxes and contributions in 2020 were 2.1% higher compared to the average earnings without taxes and contributions in 2019.

Graph 13



Source: Monstat

Graph 14



Source: Monstat



Observed by months, the highest nominal growth in earnings without taxes and contributions of 1.7% was recorded in June (Graph 13), while the lowest nominal growth of 0.2% was recorded in March, September and October. The highest nominal drop in earnings without taxes and contributions was recorded in July (-1.1%).

Taking into account the consumer prices, i.e. trends in earnings in real amounts, it can be concluded that real earnings reported the highest growth in June, while the highest real decline was reported in May.

Retail sector<sup>10</sup> loans reported positive trend in 2020. On average, loans to this sector grew at a monthly rate of 0.2%, which is less than the average monthly growth of retail loans of 0.7% in 2019. Total retail sector loans amounted to 1,394.2 million euros at 2020 year-end, which indicated a growth of 36.4 million euros or 2.7% more in relation to 2019 year-end (Graph 15).

Debt *per capita*<sup>11</sup> amounted to 2,241.89 euros at end-2020, and it was 59.67 euros higher than at end-2019.

Total MFIs retail loans amounted to 63.5 million euros at end-2020 which was by 2.1 million euros or 3.1% less than at end-2019.

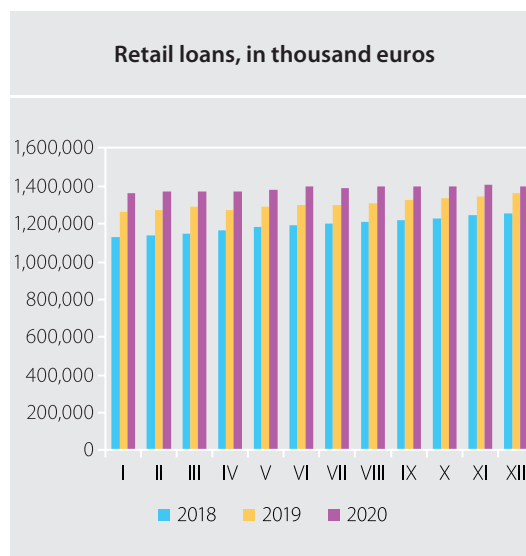
Retail sector deposits amounted to 1,254 million euros at end-2020, which represented a y-o-y decrease of 62.5 million euros or 4.7%.

Loans to deposits ratio for this sector amounted to 1.11 at end-2020, being at a higher level year-on-year (1.03).

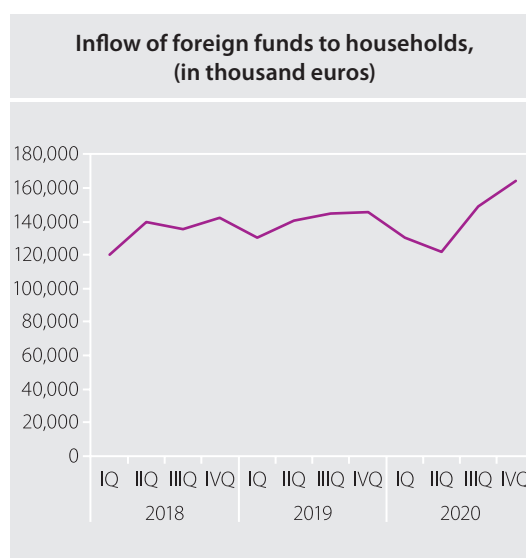
At end-2020, the retail sector generated a net debt in the total amount of 203.7 million euros.

The balance of payment statistics showed that the y-o-y decrease in 2020 was recorded in the inflow of cash based on compensations to employees,

Graph 15



Graph 16

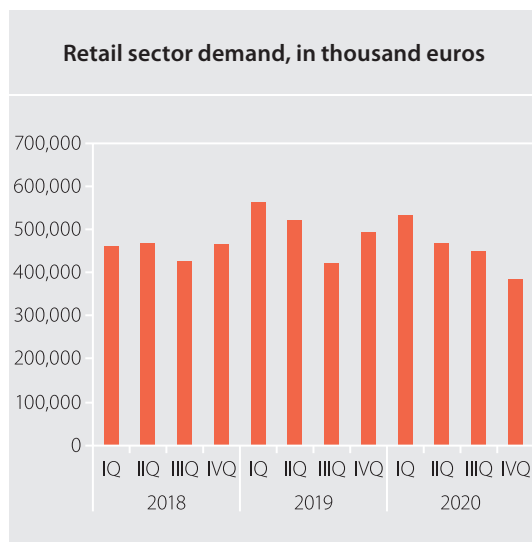


Source: CBCG

<sup>10</sup> The retail sector includes resident natural persons and entrepreneurs.

<sup>11</sup> Population estimate for 2020: Estimate as at 1 January 2020 amounts to 621,873. Source: Monstat.

Graph 17



Source: CBCG

while the inflow based on total remittances from abroad is approximately at the same level as in the previous year.

According to preliminary figures, the total retail sector demand in Q4 2020 was lower in relation to the level of demand in the first three quarters of 2020, as well as in relation to the fourth quarter of 2019.

### 3.1.2. Public sector demand

#### *Montenegro's public finance*

According to the Ministry of Finance preliminary data, **public spending** in 2020 amounted to 2.33 billion euros or 55.6% of the estimated GDP<sup>12</sup> for 2020. Compared to the previous year, public spending was higher by 109.4 million euros or 4.9%, whereas the planned amount<sup>13</sup> was exceeded by 63.5 million euros or 2.8%. The increase in consumption was caused by the economic measures of the Government of Montenegro to help the corporate and retail sectors, i.e. the categories most affected by the coronavirus epidemic.

The recorded level of public spending was financed by tax revenues (1.13 billion euros), contributions (531 million euros), fees (74.5 million euros), revenues from donations (65.2 million euros), other revenues (47.6 million euros), duties (13.4 million euros), and receipts from loan repayment and funds transferred from the previous year (9.5 million euros).

Current public spending (public spending reduced by capital expenditures<sup>14</sup>) amounted to 2.02 billion euros or 48.1% of GDP and it grew year-on-year by 11.4%, while capital expenditures amounted to 315 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 (40.5%), followed by transfers (38.3%), capital expenditures (13.5%), while 7.7% referred to other expenditures.

<sup>12</sup> The estimated GDP for 2020 equals 4.19 billion euros.

<sup>13</sup> Plan in line with the budget revision, adopted in June.

<sup>14</sup> Capital expenditures consist of capital expenditures in current budget and the capital budget.

**Preliminary public revenues** amounted to 1.87 billion euros or 44.6% of estimated GDP, being 13.1% lower y-o-y, yet 3.6% lower in relation to the plan. As for the structure of public revenues, tax revenues accounted for the main share of 60.4%, followed by contributions (28.4%), whereas the remaining public revenues accounted for 11.2%.

In 2020, according to Ministry of Finance preliminary data, **public spending** ran a **deficit** in the amount of 463.7 million euros or 11.1% of GDP, or 391.5 million euros more compared to a cash deficit recorded in 2019.

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

According to Ministry of Finance preliminary data, total revenues<sup>15</sup> of the Budget of Montenegro amounted to 3 billion euros in 2020.

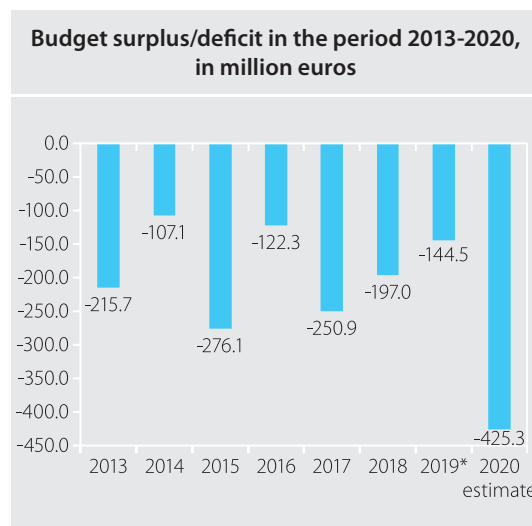
**The source revenues** amounted to 1.64 billion euros or 39.1% of the projected GDP. Compared to the plan, they were 3.9% lower, and in relation to 2019, they were 13% lower. In the structure of source revenues, tax revenues accounted for the main share of 58.9%, followed by contributions with 32.4%, donations with 3.5%, other revenues with 2.2%, fees with 1.7%, duties with 0.7%, and receipts from loan repayment and funds transferred from the previous year with 0.6%.

Tax revenues amounted to 966.1 million euros, recording a 8.5% decrease relative to the plan and a 17.6% y-o-y decrease, resulting from a decline in economic activity caused by the coronavirus pandemic. The largest decrease compared to the previous year was recorded in the collection of value added tax by 165.9 million euros (23.8%). Also, the other revenues recorded a significant decline (39.1 million euros or 51.6%) as a result of non-payment of dividends by the state-owned energy companies.

Revenues from contributions amounted to 531 million euros being 2.8% lower in relation to 2019, recording a 7.8% y-o-y increase in relation to the plan, which is explained by the subsidies of earnings for employees in industries that were particularly affected by measures to restrict the activities, as a result of the COVID-19 pandemic.

**Consolidated budget expenditures** amounted to 2.07 billion euros in 2020, or 49.2% of GDP. The recorded expenditures in relation to the planned increased by 1.2%, and compared to the previous

**Graph 18**



\* Note: Draft Law on Annual Financial Statements of the State Budget of Montenegro for 2019

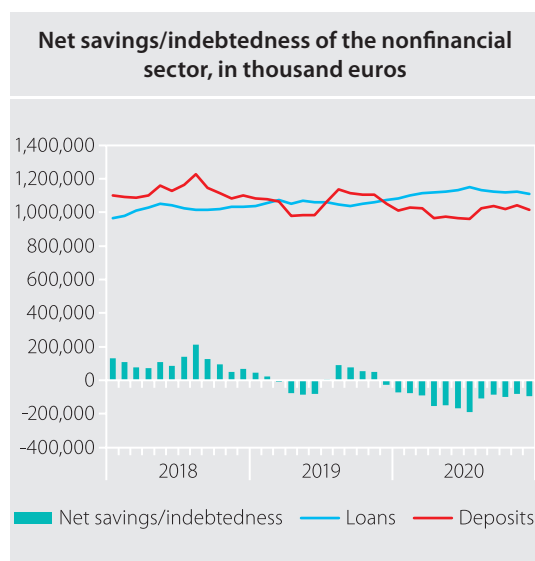
Source: Ministry of Finance

<sup>15</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.

year they were 1.8% higher. Current budget expenditures amounted to 857.9 million euros or 2.1% more than planned. Social protection transfers amounted to 558.7 million euros or 13.3% of GDP. Capital expenditures amounted to 229.9 million euros or 5.5% of GDP.

Montenegro's **budget deficit** is estimated at 425.3 million euros or 10.1% of GDP, and is higher by 282 million euros than the cash deficit, and 280.8 million euros than adjusted deficit from 2019<sup>16</sup>. Debt repayment amounted to 665.9 million euros.

Graph 19



### 3.1.3. Nonfinancial sector<sup>17</sup>

Due to the lack of data on the nonfinancial sector investments, we can use the sector's net savings/indebtedness as an approximation.

At end-2020, loans to nonfinancial sector were higher than this sector's deposits. At end-2020, net indebtedness of the nonfinancial sector amounted to 94.4 million euros (Graph 19).

Long-term loans accounted for the main share in the structure of loans to the sector (79.2%), which indicates that the loans to corporate sector were mainly used for the increase in the volume of economic activity.

### 3.1.4. External demand and the current account

According to preliminary data, the current account deficit amounted to 1.1<sup>18</sup> billion euros in 2020, being 46.4% higher in relation to 2019 due to a significant decline in the surplus on the services account, which was partly amortised by a smaller deficit on the goods account and the growth of the surplus on the primary and secondary income accounts.

In 2020, the imbalance in international visible trade was reduced as a result of a larger decline in visible imports than exports. Total visible exports amounted to 408.6 million euros recording a decline of 12.2%, whereas a total visible imports amounted to 2 billion euros, being 19.0% lower y-o-y. In the observed period, the services account recorded a surplus decrease of 82.2% (181.7 million euros). This trend in the services account is a result of a significant decline in revenues of 60.5% in relation to the previous year, due to a significant decline in revenues from tourism. Primary income account ran a

<sup>16</sup> Corrected deficit expressed in the Draft Law on Annual Financial Statements of the State Budget of Montenegro for 2019.

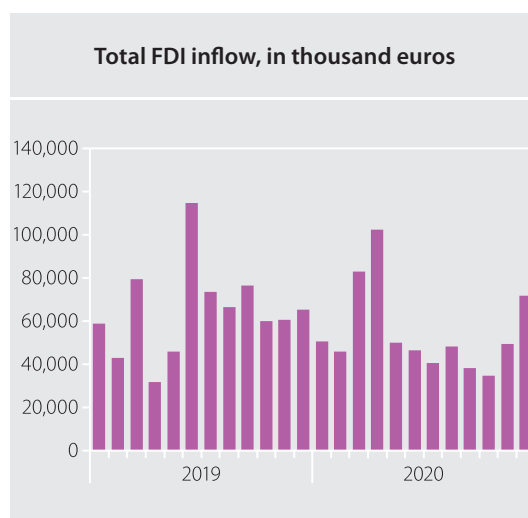
<sup>17</sup> The non-financial sector includes state companies and private companies.

<sup>18</sup> Montenegro's balance of payments' data published in accordance with the new IMF methodology (*IMF Balance of Payment Manual*, Sixth Edition - BMP 6)

surplus of 61.6 million euros, or 44.8% more y-o-y. This trend is the result of smaller outflows based on compensation to employees and international investment income. Secondary income account ran a surplus of 308.5 million euros, or 8.5% more than in 2019.

According to preliminary data, the net FDI inflow amounted to 467.5 million euros in 2020, recording a y-o-y growth of 53.2%. In relation to 2019, such trend is the result of a smaller FDI outflow with a simultaneous increase in inflows arising from intercompany debt. Total FDI inflow stood at 663 million euros, with equity investments amounting to 240.2 million euros (42.9% decrease), and the inflow in the form of intercompany debt adding up to 389.9 million euros or 21.1% more y-o-y. In the structure of equity investments, investments in companies and banks amounted to 123.8 million euros (48.9% decrease) while real estate investments amounted to 116.4 million euros (34.6% decrease). The inflow arising from the withdrawal of funds invested abroad amounted to 32.9 million euros. In the structure of the total inflow of FDI, share of inflows arising from intercompany debt amounted to 58.8%, investments in companies and banks accounted for 18.7%, while 17.6% of total inflows were invested in real estate. Total FDI outflow amounted to 195.5 million euros in 2020, or 58.7% lower year-on-year. The outflow from residents' investments abroad amounted to 28.5 million euros, while withdrawal of non-residents' funds invested in Montenegro amounted to 167 million euros.

**Graph 20**



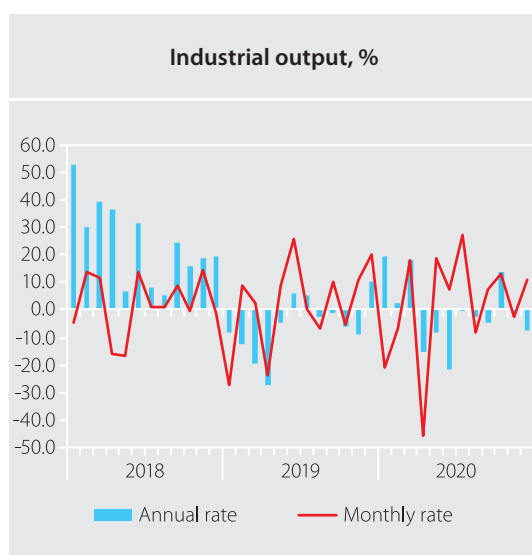
Source: CBCG

In 2020, portfolio investments account recorded net inflow of 394.1 million euros, while the net inflow in the other investments account amounted to 552.6 million euros. Developments in this account are characterised by higher borrowing by the state and banks arising from loans taken, compared to 2019, while at the same time other sectors reduced their credit liabilities.

## 3.2. Supply and demand

In 2020, industrial output recorded y-o-y decrease of 0.9%. *Electricity, gas and steam supply* and *manufacturing industry* sectors recorded respective output declines of -3.8% and -0.5%, while *mining and quarrying* recorded output growth of 7.2%. Observing monthly data on industrial output (Graph 21) the highest monthly decline was recorded in April (-45.8%), with the highest increase recorded in July (27.1%).

Graph 21



Source: Monstat

Some 444,065 tourists visited Montenegro in 2020, which represented the y-o-y decline of 83.2%. The number of domestic and foreign tourist arrivals decreased by 31.2% and 86%, respectively. Tourist overnights amounted to 2.6 million, which is a y-o-y decrease of 82.1% as a result of the coronavirus pandemic, which had the greatest negative impact on the tourism sector and related activities.

The total **production of forest assortments** amounted to 280,175 cubic metres of wood products in 2020, which is 8.2%<sup>19</sup> more than in 2019.

According to preliminary Monstat data, the total value of executed **construction works** amounted to 751.1 million euros in 2020 recording y-o-y drop of 5.6%, whereas measured by the effective working hours, it decreased by 3.2%.

Compared year-on-year, air passenger transport recorded a decrease of 80.3%, road passenger transport decreased by 64.9%<sup>20</sup>, while railway passenger transport declined by 52%<sup>21</sup> in 2020. At the same time, cargo air and road freight transport decreased by 61.3% and 9.7%<sup>22</sup>, respectively, while railway freight transport increased by 1.9%<sup>23</sup>. Total turnover in ports in 2020 amounted to 2 million tonnes, being lower by 0.4% compared to the previous year, while exports accounted for 48.5% and imports for 51.5%. In this period, exports declined by 4.2% while imports increased by 3.6%.

<sup>19</sup> Presented through weighted index, while presented through non-weighted index production increased by 4.6% over the same period.

<sup>20</sup> Presented through number of passengers, while it decreased by 74.1% presented through passenger kilometres.

<sup>21</sup> Presented through number of passengers, while it decreased by 58.1% presented through passenger kilometres.

<sup>22</sup> Presented through transported goods in thousand tonnes, while it increased by 12.5% presented in tonne kilometres.

<sup>23</sup> Presented in thousand tonnes, while it increased by 0.1% presented in tonne kilometres.

## 4. MONETARY POLICY

The Central Bank of Montenegro is responsible for monetary policy, encouraging and preserving the stability of the financial system, including encouraging and maintaining sound banking system and secure and efficient payment transactions. One of the primary CBCG monetary policy objectives is contributing to achieving and maintaining price stability in the country. The Central Bank of Montenegro Law lays down the following CBCG's primary monetary policy instruments: open market operations, credit operations, and reserve requirement. However, it should be stated that all available monetary policy instruments of the CBCG have very limited impact on inflation trends.

In May 2020, the Central Bank of Montenegro passed a Decision Amending the Decision on the Bank Reserve Requirement to be Held with the Central Bank (OGM 43/20). The Decision stipulates that the banks will calculate the reserve requirement by applying a 5.5% rate instead of the current 7.5% (on the part of the base including demand and term deposits with a maturity less than one year, i.e. up to 365 days), and a rate of 4.5% instead of the previous 6.5% (on the part of the base including deposits with a maturity over one year, i.e. over 365 day). In addition, the Central Bank of Montenegro passed a decision reducing the fee that banks are required to pay for the use of the prescribed reserve requirement amount they do not return on the same day. The decision also defines a temporary reduction of the annual interest rate from the previous 12% to 6%.

## 5. INFLATION FORECAST FOR 2021

### 5.1. Model assessment

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

Montenegro's Fan Chart for 2021 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 uncertainty degree ratios are obtained through analytical assessment and calculation of the relative impact of potential internal and external shocks that are possible in the Montenegrin economy over the one-year period and which are reflected through the “thickness” of the band around the central projection.
3. **Fan chart skewedness** – based on the level of skewedness of the distribution of inflation projection, the fan chart is adjusted to the forecast to show whether the values of the central projections have “overestimated” or “underestimated” inflation rates. The position of the mean value of inflation distribution will depend on this.

#### *Central projection of fan chart - ARIMA model 2021*

With a view to developing a fan chart, an ARIMA (Autoregressive Integrated Moving Average) time series model of inflation of Montenegro presented via Consumer Price Index<sup>24</sup> was developed.

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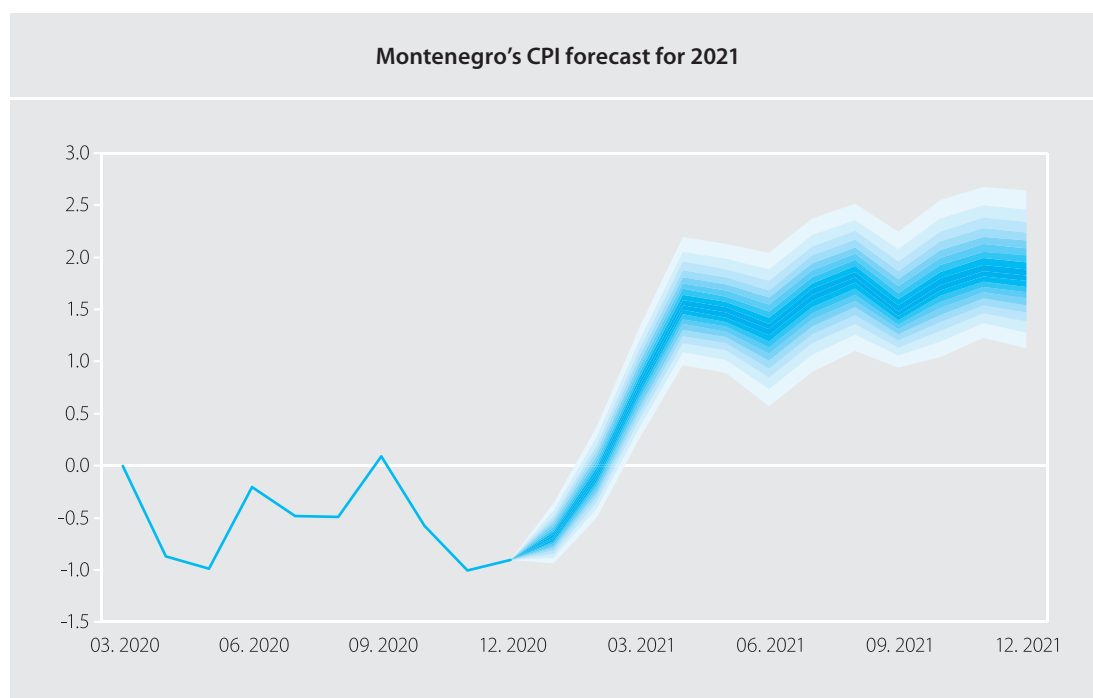
<sup>24</sup> A detailed explanation of the ARIMA model of Montenegro was presented in the working paper of the Central Bank No.11 *Inflation Forecast: Empirical research on the retail price index trend of Montenegro for 2007 - applying the ARIMA model*.



ARIMA model was used for short term forecasts (12 months), whereby several iterations of ARIMA models were made, which were ranked based on their efficiency and quality of diagnostics. The selected ARIMA model, ARIMA (3,1,2)<sup>25</sup> has sufficient confidence level for forecasts.

The monthly forecasts value was used as the value of central projection of the CPI graph for 2021. Obtained values represent the distribution mode, i.e. values with the highest frequency in the distribution of this time series.

**Graph 22**



Source: CBCG, 2021

Mean value of the obtained model is 1.2. The value of the coefficient of asymmetry varies in the range of 0.5 to 1, and the relative standard deviation is 0.25. Model projection of inflation is located in the central span of the distribution. This indicates that the corresponding range of uncertainty of future inflation is symmetrical. The fan chart describes 90% probability of inflation distribution. The central projection is usually in the deepest shade of the fan chart, i.e. in the central 10% of probability<sup>26</sup>. The fan chart has an equal number of bands (eight) on either side of the central band whereby every band of the same colour, both above and below the central band, cumulatively describes the next 10% of inflation trend probability. As uncertainty grows over time, the fan chart spreads.

<sup>25</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>26</sup> The mode values (central projection) are usually in the deepest band shade, but in case of a significant risk level, it can happen that the central projection does not cover either of these values. (Britton, E, Fisher, P.G. and Whitley, J.D. (1998), *The Inflation Report projections: Understanding the Fan Chart*, Bank of England, Quarterly Bulletin, 38, pp. 30–37)

The fan chart of inflation in Montenegro, based on the ARIMA model assessment for 2021 indicates that there is a **90% probability that the CPI inflation, depending on the certain month, will range between -0.9% and 2.7%, with the central projection of 1.23%. At the same time, inflation for December 2021 is forecasted to range between 1.1% and 2.6%, with the central trend of 1.8%.** The fan chart central projection (the darkest part) represents a 10% probability span (Graph 22).

The projected growth of the inflation rate mainly reflects the base effect, i.e. the weakening effect of a significant drop in oil prices in 2020, caused by the reduction of global oil demand during the pandemic. The risks related to the projected inflation rate shown on the fan chart are symmetrically set. Risks in terms of achieving the projected inflation rate relate to the oil and food prices trend. Also, the prices trend in the following period will be affected by the recovery rate of domestic demand.

***The projection was based on the following assumptions:***

1. After a sharp drop in oil prices in the international market in 2020, the expectations of international institutions indicate that demand and oil prices will recover quickly and achieve significant growth (around 35%<sup>27</sup>). The expected rise in oil prices will largely affect the increase in inflation this year.
2. The projection assumes mild inflationary pressures coming from our major trading partners. In the projected period, we primarily expect mild inflationary pressures from the euro area. According to the ECB's<sup>28</sup> March forecast, inflation in the euro area will be 1.5% this year. Inflation growth in 2021 is largely attributed to statistical factors that do not have a lasting effect, thus the inflation is expected to fall to 1.2% in 2022. Low inflation rates are expected in most countries in the region.
3. It is assumed that the prices of raw materials, excluding energy, will achieve a slight increase in 2021 in relation to the previous year.
4. The projection assumes an increase in the prices of domestic food and agricultural products by up to 10%.
5. Pursuant to the Law on Excise Taxes, the excise duties on tobacco and tobacco products, alcohol and alcoholic beverages, carbonated beverages with added sugar will increase, while excise duties on sugar, cocoa and ice cream products will be introduced.

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

## 5.2. Expert assessment

All forecasts for next year point to real GDP growth, as a result of the low base in 2020, which will have a disinflationary effect. On the other hand, most forecasts point to a more significant rise in oil prices and a somewhat more moderate rise in food prices and a large number of raw materials, which will have a reverse effect on the inflation trend. There is also a slight increase in aggregate demand in Q4 2020 compared to the previous quarter, but aggregate demand is still lower compared to the first two quarters of 2020 and the fourth quarter of 2019.

<sup>27</sup> Source: ECB (2021): *ECB staff macroeconomic projections for the euro area, March 2021.*

<sup>28</sup> Source: ECB (2021): *ECB staff macroeconomic projections for the euro area, March 2021.*

The expectations of both surveyed banks and the corporate sector indicate an increase in inflation, therefore it is unlikely that inflation will be negative, as was the case in the previous year. Most of the surveyed banks expect inflation in the range of 0.5% to 1%, while over half of the surveyed entrepreneurs expect inflation between 0% and 1%.

However, having in mind the high degree of global uncertainty, as well as the fact that this type of pandemic is unprecedented, i.e. there is no historical data certain legalities could be derived from, this projection should be taken conditionally and will be subject to a revision several times during the year.

Our model inflation projection predicts inflation in the range of 1.1% to 2.6% for end-2021, with a central trend of 1.8%. Our expert assessment is similar to a model estimate and we expect that inflation will range from 0.75% to 2.75% in 2021.

**Table 3**

Inflation rate estimation for 2021		
Optimistic projection	Central projection	Realistic projection
0.75	1.75	2.75

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

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