CENTRAL BANK OF MONTENEGRO

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1. INFLATION INDICATORS

Inflation slowed down in a large number of countries around the world in the first half of 2023 under the influence of the manifold reference interest rates increase by the leading central banks, stabilisation in the energy market, and a reduction in disruptions in global supply chains. According to the OPEC[1] data, oil prices on the international market decreased by 25.7% year-over-year. Data from the UN Food and Agriculture Organization (FAO) suggest that the food price index reached its two-year low in June this year and stood at 23.4% below its maximum level recorded in March 2022.

MONSTAT data indicates that consumer prices were 11.0% higher year-on-year in the first half of the current year, while the year-on-year growth in June this year averaged at 7.5%. During the second quarter of the current year, consumer prices rose 1.6%, primarily owing to price increase in the categories *food and non-alcoholic beverages* of 2.6% and *hotels and restaurants* of 12.0% (table 2). Monthly trend of consumer prices shows that consumer prices increase was recorded in all three months of the second quarter: 0.2% in April, 0.5% in May, and 0.9% in June.

Table 1

Inflation in Montenegro in the period March 2022 – June 2023, in %

	2022				2023	
	III	VI	IX	XII	III	VI
Change in relation to the previous year-end	6.3	11.1	14.5	17.2	0.2	1.9
Annual change	9.7	13.5	16.0	17.2	10.5	7.5

Source: MONSTAT

During the second quarter of 2023, price growth in Montenegro was recorded in eight out of twelve categories that accounted for 68.17% of the consumer basket (table 2). The main contributor to the price growth with 0.92 pp was the category *food and non-alcoholic beverages* that rose 2.6%. Prices in this category were driven primarily by the growth in the prices of fruit of 13.3%, vegetables of 7.6%, and meat of 4.7%. In anticipation of the summer tourist season, a significant price increase in the *hotels and restaurants* category of 12.0% was recorded, mostly as a result of a 25.8% increase in the prices of accommodation services. Price increase in the reporting period was also recorded with the following categories: *clothing and footwear* of 3.6%, *recreation and culture* of 1.6%, *health* of 1.3%, *furnishing, household equipment and routine household maintenance* of 0.9%, *alcoholic beverages and tobacco* of 0.6%, and *miscellaneous goods and services* of 0.3%. The biggest drop in prices was recorded in *transport*, 2.6%, due to a 6.7% decline in the prices of fuel and lubricants for motor vehicles. After the highest oil price since the beginning of the year was recorded in April, as a result of the decision of OPEC+ members to reduce oil production by 1.16 million barrels per day, there was a decline was recorded in May and June. The drop in oil prices is the result of concerns about the slowdown in economic growth and reduced demand for this energy product due to new increases in reference interest rates by the ECB and the FED. Price decline during the second quarter was also recorded in the category of *communications* of 0.3%, while prices in the categories of *housing, water, electricity, gas and other fuels*, and *education* remained at the same levels.

[1] *OPEC Monthly Oil Market Reports* (North Sea Dated benchmark price), July 2023.

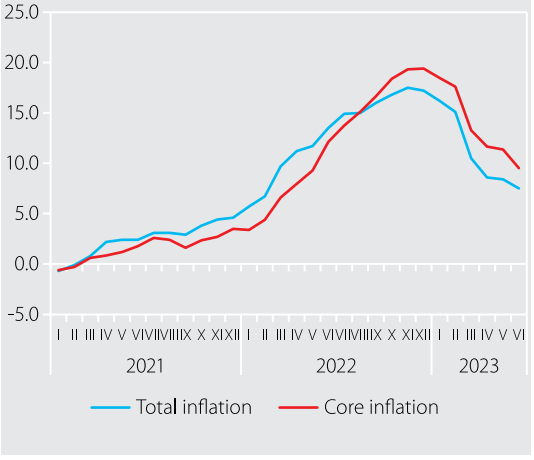
Table 2

Growth rate and contribution of individual categories in total inflation[2] in Montenegro				
	Weights	VI 2023 / III 2023	Rate	Contribution
TOTAL	1,000.0	101.6	1.6	1.6
Food and non-alcoholic beverages	360.3	102.6	2.6	0.9
Alcoholic beverages and tobacco	37.3	100.6	0.6	0.0
Clothing and footwear	80.8	103.6	3.6	0.3
Housing, water, electricity gas and other fuels	136.6	100.0	0.0	0.0
Furnishing, household equipment and routine household maintenance	44.2	100.9	0.9	0.0
Health	39.1	101.3	1.3	0.0
Transport	118.3	97.4	-2.6	-0.3
Communications	45.1	99.7	-0.3	0.0
Recreation and culture	31.4	101.6	1.6	0.1
Education	18.4	100.0	0.0	0.0
Hotels and restaurants	47.1	112.0	12.0	0.6
Miscellaneous goods and services	41.5	100.3	0.3	0.0

Source: MONSTAT and CBCG calculations

Graph 1

Annual rate of total and core inflation in Montenegro, in %



Source: MONSTAT and CBCG calculations

The annual core inflation rate stood at 9.5% in June 2023, being 2.0 pp higher than total annual inflation[3]. This was due to the rise in the prices of almost all groups of food products that are not excluded from the calculation, as well as the prices of other product groups that determine core inflation on annual level. Annual core inflation was lower than the total inflation in all three months in Q2 2023 (graph 1). The largest spread between total annual and core inflation was recorded in April due to price changes of certain products that are included in the annual inflation calculation, but not included in the core inflation calculation (e.g. prices of some agricultural products, tobacco, fuel and lubricants, and the like).

The average price of oil recorded the quarter-on-quarter decline in the second quarter of 2023. Although an increase in prices was recorded in April due to the decision of OPEC+ member states to reduce oil production,

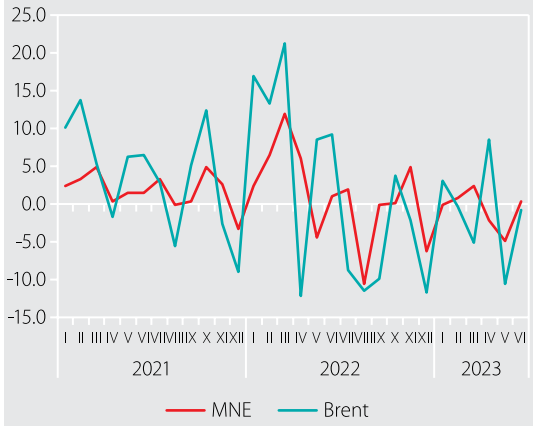
[2] It should be noted that, regardless of the index changes, the contribution share of certain categories is not recorded before the second and/or third decimal due to the weight structure.

[3] Core inflation is used as an indicator of the trend of a long-term rate or a future rate of inflation, meaning that it enables distinguishing between temporary price shocks and long-term inflation. Total annual inflation is an indicator of the average price change of all products and services used by households for consumption purposes. Read more on the methodology at: *https://www.cbcg.me/slike_i_fajlovi/eng/fajlovi/fajlovi_publikacije/radne_studije/obracun_bazicne_stope_inflacije_english.pdf*

average prices decreased in May and June. A significantly slower recovery of the Chinese economy than expected and the tightening of the monetary policies of the main central banks with the aim of reducing inflation increase the concern about the slowdown of the entire world economy, which also affected the reduced demand and lower oil prices on the international market. In the reporting quarter, the OPEC reference basket price averaged at 78.38 USD/barrel, which is 2.81% below the average price recorded in the first quarter of this year. The average price of Brent oil stood at 78.48 USD/barrel or 3.37%% less than in the comparative period. Also, the lowest price since December 2021 was recorded in June this year (74.73 USD/barrel). According to the World Bank report from June 2023[4], it is predicted that the average price of crude oil will be 80 USD/barrel, which represents a decrease of about 8 USD/barrel compared to the January forecast, while in 2024 it is expected to rise to 82 USD/barrel.

Graph 2

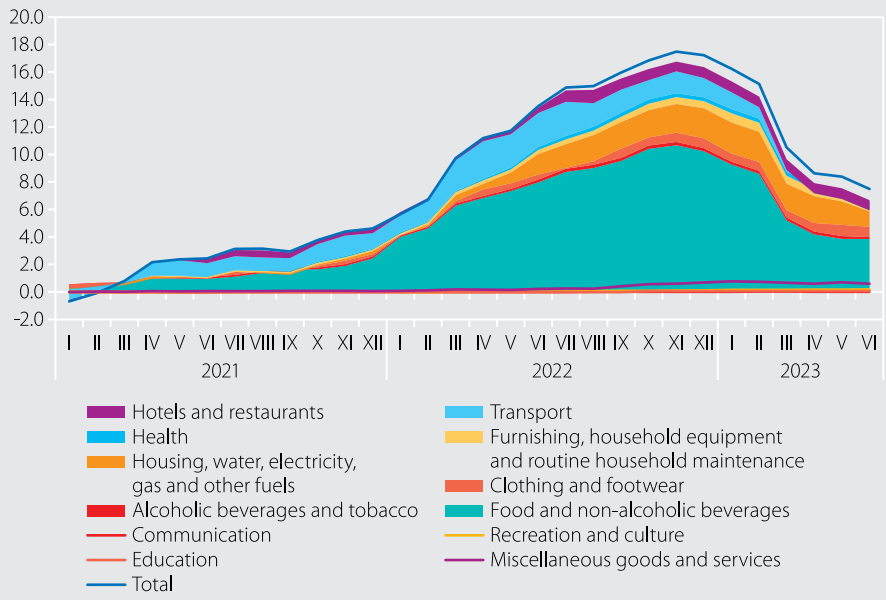
Fuel and lubricant prices in Montenegro and OPEC* oil prices, monthly rate, in %



Source: MONSTAT and OPEC Monthly Oil Market Reports
(*North Sea Dated)

Graph 3

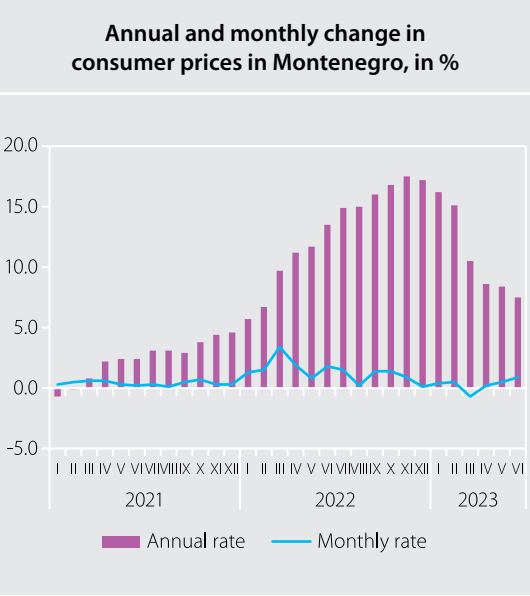
Consumer prices' components: contribution to annual growth rate



Source: MONSTAT and CBCG calculations

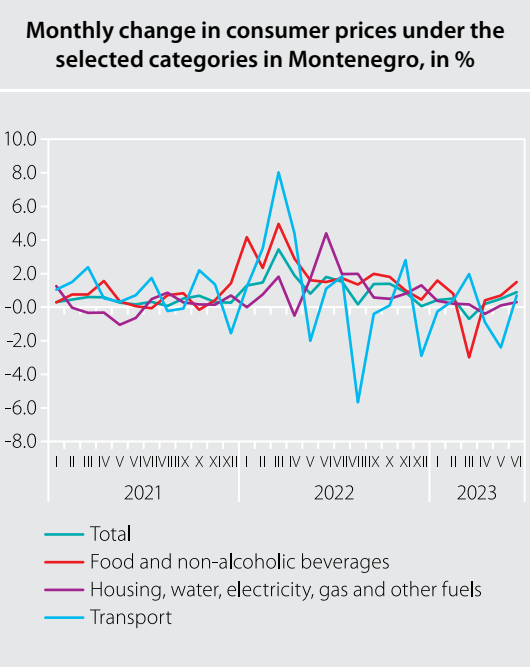
[4] *Global Economic Prospects - June 2023.*

Graph 4



Source: MONSTAT

Graph 5



Source: MONSTAT

According to MONSTAT data, the annual price growth in the *food and non-alcoholic beverages* category of 10.7% in June this year was the biggest contributor (with 3.99 pp) to total annual inflation growth of 7.5% (graph 3). Annual price growth was also seen in all other categories: *hotels and restaurants* (15.8%), *miscellaneous goods and services* (14.4%), *furnishing, household equipment and routine household maintenance* (10.2%), *clothing and footwear* (9.3%), *housing, water, electricity gas and other fuels* (8.2%), *recreation and culture* (5.7%), *health* (5.3%), *alcoholic beverages and tobacco* (3.7%), *education* (3.2%), and *communications* (0.2%). The annual price decline of 4.9%% was recorded in the category *transport*.

In June this year, **producers` prices of manufactured products** recorded a 2.6% growth in relation to December 2022 due to the price growth recorded in the mining and quarrying sector and manufacturing industry of 11.5% and 0.9%, respectively, while the prices in the sector electricity, gas and steam supply remained unchanged. At the annual level, producers' prices rose by 5.5% in June.

Inflation growth was recorded in all countries of the region and the EU in June this year. The highest annual rate of consumer prices among countries in the region in March was recorded in Serbia (13.7%), North Macedonia (9.3%) Bosnia and Herzegovina (4.9%), and Albania (4.5%). The highest annual inflation in the EU was registered in Hungary and Slovakia of 19.9% and 11.3%, respectively (graph 6).

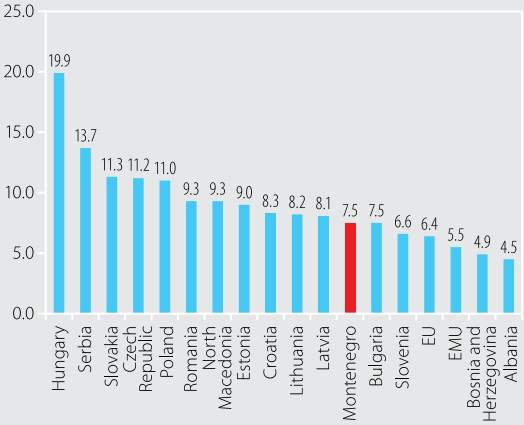
The annual HICP[5] inflation recorded in the EU stood at 6.4% in June 2023. The annual HICP inflation in the euro area amounted to 5.5% and it was 3.7 pp lower than the annual rate in December 2022, and the highest contributor to inflation with 2.35 pp was the annual price growth of food, alcoholic beverages and tobacco of 11.6%.

[5] Harmonised Index of Consumer Prices (HICP) is the basis for a comparative measure of inflation in Europe and the assessment of stability of monetary value in the euro area. Every EU member state is obliged to produce the HICP index.

In its June report[6], the European Commission forecasted the euro area inflation rates of 5.4% in 2023 and 3.0% in 2024.

Graph 6

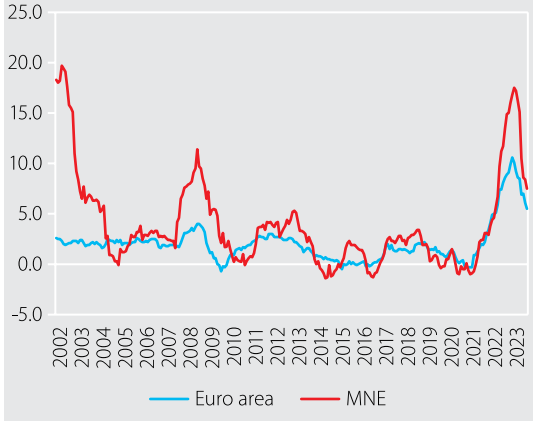
Annual inflation rate in selected countries, June 2023, in %



Source: National statistical offices and Eurostat

Graph 7

Inflation in the euro area (HICP) and Montenegro (CPI)[7] since the introduction of the euro (annual rate, in %)



Source: MONSTAT and Eurostat

[6] Source: *ECB - Eurosystem staff macroeconomic projections for the euro area*, June 2023.

[7] Cost of living has been used for measuring inflation in Montenegro until 2009, after which consumer prices were introduced.

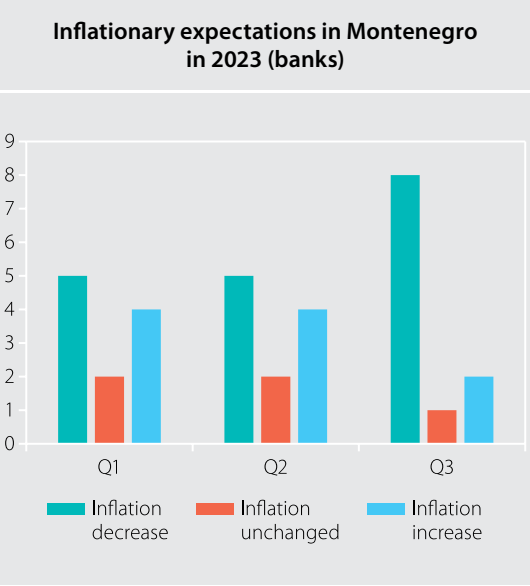
2. INFLATION EXPECTATIONS

2.1. Banks' expectations

As for inflation expectations of banks, based on the survey conducted in August this year, eight banks expect inflation to decline, two banks expect it to increase, while one believes that it will remain at the 2022 level (graph 8).

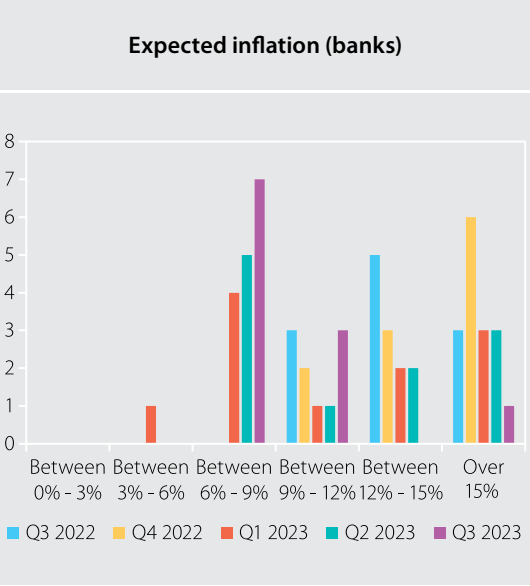
When it comes to banks' expectations regarding inflation levels, seven banks expect inflation between 6% and 9%, three banks expect it to be between 9% and 12%, and one bank expects it will be higher than 15% (graph 9).

Graph 8



Source: Central Bank Survey

Graph 9

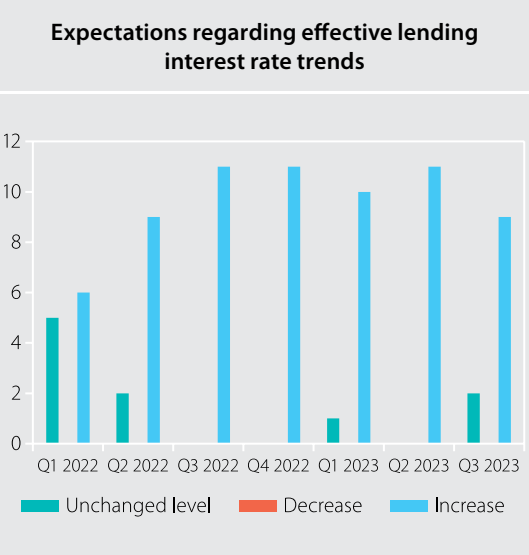


Source: Central Bank Survey

As for expectations regarding the nominal lending interest rates, ten banks expect them to rise, while one bank believes they will remain at the same levels.When it comes to expectation of effective lending interest rates, nine banks expect them to grow, while two banks expect them to stay at the same levels as in 2022 (graph 10).

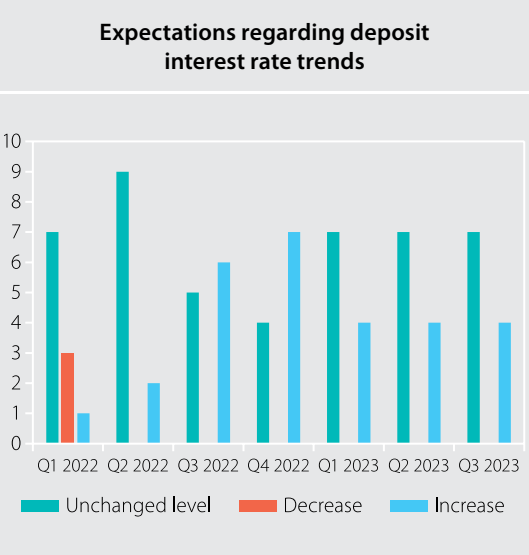
The situation with deposit interest rates is that four banks expect their increase and seven banks expect no change (graph 11).

Graph 10



Source: Central Bank Survey

Graph 11



Source: Central Bank Survey

For the purpose of calculating inflation forecasts we use the market trend indicator (horizontal line in graph 12) that is calculated as the difference between the number of banks expecting inflation growth and those expecting inflation decline. If the market trend indicator has a negative value, a decrease in inflation is expected in the upcoming period. However, if its value is positive, then an increase in the inflation rate can be expected. If it has a zero value, the same inflation rate can be expected in the upcoming period. The more negative value of the market trend indicator, the lower the inflation expectations, and vice versa, higher positive value means higher inflation level expectations. The surveys conducted in the first three quarters indicate a decline in banks' inflation expectations in 2023.

Graph 12

Source: Central Bank Survey

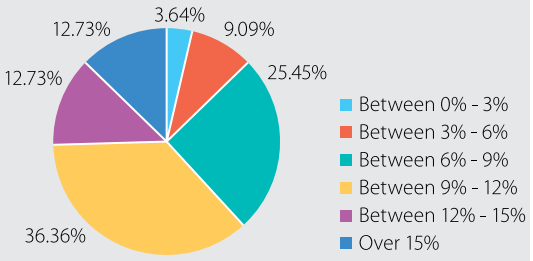
2.2. Expectations of the corporate sector (banks excluded)

Inflation

Of the total number of surveyed companies, 36.36% expect the inflation to range between 9% and 12% in 2023.Some 25.45% of companies expect inflation between 6% and 9%, 12.37% expect it between 12% and 15%, with the same percentage of companies expecting inflation higher than 15%, then 9.09% expect it to range between 3% and 6%, while a mere 3.64% of companies expect inflation between 0% and 3% (graph 13).

Graph 13

Expected inflation in Montenegro in 2023 (responses based on percentage share)

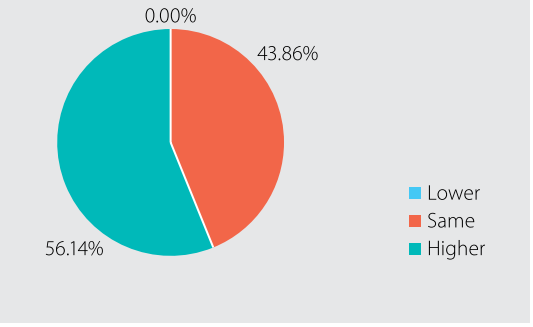


Source: Central Bank Survey

As much as 56.14% of the surveyed companies expect earnings to rise in 2023 in relation to the previous year, while the remaining 43.86% expect them to remain the same (graph 14). With regard to employment, 50.0% of the respondents expect it to remain the same, 39.29% expect this number to increase, and 10.71% expect it to decline in relation to the previous year (graph 15).

Graph 14

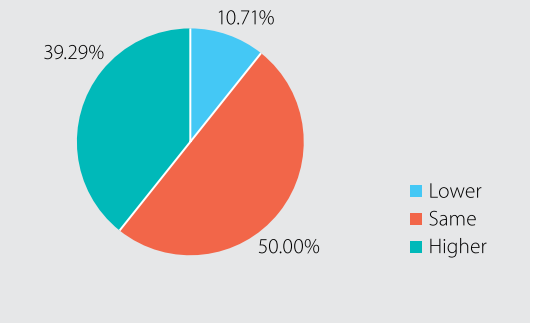
Expected earnings in 2023 in relation to 2022



Source: Central Bank Survey

Graph 15

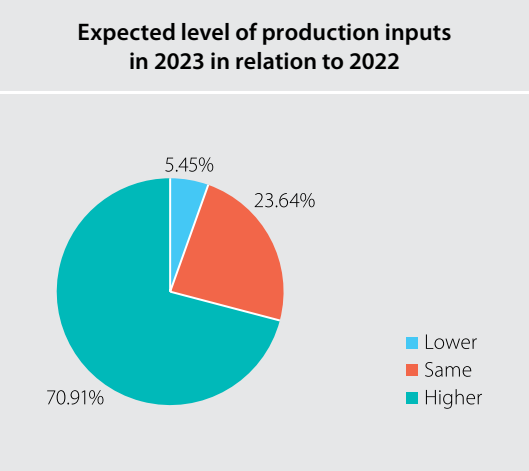
Expected number of employed persons in 2023 in relation to 2022



Source: Central Bank Survey

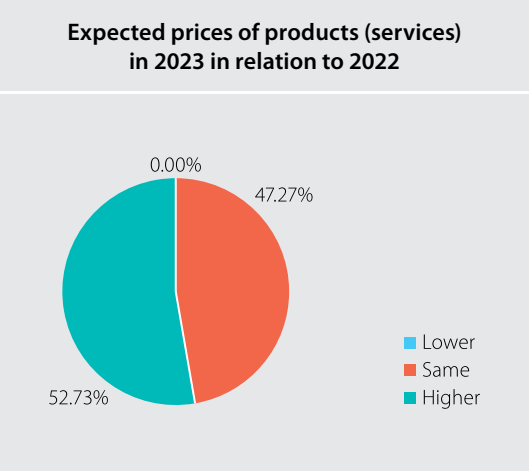
The majority of surveyed companies (70.91%) expect higher prices of production inputs they use (graph 16), while 52.73% plan to increase the prices of their products and/or services in 2023 (graph 17).

Graph 16



Source: Central Bank Survey

Graph 17



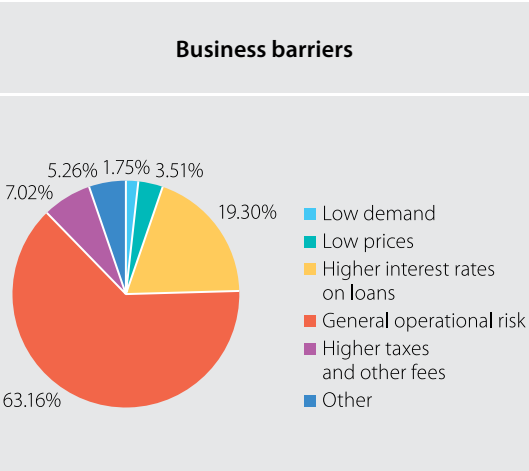
Source: Central Bank Survey

Business Environment

The survey results also show that most of the surveyed companies (63.16%) see general operational risks as the major business barriers, followed by high lending interest rates (19.30%), and too high taxes and other duties (7.02%), then other obstacles (5.26%), low prices (3.51%), and poor demand (1.751%) (graph 18).

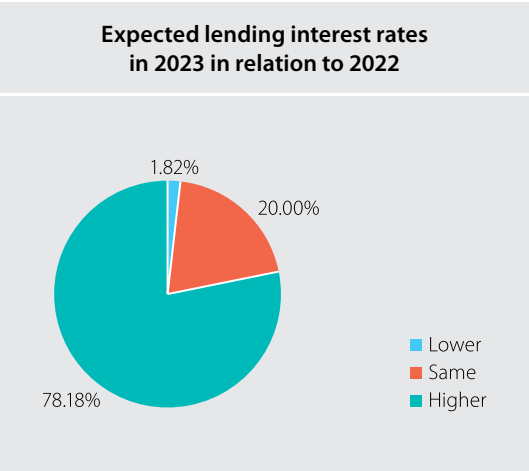
With regard to the lending interest rates, 78.18% of the respondents expect them to increase, 20.0% expect unchanged levels, while 1.82% believe they will decline in the current year relative to 2022 (graph 19).

Graph 18



Source: Central Bank Survey

Graph 19

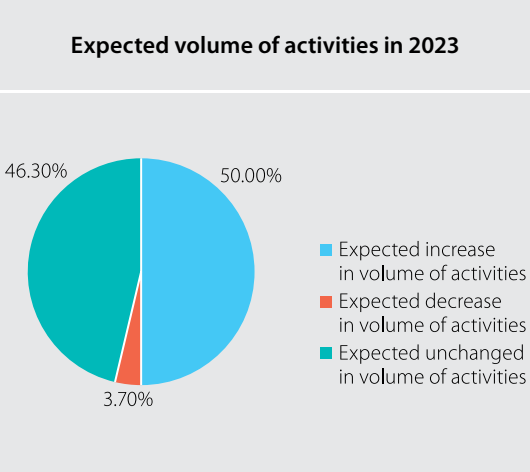


Source: Central Bank Survey

Investments

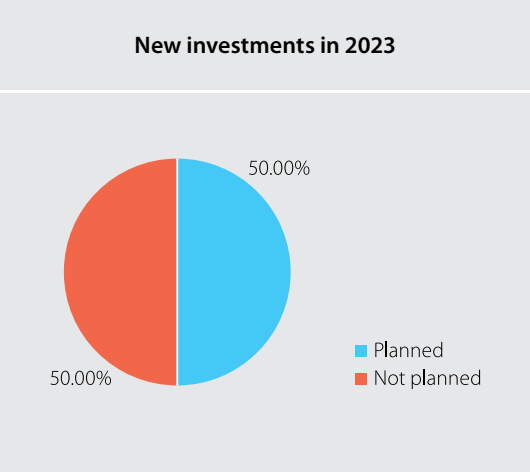
Of the total number of surveyed companies, 50.0% plan to increase the volume of their activities by end-2023 (graph 20) and the other half plan new investments (graph 21). Most investments (67.74%) will be to increase fixed assets (graph 22) and in reference to the main barriers to new investments the surveyed entities stated insufficient exploitation of existing capacities, high interest rates, unfavourable conditions for capital borrowing, and other barriers (graph 23).

Graph 20



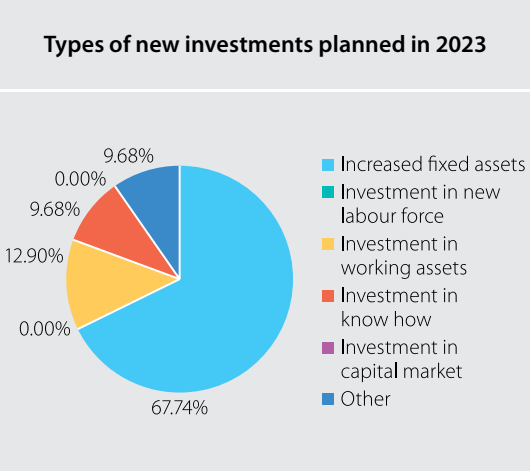
Source: Central Bank Survey

Graph 21



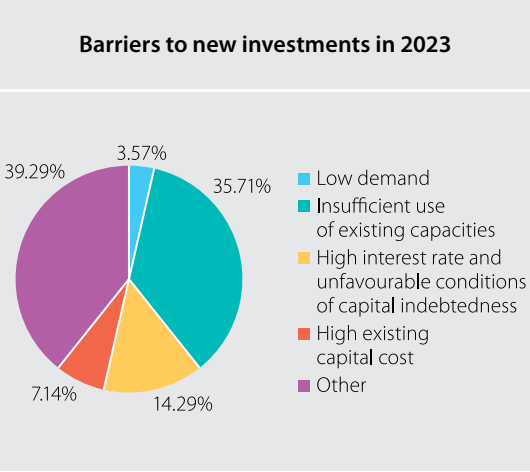
Source: Central Bank Survey

Graph 22



Source: Central Bank Survey

Graph 23



Source: Central Bank Survey

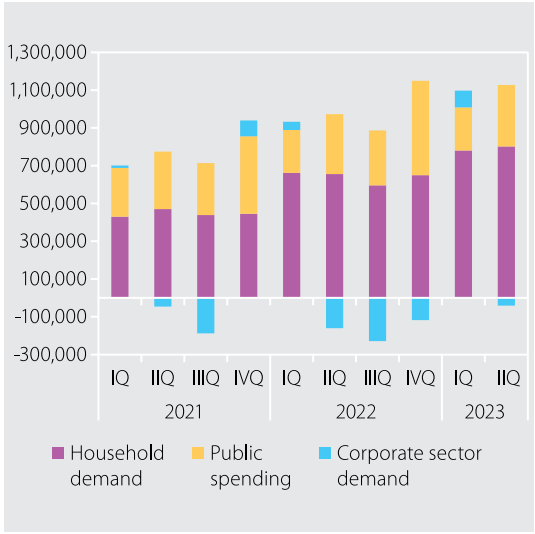
3. INFLATION DETERMINANTS

3.1. Demand

According to preliminary data, aggregate demand recorded quarterly decline in Q2 2023 but also the year-on-year increase. Observing the structure of total demand in the reporting period, the share of retail demand and public spending increased compared to the previous quarter, while that of wholesale demand declined (graph 24).

Graph 24

Aggregate demand in Montenegro, in thousand euros



Source: Central Bank calculations

Graph 25

Aggregate demand in Montenegro, quarterly change, in %

Source: Central Bank calculations

Box 1 – Aggregate demand calculation methodology

For the purpose of a more complete monitoring of aggregate demand as a determinant of inflation, the Central Bank has developed the aggregate demand calculation methodology. The starting point of this methodology is 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:

$$AD = C + I + G$$

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

I = – wholesale net savings (deposits – loans)

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

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

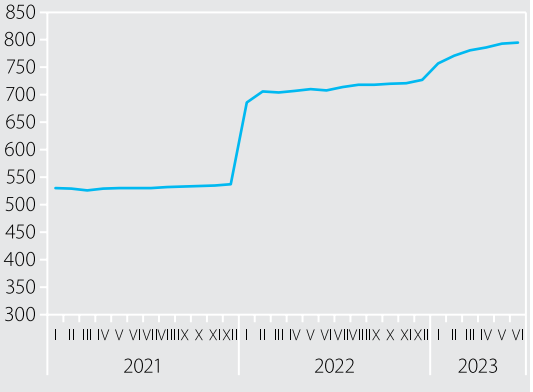
3.1.1. Earnings and other available demand determinants

In Q2 2023, an average gross earnings in Montenegro amounted to 986 euros, while an average earnings without taxes and contributions amounted to 792 euros. In relation to the previous quarter, the average gross earnings increased by 3.14% and net earnings rose 2.86%. Compared to Q2 2022, average earnings and average earnings without taxes and contributions rose by 12.81% and 11.86%, respectively.

Taking into account the consumer prices, i.e. trends in wages and salaries in real amounts, it can be concluded that real wages and salaries reported the highest growth in April, and May, but they decline in June this year.

Graph 26

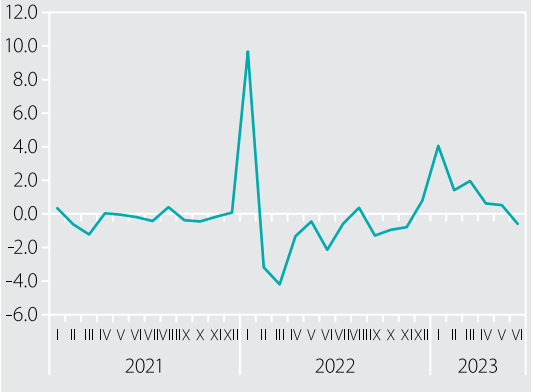
Average earnings without taxes and contributions in Montenegro, in euros



Source: MONSTAT

Graph 27

Monthly change in real gross earnings in Montenegro, in %



Source: MONSTAT

Retail loans[8] recorded a positive trend during the first six months of 2023. Loans to this sector grew at the monthly average rate of 0.68% during the reporting period, as compared to 0.92% in same six-month period in 2022.

At end-June 2023, retail loans amounted to 1,619.27 million euros, which is 107.15 million euros or 7.09% more than in the same month last year, and 64.18 million euros or 4.13% more than in December 2022 (graph 28).

Debt *per capita*[9] amounted to 2,625.72 euros at the end of the reporting period, recording an increase of 177.67 euros or 7.69% year-on-year and a 118.77 euros or 4.72% increase in relation to end-2022.

At end-June this year, total MFI loans granted to the retail sector amounted to 71.81 million euros, which is 7.53 million euros or 11.71% more than in same period of the previous year, and 4.86 million euros or 7.26% more than at end-2022.

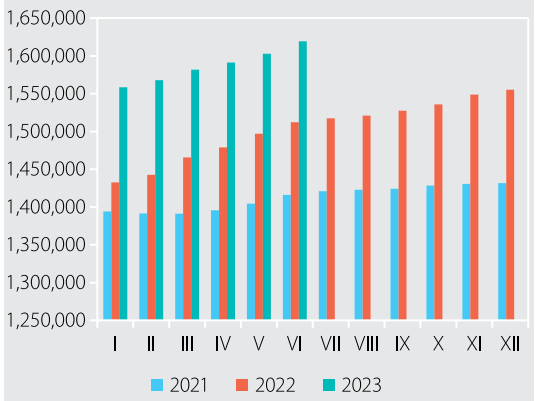
Retail deposits amounted to 1,727.52 million euros at end-June this year, being 218.62 million euros or 14.49% higher than at end-June last year and 26.16 million euros or 1.54% higher than at end-2022.

The loan to deposit ratio for the retail sector was 0.94 at end-June this year, and it deteriorated relative to the same period of the previous year when it amounted to 1.00, while it rose relative to end-2022 when it equalled 0.91.

At the end-June 2023, the retail sector had a net savings of 108.25 million euros, which is much more favourable than in the comparative period last year when the retail sector net debt amounted to 3.21 million euros. At end-December 2022, the retail sector recorded net savings in the amount of 146.28 million euros.

Graph 28

Retail loans, in thousand euros, January 2021 - June 2023, end-month balance



Source: CBCG calculations

Graph 29

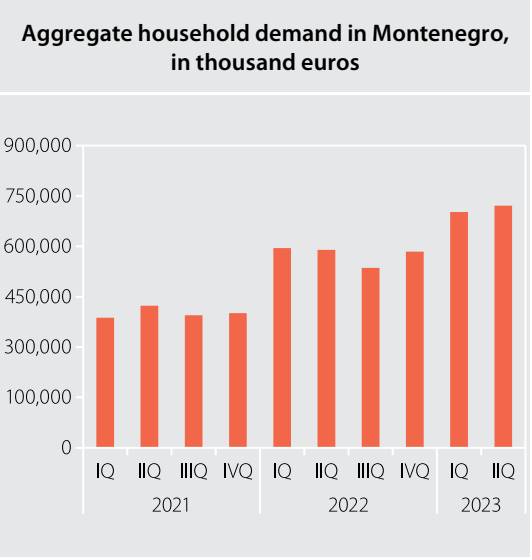
Inflow of foreign funds to households, in thousand euros

Source: Central Bank

[8] The retail sector includes resident natural persons and entrepreneurs.

[9] Population estimate for 2022 as at 1 January 2023 amounts to 616,695, Source: MONSTAT.

Graph 30



Source: Central Bank calculations

In the first half of 2023, the balance of payments statistics recorded a mild year-on-year decline in the inflow of monetary resources arising from remittances (1.11%) and compensations to employees (0.12%) (graph 29).

The comparison of the total retail sector demand by quarters shows that it was higher in Q2 this year both compared to the previous quarter Q2 2022 (graph 30).

3.1.2. Budget analysis

According to the Ministry of Finance preliminary data, total revenues[10] of the Budget of Montenegro amounted to 1,357.39 million euros in the first half of 2023.

Current revenues of the Budget amounted to 1,236.41 million euros or 19.18% of projected GDP[11] and they were 22.98% higher than planned for Q2 2023 and 35.22% higher year-over-year, which is primarily owing to greater tax discipline, economic activity growth, a successful application of the Law on Reprogramming of Tax Claims, termination of validity of the Decision on Lowering Excise Duties on Unleaded Gasoline and Gas Oils, an increase in excise duties on tobacco and tobacco products, an increase in wage coefficients for employees in the public sector, as well as an increase in consumer prices, the termination of the hedging arrangement from 2021, the transfer of funds collected from the implementation of the "Economic Citizenship" project, and the payment of funds by the EU as a direct budget support for energy efficiency. In the structure of current revenues, tax revenues accounted for the main share of 64.72%, followed by contributions with 19.52%, other revenues with 9.13%, donations with 3.57%, fees with 2.53%, and duties with 0.53%.

Tax revenues amounted to 800.20 million euros, recording a 13.71% increase relative to the plan and a 20.82% increase year-on-year. All taxes other than personal income tax and property turnover tax increased year-over-year. The highest nominal increase of 74.54 million euros was recorded in VAT collection.

[10] Revenues include current revenues (direct and indirect taxes and non-tax revenues), borrowings and loans from domestic and foreign sources, as well as revenues from property sale and receipts from loan repayment.

[11] Source: Ministry of Finance; estimated GDP for 2023 amounts to 6,447.10 million euros.

Revenues arising from contributions amounted to 241.41 million euros or 22.01% more than planned and 25.33% more than in the comparative quarter in 2022.

Consolidated budget expenditure amounted to 1,068.58 million euros or 16.58% of GDP in the first half of the year. Recorded expenditures were 9.73% lower than planned but also 9.57% higher year-on-year.

Current budget expenditures amounted to 473.76 million euros and they were 4.88% lower in relation to the plan and 18.64% higher year-on-year. The highest downward deviation from the plan was seen in expenses for material (9.09 million euros or 35.76%), while no budget expenditure item recorded decline.

Capital expenditures amounted to 42.13 million euros or 0.65% of GDP. Compared to the plan, they were 63.33% lower, while the year-over-year decline amounted to 59.25%, partly due to the completion of construction of the priority section of the Bar - Boljari highway and partly due to the non-implementation of planned projects.

In H1 2023, *cash deficit* of the Budget of Montenegro is estimated at 167.83 million euros or 2.60% of GDP.

3.1.3. Non-financial sector

Lending to the non-financial sector[12] recorded positive trends in the first six months of the current year. Loans to this sector grew at a monthly average rate of 0.20% during the reporting period, while this average amounted to 3.46% during the same period of the previous year.

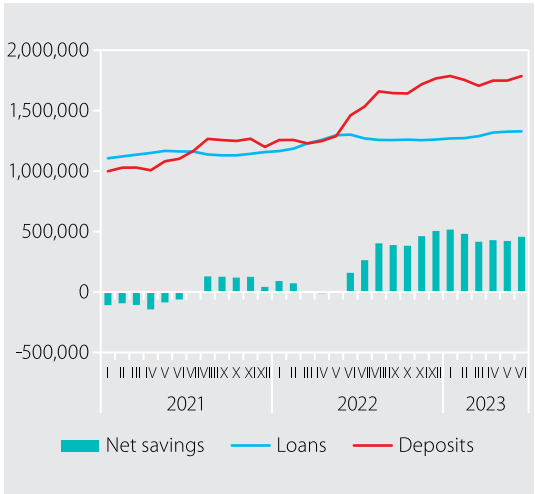
At end-June 2023, total loans extended to the non-financial sector amounted to 1,329.58 million euros, which is 27.35 million euros or 2.10% more year-on-year and 68.01 million euros or 5.39% more compared to end-2022.

Long-term loans accounted for the main share in the structure of loans to the sector with 78.60%, which indicates that loans to the corporate sector were mainly used for increasing the volume of economic activity.

Deposits of the non-financial sector amounted to 1,786.40 million euros at end-June this year, recording an increase of 325.00 million euros or 22.24% in relation to June 2022, while they were 19.76 million euros or 1.12% higher than in December 2022.

Graph 31

Net savings/indebtedness of the non-financial sector, in thousand euros, 2021 - June 2023, end-month balance



Source: CBCG calculations

[12] The non-financial sector includes state-owned and private companies.

The loans to deposits ratio of the non-financial sector was 0.74 at end-June this year and it decreased compared year-on-year when it was 1.00, while it rose compared to the end of the previous year when it stood at 0.71.

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

At end-June 2023, net savings of the non-financial sector amounted to 456.82 million euros, which is more favourable compared to the same period of the previous year when it was 159.77 million euros, but it was lower compared to end-December 2022 when it amounted to 505.07 million euros (graph 31).

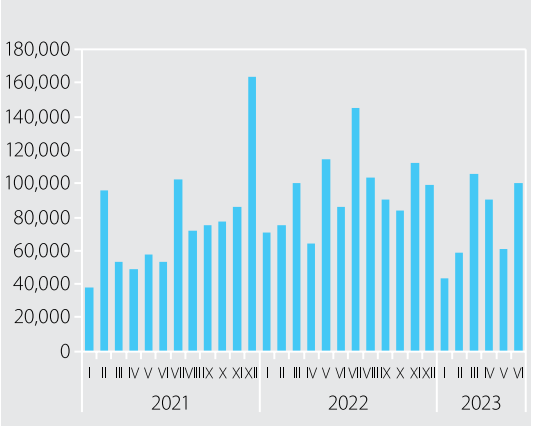
3.1.4. External demand and the current account

Preliminary data show that the current account deficit amounted to 538.96 million euros in the first six months of 2023, which is the year-on-year decrease of 2.24%. This decline is a result of an increase in surpluses on the services account and the secondary income account, while the goods account recorded a deficit growth.

The goods account recorded a deficit of 1,361.35 million euros or 18.02% more year-over-year. Total visible exports amounted to 397.09 million euros, recording a decrease of 3.83%, whereas total visible imports amounted to 1,758.44 million euros, being 12.26% higher year-on-year. The services account recorded a surplus of 526.11 million euros, which is 68.24% more than in the same period last year. The primary income account registered a surplus of 69.81 million euros, which is a decline of 2.72% that resulted from an increase in expenditure for international investments of 15.86% as well as a higher inflow arising from compensations to employees (a 12.59% increase). The secondary income account ran a surplus of 226.48 million euros, widening by 4.04% in relation to the comparative period last year.

Graph 32

Total FDI inflow in the balance of payments in Montenegro, January 2021 - June 2023, in thousand euros



Source: Central Bank

Preliminary data suggests that net FDI inflow amounted to 267.07 million euros in H1 2023, which is the year-on-year decline of 26.37%. Total FDI inflow reached 462 million euros and it dropped by 10.27% (graph 32). Equity investments amounted to 274.73 million euros (a 7.19% decrease), while the inflow in the form of intercompany debt added up to 158.46 million euros or 7.53% less year-over-year. In the structure of equity investments, investments in companies and banks amounted to 51.97 million euros (a 44.99% decline), while real estate investments reached 222.76 million euros (a 10.52% increase).

The inflow arising from the withdrawal of funds invested abroad amounted to 28.81 million euros. In the structure of total FDI inflow, the share of real estate investments amounted to 48.22%, followed by intercompany debt with 34.30% and investments in companies and banks with 11.25%. Total FDI outflow amounted to 194.93 million euros or 28.11% more than in the comparative period. The outflow from residents' investments abroad amounted to 39.56 million euros, while the withdrawal of non-residents' funds invested in Montenegro amounted to 155.37 million euros.

The portfolio investments account recorded a net outflow of 205.01 million euros, while the net outflow from the other investments account amounted to 299.14 million euros.

3.2. Supply and production

Preliminary MONSTAT data indicate that industrial production rose 4.5% in H1 this year compared to the same period of the previous year (graph 33). Electricity, gas and steam supply sector recorded output growth of 37.8%, while manufacturing industry and the mining and quarrying sector recorded respective output declines of 14.9% and 6.6%.

According to preliminary data, 878,019 *tourists*[13] visited Montenegro during the first six months of 2023, which is 40.53% more compared to the same period of the previous year. Overnight stays reached 5.44 million, which represents a growth of 75.85%. Both foreign and domestic tourist arrivals increased, by 43.17% and 80.25%, respectively.

Some 97,330 m³ of forest assortments were produced in the state-owned forests in H1 2023, which is over 53.7%[14] more than in the same period last year.

According to preliminary MONSTAT data, construction recorded a 9.51% year-on-year decline in the value of executed construction works and a 3.41% decline in effective working hours.

Graph 33

Industrial production in Montenegro, in %

Source: MONSTAT

[13] Total tourist arrivals and overnights include collective and individual (private) accommodation establishments. Source: MONSTAT, preliminary data until the final 2023 annual data are published.

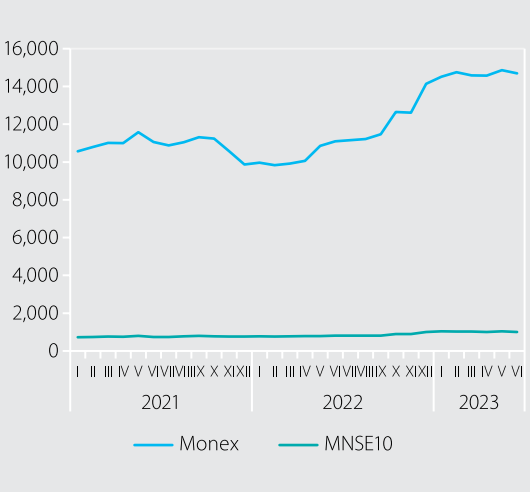
[14] Presented through weighted index.

Preliminary MONSTAT data also indicate that passenger transport recorded the year-on-year growth in all types of transport: railway transport rose by 7.56%, road transport by 0.73%, and passenger traffic at airports that increased by 43.05%. Growth was also recorded in cargo transport at airports and road freight transport of 42.19% and 10.57%, respectively, while railway freight transport dropped by 38.0%.

3.3. Stock exchange indices

Graph 34

Movement of Montenegro Stock Exchange indices, in index points, 2021 - June 2023, end-month



Source: Montenegro SE calculations

The MONEX[15] and MNSE10[16] indices oscillated during the first six months of 2023 (graph 34).

At end-June 2023, the SE index MONEX reached 14,695.71, recording a growth of no less than 3,597.46 index points or 32.41% year-on-year, while compared to the end of the previous year it rose by 554.36 index points or 3.92%.

The SE index MNSE10 reached 1,002.02, recording a growth of as much as 195.45 index points or 24.23% year-on-year, while compared to the end of the previous year it recorded growth of 7.22 index points or 0.72%.

[15] The MONEX is an index weighted by market capitalisation that is in free float and is not adjusted for dividends paid and is not protected from the dilution effect that occurs due to the payment of dividends.

[16] The MNSE10 is the blue-chip index of the Montenegro SE that describes the movement of prices of shares at the Stock Exchange and Free market of "Montenegro Stock Exchange" AD Podgorica. It includes the top ten companies from the Montenegrin market.

4. MONETARY POLICY

During the first half of 2023, there were no changes to the existing monetary policy instruments nor were any new decisions made regarding the Central Bank of Montenegro`s monetary policy instruments.

5. INFLATION FORECAST FOR THE LAST TWO QUARTERS OF 2023 AND THE FIRST TWO QUARTERS OF 2024

5.1. Model assessment

Montenegro's inflation fan chart is a graphic representation of inflation 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 very purpose of the fan chart is to indicate and consider uncertainties in the real economy flows, which are consequently reflected in the inflation rate trend (increase in energy prices, increase/decrease in foreign trade deficit, and the like.).

Montenegro's fan chart for the last two quarters of 2023 and the first two quarters of 2024 is based on three estimated constituent parts:

1. **Central projection values** – the values of the fan chart central projection 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 also depend on this.

Central projection of fan chart - ARIMA model for the last two quarters of 2023 and the first two quarters of 2023

With a view to developing the inflation fan chart, an ARIMA (Autoregressive Integrated Moving Average) model of time series of inflation of Montenegro presented via the Consumer Price Index[17] was developed.

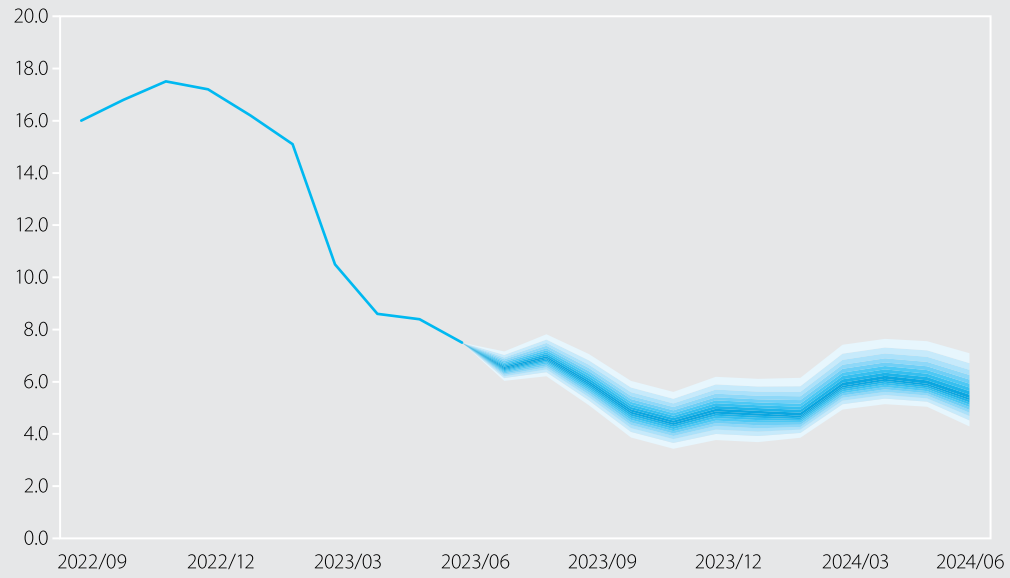
[17] A detailed explanation of the ARIMA model of Montenegro was presented in the working study of the Central Bank no. 11 "*Inflation forecasting: Empirical research on the retail price index trend of Montenegro for 2007 - applying the ARIMA model.*"

The 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 diagnostics quality. The selected ARIMA model, ARIMA (2,1,1)[18] has a sufficient confidence level for the forecast purposes.

Monthly forecast values were used as the value of central projection of the CPI graph for the last two quarters of 2023 and the first two quarters of 2024. Obtained values represent the distribution mode, i.e. values with the highest frequency in the distribution of this time series.

Graph 35

Montenegro's CPI projections for the last two quarters of 2023 and the first two quarters of 2024



Source: CBCG, 2023

Mean value (central projection) of the obtained model is 8.3. The value of the coefficient of asymmetry varies in the range of from 0.5 to 1, and the relative standard deviation is 0.3. Model projection of inflation is located in the lower band of the distribution. This indicates that the corresponding range of uncertainty of future inflation is set towards higher levels. The Fan Chart explains 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[19]. 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,

[18] 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.

[19] 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*).

cumulatively describe the next 10% of inflation trend probability. As the degree of uncertainty grows over time, so the fan chart spreads.

The fan chart of inflation in Montenegro, based on the ARIMA model assessment for the third and fourth quarter of 2023 and the first two quarters of 2024, indicates that there is a *90% probability that the CPI inflation will range between 3.4% and 8.6%, depending on the month, with the central projection at 6.3%.*

If we analyse the projected inflation for December 2023, inflation will range from 6.3% to 8.6%, with the central projection at 7.3%. The fan chart central projection (the darkest part) represents a 10% probability span (graph 35).

A gradual decrease in the prices of energy and other raw materials on the world market is expected in the second half of 2023 and, consequently, a decrease in overall inflation. Food prices are expected to continue their downward trend in this period, although not to the level of prices that prevailed before the war in Ukraine. The risks related to the projected inflation rate shown on the fan chart are set symmetrically. Inflation could reach higher levels in case of higher energy prices on the world market, as well as the spillover of energy prices to the prices of other products and services. An additional risk represents the possibility of a further wage growth in 2023. On the other hand, lower prices of energy and other raw materials on the world market, the slowdown of global economic growth, which has a modest but direct impact on the prices of raw materials, and the additional tightening of monetary policy and lower-than-expected inflation in the main foreign trade partner countries could contribute to the weakening of inflationary pressures.

The projection is based on the following assumptions:

1. In addition to reduced global cost pressures and resolved disruptions in global supply chains, inflation in the countries that are Montenegro`s main foreign trade partners is still at a high level, regardless of a declining trend. This is related to the easing of supply bottlenecks and monetary tightening from the earlier period.
2. Expectations are that the wage and price spiral will not materialise.
3. According to the ECB`s[20] baseline scenario forecast from June, the average inflation in the euro area will amount to 5.4% this year. As the ECB explains, the expected reduction in energy prices will play a very important role in inflation downtrend due to the reduced risk of gas supply cessation. Food prices will decline somewhat more gradually, because there is a possibility of growth in the profit margins of retail chains (so-called *greedflation*), an increase in employee costs, and the prolonged effects of previous weather problems. Other components of inflation (except the prices of energy, raw materials and food) may be subject to upward pressure, due to consumption caused by the influx of tourists and the increase in labour costs during the summer months. According to the ECB projections, total HICP inflation has been on a downward trend this year and it could come down to 3% and 2.2% in 2024 and 2025, respectively. This is an increase of 0.1 p.p. compared to earlier ECB projections, due to rising prices of food and other products (except electricity).

[20] Source: *ECB (2023): ECB staff macroeconomic projections for the euro area*, June 2023
https://www.ecb.europa.eu/pub/projections/html/ecb.projections202306_eurosystemstaff~6625228e9f.en.html

4. The European Central Bank (ECB) pursued a restrictive monetary policy during 2023. The rate on main refinancing operations was increased to 3.75 bp in May 2023, which is 0.25 more than in March 2023. The growth trend continued in June 2023, when the rate of main refinancing operations was 4.00%. The ECB has announced that they will continue to increase the interest rate until the available data and market expectations begin to signal that inflation has a downward trend leading to the target inflation rate of around 2%.
5. Expectations are that the ECB will soon end the tightening of monetary policy and that a looser monetary policy, i.e. a drop in interest rates, will begin next year.
6. Food prices continued their downward trend in the second quarter, albeit less intensively than in the first quarter. In June 2023, as compared to the previous month, the food price index decreased by 1.1%, mainly due to the drop in the price index of sugar (-3.2%), the price index of cereals (-2.1%) and vegetable oil (- 2.4%), while the meat price index increased by 0.8%. The Food and Agriculture Organization of the United Nations (FAO) believes that the peak of food prices was reached in April 2022, but that the continuation of the downward trend will also depend on the movement of energy prices.
7. Oil and other raw material futures in the world markets point to prices slowdown in 2023. However, this downward trend was interrupted in June 2023, when the price of oil amounted to 68.6 euros per barrel, which is an increase of 1.28 euros compared to the previous month. This was also the first increase in prices after the maximum recorded in October of the previous year (when the price was 87.7 euros per barrel).

Finally, the Russian-Ukrainian conflict could trigger new inflationary trends that have not been accounted for under the present projection. Changes in any of the abovementioned parameters would require the forecast revision.

6. EXPECTED INFLATION IN 2023

There was a slowdown in inflation in Montenegro in the second quarter of the current year.

The majority of surveyed banks expect the inflation rate between 6% and 9%, and most businessmen expect it would range between 9% and 12%. Preliminary data indicate that aggregate demand recorded the quarter-on-quarter decline and the year-over-year growth in the second quarter of 2023, which suggests that domestic inflationary pressures are still present. On the other hand, corporate expectations of a growing volume of economic activity and new investments will have a disinflationary effect.

All relevant international financial institutions have forecasted a lower inflation rate in 2023 compared to the previous year, which will largely affect a slowdown in price growth in Montenegro.

The international environment remains full of uncertainties, primarily regarding a further impact of the Russian-Ukrainian conflict, as well as the movement of food and oil derivatives prices. It is expected that the key central banks will continue with their restrictive monetary policies, which will put downward pressure on inflation.

It is for these reasons that the inflation rate is expected to decrease in Montenegro as well. Inflation projected for December 2023 ranges between 6.3% and 8.6%, with the central projection at 7.3%. Our expert assessment is similar to the model estimate and it indicates that inflation in 2023 will range between 5% and 9%.

Table 3

Estimated inflation rate		
Optimistic assessment	Realistic assessment	Pessimistic assessment
5%	7%	9%

The expert assessment is based on the same assumptions as the model assessment. Deviation from any of the given parameters from the expected values would also require the forecast revision.