CENTRAL BANK OF MONTENEGRO

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1. INFLATION INDICATORS

The tightening of monetary conditions and the global reduction of energy and food prices contributed to the slowdown of inflation in most countries of the world during the first nine months of the current year. The increased reference interest rates, according to the announcements of the leading central banks, will remain in force until inflation returns to the target level. As of January[1], 2024, according to the latest IMF report, global inflation in 2023 amounts to 6.8% (compared to 8.7% in 2022), while according to the February forecasts of the European Commission[2], inflation in the EU amounts to 6.3% (from 9.2%).

MONSTAT data indicates that consumer prices were 9.9% higher year-on-year in the period January-September, while the year-on-year average price growth in September this year amounted to 7.9%. During the third quarter of the current year, consumer prices rose 3.5%, primarily owing to price increase in the categories *food and non-alcoholic beverages* (2.2%) and *transport* (7.6%) (table 2). Monthly trends of consumer prices show that the price increase was recorded in all three months of the third quarter: 1.0% in July, 1.7% in August, and 0.8% in September.

Table 1

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

	2022				2023		
	III	VI	IX	XII	III	VI	IX
Change in relation to the previous year-end	6.3	11.1	14.5	17.2	0.2	1.9	5.4
Annual change	9.7	13.5	16.0	17.2	10.5	7.5	7.9

Source: MONSTAT

In Q3 2023, price growth recorded in eleven out of twelve categories (table 2). The highest contribution to growth (0.90 pp) was the increase in prices in the *transportation* category (7.6%), mostly due to the 13.1% increase in the prices of fuel and lubricants for motor vehicles, as a result of the increase in oil prices on the international market. The recovery of demand for this energy product in China and faster-than-expected economic growth in the USA significantly contributed to the rise in oil prices in the third quarter[3]. Instabilities in the Middle East at the beginning of October affected additional price growth, and the extent of the impact will depend on the further development of the situation. The main contributor to the price growth with 0.78 pp was the category *food and non-alcoholic beverages* that rose 2.2%. The growth of this category was mostly affected by the increase in the prices of the sugar, jam, honey, chocolate and sweets - 4.9% (which was contributed by the introduction of excise duties on

[1] Source: *IMF - World Economic Outlook*, January 2024.

[2] Source: *European Economic Forecast*, winter 2024.

[3] World bank - *Commodity markets outlook* - October 2023.

sugar and cocoa products, as well as ice cream[4]), then the price of vegetables - 4.4 %, meat - 3.1%, milk, cheese and eggs - 2.9%. Food prices in the country did not follow the trend of easing food prices at the global level[5]. According to data from the Food and Agriculture Organization of the United Nations (FAO), the food price index in September was lower by 10.7% on an annual basis, i.e. by 24% compared to the record value recorded in March 2022. Under the impact of positive indicators in tourism during the third quarter, price growth in the *hotels and restaurants* category was also recorded, due to the increase in the prices of accommodation (7.1%) and catering services (5.5%). Growth in this period was also recorded in the following categories: *clothing and footwear* 5.3%, *housing, water, electricity, gas and other fuels* 3.8%, *miscellaneous goods and services* 3.7%, *alcoholic beverages and tobacco* and *education* 2.7% each, *health* 2.8%, *furnishing, household equipment and routine household maintenance* 2.0% and *recreation and culture* 1.2%, while prices in the *communication* category remained at the same level.

Table 2

Growth rate and contribution of individual categories in total inflation[6] in Montenegro

	Weights	IX 2023 / VI 2023	Rate	Contribution
TOTAL	1,000.0	103.5	3.5	3.5
Food and non-alcoholic beverages	360.3	102.2	2.2	0.8
Alcoholic beverages and tobacco	37.3	102.7	2.7	0.1
Clothing and footwear	80.8	105.3	5.3	0.4
Housing, water, electricity gas and other fuels	136.6	103.8	3.8	0.5
Furnishing, household equipment and routine household maintenance	44.2	102.0	2.0	0.1
Health	39.1	102.8	2.8	0.1
Transport	118.3	107.6	7.6	0.9
Communications	45.1	100.0	0.0	0.0
Recreation and culture	31.4	101.2	1.2	0.0
Education	18.4	102.7	2.7	0.0
Hotels and restaurants	47.1	106.2	6.2	0.3
Miscellaneous goods and services	41.5	103.7	3.7	0.2

Source: MONSTAT and CBCG calculations

The annual core inflation rate stood at 9.0% in September this year and it was 1.1 pp higher than total annual inflation[7]. 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 higher than the total inflation in all three months

[4] Based on the Law Amending the Law on Excise Duties (OGM 027/23 as of 08 March 2023), excise duties on sugar, cocoa and ice cream products entered into force on 01 July 2023.

[5] World Bank: *WESTERN BALKANS REGULAR ECONOMIC REPORT* - Toward Sustainable Growth, No. 24, fall 2023.

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

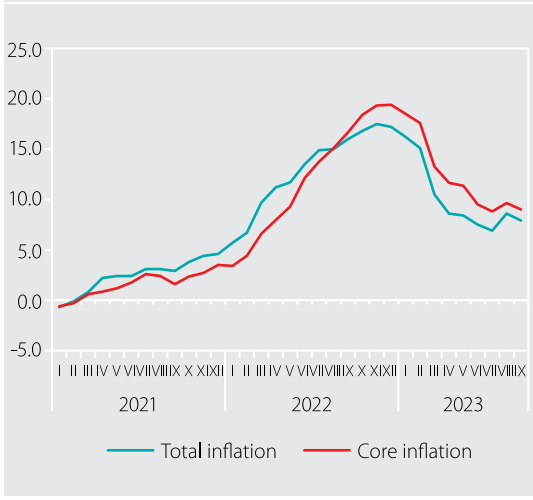
[7] Core inflation is used as an indicator of the trend of a long-term rate or a future rate of inflation, i.e. it enables distinguishing between temporary price shocks and long-term inflation. Total annual inflation is an indicator of the average price change of all products and services used by households 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*

(graph 1). The largest spread between total annual and core inflation was recorded in July 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 a large number of agricultural products, tobacco, fuel and lubricants, and the like).

The average price of oil recorded the quarter-on-quarter growth in the third quarter of 2023. After a drop in demand and lower oil prices was recorded in the second quarter, due to the additional tightening of monetary policies by the main central banks with the aim of reducing inflation, and increased concern about the slowdown of the entire world economy, their growth on the international market was recorded in the third quarter. In Q3 this year, the OPEC reference basket price averaged at 87.66 USD/barrel, being 11.84% higher than the average price recorded in the previous quarter. The average price of Brent oil stood at 86.73 USD/barrel or 10,51% more than in the comparative period. The highest price (93.96 USD/barrel) since August 2022 was recorded in September this year. According to the World Bank report from October 2023[8], it is predicted that the average price of crude oil in the current year will amount to 84 USD/barrel (assuming that there will be no escalation of the conflict in the Middle East). The possible spread of the conflict is the main risk for an increase in oil prices, and the impact itself would depend on the degree of disruption on the supply side. The report describes three scenarios for the global oil supply and its impact on the future price. In the „small disruption" scenario, assuming that the conflict does not spread, the consequences should be limited, and average oil prices in 2024 would be 81 USD/barrel. In the scenario of „moderate disruption" - as was the case during the war in Iraq - a drop in global oil supply by 3 to 5 million barrels per day is predicted, and a price increase of up to 35%. The third scenario, the so-called „major disruption" - modelled on the Arab oil embargo of 1973 - global oil supplies would decrease by 6 to 8 million barrels per day, with a price increase of 56% to 75% and would range between 140 and 157 USD/barrel.

Graph 1

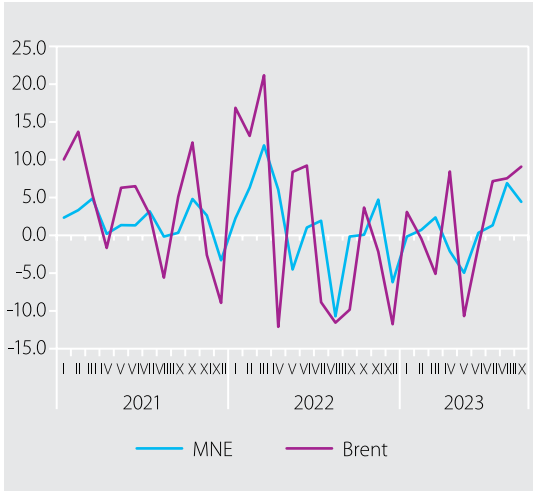
Annual rate of total and core inflation in Montenegro, in %



Source: MONSTAT and CBCG calculations

Graph 2

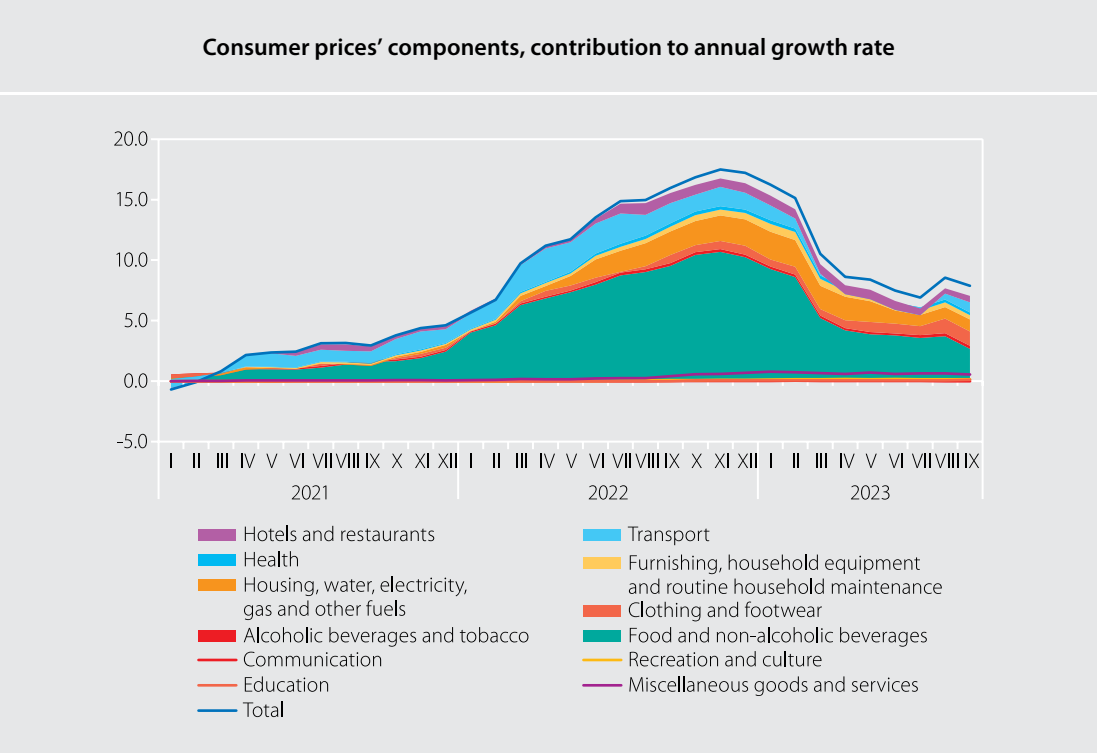
Fuel and lubricant prices in Montenegro and OPEC oil prices*, monthly rate, in %



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

[8] World bank - *Commodity markets outlook* - October 2023.

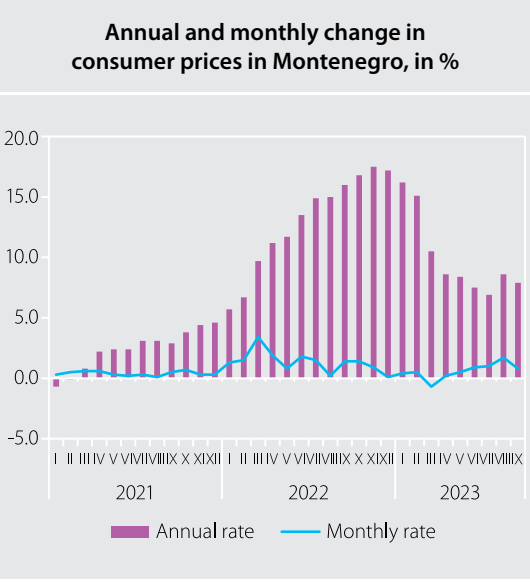
Graph 3



Source: MONSTAT and CBCG calculations

According to MONSTAT data, the price growth of 7.6% in the *food and non-alcoholic beverages* category was the biggest contributor (with 2.79 pp) to total annual inflation growth of 7.9% in September this year (graph 3). Annual price growth was also recorded in the following categories: *clothing and footwear* (13.6%), *miscellaneous goods and services* (13.3%), *hotels and restaurants* (11.5%), *furnishing, household equipment and routine household maintenance* (9.2%), *housing, water, electricity, gas and other fuels* (7.4%), *transport* (7.0%), *alcoholic beverages and tobacco* (6.0%), *health* (5.9%), *education* (5.8%) and *recreation and culture* (4.5%), while prices in the *communication* category remained at the same level.

Graph 4



Source: MONSTAT

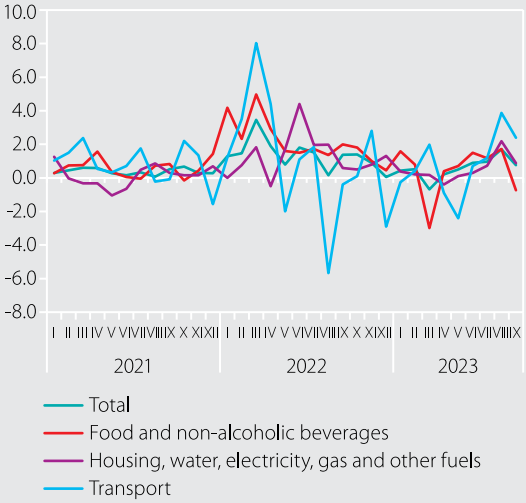
In September this year, **producers` prices of manufactured products** recorded a 3.3% growth in relation to December 2022 due to the price growth recorded in the mining and quarrying sector and manufacturing industry of 16.2% and 0.7%, respectively, while the prices in the sector electricity, gas and steam supply remained unchanged. On the annual level, the producers' prices increased by 4.0% in September this year.

Inflation has started abating in all countries of the region and the EU. The highest annual rate of consumer prices among countries in the region in September was recorded in Serbia (10.2%), The Republic of North Macedonia (6.6%) Bosnia and Herzegovina and Albania (4.1%, each). The highest annual inflation in the EU was registered in Hungary 12.2%, Romania 9.2% and Slovakia 9.0% (graph 6).

The annual HICP[9] inflation recorded in the EU stood at 4.9% in September 2023. The annual HICP inflation in the euro area amounted to 4.3% and it was 4.9 pp lower than the annual rate in December 2022, and the highest contribution of 2.05 pp and 1.78 pp was made by the annual growth of prices of services of 4.7%, i.e. food, alcohol and tobacco of 8.8%. In its December 2023 report[10], the ECB forecast the euro area inflation rates of 5.4% and 2.7% in 2024.

Graph 5

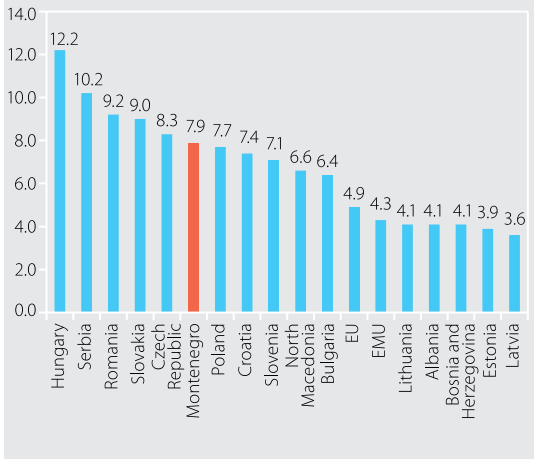
Monthly change in consumer prices under the selected categories in Montenegro, in %



Source: MONSTAT

Graph 6

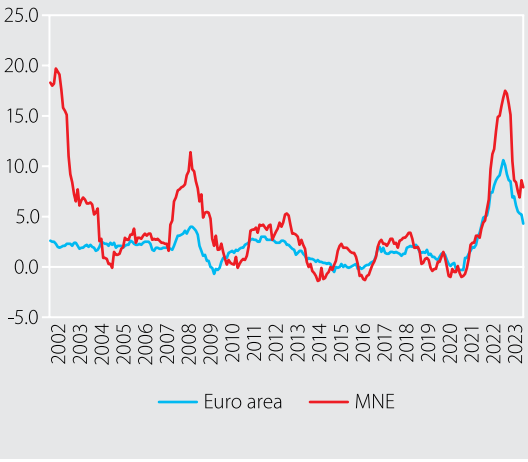
Annual inflation rate in selected countries, September 2023, in %



Source: National statistical offices and Eurostat

Graph 7

Inflation in the Euro area (HICP) and Montenegro (CPI)[11] since the introduction of the euro (annual rate, in %)



Source: MONSTAT and Eurostat

[9] 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.

[10] Source: ECB - *Euro system staff macroeconomic projections for the euro area*, December 2023.

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

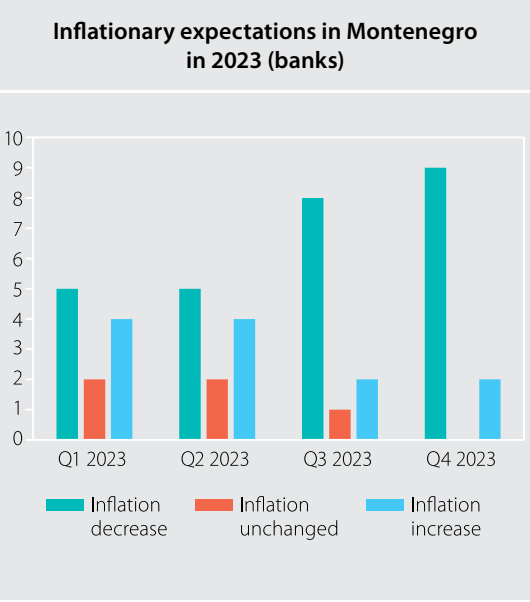
2. INFLATION EXPECTATIONS

2.1. Banks' expectations

As for expectations of banks, based on the survey conducted in November this year, nine banks expect inflation to decline, two banks expect it to increase, while no bank believes that it will remain at the 2022 level (graph 8).

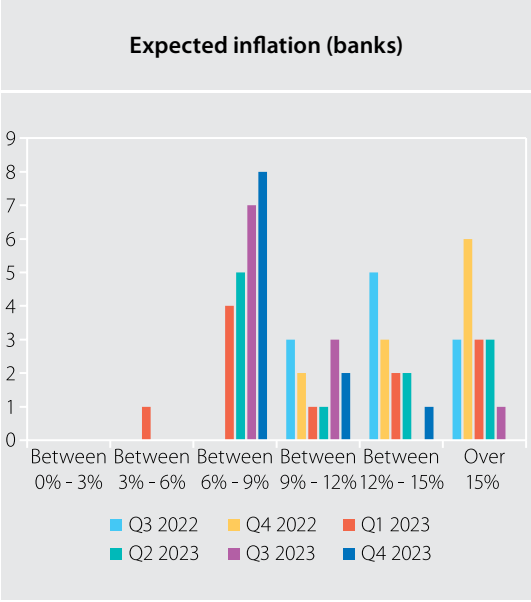
When it comes to banks' expectations regarding inflation levels, eight banks expect inflation between 6% and 9%, two banks expect it to be between 9% and 12%, and one bank expects it to be between 12% and 15% (graph 9).

Graph 8



Source: Central Bank Survey

Graph 9

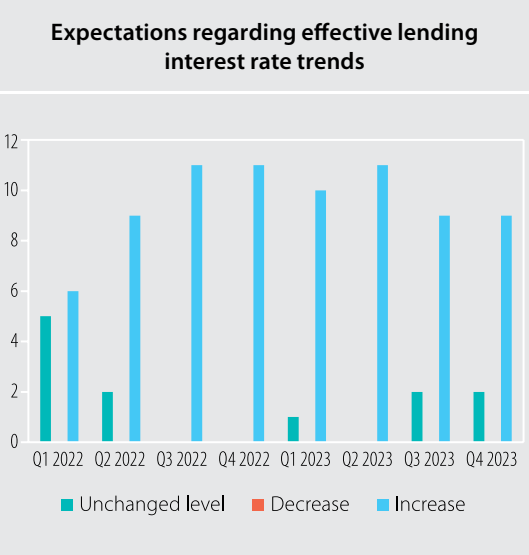


Source: Central Bank Survey

As for expectations regarding the nominal lending interest rates, nine banks expect them to rise, while two banks believe they will remain at the same level as in 2022. The banks' expectations regarding the effective interest rates are the same (graph 10).

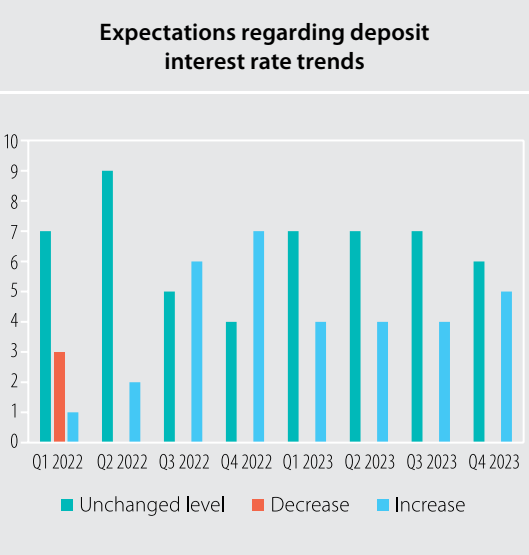
The situation with deposit interest rates is that six banks expect no change and five banks expect increase (graph 11).

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 (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, an unchanged 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 all four quarters indicate a decline in banks' inflation expectations in 2023.

Graph 12

Source: Central Bank Survey

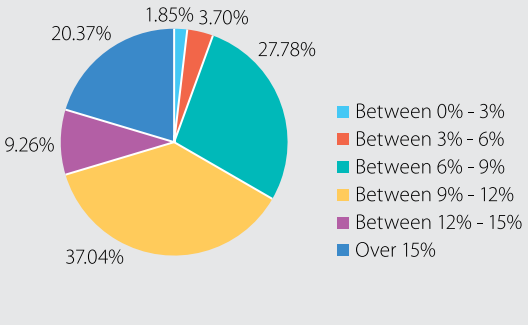
2.2. Expectations of economy (except banks)

Inflation

Of the total number of surveyed companies, 37.04% expect the inflation to range between 9% and 12% in 2023. Some 27.78% of companies expect inflation to be between 6% and 9%, 20.37% expect inflation above 15%, 9.26% expect inflation between 12% and 15%. Some 3.70% of companies believe that inflation will range between 3% and 6%, while only 1.85% expects it to be between 0% and 3% (graph 13).

Graph 13

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

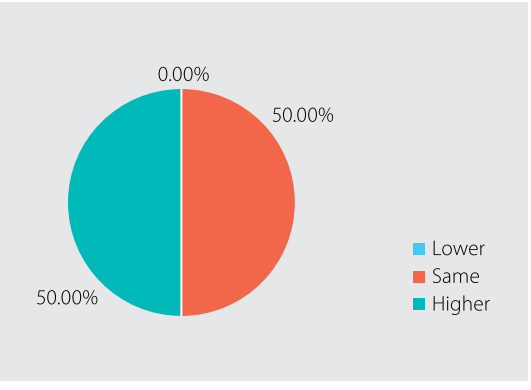


Source: Central Bank Survey

As much as 50.00% of the surveyed companies expect earnings to rise in 2023 in relation to the previous year, while 50.00 expect them to remain the same (graph 14). With regard to the number of employed persons, 50.0% of the respondents expect it to remain unchanged, 37.50% expect this number to increase, and 12.50% expected it to decline in relation to the previous year (graph 15).

Graph 14

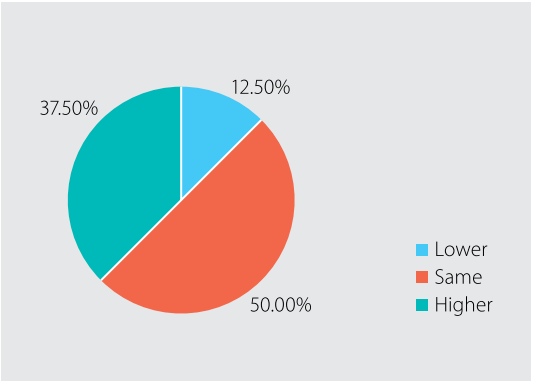
Expected earnings in 2023 in relation to 2022



Source: Central Bank Survey

Graph 15

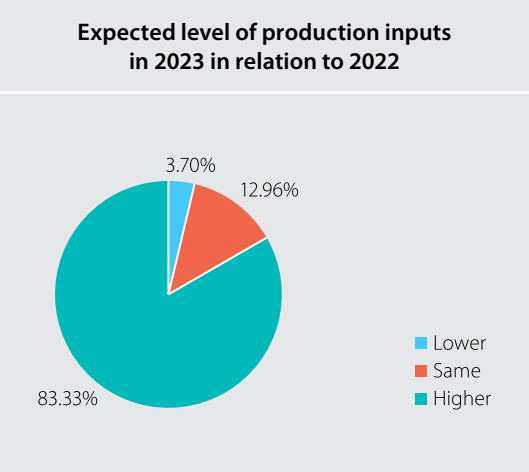
Expected number of employed persons in 2023 in relation to 2022



Source: Central Bank Survey

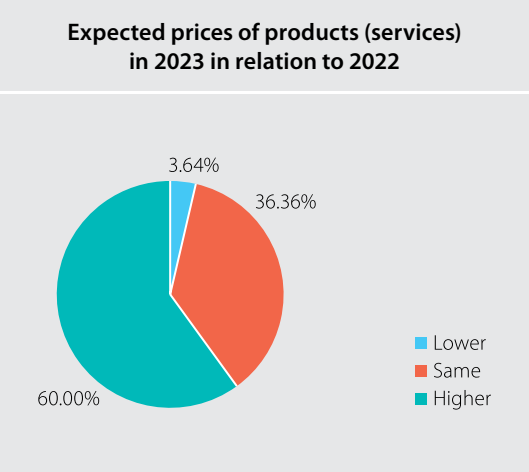
The majority of surveyed companies (83.33%) expect higher prices of production inputs they use (graph 16), and 60.00% plan to increase the prices of their products and/or services in 2023 (graph 17).

Graph 16



Source: Central Bank Survey

Graph 17



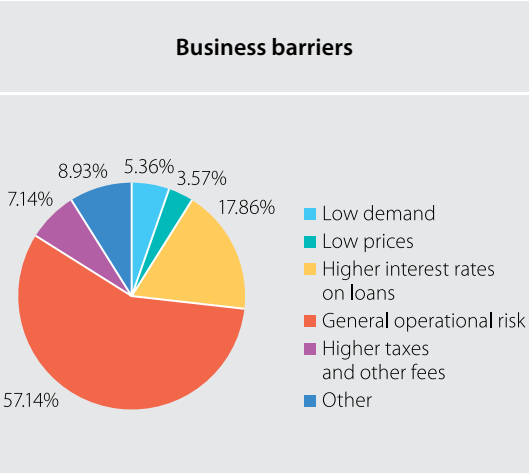
Source: Central Bank Survey

Business Environment

The survey results also show that most of the surveyed companies (57.14%) see general operational risks as the major business barriers, followed by high lending interest rates (17.86%), other obstacles (8.93%), too high taxes and other duties (7.14%), poor demand (5.36%) and low prices (3.57%).

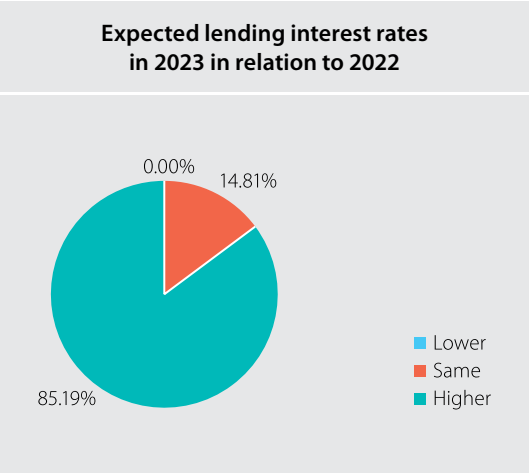
With regard to the lending interest rates, 85.19% of the respondents expect them to increase, 14.81% expect unchanged levels, while no respondent believes they will decline in the current year relative to 2022 (graph 19).

Graph 18



Source: Central Bank Survey

Graph 19

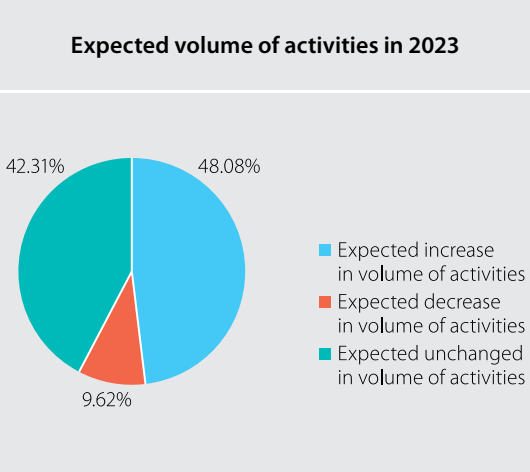


Source: Central Bank Survey

Investments

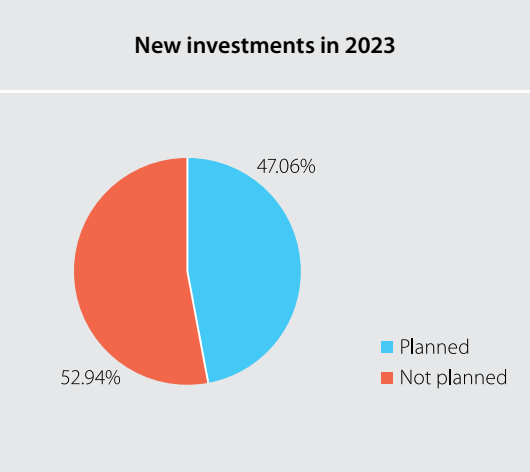
Of the total number of surveyed companies, 48.08% plan to increase the volume of their activities by end-2023 (graph 20) and 47.06% plan new investments (graph 21). Most investments (63.33%) will be to increase fixed assets (graph 22) and in reference to the main barriers to new investments the surveyed entities stated insufficient exploitation of existing capacities, high interest rates, unfavourable conditions for capital borrowing and other barriers (graph 23).

Graph 20



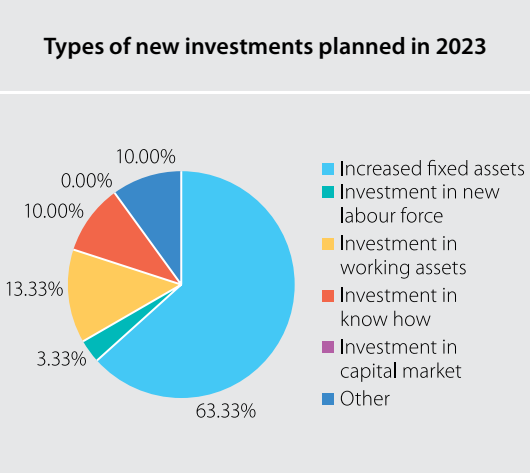
Source: Central Bank Survey

Graph 21



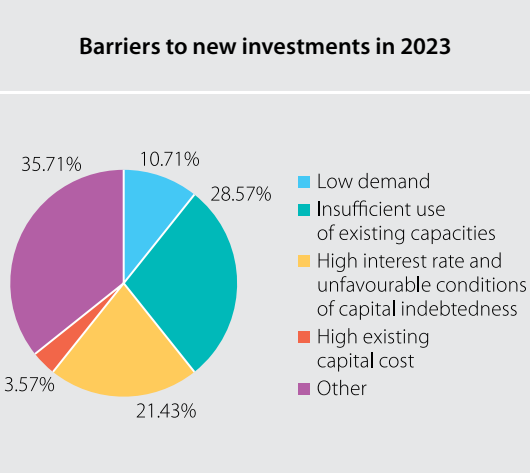
Source: Central Bank Survey

Graph 22



Source: Central Bank Survey

Graph 23



Source: Central Bank Survey

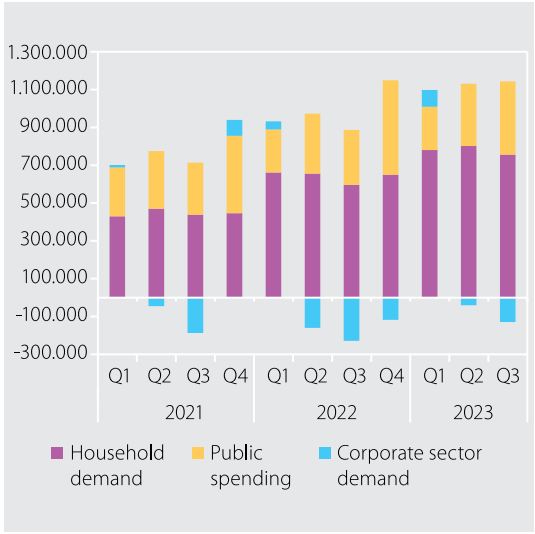
3. INFLATION DETERMINANTS

3.1. Demand

According to preliminary data, aggregate demand recorded quarterly decline and the year-on-year growth in the third quarter of 2023. Observing the structure of total demand, in relation to the structure from the previous quarter, the share of household sector demand and public demand increased, while the share of the corporate sector decreased (graph 24).

Graph 24

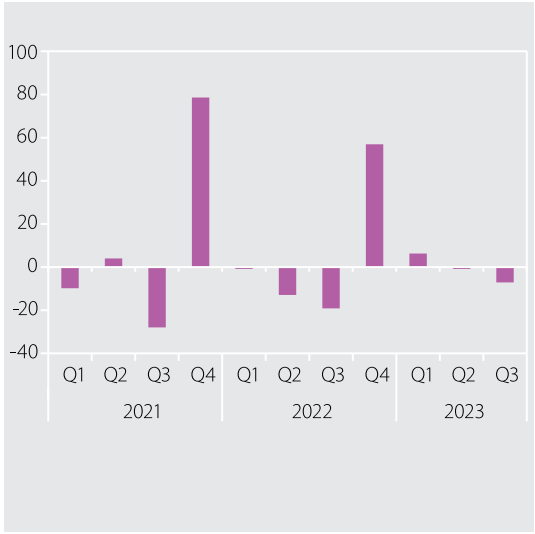
Aggregate demand in Montenegro, in thousand euros



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 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, considering 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 – net household savings (savings – loans granted)

I = -net savings of economy (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

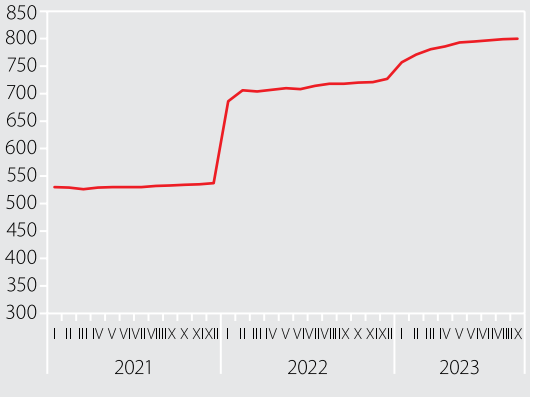
3.1.1. Earnings and other available demand determinants

In Q3 2023, average gross earnings in Montenegro amounted to 996 euros, while average earnings without taxes and contributions amounted to 799 euros. In relation to the previous quarter, the average gross earnings increased by 1.01% and net earnings rose 0.88%. Compared to Q3 2022, average earnings and average earnings without taxes and contributions rose by 12.54% and 11.59%, respectively.

If we consider consumer prices, i.e. earnings trend observed in real terms, it is concluded that real earnings fell in all three months of the reporting quarter.

Graph 26

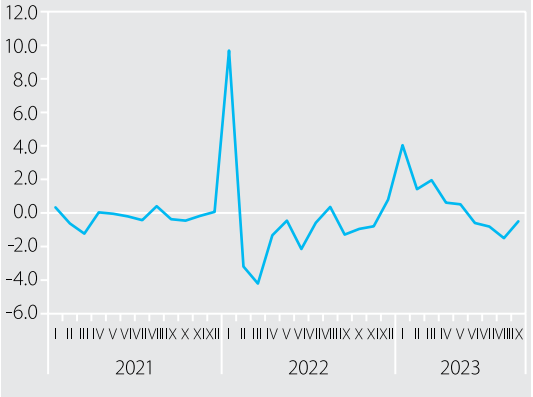
Average earnings without taxes and contributions in Montenegro, in euros



Source: MONSTAT

Graph 27

Monthly change in real gross earnings in Montenegro, in %



Source: MONSTAT

Retail loans[12] recorded a positive trend during the first nine months of 2023. Loans to this sector grew at a monthly average rate of 0.65% during the reporting period, while this rate was 0.73% in the comparative period of the previous year.

At end-September 2023, retail loans amounted to 1,648.52 million euros, which is 120.99 million euros or 7.92% more than in same month last year and 93.44 million euros or 6.01% more than in December 2022 (graph 28).

Debt *per capita*[13] amounted to 2,673.15 euros at the end of the reporting period, recording an increase of 200.15 euros or 8.09% year-on-year and 155.55 euros or 6.18% increase in relation to end-2022.

At end-September this year, total MFI loans granted to the retail sector amounted to 70.42 million euros, which is 6.37 million euros or 9.95% more than in same period of the previous year, and 3.47 million euros or 5.18% more than at end-2022.

Retail deposits amounted to 1,822.06 million euros at end-September this year, being 208.80 million euros or 12.94% higher than at end-September last year and 120.69 million euros or 7.09% higher than at end-2022.

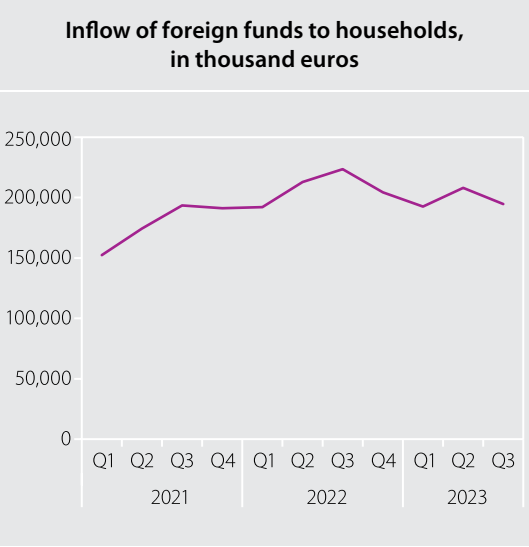
The loan to deposit ratio for the retail sector was 0.91 at end-September this year, and it deteriorated relative to the same period of the previous year when it amounted to 0.95, while it remained the same relative to end-2022.

At the end-September 2023, the retail sector had a net savings of 173.54 million euros, which is was much more favourable year-on-year when the retail sector net savings amounted to 85.73 million euros. At end-December 2022, the retail sector recorded net savings in the amount of 146.28 million euros.

Graph 28

Source: CBCG calculations

Graph 29

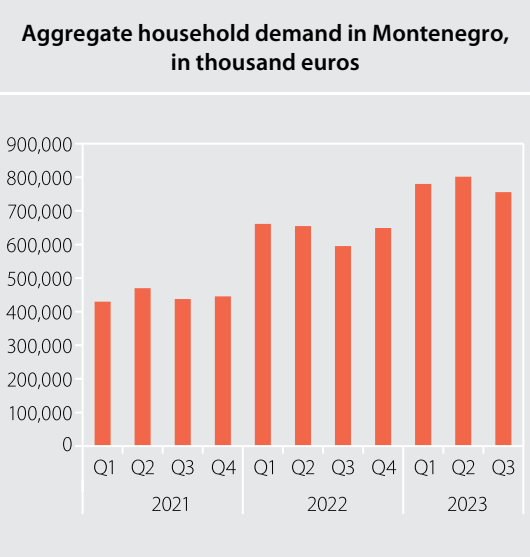


Source: Central Bank

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

[13] 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 household sector demand by quarters shows that it was lower in Q3 this year than in the previous quarter but higher than in Q3 2022 (graph 30).

3.1.2. Budget analysis

According to the Ministry of Finance preliminary data, total revenues[14] of the Budget of Montenegro amounted to 2,035.43 million euros in the first nine months of 2023.

Current revenues of the Budget amounted to 1,903.71 million euros or 28.74% of projected GDP[15] and they were 20.92% higher than planned and 31.51% higher year-over-year, which is primarily owing to greater tax discipline, economic activity growth, a successful implementation 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 66.48%, followed by contributions with 20.37%, other revenues with 7.52%, donations with 2.80%, fees with 2.23%, and duties with 0.60%.

Tax revenues amounted to 1,265.69 million euros, recording a 14.84% increase relative to the plan and a 21.66% increase year-on-year. All taxes other than personal income tax and property turnover tax increased year-over-year. The highest nominal increase of 124.81 million euros was recorded in VAT collection.

[14] 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.

[15] Source: Ministry of Finance; estimated GDP for 2023 amounts to 6,624.34 million euros.

Revenues arising from contributions amounted to 387.75 million euros or 22.05% more than planned and 26.16% more than in the comparative quarter in 2022.

Consolidated budget expenditure amounted to 1,727.31 million euros or 26.08% of GDP in the first nine months of the current year. Recorded expenditures were 6.22% lower than planned but also 16.10% higher year-on-year.

Current budget expenditures amounted to 733.99 million euros and they were 2.88% lower in relation to the plan and 20.03% higher year-on-year. The lowest downward deviation from the plan was seen in other current expenditures (15.46 million euros or 31.52%), and in relation to the comparative period of the previous year, the only decrease was recorded in expenditures based on rent (0.08 million euros or 1.11%).

Capital expenditures amounted to 113.77 million euros or 1.72% of GDP. Compared to the plan, they were 39.33% lower, while the year-over-year decline amounted to 25.27%, 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 the first nine months of 2023, *cash surplus* of the Budget of Montenegro is estimated at 176.40 million euros or 2.66% of GDP.

3.1.3. Non-financial sector

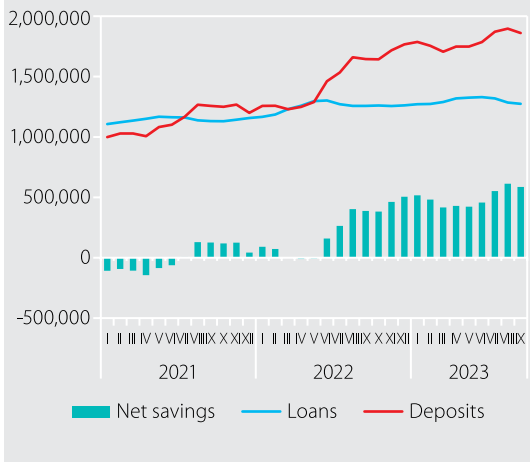
Lending to the non-financial sector[16] recorded positive trends in the first nine months of the current year. Loans to this sector grew at a monthly average rate of 0.12% during the reporting period, while this rate was 0.94% in the comparative period of the previous year.

At end-September 2023, total loans extended to the non-financial sector amounted to 1,274.75 million euros, which is 17.48 million euros or 1.39% more year-on-year and 13.18 million euros or 1.04% more compared to end-2022.

Long-term loans accounted for the main share in the structure of loans to the sector with 80.37%, which indicates that loans to the corporate sector were mainly used for increasing the volume of economic activity.

Graph 31

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



Source: CBCG calculations

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

Deposits of the non-financial sector stood at 1.860,94 million euros at end-September this year, recording an intensive increase of 215,95 million euros or 13.13% in relation to the comparative period last year, while they were 94.29 million euros or 5.34% higher than in December 2022.

The loans to deposits ratio of the non-financial sector was 0.69 at end-September this year and it decreased year-on-year when it was 0.76 and 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-September 2023, net savings of the non-financial sector amounted to 586.19 million euros, which is more favourable compared to the same period of the previous year when it was 387.72 million euros, and it was higher compared to end-December 2022 when it amounted to 505.07 million euros (graph 31).

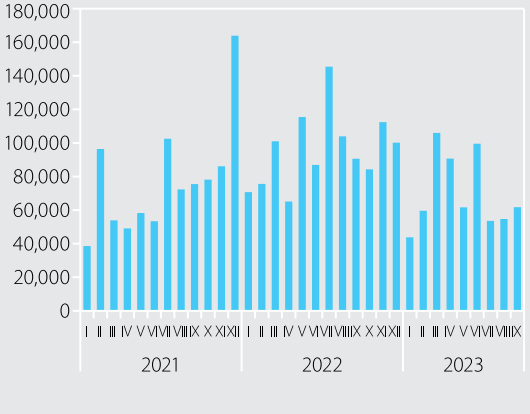
3.1.4. External demand and the current account

Preliminary data shows that the current account deficit amounted to 344.95 million euros in the period January - September 2023, which is the year-on-year decrease of 28.44%. This decline is a result of an increase in surpluses on the services account, while the goods account recorded a deficit growth.

The goods account recorded a deficit of 2,227.49 million euros or 11.73% more than in the comparative period last year. Total visible exports amounted to 533.55 million euros, recording a decrease of 6.23%, whereas total visible imports amounted to 2,761.04 million euros, being 7.74% higher year-on-year. The services account recorded a surplus of 1,483.06 million euros, which is 38.47% more than in the same period last year. The primary income account registered a surplus of 84.95 million euros, which is a decline of 14.21% that resulted from an increase in expenditure for international investments of 28.59%. The secondary income account ran a surplus of 314.54 million euros, 7.90% less in relation to the comparative period last year.

Graph 32

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



Source: Central Bank

Preliminary data suggests that net FDI inflow amounted to 320.37 million euros in the first nine months of 2023, which is the year-on-year decline of 47.14%. Total FDI inflow reached 631.36 million euros and it dropped by 26.14% (graph 32). Equity investments amounted to 403.87 million euros (a 13.39% decrease), while the inflow in the form of intercompany debt added up to 197.91 million euros or 38.53% less year-over-year. In the structure of equity investments, investments in companies and banks amounted to 68.68 million euros (a 52.35% decline), while real estate in-

vestments reached 335.19 million euros (a 4.03% increase). The inflow arising from the withdrawal of funds invested abroad amounted to 29.58 million euros. In the structure of total FDI inflow, the share of real estate investments amounted to 53.09%, followed by intercompany debt with 31.35%, while 10.88% were investments in companies and banks. Total FDI outflow amounted to 310.99 million euros or 24.99% more than in the comparative period. The outflow from residents' investments abroad amounted to 64.66 million euros, while the withdrawal of non-residents' funds invested in Montenegro amounted to 246.33 million euros.

The portfolio investments account recorded a net outflow of 388.91 million euros, while the net outflow from the other investments account amounted to 455.04 million euros.

3.2. Supply and production

Preliminary MONSTAT data indicate that industrial production rose 6.0% in the first nine months of this year compared to the same period of the previous year (graph 33). Output increase was recorded in electricity, gas and steam supply sector (33.1%), and in the mining and quarrying (2.4%), while the manufacturing industry recorded output decline (9.7%).

A total of 1.22 tourists stayed in collective accommodation[17] establishments, which is an increase of 23.87% y-o-y. The number of domestic tourists' arrivals in collective accommodation establishments increased by 13.18%, while the number of foreign tourists grew by 25.28%. Tourist overnights amounted to 4.56 million, which is the year-on-year increase of 18.86%.

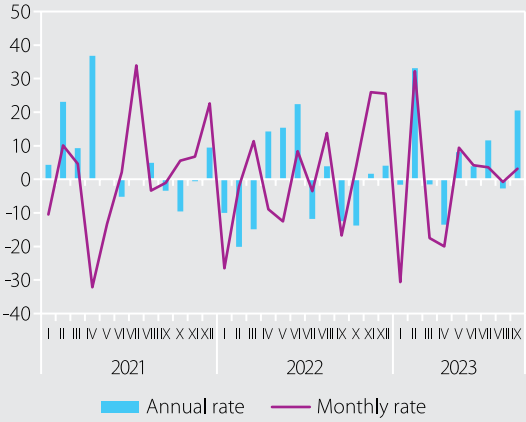
Some 227,814 m³ of forest assortments were produced in the state forests in the first nine months of 2023, which is 65.3%[18] more than in the same period last year.

According to preliminary MONSTAT data, construction recorded a 9.56% year-on-year decline in the value of executed construction works and a 4.16% decline in effective working hours.

Preliminary MONSTAT data also indicate that passenger transport recorded the year-on-year growth in transport: railway transport rose by 12.38%, road transport by 9.68%, and passenger traffic at airports that increased by 34.41%.

Graph 33

Industrial production in Montenegro, in %



Source: MONSTAT

[17] At the time of writing the report, data on individual housing for nine months was not available.

[18] Presented through weighted index.

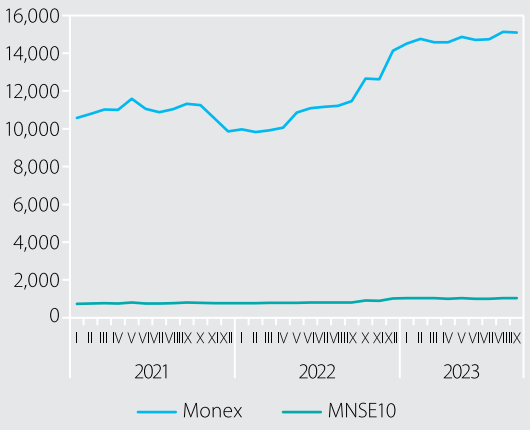
In this period, there was a 7.16% increase in cargo road transport and 49.33% increase in the cargo transport at airports, while a decrease of 25.05% was recorded in railway transport.

3.3. Stock exchange indices

The MONEX[19] and MNSE10[20] indices oscillated during the first nine months of 2023 (graph 34).

Graph 34

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



Source: Montenegro SE calculations

At end-September 2023, the SE index MONEX reached 15,102.26, recording an intensive growth of 3,638.43 index points or 31.74% year-on-year, while compared to the end of the previous year it rose by 960.91 index points or 6.80%.

The SE index MNSE10 reached 1,034.57, recording an intensive growth of 226.70 index points or 28.06% year-on-year, while compared to the end of the previous year it recorded growth of 25.33 index points or 2.51%.

[19] 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.

[20] The MNSE10 is the blue-chip index at the Montenegro Stock Exchange and it is aimed at providing a more precise description of prices trends of the most representative shares in the official and free markets of the Montenegro Stock Exchange AD Podgorica. It includes the top ten companies in the Montenegrin market.

4. MONETARY POLICY

During the nine months 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 FOURTH QUARTER OF 2023 AND 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 considers 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 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, and the like.).

Montenegro's fan chart for the fourth quarter of 2023 and 2024 is based on three estimated constituent parts:

1. **Central projection values** – the value 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 quarter of 2023 and 2024

With a view to developing a fan chart, an ARIMA (Autoregressive Integrated Moving Average) model of time series of inflation of Montenegro presented via the Consumer Price Index[21] was developed.

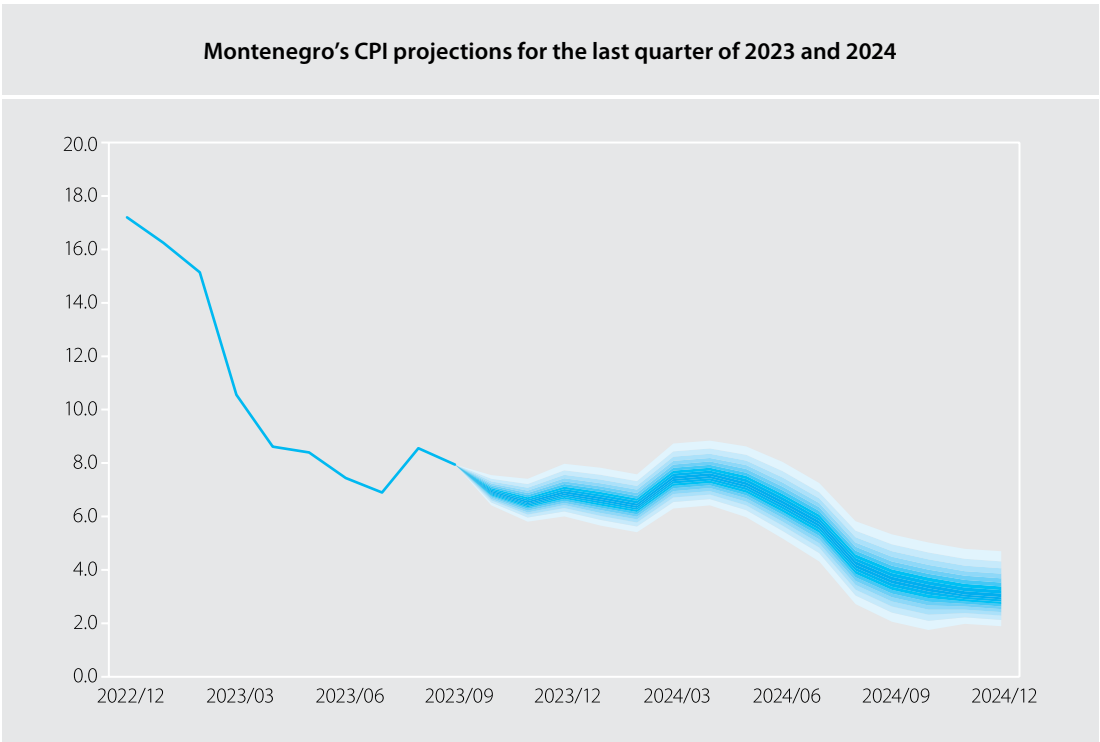
[21] A detailed explanation of the ARIMA model of Montenegro was presented in the working study of the Central Bank no. 11 *"Inflation forecasting: Empirical research on the retail price index trend of Montenegro for 2007 - applying the ARIMA model."*

The ARIMA model was used for short term forecasts, whereby iteration of several ARIMA models was made, which were ranked based on their efficiency and diagnostics quality. The selected ARIMA model, ARIMA (1,1,3)[22] has sufficient confidence level for forecasts.

The monthly forecasts value was used as the value of central projection of the CPI graph for Q4 2023 and 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 quarter of 2023 and 2024



Source: CBCG, 2024

The value of the coefficient of asymmetry varies between 0.8 and 1.3, and the relative standard deviation is 0.3. 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 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[23]. 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

[22] 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.

[23] The mode value (central projection) is, by construction, always in the deepest band shade, but in case of a heavily unbalanced risk, the central projection may not cover either of these values. (*Britton, E. Fisher, P.D. and Whitley, J.D. (1998), 'The Inflation Report projections: Understanding the Fan Chart', Bank of England, Quarterly Bulletin, 38, pp. 30–37*).

above and below the central band, 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 fourth quarter of 2023 and 2024, indicates that there is a *90% probability that the CPI inflation will range between 1.8% and 8.6%, depending on the month.*

If analyse the projected inflation for December 2024, inflation will range from 1.9% to 4.7%, with the central projection at 3%. The fan chart central projection (the darkest part) represents a 10% probability span (graph 35).

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 spill over of energy prices to the prices of other products and services. An additional risk represents the possibility of a further wage growth in 2024. On the other hand, lower food prices on the world market, a slowdown in global economic growth, primarily in the European Union and China, and an additional tightening of monetary policy could affect the weakening of inflationary pressures.

Projection is based on the following assumptions:

1. The overall inflation in the world records a downward trend, as a result of the reduction of disruption in global value chains. Inflation rates without raw materials (so-called *core inflation*) proved to be more persistent. The reason is inflationary expectations that result in higher inflation. In the previous period, the general increase in prices was a consequence of the increase in production costs (so-called *cost-push inflation*). Now, according to the IMF[24] report, inflation decline trend is expected, while the causes differ between economies with different development level. The future declining inflation trend reflects lower base inflation, as a result of restrictive monetary policy, stabilization of the labour market, reduction in energy prices, and the continuation of the trend from 2023. According to the recent IMF forecast, global inflation will decline to 5.8% in 2024, and 4.4% in 2025.
2. In January 2024, euro area inflation was 3.3%. The ECB lowered inflation forecast in relation to September 2023, especially for 2024. According to the latest ECB[25] forecasts from December 2023, the average inflation measured by the harmonized index of consumer prices in the euro area will be 2.7% and 2.1% in 2024 and 2025, respectively, while in 2026 the new inflation will be 1.9%. As of the end of 2024, all components of rising inflation will stabilize, which will bring euro area inflation closer to its target value of 2%.
3. The ECB continued with the restrictive monetary policy. The rate for main refinancing operations increased by 0.25 points in August and September to 4 basis points - which is the highest level in history. Although this rate is in the growth zone from July 2022, as of May 2023 its changes are lower compared to earlier periods of the energy crisis when it increased by 0.5 or

[24] Source: IMF World Economic Outlook, January 2024
https://www.imf.org/en/Publications/WEO/Issues/2024/01/30/world-economic-outlook-update-january-2024

[25] Source: ECB (2023): ECB staff macroeconomic projections for the euro area, December 2023.
https://www.ecb.europa.eu/pub/projections/html/index.en.html

even 0.75 points. This is in accordance and expectations of gradual price stabilisation. There are expectations that the ECB's growth rates will decline in 2024[26].

4. The conflict in the Middle East at the beginning of October had a significant impact on oil prices only after the blockade of the Suez Canal, which, according to the estimate of the United Nations Conference on Trade and Development (UNCTAD), uses 22% of global overseas cargo ships[27]. However, Bloomberg forecasts that the prices of Brent oil will stabilize and continue their downward trend as of the Q2.
5. Food prices, according to data from the Food and Agriculture Organization of the United Nations (FAO), recorded a drop of 9.4% in January 2024, compared to the same month of the previous year, due to a drop in the prices of dairy products (-11.6%), vegetable oils (-12.8%) and cereals (-18.6%). This continued the declining trend in food prices lasting from April 2022. On the other hand, sugar price increased by 15.9% due to poor weather conditions. According to the ECB forecast, food prices shall decline.

Changes of any of the abovementioned parameters would require the forecast revision. Russia-Ukrainian war and the conflicts at the Middle East could start new inflation trends that this forecast has not currently included.

[26] Source: Financial Times *https://www.ft.com/content/37b13644-5ed9-4caa-83a4-4f3094125d8e*

[27] Source: Navigating Troubled Waters, Impact to Global Trade of Disruption of Shipping Routes in the Red Sea, Black Sea and Panama Canal, UNCTAD Rapid assessment, February 2024, *https://unctad.org/publication/navigating-troubled-waters-impact-global-trade-disruption-shipping-routes-red-sea-black*

6. EXPECTED INFLATION IN 2024

The impact of the tightening of the ECB's monetary policy, i.e. the slowdown in the growth of the annual inflation rate, was recorded in Montenegro during 2023. Although consumer prices increased in the third quarter mostly due to price increases in the categories of *food and non-alcoholic beverages* and *transportation*, the annual inflation rate remained in the single digits. Preliminary data indicate that aggregate demand recorded the quarter-on-quarter decline and the year-over-year growth in the third 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.

A lower inflation rate in 2024 compared to the previous year is also a forecast by all relevant international financial institutions, which will largely affect the slowdown in price growth in Montenegro.

The international environment remains full of uncertainties, primarily regarding a further impact of the Russian-Ukrainian conflict, and the global oil supply in the event of the spread of the conflict in the Middle East. The increased reference interest rates, according to the announcements of the leading central banks, will remain in force until inflation returns to the target level.

It is for these reasons that the inflation rate is expected to decrease in Montenegro as well. Inflation projected for December 2024 ranges between 1.8% and 4.9%, with the central projection at 3%. Our expert assessment is similar to the model estimate and it indicates that inflation in the current year will range between 1% and 5%.

Table 3

Estimated inflation rate		
Optimistic assessment	Realistic assessment	Pessimistic assessment
1%	3%	5%

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