TRENDS

Q1 Q2 Q3 Q4

TRENDS

Trends, Quarter IV of 2022

✍ INTRODUCTION

The Statistical Office of the Republic of Serbia, main producer and disseminator of statistics, publishes a large number of releases, indicators, bulletins, etc. A multitude of publications often gives rise to confusion with users who, on the other hand, use data to assess their performances and adapt them to other economic subjects and trends.

As many users, apart from specialists, are statistically and economically illiterate, they may be confused by the diversity of data, unable to understand and prioritize them correctly, which often results in reluctance towards information.

As the statistical system is very complex and generalised, designed to meet the specific sub-sector needs for information, statistical data are often incomprehensible in modern society. Informing the users with „dry" statistical data is often not sufficient as they provide only a partial picture about macroeconomy. Namely, it has been proved that traditional concepts of data (tables, statistical releases, etc.) do not facilitate quick understanding of the socio-economic reality and fail to transmit the key message, particularly when there is a large amount of data.

Having in mind all the above and following world trends in presenting statistical data, as well as the interest shown by professionals, the redesigned Trends tradionally provide quarterly and annual data, but also use new concepts of presenting the most important economic signals via modern and advanced graphical solutions for presenting and dissemination.

The issue for the fourth quarter of 2022 presents a review of major economic trends in this period and in the whole year: Gross domestic product, Industrial production, Construction, External trade, Domestic trade, Prices, Labour market, Salaries and Wages, Tourism, Economic Sentiment Indicator, Regional economic asymmetries and Agriculture.

High inflation was present during the whole 2022 and is still a challenge for all business subjects, therefore this issue provides a detailed overview of its movement and the evolution of the most important factors that impacted its growth

As always, this issue presents also the forecasts of trends in certain areas in the next period, obtained under ARIMA forecasting model (in the following sections: Industry, Domestic trade and External trade). A set of composite leading indicators, which can anticipate with high reliability the cyclical movements, and serve short-term forecasts, presented in the section Macroeconomic forecasts.

Since 1999, the Statistical Office of the Republic of Serbia has no available data for AP Kosovo and Metohia, therefore they are not included in the data for the Republic of Serbia (total).

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1.   MACROECONOMIC FORECASTS

The developed SORS system of leading composite indicators is, on average, one to two quarters at most ahead of economic activity cycles. When combined with econometric models, it allows making a quantitative evaluation of the dynamics of the annual growth rate of economic activity in the short term. The family of leading indicators by sections and corresponding forecasts are presented below.

1.1. FORECASTS OF CONSUMER PRICE TRENDS IN Q2 2023

97.3%
LIKELYHOOD

The leading SORS consumer price indicator (SORS CPI)[1] is a result of an research and analytical work by the SORS. The Indicator consists of the coverage of previously developed composite food price indicators (IPC-H, i.e. CPI – F), fuel price (IPC-G, i.e. CPI-F) and tobacco rice (IPC-D, i.e. CPI-T, as the largest generators of inflation on the long-term. Taking into account the considerable change in the structure of consumer prices when generating the year-on-year growth rate (primarily, the significant growth of the influence of its energy component starting from the second half of 2022), **the SORS consumer price indicator (SORS CPI)**, with the existing long standing biggest strategic elements of consumer price growth (food, tobacco and fuels for passenger cars), has been modified by directly **including additional factors of price growth of electricity, gas and solid fuels.**

Since May 2023, a new monthly grown has been announced (May 2023/April 2023) concerning **electricity price** (8.0%) **and gas** (11.0%) **which will result in Q2 2023 in a year-on-year growth of electricity prices of 24.8% and gas of 26.9%, thus accounting for about 9.4% in the structure of the forecast year-on-year growth rate of consumer prices for Q2 2023.** This announced growth of electricity and gas prices is the subject of the Agreement on Stand-by Arrangement between the Government of Serbia and the IMF, et refers to the policy of financing the sustainability of the energy sector.
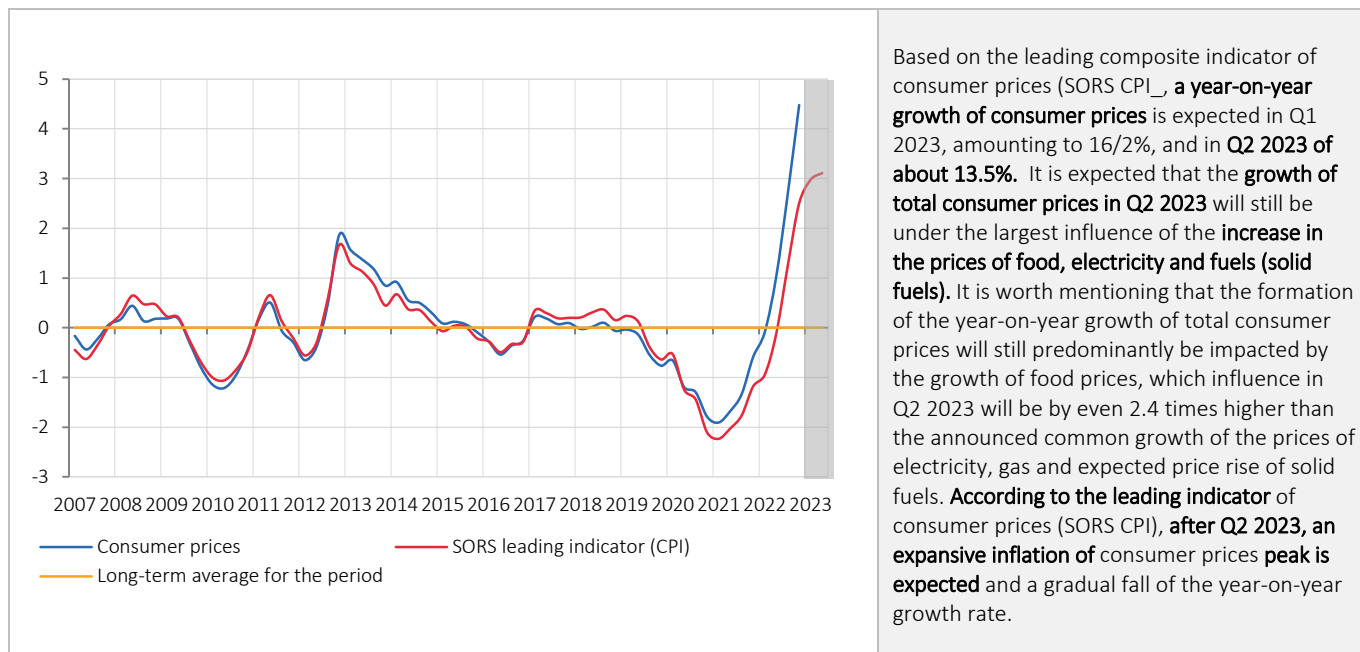
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[1] CPI-G (i.e. CPI-F) is a weighted composite leading indicator that contains information on the movement of the most relevant indicators influencing oil price in Serbia, and that in its movement is ahead of the price of fuels and lubricants in Serbia by about two months. The indicator covers: the world price of *BRENT* crude oil, value of *WTI* crude oil futures (type *Cushing Oklahoma*), average price of American *WTI* crude oil (in first purchase from oil fields) dollar to euro ratio, stocks in the production of crude oil in the territory of Serbia and import of oil, oil refined products in Serbia.

An analysis of food price trends in Serbia has allowed to obtain the composite leading indicator of food price (CPI-H, i.e. CPI-F), which main goal is the forecast of food price for the next three months. After having analyzed a large number of variables, several ones with the best leading forecast characteristics for food price in Serbia have been singled out: harmonized food price index in Hungary, average purchase price of products of crop producers, import of the section Manufacture of food products, import of milk, dairy products and eggs, stocks of beef and veal, retail price index of the total basket of vegetables.

The indicator of tobacco price is formed based on the trend of excise on tobacco and producers' tobacco prices for domestic market, which proved to be the best for forecasting the variability of the price of tobacco and tobacco products in Serbia.

The forecast of retail prices trends in the final phase represents the integration of previously obtained results of the leading indicators of retail prices of the analyzed groups of products: fuel (CPI-G, i.e. CPI-F), food and non-alcoholic beverages (CPI-H, i.e. CPI-F) and tobacco (IPC-D). The second-stage, composite and weighted aggregation of the above described indicators has allowed to derive a new composite leading indicator (abbreviated CPI), which aim is to forecast retail consumer prices for one to two quarters ahead.

Chart 1.1. Comparison of the cycle of the SORS leading consumer prices indicator (SORS CPI) and total consumer prices in Serbia, seasonally adjusted, detrended and standardised data, deviation from the average for the period (%), Q1 2007 – Q2 2023

Legend:
- Consumer prices
- SORS leading indicator (CPI)
- Long-term average for the period

Based on the leading composite indicator of consumer prices (SORS CPI_, **a year-on-year growth of consumer prices** is expected in Q1 2023, amounting to 16/2%, and in **Q2 2023 of about 13.5%.** It is expected that the **growth of total consumer prices in Q2 2023** will still be under the largest influence of the **increase in the prices of food, electricity and fuels (solid fuels).** It is worth mentioning that the formation of the year-on-year growth of total consumer prices will still predominantly be impacted by the growth of fo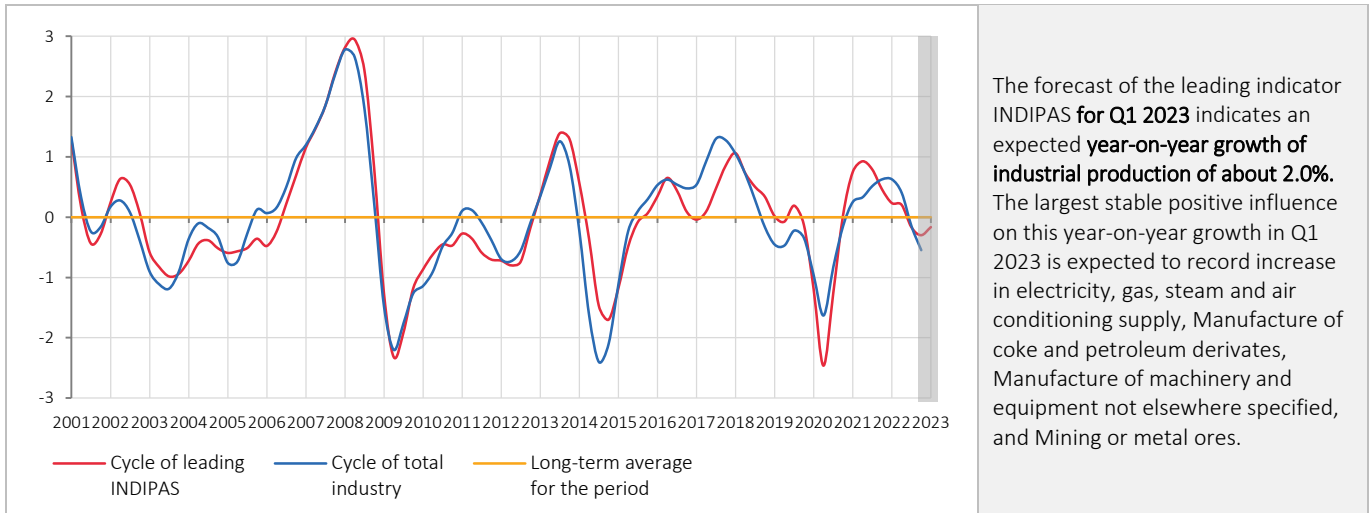od prices, which influence in Q2 2023 will be by even 2.4 times higher than the announced common growth of the prices of electricity, gas and expected price rise of solid fuels. **According to the leading indicator** of consumer prices (SORS CPI), **after Q2 2023, an expansive inflation of** consumer prices **peak is expected** and a gradual fall of the year-on-year growth rate.

Chart 1.2. Structure of the forecast year-on-year growth rate of consumer prices for Q2 2023 (total 100), %

Legend:
- Food and non-alcoholic beverages
- Tobacco
- Electricity
- Fuel
- Other

Pie values: 33.8, 47.6, 7.5, 9.4, 1.9

Based on the indicator of fuel price (SORS IPC-G, i.e. SORS CPI-F), **price fuel** is expected to remain in Q2 2023 approximately on the same level as in Q1 2023, and thus the drastic decreasing trend of the year-on-year growth rate of fuel price will continue also in the third quarter (particularly after Q4 2022 and Q1 2023), and it will slightly contribute to the year-on-year growth of total prices in Q2 2023.

On the other hand, **tobacco price** in Q1 2023, except for the increase (due to regular excises in January), will be additionally augmented by the growth of tobacco producers' prices and adjustment of tobacco rice growth with the inflation of consumer prices. This will mean that in Q1 and Q2 2023 tobacco prices will have a year-on-year growth of about 7.1% and 5.6%m respectively.
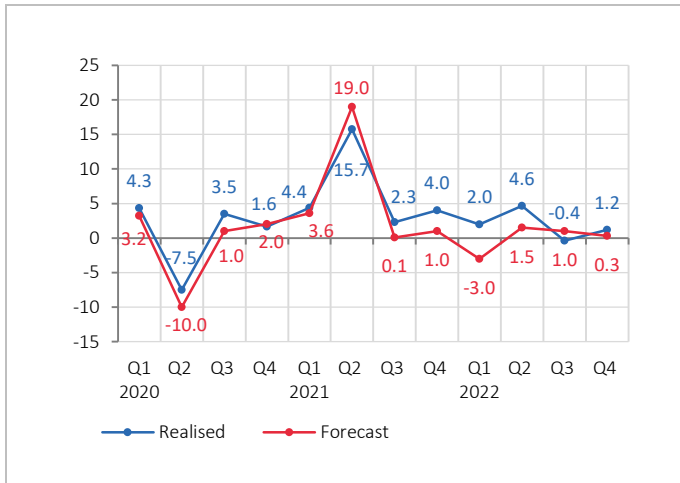
1.2. FORECAST OF INDUSTRY GVA TREND

97.8%
LIKELYHOOD

Chart 1.3. Comparison of the cycle of the leading indicator INDIPAS and physical volume of total industry, seasonally adjusted and detrended, leveled out and standardised data, deviation from the average for the period (%), Q1 2001. – Q1 2023

Cycle of leading INDIPAS — Cycle of total industry — Long-term average for the period

The forecast of the leading indicator INDIPAS **for Q1 2023** indicates an expected **year-on-year growth of industrial production of about 2.0%.** The largest stable positive influence on this year-on-year growth in Q1 2023 is expected to record increase in electricity, gas, steam and air conditioning supply, Manufacture of coke and petroleum derivates, Manufacture of machinery and equipment not elsewhere specified, and Mining or metal ores.

Chart 1.4. Comparison of realised and forecast annual industry GVA growth rate, %

Realised — Forecast

Chart 1.5. Mean absolute percentage error - MAPE[2], forecasts of industry GBVa growth, Q1 2020 – Q4 2022, %

MAPE=2.2%

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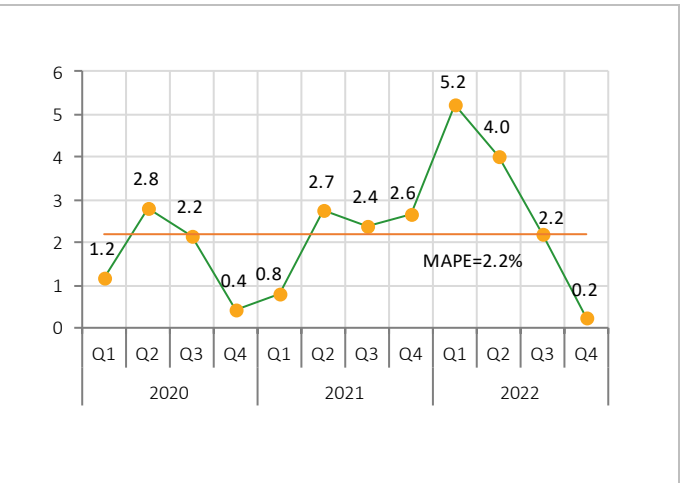
2   Mean Absolute Percentage Error – MAPE is a measure of the simplified interpretation an error of a forecasting model in statistics. It is defined as the ratio
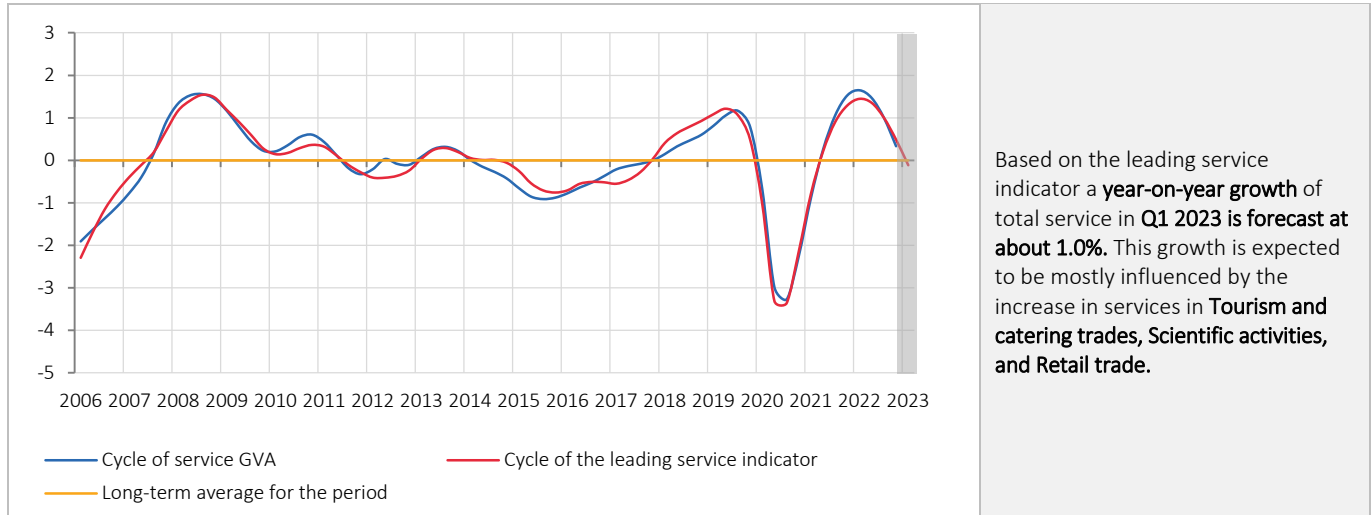
$$MAPE = \frac{100\%}{n} \sum_{t=1}^{n} \left| \frac{A_t - F_t}{A_t} \right|$$

, where A т is the real value, and F т the forecast value. Their difference is divided by the real value A т . The absolute value of this ratio is added up for each forecast point in time and divided by the total number of time points n. The relative deviation of the real values from the forecast ones by (+/-) 5% has been determined by the interval limit of validity of the given forecast (95-percentage indicator reliability interval), which we have defined after having derived MAPE as the likelihood of the model by the formula (v=100-(MAPE)) expressed in percentage. Absolute values are non-negative values. The forecast values in the chart were published in the previous issues of *Trends.*
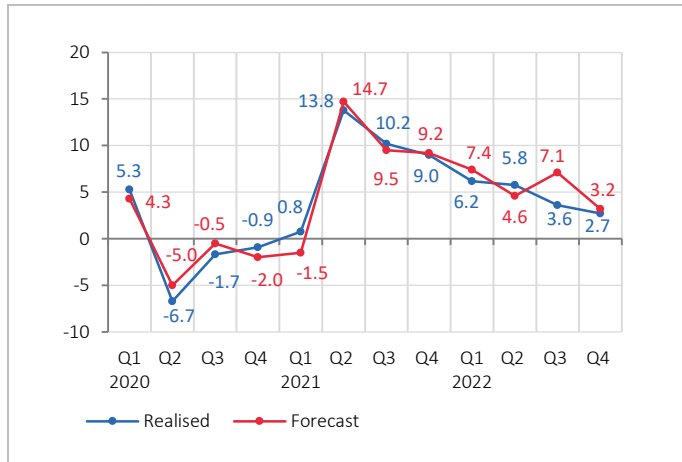
1.3. FORECAST OF SERVICE GVA TRENDS

98.7%
LIKELYHOOD

Chart 1.6. Comparison of the cycle of the leading service indicator and GVA of total services, seasonally adjusted, detrended, leveled out and standardised data, deviation from the average of the period (%), Q1 2006. – Q1 2023.

Based on the leading service indicator a **year-on-year growth** of total service in **Q1 2023 is forecast at about 1.0%.** This growth is expected to be mostly influenced by the increase in services in **Tourism and catering trades, Scientific activities, and Retail trade.**

- Cycle of service GVA
- Cycle of the leading service indicator
- Long-term average for the period

Chart 1.7[3]. Comparison of realised and forecast annual service GVA growth rates, %

- Realised
- Forecast

Chart 1.8. Medium absolute percentage error - MAPE, forecast of service GVA growth, Q1 2020 – Q4 2022, %

MAPE=1.3%

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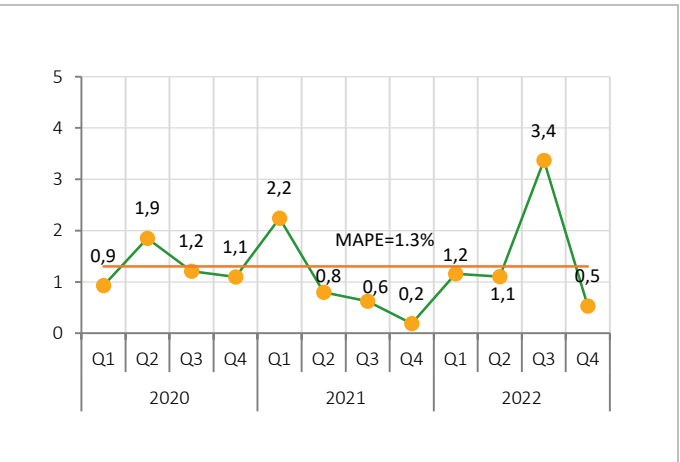
[3] Forecast values mentioned in the chart are published in the previous issues of *Trends*.

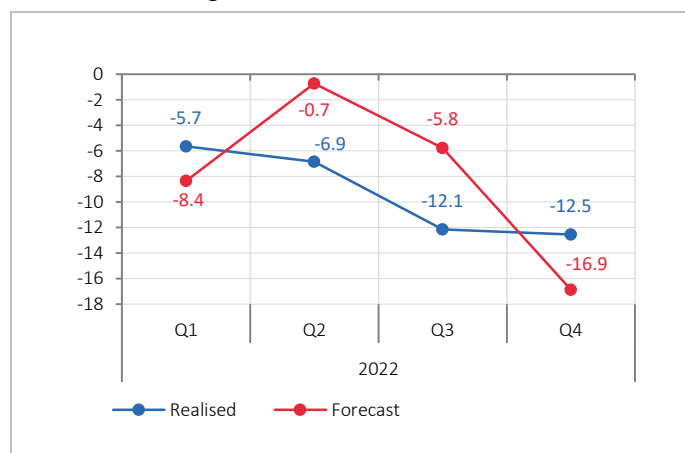# 1.4. FORECAST OF CONSTRUCTION GVA TRENDS

94.4%
LIKELYHOOD

Considerable fall of the value in non-residential construction, transport, pipelines, communications and electrical transmission lines contributed most to the year-on-year fall of construction GVA in Q4 2022. (-12.5%). The most current of building sites over the whole 2022 (this will also be in 2023) were: Morava Corridor, modernisation of the railway Novi Sad – Subotica, highway Belgrade – South Adriatic (section Preljina – Pozega; Belgrade Waterfront and highway Belgrade-Sarajevo (section Sremska Raca - Kuzmin), production plant Toyo Tyers in Indjija and high-speed Ruma – Sabac – Loznica. By applying the forecast model, **in Q1 2022 a slight growth of construction GVA of about -0.1%.**

Table 1.1. Structure of the contribution to the annual construction GVA growth rate

	2020				2021				2022			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Construction GVA, annual growth rate, % (1+2)	24.0	-0.2	-14.7	-7.5	19.8	18.3	19.4	14.4	-5.7	-6.9	-12.1	-12.5
1. Buildings, pp. (1a+1b)	7.8	-0.4	1.7	0.1	13.4	7.2	5.3	5.8	-4.7	-2.9	-6.6	-4.6
1a. Residential buildings	0.3	-0.3	3.1	1.5	10.4	3.7	1.1	-0.1	-4.8	-1.5	-2.0	-0.2
1b. Non-residential buildings	7.4	-0.2	-1.4	-1.3	3.0	3.6	4.2	5.8	0.1	-1.4	-4.6	-4.4
2. Other buildings, pp. (2a+2b+2c+d)	16.2	0.2	-16.4	-7.6	6.4	11.0	14.1	8.7	-1.0	-4.0	-5.5	-7.9
2a. Transport infrastructure	4.0	0.3	-7.4	-3.5	1.1	13.9	14.3	12.9	5.1	0.6	-0.2	-3.3
2b. Pipelines, communication and electric power lines	11.4	0.1	-11.0	-7.3	2.9	-4.5	1.4	-2.3	-4.7	-2.5	-4.0	-3.6
2c. Complex construction on building sites	-0.1	0.0	0.2	2.5	2.2	1.8	-0.5	-2.5	-1.5	-1.8	-0.7	-0.2
2d. Other civil engineering, not elsewhere classified	0.9	-0.2	1.8	0.7	0.3	-0.1	-1.2	0.5	0.1	-0.3	-0.6	-0.7
Contribution to construction GVA growth rate, pp.	0.9	0.0	-1.0	-0.5	0.8	1.0	1.1	0.9	-0.3	-0.4	-0.9	-1.0

Chart 1.9. Comparison of realised and forecast[4] annual construction GVA growth rates, %

Chart 1.10. Mean Absolute Percentage Error - MAPE, forecast of construction GVA growth, Q1 2020 – Q4 2022, %
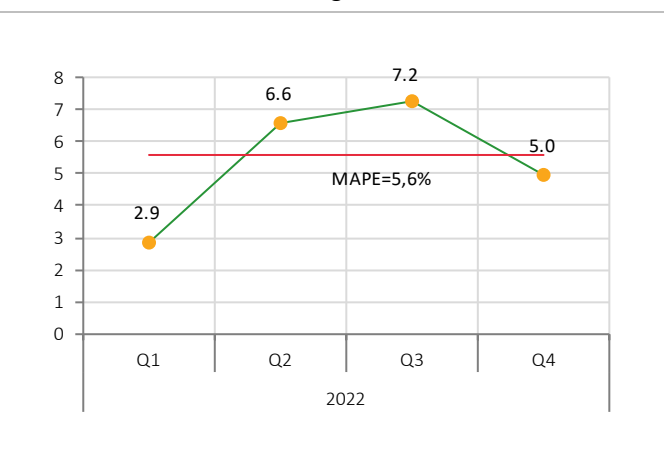
1.5. SUMMARY OF OBTAINED RESULTS OF LEADING INDICATORS BY GVA SECTOR FOR Q1 2023

Table 1.2. Forecasts of GVA of selected sectors and their estimated contributions to GDP for Q1 2023

Q1 2023	Agriculture	Taxes and contributions	Industry	Construction	Services
Quarterly growth rates, %	0.0	0.6	2.0	0.1	1.0
Contribution to the growth rate of GDP (pp.)	0.0	0.1	0.5	0.0	0.5

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[4] The forecast data presented in graph 1.2 was obtained by simulating the forecast based on the returned sample from Q1 2022 (by successively repeating the forecasting procedure after each "new" data of the leading indicator of construction activity GRIPAS RZS). Only the data for Q4 2022 was officially published in the previous (December 2022) issue of Trends.

2. GROSS DOMESTIC PRODUCT

In the fourth quarter of 2022, GDP real increase of 0.4% was recorded relative to the same period last year. Significant positive contribution to GDP trend was made by section of services, excluding trade, with 1.3 p.p. Significant negative contribution was noted in the section of construction and agriculture (with 0.9 and 0.5 p.p., respectively).

Observed by expenditure aggregates, in the fourth quarter of 2022, relative to the same period last year, household consumption recorded real growth of 1.5% and positively contributed to GDP trend with 1.0 p.p. Dynamics of export and import, with growth rates of 12.9% and 6.6% resulted in positive contribution to GDP trend (7.2 p.p. and 4.3 p.p., respectively). Investment activity decreased by 2.7% compared to Q4 2021 (negative contribution to GDP trend of 0.7p.p.) (Table 2.1).

Table 2.1. GDP – expenditure aggregates, real inter-annual growth rates, Q1 2020 – Q4 2022 (%)
(comparison with the same period of the previous year)

	2020				2021				2022			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
GDP	**5.3**	**-6.2**	**-1.3**	**-1.0**	**1.7**	**13.8**	**7.8**	**7.2**	**4.1**	**3.8**	**1.0**	**0.4**
Household consumption	3.6	-7.8	-0.8	-1.9	-1.9	17.2	8.3	7.5	6.9	3.8	3.0	1.5
Government consumption	8.8	5.4	-3.1	0.9	1.7	-1.5	9.3	7.2	2.7	4.9	-3.8	-2.4
Gross fixed capital formation	13.0	-11.1	-3.4	-3.2	11.5	25.1	15.6	13.0	1.2	2.1	-1.9	-2.7
Exports	5.2	-18.9	-6.7	3.9	8.6	36.3	22.5	14.0	20.0	21.6	16.9	12.9
Imports	7.3	-19.7	-2.7	0.9	-1.5	42.4	21.2	13.8	34.9	22.9	11.0	6.6

Chart 2.1. Contributions to inter – annual GDP growth rate – expenditure aggregates (p.p.)
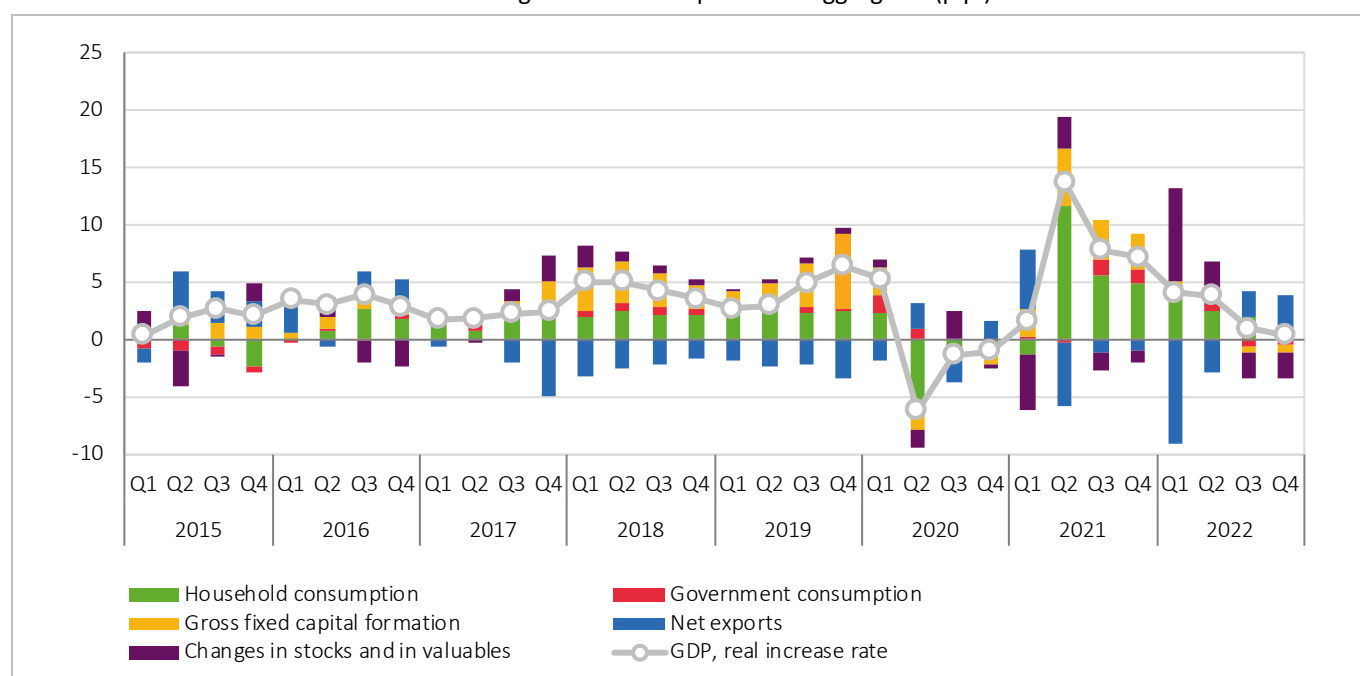
Observed from the **production side**, the greatest positive contribution to GDP trend in Q4 2022 resulted from increased activity in service section (excluding trade), 1.3 p.p.

Significant negative contribution to GDP trend was made by the construction sector and the agriculture sector (with 0.9 p.p. and 0.5 p.p., respectively).

Table 2.2. GDP – production side, real inter-annual growth rates, Q1 2020 – Q4 2022 (%)
(comparison to the same period of the previous year)

	2020				2021				2022			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
GDP	**5.3**	**-6.2**	**-1.3**	**-1.0**	**1.7**	**13.8**	**7.8**	**7.2**	**4.1**	**3.8**	**1.0**	**0.4**
Agriculture	2.3	2.5	2.4	2.2	-5.9	-5.4	-5.6	-5.8	-8.4	-8.6	-8.5	-7.8
Industry and water supply	4.3	-7.5	3.5	1.6	4.4	15.7	2.3	4.0	2.0	4.6	-0.4	1.2
Construction	24.0	-0.2	-14.7	-7.5	19.8	18.3	19.4	14.4	-5.7	-6.9	-12.1	-12.5
Trade	4.1	-8.3	1.8	0.3	8.2	23.4	10.6	10.1	7.5	5.4	2.6	0.3
Services, excl. trade	5.5	-6.3	-2.7	-1.2	-1.2	11.2	10.1	8.7	5.8	5.9	3.9	3.4
Net taxes	3.3	-7.7	-2.0	-2.5	-0.7	16.7	9.1	8.1	8.2	5.1	2.5	1.1

Chart 2.2. Contributions to inter – annual GDP growth rate – production side (p.p.)

Gross domestic product
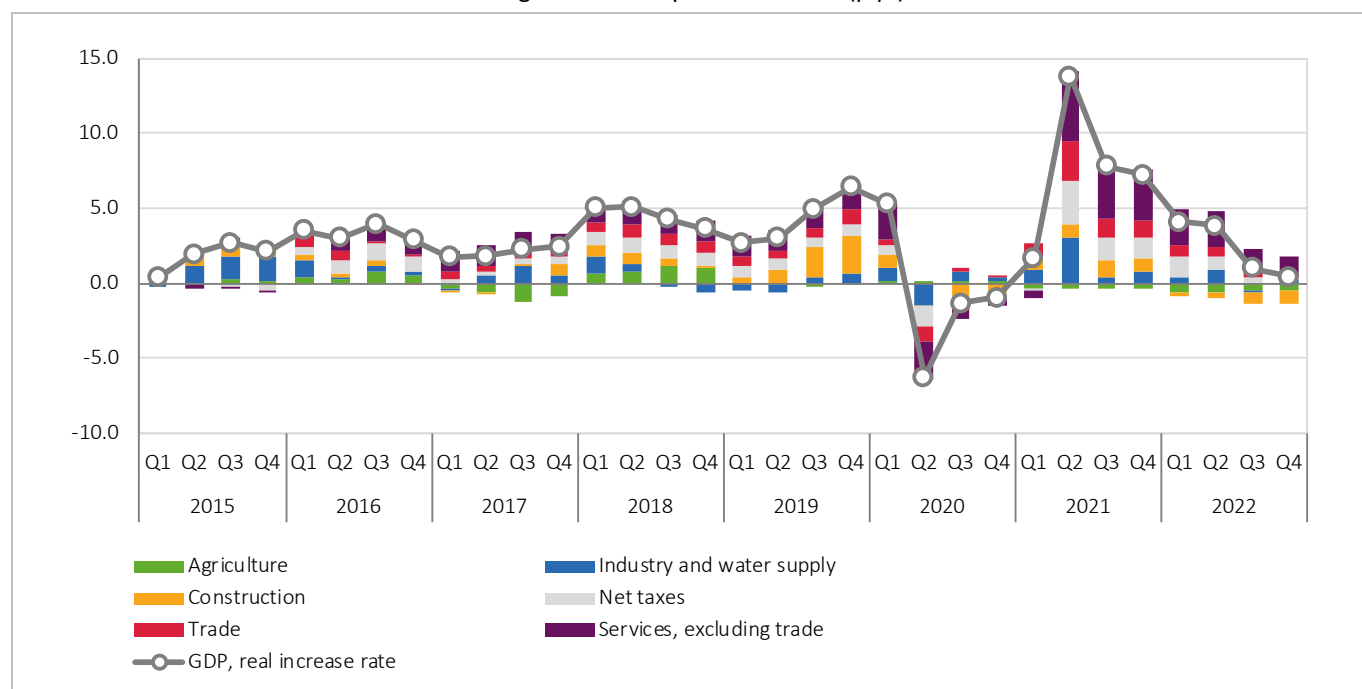
3. INDUSTRIAL PRODUCTION

3.1. TOTAL INDUSTRIAL PRODUCTION

Total industrial production in Serbia, in the Republic of Serbia in 2022 increased by 1.7% relative to 2021. Growth was noted in two sections: Manufacturing (1.4%) and Mining and quarrying (22.6%), while the section of Electricity, gas, steam and air conditioning supply recorded a fall of production of -7.1%.

Chart 3.1. Cumulative trend of total industrial production and its sections, growth rates (%)
(2022 relative to 2021)

■ Growth rate (left scale)　　— Share in total industrial production (right scale)
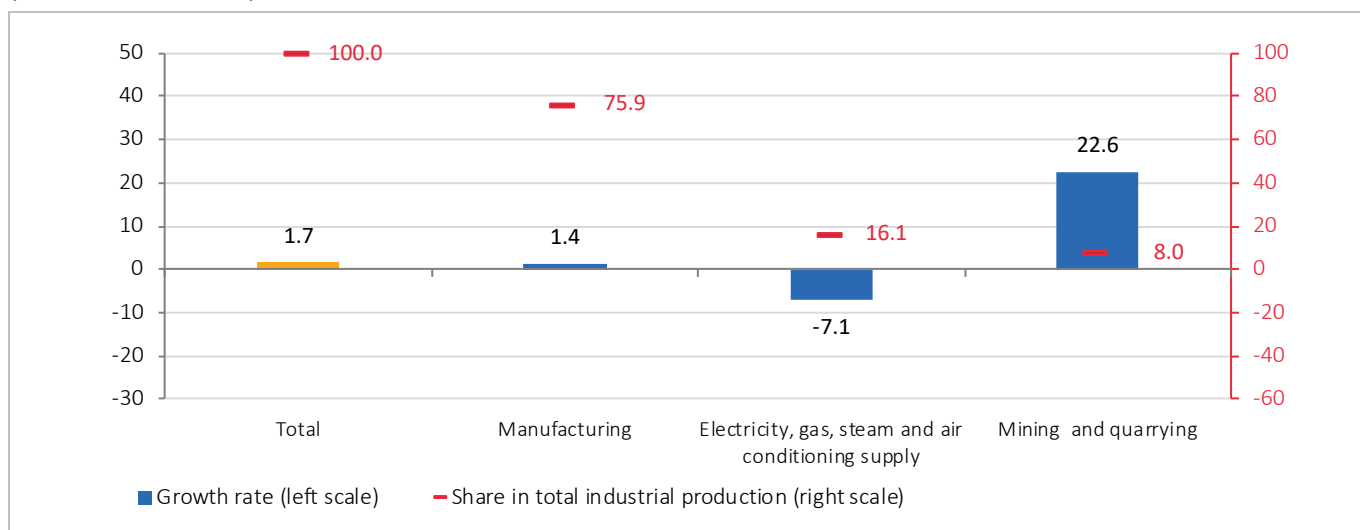
Chart 3.2. Industrial production growth rates by MIGs (%) (2022 relative to 2021)

■ Growth rate (left scale)　　— Share in total industrial production (right scale)
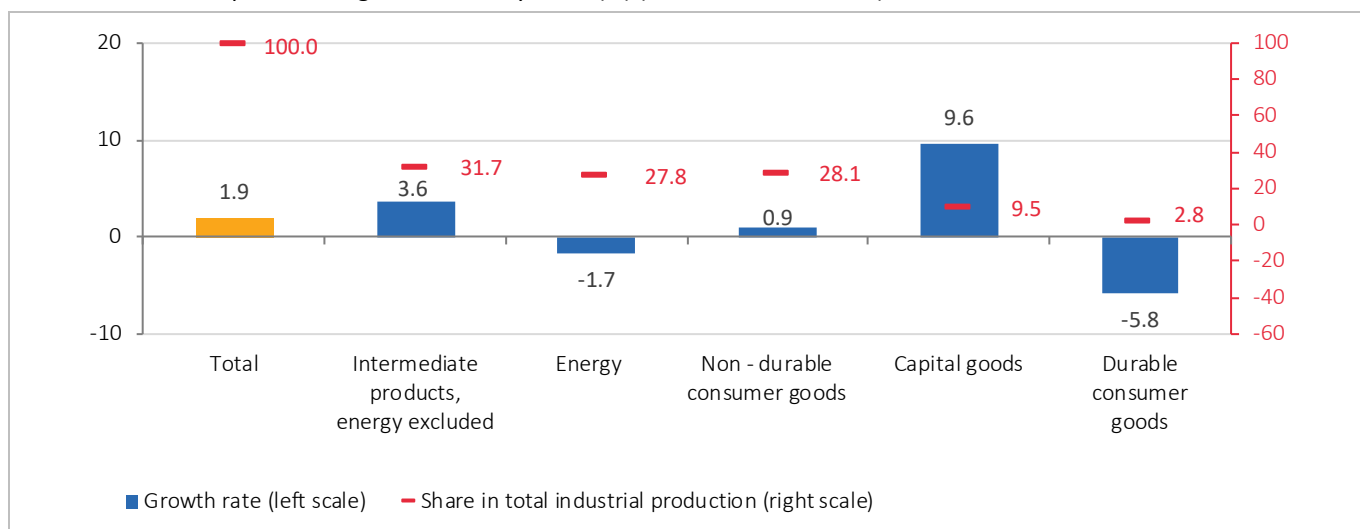
The sections of Manufacturing and Mining and quarrying contributed to the growth of Industry in 2022 with 1.2 p.p. and 1.8 p.p. each, while the section of Electricity, gas, steam and air conditioning supply had a negative contribution (-1.3 p.p.).

Table 3.1. Industrial production, indices (comparison with the same period of the previous year)

|	2020				2021				2022				2023
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1[1]
Industrial production – total	104.5	92.4	103.3	101.5	104.2	116.0	102.6	103.7	101.9	104.8	99.4	100.7	**101.5**
Manufacturing	106.3	92.1	102.4	100.2	103.2	117.0	100.4	102.9	104.1	104.7	99.1	97.8	**99.5**
Electricity, gas, steam and air conditioning supply	96.9	91.3	109.1	107.9	109.1	107.5	96.0	90.6	80.9	91.8	95.8	106.2	...
Mining and quarrying	108.9	98.5	101.3	102.0	109.0	124.6	140.8	142.9	139.0	132.4	108.5	116.5	...

[1] Prognoses (obtained on the basis of time series analysis models).

3.2. MANUFACTURING (C) (share of 75.9% total industrial production index)

Trend-cycle component of Manufacturing, after increasing trend in the first quarter, since April 2022, started the decreasing trend (chart 3.3).

Chart 3.3. Components of Manufacturing time series, indices (y – original series, sa – series with excluded seasonal component, t – trend-cycle component, average 2021 = 100)
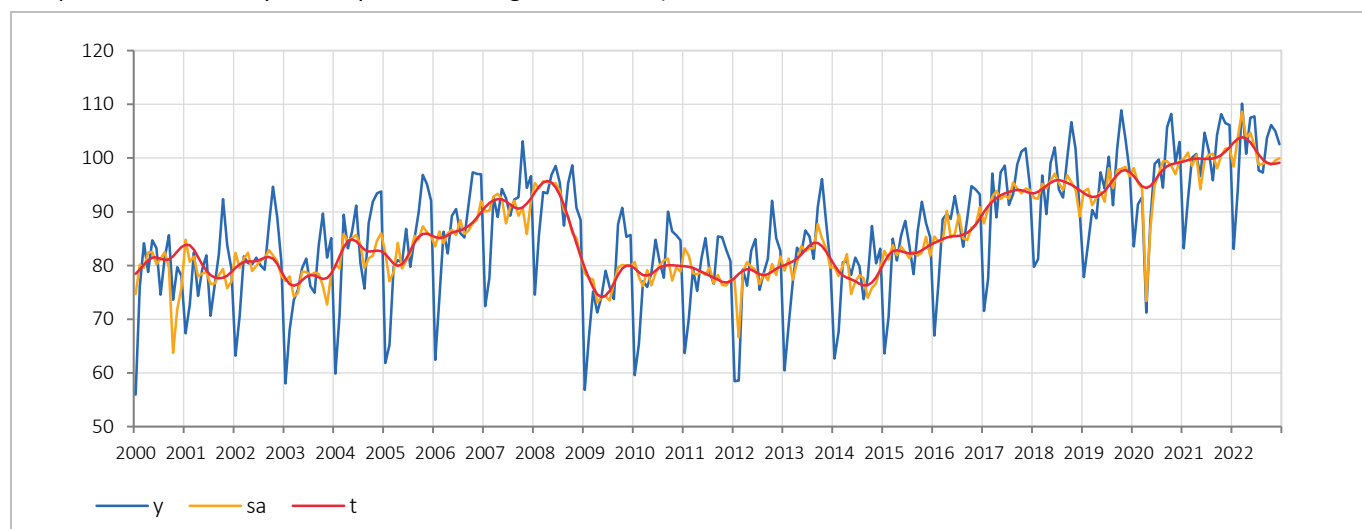
Observed by divisions, Manufacturing in 2022 increased in 15 out of 24 divisions (mutually participating with 53.1% in total industry), if compared with 2021. The most significant divisions – measured by the share in total industrial production - in which positive results were noted in 2022 were: Manufacture of food products (growth of 0.1%), Manufacture of coke and refined petroleum products (growth of 13.3%), Manufacture of metal products, except machinery (growth of 1.7%) and Manufacture of basic pharmaceutical products and pharmaceutical preparations (growth of 3.5%).

Decrease was recorded in nine divisions (mutually participating with 22.7% in total industry): Manufacture of rubber and plastic products (fall of -4.5%), Manufacture of chemicals and chemical products (fall of -6.3%), Manufacture of basic metals (fall of -17.8%), Manufacture of non-metallic mineral products (fall of -0.1%).

Chart 3.4. Manufacturing by divisions, cumulative growth rates (%) (2022 relative to 2021); divisions are presented in descending order according to shares in total industrial production)

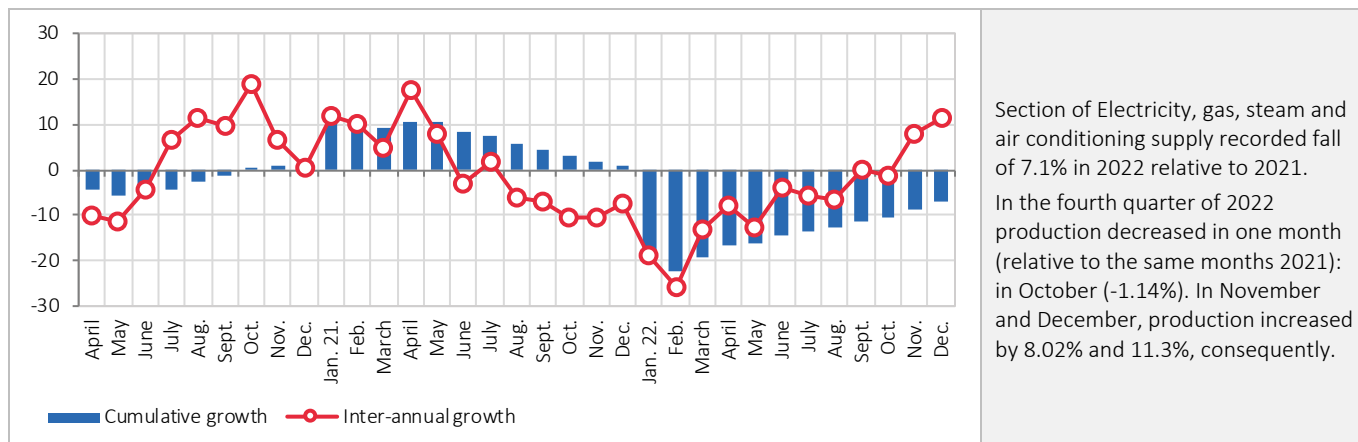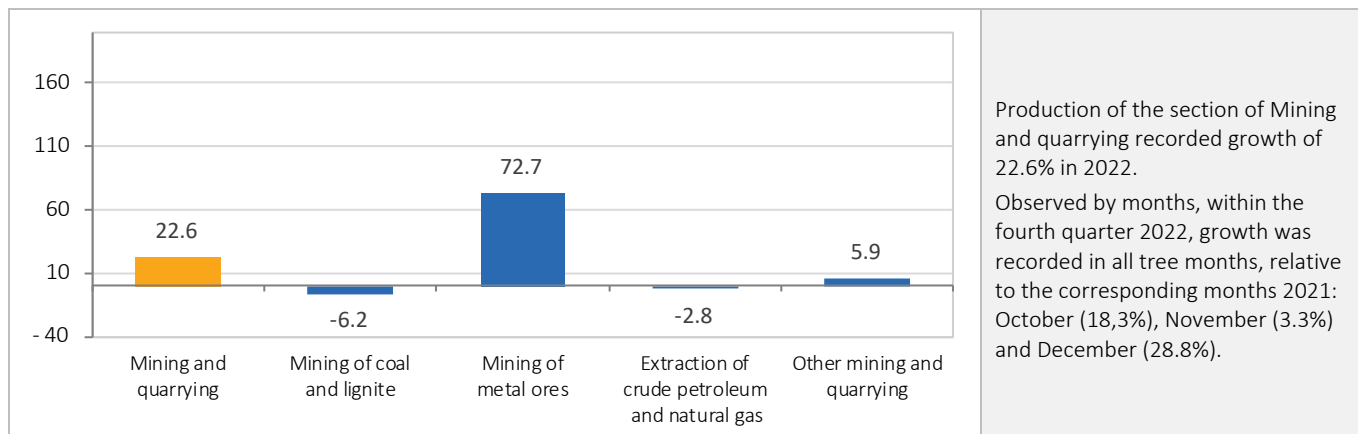| Division	Share (%)	Cumulative growth
Manufacture of food products	15.0	0.1
Manufacture of coke and refined petroleum products	7.1	13.3
Manufacture of rubber and plastic products	6.2	-4.5
Manufacture of fabricated metal products, except machinery and equipment	5.7	1.7
Manufacture of basic pharmaceutical products and pharmaceutical preparations	4.7	3.5
Manufacture of chemicals and chemical products	4.0	-6.3
Manufacture of beverages	4.0	3.4
Manufacture of basic metals	3.5	2.0
Manufacture of electrical equipment	3.4	-17.8
Manufacture of non-metallic mineral products	3.2	11.4
Manufacture of machinery and equipment n.e.c.	3.1	-0.1
Manufacture of paper and paper products	2.8	4.7
Manufacture of motor vehicles, trailers and semi- trailers	2.1	0.5
Manufacture of wearing apparel	1.8	-1.4
Manufacture of furniture	1.6	7.3
Manufacture of tobacco products	1.5	-3.5
Other manufacturing	1.1	-11.3
Printing and reproduction of recorded media	1.1	3.0
Manufacture of wood and products of wood and cork, except furniture	1.1	-10.0
Manufacture of computer, electronic and optical products	0.8	30.0
Manufacture of textiles	0.6	26.5
Repair and installation of machinery and equipment	0.6	-4.6
Manufacture of leather and related products	0.5	2.9
Manufacture of other transport equipment	0.4	2.2

3.3. ELECTRICITY, GAS, STEAM AND AIR CONDITIONING SUPPLY (D) (share of 16.1% in total industrial production index)

Chart 3.5. Cumulative and year-on-year growth rates in energy section (%) (cumulative – period relative to the same period of the previous year; year-on-year – month relative to the same month of the previous year)

Section of Electricity, gas, steam and air conditioning supply recorded fall of 7.1% in 2022 relative to 2021.

In the fourth quarter of 2022 production decreased in one month (relative to the same months 2021): in October (-1.14%). In November and December, production increased by 8.02% and 11.3%, consequently.

3.4. MINING AND QUARRYING (B) (share of 8% in total industrial production index)

Chart 3.6. Cumulative growth rates in Mining and quarrying section (%) (2022 relative to 2021)

Production of the section of Mining and quarrying recorded growth of 22.6% in 2022.

Observed by months, within the fourth quarter 2022, growth was recorded in all tree months, relative to the corresponding months 2021: October (18,3%), November (3.3%) and December (28.8%).

🔊 HOW TO INTERPRET THE SERIES?

Seasonal effects can provoke distortions in time series trend, and in such way camouflaging its "real" nature and significant characteristics necessary for precise and detail analysis of the phenomena. When selecting the indicators that will be used for analysis (original, seasonally adjusted or trend), the nature of the observed series and point of the performed analysis should be taken into account. Three separate components (obtained by series' disaggregation), together with the original series, describe various aspects of a single phenomenon and are used for versatile analytic purposes – depending on the researcher's interest. Seasonally adjusted values are used for comparison of the consecutive periods and for estimation of potential value of a series when calendar effects and season effects would not exist, as is the case with industrial production.

4. CONSTRUCTION

4.1. CONSTRUCTION ACTIVITY

Since the second half of 2017, the indices of the value of construction works done in Serbia have been rising. After a brief stoppage of construction activity in the second quarter and the second half of 2020 caused by the coronavirus epidemic, the indices of the value of the works performed on the territory of the Republic of Serbia in 2021 again recorded growth. In addition to large infrastructure projects, the year 2021 also saw very intensive construction of residential and non-residential buildings throughout the country. The annual growth rate for buildings was 17.0%, and for civil engineering 19.6%.

In 2022, cumulative value of performed construction works on the territory of the Republic of Serbia decreased both regarding buildings (-11.6%) and regarding civil engineering (-11%), while total value of performed construction works in the Republic of Serbia, at constant prices, in 2022 recorded decrease of 11.2% relative to 2021.

4.2. TREND IN 2022

Construction activity on the territory of the Republic of Serbia in 2022 decreased by 11.2% at constant prices compared to 2021.

Observed by type of constructions, the value of performed works on buildings decreased by 11.6%, and on civil engineering (transport infrastructure, pipelines, complex industrial structures, etc.), by 11% at constant prices.

Chart 4.1. Components of time series of Indices of performed construction works on the territory of the Republic of Serbia, at constant process, indices (y – original series, sa – series with excluded seasonal component, t – trend cycle component
average 2015 = 100)
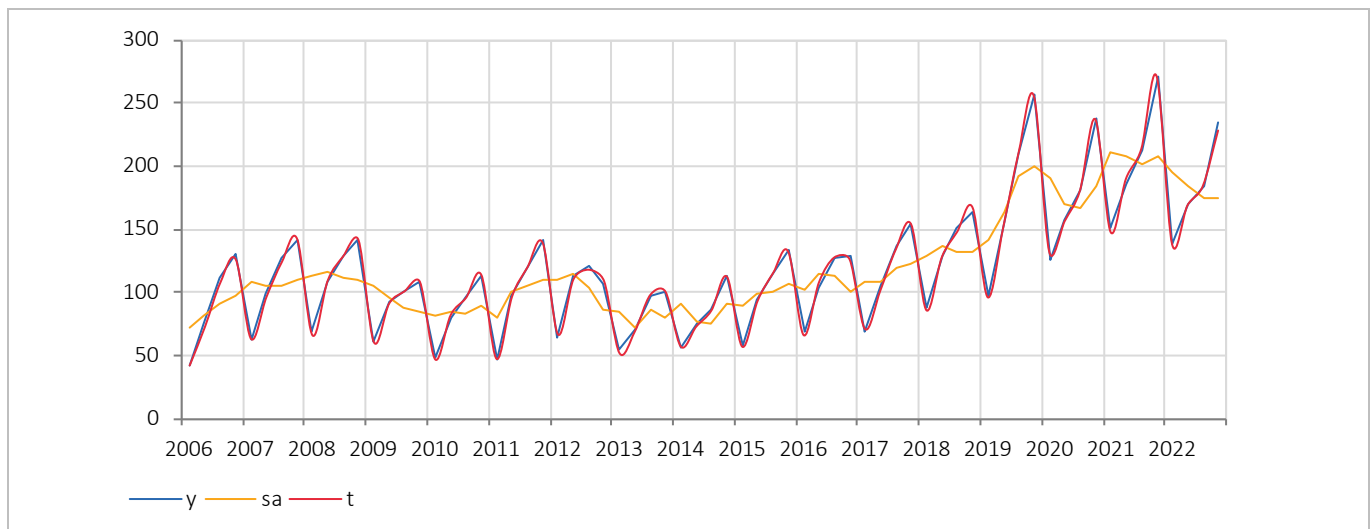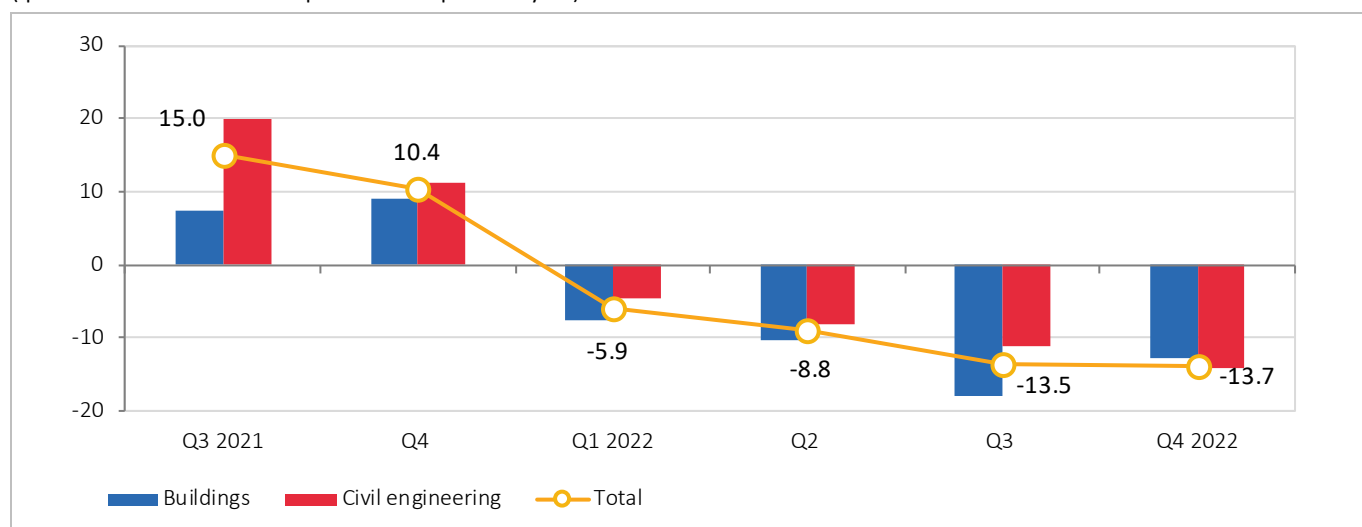
4.3. TREND IN THE FOURTH QUARTER 2022

In the fourth quarter of 2022, construction activity on the territory of the Republic of Serbia decreased by 0.1% at current prices, relative to the same period 2021, while at constant prices, it decreased by 13.7%. The price index of construction materials, which is used as a deflator of value in construction, amounted to 115.7 in the observed period.
The value of construction works, expressed at constant prices, is lower by 14.2% on civil engineering (roads, pipelines, complex industrial structures, etc.), and on buildings by 12.8% compared to the fourth quarter of 2021.

Table 4.1. Value of performed construction works, quarterly indices (%) (comparison with the same period of the previous year)

	2020				2021				2022			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Current prices	133.7	104.4	86.8	95.0	116.7	124.7	128.8	127.1	110.3	108.4	102.7	99.9
Constant prices	127.2	99.4	84.2	91.2	117.4	114.9	115.0	110.4	94.1	91.2	86.5	86.3

Chart 4.2. Value of performed construction works at constant prices, growth rates (%)
(quarter relative to the same quarter of the previous year)

In the fourth quarter of 2022, construction activity decreased in all regions. In **Region of Šumadija and Western Serbia,** compared to the same period last year, the decrease amounts to 0.3%, in constant prices. Observed according to the types of buildings, the activity has increased on the buildings of traffic infrastructure, while regarding value on residential buildings and pipelines, the decrease was recorded.

In **Region of Southern and Eastern Serbia,** construction activity decreased by 19.8% at constant prices. The biggest impact on the decline of overall value of works was the consequence of the completion of works on the construction of the Main Gas Pipeline, as well as decreased intensity of works on transport infrastructure constructions. Works on residential and non-residential constructions increased relative to the fourth quarter 2021.

In **Belgrade region**, construction activity noted the greatest decrease, amounting to 30.9%, in constant prices, compared to the same period last year. The biggest drop in value was recorded on the constructions of transport infrastructure, as the modernization works on Belgrade-Stara Pazova railway were completed. Additionally, noticeable is the decreased value regarding construction of non-residential buildings. In this region, increased were only works on residential buildings.

The decrease in construction activity in the fourth quarter was also recorded in the **Region of Vojvodina** and amounted to 1%, at constant prices. Significant growth was recorded in the construction of transport infrastructure, mostly regarding the

modernization of Novi Sad - Subotica railway, then the construction of Sremska Rača - Kuzmin and Ruma - Šabac express roads. Compared to the fourth quarter of the previous year, this region recorded slower activity on non-residential buildings.

Chart 4.3. Value of performed construction works by regions, at constant prices, growth rates (%)
(quarter relative to the same quarter of the previous year)
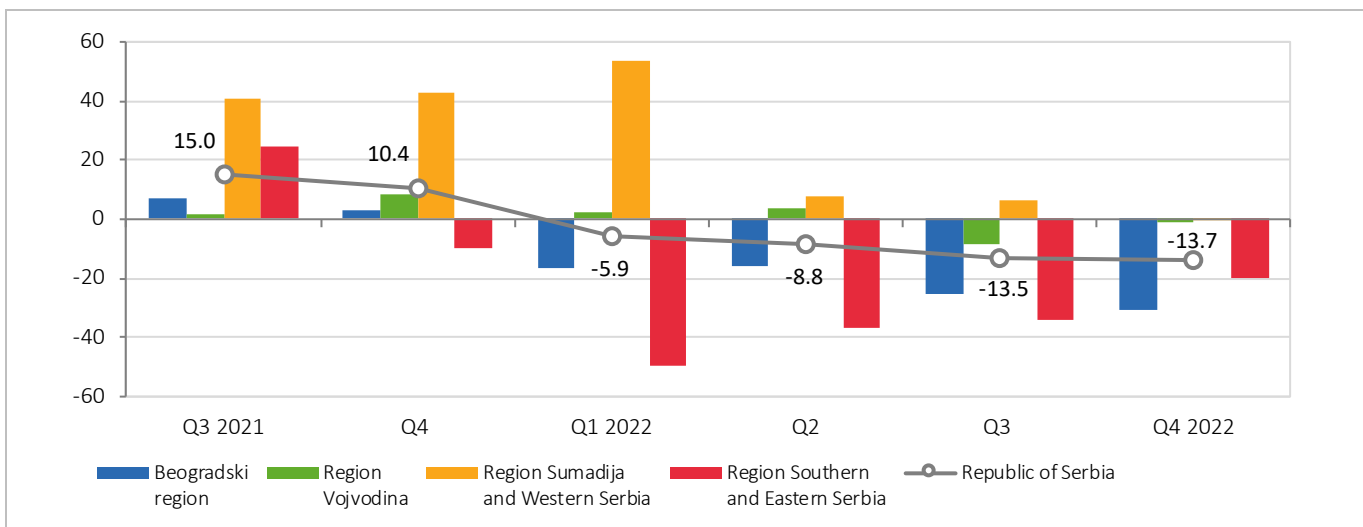
Chart 4.4. Value of performed construction works and hours of work on construction sites, comparative overview, indices
(quarter compared to the same quarter of the previous year)
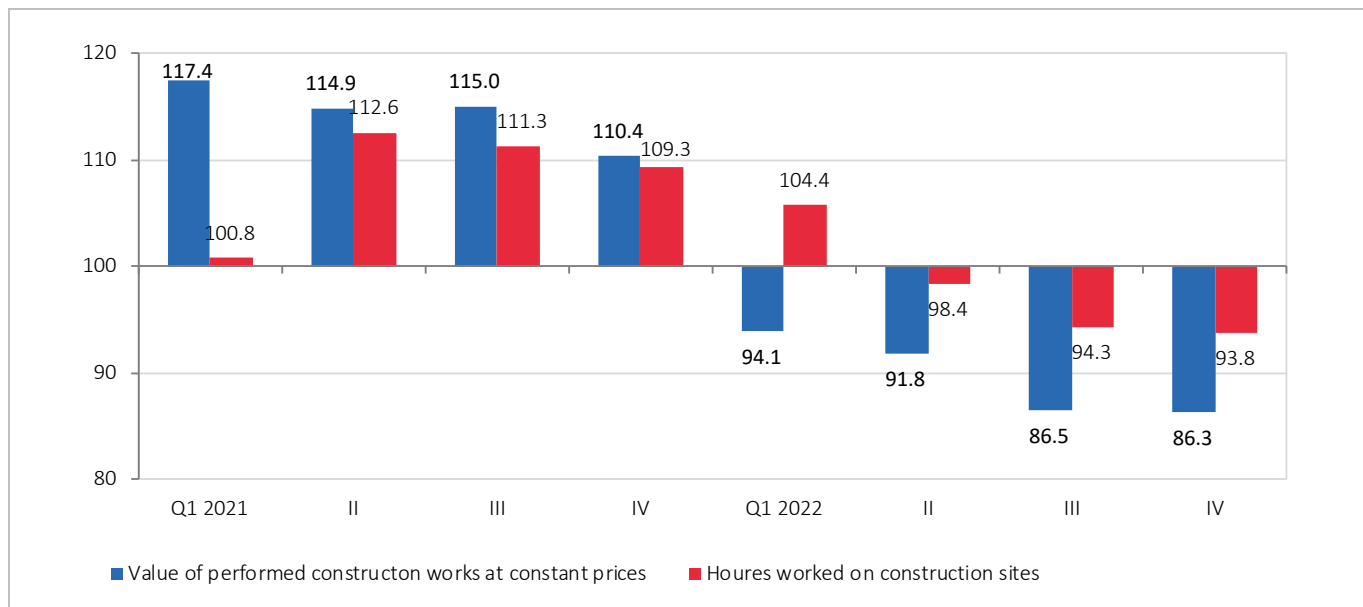
Chart 4.4 shows a comparative overview of the movement of working hours and the value of the works performed on construction sites. As can be seen, from the second quarter of 2021, the indices of working hours are high, which is a direct consequence of the engagement of a large number of workers on the construction of transport infrastructure constructions (highways and railways). In the first quarter of 2022, the value of works was lower, but the number of engaged workers was higher. In the second, third and fourth quarter of 2022, the hours of work and the value of completed works confirm the decline of the construction activity.

4.4. BUILDING PERMITS

In addition to the value of works performed and hours of work on construction sites, the statistics of construction keep a monthly record of the issued **building permits and decisions**, which approve the implementation of construction works in Serbia and which show the future trend of construction activity.

In **the fourth quarter 2022,** 8 332 building permits were issued. The greatest part of permits (6 927) related to construction works on buildings, while the rest (1 405) related to transport infrastructure works, pipelines, complex industrial structures, etc. Total number of issued permits in the fourth quarter 2022 decreased by 17.4% related to the same period of the previous year.

Chart 4.5. Number of issued building permits for buildings and civil engineering
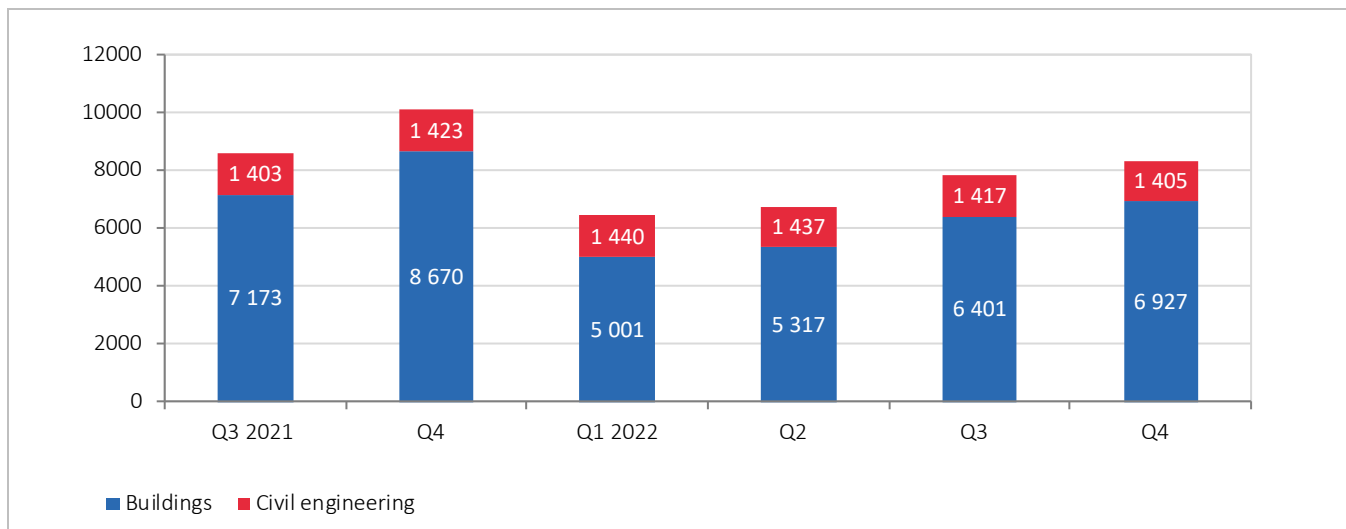
The anticipated value of works, according to the issued permits, in the fourth quarter, amounts to RSD 224 809 million, which represents the decrease of 24.4% compared to the same quarter of the previous year.

Region of Vojvodina and Region of Southern and Eastern Serbia have the largest share (28%) in the anticipated value in the fourth quarter, followed by Region of Šumadija and Western Serbia (24%) and Belgrade Region (20%).

Chart 4.6. Anticipated value of works according to issued permits, by region; share in %[5]

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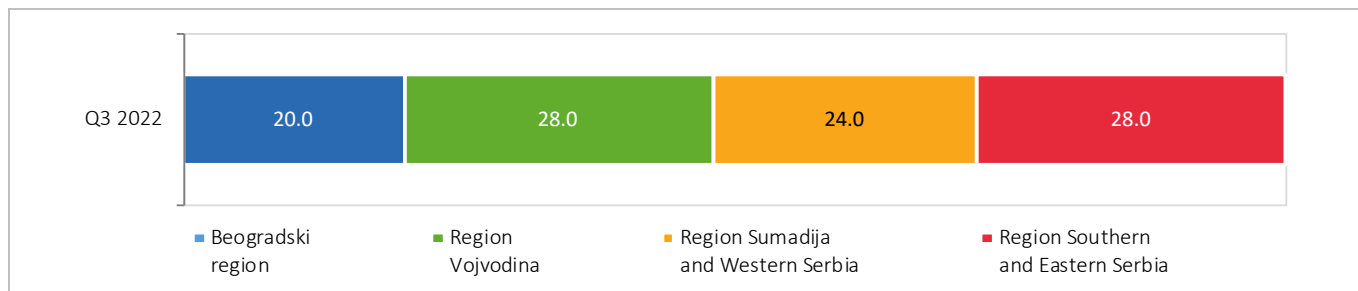
[5] Note: Instead of the previously published data on the percentage share of the number of permits by region, in the future we will show the share of the anticipated value of the works according to the issued permits. Namely, the value of works is a better indicator of the volume of construction activity in the future, while the number of permits does not provide key information about the value of the planned investment, which is the most important for assessing the value of future construction works.

GLOSSARY

Value of performed construction works – the most significant indicator of construction activity trend in Serbia. It presents the value of performed works on construction that the reporting unit performed with workers directly engaged for execution of works.

Value of performed works includes value of work, value of built in material and finished products for incorporating, consumed energy commodities and other expenditures related to performing works on construction. Value of performed works excludes value of subcontractors' works, expenditures of land purchase, design, supervision and VAT.

According to *Classification of Types of Constructions*, applied since 2004, which is completely harmonized with the same Classification of Eurostat, all constructions can be classified into: buildings and civil engineering.

Value on buildings includes value of performed works, both on residential and non-residential buildings.

Civil engineering, besides transport infrastructure (roads, railways, bridges, etc.) involves also works carried out on pipelines, complex industrial structures and other civil engineering n.e.c. (e.g. sport constructions).

5. EXTERNAL TRADE

5.1. EXPORTS OF GOODS (EUR current exchange rate)

Total value of goods export in the Republic of Serbia in 2022 increased by 26.3%, relative to 2021. Total export results were mostly influenced by manufacturing increase of 22.8%, as it presents 84.8% of total export, and increase of 118.4% in the section of mining and quarrying, presenting 6.5% of total export in 2022.

Chart 5.1. Components of export's time series, indices (Y – original series, sa – series with excluded seasonal component, t – trend cycle component, average 2021 = 100)
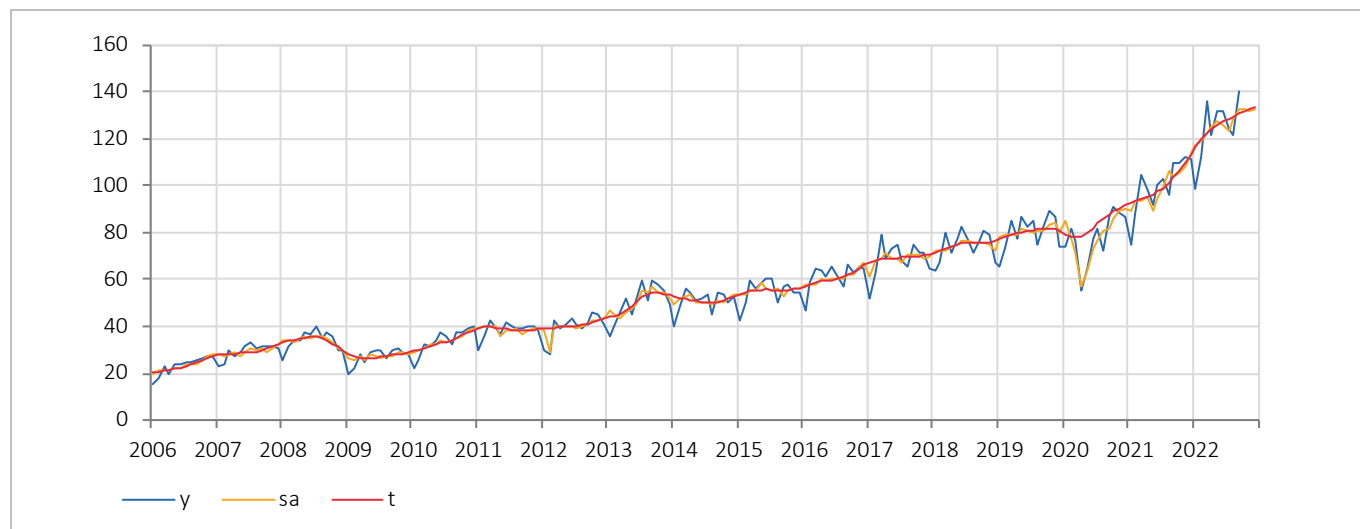
Table 5.1. Export of goods by CA (2010) sections, quarterly indices (comparison with the same period of the previous year)

	2020	2021				2022				2023
	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1[1]
Export – total	106.8	114.2	145.6	127.2	123.4	128.5	132.7	125.0	119.5	**116.0**
Manufacturing	102.0	111.5	145.4	122.4	122.4	125.9	126.3	122.3	117.5	…
Agriculture, forestry and fishing	141.7	132.7	97.1	119.2	73.5	76.3	117.6	98.0	95.6	…
Mining and quarrying	574.9	202.8	916.1	1369.6	366.8	1129.0	330.3	160.1	122.2	…

[1] Prognosis (obtained on the basis of a time series analysis model).

Chart 5.2. Cumulative growth rates of export by CA (2010) sections and sections' share in export (%)
(2022 relative to 2021)
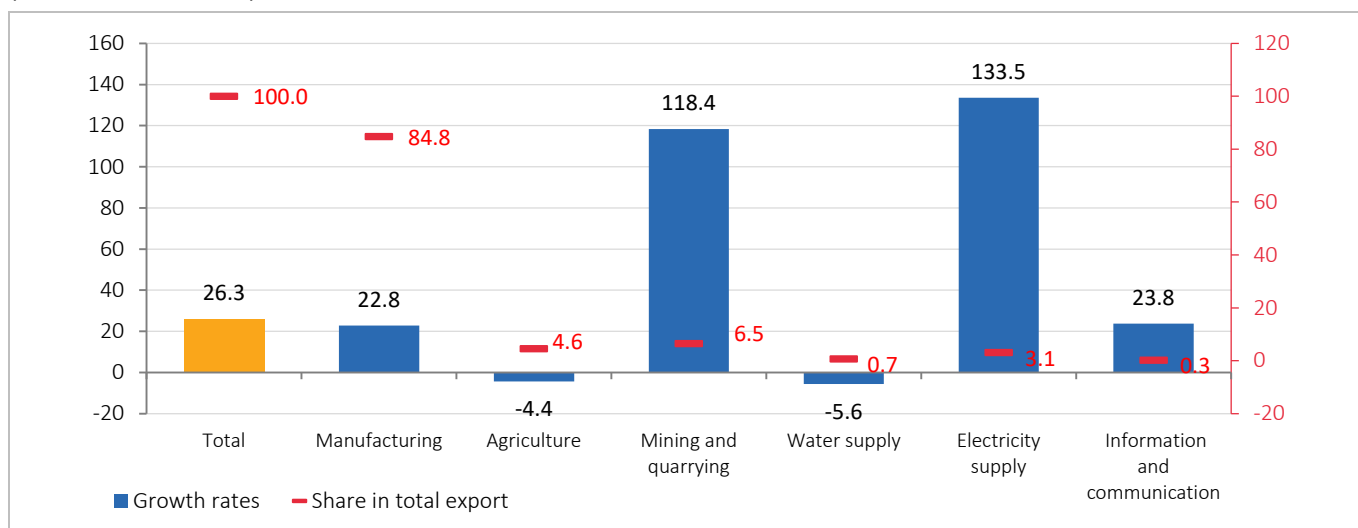
Observed by economic purpose, total export results in 2022 were mostly influenced by increased exports of intermediate products (share of 43.8% and increase of 30.5%).

Chart 5.3. Cumulative growth rates of exports according to the economic purpose of the European Union (%)
(2022 relative to 2021)
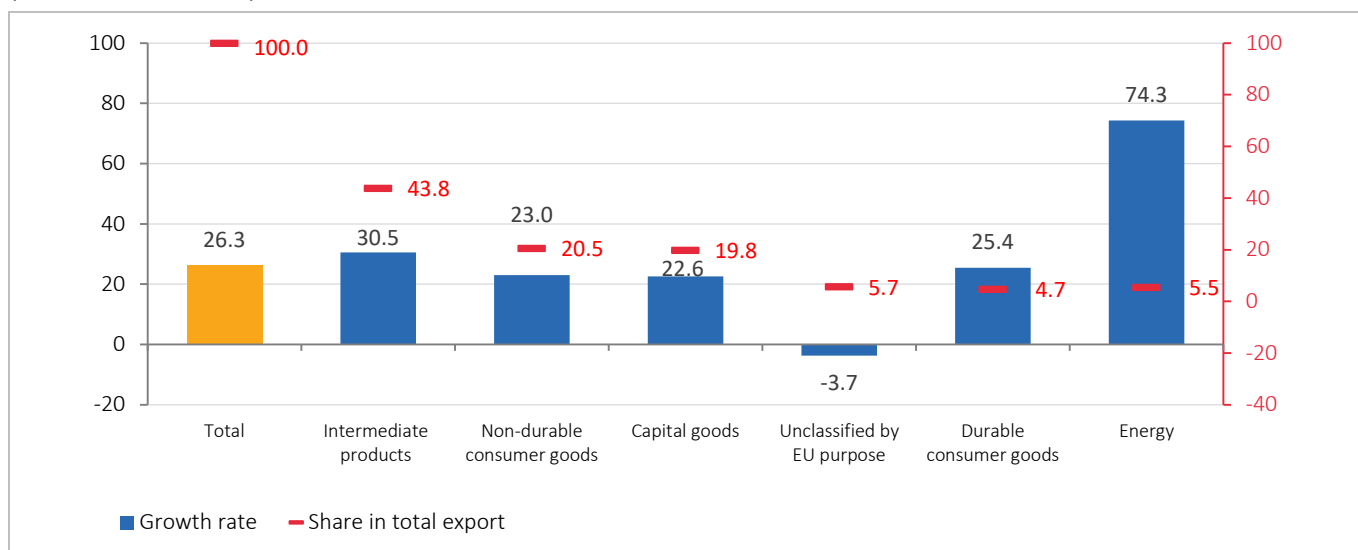
5.2. IMPORTS OF GOODS (EUR current exchange rate)

Total value of goods import in Serbia in 2022 increased by 34.8% relative to the same period 2021.

Import results were mostly influenced by the section of manufacturing (increase of 23.9%), as it presents 70.8% of total imports, and 109.1% increase in the section of mining and quarrying (11.3% of total imports) in 2022.

Chart 5.4. Components of import's time series, indices (y – original series, sa – series with excluded seasonal component, t – trend cycle component, average 2021 = 100)
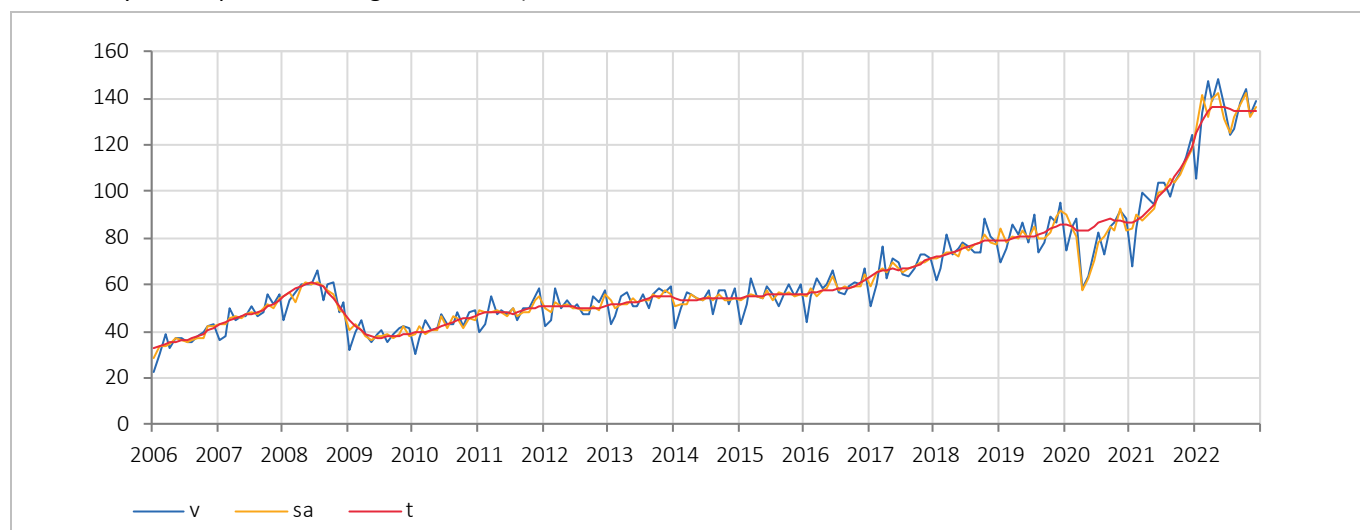

Table 5.2. Import of goods by CA (2010) sections, quarterly indices (comparison with the same period of the previous year)

|	2020	2021				2022				2023
	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1[1]
Import – total	98.5	100.5	149.4	125.9	127.5	148.5	143.8	127.2	119.7	**100.0**
Manufacturing	102.4	104.8	148.9	120.6	123.3	130.6	134.2	119.6	112.5	…
Agriculture, forestry and fishing	105.1	102.3	101.0	113.6	143.8	127.6	123.5	134.5	127.0	…
Mining and quarrying	52.9	58.2	206.4	181.1	158.2	373.7	210.8	140.0	186.3	…

[1] Prognosis (obtained on the basis of a time series analysis model).

Chart 5.5. Cumulative growth rates of import by CA (2010) sections and sections' share in import (%)
(2022 relative to 2021)
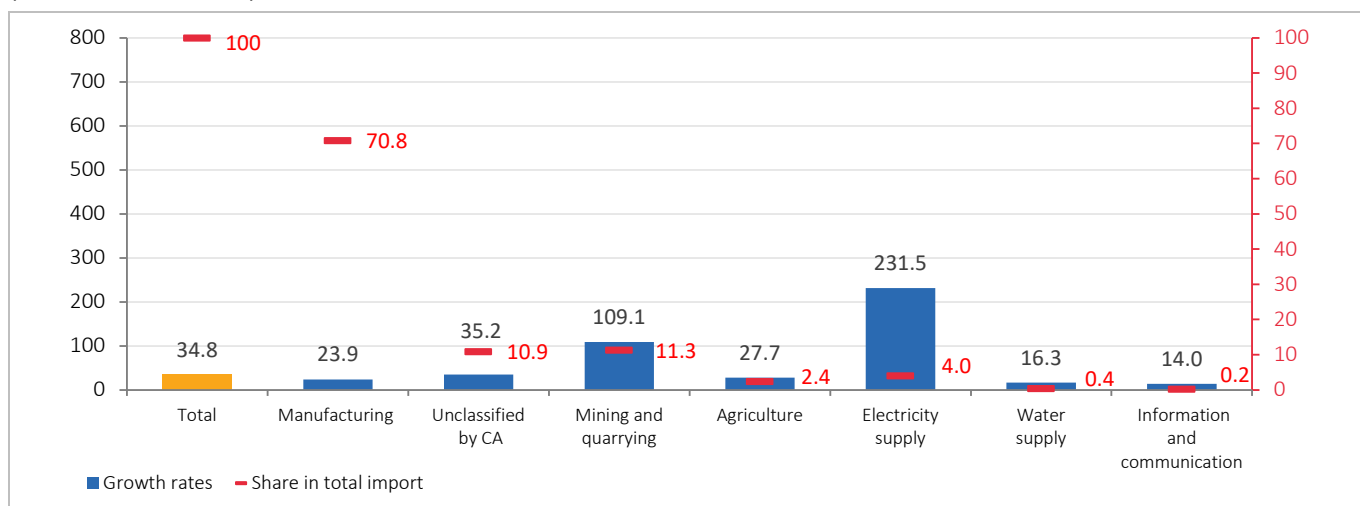
Observed by MIGs, the greatest influence on total import in 2022 related to intermediate products (share of 34.7%, increase of 24.7%), energy (share of 17.5% and increase of 134.1%) and capital goods (share of 17.1%, increase of 15.7%).

Chart 5.6. Cumulative growth rates of imports according to the economic purpose of the European Union (%)
(2022 relative to 2021)
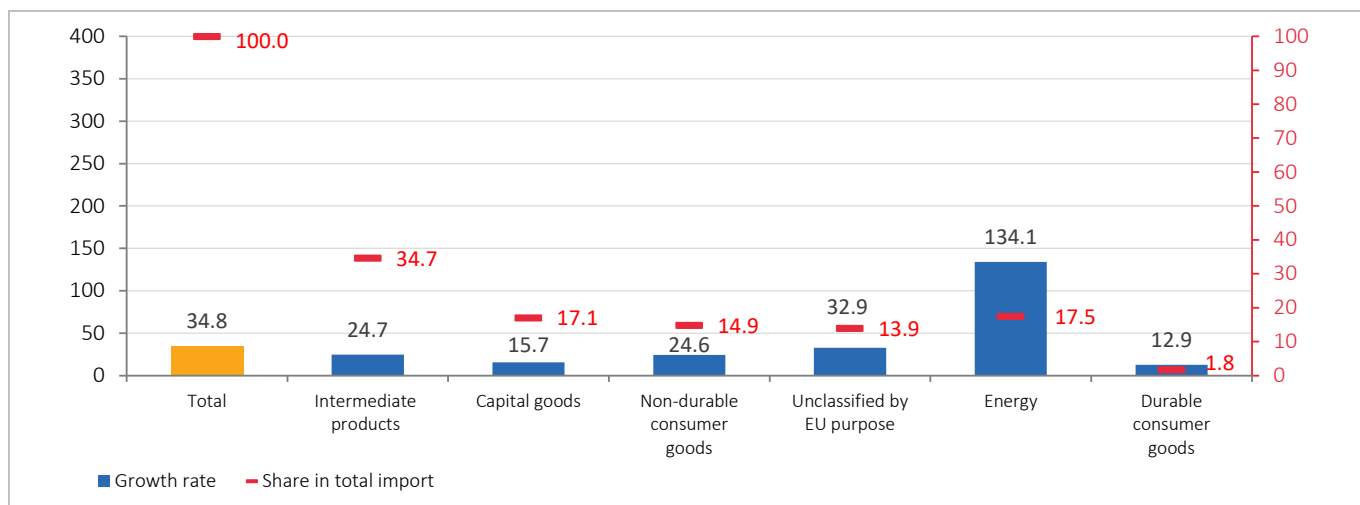
Chart 5.7 shows the 20 largest external trade partners of the Republic of Serbia, which account for 78.3% of the total external trade exchange. The Republic of Serbia achieved a positive external trade balance in 2022, i.e. a surplus, with eight European countries (a total of about EUR 3.0 billion), of which Montenegro is on the first place (a surplus of EUR 940.0 million). In this period, the Republic of Serbia exported the most food products (18.1% of total export to Montenegro), electricity, gas and steam (13.2% 0f total export to MNE) and chemicals and chemical products (5.7% of total export to MNE).

On the other hand, negative external trade balance, i.e. deficit, was recorded in 12 countries and amounts to a total of EUR -8.5 billion. The largest external trade deficit in 2022 was recorded in trade with China (EUR -3.6 billion) and the Russian Federation (balance EUR -1.8 billion). Observed by CA product activities (2010), product imports from China mostly consisted of imports of computers, electronic and optical products (16.6% of total imports from China), unclassified products (16.0% of total imports from China), and other n.e.c. machinery and equipment (14.9% of total imports from China). With the Russian

Federation, the negative external trade balance is the result of the high value of crude oil and natural gas imports (66.8% of total imports from Russia), followed by Germany (deficit of EUR -667.6 million), Hungary (EUR -647.0 million) and Italy (EUR -594.3 million).

Chart 5.7. External trade balance of the Republic of Serbia by countries, 2022 (EUR mill.)
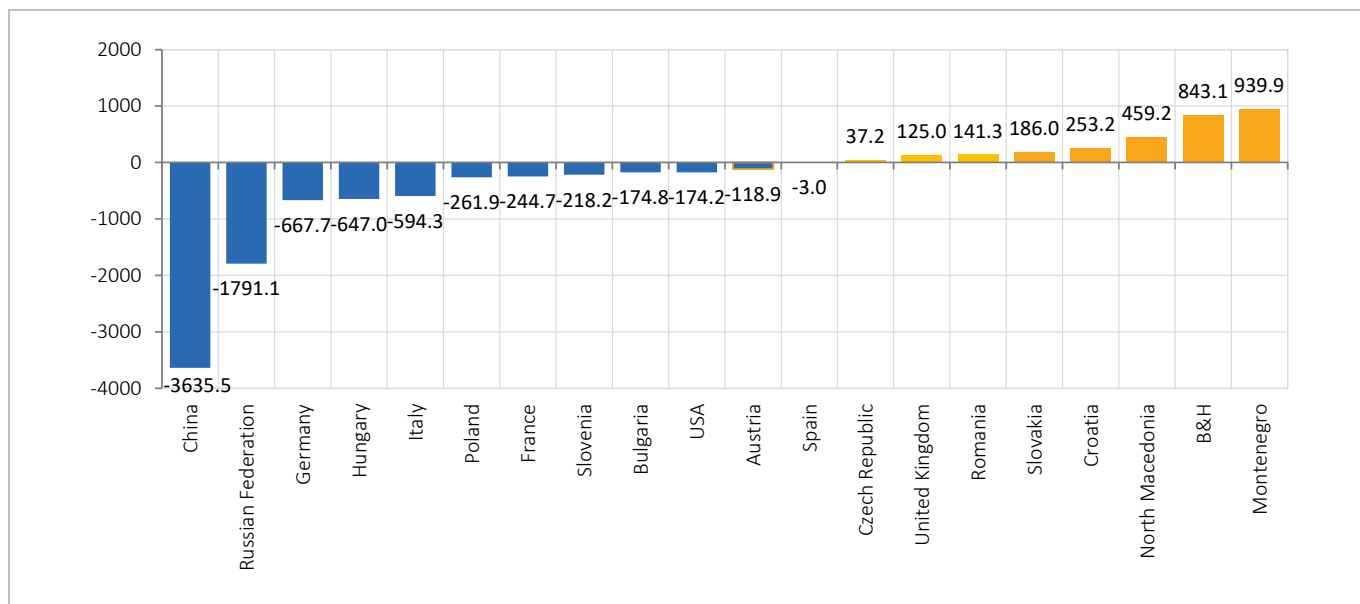
5.3. THE MOST SIGNIFICANT EXTERNAL TRADE PARTNERS

Table 5.3. The major external trade partners

Export	EUR mill.	Import	EUR mill.
Germany	3785,8	China	4736,2
Bosnia and Herzegovina	2058,8	Germany	4453,5
Italy	1992,1	Russian Federation	2930,4
Hungary	1501,4	Italy	2586,4
Romania	1213,2	Hungary	2148,4

The most significant external trade partners in 2022 were the countries with which Serbia has signed agreements on free trade. The EU member countries **account for 58.7% of total exte**rnal trade, followed by Asia – Pacific Economic Cooperation, APEC, with the share of 19.6%. The major external trade partners are separately presented in Table 5.3.

5.4. MANUFACTURING (C) (share of 84.8% in total export and 70.8% in total import)

Export of manufacturing recorded growth of 22.8% in 2022, relative to 2021. Out of 23 divisions, cumulative growth was noted in 22 divisions, mutually presenting 83.7% of total manufacturing export.

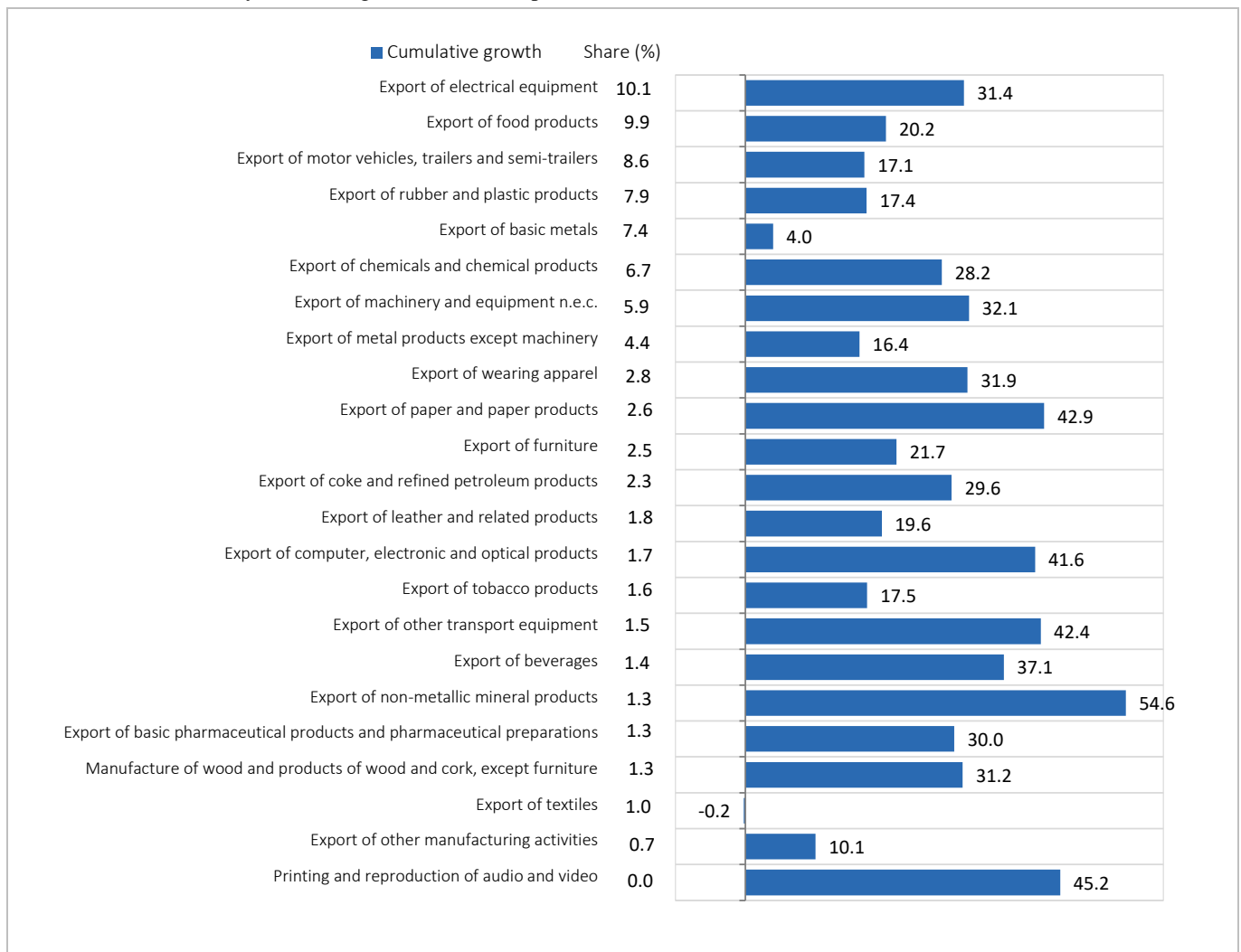The export of **electrical equipment,** the division with the greatest export value (EUR 2774.8 million) recorded a cumulative growth of 31.4% in total export, with share of 10.1% (9.7% in the same period in 2021). The export of **food products** noted a cumulative growth of 20.2%, and export value of EUR 2731.3 million, with a share in total exports of 9.9% (10.4% in the same period 2021). Export of **motor vehicles and trailers**, division with an export value of EUR 2386.1 million and a share of 8.6%, recorded a cumulative growth of 17.1%. The export of **rubber and plastic products**, with a participation in total exports of 7.9%, records a cumulative growth of 17.4% and an export value of EUR 2186.6 million. The export of **basic metals**, positioned on the fifth place, with the export value of EUR 2051.4 million and a share in total exports of 7.4%, recorded a cumulative growth of 4.0%.

Chart 5.8. Export of manufacturing by divisions, cumulative growth (%)
(2022 relative to 2021, by descending share in total export)

Division	Share (%)	Cumulative growth
Export of electrical equipment	10.1	31.4
Export of food products	9.9	20.2
Export of motor vehicles, trailers and semi-trailers	8.6	17.1
Export of rubber and plastic products	7.9	17.4
Export of basic metals	7.4	4.0
Export of chemicals and chemical products	6.7	28.2
Export of machinery and equipment n.e.c.	5.9	32.1
Export of metal products except machinery	4.4	16.4
Export of wearing apparel	2.8	31.9
Export of paper and paper products	2.6	42.9
Export of furniture	2.5	21.7
Export of coke and refined petroleum products	2.3	29.6
Export of leather and related products	1.8	19.6
Export of computer, electronic and optical products	1.7	41.6
Export of tobacco products	1.6	17.5
Export of other transport equipment	1.5	42.4
Export of beverages	1.4	37.1
Export of non-metallic mineral products	1.3	54.6
Export of basic pharmaceutical products and pharmaceutical preparations	1.3	30.0
Manufacture of wood and products of wood and cork, except furniture	1.3	31.2
Export of textiles	1.0	-0.2
Export of other manufacturing activities	0.7	10.1
Printing and reproduction of audio and video	0.0	45.2

Import of manufacturing in 2022, compared to 2021, achieved a growth of 23.9%, whereby growth was realized in 22 out of 23 divisions. This result was mostly influenced by the growth in import of **chemicals and chemical products** of 35.5 (with the largest share in total imports, which is 9.6%), import of **machinery and equipment n.e.c.** (growth of 16.1% and share of 7.2%), import of **basic metals** (growth of 27.9% and a share of 7.0%)), and import of **electrical equipment**, which achieved a growth of 12.7% and share in total imports of 5.7%.

Chart 5.9. Import of manufacturing by divisions, cumulative growth (%)
(2022 relative to 2021, by descending share in total import)

Division	Share (%)	Cumulative growth
Import of chemicals and chemical products	9.6	35.5
Import of machinery and equipment n.e.c.	7.2	16.1
Import of basic metals	7.0	27.9
Import of electrical equipment	5.7	12.7
Import of food products	5.0	33.1
Import of computer, electronic and optical products	4.4	16.0
Import of basic pharmaceutical products and pharmaceutical...	4.0	19.5
Import of rubber and plastic products	3.9	21.5
Import of motor vehicles, trailers and semi-trailers	3.7	6.9
Import of metal products except machinery	3.6	16.7
Import of coke and refined petroleum products	3.1	48.2
Import of paper and paper products	2.5	35.1
Import of textiles	1.8	20.6
Import of non-metallic mineral products	1.7	25.9
Import of wearing apparel	1.5	23.5
Import of other transport equipment	1.4	98.1
Import of other manufacturing activities	1.1	-0.7
Import of leather and related products	1.0	19.0
Import of wood and products of wood and cork, except furniture	1.0	23.5
Import of furniture	0.6	25.1
Import of beverages	0.5	37.8
Import of tobacco products	0.5	40.0
Printing and reproduction of audio and video	0.0	9.2

5.5. AGRICULTURE, FORESTRY AND FISHING (A)
   ## (share of 4.6% in total export and 2.4% in total import)

Export in this section in 2022 realized decrease of 4.4%, as well as decreased share from 6.1% (in 2021) to 4.6% as recorded in 2022. The cumulative drop of 9.1% in exports of cereals (except rice), leguminous crops and oil seeds, a group that makes up 64.9% of the entire section's exports in the observed period, contributed the most to this result. Export of pome and stone fruits- the next group by share (12.6%) decreased by 0.4% in 2022 relative to 2021. On the other hand, increased export (10%) in this section was noted for vegetables, root and carotid plants (share of 4.3%) in the export of this section.

Import recorded growth of 27.7% in 2022 relative to 2021 and increased share of 2.4% in total import. The group with the largest participation in the section (21.0%) - cereals (except rice), leguminous and oil seeds achieved growth of 64.0% in 2022. The next group, by share (15.2%) related to vegetables, root and carotid plants - recorded a growth of 78.4% and growing of beverage crops, which noted growth in the import of this section of 64.0% and share of 10.9%.

5.6. MINING AND QUARRYING (B) (share of 6.5% in total export and 11.3% in total import)

The section of Mining and quarrying records the greatest increase in total export, from 3.7% in 2021 to 6.5% in 2022. The realized value of exports in 2022 is EUR 1.8 billion, which is by 118.4% more than exports in 2021. This result is a consequence of the growth in the export of metal ores, a group that accounts for 98.2% of the exports of the entire section, and which achieved a growth of 119.8% compared to 2021.

Import of this section in 2022 amounts to EUR 4,4 billion, presenting the share of 11.3% in total import (7.3% in 2021). Import increase was 109.1% relative to 2021.

The growth in import was largely caused by a 143.2% increase in the import of crude oil and natural gas, a group that accounts for 86.3% of the entire sector's imports.

GLOSSARY

Unclassified goods by CA (2010), involves storage goods, goods in free zone, as well as goods for which customs tariff is not entered/ filled.

6. DOMESTIC TRADE

6.1. RETAIL TRADE TURNOVER (Division 47 of the Classification of Activities)

Retail trade turnover in 2022, relative to 2021, increased by 22.0% at current and by 6.1% at constant prices.

Table 6.1. Retail trade turnover, indices (comparison with the same period of the previous year)

|	2020				2021				2022				2023
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1[1]
Current prices	111.4	97.9	105.8	102.5	104.8	124.2	114.3	118.9	124.0	121.4	123.0	120.1	**115.0**
Constant prices[2]	110.0	99.8	105.9	103.0	104.7	118.6	107.7	108.4	111.0	106.2	105.0	102.2	**100.0**

[1] Prognosis (obtained on the basis of time series model analysis).
[2] Indices are recalculated through monthly indices at constant prices.

The trend of growth in retail trade, which has been present for the last ten years, continues. Turnover growth rates at current prices are significantly higher than at constant prices, which is a consequence of accelerated inflation.

Chart 6.1. Components of time series of retail trade turnover at constant prices, indices
(y – original series, sa – series with excluded seasonal component, t – trend cycle component, average 2021 = 100)
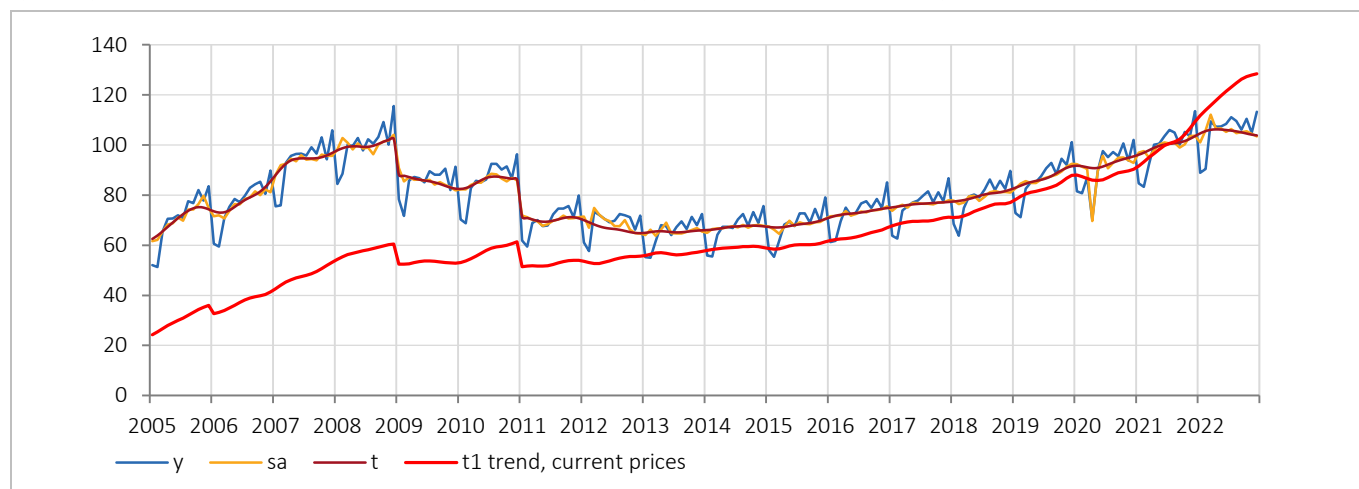
Observed according to the basic aggregates of CA (2010), **in 2022**, compared to 2021, the highest turnover growth was achieved in trade of motor fuels (35.5% at current and 12.7% at constant prices), then in trade of Food, beverages and tobacco and amounted to 19.0% at current and 2.1% at constant prices. The lowest growth in trade was recorded in trade of non-food products (18.4% at current and 6.8% at constant prices).

Observed by the structure of trade divisions and commodity groups, **in the fourth quarter 2022,** the most notable were food products and alcoholic beverages (35.2%), followed by motor vehicles and motorcycles fuels (19.1%) and other non-food products (13.0%).

Chart 6.2. Structure of retail trade turnover by trade divisions and commodity groups (%)

Legend:
- Food products and alcoholic beverages
- Motor vehicles and motorcycles fuels
- Other non-food products
- Household goods
- Pharmaceutical, beauty and personal hygiene products
- Tobacco
- ICT equipment
- Recreation and culture goods
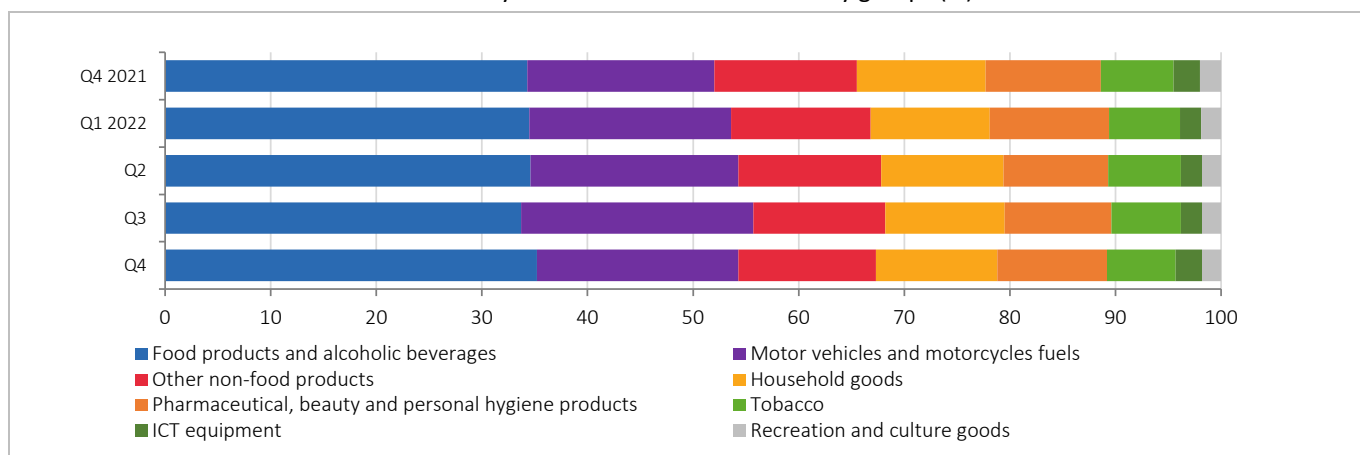
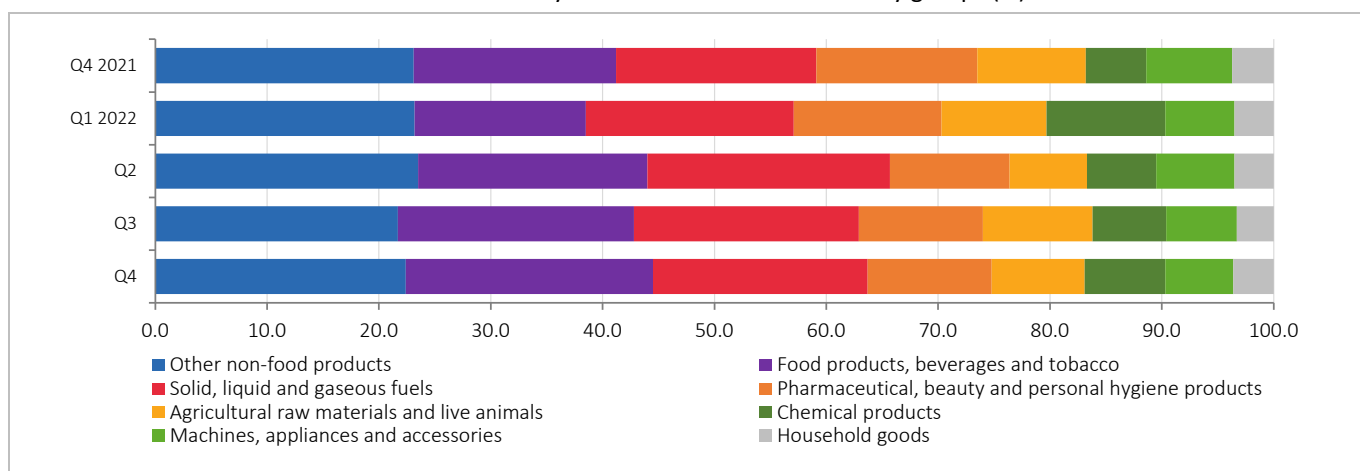## 6.2. WHOLESALE TRADE TURNOVER (Division 46 of the Classification of Activities)

Wholesale trade turnover **in the fourth quarter 2022**, compared with the same period 2021 noted increase of 11.4% at current prices. **In 2022**, wholesale trade turnover increased by 16.9% relative to the same period last year.

Table 6.2. Wholesale trade turnover, indices (comparison with the same period of the previous year)

	2020				2021				2022			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Current prices	101.9	86.7	96.1	96.2	110.9	133.5	123.6	126.5	120.1	122.6	115.2	11.4

Observed by trade divisions and commodity groups, in wholesale trade turnover, **in the fourth quarter of 2022,** the most notable were other non - food products (22.4%), followed by food products, beverages and tobacco (22.1%), solid, liquid, and gaseous fuels, (19.2%).

Chart 6.3. Structure of wholesale trade turnover by trade divisions and commodity groups (%)

Legend:
- Other non-food products
- Food products, beverages and tobacco
- Solid, liquid and gaseous fuels
- Pharmaceutical, beauty and personal hygiene products
- Agricultural raw materials and live animals
- Chemical products
- Machines, appliances and accessories
- Household goods

6.3. TURNOVER IN WHOLESALE AND RETAIL TRADE AND MOTOR VEHICLES REPAIR
### (Division 45 of the Classification of Activities)

Turnover of goods in wholesale and retail trade and repair of motor vehicles **in the fourth quarter 2022**, relative to the same period 2021, recorded increase of 21.3% at current prices. **In 2022**, this division recorded increase of 22.2% relative to 2021.

Table 6.3. Turnover in wholesale and retail trade and motor vehicles repair, indices (comparison with the same period of the previous year)

	2020				2021				2022			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Current prices	95.9	77.6	104.1	100.5	111.1	138.4	113.6	116.1	124.5	124.8	118.8	21.3

Observed by trade divisions and commodity groups, **in the fourth quarter 2022**, similarly as in the previous quarters, in the structure of wholesale and retail trade turnover and motor vehicles repair, the most notable were motor vehicles (49.8%), and motor vehicles parts and accessories (40.5%).

Chart 6.4. Structure of wholesale and retail trade turnover and motor vehicles repair by trade divisions and commodity groups (%)
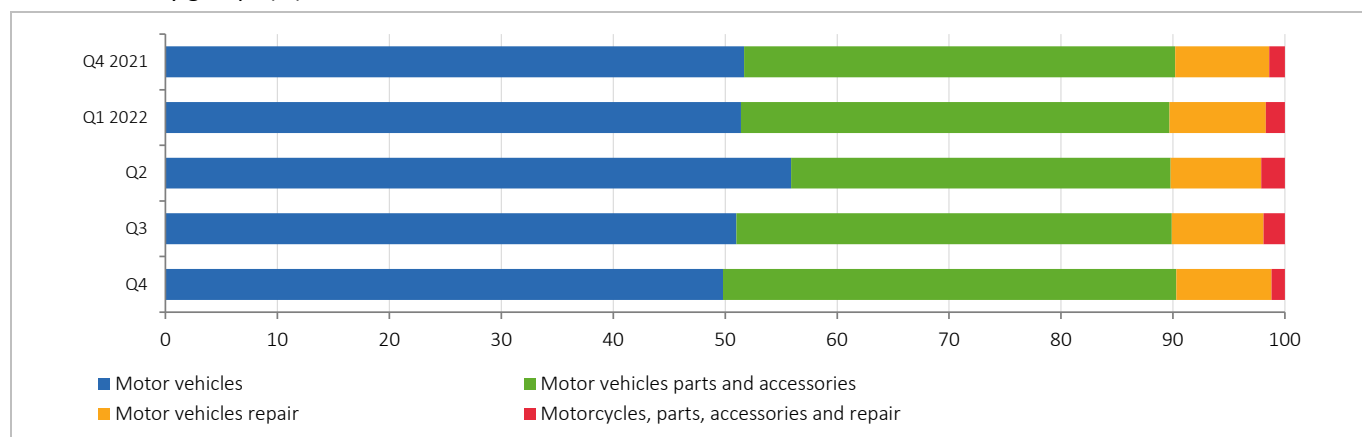
🔊 NOTE:

Goods turnover indices of retail trade at constant prices are obtained by deflating the indices at current prices with appropriate consumer price indices, which exclude water (from public utilities systems), electricity and motor vehicles, motorcycles, and parts thereof.

7. PRICES

In 2022, consumer prices saw a year-on-year growth of 11.9%. Observed on product level, the largest influence on the growth of consumer prices was that of the growth of the prices of meat, car fuel, dairy products, bread and cereals, vegetables and solid fuels (firewood).

Table 7.1. Consumer prices, year-on-year inflation rate (%) (quarter to the same quarter of the previous year)

	2021				2022			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Consumer prices	1.4	3.2	4.4	7.3	8.7	10.6	13.3	15.1

Chart 7.1. Inflation rate measured with consumer price indices (%), (monthly – month to the previous month; annual – month to the same month of the previous year)
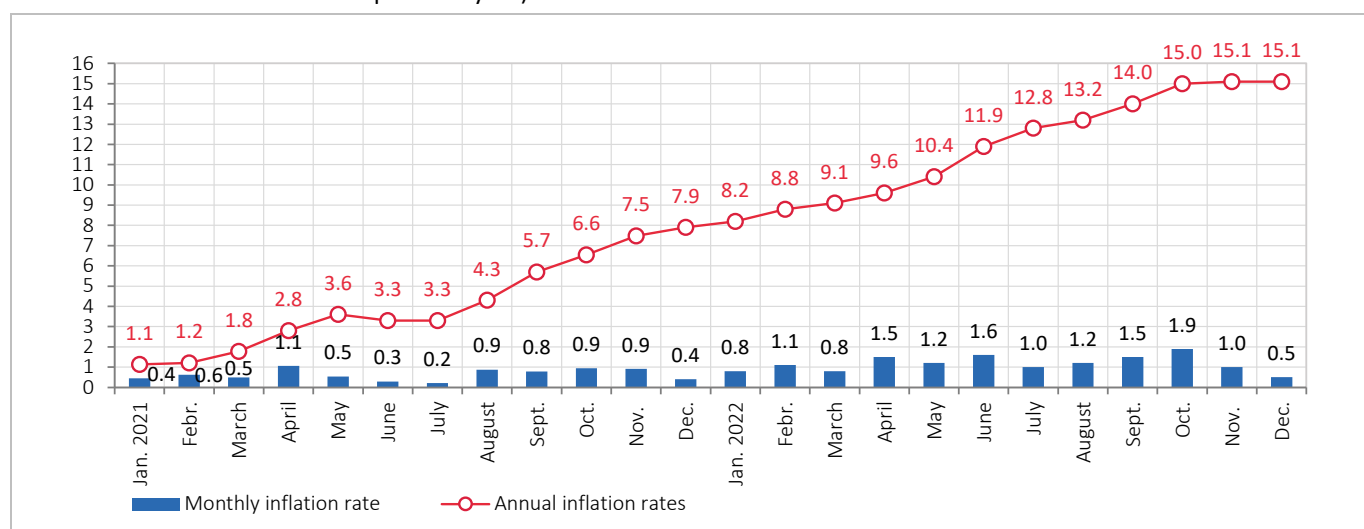
Char 7.2. Structure of the average annual consumer price growth rate (of 11.9%) by purpose and main groups of products, 2022 (total=100) (%)
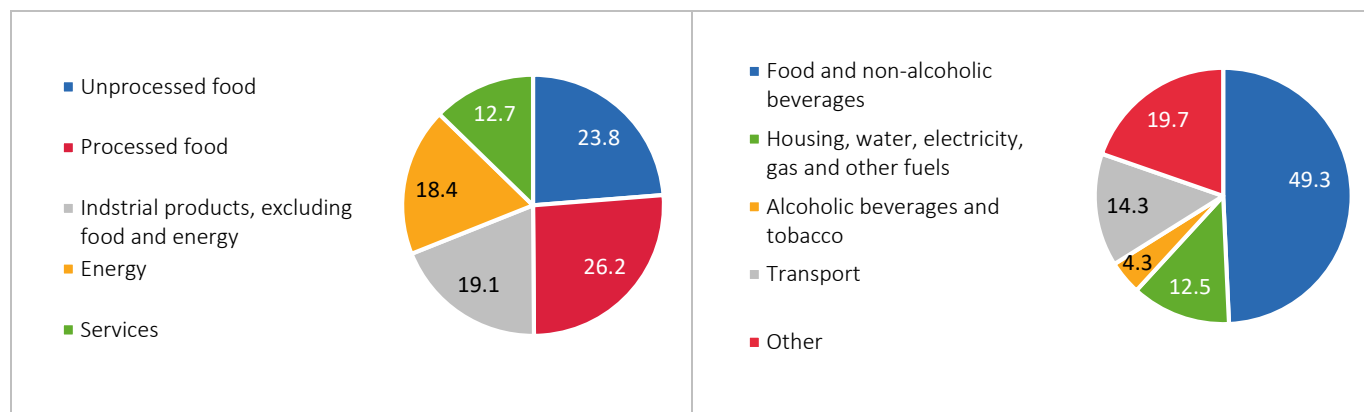
7.1. MEAT, DAIRY PRODUCTS, BREAD, CEREALS AND VEGETABLES
(share in the average consumer price growth rate in 2022 – 35.8%)

Chart 7.3. Movement of the prices of food and alcoholic beverages and agricultural products; seasonally adjusted and standardised quarterly data, deviations from the average for the period (%), Q1 2007 – Q4 2022

Legend:
— Food and non-alcoholic beverages
— Producers' prices of agriculture and fishing
— Long-term average for the period
— Fuel price in Serbia

In 2022 the largest influence on the growth of consumer prices was that of the annual growth of meat price of 20.3%. The gr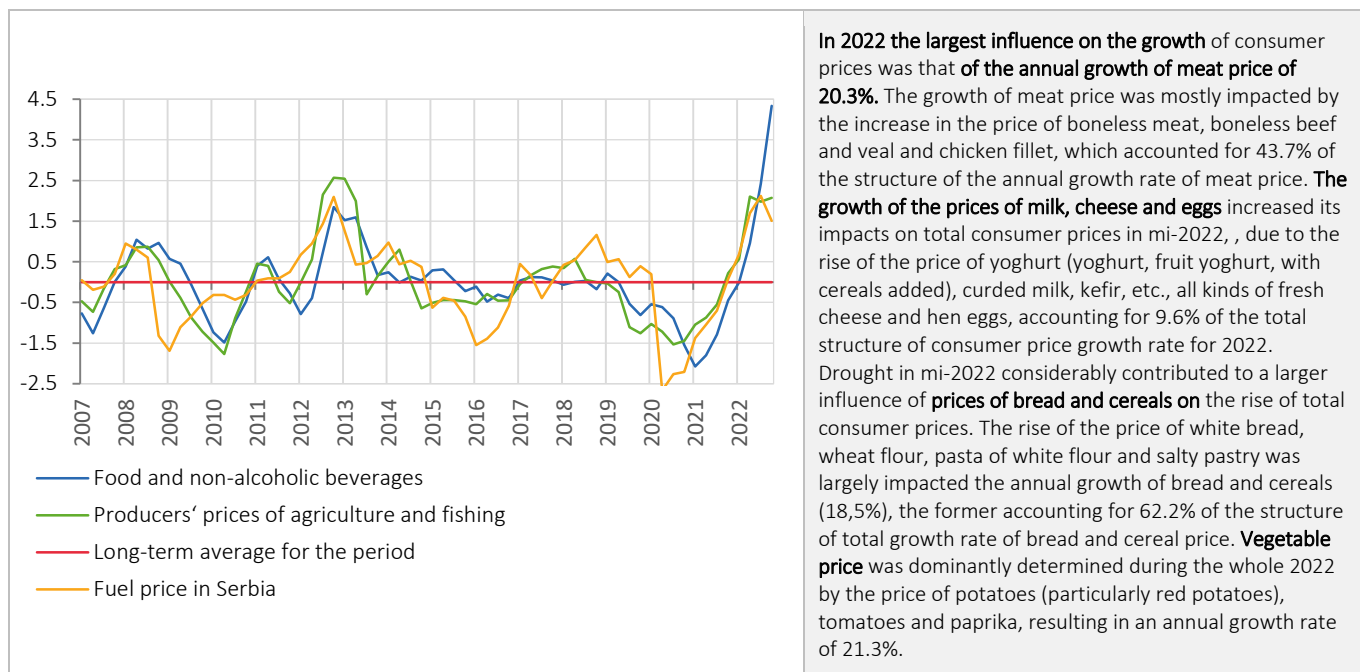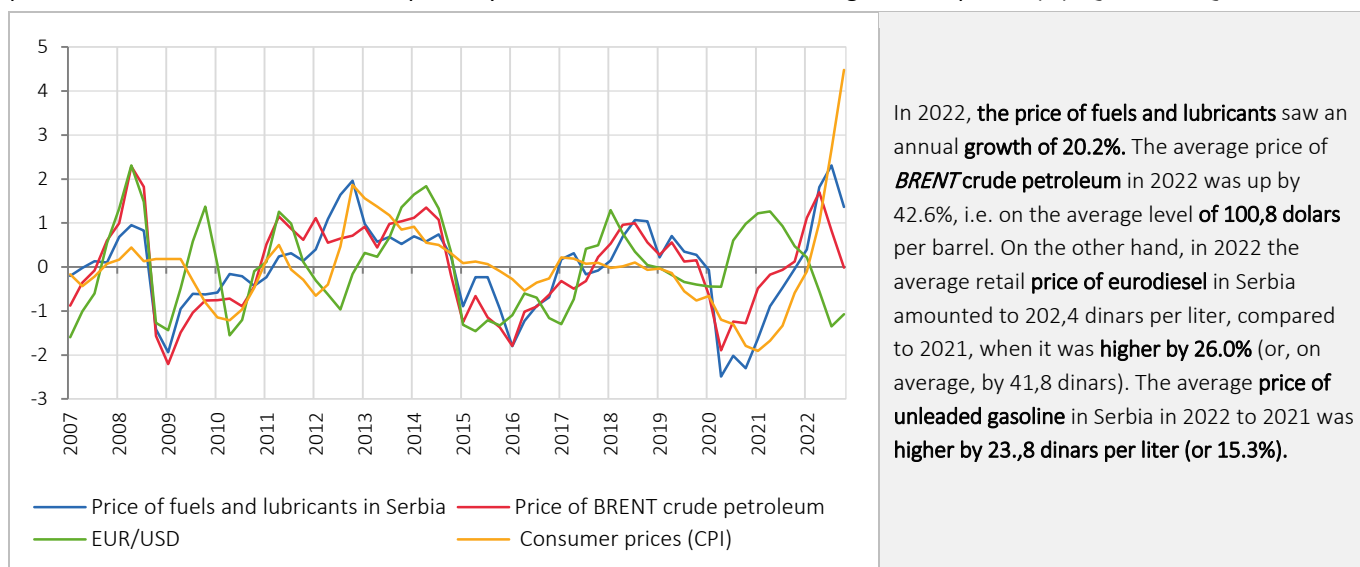owth of meat price was mostly impacted by the increase in the price of boneless meat, boneless beef and veal and chicken fillet, which accounted for 43.7% of the structure of the annual growth rate of meat price. The growth of the prices of milk, cheese and eggs increased its impacts on total consumer prices in mi-2022, , due to the rise of the price of yoghurt (yoghurt, fruit yoghurt, with cereals added), curded milk, kefir, etc., all kinds of fresh cheese and hen eggs, accounting for 9.6% of the total structure of consumer price growth rate for 2022. Drought in mi-2022 considerably contributed to a larger influence of prices of bread and cereals on the rise of total consumer prices. The rise of the price of white bread, wheat flour, pasta of white flour and salty pastry was largely impacted the annual growth of bread and cereals (18,5%), the former accounting for 62.2% of the structure of total growth rate of bread and cereal price. Vegetable price was dominantly determined during the whole 2022 by the price of potatoes (particularly red potatoes), tomatoes and paprika, resulting in an annual growth rate of 21.3%.

7.2. FUELS AND LUBRICANTS FOR PASSENGER CARS
(share in the average consumer price growth rate in 2022 – 10.3%)

Chart 7.4. Movement of the prices of fuels and lubricants of *BRENT* crude petroleum, parity EUR/USD in total consumer prices; detrended and standardised quarterly data, deviations from the average for the period (%), Q1 2007 – Q4 2022

Legend:
— Price of fuels and lubricants in Serbia   — Price of BRENT crude petroleum
— EUR/USD   — Consumer prices (CPI)

In 2022, the price of fuels and lubricants saw an annual growth of 20.2%. The average price of *BRENT* crude petroleum in 2022 was up by 42.6%, i.e. on the average level of 100,8 dolars per barrel. On the other hand, in 2022 the average retail price of eurodiesel in Serbia amounted to 202,4 dinars per liter, compared to 2021, when it was higher by 26.0% (or, on average, by 41,8 dinars). The average price of unleaded gasoline in Serbia in 2022 to 2021 was higher by 23.,8 dinars per liter (or 15.3%).

7.3. SOLID FUELS - FUELWOOD
   (share in the average consumer price growth rate in 2022 – 6.6%)

Chart 7.5. Movement of the prices of fuelwood and producers' prices of the section Manufacture of wood and products of wood and cork, except furniture for domestic market; detrended and standardised data, deviations from the average for the period (%), Q1 2014 – Q4 2022

Producers' prices of the section Manufacture of wood and product of wood and cork (except furniture) for domestic market

Long-term average for the period
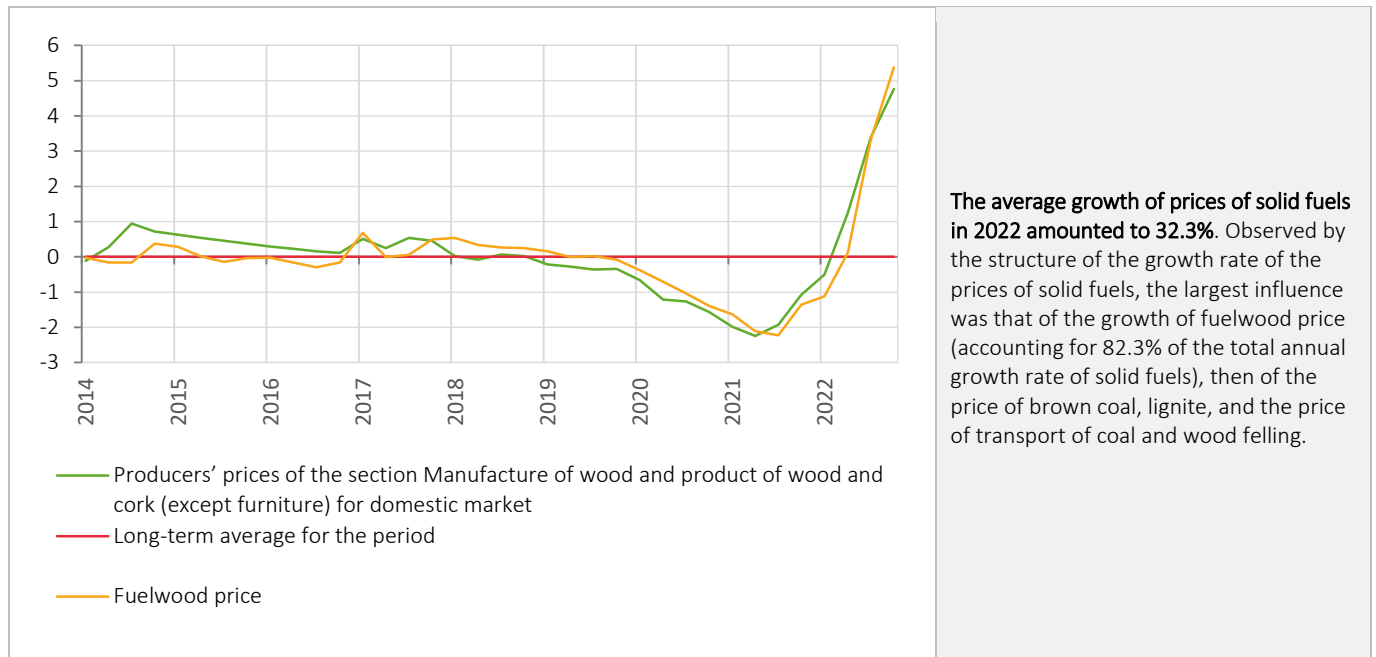
Fuelwood price

The average growth of prices of solid fuels in 2022 amounted to 32.3%. Observed by the structure of the growth rate of the prices of solid fuels, the largest influence was that of the growth of fuelwood price (accounting for 82.3% of the total annual growth rate of solid fuels), then of the price of brown coal, lignite, and the price of transport of coal and wood felling.

8. LABOUR MARKET

In the Republic of Serbia in the fourth quarter of 2022 there were 2,889 million employed persons, 291,1 thousand unemployed persons and 2,590 million persons outside labour force aged over 15.

The unemployment rate was 9.2% and, compared to the third quarter of 2022 higher by 0.3 pp., the number of unemployment persons was up by 2,2 thousand, while persons outside labour force went up by 34,1 thousand.

Looking at regional level, the unemployment rate in the fourth quarter of 2022, compared to the previous quarter, saw growth in most of the regions: Belgrade Region (from 7.5% to 7.7%), Region of Vojvodina (from 7.4% to 8.1%) and Region of Sumadija and Western Serbia (from 9.7% to 9.8%), with the exception of Region of Southern and Eastern Serbia, where the unemployment rate recorded slight fall (from 11.9% to 11.6%).

Chart 8.1. Movement of the employment and unemployment rate for persons aged over 15 (%)[6]
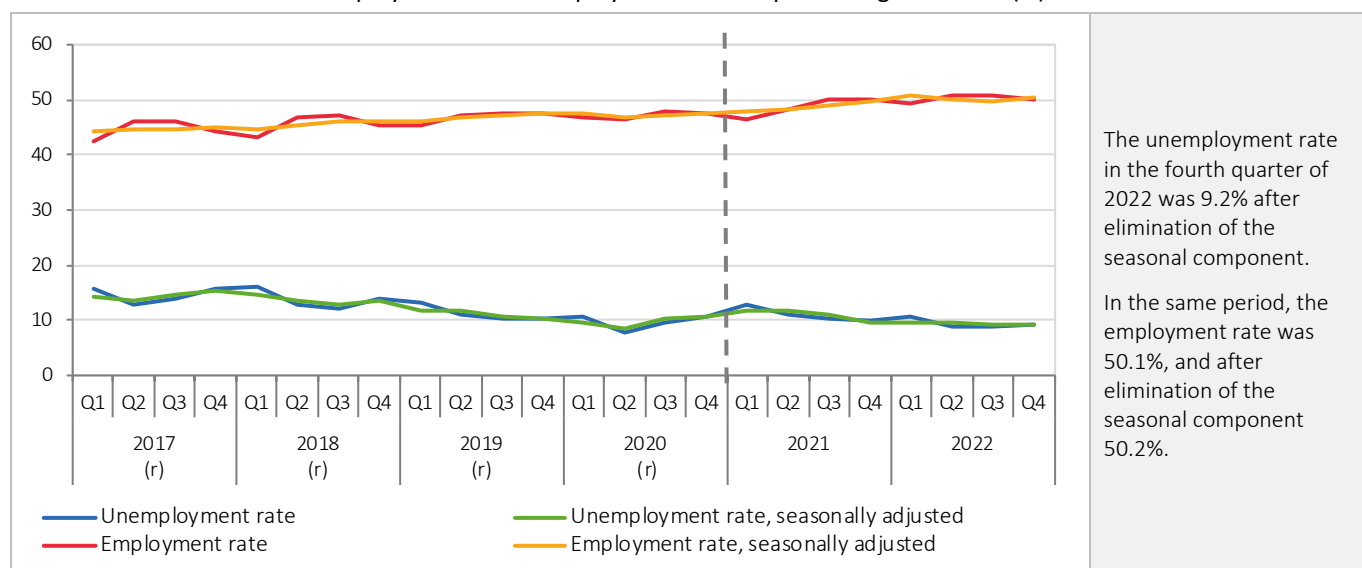
The unemployment rate in the fourth quarter of 2022 was 9.2% after elimination of the seasonal component.

In the same period, the employment rate was 50.1%, and after elimination of the seasonal component 50.2%.

(r) – revised data

Table 8.1. Activity, employment and unemployment rate – non-seasonally adjusted and seasonally adjusted values

	2020(p)				2021				2022			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Activity rate (%)	52.2	50.2	53.0	53.3	53.1	54.3	55.8	55.4	55.2	55.8	55.8	55.1
Seasonally adjusted values	53.1	49.9	52.3	53.5	54.0	54.0	55.1	55.5	56.0	55.7	55.2	55.3
Employment rate (%)	46.7	46.3	47.8	47.6	46.3	48.3	50.0	50.0	49.3	50.9	50.8	50.1
Seasonally adjusted values	47.3	47.0	47.0	47.4	47.9	48.4	48.8	49.4	51.0	50.4	49.6	50.2
Unemployment rate (%)	10.5	7.9	9.8	10.7	12.8	11.1	10.5	9.8	10.6	8.9	8.9	9.2
Seasonally adjusted values	9.5	8.4	10.3	10.4	11.6	11.9	11.2	9.7	9.6	9.4	9.4	9.2

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[6] Since 2021, the Statistical Office of the Republic of Serbia has been carrying out the Labour Survey according to the new, revised Eurostat methodology. The methodology has been modified in line with the Regulation of the European Parliament and European Council, which entered into force on 1 January 2021. More information on methodological changes and their effects on major statistical indicators are available on: https://www.stat.gov.rs/vesti/20210628-anketa-o-radnoj-snazi-nova-metodologija/

Table 8.2. Labour market – persons aged over 15

|	Current quarter	Previous quarter		The same quarter of the previous year	
	Q4 2022 (in thous.)	Q3 2022 (in thous.)	Change, %	Q4 2021 (in thous.)	Change, %
Unemployment	291,1	288,9	0,8	316,7	-8,1
Employment	2 888,7	2 942,0	-1,8	2 917,4	-1,0
	%	%	Change, pp.	%	Change, pp.
Unemployment rate	9,2	8,9	0,3	9,8	-0,6
Employment rate	50,1	50,8	- 0,7	50,0	0,1

Observed by sections, the largest share of the number of employed persons in the fourth quarter of 2022 was recorded in Services (54.9%), then in Manufacturing (24.9%) and Agriculture (14.5%), and the lowest in Construction (5.7%). When compared to the previous quarter, a fall of the share of employed persons was recorded in Agriculture, forestry and fishing (from 15% to 14.5%), and Construction (from 6.1% to 5.7%). On the other hand, a growth of the share of persons employed was recorded in Manufacturing (from 24.1% to 24.9%) and Service (from 54.8% to 54.9%).

In year-on-year periodicity (quarter IV of 2022 – quarter IV of 2021), the largest fall of the share of employed persons was recorded in Services (from 55.9% to 54.9%), in contrast with Manufacturing, where the largest growth was noted (from 23.5% to 24.9%).

Chart 8.2. Share of employees by section (%)
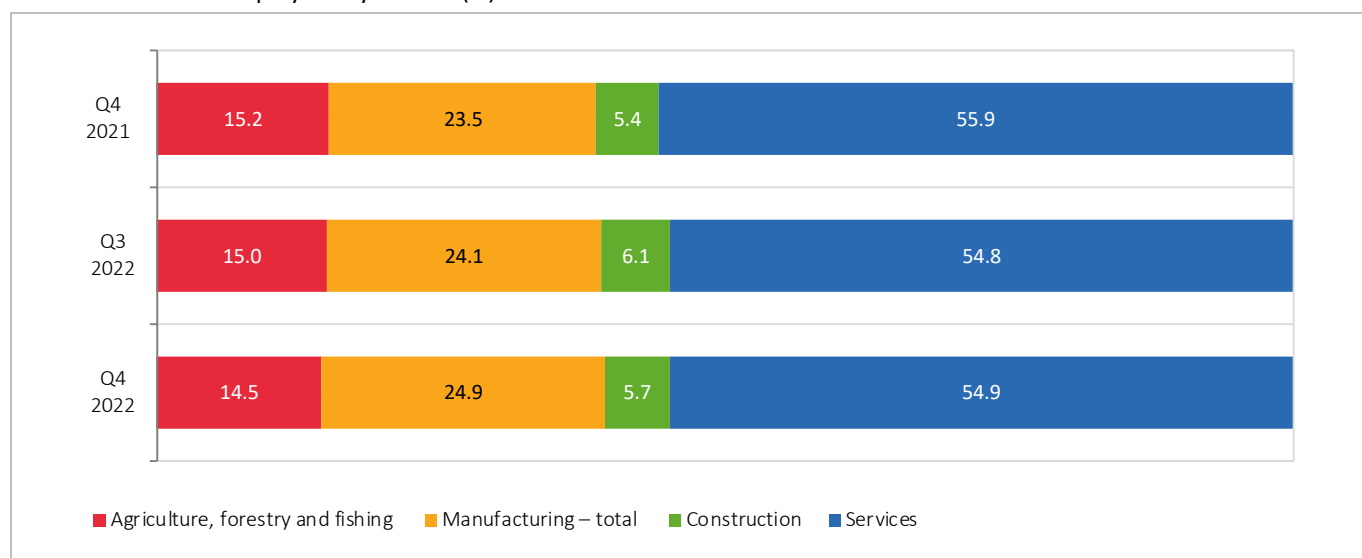
Trends in the labour market remained considerably resilient to the slowing down of the dynamics of the economic activity, owing primarily to the macroeconomic stability established in the previous period. Therefore in 2022, positive trends continued and are reflected in the first place through employment growth, with at the same time unemployment reduction, but under the influence of geopolitical tensions with a slower dynamics.

Chart 8.3. Labour market – major indicators for the previous quarter, the same quarter of the previous year and current quarter (%)
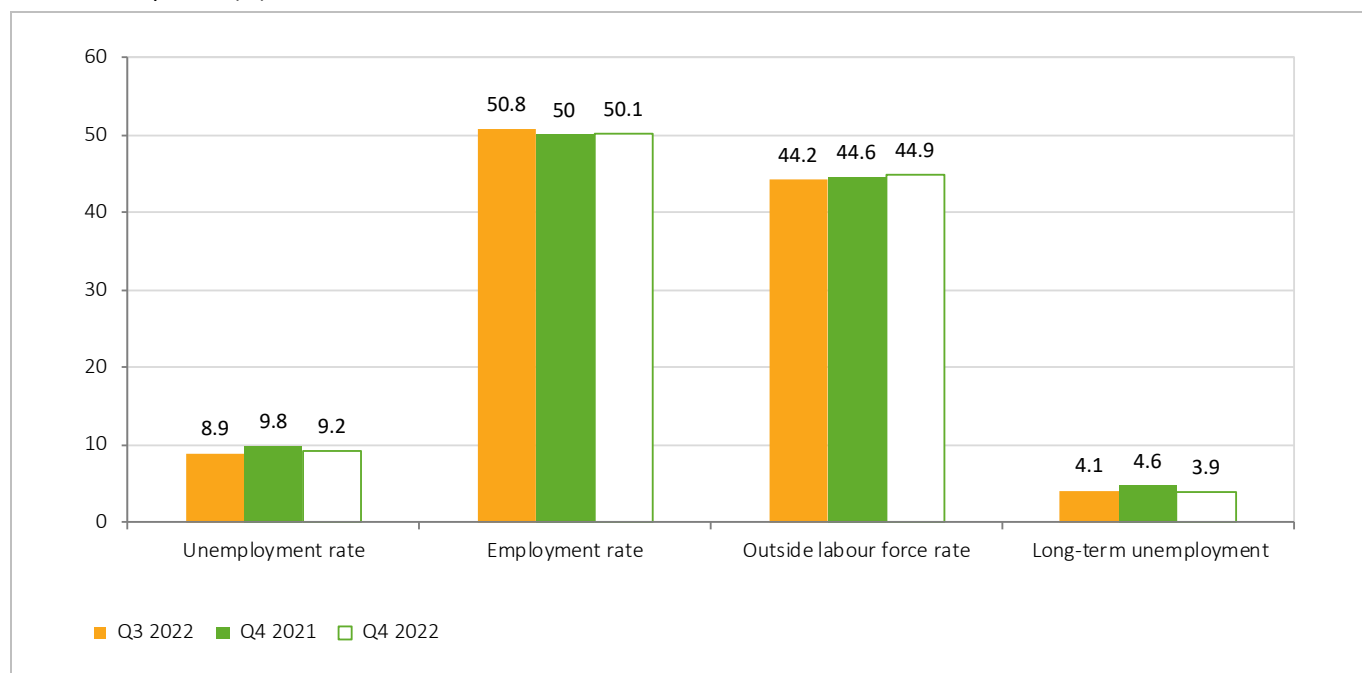
8.1. COMPARISON WITH THE PREVIOUS QUARTER

When compared to the previous, third quarter of 2022, the number of employed persons fell by 53,4 thousand, with a slight growth of unemployed persons of 2,2 thousand and considerable growth of persons outside labour force of 34,1 thousand, which led to the decrease in the employment rate of 0.7 pp., increase in the unemployment rate by 0.3 pp., and in the outside labour force population of 0.7 pp.

The youth unemployment rate (aged 15-24) in the fourth quarter of 2022 amounted to 24.3%, by 1.1 pp. less than in the third quarter of 2022, when it was 25.4%.

The long-term unemployment rate amounted to 3.9%, by 0.2 pp. less than in the third quarter of 2022.

Observed by sex, the unemployment rate in the fourth quarter of 2022, compared to the previous quarter, saw a fall of 0.8 p.p. among women and a simultaneous growth of 1.1 pp. among men.

The unemployment rate among men increased in all the regions: in Belgrade Region from 7.8% to 8.3%, Region of Vojvodina from 6.7% to 8.3%, Region of Sumadija and Western Serbia, from 8.9% to 9.7% and in Region of Southern and Eastern Serbia, from 10.9% to 12.4%.

In contrast, the unemployment rate among women decreased in almost all the regions: in Belgrade Region from 7.3% to 7.1%, Region of Vojvodina from 8.3% to 7.9%, Region of Sumadija and Western Serbia from 10.7% to 9.9% and in Region of Southern and Eastern Serbia from 13.2% to 10.7%,

Observed by professional status, and compared to the previous quarter, the number of employed persons increased only in the category of self-employed (by 1.5%), while a fall of 2.6% and 0.9% was recording in employed persons and contributing family members.

Table 8.3. Employment by professional status, comparison Q3 2022 – Q4 2022

	Q3 2022 (in thous.)	Q4 2022 (in thous.)	Change, %
Employed persons – total	2 942.0	2 888.7	-1.8
Self-employed	478.0	485.4	1.5
Employed	2 271.4	2 212.4	-2.6
Contributing family members	192.6	190.9	-0.9

8.2. COMPARISON WITH THE SAME QUARTER OF THE PREVIOUS YEAR

Compared with the same quarter of the previous year, the number of unemployed persons decreased by 8.1% (from 316,7 thousand to 291,1 thousand). At the same time, the number employed persons fell by 1% (from 2 917,4 in the fourth quarter of 2021 to 2 888,7 in the fourth quarter of 2022).

The youth unemployment rate (aged from 15 to 24) in the fourth quarter of 2022 amounted to 24.3%, by 4.4 p.p. less than in the fourth quarter of 2021, when it amounted to 28.7%.

The long-term unemployment rate recorded fall on year-on-year level. In the fourth quarter of 2022 it amounted to 3.9%, by 0.7% down relative to the fourth quarter of 2021.

Observed by sex, the unemployment rate in the fourth quarter of 2022, compared to the same quarter of the previous year, saw a fall among both women, by 2.1 p.p., while it saw a growth of 0.5 pp. among men.

Observed by regions, the unemployment rate among men saw a growth in almost all the regions: in Belgrade Region from 6.7% to 8.3%, Region Vojvodina, from 8% to 8.3%, and in Region of Southern and Eastern Serbia from 11.5% to 12.4%, with the exception of Region of Sumadija and Western Serbia, where a slight fall was recorded (from 10% to 9.7%).

In contrast, among women the unemployment rate decreased in all four regions: in Belgrade Region from 9.4% to 7.1%, Region of Vojvodina from 9.9% to 7.9%, Region of Southern and Eastern Serbia from 13.1% to 10.7%, and in Region of Sumadija and Western Serbia from 11.6% to 9.9%.

Observed by professional status, compared to the same quarter of 2021, the number of employed persons increased only in the category of contributing family member (by 2.4%), while in employees and the self-employed there was a fall by 1.3% and 1%.

Table 8.4. Employment by professional status, comparison Q4 2021 – Q4 2022

	Q4 2021 (in thous.)	Q4 2022 (in thous.)	Change, %
Employed persons – total	2 917.4	2 888.7	-1.0
Self-employed	490.1	485.4	-1.0
Employees	2 240.7	2 212.4	-1.3
Contributing family members	186.5	190.9	2.4

🔊 GLOSSARY

Active population (labour force) comprises all employed and unemployed persons aged 15 and 24.

Employed persons are persons aged 15-89 and over who performed a paid job for at least one hour in the reference week (in cash or in kind), as well as persons who had an employment but who were absent from work in that week. According to the Classification of Employment Status, they are divided into *self-employed, employed and contributing family member.*

Self-employed are persons working solely in their own enterprise, institution, privately-owned store or on an agricultural holding, as well as persons performing solely a professional activity or any other job for own account. Self-employed are persons who solely define the conditions of their work (as well as of their employees) and bear the risk for their work.

Employed workers are persons who work for an employer in any ownership sector, whether having a formal employment contract or working on an oral contract. Family members who help in performing family business and are paid for their work are considered employed workers.

Contributing family members are persons who help another family member in running family business or agricultural holding, and are not paid for that work. Those persons are considered employed even if they are not paid for their work because they have benefits, such as accommodation, food, etc.

Unemployed persons are persons aged 15-74 who did not perform any paid job in the reference week, sought actively a job during four weeks preceding the reference week, and who were ready to start working within two weeks after the reference week

Outside labour force population comprises all persons aged 15 and more who are classified in the employed or unemployed population. Inactive persons include students, retired persons, houseworkers, as well as all persons who did not perform in the reference week any paid job, did not actively seek employment or were not able to start working within two weeks after the end of the reference week.

Activity rate is the share of active population in the total population aged 15 and over.

Employment rate is the share of employed persons in the total population aged 15 and over.

Unemployment rate is the share of unemployed persons in the total number of active population aged 15 and over.

Long-term unemployment is the share of persons being unemployed more than a year in the labour force (the employed and unemployed) aged 15 and over.

Outside labour force rate is the percentage of inactive population in the total population aged 15 and over.
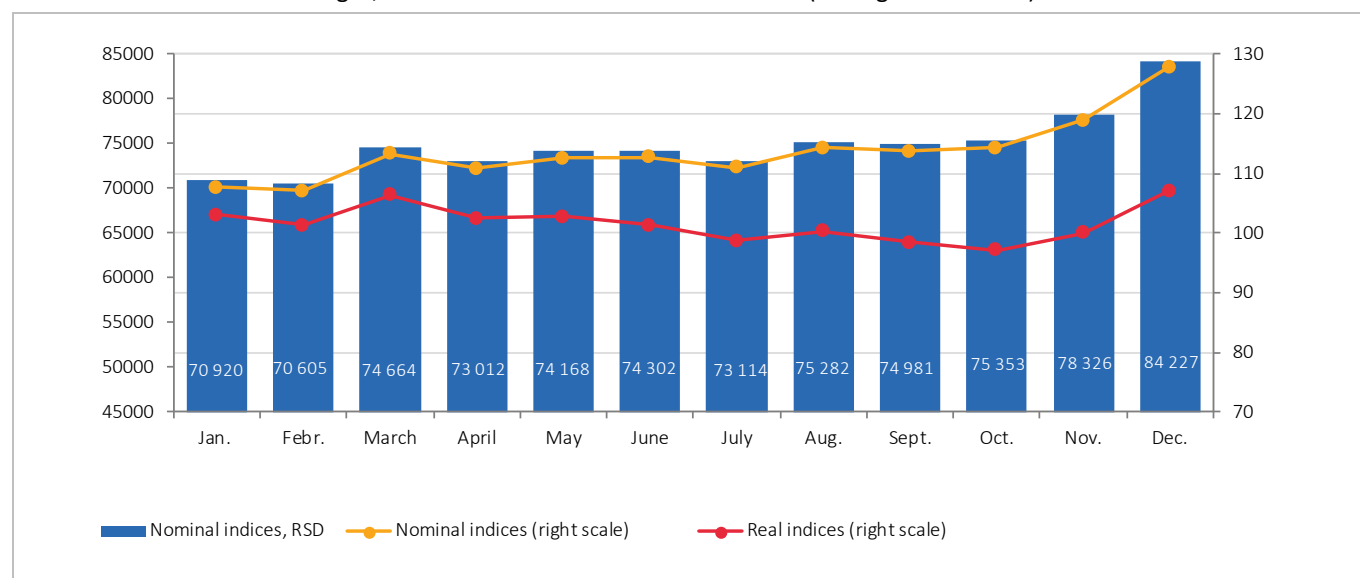
9. SALARIES AND WAGES

Average net salaries and wages in the Republic of Serbia amounted to 79 299 dinars in the fourth quarter of 2022. When compared to the same period of the previous year they were nominally up by 13.4% and real terms down by 1.4%. When compared to the previous, i.e. third quarter of 2022 they nominally grew by 6.5% and in real terms fell by 2.3%.

In 2022, the calculated average net salaries and wages amounted to 74 933 dinars, and in relation to the previous year, they increased nominally by 13.8%, and in real terms by 1.7%.

Table 9.1. Net salaries and wages – real and nominal indices (comparison with the same period of the previous year)
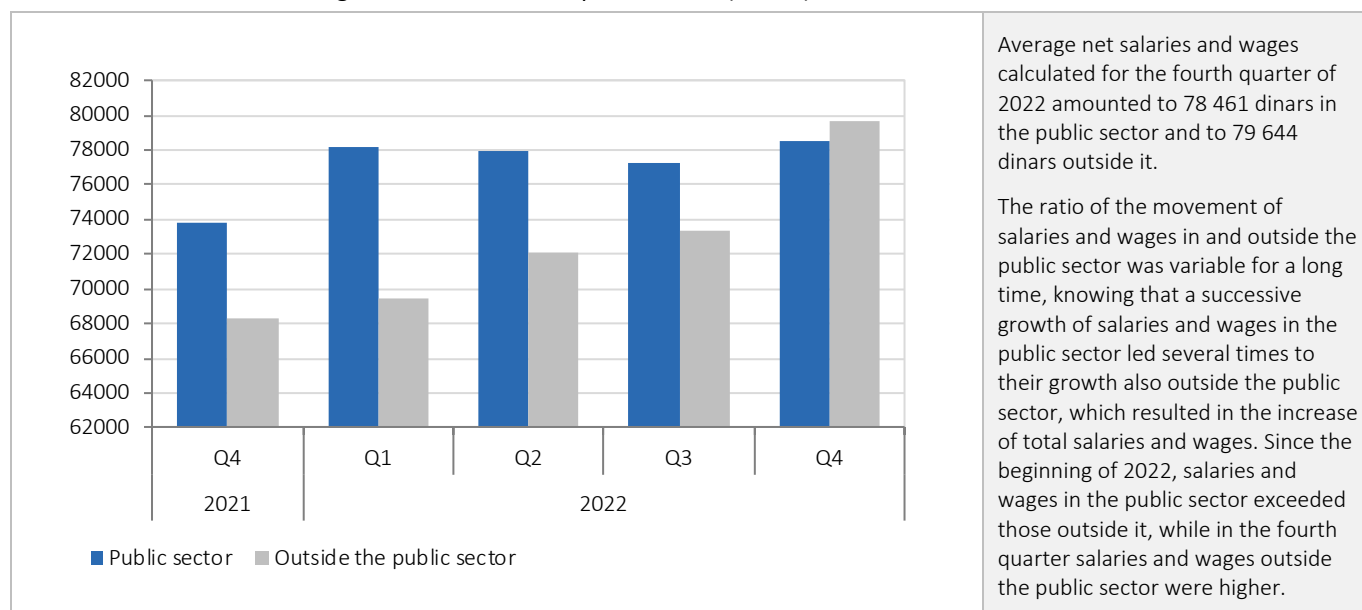
	2020				2021				2022			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Real indices	108.3	107.4	107.4	107.6	105.8	106.4	104.5	104.5	104.3	102.7	101.3	98.6
Nominal indices	110.3	108.5	109.4	109.3	107.3	109.8	109.2	112.1	113.4	113.6	114.8	113.4

Chart 9.1. Net salaries and wages, movement of nominal and real indices (average 2021 = 100)

Since the beginning of the year, nominal salaries and wages have followed the real economy and budget, adapting themselves at the same time to trade indicators, i.e. offer and demand for labour force. Average net salaries and wages recorded also an ascending trend in December 2022, amounting to RSD 84 227, reaching a year-on-year growth of 12.9% nominally, and fall of 1.9% in real terms. The decision on increasing the minimal pay from 183.9 dinars per hour of work in 2021 to 201.2 dinars in 2022 influenced the growth of salaries and wages. Average net salaries and wages, expressed in euros, as an indicator of living standard and international economic competitiveness of Serbia, recorded growth also in December 2022, reaching a value of EUR 718 or year-on-year growth of 13.1%, which close to the nominal growth of salaries and wages due to the relative stability of the exchange rate of RSD to EUR.

Chart 9.2. Net salaries and wages in and outside the public sector (in RSD)

Average net salaries and wages calculated for the fourth quarter of 2022 amounted to 78 461 dinars in the public sector and to 79 644 dinars outside it.

The ratio of the movement of salaries and wages in and outside the public sector was variable for a long time, knowing that a successive growth of salaries and wages in the public sector led several times to their growth also outside the public sector, which resulted in the increase of total salaries and wages. Since the beginning of 2022, salaries and wages in the public sector exceeded those outside it, while in the fourth quarter salaries and wages outside the public sector were higher.

Average net salaries and wages in the public sector, 2022

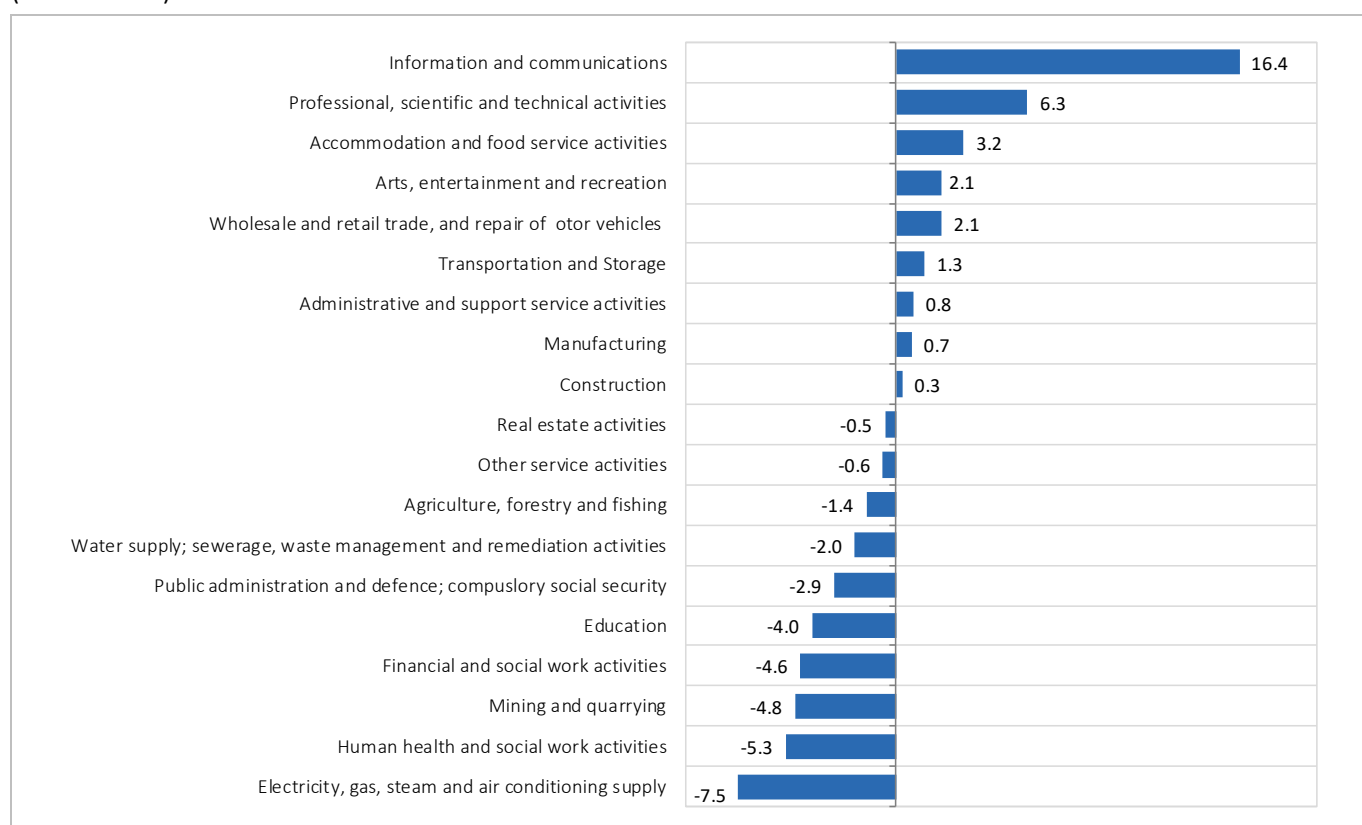|	
Public sector – total	RSD 77 951
Public state-owned enterprises	RSD 88 362
Public local enterprises	RSD 68 790
Administration – all levels	RSD 82 094
Government level	RSD 85 493
Autonomous province level	RSD 86 841
Local authorities level	RSD 65 182
Human health and social work	RSD 78 177
Education and culture	RSD 71 124

When comparing net salaries and wages by CA (2010), one notices that the largest real growth in 2022 to 2021 was realised in the sections Information and communications (16.4%), Professional, scientific and technical activities (6.3%), and Accommodation and food service activities (3.2%).

The highest net salaries and wages in 2022 was recorded in the following divisions: Computer programming and consultancy activities (246 768 dinars), Air transport (176 353 dinars), Scientific research and development activities (158 110), Extraction of crude petroleum and natural gas (132 319), and Financial services, except insurance and pension funds (129 989).
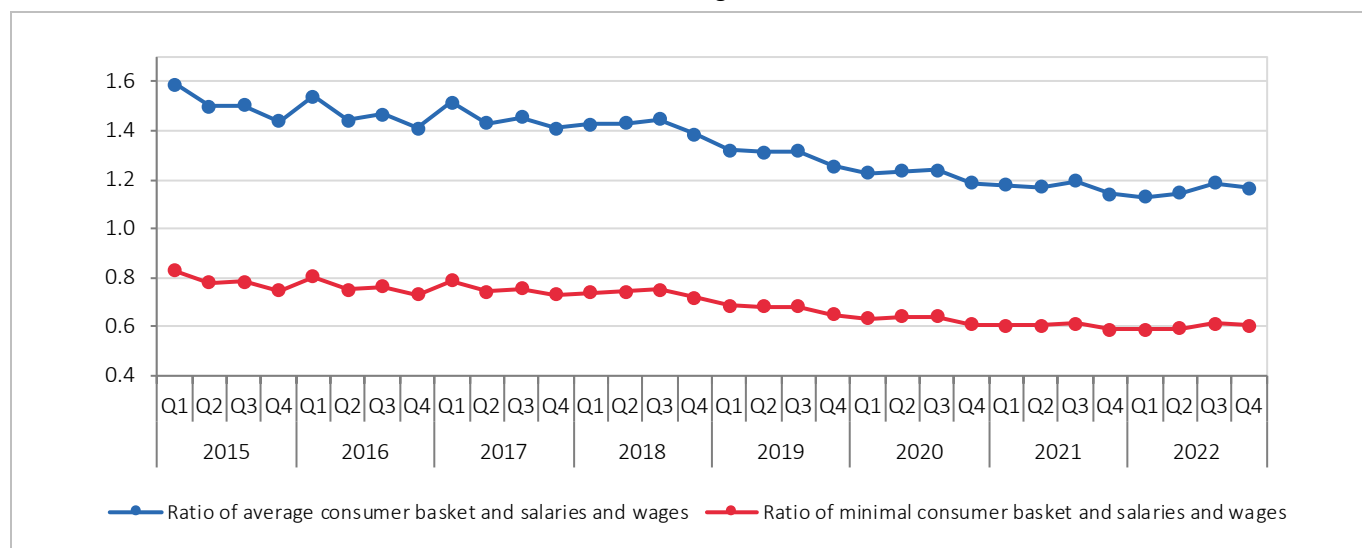
In all other divisions salaries and wages ranged from 42 526 dinars (Food and beverages service activities) to 126 190 dinars (Manufacture of tobacco products).

Observed by regions, the highest average net salaries and wages in 2022 were paid in Belgrade Region, 94 808 dinars. In Region Vojvodina average salaries and wages totaled 71 236 dinars, in Region of Southern and Eastern Serbia, 64 329 dinars, and in Region of Sumadija and Western Serbia, 62 687 dinars.

Chart 9.3. Real net salaries and wages by section of CA (2010)
(2022 to 2021)

Section	Value
Information and communications	16.4
Professional, scientific and technical activities	6.3
Accommodation and food service activities	3.2
Arts, entertainment and recreation	2.1
Wholesale and retail trade, and repair of otor vehicles	2.1
Transportation and Storage	1.3
Administrative and support service activities	0.8
Manufacturing	0.7
Construction	0.3
Real estate activities	-0.5
Other service activities	-0.6
Agriculture, forestry and fishing	-1.4
Water supply; sewerage, waste management and remediation activities	-2.0
Public administration and defence; compuslory social security	-2.9
Education	-4.0
Financial and social work activities	-4.6
Mining and quarrying	-4.8
Human health and social work activities	-5.3
Electricity, gas, steam and air conditioning supply	-7.5

Chart 9.4. Ratio of the consumer basket[7] and net salaries and wages

Increased population living standard over 2015–2022 is primarily the result of a dynamic growth of salaries and wages. In 2015, the ratio of the average consumer basket and average net salaries and wages was 1.51, while in 2022 it was 1.16, indicating that, while in 2015 1.51 of the average salaries and wages was needed for the average consumer basket, in 2022 this ratio grew so that 1.16 of the average salaries and wages was necessary for the average consumer basket.

The ratio of net salaries and wages and average consumer basket in the fourth quarter of 2022 indicates that the purchasing power grew slightly, when compared to the previous quarter. To cover the average consumer basket in the fourth quarter of 2022 1.17 average salaries and wages (in the third quarter of 2022, 1.19) and to cover the minimum consumer basket only 0.61 of average (in the second quarter 0.59).

When compared to the same quarter of the previous year, the ratio of net salaries and wages and average consumer basket indicates a fall of the purchasing power (1.19), while the minimum average consumer basket of 0.61 of average salaries and wages exceeds the level from the same quarter of the previous year (0.59).

Observed by towns, in the fourth quarter of 2022, purchasing power (ratio of the average consumer basket and average salaries and wages) above the average of the Republic (1.17) was recorded in Belgrade (0.94), Novi Sad (1.08), Kragujevac and Nis (1.15), while in other statistically monitored towns, average salaries and wages covered the minimum, but not average household consumer basket.

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[7] *Minimum consumer basket* – refers household consumption, which provides for basic living and working capacity of household members, bearing in mind the optimal biochemical composition of food (carbohydrates, proteins, fats and calories). The total value of the minimum consumer basket is the sum of expenses for food and other products and services making up individual household consumption.
Average consumer basket – refers to the consumption of products and services of the individual consumption of an average household. Since January 2011 New Average and New Minimum Consumer Basket have been published, which are calculated starting with January 2008 according to the new methodology of the Statistical Office of the Republic of Serbia.

10. TOURISM

Tourism, having a multidimensional and complex nature, is an activity intertwined with many other economic activities, as, besides providing accommodation and restaurant services, indispensable activities related to tourism are the following ones: transport, cultural and recreational activities, payment operations, etc. It not only promotes and forms the national identity of a country but it also plays a big role in its economy – in some regions it is even the only factor for creating employment for the local population, and generally, the only factor of sustainable development — all the reasons to deserve special analytical attention.

10.1. TOURIST OVERNIGHT STAYS

Tourism in the Republic of Serbia started its expansion in 2015, primarily by means of incentive measures of domestic tourism, but also by increased interests of foreign tourists in this period. Expressed in number of overnight stays, tourist turnover was going up until 2019, when a record number of 10.1 million overnight stays was achieved. The year 2020 brought contraction of tourism activity and a fall of the number of overnight stays of 6.2 million, where domestic tourists spent almost 5 million, and foreign ones about 1.3 nights. The year 2021 brought recovery and the number of overnight stays grew by 8.2 million. Even though domestic tourists were predominant in the number of overnight stays, there were twice as many foreign tourists in our country (2.4 million) than in 2020.

In the fourth quarter of 2022, the number of spent tourist nights amounted to 2.9 million, by 71.7% more than in the fourth quarter of 2021. Domestic tourists accounted for 54.6% and foreign ones for 45.4% of the total number of overnight stays.

Chart 10.1. Tourist overnight stays – domestic, foreign and total; quarterly and annual data
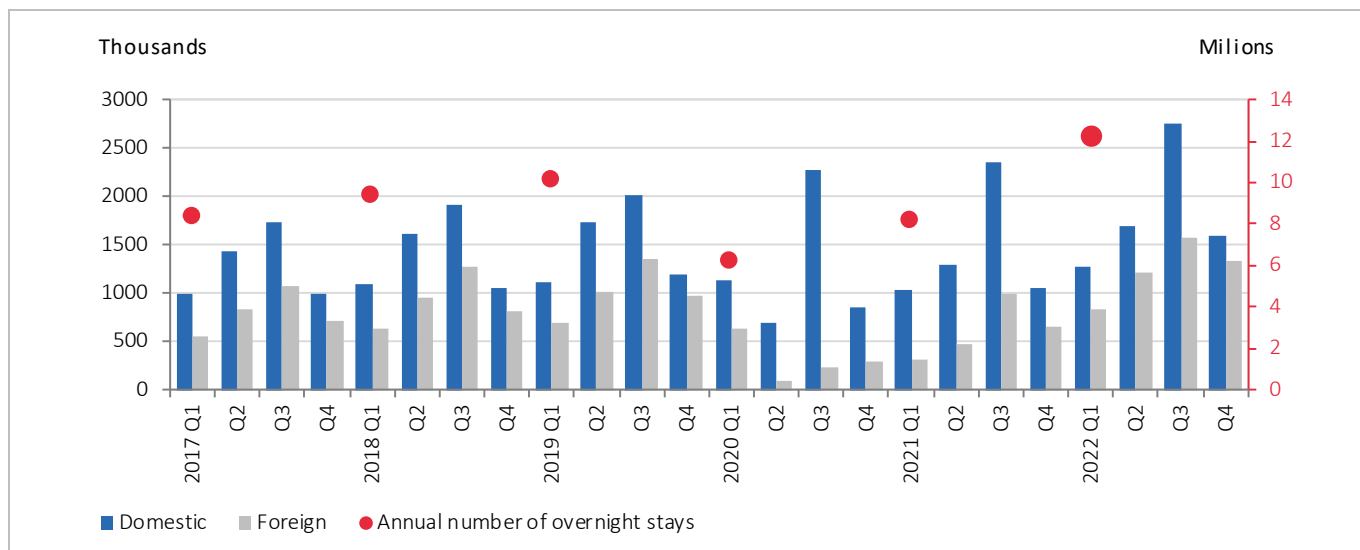
Table 10.1. Tourist overnight stays, indices (comparison with the same period of the previous year)

|	2020				2021				2022			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Total	98.3	28.1	74.9	52.8	76.1	228.4	133.3	148.2	156.3	164.1	129.2	171.7
Domestic tourists	101.5	39.3	113.0	71.1	91.9	188.5	103.6	123.5	122.2	130.8	117.2	151.4
Foreign tourists	93.2	8.9	17.9	30.2	48.3	535.8	412.6	220.0	270.1	253.8	157.5	204.7

10.2. MAJOR TOURIST RESORTS

Expressed in number of tourist overnight stays[8], the most frequently visited tourist resorts in 2022 were **Other tourist resorts**, with 6.7 million overnight stays (or about 53.3% of total overnight stays), by 35.2% more than in 2021. This category comprises Belgrade (3.2 million overnight stays) and larger towns of Serbia (Novi Sad, Subotica, Nis). Most of the visitors to Belgrade were foreign tourists (84.3%), and a similar situation was recorded in Novi Sad (foreign tourists 69.5%) and Subotica, where about 62% of visitors were from abroad.

Spa resorts, second by category in a row of resorts according to the number of tourist overnight stays in 2022 recorded about 3.0 million overnight stays, by 38.3% more than in 2021. Tourists were mainly from Serbia (88.4%), and the most visited was Sokobanja with 767.7 thousand visitors, followed by Vrnjacka banja (756.1 thousand), Lukovska Banja (205 thousand), Banja Vrdnik (202 thousand), and other spas.

In Mountain resorts in 2022 there were 2.8 million overnight stays (or 22.3% of the total number of overnight stays)**,** by 33.5% more than in the same period of the previous year. Zlatibor attracted the largest number of tourists (673.9 thousand), who were mostly from Serbia (521.1 thousand). Kopaonik recorded 585.1 thousand tourist overnight stays, of which most were from Serbia (464 thousand). These two mountains accommodated about 45% of the total number of tourists who spent nights in mountain resorts.

Almost all tourist resorts saw a growth of the number of tourist overnight stays in 2022 to 2021, and mostly in Gamzigradska banja (index 225.6), Novopazarska banja (index of 152.2%), Golija (index 145.3) and Sijarinska Banja (index of 89.2%)

Chart 10.2. Tourist overnight stays by selected tourist resorts over January-December 2022
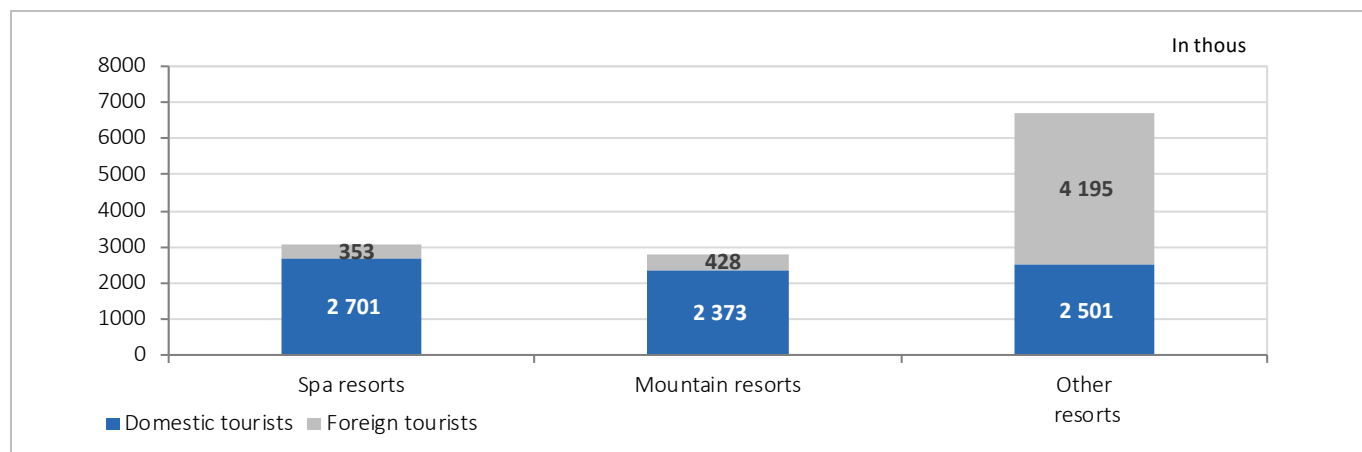
## 10.3. COUNTRY OF ORIGIN OF FOREIGN TOURISTS

In 2022, the number of foreign tourist overnight stays increased by 49.3%, compared to 2021. In the period January-December 2022 tourists from about fifty different countries visited Serbia. Tourists from Europe were the most numerous to have spent nights (79.5%).

Three countries from which tourists spent the largest number of nights were the Russian Federation (594.2 thousand), Turkey (442.6 thousand), and other non-European countries (348.5 thousand). Visitors from Bosnia and Herzegovina were at the fourth place (342.7 thousand), then from Germany (242.5 thousand), North Macedonia (213.5 thousand) and Montenegro (207.6 thousand). Overnight stays of tourists from these seven countries account for almost a half of the total number of nights spent in the first nine months of 2022.

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[8] The sum of data by type of resorts (spas, mountains, other resorts) does not give the correct number of tourist overnight stays in the Republic of Serbia knowing that the areas of some tourist resorts belong at the same time to different resorts (e.g. they are at the same time spa and mountain resorts).

For the purpose of comparison, chart 10.4 presents the number of tourist overnight stays in 2021, when tourism was still under the negative influence of the coronavirus epidemic.

Chart 10.3. Foreign tourist overnight stays by countries they came from, 2022
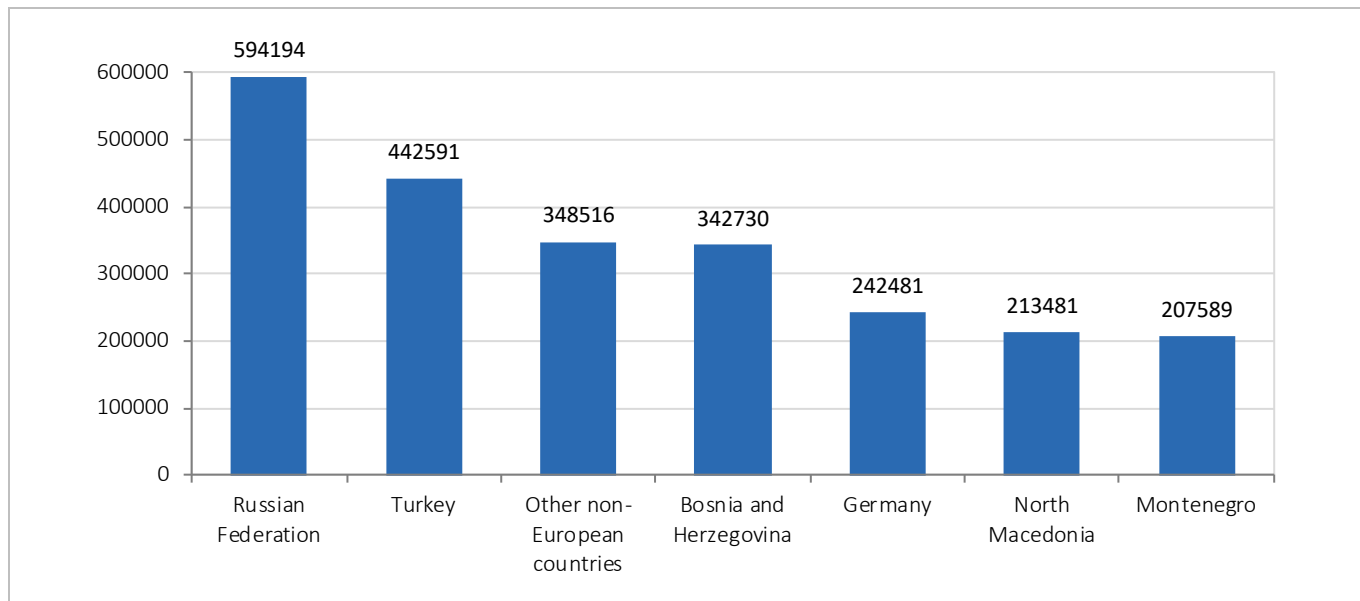
Chart 10.4. Foreign tourist overnight stays by countries they came from, 2021
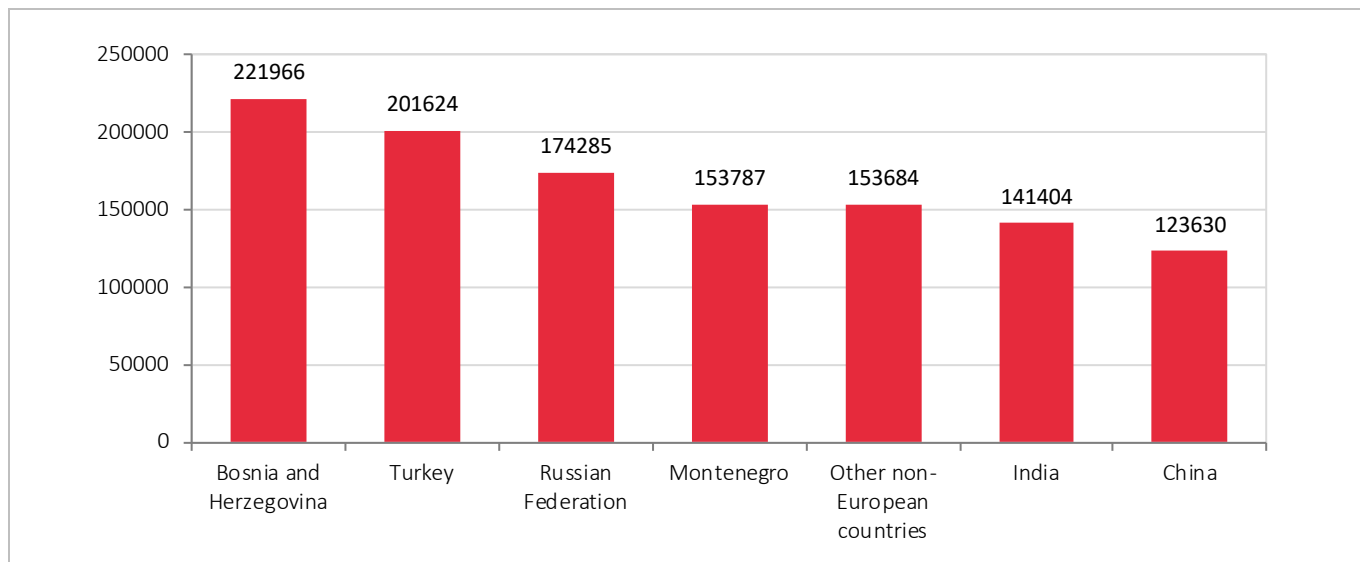
🔔 Note: in all the publication of the Statistical Office of the Republic of Serbia. Since 2022 data on tourism turnover have been published on the basis of the processing of data retrieved from the administrative source, Central Information System in Catering and Tourism (eTourist). Until December 2021 included, data were collected, processed and published on the basis of a statistical survey on tourist arrivals and overnight stays in accommodation facilities (TU-11).

All indices of tourism turnover (tourist arrivals and overnight stays) in 2022 are calculated based on the data of the Central Information System in Catering and Tourism (eTourist) for 2022 and 2021. With the change of data source, and therefore of the coverage, the survey-based results (TU'-11, for the previous year) and those from the administrative source (eTourist) are not comparable.
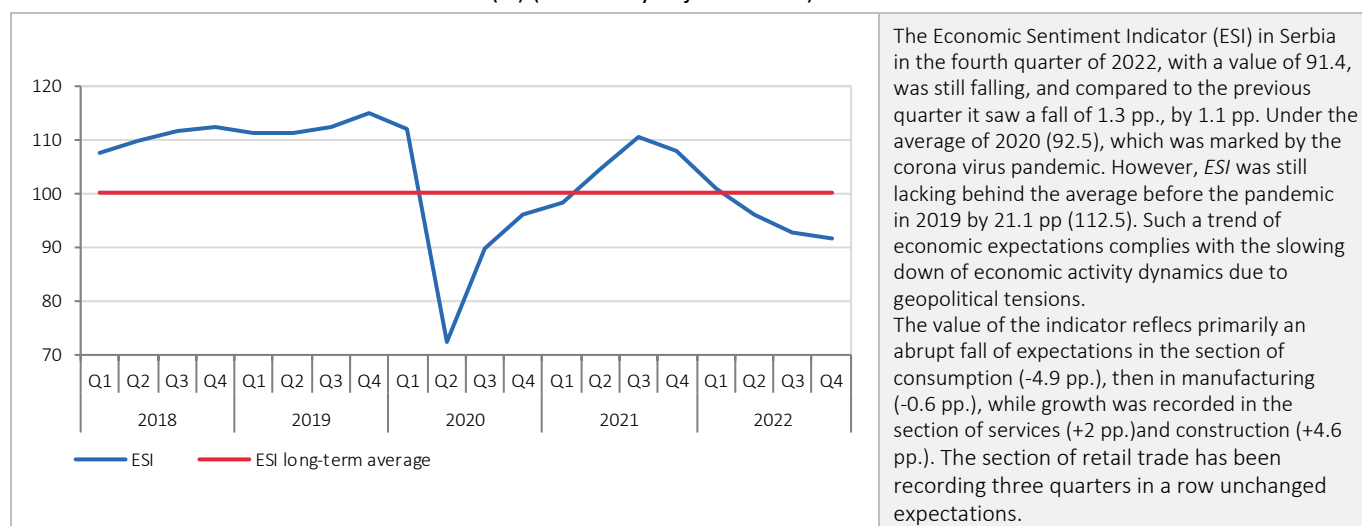
11. ECONOMIC SENTIMENT INDICATOR

11.1. ECONOMIC SENTIMENT INDICATOR - ESI

Economic Sentiment Indicator - ESI is a composite indicator which purpose is to present producers' and consumers' perceptions about economic movements and economic stability. As expectations of business subjects can be an important signal of changes in economic trends, this indicator is used to assess economic situation, make flash estimates, for scientific and analytical use, as well as for international comparisons and creating economic policies.

ESI has been developed by the General Directorate for Economic and Financial Affairs of the European Commission (DG ECFIN). It is obtained through five different surveys of producers and consumers, which attitudes provide a reliable indication of economic movements, based on which confidence indicators are created. Confidence indicators of the analysed sections are weighted in order to reflect as good as possible their influence on economic activity – manufacturing 40%, service activities 30%, household consumption 20%, construction 5% and retail trade 5%. A value of ESI index exceeding 100 indicates improvement or economic activity, while that below 100 suggests decline.[9]

Chart 11.1. economic Sentiment Indicator[10] (%) (seasonally adjusted data)

The Economic Sentiment Indicator (ESI) in Serbia in the fourth quarter of 2022, with a value of 91.4, was still falling, and compared to the previous quarter it saw a fall of 1.3 pp., by 1.1 pp. Under the average of 2020 (92.5), which was marked by the corona virus pandemic. However, *ESI* was still lacking behind the average before the pandemic in 2019 by 21.1 pp (112.5). Such a trend of economic expectations complies with the slowing down of economic activity dynamics due to geopolitical tensions.

The value of the indicator reflecs primarily an abrupt fall of expectations in the section of consumption (-4.9 pp.), then in manufacturing (-0.6 pp.), while growth was recorded in the section of services (+2 pp.)and construction (+4.6 pp.). The section of retail trade has been recording three quarters in a row unchanged expectations.

Source: European Commission, processing: Statistical Office of the Republic of Serbia. Quarterly data represent quarterly average.

Table 11.1. Confidence indicators by sections of the Economic Sentiment Indicator – growth to the long-term average (%)
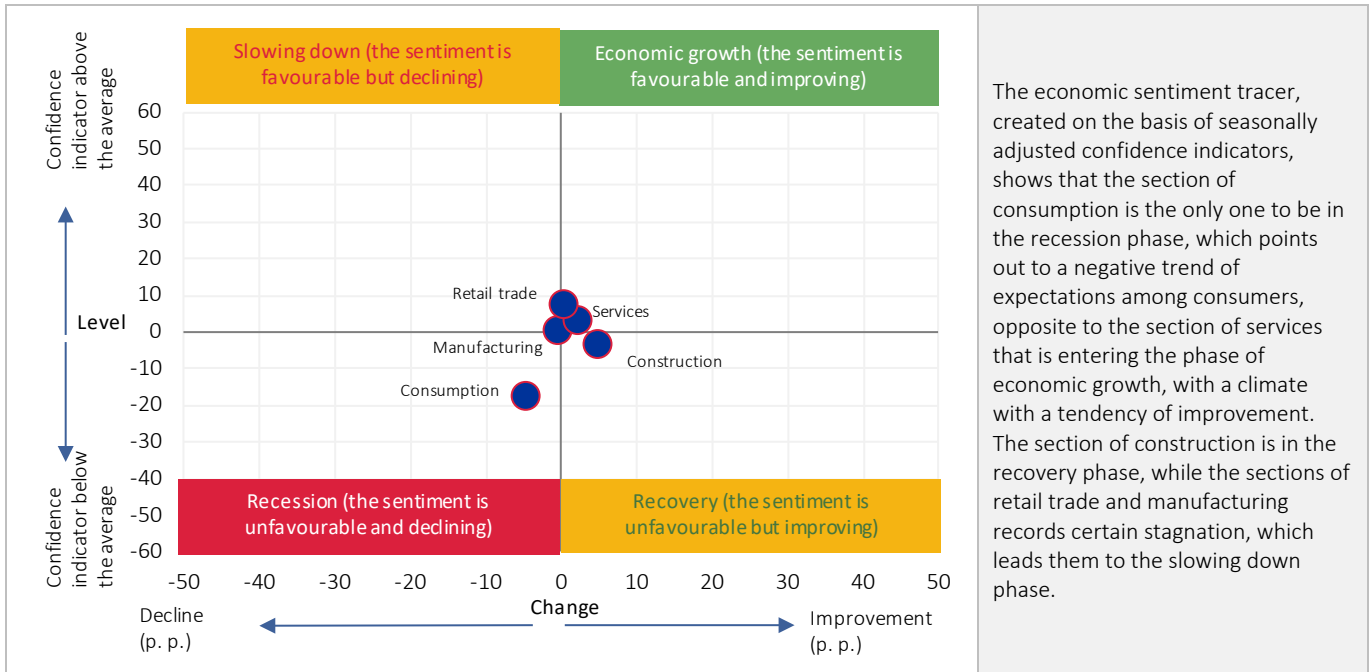
Confidence indicators	Minimum		Average	Maximum		2021				2022			
	Quarter	Value		Quarter	Value	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Manufacturing	Q2 2020	-9.3	3.8	Q3 2018	8.0	0.0	1.6	4.5	6.6	0.2	-0.7	1.0	0.4
Services	Q2 2020	-40.5	6.6	Q2 2016	16.2	-0.1	8.1	14.2	8.2	6.7	7.0	1.2	3.2
Retail trade	Q2 2020	-11.8	8.2	Q4 2019	17.0	5.0	7.3	9.4	7.6	8.5	7.5	7.5	7.5
Construction	Q3 2013	-40.9	-10.6	Q3 2019	7.0	-4.9	-2.1	-1.8	-1.7	-1.1	-5.9	-7.8	-3.2
Consumption	Q4 2014	-20.6	-4.9	Q1 2020	10.7	4.1	5.7	6.8	2.2	2.3	-6.0	-12.3	-17.2
Economic Sentiment Indicator	*Q2 2020*	*72.3*	*102.2*	*Q4 2019*	*115.0*	*98.4*	*104.5*	*110.4*	*107.8*	*100.7*	*95.9*	*92.7*	*91.4*

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[9] ESI is calculated as an index with a mean value of 100 and standardised deviation of 10. More on the methodology on:
https://ec.europa.eu/info/sites/default/files/bcs_user_guide.pdf

[10] Data for the Economic Sentiment Indicator (ESI) have been revised in line with the improved methodology of data seasonal adjustment, which has been in use since April 2022.
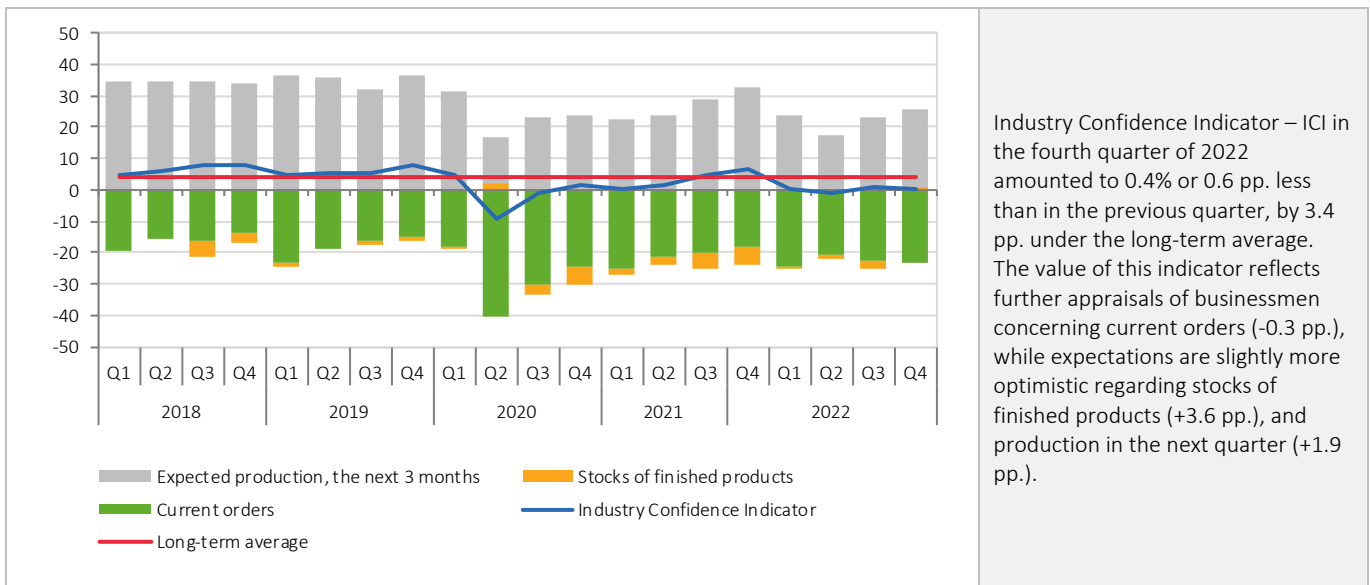
Chart 11.2. Economic sentiment tracer

The economic sentiment tracer, created on the basis of seasonally adjusted confidence indicators, shows that the section of consumption is the only one to be in the recession phase, which points out to a negative trend of expectations among consumers, opposite to the section of services that is entering the phase of economic growth, with a climate with a tendency of improvement. The section of construction is in the recovery phase, while the sections of retail trade and manufacturing records certain stagnation, which leads them to the slowing down phase.

11.2. TRADE CONFIDENCE INDICATOR

The industry confidence indicator includes the responses of economic subjects on contracted orders, expected production and stocks of finished products.
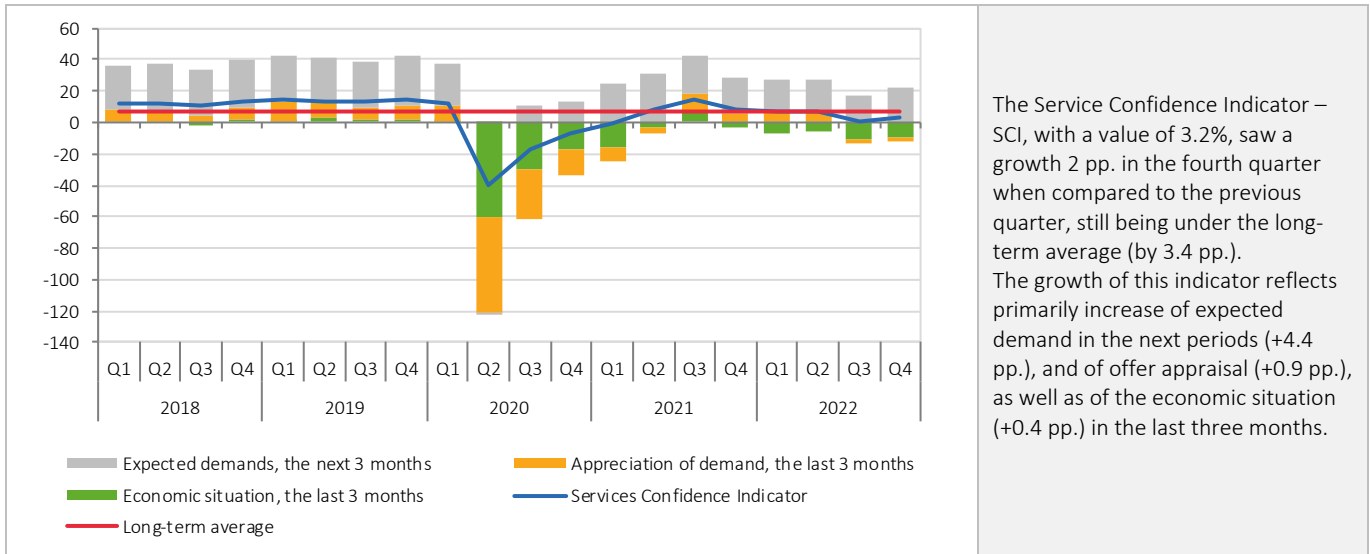
Chart 11.3. Industry Confidence Indicator (%) (seasonally adjusted data)

Industry Confidence Indicator – ICI in the fourth quarter of 2022 amounted to 0.4% or 0.6 pp. less than in the previous quarter, by 3.4 pp. under the long-term average. The value of this indicator reflects further appraisals of businessmen concerning current orders (-0.3 pp.), while expectations are slightly more optimistic regarding stocks of finished products (+3.6 pp.), and production in the next quarter (+1.9 pp.).

11.3. SERVICE CONFIDENCE INDICATOR

The survey in services is made of questions about the economic situation, current and expected demand for services.
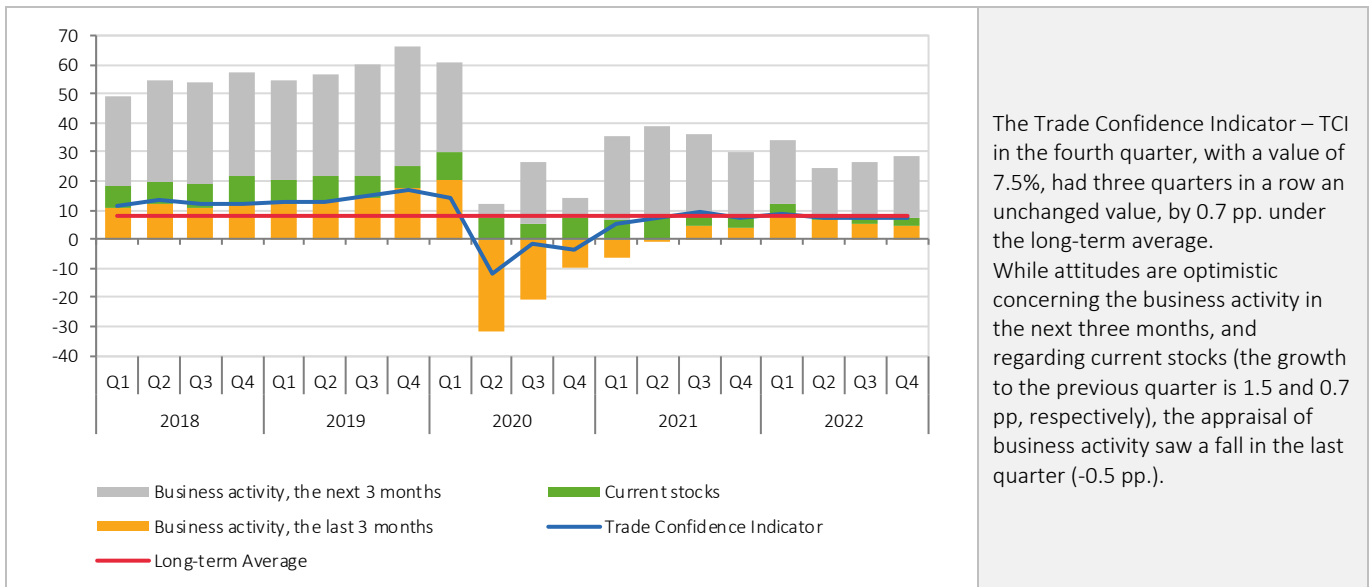
Chart 11.4. Service Confidence Indicator (%) (seasonally adjusted data)

The Service Confidence Indicator – SCI, with a value of 3.2%, saw a growth 2 pp. in the fourth quarter when compared to the previous quarter, still being under the long-term average (by 3.4 pp.).
The growth of this indicator reflects primarily increase of expected demand in the next periods (+4.4 pp.), and of offer appraisal (+0.9 pp.), as well as of the economic situation (+0.4 pp.) in the last three months.

Legend:
- Expected demands, the next 3 months
- Appreciation of demand, the last 3 months
- Economic situation, the last 3 months
- Services Confidence Indicator
- Long-term average

11.4. TRADE CONFIDENCE INDICATOR

The survey in retail trade is made of questions about the current and future business activity of enterprises and stock balance.

Chart 11.5. Trade Confidence Indicator (%) (seasonally adjusted data)

The Trade Confidence Indicator – TCI in the fourth quarter, with a value of 7.5%, had three quarters in a row an unchanged value, by 0.7 pp. under the long-term average.
While attitudes are optimistic concerning the business activity in the next three months, and regarding current stocks (the growth to the previous quarter is 1.5 and 0.7 pp, respectively), the appraisal of business activity saw a fall in the last quarter (-0.5 pp.).

Legend:
- Business activity, the next 3 months
- Current stocks
- Business activity, the last 3 months
- Trade Confidence Indicator
- Long-term Average

11.5. CONSTRUCTION CONFIDENCE INDICATOR

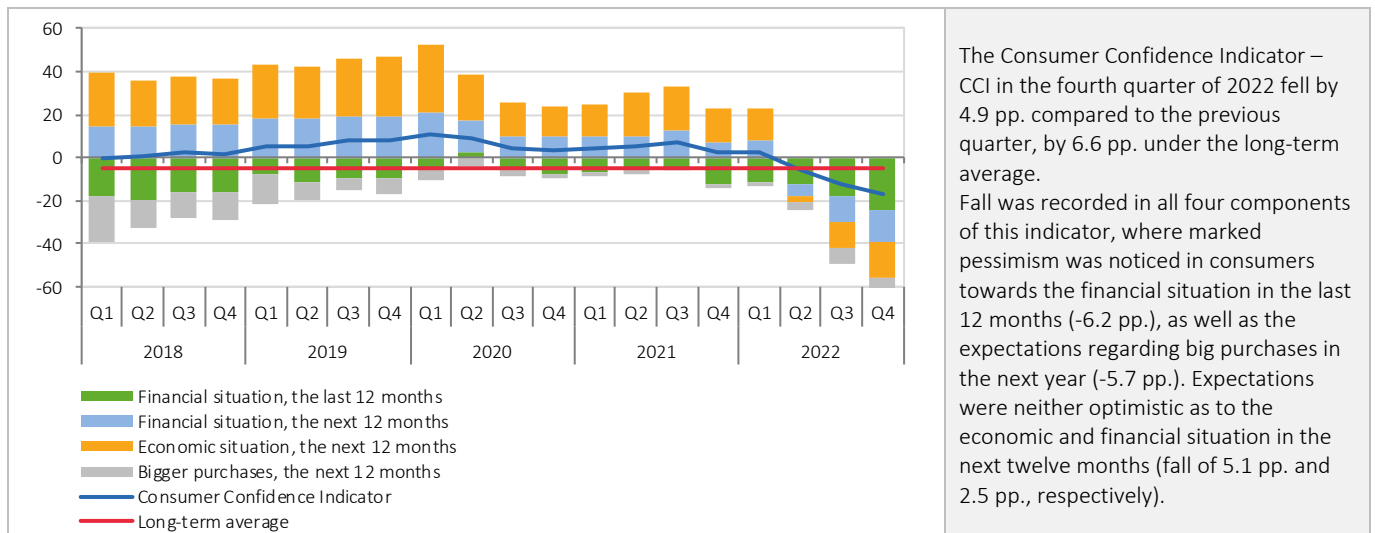The survey in construction is made of questions about contracted orders and expected employment.

Chart 11.6. Construction Confidence Indicator (%) (seasonally adjusted data)

The Construction Confidence Indicator – CCI in the fourth quarter of 2022 saw growth (+4.6 pp.), exceeding the long-term average by 7.4 pp.
The growth of the value of this indicator reflects primarily a considerable increase in the expectations concerning employment (9.6 pp.), while the expectations regarding current orders recorded slight fall (-0.5 pp.).

Legend:
- Current orders
- Expected employment, the next 3 months
- Construction Confidence Indicator
- Long-term average

11.6. CONSUMER CONFIDENCE INDICATOR[11]

The survey of household consumption is made of questions about household financial situation, general economic situation and expectations relative to bigger purchases.

Chart 11.7. Consumer Confidence Indicator (%) (seasonally adjusted data)

The Consumer Confidence Indicator – CCI in the fourth quarter of 2022 fell by 4.9 pp. compared to the previous quarter, by 6.6 pp. under the long-term average.
Fall was recorded in all four components of this indicator, where marked pessimism was noticed in consumers towards the financial situation in the last 12 months (-6.2 pp.), as well as the expectations regarding big purchases in the next year (-5.7 pp.). Expectations were neither optimistic as to the economic and financial situation in the next twelve months (fall of 5.1 pp. and 2.5 pp., respectively).

Legend:
- Financial situation, the last 12 months
- Financial situation, the next 12 months
- Economic situation, the next 12 months
- Bigger purchases, the next 12 months
- Consumer Confidence Indicator
- Long-term average

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[11] The European Commission made changes in 2018 to the methodology for the calculation of the Consumer Confidence Indicator, therefore the data have been revised accordingly.

11.7. CORRELATION OF ESI AND GDP OF SERBIA

Researchers and decision-makers in economic matters often include ESI as an explanatory variable with relevant pieces of information to model the economic growth, particularly if one takes into account that the data on the economic climate are available before most of the economic indicators. Gross Domestic Product (GDP) is the reference (explanatory) series that is most frequently used, because it reflects the movements in the economy as a whole. When considering that ESI represents a coincident indicator (showing changes at the same time when the changes are shown by the reference series), it can be concluded that it follows relatively well the GDP trend, which is confirmed also by the correlation coefficient of 0.68.

Chart 11.8. Correlation of ESI and GDP of Serbia
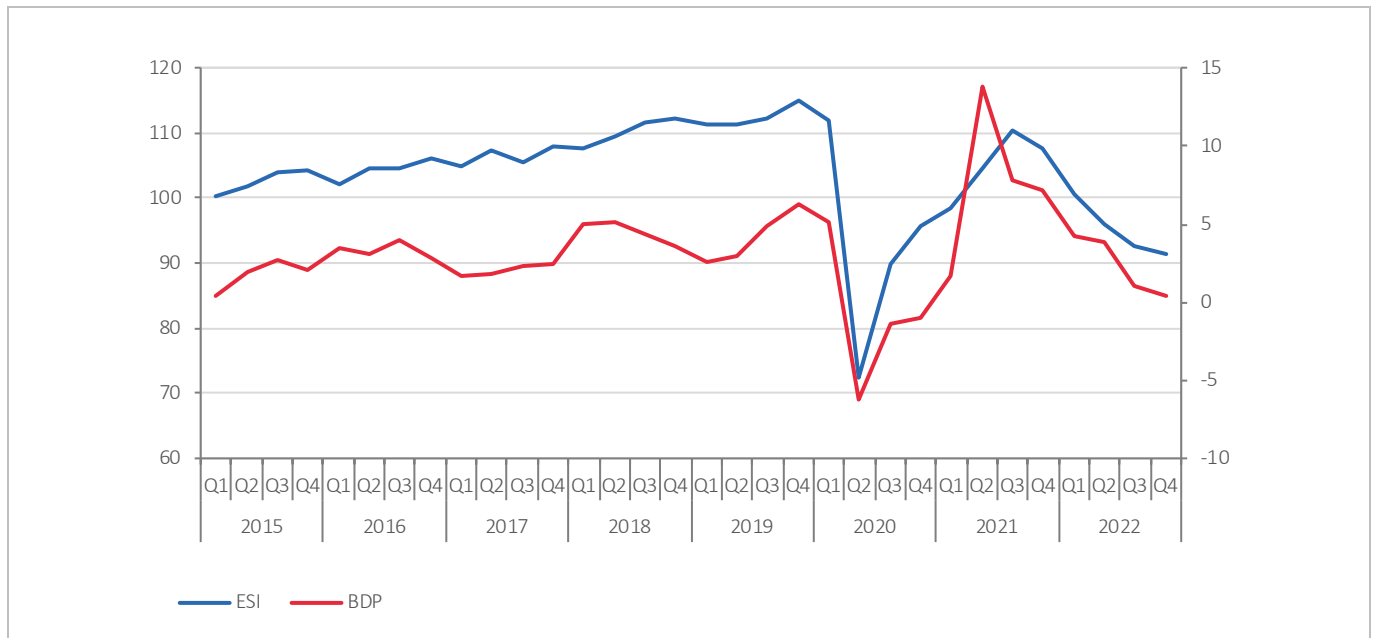
11.8. ECONOMIC SENTIMENT INDICATOR IN THE EUROPEAN UNION

Economic expectations in most of EU member states declined in the third quarter of 2022 (relative to the previous quarter), which made ESI go down by 2.6 p.p. (from the value of 92.8). The largest fall in expectations in the EU was recorded in Manufacturing (-2.8 pp.), then in Services (-1.9 pp.).

Chart 11.9. Economic Sentiment Indicators
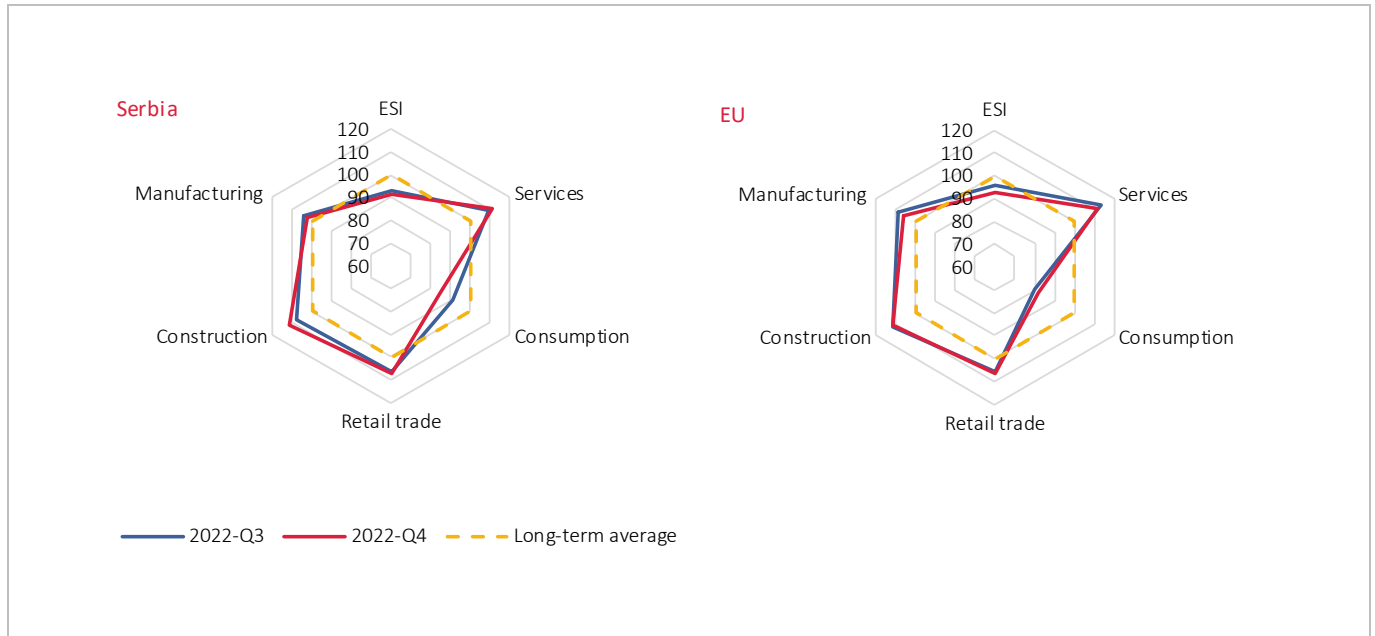
HOW TO INTERPRET THE TRACER?

The tracer scale of the chart ranges from 60 to 120 (average = 100). The most recent quarterly outcomes (Q4 2022) are compared with the previous quarterly outcomes (Q3 2022) and long-term average (= 100) of the corresponding series of confidence indicators. Developments far from the center reflect confidence indicator improvement, and close to the centre its decline.

12. REGIONAL ECONOMIC ASYMMETRIES

The starting point in realizing various aspects of regional asymmetries is the status of cities and municipalities of Serbia according to Regulation on establishing *List of Regional Development and Local Government Units for 2014* (Official Gazette of RS, no 104/2014). In compliance with the Regulation, excluding Beogradski region that comprises no municipality with the status of undeveloped area, in other three regions, number and size of undeveloped municipalities varies – Region Vojvodine has only one municipality in the group of extremely underdeveloped (out of 46 municipalities), Region Southern and Eastern Serbia has even 30 (out of total of 53), and in Region Sumadija and Western Serbia, such status is recorded in 13 out of 53 municipalities.. On the other hand, there is no municipality in Region Vojvodina with the status of devastated municipality (devastated means that development level is below 50% of the Republic average – see Glossary), while in Region Sumadija and Western Serbia, the mentioned status is recorded in three municipalities, and in Region Southern and Eastern Serbia, even 16 municipalities.

Unequal economic development in Serbia in the last several decades has contributed to deeper, already existing territorial inequalities. Regional polarization is apparent at several levels – undeveloped area, developed centre and insufficiently developed periphery. Regional disproportions – expressed in economic, social, demographic and infrastructure indicators – reflect characteristics of economic and social system of the country.

■ Gross domestic product

Regional gross domestic product presents primary statistical indicator for estimating economic performances of the region and effectiveness of regional policies and programs directed to decreasing the gap among the regions.

Out of total GDP in 2021, observed by level of NSTU 2 regions, the greatest realized GDP was in Beogradski region (40.2%), followed by Region Vojvodina (25.6%), Region Sumadija and Western Serbia (18.3%) and Region Southern and Eastern Serbia (14%).

Knowing that Beogradski region covers 3.7% of the area inhabited by 24% of the population of Serbia, it is clear that it is also the region with the highest GDP per capita (1 492 000 RSD / per capita, i.e. 62.6 % above the republic average or almost double than in Region Southern and Eastern Serbia). Other regions record GDP per capita under the average, i.e. Region Vojvodina -3.5%, Region Sumadija and Western Serbia -31.6% and Region Southern and Eastern Serbia -27.9%.

Chart 12.1. Share of the region in the national GDP, 2021

Beogradski region, 4,0% | Region Vojvodina, 2,6% | Region Sumadija and Western Serbia, 1,9% | Region Southern and Eastern Serbia, 1,5%
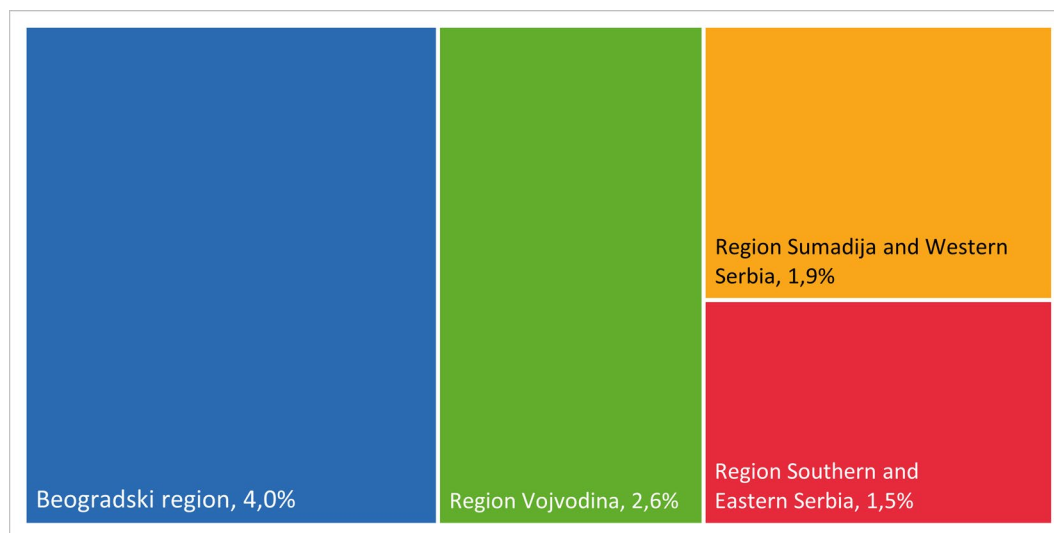
■ Average salaries and wages

Level of regions' development, measured by average net salaries and wages in 2022 varies in ratio 1.5:1, i.e. the highest salaries and wages are recorded in Beogradski region, and lowest ones in Region Sumadija and Western Serbia. Average net salaries and wages in Beogradski region amounted to RSD 94 808, or 127% of RS average (RSD 74 933), in Region Vojvodina, they were insignificantly below RS average (RSD 71 236, or 95% of RS average), while in Region Southern and Eastern Serbia and Region Sumadija and Western Serbia, they were about 86% and 84% of the Republic average (RSD 64 329 and RSD 62 687, respectively). In all regions, average salaries and wages recorded growth relative to the previous year, and the greatest absolute and relative increase was noted in Beogradski region, by 15.4%.

In 82 municipalities, average net salaries and wages were below 80% of the Republic average, i.e. in particular Belgrade municipalities, average salaries and wages were more than double relative to municipality of Bojnik (with the lowest average salaries and wages of RSD 49 706). Moreover, at the bottom of the list are the municipalities of Presevo with an average salary of RSD 50 627, Vlasotince (52 009) and Blace (52 204).

■ Labour market

The correlation of unemployment rate and development level of the region is very high, and in accordance with the mentioned, Region Southern and Eastern Serbia, with unemployment rate of 11.8% in 2022, by 25.2% exceeds the average of Serbia (9.4%). On the other hand, in Beogradski Region, unemployment rate was the lowest, 7.9%, i.e. 16.1% below the national average. Additionally, referring to employment rate, it is the highest in Beogradski region (54.2% or 7.8% above the average of Serbia), while in Region Southern and Eastern Serbia, noted was the lowest employment rate of 45.5%, or 9.5% below the Republic average (50.3%).

In 2022, Region Sumadija and Western Serbia recorded the largest share in total employment (27.5%), but this region recorded also almost a third of total unemployment (31.5%). Region Southern and Eastern Serbia with 19% has the lowest share in total employment in Serbia, participating with 24.4% in total unemployment of Serbia. (according to the Labour Force Survey).

■ Export activity

In contrast to other indicators, in 2022, Beogradski region was not on the first place regarding total export of Serbia (share of 23.3%). Region Vojvodina is on the first place with the share of 33.6% in export, followed by Region Sumadija and Western Serbia (21%) and Region Southern and Eastern Serbia (20%). Export per capita reflects regional asymmetries – Region Vojvodina records the export of EUR 5 075 per capita, and it is by 26% above the Republic average and it almost double exceeds the export value per capita in Region Sumadija and Western Serbia (EUR 3 111), which is by 23% below the average of the Republic. Region Vojvodina, as the leading exporter in 2022, recorded the greatest share in export[12] and the greatest share of agricultural and food products (22%), primarily cereals (32.2%), the most important export product being maize (15% of export of agricultural and food products).

■ Demographic structure

According to the last available data for 2021, population density in Beogradski region is by 6.8 times greater than average population density in Serbia, while in Region Southern and Eastern Serbia, population density was the lowest – 28% below the Republic average. Although all regions participate relatively equally in total population of Serbia, interregional differences are particularly apparent. For example, in eight towns in Region Vojvodina, lives even over a half of total population of Vojvodina (53.7%). However, the most obvious population inequality is in other two regions: Region Sumadija and Western Serbia comprises 10 towns in which 55% of total population of the Region lives, while in 13 undeveloped municipalities, only 13 % of population lives. This ratio is even more noticeable in Region Southern and Eastern Serbia, as 56% of population lives in 9 cities, while even in 30 underdeveloped municipalities live 31% of population. Additionally, due to economic migrations, number of population in Beogradski region is constantly increasing (by 1.8% between 2011 and 2021), while the number of

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[12] According to the Standardized International Trade Classification (SITC).

population in other three regions is constantly decreasing. Simultaneously, it means that differences in population density will be even greater as population in Region Southern and Eastern Serbia is becoming more and more fragmented, while population density in Beogradski region becomes increasingly denser.

■ Transport infrastructure

In the Republic of Serbia, there are huge regional and interregional differences regarding infrastructure equipment (transport, telecommunication and water management, i.e., accompanying supra structures). In roads' quality, telecommunication and modern living conditions, differences are, first of all, manifested in underdeveloped south area and more developed north area of Serbia. The unsatisfactory condition of the road network is particularly evident in the municipal (local) roads, necessary for the daily functioning, development and activation of municipalities and settlements. This is clearly indicated by the fact that 40 municipalities[13] have an out-of-band participation of local roads with a modern roadway, while four municipalities account for less than 20%, which are actually undeveloped and devastated areas facing the biggest developmental problems. Also, *the car renewal rate* (the number of cars registered for the first time in relation to the total number of registered cars) as an indicator of socio-economic inequalities at the regional level varies in 2022 from 5.7 in Region Southern and Eastern Serbia to 7.8 in Beogradski region, where a quarter of the vehicles was registered. The number of first-time registered cars compared to the number of inhabitants in 2022 reflects a similar ratio, with Beogradski region leading up to 33% above the average of the Republic of Serbia versus Region Southern and Eastern Serbia, with 24% below the national average.

Regional asymmetry is seen through the relation between the extreme (the highest and the lowest) values of the key indicators. For example, the highest density of population is recorded in Belgrade and exceeds 9 times the population density in Region Southern and Eastern Serbia, where it is the lowest (Table 12.1)

Table 12.1. Extreme values and indicators of regional asymmetry, 2022

Indicators	Population density, km², 2021	GDP/per capita, 2021	Average net salaries and wages	Unemployment rate	Export per capita	Demographic emptying, 2011–2021 (%)
Extreme Values (the highest : the lowest)	9 : 1	2.3 : 1	1.5 : 1	1.5 : 1	1.6 : 1	(-9.9) : (+1.8)
	Beogradski region: Region Southern and Eastern Serbia	Beogradski region: Region Southern and Eastern Serbia	Beogradski region: Region Sumadija and Western Serbia	Region Southern and Eastern Serbia: Beogradski region	Region Vojvodina: Region Sumadija and Western Serbia	Region Southern and Eastern Serbia: Beogradski region

Chart 12.2. Disproportions at the regional level in Serbia, (RS level = 100%), 2022

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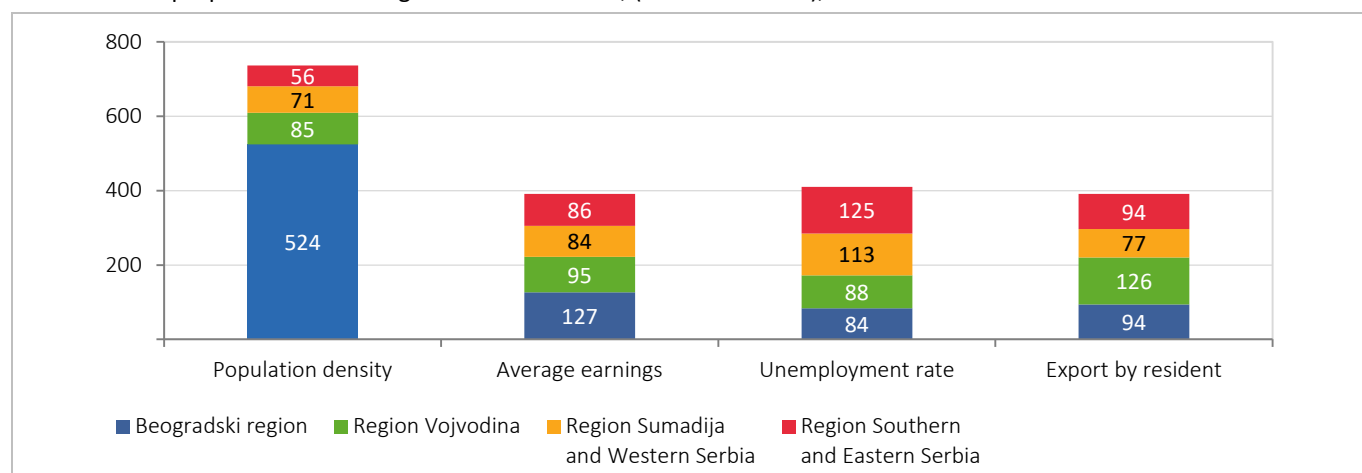
[13] Data relate to 2021.

Table 12.2. Indicators of regional development of Serbia (NSTJ 2) (RS level = 100%)

	2020				2021[14]				2022			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Beogradski region												
Average salaries and wages in dinars	124.0	123.5	123.3	124.1	124.0	123.8	124.6	126.2	125.8	125.8	126.3	128.0
Employment rate	109.0	104.1	102.0	102.6	109.5	109.1	107.2	106.2	106.7	107.1	108.9	108.4
Unemployment rate	73.2	83.6	86.7	89.9	75.0	81.1	83.8	81.6	81.1	84.3	84.3	83.7
Exports per capita in euros	99.5	110.4	97.6	98.8	93.2	94.2	97.4	96.4	91.0	91.3	94.1	100.5
Number of first- time registered passengers' cars per 1000 inhabitants	130.7	137.3	130.0	125.7	125.0	136.8	124.3	125.4	126.3	135.8	132.6	135.1
Region Vojvodina												
Average salaries and wages in dinars	95.2	94.9	95.2	95.5	95.2	94.8	94.5	95.1	95.1	94.9	94.9	95.4
Employment rate	97.7	97.5	100.0	99.2	101.9	99.2	101.6	102.8	99.8	99.4	101.6	100.0
Unemployment rate	86.6	82.2	80.0	87.9	85.2	86.5	83.8	89.8	91.5	86.5	83.1	88.0
Exports per capita in euros	134.3	134.9	130.8	135.4	136.8	131.8	125.6	123.1	125.6	128.8	125.3	122.9
Number of first- time registered passengers' cars per 1000 inhabitants	95.1	91.7	91.1	94.7	94.4	89.7	90.2	94.1	95.2	90.5	88.6	91.5
Region Sumadija and Western Serbia												
Average salaries and wages in dinars	84.8	85.1	85.5	84.7	84.9	85.2	85.2	84.2	83.9	83.9	83.9	83.0
Employment rate	101.4	102.3	102.6	103.6	98.9	100.0	101.0	100.4	102.2	99.4	98.6	100.2
Unemployment rate	118.6	106.8	107.8	104.0	114.8	122.5	110.5	109.2	109.4	116.9	109.0	106.5
Exports per capita in euros	81.3	74.5	84.2	83.1	79.6	80.4	79.0	76.9	76.8	77.4	76.9	76.9
Number of first- time registered passengers' cars per 1000 inhabitants	95.2	94.2	97.0	97.5	98.9	94.5	101.0	99.7	96.9	94.3	100.2	97.9
Region Southern and Eastern Serbia												
Average salaries and wages in dinars	87.6	88.4	88.2	87.8	87.8	88.3	87.9	85.7	86.6	86.9	86.1	83.9
Employment rate	90.8	95.6	93.6	92.6	88.3	90.3	88.2	88.4	89.5	93.1	89.8	89.6
Unemployment rate	126.8	131.5	133.3	123.2	131.3	109.0	127.6	124.5	124.5	112.4	133.7	126.1
Exports per capita in euros	81.4	76.8	84.2	78.5	82.6	88.0	93.1	98.4	101.0	95.0	90.4	89.3
Number of first- time registered passengers' cars per 1000 inhabitants	75.8	74.1	79.5	79.1	78.2	76.0	81.7	77.6	78.6	76.7	75.6	72.4

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[14] Labour market indicators - employment rate and unemployment rate, were created according to the new redesigned Eurostat methodology, which the Statistical Office of the Republic of Serbia has been conducting as a part of 2021 Labour Force Survey. The change in methodology was made on the basis of and in accordance with the new Regulation of the European Parliament and the Council, which entered into force on January 1st, 2021. More information on methodological changes and their effects on the main statistical indicators can be found in a special publication via the link: https://www.stat.gov.rs/vesti/20210628-anketa-o-radnoj-snazi-nova-metodologija/

GLOSSARY

Classification of regions and local government units (municipalities) – according to the Regulation. The Regulation establishes the unique list of *regions*' development (that are by development levels classified as developed and insufficiently developed regions) and *municipalities,* classified in four groups and devastated areas. In the first group are municipalities with the development level above the Republic average; in the second group are municipalities with the development level of 80% - 100% of the Republic average, the third group comprises insufficiently developed municipalities with the level of development of 60% - 80% of the average, while in the fourth group are extremely insufficiently developed municipalities, with the development level below 60% of the Republic average.

Devastated areas are municipalities from the fourth group with the development level below 50% of the Republic average (according to the data of the authority competent for statistics and finances tasks). Classification of the regions is performed on the basis of GDP value per capita in the observed region compared to Republic average, for the referent period. Developed regions are the regions that realize gross domestic product value above the Republic average, (Beogradski Region and Region Vojvodina). Insufficiently developed regions are the ones in which GDP value is below the Republic average, (Region Sumadija and Western Serbia and Region Southern and Eastern Serbia). Additionally, status of insufficiently developed region refers to Region Kosovo I Metohija.

Demographic emptying is the term that depicts natural and mechanical population outflow in the specific geographic and administrative area.

13. AGRICULTURE

Agricultural production is made of two main branches: crop production and livestock production. Due to its specific nature, relevant data related to agricultural production are available mainly on annual basis. This issue of Trend presents the movement of occurrences in agriculture concerning the fourth quarter of 2022 and the whole 2022. The analysed occurrences are the following:

- in plant production, with an overview of the autumn sowing,
- occurrences in livestock productions (number of livestock, production of consumption cow milk in dairy factories and livestock slaughtering in slaughtering houses),
- prices of agricultural products and intermediate goods, and
- external trade in agricultural products.

13.1. PLANT PRODUCTION IN 2022 AND AUTUMN SOWING

Plant production can be divided into crop and vegetable production, fruit growing and viticulture. Crop production is the most significant branch of plant production, accounting for 74.5% of the total value of plant production in 2022. It is followed by fruit growing (share of 23.8%) and viticulture (share of 1.8%). In 2022, plant production was smaller by 11.3% than in the previous year. This trend was primarily impacted by bad weather conditions, which led to a fall of crop and vegetable production of 16.7%. On the other hand, fruit production, with a share of 23.8% in the total value of plant production, saw a growth of 9.3% in 2022 to 2021.

Even though the very beginning of the year promised optimistic results, as time passed, weather conditions reflected very badly on vegetable production. In addition to the current 2022 year, drought years for agriculture were also 2000, 2003, 2007, 2012 and 2017, when average yields and total production were far under the average.

By groups of products within plant production, the indices (2022/2021) were:

- Cereals: 78.5 (wheat 90.3; maize 71.1)
- Industrial crops: 89.1 (sunflower 105.9; soya beans 73.8)
- Vegetables: 95.9 (potatoes 85.3; tomatoes 109.6; paprika 97.6)
- Fodder crops: 81.0
- Fruits: 109.3 (apples 94.7; plums 118.4; raspberries 105.0)
- Viticulture: 104.3

Weather conditions influence also significantly the moment of sowing, therefore one can often hear agricultural production called „open air factory". When looking at crop production (for most of the crops the optimal time for autumn sowing is October.[15] Factors, such plowing, selection of varieties and the sowing moment itself, will impact to a great extent later yields. However, unstable weather conditions prolong autumn sowing beyond the optimal time. When there are different varieties of seeds in the market, with different resistance, the impact of unfavourable climatic conditions becomes smaller. On the other hand, beside different varieties of seeds in the market, it is recommended to keep the sowing within the optimal time. In the observed year, October was favourable for sowing so we can say that autumn sowing in 2022 was done within the optimal time.

In the autumn sowing in 2022 a year-on-year growth of total sown areas, amounting to 8.9%. With all crops, there were increase in sown areas, except rye (total sown area, 5 379 ha, a fall of 3.6% compared to the previous year). Wheat was sown on 665,7

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[15] The optimal time for wheat sowing, which is one of the major crops in crop production, is 5–25 October.

thousand hectares, by 6.1% more than 2021. Other crops – barley, oat and rapeseed saw increase in amounts, 19.3%, 17.4% and 30.9%, respectively, compared to the 2021

Chart 13.1. Structure of sown area, 2022 (%)

The largest share in the structure of sown areas in autumn sowing in 2022 was noticed with wheat, 76.2% (665,7 thousand hectares) and barley, 12.5% (108,9 thousand hectares). The other sown areas and rapeseed accounted for up to 4.4%, while oat accounted for 1.9% and 0.6%, respectively.

Table 13.1. Year-on-year growth rate of sown areas in autumn sowing (%)

	Total sown area	Wheat	Barley	Oat	Rye	Rapeseed	Other sown areas
Year-on-year growth rate	8.9	6.1	19.3	17.4	-3.6	30.9	12.0

13.2. LIVESTOCK PRODUCTION

Livestock production in 2022 accounted for 32.3% in the total value of agriculture (plant production accounted for 67.7%). According to the decreasing trend, the most significant branches in the value of livestock production were:

- Bovine breeding (share of 39.7%),
- Pig breeding (share 32.8%),
- Poultry breeding (share of 16.2%),
- Sheep breeding (8.4%), and
- Apiculture (3.0%).

Looking at the ten-year period (2013–2022), one notices fall of the number of heads with all species of livestock, except with sheep which saw slight growth.

Over 2013–2022, the number of bovine animals decreased over the years by 1.5%. Similar situation was with pigs and poultry, where the average number of livestock heads decreased over the years by 1.8% for pigs and 2.5% for poultry. On the other hand, in the observed period the number of sheep increased yearly by 0.7%.

Table 13.2. Livestock balance, 2020–2022

|	Livestock balance, in thousands			
	Bovine animals	Pigs	Sheep	Poultry
2020	886	2983	1685	15249
2021	860	2868	1695	15348
2022	800	2667	1721	14187

In 2022, there was a decrease in the number of cattle and pigs (by 7%) and poultry (by 7.6%). On the other hand, in 2022 to 2021, the number of sheep grew by 1.5%.

13.3. LIVESTOCK SLAUGHTER

In the Republic of Serbia, livestock slaughter is performed in registered slaughtering houses and outside them, i.e. on agricultural holdings. As far as bovine animals are concerned, slaughter in slaughtering houses accounted for about 57% of total slaughter of this livestock species, while with and sheep slaughters mostly done outside slaughtering houses, about 60% and 83, respectively. Data on livestock slaughter in slaughtering houses in the territory of the Republic of Serbia, totaling to this day to 361. In this issue of Trends, the analysis is focused on livestock slaughter in slaughtering houses.

In 2022, compared to 2021, the number of slaughtered **bovine animals** slaughtered in slaughtering houses fell by 9.3%. Observed quarterly, in the fourth quarter the number of bovine animals slaughtered in slaughtering houses fell by 15.6%, compared to the same quarter of the previous year. The largest share in total slaughter in the fourth quarter of this year was that of bovine animals aged 1–2, amounting to 73.9%.

Chart 13.2. Number of slaughtered pigs, sheep and bovine animals slaughtered in slaughtering houses (in thous.)
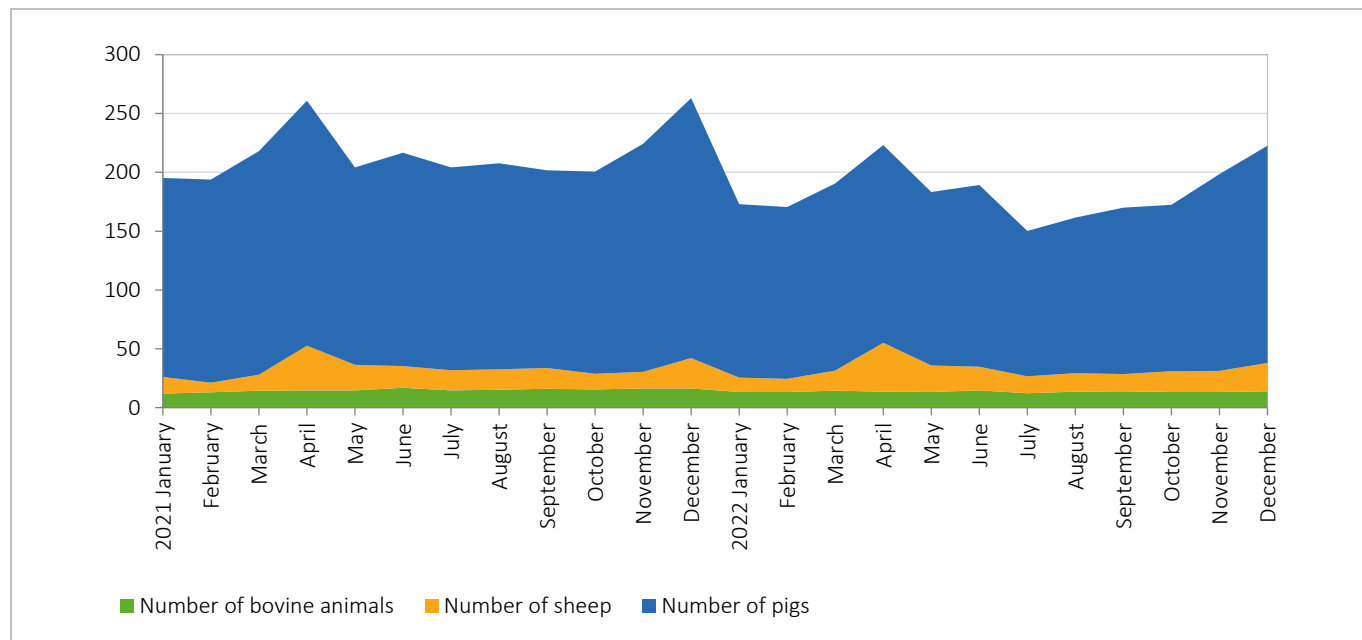
The number of slaughtered **pigs** slaughtered in slaughtering houses in 2022 went down by 17.2%, compared to the same period of the previous year. Observed quarterly, in the fourth quarter of 2022 the number of slaughtered pigs was lower by 15.9% than in the same quarter of 2021. Of total slaughtered pigs, the largest share was that of pigs over 50 kg, amounting to 86.6%.

Of the total number of slaughtered **sheep** in the territory of the Republic of Serbia only about 17% were slaughtered in slaughtering houses. In 2022, the number of sheep slaughtered in slaughtering houses increased by 4.2% in relation to the same period of the previous year. Observed quarterly, in the fourth quarter of 2022, the number of slaughtered sheep fell by 11.6% relative to the same quarter of 2021. Of totally slaughtered sheep in slaughtering houses in the the fourth quarter of 2022, the largest share was that of *lambs up to six months*, amounting to 94.4%.

13.4. PRICES OF MILK, CEREALS AND LIVESTOCK

Estimates show that agricultural holdings engaged in the production of cow milk distribute it to milk collection points (dairy factories) about 59% of total production[16]. Of the quantity of cow milk that stays on the agricultural holding (about (41%) about 10% are used for feeding household members and livestock on the holding, about 22% are transformed in dairy products (mainly cheese and „kajmak"), and the rest (about 9%) is sold to direct consumers. According to the same source, losses on the holding are insignificant (up to 0.1%).

Cow milk accounts for about 97% of the total production of milk on holdings, and the remnant refers to sheep and goat milk. In 2022, the production of consumption cow milk in dairy factories increased by 1.2% relative to 2021. When looking by quarters, in the fourth quarter of 2022 the production of consumption cow milk grew by 30.8%, compared to the same quarter of the previous year.

Chart 13.3. Production of consumption cow milk in dairy factories (in thous. tons)

Quantity (thousands tons) — Average for the period

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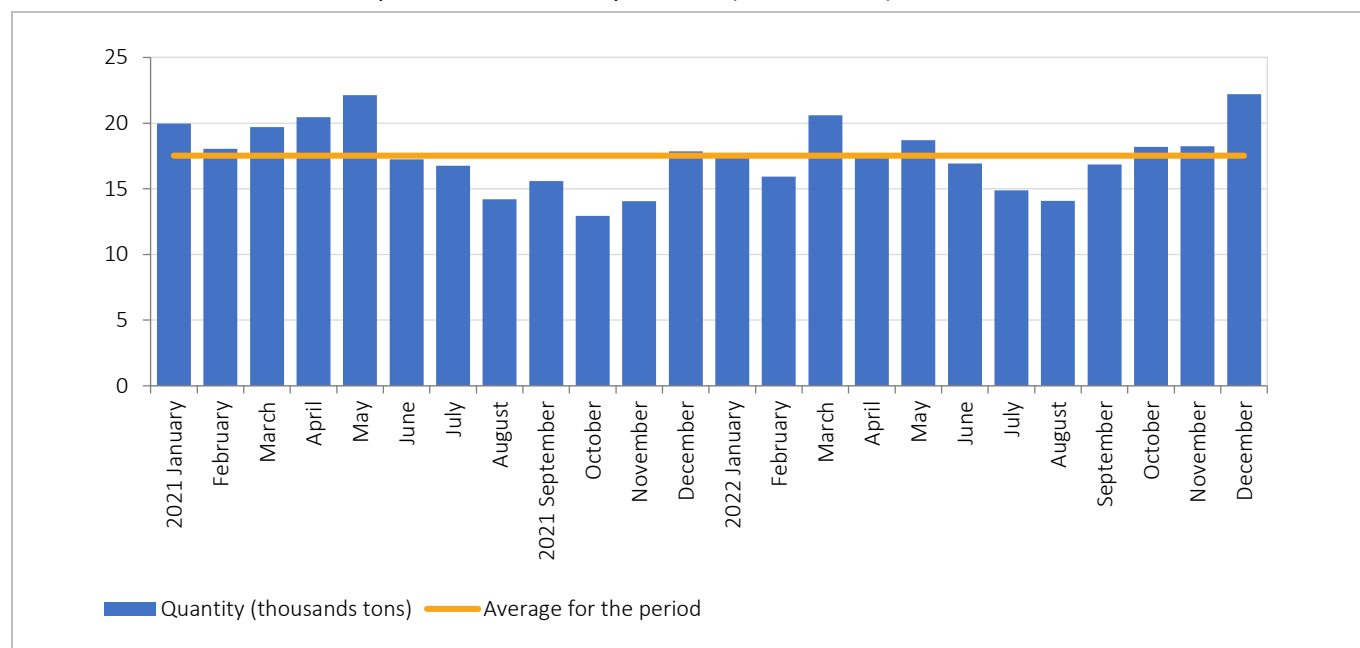
[16] Survey on Agricultural Production – Livestock Production, 2021.

Purchase prices of cow milk increased by 48.1% in 2022, compared to 2021[17]. In relation to the same quarter of the previous year, in the fourth quarter of 2022 prices of milk increased by 91%.

Consumer prices of milk had a growing trend in 2022 and were higher by 22.5% than in 2021. Observed by quarters, the growth of consumer prices amounted to 48.8% in the fourth quarter of the current year, compared to the same quarter of the previous year.

Based on the comparative presentation and previous analysis, it can be concluded that the purchasing prices of milk showed a tendency of faster growth in 2022, compared to 2021 (increase of 48.1%), while consumer prices growth in the same period amounted to 22.5%

As this issue of *Trends* analyses, besides livestock products, the production of certain crops, as well a selected categories of livestock, it is necessary to present also their purchasing prices.

In 2022, the **price index of cereals** amounted to 133.5%. In this period the purchasing prices of wheat grew by 435.3%, while the price of maize went up by 28.1%. The price index of **industrial crops** in the same period grew by 11.4%.

Observed by **livestock categories,** in 2022, the purchasing price of bovine animals grew by 26.1% and of pigs by 29.9%.

Table 13.3. Comparative review of purchase and consumer prices of cow milk

Month	Milk price, din./lit.	
	Purchase price	Consumer price
January 2021	32.35	91.12
February	31.94	91.22
March	32.08	90.85
April	32.04	90.88
May	31.83	91.07
June	31.60	90.96
July	31.58	90.93
August	31.84	91.09
September	32.37	91.15
October	33.38	92.69
November	34.40	93.81
December	35.25	94.90
January 2022	36.91	95.33
February	37.54	95.50
March	38.08	96.81
April	39.86	97.41
May	40.97	101.62
June	42.29	104.46
July	45.16	110.10
August	47.70	111.30
September	53.13	117.40
October	63.87	133.60
November	65.88	141.80
December	67.06	143.40

Table 13.4. Producers' prices of agricultural and fishing products

	XII 2022 / XII 2021	XII 2022 / XI 2022	Ø 2022 / Ø 2021
Agriculture and fishing	132.1	98.4	125.7
Cereals	122.3	93.7	133.5
Wheat	115.3	90.9	145.3
Maize	128	94.7	128.1
Industrial crops	104.2	99.2	111.4
Livestock and poultry	136.1	103.2	126.9
Bovine animals	125.2	100.2	126.1
Pigs	144.6	105.1	129.9

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[17] Those are producers' prices of agriculture and fishing – the prices at which purchase from family holding is made and prices at which legal persons engaged in agriculture sell their products.

13.5. INTERMEDIATE GOODS

A stable and successful production in agriculture depends on many factors. As far as crop production is concerned, besides adequate land tillage for high and stable yields, the used inputs are extremely important. The latter refer to seeds and seeding materials, fertilizers and protection preparations. As for the other agricultural branch, i.e. livestock production, good animal health and increase require adequate animal feed and housing facilities. To meet all these conditions one need not only human labour but also capital goods, i.e. agricultural machinery. Therefore, farmers have to have corresponding machinery or to engage others (fertilization, sprinkling, harvest, etc.). All these factors make the intermediate consumption (accounting for almost 60% of the total value of agricultural production)[18], and their price indices are presented in table 13.5.

The total intermediate consumption, i.e. the prices of intermediate goods, capital goods and services in agriculture in the fourth quarter of 2022 increased by 18.9% compared to the same quarter of the previous year. Observed by groups of products, the largest price increase in the fourth quarter of 2022, relative to the same quarter of the previous year, was recorded in: Mineral fertilizers (44.3%), Seeds (85.8%), Plant protection preparations (24.3%) and Animal feed and Energy commodities (13.1%).

In 2022 to 2021, the total intermediate consumption increased by 27.2%, and the largest influence was recorded in the groups: Mineral fertilizers (109.2%) seeds (37.5%) and Plant protection preparations.

Table 13.5. Price indices of intermediate goods, capital goods and services in agriculture

	IV quarter 2022 IV quarter 2021	IV quarter 2022 III quarter 2022	Ø 2022 Ø 2021
Total	**118.9**	**100.6**	**127.2**
Products and services for current use in agriculture	**119.5**	**100.6**	**128.4**
Seed	144	87.4	137.5
Energy commodities	113.1	100.4	113.1
Mineral fertilizers	144.3	97	209.2
Plant protection preparations	126.5	101.8	126.4
Animal feed	113.1	105.1	107.8
Equipment maintenance	110.2	103.3	116.1
Facilities maintenance	112.7	101.6	118.4
Other products and services	103.8	100.3	104.2
Products and services for investments in agriculture	**111.9**	**100.4**	**112.8**
Machinery in agriculture	111.9	100.4	112.8

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[18] https://publikacije.stat.gov.rs/G2021/Pdf/G202110118.pdf (page 19)

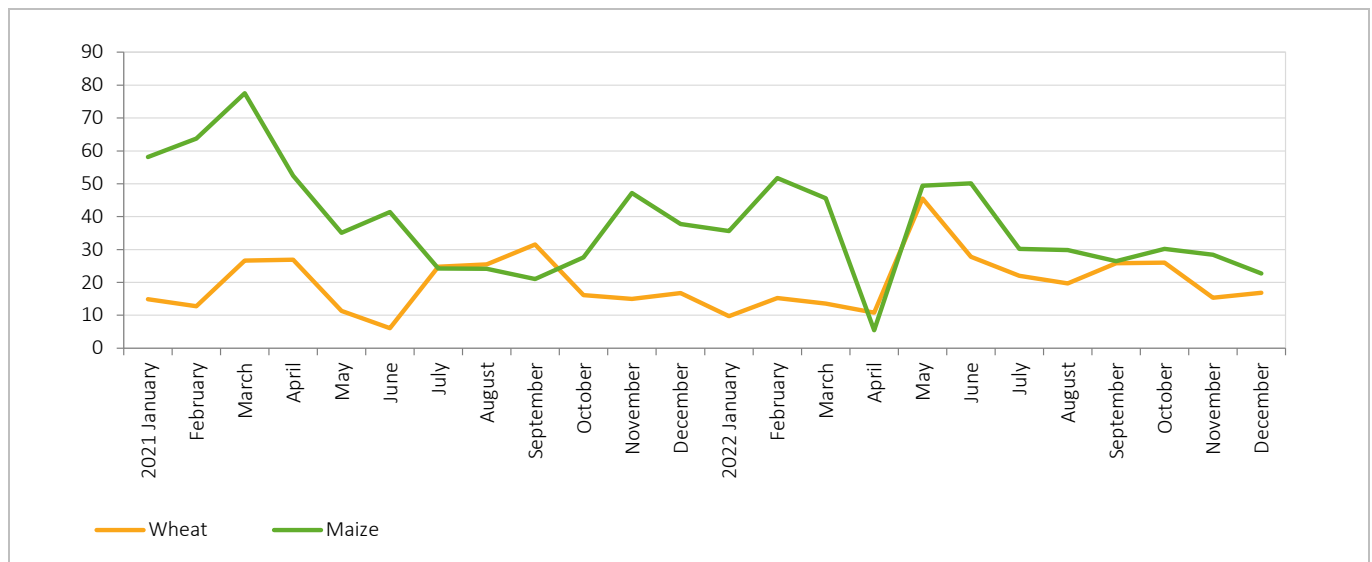## 13.6. EXTERNAL TRADE IN AGRICULTURAL PRODUCTS

In 2022, the section Agriculture, forestry and fishing[19] realised a positive external trade balance of EUR 348.6 million. Exports of this section amounted to EUR 1.3 billion, by 4.4 % less than in the same period of 2021, and the share in total exports in the observed period fell from 6.1% to 4.6%. Imports of this section in 2022 amounted to EUR 924.0 million, by 27.7% more than in the same period of the previous year, and the share in total imports fell from 2.5% to 2.4%.

Exports fall 2021 is mostly a result of a cumulative fall of 9.9% in exports of wheat (except for rice), leguminous and oil seed, the most representative groups in this section (share of 64.9%). As with exports, on import side, the representative group of products is growing of wheat (except rice) leguminous and oil seed (share of 21% in imports in the section of agriculture), which records a cumulative growth of 64% in 2022.

Export of maize in 2022 amounted to EUR 405.8 million, a fall of 20.5% relative to 2021. Most of maize, when looking at the value, was exported to Romania (29.4% of total exports of this crop). 21.5% was exported to Italy, then to Bosnia and Herzegovina, Hungary and Austria, with the shares of 13.3%, 10.5% and 6.8.0% of total exports, respectively. Exports of maize in the fourth quarter of 2022 were lower by 27.7% than in the fourth quarter of 2021.

Export of wheat in 2022 amounted to EUR 248.3 million, a growth of 8.8% relative to the same period of the previous year. Looking at values, in 2022 most of the wheat was exported to Italy (37.3% of total exports of wheat), then to Romania (23.4%) followed by Bosnia and Herzegovina, North Macedonia and Albania with 13.7%, 11.2% and 7.5% of total exports, respectively. Wheat exports in the fourth quarter of 2022 were higher by 21.6% than in the fourth quarter of 2021.

Chart 13.4. Export of wheat and maize by months (in mill. euros)

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[19] According to CA (2010).

Q4

TRENDS 2022 - 4th quarter