



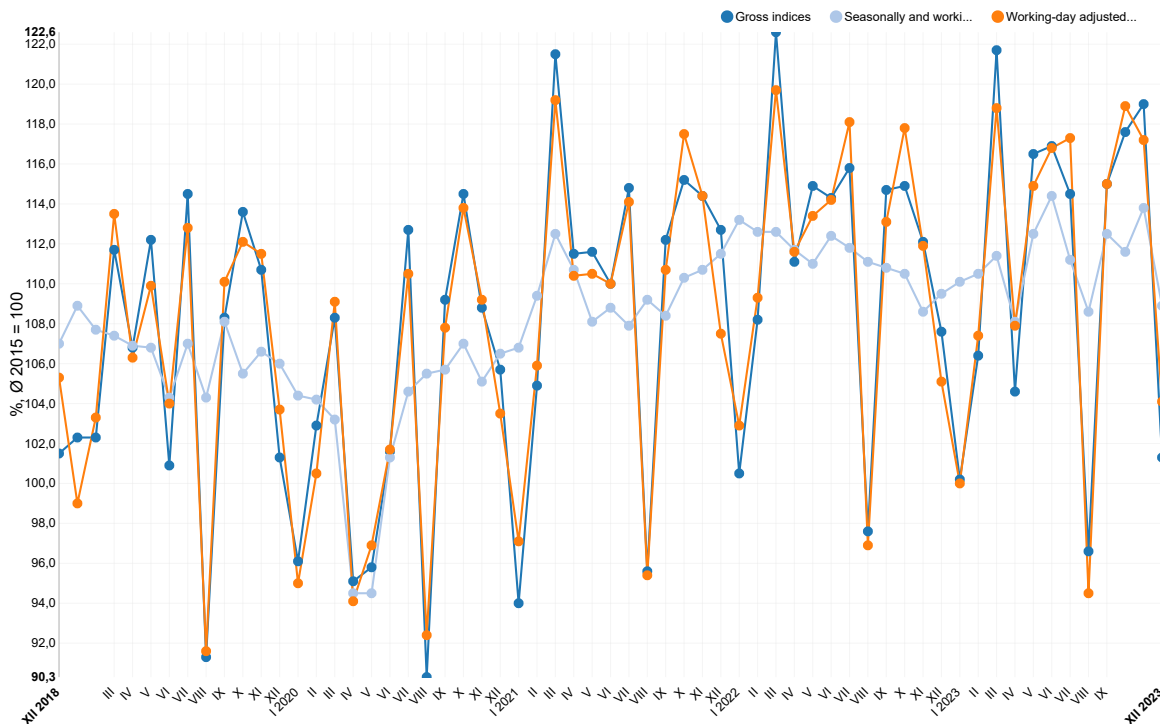
## INDUSTRIAL PRODUCTION VOLUME INDEX AND INDICES OF STOCKS, PERSONS EMPLOYED AND LABOUR PRODUCTIVITY IN INDUSTRY, DECEMBER 2023

### Industrial production volume index – total

The total seasonally and working-day adjusted industrial production in the Republic of Croatia decreased by 4.3% in December 2023 as compared to November 2023.

In December 2023 as compared to December 2022, working-day adjusted industrial production in the Republic of Croatia decreased by 0.9%.

### G-1 INDUSTRIAL PRODUCTION VOLUME INDICES OF REPUBLIC OF CROATIA, DECEMBER 2018 – DECEMBER 2023



### Industrial production volume index, according to the MIGs 2009 aggregates

#### Monthly comparison<sup>1)</sup>

In December 2023, as compared to November 2023, the production of Capital goods decreased by 15.3%, of Energy by 9.3% and of Intermediate goods by 0.4%, the production of Non-durable consumer goods remained at the same level, while the production of Durable consumer goods increased by 1.4%.

#### Annual comparison<sup>2)</sup>

In December 2023, as compared to December 2022, the production of Durable consumer goods decreased by 13.9%, of Capital goods by 11.2% and of Energy by 0.7%, while the production of Non-durable consumer goods increased by 3.9% and of Intermediate goods by 1.4%.

### Industrial production volume index, according to the NKD 2007 sections – adjusted indices

#### Monthly comparison<sup>1)</sup>

According to the NKD 2007 sections, seasonally and working-day adjusted industrial production in December 2023, as compared to November 2023, decreased in Manufacturing by 5.4% and in Electricity, gas, steam and air conditioning supply by 3.5%, while it increased in Mining and quarrying by 2.5%.

#### Annual comparison<sup>2)</sup>

In December 2023 as compared to December 2022, working-day adjusted industrial production decreased in Manufacturing by 1.8% and in Mining and quarrying by 1.8%, while it increased in Electricity, gas, steam and air conditioning supply by 2.3%.

## Producers' stock index of industrial finished products – gross indices

At the end of December 2023, the total stocks of industrial finished products in the Republic of Croatia were 5.3% lower than the stocks at the end of November 2023, and 5.9% higher than the stocks at the end of December 2022.

## Index of persons employed in industry – gross indices

The total number of persons employed in industry in December 2023 decreased by 0.5% compared to November 2023 and by 2.4% compared to December 2022.

## Labour productivity index in industry – gross indices

In the period from January to December 2023, total labour productivity in industry increased by 1.1%, as compared to the same period of 2022.

1) Seasonally and working-day adjusted indices. See Notes on Methodology.

2) Working-day adjusted indices. See Notes on Methodology.

## I SEASONALLY ADJUSTED AND WORKING-DAY ADJUSTED INDICATORS

### 1 INDUSTRIAL PRODUCTION – MONTH-ON-MONTH GROWTH RATES CALCULATED ON BASIS OF SEASONALLY AND WORKING-DAY ADJUSTED INDICES, DECEMBER 2023

%

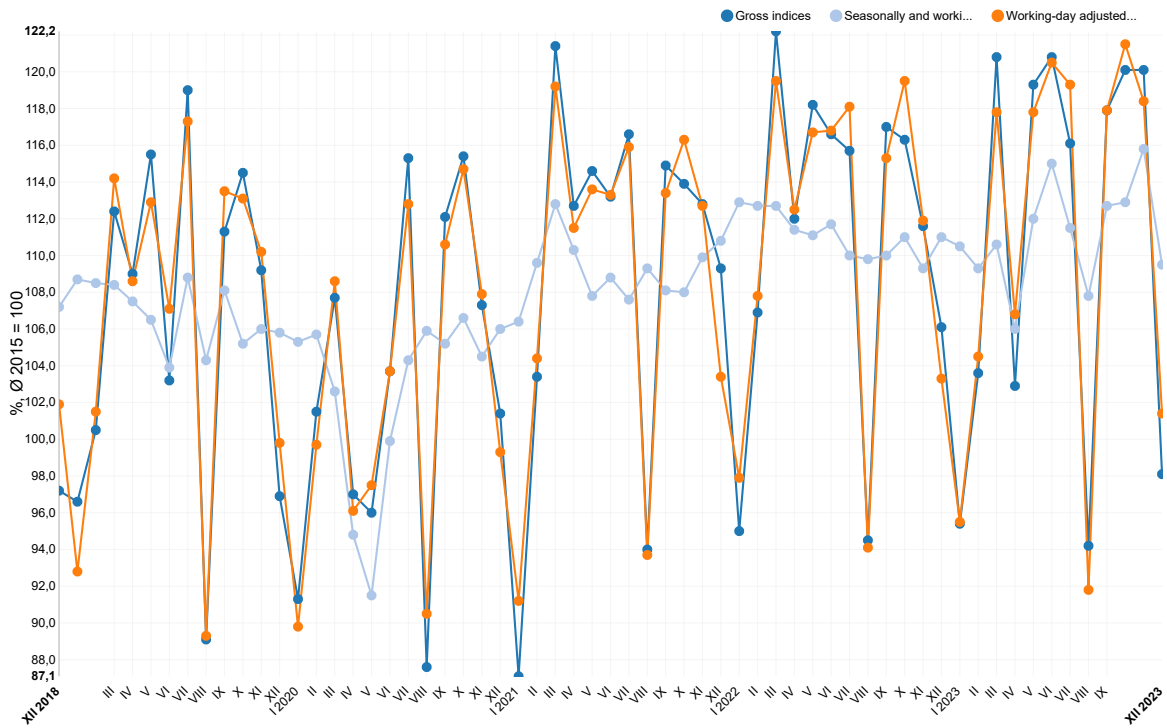
	VII 2023 VI 2023	VIII 2023 VII 2023	IX 2023 VIII 2023	X 2023 IX 2023	XI 2023 X 2023	XII 2023 XI 2023
<b>Total industry</b>	-2,8	-2,3	3,7	-0,9	2,0	-4,3
<b>According to MIGs 2009</b>						
AI Intermediate goods	0,2	-1,7	0,9	4,4	-2,6	-0,4
AE Energy	-2,0	0,7	0,6	-4,2	6,7	-9,3
BB Capital goods	-6,3	-11,6	12,4	-2,4	7,6	-15,3
CD Consumer durables	6,8	-6,9	-16,3	5,0	6,6	1,4
CN Consumer non-durables	-6,5	0,8	7,1	-2,9	0,8	0,0
<b>According to NKD 2007 sections and divisions</b>						
B Mining and quarrying	0,0	-2,3	-12,4	14,2	-3,0	2,5
06 Extraction of crude petroleum and natural gas	2,2	-3,2	-22,4	28,2	-0,3	-0,8
08 Other mining and quarrying	-4,6	-3,2	3,0	2,7	-12,6	12,6
09 Mining support service activities	0,1	1,3	-0,7	2,0	-1,8	-3,3
C Manufacturing	-3,0	-3,3	4,5	0,2	2,5	-5,4
10 Manufacture of food products	-4,0	2,8	2,4	-0,2	1,0	3,8
11 Manufacture of beverages	0,0	-2,5	8,9	5,6	-7,1	-25,4
12 Manufacture of tobacco products	-0,1	10,5	-3,2	-5,4	-10,3	-9,0
13 Manufacture of textiles	-1,9	9,5	-11,5	4,1	9,1	9,2
14 Manufacture of wearing apparel	-3,9	-1,6	4,7	-7,7	-1,4	1,5
15 Manufacture of leather and related products	-1,1	-11,5	19,9	-4,2	-5,3	2,3
16 Manufacture of wood and of products of wood and cork, except furniture; manufacture of articles of straw and plaiting materials	-4,6	-2,1	6,2	5,4	-2,3	1,9
17 Manufacture of paper and paper products	3,7	-6,4	8,8	1,7	-4,1	3,8
18 Printing and reproduction of recorded media	-8,8	-0,5	-0,5	4,2	4,6	-14,1
19 Manufacture of coke and refined petroleum products	0,0	8,3	-5,8	-3,9	58,8	-37,7
20 Manufacture of chemicals and chemical products	-6,7	2,9	4,1	-1,0	7,5	-12,6
21 Manufacture of basic pharmaceutical products and pharmaceutical preparations	-16,0	2,2	12,9	-13,7	6,7	33,6
22 Manufacture of rubber and plastic products	-1,5	-2,9	-1,9	0,3	-2,6	-2,4
23 Manufacture of other non-metallic mineral products	-1,7	-0,4	1,7	1,3	-4,5	2,9
24 Manufacture of basic metals	3,0	-14,2	19,0	-5,0	4,1	-6,4
25 Manufacture of fabricated metal products, except machinery and equipment	-14,8	-8,0	7,3	-1,2	14,2	-16,0
26 Manufacture of computer, electronic and optical products	0,4	-3,4	-1,2	20,9	-21,8	-2,4
27 Manufacture of electrical equipment	1,9	-10,5	-2,1	35,7	-11,2	-5,8
28 Manufacture of machinery and equipment n. e. c.	9,3	-2,3	3,9	0,3	-2,4	0,7
29 Manufacture of motor vehicles, trailers and semi-trailers	14,0	-18,9	27,8	-14,2	-7,4	13,5
30 Manufacture of other transport equipment	15,9	-22,0	7,9	-14,5	10,3	-40,0
31 Manufacture of furniture	-1,7	-4,1	-5,5	11,9	8,1	0,7
32 Other manufacturing	-16,2	-12,9	25,3	11,6	-11,8	-1,5
33 Repair and installation of machinery and equipment	2,7	1,4	0,0	-2,1	-0,4	-10,8
D Electricity, gas, steam and air conditioning supply	-1,3	-0,6	6,7	-10,0	1,4	-3,5
35 Electricity, gas, steam and air conditioning supply	-1,3	-0,6	6,7	-10,0	1,4	-3,5

2 INDUSTRIAL PRODUCTION – YEAR-ON-YEAR GROWTH RATES CALCULATED ON BASIS OF WORKING-DAY ADJUSTED INDICES, DECEMBER 2023

96

	VII 2023 VII 2022	VIII 2023 VIII 2022	IX 2023 IX 2022	X 2023 X 2022	XI 2023 XI 2022	XII 2023 XII 2022	I – XII 2023 I – XII 2022
<b>Total industry</b>	-0,6	-2,4	1,7	1,0	4,7	-0,9	-0,1
<b>According to MIGs 2009</b>							
AI Intermediate goods	0,6	-1,8	-1,7	3,9	2,4	1,4	-2,8
AE Energy	-6,0	-3,0	1,4	-0,2	9,0	-0,7	-0,6
BB Capital goods	8,5	-7,1	7,2	0,1	13,8	-11,2	5,6
CD Consumer durables	-5,3	-11,8	-23,0	-21,1	-14,6	-13,9	-12,3
CN Consumer non-durables	-3,7	-3,5	4,7	2,1	2,2	3,9	1,3
<b>According to NKD 2007 sections and divisions</b>							
B Mining and quarrying	-1,5	-6,0	-19,7	-4,1	-8,1	-1,8	-5,3
06 Extraction of crude petroleum and natural gas	-1,9	-6,7	-27,2	-6,3	-5,4	-6,2	-6,2
08 Other mining and quarrying	-1,3	-7,9	-0,6	2,6	-13,1	3,6	-4,1
09 Mining support service activities	7,6	1,6	5,9	8,2	3,4	-2,1	4,5
C Manufacturing	1,1	-2,4	2,2	1,7	5,8	-1,8	0,0
10 Manufacture of food products	-7,7	-4,6	0,4	1,4	0,9	6,8	-2,6
11 Manufacture of beverages	0,5	-4,3	12,8	19,7	5,5	-17,8	3,6
12 Manufacture of tobacco products	-6,8	12,3	23,9	-11,1	-22,1	-30,1	-10,5
13 Manufacture of textiles	-28,4	-31,3	-28,3	-23,6	-7,2	9,9	-23,9
14 Manufacture of wearing apparel	-8,1	-12,3	-7,3	-15,3	-20,5	-14,3	-9,3
15 Manufacture of leather and related products	-7,1	-19,1	-1,7	-8,0	-14,0	-13,3	-3,4
16 Manufacture of wood and of products of wood and cork, except furniture; manufacture of articles of straw and plaiting materials	-23,0	-15,4	-16,1	-11,4	-11,5	-0,9	-14,5
17 Manufacture of paper and paper products	-3,7	-9,3	1,7	7,5	2,5	15,0	-6,3
18 Printing and reproduction of recorded media	-11,8	-7,6	-5,1	-5,4	4,1	-11,0	-7,9
19 Manufacture of coke and refined petroleum products	-7,2	-1,6	1,0	-3,4	705,4	61,5	-2,1
20 Manufacture of chemicals and chemical products	18,4	12,3	7,3	14,3	36,5	9,6	-1,7
21 Manufacture of basic pharmaceutical products and pharmaceutical preparations	4,4	10,5	23,4	0,6	12,8	50,1	22,2
22 Manufacture of rubber and plastic products	4,8	1,0	-2,1	-8,6	-6,4	-6,9	-3,3
23 Manufacture of other non-metallic mineral products	-7,2	-8,4	-4,0	-2,9	-9,2	-5,5	-6,0
24 Manufacture of basic metals	8,2	5,1	21,2	5,1	19,1	4,9	1,2
25 Manufacture of fabricated metal products, except machinery and equipment	4,1	-5,1	3,2	-3,7	16,4	-6,7	2,5
26 Manufacture of computer, electronic and optical products	-11,2	-7,3	-10,8	3,1	-22,4	-11,9	-12,3
27 Manufacture of electrical equipment	33,5	29,2	7,2	51,5	38,3	14,8	23,0
28 Manufacture of machinery and equipment n. e. c.	-1,9	3,5	4,4	5,4	6,8	0,1	6,0
29 Manufacture of motor vehicles, trailers and semi-trailers	36,3	-35,0	30,6	1,1	-9,6	-7,8	6,0
30 Manufacture of other transport equipment	83,3	30,3	48,9	9,4	34,8	-65,6	11,1
31 Manufacture of furniture	-16,0	-15,5	-21,9	-10,0	1,7	3,4	-13,8
32 Other manufacturing	-20,8	-43,5	-10,7	-5,1	-9,6	-11,4	-8,6
33 Repair and installation of machinery and equipment	-0,6	0,6	0,2	0,3	-0,7	-1,9	2,5
D Electricity, gas, steam and air conditioning supply	-8,9	-5,2	5,8	-1,1	1,8	2,3	0,9
35 Electricity, gas, steam and air conditioning supply	-8,9	-5,2	5,8	-1,1	1,8	2,3	0,9

G-2 MANUFACTURING VOLUME INDICES OF REPUBLIC OF CROATIA, DECEMBER 2018 – DECEMBER 2023



II GROSS INDICES

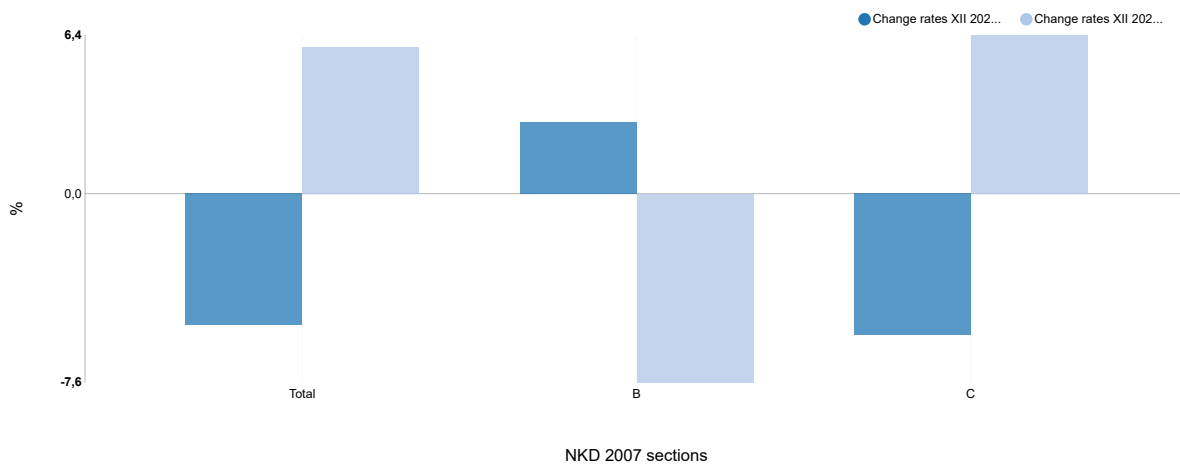
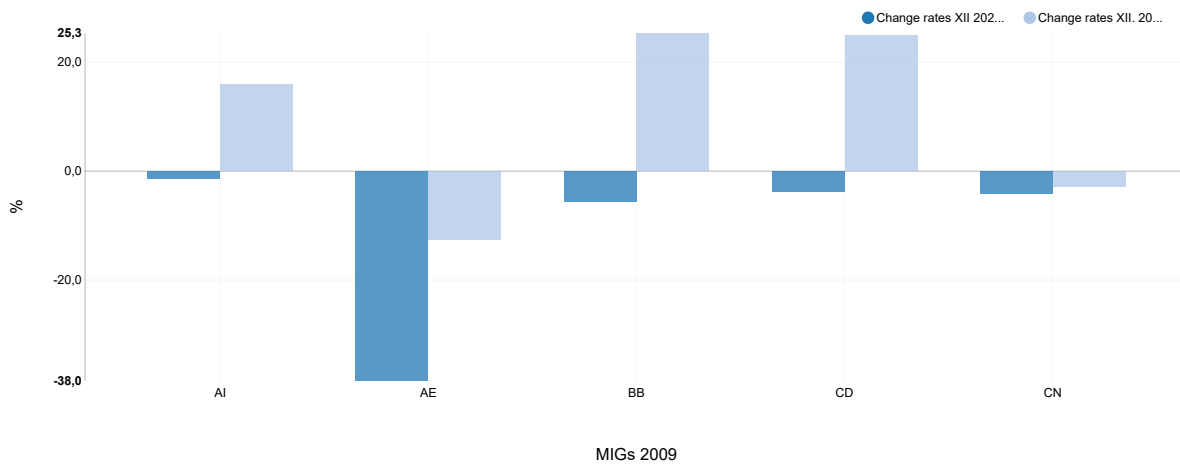
1 INDUSTRIAL PRODUCTION – GROSS VOLUME INDICES, TOTAL, ACCORDING TO MIGs 2009 AND TO NKD 2007  
SECTIONS AND DIVISIONS, DECEMBER 2023

	Structure	XII 2023 Ø 2022	XII 2023 XII 2022	I – XII 2023 I – XII 2022
<b>Total industry</b>	100,00	91,1	94,2	99,7
<b>According to MIGs 2009</b>				
AI Intermediate goods	32,57	80,9	96,1	97,2
AE Energy	18,80	98,4	99,3	99,4
BB Capital goods	14,13	96,9	84,7	105,5
CD Consumer durables	2,49	74,6	80,8	87,7
CN Consumer non-durables	32,01	95,8	96,6	100,9
<b>According to NKD 2007 sections and divisions</b>				
B Mining and quarrying	4,60	89,7	97,1	94,7
06 Extraction of crude petroleum and natural gas	3,29	93,7	93,8	93,8
08 Other mining and quarrying	1,18	77,1	100,1	96,1
09 Mining support service activities	0,13	101,3	95,3	104,5
C Manufacturing	81,46	88,4	92,4	99,8
10 Manufacture of food products	16,77	91,5	99,5	97,1
11 Manufacture of beverages	4,77	95,0	77,8	103,2
12 Manufacture of tobacco products	0,39	78,1	62,6	89,0
13 Manufacture of textiles	0,94	60,0	97,5	75,7
14 Manufacture of wearing apparel	1,58	69,9	78,9	90,5
15 Manufacture of leather and related products	1,49	74,2	82,6	96,5
16 Manufacture of wood and of products of wood and cork, except furniture; manufacture of articles of straw and plaiting materials	4,77	73,3	95,9	85,5
17 Manufacture of paper and paper products	2,29	86,4	112,3	93,8
18 Printing and reproduction of recorded media	2,08	84,0	85,9	92,1
19 Manufacture of coke and refined petroleum products	1,57	28,7	161,0	97,9
20 Manufacture of chemicals and chemical products	2,11	81,1	94,9	97,4
21 Manufacture of basic pharmaceutical products and pharmaceutical preparations	5,12	131,8	122,8	120,7
22 Manufacture of rubber and plastic products	5,44	72,3	88,2	96,4
23 Manufacture of other non-metallic mineral products	5,51	76,3	91,9	94,1
24 Manufacture of basic metals	1,61	73,0	91,4	100,3
25 Manufacture of fabricated metal products, except machinery and equipment	8,21	93,0	87,2	102,3
26 Manufacture of computer, electronic and optical products	1,03	62,8	73,9	87,0
27 Manufacture of electrical equipment	4,13	113,2	107,3	122,8
28 Manufacture of machinery and equipment n. e. c.	3,31	106,7	100,1	106,0
29 Manufacture of motor vehicles, trailers and semi-trailers	0,81	111,9	92,2	106,0
30 Manufacture of other transport equipment	1,62	56,9	29,4	113,2
31 Manufacture of furniture	2,01	84,6	98,2	86,0
32 Other manufacturing	0,86	87,4	88,6	91,4
33 Repair and installation of machinery and equipment	3,04	92,2	94,2	102,5
D Electricity, gas, steam and air conditioning supply	13,94	107,4	102,3	100,9
35 Electricity, gas, steam and air conditioning supply	13,94	107,4	102,3	100,9

2 PRODUCERS' STOCK OF FINISHED PRODUCTS – GROSS VOLUME INDICES, TOTAL, ACCORDING TO MIGs 2009 AND TO NKD 2007 SECTIONS AND DIVISIONS, DECEMBER 2023

	Structure	XII 2023 Ø 2022	XII 2023 XI 2023	XII 2023 XII 2022
<b>Total industry</b>	100,00	105,9	94,7	105,9
<b>According to MIGs 2009</b>				
AI Intermediate goods	38,71	118,2	98,6	115,9
AE Energy	7,11	64,9	61,5	87,4
BB Capital goods	4,08	140,8	94,4	125,3
CD Consumer durables	2,20	102,7	96,2	124,9
CN Consumer non-durables	47,90	99,1	95,9	97,1
<b>According to NKD 2007 sections and divisions</b>				
B Mining and quarrying	4,78	92,7	102,9	92,4
06 Extraction of crude petroleum and natural gas	2,23	78,1	98,7	78,9
08 Other mining and quarrying	2,55	105,5	105,8	103,8
C Manufacturing	95,22	106,5	94,3	106,4
10 Manufacture of food products	18,10	104,1	98,9	98,1
11 Manufacture of beverages	10,64	83,2	92,7	78,0
12 Manufacture of tobacco products	1,50	48,8	115,9	46,3
13 Manufacture of textiles	1,63	102,6	100,0	107,8
14 Manufacture of wearing apparel	2,79	74,5	94,3	83,3
15 Manufacture of leather and related products	1,41	125,1	110,0	103,4
16 Manufacture of wood and of products of wood and cork, except furniture; manufacture of articles of straw and plaiting materials	7,18	98,0	93,8	88,4
17 Manufacture of paper and paper products	1,41	100,6	94,2	112,7
19 Manufacture of coke and refined petroleum products	4,88	58,9	50,1	93,6
20 Manufacture of chemicals and chemical products	5,31	161,0	96,3	173,0
21 Manufacture of basic pharmaceutical products and pharmaceutical preparations	11,44	110,7	90,8	120,1
22 Manufacture of rubber and plastic products	1,95	122,4	95,0	108,3
23 Manufacture of other non-metallic mineral products	12,31	126,7	100,9	113,1
24 Manufacture of basic metals	3,45	87,3	90,0	119,5
25 Manufacture of fabricated metal products, except machinery and equipment	2,49	157,4	110,0	137,8
26 Manufacture of computer, electronic and optical products	0,72	73,9	106,6	71,1
27 Manufacture of electrical equipment	3,27	122,9	106,0	154,9
28 Manufacture of machinery and equipment n. e. c.	1,81	132,3	80,1	119,0
29 Manufacture of motor vehicles, trailers and semi-trailers	0,02	189,1	92,5	218,2
30 Manufacture of other transport equipment	0,05	90,2	75,2	96,2
31 Manufacture of furniture	1,58	71,5	102,0	71,0
32 Other manufacturing	1,28	96,1	100,4	107,2

G-3 CHANGE RATES OF PRODUCERS' STOCKS OF FINISHED PRODUCTS BASED ON DECEMBER 2023/NOVEMBER 2023 AND DECEMBER 2023/DECEMBER 2022 INDICES



**MIGs 2009**

- AI Intermediate goods
- AE Energy
- BB Capital goods
- CD Durable consumer goods
- CN Non-durable consumer goods

**NKD 2007 sections**

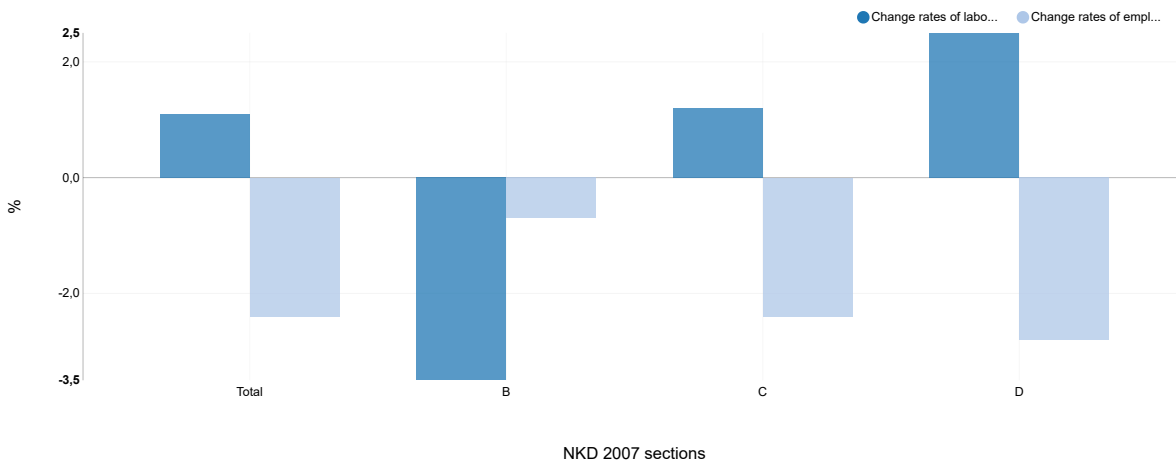
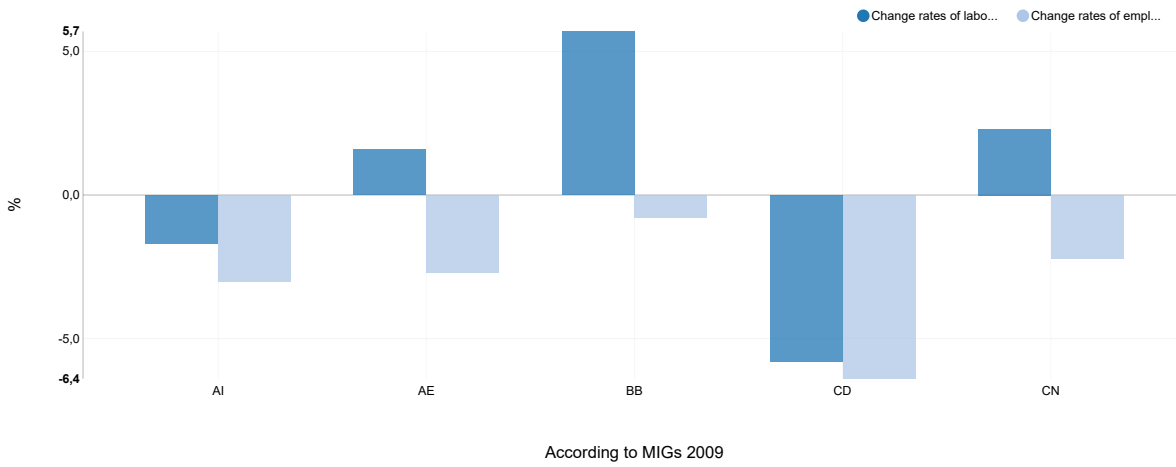
- B Mining and quarrying
- C Manufacturing

3 PERSONS EMPLOYED AND LABOUR PRODUCTIVITY IN INDUSTRY – GROSS VOLUME INDICES, TOTAL, ACCORDING TO MIGs 2009 AND TO NKD 2007 SECTIONS AND DIVISIONS, END OF DECEMBER 2023

	Structure	XII 2023 Ø 2022	XII 2023 XI 2023	XII 2023 XII 2022	I – XII 2023 I – XII 2022	Labour productivity
<b>Total industry</b>	100,00	97,5	99,5	97,6	98,6	101,1
<b>According to MIGs 2009</b>						
AI Intermediate goods	34,70	97,5	99,7	97,0	98,9	98,3
AE Energy	7,04	97,2	100,0	97,3	97,8	101,6
BB Capital goods	18,31	99,7	99,5	99,2	99,8	105,7
CD Consumer durables	4,47	89,7	99,3	93,6	93,1	94,2
CN Consumer non-durables	35,48	97,5	99,2	97,8	98,6	102,3
<b>According to NKD 2007 sections and divisions</b>						
B Mining and quarrying	1,99	97,2	99,3	99,3	98,1	96,5
06 Extraction of crude petroleum and natural gas	0,55	90,6	99,1	96,4	92,8	101,1
08 Other mining and quarrying	1,02	97,1	99,4	98,7	98,2	97,9
09 Mining support service activities	0,42	105,8	99,8	104,4	104,6	99,9
C Manufacturing	91,89	97,5	99,4	97,6	98,6	101,2
10 Manufacture of food products	16,20	100,6	99,6	100,4	99,8	97,3
11 Manufacture of beverages	2,55	99,0	100,7	101,8	101,2	102,0
12 Manufacture of tobacco products	0,54	82,0	91,9	70,2	90,9	97,9
13 Manufacture of textiles	1,61	89,8	99,4	96,2	90,8	83,4
14 Manufacture of wearing apparel	5,37	90,8	98,3	93,4	94,9	95,4
15 Manufacture of leather and related products	4,23	89,4	99,1	89,9	94,6	102,0
16 Manufacture of wood and of products of wood and cork, except furniture; manufacture of articles of straw and plaiting materials	7,04	94,5	99,5	94,4	97,4	87,8
17 Manufacture of paper and paper products	2,57	97,0	100,3	99,0	96,5	97,2
18 Printing and reproduction of recorded media	2,34	100,8	100,1	99,8	101,5	90,7
19 Manufacture of coke and refined petroleum products	0,37	98,9	101,2	100,2	95,9	102,1
20 Manufacture of chemicals and chemical products	2,83	97,6	96,1	98,9	98,8	98,6
21 Manufacture of basic pharmaceutical products and pharmaceutical preparations	2,72	109,3	100,2	106,8	106,9	112,9
22 Manufacture of rubber and plastic products	4,07	95,7	99,4	97,0	97,0	99,4
23 Manufacture of other non-metallic mineral products	4,51	98,2	100,0	100,9	96,9	97,1
24 Manufacture of basic metals	2,32	95,6	99,5	94,8	97,5	102,9
25 Manufacture of fabricated metal products, except machinery and equipment	9,47	98,2	99,5	97,9	99,7	102,6
26 Manufacture of computer, electronic and optical products	1,26	88,7	94,6	86,5	94,8	91,8
27 Manufacture of electrical equipment	5,10	103,8	99,6	96,1	106,6	115,2
28 Manufacture of machinery and equipment n. e. c.	4,63	99,6	100,0	99,1	100,1	105,9
29 Manufacture of motor vehicles, trailers and semi-trailers	1,08	113,2	98,9	97,4	112,6	94,1
30 Manufacture of other transport equipment	2,55	88,8	99,3	100,6	88,5	127,9
31 Manufacture of furniture	3,97	90,5	99,5	93,1	93,6	91,9
32 Other manufacturing	1,02	103,5	99,5	100,3	101,1	90,4
33 Repair and installation of machinery and equipment	3,54	102,8	101,7	103,4	100,9	101,6
D Electricity, gas, steam and air conditioning supply	6,12	97,6	100,0	97,2	98,4	102,5
35 Electricity, gas, steam and air conditioning supply	6,12	97,6	100,0	97,2	98,4	102,5



**G-4 CHANGE RATES OF LABOUR PRODUCTIVITY AND PERSONS EMPLOYED, END OF DECEMBER 2023**



**MIGs 2009**

- AI Intermediate goods
- AE Energy
- BB Capital goods
- CD Durable consumer goods
- CN Non-durable consumer goods

**NKD 2007 sections**

- B Mining and quarrying
- C Manufacturing
- D Electricity, gas, steam and air conditioning supply

**III ANNEX – INDUSTRIAL PRODUCTION VOLUME INDICES – TIME SERIES**

# 1 TOTAL INDUSTRY AND ACCORDING TO MIGs 2009 – GROSS AND WORKING-DAY ADJUSTED INDICES

Ø 2015 = 100

	Gross indices						Working-day adjusted indices					
	Total	Intermediate goods	Energy	Capital goods	Durable consumer goods	Non-durable consumer goods	Total	Intermediate goods	Energy	Capital goods	Durable consumer goods	Non-durable consumer goods
<b>2021</b>												
XII	112,7	110,1	121,6	108,1	99,8	115,0	107,5	103,6	121,6	102,5	93,0	108,8
<b>2022</b>												
I	100,5	110,0	123,3	88,0	90,0	88,8	102,9	111,8	123,3	91,2	92,4	92,0
II	108,2	122,8	108,1	99,1	102,5	101,0	109,3	124,7	108,1	100,1	103,4	101,6
III	122,6	141,5	115,4	116,1	109,6	115,0	119,7	139,0	115,4	113,2	107,6	111,5
IV	111,1	126,5	103,7	109,1	109,3	102,9	111,6	126,9	103,7	110,0	108,9	103,5
V	114,9	131,1	98,9	109,8	103,5	113,3	113,4	129,9	98,9	108,1	100,9	111,2
VI	114,3	125,1	105,2	106,7	100,5	115,2	114,2	125,2	105,2	105,8	100,5	115,3
VII	115,8	122,4	119,8	100,6	102,8	119,1	118,1	124,5	119,8	102,7	103,7	122,0
VIII	97,6	96,3	117,8	85,6	76,7	98,3	96,9	96,1	117,8	85,1	78,1	97,1
IX	114,7	128,5	104,1	110,4	107,8	112,3	113,1	126,7	104,1	108,0	104,4	110,7
X	114,9	126,5	110,3	114,7	107,8	108,9	117,8	129,0	110,3	117,7	112,2	112,1
XI	112,1	119,4	107,2	111,8	101,4	110,7	111,9	119,3	107,2	112,0	104,7	110,4
XII	107,6	101,9	109,3	121,4	92,7	106,8	105,1	99,7	109,3	118,7	89,6	103,5
<b>2023</b>												
I	100,2	102,4	113,3	102,6	84,5	92,4	100,0	102,4	113,3	102,6	86,0	91,6
II	106,4	112,5	109,3	114,9	95,4	97,8	107,4	114,5	109,3	115,9	96,3	98,4
III	121,7	132,3	114,4	122,9	103,9	119,2	118,8	128,6	114,4	119,9	100,9	116,0
IV	104,6	112,3	101,8	108,3	87,5	100,6	107,9	116,4	101,8	111,4	91,5	105,0
V	116,5	129,5	104,7	115,0	87,5	116,5	114,9	127,3	104,7	113,7	87,4	114,5
VI	116,9	122,5	103,5	123,5	96,3	120,0	116,8	121,8	103,5	123,5	93,7	120,1
VII	114,5	122,8	112,6	108,4	93,8	114,4	117,3	125,3	112,6	111,4	98,2	117,5
VIII	96,6	97,2	114,2	82,4	71,3	96,2	94,5	94,4	114,2	79,1	68,9	93,6
IX	115,0	124,9	105,6	115,2	80,9	116,0	115,0	124,5	105,6	115,8	80,4	115,9
X	117,6	132,7	110,0	116,9	88,4	113,0	118,9	134,0	110,0	117,8	88,5	114,4
XI	119,0	123,9	116,9	130,6	92,4	114,5	117,2	122,2	116,9	127,5	89,5	112,8
XII	101,3	97,9	108,5	102,8	74,9	103,2	104,1	101,1	108,5	105,4	77,1	107,6

## 2 INDUSTRIAL PRODUCTION VOLUME INDICES, TOTAL AND ACCORDING TO MIGs 2009 – SEASONALLY AND WORKING-DAY ADJUSTED INDICES AND TREND

Ø 2015 = 100

	Seasonally and working-day adjusted indices						Trend					
	Total	Intermediate goods	Energy	Capital goods	Durable consumer goods	Non-durable consumer goods	Total	Intermediate goods	Energy	Capital goods	Durable consumer goods	Non-durable consumer goods
<b>2021</b>												
XII	111,5	121,7	112,2	97,5	101,3	111,5	111,7	123,9	110,6	99,6	102,2	107,8
<b>2022</b>												
I	113,2	125,6	112,1	103,6	102,7	107,5	112,2	124,6	111,0	101,3	102,2	108,1
II	112,6	125,6	111,1	99,2	103,6	110,2	112,4	125,0	111,4	102,8	101,7	108,3
III	112,6	126,6	109,4	105,2	99,1	108,2	112,4	124,8	111,8	104,0	101,0	108,3
IV	111,7	123,4	113,2	106,9	108,0	106,3	112,2	123,9	112,7	105,0	100,3	108,2
V	111,0	121,4	106,8	105,6	100,1	108,5	112,0	122,6	113,7	105,5	99,6	108,1
VI	112,4	122,8	115,0	105,0	96,0	107,0	111,7	121,2	114,4	105,9	99,3	107,9
VII	111,8	118,1	118,1	106,3	101,8	108,2	111,5	120,0	114,2	106,2	99,4	107,6
VIII	111,1	118,3	115,0	107,0	98,9	108,3	111,1	119,3	112,8	107,0	99,7	107,4
IX	110,8	120,2	110,3	105,9	98,6	107,7	110,6	118,8	110,3	108,2	99,9	107,3
X	110,5	118,8	106,5	111,1	102,5	106,8	110,1	118,4	107,6	110,1	99,8	107,3
XI	108,6	117,1	104,3	104,7	99,1	107,8	109,8	117,8	105,6	111,9	99,3	107,4
XII	109,5	118,1	102,8	114,3	97,5	106,3	109,7	117,0	104,7	113,2	98,2	107,7
<b>2023</b>												
I	110,1	116,2	104,1	114,7	96,1	107,2	110,0	116,3	105,3	113,8	96,6	108,0
II	110,5	115,2	112,2	115,1	96,4	106,7	110,5	115,9	106,9	113,7	94,7	108,4
III	111,4	115,8	108,4	111,9	92,9	111,9	111,0	116,0	108,8	113,2	92,7	108,9
IV	108,1	113,3	110,2	108,4	90,3	108,3	111,4	116,5	110,4	112,7	91,1	109,3
V	112,5	118,7	112,7	111,5	87,1	111,4	111,7	117,1	111,5	112,6	89,7	109,7
VI	114,4	118,9	112,5	122,4	89,9	111,5	111,8	117,8	111,9	112,8	88,5	110,1
VII	111,2	119,2	110,2	114,7	95,9	104,3	111,8	118,4	111,7	113,1	87,3	110,3
VIII	108,6	117,1	111,0	101,4	89,3	105,1	111,9	118,9	110,8	113,2	86,2	110,4
IX	112,5	118,1	111,6	114,0	74,8	112,6	111,9	119,2	109,5	112,8	85,1	110,4
X	111,6	123,3	106,9	111,3	78,6	109,3	111,9	119,5	107,9	112,0	84,2	110,3
XI	113,8	120,1	114,1	119,7	83,8	110,2	111,7	119,6	106,4	111,2	83,4	110,2
XII	108,9	119,6	103,4	101,4	84,9	110,3	111,5	119,6	105,4	110,5	83,2	110,0

### 3 SECTIONS AND DIVISIONS OF NKD 2007 – GROSS AND WORKING-DAY ADJUSTED INDICES

Ø 2015 = 100

NKD 2007 levels	Gross indices						Working-day adjusted indices					
	2023						2023					
	VII	VIII	IX	X	XI	XII	VII	VIII	IX	X	XI	XII
Section B	69,1	65,5	55,6	67,5	62,9	61,1	69,6	65,0	55,7	67,6	62,6	61,7
06	58,2	56,3	41,8	55,6	53,9	54,6	58,2	56,3	41,8	55,6	53,9	54,6
08	115,1	101,6	116,3	118,4	98,5	83,9	116,7	98,7	116,6	119,9	97,1	86,5
09	59,2	61,8	59,9	62,1	61,8	58,5	60,5	60,8	60,0	62,2	60,5	59,2
Section C	116,1	94,2	117,9	120,1	120,1	98,1	119,3	91,8	117,9	121,5	118,4	101,4
10	117,5	115,2	121,0	118,8	118,9	106,3	120,9	113,1	120,9	120,4	116,9	110,2
11	146,2	134,5	106,1	112,2	102,4	99,9	149,4	131,6	107,0	113,5	101,1	104,1
12	88,2	104,6	95,6	98,8	116,3	84,2	92,5	96,7	97,3	104,6	113,5	89,9
13	80,1	46,2	83,2	84,1	89,2	68,2	84,4	44,1	83,1	84,6	87,1	73,3
14	56,0	30,1	50,6	50,0	48,4	38,6	58,2	28,5	51,4	51,4	46,4	40,6
15	91,9	52,5	99,6	95,6	95,3	70,1	92,2	51,0	101,0	97,2	92,3	73,0
16	96,6	63,3	102,6	113,6	103,7	87,5	98,7	62,3	103,4	114,5	102,0	89,9
17	129,7	113,7	118,0	129,8	123,7	107,3	132,7	110,6	118,8	130,8	121,8	109,4
18	91,6	92,5	97,3	107,6	118,1	92,0	93,5	91,3	96,9	108,6	117,0	93,7
19	127,8	135,3	114,4	115,5	104,8	20,8	127,8	135,3	114,4	115,5	104,8	20,8
20	70,6	61,3	85,7	80,9	85,0	55,2	74,0	60,3	86,2	80,6	82,5	59,6
21	131,0	63,2	168,6	143,6	163,4	161,4	139,1	61,2	167,7	147,4	159,8	184,7
22	144,2	107,3	145,2	148,3	138,6	101,7	147,3	106,2	145,0	149,6	137,1	104,5
23	117,9	107,9	118,4	122,9	112,1	91,6	119,5	105,4	118,8	123,9	110,4	93,6
24	111,5	72,5	108,6	118,0	115,7	76,8	114,5	71,9	109,1	117,8	115,0	85,8
25	104,4	82,5	110,2	113,9	134,3	98,9	108,3	79,0	110,0	116,5	131,8	101,9
26	106,9	79,3	103,4	131,6	102,9	74,8	115,6	76,9	102,1	134,3	98,5	81,5
27	178,5	118,2	173,5	203,1	188,7	150,1	184,8	114,2	170,9	208,5	187,9	152,1
28	99,4	70,7	104,9	106,8	104,4	101,9	99,4	70,7	104,9	106,8	104,4	101,9
29	167,6	89,3	177,4	142,2	126,5	148,7	167,6	89,3	177,4	142,2	126,5	148,7
30	97,1	72,4	86,1	77,5	87,7	40,8	96,9	67,5	86,9	78,5	84,4	49,1
31	76,3	57,7	75,1	83,4	91,0	79,4	79,4	56,7	74,7	83,9	89,4	81,3
32	76,3	60,6	104,6	126,1	101,2	89,2	76,3	60,6	104,6	126,1	101,2	89,2
33	133,9	125,8	144,5	150,4	147,5	126,6	137,2	121,2	147,1	150,4	144,4	131,9
Section D	123,2	125,2	123,4	122,8	136,9	140,3	123,2	125,2	123,4	122,8	136,9	140,3
35	123,2	125,2	123,4	122,8	136,9	140,3	123,2	125,2	123,4	122,8	136,9	140,3

## 4 SECTIONS AND DIVISIONS OF NKD 2007 – SEASONALLY AND WORKING-DAY ADJUSTED INDICES AND TREND

Ø 2015 = 100

NKD 2007 levels	Seasonally and working-day adjusted indices						Trend					
	2023						2023					
	VII	VIII	IX	X	XI	XII	VII	VIII	IX	X	XI	XII
Section B	65,7	64,2	56,3	64,3	62,3	63,9	64,9	64,5	64,2	63,8	63,4	63,1
06	56,7	54,9	42,6	54,6	54,4	54,0	55,6	55,4	55,1	54,8	54,4	54,0
08	104,5	101,2	104,2	107,0	93,5	105,4	104,7	104,6	104,5	104,3	103,9	103,2
09	60,1	60,9	60,4	61,6	60,5	58,5	60,7	60,7	60,7	60,8	60,9	60,9
Section C	111,5	107,8	112,7	112,9	115,8	109,5	112,0	112,3	112,3	112,2	111,9	111,5
10	108,9	112,0	114,6	114,4	115,5	119,8	112,5	113,1	113,8	114,5	115,0	115,3
11	108,7	106,0	115,4	121,9	113,2	84,5	110,7	110,6	110,2	109,6	109,0	108,3
12	98,5	108,8	105,3	99,7	89,4	81,3	99,3	98,0	96,6	95,1	93,8	92,9
13	80,9	88,5	78,4	81,6	89,1	97,2	82,5	83,1	83,9	84,8	85,6	86,3
14	49,8	49,0	51,3	47,3	46,7	47,4	50,2	49,7	49,0	48,3	47,6	46,8
15	88,5	78,4	94,0	90,0	85,3	87,2	89,7	88,9	88,4	88,0	87,4	86,5
16	94,5	92,5	98,3	103,6	101,3	103,2	98,1	97,9	98,8	100,2	101,6	102,5
17	121,2	113,5	123,5	125,7	120,5	125,1	119,7	121,9	123,1	123,5	123,3	123,1
18	97,7	97,2	96,8	100,9	105,5	90,6	99,1	98,7	98,6	98,8	98,8	98,8
19	75,2	81,5	76,7	73,7	117,1	72,9	72,3	73,1	73,6	73,6	73,2	72,7
20	68,4	70,4	73,3	72,5	78,0	68,2	70,2	72,0	72,9	72,9	72,2	71,3
21	136,7	139,6	157,7	136,0	145,2	193,9	147,9	147,8	147,5	147,2	147,2	147,5
22	140,5	136,5	133,9	134,4	130,8	127,6	139,2	137,6	135,4	132,8	130,6	128,9
23	110,6	110,1	111,9	113,4	108,3	111,4	111,7	111,5	111,2	111,0	110,6	110,3
24	111,3	95,5	113,7	108,0	112,5	105,3	110,0	111,1	111,3	110,4	109,0	107,5
25	110,2	101,4	108,8	107,5	122,8	103,1	109,1	109,3	108,9	108,5	108,3	108,4
26	105,2	101,6	100,3	121,3	94,9	92,6	103,0	101,7	100,4	99,2	98,1	97,3
27	172,3	154,2	150,9	204,7	181,8	171,2	169,9	171,4	172,8	174,0	174,6	174,7
28	99,7	97,4	101,2	101,4	99,0	99,7	101,8	101,4	101,0	100,7	100,6	100,7
29	154,9	125,7	160,6	137,9	127,7	145,0	138,1	139,4	140,7	141,9	142,7	143,1
30	98,5	76,8	82,9	70,9	78,2	47,0	77,2	77,2	76,1	74,3	72,5	70,9
31	78,8	75,6	71,4	79,9	86,4	87,0	77,9	78,1	79,2	81,0	83,0	84,8
32	81,8	71,2	89,3	99,6	87,9	86,6	91,5	89,9	88,6	87,7	87,2	87,2
33	141,8	143,8	143,8	140,9	140,3	125,2	141,1	141,8	142,1	141,7	140,6	139,2
Section D	131,4	130,7	139,4	125,5	127,3	122,9	132,5	130,5	128,7	127,1	125,9	124,9
35	131,4	130,7	139,4	125,5	127,3	122,9	132,5	130,5	128,7	127,1	125,9	124,9

### NOTES ON METHODOLOGY

Industrial production volume indices are presented on an interannual chain basis and on the fixed base year 2015 = 100, in line with the Regulation (EU) 2019/2152 of the European Parliament and of the Council of 27 November 2019 on European business statistics, repealing 10 legal acts in the field of business statistics. The Croatian Bureau of Statistics submits the industrial production index for the Republic of Croatia to Eurostat on a monthly basis and publishes it on Eurostat's web site <http://ec.europa.eu/eurostat/euroindicators> for the principal European economic indicators (the so-called PEEIs) presented on the fixed base year 2015 = 100, which enables a direct comparison of the development of industrial production between the Member States. The industrial production volume index for the Republic of Croatia is fully harmonised with the European standards.

We would like to inform users that the First Release IND-2023-3-1 is published around the 29<sup>th</sup> day in a month at 11 a.m. for indices of the previous reference month. Precise publishing dates are listed in the Calendar of Statistical Data Issues for 2023, which is available in printed form and on the website of the [Croatian Bureau of Statistics](#).

#### Legal and methodological framework

The presented indices were calculated on the basis of the data collected in the Monthly Survey on Industrial Production and Persons Employed (IND-1/KPS/M form) in 2023, which is directly carried out by the Croatian Bureau of Statistics on the basis of the Official Statistics Act (NN, No. 25/20).

The concepts and definitions used in the IND-1/KPS/M Survey are specified in the Statistical Standards for the Monthly Survey on Industrial Production and Persons Employed (IND-1/KPS/M form) published on the website of the [Croatian Bureau of Statistics](#). The concepts and definitions are harmonised with the EU concepts and definitions and especially with the Regulation (EU) 2019/2152 of the European Parliament and of the Council and the Commission Implementing Regulation (EU) 2020/1197.

#### Scope and coverage

The IND-1/KPS/M Survey covers enterprises and parts thereof employing 20 or more persons (the so-called 'cut-off' sample) and performing one or several industrial activities listed in the NKD 2007 sections B Mining and quarrying, C Manufacturing, and D Electricity, gas, steam and air conditioning supply, that is, their divisions 05 – 35 except group 35.3 (NN, Nos 58/07 and 72/07). The IND-1/KPS/M Survey for December 2023 covered 1 951 enterprises (legal entities and tradesmen). In December 2023, the response rate was 98.5% and the non-response estimate was 1.5%.

#### Reference period and data collection method

The reference period for data collection is one month and is identical to a calendar month. The data collection method used in 2023 is a web-based application (the so-called CAWI). The reporting units enter data directly into the IND-1/KPS/M e-form, which is available on the website of the [Croatian Bureau of Statistics](#).

The time schedule for data collection is between 1<sup>st</sup> and 15<sup>th</sup> day in a month for the previous reference month data.

## INDUSTRIAL PRODUCTION INDICES

### Definition of indicator

The industrial production volume index is an important short-term indicator of a business cycle that measures the monthly results of the industrial sector. Taking into account its periodicity and its rapid availability, it is a central and an up-to-date indicator of the development of the industrial sector, which is one of the most volatile components of economy.

Industrial production volume indices are indices of finished industrial products defined by the Nomenclature of Industrial Products (NIPUM 2023).

A finished product is considered every product that reached a certain level in the production process and listed in the NIPUM 2023 under a separate code and heading.

### Calculation method<sup>1)</sup>

Industrial production volume indices for various levels of the NKD 2007 are calculated in two stages according to the Laspeyres formula. In the first stage, indices are calculated from quantity data on the production of individual products according to the NIPUM 2023 and an adequate weighting coefficient, which represents an estimated value added of individual products. In the second stage, all indices of groups and higher levels are weighted with the shares of the value added of the individual activities of industrial production by the NKD 2007 levels. In this way, the relative importance of individual levels is defined and at the same time different levels of coverage are levelled.

### MIGs 2009 aggregates

Indices for MIGs 2009 aggregates are calculated in the same way, according to the predominant end-use of products within the same NKD 2007 activity group. Since January 2009, new definitions have been applied for MIGs aggregations in the calculation of aggregated indices in order to facilitate further harmonisation with the EU statistical standards.<sup>2)</sup>

The grouping at the level of the NKD 2007 groups or divisions according to the MIGs 2009, using alphabetic marks of abbreviations, was done as follows:

AI	Intermediate goods: the NKD 2007 divisions and groups: 07 – 09, 10.6, 10.9, 13.1 – 13.3, 16, 17, 20.1 – 20.3, 20.5, 20.6, 22 – 24, 25.5 – 25.7, 25.9, 26.1, 26.8, 27.1 – 27.4 and 27.9
AE	Energy: the NKD 2007 divisions: 05, 06, 19 and 35 (excluding 35.3)
BB	Capital goods: the NKD 2007 divisions and groups: 25.1 – 25.4, 26.2, 26.3, 26.5, 26.6, 28, 29, 30.1 – 30.4, 32.5 and 33
CD	Consumer durables: the NKD 2007 divisions and groups: 26.4, 26.7, 27.5, 30.9, 31, 32.1 and 32.2
CN	Consumer non-durables: the NKD 2007 divisions and groups: 10.1 – 10.5, 10.7, 10.8, 11, 12, 13.9, 14, 15, 18, 20.4, 21, 32.3, 32.4 and 32.9

### Weighting system

The weighting coefficients of individual products of the NIPUM 2023 used in the calculation of industrial production index represent the value added to the unit production of a respective product. They are calculated on the basis of unit values of the PRODCOM survey on industrial production for 2015 and are revised every five years.

The weighting coefficients used in the period from 2012 to 2017 were calculated on the basis of the PRODCOM Survey on Industrial Production for 2010, while those used in the period from 2009 to 2012 were calculated on the basis of the PRODCOM Survey on Industrial Production for 2005.

In the Republic of Croatia, the structure of industrial activities (division structure) was calculated on the basis of the gross value added of factor costs by the pure activity principle in 2021. It was calculated on the basis of the 2021 annual statistical results of the Structural Business Survey carried out by the Croatian Bureau of Statistics by processing annual results taken over from the administrative data of Fina – the Annual Accounts of Industrial Enterprises in 2021. It was further corrected by the results of the PRODCOM Survey on Industrial Production for 2021 and then by the industrial production volume indices for 2022. The division structure is updated at the beginning of every year for the calculation of the industrial production volume indices in the current year.

### Presentation and interpretation of movements in volume of industrial production

The presentation and the interpretation of the industrial production volume indices are in line with Eurostat's requirements for the presentation of short-term business indicators and with the Regulation (EU) 2019/2152 of the European Parliament and of the Council.

The movements of the industrial production volume are presented and interpreted in relation to growth rates calculated on the basis of seasonally adjusted and working-day adjusted indices. Seasonally adjusted indices are used for the monthly comparison of movements of the industrial production volume and working-day adjusted indices for the annual comparison.

### Seasonal and working-day adjustment method

Seasonal and working-day adjustment has been done by using the X13 ARIMA method on the monthly index series, which starts with the January 1998 index for the total industry (sections B, C and D, excluding group 35.3 of the NKD 2007) for the divisions of the NKD 2007 as well as for the MIGs 2009. The effect of a random component in the seasonal adjustment process of time series of indices has been excluded.

Due to the character of the implemented seasonal adjustment method, the extension of the index series by adding new monthly observations for each new month could cause subsequent corrections of the already published seasonally and working-day adjusted indices and trend for several previous months.

### Notice concerning the terminology used

In the Croatian language, the term "kalendarsko prilagođavanje" (calendar adjustment) is not the literal translation of the term "working-day adjustment" in English, which means "adjustment for the number of working days". It is used in order to prevent misunderstandings by national users.

The term "working-day adjustment" in short-term business statistics actually refers to the calendar adjustment, but due to Eurostat's specific requirements for short-term statistics, the term "working-day adjustment" is used instead.

### Seasonally and working-day adjusted indices

The term "seasonally and working-day adjusted" indices is used to indicate that gross indices are adjusted for both seasonal and working-day effects. In line with Eurostat's requirements for short-term business indicators, the data that are compared to those of the previous month (that is, monthly comparison) are presented in a seasonally and working-day adjusted form of industrial production indices or growth rates calculated from them.

In line with the above mentioned, month-on-month growth rates of the volume of industrial production calculated on the basis of seasonally and working-day adjusted indices (the comparison between the indices of the current reporting month with the indices of the previous reporting month) are presented and interpreted in the monthly comparison (table 1).

### Working-day adjusted indices

The term "working-day adjusted indices" is used to indicate that gross indices are adjusted only for working-day effects in line with Eurostat's requirements for short-term business indicators, while data compared to those of the same month of a previous year (that is, annual comparison) are presented in a working-day adjusted form of industrial production indices or growth rates calculated from them.

In line with the above mentioned, year-on-year growth rates of the volume of industrial production calculated on the basis of working-day adjusted indices (comparison between indices of the reporting month with the indices of the same reporting month of the previous year) are presented and interpreted in the annual comparison (table 2).

### Gross indices

The term "gross indices" indicates that indices are unadjusted for seasonal and working-day effects. In line with Eurostat's recommendations and requirements for the industrial production volume index, they are not used for the interpretation of the movement of the industrial production volume. Eurostat does not publish them, neither is it the practice

in most Members States. They are presented here (table 3) just for the information on the activity structure for users' needs and for the continuity in publishing the industrial production volume indices in the Republic of Croatia.

## INDICES OF PRODUCERS' STOCK OF FINISHED PRODUCTS

### Definition of indicator

**Indices of producers' stock of finished products** are the chain volume indices of finished products as defined in the Nomenclature of Industrial Products – NIPUM 2023.

A **finished product** is considered every product that reached a certain level in the production process and is listed under a separate code and heading in the NIPUM 2023.

### Calculation method<sup>1)</sup>

The volume stock indices of finished products for B and C sections and divisions of the NKD 2007 as well as for the total industry were calculated on the basis of the data on the state of the stocks of finished products at the end of the reporting month, using Laspeyres formula in the same way as for the production indices. Stock indices of finished products are calculated on the basis of the data on the state of the stocks of finished products according to the NIPUM 2023 and an adequate weighting coefficient.

The stock indices for the MIGs 2009 aggregates are calculated in the same way by the predominant end-use of products within the same NKD 2007 activity group. They are harmonised with the EU statistical standards.<sup>2)</sup>

The weighting coefficients of the stocks of finished products, as defined in the NIPUM 2023, were calculated on the basis of constant prices, that is, on the basis of the unit values from the PRODCOM Survey on Industrial Production for 2015 and are revised every five years. The weighting coefficients used in the period from 2009 to 2012 were calculated on the basis of the PRODCOM Survey on Industrial Production for 2005 and those used in the period from 2012 to 2017 were calculated on the basis of the PRODCOM Survey on Industrial Production for 2010.

The basis for the calculation of the volume indices of stocks in 2023 are the states of stocks or the average annual stocks that were calculated on the basis of 12 states of producers' stocks of industrial finished products at the end of each month of 2022.

The presented volume indices of producers' stocks of industrial finished products are not seasonally adjusted or working-day adjusted, which must be taken into account in the interpretation of the results.

## INDICES OF PERSONS EMPLOYED AND LABOUR PRODUCTIVITY

### Definition of indicators

**Indices of persons employed** show the dynamics of the number of persons employed in industrial activities of enterprises, excluding persons employed in non-industrial activities of the same enterprise.

**Persons employed** are persons who work for an employer in the state or private sector and are paid in cash or in kind for their work. This includes all persons who have signed a work contract with an employer for a fixed or an unspecified period of time, irrespective of type of ownership and of whether they work full time or less than full time. This also includes trainees, persons on maternity leave, sick leave and persons absent from work for other reasons, until the cessation of employment.

Persons employed are also persons who presently or occasionally work under a contract or for payment in cash or in kind as well as retired or unemployed persons and regular students. Persons employed are also persons employed in own trade company, enterprise, craft, or free lances.

### Calculation method<sup>1)</sup>

**The labour productivity index** was calculated as a relation between the volume index of industrial production from the beginning of the year until the end of the reference month and the level index of the number of persons employed in industry, also from the beginning of the year to the end of the reference month. The level index presents the comparison of the current period with the same period of the previous year.

The labour productivity indices for MIGs 2009 aggregates are calculated in the same way, according to the prevailing activity at the NKD 2007 group level, which are published for these types of indicators in order to harmonise them with the EU statistical standards.<sup>2)</sup>

The presented indices of persons employed and labour productivity are not seasonally adjusted, which must be taken into account in the interpretation of the results.

1) Additional information is available in the Studies and Analyses – Short-Term Indicators on Industry, No. 85, Zagreb, 1999, CBS.

2) Commission Implementing Regulation (EU) 2020/1197 of 30 July 2020 laying down technical specifications and arrangements pursuant to Regulation (EU) 2019/2152 of the European Parliament and of the Council, as regards the definitions of Main Industrial Groupings (MIGs).

### Notice

The Croatian Bureau of Statistics has changed the package and the method of seasonal adjustment of industrial production time series of indices and other short-term indicators. Up until now, the TRAMO-SEATS method was used in the Demetra (version 2.2.) package. Since January 2016, the new X13 ARIMA method in the new JDemetra+ (version 2.0.0. or newer version after they have been officially available) package has been used. Due to this, there was a change in the already published seasonal and working-day adjusted values and corresponding change rates on whole time series.

### Abbreviations

CAWI	computer-assisted web interchange
CBS	Croatian Bureau of Statistics
EU	European Union
Eurostat	Statistical Office of the European Union
Fina	Financial Agency
MIGs 2009	Main Industrial Groupings, 2009 version
n. e. c.	not elsewhere classified
NIPUM 2023	Nomenclature of Industrial Products for the Monthly Survey on Industrial Production, 2023 version
NKD 2007	National Classification of Activities, 2007 version
NN	Narodne novine, official gazette of the Republic of Croatia
PRODCOM	PRODucts of the European COMmunity

### Symbols

0,0 value not zero but less than 0.05 of the unit of measure used



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