

Mineral Industry Surveys

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U.S. PRODUCTION OF SELECTED MINERAL COMMODITIES IN THE FOURTH QUARTER 2023

Previously, U.S. mine and plant production data for 16 selected mineral commodities were provided on a monthly (or quarterly) basis by the U.S. Geological Survey to the Board of Governors, Federal Reserve System (FRS), for use in preparing its index of industrial production and the related capacity indexes and capacity utilization rates. These measures cover manufacturing, mining, and electric and gas utilities, and they are among the key economic indicators monitored by the FRS for guidance in determining national monetary policy.

Construction Materials

The combined production of construction-related materials (cement, construction sand and gravel, crushed stone, and gypsum) in the fourth quarter of 2023 decreased by 15% compared with that in the third quarter of 2023 following the typical seasonal trend (fig. 1, tables 1, 2). The combined production of construction-related materials during 2023 was slightly less compared with production in 2022; production of gypsum was slightly higher, crushed stone was unchanged, cement was slightly less, and construction sand and gravel was 3% lower in 2023 compared with production in 2022 (fig. 1, table 1).

Base Metals

Production of base metals varied in the fourth quarter of 2023 compared with that in the third quarter of 2023. Zinc production increased by 18%, iron ore and lead increased slightly; secondary aluminum production was unchanged; and copper production decreased by 3% (fig. 2, table 1). Comparing full-year 2023 with full-year 2022, production increased for iron ore (16%), secondary aluminum (6%), and zinc (slightly); production decreased for lead (slightly) and copper decreased by 9% in 2023 compared with that in 2022 (fig. 2, tables 1, 2).

Precious Metals

During the fourth quarter of 2023, platinum and palladium production were each unchanged, production of gold increased slightly, and silver production decreased slightly, compared with production in the third quarter of 2023. Gold production in 2023 was 3% lower and silver production was slightly lower compared with production in 2022 (fig. 3, table 1). Palladium and platinum production were each slightly lower in 2023 compared with that in 2022 (tables 1, 2).

Other Mineral Materials

Molybdenum production was 7% higher in the fourth quarter of 2023 than that in the third quarter of 2023 but was slightly lower in 2023 compared with that in 2022. Phosphate rock production was an estimated 15% lower in the fourth quarter of 2023 than that in the third quarter of 2023 and was slightly lower in 2023 compared with that in 2022. Soda ash production was 3% higher in the fourth quarter of 2023 compared with that in the third quarter of 2023 but was 3% lower in 2023 compared with that in 2022 (tables 1, 2).

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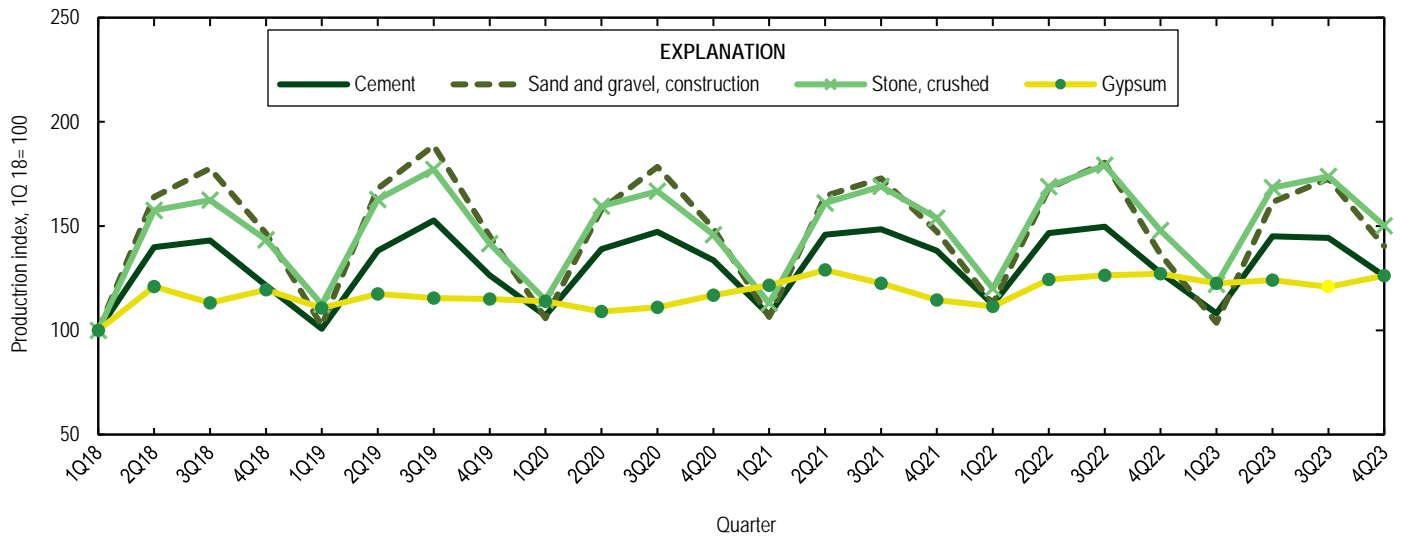


Figure 1. U.S. production of selected construction-related mineral commodities from the first quarter of 2018 through the fourth quarter of 2023, indexed to the first quarter of 2018.

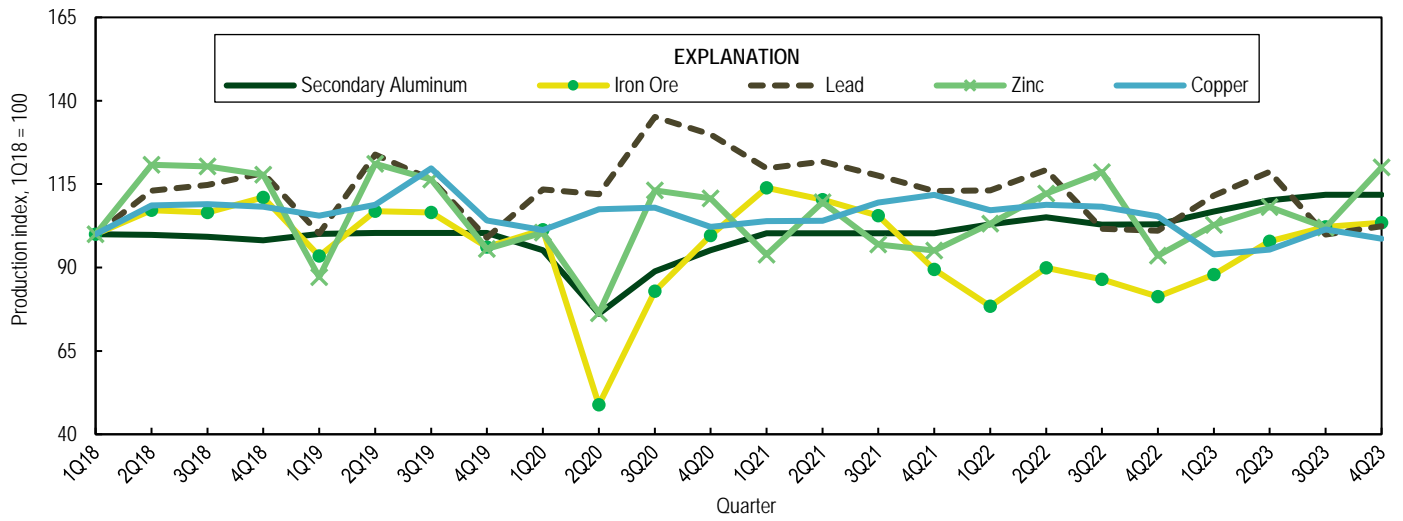


Figure 2. U.S. production of selected base metals from the first quarter of 2018 through the fourth quarter of 2023, indexed to the first quarter of 2018.

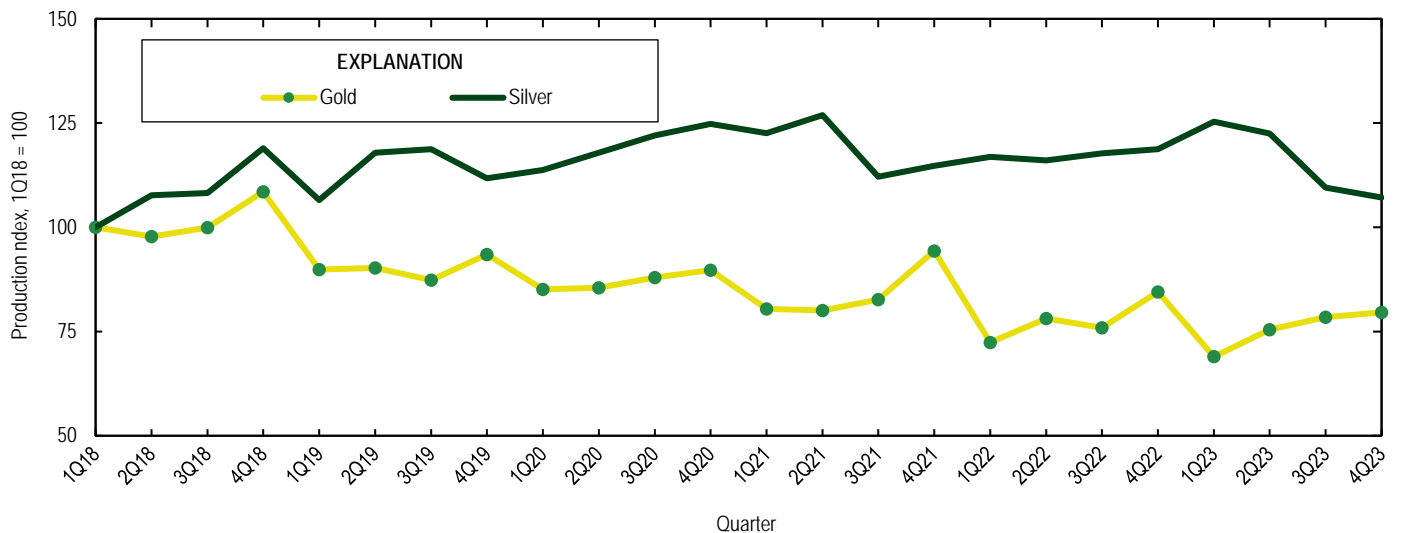


Figure 3. U.S. mine production of gold and silver from the first quarter of 2018 through the fourth quarter of 2023, indexed to the first quarter of 2018.

TABLE 1
PRODUCTION TRENDS FOR SELECTED MINERAL COMMODITIES¹

Mineral commodity	Percent change, 4th quarter 2023 vs. 3d quarter 2023	Percent change, YTD 2023 vs. YTD 2022
Aluminum (secondary)	--	6
Cement ^c	-13	-2
Copper	-3	-9
Gold	1	-3
Gypsum	4	1
Iron ore	1	16
Lead	2	-1
Molybdenum	7	-2
Palladium	--	-1
Phosphate rock ^c	-15	-1
Platinum	--	-1
Sand and gravel, construction	-19	-3
Silver	-2	-1
Soda ash	3	-3
Stone, crushed	-14	(2)
Zinc	18	1

^cEstimated. -- Zero.

¹Based on data available through March 13, 2024.

²Less than 0.5 percent.

TABLE 2
U.S. PRODUCTION OF SELECTED MINERAL COMMODITIES, BY QUARTER^{1,2}

Commodity		2022				2023				YTD	
		1st quarter	2d quarter	3d quarter	4th quarter	1st quarter	2d quarter	3d quarter	4th quarter	2022	2023
Aluminum ^{6,3}	thousand metric tons	215	219	215	215	223	230	233	233	864	920
Cement ^{6,4}	million metric tons	19.0 ^r	24.8 ^r	25.4 ^r	20.9 ^r	18.2	24.5 ^r	24.3	21.2	90.1 ^r	88.2
Copper ⁵	thousand metric tons	308	312	311	302	270 ^r	274 ^r	291	283	1,230	1,120
Gold ⁵	metric tons	40.2	43.4	42.2	46.9	38.3	41.9 ^r	43.6 ^r	44.2	173	168
Gypsum ⁶	million metric tons	4.3	4.7	4.8	4.9	4.7	4.7	4.6	4.8	18.7	18.9
Iron ore ⁷	do.	9.1	10.4	10.0	9.4	10.2	11.4 ^r	11.9 ^r	12.0	39.0	45.4
Lead ⁵	thousand metric tons	68.6	72.3	61.6	61.3	67.7	72.0 ^r	60.6 ^r	62.1	264	262
Molybdenum ⁵	do.	8.8	7.7	7.9	10.2	8.1	8.4	8.4	9.0	34.6	34.0
Palladium ⁵	metric tons	2.9	2.6	2.0	2.5	2.4	2.5	2.5	2.5	10.1	10.0
Phosphate rock, marketable ⁸	million metric tons	4.6	5.3	5.5	4.2 ^e	4.7 ^e	5.0 ^e	5.3 ^e	4.5 ^e	19.8 ^e	19.5 ^e
Platinum ⁵	metric tons	0.9	0.8	0.6	0.7	0.7	0.7	0.8	0.8	3.0	3.0
Sand and gravel, construction ⁹	million metric tons	180	268	287	218	165	257	275	224	953	922
Silver ⁵	metric tons	251	249	253	255	269 ^r	263 ^r	235 ^r	230	1,010	998
Soda ash ⁷	million metric tons	2.8	2.7	2.7	3.0	2.6	2.8	2.7	2.8	11.3	10.9
Stone, crushed ⁹	do.	302	424	450	371	307	423	437	377	1,550	1,540
Zinc ⁵	thousand metric tons	180	195	206	166 ^r	179	188	178 ^r	209	747 ^r	753

⁵Estimated. ⁷Revised. do. Ditto.

¹Based on data available through March 13, 2024.

²Data are rounded to no more than three significant digits; may not add to totals shown.

³Aluminum alloys produced at secondary smelters in the United States, less primary aluminum consumed, primary silicon consumed, and other alloying ingredients consumed.

⁴Shipments of domestically produced portland and blended cement, including cement made from imported clinker, as a proxy for actual domestic cement production.

⁵Recoverable mine production.

⁶Calcined production.

⁷Mine production.

⁸Marketable mine production. First to fourth quarter 2022 total may not add to quarterly data owing to annual adjustments that are not broken out by quarter.

⁹Sold or used; quarterly survey based on sample survey.