

# Mineral Industry Surveys

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## U.S. PRODUCTION OF SELECTED MINERAL COMMODITIES IN THE FOURTH QUARTER 2021

U.S. mine and plant production data for 14 selected mineral commodities are provided monthly (or quarterly) 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 2021 decreased by 11% compared with that in the third quarter of 2021 following the typical seasonal trend (fig. 1, tables 1, 2). The combined production of construction-related materials during 2021 was 5% higher compared with production in 2020; production of gypsum was 8% higher, construction sand and gravel was 6% higher, crushed stone was 4% higher and estimated cement was slightly higher (fig. 1, table 1).

### Base Metals

Production of iron ore, lead, and zinc decreased in the fourth quarter of 2021 compared with that in the third quarter of 2021, but production of copper increased slightly and estimated secondary aluminum production was essentially unchanged in the fourth quarter of 2021 compared with that in the third quarter of 2021 (fig. 2, table 1). The following describes each base metal production change in the fourth quarter of 2021 compared with that in the third quarter of 2021: copper production was slightly higher, estimated iron ore production decreased by 15%, lead production decreased by 5%, estimated secondary aluminum production was essentially unchanged, and zinc production decreased slightly. During 2021, base metals, except lead and zinc, had higher production quantities than

those in 2020 when production was negatively affected by the COVID-19 pandemic. Comparing full-year 2021 with full-year 2020, the production increased for estimated iron ore (18%), secondary aluminum (13%), and copper (slightly higher). Lead production decreased by 4% and zinc production was slightly lower in 2021 compared with that of 2020 (fig. 2, table 1).

### Precious Metals

During the fourth quarter of 2021, gold production was essentially unchanged and silver production decreased by 4% compared with production in the third quarter of 2021. Gold production in 2021 was 6% lower and silver production was slightly lower compared with production in 2020 (fig. 3, table 1).

### Other Mineral Materials

Molybdenum production was 9% lower in the fourth quarter of 2021 than that in the third quarter of 2021, and production in 2021 was 21% lower than that in 2020. Phosphate rock production was 12% lower in the fourth quarter of 2021 than that in the third quarter of 2021, and production in 2021 was 7% lower than that in 2020. Soda ash production was 5% higher in the fourth quarter of 2021 compared with that in the third quarter of 2021, and production in 2021 was 13% higher than that in 2020 (table 1).

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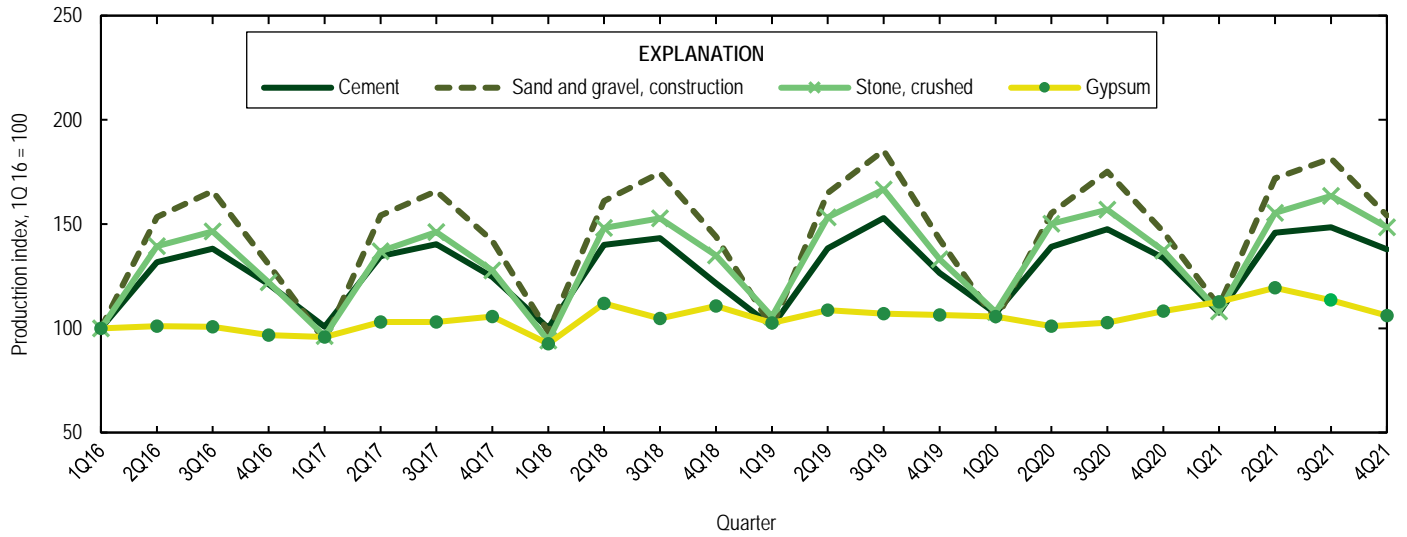


Figure 1. U.S. production of selected construction-related mineral commodities from the first quarter of 2016 through the fourth quarter of 2021, indexed to the first quarter of 2016.

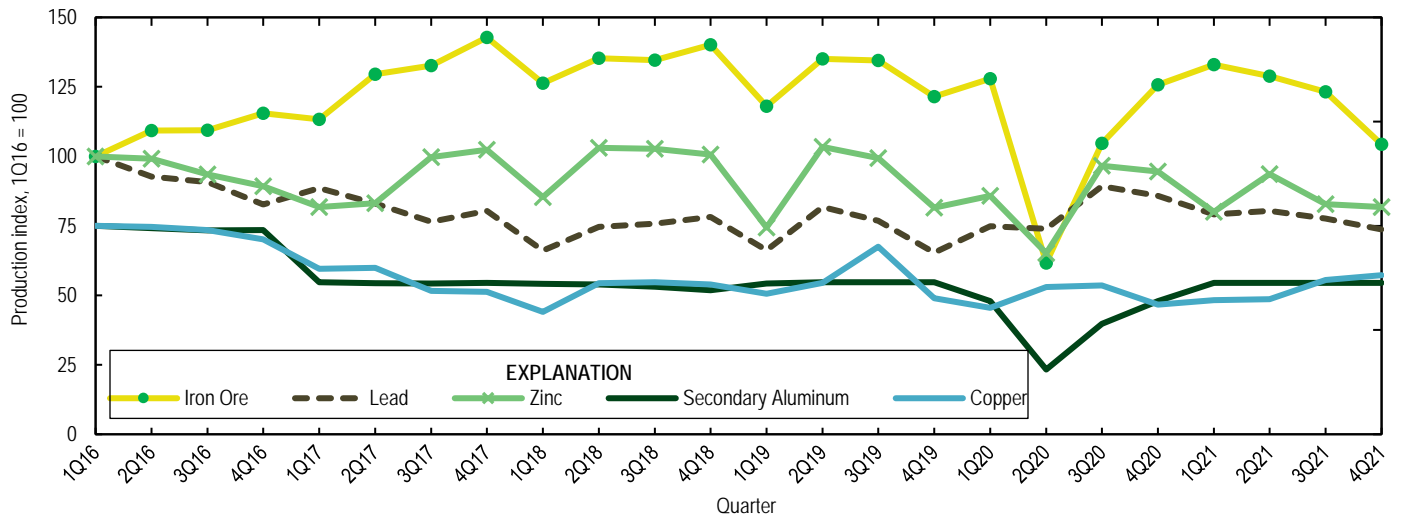


Figure 2. U.S. production of selected base metals from the first quarter of 2016 through the fourth quarter of 2021, indexed to the first quarter of 2016.

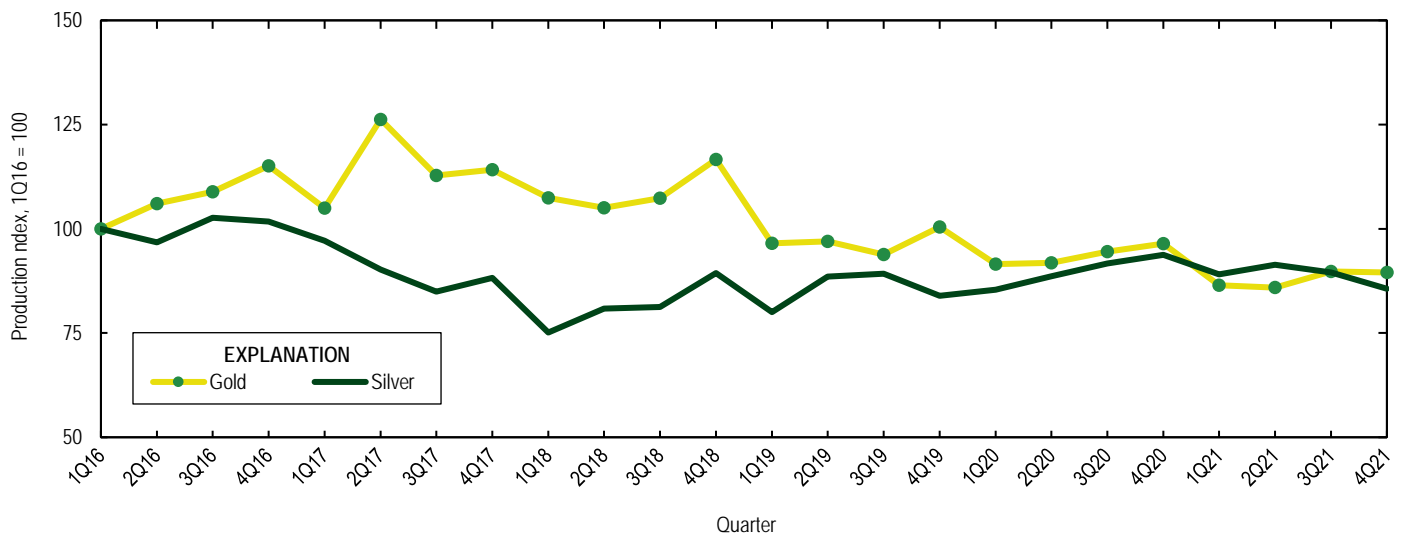


Figure 3. U.S. mine production of gold and silver from the first quarter of 2016 through the fourth quarter of 2021, indexed to the first quarter of 2016.

TABLE 1  
PRODUCTION TRENDS FOR SELECTED MINERAL COMMODITIES<sup>1</sup>

Mineral commodity	Percent change, 4th quarter 2021 vs. 3d quarter 2021	Percent change, 2021 Total vs. 2020 Total
Aluminum (secondary)	(2)	13
Cement <sup>e</sup>	-7	2
Copper	1	2
Gold	(2)	-6
Gypsum	-6	8
Iron ore <sup>e</sup>	-15	18
Lead	-5	-4
Molybdenum	-9	-21
Phosphate rock	-12	-7
Sand and gravel, construction	-15	6
Silver	-4	-1
Soda ash	5	13
Stone, crushed	-9	4
Zinc	-1	-1

<sup>e</sup>Estimated.

<sup>1</sup>Based on data available through March 15, 2022.

<sup>2</sup>Less than 0.5 percent.

TABLE 2  
U.S. PRODUCTION OF SELECTED MINERAL COMMODITIES, BY QUARTER<sup>1,2</sup>

Commodity		2020				2021				1st quarter– 4th quarter	
		1st quarter	2d quarter	3d quarter	4th quarter	1st quarter	2d quarter	3d quarter	4th quarter	2020	2021
Aluminum <sup>3,3</sup>	thousand metric tons	199	159	185	199	209	209	209	209	742	837
Cement <sup>4</sup>	million metric tons	18.0	23.4	24.8	22.5	18.1 <sup>e</sup>	24.5 <sup>e</sup>	25.0 <sup>e</sup>	23.2 <sup>e</sup>	88.8	90.8 <sup>e</sup>
Copper <sup>5</sup>	thousand metric tons	291 <sup>f</sup>	308 <sup>f</sup>	310 <sup>f</sup>	293 <sup>f</sup>	297 <sup>f</sup>	298 <sup>f</sup>	315	319	1,200	1,230
Gold <sup>5</sup>	metric tons	47.3	47.4	48.8	49.8	44.7	44.4	46.4 <sup>f</sup>	46.3	193	182
Gypsum <sup>6</sup>	million metric tons	4.4	4.2	4.2	4.5	4.6	4.9	4.7	4.4	17.2	18.6
Iron ore <sup>7</sup>	do.	11.8	5.7	9.6	11.6	12.2 <sup>f,e</sup>	11.8 <sup>f,e</sup>	11.3 <sup>f,e</sup>	9.6 <sup>e</sup>	38.1	45.0 <sup>e</sup>
Lead <sup>5</sup>	thousand metric tons	68.8	67.9	82.0	78.8	72.6	73.8	71.2 <sup>f</sup>	67.6	297	285
Molybdenum <sup>5</sup>	do.	13.2	11.6	12.9	13.3	12.7	9.5	9.6	8.8	51.1	40.5
Phosphate rock, marketable	million metric tons	5.7	6.4	5.9	5.5	5.3	5.6	5.8 <sup>f</sup>	5.1	23.5	21.8
Sand and gravel, construction <sup>9</sup>	do.	168 <sup>f</sup>	252	284	237	179 <sup>f</sup>	279	294	250	942	1,000
Silver <sup>5</sup>	metric tons	244	253	262	268	255	261	256 <sup>f</sup>	245	1,030	1,020
Soda ash <sup>7</sup>	million metric tons	2.9	2.1	2.3	2.7	2.8 <sup>f</sup>	2.8	2.8 <sup>f</sup>	2.9	10.0	11.3
Stone, crushed <sup>9</sup>	do.	288 <sup>f</sup>	401 <sup>f</sup>	419	366 <sup>f</sup>	289 <sup>f</sup>	415	437 <sup>f</sup>	397	1,470	1,540
Zinc <sup>5</sup>	thousand metric tons	175	133	197	193	163	191	169 <sup>f</sup>	167	697	689

<sup>1</sup>Estimated. <sup>2</sup>Revised. do. Ditto.

<sup>3</sup>Based on data available through March 15, 2022.

<sup>4</sup>Data are rounded to no more than three significant digits; may not add to totals shown.

<sup>5</sup>Aluminum alloys produced at secondary smelters in the United States, less primary aluminum consumed, primary silicon consumed, and other alloying ingredients consumed.

<sup>6</sup>Shipments of domestically produced portland and blended cement, including cement made from imported clinker, as a proxy for actual domestic cement production.

<sup>7</sup>Recoverable mine production.

<sup>8</sup>Calcined production.

<sup>9</sup>Mine production.

<sup>10</sup>Total for 2020 as reported by mines may vary from monthly production totals.

<sup>11</sup>Sold or used; quarterly survey based on sample survey. Includes all 50 States.