

# Mineral Industry Surveys

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# U.S. PRODUCTION OF SELECTED MINERAL COMMODITIES IN THE FOURTH QUARTER 2016

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 materials (cement, construction sand and gravel, crushed stone, and gypsum) in the fourth quarter of 2016 was 18% lower compared with that in the third quarter of 2016 but total production in 2016 was slightly higher for cement, 2% higher for construction sand and gravel, 3% higher for crushed stone, and 10% higher for gypsum compared with 2015 (fig.1, table 1).

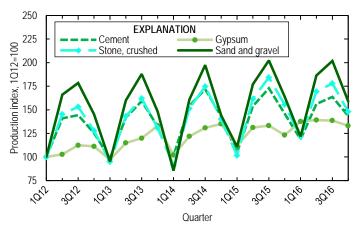


Figure 1. U.S. production of selected construction-related mineral commodities from the first quarter of 2012 through the fourth quarter of 2016, indexed to the first quarter of 2012. Source: U.S. Geological Survey.

#### **Base Metals**

Production of iron ore increased in the fourth quarter of 2016, whereas secondary aluminum production was essentially unchanged, and copper, lead, and zinc production decreased by 3%, 16%, and 8%, respectively, compared with the third quarter of 2016 (fig. 2, table 1).

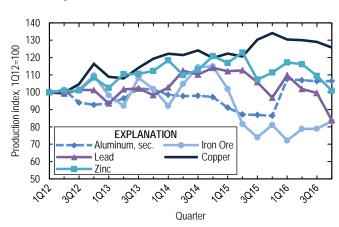


Figure 2. U.S. production of selected base metals from the first quarter of 2012 through the fourth quarter of 2016, indexed to the first quarter of 2012. Source: U.S. Geological Survey.

#### **Precious Metals**

During the fourth quarter of 2016, gold production increased by 4% and silver production decreased by 3% compared with production in the third quarter of 2016 (fig. 3, table 1). Gold and silver production has generally trended upward since the second and third quarters of 2015, respectively.

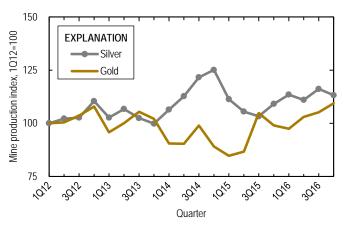


Figure 3. U.S. mine production of gold and silver from the first quarter of 2012 through the fourth quarter of 2016, indexed to the first quarter of 2012. Source: U.S. Geological Survey

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TABLE 1 PRODUCTION TRENDS FOR SELECTED MINERAL COMMODITIES

|                               | Percent change,              | Percent change,         |
|-------------------------------|------------------------------|-------------------------|
|                               | 4th quarter 2016             | 2016 Total              |
|                               | •                            |                         |
| N.C. 1 114                    | VS.                          | VS.                     |
| Mineral commodity             | 3d quarter 2016 <sup>1</sup> | 2015 Total <sup>1</sup> |
| Aluminum (secondary)          | (2)                          | -2                      |
| Cement                        | -12                          | 1                       |
| Copper                        | -3                           | 2                       |
| Gold                          | 4                            | 11                      |
| Gypsum                        | -4                           | 10                      |
| Iron ore                      | 6                            | -7                      |
| Lead                          | -16                          | -8                      |
| Molybdenum                    | 14                           | -29                     |
| Phosphate rock                | -12                          | (2)                     |
| Sand and gravel, construction | -21                          | 2                       |
| Silver                        | -3                           | 6                       |
| Soda ash                      | (2)                          | 2                       |
| Stone, crushed                | -17                          | 3                       |
| Zinc                          | -8                           | -3                      |
|                               |                              |                         |

<sup>&</sup>lt;sup>1</sup>Based on data available as of February 28, 2017.

<sup>&</sup>lt;sup>2</sup>Less than 0.5 percent.

 $\label{eq:table 2} \text{U.S. PRODUCTION OF SELECTED MINERAL COMMODITIES, BY QUARTER}^{1,2}$ 

|  |                      |                  |                  |                  |                  |                   |                   |                   |             | 1st qua          | rter-       |  |
|--|----------------------|------------------|------------------|------------------|------------------|-------------------|-------------------|-------------------|-------------|------------------|-------------|--|
|  |                      |                  | 2015             |                  |                  |                   | 2016              |                   |             |                  | 4th quarter |  |
| Mineral commodity                          |                      | 1st quarter      | 2d quarter       | 3d quarter       | 4th quarter      | 1st quarter       | 2d quarter        | 3d quarter        | 4th quarter | 2015             | 2016        |  |
| Aluminum <sup>3</sup>                      | thousand metric tons | 230 г            | 230 <sup>r</sup> | 229 <sup>r</sup> | 228 <sup>r</sup> | 226               | 224               | 223               | 223         | 916 <sup>r</sup> | 896         |  |
| Cement <sup>4</sup>                        | million metric tons  | 14.9             | 21.8             | 24.5             | 20.8             | 16.9              | 22.2              | 23.2              | 20.4        | 81.9             | 82.7        |  |
| Copper <sup>5</sup>                        | thousand metric tons | 339              | 335              | 361              | 372              | 362               | 361               | 358 г             | 349         | 1,410            | 1,430       |  |
| Gold <sup>5</sup>                          | metric tons          | 48.3             | 49.4             | 59.7             | 56.4             | 55.5 <sup>r</sup> | 58.6 <sup>r</sup> | 59.9 <sup>r</sup> | 62.3        | 214              | 236         |  |
| Gypsum <sup>6</sup>                        | million metric tons  | 3.4              | 3.9              | 4.0              | 3.7              | 4.1               | 4.2               | 4.2               | 4.0         | 15.0             | 16.4        |  |
| Iron ore <sup>7</sup>                      | do.                  | 13.0             | 10.4             | 9.4              | 10.3             | 9.2 <sup>r</sup>  | 10.0 <sup>r</sup> | 10.1              | 10.6        | 43.1             | 39.9        |  |
| Lead <sup>5</sup>                          | thousand metric tons | 93.9             | 94.2             | 88.8             | 81.0             | 91.8              | 85.1 <sup>r</sup> | 83.3 <sup>r</sup> | 70.1        | 358              | 330         |  |
| Molybdenum <sup>5</sup>                    | do.                  | 13.8             | 13.6             | 12.6             | 10.5             | 8.8               | 8.8               | 8.5               | 9.7         | 50.6             | 35.8        |  |
| Phosphate rock <sup>8</sup>                | million metric tons  | 6.2              | 7.6              | 7.0              | 7.0              | 6.2               | 6.7               | 7.7 <sup>r</sup>  | 6.8         | 27.4             | 27.3        |  |
| Sand and gravel, construction <sup>9</sup> | do.                  | 159              | 254              | 290              | 235              | 174 <sup>r</sup>  | 267               | 289 <sup>r</sup>  | 228         | 937              | 959         |  |
| Silver <sup>5</sup>                        | metric tons          | 283              | 268              | 262              | 277              | 288               | 282 <sup>r</sup>  | 295 г             | 288         | 1,090            | 1,150       |  |
| Soda ash <sup>7</sup>                      | million metric tons  | 2.9              | 2.9              | 2.9              | 2.9              | 2.9               | 2.9               | 3.0               | 3.0         | 11.6             | 11.8        |  |
| Stone, crushed <sup>9</sup>                | do.                  | 223 <sup>r</sup> | 356 <sup>r</sup> | 405 <sup>r</sup> | 342 <sup>r</sup> | 269 <sup>r</sup>  | 375 <sup>r</sup>  | 395 <sup>r</sup>  | 328         | 1,330            | 1,370       |  |
| Zinc <sup>5</sup>                          | thousand metric tons | 203              | 214              | 187              | 194              | 204 <sup>r</sup>  | 202 <sup>r</sup>  | 190 <sup>r</sup>  | 175         | 797              | 772         |  |

<sup>&</sup>lt;sup>r</sup>Revised. do. Ditto.

<sup>&</sup>lt;sup>1</sup>Based on data available as of February 28, 2017.

<sup>&</sup>lt;sup>2</sup>Data are rounded to no more than three significant digits; may not add to totals shown.

<sup>&</sup>lt;sup>3</sup>Aluminum alloys produced at secondary smelters in the United States, less primary aluminum consumed, primary silicon consumed, and other alloying ingredients consumed.

<sup>&</sup>lt;sup>4</sup>Data are shipments of domestically produced portland and blended cement, including cement made from imported clinker, as a proxy for actual domestic cement production.

<sup>&</sup>lt;sup>5</sup>Recoverable mine production.

<sup>&</sup>lt;sup>6</sup>Calcined production.

<sup>&</sup>lt;sup>7</sup>Mine production.

<sup>&</sup>lt;sup>8</sup>Marketable mine production. First to fourth quarter total may not add to quarterly data owing to annual adjustments that are not broken out by quarter.

<sup>&</sup>lt;sup>9</sup>Sold or used; quarterly survey based on sample survey. Quarterly data my not add to totals shown because of independent rounding and differences between projected totals by States and by division.