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Volume Author/Editor: Harold Barger and Sam H. Schurr

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Chapter Author: Harold Barger, Sam H. Schurr

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Appendix E

Charts: Sources and Notes

1 National Bureau index (NBER), Appendix Table A-7; Day's index, *Review of Economic Statistics,* Vol. VI (July 1924), p. 200; National Research Project index, Vivian E. Spencer, *The Mineral Extractive Industries, 1880–1938* (National Research Project, Philadelphia, 1940), p. 9; Federal Reserve Board index, *Federal Reserve Bulletin,* August 1940, p. 764.

2 Output indexes from Table 1; population figures from Harold Barger and Hans H. Landsberg, *American Agriculture, 1899–1939: A Study of Output, Employment and Productivity* (National Bureau of Economic Research, 1942), pp. 399-400.

3 Table 1; population figures, as in Chart 2.

4 Copper, lead and zinc, Appendix Table A-7; iron ore, Appendix Table A-5.

5 Iron ore output, Appendix Table A-5; steel production and consumption of scrap, annual issues of *Minerals Yearbook* (U. S. Bureau of Mines).

6 The total represents steel production as in Chart 5; production of alloy ingots and castings from *Annual Statistical Reports* of the American Iron and Steel Institute.

7 Iron ore, Appendix Table A-5; manganese, Appendix Table A-7.

8 Appendix Table A-7. Data shown in this chart refer to the output of the commodity copper, and not of the copper mining industry; and so forth. The distinction is elucidated in Appendix B.

9 Appendix Table A-1.

10–13 Primary output, Appendix Table A-1; secondary output, Appendix Table A-8.

14 Appendix Table A-11.

15 Appendix Table A-12.

16 Appendix Table A-13.

17 Appendix Table A-1.

18 Petroleum, Appendix Table A-7; natural gas, bituminous and anthracite coal, Appendix Table A-1.

19–20 *Minerals Yearbook, 1937,* pp. 807-08; *1940,* p. 789. Water power is included at constant fuel equivalent (4.02 pounds per kilowatt-

hour). The heat values employed by the Bureau of Mines are as follows: anthracite, 13,600 BTU per pound; bituminous coal, 13,100 BTU per pound; petroleum, 6,000,000 BTU per barrel; natural gas, 1,075 BTU per cubic foot. One BTU is the quantity of heat required to raise the temperature of one pound of water one degree Fahrenheit. The BTU values mentioned are determined by complete combustion in a calorimeter, and therefore represent the maximum energy obtainable provided there were no losses in fuel consumption.

21 Appendix Table A-14.

22 Appendix Table A-15.

23 Appendix Table A-5; for the inclusion of noncommercial output, see footnote k to that table.

24 Appendix Table A-16.

25 Appendix Table A-1. The indexes shown here represent simple tonnage aggregates for each variety of stone; they are not computed from data broken down by use (see discussion in Appendix C above).

26 Appendix Table A-17.

27 Clay, and sand and gravel, Appendix Table A-7; other items, Appendix Table A-1.

28 Appendix Table A-5. Comprises all metal mining except placers; bituminous coal; anthracite; gypsum; phosphate rock; and, for the period after 1911, stone quarrying.

29 Appendix Table A-5. "Metals" does not include placer mining; "coal" comprises bituminous coal and Pennsylvania anthracite; the coverage of "total mining" is the same as in Chart 28.

30 Appendix Table A-5. "Other metals" does not include placer mining.

31 Mercury, Appendix Table A-6; total metals, Appendix Table A-5. The latter does not include placer mining.

32 Appendix Table A-5. The coverage of "total mining" is the same as in Chart 28.

33, 34, 35 Based on material to be found in Robert Peele and John A. Church, *Mining Engineers' Handbook* (3rd ed., John Wiley, 1941); Robert S. Lewis, *Elements of Mining* (2nd ed., John Wiley, 1941); and Y. S. Leong and others, *Copper Mining* (National Research Project, Philadelphia, 1940). In Charts 34 and 35 the vertical distance between the original surface line and the top of the ore (i.e., the thickness of the capping) has been greatly reduced for convenience in presentation.

36 For 1880–1899, Spencer, *The Mineral Extractive Industries*, p. 153; for 1899–1939, Appendix Table A-5.

37 Output per manhour and per manday, Appendix Table A-5; output per man computed from data in Appendix Tables A-3 and A-5.
38 Appendix Tables A-9 and A-10. For copper mines output per manday is computed from data which do not include employment at ore dressing plants.
39 Based on material to be found in Peele and Church, *Mining Engineers' Handbook;* and Lewis, *Elements of Mining.*
40 For 1880–1899, Spencer, *The Mineral Extractive Industries,* p. 154; for 1899–1939, Appendix Table A-5.
41 Output per manhour and per manday, Appendix Table A-5; output per man computed from data in Appendix Tables A-3 and A-5. The relatively low levels of output per man in 1902, 1922 and 1925 are attributable to strike conditions in those years.
42 Appendix Table A-5.
43 Appendix Table A-18. At any given moment, proved reserves are the difference between discoveries and production, each cumulated over the life of the industry to date.
44 For 1880–1902, Spencer, *The Mineral Extractive Industries,* p. 155; for 1902–1939, Appendix Table A-5.
45 For 1880–1902, Leong and others, *Copper Mining,* p. 214; for 1902–1939, Appendix Table A-5.
46 Appendix Table A-10. It should be observed that employment at ore dressing plants is not included in the calculation of output per manday, a fact which serves to explain differences between this chart and Chart 45.
47 Appendix Table A-5. Data are for commercial operations only.
48 Appendix Table A-5.
49 Appendix Table A-5. Data are for commercial operations only.
50 Appendix Table D-2. Data apply to a sample of the industry, which varies somewhat in composition over the period. While changes in coverage have been allowed for through the use of overlapping data, the alternative indexes shown measure the output of this sample rather than of the copper mining industry as a whole.