

25. Evans, Judge Evan A.: Disposition of Pat. Cases by the Courts; in *JPOS* 24:19-24, 1942.

26. Lang, Edw. H. and Thomas, B. K.: Disposition of Pat. Cases by Courts During the Period 1939-49; in *JPOS* 32:803-7, 1950.

28. Federico, N 20, reprinted, pp. 245-9, from his study of 50 recent cases in the courts of appeals. See also the Subcom'ee's *Analysis of Pat. Litigation Stat.*, ftN 269.

29. *Ibidem*, p. 236, and the above *Analysis*.

30. *Ibidem*, p. 244; or our table 2.

36. Patents on invs., to Americans, from *Hist. Stat. of the U.S.* and latterly from data in *JPOS* 43:417 and later. Design pats. to foreigners are negligible, if involved at all. The custom is to quote pat. stat. for single years, and to include pats. granted to foreigners, but this is less stable and suitable for present purposes than the method here used. The share of foreigners in Amer. pats. rose from 6.3% in our earliest period to 15.7% in 1957-9. Our figures are yearly averages for 3-year groups. The 1960 and '61 group average would be 41,200 pats. yearly to Americans.

37. Workers ten years old and over, for the 1880 datum, and 14 and over for 1962. From *Stat. Abstract of the U.S.*, whence many of our stat.

38. *The Rate and Direction*, N 46, esp. J. R. Minasian: The Econ. of R&D; F. Machlup: The Supply of Inventors and Inv., N 96; J. Schmookler: Changes in Industry and the State of Knowledge as Determinants of Indus. Inv., pp. 195-232; and Y. Brozen: The Future of Indus. R&D, abstracted from his Trends in Indus. R&D, N 62.

Kreps, T. J., statement on the econ. aspects of inv., with stat., in pp. 16,206-69 of U.S. Temp. Nat. Econ. Com'ee: *Hearings, Part 30: Technology and Concentration of Econ. Power*, 1940, pp. 16207-17599.

Sanders: Some Difficulties in Measuring Inventive Activity, N 97. Demolishes pats. as an index.

Stafford, Alf. B.: Is the Rate of Inv. Declining? *Am. Jol. of Sociol.* 57:539-45, 1952. Attempts to measure the course of inv. by pats., while acknowledging that these have no long-term stable ratio. A decline of inv., or its transformation to a new, incommensurable parameter, is suspected. See also his Trends of Inv., N 156.

Schmookler, J.: The Level of Inventive Activity; *Rev. of Ec. & Stat.* 36:183-90, 1954. Combines with advanced ec. stat., hist. data on occupations, pats., various inputs and GNP, the last 3 measured according to their variations from trend. Although respecting his competence in econ. stat., we disagree with his conclusions in this and his articles below, that the per capita rate of Amer. inventing has not advanced greatly, and that pat. applications might have some use as long-run measures of inv.

———: The Interpretation of Pat. Stat.; *JPOS* 32:123-46, 1950.

———: The Changing Efficiency of the Amer. Economy, 1869-1938; *Rev. of Ec. & Stat.* 34:214-31, 1952.

———: Pat. Application Stat. as an Index of Inventive Activity; *JPOS* 35:539-50, 1953.

———: The Utility of Pat. Stat.; *JPOS* 35:407-12, 1953. Mentions various useful considerations and ways of using pat. stat. properly, although he tends to see little decline in the percent of invs. pat'd.

Princeton Conference on Quantitative Description of Technol. Change, 1951, papers individually pub., inc. ones by Schmookler, Stafford and Gillillan.

Markham, J. W., Worley, J. S., and Brothers, D. S.: The Value of the Amer. Pat. Sys.: an inquiry into possible approaches to its measurement; *PTCJRE* 1:20-56, 1957, esp. 49-53 on the difficulties of measuring productivity and the shares of it due to inv. and the pat. sys.

Abramovitz, M.: Resource and Output Trends in the U.S. since 1870. Nat. Bur. of Ec. Research, *Occasional Paper* 52, 1956, 23 pp. esp. pp. 7,8.

Merton, R. K.: Fluctuations in the Rate of Indus. Inv.; *Q. Jol. of Ec.* 49:454-74, 1935.

Ewell, R. H.: Role of Research in Ec. Growth; *Chem. & Engg. N.* 2980-5, July 18, 1955. Compares stat. of R&D and Productivity, recognizing their incommensurability.

39. Hart, Hornell: Acceleration in Soc. Change, chap. 3 of F. R. Allen et al.: *Technology and Social Change*, 1957, 541 pp.; also Hart's chaps. 19 and 20.

———: *The Technique of Soc. Progress*, 1931; and Technol. Acceleration and the Atomic Bomb, *Am. Sociol. Rev.*, June, 1946, pp. 277ff.