

SOCIAL AND BEHAVIORAL SCIENCES

The social and behavioral sciences encompass a variety of fields. They include anthropology, geography, political science, sociology, and two large but very different fields which are often reported on separately, economics and psychology. Some data sources treat psychology as a behavioral science, separate from other social sciences.

The bachelor% degree is insufficient for professional employment in the social and behavioral sciences. Thus, graduate enrollments and degrees are the best indicators for forecasting the supply of social scientists. Ph.D.s have been steady at around 6,000 a year since 1975, with psychology taking an increasing share while other social sciences have declined. Bachelor% degrees in social and behavioral sciences peaked in 1974 and have been dropping steadily ever since. Freshman interest has been fairly steady since the late 1970s, although it dipped in 1980-1983 at the same time that interest in engineering peaked. For all these fields combined, about 14 percent of bachelor% graduates earn a master's and 5 percent a Ph.D.⁹⁰

It is difficult to estimate the number of social and behavioral scientists working in this broad field; the Bureau of Labor Statistics estimates 325,000 in 1985 while the National Science Foundation (NSF) estimates 621,000 in 1986. Outside of psychology, according to NSF'S 1986 estimates, social scientists number about 382,000 members of the labor force, including 70,000 Ph.D.s.⁹¹ ~~psychologists add 240,000 to that number,~~ including 55,000 Ph.D.s.

In general, social scientists are more likely to work in industry than in educational institutions, and a larger proportion work in the non-profit sector and in Federal, State,

90. National Science Foundation, Science and Engineering Degrees: 1950-80. A Source Book, op. cit., p. 54. Bachelor's and master% degree data for 1981-83 are from the U.S. Department of Education, National Center for Statistics, unpublished. Ph.D. data are from the National Research Council's Survey of Earned Doctorates in the United States.

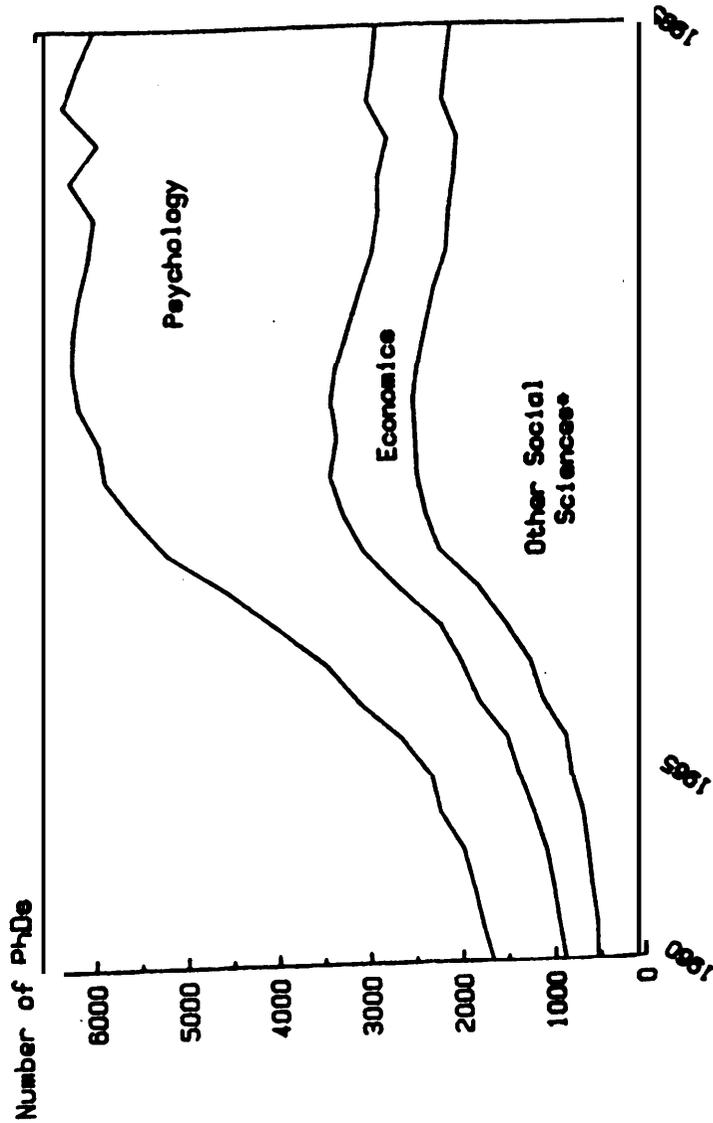
91. National Science Foundation, Science Resources Studies Division, preliminary 1986 estimates, Tables B-1 and B-n, unpublished data.

and local government compared to other sciences. Unemployment is traditionally higher among social and behavioral scientists than other scientists and engineers, indicating a chronic oversupply.

The social sciences attract more women and fewer foreign students than other fields. Within specific disciplines, however, large differences exist. Psychology and economics, for example, are mirror images in terms of enrollments of women and foreign nationals. Non-Asian minorities are better represented in the social sciences than in other sciences. Indeed, the social and behavioral sciences have been viewed as fields of educational opportunity. But they, together with the life sciences, have the lowest salaries and the highest unemployment and underemployment rates. Almost one-third of the Ph.D.s trained in a social science were working outside their doctorate field in 1983. Nearly one-fifth of Ph.D.s work outside science and engineering altogether.

The market for social science Ph.D.s is still predominantly academic. This is not likely to change soon, though the more applied degrees and specialties will continue to fare better in business, industry, and State and local government.

Social/Behavioral Sci PhDs 1960-1985



*includes agricultural economics
Sources: National Research Council

PSYCHOLOGY

Enrollments and Degrees

- Psychology is the largest social and behavioral science field, accounting for one-half of Ph.D.s and one-third of bachelor's degrees in social sciences. Although Ph.D.s in the social sciences have declined since 1976, Ph.D.s in psychology have continued at about 3,000 per year since 1977.⁹² In 1985, this number represented 16 percent of the doctorates granted in all science and engineering.
- Current graduate enrollments in doctoral degree programs are about 60 percent in clinical specialties, 40 percent in research and experimental specialties.⁹³
- Bachelor's graduates in psychology are more likely than other social scientists to complete one or more graduate degrees.

Employment Patterns

- There are 170,000 to 240,000 psychologists employed in the United States. Of these, three out of four are employed in science and engineering (S/E) positions.⁹⁴
- In 1986, over 20 percent of psychologists in S/E positions were employed in business and industry; another 20 percent work in nonprofit organizations, and almost one-half in academia.⁹⁵
- The work of psychologists in S/E positions differs from those of other S/E professionals. Only 9 percent of psychologists are engaged in research and development, 22 percent in teaching, and 17 percent in some type of

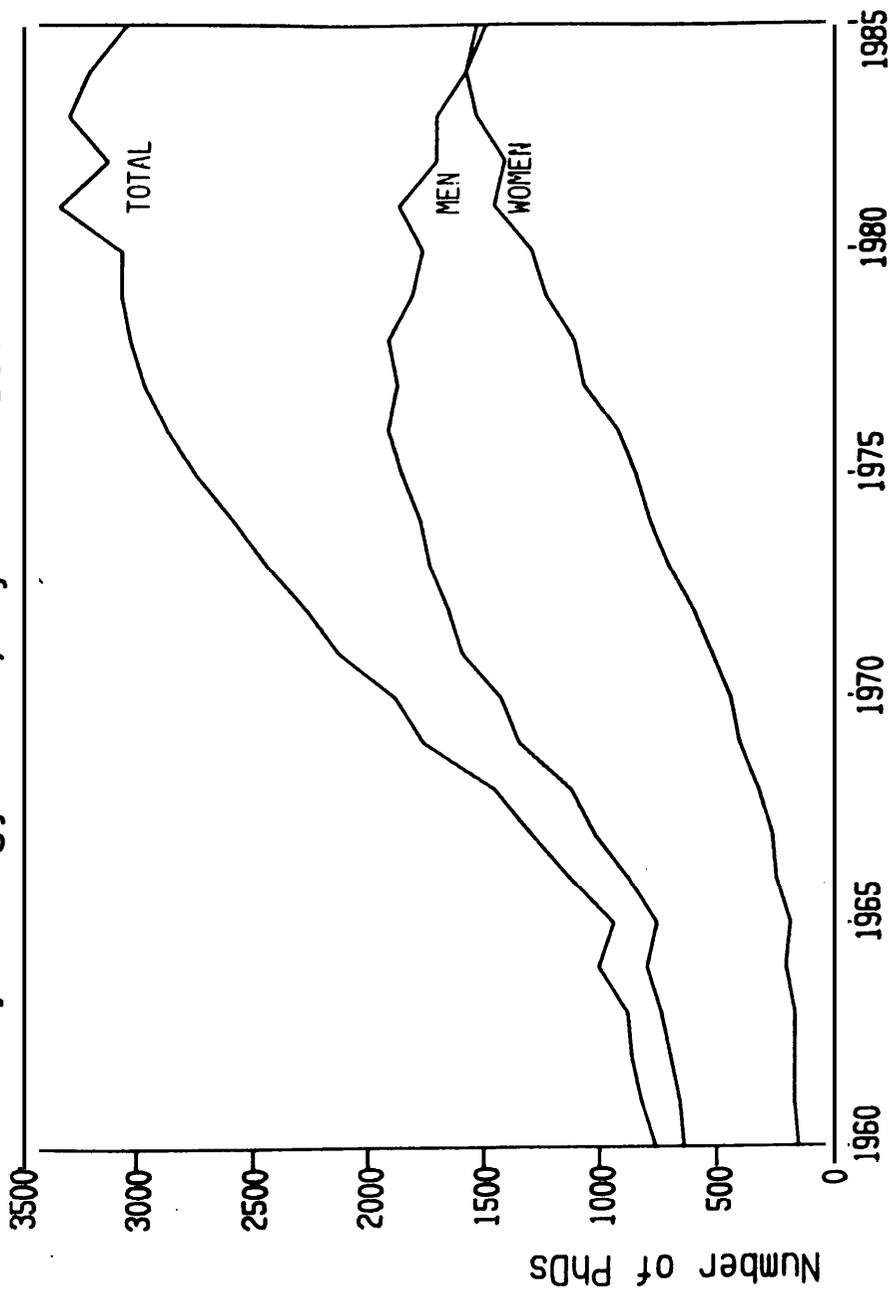
92. National Science Foundation, Science and Engineering Doctorates: 1960-82, op. cit., p. 19, Table 1.

93. Georgine M. Pion, et al., Summary Report of the 1984-85 Survey of Graduate Departments of Psychology (Washington, DC: American Psychological Association, June 1985), p. 28, Table 11.

94. The Bureau of Labor Statistics reports 169,000 employed psychologists in 1985; the National Science Foundation estimates 239,700 in 1986. National Science Foundation, Science Resources Studies Division, preliminary 1986 estimates, Table B-1.

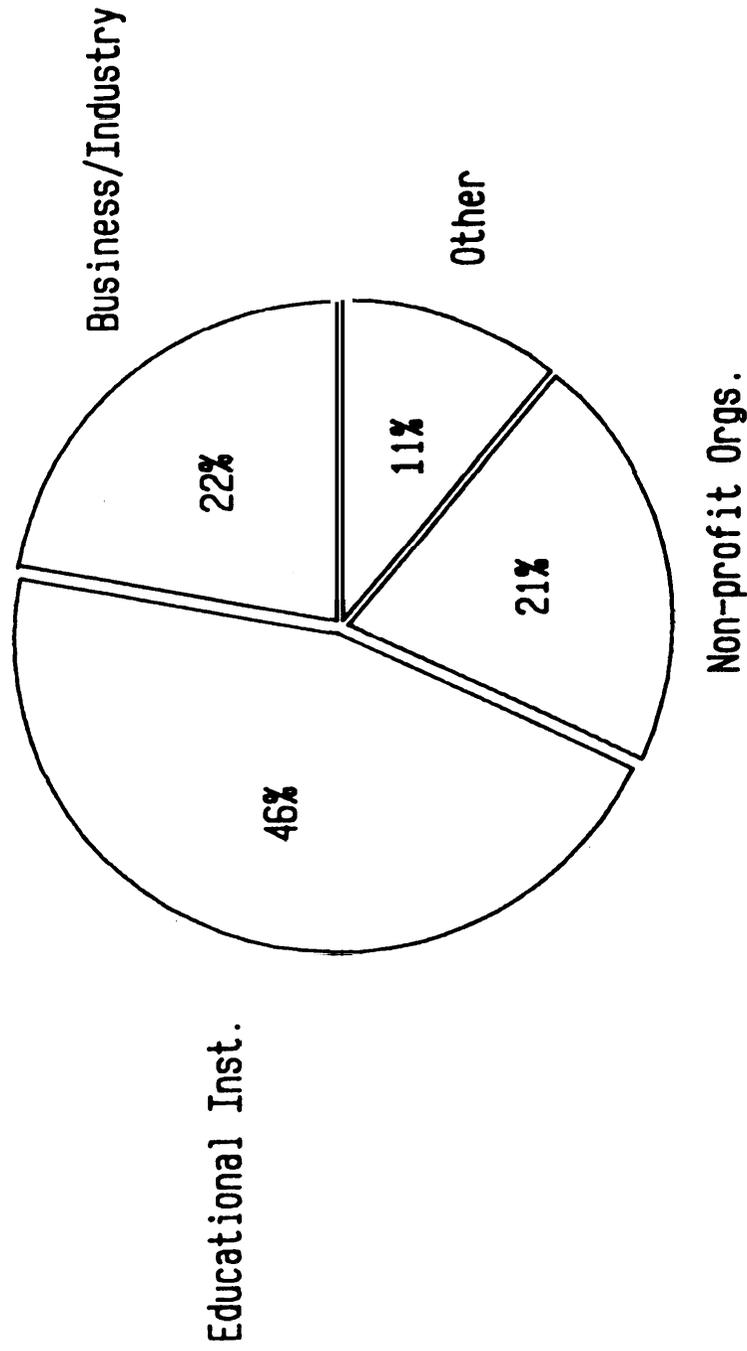
95. Ibid., Table B-13.

Psychology hD , By 196



SOURCE: NATIONAL RESEARCH COUNCIL

Where Psychologists* Work, 1986



*ALL DEGREES

SOURCE: NAT ONAL SCIE FOUNDATION

management.⁹⁶ Part of this may be explained by the large numbers of psychologists in clinical practice.

- Compared to other doctoral-level scientists, psychologists exhibit relatively low mobility into other scientific fields:⁹⁷ Instead, they may move out of science altogether in times of oversupply, as indicated by the high proportion of psychology Ph.D.s reporting non-science/engineering employment.
- Psychologists generally follow two career paths. Clinical psychologists, with a bachelor's or master's, work in industry or hospitals and other health service occupations. Two-thirds of clinical psychologists are bachelor's or master's holders. Experimental psychologists earn a Ph.D. and enter academic research, or, to a lesser extent, industry; three out of four of psychologists active in research hold a Ph.D.⁹⁸
- Between 1972 and 1984, subfields associated with academic research— experimental, comparative, and physiological— declined while clinical specialties thrived. Over half of recent Ph.D.s in psychology have been awarded in clinical subfields, and new Ph.D.s increasingly enter private or public clinical practice (health service provider) instead of pursuing traditional academic careers.⁹⁹

Women, Minorities, and Foreign Nationals

- The composition of the psychology degree pool is distinctive: women dominate at the bachelor's level (two of every three bachelor's awarded) and earn half of the

96. [ibid.

97. National Research Council, Office of Scientific and Engineering Personnel, Science, Engineering, and Humanities Doctorates in the United States: 1983 Profile, op. cit., pp. 18-19, Table 2-2.

98. Joy Stapp, et al., "Census of Psychological Personnel: 1983," American Psychologist, vol. 40, No. 12, December 1985, pp. 1,334-1,341.

99. Georgine M. Pion and Mark W. Lipsey, "Psychology and Society: The Challenge of Change," American Psychologist, vol. 39, No. 7, July 1984, pp. 739-754; and Ann Howard, et al., "The Changing Face of American Psychology: .4 Report from the Committee on Employment and Human Resources," unpublished manuscript.

Ph.D.s, the highest proportion among the sciences. ¹⁰⁰ Women tend to congregate in developmental, educational, and clinical psychology, while men hold more research positions.

- Despite receiving a majority of psychology degrees, women are less likely to be tenured or on a tenure track, and more likely to be working part time. In graduate departments of psychology, two-thirds of the faculty are male.
- Minority participation in psychology is very low: 3 to 6 percent black, 3 percent Hispanic, and 1 percent Asian and Native American.
- There are very few foreign nationals in psychology; they comprise only 4 percent of current graduate enrollment, compared to 20 percent for other social sciences. ¹⁰¹

100. Commission on Professionals in Science and Technology, Professional Women and Minorities: A Manpower Data Resource Science, 6th ed. (Washington, DC: February 1986), pp. 232, 241-242.

101. National Science Foundation, Academic Science/Engineering: Graduate Enrollment and Support, Fall 1983, op. cit., p. 27, Table A-8.

ECONOMICS

Education and Supply

- For 25 years economics has attracted many students. Baccalaureate production more than doubled to 17,000 in 1970, declined slightly to mid-decade, and has climbed ever since, surpassing 20,000 in 1983.
- Master% degrees exhibit a similar pattern to baccalaureates, plateauing in 1980 around 2,000 and holding stable. Ph.D. production has fluctuated between 700 and 800 a year since 1970.¹⁰²

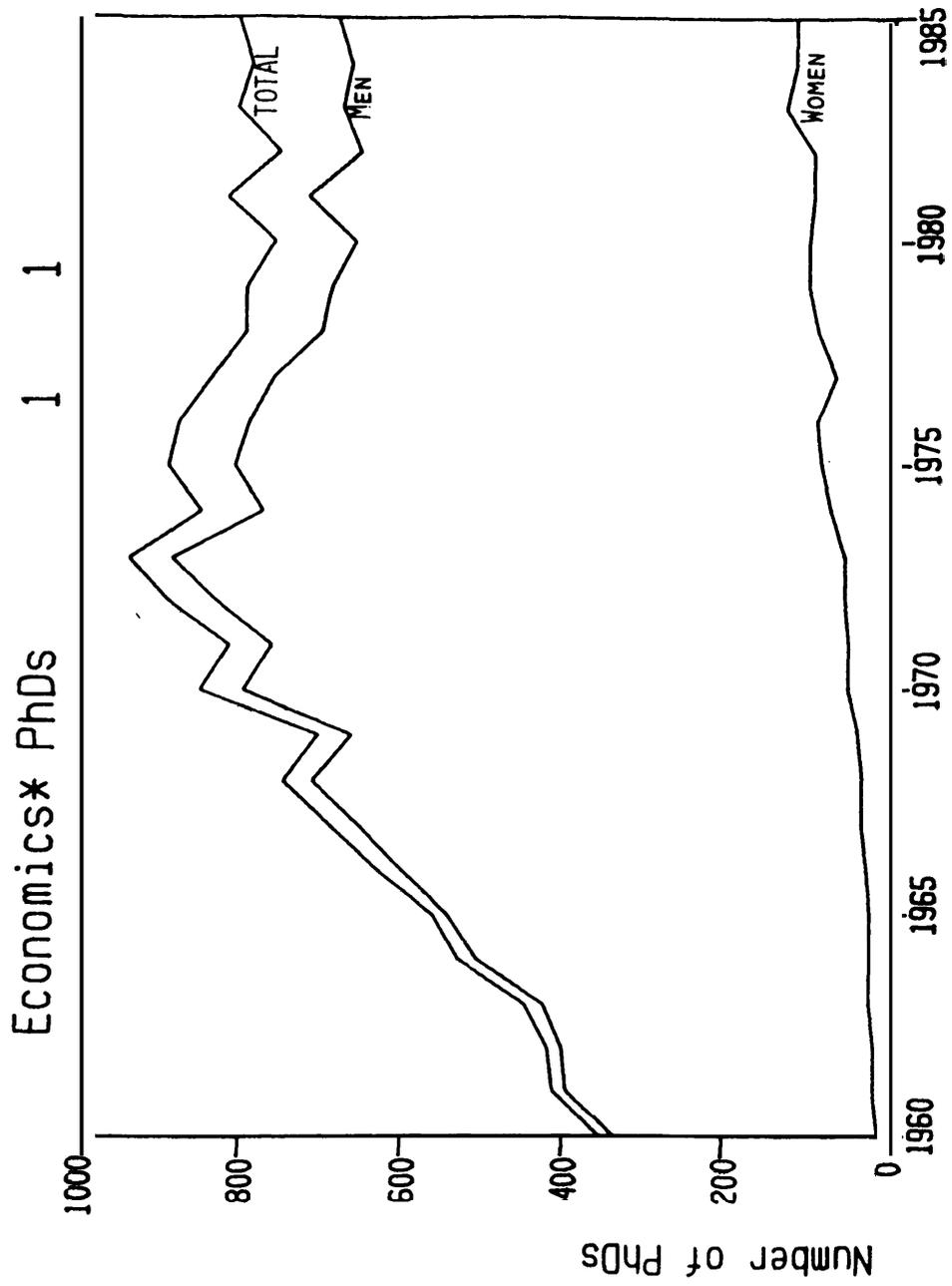
Employment Patterns

- There are 111,000 to 145,500 economists employed in the United States. Of these, three out of five are employed in S/E positions.¹⁰³
- In 1986, 42 percent of the economists holding S/E positions are working in business and industry, 35 percent in academia and 12 percent in the Federal Government.¹⁰⁴ In the last decade, economists have doubled their number in the work force.
- The principal work activity of S/E economists in 1986 is management/administration (25 percent), followed by teaching (24 percent), and

102. National Science Foundation, Science and Engineering Degrees: 1950-80. A Source Book, op. cit., p. 56.

103. The Bureau of Labor Statistics reported 110,000 employed economists in 1985; the National Science Foundation estimates 145,500 in 1986. National Science Foundation, Science Resources Studies Division, preliminary 1986 estimates, Table B-1, unpublished data.

104. National Science Foundation, Science Resources Studies Division, preliminary 1986 estimates.

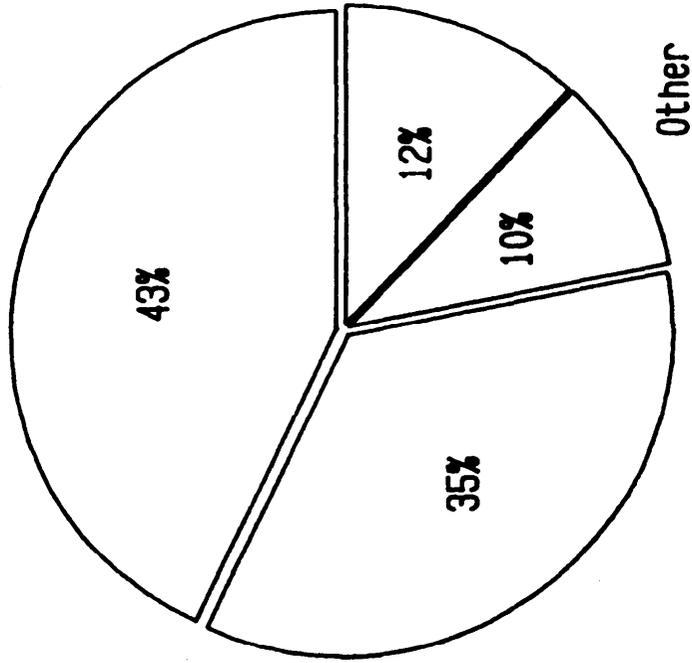


* INCLUDES ECONOMETRICS

SOURCE: NATIONAL RESEARCH COUNCIL

Where Economists' Work, 1986

Business/Industry



Educational Inst.

Federal Govt.

Other

* ALL DEGREES

SOURCE: NATIONAL SCIENCE FOUNDATION

research and development (19 percent).¹⁰⁵

- The profile for the 20,000 Ph.D. economists in the work force is more academic, with almost half having teaching as their primary work activity and one-quarter engaged in R&D.¹⁰⁶
- The average salary for a Ph.D. economist in 1983 was \$42,000. This exceeds the average for scientists/engineers in all fields combined by almost \$3,000 and in social sciences by \$6,000.¹⁰⁷ Although new job openings were down in 1985 'rem the year before, the academic market has accommodated new Ph.D.s seeking entry-level positions.¹⁰⁸

Women, Minorities, and Foreign Nationals

- Women have historically fared poorly in economics. They receive disproportionately fewer of the degrees awarded at all levels, 33 percent of bachelor's, 24 percent of master's, and 16 percent of Ph.D.s. Women have slowly increased their share of degrees over the past decade, although this increase has slowed. According to one survey, the percentage of female economics assistant professors doubled to 16 percent between 1976 and 1984. Still, in that year only 4 percent of the tenured economics faculty were women.¹⁰⁹
- Blacks and Hispanics are not well represented in economics, while Asians are doing somewhat better. In 1983, black economists in the work force totaled 3 percent, Asians 7 percent, and Hispanics 2 percent. Black economists have remained

105. Ibid.

106. National Science Foundation, Science and Engineering Personnel: A National Overview, op. cit., pp. 117, 121, 125, 129, Table 12-b, and unpublished data 1986 estimates.

107. Ibid., p. 140, Table B-18.

108. C. Elton **Hinshaw**, 'Report of the Director: Job Openings for Economists,' in Proceedings of the 98th Meeting of the American Economic Association, American Economic Review, vol. 76, No.2, May 1986, pp. 443-444.

109. **Isabell Sawhill**, "Report of the Committee on the Status of Women in the Economics Profession," in Proceedings of the 98th Meeting of the American Economic Association, American Economic Review, vol. 76, No. 2, May 1986, pp. 452-457.

between 1 and 2 percent of Ph.D.s since 1973, while Asians have doubled their participation to 9 percent. Ph.D. data for 1985 show this trend continuing: blacks, Hispanics, and American Indians combined account for less than 4 percent of the doctorates granted.¹¹⁰

- Foreign nationals holding temporary visas are a large share of the economics talent pool. In 1960, they received 19 percent percent of the Ph.D.s conferred in economics; in 1985, that percentage was 34.¹¹¹

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110. National Research Council, Office of Scientific and Engineering Personnel, Doctorate Recipients from United States Universities: Summary Report 1984, op. cit., p. 32.

111. Data for 1960-82 are from National Science Foundation, Science and Engineering Doctorates: 1960-1982, NSF 83-328 (Washington, DC: 1983), pp. 44-45, Table 2. Data for 1983-85 are from National Research Council, Doctorate Recipients from United States Universities: Summary Report 1984, op. cit.