# Part Two

# Higher Education

## 1 *Number of Teachers*

Since 1900 college professors have multiplied at a rate that is surely unprecedented in the history of established professions (Table 17 and Figure 4). By 1940 academic staffs were five times as large and enrollments six times as large as in 1900. Only one brief and mild interruption of growth (in 1933-34) has occurred in peacetime.[1] In addition to an academic staff of almost 150,000

TABLE 17

Enrollments and Academic Employees in Higher Education (thousands)

| | TEACHING STAFF | OTHER ACADEMIC EMPLOYEES | TOTAL ACADEMIC EMPLOYEES | ENROLLMENTS Total | ENROLLMENTS % of population 18-21 incl. |
|---|---|---|---|---|---|
| 1900 | 26.5 | 2.5 | 29.0 | 238 | 4.0 |
| 1905 | 32.9 | 3.9 | 36.8 | 264 | 4.0 |
| 1910 | 39.5 | 5.5 | 45.0 | 355 | 4.8 |
| 1915 | 43.6 | 6.9 | 50.5 | 404 | 5.5 |
| 1918 | 48.4 | 8.3 | 56.7 | 441 | 6.0 |
| 1920 | 52.5 | 9.5 | 62.0 | 598 | 8.1 |
| 1922 | 60.6 | 11.5 | 72.1 | 681 | 8.9 |
| 1924 | 68.8 | 13.6 | 82.4 | 823 | 10.3 |
| 1926 | 76.5 | 15.7 | 92.2 | 917 | 11.0 |
| 1928 | 81.7 | 17.5 | 99.2 | 1,054 | 12.1 |
| 1930 | 86.2 | 19.2 | 105.4 | 1,101 | 12.2 |
| 1932 | 90.1 | 20.8 | 110.9 | 1,154 | 12.6 |
| 1934 | 88.5 | 20.4 | 108.9 | 1,055 | 11.5 |
| 1936 | 98.1 | 22.9 | 121.0 | 1,208 | 13.0 |
| 1938 | 110.3 | 25.7 | 136.0 | 1,351 | 13.3 |
| 1940 | 118.1 | 28.5 | 146.9 | 1,494 | 15.6 |
| 1942 | 122.5 | 28.6 | 151.1 | 1,404 | 14.2 |
| 1944 | 112.0 | 39.0 | 151.0 | 878[a] | 9.2 |
| 1946 | 130.1 | 35.2 | 165.3 | 1,677[b] | 17.9 |

Source: Appendix C. 'Other academic employees' include those in administration, full-time research, etc.

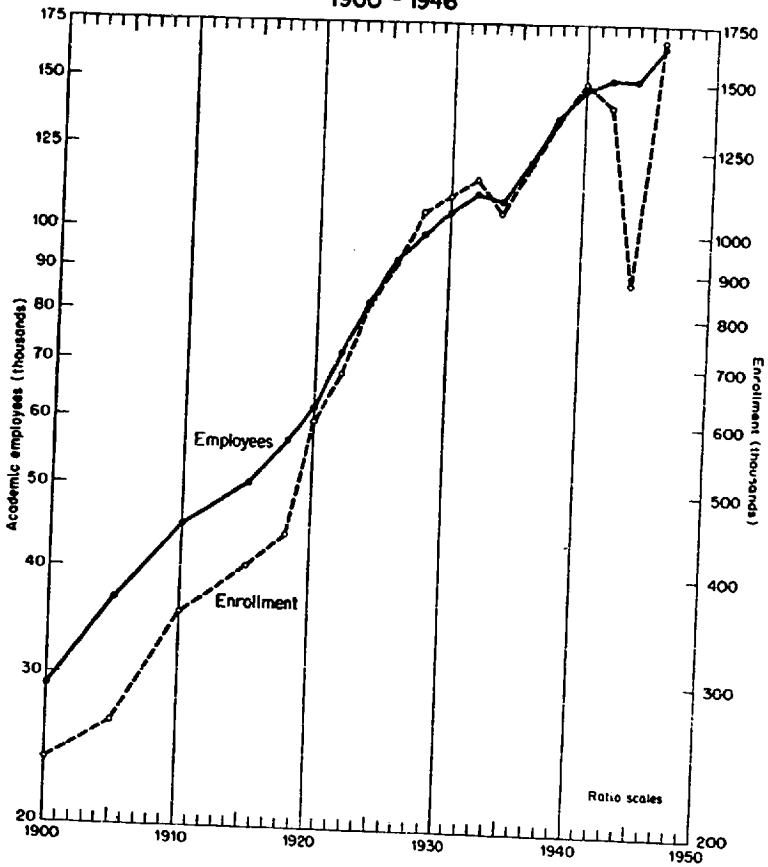
[a]Civilian only; also 806,000 students in military programs (of which 277,000 were full year students, 529,000 short course students).

[b]Including 462,000 veterans.

[1]Annual enrollments in selected institutions confirm this statement, and also reveal a moderate decrease during World War I; see W. A. Lunden, *The Dynamics of Higher Education* (Pittsburgh Printing Company, 1939), p. 242.

Figure 4

**Academic Personnel and Enrollments in Institutions of Higher Education 1900 – 1946**




in 1940, the institutions had a large but unknown number of nonacademic employees.[2]

During the war civilian enrollments fell to almost half their 1940 level, and after 1945 with the influx of veterans quickly soared to almost twice the prewar level.[3] The enrollment of

[2]The number of nonacademic employees is probably at least half the number of academic employees, if we may judge by fragmentary data (e.g., in 1940 at the University of Minnesota clerical and service employees numbered half academic employees; at Columbia University the fraction was seven-eighths).

[3]Office of Education, Statistical Circular, Nov. 20, 1946; Circular 238, Nov. 10, 1947; Higher Education, Dec. 15, 1949. Autumn enrollments run somewhat under the number reported as regular students in Table 17.

| | ENROLLMENTS (THOUSANDS) | | |
|---|---|---|---|
| | CIVILIAN COURSES | | MILITARY |
| AUTUMN | Nonveterans | Veterans | COURSES |
| 1939 | 1,360 | | |
| 1941 | 1,263 | | |
| 1943 | 738 | | 291 |
| 1945 | 952 | * | 88 |
| 1946 | 998 | 1,080 | |
| 1947 | 1,215 | 1,123 | |
| 1948 | 1,386 | 1,022 | |
| 1949 | 1,600 | 856 | |

*Not reported separately; about 25,000.

nonveterans has returned to its prewar ratio to the population 18-21 inclusive.

College faculties decreased much less than civilian enrollments during the war, in part because of the expansion of nonteaching activities (research, extension work, etc.), in greater part because of the large number of students in military programs.[4] Teaching staffs have doubtless expanded greatly since the war: in the land-grant institutions (which before the war employed about a fifth of all college teachers) the number increased 69 percent from 1946 to 1949.

### 2 *Institutions of Higher Education*

Although our primary concern is with college teachers, we describe briefly by way of background the characteristics of the 1,700 institutions of higher education employing them in 1940. These institutions are a heterogeneous group: their single common characteristic is that their students have completed high school or its equivalent.

Almost half of the institutions are colleges or universities (chiefly 4-year, nonprofessional schools—the designation of college or university is self-chosen and bears no obvious relationship to observable differences in many cases), and well over half of these are still under denominational control (Table 18). Junior colleges (i.e., 2-year schools) have sprung up in large number in the last twenty-five years, and in part because of their recent development a much larger proportion (almost half) are publicly controlled.

A more informative picture of the institutions of higher education can be obtained from Table 19, where average enrollments,

[4]In addition to the 277,000 students in full year military courses in 1943-44, there were 529,000 students in short term military courses.

## Table 18
### Classification of Institutions of Higher Education by Type of Control, 1940

| Type of institution | Public control: State | Public control: Local | Private control: Nondenominational | Private control: Protestant | Private control: Catholic | Total |
|---|---|---|---|---|---|---|
| College or university | 111 | 15 | 176 | 292 | 140 | 734 |
| Professional school | 19 | 1 | 157 | 67 | 19 | 263 |
| Teachers college | 156 | 8 | 12 | 1 | 4 | 181 |
| Normal school | 30 | 5 | 17 | 6 | 4 | 62 |
| Junior college | 38 | 173 | 91 | 118 | 39 | 459 |
| All | 354 | 202 | 453 | 484 | 206 | 1,699 |

Source: Office of Education, *Educational Directory*. Bulletin 1940, No. 1.

faculty, and expenditure are given.[5] Colleges and universities were only 43.5 percent of all institutions, but had 71.3 percent of the students, 74.2 percent of all faculty, and spent 78.2 percent of all instructional expenditure.

Public colleges and universities are on the average more than four times as large as private. But there is enormous variation within each class: the largest public college had 30,614 students,

## Table 19
### Enrollments, Faculty, and Expenditures of Institutions of Higher Education, 1940

| Type of institution | Number | Enrollment | Faculty | Exp. ($000) | Ratio: Exp. to no. of Students | Ratio: Exp. to no. of Faculty members |
|---|---|---|---|---|---|---|
| | | | Averages | | | |
| *Public* | | | | | | |
| Colleges & universities | 125 | 3,914 | 350 | 1,645 | $420 | $4,699 |
| Professional & technological | 17 | 838 | 97 | 469 | 559 | 4,833 |
| Teachers colleges & normal schools | 197 | 842 | 57 | 214 | 254 | 3,758 |
| Junior colleges | 217 | 494 | 24 | 75 | 152 | 3,125 |
| *Private* | | | | | | |
| Colleges & universities | 597 | 930 | 87 | 366 | 394 | 4,209 |
| Professional & technological | 227 | 364 | 40 | 161 | 443 | 4,030 |
| Teachers colleges & normal schools | 40 | 216 | 26 | 71 | 327 | 2,713 |
| Junior colleges | 239 | 172 | 21 | 54 | 315 | 2,581 |
| | | | Percentages of aggregate | | | |
| *Public* | | | | | | |
| Colleges & universities | 7.5 | 33.4 | 33.9 | 37.9 | | |
| Professional & technological | 1.0 | 1.0 | 1.5 | 1.5 | | |
| Teachers colleges & normal schools | 11.9 | 11.3 | 8.7 | 7.8 | | |
| Junior colleges | 13.1 | 7.3 | 4.0 | 3.0 | | |
| *Private* | | | | | | |
| Colleges & universities | 36.0 | 37.9 | 40.3 | 40.3 | | |
| Professional & technological | 13.7 | 5.6 | 7.0 | 6.7 | | |
| Teachers colleges & normal schools | 2.4 | .6 | .8 | .5 | | |
| Junior colleges | 14.4 | 2.8 | 3.9 | 2.4 | | |
| Total | 100.0 | 99.9 | 99.9 | 100.1 | | |

[5]The numbers in Table 19 are smaller than those in Table 18 because not all institutions report to the Office of Education.

the smallest, 114; the largest private university had 36,126 students, the smallest private college, 32. Twenty-six private and 38 public colleges and universities had enrollments of 4,000 or more; together they had about 700,000 of the 1,040,000 students in all colleges and universities. In other words, the largest 9 percent of the institutions had about 70 percent of the students.

Public institutions increased in relative importance before 1920, and thereafter maintained a stable proportion of total enrollments (Table 20).[6] More detailed data indicate that enrollments in teachers colleges and normal schools have fallen off sharply relative to those in colleges, universities, and technical schools. An investigation of the cause of the shift toward public schools is not within our scope, but we may pause to notice one factor that reflects many others. The fees of public institutions are and have long been substantially less than those of private institutions (except in certain denominational schools), although fees have increased more rapidly in public schools and especially rapidly for non-resident students (Table 21).

TABLE 20

Enrollments in Institutions of Higher Education

| | PUBLIC INSTITUTIONS | PRIVATE INSTITUTIONS | TOTAL |
|---|---|---|---|
| | NUMBER (THOUSANDS) | | |
| 1900 | 91 | 146 | 238 |
| 1920 | 309 | 289 | 598 |
| 1930 | 537 | 564 | 1,101 |
| 1940 | 797 | 698 | 1,494 |
| | PERCENTAGE DISTRIBUTION | | |
| 1900 | 38.5 | 61.5 | 100.0 |
| 1920 | 51.6 | 48.4 | 100.0 |
| 1930 | 48.8 | 51.2 | 100.0 |
| 1940 | 53.3 | 46.7 | 100.0 |

Source: Report of the President's Commission on Higher Education, Part VI. Table 22.

The difference in fees reflects differences in the resources of the two types of institution: private institutions draw more than half their current income from student fees, public institutions less than one-fifth; public institutions receive seven-tenths of their current income from governmental appropriations, private institutions less than one-twentieth (Table 22). Endowments have been growing much more slowly than enrollments, the rate of return on endowment has fallen almost a fifth since 1926, and

[6]Public institutions began to become important after the Civil War; 42 of the land-grant colleges were founded between 1860 and 1890 (Lunden, *op. cit.*, p. 180).

## TABLE 21

## Average Annual Tuition Fees in Arts Colleges

| | STATE INSTITUTIONS | | | |
|---|---|---|---|---|
| | Resident students | Non-resident students | PRIVATE INSTITUTIONS | COST OF LIVING INDEX (1935-39:100) |
| 1900 | $15 | $22 | $130 | 52.6 |
| 1901 | 15 | 22 | 130 | 54.7 |
| 1902 | 16 | 26 | 130 | 55.7 |
| 1903 | 17 | 30 | 130 | 57.3 |
| 1904 | 17 | 30 | 131 | 59.9 |
| 1905 | 17 | 30 | 132 | 59.3 |
| 1906 | 17 | 30 | 132 | 59.3 |
| 1907 | 18 | 31 | 133 | 61.9 |
| 1908 | 18 | 31 | 133 | 65.0 |
| 1909 | 18 | 34 | 133 | 62.4 |
| 1910 | 18 | 35 | 133 | 62.4 |
| 1911 | 19 | 41 | 135 | 66.0 |
| 1912 | 19 | 41 | 135 | 68.1 |
| 1913 | 21 | 44 | 135 | 68.6 |
| 1914 | 23 | 51 | 136 | 70.7 |
| 1915 | 25 | 52 | 140 | 72.6 |
| 1916 | 25 | 56 | 146 | 74.0 |
| 1917 | 27 | 61 | 161 | 82.4 |
| 1918 | 28 | 62 | 162 | 97.8 |
| 1919 | 30 | 64 | 169 | 118.0 |
| 1920 | 33 | 69 | 203 | 135.3 |
| 1921 | 45 | 108 | 253 | 138.3 |
| 1922 | 48 | 120 | 265 | 123.6 |
| 1923 | 49 | 121 | 275 | 120.4 |
| 1924 | 49 | 122 | 289 | 123.5 |
| 1925 | 50 | 122 | 289 | 123.2 |
| 1926 | 50 | 123 | 327 | 128.2 |
| 1927 | 52 | 124 | 339 | 126.1 |
| 1928 | 52 | 125 | 341 | 123.8 |
| 1929 | 58 | 126 | 379 | 122.4 |
| 1930 | 58 | 126 | 379 | 122.8 |
| 1931 | 58 | 140 | 389 | 115.3 |
| 1932 | 59 | 140 | 391 | 104.2 |
| 1933 | 60 | 149 | 398 | 93.5 |
| 1934 | 66 | 180 | 399 | 93.9 |
| 1935 | 68 | 183 | 400 | 96.2 |
| 1936 | 68 | 183 | 407 | 98.0 |
| 1937 | 70 | 188 | 409 | 99.8 |
| 1938 | 70 | 194 | 409 | 103.0 |
| 1939 | 70 | 194 | 409 | 100.2 |
| 1940 | 73 | 198 | 412 | 99.6 |
| 1941 | 80 | 211 | 419 | 100.7 |
| 1942 | 80 | 212 | 431 | 110.5 |
| 1943 | 83 | 217 | 430 | 120.4 |
| 1944 | 85 | 221 | 431 | 124.4 |
| 1945 | 89 | 253 | 423 | 127.0 |
| 1946 | 85 | 249 | 435 | 129.9 |
| 1947 | 87 | 263 | 493 | 153.3 |
| 1948 | 104 | 299 | 526 | 167.0 |
| 1949 | 104 | 324 | 586 | 171.4 |

*Notes on page 35*

TABLE 22

Current Income of Institutions of Higher Education, 1940

| SOURCE | AGGREGATE INCOME (MILLIONS) Private | Public | % DISTRIBUTION Private | Public |
|---|---|---|---|---|
| Student fees | $145.9 | $55.0 | 52.9 | 18.6 |
| Endowment earnings | 64.6 | 6.7 | 23.4 | 2.3 |
| Private gifts | 35.3 | 5.1 | 12.8 | 1.7 |
| Federal government | 2.4 | 36.5 | .9 | 12.4 |
| State government | 7.7 | 143.5 | 2.8 | 48.6 |
| Local government | .2 | 24.2 | .1 | 8.2 |
| Sales of services | 12.5 | 20.3 | 4.5 | 6.9 |
| Miscellaneous | 7.4 | 4.0 | 2.7 | 1.4 |
| Total | 275.9 | 295.4 | 100.1 | 100.1 |

Source: *Biennial Survey, 1938-40* and *1940-42*, II, Ch. IV, p. 38.

inflation has reduced real income from endowment to its lowest level in two decades.[7]

### 3 *Recruitment and Promotion*

The training of college teachers is considerably less formalized than that of elementary and secondary school teachers: there is only one conventional requirement for professorial appointment, the Ph.D., and it is not, and, as we shall see, could not have been, universally enforced. The general information available, however, suggests that college teachers form a relatively homogeneous group: chiefly male;[8] almost exclusively white (96.8

[7]Information on endowment and its earnings in 45 large private institutions is given by J. Harvey Cain, *College Investments under War Conditions* (American Council on Education, Washington, D. C., Sept. 1944).

| | *1926* | *1932* | *1935* | *1940* | *1943* |
|---|---|---|---|---|---|
| Principal ($ mil.) | 372 | 575 | 565 | 653 | 702 |
| Income ($ mil.) | 19.2 | 29.3 | 25.0 | 28.9 | 29.8 |
| % return | 5.14 | 5.06 | 4.42 | 4.42 | 4.27 |

[8]The 1940 Census reports females as 26.6 percent of teachers in colleges. Women are concentrated in women's and teachers' colleges: in the private institutions with enrollments over 9,000 and the public institutions with enrollments over 13,000 (each 9 in number), only 16.7 percent of the teachers were women in 1940.

*Notes to Table 21*

TUITION FEES

State institutions: California (Berkeley), Michigan, Minnesota, Ohio State, Texas, Wisconsin.

Private institutions: Brown, Chicago, Columbia, Harvard, Princeton, Stanford, Yale.

COST OF LIVING INDEX

To 1913: P. H. Douglas, *Real Wages in the United States* (Houghton Mifflin, 1930), p. 41.

1913 on: Bureau of Labor Statistics. Before 1915 the index is for the calendar year. Thereafter, the index opposite a given school year is for the preceding December, e.g., 100.7 was the index for December 1940.

percent in 1940); with extraordinarily equal incomes (as we shall see later); and coming chiefly from middle and working class families.[9]

FORMAL ENTRANCE REQUIREMENTS

Teachers in colleges and universities are usually required to be graduates of 4-year, degree-conferring institutions (and hence possessors of some kind of bachelor's degree). (The exceptions are chiefly in music, art, and foreign languages.) In addition, to be appointed to a professorial rank in a good institution, it is usually necessary to possess a Ph.D.; some indication of this is provided by an analysis of faculty members' degrees in four

TABLE 23

Percentage of Faculties of the Liberal Arts Colleges Holding the Ph.D. Degree

| COLLEGE AND RANK | 1900 | 1910 | 1920 | 1930 | 1940 |
|---|---|---|---|---|---|
| *Columbia* | | | | | |
| Professor | 75.9 | 76.0 | 83.3 | 85.3 | 87.1 |
| Associate Professor | (50.0) | 72.7 | 81.8 | 90.5 | 66.7 |
| Assistant Professor | X | X | 53.3 | 61.5 | 83.3 |
| Instructor | 66.7 | 84.6 | 41.7 | 25.5 | 52.9 |
| *Oberlin* | | | | | |
| Professor | 41.2 | 57.9 | 75.0 | 88.3 | 90.0 |
| Associate Professor | (100.0) | 54.5 | 57.1 | (87.5) | (100.0) |
| Assistant Professor | X | X | 61.5 | 26.3 | 81.0 |
| Instructor | (14.3) | 7.1 | (0.0) | 14.3 | 41.7 |
| *Smith* | | | | | |
| Professor | 47.4 | 56.7 | 64.3 | 71.9 | 73.3 |
| Associate Professor | (100.0) | 52.6 | 51.9 | 42.2 | 47.5 |
| Assistant Professor | X | X | 25.6 | 30.4 | 52.8 |
| Instructor | 33.3 | 30.8 | 19.2 | 20.0 | 35.9 |
| *University of Illinois* | | | | | |
| Professor | 59.1 | 79.2 | 90.7 | 98.4 | 95.0 |
| Associate Professor | (33.3) | 90.9 | 100.0 | 90.6 | 91.1 |
| Assistant Professor | (28.6) | 92.0 | 96.7 | 93.0 | 96.5 |
| Instructor | 21.4 | 67.3 | 72.2 | 81.0 | 83.8 |

X: Rank did not exist.

Source. College announcements. Columbia faculty is that of Columbia College, the men's undergraduate school. Percentages in parentheses based on 16 or fewer persons.

[9]A study in the mid-thirties of about 4,600 college teachers who were members of the American Association of University Professors gives the occupation of fathers.

| | | | |
|---|---|---|---|
| Business man | 26.6 percent | Lawyer or physician | 9.2 percent |
| Farmer | 24.7 percent | Professor | 3.9 percent |
| Manual worker | 12.1 percent | Chemist or engineer | 3.0 percent |
| Clergyman | 10.6 percent | Other | 4.8 percent |
| Teacher | 5.1 percent | | |

(B. W. Kunkel, A Survey of College Faculties, Bulletin of the Association of American Colleges, Dec. 1937, p. 510).

institutions (Table 23). Seven-eighths of the assistant professors in these schools, other than those in art, music, and foreign languages, possessed the Ph.D. degree in 1940. But this requirement is recent, and far from generally met by older professors: probably only a third of the teachers in institutions of higher learning in 1940 were Ph.D.'s, and indeed the aggregate number of Ph.D.'s conferred in the United States since 1896 (when the honorary Ph.D. was virtually abolished by general convention) is probably less than half the number of persons holding professorial rank at present.[10]

The formal requirements for the Ph.D. are typically three: two years of graduate study at the institution from which the degree is to be obtained; passage of oral or written examinations on designated subject matter and demonstration of ability to read, with the aid of a dictionary, two foreign languages; and the completion of a dissertation which, in the faculty's opinion, is an original and significant contribution to knowledge. These requirements, the young graduate student often believes, can be fulfilled in three, or at most four, years; and so they can. But because of the migration of graduate students among universities, concurrent employment (often as an instructor), and innumerable personal factors, the average period is two or three times as long (Table 24). The median period is somewhat shorter (10

TABLE 24

Average Period between B.A. and Ph.D. for Recipients of the Ph.D. at Columbia and Harvard, 1900-1940

| FIELD AND INSTITUTION | *1900* | *1910* | *1930* | *1940* |
|---|---|---|---|---|
| *Natural Sciences* | | | | |
| Columbia | 7.6 | 8.0 | 9.4 | 9.2 |
| Harvard | 6.8 | 8.3 | 6.2 | 6.1 |
| *Social Sciences* | | | | |
| Columbia | 4.3 | 9.8 | 10.3 | 12.9 |
| Harvard | 4.8 | 4.5 | 10.5 | 8.7 |
| *Humanities* | | | | |
| Columbia | 4.7 | 9.3 | 13.9 | 14.3 |
| Harvard | 6.3 | 9.2 | 7.9 | 8.8 |
| *All Fields* | | | | |
| Columbia | 6.3 | 9.2 | 10.8 | 11.7 |
| Harvard | 6.2 | 8.4 | 8.0 | 7.8 |

Compiled from reports of the universities.

[10]The annual number of Ph.D.'s ("Doctor's Degrees" from 1940 on) conferred has risen rapidly in recent decades. The total (estimated by linear interpolation) conferred in the four decades 1900-40 numbered about 48,000.

| *1900* | *1910* | *1920* | *1930* | *1940* | *1942* | *1944* |
|---|---|---|---|---|---|---|
| 342 | 409 | 532 | 2,024 | 3,290 | 3,497 | 2,305 |

years at Columbia, 7 years at Harvard), but still sufficient to constitute the most protracted period of preparation in any profession.[11]

The restrictive effect on entry into college teaching of the Ph.D. requirement cannot be measured by the average period required to obtain it, of course. The prospective college teacher almost invariably begins his teaching before receiving his degree; fragmentary data suggest that full-time graduate study averages only about 2 years.[12] But even if income is usually earned during the apprenticeship, the fact that it is at a lower level in rank or class of institution and in salary is of considerable importance. Nor should the retrospective statistics we have necessarily employed obscure the fair probability that the graduate student will never receive the degree, and be handicapped in his professional career.

### APPOINTMENT AND PROMOTION

We have little information on the methods of recruitment of instructors in private and small institutions, but in the land-grant colleges three-fifths of all instructors were employed by

[11]The distribution of the recipients of Ph.D.'s in 1940 at Columbia and Harvard, by years between A.B. and Ph.D., is illuminating. We shall not digress to examine the reasons for the differences but one is obvious: the publication requirement at Columbia. Of those receiving the Ph.D. at Columbia in 1940, 55 percent passed their final oral examination on dissertation from 1 to 16 academic years earlier; the mean period for publication delay was .86 years, the median 1 year. The publication requirement was abolished at Columbia in 1949: Catholic University is apparently the only institution still requiring publication.

| YEARS | COLUMBIA | HARVARD |
|---|---|---|
| 2 to 4 | 0 | 13 |
| 4 to 6 | 25 | 40 |
| 6 to 8 | 21 | 31 |
| 8 to 10 | 19 | 26 |
| 10 to 12 | 15 | 14 |
| 12 to 14 | 12 | 8 |
| 14 to 16 | 10 | 11 |
| 16 to 20 | 23 | 5 |
| 20 to 30 | 12 | 1 |
| 30 to 40 | 2 | 0 |
| Total | 139 | 149 |

[12]An examination of 61 scattered entries in the Directory of American Scholars of persons receiving the Ph.D. 1930-39 indicates that the unemployed time between A.B. and Ph.D. averages 2.5 years. Since noneducational work is usually omitted, this is probably too high a figure, but on the other hand, this is a relatively successful group of teachers.

schools in which they received (or were receiving) some or all of their academic training in 1929 (Table 25).[13] At the higher ranks wider recruitment is practiced, but almost a third of even the full professors received all or part of their training at the institution at which they are employed. If the recent experience of the University of Illinois is at all typical, promotion is much the most important source of appointments to higher ranks: as of 1946, 82 percent of the new professorial appointments since 1940 were promotions; and 80 percent of the new associate professorships (Table 26). (However, in a period of rapid increase in number, external hiring is no doubt more common.)

TABLE 25

Inbreeding in Land-Grant Colleges Measured by Percentage of Faculty Who Received All or Part of Their Academic Training at the Institution in Which They are Employed

| TYPE AND PORTION OF TRAINING RECEIVED AT SCHOOL WHERE EMPLOYED | RANK OF FACULTY | | | |
|---|---|---|---|---|
| | Prof. | Assoc. Prof. | Asst. Prof. | Instr. |
| *Undergraduate* | | | | |
| All | 15.3 | 20.0 | 23.5 | 28.5 |
| Part | 6.1 | 6.9 | 8.2 | 10.6 |
| | 21.4 | 26.9 | 31.7 | 39.1 |
| *Graduate* | | | | |
| All | 9.1 | 14.0 | 20.5 | 30.6 |
| Part | 15.9 | 20.9 | 19.6 | 22.2 |
| | 25.0 | 34.9 | 40.1 | 52.8 |
| *Graduate & Undergraduate* | | | | |
| All | 6.3 | 8.9 | 13.0 | 18.8 |
| Part | 25.8 | 32.6 | 33.6 | 40.3 |
| | 32.1 | 41.5 | 46.6 | 59.1 |

Source: J. H. McNeely, Faculty Inbreeding in Land-Grant Colleges and Universities, Office of Education, Pamphlet 31 (1932). The data apparently refer to 1929.

It is not difficult to list reasons why the land-grant colleges may be atypical. For example, having graduate schools, they train college teachers; on the other hand, being large institutions, they place relatively heavier weight on research accomplishments, which may work the other way. The direction of net bias is not clear, but the majority of initial appointments in all types of institutions is probably persons who were or are students.

[13]See also Report of Committee B, Methods of Appointment and Promotion, Bulletin of the American Association of University Professors, XV (1929), 175-217.

TABLE 26

Faculty by Rank, University of Illinois, 1940 and 1946

| RANK IN 1940 | RANK IN 1946 | | | | | |
|---|---|---|---|---|---|---|
| | Prof. | Assoc. Prof. | Asst. Prof. | Instr. | NOT TEACHING Emeritus | Elsewhere |
| Professor | 118 | | | | 22 | 11 |
| Associate Professor | 43 | 22 | | | 2 | 2 |
| Assistant Professor | 16 | 51 | 22 | | 1 | 18 |
| Instructor | 2 | 18 | 81 | 59 | 2 | 124 |
| Not present | 13 | 17 | 55 | 145 | | |

Compiled from Minutes of Trustees. Instructors include associates and assistants.

The average college teacher has taught in two or three institutions during his academic life. The extensive survey of AAUP members already referred to gives a tabulation of teachers between the ages of 50 and 60 (when additional moves are uncommon), by number of colleges in which they have taught: 24.3 percent taught in one college; 29.4 percent in two colleges; 24.9 percent in three colleges; 21.2 percent in four or more colleges.[14]

TABLE 27

Faculty by Rank in Universities and Colleges and in Professional Schools, State of New York
Percentage Distribution

| | PROFESSOR | ASSOCIATE & ASST. PROFESSOR | INSTRUCTOR & TUTOR | OTHER |
|---|---|---|---|---|
| | UNIVERSITIES AND COLLEGES | | | |
| 1905 | 35.0 | 13.2 | 27.3 | 24.6 |
| 1910 | 34.8 | 13.7 | 25.9 | 25.6 |
| 1915 | 32.4 | 20.1 | 26.2 | 21.2 |
| 1920 | 31.5 | 20.2 | 26.7 | 21.5 |
| 1925 | 28.8 | 21.7 | 29.8 | 19.7 |
| 1930 | 24.4 | 23.2 | 32.4 | 20.0 |
| 1935 | 21.4 | 25.8 | 30.6 | 19.4 |
| 1940 | 19.1 | 27.1 | 29.5 | 24.3 |
| 1945 | 20.9 | 30.0 | 28.2 | 20.8 |
| | PROFESSIONAL SCHOOLS | | | |
| 1905 | 36.6 | 7.7 | 28.4 | 27.3 |
| 1910 | 36.5 | 10.4 | 27.6 | 25.4 |
| 1915 | 33.5 | 13.7 | 30.2 | 22.7 |
| 1920 | 37.1 | 14.0 | 27.8 | 21.1 |
| 1925 | 34.4 | 18.1 | 34.3 | 13.2 |
| 1930 | 32.3 | 20.6 | 29.8 | 17.2 |
| 1935 | 29.7 | 21.0 | 33.2 | 16.1 |
| 1940 | 25.3 | 23.5 | 32.2 | 19.0 |
| 1945 | 22.3 | 29.5 | 31.8 | 16.4 |

Source: Annual Reports of University of the State of New York (Albany). Professional schools include architecture, dentistry, engineering, law, pharmacy, and theology; medical schools are omitted because of the large part-time faculty.

[14]Kunkel, *op. cit.*, p. 499. A third of these teachers had taught also in one or more elementary or secondary schools.

The full professors in this sample had attained their present rank by the age of 36.7 years on the average—about 14 years after receiving their B.A. and 5 years after receiving their Ph.D. (which seven-tenths of them possessed).

The intermediate professorial ranks were relatively unused at the beginning of the century, but have grown rapidly in popularity—with colleges if not with all college teachers. The distribution of faculties by ranks in institutions in New York State shows a steady decline in the relative number of professors, and an offsetting increase in the relative number of associate and assistant professors, since 1905 (Table 27). The rise in the total number of college teachers has been so rapid, however, that one cannot infer that the professorial rank is being attained at a progressively higher age; indeed, since World War II it is probable that the proportion of full professors and their average age have both declined substantially.

## 4 *Salaries and Earnings*

A professor of moral philosophy once remarked of "that unprosperous race of men commonly called men of letters":

"Before the invention of the art of printing, a scholar and a beggar seem to have been terms very nearly synonymous. The different governors of the universities before that time appear to have often granted licenses to their scholars to beg."[15]

In this age of specialization, the mendicant functions have been restricted to the college presidents, but the belief in professional poverty continues to be widely diffused. We shall deal with this subject in as much detail as the fragmentary data permit, emphasizing the trend and structure of salaries, and comparisons with other professions.

### TREND OF SALARIES

The larger public universities and colleges are the only relatively homogeneous class of institutions for which we have information over a substantial period. The information for earlier and later periods is not strictly comparable, but the broader movements of salaries appear to be reliably portrayed by Table 28 and Figure 5.

Salaries in current dollars had an upward drift before the first World War, but were roughly stable in purchasing power. From

[15]Adam Smith, *The Wealth of Nations* (Modern Library Ed.), pp. 131-2.

## TABLE 28
## Median Salaries of College Teachers in Large Public Institutions

| | CURRENT DOLLARS | | | | DOLLARS OF 1935-39 PURCHASING POWER | | | |
|---|---|---|---|---|---|---|---|---|
| | Prof. | Assoc. Prof. | Asst. Prof. | Instr. | Prof. | Assoc. Prof. | Asst. Prof. | Instr. |
| 1908 | 2,279 | 1,646 | 1,451 | 891 | 3,506 | 2,532 | 2,232 | 1,371 |
| 1909 | 2,415 | 1,670 | 1,429 | 898 | 3,870 | 2,676 | 2,290 | 1,439 |
| 1910 | 2,417 | 1,737 | 1,438 | 924 | 3,873 | 2,784 | 2,305 | 1,481 |
| 1911 | 2,368 | 1,834 | 1,493 | 1,016 | 3,588 | 2,779 | 2,262 | 1,539 |
| 1912 | 2,382 | 1,791 | 1,503 | 984 | 3,498 | 2,630 | 2,207 | 1,445 |
| 1913 | 2,463 | 1,763 | 1,511 | 1,013 | 3,590 | 2,570 | 2,203 | 1,477 |
| 1914 | 2,530 | 1,862 | 1,567 | 1,008 | 3,579 | 2,634 | 2,216 | 1,426 |
| 1915 | 2,580 | 1,883 | 1,584 | 1,074 | 3,554 | 2,594 | 2,182 | 1,479 |
| 1916 | 2,558 | 1,871 | 1,619 | 1,096 | 3,457 | 2,528 | 2,188 | 1,481 |
| 1917 | 2,661 | 1,944 | 1,648 | 1,115 | 3,229 | 2,359 | 2,000 | 1,353 |
| 1918 | 2,677 | 2,012 | 1,714 | 1,114 | 2,737 | 2,057 | 1,753 | 1,139 |
| 1919 | 2,812 | 2,183 | 1,766 | 1,231 | 2,383 | 1,850 | 1,497 | 1,043 |
| 1920 | 3,262 | 2,447 | 2,022 | 1,508 | 2,411 | 1,809 | 1,494 | 1,115 |
| 1921 | 3,616 | 2,744 | 2,334 | 1,653 | 2,615 | 1,984 | 1,688 | 1,195 |
| 1922 | 3,835 | 3,007 | 2,484 | 1,794 | 3,103 | 2,433 | 2,010 | 1,451 |
| 1923 | 3,952 | 3,049 | 2,548 | 1,826 | 3,282 | 2,532 | 2,116 | 1,517 |
| 1924 | 4,009 | 3,084 | 2,548 | 1,888 | 3,246 | 2,497 | 2,063 | 1,529 |
| 1926 | 4,112 | 3,160 | 2,630 | 1,924 | 3,207 | 2,465 | 2,051 | 1,501 |
| 1927 | 4,230 | 3,197 | 2,675 | 1,908 | 3,354 | 2,535 | 2,121 | 1,513 |
| 1928 | 4,327 | 3,298 | 2,739 | 1,952 | 3,495 | 2,664 | 2,212 | 1,577 |
| 1929 | 4,348 | 3,359 | 2,691 | 2,003 | 3,552 | 2,744 | 2,198 | 1,636 |
| 1930 | 4,407 | 3,345 | 2,775 | 1,995 | 3,589 | 2,724 | 2,260 | 1,625 |
| 1931 | 4,480 | 3,418 | 2,815 | 2,069 | 3,886 | 2,964 | 2,441 | 1,794 |
| 1932 | 4,505 | 3,379 | 2,800 | 2,005 | 4,323 | 3,243 | 2,687 | 1,924 |
| 1935 | 3,775 | 2,903 | 2,449 | 1,769 | 3,924 | 3,018 | 2,546 | 1,839 |
| 1936 | 3,951 | 2,973 | 2,486 | 1,792 | 4,032 | 3,034 | 2,537 | 1,829 |
| 1937 | 4,166 | 3,144 | 2,556 | 1,842 | 4,174 | 3,150 | 2,561 | 1,846 |
| 1938 | 4,163 | 3,189 | 2,592 | 1,892 | 4,045 | 3,096 | 2,517 | 1,837 |
| 1940 | 4,245 | 3,272 | 2,605 | 1,937 | 4,262 | 3,285 | 2,615 | 1,945 |
| 1942 | 4,302 | 3,324 | 2,645 | 1,862 | 3,893 | 3,008 | 2,394 | 1,685 |

For salaries, see Appendix D; for implicit cost of living index, see Table 21. Data were not collected in the missing years.

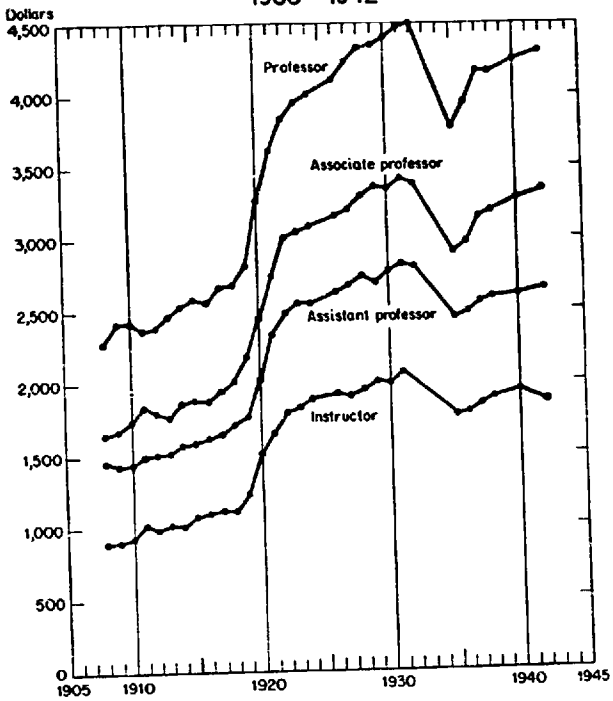
the threshold of World War I (1914) to that of World War II (1940), salaries increased two-thirds to three-quarters for the various ranks of professors, and almost doubled for instructors. The upward movement was virtually unbroken except for the substantial decrease (averaging about 15 percent) from 1932 to

PERCENTAGE INCREASE, 1914-1940

| RANK | CURRENT SALARY | REAL SALARY |
|---|---|---|
| Professor | 67.8 | 19.1 |
| Associate Professor | 75.7 | 24.7 |
| Assistant Professor | 66.2 | 18.0 |
| Instructor | 92.2 | 36.4 |

Figure 5

**Salaries of College Teachers in Large Public Institutions 1908 – 1942**




1935; most or all of this decrease came in 1933 and 1934.[16] Two-thirds of the aggregate increase occurred in the four years immediately after World War I (1918-22).

When the current salaries are deflated by the cost of living index, a very different pattern emerges. From 1914 to 1940 'real' salaries rose only a fourth to a third as much as salaries in current dollars. They reached their minimum in 1919 or 1920, when they were about a third below those of 1914. Thereafter the decline in the cost of living and the rapid rise in dollar salaries led to a large increase in real salaries, so the 1914 level had been

[16]From the Office of Education surveys, Economic Outlook of Higher Education, by H. G. Badger, for 1933, 1934, and 1935, one may calculate means of percentage change in modal salaries of professors in public universities and colleges. They show decreases of about 8 percent in 1933 and 12.3 percent in 1934, and a slight rise in 1935—which is consistent with our 1932-35 change. See Circulars 58 (Sept. 1932) and 121 (Sept. 1933), and Pamphlet 58 (1934).

regained by all ranks between 1928 and 1930.[17] Real salaries continued to rise for two or three years, then fell very moderately, and by 1940 new peaks had been reached.

The relative structure of salaries by rank has been surprisingly stable. The extremes in fluctuations are suggested by the adjoining table (based on Table 28). There was an upward drift in the relative salaries of the lower ranks, especially of instructors, before and during World War I (if the less reliable data for this period can be trusted), but little apparent trend in the annual data thereafter.

RELATIVE SALARIES (PROFESSORS: 100)

| | *1914* | *1919* | *1924* | *1929* | *1932* | *1937* | *1942* |
|---|---|---|---|---|---|---|---|
| Associate Professors | 73.6 | 77.6 | 76.9 | 77.3 | 75.0 | 75.5 | 77.3 |
| Assistant Professors | 61.9 | 62.8 | 63.6 | 61.9 | 62.2 | 61.4 | 61.5 |
| Instructors | 39.8 | 43.8 | 47.1 | 46.1 | 44.5 | 44.2 | 43.3 |

A salary series for all ranks combined therefore differs in behavior through time from that of professors' salaries chiefly because of changes in the relative number in various ranks. The relative numbers are not known for these institutions, but we may use as approximate weights the distribution of faculty in colleges, universities, and technical schools in New York State. The combined salary series (Table 29 and Figure 8) has a less rapid

TABLE 29

Average Salaries of College Teachers in Large Public Institutions

| | CURRENT DOLLARS | DOLLARS OF 1935-39 PURCHASING POWER | | CURRENT DOLLARS | DOLLARS OF 1935-39 PURCHASING POWER |
|---|---|---|---|---|---|
| 1908 | 1,656 | 2,548 | | | |
| 1909 | 1,728 | 2,769 | 1923 | 2,886 | 2,397 |
| 1910 | 1,746 | 2,798 | 1924 | 2,919 | 2,364 |
| 1911 | 1,763 | 2,671 | 1926 | 2,958 | 2,307 |
| 1912 | 1,748 | 2,567 | 1927 | 2,991 | 2,372 |
| 1913 | 1,785 | 2,602 | 1928 | 3,045 | 2,460 |
| 1914 | 1,821 | 2,576 | 1929 | 3,056 | 2,497 |
| 1915 | 1,861 | 2,563 | 1930 | 3,065 | 2,496 |
| 1916 | 1,860 | 2,514 | 1931 | 3,134 | 2,718 |
| 1917 | 1,923 | 2,334 | 1932 | 3,111 | 2,986 |
| 1918 | 1,943 | 1,987 | 1935 | 2,666 | 2,771 |
| 1919 | 2,068 | 1,753 | 1936 | 2,732 | 2,788 |
| 1920 | 2,410 | 1,781 | 1937 | 2,843 | 2,849 |
| 1921 | 2,661 | 1,924 | 1938 | 2,861 | 2,778 |
| 1922 | 2,834 | 2,293 | 1940 | 2,886 | 2,898 |
| | | | 1942 | 2,892 | 2,617 |

Salaries are from Table 28; distribution of faculty by rank from Table 27; cost of living index from Table 21. A simple average was taken of salaries of Associate and Assistant Professors.

[17] Of course the standard of living had actually risen by 1930; the cost of living index does not reflect improvements in quality or the introduction of new products. Nor is the index, calculated for manual and clerical workers with smaller incomes, wholly appropriate to this profession.

upward trend because of the relative decline in full professors and increase in associate and assistant professors, but does not differ greatly from that for the individual ranks.

The representativeness of the large public institutions can be roughly tested as far as the trend of salaries is concerned. From 1914 to 1920 the average salary in a large number of private institutions rose from $1,724 to $2,279, or 32 percent—exactly the rise in public institutions.[18] From 1920 to 1927 the percentage increase in salaries in the large public institutions and in a broad sample of 305 institutions was again tolerably close.[19] One may conclude that at least through the 'twenties the trend of salaries in colleges and universities as a whole are fairly reliably portrayed by those in large public institutions.

Comprehensive salary information is not yet available for the war and postwar periods, but a fairly accurate extrapolation of Table 29 beyond 1942 can be made from payroll data.[20] Average

SALARIES IN LAND-GRANT INSTITUTIONS

| | *1942* | *1943* | *1944* | *1945* | *1946* | *1947* | *1948* | *1949* |
|---|---|---|---|---|---|---|---|---|
| Average salary | $2,892 | $2,988 | $3,282 | $3,236 | $3,429 | $3,705 | $4,098 | $4,217 |
| Av. salary in 1935-39 purchasing power | $2,617 | $2,482 | $2,638 | $2,548 | $2,640 | $2,417 | $2,454 | $2,460 |

salaries rose 46 percent from 1940 to 1949 but 'deflated' salaries

[18]Trevor Arnett, Teachers' Salaries, General Education Board, Occasional Paper 8, (1928) p. 17. The agreement was of course less miraculous for specific ranks.

PERCENTAGE INCREASE IN SALARIES, 1914-1920

| | PUBLIC INSTITUTIONS | ARNETT SAMPLE |
|---|---|---|
| Professors | 40.4 | 30.4 |
| Instructors | 24.6 | 26.4 |

Calculated from Arnett, Teachers' Salaries, General Education Board, Occasional Paper 7, (1921).

[19]The comparison by rank is as follows:

PERCENTAGE INCREASE IN SALARIES, 1920-1927

| | PUBLIC INSTITUTIONS | ARNETT SAMPLE |
|---|---|---|
| Professors | 29.7 | 36.4 |
| Associate Professors | 30.6 | 33.9 |
| Assistant Professors | 32.3 | 27.3 |
| Instructors | 26.5 | 34.6 |

[20]Average salary is extrapolated by expenditures of land-grant institutions for residential instruction (which excludes plant operation, administration, extension, libraries, research, etc.) divided by the number of persons in residential instruction. This series follows the average salary closely in 1935-40. See Statistics of Land-Grant Colleges and Universities, various years. The average salary of *all* teachers in 1948 is estimated to be $4,147 (Survey of Salaries and Occupational Attitudes of Faculty Personnel of Higher Education, 1947-48. Office of Education, Circular 254).

fell 15 percent. Data for a few large universities suggest that salaries rose most in the lowest rank and least in the highest rank, and there is some evidence of an increase in the proportion of teachers in the lower ranks.

### RANK VS. SALARY INCREASES

When the workers in an occupation are classified by grade or rank, the employer may increase the salaries of individuals by within-grade increments or by promotions to a higher grade, without changing the nominal schedule of salaries by rank. The time pattern of an individual's salary is then governed by three factors: the initial levels of salary for persons of given qualifications; the rate of in-grade increments; and the rate of promotion. Many discussions of salary changes concentrate on the first factor, tacitly treating the second and third factors as stable or unimportant.

We possess little information about customary patterns of in-grade increments and of promotion in college teaching, so we cannot test the stability of these patterns.[21] A detailed analysis of the salaries paid by one large university, however, illustrates the considerable scope for salary increases through more rapid in-grade increments and promotions. The salaries of individuals receiving promotions were substantially less than those who held a given rank in both 1940 and 1946, but the latters' salaries were less than those of new personnel, in the higher ranks (Table 30). Salaries of those holding a given rank increased much more than the average salary of the rank (Table 31). It is apparent that changes in the practices of in-grade increments and promotions are important possible substitutes for changes in nominal salary levels. Common observation suggests that salary increases since the war through accelerated promotion have added substantially to the salaries of college teachers.

### STRUCTURE OF SALARIES

The average salaries paid by all degree-granting institutions may be estimated from a large sample study for 1940 (Table 32). Salaries of instructors are almost equal in the various types of institution (private and public colleges and teachers colleges); the differences among type of institution become larger as one goes up the ranks, but are fairly small at all ranks if one excludes

[21]Some information for a sample of 1,351 teachers is given in Circular 254.

## TABLE 30
## Salaries of Identical Teachers, University of Illinois, 1940 and 1946

| RANK | | SALARY | |
|---|---|---|---|
| *1940* | *1946* | *1940* | *1946* |
| Professor | Professor | $5,418 | $6,449 |
| Associate Professor | Professor | 3,815 | 5,247 |
| Assistant Professor | Professor | 3,305 | 5,257 |
| Instructor | Professor | 2,400 | 6,000 |
| Not present | Professor | | 7,327 |
| Professor | Not present | 5,540 | |
| Associate Professor | Associate Professor | 3,681 | 4,330 |
| Assistant Professor | Associate Professor | 3,149 | 4,137 |
| Instructor | Associate Professor | 2,422 | 4,028 |
| Not present | Associate Professor | | 4,409 |
| Associate Professor | Not present | 3,825 | |
| Assistant Professor | Assistant Professor | 3,039 | 3,600 |
| Instructor | Assistant Professor | 2,271 | 3,331 |
| Not present | Assistant Professor | | 3,416 |
| Assistant Professor | Not present | 3,064 | |
| Instructor | Instructor | 1,890 | 2,501 |
| Not present | Instructor | | 2,190 |
| Instructor | Not present | 1,896 | |

Source: Table 26. 'Not present' 1946 includes emeritus faculty.

the teachers colleges. If one subclassifies these categories, however, larger differences appear: in the wealthier private colleges (measured by value of plant) professors receive almost 3 times as much as in the poorer colleges.[22]

## TABLE 31
## Salaries of Identical Teachers, University of Illinois Percentage Increase, 1940-1946

| RANK | *1940* | *1946* | % INCREASE |
|---|---|---|---|
| Professor in 1940, present in 1946 | $5,418 | $6,449 | 19.0 |
| Professor in 1946, present in 1940 | 4,810 | 6,049 | 25.8 |
| All Professors at indicated date | 5,467 | 6,135 | 12.2 |
| Associate Professor in 1940, present in 1946 | 3,770 | 4,937 | 31.0 |
| Associate Professor in 1946, present in 1940 | 3,134 | 4,162 | 32.8 |
| All Associate Professors at indicated date | 3,775 | 4,201 | 11.3 |
| Assistant Professor in 1940, present in 1946 | 3,150 | 4,205 | 33.5 |
| Assistant Professor in 1946, present in 1940 | 2,435 | 3,391 | 39.3 |
| All Assistant Professors at indicated date | 3,130 | 3,400 | 8.6 |
| Instructor in 1940, present in 1946 | 2,149 | 3,138 | 46.0 |
| Instructor in 1946, present in 1940 | 1,890 | 2,501 | 32.3 |
| All Instructors at indicated date | 2,037 | 2,280 | 11.9 |
| All Faculty | 3,268 | 3,979 | 21.8 |
| All Faculty present both years | 3,492 | 4,533 | 29.8 |

Source: Table 26.

[22]The average salary of all college teachers in 1940 was $2,855, almost the same as the average salary of teachers in land-grant colleges ($2,866; see Table 29).

TABLE 32

Average Salaries in Degree-granting Institutions, 1940

| TYPE OF INSTITUTION | PROFESSOR | ASSOCIATE PROFESSOR | ASSISTANT PROFESSOR | INSTRUCTOR | ALL RANKS |
|---|---|---|---|---|---|
| Land-grant | $4,421 | $3,304 | $2,733 | $2,000 | $3,059 |
| Universities & colleges | | | | | |
| Private | 3,679 | 3,165 | 2,621 | 1,905 | 2,738 |
| Public (not land-grant) | 3,864 | 2,930 | 2,381 | 1,812 | 2,885 |
| State teachers colleges | 3,270 | 2,643 | 2,386 | 1,990 | 2,539 |
| All | 3,818 | 3,066 | 2,573 | 1,925 | 2,855 |
| *Detailed Classes* | | | | | |
| Private universities & colleges | | | | | |
| Plant over $10 million | 5,754 | 3,876 | 3,151 | 2,228 | 3,779 |
| Plant $3 to $8 million | 4,431 | 3,389 | 2,761 | 1,949 | 3,169 |
| Plant under $1 million | 1,989 | 1,837 | 1,664 | 1,234 | 1,759 |
| Private colleges | | | | | |
| Men | 4,361 | 3,271 | 2,707 | 2,101 | 3,081 |
| Women | 3,339 | 2,925 | 2,457 | 1,877 | 2,660 |

Source: College Salaries, 1939-40, Office of Education, Circular 196. The average salary of all teachers in a rank is based on the total number of teachers in each type of school, not the number in this sample of 305 schools. The aggregates are estimated from the ratio of teachers (of all ranks) in the particular schools in the sample to all teachers in the specified type of school. Thus it is assumed that the sample is representative with respect to the distribution of teachers by rank. This table covers all teachers; Table 28 covers only those on a 9-month basis of pay.

The 1940 salary structure cannot be analyzed by region, size of community, or size of school. An earlier study, however, gives some information on the regional and size of school variations in salaries (Table 33). With few exceptions, salaries are larger in the larger schools, and larger in the New England and Middle Atlantic regions than elsewhere in the country. As both variations are large, the average for professors in small schools in the South is less than half that of professors in large schools in New England. The differences by size of school are considerably smaller (relatively and absolutely) in the lower than in the higher ranks.

College teachers have relatively equal incomes. This is one element of the unusual security of the profession: one cannot be a very great financial failure or success. The contrast with the dispersion of incomes of independent practitioners in law, medicine, and dentistry is pronounced (Figure 6 and Table 34), and the contrast with salaried business workers substantial.[23] (The inequality of college teachers' earnings is probably somewhat greater than that of salaries; see below).

The extent to which incomes within a profession approaches

[23]See Figure 3 for the Lorenz curve of salaried workers in Minnesota; the Lorenz curve of college teachers is very similar to that of elementary and secondary school teachers.

TABLE 33

Average Salaries in Men's and Coeducational Colleges, 1927

| RANK & COLLEGE ENROLLMENT | UNITED STATES | REGION New England | Middle Atlantic | South | Middle West | West |
|---|---|---|---|---|---|---|
| *Professor* | $3,847 | | | | | |
| 1,000 & over | 4,620 | $5,632 | $5,112 | $3,928 | $4,558 | $4,184 |
| 500-1,000 | 3,355 | 4,384 | 3,914 | 3,212 | 2,960 | 3,112 |
| Under 500 | 2,726 | 4,238 | 3,383 | 2,736 | 2,546 | 2,551 |
| *Associate Professor* | 3,305 | | | | | |
| 1,000 & over | 3,547 | 4,053 | 4,331 | 2,985 | 3,394 | 3,214 |
| 500-1,000 | 2,741 | 3,377 | 3,127 | 2,430 | 2,488 | 2,648 |
| Under 500 | 2,435 | 3,413 | 3,050 | 2,192 | 2,299 | 2,508 |
| *Assistant Professor* | 2,696 | | | | | |
| 1,000 & over | 2,833 | 3,106 | 3,115 | 2,499 | 2,731 | 2,633 |
| 500-1,000 | 2,461 | 2,864 | 2,857 | 2,277 | 2,261 | 2,244 |
| Under 500 | 2,169 | 2,783 | 2,322 | 2,056 | 2,107 | 2,421 |
| *Instructor* | 1,947 | | | | | |
| 1,000 & over | 2,000 | 2,208 | 2,055 | 1,772 | 1,976 | 1,954 |
| 500-1,000 | 1,890 | 2,148 | 2,032 | 1,584 | 1,851 | 1,838 |
| Under 500 | 1,623 | 2,200 | 1,724 | 1,553 | 1,664 | 1,239 |
| All | 3,003 | 3,605 | 3,243 | 2,753 | 2,824 | 2,974 |

Source: Arnett, General Education Board, Occasional Paper 8, Appendix. The regions are defined in *ibid.*, pp. 5-6.

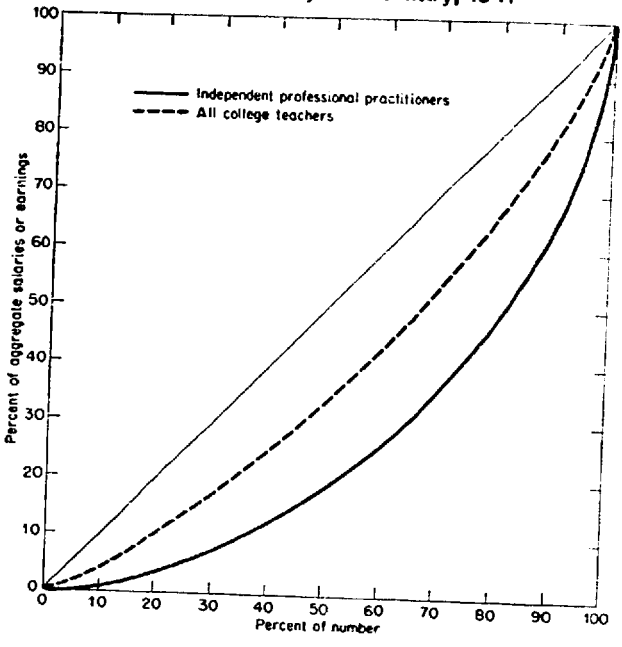
equality may be viewed as determined by two factors: the directness of rivalry between members of the profession, and the importance attached to the outcome of this rivalry.[24] In law the rivalry of attorneys for litigants is direct, and the stakes are often large. In million dollar cases a lawyer who wins 60 percent of borderline cases is worth $200,000 more than one who wins 40 percent. In medicine the rivalry is less direct and personal, although still present (witness reputation, hospital connections, speed in adopting new techniques, etc.), and the stakes are very large in the buyer's eyes. Accordingly inequality is large in these fields. It is less in dentistry, where the stakes are usually much smaller in the buyer's eyes.

The two chief functions of the professor are teaching and research. Rivalry, while present in classroom performance, is mild and indirect, and indeed great success may be viewed suspiciously, perhaps as indicative of inappropriate theatricalism. The teaching abilities of a professor are usually imperfectly known, especially outside the institution where he is teaching; nor are the criteria of good teaching unambiguous. The stakes, too, are small: no matter how important it may be to give the students a good

[24]We are concerned here with what might be termed pure inequality, i.e., inequality that would be found in salaries of members of a profession who are comparable with respect to age and size of community.

Figure 6

**Lorenz Curves of Salaries of All College Teachers, 1940, and of Earnings of Independent Practitioners in Law, Medicine, and Dentistry, 1941**




education, one teacher's contribution will usually be small. Research is more competitive—directly and personally in the journals, less directly in the search for new truths. The relative caliber of men is therefore more easily judged in research, but again the stakes are fairly low.[25] The prestige conferred upon a university by a distinguished faculty is very valuable, but again the contribution of one individual to this reputation is seldom large.

If this line of argument is correct, teachers' salaries should be more unequal in institutions emphasizing research than in those devoted primarily to instruction. This hypothesis can be roughly tested by comparing the Lorenz curve of 1940 salaries in seven large private colleges with that for 76 small private colleges.[26]

[25]They may become larger with the growing practice of universities of patenting and exploiting inventions of faculty members.

[26]The large institutions are Stanford, Johns Hopkins, New York University, Teachers College, Duke, Western Reserve, and the University of Pennsylvania. For the list of small schools, see *College Salaries, 1939-40*, p. 24 n.

TABLE 34

Salaries of College Teachers, 1940, and Earnings of Independent Practitioners in Law, Medicine, and Dentistry, Percentage Distribution, 1941

| SALARY OR EARNINGS | COLLEGE TEACHERS | | LAW | MEDICINE | DENTISTRY |
|---|---|---|---|---|---|
| | All | Professorial ranks | | | |
| Under $1,000 | 2.7 | 1.4 | 11.8 | 11.3 | 6.4 |
| 1,000- 2,000 | 22.7 | 11.4 | 18.8 | 14.2 | 16.4 |
| 2,000- 3,000 | 37.1 | 36.5 | 20.3 | 15.6 | 21.8 |
| 3,000- 4,000 | 21.5 | 28.6 | 12.9 | 11.7 | 17.7 |
| 4,000- 5,000 | 9.2 | 12.6 | 8.3 | 9.3 | 12.7 |
| 5,000- 6,000 | 3.9 | 5.5 | 6.6 | 7.4 | 8.7 |
| 6,000- 7,000 | 1.5 | 2.1 | 4.8 | 6.6 | 5.7 |
| 7,000- 8,000 | .7 | 1.0 | 3.4 | 4.9 | 3.6 |
| 8,000- 9,000 | .4 | .5 | 2.5 | 3.0 | 2.3 |
| 9,000-10,000 | .3 | .4 | 1.2 | 3.3 | 1.5 |
| 10,000 and over | | | 9.5 | 12.7 | 3.2 |
| Total | 100.0 | 100.0 | 100.1 | 100.0 | 100.0 |

Source: See Tables 32, 36.

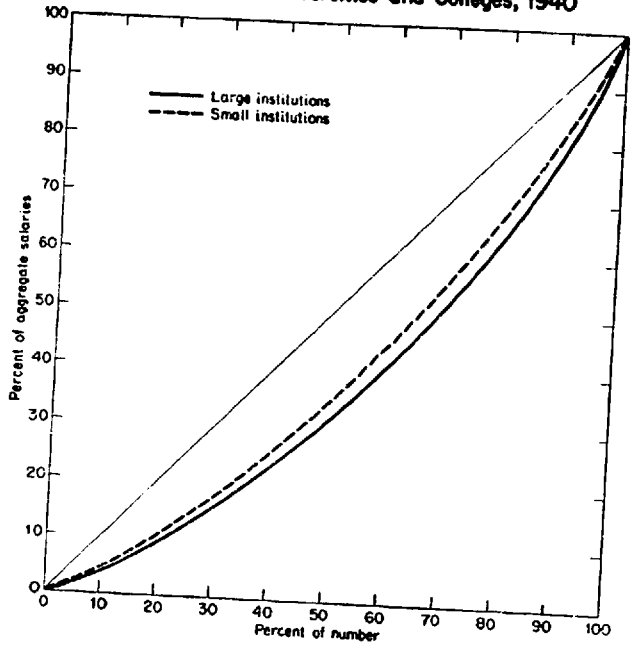
The larger institutions have more unequal salaries (Figure 7), although the difference is not large. Another bit of evidence pointing the same way is the slightly greater variability of salaries of full-time research men than of full-time undergraduate teachers in land-grant colleges in 1929.[27] The important conclusion is reinforced by these comparisons of inequality: college teachers' salaries approach unusually close to equality, even if no correction is made for differences in age, size of community, etc.

This equality of salary is only one of the elements of security the college teacher enjoys. In addition he is virtually certain of permanent employment once he receives 'tenure' (which usually accompanies a professorial appointment or follows automatically after a certain number of years of teaching at an institution), at least in the larger and older colleges: the discharge of a professor for incompetence or failure to perform his duties is extremely (and, from the viewpoint of the student one can argue regrettably) unusual. The absolute salary of the college teacher, unlike the earnings of the independent professional worker or most employees, does not decline after he passes his most productive

[27]See Survey of Land-Grant Colleges and Universities, Office of Education, Bulletin 1930, No. 9, Vol. 2, pp. 581-2.

| | FULL-TIME | |
|---|---|---|
| | Teaching | Research |
| Number | 2,639 | 384 |
| Mean salary | $2,630 | $2,799 |
| Standard deviation | $855 | $1,005 |
| Coefficient of variation | 32.5 | 35.9 |

Figure 7
Lorenz Curves of Salaries of Teachers in Large and Small Private Universities and Colleges, 1940




years, although a relative decline probably occurs in a period of rising salaries.

Such extreme security, matched only in the federal judiciary and in certain civil service and seniority systems, has an uncertain effect on college teachers' earnings relative to those in riskier callings. If the possibility of great success is a real attraction to persons entering professions, as Adam Smith and innumerable followers have believed, the absence of this possibility in teaching would tend to increase college teachers' salaries enough to compensate for foregoing it. In the United States before the first World War this may well have been the effect of security; if the desire for security has since grown strong, as is often claimed, it now has the opposite effect.

We have not measured differences in teachers' salaries in various disciplines or departments. One would expect significant differences to appear from time to time, for shifts in student interests and university policies (both of which tend to be nationwide) can lead to shifts in departmental staff needs at a rate that cannot be currently met by the output of new Ph.D.'s, and of

course can seldom be met by shifts of existing staff members. Absolute contraction of a department has probably been a minor problem: the vast increase in enrollments for half a century has increased the number of teachers in almost every discipline. Scraps of information for a few schools suggest that differences in salaries among departments are fairly small for professors and nearly zero at other ranks, so the impact of changing demands on inelastic supplies of new teachers must be chiefly through differences in rates of promotion.

### OTHER EARNINGS

Although there is considerable information on the salaries of college teachers, little is known about their aggregate professional income. Their regular salaries are often supplemented by five types of income: salaries for teaching in the summer or in extension courses; royalties on textbooks; fees for lectures, radio talks, etc.; consultation, on a sporadic or continuing basis, with public or private bodies; and private practice in numerous fields (e.g., law, medicine, accounting, engineering). Such earnings will vary with the field of specialization: they will be smaller for historians or linguists (unless they cultivate the lecture rostrum) and larger for labor experts, lawyers, and physicians. Earnings, especially consultation fees, will vary also with professional rank and the prestige of the university, since higher ranks in the more famous institutions carry with the public greater testimony of competence.

Some measure of these outside earnings is provided by a study of teachers' incomes in 1927 (Table 35).[25] Extra income of those with outside earnings amounted to a quarter of the regular salary at each rank, and of this extra income half came from extra teaching engaged in by two-thirds to three-quarters of the teachers. The relatively high percentage of income received by instructors from 'other' activities presumably represents chiefly earnings in nonacademic activities.

The outside earnings reported in Table 35 are averages of amounts received by teachers who reported supplementary earnings; it is impossible to determine precisely the average earnings for all teachers. The percentage of teachers receiving outside earnings was higher in the higher ranks: professors, 76.2 percent; associate professors, 70.1 percent; assistant professors, 61.7 per-

[25] Arnett, General Education Board, Occasional Paper 8.

## TABLE 35

### Earnings of College Teachers who had Supplementary Earnings, 1927

| RANK | REGULAR SALARY | OTHER EARNINGS: Total | Writing | Extra teaching | Outside lectures | Consulting work | Other |
|---|---|---|---|---|---|---|---|
| | AVERAGE EARNINGS | | | | | | |
| Professor | $4,137 | $973 | $237 | $429 | $81 | $97 | $129 |
| Assoc. Prof. | 3,273 | 761 | 95 | 428 | 45 | 80 | 113 |
| Asst. Prof. | 2,749 | 647 | 72 | 390 | 26 | 58 | 103 |
| Instructor | 2,032 | 532 | 38 | 291 | 17 | 28 | 158 |
| | | PERCENTAGE RECEIVING OTHER EARNINGS | | | | | |
| Professor | | | 33.0 | 67.9 | 27.3 | 11.1 | 19.6 |
| Assoc. Prof. | | | 28.3 | 74.4 | 20.8 | 12.2 | 20.7 |
| Asst. Prof. | | | 20.0 | 74.3 | 12.3 | 9.8 | 25.4 |
| Instructor | | | 9.6 | 66.2 | 6.8 | 6.1 | 42.8 |
| | | PERCENTAGE OF AGGREGATE EARNINGS | | | | | |
| Professor | 81.0 | 19.0 | 4.6 | 8.4 | 1.6 | 1.9 | 2.5 |
| Assoc. Prof. | 81.1 | 18.9 | 2.4 | 10.6 | 1.1 | 2.0 | 2.8 |
| Asst. Prof. | 80.9 | 19.1 | 2.1 | 11.5 | .8 | 1.7 | 3.0 |
| Instructor | 79.3 | 20.7 | 1.5 | 11.1 | .7 | 1.1 | 6.2 |

Source: Arnett, General Education Board, Occasional Paper 8, pp. 72-3.

cent; instructors, 52.4 percent. Those who did not receive any outside earnings had somewhat lower salaries than those who did.[29] For the entire group, outside earnings averaged about 17 percent of salaries.[30]

It is highly probable that the ratio of outside earnings to regular salary has been increasing steadily. Summer school enrollments have grown much more rapidly than regular enrollments, so an increasing proportion of college teachers must have been receiving income from this, the largest source.[31]

A larger proportion of college teachers are now in large cities,

[29]Arnett, *ibid.*, pp. 11, 72-3. Relatively more married men than single men had outside earnings. Differences in average age may explain the salary differences.

AVERAGE SALARIES, 1927

| | PROF. | ASSOC. PROF. | ASST. PROF. | INSTR. |
|---|---|---|---|---|
| All teachers | $3,798 | $3,256 | $2,669 | $1,941 |
| Teachers with reported supplementary earnings | 4,137 | 3,273 | 2,749 | 2,032 |

[30]A considerable number reported the receipt but not the amount of outside earnings. Outside earnings were 16.7 percent of salaries if those reporting supplementary earnings but not their amount, received only negligible amounts: 17.9 percent if this group on the average received the same amount of supplementary earnings as those who reported the amount.

[31]In 1919 there were 95,000 students in summer sessions, in 1939, 457,000 students. Therefore summer school enrollments increased twice as fast as regular enrollments in this period.

where opportunities for outside earnings are greater.[32] Moreover, the proportion of teachers in vocational fields (accounting, technology, etc.) has risen, and presumably this group has relatively larger outside earnings. One may conjecture, as a very rough guess, that the ratio of outside earnings to salary has risen from one-tenth in 1900 to perhaps one-fourth at present.

### COMPARISONS WITH OTHER PROFESSIONS

Before entering on comparisons of the absolute level of college teachers' salaries with earnings in other occupations, we recapitulate briefly certain peculiarities of teachers' salaries previously discussed in connection with elementary and secondary school teachers:

Teachers in state institutions were exempt from federal personal income taxation before 1939. Because of the low federal rates and large exemptions in this period, the average value of the exemption to the recipients was small (perhaps 2 to 5 percent in the upper ranks).

College teachers have long vacations—about 3 months on the average in the summer plus several weeks during the school year. But if we recognize additional earnings, of which earnings from summer school teaching are most important, the effective vacation is reduced perhaps to 2 months.

Although a few private systems were already in operation by 1905, college teachers' pension and retirement systems really started with the establishment of the Carnegie Foundation, which began with a system of free pensions, but was eventually forced to close its list. Most retirement systems are now joint-contributory, and in most institutions teacher and institution each contribute 5 percent of the teacher's salary. About 85 percent of the teachers in universities and colleges and 95 percent of those in teachers colleges are now covered.[33] The institutions without a retirement plan have relatively low salaries. The retirement systems add about 4 percent to the average salary.

In addition to these supplements to college teachers' salaries, there are two not found in elementary and secondary education:

[32]Arnett's study shows materially higher percentages of teachers receiving outside earnings in urban than in rural areas, even with his classification (in which urban teachers are in cities of over 100,000); General Education Board, Occasional Paper 8, Table X.

[33]For a comprehensive description and discussion, see W. C. Greenough, *College Retirement and Insurance Plans* (Columbia University Press, 1948).

The college teacher often has the privilege of sabbatical leave. Commonly he receives a full year's leave at half pay or a half year's leave at full pay, not more often than every seventh year. This is not a simple increase of about one-thirteenth per teaching year, for the leave is often circumscribed: a promise is exacted to return to the institution for some period; outside earnings are prohibited; etc. About half the institutions of higher learning possess the system, but many grant sabbatical leave irregularly. In 1930 only 4.8 percent of the teachers in schools having the plan were on sabbatical leave.[34]

College teachers may receive a variety of perquisites. The most important is probably housing, which sprang into prominence as an important competitive factor in recruitment recently but extends far back into the past.[35]

There are many miscellaneous items: often lower or no tuition fees for faculty children; not infrequently access on favorable terms to university health services; occasionally preferential rates at hotels, etc.; and in at least one university (Brown) $10,000 exemption from assessments for property taxes.

Of these supplements to college teachers' salaries, the long vacation is no doubt the most important quantitatively, adding a fifth to a tenth to salaries if they are appraised at the same value as teaching time,[36] when compared with occupations with one-month vacations. Vacations have declined if, as we believe, outside earnings have increased; so on balance the ratio of these

[34]See L. B. Cooper, Sabbatical Leave for College Teachers, University of Florida Publications, Education Series, Vol. 1, No. 1 (Feb. 1932). Cooper sent inquiries to 709 institutions (excluding all junior colleges, schools for Negroes, and Catholic schools). Of the 575 institutions replying, 300 had plans of sabbatical leave, and in 193 the leave was granted regularly. In 1907 only 7 of these institutions granted sabbatical leave.

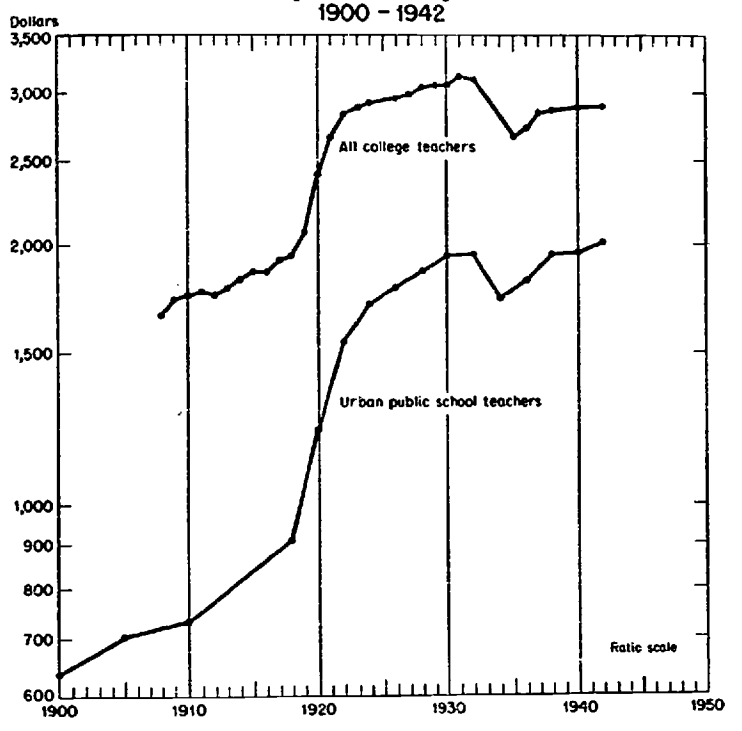
[35]Of 69 land-grant institutions 10 provided housing (on terms that were presumably generous) for some of their faculty members in 1929. (Survey of Land-Grant Colleges and Universities, Vol. 1, pp. 606-7). Before World War I the Office of Education often reported numbers of professors receiving free housing at certain universities.

[36]Summer teaching is usually paid for at the regular monthly rate; see *ibid.*, Vol. 2, pp. 417-8. This is not the only or most popular view of vacations. The late President W. R. Harper said: "In discussing the question of salaries, there is no error more ungracious and unreasonable than that which grudges the professor his vacation" (The Pay of American College Professors, *Forum*, Sept. 1893, p. 108).

monetary and nonmonetary advantages to salary has probably risen only moderately over time.

The comparison of college teachers' salaries with those of elementary and secondary school teachers is subject to least qualification for differences in working year, type of work, security of tenure, and inequality of income. One important difference, however, is that most college professors are in urban areas (79.6 percent in 1940), whereas a majority of public school teachers are in rural areas (51.5 percent in 1940). A more meaningful comparison can therefore be made between college teachers' salaries and urban public school teachers' salaries than if all public school teachers' salaries are used (Figure 8).[37] The relative difference between college and public school teachers has

Figure 8
Average Salaries of Urban Public School Teachers and Teachers in Large Public Colleges and Universities
1900 - 1942




[37]Since rural school teachers' salaries rose relative to urban school teachers' salaries, the trend about to be discussed would become even more pronounced if all school teachers' salaries were used.

steadily narrowed. In 1910 college teachers' salaries were 2.4 times those of public school teachers; by 1930 the ratio had fallen to 1.6 and by 1940 to 1.5. It appears to have continued to fall since 1940.[38]

A minor part of the explanation for this decline in the ratio of college teachers' salaries to public school teachers' salaries is found in changes in formal education.[39] The academic training of the public school teacher has risen from about 1 year beyond high school in 1900 to 4 years beyond high school in 1940. The full-time academic training of college teachers has also risen, with more obtaining the Ph.D. and this degree requiring a progressively longer period of work, but on balance the differential between public school and college teachers has probably diminished. Some part of the decline in the ratio of college teachers' to public school teachers' salaries is also attributable to the convergence of teaching levels: a rising proportion of public school teachers are in high schools, and a rising proportion of college teachers in junior colleges. The rise in the average age of public school teachers relative to college teachers works in the same direction.

An important part of the explanation, however, is also that the 1910 ratio of college teachers' to public school teachers' salaries, 2.4, vastly exceeded the additional cost of training for college teaching. The additional return, as a percentage of salary, necessary to compensate a teacher for the additional training for college teaching was then on the order of 40 or 50 percent and is now on the order of 15 or 20 percent.[40] These percentages,

[38]Elementary school teachers' salaries rose 66.1 percent from 1941 to 1949, high school teachers' salaries rose 57.1 percent from 1941 to 1949, and college teachers' salaries rose 46.1 percent from 1940 to 1949.

[39]The urban school year has not changed appreciably since 1910; the trend, if any, in the college year is unknown.

[40]This percentage may be estimated roughly, using the formula given by Friedman and Kuznets (*op. cit.*, p. 142). The present value of an urban public school teacher's future salary in the late 1930's was about $50,000 (see H. Clark, *Life Earnings in Selected Occupations in the United States*, Harper, 1937). The additional formal training of college teachers is about the equivalent of 3 years if a year is allowed for the doctoral dissertation. In the formula referred to, the following estimates have been used: $V = \$50,000$, $v$ (the present value of the last three years' salary in public school teaching) $= \$1,100$, $c$ (the present value of the additional direct costs of college teachers' training) $= \$1,000$, and $p$ (the ratio of the last three years' salary to the

moreover, are for comparable groups of college and public school teachers. They should be reduced if one compares, as we must do, the average salary of urban teachers with the average salary of all college teachers.[41]

Most public school teachers could not enter college teaching because of the traditional opposition to women on college faculties, and many could not meet the variable but apparently rising standards of the Ph.D., but many young men could choose between the two levels, and the relative attractions of college teaching were large.[42] In addition college teaching offered greater prestige, less classroom teaching, and greater opportunities for outside earnings. College teachers increased fivefold from 1900 to 1940; public school teachers doubled. The difference in salaries was probably a significant cause of this difference in rate of growth, and the difference in the rate of growth was a major factor in the declining ratio of college teachers' to teachers' salaries.

The other group with which college teachers' salaries and earnings will be compared is the independent professions — law, medicine, and dentistry. The unfortunate restriction of our information on earnings in these professions to 1929-48 (Table 36) makes comparison difficult because the temporal pattern is dominated by the relative insensitivity of professorial salaries to business fluctuations.

These cyclical effects were perhaps at a minimum in 1941, when college teachers' salaries had regained the level of the late

average salary of public school teachers) = 1. Then the ratio of college teachers' to teachers' salaries necessary to make the two branches equally attractive financially is 1.17.

41The effect of community size on salary already noted for public school teachers probably holds for college teachers. Our salary series for large public institutions probably does not include any rural college teachers. But college teachers as a class are in smaller communities than public school teachers. In 1940, 43 percent of urban public school teachers and 34 percent of urban college teachers were in cities over 100,000.

42The Pennsylvania studies made under the auspices of the Carnegie Foundation for the Advancement of Teaching revealed that the students in teachers colleges and the majors in education in arts colleges had lower intelligence quotients than the average college student, that their performance on the achievement tests was also low, but that the male students in education had superior records. See W. S. Learned and B. D. Wood, *The Student and his Knowledge* (Carnegie Foundation, 1938), Ch. VII.

TABLE 36

Average Incomes and Salaries in Four Professions

| | LAWYERS | PHYSICIANS | DENTISTS | COLLEGE TEACHERS |
|---|---|---|---|---|
| 1929 | $5,534 | $5,224 | $4,267 | $3,056 |
| 1932 | | | | 3,111 |
| 1933 | 3,868 | 2,948 | 2,188 | |
| 1935 | 4,272 | 3,695 | 2,485 | 2,666 |
| 1936 | 4,394 | 4,204 | 2,726 | 2,732 |
| 1937 | 4,483 | 4,285 | 2,883 | 2,843 |
| 1938 | | 4,093 | | 2,861 |
| 1939 | 4,391 | 4,229 | 3,096 | |
| 1940 | | 4,441 | | 2,886 |
| 1941 | 4,794 | 5,047 | 3,782 | |
| 1942 | | | | 2,892 |
| 1943 | 5,945 | 8,822 | | 2,988 |
| 1944 | 6,504 | | 6,649 | 3,282 |
| 1945 | 6,861 | | 6,922 | 3,236 |
| 1946 | 6,951 | | 6,381 | 3,429 |
| 1947 | 7,437 | 10,057 | 6,610 | 3,705 |
| 1948 | 8,121 | | 7,039 | 4,098 |

Independent professions: E. F. Denison, Incomes in Selected Professions, *Survey of Current Business*, May 1944; William Weinfeld, Income of Lawyers, Income of Dentists, *ibid.*, Aug. 1949, Jan. 1950. The figures for physicians in 1943 and 1947 are from W. A. Richardson, Physicians' Incomes, *Medical Economics*, Sept. 1948, reduced 11.00 percent (on the basis of the 1941 relationship) for omission of physicians over 65.
College teachers: Table 29 and text.

nineteen-twenties, and the fairly sustained expansion of business had raised incomes in the independent professions well above their previous depression levels. In this year professional earnings exceeded college teachers' salaries (taking the latter to be $2,889) by the following amounts: lawyers, $1,905; physicians, $2,158; and dentists, $893.

These comparisons, however, are fatally incomplete: numerous adjustments must be made to college teachers' salaries to achieve comparability with professional earnings:

The outside earnings of college teachers are about 20 to 25 percent of their average salaries.

The vacations of college teachers exceed those in the independent professions by at least a month on the average, and amount to at least 10 percent of the average salary if valued at the rate at which teaching is usually paid.

The college contributions to college teachers' retirement funds average about 4 percent of their salaries.

The occupational expense of the college professor was on the average small (probably less than $50 per year) and his investment in equipment usually small; the earnings of independent

professional workers include interest on their investment. If this investment averages $3,000, as a rough guess, at 4 percent the interest return in earnings is $120. For comparative purposes, about 2 percent should be added to college teachers' salaries.

Since college teaching is a much more rapidly growing field, its members are on the average younger. The median ages in the various professions in 1940 were college teachers, 40.8; lawyers and judges, 42.0; physicians, 44.1; dentists, 43.6. The average independent professional worker was at the age at which his earnings were at about a lifetime maximum,[43] whereas the college teacher was at a lower level relative to lifetime earnings (especially if, as is probable, salaries show no downward trend in later years of teaching comparable to that found in the independent professions). In the absence of knowledge of the life pattern of college teachers' salaries the importance of this difference cannot be estimated.

The independent professions are concentrated rather heavily in the largest communities, where income levels are relatively high; college teachers are distributed among community sizes more in proportion to the population at large. If college teachers' salaries were calculated for the same distribution among community sizes as rules in the independent professions (assuming that their salaries would show the usual size of community pattern), they would be about 15 percent higher.[44]

The full-time academic training of college teachers plus allowance of a year for the preparation of a doctoral dissertation exceeds by about a year that of dentistry and law (6 years of college), but is about 2 years less than that in medicine. In comparisons of college teachers' salaries with doctors' incomes,

[43]See Friedman and Kuznets, *op. cit.*, pp. 237 ff.

[44]Friedman and Kuznets have performed the opposite standardization, that is, calculated the incomes in the professions if their members were distributed among community sizes in the same proportion as nonrelief families (which appears to be similar to that of college teachers). The standardized income of physicians was 90 percent of their actual average income, and the corresponding percentages for dentists and lawyers are 88 and 79 respectively; *op. cit.*, p. 184.

PERCENTAGES OF MEMBERS OF THE PROFESSIONS IN THE LARGEST COMMUNITIES, 1940

| | COMMUNITY SIZE | | |
|---|---|---|---|
| | Over 1,000,000 | 500,000-1,000,000 | 100,000-500,000 |
| College teachers | 9.1 | 4.5 | 13.3 |
| Lawyers and judges | 21.8 | 8.3 | 16.3 |
| Physicians | 19.4 | 7.4 | 15.7 |

about 10 percent should be added to the former; for comparisons with the other groups, 5 percent should be deducted.[45]

The progressive personal income tax affects net earnings after taxes (which is more pertinent than earnings before tax to the relative financial attractiveness of professions) in two ways, both favorable to college teachers. Between occupations with equal average incomes before tax, the average tax is larger the more unequal the distribution of income; and of course it increases more than in proportion to average income. Tentative calculations for 1941 indicate that the federal income tax was about 14.0 percent of the average income of lawyers, 10.8 percent of the average income of physicians, 6.0 percent of the average income of dentists, and 2.7 percent of the average salary of college teachers.[46] The second effect of the progressive income tax is to favor occupations with stable incomes relative to those with fluctuating incomes, but this effect seems to be much smaller in magnitude.[47] On these two scores, the earnings of lawyers should be reduced more than 10 percent (and those in the other independent professions by smaller percentages) in comparisons with college teaching. On the other hand, it is commonly believed that salaries are more fully reported than entrepreneurial net income.

There are two important factors on the other side. One is that our salary series does not cover persons below the rank of instructor (i.e., teaching assistants, laboratory assistants, etc.) and their inclusion might lower the average college teachers' salary appreciably.[48] The other is that outside earnings in the professions, especially law, may be substantial.

In sum, more than 50 percent must be added to the salaries of college teachers in making comparisons with earnings in inde-

[45] *Ibid.*, pp. 142 ff.

[46] These calculations assume that the earner is married and has two children, and takes into account the earned income credit. For the underlying data, see Table 34.

[47] Using the same assumptions as in the previous footnote, and employing the data on incomes of physicians from 1929 to 1937 (Friedman and Kuznets, *op. cit.*, p. 101), the physician with average income would pay a tax of 3.9 percent of his income (under 1941 rates), whereas with a stable income equal to the average for the period, he would pay a tax of 2.5 percent of his income.

[48] Although if these junior positions are usually held for several years, graduate study is also pursued, and the effects on the present value of the person's future net earnings are uncertain.

pendent professions. With this correction, in 1941 the 'net advantages' of college teaching exceeded those of dentistry, and were almost equal to those of law and medicine. It would be unsafe to generalize this finding until more ample data permit a better isolation of cyclical fluctuations in incomes, but the evidence for 1941 suggests that the net financial advantages of college teaching were not much inferior to the more prosperous independent professions.

The foregoing comparison has been made for a more or less normal year. The sensitivity of income to fluctuations in general business conditions differs greatly between the independent professions and college teaching, so comparisons in years of depression or inflation yield very different conclusions. College teachers' salaries rose from 1929 to 1932 and subsequently fell only about 15 percent, whereas earnings in the independent professions began to fall in 1930 and by 1933 had fallen 45 percent from the 1929 level.[49] Thus in 1932 college teachers' average salaries were larger than the incomes of physicians and dentists and only a fifth less than lawyers' incomes.

Conversely, during the war years college teachers' salaries fell far behind earnings in the professions (Table 36). (The different rates of increase in earnings in the various professions during the war seem directly related to the proportions of their members drawn into military service.) The gap between college teachers and the professions began to narrow after the war, but the prewar relationship had not been restored by 1948: college teachers' salaries were still a fifth lower than in 1941 relative to the average of law and dentistry, and no doubt lower still relative to medicine. These figures exaggerate the gap, for no doubt outside earnings of college teachers also respond to changing business conditions.

It is impossible to say whether college teachers have on balance lost or gained relative to the independent professions from the relative rigidity of their money salaries; if one considers the 'twenties and 'thirties, they may have gained; if one considers the 'thirties and 'forties, they probably lost. But wherever the balance lies, this stability of teachers' salaries seems ill suited to periods of large inflation and deflation such as we have experienced for several decades and may continue to enjoy for some time.

[49]See Friedman and Kuznets, *op. cit.*, p. 366.