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CHAPTER 6

THE PROFESSIONAL SERVICE INDUSTRIES

A century ago the professions were a fairly well-defined group: law, medicine, the clergy, military officers, and a few small groups such as college teachers. These were all occupations characterized by a long period of formal educational training, and they were substantially the only occupations which required such training. Correspondingly, they commanded prestige, and as a rule they probably also commanded relatively high earnings—the tradition of poverty of the minister and the professor notwithstanding.

The vast expansion of formal education, in the United States beyond all other countries, has permitted a great increase in the learned occupations. The accumulation of knowledge and the increasing specialization of labor have led to the development of many new occupations requiring such training. A very incomplete list of fairly broad occupations makes clear the extent to which formal education is now characteristic of numerous occupations (Table 38). The traditional professions still stand at the head of the list when ranked by formal training, but many other occupations are approaching them. Modern technology gives rise to a host of engineers and chemists, and modern governments demand trained teachers, social workers, administrators, etc. The traditional professions are now only the leading species of a large and growing genus.

Yet we shall restrict our discussion to four traditional professions. Some limitations are necessary, and these professions are still large, and—unlike many of the newer professions—their members are still organized as independent practitioners or are employees of nonprofit organizations.

1. Trends in Numbers

We cannot give a full account of each of the professions chosen to represent this group of industries. Instead, we shall first consider the trends in numbers employed, then the methods of recruitment and the forms of business organization, and finally the earnings.

NUMBERS IN THE PROFESSIONS

The decennial data on numbers in the four professions we have chosen for study are presented in Table 39, and in Chart 26 fuller

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TABLE 38

College-Trained Persons as a Percentage
of All Members of Selected Occupations, 1940

	<i>Number in Labor Force</i>	<i>Number with 4 or More Years of College</i>	<i>% in Labor Force with 4 or More Years of College</i>
College presidents, professors, and instructors	75,760	71,020	93.74
Physicians and surgeons	164,760	152,980	92.85
Lawyers and judges	183,080	146,460	80.00
Dentists, pharmacists, osteopaths, and veterinarians	173,240	106,900	61.71
Clergymen	136,560	83,700	61.29
Electrical engineers	55,440	33,540	60.50
Mechanical engineers	82,920	49,120	59.24
Civil engineers	86,140	51,000	59.21
Other technical engineers	30,980	22,100	71.34
Chemists, assayers, and metallurgists	55,640	32,620	58.63
Teachers ^a	1,052,960	593,920	56.40
Architects	20,740	11,640	56.12
Social and welfare workers	73,880	38,320	51.87
Librarians	33,320	15,240	45.74
Authors, editors, and reporters	76,240	29,520	38.72
Musicians and music teachers	149,900	31,120	20.76
Designers and draftsmen	107,940	16,020	14.84

^a Not including college professors and instructors.

Source: *Census of Population, 1940*, Bureau of the Census, *The Labor Force (Sample Statistics)*, *Occupational Characteristics*, Tables 1 and 3.

data from other sources are given. In addition, the numbers in dentistry and the ministry have been reported, although they are not included in our subsequent discussion.

The profession which has grown most rapidly in numbers is that of commissioned military officers. The growth in numbers from 4,000 in 1900 to 131,000 in 1950 is not due to the inclusion of years of active hostilities (see Chart 26)—in 1918 there were 214,000 officers and in 1945, 1,300,000 officers. Aside from periods of active hostilities, the number of officers tended to grow only slowly, but the average number rose to a new level after each war: it averaged 7,000 from 1900 to 1910, 25,000 from 1920 to 1940, and 188,000 in 1948-1950.

The basic reason for the growth of the military profession in this country hardly requires mention, but a second factor has also been

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TABLE 39

Number of Persons in Selected Professions, 1900-1950

	Lawyers (1)	Physicians (2)	Dentists (3)	College Teachers ^a (4)	Clergymen (5)	Military Officers (6)
A. Absolute Number						
1900	107,483	112,138	29,665	29,000	98,353	4,343
1910	114,704	134,195	39,997	45,000	118,018	7,466
1920	122,519	144,977	56,152	62,000	127,270	27,265
1930	160,605	153,803	71,055	105,400	148,848	24,899
1940	180,483	165,629	71,314	146,900	143,642	33,662
1950	181,226	192,317	75,025	246,700	168,419	188,390
B. Number per 1,000 Population						
1900	1.41	1.47	.39	.38	1.22	.06
1910	1.24	1.45	.43	.49	1.28	.08
1920	1.15	1.36	.53	.58	1.20	.26
1930	1.30	1.24	.58	.86	1.21	.20
1940	1.37	1.26	.54	1.11	1.09	.26
1950	1.20	1.28	.50	1.64	1.12	.87

^a Including academic employees in administration, full-time research, etc.
Column Source

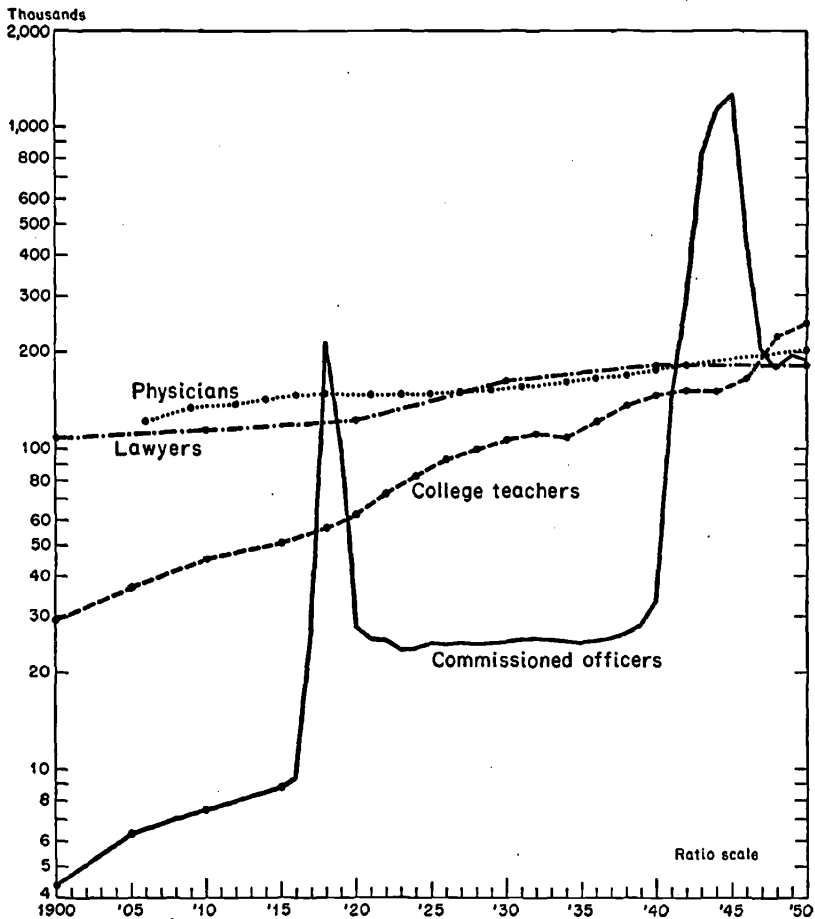
- 1, 3, 5 1900-1940: Alba M. Edwards, *Comparative Occupational Statistics for the United States, 1870 to 1940*, Bureau of the Census, 1943. 1950: *Census of Population, 1950*, Bureau of the Census, Vol. II.
- 2 The number of physicians in 1900 was estimated by using the 1910 ratio of estimated physicians to total number of physicians, surgeons, osteopaths, and other healers reported. The 1910 ratio was obtained by comparing physicians reported for that year by the American Medical Association (see *American Medical Dictionary*, American Medical Association, 1950) with total number of physicians, surgeons, and osteopaths reported in the 1910 census of occupations. The number of physicians for the years 1920 to 1940 was obtained from Edwards (*op. cit.*), and that for 1950 from the *Census of Population, 1950*, Vol. II.
- 4 *Biennial Survey of Education in the United States*, Office of Education. For a discussion of the large excess of Office of Education over census figures for college teachers, see George J. Stigler, *Employment and Compensation in Education*, National Bureau of Economic Research, Occasional Paper 33, 1950.
- 6 *Statistical Abstract of the United States*, Bureau of the Census.

of some importance. In 1900 less than 1 out of 20 men on active duty was a commissioned officer; in the interwar decades and thereafter the proportion of officers has been about 1 in 10.

College teachers grew at a slower rate than military officers but increased by a larger absolute number during the half century. Americans outside the academic world are perhaps unacquainted with the prodigious extent of higher education in this country as compared with foreign nations. No other country has attempted to

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CHART 26
Growth in Four Selected Professions, 1900-1950



Source: *Physicians*: American Medical Directory, American Medical Association, 1950. *Lawyers*: Alba M. Edwards, *Comparative Occupation Statistics for the United States, 1870 to 1940*, Bureau of the Census, 1943, and *Census of Population, 1950*, Bureau of the Census, Vol. II, Part 1, Table 130. *Commissioned Officers*: *Statistical Abstract of the United States*, Dept. of Commerce. *College Teachers*: *Biennial Survey of Education in the United States*, Office of Education.

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give a college education to so large a share of its population, as a few comparative figures indicate:¹

Country	Year	College Students per 1,000 Population Aged 18 to 21
United States	1950	19.3 ^a
United Kingdom	1950	3.7
France	1951	5.4
Sweden	1948	5.0

^a The figure is 29.6 including veterans.

The extent of higher education in the United States is exaggerated, to be sure, by our practice of designating as a college or university almost any institution which is not beyond all pretense something else. Yet even with full allowance for the variations in language, our society provides unusual amounts of formal education. The growth of college enrollments, we may add, has been almost unbroken; only large wars have been able significantly to reduce the numbers. The broad course of enrollments is portrayed in the decennial data (Table 40).

TABLE 40
Enrollments in Institutions of Higher Education, 1900-1950

	Enrollments (thousands)	% of Population 18-21 in Colleges	Enrollment per Teacher
1900	238	4.0	9.0
1910	355	4.8	9.0
1920	598	8.1	11.4
1930	1,101	12.2	12.8
1940	1,494	15.6	12.6
1950	2,659	19.3 ^a	13.6

^a Excluding veterans; 29.6 per cent including veterans.

Source: *Biennial Survey of Education in the United States, 1948-50*, Office of Education, 1953, Chap. 4, Sec. 1, p. 6.

The growth in the number of lawyers has been relatively modest—68.6 per cent in the half century, or moderately less than the growth of population. Since the number of laws and regulations affecting each individual has presumably increased, and a vast host

¹ *Annuaire Statistique, 1951*, Paris, 1951, pp. 25 and 61; *Statistisk Arsbok, 1951*, Stockholm, 1951, pp. 8 and 94; *Annual Abstract of Statistics, 1952*, London, 1952, pp. 14 and 274 ff.; and *Biennial Survey of Education in the United States, 1948-50*, Office of Education, Chap. 4, Sec. 1, p. 6.

of government regulatory bodies have appeared in the half century, one would expect a considerably larger growth than has actually taken place. One may conjecture that two forces have served to reduce the growth of lawyers. The first is the progressive increase in the standards of professional training, which we discuss below. The second is the growth of specialization in the law. There probably has been some increase in the degree of specialization in branches of the law (patent, antitrust, labor, etc.), with some increase in capacity to handle legal business. The lawyer of fifty years ago was also more inclined to blend a variety of business activities with his practice of law.

Our final profession, the physicians, has grown least rapidly, and the ratio of physicians to population has declined by 17 per cent from 1900 to 1950. The decline is largely the result of the vast rise in the quality and duration of medical training during the early decades of the century, a matter we shall discuss below. A second factor has been scientific progress: the past generation has witnessed one of the golden ages of medical progress, with advances in techniques, equipment, and medical preparations following so fast on one another as to invite analogy with the industrial revolution. This brilliant progress has been both a cause and an effect of progressive specialization by physicians, which probably serves to increase the number of patients one physician can care for—as well as the number of physicians one patient cares for.

2. *Recruitment and Business Organization*

LAW

A century ago the training of lawyers was still dominantly acquired by apprenticeship—by “reading” in a law office. Indeed, the trend toward elimination of requirements for legal training was then reaching an extreme: “Every citizen twenty-one years of age, in New Hampshire after 1842, every citizen of Maine after 1843, every resident of Wisconsin after 1849, and every voter in Indiana after 1851, was entitled to be admitted to practice in these states merely on proof of good moral character.”² Even under these circumstances the professional nature of the bar was maintained by various devices, including ostracism of the nonqualified, and after the Civil War an increasing amount of training began to be prescribed for lawyers.

² A. Z. Reed, *Training for the Public Profession of the Law*, Carnegie Foundation, Bull. 15, 1921, pp. 87-88.

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Law schools gradually developed during the nineteenth century—there were none at its beginning—until by 1894 there were 72 schools with 7,600 students. At that time the average term was two years, but ranged from ten months to three years, and some schools met for only twelve weeks a year. There were only negligible requirements for prelegal education. When the newly formed Association of American Law Schools required, in 1901, that its member institutions require a high school education of students, this requirement served to exclude numerous schools.³

The standards of entrance to the bar vary among states much more than standards in the field of medicine. The duration of required prelegal college education varies as follows:⁴

<i>Years</i>	<i>States</i>
None	5
2	31
3	9
4	3

Moreover, twenty-one states still allow the candidate to obtain his entire legal training by apprenticeship (for a period of at least three to four years), although a majority require three years of study in a law school or an LL.B. This latter method of preparation is now almost universal: in 1951, of 178,700 reporting lawyers, 170,977 attended law school and 145,467 had a law degree.⁵

Exacting requirements for admission to the bar have always been opposed by the "John Marshall" or "Abraham Lincoln" argument: that some of our most illustrious legal and political figures would have been excluded from the law by the standards the reformers proposed. Evening schools still enrolled 35 per cent of the law students in 1952, and approval of a law school by the American Bar Association is not so important to the school as is the corresponding endorsement by the American Medical Association.

Partnerships have long been a popular form of organization of lawyers, but two and a half times as many lawyers are in practice as individuals (see Table 41). The dominance of the single-person

³ See A. J. Harno, *Legal Education in the United States*, Bancroft-Whitney, 1953.

⁴ See *Law Schools and Bar Admission Requirements in the United States, 1952 Review of Legal Education*, published by the Section of Legal Education and Admissions to the Bar of the American Bar Association.

⁵ See J. V. Martindale, E. J. Nofer, and W. Hildebrand, Jr., *The Second Statistical Report on the Lawyers of the United States*, American Bar Association, 1952.

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firm suggests that specialization has not developed extensively in the practice of law. To the layman, at least, the complexity of the law of patents, or taxation, or admiralty, or antitrust, or other such fields would seem sufficient to foster and perhaps require extensive specialization, and of course specialization is not necessarily inconsistent with single-person firms. One explanation for the persistence

TABLE 41
Lawyers by Type of Employment, 1951

	<i>Number</i>	<i>Per Cent</i>
Independent practitioner		
Individual	120,340	53.6
Partnership	47,311	21.1
Salaried employees hired by:		
Independent practitioners	9,344	4.2
Governments (nonjudicial)	19,910	8.9
Judicial bodies	7,471	3.3
Other	12,997	5.8
Inactive or retired	6,974	3.1
Total	224,347	100.0

Source: J. V. Martindale, E. J. Nofer, and W. Hildebrand, Jr., *The Second Statistical Report of the Lawyers of the United States*, American Bar Association, 1952. A lawyer who is also, for example, a member of a legislature is listed both as an independent practitioner and as a governmental employee; there are 4,147 such multiple listings.

of the single-person firm may be that the mass of legal work still falls within a few categories, such as property transfers, incorporations, contracts, and the like.

MEDICINE

The training of physicians has been standardized and subjected to professional supervision to an unusual degree.⁶ The medical schools are (with unimportant exception) approved by the American Medical Association (through its Council on Medical Education and Hospitals)—there were 72 such schools, plus 7 offering a two-year basic medical science program, in 1951/1952. Three years of premedical college training are required (four years in 8 schools), but 78.4 per cent of the graduates in 1952 had baccalau-

⁶ See D. G. Anderson, F. R. Manlove, and A. Tipner, "Medical Education in the United States and Canada," *Journal of the American Medical Association*, September 13, 1952, pp. 99 ff.

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reate degrees. The four-year course is succeeded by at least one year of internship. The full period of college and graduate training is therefore at least eight, and usually nine, years.

The training of physicians has undergone a revolution since 1900, when there were 160 medical schools with variable, but in many cases extremely low, standards of instruction. The American Medical Association took the lead in raising the standard of medical instruction, and since high standards have high costs, half the medical schools were eliminated (see Table 42). The powers of the Association were vastly augmented when its approval of a medi-

TABLE 42
Medical Schools and Their Graduates, 1900-1952

	ALL SCHOOLS		SCHOOLS APPROVED BY A.M.A.	
	Schools	Graduates	Schools	Graduates
1900	160	5,214		
1905	160	5,600		
1910	131	4,440	66	3,165
1915	96	3,536	67	2,629
1920	85	3,047	70	2,680
1925	80	3,974	71	3,842
1930			76	4,565
1935			77	5,101
1940			77	5,097
1945			77	5,136
1950			79	5,553
1952			79	6,080

Source: *Factual Data on Medical Economics*, American Medical Association, 1939, and "52nd Annual Report on Medical Education in the United States and Canada," *Journal of the American Medical Association*, September 13, 1952.

cal school came to be required in most states before graduates could be examined for a license.

The original objective of the profession was to raise the level of medical training; in the 1930's it appears to have been supplemented by a desire to limit numbers.⁷ The high earnings and prestige of the physicians have attracted many applicants, of whom only roughly half succeed in entering medical schools. The number of graduates was virtually stable from 1934 to 1944, but since

⁷ See Milton Friedman and Simon Kuznets, *Income from Independent Professional Practice*, National Bureau of Economic Research, 1945, pp. 12 ff.

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the war the number has increased by a fifth, and will presumably continue to rise as the number of medical schools rises. In 1952/-1953, 42 per cent of those applying for the first time to a medical school were accepted; and 30 per cent of those applying who had previously been unsuccessful were accepted.

Any intent to restrict numbers has been overshadowed in recent years by the financial plight of the medical schools, 63 of which are affiliated with universities.⁸ Medical education costs four to eight times as much per student as the other branches of university instruction, but tuition rates are usually the same or only slightly higher.⁹ Unless tuition rates are radically increased, or increased government financial assistance is given to medical schools—and both policies are opposed by the American Medical Association—the number of medical students will not increase rapidly.

Medical practice continues to be organized chiefly in firms containing only one practitioner (see Table 43). Yet it is probable

TABLE 43
Distribution of Physicians by Type of Organization, 1949

	<i>Per Cent of Physicians</i>
Independent	
Individual	66.7
Partnership	11.0
Employed by:	
Independent physicians	4.4
Government bodies and hospitals	14.3
Nonprofit bodies	1.6
Industrial concerns	2.2
Total	100.2

Source: William Weinfeld, "Income of Physicians, 1929-1949," *Survey of Current Business*, July 1951, p. 13.

that the individual practitioner has been losing ground relative to both partnerships and salaried employment, and will continue to do so. The growth of welfare functions of government has led to a continuous expansion of employment of physicians in hospitals and in other government activities. The growth of specialization of

⁸ See J. D. Millett, *Financing Higher Education in the United States*, Oxford, 1953, pp. 178-189.

⁹ In 1952/1953, average expenditures per medical student were almost \$4,000; those for all college students, roughly \$750.

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physicians, which is due to the great recent accumulation of medical knowledge and the increasing urbanization of the population, fosters group practice (partnerships). In 1949, 46 per cent of physicians were full specialists (only 26 per cent were in 1929) and another 16 per cent were partly specialized. Even in the absence of a radical reorganization of medical practice such as has occurred in Great Britain, these forces will probably continue to favor group and hired practice relative to the traditional individual practitioner.

COLLEGE TEACHERS

The training of college teachers is more varied than that of the other professions we survey. Without important exception such teachers have a college degree and a large fraction have the master's degree. Only a minor fraction, however, obtain the Ph.D., although it is commonly employed as the standard of full academic preparation. This degree requires a minimum of 2 years of post-graduate training plus the writing of a dissertation; in practice it is seldom received in less than 5 years, and on average in perhaps 8 to 10 years, after the bachelor's degree. The output of Ph.D.'s has fallen far short of the number of college teachers:¹⁰

<i>Decade</i>	<i>Increase in No. of College Teachers</i>	<i>Approximate No. of Ph.D.'s Conferred</i>
1900-1910	13,000	3,750
1910-1920	13,000	4,700
1920-1930	33,700	12,800
1930-1940	32,200	26,600
1940-1950	72,000	37,200

Since many holders of the doctor's degree work outside the academic field, it is apparent that much less than half of the college teachers have this degree. It is more commonly demanded in the larger and more prosperous institutions.¹¹ Teachers with this degree have an average of about 7 or 8 years of college and post-

¹⁰ 1900 to 1940: George J. Stigler, *Employment and Compensation in Education*, NBER, Occasional Paper 33, 1950, pp. 29 and 37. 1940 to 1950: *Biennial Survey of Education in the United States, 1948-50*, Chap. 4, Sec. I, Tables 1 and 4, pp. 40 and 50. Approximate number of Ph.D.'s estimated by interpolation.

¹¹ See the illustrative analyses in Stigler, *op. cit.*, p. 36.

graduate instruction; the profession as a whole averages perhaps 6 years.

College teachers specialize to a degree that is unique among the professions. Even in the smaller colleges a teacher seldom works in two departments of instruction. In the larger universities, and especially in graduate instruction, the specialization goes to great lengths: the work of one professor of mathematics or economics may be incomprehensible to another—although incomprehensibility is not always due to specialization. There are no general practitioners in college teaching.

If college teaching were not a rapidly growing field, this specialization would create serious problems. The changing demands for education sometimes call for relatively rapid changes in the composition of faculties. Since few teachers can shift among departments, the flexibility has been attained by differential rates of growth of the faculties. The number of college teachers has at least doubled every twenty years, so a given branch of instruction could shrink relative to the total by half within twenty years even if the absolute number of teachers were maintained.

The employers of college teachers are some 1,851 institutions (in 1950), of which 1,109 were universities, colleges, and technical schools—the remainder being teachers' colleges and junior colleges. The colleges and universities employ 86 per cent of the total professional staff of 246,700 (in 1950). Among the colleges and universities (to which we will restrict our discussion), 948 were privately controlled and 161 publicly controlled. Since aggregate enrollments in private schools were only one-fourth greater than in public schools, the average public institution is more than four times as large as the average private institution.

The private institutions collect more than half their income from students; the public institutions only one-fifth (see Table 44). Since private institutions spend somewhat more per student than public institutions,¹² student charges are more than two times as high in the former institutions. An economist is tempted to argue that one part of a competitive industry cannot hold its share of the market if it charges more than another part, even though this situation has persisted for at least three decades! One offsetting factor has been that private institutions are more often in large urban centers and therefore attract both local students and distant

¹² Millett, *op. cit.*, p. 113.

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TABLE 44

Percentage Composition of Educational and General Income of Colleges, Universities, and Technical Schools, 1950

<i>Source of Income</i>	<i>Public Institutions</i>	<i>Private Institutions</i>
Student fees		
Students	9.9	33.2
Federal govt. (veterans)	12.8	21.2
Governments		
Federal (except veterans)	14.8	12.0
State	46.3	3.4
Local	3.3	.1
Endowment earnings	1.1	10.6
Private benefactions	2.4	11.4
Sales and services	7.8	5.8
Miscellaneous	1.6	2.3
Total	100.0	100.0

Source: *Biennial Survey of Education, 1948-1950*, Office of Education, 1953, Chap. 4, Sec. II, p. 16.

students who can get part-time employment near the institution.¹³ Another offsetting factor has been the increase in tuition rates in public institutions relative to private institutions (see Chart 27). In 1900, public institutions charged nonresidents only one-sixth as much as private institutions charged, but now they charge more than half as much, and a lesser relative increase has taken place in fees charged resident students.¹⁴

¹³ See the statistical analysis by R. H. Ostheimer, *Student Charges and Financing Higher Education*, Columbia University Press, 1953, pp. 94 ff.

¹⁴ The revised data on tuition rates in the institutions covered by the series in Chart 27 for the years since 1948 are:

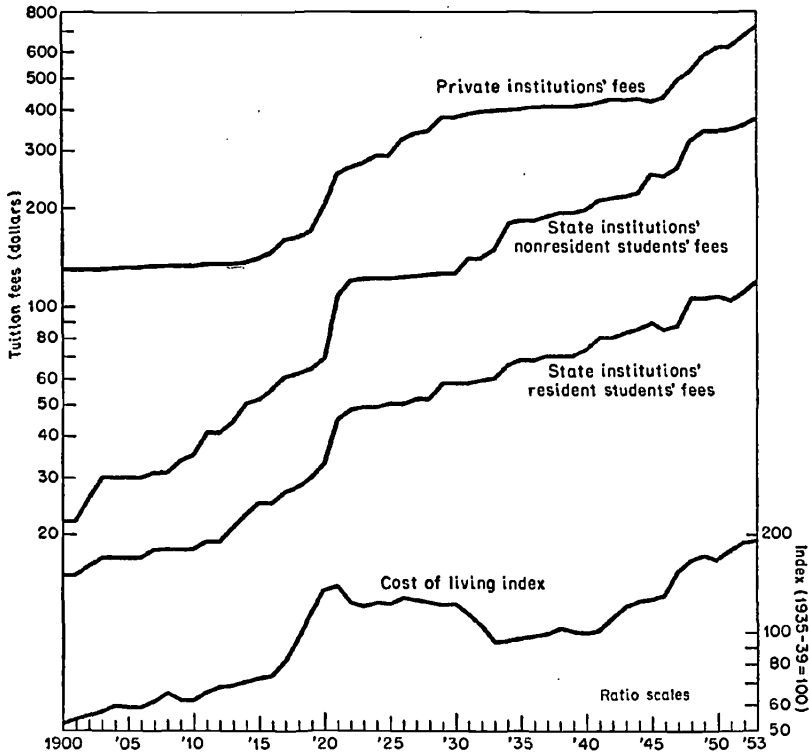
YEAR	STATE INSTITUTIONS		PRIVATE INSTITUTIONS	COST OF LIVING INDEX (1935-1939 = 100)
	<i>Resident Students</i>	<i>Nonresident Students</i>		
1948	106	320	526	167.0
1949	106	343	586	171.4
1950	107	343	616	167.5
1951	104	348	616	178.8
1952	109	353	662	189.1
1953	119	373	710	190.7

Note: Data for earlier years, and the identification of colleges, are given in George J. Stigler, *Employment and Compensation in Education*, National Bureau of Economic Research, Occasional Paper 33, 1950.

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CHART 27

Average Annual Tuition Fees in Arts Colleges, 1900-1953



Source: *Tuition Fees*: Catalogues of state and private colleges (for list of institutions included see George J. Stigler, *Employment and Compensation in Education*, National Bureau of Economic Research, Occasional Paper 33, 1950, Table 21, p. 35).

Cost of Living Index: 1900-1913: Paul H. Douglas, *Real Wages in the United States 1890-1926*, Houghton Mifflin, 1930, p. 41. *1913-1953*: 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.

The hierarchy of ranks in college teaching is fairly standard: instructor, assistant professor, associate professor, and professor. The latter two ranks are commonly permanent in tenure in the superior institutions, i.e. the associate or full professor can be discharged only for cause (neglect of duty, criminality, etc.). In 1952, in the land grant colleges 27 per cent of the staff were professors; 21 per cent, associate professors; 29 per cent, assistant

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professors; and 23 per cent, instructors. A few institutions have regular schedules for promotion (or discharge), but usually promotion procedures are informal, not to say unsystematic. Since an assistant professorship in one institution may be preferable in every respect to a professorship in another, rank per se is an incomplete measure of academic status.

The utilitarian basis for rank in college teaching is presumably that it offers a series of externally recognizable rewards to the salaried professional, useful in inciting him to the instruction of the young or the enlargement of knowledge. The growth of college teaching in the United States—there are probably 100,000 professors of the three ranks—has proceeded so far that the prestige which this scarce title achieved in Europe has now almost vanished. There may be some tendency toward an elaboration of the ranks: the associate professorship became popular only in this century and distinguished professorships are now multiplying. But the salary differentials among ranks are diminishing, and it is more likely that rank will decline in importance as an indication of professional status.

MILITARY OFFICERS

If one insists that a profession be an occupation which requires a long formal training, there is some question whether military officers constitute a profession. Most officers are commissioned in wartime, after a period of training of approximately three months—which is not always embarked upon voluntarily. Yet there is a corps of officers whose training is more extensive, and this corps dominates the profession. The two long-established official academies, West Point and Annapolis, each turn out about 700 officers per year, or a fraction of 1 per cent of the officers in the present armed forces. Yet these graduates constitute more than half the generals and more than four-fifths of the admirals (see Table 45). During wars their numbers are dwarfed by officers obtained from the National Guard, college officer training courses, and short-term officer training centers, and if the armed forces continue at present levels the academy graduates will be vastly outnumbered in peacetime also. But up to the present the official academies (and, to a lesser extent, a few private military academies) have been the basic source of professional military officers, and they are the only source we discuss.

The officer-candidate enters one of the official academies between

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TABLE 45

Military Officers by Educational Institution
from Which Graduated, 1950

RANK	TOTAL NUMBER	GRADUATES		
		<i>West Point</i>	<i>V.M.I.</i>	<i>Annapolis</i>
Army				
General of the Army	4	3	...	...
General	4	3	1	...
Lieutenant General	18	11	...	...
Major General	145	54	5	1
Brigadier General	199	116	1	1
Navy				
Fleet Admiral	3	...	...	3
Admiral	5	...	...	5
Vice Admiral	21	...	...	21
Rear Admiral	220	...	...	177
Air Force				
General	4	3	...	...
Lieutenant General	13	4	...	...
Major General	95	52	...	...
Brigadier General	135	69	...	...

Source: *Official Army Register*, Adjutant General's Office, 1951; *Register of Commissioned Officers*, Naval Personnel Bureau, 1951; and *Air Force Register*, Office of the Air Adjutant, 1951. (All January.)

the ages of seventeen and twenty-two—more often at the beginning of this age range—and undergoes four years of training. This training period is unusually short for a profession, and it is also unusual in that the candidate receives maintenance and \$81.12 per month. The selection of candidates is primarily a matter of political prerogative, instituted perhaps less for its patronage value than because Congress has been unwilling to foster an undemocratic military officer corps. The appointments to the naval academy—those to West Point are broadly similar—are divided as follows:

- 160 (annually) are competitive among enlisted men in the Navy or Marine Corps.
- 160 (annually) are competitive among members of the Naval Reserve or Marine Corps Reserve.
- 2,650 (at any time) are chosen by members of Congress—five by each member. In many districts these appointments are made on a competitive basis.
- 75 (annually) are chosen by the President; these are given to sons of naval officers and enlisted men.

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40 (annually) are competitive among sons of deceased officers or enlisted men of World Wars I and II.

In addition there are small numbers of other groups, e.g. sons of winners of the Congressional Medal of Honor.

The candidates, if they meet the exacting physical and modest mental qualifications,¹⁵ then embark upon a four-year course, after which they are commissioned as ensigns (or second lieutenants, in the case of the Army and Marine Corps). The instruction at the military academies is provided chiefly by military officers assigned for a tour of duty to this task, and the military craft is therefore unusual in that it is the only profession of any size whose members are not trained by specialists. The illustrative tabulations for West Point (see Table 46) suggest that both the extent of

TABLE 46
Faculty Degrees and Experience,
United States Military Academy, 1953

	DEPARTMENT OF INSTRUCTION			
	<i>Physics</i>	<i>Mathematics</i>	<i>Chemistry</i>	<i>Social Sciences</i>
B.S.	3	15	4	3
M.A.	11	17	7	25
Ph.D., Ed.D., Sc.D.	0	3	1	3
Period of instruction at West Point (years)	5.2	3.6	3.7	3.2

Source: *Catalogue of the United States Military Academy, 1952-1953*, pp. 117-135.

training and the period of teaching are very short for instruction at the college level.

The avoidance of specialism, however, is deeply imbedded in the entire military profession. The statutes governing appointments and promotions make a sharp distinction between officers capable of limited duty and those capable of general duty, and place restrictions on the number and functions of those in the former group.

Promotion is governed primarily by seniority, modified by the power of officer-constituted boards to pass over candidates deemed

¹⁵ The mental examination is waived if the candidate has successfully completed one year of college work.

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unworthy of promotion.¹⁶ If an individual is passed over twice, he is retired. In the Navy, for example, there is a period of minimum and normal service in each rank after three years' service as ensign:

RANK	MINIMUM	NORMAL SERVICE	
	SERVICE (years)	In Rank (years)	Total (years)
Lieutenant junior grade	2	3	6
Lieutenant	4	6	12
Lieutenant Commander	4	6	18
Commander	5	7	25
Captain	3	5	30

There are also maximum periods: a captain cannot have more than 31 years' service; a commander, 26 years'; and a lieutenant commander, 20 years'. If an officer is retired in the senior ranks, he receives a pension equal to 2½ per cent of his final salary times his years of service, up to a maximum of 75 per cent of his final salary.¹⁷ If at any time an officer is retired for physical incapacity, he receives a pension of 75 per cent of his final salary. If he has been cited for performance of duty in combat, he is promoted one rank at the time of retirement. The provisions in the Army are similar, but put greater emphasis upon seniority and are less specific with respect to normal periods of service.

The distribution of officers by rank is also governed by general statute, more closely in the case of the Navy than for the Army. In peacetime the commissioned officers of the Navy are to be:

<i>Per Cent</i>	<i>Rank</i>
.75	Rear admirals
6.0	Captains
12.0	Commanders
18.0	Lieutenant commanders
24.75	Lieutenants
38.5	Lieutenants (junior grade) and ensigns

The Army has corresponding limits on the percentages of various ranks in the promotion lists, for example, 8 per cent colonels, 19 per cent majors. The actual distribution of ranks does not accord

¹⁶ See *Officer Personnel Act of 1947*, Public Law 381, 80th Cong., 1st sess.

¹⁷ Lieutenants of both grades, if retired, receive 2 months' pay for each year of service up to 12 years.

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with these prescriptions, which are long-term peacetime goals, as can be seen from Table 47.

TABLE 47
Active Military Officers by Rank, 1949

	<i>Army</i>	<i>Navy</i>	<i>Marine Corps</i>	<i>Air Force</i>
General of the Army; Fleet Admiral	3	3	0	0
General; Admiral	5	5	1	4
Lt. General; Vice Admiral	20	22	2	12
Major General; Rear Admiral (upper half)	143	115	15	84
Brigadier General; Rear Admiral	177	120	26	107
Colonel; Captain	3,100	2,565	257	1,894
Lt. Colonel; Commander	8,362	4,592	678	3,760
Major; Lt. Commander	11,349	6,589	963	7,054
Captain; Lieutenant	21,564	10,118	1,530	18,900
First Lieutenant;				
Lieutenant j.g.	22,704	13,807	1,962	21,050
Second Lieutenant; Ensign	6,033	6,142	904	2,908

Source: *Second Report of the Secretary of Defense*, Dept. of Defense, 1949, Exhibit 8.

3. Professional Income

Each profession has a structure of earnings or salaries that is elaborate, and as a rule complicated—the exception is military officers, where the existence of a single employer, and of odd personality, makes for a greatly simplified salary structure. Professional earnings usually vary with extent of professional training, size of community, and age; we discuss these factors below.

In each profession, however, more or less peculiar forces are also at work in the salary structure. In college teaching, for example, the extent of the individual's publications influences his reputation and the frequency with which he is asked to teach at another institution. In a recent study of three large Middle Western universities, it was found that a professor's annual salary increased by 49 cents for each page of publication.¹⁸ In law, earnings are probably greater for those who acquired a practice from their

¹⁸ F. S. Kristof, "A Statistical Analysis of Factors Influencing Individual Salaries in Three Institutions of Higher Learning," Columbia University doctoral dissertation, 1952, p. 154.

fathers. We pass over the factors which create differences of earnings among individuals within the classes we distinguish.

AGE

The life pattern of earnings usually appears as follows: earnings start at a relatively low level, rise at a decreasing rate until a peak is reached, and then decline at an increasing rate. This pattern is found in the independent professions, but not in the salaried professions (see Chart 28). Earnings in the independent professions reach a peak somewhere between the ages of 45 and 55; the teachers and military officers receive increasing salaries substantially until retirement. (If one could take account of the outside earnings of college teachers, total earnings would probably show a decline after, say, age 60.)

The eventual decline of earnings is easily explained: the energy, health, and financial needs of a worker decline after a certain age. These factors surely work also in the salaried professions¹⁹—why do salaries continually rise? One may conjecture that the proximate explanation lies in the existence of a hierarchy of ranks. In a profession with ranks, demotion for age alone will not be tolerated by the profession, and rank must be positively correlated with income or it will not serve as an inducement to and reward for good work. Another possible explanation is that the independent worker has greater freedom to vary his working time.

To compare two professions with different life patterns of earnings, one should not simply compare average earnings. Lawyers and college teachers begin to earn money at about the same age, and there may be little difference in life expectancy. Yet lawyers reach a peak in earnings between 50 and 55, but college teachers' salaries rise to age 65. Both life patterns may be converted into present values (we use an interest rate of 4 per cent), and we find that of lawyers (in 1947) was \$135,035 at age 25, and that of college teachers (in 1949, using Kristof's sample) was \$99,655. The former exceeded the latter by 35.5 per cent, whereas the average income of a lawyer was \$7,517 and that of a college teacher \$4,984, and the former exceeded the latter by 50.8 per cent.²⁰ The earlier the peak earnings in a profession, or the higher the earnings

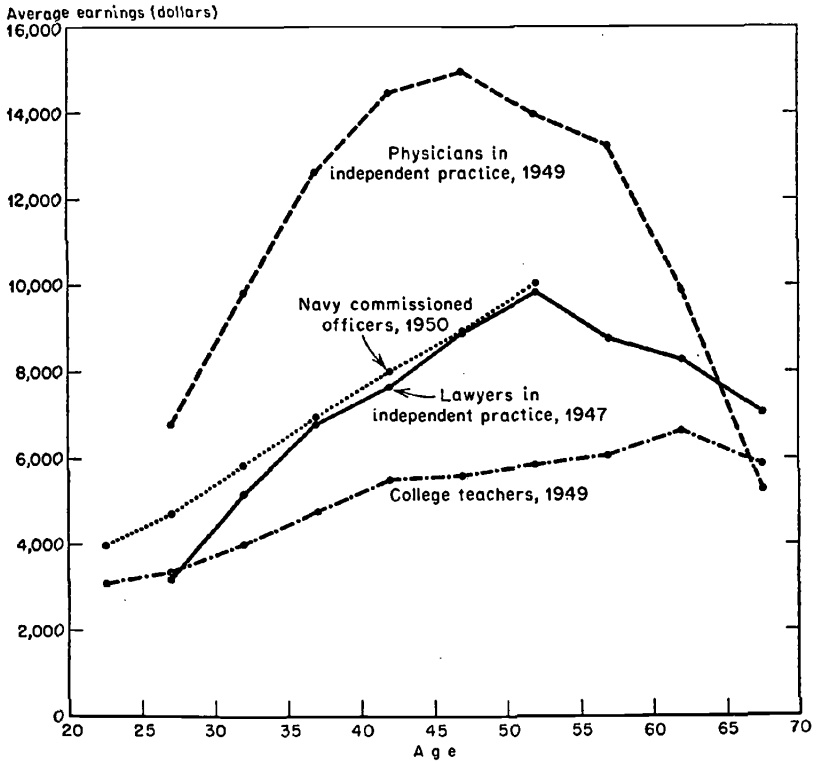
¹⁹ The accumulation of skill and reputation may serve as partial offsets, but they too are operative in the independent professions.

²⁰ The average salary is also influenced by the age structure of the profession, which in fact is a source of the high mean income for lawyers. The unweighted average life incomes were \$7,302 and \$5,279.

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CHART 28

Relation of Age to Income for Four Professions



Source: William Weinfeld, "Income of Lawyers, 1929-1948," August 1949, Table 10, and "Income of Physicians, 1929-1949," July 1951, Table 8, both in *Survey of Current Business*, Dept. of Commerce; F. S. Kristof, *A Statistical Analysis of Factors Influencing Individual Salaries in Three Institutions of Higher Learning*, Columbia University Press, 1952, p. 40; and *Register of Commissioned Officers*, Naval Personnel Bureau, January 1, 1952.

in early years relative to later years, the greater will be the discounted value of future earnings.

SIZE OF COMMUNITY

In the independent professions, earnings are generally larger in the larger communities (see Table 48). The rise is consistent in law; in cities over 1,000,000, net earnings were almost three times as large as in communities under 1,000. These figures probably exaggerate substantially the influence of community size because

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TABLE 48

Mean Net Income of Nonsalaried Physicians, 1949, and Lawyers in Independent Practice, 1947, by Size of Community

<i>Size of Community (population)^a</i>	<i>Mean Net Income of Nonsalaried Physicians^b</i>	<i>Mean Net Income of Lawyers in Independent Practice^c</i>
Under 1,000	\$7,029	\$3,694
1,000-2,500	8,775	4,708
2,500-5,000	11,297	5,060
5,000-10,000	11,581	5,516
10,000-25,000	12,282	6,350
25,000-50,000	12,903	6,236
50,000-100,000	12,991	8,501
100,000-250,000	13,083	7,332
250,000-500,000	14,368	8,348
500,000-1,000,000	12,877	10,057
1,000,000 and over	10,287	10,625

^a Size of community for lawyers' distribution based on 1940 population; returns for physicians classified by size of place on the basis of preliminary 1950 census.

^b Entire source of medical income from nonsalaried practice.

^c Major source of legal income from independent practice.

Source: William Weinfeld, "Income of Physicians, 1929-1949," July 1951, Table 10, and Weinfeld, "Income of Lawyers, 1929-1948," August 1949, Table 8, both in *Survey of Current Business*, Dept. of Commerce.

there may be relatively more young practitioners in small cities, and specialists are chiefly in large cities.²¹

The earnings of physicians depart from this pattern in one respect: earnings decline after the city size exceeds 500,000. No persuasive explanation has been found for this phenomenon, which is not due merely to differences in extent of specialization or age.

In the salaried professions the effect of community size is less marked. Indeed size of community has no effect on salaries of military officers. No direct data are available on college teachers, but common observation suggests that salaries are higher in the larger cities and that outside earnings are a larger proportion of salaries in these cities.

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The only profession for which we have fairly extensive informa-

²¹ In 1947, 47.9 per cent of gross earnings (aside from salaries) were received from businesses by the profession as a whole. See W. Weinfeld, "Income of Lawyers, 1929-1948," *Survey of Current Business*, Dept. of Commerce, August 1949.

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tion on the relationship between training and earnings is that of physicians. In 1949 the fully specialized physicians earned almost twice as much as general practitioners; the respective averages were \$15,014 and \$8,835. The earlier analysis of Friedman and Kuznets suggests that half of this difference is due to the relative concentration of specialists in large cities and their greater average age.²² In a study of three large universities, it was found that teachers with a Ph.D. average \$878 per year more (in 1949) than those without the degree, holding age and volume of publication constant.²³ The preponderance of West Point and Annapolis graduates in the higher ranks suggests that graduates of these institutions also receive higher average salaries than other officers with comparable periods of service.

SALARY AND RANK

In the salaried professions, rank is the primary determinant of income. In military service the salary of an officer will also vary to some extent with the nature of his duties—flying and submarine officers receive extra payment—but this is a relatively minor source of variation. In college teaching, there is relatively little variation within ranks, and it is smaller the lower the rank:

RANK	SALARIES IN LAND GRANT COLLEGES, 1950 ^a			INTER- QUARTILE RATIO
	1st Quartile	Median	3rd Quartile	
Professor	5,299	6,132	7,037	.283
Associate Professor	4,351	4,930	5,492	.231
Assistant Professor	3,696	4,085	4,521	.202
Instructor	2,981	3,202	3,541	.175

^a Teachers on nine-month basis.

There has been a noticeable tendency for the relative salary differentials among ranks to diminish (see Tables 49 and 50). In college teaching the differentials have decreased only since the 1930's, and may reflect only the primary need to make adjustments to the lowest-paid ranks during a substantial inflation.

²² Friedman and Kuznets, *op. cit.*, p. 278.

²³ Kristof, *op. cit.*, p. 154.

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TABLE 49
Salaries of Army Officers by Rank, 1929, 1949,
and Allowances

	CUMULATIVE SERVICE (YEARS)	SALARIES AND ALLOWANCES		PER CENT INCREASE, 1929 TO 1949
		1929	1949	
Major General	Over 30	\$9,700	\$13,761	41.9
Brigadier General	Over 30	7,500	12,222	63.0
Colonel	26-30	7,200	9,981	38.6
Lieutenant Colonel	18-22	6,638	8,271	24.6
Major	14-16	5,448	7,065	29.7
Captain	8-10	4,152 ^a	5,859	41.1
First Lieutenant	4-6	3,252 ^b	4,829	48.5
Second Lieutenant	Under 2	2,196	3,969	80.7

^a Nine to twelve years of service.

^b Three to six years of service.

Source: *Official Army Register*, Adjutant General's Office, 1930 and 1950.

TABLE 50
Median Salaries of Teachers in Land Grant Institutions by Rank,
1929, 1940, 1950 Salaries

	1929	1940	1950	Per Cent Increase,
				1929 to 1950
Professor	\$4,348	\$4,245	\$6,132	41.0
Associate Professor	3,359	3,272	4,930	46.8
Assistant Professor	2,691	2,605	4,085	51.8
Instructor	2,003	1,937	3,202	59.0

Source: 1929 and 1940: George J. Stigler, *Employment and Compensation in Education*, National Bureau of Economic Research, Occasional Paper 33, 1950, Table 28, p. 42. 1950: *Faculty Salaries in Land-Grant Colleges and Universities, 1949-1950*, Office of Education, Circular 283, June 1951, Table 3, p. 4.

MISCELLANEOUS FACTORS

We shall attempt no detailed comparison of the levels of income in the four professions, but certain other factors which would enter into such a comparison deserve brief comment.

1. Length of working year. The college teacher receives at least three months of vacation or—in the case of a third of these teachers—devotes half this time to summer school teaching and receives an approximately pro rata salary.

2. Pensions. Military officers receive 2½ per cent of their terminal salary for each year of service, up to a maximum of 75 per cent

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of this salary. Thus 75 per cent of their terminal salary will normally be received after 30 years of service, or at the age of about 55. College institutions on the average contribute 5 per cent of a teacher's current salary to the purchase of annuities.

3. Outside earnings. These are unreported in the independent professions, but they are probably very small for physicians and possibly appreciable for lawyers. Military officers, one would assume, have only the royalties from memoirs. One may estimate that college teachers earn (aside from teaching in the summer) approximately one-tenth of their basic salary by outside work.

4. Perquisites. Military officers and their families receive a variety of perquisites such as free medical service and the privilege of purchasing through post exchange stores. Every profession has a variety of such perquisites, which we lack the information to estimate in terms of income.

5. Income tax. A progressive income tax will take a larger share of the income of a profession, given its average income, (a) the more unequally it is distributed, and (b) the greater the fluctuations of a practitioner's income through time. It has been roughly estimated that in 1941 the federal income tax took 14.0 per cent of the average income of lawyers, whose income is most unequally distributed (see below), and 10.8 per cent of the average income of physicians, and 2.7 per cent of the average income of college teachers.²⁴

6. Duration of training. In order to offset the costs of training, the greatest of which is the delay in receiving income, certain professions require larger average incomes in order to be as remunerative as others. As a rough rule, earnings in a profession should be larger by 5 per cent for each additional year of training.²⁵ Military officers average about 4 years of training beyond the high school level, lawyers 6 years, college teachers 7 years, and physicians 8 to 9 years.

INEQUALITY

The independent professions display much greater inequality in earnings than the salaried professions (see Chart 29). The differences are marked even between independent and salaried physicians and lawyers. The independent lawyers, for example, probably vary more in skill and preparation than the salaried lawyers. Moreover,

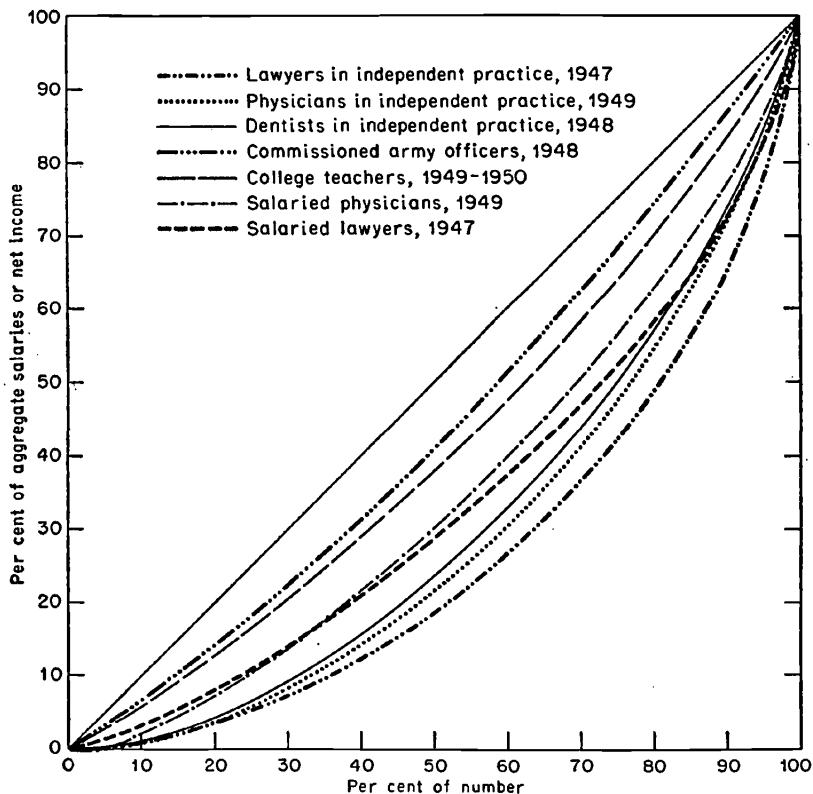
²⁴ Stigler, *op. cit.*, p. 62.

²⁵ See Friedman and Kuznets, *op. cit.*, pp. 142 ff.

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CHART 29

Lorenz Curves of Salaries of Physicians, Lawyers, Army Commissioned Officers, and College Teachers in Land-Grant Institutions and of Net Income of Independent Practitioners in Law, Medicine, and Dentistry, 1947-1950



Source: *Lawyers*: William Weinfeld, "Income of Lawyers, 1929-1948," *Survey of Current Business*, Dept. of Commerce, August 1949, Table 5, p. 20. *Physicians*: William Weinfeld, "Income of Physicians, 1929-1949," *Survey of Current Business*, July 1951, Table 3, p. 13. *Dentists*: William Weinfeld, "Income of Dentists, 1929-1948," *Survey of Current Business*, January 1950, Table 4, p. 11. *Commissioned Army Officers*: *Official Army Register*, Adjutant General's Office, 1949. *College Teachers*: *Faculty Salaries in Land-Grant Colleges and Universities, 1949-1950*, Office of Education, Circular 283, June 1951, Table 3, p. 4.

the income of an independent worker will fluctuate more from year to year, so we should expect greater inequality simply because annual data are reported.

Much of the inequality within a profession can be explained by the directness of the rivalry between members of the profession

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(which is probably at a maximum in law) and the importance to the client of a slight superiority in ability (which is also often great in law, and is usually important in medical practice). College teaching has little direct rivalry, and superiority in teaching (although not in research) often becomes apparent only after a long time period. One would expect much greater inequality in military service than we observe: a great general is surely worth a thousand lieutenants, but great or not he receives about four times as much income. The perquisites of power are less equally distributed, but one may conjecture that the closeness of military salaries is due to the same forces that press all public salaries in the United States within a fairly narrow range.

The inequality of earnings has diminished appreciably in the independent professions within the last decade (see Chart 30).²⁶ Some part of the decrease is attributable in medicine to the extension of specialization, and some part in both medicine and law to the decrease in the community-size differences in earnings.²⁷

THE TREND OF INCOMES

Information on the incomes of independent professional practitioners began to be collected only in 1929, so a comparative anal-

²⁶ The coefficients of variation tell a similar story:

Year	<i>Nonsalaried</i>	<i>Nonsalaried</i>
	<i>Physicians</i>	<i>Lawyers</i>
	(per cent)	
1936		160.4
1945	96.6	115.5
1949	83.6	

Note: See *Survey of Current Business*, August 1949, July 1951.

²⁷ The ratio of earnings in the selected size of community to the national average earnings was as follows:

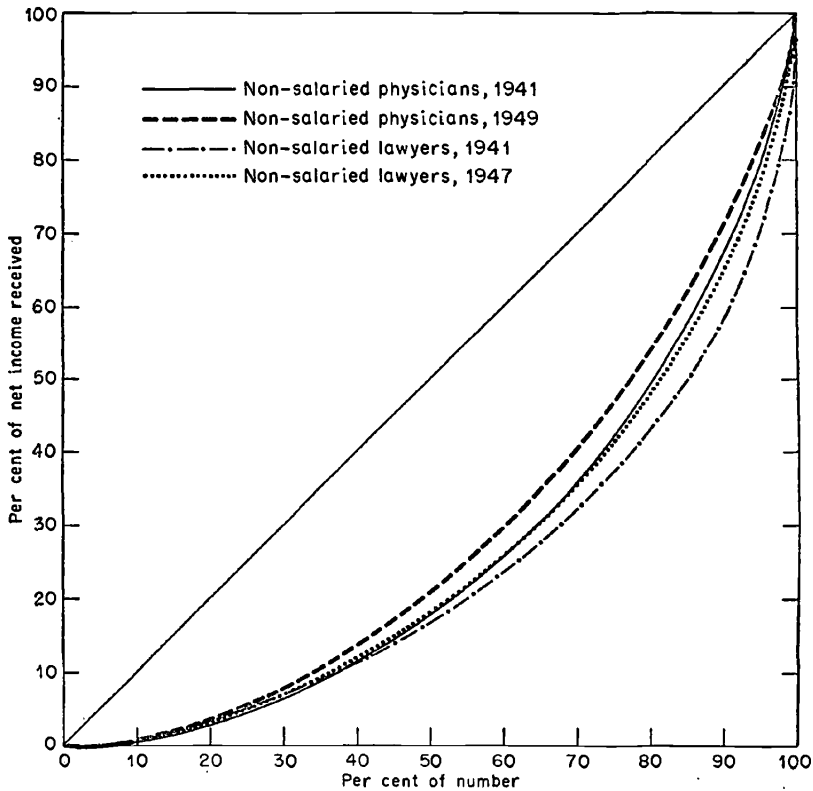
	COMMUNITY SIZE	
	250,000-500,000	20,000-25,000
Lawyers		
1941	113.5	82.4
1947	111.1	84.5
	100,000-500,000	10,000-25,000
Physicians		
1941	127.3	112.7
1949	121.0	102.5

Source: 1941: Edward F. Denison, "Incomes in Selected Professions," *Survey of Current Business*, August 1943, Table 3, p. 24, and Edward F. Denison and Alvin Slater, "Incomes in Selected Professions," *Survey of Current Business*, September 1943, Table 3, p. 17. 1947: W. Weinfeld, "Incomes of Lawyers, 1929-1948," *Survey of Current Business*, August 1949, Table 8, p. 22. 1949: W. Weinfeld, "Income of Physicians, 1929-1949," *Survey of Current Business*, July 1951, Tables 6 and 7, pp. 14-15.

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CHART 30

Lorenz Curves of Net Income of Nonsalaried Lawyers, 1941, 1947, and Nonsalaried Physicians, 1941, 1949



Source: Edward F. Denison, "Incomes in Selected Professions," *Survey of Current Business*, Dept. of Commerce, August 1943, Table 2, p. 24, and October 1943, Table 2, p. 17, and William Weinfeld, "Income of Lawyers, 1929-1948," August 1949, Table 10, and "Income of Physicians, 1929-1949," July 1951, Table 8, both in *Survey of Current Business*.

ysis of the trends of the four professions is limited to about two decades (see Table 51); the salaried professions are carried back two additional decades (see Chart 31). Salaries of military officers are changed only by infrequent acts of Congress—there was no change in salary rates between 1922 and 1942. Short-run changes in the average salary are therefore usually due only to changes in the composition by rank; the estimated average is given for selected years in Table 51. The salary of a given rank of college teacher in a given school also changes infrequently, but the large number of schools is an additional source of short-run variation.

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TABLE 51
Earnings of Independent Practitioners and Salaries of College Teachers
and Commissioned Army Officers, 1929-1952

	AVERAGE NET INCOME OF INDEPENDENT PRACTITIONERS		SALARIES OF COLLEGE TEACHERS		AVERAGE PAY AND ALLOWANCES ^a OF U.S. REGULAR ARMY COMMISSIONED OFFICERS		COST-OF- LIVING INDEX (1947-49 = 100)
	<i>Lawyers</i> (1)	<i>Physicians</i> (2)	(3)	(4)	(5)	(6)	
1929	\$5,534	\$5,224	\$3,056	\$4,800	\$4,232	73.3	
1930	5,194	4,870	3,065	4,800		71.4	
1931	5,090	4,178	3,134	4,800		65.0	
1932	4,156	3,178	3,111	4,800	4,081	58.4	
1933	3,868	2,948	n.a.	4,800		55.3	
1934	4,218	3,382	n.a.	4,800		57.2	
1935	4,272	3,695	2,666	4,800		58.7	
1936	4,394	4,204	2,732	4,800		59.3	
1937	4,483	4,285	2,843	4,800		61.4	
1938	4,273	4,093	2,861	4,800		60.3	
1939	4,391	4,229	n.a.	4,800		59.4	
1940	4,507	4,441	2,906	4,800		59.9	
1941	4,794	5,047	n.a.	4,800	4,800	62.9	
1942	5,527	6,735	2,914	5,096		69.7	
1943	5,945	8,370	3,039	5,096		74.0	
1944	6,504	9,802	3,331	5,096		75.2	
1945	6,861	10,975	3,277	5,096		76.9	
1946	6,951	10,202	3,465	5,528		83.4	
1947	7,437	10,726	3,736	5,528	6,081	95.5	
1948	8,121	11,327	4,123	5,528		102.8	
1949	8,083	11,744	4,234	6,552	7,246	101.8	
1950	8,540	12,324	4,354	6,552		102.8	
1951	8,730	13,432	n.a.	6,552		111.0	
1952	n.a.	n.a.	5,106	6,552		113.5	

(Notes on next page)

Notes to Table 51

^a Including rental, subsistence, and money allowances. n.a. = not available.

Column

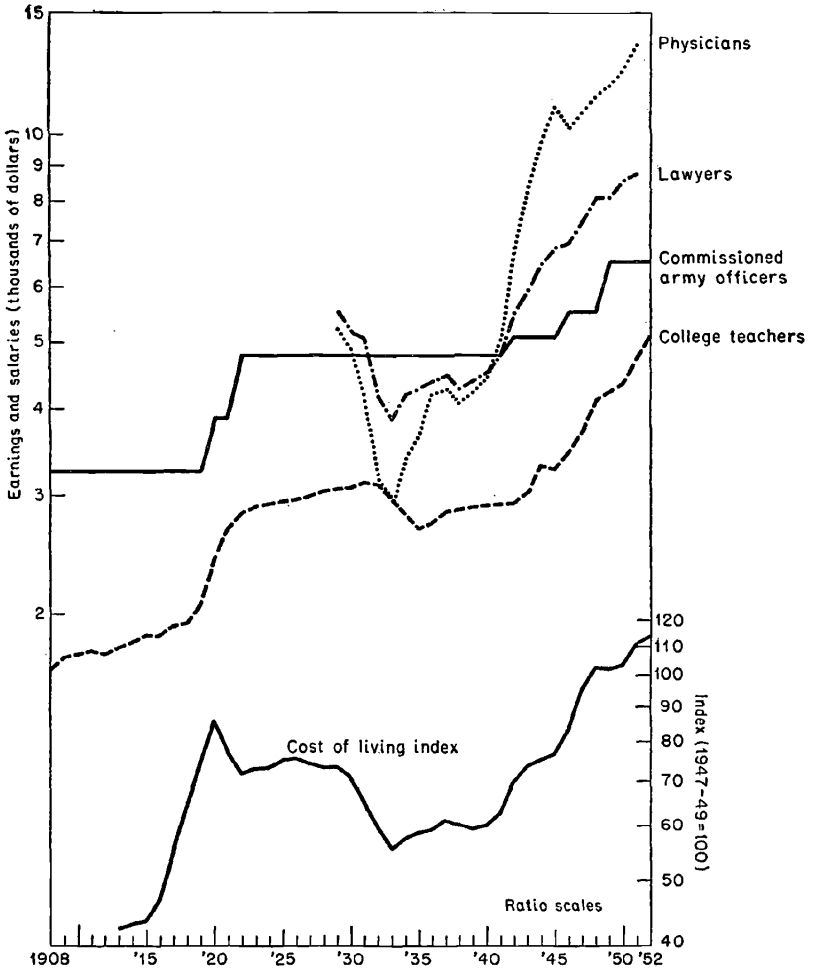
Source

- 1 William Weinfeld, "Income of Lawyers, 1929-1948," *Survey of Current Business*, August 1949, Table I, p. 18.
- 2 William Weinfeld, "Income of Physicians, 1929-1949," *Survey of Current Business*, July 1951, Table I, p. 11.
- 3 Averages of median salaries from George J. Stigler, *Employment and Compensation in Education*, National Bureau of Economic Research, Occasional Paper 33, 1950, p. 44. 1940, 1942, 1950, and 1952: Office of Education Circulars, 1943-1949: Interpolated by expenditures on resident instruction per teacher.
- 4 Weighted averages of average annual earnings (computed according to specified years of cumulative service for each rank). Distribution of ranks for 1941 used as weights throughout (from rates of pay and allowance, *Official Army Register*, Adjutant General's Office, 1930, 1933, 1947, and 1950, and distribution of officers by rank, *Annual Report of the Secretary of the Army*, Dept. of the Army, 1941).
- 5 Averages for selected years obtained by using distribution of officers by rank of same year as weights except for 1947 and 1949, for which years 1948 weights were applied (from rates of pay and allowances, *Official Army Register*, and distribution of officers by rank, *Annual Report of the Secretary of the Army*, 1929, 1932, 1941; *Semi-Annual Report of the Secretary of the Army*, 1947-1948).
- 6 *Monthly Labor Review*, Dept. of Labor, September 1953, Table D-3, p. 1035.

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CHART 31

Earnings of Independent Practitioners; Salaries of College Teachers and Army Commissioned Officers and Cost of Living Index, 1908-1952



Source: Same as in Table 51.

The salaried professions differ strikingly from the independent professions. The former fell relatively little during the 1930's—indeed the rates of pay of persons of given ranks hardly fell at all. On the other hand, earnings in the independent professions fell by about two-fifths, and did not regain the 1929 level until 1942. Thereafter the relationship was almost reversed: salaries of teachers and officers increased by one-half and one-third respectively

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from 1940 to 1950, but earnings of physicians more than doubled and those of lawyers almost doubled. Lawyers' earnings increased much less than those of physicians, chiefly because with rising incomes the demand for medical service grew rapidly. If one averages decades, the difference between the two kinds of professions is emphasized:

	1931-1940	1941-1950	Percentage Increase
Lawyers	\$4,365	\$6,876	57.5
Physicians	3,863	9,725	151.7
College teachers	2,893	3,608	24.7
Army officers	4,800	5,487	14.3

There was a strong tendency for earnings of professional workers to diminish relative to those of the entire full-time labor force between 1929 and 1949 (see Table 52). The differential enjoyed

TABLE 52
Incomes in Selected Professions Relative to
General Labor Force, 1929 and 1949

	1929	1949
Earnings of all full-time employees	\$1,421	\$2,866
Lawyers	5,534	8,083
Physicians	5,224	11,474
College teachers	3,056	4,234
Army officers	4,232	7,246
Ratio to earnings of all employees		
Lawyers	3.89	2.82
Physicians	3.68	4.10
College teachers	2.15	1.48
Army officers	2.98	2.53

Source: *National Income Supplement, 1951, Survey of Current Business*, Dept. of Commerce, Table 26, p. 184.

by college teachers was more than halved, that of lawyers fell by a third, and that of military officers fell by one-fourth. Only the differential of physicians increased, proximately because of the great expansion in the demand for medical service with a lesser increase in the number of physicians. Two years separated by two decades are not sufficient to define trends, but it is probable that the differential between professional and nonprofessional incomes has long been falling and will continue to do so as a continually increasing fraction of the population receives advanced and technical educational training.