

NBER Working Paper Series

THE MARKET FOR LAWYERS:
THE DETERMINANTS OF THE DEMAND FOR
AND SUPPLY OF LAWYERS

B. Peter Pashigian*

Working Paper No. 158

CENTER FOR ECONOMIC ANALYSIS OF HUMAN BEHAVIOR
AND SOCIAL INSTITUTIONS

National Bureau of Economic Research, Inc.
204 Junipero Serra Boulevard, Stanford, CA 94305

December 1976

Preliminary; not for quotation.

NBER working papers are distributed informally and in limited number for comments only. They should not be quoted without written permission of the author.

This report has not undergone the review accorded official NBER publications; in particular, it has not yet been submitted for approval by the Board of Directors.

Research for this paper was supported by a grant from the American Bar Foundation to the National Bureau of Economic Research. Support was also received from the Hoover Institution at Stanford University during the author's stay as a Fellow in the Domestic Studies Program. Patricia Williams, Boyan Jovanovic and Laurie Goodman performed the tedious but important tasks of collecting information and performing the calculations. Helpful comments were received from Aaron Director and George Stigler.

*Professor of Business Economics, Graduate School of Business, University of Chicago, and Senior Research Associate at NBER.

Since the early sixties, students have been attracted to the study and to the practice of law. The number of lawyers increased by 33 percent between 1960 and 1970 after growing by just 14 percent during the previous decade. Interest in the law has not declined since 1970. The annual number of new admissions to the Bar was higher in 1975 than in 1970 by 91 percent. This rapid growth, while unusual, is not unprecedented in the United States, as witness the 30 percent increase in the number of lawyers (and judges) from 1920 to 1930 (Table 1), nor is it limited to the United States, as witness the increase in the number of lawyers in Canada and in England during the sixties. Table 1 also shows the United States has been historically more lawyer intensive than Canada and England.

The renewed interest in the practice of the law and these international comparisons, crude as they are, raise several questions about the underlying determinants of the demand for lawyers. The prosperity of the twenties and sixties indicates the level of economic activity is an important determinant of the demand for lawyers. The role of government regulation is less obvious and more difficult to detect. It is often said the social legislation of the sixties, the expanding scope of government regulations and judicial rulings are responsible for the increase in the number of lawyers. Those who advance the regulation hypothesis often support it with evidence from the sixties. The appeal of the regulation hypothesis is reduced if a longer span of time is studied. The regulation hypothesis does not explain why the U.S. has been historically more lawyer intensive than Canada and England and cannot explain the rapid growth in lawyers during the twenties. Nor does economic theory unambiguously predict an increase in regulation will increase the number of lawyers. At least some types of regulations of industry simultaneously raise the cost of production and increase the use of lawyers. Regulations of this type, e.g. noise or pollution control, encourage a more intensive use of lawyers, but also reduce

TABLE I: NUMBER OF LAWYERS AND JUDGES FOR SELECTED COUNTRIES 1920-1970

Year	Number of Lawyers and Judges (Thousands)			Number per 1,000 persons		
	Canada ^a	England ^b & Wales ^b	U.S. ^c	Canada	England & Wales	U.S.
1920 (1921) ^d	7.5	na	123	.85		1.16
1930 (1931)	8.6	18.9	160	.83	.47	1.30
1940 (1941)	8.4	na	182	.73	na	1.38
1950 (1951)	9.6	23.5	184	.69	.54	1.22
1960 (1961)	12.9	29.3	209	.71	.64	1.17
1970 (1971)	17.6	35.7	278	.82	.73	1.37

Footnotes:

- a. Includes lawyers, notaries, judges and magistrates. The data for 1921 may not be comparable with later years. Small differences may exist after 1951 because of a change from gainfully occupied concept to labor force concept. Census in 1971 changed definition of some occupations. Comparability between 1961 and 1971 has yet to be determined.
- b. Includes judges, barristers, advocates, solicitors. Change in occupation classification after 1951 may distort comparisons between 1961 and 1971 Census data and 1931 and 1951 data. The 1951 Census includes articulated clerks while the 1931 Census did not in this class. Class does not include registrars.
- c. Includes lawyers and judges.
- d. Population Census in Canada and Great Britain is taken during the second year of each decade.

na: not available

Sources:

Canada: Census of Canada, various dates; Ninth Census of Canada, Occupation and Industry Trends in Canada; Dominion Bureau of Statistics, no date.

England & Wales: General Registrar Office, Census 1951, Occupation Tables (London: Her Majesty's Stationery Office: 1956) Table D; General Registrar Office, Census 1961, Occupation Tables (London: Her Majesty's Stationery Office: 1966) Table 1; General Registrar Office, Census 1971, Summary Table (1% Sample) (London: Her Majesty's Stationery Office: 1973) Table 16.

U.S.: Census of Population, 1920 to 1970.

industry output and employment because of higher product prices. Whether this type of regulation increases the number of lawyers, depends on the strength of these two opposing forces.^{1/} Economic theory and some of the empirical evidence suggests that government regulation may not be an important a determinant of the demand for lawyers. Clearly some additional evidence on the comparative effect of income, regulation as well as other variables on the demand for lawyers is called for.

Professional training in law often requires three years of schooling. Specialized training could lead to oscillatory or "cobweb" patterns in earnings and number of lawyers if prospective entrants fail to correctly forecast future demand and cost conditions. Recent concern has been expressed that the current large enrollments in law schools will depress earnings in law as the market adjusts to the large graduating classes. Freeman [1974] provides some results suggesting that such oscillations are an important characteristic of the market for lawyers. There are, however, several reasons to suspect that oscillations due to systematic forecast errors cannot be of great importance in the market for lawyers. The training of lawyers is sufficiently general that recent graduates could and have substituted into other business occupations if and when earnings in law are unduly depressed. In addition, systematic forecast errors committed by prospective law students imply the periodic existence of profitable investments in legal education. These reasons suggest a reconsideration of the legal market to determine if cobweb patterns are in fact an important phenomenon of the market for lawyers.

^{1/} If new legislation or administrative rulings reduce uncertainty at a lower transaction cost than would occur within the existing legal system in the absence of the new legislation, then the demand for lawyers may decline with added regulation.

Another objective of this paper is to investigate the speed of adjustment of law schools to shifts in the demand for lawyers. Law schools are members of private nonprofit and public educational institutions. A large proportion of law schools are approved by the American Bar Association (ABA). Profit making law schools are excluded from the market and have been opposed by the A.B.A. The organization of the legal education industry and the effect of this type of organization on property rights and on the speed of adjustment of enrollments to shifts in demand have not been given serious attention.

Section I presents a theoretical model of the demand for and supply of lawyers. The empirical counterparts of the variables are introduced in Section II. Section III presents the results of the estimation and Section IV compares the actual number of lawyers with the number that would have existed if lawyers earned a normal return on their investment in legal education. Section V presents other evidence of an excess demand for lawyers and offers several explanations for the speed of adjustment of enrollments in law schools to shifts in the demand for lawyers. The paper ends with a summary of the major findings of the paper.

I. The Theoretical Model

The number of practicing lawyers in year t equals a fraction of the number practicing in year $t - 1$ plus a fraction of new admissions to the bar in year t .^{1/}

^{1/}Not all new admissions begin the practice of law. While the depreciation rate of new admissions may differ from the rate for existing lawyers, it could be higher or lower. Older and more experienced lawyers have greater investments in on the job training and would have lower depreciation rates to offset the higher rates due to retirements, etc.

$$(1) \quad L_t = (1 - d) [L_{t-1} + NA_t] ,$$

where d denotes the depreciation rate and measures the effects of voluntary quits, deaths and retirements. New admissions to the bar in t equal some proportion of first year law students in year $t - 3$, F_{t-3}

$$(2) \quad NA_t = c_t F_{t-3} + \eta_t$$

where c_t is the proportion of first year students in $t - 3$ who have completed law school and passed the bar examination in t . η_t is a random variable and represents successful candidates who have failed the bar examination in previous attempts or have taken longer to complete law school because they were part time students.

The demand for legal services in t is given by

$$(3) \quad LS_t^D = \alpha_1 + \alpha_1 LE_t + \alpha_2 Z_t + u_t \quad \alpha_1 < 0, \alpha_2 > 0 ,$$

where LS_t^D denotes the quantity of legal services demanded, LE_t denotes the annual earnings per lawyer, Z_t is a vector of exogenous variables (discussed in detail below) and u_t is a disturbance term.^{1/}

^{1/}The quantity demanded is normally related to the price charged per day (hour), P_t . Earnings have been used as a substitute. This approximation is acceptable if total days worked per year, h_t and the share of total revenues accounted for by operating costs, v_t , have not changed appreciably over time. Under these assumptions

$$P_t = \left(\frac{1}{1 - v_t}\right) \left(\frac{1}{h_t}\right) LE_t = \gamma LE_t \quad \text{where} \quad \gamma = \left(\frac{1}{1 - v}\right) \left(\frac{1}{h}\right) .$$

The quantity of legal services supplied, LS_t^S is assumed to increase with the number of lawyers, L_t , and the earnings of lawyers. The existing stock of lawyers supplies more services by increasing the use of other factors when legal earnings rise and increases in the number of lawyers increases the supply of legal services, given legal earnings

$$(4) \quad LS_t^S = \beta_0 + \beta_1 LE_t + \beta_2 L_t + v_t \quad \beta_1, \beta_2 > 0,$$

where v_t is a disturbance term. Under this formulation an increase in earnings outside of the legal industry does not have an immediate effect on the supply of legal services but reduces the supply of legal services in the long run by reducing the number of lawyers. Given the stock of lawyers, $LS_t^D = LS_t^S$ when

$$(5) \quad LE_t = \frac{(\beta_0 - \alpha_0) + \beta_2 L_t - \alpha_2 Z_t + v_t - u_t}{\alpha_1 - \beta_1}.$$

Since $\alpha_1 - \beta_1 < 0$, LE_t decreases with L_t and increases with Z_t .

In long run equilibrium the number of lawyers is determined so that a prospective law student anticipates a normal rate of return on the investment in legal education. If the number of lawyers is less than this equilibrium number, the anticipated rate of return on the investment in legal education will exceed the normal rate of return. The number of first year law students will increase and three years later the number of lawyers will increase. This adjustment to long run equilibrium may be described with the aid of graphs. Let the demand curve for legal services be given by DD in Figure 1. If the current number of lawyers is L_1 , the supply curve of legal services is given

by SS. Assume a college graduate can earn U dollars per year. Because the college graduate must forego $\$U$ for three years while attending law school, the graduate will enter law school only if $LE \geq (1+r)^3 U$.^{1/} Because $LE_1 > (1+r)^3 U$, the anticipated rate of return from legal training exceeds the normal rate of return, r . Law school enrollments and the number of lawyers increase. The supply curve shifts to $S'S'$. The number of lawyers increases to L_2 , earnings decline to $(1+r)^3 U$ and the quantity of legal services increases to LS_2 . The market is now in long run equilibrium since a normal rate of return is earned on the investment in legal education

In long run equilibrium the annual earnings of a lawyer may be expected to exceed $(1+r)^3 U$. The probability of completing law school and passing the bar examination within three years of beginning law school has been appreciably less than one, varying from an estimated low of .26 in 1938 to a high of .47 in 1969 over the 1925-1940 and 1951-1970 periods.^{2/} Embarking on a legal career has been a somewhat risky endeavor. It is possible to derive an estimate of long run equilibrium earnings that reflects the probability of failure.

^{1/}The present value of earnings for a college graduate is:

$$\sum_{i=0}^{\infty} U \frac{1}{(1+r)^i} .$$

The present value of earnings for a college graduate who enters and completes law school is (ignoring tuition):

$$\sum_{i=3}^{\infty} LE \frac{1}{(1+r)^i} .$$

These two streams are equal if $LE = (1+r)^3 U$.

^{2/}These figures overestimate the degree of uncertainty since many candidates who fail the initial bar examination try again until they pass.

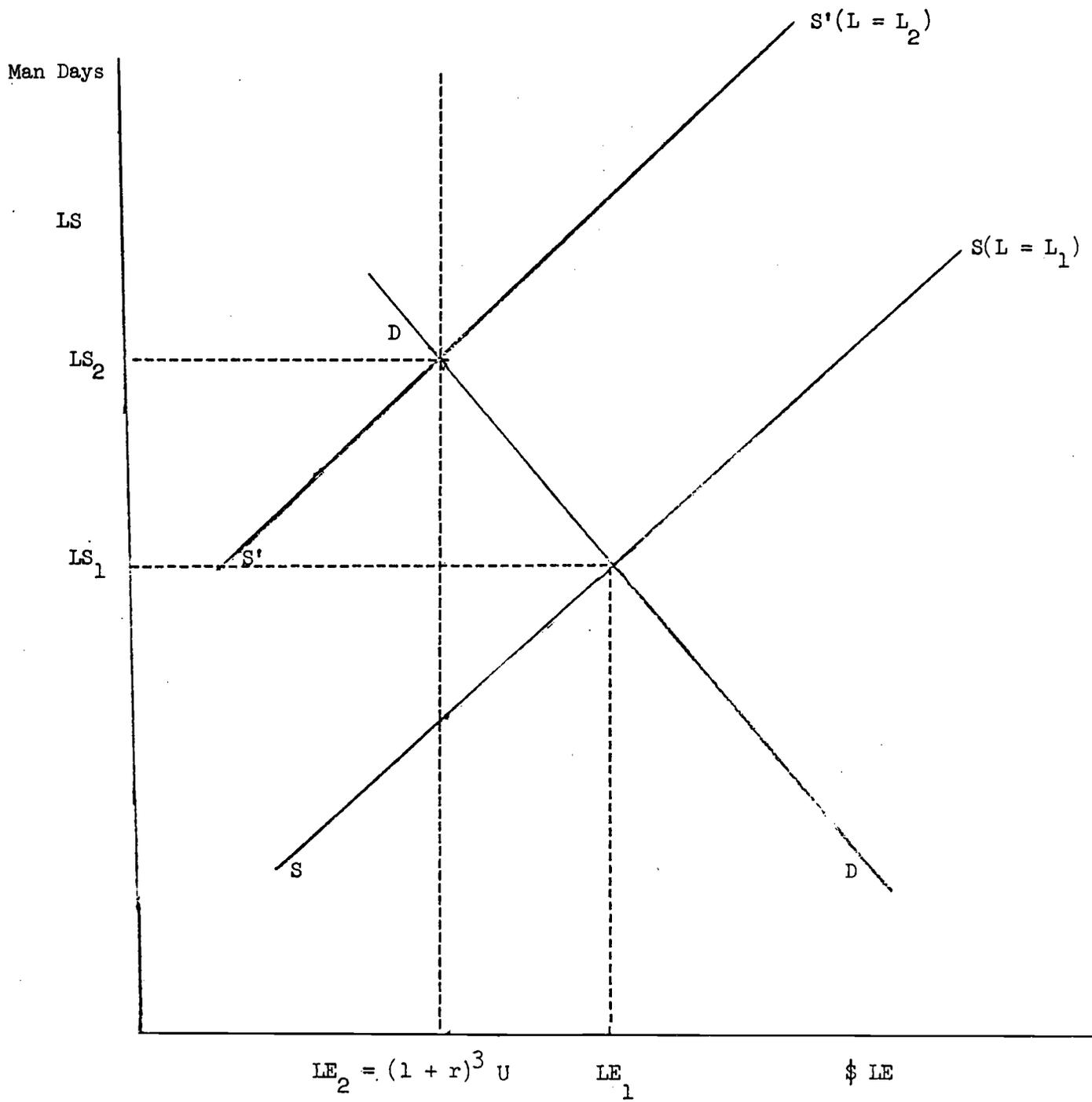


FIGURE I

The probability of completing law school, \hat{p} , and the probability of passing the bar examination, p , help determine the annual earnings of a lawyer when the market is in long run equilibrium. In Appendix A the long run equilibrium earnings of a lawyer are shown equal to

$$(6) \quad LE_t = (1 + r)^3 U_t H_t$$

where

$$(7) \quad H_t = \left[\frac{(1+r)^2 - (1-\hat{p})(1+rh)^2}{p\hat{p}(1+r)^2} - \frac{(1-p)}{(1+r)p\hat{p}} - \frac{(1+rh)^3(1-p)r}{(1+r)^4 p} + \frac{(1+rh)^2(1-\hat{p})(1-p)}{(1+r)^3 \hat{p}p} \right]$$

where $1 + rh$ ($0 < h < 1$) is the assumed rate of return earned by a law student who has graduated but has not passed the bar examination.^{1/} Equation (6) indicates the real earnings of lawyers should exceed the real earnings of college graduates by more than $(1 + r)^3 U$ if p or \hat{p} is less than one. Table II shows that a change in \hat{p} has a larger effect on the LE to U ratio than a comparable change in p .^{2/}

Equation (6) may be modified to reflect the uncertainty of future earnings of lawyers and college graduates. In long run equilibrium the forecast made in $t - 3$ of real annual earnings per lawyer in t , ${}_{t-3}LE_t$, is

^{1/}The time subscripts on p and \hat{p} have been suppressed in equation (7) for convenience.

^{2/}This result assumes that a candidate who fails the bar exam tries again and again while a student that fails out of law school does not re-enter law school.

related to the forecast made in $t - 3$ of real annual earnings of a college graduate in t , ${}_{t-3}U_t$, through

$$(8) \quad {}_{t-3}LE_t = {}_{t-3}U_t(1+r)^3H_t.$$

Equation (8) defines an equilibrium in terms of the forecasts of the earnings of a representative lawyer and a representative college graduate. With rational expectations the forecast of earnings in t made by first year law students in $t - 3$ is assumed equal to the mean of the distribution of lawyer earnings in t [Muth, 1961].

$$(9) \quad {}_{t-3}LE_t = {}_{t-3}E(LE_t)$$

where E denotes the mathematical expectation given the information available in $t - 3$. First year law students are assumed to neither systematically over or under estimate their future earnings under rational expectations.

In $t - 3$ anticipated lawyer earnings in t will depend on the current stock of lawyers, L_{t-3} , the current flow through the pipeline, F_{t-5} , F_{t-4} , F_{t-3} and the forecast of the exogeneous variable in the demand curve ${}_{t-3}Z_t$. This result may be derived formally by first noting that L_t is related to L_{t-3} , F_{t-3} , F_{t-4} and F_{t-5} through

$$(10) \quad L_t = (1-d)^3L_{t-3} + (1-d)^3c_{t-2}F_{t-5} + (1-d)^2c_{t-1}F_{t-4} \\ + (1-d)c_tF_{t-3} + (1-d)^3\eta_{t-2} + (1-d)\eta_{t-1} + (1-d)\eta_t.$$

Substituting (10) into (5) and the result into (9) and then taking the

TABLE II

RATIO OF LE TO U FOR SELECTED VALUES OF THE PROBABILITY
OF COMPLETING LAW SCHOOL AND THE PROBABILITY
OF PASSING THE BAR EXAMINATION^{a/}

\hat{p} \ p	.5	.8	1.0
.5	1.57	1.49	1.44
.8	1.40	1.37	1.36
1.0	1.34	1.33	1.33

^{a/} \hat{p} denotes the probability of passing the bar examination in a given period
 \hat{p} denotes the probability of completing law school. Note: Ratios are
calculated assuming $(1+r) = 1.1$ and $h = .5$.

mathematical expectation, yields the desired equation for ${}_{t-3}LE_t$.^{1/}

$$(11) \quad {}_{t-3}LE_t = \frac{(\beta_0 - \alpha_0) - \alpha_2 {}_{t-3}Z_t + \beta_2 [(1-d)^3 L_{t-3} + (1-d)^3 c_{t-2} F_{t-5} + (1-d)^2 c_{t-1} F_{t-4} + (1-d) c_t F_{t-3}]}{\alpha_1 - \beta_1}$$

The equilibrium number of first year students enrolled in $t - 3$ when the market is expected to be in a long run equilibrium in t can be derived by substituting from (11) into (8) and by solving for F_{t-3}^e .

$$(12) \quad F_{t-3}^e = \frac{(\alpha_0 - \beta_0) + \alpha_2 {}_{t-3}Z_t + (\alpha_1 - \beta_1)(1+r)^3 H_{t-3} U_t - \beta_2 [(1-d)^3 L_{t-3} + (1-d)^2 c_{t-1} F_{t-4} + (1-d)^3 c_{t-2} F_{t-5}]}{\beta_2 (1-d) c_t}$$

F_{t-3}^e denotes the equilibrium number of first year law students given the forecast of Z_t , the stock of lawyers in $t - 3$, the size of the entering classes in $t - 4$ and $t - 5$ and current completion rates.^{2/} The

^{1/}In taking the mathematical expectation it is assumed that

(1) c_{t-1} ($i = 0, 1, 2$) are predicted without error; (2) ${}_{t-3}E(\eta_{t-1}) = 0$

($i = 0, 1, 2$) and (3) ${}_{t-3}E(v_t - u_t) = 0$. Completion rates, c_{t-i} , are treated as exogenous. A more general study would attempt to explain changes over time in the completion rates.

^{2/}If the completion rates vary with the size of the first year class, the observed completion rate will differ from the (unobserved) completion rate that would exist if the first year class equals F_{t-3} . In the empirical work reported below the observed completion rates are substituted for the completion rates that would be observed if a long run equilibrium was continuously achieved. However, completion rates will in general depend on relative earnings and therefore on the size of the first year class. Therefore, some measurement error is introduced with this assumption. A more general formulation would make the completion rate endogeneous.

equilibrium number of new admissions in t is given by

$$(13) \quad NA_t^e = \left[\frac{\alpha_0 - \beta_0 + \alpha_2 z_{t-3} + (\alpha_1 - \beta_1) H_{t-3} + U_t}{\beta_2} \right] - (1 - d)_{t-3} L_{t-1} .$$

Equation (13) requires that new admissions in period t equal the difference between the number of lawyers demanded at the anticipated equilibrium earnings per lawyer (the expression in the square brackets) and the expected number of lawyers in t as projected in $t - 3$ from the size of the entering classes in $t - 4$ and $t - 5$.

The actual number of first year students may be less than the long run equilibrium number during periods of growth. Entry by profit making law schools is prohibited and entry by nonprofit law schools is regulated by minimum requirements established by the A.B.A. Within the nonprofit sector the incentives for growth are attenuated. Tuition does not differ appreciably between departments or professional schools and is independent of demand conditions. In many law schools tuition could have been increased in the last ten years or so without reducing enrollment but with a lowering of the quality of student. Yet, some law schools act as if any increase in the net income of the law school due to an increase in tuition or enrollment will be taxed at a high marginal rate. In particular, the incentive to increase enrollment is reduced if the use in net income reverts to the central administration. The degree of attenuation of property rights is not random across law schools. In his pioneering study of law schools in the twenties Reed [1928] distinguished between law schools in universities with extensive private endowments or public support and those in universities with little private or public support.

Law schools in universities with little private or public support were in fact virtually independent operations whose net revenue depended on their ability to attract tuition paying students. These law schools placed relatively low prerequisites on prospective students requiring none or one year of college. Well endowed law schools placed higher prerequisites on prospective students by requiring a college degree. Differences in this type of behavior can be explained by differences in property rights. While changes have occurred since, the distinction between higher and lower quality schools remains a useful one. In summary there are two reasons for expecting a slower response to a shift in demand for lawyers: restrictions on the formation of new law schools and the attenuation of property rights in existing law schools.^{1/}

If these arguments have some validity, the actual number of first year students may at times differ from the equilibrium number. The speed of response by the legal education industry to shifts in demand can be estimated and the model has been formulated to provide some estimates of this response rate. It is assumed that the number of places in law schools for first year students is always large enough to satisfy replacement demand due to retirements, etc. The number of first year students required to satisfy replacement demand equals $(d_{t-1}L_{t-1})/(c_t(1-d))$. A second assumption is that places for first year students expand so that a proportion, w , of the discrepancy between the equilibrium number of lawyers in t and the projected number of lawyers in t ,

^{1/}The attenuation of property rights should also exist in other fields as well, e.g. business. If the legal education industry responds less rapidly than the business education industry, it is presumably because of differences in the cost of entry.

${}_{t-3}L_{t-1}$ is satisfied.^{1/} Under these two assumptions the observed number of first year students equals:

$$(14) \quad F_{t-3} = \omega \left[\frac{\alpha_0 - \beta_0 + \alpha_2 {}_{t-3}Z_t + (\alpha_1 - \beta_1) H_{t-3} U_t}{\beta_2 (1-d) c_t} - \frac{{}_{t-3}L_{t-1}}{(1-d) c_t} \right] + \frac{d}{(1-d) c_t} {}_{t-3}L_{t-1},$$

where $0 < \omega < 1$. If $\omega = 1$, the actual number of first year law students equals the equilibrium number.

By combining equations (1), (2), (12) and (14), L_t , NA_t and F_{t-3} can be expressed as

$$(15a) \quad L_t = L_{t-1} + \frac{\omega D_t}{\beta_2} - \omega ({}_{t-3}L_{t-1}) + e_t$$

$$(15b) \quad NA_t = \frac{\omega D_t}{(1-d)\beta_2} + \frac{(d-\omega)({}_{t-3}L_{t-1})}{(1-d)} + e'_t$$

$$(15c) \quad F_{t-3} = \frac{\omega D_t}{(1-d)c_t\beta_2} + \frac{(d-\omega)({}_{t-3}L_{t-1})}{(1-d)c_t} + e''_t,$$

where $D_t = (\alpha_0 - \beta_0) + \alpha_2 {}_{t-3}Z_t + (\alpha_1 - \beta_1)(1+r)^3 H_{t-3} U_t$.

Equations (15a)-(15b) contain forecasts made in $t-3$ of L_{t-1} , Z_t and U_t . The empirical work has been simplified by assuming these predicted

^{1/}The loss in the number of lawyers between $t-1$ and t due to depreciation is completely replaced.

values equal the actual values of these variables plus a nonserial correlated random variable. Under this assumption, the actual values of the variables may be substituted for the predicted values. These substitutions are justified in part because the series in question appear to be smooth and the forecast errors are likely to be small.^{1/}

Under these assumptions equations, the reduced form equations, (15a)-(15c), may be rewritten as

$$(16a) \quad L_t = (1 - \omega)L_{t-1} + \frac{\omega}{\beta_2} D_t + g_t$$

$$(16b) \quad NA_t = \frac{\omega}{\beta_2} D_t + \frac{(d - \omega)L_t}{(1 - d)} + g'_t$$

$$(16c) \quad F_{t-3} = \frac{\omega D_t}{(1 - d)c_t \beta_2} + \frac{(d - \omega)L_{t-1}}{(1 - d)c_t} + g''_t$$

where g_t , g'_t , g''_t , are random variables. L_t , NA_t and F_{t-3} should be related to the exogenous variables entering through Z_t and the opportunity cost variable $(1 + r)^3 H_{t-3} U_t$. L_{t-1} enters with a positive coefficient in (16a) and a negative coefficient in (16b) or (16c) if $\omega > d$. As ω approaches zero (one), the coefficients of L_{t-1} will approach one (zero) in (16a) and zero

^{1/}The analysis could be extended by forecasting each of the exogenous variables and then using these forecasts in the regression analysis. If $Z_t = {}_{t-3}Z_t + \xi_t$, the use of Z_t as an independent variable will introduce some bias because the disturbance term in the regression includes ξ_t which is correlated with the independent variable Z_t . If the variance of ξ_t is small relative to the variance Z_t , the bias will be small.

(minus one) in (16b) and (16c). Empirical estimates of the coefficients of (16a) and (16b) are presented below.^{1/}

II. Discussion of Selected Time Series, 1920-1970

A. Number of Lawyers, New Admissions and First Year Law Students

A continuous time series of lawyers from 1920 to 1970 does not exist. The decennial census estimates of the number of lawyers may be combined with the annual number of new admissions to the bar to produce an estimate of the depreciation rate for each decade from the expression

$$L_t = \sum_{i=0}^{i=9} (1 - d)^{i+1} NA_{t-i} + (1 - d)^{10} L_{t-10}$$

where L_t and L_{t-10} are Census of Population estimates of practicing lawyers^{2/} and NA_{t-i} is known for $i = 0$ to $i = 9$. A value of d may be determined which satisfies the equality during each decade from 1910 to 1970. The decennial estimates of d are shown below.

^{1/}Equation (16c) could be estimated by using D_t/c_t and L_{t-1}/c_t as independent variables. However, accurate estimates of c_t are difficult to obtain without separating full time from part time students. Some preliminary results were not promising, perhaps because of the measurement errors in c_t .

^{2/}More precisely, the Census combines lawyers and judges.

<u>Decade</u>	<u>Depreciation Ratio</u>	<u>Decade</u>	<u>Depreciation Ratio</u>
1910-1920	.030	1940-1950	.038
1920-1930	.031	1950-1960	.039
1930-1940	.037	1960-1970	.030

Comparatively low depreciation rates were experienced from 1910 to 1930 and from 1960-1970. The highest depreciation rate occurred in the decade from 1950 to 1960. It is likely that trends in the depreciation rates accurately reflect the level of prosperity in the legal service industry. By this test the periods from 1910 to 1930 and 1960-1970 were prosperous ones for the legal profession.

Once the estimate of d is known for each decade, the number of lawyers in each year of the decade may be estimated. As Table I indicates the number of lawyers grew rapidly during the 1920's and in the 1960's. This may be seen even more clearly by examining the time path of new admissions to the bar in Table III. New admissions increased rapidly after 1920 and peaked in 1930. It is revealing that new admissions to the bar remained at comparatively high levels during the first half of the thirties, averaging 9,477 per year from 1930-1934. New admissions declined after 1934 but still averaged 8,772 per year from 1935-1939 compared to 9,132 per year from 1925-1929. Given the large decline in real income from 1929 to 1934, the modest decline in new admissions over this period suggests that relative earnings of lawyers remained high during the first half of the Depression. In the immediate post war World War II period new admissions surged and then remained relatively constant throughout the fifties at a level slightly higher than the late twenties. New admissions have grown rapidly since 1963.

TABLE III

NEW ADMISSIONS TO THE BAR 1920-1940; 1951-1970

Selected Years

	Number of New Admissions	Index 1930 = 100		Number of New Admissions	1930 = 100
1920	5,586	56	1950	13,641	136
1922	6,530	65	1952	11,900	119
1924	7,241	72	1954	9,928	99
1926	9,025	90	1956	9,450	94
1928	9,851	98	1958	10,465	105
1930	10,012	100	1960	10,505	105
1932	9,340	93	1962	10,784	108
1934	9,099	91	1964	12,023	120
1936	8,627	86	1966	14,637	146
1938	8,797	88	1968	17,764	178
1940	7,952	79	1970	17,922	179

Source: National Conference of Bar Examiners, Bar Examiner, various issues.

B. Actual and Equilibrium Earnings of Lawyers

No continuous series of lawyer earnings exists and those that do exist are limited. From 1929 to 1954 the Department of Commerce surveys estimate the income of lawyers in individual practice. The Internal Revenue Service (I.R.S.) provides tax return data of the net income of sole proprietors submitting Schedule C and informational return data of partners in 1949 and 1953 and annually since 1957. The two series were spliced together by (1) interpolating the I.R.S. data from 1953 to 1957, and (2) adjusting the I.R.S. series upward by 27 percent since the Department of Commerce data exceed the I.R.S. data by an average of 27 percent in 1949 and 1953, two recent years where a comparison is possible.^{1/} A more detailed discussion of the income data is presented in Appendix B.

Real lawyer earnings from 1929 to 1970 (in 1947 prices) are shown by the series marked I in Figure II. Real earnings of lawyers remained fairly stable from 1929 to the middle fifties and increased markedly thereafter. The right hand side of equation (6) may be used to calculate an estimate of equilibrium earnings of lawyers. Because a long time series of earnings of college graduates or of high school graduates does not exist, annual earnings of full time employees were adjusted upward to derive an estimate of the earnings of high school graduates (see Appendix B). r was arbitrarily set at .10, an estimate close to other estimates of the rate of return on education. The time

^{1/}The I.R.S. estimates are below the Commerce estimates because a lawyer who is a member of a partnership but also has some independent practice will submit a Schedule C (as a single proprietor) and will also be included in the information return of the partnership. A salaried lawyer with a practice on the side will also submit a Schedule C return. Because of the method of reporting, I.R.S. estimates of net income per lawyer should be biased downward.

series of estimated equilibrium earnings of lawyers is shown by the series marked by 0 in Figure II. The actual earnings of lawyers exceeded equilibrium earnings by decreasing amounts from 1929 to the early fifties. The discrepancy disappears in the early 1950's but reappears and increases throughout the 1960's. The ratio of actual to equilibrium earnings is shown in Figure III. This ratio equaled 1.67 in 1929, declines, hovers around unity throughout the early fifties, rises during the sixties and equaled 1.29 in 1970. This review of the earnings data suggests the market was adjusting to long run equilibrium between 1929 to the early fifties. Real lawyer earnings remained flat from 1929 to the mid-fifties while long run equilibrium earnings continued to increase. New admissions remained relatively high throughout the thirties because of the relatively favorable earnings of lawyers although the decline in new admissions in the late thirties is not explained by the relative earnings data. During the fifties the market for lawyers appears to have been in long run equilibrium, and the approximate stability of new admissions during this period is consistent with this conclusion. The rise in new admissions since 1963 is consistent with the rise in the relative earnings of lawyers. A surprising finding of this historical review of relative earnings is that the speed of adjustment to long run equilibrium has been low since the excess of actual over equilibrium earnings has persisted for relatively long periods of time.

C. Exogeneous Determinants of the Demand For Legal Services

Given a body of law and current interpretations of this body of law, increases in the level of economic activity will increase the number of transactions between consumers and firms and between firms and presumably raise the demand for lawyers. Given the level of economic activity, an increase in

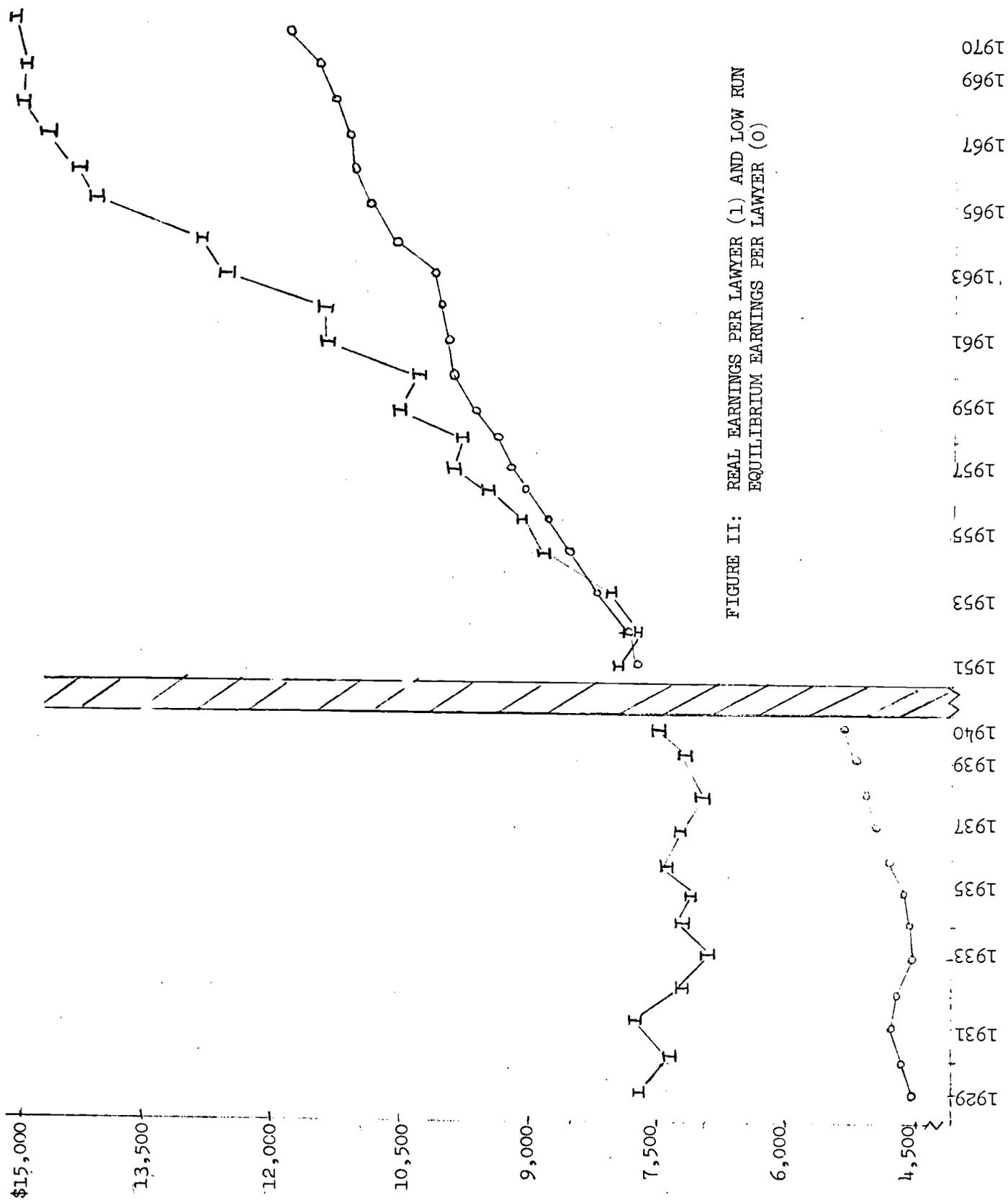
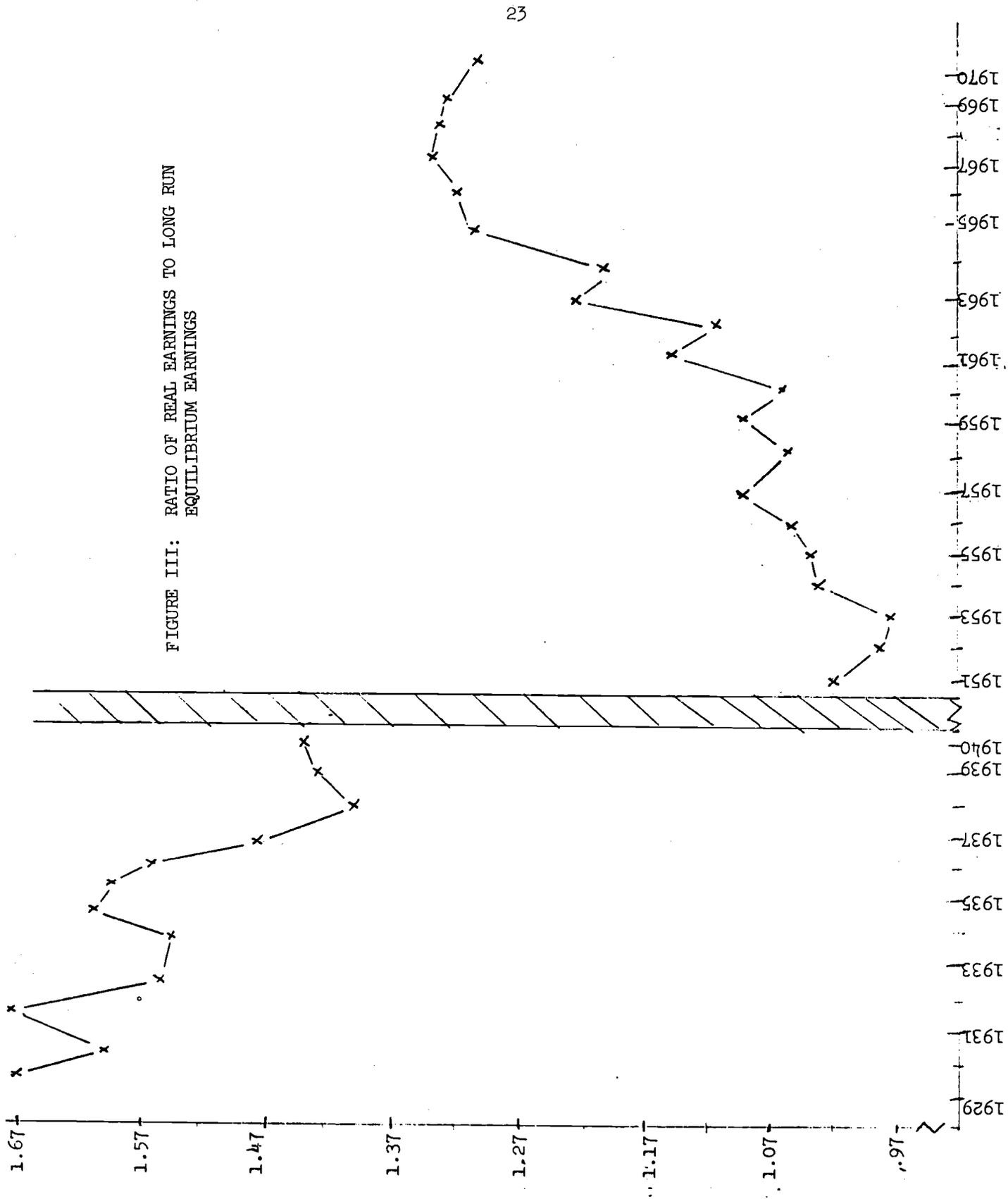


FIGURE II: REAL EARNINGS PER LAWYER (1) AND LOW RUN EQUILIBRIUM EARNINGS PER LAWYER (0)

1970
1969
1967
1965
1963
1961
1959
1957
1955
1953
1951
1940
1939
1937
1935
1933
1931
1929

FIGURE III: RATIO OF REAL EARNINGS TO LONG RUN EQUILIBRIUM EARNINGS



the number of regulations will also raise the demand for lawyers. The purpose of the econometric estimation is to quantify these two effects.^{1/}

Consumers, firms and governments are the major users of the services of lawyers. Recent surveys do allow some perspective on the relative importance of consumers and firms as contributors to revenue of the legal service industry, i.e. single proprietors and partnerships and certain nonprofit firms.^{2/} In 1948 the Department of Commerce reported consumers accounted for 52 percent of total billings of the legal service industry [Winfield, 1949]. The 1972 Census of Selected Services reported consumers accounted for 53 percent of total billings. Individuals appear to produce about the same dollar volume as firms do and somewhat surprisingly, the consumer share has not declined over time.^{3/}

Several proxy variables have been used to identify those transactions where the services of a lawyer are likely to be used. The variables and the symbols used are discussed below.

^{1/}Time series analysis may be a superior way of measuring the adjustment to equilibrium while a cross state analysis may be a superior way of identifying the separate effects of each of the variables on the demand for lawyers since the variables in the demand equation tend to move together through time.

^{2/}In house council and government lawyers would be excluded from these figures.

^{3/}If the burden of the increasing scope of regulation has been placed on firms, it should have caused a relative rise in the use of the legal service industry by the business sector. If this effect is operating, it has been offset by a corresponding rise in the services demanded by consumers.

1. Consumer

Besides the level of real income, certain transactions have been singled out for analysis.

a. Real Estate Transactions (MORG): A continuous time series real estate transactions does not exist. Nonfarm housing mortgage loans made by savings and loans deflated by the rent price index were used as a measure of the volume of transactions in the real estate market.^{1/}

b. Divorce (DIV): The total divorce rate per 1000 population was used.

c. Automobile Accidents (LOSS): Real dollar losses paid by insurance companies for auto insurance (property and liability) divided by total motor vehicle registrations was used.

2. Business

Transactions among firms create a demand for legal services. The volume of transactions among firms in an economy will be directly related to the size of the economy. Given the size of the economy, the number of transactions requiring legal services will depend on the average size of the firm.

If there are relatively few firms in the economy so that the average size of a firm is relatively large, the demand for legal services should be smaller since the number of nonmarket transactions increases, i.e., transactions within the firm will be larger. As the number of firms increases, the number of market transactions will rise and with it the demand for legal services. Still further

^{1/} Shorter series of the volume of mortgage recordings do exist. By combining these measures, a time series of mortgage recordings can be constructed. No change in results was obtained with these alternative measures.

increases in the number of firms may reduce the demand for legal services since smaller firms are likely to use other less costly methods of resolving and enforcing conflicts. Given the size of the economy the demand for legal services is likely to rise with increases in the size of the firm up to a point and thereafter decrease because more nonmarket transactions occur.

The proxy measures used to represent business demand for legal services are:

a. Real Gross National Product (RGNP): The number of market transactions among firms and the demand for legal services is expected to rise with real gross national product.

b. Number of Firms (AC): Because a continuous series of the business population is unavailable, the number of active corporations as reported by the Internal Revenue Service was used.

3. Judicial and Regulatory Activity

The central difficulty in measuring the effect of government regulation on the number of lawyers is that the available measures of regulation are deficient in one or more ways. Some new laws or regulations create legal uncertainties which are resolved through court activity. Measures of court activity are available and may be used as a proxy for government regulation. However, some new laws are sufficiently precise and some judicial interpretations are so clear that the amount of subsequent judicial activity will be negligible even though the effect on the demand for lawyers can be large. A new tax law may increase the demand for (tax) lawyers without an appreciable increase in subsequent court activity. While, the effects of regulation are large, they would not be reflected in court activity. Hence, court activity is an admittedly imperfect proxy for the scope of government regulation.

Rules promulgated and enforced by regulatory commissions raise similar issues. On the other hand the scope of activity of regulatory commissions cannot be independent of the available resources. The number and thoroughness of investigations and the level of enforcement of regulations depend on the size of the budgets of these commissions. It is assumed that the scale of activity of regulatory commissions is directly related to resources available to these agencies.

The proxy variables for regulatory activity are

a. Court Activity (TCA). Number of Federal District court cases commenced plus the number of bankruptcies filed is used. It should be noted the judicial activity at the state level has been ignored.

b. Regulatory Commission Activity (REG). The total real budget of 15 federal regulatory agencies was used as the measure of regulatory activity [see Stigler, 1972].^{1/} It is worth examining the behavior of this measure over time relative to the size of the economy to see if it conforms with conventional views of changes in government regulation. Regulatory expenditures per \$10,000 of gross national product for selected years are shown in Table IV. Relative to the size of the economy, regulatory input declined during the late twenties, rose during the thirties and reached a peak by 1940. An erratic pattern followed with a decline in the middle fifties. Regulatory expenditures have increased relative to the economy since the late fifties so

^{1/}The agencies include the Antitrust Division Civil Aeronautics Board, Commodity Exchange Authority, Federal Communication Commission, Federal Home Loan Bank, Federal Maritime Commission, Federal Power Commission, Federal Trade Commission, Food and Drug Administration, Interstate Commerce Commission, National Labor Relations Board, Administration of the Packers and Stockyard Act, Securities and Exchange Commission, Tariff Commission and the Wage and Hour Division.

TABLE IV
EXPENDITURES ON 15 FEDERAL REGULATORY COMMISSIONS
per \$10,000 OF GROSS NATIONAL PRODUCT

Year	Exp. per \$10,000	Year	Exp. per \$10,000
1925	\$1.95	1950	\$2.23
1929	1.30	1955	1.62
1935	1.91	1960	2.32
1940	3.54	1965	3.14
1945	1.87	1970	3.25

Source: Stigler [1972].

that by 1970 the ratio was approaching the high of the late thirties. This series suggests that the scope of regulation was widest in the late thirties and late sixties during the 1925-1970 period. It should be noted the rate of growth of lawyers was declining in the late thirties, while increasing in the late sixties. Further, the decline in the scope of regulation in the late twenties was accompanied by a continued growth in new admissions. This admittedly partial analysis of the data suggests that regulatory expenditures have not had a large quantitative effect on the demand for lawyers.

As an aid to the reader a summary of the symbols used for each variable is presented in Chart I.

III. Regression Results

Regression results for equations (16a) and (16b) are displayed in Table V. These equations were estimated with the Hildrith-Lu search process over a grid of values for the first order serial correlation coefficient, ρ . Results are presented for the smallest transformed sum of squares.

The coefficient of L_{t-1} is positive in (16a) and negative in (16b) if $\omega > d$. Except for two cases, the estimated coefficients have the correct signs. The numerical magnitude of these coefficients indicates the speed of adjustment toward long run equilibrium is relatively low. The estimates in columns 1-4 indicate ω ranges from .03 to .17. This finding is independent of, but consistent with, the slow adjustment of actual lawyer earnings to long run equilibrium earnings noted above.

Two variables were used to measure the opportunity cost of choosing the law as an occupation and both indicate a rise in earnings outside of the

CHART 1

SUMMARY OF VARIABLES AND SYMBOLS

-
1. L_t = Number of lawyers in t (Census Estimate).
 2. REA_t = Real annual earnings per full time employee (all industries) adjusted for probability of failure and for years required beyond high school to complete law school in t .
 3. $RGNP_t$ = Real gross national product in t .
 4. $RGNPP_t$ = Real gross national product per capita in t .
 5. AC_t = Total number of active corporations in t .
 6. TCA_t = Total number of district court cases commenced in t plus total number of bankruptcies filed in t .
 7. RPC_t = Real gross national product per active corporation in t .
 8. RPT_t = Real gross national product per TCA in t .
 9. DIV_t = Divorce rate in t .
 10. CC_t = District court cases commenced in t .
 11. $LOSS_t$ = Real losses paid by auto insurance companies for property and liability coverage per motor vehicle registration in t .
 12. $MORG_t$ = Nonfarm housing mortgage loans made by Savings and Loan Associations divided by Rent Index of C.P.I. in t .
 13. $BANK_t$ = Number of bankruptcies filed in t .
 14. REG_t = Real budgets of 15 federal regulatory agencies from 1925 to 1970.
 15. * Denotes coefficient has t statistic between 1.60 and 1.99.
 16. ** Denotes coefficient has t statistic equal to or greater than 2.0.
-

TABLE V
 DETERMINANTS OF THE NUMBER OF LAWYERS AND NEW ADMISSIONS
 1925-1940; 1951-1970
 (N = 34)

Variable	Number of Lawyers						New Admissions		
	(1) Est.	(2) Est.	(3) Est.	(4) Est.	(5) Est.	(6) Est.	(7) Est.	(8) Est.	
1. Constant	22.4	378.6**	103.9**	337.7**	-9.24	320.5**	97.8**	346.1**	
2. I_{t-1}	.973**	.834**	.948**	.844**	.053*	-.077**	.016	-.103**	
3. REA	-26.4**	-22.45**	-25.60**	-24.33**	-25.55**	-19.97**	-23.37**	-23.67**	
4. RGNP	.029**	.155**	.041**	.157**	.030**	.151**	.041**	.161**	
5. AC	.00483*	-.00683*			45.9*	$-.80 \times 10^{-2}$ **			
6. RPC			-117.7**	146.7*			-141.7**	128.1	
7. MORG	-.46								
8. TCA	$.24 \times 10^{-3}$ **	$.12 \times 10^{-3}$ **	$.211 \times 10^{-3}$ **		$.17 \times 10^{-3}$ **	$.64 \times 10^{-4}$ **	$.13 \times 10^{-3}$ **		
9. REG	-115.6	-103.7	-91.9	-227.4	-356.6**	-301.6**	-266.5*	-261.4*	
10. DIV	2.82**	4.88**	3.52**	4.35**	1.51	3.64**	2.22**	3.45**	
11. CC				$.119 \times 10^{-3}$ **				$.970 \times 10^{-4}$	
12. BANK				$.131 \times 10^{-3}$ **				$-.720 \times 10^{-4}$	
13. LOSS	$.62 \times 10^{11}$ **	$-.63 \times 10^9$ **	$.46 \times 10^{11}$ *		$.50 \times 10^{11}$ *	$-.22 \times 10^{10}$ **	$.29 \times 10^{11}$		
14. RGNPP		$-.22 \times 10^5$ **		$-.25 \times 10^5$ **		$-.21 \times 10^5$ **		$-.25 \times 10^5$ **	
R^2	.9998	.9999	.9999	.9999	.976	.987	.979	.987	
Q_u	5.16	3.85	4.76	3.93	5.12	3.84	4.77	3.76	
D - W	2.06	2.14	2.10	2.24	1.60	1.43	1.49	1.39	
ρ	.35	.55	.45	.55	.55	.55	.65	.65	

legal profession reduces the number of lawyers. REA measures long run equilibrium earnings and is derived from real annual earnings of full time workers in the private sector. RGNPP measures real per capita gross national product. Given REA, a rise in RGNPP is thought to reflect an improvement in employment opportunities in the private sector and, for this reason, leads to a reduction in the number of lawyers.^{1/}

The most important determinant of the demand for legal services and for lawyers is real gross national product. Shifts in the demand for lawyers are due for the most part to changes in real income. On the other hand, the form in which wealth is held appears to have little differential effect on the demand for lawyers. No consistent effect of real property and liability losses paid by automobile insurance companies or of the measures for the turnover of the housing stock were observed. It appears that increases in real income increases the number of transactions, a fraction of which require consumers and firms to use the services of lawyers.

The time series results do indicate the divorce rate is a significant but quantitatively small determinant of the demand for lawyers. So, marital instability does increase the number of lawyers but this effect is small compared to a comparable increase in real income.

^{1/} RGNPP varies more over time than REA and is more sensitive to cyclical changes. REA is a measure of opportunity cost assuming the worker is employed full time in the private sector. On the other hand, fluctuation in RGNPP appear as a proxy for employment conditions in the private sector, improving when RGNPP rises. While other methods of adjusting for changes in employment conditions have not been explored, an alternative is to adjust REA directly for under and unemployment.

The effect of the size of corporation on the demand for lawyer is unclear. Columns (2) and (4) indicate an increase in the size of corporation increases the number of lawyers. However, this result is sensitive to the inclusion of real per capita income (columns 1 and 3). Great reliance cannot be placed on this result.

Different effects are observed for the regulatory variables. Total court activity is positively related to the demand for lawyers and to new admissions if per capita income is excluded. Column (4) suggests that the number of court cases and not the number of bankruptcies is important. If court activity is a measure of the increasing scope of government regulation, then there is some support for the hypothesis that regulation increases the demand for lawyers. However, this effect is quantitatively small (see below). The budgets of regulatory commissions have no significant effects on the number of lawyers and are inversely related to new admissions. Hence, this measure of regulation does not suggest that the legal profession benefits from regulation.

In summary the number of lawyers appears to decline with increases in the foregone earnings of becoming a lawyer. The quantity demanded of legal services appears to increase with the level of economic activity, the divorce rate, the scale of judicial activity and may decrease with the scale of regulatory activity.

The quantitative effect of a one percent change in each variable on the long-run number of lawyers is shown in Table VI. These elasticities were obtained by letting $L_t = L_{t-1}$ in (16a) and solving for the equilibrium

TABLE VI
ESTIMATES OF ELASTICITY OF THE EQUILIBRIUM
NUMBER OF LAWYERS^a

	Col. 1	Col. 2	Col. 3	Col. 4
Variable				
1. REA	-3.78	-.52	-1.90	-.60
2. RGNP	2.07	1.80	1.52	1.94
3. AC	.77	-.18		
4. RPC			-.52	.21
5. MORG	.06			
6. TCA	.82	.07	.37	
7. REG	-.16	-.24	-.07	-.06
8. DIV	1.14	.32	.74	.30
9. CC				.03
10. BANK				.04
11. LOSS	.56	0	.19	
12. RGNPP		-1.54		-1.86

^aElasticities evaluated at the mean values of the variables and derived from coefficient estimates in columns 1-4 in Table V.

number of lawyers. The elasticities are evaluated at the mean values of the variables. The estimates in columns 2 and 4 are derived from the two regressions with the highest explanatory power. If reliance is placed on these estimates, it appears that the real product elasticity is in the 1.8 to 2.0 range. The elasticities of the other variables in the demand curve are decidedly lower with the divorce rate elasticity around .3. It is apparent that the major variable increasing the demand for lawyers has been the increase in real gross national product. A 10 percent increase in long run equilibrium earnings and in real per capita income reduces the number of lawyers by 2.0 to 2.5 percent.^{1/}

IV. The Equilibrium Number of Lawyers

Equation (16a) may be solved for the equilibrium number of lawyers, L^e , by letting $L_t = L_{t-1} = L^e$

$$(17) \quad L^e = \frac{1}{\beta_2} [(\alpha_0 - \beta_0) + \alpha_2 t^{-3} Z_t + (\alpha_1 - \beta_1) - \{(1+r)^3 U_t H_t\}] .$$

The equilibrium number of lawyers in each year may be derived by setting

^{1/}If a profession maximized the total wage bill of its existing members, the salary per member would be determined so that salary elasticity equals -1. The results suggest the salary (earnings) elasticity is less than -1. This evidence does not indicate the pass rate on the bar examination has been determined so as to maximize total earnings. It should be noted the elasticities are calculated on the assumption that the actual number of lawyers equals the equilibrium number. Since the actual number has often been less than the equilibrium number, the actual elasticities will differ from the elasticities shown in Table VI.

$L_{t-1} = 0$ and dividing the r.h.s. of (16a) by one minus the coefficient of L_{t-1} . The estimated coefficients have been used to derive L^e in equation (17). The estimate of the equilibrium number of lawyers in a given year assumes (1) the exogenous variables remain constant thereafter, (2) the equilibrium rate of return on legal education equals 10 percent, and (3) the completion rates of law students are exogenous.^{1/} By comparing this time series of the equilibrium number of lawyers with the actual time series of lawyers, it is possible to determine the time periods when the rate of return on legal education exceeded 10 percent. Whenever the actual number of lawyers is less than the equilibrium number, it may be inferred that the actual rate of return on legal education exceeded 10 percent.

Figure IV shows the equilibrium and actual number of lawyers in each year from 1925-1940 and 1951-1970. The equilibrium number of lawyers was estimated from the coefficient estimates (column 2 of Table V); the regression with the smaller residual standard error. Table VII shows the ratio of equilibrium to actual number of lawyers and the ratio of actual to equilibrium earnings for selected years. The ratio of equilibrium to actual number of lawyer is largest in the mid-twenties and declines thereafter and approaches one in 1940. After the post war adjustment, the ratio hovers near but somewhat above unity throughout the nineteen fifties and then rises from 1960 to 1970 and was in the 1.17-1.19 range in 1970, not far different from the value reached in 1929. The time series pattern of the ratio of actual to equilibrium earnings shows a similar pattern except for one major exception. The ratio

^{1/}Completion rates are positively correlated with the rate of return to the investment on legal education. If the rate of return to legal education fell to 10 percent, the completion rates would decline, equilibrium earnings of lawyers would rise, and the equilibrium number of lawyers would decrease. Hence, the estimates of the equilibrium number of lawyers are biased upward when the completion rates are considered exogenous.

of earnings is largest in 1929 and declines throughout the thirties. However, the ratio of earnings far exceeds unity in 1940 while the ratio of equilibrium to actual number of lawyers is near unity in 1940. In the post war period the ratio of earnings remains near unity throughout the fifties and then rises from 1960 to 1970 and equals 1.29 in 1970. The two independent tests, the ratio of earnings and the ratio of numbers suggest the rate of return to legal education exceeded 10 percent throughout the twenties, most of the thirties, and throughout the sixties.^{1/}

Figure IV reveals why an equilibrium was finally achieved in the middle fifties. The equilibrium number of lawyers grew by only .4 percent per year from 1925 to 1940 and by about .6 percent per year from 1925 to 1956. Changes in real income, divorce rates and other determinants of the demand for legal services were on balance offset by increases in the opportunity cost of legal education, so that the equilibrium number of lawyers demanded at long run equilibrium earnings did not increase appreciably over a 30 year period ending in the middle fifties.

Given the low speed of adjustment in the production of lawyers, a long run equilibrium was not achieved until the late thirties. After the post war adjustment a long run equilibrium was reestablished throughout the

^{1/}This comparison of the ratio of earnings to the ratio of numbers indicates the actual earnings of lawyers reported by the Department of Commerce during the thirties are probably biased upward. The ratio of equilibrium to actual number of lawyers suggests the market was close to equilibrium by 1940. The depreciation rate of the stock of lawyers was relatively high for the decade of the thirties compared to the twenties. These two sources of information raise the suspicion that the earnings of lawyers reported in the surveys conducted by the Department of Commerce during the 1930's are biased upward. The surveys conducted in the post war period do not indicate the same degree of bias. No explanation can be offered for the apparent improvement in the quality of the data.

FIGURE IV: EQUILIBRIUM (E) AND ACTUAL (L) NUMBER OF LAWYERS 1925-194; 1951-1970

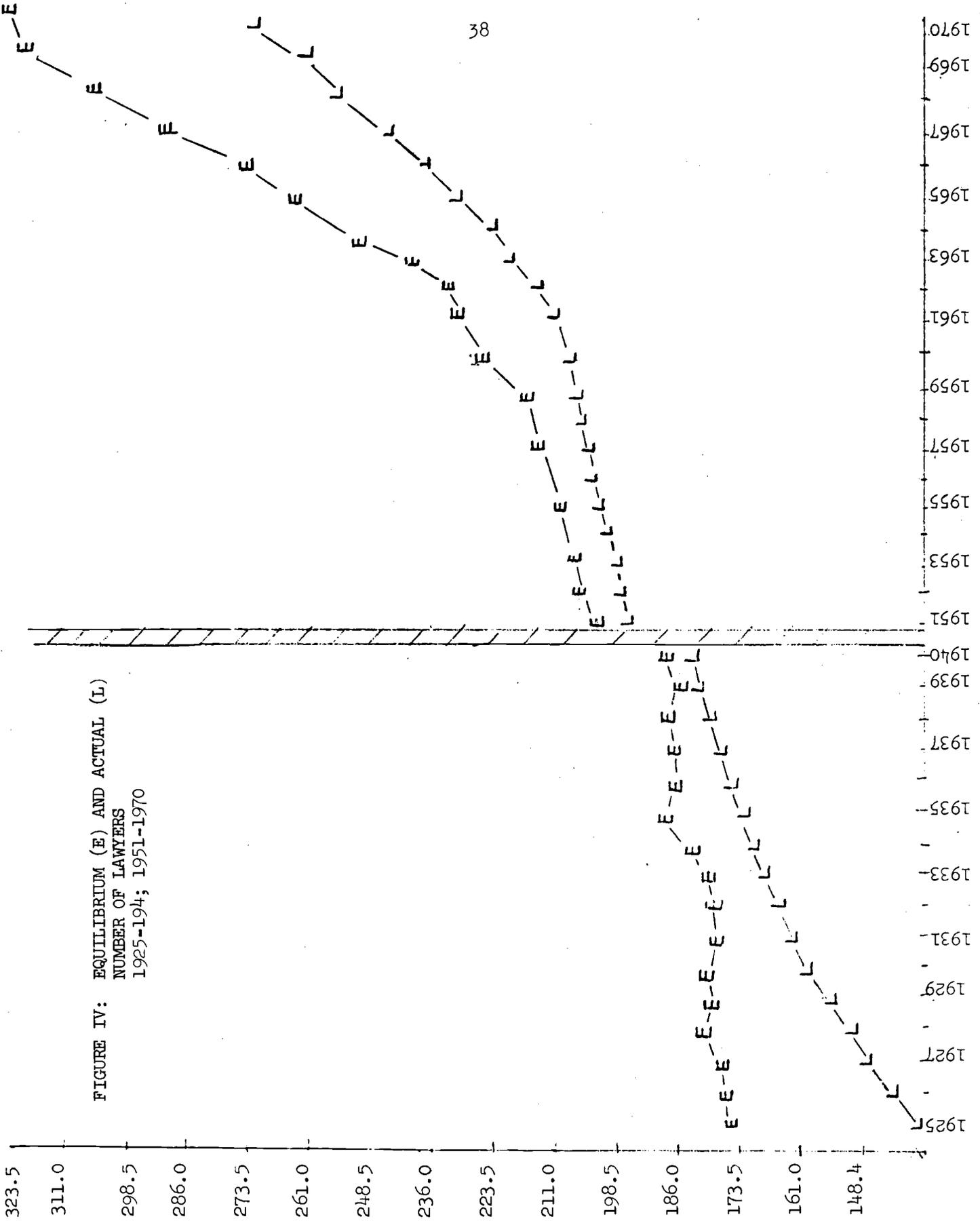


TABLE VII

RATIO OF EQUILIBRIUM TO ACTUAL LAWYERS AND RATIO
OF LAWYER EARNINGS TO OPPORTUNITY COST
OF LEGAL EDUCATION

Year	Ratio of Equilibrium to Actual Number of Lawyers		Ratio of Actual Earnings to Equilibrium Earnings
	Col. 2, Table I	Col. 4, Table I	
1925	1.29	1.32	
1929	1.16	1.18	1.68
1935	1.08	1.09	1.58
1940	1.03	1.03	1.43
1951	1.07	1.08	1.02
1955	1.04	1.05	1.04
1960	1.05	1.06	1.04
1965	1.14	1.15	1.31
1970	1.17	1.19	1.29

fifties. Increases in RGNP and other demand determinants throughout the 1960's have increased the demand for legal services. Once again, the low speed of adjustment of places in law schools created a gap between the actual and equilibrium number of lawyers. By 1970 the ratio of equilibrium to actual number of lawyers was between 1.17 to 1.19, not far different from the ratio in 1929.

V. Other Evidence

Other evidence indicates a widening discrepancy between the actual and equilibrium number of lawyers throughout the sixties and into the early seventies. Table VIII shows the number of (LSAT) tests administered to prospective law school students relative to first year law students and the mean score on the tests administered. Comparable data are shown for prospective graduate students in business. In both law and business there has been a rapid rise in total tests administered. However, the trend to testing occurred earlier in law than in business so that a smaller proportion of the increase in testing intensity (columns 3 and 4) is due to the rise in the number of law schools requiring testing.^{1/} The evidence suggests that there has been an increasing interest in entering law school and probably an increase in the quality of law students.^{2/} In contrast the mean score of prospective business

^{1/}The number of schools requiring the test is unknown. However, conversations with informed individuals suggests that most law and business schools were requiring the test by the middle sixties.

^{2/}The number of tests administered differs from the number of individuals taking the test since some individuals repeat the test. The repeat rate appears to be higher in law than in business. The higher repeat rate in law than business is consistent with a larger discrepancy between the actual and equilibrium stock in law than in business.

TABLE VIII: A COMPARISON OF PROSPECTIVE LAW AND GRADUATE BUSINESS STUDENTS, 1958-1973

Year	Number of Tests Administered ^a		Ratio of Tests Administered to First Years Students		Mean Test Score ^d		
	Law (1)	Business (2)	Law ^b (3)	Business ^c (4)	Law (LSAT) (5)	Business (ATGSB) (6)	Ratio (7) (5)/(6)
1958-1959	17,374	7,898	1.07	na	481	496	.97
1960-1961	23,800	13,295	1.40	.75	481	483	1.00
1967-1968	50,793	57,567	1.97	1.25	na	485	na
1970-1971	107,147	86,336	2.85	1.40	519	453	1.15
1973-1974	136,074	114,146	3.34	1.66	527	450	1.17

- a) Law school and business school tests are taken by students entering law school and graduate business schools. The number of law and business schools requiring the test as part of the application process has increased over time. While there are no figures available, informal opinion suggests that most law and business schools required the test by the mid-sixties. Repeaters are included.
- b) Enrolled first year students reported by the Journal of Legal Education includes full and part-time students.
- c) Includes M.B.A. and doctoral students and full and part-time students.
- d) Data supplied by Educational Testing Service. The tests are normed so that the absolute level of the test scores are not comparable across fields.

If the student drops out of law school after 2 years (virtually all dropouts occur within the first two years), he receives:

$$(5a) \quad \frac{1+r}{r} \left(\frac{U(1+rh)^2}{(1+r)^2} \right).$$

The present value of earnings for a student entering law school is:

$$(6a) \quad \hat{p} \left(\frac{1}{1+r} \right)^3 L^* + (1 - \hat{p}) \left(\frac{(1+r)}{r} \cdot \frac{U(1+rh)^2}{(1+r)^2} \right).$$

In long run equilibrium the present value of not entering law school equals the present value of entering law school,

$$(7a) \quad \frac{1+r}{r} U = \hat{p} \frac{L^*}{(1+r)^3} + (1 - \hat{p}) \left(\frac{(1+r)}{r} \cdot \frac{U(1+rh)^2}{(1+r)^2} \right).$$

Equation (7a) may be derived by substituting for L^* from (3a).

TABLE IX
 CHANGE IN MARKET SHARE OF FULL TIME EQUIVALENT LAW STUDENTS
 BY QUALITY OF LAW SCHOOL
 1958-1973^{a)}

Type of Law School	1958	1973 ^h	Change ^h
I. Private Law Schools, 1958-1973			
A. Approved by A.B.A. in 1958			
1. Nine highest quality law schools ^{b)}	17	8	-9
2. Eleven next highest quality law schools ^{c)}	13	9	-4
3. Other approved schools (56 schools)	27	30	
B. Not approved by A.B.A. in 1958 (31 schools) ^{d)}	5	5	--
C. Law schools established after 1958			
1. Approved in 1973 (10 schools)	--	5	+5
2. Not approved in 1973 (18 schools)	--	5	+5
	—	—	—
Total private, 1958-1973	62	62	--
II. Private Law Schools that Became Public Between 1959 and 1973 (7 schools)	4	4	--
III. Public Law Schools, 1958-1973			
A. Ten highest quality law schools ^{e)}	11	8	-3
B. Fifteen next highest quality law schools ^{f)}	13	12	-1
C. Other public law schools in 1958 (30 schools)	10	12	+2
D. Law schools established after 1958 (10 schools)	--	3	+3
	—	—	—
Total public, 1958-1973	34	35	+1
IV. Total Enrollment (Full Time Equivalent) ^{g)}	35,505	100,682	+65,177
V. Market Share of Highest Quality Private and Public Law Schools (IA1 + IIIA)	28	16	-12

Footnotes to Table IX

- a) Evening students in 1958 and part-time students in 1973 assumed equal to one-half of full time morning student.
- b) Tuition in 1958 equals 70% or more of the mean of three private law schools with highest tuition and volumes in library in 1973 exceeding 200,000.
- c) Tuition in 1958 exceeds 54% or more of the mean of three private law schools with highest tuition and volumes in library in 1973 between 100,000 and 200,000.
- d) Not all schools reported enrollment in 1958.
- e) Non-resident tuition in 1958 equals 70% or more of the mean of three public law schools with highest nonresident tuition and volumes in library in 1973 exceeding 200,000.
- f) Nonresident tuition in 1958 exceeds 54% or more of the mean of three public law schools with highest nonresident tuition and volumes in library in 1973 between 100,000 and 200,000.
- g) Enrollment figures estimated from data published in American Bar Association, Law Schools and Bar Admission Requirements in the United States, 1958 and 1973.
- h) May not add due to rounding.

Source: American Bar Association, Law Schools Bar Admission Requirements, 1958 and 1973 editions.

quality variation presumably also exists in other fields, e.g. business. A detailed study of business education has not yet been undertaken. However supply response of the business education sector is not likely to be as slow. A major difference between law and business is the ease of entry into the education sector. A comparison between law and business is instructive. While both sectors have experienced a rapid increase in the demand for professional education, they differ in the number of new schools entering the market. The number of business schools offering graduate programs increased from 183 in 1960-61, 254 in 1966-67 and 360 in 1972-73. Similar counts of the number of law schools are 158 in 1960-61, 166 in 1966-67 and 190 in 1972-73. The number of business schools increased by about 97 percent since 1960 while the number of law schools has increased by 20 percent. The comparatively modest expansion in the number of law schools may explain why the ratio of tests administered to first year students has increased more rapidly in law than in business since the middle sixties (when realistic comparisons are possible) and why the mean score of prospective law students has increased relative to mean score of prospective business students.

A further test of the regression results is to explain behavior after 1970. The empirical results suggest that the rate of return to legal education exceeded 10 percent in 1970. The ratio of equilibrium to actual number of lawyers was between 1.17 and 1.19. The subsequent behavior of first year enrollments and new admissions is consistent with this evidence. Table X shows first year students enrolled in law schools and new admissions, the equilibrium and actual number, and the estimates of the number of lawyers from 1970 to 1974. The equilibrium number of lawyers is estimated with the actual or extrapolated values of the exogenous variables from 1971 to 1974.

Table X shows first year students increased somewhat from 1970 to 1974 and remained at relatively high levels between 1973 and 1974. If the difference between the equilibrium and actual number of lawyers had declined from 1970 to 1974, the number of first year students should have declined. The evidence suggests that the gap between the equilibrium and actual number of lawyers increased from 1970 to 1973 and then declined in 1974 and helps explain why the size of the first year class has not declined appreciably. Nevertheless, the large number of new admissions in 1973 and 1974 has substantially increased the number of practicing lawyers and a subsequent decline in the size of the first year class would not be surprising.

Conclusions

During the last half century the legal profession has experienced two extended periods of prosperity. The first period covered the twenties and the early thirties and the second the sixties and the first half of the seventies. Both periods correspond to periods of rapid growth in real gross national product, the major determinant of the demand for legal services. The length of these prosperous episodes appears due to the slow adjustment of places in law schools. The slow supply adjustment causes the rate of return to legal education to rise when demand increases and to remain above a normal rate of return for extended periods of time. The existing stock of lawyers has gained from the slow supply response in the legal education industry. A more rapid supply adjustment would shorten the number of periods when the rate of return exceeded a normal return. Some tentative explanations for the slow response have been considered. The slow response may be due in part

TABLE X

FIRST YEAR STUDENTS, NEW ADMISSION AND EQUILIBRIUM
AND ACTUAL NUMBER OF LAWYERS, 1970-1974

Year	First Year Students (1)	New Admissions (2)	Number of Lawyers			
			Equilibrium ^{a/} (1,000) (3)	Actual (1,000) (4)	Difference (3)-(4) (5)	Ratio (3)/(4) (6)
1970	36,642	17,922	331	278 ^{b/}	53	1.19
1971	37,538	20,485	351	290 ^{c/}	61	1.21
1972	37,724	25,086	369	305 ^{c/}	64	1.21
1973	41,810	30,707	397	326 ^{c/}	71	1.22
1974	40,683	33,358	402	349 ^{c/}	53	1.15

^{a/} Estimated from the coefficients in column 4 of Table 2.

^{b/} Reported in the 1970 Census of Population.

^{c/} Estimated by using the annual depreciation rate of .02984 estimated for the 1960-1970 decade.

to the nonprofit character of the suppliers in the legal education industry. Higher quality law schools act as if a high marginal tax rate is placed on the net income of the school. In addition entry in the legal education sector appears more difficult than in business education sector. These arguments imply that the supply response would be faster if the legal education industry was organized with profit maximizing suppliers or under the apprenticeship system.

The importance of cobweb oscillations in the market for lawyers can be best assessed after study of an extended time series. During the last fifty years the market for lawyers has been marked by two extended periods of adjustment to long run equilibrium and one extended period in or near long run equilibrium. Cobweb oscillations due at first to "too many" and then "too few" lawyers do not describe the market for lawyers in the last fifty years. The slow supply response and the ease with which lawyers may shift into other occupations mitigate against cobweb type oscillations. While many believe the number of lawyers is excessive, the historical evidence suggests that there have been on balance too few lawyers. The current wave of warnings of a future glut of lawyers should also be evaluated in light of the historical record.

The findings of this study suggest the economic status of the legal profession is closely tied to the performance of the economy and not to scale of government regulation. Consequently, additions to the stock of lawyers should decline in the future unless there is an unexpected increase in the rate of economic growth. At the present time the earnings of lawyers appear to be abnormally high. A decline in the relative earnings of lawyers may be expected to accommodate the decline in the rate of growth of lawyers.

APPENDIX A

Long Run Equilibrium Lawyer Earnings

Let \hat{p} be the probability of completing law school and p be the probability of passing the bar examination during the year. Suppose a student graduates from law school. If the student passes the bar, the present value of lawyer earnings (assuming infinite life) is:

$$(1a) \quad \sum_{t=0}^{\infty} \frac{LE}{(1+r)^t} = \frac{LE(1+r)}{r}$$

where LE (assumed constant) equals the annual earnings of a lawyer. Define L^* as the present value of taking the bar examination. Then the present value of earnings for a student that fails the examination is:

$$(2a) \quad U(1+rh)^3 + \frac{1}{1+r} L^* \quad \text{where } h < 1.$$

The present value of taking the bar examination is:

$$(3a) \quad L^* = p \left(\frac{LE(1+r)}{r} \right) + (1-p) \left[U(1+rh)^3 + \frac{1}{1+r} L^* \right].$$

Consider a student entering law school. If the student graduates from law school, the present value of earnings is:

$$(4a) \quad \left(\frac{1}{1+r} \right)^3 L^* .$$

If the student drops out of law school after 2 years (virtually all dropouts occur within the first two years), he receives:

$$(5a) \quad \frac{1+r}{r} \left(\frac{U(1+rh)^2}{(1+r)^2} \right).$$

The present value of earnings for a student entering law school is:

$$(6a) \quad \hat{p} \left(\frac{1}{1+r} \right)^3 L^* + (1 - \hat{p}) \left(\frac{(1+r)}{r} \cdot \frac{U(1+rh)^2}{(1+r)^2} \right).$$

In long run equilibrium the present value of not entering law school equals the present value of entering law school,

$$(7a) \quad \frac{1+r}{r} U = \hat{p} \frac{L^*}{(1+r)^3} + (1 - \hat{p}) \left(\frac{(1+r)}{r} \cdot \frac{U(1+rh)^2}{(1+r)^2} \right).$$

Equation (7a) may be derived by substituting for L^* from (3a).

APPENDIX B

Appendix B displays lawyer income data from four different sources and briefly describes the methods used to calculate long run equilibrium earnings.

I. The Net Income and Earnings of Lawyers

The net income data for lawyers for selected years is shown in Table B1. In 1974 and 1953 the Department of Commerce estimates exceed the Internal Revenue Service estimates (column (1) compared to column (5)) by about twenty-seven percent. Median earnings reported in the 1949 Census of Population are not out-of-line with the 1949 Department of Commerce estimate of mean income, given the skewness of lawyer income distribution.

Column (6) displays the Internal Revenue Service estimate adjusted upward by twenty-seven percent. The adjusted estimate in 1959 is less than the 1959 Census of Population estimate of mean earnings by 19 percent, a relatively large amount, but exceeds the 1969 Census of Population estimate by only 4 percent. While a changing proportional upward adjustment of the I.R.S. figures would have been preferable to a fixed upward adjustment of 27 percent, the Census of Population figures do not reveal a systematic upward or downward bias in the adjusted I.R.S. estimates. Some further support for the upward adjustment comes from a special tabulation of the 1971 income tax returns. For returns with a Schedule C, the amount of other sources of income in 1971, e.g., wage and salary income, was reported. If lawyers operating single proprietorships also obtain considerable wage and salary income, the income estimates based solely on the Schedule C reports will seriously underestimate total income from

TABLE B1: NET INCOME PER LAWYER, 1947-1973: A COMPARISON OF INCOME ESTIMATES FROM FOUR SOURCES

Year	Department of Commerce ^{a/} (independent practice) Mean Net Income (1)	Census of Population (2)	Internal Revenue Service				U.S. Department of Labor ^{b/} Mean Annual Salary (7)
			Single Proprietor Net Profit (3)	Partner Compiled Net Profit Plus Salary (4)	Combined ^{c/} (5)	Adjusted ^{e/} (6)	
1947	\$7,437	\$ 6,257 ^{b/}	\$ 4,194	\$10,497 ^{f/}	\$ 6,023 ^{f/}		\$11,615
1949	7,971		4,969	11,738 ^{f/}	7,189 ^{f/}		12,700
1953	9,392		6,550	16,480 ^{f/}	9,480 ^{f/}		13,313
1957			6,580	17,538 ^{f/}	9,620 ^{f/}	\$12,040	13,730
1958			7,080	17,740	10,470	12,218	14,499
1959		15,793 ^{c/}	7,260	17,090 ^{f/}	10,390 ^{f/}	13,297	14,751
1960			7,870	18,500	11,550	13,195	15,416 ^{i/}
1961			8,150	19,000	11,670	14,669	16,116
1962			8,760	20,660	13,010	14,820	17,485 ^{j/}
1963			9,270	21,690	13,440	16,523	18,789
1964			10,380	23,390	15,120	17,069	20,550
1965			10,750	24,220	15,790	19,202	21,076 ^{k/}
1966			10,850	26,850	16,740	20,053	22,253
1967			11,220	27,820	17,690	21,260	23,534
1968			12,010	28,990	18,560	22,466	
1969		22,734 ^{d/}	12,750	31,320	19,790	23,571	
1970			14,170	33,380	22,030	25,133	
1971			(22,710) ^{f/}		(26,570) ^{f/}	27,978	
1972							
1973							

Footnotes to Table B1

a/ U.S. Department of Commerce, Survey of Current Business (U.S. Government Printing Office, Washington, D.C.: various issues).

b/ Median Income in 1949 of Experience Civilian Labor Force, Male, lawyers and judges. Income includes wages and salary plus income from own professional practice or partnership. Census of Population: 1950, Vol. II. Characteristics of the Population, Part I, U.S. Summary Table 129.

c/ Mean Earnings in 1959 of Males 25-64 years old in the Experienced Civilian Labor Force, lawyers and judges. Median Earnings equals \$10,587. Median Wage and Salary income of Wage and Salary male workers equals \$8,537. U.S. Census of Population: 1960, Occupational Characteristics PC(2)-7A and Occupation by Earnings and Education PC(2)-7B. (Note: earnings equal wage or salary and self-employment income.) Mean earnings are reported in PC(2)-7D.

d/ Mean Earnings in 1969 of males 25-64 years old with earnings in Experienced Civilian Labor Force, Lawyers and judges. Median Earnings equal \$19,466. Median Earnings of all males (with or without earnings) equal \$18,870. Median Wage and Salary earnings of wage and salary male workers equal \$14,794. Median of Total Family Income in 1969 of families with male heads reported as lawyers in the Experienced Civilian Labor Force equals \$23,037. Census of Population: 1970, Earnings by Occupation and Education, PC(2)-8B and Occupational Characteristics, PC(2)-7A.

e/ Net profit of sole proprietors (Schedule C) plus compiled net profit of partnerships plus salaries paid to partners (information return) divided by the sum of number of returns by sole proprietors plus number of partners.

f/ Excludes salaries paid to partners.

g/Column 5 multiplied by 1.27. Average ratio of net income per lawyer in independent practice to combined income reported by I.R.S. in 1949 and 1953 is 1.27. The ratios of mean income per lawyer (salaried and nonsalaried) reported by Census of Population to combined income reported by I.R.S. in 1959 and 1969 are 1.51 and 1.23 respectively. The 1959 ratio appears abnormally large while the 1969 ratio is close to the average ratio of 1.27. The mean of the ratios for 1949, 1953 and 1969 is 1.255.

h/U.S. Department of Labor, National Survey of Professional, Administrative, Technical and Clerical Pay (Government Printing Office, Washington) various issues. Annual salary for standard work schedules excludes overtime but includes cost of living and incentive payments.

i/Date of survey changes from February to June.

j/Change in definition of work level and experience required for each level. Comparability between 1967 and 1968 data is in question.

k/Date of survey changes from June to February.

l/In 1971 Business Statistics reports the distribution of income for returns with Schedule C. Adding wages and salaries reported, partnership income and loss from proprietorships in other industries raises the reported income per return to \$22,710. This may overestimate the return from legal practice since wages and salaries may include wages and salaries of other members of the household.

legal practice. When wages and salaries, partnership income and loss from proprietorships in other industries are added to income reported on Schedule C, the 1971 income per proprietor increases from \$14,170 to \$22,710. The income per lawyer (including proprietors and partners) rises from \$22,030 to \$26,570 which is only 5 percent less than the 1971 adjusted value of \$27,978. This test also suggests the 27 percent upward adjustment is not in great error.

The mean annual salaries of lawyers employed by firms in the private sector reported by the Department of Labor (column (7)) are near the combined I.R.S. estimate but less than the adjusted I.R.S. estimates and less than the Census of Population estimates of earnings. The Census of Population figures generally show the wage and salary income of wage and salary lawyers is less than the earnings of all lawyers and this may account for the lower salary estimates reported by the Department of Labor.

II. The Calculation of Long Run Equilibrium Earnings

The estimation of long run equilibrium contains the following steps. The ratio of annual earnings of high school graduates to average annual earnings of all full time working in private industry was regressed on time for selected years when annual earnings of high school graduates was available (1939 in the first such year). The coefficients of this regression equation were used to convert the average annual earnings of full time workers in private industry into estimated average annual earnings of high school graduates for the period 1925-1940 and 1951-1970.

The estimated annual earnings of high school graduates in each year was multiplied by $(1 + r)^{ED}$ where ED represented a three year moving average of the mean years beyond high school required for completion of law school. The series for mean years beyond high school to complete law school was obtained by taking a random sample of law school and calculating a mean value for each year. The result of this product was then multiplied by H_t (equation 7) where p equals the proportion passing the bar in t and \hat{p} equals the third year students in $t - 1$ divided by first year students in $t - 3$. h was arbitrarily set at .05 and $r = .10$ was considered a normal rate of return on the investment in education.

Bibliography

- Freeman, Richard, "Legal 'Cobwebs': A Recursive Model of the Market for New Lawyers," Review of Economics and Statistics, 57 (May 1975).
- Muth, Richard, "Rational Expectations and the Theory of Price Movements," Econometrica, 29 (July 1961).
- Reed, Alfred, Present-Day Law Schools in the United States and Canada.
New York, New York: The Merrymount Press, 1928.
- Stigler, George, "The Process of Economic Regulation," Antitrust Bulletin, 17 (Spring 1972).
- Winfield, William, "Income of Laywers, 1929-48" Bar Bulletin, New York County Lawyers Association, 7 (September, 1949).