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# OCCUPATIONAL LICENSING AND THE INTERSTATE MOBILITY OF PROFESSIONALS

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# OCCUPATIONAL LICENSING AND THE INTERSTATE MOBILITY OF PROFESSIONALS

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This paper attempts to measure the effect of occupational licensing, restrictions on reciprocity, location specific investment in reputation and earnings on the interstate mobility of professionals. While 34 professional occupations are analyzed, special attention is focused on the legal profession. The comparatively low interstate mobility rate of lawyers may be due to state licensing and restrictions on reciprocity or to the investments made by lawyers to develop local reputations or to the investments made by lawyers in state specific law. Tests are conducted to distinguish among these three hypotheses.

### Introduction

The interstate migration of human resources has attracted the attention of an increasing number of economists. Recent advances in the theory of human capital have focused on the importance of age and education in explaining the migration of workers. An older literature in the field of industrial organization emphasized the importance of licensing and reciprocity to explain differences between occupations in earnings and mobility. Yet to be undertaken is a study which combines those determinants of mobility stressed by the human capital theorists with those advanced by students of industrial organization. Recent work in the field has slighted the effect of class of worker on interstate mobility. Many professionals are independent businessmen, either sole proprietors or partners. Dentists, lawyers, optometrists, physicians and veterinarians invest resources throughout their careers to develop business reputations and goodwill. Reputation and business contacts are to a large degree location specific and depreciate rapidly if the practitioner leaves the immediate market. On the other hand, professionals primarily employed by firms would suffer smaller losses in goodwill if they left the immediate geographical market. A serious study of the determinants of mobility of professionals, as this study purports to be, must take cognizance of reputation capital and measure its importance in explaining differences in occupational mobility.

This paper will focus special attention on the legal profession. The legal profession is granted special attention not only because licensing by state bar examination is common and because lawyers in large part are independent businessmen but also because the practice of law, unlike the practice of dentistry or medicine, has some state specific features. It can be and has

been argued that law and procedure vary from one state to the next, and that a seasoned lawyer is reluctant to launch a new practice in another state. Lesser interstate mobility of lawyers might be explained by any one or a combination of three hypotheses: (1) licensing with restrictions on reciprocity, (2) investments in reputation capital, and (3) investments in state specific law and procedure. A major endeavor of this paper is to formulate tests that distinguish between these three hypotheses.

Section I summarizes the existing theory of mobility, while Section II discusses the measurement of interstate mobility and licensing. The empirical results are presented in Section III. Tests of the state specific law hypothesis are reviewed in Section IV. The major results of the paper are summarized in the last section, and several possible extensions of the work are indicated.

## I. <u>Interstate Mobility: A Capsule Summary of the Existing Theory</u>

The theory of mobility is in its formative stages. Schwartz (1976) has recently presented a theory to explain several known regularities in mobility patterns as revealed in census data.

Schwartz developed a theory of the effects of age and education on the area of search over a homogeneous plane by prospective employers and employees. Job seekers and employers substitute between a more intensive search of a given area (by expanding the share of population considered for the job) and a more extensive search over a larger geographical area. Two implications of the theory are of immediate interest: (1) the interstate migration rate, the proportion of employees that move a given distance, declines with age at a rate which increases with education, and (2) the expected

distance moved by a prospective employee increases with the level of education (and may either increase or decrease with age). Given the number of positions to be filled, employers have a greater incentive to search over a larger area for younger prospective employees than to search over a smaller area and to try and attract older prospective employees, the higher are educational requirements of the position. The job seeker also trades off between the waiting time before a position is found and the area of search. If waiting time increases with education and age given the area searched, there will be an incentive to search over a larger area (to reduce waiting time) the higher is educational attainment or age. Thus, firms and job seekers search over larger areas as education level increases. Consequently, the expected distance moved of successful applicants would be expected to rise with educational attainment. Given education, older individuals also search over a larger area but the pecuniary cost of transportation and the nonpecuniary cost of changing locations may rise with age so that the expected distance moved may or may not increase with age.

The objective of Schwartz was to advance a theory capable of explaining the known regularities in gross mobility patterns of broadly defined groups classified by age and education. The theory appears well suited for this purpose but is less well suited to analyze the mobility of occupations.

Consequently, some extensions of the theory need to be considered if differences in mobility rates between occupations are to be explained. Schwartz assumed that job opportunities are homogeneous over space. The number of substitute employers or employees do not differ from one location to another. Of course, the distance between substitute employers differs appreciably from one occupation to another. Professors have fewer substitute employers within

a city than accountants. The higher interstate mobility of professors should not be attributed to educational achievement until an adjustment for the smaller number of educational institutions per state is made.

The class of worker can be safely ignored when explaining differences in interstate mobility rates of all workers by education and age. But the effect of private practice on mobility cannot be safely ignored in a study of professional occupations. The cost of mobility is higher to those in private practice selling directly to the public. Other factors considered, lesser mobility may be expected in those occupations where it is relatively more expensive to attract customers and to establish business reputations in new markets. In these occupations comparatively fewer older practitioners should be prepared to move and to establish a business in a new market than in occupations with salaried members.

A final comment deserves mention. In large degree Schwartz's theory is a supply theory of mobility. Once again, an analysis of occupations requires some attention be paid to demand factors. Differential growth rates between occupations and between states within each occupation should be considered to determine how important are demand factors in explaining interstate mobility between occupations.

These observations indicate interstate mobility would differ between occupations even in the absence of licensing and restrictions on reciprocity. Licensing and restrictions on reciprocity impose added costs on potential movers. There appear to be larger differences between occupations in the use of licensing and the conditions for reciprocity than there are between states within an occupation. This fact alone suggests that a study of occupations is

 $<sup>\</sup>frac{1}{0}$ Older lawyers, dentists, etc. should be more likely to stay put than older engineers, accountants, etc.

an attractive method to determine the effect of licensing on mobility in general and on the mobility of lawyers in particular. However, a study of different occupations is not without important drawbacks. The major determinants of mobility, other than licensing, must be included in the analysis. An acceptable method must be discovered for ranking occupations with regard to the use of licensing and to the practice of reciprocity. these are considerable achievements that invite criticism given the scarcity of information.

A study of occupations may for many purposes be a more efficient method of detecting the effects of licensing and restrictions on reciprocity on interstate mobility. Nevertheless, a study of states can provide some useful tests of state specific law hypothesis. Indeed, tests of the importance of state specific law are difficult but not impossible to make without state data. While most of the tests in this paper will use the occupation as the unit of observation, a few will rely on state data to provide supplemental tests of the determinants of lawyer mobility.

## II. The Measurement of Interstate Mobility and Licensing

Holen used two measures of interstate mobility in a pilot study of the dental, medical and legal professions (Holen 1965). One measure was the interstate migration rate—the number of out—of—state movers over a period of time relative to the total members in the occupation. The second measure was the conditional probability of moving out of state given an out—of—county change in residence—the number of out—of—state movers relative to the number of out—of—county movers. 2/ These two measures of mobility are retained for use and

<sup>2/</sup>The 1970 Census of Population identifies the number of individuals whose residence in 1965 was in a different state than the residence in 1970. Strictly speaking, the Census data do not enumerate the number of movers since an individual who left and then returned to the state between 1965 and 1970 would not be counted as a mover by the Census.

augmented by yet another measure—the <u>conditional</u> probability of remaining in the county of residence given no interstate change in residence. This measure is a retention probability, the opposite of a mobility probability. It measures the number remaining in the county of residence (be they stayers or intra county movers) relative to the number who remain in the state over the period of measurement. This retention probability reflects the net advantages of remaining in the same county relative to other locations in the state. The formal definition of each measure and the symbol assigned to each are presented below.

- 1. <u>Interstate Migration Rate</u> (I.M.R.)--Members of an occupation whose 1970 residence was outside the state of residence in 1965 relative to all members of the occupation in 1970. 3/
- 2. Probability of an Interstate Move Given an Out-of-County

  Move (P.I.M.)--Members of an occupation whose 1970 residence
  was outside the state of residence in 1965 relative to those
  members who were living outside the county of residence in 1965.
- 3. Probability of Remaining in County Given No Interstate Move

  (P.I.C.) Members of an occupation whose county of residence was the same in 1970 and 1965 relative to those members whose state of residence was the same in 1970 and 1965.

A numerical illustration will indicate how these measures are calculated and will reveal the difference between them. The 1970 Census of Population indicates 50,073 lawyers lived in a different county in 1970 than in 1965. Of these, 22,342 or (P.I.M. =) .446 lived in a different state in 1970 than in

<sup>3/</sup>Individuals are excluded if abroad or if no information was supplied.

1965. The probability of an interstate move given an out-of-county move was .446 for lawyers. The 22,342 lawyers who moved across boundaries represented (I.M.R. =) .105 of all lawyers in 1970 (after excluding those abroad in 1965 and those lawyers submitting no response). The interstate migration rate of lawyers was slightly higher than 10%. A large number of lawyers--162,776 remained in the same county. This number represented (P.I.C. =) 85% of all lawyers whose residence was in the same state in 1965 and 1970.

Each of the three measures identifies a different aspect of migration. The interstate migration rate gives an indication of the relative importance of interstate migratory activity in an occupation. The probability of an interstate move is more closely related to the distance moved since it is the proportion moving out-of-state-relative to all out-of-county movers. The retention probability reflects the net advantage of locations within the county relative to locations elsewhere in the state and only reflects intrastate factors that determine location of residence within the state.

In principle, no relationship need exist between the three measures. This may be seen more clearly by considering the definition of each measure. If T denotes the total number of members in an occupation, S denotes members in the same residence (nonmovers), INC denotes movers who remain in same county, INS denotes movers in different county but in the same state and OUTS denotes movers located in a different state in 1965 than in 1970 then T = S + INC + INS + OUTS. The definitions of the three measures are:

a. I.M.R. 
$$\equiv \frac{\text{OUTS}}{\text{T}}$$

b. P.I.M. 
$$\equiv \frac{\text{OUTS}}{\text{INS} + \text{OUTS}}$$

c. P.I.C. 
$$\equiv \frac{S + INC}{S + INC + INS}$$

The interstate relation rate can be low in an occupation because relatively few members move across state boundaries even though the probability of an interstate move is high because moves are of long distances when out-of-county moves are made. Similarly, a low I.M.R. could be associated with either a high or low P.I.C. because individuals might remain in the same county or might move into other counties within the same state. In fact, the measures are correlated as the correlation matrix below shows.

Si	imple Correlation Matrix	ka
   Variable	P.I.M.	P.I.C.
I.M.R.	.87	58
P.I.M.		24

a34 occupations

Occupations where moves tend to be over longer distances are usually those where a relatively larger share of members are undertaking interstate moves. Similarly, occupations with relatively large amounts of interstate activity are ones where intrastate retention probabilities are relatively low. On the other hand, the correlation between the probability of an interstate move and the retention probability is small. A high retention probability should not affect the distance moved once an out-of-county move is made.

Table 1 shows the three measures for each of 34 professional occupations. The selected occupations have characteristics similar to the legal profession—higher educational attainment, primarily male members and above a minimum size. The selection was limited to those occupations classified as professional by the Census Bureau with 60% or more male members and with

at least 4,500 members. 4 Each of these occupations was classified further into one of three groups: (1) occupations without formal licensing requirements with few if any legal barriers to interstate mobility, (2) occupations with state licensing and with many states granting reciprocity, and (3) occupations with licensing and evidence of more restrictions on the use of reciprocity. 5 Occupations were classified after two somewhat dated publications on licensing published by the Council of State Governments (1952) (1964) were consulted.

Table 1 shows lower mean values for the interstate migration rate (I.M.R.) and probability of an interstate move (P.I.M.) of occupations with licensing than those without. Still lower means appear for occupations with

 $<sup>\</sup>frac{4}{}$  One occupation—coaches and physical education professors—was excluded.

<sup>5/</sup>The classification of occupations among the three groups is not easily made and involves judgment. In some occupations the requirements for reciprocity differ across states. Developing a continuous measure of reciprocity for different occupations is difficult given the variety of conditions imposed by states before reciprocity is granted. A further difficulty is the lack of information of the implementation of the formal conditions imposed by the states. Under these circumstances a more promising approach is to merely assign each occupation to one of the three broad groups. The classification of the judicial profession was particularly difficult to make. While judges do not complete a formal test process, they are evaluated and recommended by a commission, and sometimes confirmed by a legislative body. Some are elected. Reciprocity has little applicability in this profession. These considerations provide some justification for classifying the judicial profession as a licensed one with limits placed on reciprocity. The classification of accountants may be questioned and with some justification. While C.P.A.'s are examined, the licensing of other accountants appears to vary across states and is of more recent vintage.

TABLE I

INTERSTATE MOBILITY BY OCCUPATION AND LICENSING STATUS
(Selected Occupations)

	*	Occupation	Out-of-State Movers as a Proportion of All Out-of-County Movers (PIM)	Out-of-State Movers as a Proportion of All Members (IMR)	In-County Stayers as a Proportion of All In-State Stayers (PIC)
ı.		upations with Little State			
	1.	Accounting	.480	.119	.855
	2,	Clergy	.486	.281	. 58 <b>6</b>
	3.		597	.191	. 340
	4.	Engineers	.614	.182	.860
	5.	Psychologists	.644	.281	. 774
	6.	Chemists	. 647	.189	.825
	7.	Biologists	. 654	.276	.798
		Math. Specialists	. 654	.229	.843
		Economists	. 688	.292	.813
		Physicists and Astronomers	.710	.276	.845
	u.		.711	.295	.830
:	12.	Atmospheric and Space			000
		Scientists	<u>.742</u>	<u>.251</u>	<u>.883</u>
		Simple Average (1-12)	.636	.239	.813
:	13.	College and University Teachers			
		D	.654	,429	.907
		a. Business and Commerce	.658	.324	751
		b. Education		.316	.807
		c. Physics	.705		.763
		d. Mathematics	.719	.377 .228	.886
		e. Agriculture	.721	.426	.723
		f. Sociology	.728		.814
		g. Biology	.740	.347	.774
		h. Psychology	.742	. 394	-114
		i. Atmospheric, Earth and	-1.0	202	.791
		Marine	.748	.383	.836
		j. Chemistry	.764	. 348	.870
		k. Engineering	.765	.297	.812
		1. History	.770	.386	.863
		m. Law	.790	.341	_
		n. Economics	<u>.792</u>	.436	<u>.797</u>
		Simple Average (1-13)	.689	. 304	.813
II.	Lic	upations with State ensing and Evidence of e Reciprocity			
	1.	Pharmacists	.347	.071	.856
	2.		.441	.072	.902
	3.	-	.556	.125	.885
		Veterinarians	.586	.166	.8 <b>60</b>
	5.	Physicians	<u>. 650</u>	<u>. 186</u>	<u>.877</u>
		Simple Average	.516	.124	.876
III.	Lic pro	supations with State tensing and Little Reci- city or with Little			
	,	Tudasa	300	.018	.956
		Judges	.300 .446	.105	.854
	2.	Lawyers			.891
	3.	Dentists	.498	<u>. 098</u>	<del></del>
		Simple Average	.415	.074	.900

SOURCE: 1970 U.S. Census of Population, Mobility for States and the Nation. PC(2) 2B, pp. 38-44.

lesser reciprocity than those with. 6/ College and university professors have relatively high migration rates and probabilities. In contrast, judges have very low migration rates and probabilities.

These comparisons, crude as they are, suggest that licensing and restrictions on reciprocity have reduced the interstate flow of human capital. There is, however, evidence that the retention probability varies with the use of licensing. The mean retention probabilities are higher in licensed rather than unlicensed occupations. This is a curious finding. The value of licensing and of restrictions on reciprocity to members of an occupation would appear greater when retention probabilities are relatively low. This finding may mean that licensing is a useful device to control the flow of younger practitioners across state boundaries. In any event, the lower interstate migration rates and probabilities of an interstate move in licensed occupations may be caused in part by the higher cost of establishing new practices in different markets, and at this point cannot be attributed solely to licensing and restrictions on reciprocity.

<sup>&</sup>lt;sup>6</sup>It should be noted that differences between occupations in the probability of an interstate move have narrowed over time.

		<u> 1950</u>	<u> 1970</u>	Percent Change
1.	Dentists	.385	.498	26%
2.	Lawyers and Judges	.363	.445	23
3.	Architects	.552	.556	1
4.	Optometrists	.520	.441	<b>-</b> 15
5.	Pharmacists	.390	.347	-11
6.	Physicians	.683	.650	<del>-</del> 5
7.	Accountants	.487	.480	<u>-</u>
8.	Clergymen	.481	.487	1
9.	Engineers	. 583	.614	5
10.	Chemists	.563	. 647	15
11.	College Professors	.708	.731	3

These results suggest that restrictions on reciprocity have been declining over time in dentistry and law.

The logit model has been employed to estimate the determinants of I.M.R. and P.I.M. If  $I_j$  denotes a measure of interstate mobility in the  $j^{th}$  occupation, it is expressed as a function of  $x_j$ , though

(1) 
$$I_{j} = \frac{1}{1 + e^{f(x_{j}) + u_{j}}} \qquad j = 1, ..., 34$$

where  $u_j$  is a disturbance term and  $x_j$  is a vector of independent variables. A transformation of (1) yields

(2) 
$$H_{j} = \ln \left[ \frac{I_{j}}{1 - I_{j}} \right] = -[f(x_{j}) + u_{j}].$$

The selection of the independent variables is dictated in part by the theory developed by Schwartz, by the importance of local goodwill in some occupations, by the importance of growth in producing interstate migration, and by the importance of licensing and restrictions on reciprocity.

The definition of and the symbols used for each of the independent variables are:

#### Age of Worker

Two variables are employed to measure the effect of age.

- a. Median Age of Worker in Experienced Civilian Labor Force, 1970 (AGE).
- b. Percent of Workers in Experienced Civilian Labor Force
   Less than Thirty Years Old, 1970 (YOUTH).
   This variable was employed to determine if occupations with a larger percent of younger workers would record greater interstate

mobility because of the change in residency during the transition from college to work. 1

## 2. Educational Attainment

The information on education attainment of professionals in the 1970 Census of Population is deficient. The highest measured attainment was the open-ended class with 17 or more years of formal education. The median educational attainment in many professional occupations exceeds 17 years. This is a serious limitation and one not easily overcome. Two substitute measures were employed although both are subject to their own limitations:

- a. Percent of Experienced Civilian Labor Force (16 years or older) with Five or More Years of College 1970 (EDU).
- b. Mean Earnings, Full-Time Workers, 1969 (F.T. EARNINGS)

The selection of full-time earnings was indicated because EDU contains greater measurement error in occupations with higher educational attainment. EDU does not distinguish sufficiently between dentists and lawyers on the one hand and physicians and college and university professors on the other hand. Given age, differences in earnings will better reflect differences in educational attainment as well as differences in mean quality of members across occupations.

## 3. Class of Worker

The Census of Population classifies workers into three groups:

- a. Percent of Workers in Private Practice, 1970 (PRI-PRACT).
- b. Percent of Workers Salaried in Government, 1970 (GOV).
- c. Percent of Workers Salaried in Firms and Other Monprofit Institutions, 1970 (PRI-SAL).

 $<sup>\</sup>frac{7}{10030}$  is negatively correlated with AGE (r = -.92).

Because the sum of these three variables equals unity, only the first two are included in the regressions. The coefficients of PRI-PRACT and GOV measure the effect of each of these variables relative to the effect of PRI-SAL.

## 4. Supply of Substitute Employers

The number of colleges and universities per state is typically smaller than the number of firms per state. Therefore, a location change by a professor has a higher probability of involving an interstate move. A variable is required to distinguish between academic occupations and other occupations.  $\frac{8}{}$ 

a. Employed by College or University, 1970 (UNIVER):
 A dummy variable is assigned a value of one in the occupation is composed of college and university teachers.

## 5. Licensing and Reciprocity

Several dummy variables are used to determine the effect of licensing and the effect of restrictions on reciprocity on interstate flows of human capital.

- a. Licensed Occupations with Reciprocity (LIREC): This variable is assigned a value of one if the occupation is licensed and if reciprocity is granted by many states.
- b. Licensed Occupations With Little Evidence of Reciprocity (LICNREC):

  This variable is assigned a value of one if the occupation is

  licensed and if reciprocity is seldom granted or if reciprocity

  is granted only after many conditions are satisfied. The definition

  of LIREC and of LINREC implies the effect on interstate mobility of

 $<sup>\</sup>frac{8}{1}$ It would also be desirable to distinguish between the availability of substitutes among nonacademic occupations.

adding restrictions on reciprocity in an already licensed occupation is measured by the <u>difference</u> between the coefficients of LINREC and LIREC.

- c. Dummy Variables for Each Licensed Occupation with Restrictions on Reciprocity. These variables were introduced to determine if the effect of LINREC on mobility was solely due to the inclusion of judges in the LINREC class.
  - 1. Judicial Occupation (JUD): This variable is assigned a value of one if the occupation is the judiciary.
  - 2. Legal Occupation (LAW): This variable is assigned a value of one if the occupation is the legal profession.
  - 3. Dental Occupation (DENT): This variable is assigned a value of one if the occupation is the dental profession.

## 6. Growth in Market Demand

There were substantial differences in the growth rates of occupations between 1960-1970. If this national growth rate was experienced uniformly across the states, there would be no reason to expect the growth rate in the total number of members in the occupation to affect interstate mobility. If the variability in state growth rates increases with the growth rate of the occupation, then occupations with higher national growth rates would experience greater interstate mobility as members leave slower growing states for faster growing states. This assumption was verified by selecting a random sample of 16 states and 28 occupations, and then finding the variability in state growth rates increased with the mean growth rate of the occupation.

a. Growth Rate in the Number of Workers in C.L.F. between 1960 and 1970 (GROWTH).

A list of the variables and the assigned symbols is reproduced in Chart I for the convenience of the reader.

### CHART I

#### SUMMARY OF VARIABLES AND SYMBOLS EMPLOYED

- 1. I.M.R. = Interstate Migration Rate
- 2. P.I.M. = Probability of an Interstate Move Given an Out-of-County

  Move
- 3. P.I.C. = Probability of Remaining in County Given No Interstate Move
- 4. AGE = Median Age of Worker, 1970
- 5. YOUTH = Percent of Workers in C. L. F. Less than Thirty Years Old,
  1970
- 6. EDU = Percent of Workers in C. L. F. with Five or More Years of College, 1970
- 7. F.T. EARNINGS = Mean Earnings of Full-Time Workers (50-52 weeks), 1969
- 8. PRI-PRACT = Percent of Workers in Private Practice, 1970
- 9. GOV = Percent of Workers Employed by Government, 1970
- 10. PRI-SAL = Percent of Workers Salaried by Firms and Nonprofit
  Institutions, 1970
- 11. UNIVER = Variable Assigned a Value of One if Occupation is Composed of College and University Professors
- 12. LIREC = Variable Assigned a Value of One if Occupation is Licensed and if Reciprocity is granted by states
- 13. LINREC = Variable Assigned a Value of One if Occupation is Licensed and if Reciprocity is seldom granted by states
- 14. JUD = Variable Assigned a Value of One if Occupation is the Judiciary
- 15. LAW = Variable Assigned a Value of One if Occupation is the Legal
  Profession
- 16. DENT = Variable Assigned a Value of One if Occupation is the Dental

  Profession
- 17. GROWTH = Growth Rate of Workers in C. L. F. Between 1960 and 1970.

### III. Empirical Results

The results of the regression analysis are presented in Table II, where the dependent variable is log[I.M.R./(1 - I.M.R.)], and in Table III, where the dependent variable is log[P.I.M./(1 - P.I.M.)]. The results for those variables other than the licensing variable will be discussed first, with comments on the effects of the licensing variables reserved for later.

Median age is inversely related to I.M.R. and P.I.M. It would appear that interstate migration activity is lower and the distance moved (as approximated by P.I.M.) is shorter in occupations with older members. The coefficients of the other age variable, the percent of members less than 30 years old, are consistently negative. It may be recalled that YOUTH was expected to increase mobility if members under 30 made interstate changes as the transition between formal schooling and the job market was made. The reason for the negative coefficient is not altogether clear, but the chief culprit appears to be errors of measurement in the education variable. While interstate mobility may in fact rise with educational attainment, this effect may not appear in the regression results because of errors in the measurement Instead, interstate mobility will appear to be inversely related to YOUTH if YOUTH is more closely correlated to the true but unobserved value of educational achievement. 9/ The errors of measurement in EDU may also be responsible for the significant effect of earnings on interstate migratory activity. Because the possibility of errors of measurement exists, it is not possible to resolve the central issue of whether interstate migration is determined by earnings or educational attainment.

 $<sup>\</sup>frac{9}{\text{The correlation between YOUTH and EDU is surprisingly low, } r = .05$ . This may be a sign of the seriousness of measurement errors in EDU and/or because occupations with the highest growth rates were those with higher educational requirements.

TABLE II

INTERSTATE MIGRATION RATE (I.M.R.),

DEPENDENT VARIABLE

Log [I.M.R.]

1 - I.M.R.]

Independent			Coeffici	ent Estimates	1	_
Variable	(1)	(2)	(3)	(4)	(5)	(6)
1. CONSTANT	4.01**	6.76***	7.90 <sup>**</sup>	5.90**	8.02***	11.06***
2. AGE	12***	14 ***	15 <sup>***</sup>	11 <sup>***</sup>	16***	19 <sup>***</sup>
3. LIREC	-1.01 <sup>***</sup>	83***	76 <sup>***</sup>	<b></b> 60 <sup>**</sup>	70 <sup>***</sup>	<del>-</del> .55
4. LINREC	-1.55 *** '	-1.40 <sup>***</sup>	-1.26***		-1.21 <sup>***</sup>	980***
5. EDU	.011***	.005	56 <b>-</b> 03	.22-02	.45-02	45-02
6. F.T. EARNINGS	.26-03	.30-02*	.41-02**	.41-02**	.29-02*	.51-02
7. PRI-PRACT.	.11	•34	.46	13	.01	.17
8. GOV	16	.40	.44	.40	.13	.38
9. You'ih	04 **	05 ***	05 ***	04**	06 ***	08
lo. UNIVER.			. <b>.2</b> 9**	.18		.45 ***
11. P.I.C.		-2.81***	-3.47 ***	-3.26***	-2.75 **	-4.40 ***
12. GROWTH					.18*	.13*
13. LAW				<b>-1.</b> 03***		
14. ЛИД			•	-1.85 ***		
15. DENT				94 **		
R <sup>2</sup>	•939	.956	.964	.967	.972	.987
σ <sub>u</sub>	.227	.196	.183	.181	.176	.124
N	34	34	34	34	28	28

\*denotes t ratio between 1.60 and 1.99

<sup>\*\*</sup>denotes t ratio between 1.99 and 2.99

<sup>\*\*\*</sup> denotes t ratio greater than 2.99

TABLE III

PROBABILITY OF INTERSTATE MOVE (P.I.M.),
DEPENDENT VARIABLE
LOG P.I.M.
1 - P.I.M.

Independent			Coefficie	ent Estimates		
Variable	(1)	(2)	(3)	(4)	(5)	(6)
1. CONSTANT	4.75 <sup>**</sup>	3.88 <sup>**</sup>	4.62**	3.97	3.6 <b>5</b> *	6.02***
2. AGE	11***	10***	11***	10**	11***	14 <sup>***</sup>
3. LIREC	61 <sup>**</sup>	67 <sup>**</sup>	62 <sup>**</sup>	53 <sup>*</sup>	<b></b> 69***	57 ***
4. LINREC	-1.11***	-1.15 <sup>***</sup>	-1.06***		-1.16***	-·99***
5. EDU	.16-02	.35-02	.12-03	.11-02	.70 <b>-</b> 02**	.29-04
6. F.T. EARNINGS	.48-02***	.39-02**	.46-02**	.47-02**	.25-02	.42-02**
7. PRI-PRACT.	.08	.01	.08	20	<b></b> 39	26
8. GOV	<b>.5</b> 6**	.38	.40	-37	.05	.15
9. Youth	04 <sup>**</sup>	04**	04 <sup>**</sup>	- 04**	05 <sup>***</sup>	07 <sup>***</sup>
10. UNIVER.			.19	.14		•35 <sup>**</sup>
11. P.I.C.		.88	.46	.47	2.25*	.96
12. GROWTH					.14	.09
13. LAW				-1.05**		
14. JUD				-1.23**		
15. DENT				81*		
R <sup>2</sup>	.891	.894	.901	.403	.947	.966
σ <sub>u</sub>	.211	.211	.209	.217	.168	.134
N	34	34	34	34	28	28

<sup>\*</sup>denotes t ratio between 1.60 and 1.99

<sup>\*\*\*</sup>denotes t ratio between 1.99 and 2.99

<sup>\*\*\*\*</sup>denotes t ratio greater than 2.99

An important finding is that P.I.C. or local reputation has a significant effect in reducing the interstate migration rate but not the probability of an interstate move. Hence, the interstate migration rate is lower in occupations where local reputation appears to be important. Not surprisingly, the distance moved, as approximated by P.I.M., is not related to local capital as measured by P.I.C. Once a move is made out of the local market, the importance of local reputation should not determine if the move is over a short or long distance.  $\frac{10}{}$ 

If the growth rate of an occupation has an effect, it is on I.M.R. and not on P.I.M. There is some weak evidence that more rapidly growing occupations experience higher interstate migration rates, but the t values are lower and a cautious interpretation is suggested.

The coefficients of each of the licensing variables are of considerable interest. In each table the coefficients of LIREC and LINREC are negative and often have t ratios exceeding 3. The coefficient of LINREC, the variable for licensed occupations with little reciprocity, is as expected, algebraically smaller than the coefficient of LIREC, the variable for licensed occupations with fewer restrictions on reciprocity. Column 4 of each table indicates the difference in coefficients is not due solely to the lower interstate mobility of judges. The dummy coefficients for the three occupations, law, dentistry and judiciary, indicate significantly lower interstate migration rates with judges having substantially lower rates, followed by lawyers and then dentists. In review, these results indicate licensing itself reduces the interstate migration rate and the probability of an interstate move and the restrictions on reciprocity reduce I.M.R. and P.I.M. still further.

 $<sup>\</sup>frac{10}{\text{While P.I.C.}}$  is related to I.M.R., the proportion of workers in private practice is not. Surprisingly, the simple correlation between P.I.C. and PRI-PRACT is only .29.

The quantitative effect of licensing and restrictions on reciprocity on the interstate migration rate is illustrated for the dental and legal professions in Table 4. If reciprocity was practiced in the dental and legal professions, the interstate migration rate would rise from .105 to .150-.153 in the legal profession and from .098 to .133-.150 in the dental profession.

Elimination of the all licensing raises the migration rate to .248-.275 for the legal profession and to .218-.274 for the dental profession. 11/ These sample calculations show the largest effects on mobility spring from licensing itself. Hence, with smaller effects traceable to restrictions on mobility, the effects of licensing are not simply to reduce the numbers or to certify quality, effects which are frequently mentioned by economists, but to reduce the interstate flow of human capital.

Interestingly enough, the predicted interstate migration rates with the removal of licensing in dentistry and law would closely approximate the mean of the rates for nonlicensed, nonacademic professions. The reduced mobility due to the greater importance of local reputation and age is offset by the greater mobility caused by higher earnings, etc.

Two unresolved issues about the effects of licensing and restrictions on reciprocity on interstate mobility remain and require further comment and study. First, why should and do licensed occupations practicing reciprocity have lower interstate migration rates and lower probabilities of an interstate move than unlicensed occupations? The answer to this query is that the formal conditions about the practice of reciprocity are not in fact implemented and that reciprocity is not practiced in all states so that licensed occupations

These predictions assume changes in licensing status would not change the other independent variables, e.g., age and earnings.

TABLE IV

ESTIMATED EFFECT OF LICENSING AND RESTRICTIONS ON RECIPROCITY ON THE INTERSTATE MIGRATION RATE OF DENTISTS AND LAWYERS

_				<del></del>	
			Occuj	pation	
		(1	)	(2	)
		Dent	ists	d Estimate Derived From Table II	
		Estimate From Ta			
		Equation 3	Equation 4	Equation 3	Equation 4
1.	Actual Interstate Migration Rate	.098	.098	.105	.105
2.	Estimated Interstate Migration Rate	.097	.098	.097	.105
3.	Predicted I.M.R. with Licensing and with Reciprocity	.150	.133	.150	.153
4.	Predicted I.M.R. with Licensing Eliminated	.274	.218	.275	.248

with the apparent liberal use of reciprocity are a quantum jump away from occupations free of licensing. Indeed, the empirical results imply the licensed occupations practicing reciprocity have characteristics more similar to licensed occupations that limit the use of reciprocity than to unlicensed occupations. The second issue is whether the state specific law is capable of explaining the lower interstate migration rate of lawyers. Evidence bearing on this issue is presented in the next section of this paper.

### IV. Investment in State Specific Law

Investments in state specific law may be made in law school if the curriculum and the state bar exam stress—state law and procedure or through experiences and practice. The results of tests of these two hypotheses are summarized below.

## A. <u>Investment in Specific State Law and Law School Education</u>

If the state bar examination emphasizes state law, the curriculum of local law schools will be devoted in part to state law courses. 12/ If the curriculum of law schools focused on state law, law professors as well as lawyers should be less mobile since they too would have made investments in state specific law. Table 5 shows the interstate mobility rate of law professors is more like that of their academic counterparts than the rate for lawyers is like that of their business counterparts. This indirect test suggests that state specific investments are not made by law students during the formal education process.

<sup>12/</sup>The presence of national law schools like Chicago, Harvard, Stanford, Yale, etc., indicates a nonnegligible fraction of law students undertake general investments and constitutes evidence against the state specific investment hypothesis.

Table V
COMPARISON BETWEEN INTERSTATE MOBILITY OF
PRACTITIONERS AND PROFESSORS

			Interstate Migration Rate						
		Pract	itioner	Professor		(5)			
	Field	(1) IMR	(2) Rank	(3) IMR	(4) Rank	Ratio (3)/(1)			
1.	Law	10.5	ı.	34.1	2	3.25			
2.	Engineering	18.2	2	29.7	1	1.63			
3.	Chemistry	18.9	3	34.8	4	1.84			
4.	Mathematics	22.9	4	37.7	.5	1.65			
5.	Biology	27.6	5	34.7	3	1.26			
6.	Psychology	28.1	6	39.4	6	1.40			
7.	Economics	29.2	7	43.6	7	1.49			

			Move			
		Practitioner		Professor		(5)
	Field	(1) IMR	(2) Rank	(3) IMR	(4) Rank	Ratio (3)/(1)
1.	Law	44.6	ı	79.0	6	1.77
2.	Engineering	61.4	2	76.5	5	1.25
3.	Psychology	64.4	3	74.2	3	1.15
4.	Chemistry	64.7	4	76.4	4	1.18
5.	Mathematics	65.4	5 1/2	71.9	1	1.10
6.	Biology	65.4	5 1/2	74.0	2	1.13
7.	Economics	68.6	7	79.2	7	1.15

SOURCE: 1970 U.S. Census of Population, Mobility for States and the Nation. PC(2) 2B, pp. 38-44.

If specific state law is taught in law school and examined for on the bar exam, graduates of law schools in each state should have a higher pass rate on the state bar examination than graudates of out-of-state law schools, holding quality of law student constant. A partial test of this hypothesis is possible since California reports the pass rate of in-state and out-of-state law school graduates. The data in Table VI show that graduates of California law schools approved by the American Bar Association did outperform graduates of A.B.A. approved out-of-state schools during the fifties but that differences in pass rates have narrowed and disappeared during the sixties and seventies. Table VII shows the pass rates of graduates of a selected number of law schools of a more uniform and higher quality. These figures indicate the pass rates of graduates from Stanford, Harvard, and Yale law schools were comparable during the sixties and seventies while the pass rate of graduates from the University of Michigan compare quite favorably to those of graduates of the University of California (Berkelev).  $\frac{13}{}$ On the whole these data suggest that state specific law has not been tested for on the California bar exam and probably has not been an important part of the curriculum of California law schools during the last 10 to 15 years.

## B. <u>Investment in State Specific Law</u> and Experience

Knowledge of state specific law and procedure may be gained through practice. Lawyers who have made investments in state specific law will have a lower probability of moving across state boundaries. Certain types of practices are more likely to require investments in state specific law. The

 $<sup>\</sup>frac{13}{\text{Harvard}}$ , Stanford and Yale are usually identified as national law schools. Hence, the performance of graduates of these three schools might be expected to be similar.

TABLE VI

PASS RATES ON CALIFORNIA BAR EXAM OF GRADUATES
OF IN-STATE VERSUS OUT-OF-STATE LAW SCHOOLS
(First Examination)
(Percent)

Period	Graduates of California Law Schools, A.B.A. Approved	Graduates of Out-of-State Law Schools, A.B.A. Approved
April 1951 - Oct. 1953	72.0	47.0
March 1956 - Sept. 1959	78.7	59.2
March 1963 - Aug. 1965	74.2	69.4
1969 - 1971	70.6	70.3
1973 - 1975	72.4	73.7

SOURCE: California State Bar Journal, various issues.

TABLE VII

PASS RATES ON CALIFORNIA BAR EXAM OF GRADUATES FROM SELECTED HIGHER QUALITY LAW SCHOOLS<sup>22</sup>/(Percent)

			Private		Public	၁
	Period	Stanford	Harvard	Yale	U. of Michigan U. of Calif.	U. of Calif.
٦.	1. April 1951-0ct. 1953	88.7 (274)	69.4 (72)	56.5 (23)	54.8 (31)	79.2 (197)
6	2. March 1956-Sept. 1959	86.1 (294)	75.6 (82)	81.3 (16)	77.4 (31)	88.0 (276)
ŕ	3. March 1963-Aug. 1965	83.8 (260)	85.5 (159)	73.5 (34)	86.8 (53)	80.4 (606)
4.	4. 1969-1971 <sup>b</sup> /	80.9 (293)	89.4 (170)	85.7 (56)	86.6 (67)	77.0 (639)
5.	5. 1973-1975 <sup>b</sup> /	88.2 (338)	87.0 (207)	82.4 (68)	85.3 (75)	79.3 (716)

SOURCE: California State Bar Journal, various issues.

 $^{\mathbf{a}}/_{\mathrm{Number}}$  in parentheses denotes number of applicants.

 $\frac{b}{}$  Graduates - first exam.

practices of lawyers in private practice are more likely to involve state law than salaried lawyers employed by firms. Nongovernment salaried lawyers would include those lawyers working for firms and nonprofit institutions as well as associate lawyers employed by law firms. Lawyers employed by firms may devote a larger share of their time to federal law than lawyers in private practice. Less can be said about the work load of associates. Therefore, it is less clear whether associates make comparatively smaller investments in state specific law than lawyers in private practice. 14/

There is, however, a competing hypothesis which may also explain a lower interstate mobility for self-employed lawyers than for salaried lawyers. Self-employed lawyers develop local reputations and suffer a greater loss in goodwill if they leave the immediate market. This loss of goodwill suggests that self-employed lawyers will be less likely to change residence and will be more likely to remain in the same market if a change of residence is made. Under this hypothesis a smaller proportion of self-employed lawyers than salaried lawyers should move out of county of residence, given that they remain in the state. By limiting the analysis only to those lawyers who remain in the state, the effect of state law on mobility is eliminated and attention can be centered on the differential effect on mobility of the higher cost of mobility for self-employed lawyers.

Table VIII shows (1) the interstate mobility rate (I.M.R.), (2) the probability of an interstate move given an out of county move (P.I.M.), and (3) the probability of remaining in the same county given no change in the state of residence between 1965 and 1970 (P.I.C.) for three classes of lawyers, salaried by private company (or nonprofit organization), government

 $<sup>\</sup>frac{14}{I}$ If a large fraction of associates are employed by the larger law firm, their training would also reflect the type of practice of the larger law firms.

Table VIII
INTERSTATE MOBITITY BY CLASS AND AGE OF LAWYER

Probability of Remaining In-County Conditional On Remaining in State P.I.C.	.731 .930	. 793 . 899 . 762	. 891 . 962 . 914	.940 .956
Probability of an Interstate Move P.I.M.	.384 .550	.359 .353	.240 .303	.325 .386
Interstate Nigration Rate I.M.R.	.079 215	.103	.033 .016	.072 .031
Sample Size	230 140 652	135 115 388	542 62 <b>2</b> 1,502	907 877 758 2,542
Class and Age of Lawyer	<ol> <li>Salaried-Private</li> <li>31-44 years old</li> <li>45-64 years old</li> <li>Total</li> </ol>	<pre>II. Government 31-44 years old 45-64 years old Total</pre>	III. Self-Employed 31.44 years old 45-64 years old Total	IV. All Lawyers 31-14 years old 15-64 years old Total

15/Public Use Sample, 1970 U.S. Census of Population.

lawyer, and self-employed. This table shows the interstate migration rate and the probability of an interstate move is highest for the self-salaried lawyer and lowest for the self-employed lawyer. The probability of remaining in the county of residence given that the lawyer remains in the state between 1965-1970 is lowest for the salaried lawyer employed by firms and highest for the self-employed lawyer. The lower interstate migration rate and probability of an interstate move for self-employed lawyers suggests that state law does depress the mobility of self-employed lawyers. However, among lawyers who remained in the state between 1965 and 1970, a higher proportion of selfemployed lawyers remained in the same county of residence. Therefore, the loss in goodwill suffered by leaving the immediate market is also capable of explaining the lower interstate migration rate of lawyers. An additional piece of evidence suggests that state law is not responsible for lower lawyer mobility. Table IX shows I.M.R., P.I.M. and P.I.C. for Louisiana, a civil law state, and the three adjoining states, Mississippi, Texas and Arkansas presumably common law states. If there is investment in state specific law, Louisiana should be the ideal test case. Yet, the comparison among these states fails to reveal significant differences in mobility patterns.

Investments in state specific law are made over the years as a practice is developed. If so, interstate mobility would decline more rapidly with age in the legal profession than in other occupations once other determinants are held constant. Private practice is one such determinant. Out of market mobility should decline more rapidly with age in those occupations where private practice is important. It is first necessary to control for the effect of private practice on mobility before any effect of state specific law on the mobility of lawyers can be isolated.

Table IX MOBILITY OF LAWYERS IN LOUISTANA AND THREE ADJACENT STATES  $\underline{\mathbf{a}}^{\prime}$ 

Probability of Remaining of in County Conditional  Move on Remaining in State		.810 (17/21) .929 (13/14)	. 800 (108/135) . 843 (70/83)	.700 (7/10) .750 (6/8)	. 795 (132/166) (848 (89/105)
Probability of Interstate Move	.333 (2/6)	.200 (1/5) .000 (1/5)	.206 (7/34)	.250 (1/4) .333 (1/3)	.209 (9/43) (71/1) 930.
Interstate Migration Rate	.063 (2/32) .000 (0/26)	.000 (1/22) .000 (0/14)	.040 (7/142) (541/7) 600.	(11/1) 190. (9/1) 111.	.051 (9/175) .009 (1/106)
Swaple	32 26	22	142 83	11 9	1.75 1.32
, + o + S,	Louisiana Total Self-Employed	Mississippi Total Self-Employed	Texas Total Self-Employed	Arkansas Total Self-Employed	Miss., Texas, Ark. Total Self-Employed

 $\underline{a}/_{\text{Numbers}}$  in parentheses denote the number of observations used to calculate each of the mobility rates and probabilities.

The regression analysis attempts to explain the interstate mobility rates of younger relative to older members of an occupation. The ratio of the I.M.R. for younger members of an occupation (between 25 and 44 years old in 1970) to the I.M.R. for older members (between 45 and 64 years old) is the dependent variable and is expected to be larger in occupations with higher proportion in private practice, PRI-PRACT, and in occupations with higher retention probabilities, P.I.C. A somewhat different method of determining the effect of private practice on relative interstate mobility is also adopted. The ratio of the retention probability of younger relative to older members of an occupation has been calculated to determine if occupations with higher ratios of the retention probabilities have lower ratios of the interstate migration rates. The symbol assigned to the ratio of the retention probabilities is R.P.I.C.

The effect of state specific law on mobility is detected by introducing a dummy variable for the legal profession. If state specific law reduces lawyer mobility, the ratio should be higher for lawyers and the coefficient of the dummy variable will be positive.

The results are shown in Table X and indicate the ratio of migration rates is higher in academic fields and in occupations where private practice predominates. On the other hand, the ratio of retention probabilities is not related to the ratio of migration rates, a disappointing result.

The results on the importance of state specific law are of considerable interest. The ratio of interstate migration rates for lawyers appears no different from the ratios of other occupations once the effects of private practice and university connection are accounted for.

 $<sup>\</sup>frac{15}{\text{An unanswered issue is why PRI-PRACT affects}}$  the ratio of interstate migration rates but not the level of I.M.R.

TABLE X

THE RATIO OF THE INTERSTATE MIGRATION RATE FOR YOUNGER AND FOR OLDER MEMBERS OF AN OCCUPATION

Independent Variable		Coefficient Estimates			
		(1)	(2)	(3)	(4)
1.	CONSTANT	2.44***	-3.57**	-3.16	-3.99
2.	UNIVER	1.17	1.26**	1.12**	.42
3.	PRI-PRACT	7.49***	7.05	5.60***	
4.	P.I.C.		7.28**	6.95**	
5.	R.P.I.C.				9.16
6.	LAW	-1.13	-1.07	<b></b> 33	2.28
7.	DENT			2.65*	6.98***
8.	DOC			1.52	4.38***
	2			·	•
	R <sup>2</sup>	.695	.744	.780	.545
	$\sigma_{\mathbf{u}}$	1.185	1.103	1.059	1.498
	N	34	34	34	34

<sup>\*</sup> Denotes t ratio between 1.60-1.99

Denotes t ratio between 2.00-2.99

Denotes t ratio above 2.99.

In review, the results of these several tests point in one direction. The comparatively low interstate flow of lawyers cannot be explained by investments in state specific law.

#### Conclusions

Occupational licensing has had a quantitatively large effect in reducing the interstate mobility of professionals. Placing further restrictions on the interstate movement of human capital by limiting the use of reciprocity reduces interstate mobility still further, but by a diminishing amount. While licensing may serve the role of a certifying instrument, it has an important effect of restricting the flow of factors even in those occupations where reciprocity among the states is practiced in some degree.

While the lower interstate mobility of lawyers could be traced to investments in state specific law and procedure or to licensing through the state bar exam, the results of the tests suggest that the effects of investment in state specific law are apt to be small. The lower mobility of lawyers, like the lower mobility of dentists, appears traceable to licensing and limitations on the use of reciprocity.

There are two directions in which this study may be extended. A study of the effect of licensing and restrictions on reciprocity on earnings is feasible and is a natural extension. Further analysis of the dental and legal professions may be undertaken to determine if restrictions on the interstate flow of human capital coincide with greater intrastate control over the number and size of educational institutions than in licensed professions with reciprocity or unlicensed occupations. A study of the reasons for licensing in some and not other occupations would be valuable but progress is apt to be small. Yet, such a study is necessary if the relative merits of the cartel versus the certification hypothesis for licensing are to be evaluated.

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