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THE PREVALENCE AND EFFECTS OF OCCUPATIONAL LICENSING

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ABSTRACT

This study provides the first nation-wide analysis of the labor market implications of occupational licensing for the U.S. labor market, using data from a specially designed Gallup survey. We find that in 2006, 29 percent of the workforce was required to hold an occupational license from a government agency, which is a higher percentage than that found in studies that rely on state-level occupational licensing data. Workers who have higher levels of education are more likely to work in jobs that require a license. Union workers and government employees are more likely to have a license requirement than are nonunion or private sector employees. Our multivariate estimates suggest that licensing has about the same quantitative impact on wages as do unions -- that is about 15 percent, but unlike unions which reduce variance in wages, licensing does not significantly reduce wage dispersion for individuals in licensed jobs.

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Introduction

One of the fastest growing, yet least understood, institutions in the U.S. labor market is occupational licensing. The movement to a service-oriented economy from manufacturing, where unions and contracts were prominent, created a demand for a "web of rules" of the workplace that licensing may have provided (Dunlop, 1958). While unions have declined, occupational licensing has grown over the last fifty years (Kleiner, 2006).

Occupational regulation in the U.S. generally takes three forms. The least restrictive form is registration, in which individuals file their names, addresses, and qualifications with a government agency before practicing their occupation. The registration process may include posting a bond or filing a fee. In contrast, certification permits any person to perform the relevant tasks, but the government—or sometimes a private, nonprofit agency—administers an examination and certifies those who have achieved the level of skill and knowledge for certification. For example, travel agents and car mechanics are generally certified but not licensed. The toughest form of regulation is licensure; this form of regulation is often referred to as "the right to practice." Under licensure laws, working in an occupation for compensation without first meeting government standards is illegal. In 2003 the Council of State Governments estimated that more than 800 occupations were licensed in at least one state, and more than 1,100 occupations were licensed, certified or registered (CLEAR, 2004).

In this paper we use newly available data from a national survey conducted by the Gallup Organization on our behalf to analyze the influence of occupational licensing in the labor market. To determine if a worker is in a licensed position, the survey asks the question: "Does your job require a license by a federal, state or local government agency?"

This study is the first attempt to gather nation-wide data by asking individuals whether a government license is required to do their work. We find that about twenty-nine percent of the work-force is required to obtain a license from either the federal, state or local government to work for pay. The information from the survey shows that licensing is more prevalent among more highly educated workers, minorities, union members, and government workers. The impact of licensing on wages, as judged from a cross-sectional regression, is similar to the influence of unions on wages. Unlike the estimates of the impact of unions, that reduces the variation of wages, licensing results show that there is little effect on wage variations. However, workers who are licensed say they are more competent in doing their jobs, in contrast to what we find for union members.

Why License?

The simplest theory of occupational licensing emphasizes the administrative procedural role of licensing. It perceives a costless supply of unbiased, capable gatekeepers and enforcers. Friedman (1962) questioned the role of the government and professional associations as unbiased gatekeepers and enforcers. Instead, he viewed licensing's entry restrictions as creating undesirable monopoly rents through greater barriers to entry. Friedman argued that licensing systems are almost always run by and for incumbents, so that gatekeepers and enforcers are self-interested. Their vested interests lead them to not only create monopoly rents through restrictions on entry but also to limit complaints and disciplinary procedures against most incumbents.

An alternative view is that licensing requirements can take the form of unspecified fixed costs controlled by the licensing authority that is similar to the unbiased gatekeeper (Shapiro 1986). The skill and quality of the licensed worker affects the relative cost of producing high-quality services, and licensing takes the more specific form of a minimal human capital requirement. In practice the fixed costs would be requirements that entrants and incumbents take job specific training programs, pass an exam or have long-term residency requirements. These models resemble the ones above in predicting, typically, that both the average quality and the average prices or earnings from the services within the regulated industry will rise as licensing requirements are implemented or tightened, resulting in benefits for those who want higher quality, but at a cost to those who are in lower quality service markets.

Growth of Regulation

During the early 1950s, less than 5 percent of the U.S. work force was covered by licensing laws at the state level (Council of State Governments, 1952). That grew to almost 18 percent by the 1980s—with an even larger number if federal, city and county occupational licensing is included. By 2000, the percent of the workforce in occupations licensed by states was at least 20 percent, according to data gathered from the Department of Labor and the 2000 Census.

As employment shifted from manufacturing to service industries, which typically have lower union representation, the members of the occupations established a formal set of standards that governed members of the occupation. For a professional association, obtaining licensing legislation meant raising funds from members to lobby the state legislature, particularly the chairs of appropriate committees. In addition, the occupation association often solicits volunteers from its membership to work on legislative campaigns. With both financial contributions and volunteers, the occupational association has a significant ability to influence legislation, especially when opposition to regulatory legislation is absent or minimal (Wheelan, 1998).

Most prior studies gathered data to estimate the number of individuals who were in licensed occupations at the state level, where most licensing occurs in the U.S. (Kleiner, 2006).

However, these estimates understate the regulation that also occurs at the federal and local level. For this reason the Gallup Survey provides a more comprehensive assessment of the coverage of occupational licensing. In Figure 1 we show trends in the growth of occupational licensing and unionization from 1950 to 2006[1]. Licensing data for earlier periods are only available at the state/occupational level; the data gathered through the Gallup Survey are denoted with a dashed line in the figure. Despite possible problems in both data series, it is clear that occupational licensing is rising and unionization is declining. By 2006, 29 percent of workers said they were required to have a government-issued licensed to do their job, compared with only 12 percent who said they were union members.

The Gallup Survey

The survey we use for our analysis was a national survey conducted by the Gallup Organization from May to August of 2006. The random digit dial phone survey began with the Bureau of Labor Statistics' (BLS) American Time Use Survey (AUTS), and included Current Population Survey (CPS) questions on demographics, industry, occupation, earnings, and education. The response rate was 37 percent, which is reasonable for a private survey of this kind.[2] The total number of respondents in the survey was 3,982, and 2,037 of these individuals were employed in the reference week. Due to missing data the totals for the analysis of wages and perceived competence is generally lower. We examined the individual responses for those who stated that they needed a license to do their work and found few surprises. When we examined individual responses for accountants, teachers, and barbers, they typically stated they

[1] The method used to calculate the percent licensed prior to 2006 first involved gathering the listing of licensed occupations in Bureau of Labor Statistics Occupation and Employment Survey. This was matched with occupations in the 2000 Census. If no match was obtained the occupation was dropped. From the Census the number working in the licensed occupation in each state was estimated and used to calculate a weighted average of the percent of the workforce in U.S. that works in a licensed occupation.
[2] Sample weights were developed to adjust for non response. The pattern of time use closely matched the ATUS. All of the results we present rely on weighted estimates.

needed a license to do their work. Similarly, factory laborers, carpenters, and economists stated they did not need a license.

In Figure 2 we show the distribution of licensed occupations by education, race, union status, public or private sector, and gender. The results indicate that licensing increases with education: more than 40 percent of those with post college education are required to have a license, a contrast to 11 percent for those with less than a high school education. Both African-Americans and Hispanics have a higher percentage of licenses than do Whites or Asians. In panel C of Figure 2 the results show that union members are more likely to be licensed, reflecting the large number of teachers and nurses who tend to be both union members and licensed. Government workers are more likely to have a license than non-government workers, and there is no difference in the licensing rate by gender.

Multivariate Estimates

In Table 1 we summarize initial results of the impact of licensing on wages. Specifically, we augment a standard human capital earnings equation to include a dummy variable measuring whether a license is required for the worker's job. We regard these estimates as mainly descriptive as licensed workers may differ from unlicensed workers in unobserved ways, even after we condition on education and occupation. If a licensed dummy is added to a standard wage equation, having a license is associated with approximately 15 percent higher hourly earnings (p-value < 0.001). The cross-sectional effect of licensing is remarkably similar to the estimated effect of belonging to a union (see Lewis, 1986), and greater than an additional year of schooling.

Of course, jobs that require a license may also require higher skill, and thus may not be directly comparable, even conditional on education, experience and other covariates variables in the regression. We can partially adjust for unobserved factors by controlling for occupation dummies. Within some occupations (e.g., electricians), identical jobs are licensed in some states and not in others. In an alternative specification in column 2, we controlled for 306 detailed occupation dummies. We continued to find an estimate of the licensing variable of around 15 percent, and the estimate continued to be statistically significant. The resilience of the licensing wage effect to occupation controls suggests that the cross-sectional estimate is not severely biased by omitted variables associated with licensing at the occupation level.[3]

Does licensing reduce variability in wages similar to the impact of unions? To examine the role of each labor market institution on the wage structure within large occupational categories, we grouped workers into three large occupational groups: professional and technical workers, managers and administrators, other occupations. Large occupational groups were used to have sufficient observations for a meaningful analysis of wage dispersion in similar types of jobs. We also looked within the full sample. For each sample we first regressed the log wage on education, experience, and dummy variables indicating union status, occupational licensing status, public sector employment and gender. We then used the squared residuals from this regression to compare the mean squared residual in licensed and unlicensed jobs and in unionized and nonunionized jobs. The results in Table 2 show that the dispersion of wages of union members is significantly lower than for nonunion members, consistent with Freeman (1982). Residual wage dispersion in licensed jobs, however, is about the same or only slightly smaller, on average, than in unregulated ones. Unlike unions, the institution of occupational licensing does not appear to result in lower wage dispersion.

[3] We also attempted to instrument for licensing by using the state licensing of an occupation such as electricians plumbers and teachers but were not able find a robust instrument in our first stage estimates.

If licensing is associated with increases in earnings, does it result in more competent services? Our evidence here is sketchy and depends on subjective self assessments. We model answers to a question that asked: “On a scale of 0 to 6, where 0 means not at all and 6 means very much, how competent did you feel while you were at work yesterday?” Using responses to this question as the dependent variable, we estimate a multivariate equation with standard human capital and labor market variable as controls. Table 3 shows our results. We find that individuals who have a license perceive themselves as being more competent. In contrast, union members perceive themselves as less competent than other workers. Although a more precise measure of quality would gather information from consumers or directly observe output, these estimates show that self-reported abilities are higher for licensed workers. Moreover, the contrast with union members suggests that the results are not merely the consequence of a wage premium. If the results can be replicated for consumer outcomes, there may be support for the Shapiro model of greater ability, quality, and costs of licensing for some consumers as a consequence of licensing (Shapiro, 1986).

Conclusions

Our study provides the first national analysis of labor market implications of workers who are licensed by any agency of the government in the U.S. Using a specially designed Gallup survey of a nationally representative sample of Americans, we provide a preliminary analysis of the influence of this form of occupational regulation. We find that 29 percent of the workforce was required to hold a license in 2006, which is a higher percentage than that found in other studies that rely on state-level occupational licensing data or single states. Workers who have higher levels of education are more likely to work in jobs that require a license. This pattern suggests that our results are not spuriously reflecting driver’s licenses. Union workers and government employees are more likely to have a license requirement than are nonunion or private sector employees. Our multivariate estimates suggest that licensing has about the same quantitative impact on wages as do unions -- that is about 15 percent. If this result holds up to further scrutiny, occupational licensing would be a much more important phenomenon for the distribution of income than labor unions.

With the large and growing number of workers required to obtain an occupational license, and the apparently large effect of licensing requirements on the labor market, we think it would be prudent for the government to measure the extent of occupational licensing in a manner similar to information that is collected for unions. To help this effort, we are in the process of developing a small number of questions on occupational licensing that can be added to a labor force survey, such as the Current Population Survey. These questions would help to answer more fully how much regulation is optimal, the effect of licensing on wages and productivity, and the type of regulation that is best suited for the emerging jobs in the workforce.

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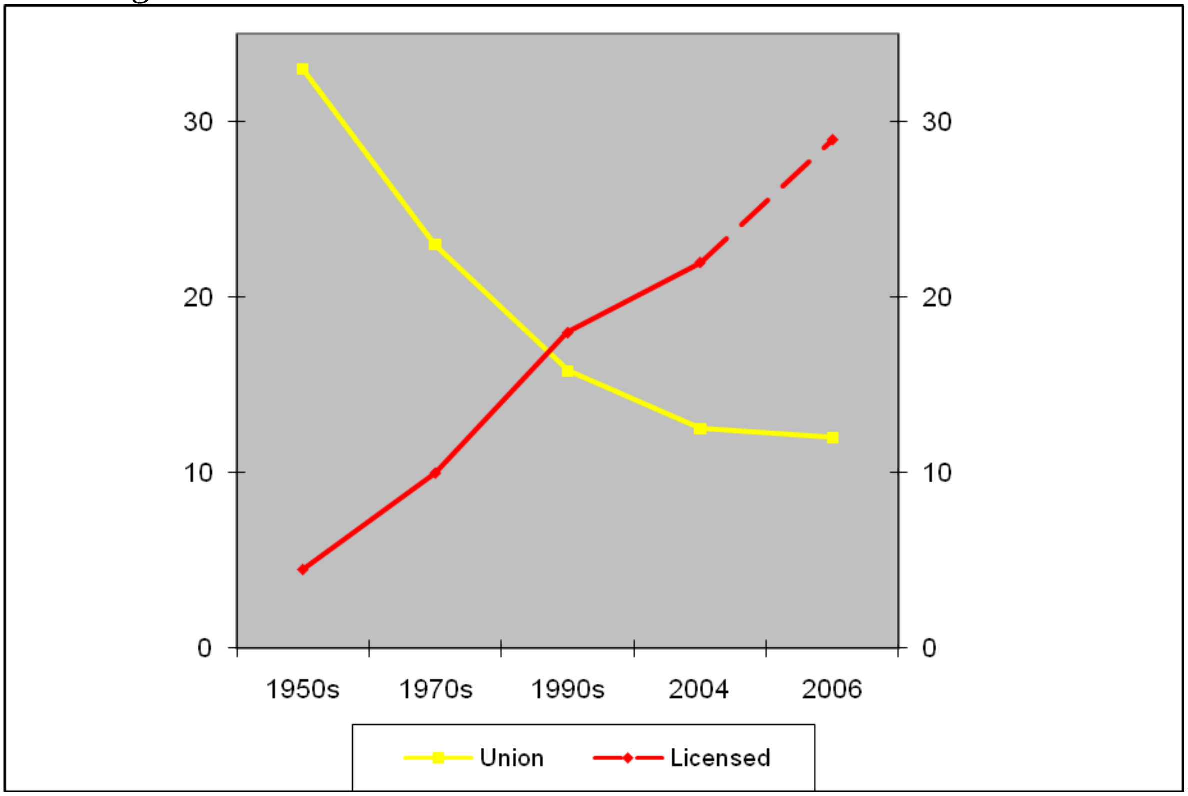
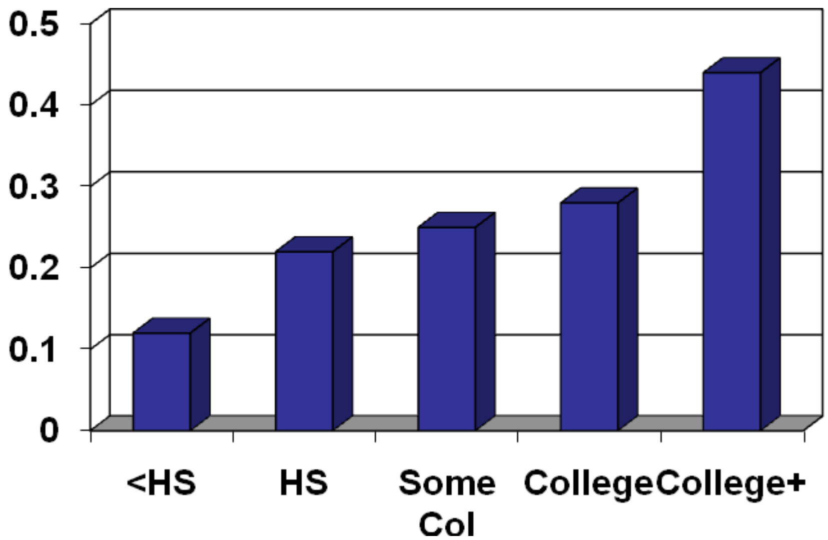
Figure 1: Comparisons in the Time-Trends of Two Labor Market Institutions: Licensing and Unionization*



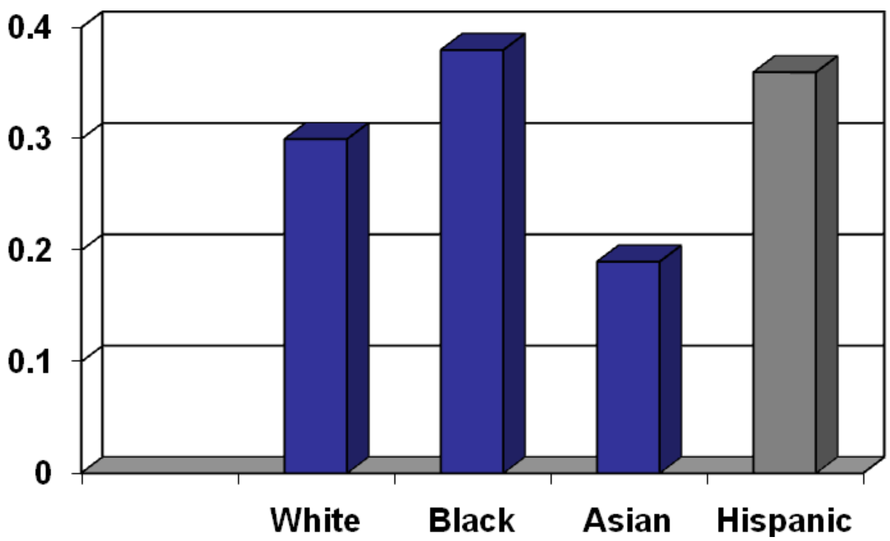
*Dashed line shows the value from state estimates of licensing to the Gallup Survey results

Figure 2: Occupational Licensing by race, gender, education, occupation, and industry

Panel A: Education



Panel B: Licensing by Race



Panel C: Licensing by Union Status, Industry and Gender

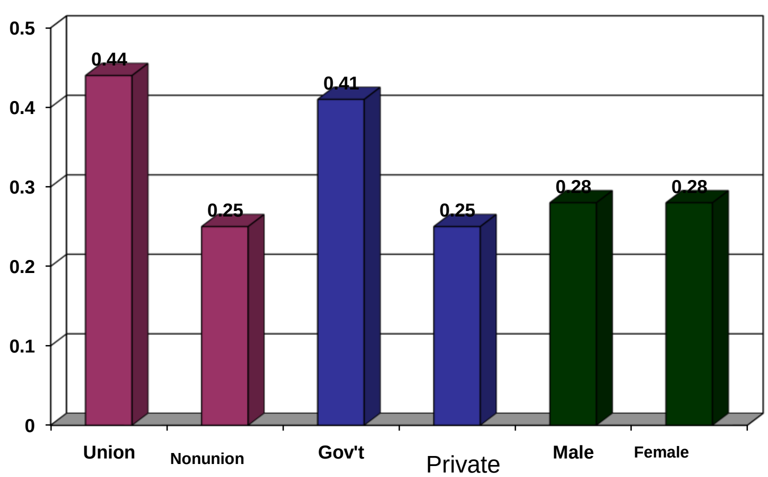


Table 1: Multivariate Estimates of the Influence of Occupational Licensing on Hourly Wages With and Without Occupation-specific Controls

Dependent variable Log wage	Coefficient (1)	Standard error	Coefficient (2)	Standard error
License	0.15	0.03	0.157	0.04
Experience	0.03	0.004	0.03	0.004
$\text{Experience}^2/100$	-0.04	0.007	-0.04	0.007
Education	0.11	0.005	0.08	0.007
Gender	-0.29	0.03	-0.23	0.03
Union	0.12	0.04	0.14	0.05
Government	-0.08	0.04	-0.01	0.04
Constant	1.56	0.08	2.28	0.17
306 occupation-specific controls	No		Yes	
Sample size	1628		1614	

$R^2 = 0.32$ $R^2 = 0.55$

Table 2: Wage Variability in Licensed and Unlicensed Jobs and Union and Non-Union Jobs, Within Broad Occupational Categories and Overall

Occupation Category	Mean Within-Category Squared Residual			
	Licensed	Unlicensed	Difference	P-Value
Professional/Technical	0.33	0.32	0.01	0.749
Managers	0.48	0.37	0.11	0.293
Other	0.34	0.38	-0.03	0.756
All	0.36	0.34	0.02	0.567

Occupation Category	Mean Within-Category Squared Residual			
	Union	Nonunion	Difference	P-Value
Professional/Technical	0.22	0.35	-0.13	0.017
Managers	0.25	0.41	-0.15	0.35
Other	0.14	0.4	-0.26	0.06
All	0.22	0.37	-0.15	0.002

Note: Tables shows means squared residual from log wage regression. See text for details. Sample size is 1,680.

Table 3: OLS Estimates of the Impact of Licensing on Perceived Competence, N=1951*

Dependent variable: Perceived Competence	Coefficient	Standard error
License	.16	.05
Education	.016	.009
Age	.007	.009
Union	-.006	.069
Government	.13	.07
Self employed	.05	.07
Nonprofit	.07	.08
Constant	-.59	.12

R^2= .02

*Question was “On a scale of 0 to 6, where 0 means not at all and 6 means very much, how competent did you feel while you were at work yesterday?”