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The impact of potential labor supply on licensing exam difficulty ☆

Mario Pagliero

University of Turin, Italy
Collegio Carlo Alberto, Italy

HIGHLIGHTS

- Entry into licensed professions typically requires passing licensing examinations.
- The number of individuals wishing to enter a profession is the potential supply.
- Larger potential supply is correlated with more difficult licensing exams.
- Occupational licensing may partially shelter the market from supply shocks.
- Occupational licensing may limit the impact of labor supply policies.

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ABSTRACT

Entry into licensed professions requires meeting competency requirements, typically assessed through licensing examinations. This paper explores whether the number of individuals attempting to enter a profession (potential supply) affects the difficulty of the entry examination. The empirical results suggest that a larger potential supply may lead to more difficult licensing exams and lower pass rates. This implies that licensing may partially shelter the market from supply shocks and limit the impact of policies targeted at increasing labor supply.

1. Introduction

For an increasing number of occupations, people seeking to enter the profession must satisfy a number of requirements set by state licensing boards. This usually means passing a licensing examination and meeting educational, residency and moral character and fitness requirements. According to Kleiner (2000), over 800 occupations are licensed in at least one U.S. state, including lawyers, accountants, auditors, teachers, nurses, engineers, psychologists, barbers and hairdressers. Occupational licensing directly affects 29% of U.S. workers, more than those affected by either minimum wage or unionization (Kleiner and Krueger, 2010, 2013). Moreover, while the number of licensed occupations is rising, the proportion of the workforce being represented by trade unions is falling. Hence, an understanding of the determinants of licensing restrictions is growing increasingly important.

This paper explores the possibility of a link between the number of individuals attempting to enter a profession (potential supply) and the stringency of the entry requirements. While the existence of such a relationship is generally accepted in the literature (a summary is provided in Section 2), there is no direct evidence as to whether potential labor supply affects entry requirements. This may be due, in part, to the difficulty of measuring the stringency of entry requirements: while licensing boards may adjust the difficulty of the exams, their behavior is not generally observable to the researcher.

This work exploits an unusually rich panel data set on the U.S. market for lawyers. In this market, accurate data is available on bar exam difficulty, the number of exam candidates and exam outcomes.

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E-mail address: mario.pagliero@unito.it.

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Detailed data on candidate ability can also be procured. Another factor making this market well suited for the present study is that the structure of the bar exam remains the same in the states and years in the sample, whereas the exam difficulty and the number of candidates vary significantly.

There are large discrepancies in exam difficulty across states. For example, when holding candidate ability constant, a change in exam difficulty from the standard in Alabama to the standard in California would imply a drop from 79% to 39% in the pass rate.[1] States with more numerous candidates tend to have more difficult examinations (holding candidate ability constant). Also using within-state variability, I find a positive correlation between the number of candidates and bar exam difficulty. Accounting for the possible endogeneity of potential supply increases the estimated correlation between the two variables. Overall, the paper shows that minimum entry requirements are relative standards, which are highly correlated with potential labor supply in the profession.

The magnitude of the estimated correlation suggests that licensing boards may significantly respond to changes in potential supply. Doubling the number of exam candidates is consistent with an increase of about 8% in exam difficulty. This implies that the actual increase in successful candidates may be about half of the increase that would have taken place without increases in standards. Thus, the licensing exam may partially shelter the market from supply shocks. More generally, it may affect the return to earning a professional degree and could dampen the impact of labor market policies targeted at increasing labor supply. Given the scale of public expenditure on education, it is important to understand whether professional licensing may influence the impact of such public investment on the labor supply.[2] Finally, professional licensing may also affect diversity in the profession. Since the service industry is a growing source of employment in developed economies, access to licensed professions may become an increasingly sensitive issue. This is particularly true for minorities, who provide a growing proportion of workers in less skilled licensed professions. The results of this paper are also relevant for the debate on the causes and consequences of occupational licensing and the applicability of competition rules in professional markets in the U.S. and the European Union (Andrews, 2002; Paterson et al., 2003; European Commission, 2004).

2. Related literature

The stringency of entry requirements is the key variable controlled by licensing boards. The stated objective of entry examinations is uniquely to protect the public from unqualified practitioners. In fact, when standards are changed, there is typically no reference to changes in market conditions. However, there is agreement among economists that minimum standards are expected to vary depending on (potential) labor supply in the profession, since their impact on social welfare and salaries in the profession crucially depends on the availability of potential entrants. Independent of the exact objective function of licensing boards, then, potential supply is a key determinant of licensing stringency.[3] However, there is surprisingly little empirical research on the subject. In practice, little is known on how and why entry requirements change.

In one of the early contributions to the literature on licensing, Maurizi (1974) finds cross-sectional evidence of a negative correlation between the number of applicants and the pass rate on professional exams. He suggests that this correlation may be evidence of licensing boards increasing exam difficulty in response to excess supply. Although this evidence is intriguing (and similar results are obtained with my data, see Fig. 1), using pass rates as a measure of licensing strictness has clear limitations, given that they depend both on exam difficulty and candidate ability.

Leffler (1978) attempts to overcome this problem by developing a proxy for licensing difficulty in the market for physicians. Since candidates can take either a state or a national examination, the proportion of candidates choosing the state exam is used to develop a proxy for state exam difficulty. Although this is a significant step forward in measuring the stringency of entry requirements, the indirect procedure makes this proxy very imprecise. Moreover, candidate ability remains unobservable, and endogeneity may seriously affect the analysis (p.182).[4]

A related stream of literature has focused on the effect of licensing on wages and on the quality of professional services (Shepard, 1978; Haas-Wilson, 1986; Kleiner, 1990; Kleiner and Kudrle, 2000; Kugler and Sauer, 2005; Timmons and Thornton, 2008), and labor mobility (Pashigian, 1979, 1980). Harrington and Krynski (2002), and Harrington (2007) study the impact of professional licensing in the funeral industry. Federman et al. (2006) analyze the effect of state licensing regulations on low-skilled immigrants. Law and Kim (2005) study the historical origins of licensing, and Law and Marks (2009) the impact of licensing on minorities in the progressive era. Pagliero (2010) exploits changes in bar exam difficulty to estimate the effect of licensing requirements on entry-level salaries in the legal market. Winston et al. (2011) discuss the current policy debate on the regulation of the legal market.

All these studies focus on estimating the effects of licensing regulation on economic outcomes, implicitly assuming that licensing requirements are exogenously given. This paper departs from this stream of literature, as it does not focus on the effects of licensing regulation, but rather on the determinants of the stringency of entry regulation.[5]

3. Brief overview of the bar exam and the data

The structure of the bar exam is the same in almost all states and has remained stable over the past two decades. The exam is administered twice a year, in February and July.[6] It consists of two components: the Multistate Bar Examination (henceforth MBE), a standardized test, and essay and case questions. The MBE contains 200 multiple choice questions developed by the National Conference of Bar Examiners, who are also responsible for correcting this portion of the exam. Using the results of a small sample of questions, which are repeated in different examinations over time and across states, scores are scaled so that any single MBE score represents a standard level of performance, regardless of when and where the exam is taken. Hence, the mean MBE score for candidates taking the exam in a given state and year is a cardinal measure of their average quality, and exam results can therefore be compared across states and years.[7]

[1] I use for comparison a normal score distribution, with a mean equal to the mean bar exam score and the variance equal to the mean variance in the U.S. over the period 1981–2003. The grading procedures for the bar exam are described in Section 3.

[2] In 2007, OECD countries devoted 13% of total public expenditure to education, of which 3% to tertiary education (OECD, 2010).

[3] There are two main views of licensing. According to Adam Smith (1776, I.x.c.5), the objective of licensing requirements "is to restrain the competition to a much smaller number than might otherwise be disposed to enter into the trade". According to this classic view, licensing is an inefficient institution that allows practitioners to capture monopoly rents by restricting entry (Friedman and Kuznets, 1945; Stigler, 1971). More recent theoretical studies have focused on the existence of asymmetric information on the quality of professionals (Akerlof, 1970; Leland, 1979; Shaked and Sutton, 1981; Shapiro, 1986). In the presence of asymmetric information, the licensing board takes into account both the quality-enhancing and competition-reducing effects of entry requirements. In this setting, if the objectives of the licensing board correspond to social welfare, licensing may be socially beneficial (the public interest theory of licensing, Leland, 1979).

[4] Kleiner (1990) provides a replication and time-series extension of the model first estimated by Maurizi (1974).

[5] Pagliero (2011) also looks at licensing standards as an endogenous outcome of regulation. However, the objective of the paper (identifying competing models of licensing) and the empirical strategy are different.

[6] Exceptions are Delaware, Nevada and North Dakota, where the bar exam is held only once a year.

[7] A more detailed description of the MBE can be found at http://www.ncbex.org. A similar standardized test is the Graduate Record Examination (GRE), often used in the admission process to graduate courses.