Licensing Occupations

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Comparing Licensing in the United States and the European Union

Millions of Europeans, from bartenders to soccer stars, have to deal with what might be called the certification complex—a requirement that they be certified to pursue their jobs in a time-consuming process dating back to 19th-century apprenticeships. Economists say it is a big reason behind Europe’s high unemployment and lagging productivity.

—John Miller, Wall Street Journal, August 16, 2004

As the above quote suggests, the regulation of occupations is perceived to be a major factor in the lack of efficiency in the labor market and a contributor to lagging productivity and high unemployment in Europe. Is this the case, and do the European methods of regulating occupations have different outcomes from those in the United States? The focus of this chapter is to present the basic data on and analysis of the labor market impact of licensing in the three largest EU countries: France, Germany, and the UK. Prior to 2003, these nations comprised more than 51 percent of the EU workforce (Statistical Office of the European Communities 2004). This analysis will be used to compare the impacts of licensing in the EU relative to the United States.

For licensed occupations in both the United States and the EU, the government is able to control who gets to work and how the task is done. However, licensing follows divergent paths in both cases and results in varied labor market outcomes. In most EU countries, licensing is national and, for most professions, there is no licensing exam beyond passing the classes in order to graduate from an accredited school. However, the regulatory trade-off in the EU is that, for most occupations, practitioners are regulated more heavily after they are working. Unlike the generally market-oriented focus of U.S. occupational licensing laws following entry, the level of fees, method of payment (e.g., contingency or hourly), and advertising are all regulated by the government in the EU (Garoupa 2004). Consequently, there is likely to be much greater
variation in earnings of licensed practitioners in the United States because of fewer post-entry regulations of licensed practitioners. In addition, earnings of licensed individuals in the EU are likely to mimic the overall earnings distribution in the EU, with relatively high minimum earnings and lower upper bounds for workers. Generous social safety nets and relatively higher taxes in the EU result in a much narrower wage and earnings distribution than in the United States (Filer, Hammermesh, and Rees 1994). Moreover, for most occupations in medical specialties, such as physicians and dentists, a large proportion of practitioners work for the government or are limited by government pay scales. Finally, for many of the regulated occupations, subsidies by EU governments for education in medical and other specialties often result in a justification for regulations that limit earnings. The remainder of this chapter documents the regulations that licensed practitioners work under and estimates the impact of licensing on earnings in comparison to unregulated occupations in the three largest countries in the EU.

OCCUPATIONAL REGULATION IN THE EU

The nations in the EU have only recently focused public policy attention on the economic and labor market consequences of occupational licensing (Paterson, Fink, and Ogus 2003). Occupational regulation across countries has been divided into two general categories: structural regulation and behavioral regulation. Examples of structural regulation include entry restrictions and the granting of exclusive rights to perform certain services. These types of restrictions would likely be promulgated by the organizations associated with the occupation and would be a form of public interest regulation. Examples of behavioral regulation include rules regarding the level or structure of professional fees and limitations on advertising (Commission of the European Communities 2004). For this type of regulation the “social planner” would likely restrict the upper bound for prices, but the occupational association may view this as acceptable if the lowest price that could be charged were sufficiently high to satisfy the majority of the members of the occupation. This process may be similar to unions setting the minimum negotiated wage for a large number of employees
at a sufficiently high level, but this policy may come at the price of a truncated upper wage (Freeman and Medoff 1984).

This type of regulation in the EU impacts both the price and the level of employment. Regulation in the United States occurs through the restriction of entry or employment, but the price or wage can be set by the market for the service. Restrictions in the EU occur both through regulations on entry and through limitations on prices. Consequently, the restrictions are likely to manifest themselves in wait time and shortages for the service. Table 6.1 shows attitudinal data for users of health services for the UK and United States, and it shows that perceptions of wait times and shortages for appointments and the time to see health professionals are substantially higher in the UK relative to the United States (Commonwealth Fund 2002). This table shows patient attitudes

Table 6.1 Survey Perceptions of “Wait Time” and Shortages for UK and U.S. Patients

<table>
<thead>
<tr>
<th>Most frequently cited problems</th>
<th>UK</th>
<th>U.S.</th>
</tr>
</thead>
<tbody>
<tr>
<td>High cost of health care</td>
<td>6</td>
<td>48</td>
</tr>
<tr>
<td>Shortages</td>
<td>33</td>
<td>5</td>
</tr>
<tr>
<td>Waiting times</td>
<td>39</td>
<td>3</td>
</tr>
<tr>
<td>Need for increased number of health professionals</td>
<td>15</td>
<td>2</td>
</tr>
<tr>
<td>Having to wait for an appointment, long waiting times for type of care</td>
<td>75</td>
<td>40</td>
</tr>
</tbody>
</table>

NOTE: The International Health Policy Survey (Commonwealth Fund 2002) consisted of interviews with adults with health problems in each of five countries: Australia, Canada, New Zealand, the UK, and the United States. To identify these adults, the survey screened initial random samples of adults 18 or older who met at least one of the four following criteria: reported their health as fair or poor; had serious illness, injury, or disability that required intensive medical care in the past two years; had major surgery in the last two years; or had been hospitalized for something other than a normal, uncomplicated delivery of a baby. These questions resulted in a final sample of 750 or more “sicker adults” in each country who were eligible to participate in the full survey (AUS, 844; CAN, 750; NZ, 750; UK, 750; U.S., 755). This final survey sample represents one-fourth to one-third of the adults initially contacted. These sicker adults are among the most intensive users of the health care system and are particularly vulnerable to variations in quality and outcomes of care. Harris Interactive, Inc. and country affiliates conducted the interviews by telephone between March and May 2002.
toward the wait time for medical services, which are the most heavily regulated occupations in both the United States and the EU. On the other hand, complaints about price are much greater in the United States (48 percent) relative to the UK (6 percent). Unfortunately, the survey results are not available for Germany or France, but the available results show that complaints about a shortage of health professionals are 15 percent in the UK relative to 2 percent in the United States. Overall the data in this table show that, at least for the UK, putting greater constraints on both employment and prices can lead to shortages, which manifest themselves in longer waiting times for patients.

Unlike the Department of Labor and Census Bureau data in the United States, which allow for the tabulation of an estimate of the number of regulated occupations, there is no central agency that gathers data on the number of persons who are licensed by country in the EU. It is therefore difficult to estimate the number of occupations licensed in the EU or the density level of licensing as a percentage of the workforce in Europe. Consequently, my examination of licensing in the EU will be focused on a country-by-country basis with an emphasis on specific occupations rather than the relatively large number of occupations that were examined for the United States. Nevertheless, estimates are provided of the overall impact of licensing for a group of regulated occupations across the UK, France, and Germany, and these are likely to be representative of the larger body of licensed occupations in these nations.

The focus on the port of entry for joining a licensed occupation is on the educational establishments rather than passing licensing exams following the completion of schooling. An example of the method for becoming licensed in the EU is provided through the licensing process for dentists in the UK. To work as a dentist in the UK, one must obtain a license from the General Dental Council (GDC) and be put “on the register” (Jetha 2002). A candidate must graduate from a dental school accredited by the GDC or be subject to EU regulations on mobility of professionals across countries. If an individual is from a non-UK or non-EU dental school, a licensing exam is required to be listed on the GDC registry. Requirements for becoming a dentist include being in dental school at least five years, which is up from four years. In contrast, U.S. dentists must obtain an undergraduate degree and then go to dental school for four years. In the UK, dentists can work either for
Comparing Licensing in the United States and EU

the national health insurance or as a private dentist. Within the national health insurance, there are proscribed numbers of patients per day, and this often leaves little time per patient.

Unlike the United States, where dentists and their perceptions of labor market conditions often influence dental licensing boards, the numbers who enter the occupation in a particular year in the UK, and the number of overall entrants, are largely determined by the demands of the national health insurance through the national government acting as a planner (Kleiner 1990; Maurizi 1974). As shown in Figure 6.1, even though there are booms and busts in the number of applicants, perhaps following the “Cobweb model” of either too many or too few practitioners based on the previous year’s market conditions, the number of admittances remained constant over time from 1980 to 2001 (Jetha 2002). It is unclear if the constant number of admittances to dental school is impacted more by the dental association or by general health policy through the national health insurance in Britain. To the extent that there were shortages, any increase in demand for dentists was dealt

Figure 6.1 Applicants and Admissions in UK Dental Schools, 1980–2001

with largely through an increase in foreign dentists practicing in the UK (Jetha 2002).

For most of the medical fields in the EU, the process of entering a government-regulated occupation is similar. The port of entry, which is usually an educational establishment, determines the number of practitioners, with generally no state-sponsored exam following graduation from the national government-approved curriculum. In the United States, constraints on entry often are more difficult, as a consequence of longer years of schooling and entry tests following graduation. In the EU, however, licensing regulations are focused on the practice of the occupation. In a ranking of regulatory policies of EU professions in comparison with the United States, Garoupa (2004) finds that, based on criteria of “libertarian, efficiency, and consumer protection,” the United States has the “best regulatory framework” for improving market performance. Other examinations of licensing for EU nations have been developing indices of regulation for a number of occupations to include accountants, architects, engineers, and pharmacists, in addition to physicians and lawyers (Paterson, Fink, and Ogus 2003). These factors include entry, fees, organizational forms, advertising, and conduct restrictions for doctors and lawyers. In the medical professions, more than 50 percent work for the government in the UK, whereas only 20 percent work for the government in the United States (Robinson and Dixon 1999). Moreover, for France and Germany, prices are largely established by the state-funded health care system, resulting in a reduction in hourly earnings (Busse and Riesberg 2004; Sandier, Paris, and Polton 2004). A ranking of EU countries by levels of licensing restrictions, using behavioral restrictiveness for doctors and lawyers, is shown in Figure 6.2. The figure shows that the United States has the lowest level of occupational restrictiveness relative to the EU nations on behavioral restrictions for these universally regulated occupations.

Recently, the EU has stated that their goal for regulated occupations is to examine price fixing, recommended prices, advertising regulations, entry requirements, reserved rights, and regulations governing business structure (Commission of the European Communities 2004). The general rule is that when a nation in the EU delegates “its policy-making power to a professional association without sufficient safeguards, that is without clearly indicating the public interest objectives to respect, without retaining the last word and without control of the implementation,
Comparing Licensing in the United States and EU

The Member State can also be held liable for any resulting infringement” (Commission of the European Communities 2004, p. 6). The focus of the EU rules is on attempting to ensure that the government and not the professional associations have the major voice in the regulation of the professions. Nevertheless, current policies on occupational regulation are generally much more restrictive than those in the United States following entry into the occupation.²

The professional occupations are of particular interest in the EU since this sector is growing at a much faster pace than overall employment, much like in the United States. From 1980 to 1990, employment in this more highly regulated category (in the OECD countries reporting data) grew by an average of 55 percent, six times faster than the overall national employment growth of 9 percent (Biggar and Wise 2000, p. 44). More recently, professional occupations in the EU during

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**Figure 6.2 Measures of Post-Entry Restrictions for Doctors and Lawyers in the United States and the EU**

![Figure 6.2 Measures of Post-Entry Restrictions for Doctors and Lawyers in the United States and the EU](image)

NOTE: Estimates modify the index in Garoupa (2004) to include only post-entry restriction on work, using only integer values, and having lower values indicates fewer restrictions. Nations evaluated include the United States, Netherlands, Spain, Norway, Belgium, France, England and Wales (E&W), Portugal, Germany, and Austria.
the first half of 2003 continued to outpace overall employment. Overall employment grew at an annual rate of 0.7 percent while employment in occupations that were regulated in the service sector grew by 5 percent (Commission of the European Communities 2004, p. 8). In part, as a consequence of this employment growth among more highly regulated occupations, the EU is monitoring licensing among member countries through its commission on competition.

As part of these reforms in the labor market, mobility for most occupations has grown (Jeffery 2001). In 2003, the EU made it easier for individuals in most occupations to move between nations without additional regulatory constraints by requiring mutual recognition of occupational requirements, similar to endorsement among states in the United States (Lonbay 2004). However, language and cultural factors are more likely to serve as barriers to geographic mobility in the EU relative to the United States (Krueger 2000). An occupation that is exempted from these reduced barriers is attorneys, who still maintain national requirements without “endorsement” across EU countries.

**GOVERNMENTAL LIMITATIONS ON REGULATED OCCUPATIONS IN THE EU**

Although mobility across nations has become easier within the EU, there still remain constraints on the behavioral aspects of working in the EU. Many of the countries in the EU maintain restrictions on advertising, fees, relationships with other businesses, foreign providers of services, and location of business or practice (Bertrand and Kramarz 2001). Unlike in the United States, where professions come under antitrust legislation as discussed in Chapter 2, the basic legislation on restrictive trade practices in the UK does not apply to professional services, but professional conduct may fall under the monopoly provisions of the legislation.

The Director General of Fair Trading (DGFT) in the UK considers that the principles of competition policy and law should be applied to the business and market activities of all professions as they apply to other business activities. There have been several transformations in UK laws governing occupational regulation that have reduced regulations.
Moreover, government policy is to increase competition, and some of
the professions have themselves embarked on reforms designed to fos-
ter greater competition in their various business activities.

In France, the Conseil de la concurrence, the major regulatory agen-
cy, has stated that professional organization rules may not authorize
violations of the rules of competition law, notably those against price-
fixing agreements. The Conseil has condemned a boycott by local ar-
chitects intended to maintain fee levels. And the Conseil has challenged
three local bar associations’ fee schedules, emphasizing that they had
an anticompetitive effect even when they may not have been adopted
for an anticompetitive purpose. The authority for this action was estab-
lished by a 1987 decision involving fee schedules of architects, which
was affirmed by the courts in 1992. A closely aligned issue is the regu-
lations on opening new establishments in specific locations. In France,
local merchants must approve the establishment of a new business, and
the process is likely to eliminate competition in licensed occupations
such as attorneys, accountants, and architects on a geographic or loca-
tion-specific basis (Bertrand and Kramarz 2001). The estimates suggest
that this regulatory practice reduces overall job growth by 10 percent.

In Germany, regulation of professions occurs both through the gov-
ernment and through industry associations. In part as a consequence of
heavy regulation and resulting constraints of most occupations, there
has been a movement toward deregulation. Germany still requires 41
professions, from well diggers to chimney sweeps, to pass exams to
get a “Meisterbrief,” or master certificate, before they start a business.
Local organizations are required to hire these individuals or face gov-
ernmental financial penalties or sanctions.

From 1995 to 2003, Germany has exempted 53 of 94 trades from
having to pass qualifying exams, reducing the number of licensed work-
ers in the Zentraverband Des Deutschen Handwerks (ZDH), which is
the occupation/business federation, from 6.3 million in 1995 to 4.8
million in 2003. Generally, the movement toward deregulation has in-
cluded lower-risk jobs such as hairdressers and florists. Nevertheless,
German businesses, government, and unions see the rules as guarantees
of the nation’s traditional emphasis on quality products and services
(Miller 2004).
There are substantial differences in the method by which licensing impacts workers and wages in the United States and Europe. In the United States, there are greater barriers to entry as a consequence of longer general and specific training periods and the requirement for the passage of a licensing exam. Moreover, for most professions, the cost of education is borne by the individual. In contrast, in most EU countries, subsidies for education are higher so that debt for entering an occupation is lower. However, there are greater constraints on behavioral issues like advertising and fees. Moreover, the lower levels of wage inequality in the EU relative to the United States may make the gains to licensing lower in the EU.

In this section I provide estimates of the impact of licensing on hourly earnings for three of the largest EU nations: the UK, France, and Germany. The methodology used is similar to that employed in analyzing licensing on earnings in the United States in Chapter 4. I first compare certain licensed occupations to their unlicensed counterparts in each nation and then provide an overall estimate of the impact on licensing in the EU. Unlike U.S. census data, which has large numbers of observations, the analysis of the EU nations is based on either administrative data or surveys that contain smaller sample sizes in large part due to either the difficulty of sharing this information with non-nationals or the lack of wage or earnings data from these sources because of concerns regarding confidentiality within their countries.

United Kingdom

The UK has been concerned with and has been working to change its competition law governing regulated occupations for more than 30 years (Siebert 1977). The policy has been to increase competition, and many of the professions have implemented programs in order to implement directives on the deregulation of the professions. More specifically, the Competition Act of 1998 replaced several more restrictive policies on regulated occupations. One important provision was the "complex monopoly" provision, under which several persons who are
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not connected but who together account for at least one-quarter of the supply or acquisition of any particular goods or services in all or part of the UK can be examined by the Competition Commission. They can be investigated if they are engaged in conduct that has or is likely to have the effect of restricting, distorting, or preventing competition. This provision dealt with issues of the structure of services and the linkages of accounting and law firms. One of the policies focusing on licensing was the freedom to advertise and to set prices competitively, which is now widely accepted in the regulated professions in the UK.

The analysis for the UK uses data from the Labour Force Survey, which is similar to the CPS in the United States. Given the sample size of the UK survey and the categorization of occupations within the survey, the occupations that are examined are somewhat different from those in the United States, since occupations with fewer members are excluded. The licensed occupations in the analysis include dentists, lawyers, pharmacists, physicians, and school teachers. The comparisons with unlicensed occupations are based on the same “occupation family” by the Dictionary of Occupational Titles in a manner similar to the comparisons developed in Chapter 4. The estimation methodology also is similar to that presented in Chapter 4, in which earnings of similar licensed and unlicensed occupations in the United States were examined. The counterfactual analysis builds on a “thought experiment” of what would have been the earnings outcome if all the measured human capital characteristics of one group were given to the other group, except for licensing. For example, using this approach assumes that the market rewards individuals differently for each year of schooling, age, or experience based on whether the individual was licensed. In order to do the statistical analysis of developing a counterfactual for this issue, a decomposition analysis is implemented. This procedure presumes little movement between occupational groups and that all differences between the two groups not accounted for by human capital and other factors are a consequence of licensing. For each person in the regulated occupation, the model predicts what would have been the earnings of the individual if they were not regulated at the mean of the distribution. Given the smaller sample size of the observations in the British data, the comparison occupations were more limited than those for the United States estimates.
Table 6.2 Hourly Earnings in Selected Licensed and Unlicensed Occupations in the UK

<table>
<thead>
<tr>
<th>Occupation</th>
<th>Actual difference</th>
<th>Nonlicensing factors</th>
<th>Licensing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Medical practitioners</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chemists</td>
<td>0.16</td>
<td>0.04</td>
<td>0.12</td>
</tr>
<tr>
<td>Biological scientists and biochemists</td>
<td>0.21</td>
<td>−0.01</td>
<td>0.23</td>
</tr>
<tr>
<td>Pharmacists, pharmacologists</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chemists</td>
<td>0.04</td>
<td>−0.02</td>
<td>0.06</td>
</tr>
<tr>
<td>Biological scientists and biochemists</td>
<td>0.10</td>
<td>−0.10</td>
<td>0.20</td>
</tr>
<tr>
<td>Dental practitioners</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chemists</td>
<td>0.35</td>
<td>0.00</td>
<td>0.35</td>
</tr>
<tr>
<td>Biological scientists and biochemists</td>
<td>0.40</td>
<td>−0.10</td>
<td>0.50</td>
</tr>
<tr>
<td>Secondary education teachers</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Administrators—national government</td>
<td>0.07</td>
<td>0.12</td>
<td>−0.05</td>
</tr>
<tr>
<td>Lawyers and judges</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>University, polytechnic teachers</td>
<td>0.02</td>
<td>−0.14</td>
<td>0.17</td>
</tr>
</tbody>
</table>


Table 6.2 gives the estimates of the impact of being in a licensed occupation relative to an unregulated occupation in the UK using data from the British Labour Force Survey for medical practitioners, pharmacists, dental practitioners, teachers, and lawyers. These occupations were selected in large part due to data availability within the Labour Force Survey. Based on the results in Table 6.2, the UK has relatively open markets for licensed occupations, with advertising allowed for most professions. The estimates show that, when human capital variables are accounted for, licensing factors show much variation on earnings, from zero for secondary teachers to as much as 35 to 50 percent for dentists. In comparison to the U.S. estimates, the impact of licensing in
the UK has similar relative effects, but the absolute percent impacts are smaller. For example, the average licensing impact in the United States for physicians and dentists relative to their peer occupations as shown in Table 4.4 is 41 and 64 percent, but it is between 12 and 50 percent in the UK for these two occupations. For the other occupations in Table 6.2, such as lawyers and pharmacists, the licensing premium is between 6 and 20 percent. The only occupation for which licensing has no real impact in the table is teachers, and this result is similar to the impact in the United States. It may be that since teachers work mainly for the public or for a large educational organization in the UK, there is a small negative impact on earnings due to the ability of employers to argue and lobby for a large supply of practitioners that may dominate any impact of licensing. Overall, for the regulated occupations in the UK, there are more constraints than in the United States, but these results suggest that the outcomes result in licensing having smaller but still substantial impacts on earnings relative to their comparison group.

France

Figure 6.2, which compares post-entry restrictions among EU nations, shows that, at least for doctors and lawyers, France has a more restrictive system of regulation than either the United States or the UK, but it is less restrictive than Germany. A more recent categorization of regulation for EU nations for accountants, architects, and pharmacists gives evidence that France is substantially more regulated for these occupations than the UK but slightly less so than in Germany (Paterson, Fink, and Ogus 2003). Entry requirements and the way that business can be conducted are the common methods of developing these indices. The criteria for measuring restrictions are through fixed prices, regulation of advertising and marketing, the regulation of location and diversification on offering services, and restrictions on interprofessional cooperation (e.g., restrictions on forms of business). This pattern of relative restrictiveness for France is also likely to apply to other regulated occupations in the nation.

Table 6.3 gives evidence on the impact of licensing relative to their comparison occupations in France for the years 1990 to 1997 using the Enquêtes Emploi. Given the limited sample size of this database, the analysis only allows an examination of a few regulated occupations,
including doctors, dentists, and teachers. The technique in examining licensing is similar to that employed for the UK and the United States. For each person in the regulated occupation, the model predicts what would have been the earnings of the individual if they were not regulated at the mean of the distribution. The results show that dentists and doctors earn more relative to their comparison groups using this data. For both doctors and dentists, the estimated impact of licensing is between 8 and 19 percent relative to its comparison occupations, which is below the comparable estimates in both the UK and the United States. Greater regulation in the way business is conducted in France likely results in these licensed occupations having lower relative earnings. Furthermore, most workers in medical occupations work for the government or receive payments from the government in France, and this is likely to limit wage growth. The estimates for teachers use a registered occupation, social workers, rather than a licensed occupation as a comparison group. In France, social workers fit under the category of being in a registered occupation noted, as “the inappropriate use of the title of social worker by unqualified individuals” is illegal (International Federation of Social Workers 2004, p. 21). Nevertheless, they are allowed to do the work as long as they do not call themselves social workers.

Table 6.3 Hourly Earnings in Selected Licensed and Unlicensed Occupations in France, 1990–1997

<table>
<thead>
<tr>
<th>Occupation</th>
<th>Difference due to Nonlicensing factors</th>
<th>Licensing</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Actual difference</td>
<td></td>
</tr>
<tr>
<td>Doctor</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Higher education teachers</td>
<td>−0.05</td>
<td>−0.23</td>
</tr>
<tr>
<td>Programmers</td>
<td>0.35</td>
<td>0.28</td>
</tr>
<tr>
<td>Dentist</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Higher education teachers</td>
<td>−0.02</td>
<td>−0.21</td>
</tr>
<tr>
<td>Programmers</td>
<td>0.37</td>
<td>0.28</td>
</tr>
<tr>
<td>Teacher</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Social workers</td>
<td>−0.01</td>
<td>0.00</td>
</tr>
</tbody>
</table>

NOTE: N = 15,579.
Consequently, teachers, who are licensed, are compared to a “registered occupation.” The estimates in Table 6.3 show there is no earnings premium for teachers relative to social workers. Overall, there appears to be a licensing wage premium for these licensed occupations, but the impact is smaller than for either the United States or the UK.

**Germany**

Using the indices of EU occupational licensing, Germany, along with Austria, is usually ranked among the most regulated nations in the EU (Garoupa 2004; Paterson, Fink, and Ogus 2003). This result is mainly a consequence of regulations on practice following entry into the occupation. As Figure 6.2 shows, regulations on post-entry market restrictions on working are among the highest in Germany relative to the other EU nations. Similarly, for other licensed occupations such as accountants, architects, engineers, and pharmacists, Germany has the highest values in these post-entry restrictiveness indices. More recently, Germany has been moving toward deregulating its labor markets as evidenced by the reduction in the number of occupations licensed and the move toward the adoption of OECD policies on the regulation of the professions (Biggar and Wise 2000).

Unfortunately, the data used for examining regulations for Germany contain the fewest number of observations relative to the data available for the United States, UK, and France. The data from the Qualifikation

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**Table 6.4 Hourly Earnings in Selected Licensed and Unlicensed Occupations in Germany, 1991**

<table>
<thead>
<tr>
<th>Occupation</th>
<th>Actual difference</th>
<th>Nonlicensing factors</th>
<th>Licensing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dentist</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Computer scientist</td>
<td>$-0.05$</td>
<td>$-0.06$</td>
<td>$0.01$</td>
</tr>
<tr>
<td>Chemist</td>
<td>$-0.09$</td>
<td>$-0.13$</td>
<td>$0.05$</td>
</tr>
<tr>
<td>Doctor</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chemist</td>
<td>$-0.08$</td>
<td>$-0.09$</td>
<td>$0.01$</td>
</tr>
</tbody>
</table>

**NOTE:** $N=1,493$.

**SOURCE:** “Qualifikation und Berufsverlauf.”
and Berufsverlauf contain only 1,493 observations for the year 1991. Nevertheless, in Table 6.4, the approach for the analysis examines each person in the regulated occupation, and the model predicts what would have been the earnings of the individual if the occupation were not regulated. Given the small sample size, the analysis focuses only on doctors and dentists and also has a limited number of comparison occupations that are in the same job family. The results show that dentists only made between 1 and 5 percent more than the designated control group as a consequence of licensing. The licensing premium for doctors relative to chemists is less than 1 percent. These estimates suggest that Germany, with its higher level of regulation, especially following entry into an occupation, has a lower licensing premium for dentists and doctors than the other two countries in the EU analysis. The lower impact of licensing on earnings is consistent with results of small returns to education effects in Germany. Pischke and von Wachter (2005) speculate that the reason for low returns to education may be a result of rigid wages in Germany, the existence of the apprenticeship training system, or the better academic skills provided earlier in the German system. Nevertheless, the returns to licensing in these occupations are also much lower in Germany than in the other nations examined in this chapter.

**IMPACT OF LICENSING ON EARNINGS IN THE UK, FRANCE, AND GERMANY**

The UK, France, and Germany comprised about 51 percent of the EU workforce prior to the expansion of the EU in 2003 and represent a relatively lightly regulated (UK), a medium-regulated (France), and a highly regulated (Germany) nation with respect to the rigor with which they regulate occupations. However, to what extent does licensing impact the earnings of a group of regulated and similar unregulated individuals in these occupations? Table 6.5 shows the impact of licensing on hourly earnings in these three countries with standard human capital control variables such as age, age-squared, gender, years of education, and whether the person had a college degree. The occupations examined are presented in the note to the table, and the estimates show a somewhat smaller variety of occupations than those presented for the
Comparing Licensing in the United States and EU

This set of occupations is smaller because the sources of data for EU nations do not have a sufficiently large number of persons in the occupations for a more expansive analysis. The estimates show that licensing has a modest but statistically significant 1 percent impact on hourly earnings. The estimate is much smaller than the 10 to 12 percent impact in the United States and may be a consequence of greater post-entry restrictions on competition that limit prices and earnings relative to those occupations that can advertise, charge market fees, and establish contingency fees based on outcomes. Moreover, the generally higher taxes and social benefits in the EU reduce overall income inequality in the EU, and this also is the case for regulated occupations that have only a slight earnings edge relative to their unlicensed counterparts. In addition, a much higher percentage of the individuals work for the government or have government-determined fees in these occupations in the EU and consequently have narrower

Table 6.5 Impact of Licensing on Hourly Earnings in the UK, France, and Germany

<table>
<thead>
<tr>
<th></th>
<th>Coefficient</th>
<th>Standard error</th>
</tr>
</thead>
<tbody>
<tr>
<td>Licensed occupation</td>
<td>0.011*</td>
<td>0.006</td>
</tr>
<tr>
<td>Age</td>
<td>0.063*</td>
<td>0.002</td>
</tr>
<tr>
<td>Age²</td>
<td>−0.001</td>
<td>0.000</td>
</tr>
<tr>
<td>Female</td>
<td>−0.094*</td>
<td>0.005</td>
</tr>
<tr>
<td>Education (year)</td>
<td>0.039*</td>
<td>0.001</td>
</tr>
<tr>
<td>University education</td>
<td>0.394*</td>
<td>0.032</td>
</tr>
<tr>
<td>Constant</td>
<td>1.55</td>
<td>0.05</td>
</tr>
<tr>
<td>$R^2$</td>
<td>0.79</td>
<td></td>
</tr>
<tr>
<td>$N$</td>
<td>28,326</td>
<td></td>
</tr>
</tbody>
</table>

NOTE: With dummy variable controls for country: UK and France relative to Germany and year of the observation. The coefficients for the country dummy variables are interpreted in comparison to the base country, Germany. *Indicates statistical significance at the 0.05 level. Occupations in the sample include doctors, dentists, accountants, public administrators, higher education teachers, engineers (chemistry), teachers, social workers, programmers, administrators—national government, personnel training managers, chemists, biological scientists and biochemists, medical practitioners (nondoctors), pharmacists, pharmacologists, dental practitioners (not dentists), university and polytechnic teachers, etc., secondary education teachers, etc., primary and nursery education teachers, lawyers and judges, chartered and certified accountants, actuaries, economists, and statisticians.
variance in their range of income. To the extent that there are little to no measurable quality benefits, the potential “dead-weight losses” in the EU are lower than in the United States. However, economic losses could be substantial if the reduction in job growth is similar to the 10 percent estimate that Bertrand and Kramarz (2001) found as a consequence of regulatory restrictions of businesses. These estimates of dead-weight loss could be even higher if the economic value of “wait time” for a doctor or other health service professional were included in a calculation. Since there is no comprehensive value on the number or the percentage of the workforce that is licensed in the EU, these types of calculations are difficult. Moreover, there has not been the large body of research into the quality effects of occupational licensing in the EU relative to the studies completed in the United States, so that an overall assessment of the impact of licensing for these three nations is difficult to estimate.

IMPLICATIONS FOR OCCUPATIONAL REGULATION

This examination of licensing in Europe provides a useful comparison relative to the United States. The focus of U.S. licensing is on control of entry and mobility across states, with little attention to the prices charged, method of payment, or the barriers to advertising. In contrast, it is somewhat easier and usually takes a shorter time for entry into the professions in the EU. For most occupations, entering the education process occurs immediately after high school, though being accepted is highly competitive. Students matriculate into the professions and usually finish their professional education, which is subsidized in large part by the government, at an earlier age than in the United States. Following entry, there tend to be many more constraints on work, including location, prices charged, and the lack of opportunity to provide information to consumers on the quality of the service through advertising. In the licensed health professions, the employer is often the government. Consequently, it is not surprising to find that earnings of professionals relative to their comparison group are lower in the UK, France, and Germany than they are in the United States.
Unfortunately, there have been no analytical examinations of the impact that licensing in these nations has on the quality of service received in the EU. This stands in contrast to the large number of studies that have examined licensing in the United States. For the most part, the empirical work shows that licensing has modest to no impact on quality relative to a regime of certification or registration. Moreover, there is little evidence that insurance companies in the United States give discounts for malpractice insurance to individuals who are licensed relative to their unlicensed counterparts.

In summary, the impact of licensing within the three countries examined in this chapter shows that regulation has a modest 1 percent impact on the earnings of the regulated occupations. This stands in stark contrast to the 10 to 12 percent impact for regulated to unregulated occupations or the 4 percent effect for those occupations licensed in some states and not in others in the United States. The impact of licensing must therefore be viewed in the context of the nation that is regulating the workers. If national inequality is low and constraints on the occupation are high, then price and wage impacts are likely to be modest. On the other hand, the impact of this regulatory policy where there are few financial incentives to succeed may lead to less effort because wage variations are small or the more able seek occupations where the financial constraints are less limited. In addition, innovation, creativity, and employment may be reduced in the regulated sector, as relative financial incentives for more effort in the regulated sector are small, but entry requirements are tough.

Notes

1. The state of Wisconsin is unique in that it has a provision that allows graduating law students in the two major law schools in the state (i.e., the University of Wisconsin and Marquette University) to not be required to take the state licensing exam if they agree to practice in the state for at least five years (Wisconsin Court System 2005). This policy is similar to the procedures to become licensed for this occupation in most EU countries.
2. This lower level of post-entry regulation largely occurred following the Goldfarb v. Virginia (1975) decision (discussed in Chapter 2) and its enforcement in a vigorous way by the FTC and the Antitrust Division of the Department of Justice.
3. Given the small number of observations by country in these data, no nonparametric estimates were developed like those for the United States in Chapter 4.