

# Returns to Legal Education

## Job Market Paper

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### **Abstract**

I estimate that the average rate of return to obtaining a JD is between seven and nine percent, comparable to estimates of the rate of return for obtaining a college degree. However, this average return obscures substantial heterogeneity. I show how the rate of return varies with law school quality, undergraduate background, and type of employment obtained after law school. My estimates account for labor market uncertainty, potential self-selection among those who attend law school, differential income tax treatment, and applicable government-sponsored student loan repayment programs. I present a simple model of wage and counterfactual wage evolution, and estimate it using a combination of data sources that include richly detailed data on college graduates and JD-holders, as well as information about the legal labor market more broadly. In summary, I conclude that a JD from both top- and middle-tier law schools yields expected returns substantially higher than the average market rate, but that the returns to a JD from a low-tier law school, while still positive, are below the average stock market rate of return.

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# 1 Introduction

Despite widespread claims of a crash in the legal labor market, the average prospective lawyer—more precisely, the average prospective JD—can expect significant financial returns to attending law school. However, there is considerable heterogeneity in the returns to a legal education. The returns vary substantially with the quality of law school attended and with the type of law practiced. Even workers interested in practicing public-interest law can expect significant positive returns. Beware, however, to those considering attending low-quality law schools.

The difficulty in estimating the returns to a legal education lies in three facts: (1) the labor market for lawyers is in flux, (2) a significant portion of JDs do not work as lawyers, rendering an individual's occupation an unsuitable proxy for whether he attended law school, and (3) there is substantial variety in the quality of law schools and the type of employment that law school graduates obtain.

In this paper I first study the labor market for lawyers by looking at lawyer employment and lawyer wages over time, and, crucially, compare the trends for lawyers to that of other highly educated occupations. This reveals that, though there was a significant decline in lawyer employment in the 2008-2012 period, the decline was part of a global decline in the employment of most educated professions. While the early-career earnings of post-2008 JDs are on average lower than the earnings of pre-2008 JDs, the relevant baseline for estimating the returns is how the post-2008 JDs themselves would have fared in the the post-2008 labor market had they not obtained a JD.

After considering the legal labor market in the aggregate, I turn to micro-data on individuals who took one of three educational paths: those who attended law school after graduating from college, those who attended some other type of graduate school, or those who worked continuously after college graduation. In addition to standard demographic variables, my data include individuals' salaries approximately ten years after college graduation, educational characteristics including undergraduate major, undergraduate GPA, the quality of the undergraduate institution and, if applicable, law school GPA and the quality of the law school attended.

I develop a framework for estimating the return to a legal education, acknowledging the facts that (1) those who attended law school forewent three years of earnings relative to their counterparts

who went straight to work after college, (2) those who attend law school may not in fact become lawyers, and (3) the wage trajectories of those who attended law school may differ substantially from those who followed other educational and professional paths.

Combining this framework with the micro-data described above as well as other data described in the body of the paper permits the estimation of the returns to a legal education. Moreover, I can estimate how these returns vary with quality of law school and type of post-JD employment. To establish the robustness of my results, I test for selection, and in addition to traditional parametric methods, estimate via propensity score matching.

My initial results apply most directly to the cohort to which the data sample belongs, a cohort which graduated from college in 1997. I “modernize” the results by simulating the returns to legal education under a variety of scenarios as suggested by the consideration of the dynamics of the labor market for lawyers considered in the first part of my analysis.

This paper proceeds in the following way. Section 2 is a brief literature review. Section 3 studies the market for lawyers in the spirit of Rosen (1992), by considering trends in earnings and employment of lawyers in relation to other professions. It establishes that the legal labor sector did not experience a special “crash,” contrary to the claims of many commentators. Section 4 presents the model of wage evolution and an estimation framework. Section 5 describes the data used for estimation. Section 6 turns to estimating the returns to legal education for the JD class of 2000. This year was chosen in part because it is the year for which richly detailed data are available. Section 7 extrapolates the findings in Section 6 to the current legal labor market described in Section 3. Section 8 concludes.

## 2 Prior Work

Since the recession of 2008, various columnists and legal scholars—but few economists—have vocally question the wisdom of attending law school. A sizable fraction of newly minted law school graduates fail to obtain jobs as lawyers, wages for new lawyers have stagnated, and the rising cost of law school is burdening many graduates with large debts. In 2013, first-year enrollment of full- and part-time students in the nation’s law schools plummeted to less than 40,000, a 25 year low

and nearly a 25 percent decline from three years prior.

Legal education's most visible critics first appeared in the popular press. In 2011, David Segal's New York Times article "Is Law School a Losing Game?" highlighted the high cost of legal education and the declining job market for new JDs. In further articles he, and other writers, criticized the training that law schools provide (e.g., "What They Don't Teach Law Students: Lawyering"). Stories of recent law graduates with no work, mountains of debt, and no prospective job as a lawyer abound. To be sure, those stories are anecdotal but they do identify a real and important problem facing the legal profession.

At the same time, rigorous empirical work on the economic returns to law school is sparse. A legal scholar, Schlunk (2009), performs a very rough back-of-the-envelope calculation of the costs and benefits of law school. But his analysis does not utilize data on individual lawyers, and rests on assumptions that he does not support with data. Simkovic and McIntyre (2013) use better data, however they fail to address selection on unobservables, and come up with an estimate that is implausibly high. Also they do not consider heterogeneity in the returns.

Analyzing the returns to education, but not specifically law school, has a long history in economics. Becker (1964) initially drew attention to the rate of return of investments in education. Schooling decisions can be viewed as investment decisions: costs are paid initially and rewards are reaped in the future. A schooling decision is optimal from the perspective of income maximization if its rate of return is higher than any other available investment.

Thus estimating the rate of return to education became a focus in economics research (e.g., Card (1999), Heckman et al. (2003)). As expected, the estimated rate varies across types of school (e.g., high school, college), settings (e.g., developing country, country in a recession, etc.), and with individual characteristics (e.g., age, race, disability status). Work that looks specifically at types of school includes Kane and Rouse (1995), who compare the labor market's value of college credits from a junior college with those from a regular college and find they are similar. Brewer et al. (1999) compared attending an elite private college with attending elite public schools as well as with attending lower-tier public institutions. Unlike previous work, they explicitly model the individual choice of what type of school to attend. They find that there are significant advantages

to attending an elite private institution. Moreover, for all the research on the returns to college education, there is very little work that studies the returns to graduate education. Arcidiacono et al. (2008) is an exception, and studies the returns to MBA degree from a high-quality institution relative to other institutions. It is, however, difficult to compare their results to the results of this paper because his comparison group is other holders of the same degree, rather than to the college-educated population as a whole.

Although the legal profession has received a fair amount of attention in economics, there has been little rigorous research that focuses on the returns to legal education in the United States. Work such as Rosen (1992) and Winston et al. (2011) study the market for lawyers, looking at the supply and demand for lawyers as well as salaries. Ehrenberg (1989) studies the relationship between lawyer's income and prestige, but his data are at the school level rather than the individual level, and he is not concerned with selection. Oyer and Schaefer (2009) improve upon that work, but only focus on how the returns to a prestigious law school compared to other kinds of law school. That is, they study the returns to quality of law school *conditional on* attending law school. They find significant premiums associated with attending a top-tier law school relative to other law schools, which is consistent with results presented in this paper. But their work does not comment on the decision to attend law school in the first place. Daly et al. (2004) studies the returns to legal education in Australia, which which has a very different environment for legal education than that of the United States.

### **3 The Market for Lawyers, 1995-2013**

Claims in the popular press about the stagnation of the legal labor market abound, however commentators have failed to look at the legal profession in relation to its long-term trends and in relation to other professions. Indeed, 2006, just prior to the recession, was a boom year for lawyers. This made the subsequent dip in the market appear all the more pronounced. This section documents exactly what comprises the "stagnation" in the legal labor market, and puts it in the the context of its historical trends.

### 3.1 Lawyers' Earnings

Lawyers' real wages and relative wages have increased dramatically over the last 50 years. Only in the last several years have growth of real wages stagnated and growth of relative wages slowed. While the Current Population Survey is not ideal for studying a specific occupation in a given year, due to a relatively small sample size for any single occupation, it is useful for giving a sense of how wages and employment in an occupation vary over time. CPS data indicate college graduates earned, on average, \$66,000 for the years 1995-2007 (in 2011 PPP). Over this same time period, lawyers earned on average \$158,000, which amounts to a premium of 140 percent. As reported in Rosen (1992), this premium in 1967-1987 was 63 percent.

These raw averages do not account for the fact that lawyers have different characteristics from people who do not obtain a law degree. As will be studied in detail for a particular cohort below, lawyers are abler on average than college graduates who did not obtain a law degree. Moreover, lawyers, or at least a significant subset of lawyers, tend to work more hours than college graduates. For example, private sector lawyers work approximately 10 percent more hours a week than college graduates, while public sector lawyers work about the same number of average hours.

CPS data, though only providing rough detail on education, age, hours of work, geographical region and occupation, provide a sense of the adjusted wage premium of lawyers. Figure 1 shows these adjusted wage premia over time. These estimates come from a regression of log wage on education dummies, hours of work per week, years of work experience, gender and race dummies, regional dummies, and year dummies. While the regression underlying this figure fails to control for many important explanatory variables, as considered in more detail in the next chapter, it is noteworthy in that it was relatively stable over the period of the recession. If there were a crash in the legal labor market following the 2008 recession, it is not reflected in the average wage premium of lawyers.

These adjusted premia obscure key features of the JD wage structure. Of special importance is heterogeneity in wages across types of legal work. Figure 2 shows the difference between the average wage of private sector lawyers, public sector lawyers, and college graduates. Again, this figure is characterized by stability through the post-recession period.

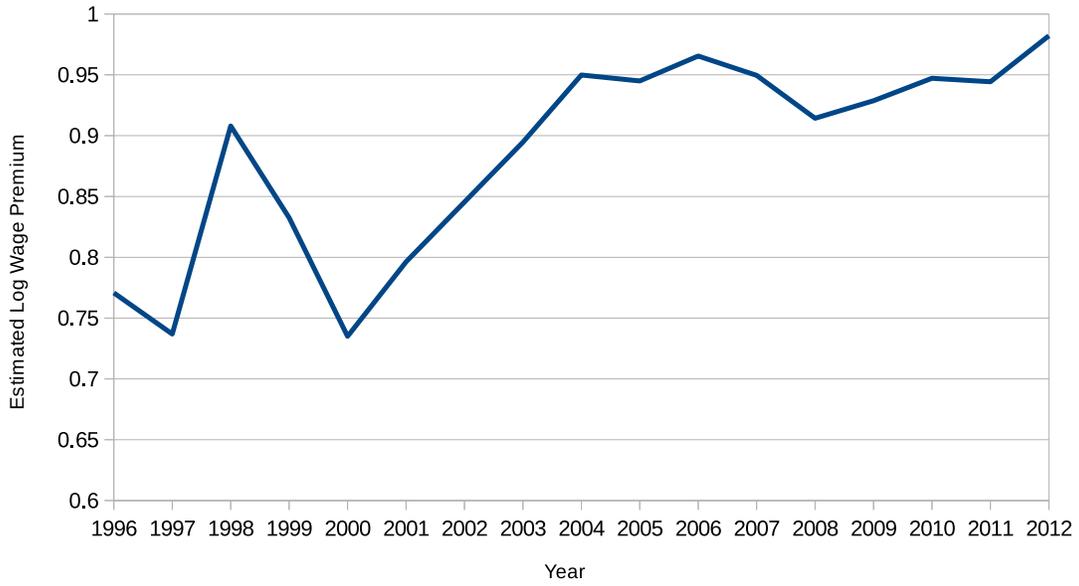


Figure 1: Lawyers's Wage Premia Relative to College Graduates

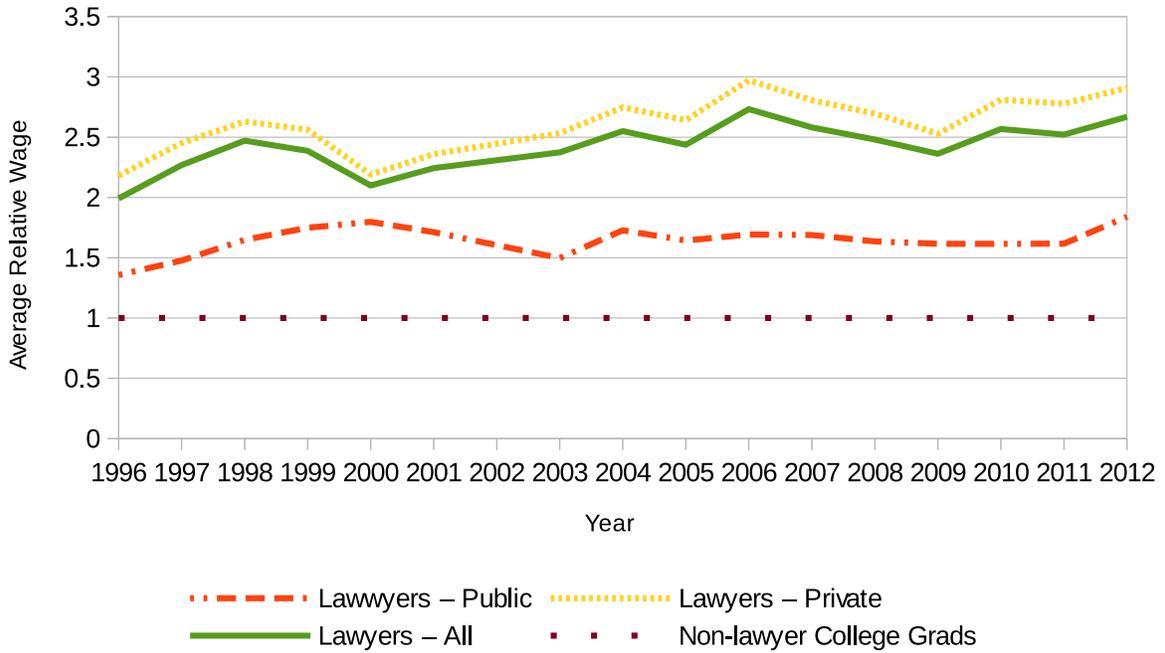


Figure 2: Public and Private Sector Lawyers' Earnings Relative to College Graduates

The averages presented so far do obscure certain important dynamics in the wages of lawyers. Indeed, data from the National Association for Law Placement indicate that the wage distribution of starting salaries of lawyers, at least since 2000, has been characterized by a bimodal distribution, which has become increasingly stark over time. This is largely driven by the rise of large, corporate law firms. These firms, typically located in lawyer-heavy areas such as New York and Washington, D.C., have similar compensation structures for new lawyers, paying around \$160,000 annual base salary since 2007. For comparison, the starting annual salary for new government lawyers is approximately \$65,000. A lawyers' earnings vary greatly with the type of law he or she practices.

### **3.2 Lawyers' Employment**

These changes in the lawyers' wages have been accompanied by a fairly steady increase in the number of lawyers, according to both the CPS and data from the Occupational Employment Statistics survey (OES, also administered by the Bureau of Labor Statistics). Despite the many reports that the legal hiring has stagnated, these data sources indicated there has been net growth in the legal services sector even through the 2008 recession. According to CPS data, the average annual growth rate in the numbers of lawyers since 1965 has been about 3 percent each year. The decade of the 1970s saw much more rapid growth—approximately 6.5 percent on average—where as the 80s into the early 90s grew at about 3 percent on average. Since 2008 growth been more modest, but still positive, at about 1.5 percent per year.

For more detail on this later period, Figure 3 shows data from the OES survey, a nationally representative survey of non-farm employers. Because the survey is of employers, response rates are better, easier to check, and therefore the data are plausibly more accurate than CPS data. While the legal sector contracted slightly in one year, and the rate of growth post-recession is slower than prior to the recession, the sector appears to have weathered the recession quite well relative to college graduates as a whole, and the professional and financial services in particular.

Data from the Current Employment Statistics (CES) are at odds with these other data sets in the sense that they show a slight decrease in legal services employment since 2008, as displayed in Figure 4. The discrepancy may be explained by the fact that the CES reports employment for the

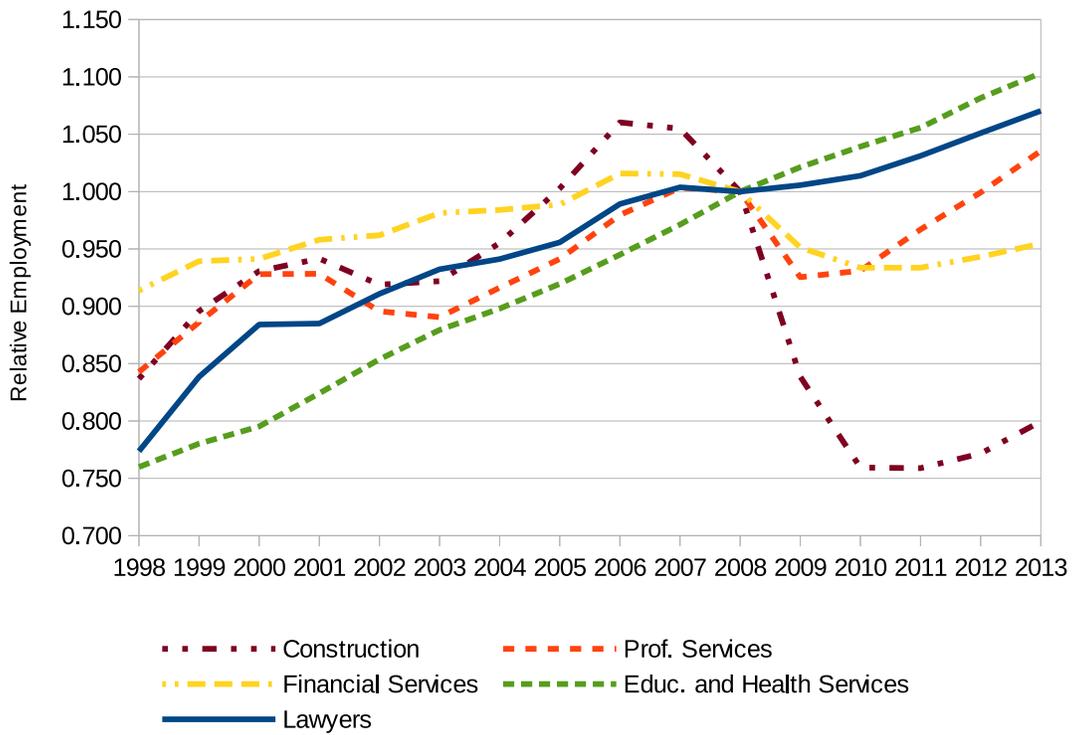


Figure 3: Employment of Various Occupations Relative to 2008 (OES)

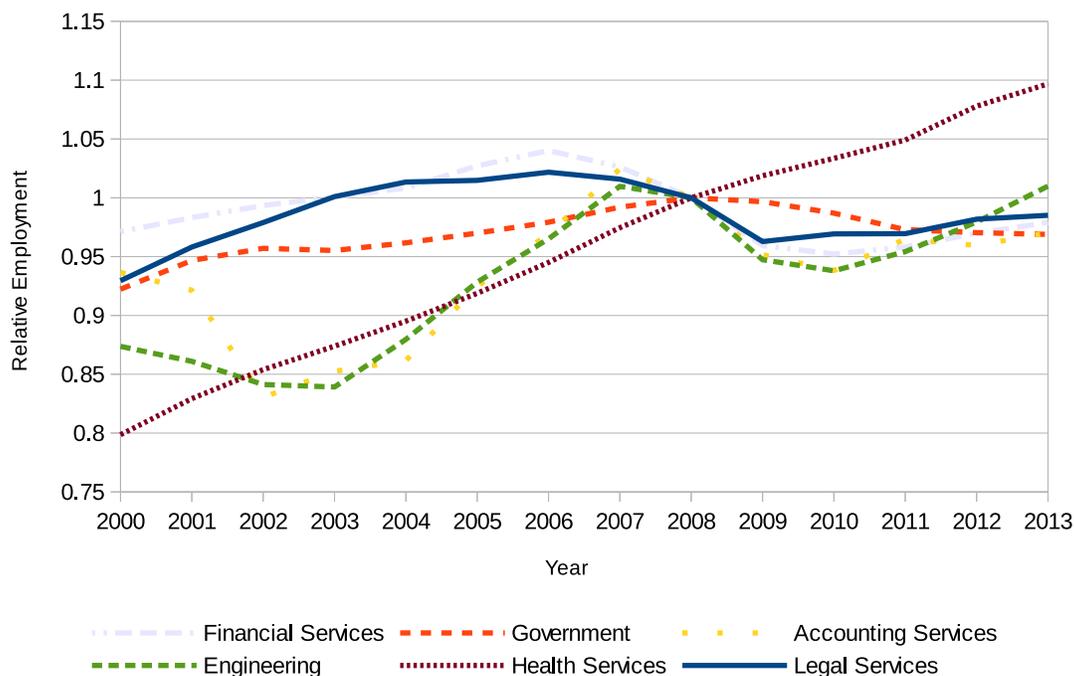


Figure 4: Employment of Various Sectors Relative to 2008 (CES)

legal services sector as a whole—including paralegals and other non-lawyers who work at law firms or in the legal sector. But even according to these numbers, there is no indication that the legal sector has suffered relative to other highly-educated labor markets.

An important subset of overall employment growth is the rate of employment growth for new lawyers. In the CPS and OES data already discussed, it is not possible to cleanly identify new lawyers. The overall growth rate of the legal sector includes both the introduction of new lawyers and the departure of exiting lawyers. Unfortunately, data on lawyers who exit the labor force, whether to retire or to change occupations, are scarce. However, given the occupation-specific human capital that is accumulated over time, it is likely that experienced lawyers exit the legal sector by retiring rather than moving laterally to a new occupation.

If the retirement rate of old lawyers were zero, then the employment growth would plausibly be attributed almost completely to new lawyers.<sup>1</sup> Furthermore, if the legal labor market had cleared

<sup>1</sup>There are certainly some workers who move into and out of the legal profession, but limited empirical evidence on this suggests that serial switchers are uncommon (as suggested by human capital theory, as mentioned).

in previous years such that there were no workers in the labor force waiting for job openings, then the overall employment growth rate would be comprised entirely of new law graduates. It is likely however that the growth in new lawyers exceeds the overall growth rate, since there certainly are some seasoned lawyers who leave the labor force.

### 3.3 The Production of Lawyers<sup>2</sup>

In order to practice law, a lawyer must pass a qualifying state bar exam. In addition to this requirement, all but three states mandate that lawyers hold a JD from a law school that has been accredited by the American Bar Association (ABA). To be accredited, a law school must meet certain standards set forth by the ABA. One of these standards is that JD-granting programs consist of three years of full-time course work.<sup>3</sup> As discussed earlier, these prerequisites—passing a bar exam and holding a degree from an accredited law school—constitute a significant entry barrier to the legal labor market. Following the theory of entry restriction, it is plausible that this regulation regime bids up the wages of lawyers, and allows law schools to charge more than they would in an regulated environment.

Despite this restricted entry, the legal education system appears to be producing more JDs than find work as lawyers.<sup>4</sup> While this has been the case for at least the last thirty years, only recently, since the recession, have critics of the legal education system addressed it as a problem. In truth, the issue has exacerbated since 2008, with higher portions of new law school graduates employed in other sectors than the law. But, as noted, prospective law students have responded by reducing their applications to law school—indeed, 2013 law school enrollment was at a 25-year low. Given the minimum three-year delay between entering law school and entering the legal labor market, it is not surprising that the portion of new graduates obtaining positions in the legal sector drops. Students who newly enrolled in law school in 2008 were committed to sticking it out, even as the market declined over the subsequent three years.

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<sup>2</sup>I take this term for the process of matriculating JDs and employing lawyers from Rosen.

<sup>3</sup>Accordingly, part-time programs (e.g., evening programs) may take longer than three years. There also exist accelerated accredited programs, that fit the “three years of coursework” into two years.

<sup>4</sup>From a report on enrollment and degrees awarded by the American Bar Association Section of Legal Education and Admissions to the Bar.

Data on new law school graduates from the American Bar Association permit a rough calculation of the amount of the “over-production” of JDs relative to the employment of lawyers.<sup>5</sup> Figure 5 shows the number of law schools and new graduates from 1963-2012. Assuming that 75 percent of those law school graduates were able to pass the bar, this amounts to approximately 360,000 newly certified lawyers over the decade.<sup>6</sup> Further assume, conservatively, that 1/35th of working lawyers retire each year, thus vacating approximately 160,000 jobs over the period. Combining these job openings with the net expansion of lawyer employment of about 80,000 over the decades yields positions for 240,000 new lawyers. This leaves 120,000 certified prospective lawyers unable to find employment over this decade, or about 12,000 new graduates each year that do not find jobs in the legal sector. This amounts to slightly less than one third of each graduating class.

This back-of-the-envelope calculation corresponds nicely with survey data from the National Association of Law Placement, which shows that over the previous decade the portion of new graduates who obtained jobs that required passage of the bar exam decreased from 76 percent in 2001 to 64 percent in 2011. These data also give an indication of what JDs do when they do not work as lawyers, either by choice or because of failure to obtain a law job. In 2001, six percent obtained jobs where “[a] JD is an advantage,” with this fraction rising to 12.5 percent in 2011. Five to six percent obtained professional positions where the JD was of no clear advantage, and nine to 14 percent either worked in non-professional positions or did not work at all.

These numbers may be especially bleak since the period under consideration spans a recession. Indeed, the previous decade from 1991-2000 had an average of 75 percent of new law school graduates immediately obtaining employment in law. Restricting the time frame to the post-recession period of 2009-2012, the average is 67 percent. As expected, it does seem that recent years have been difficult for new law graduates.

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<sup>5</sup>This neglects the fact, considered in more detail in the next section of this paper, that JDs have value, sometimes substantial, in fields other than law. Indeed, a significant portion of JDs in non-law occupations earn higher-than-average JD wages.

<sup>6</sup>The 75 percent figure comes from a report by the National Conference of Bar Examiners, which gives bar passage rates, by state, of first-time and repeated takers. In 2011, the first-time passage rate was 79 percent, and the repeater passage rate was 37 percent. In 2001, the first-time passage rate was 74 percent, the lowest of the decade. If JD holders were willing to take the bar up to five times—not implausible given the substantial marginal value of passing the bar to someone who already holds a JD—they would, based on the 2011 statistics, be expected to pass the bar with 98 percent probability.

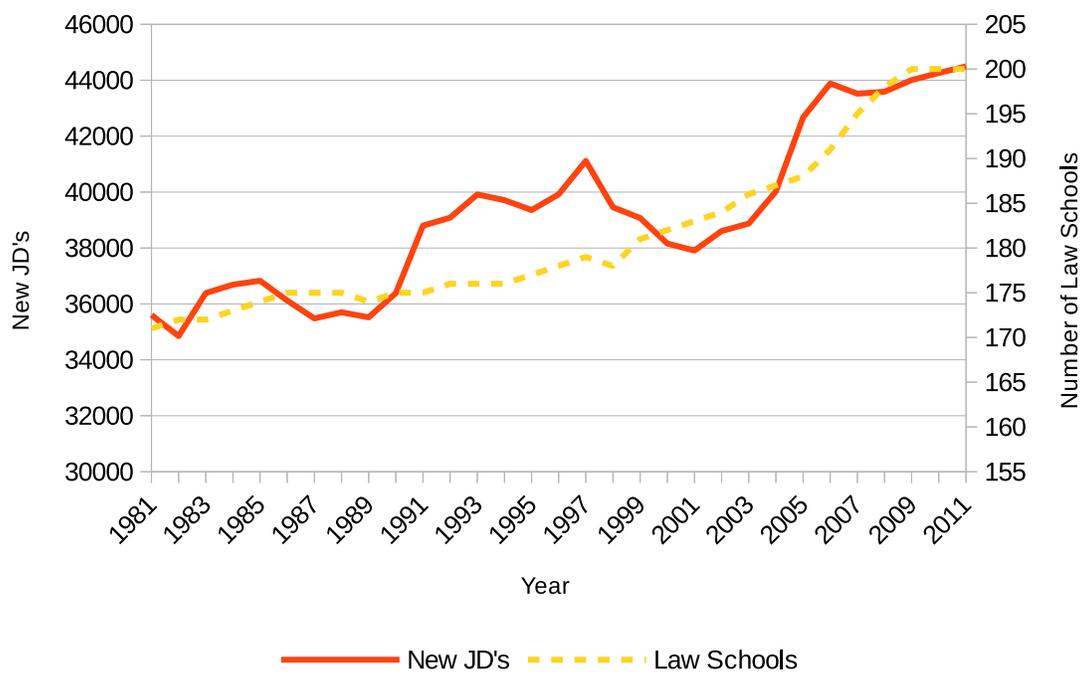


Figure 5: Graduates and Number of Law Schools by Year

The crucial question for someone considering attending law school, of course, is whether she will be able to obtain a job that values her JD above and beyond her college degree. This depends crucially on both the demand for lawyers and the number of un- or under-employed would-be lawyers in the work force. The first factor is more difficult to predict: will growth in the legal sector revert to its former trend, or has it undergone a permanent change? As I consider in more detail in Section 7, even if it takes several years before a JD graduate can find employment that utilizes her degree and training, the investment in law school could still be a wise one from a financial perspective.

The prospective JD may be cheered by the declining interest among his peers in attending law school. While she has a growing backlog of unemployed lawyers to compete with, the newly graduated law student may benefit from having no history of failing to get a legal job despite having a JD. Un- or under-employed lawyers waiting for the market to revive carry the signal of not being sufficiently attractive for employment when the market was tight, whereas the new law school graduate has no such stigma. Moreover, the new law school graduate will compete against a smaller cohort of new graduates.

This section has established that lawyers' wages, and by extension JDs' wages, have steadily increased since the 1970s through the 2008 recession after which there has been some stagnation in relative wages. Since 2000, there has also been a clear bifurcation of the wage distribution, where lawyers at large corporate firms earn much higher wages than their public-service or solo-practitioner counterparts. Lawyer employment has continued to grow, albeit at a declining rate since the recession. Evidently it has become more difficult for recent law graduates to obtain new jobs that value their costly JD degree.

## 4 Model and Estimation Framework

The economic value of a JD to a college-graduate is the difference between (1) the net present value of career earnings with a JD, and (2) the net present value of what the same person would earn over his career without a JD. Suppose that an individual intends to retire  $T$  years after graduation from college. She may go immediately to work, earning  $w_t^{\text{non-JD}}$  for each year  $t$  of her  $T$  year career.

Alternatively she may attend law school for three years, at a cost of  $c_t$  each year, before beginning her career of  $T - 3$  years with a salary of  $w_t^{\text{JD}} = p_t w_t^{\text{non-JD}}$ , where  $p_t$  is the salary premium that comes with a JD. At the time of her decision of whether to enter the labor force or enter law school, the value to her of the obtaining the value of each path is expressed by

$$\text{NPV}_{\text{non-JD}}(r, T) = \sum_{t=0}^{T-1} \frac{w_t^{\text{non-JD}}}{(1+r)^t} \quad (1)$$

and

$$\begin{aligned} \text{NPV}_{\text{JD}}(r, T) &= - \sum_{t=0}^2 \frac{\text{tuition}_t}{(1+r)^t} + \sum_{t=3}^{T-1} \frac{w_t^{\text{JD}}}{(1+r)^t} \\ &= - \sum_{t=0}^2 \frac{\text{tuition}_t}{(1+r)^t} + \sum_{t=3}^{T-1} \frac{p_t w_t^{\text{non-JD}}}{(1+r)^t}. \end{aligned} \quad (2)$$

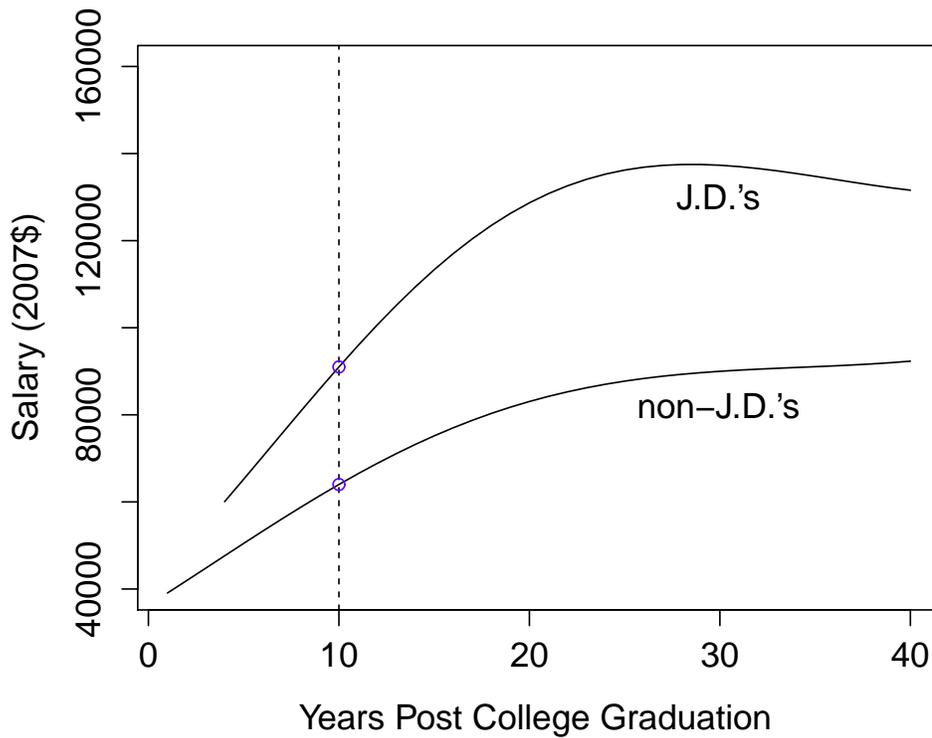
The value of obtaining a JD is the difference of these two terms,  $\text{NPV}_{\text{JD}}(r, T) - \text{NPV}_{\text{non-JD}}(r, T)$ , which can be expressed as

$$- \underbrace{\sum_{t=1}^3 \frac{\text{tuition}_t + w_t^{\text{non-JD}}}{(1+r)^{t-1}}}_{\text{costs}} + \underbrace{\sum_{t=4}^T \frac{w_t^{\text{JD}} - w_t^{\text{non-JD}}}{(1+r)^{t-1}}}_{\text{benefits}}. \quad (3)$$

While this expression represents the value in current dollars, the economic return on obtaining a JD alternatively may be expressed as an “internal rate of return,” or a rate of return on the investment. This rate of return is defined as the interest rate  $r^*$  that makes the net present value of the benefit of a JD equal to 0:

$$\text{NPV}_{\text{JD}}(r^*, T) - \text{NPV}_{\text{non-JD}}(r^*, T) = 0 \quad (4)$$

The wage profiles  $w_t^{\text{non-JD}}$  and  $w_t^{\text{JD}}$  are the keys objects I need to estimate to compute the returns in Expressions 3 and 4. These must be estimated because (1) for any given individual I only observe their wages as either a JD or a non-JD, and (2) given the data I am using, I only observe wages at certain points in an individual’s career. I estimate these objects in two stages. First, using



Notes: First, I estimate the shapes of the two wage trajectories, which show how wage evolves over time. In the second stage, I estimate the wage premium at one point in time, as indicated by the circled points on the figure. Combining the results from these two stages allows the estimation of the wage paths over the course of a worker's career.

Figure 6: Estimated Wage Trajectories

data that span many years and levels of experience, I estimate how wages evolve over a worker's career under either education choice. Second, using data that include a rich set of educational characteristics but unfortunately only have observations one workers at one level of experience, I estimate the JD premium at one point in time. I combine the estimates from these two stages to estimate the total career earnings. Figure 6 may help elucidate the estimation strategy.

## 4.1 Approach to Estimating the JD Premium

The key model is the familiar income equation for person  $i$  with post-college experience  $t$ :

$$y_{it} = \beta_1 x_{it} + f(t) + \gamma_t \text{JD}_{it} + \varepsilon_{it} \quad (5)$$

where  $y_{it}$  is a measure of income,  $x_{it}$  are observed individual characteristics,  $f(t)$  is a function that describes how income evolves with  $t$ , JD is (a potentially vector-valued) variable that describes  $i$ 's legal education or lack thereof, and  $\varepsilon_{it}$  is the effect of unobservable variable and perhaps an stochastic idiosyncratic income shock. Accordingly,  $\gamma_t$  reflects the ‘‘JD premium’’ associated with experience  $t$ .<sup>7</sup>

Obtaining an unbiased estimate of  $\gamma_t$  is notoriously difficult if the unobservable factors  $\alpha_i$  are correlated with the ‘‘treatment’’ variable JD (see, e.g., Heckman (1979)). That is, if

$$\varepsilon_{it} = \phi_i + u_{it} \quad (6)$$

$$\text{JD}_{it} = \alpha_1 x_i + \alpha_2 z_i + \alpha_3 \phi_i + v_i \quad (7)$$

where  $\phi_i$  is an unobserved individual fixed effect that is relevant to both  $y_i$  and  $\text{JD}_i$ , and  $u_{it}$  and  $v_i$  are mean-0 stochastic terms. Under these conditions OLS estimators of the parameters in Equation 5 are biased.

As described in Section 2, there is a substantial literature that addresses the selection issue in the returns to schooling. A well-known method is to take an instrumental variables approach, which relies on the existence of an unobserved variable  $z$  that affects the individual’s schooling decision, but does not affect her income. I argue for and present such an instrumental approach.

Another approach to selection is essentially to assume that the critical selection factors are, in fact, observed. This ‘‘selection on observables assumption’’ is, when plausible at least, typically employed with a particularly rich data set. If the unobservable  $\phi_i$  were observed, or effectively proxied by other observable variables, OLS estimation of Equation 5 would be consistent. The

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<sup>7</sup>Since  $\gamma_t$  is the log wage premium, it has a precise correspondence to  $p_t$ , the JD premium expressed as a multiplier of the level of wage, described above. In particular,  $\log(\text{wage}_t) + \gamma_t = \log(p_t \times \text{wage}_t)$ .

data I present are relatively rich, and, with support from results of an instrumental variables approach, I argue that selection on unobservables is not an important phenomenon in this setting.

Yet another approach to addressing the selection issue is to apply a matching estimator. This estimation technique relaxes the linear form assumption exhibited in the model stated in Equations 5, 6, and 7. I employ propensity score matching in the spirit of Black and Smith (2006), who studied the effects of undergraduate institution quality on earnings. The idea behind matching is to compare individuals who are similar along observed characteristics but that have different treatment statuses, in this case whether they have obtained a JD or not.

Having estimated the average treatment effect of attaining a JD, I investigate the heterogeneity in the returns to a JD by analyzing different types of JDs separately. In particular, I estimate the premia and returns for JDs from different quality tiers of law schools, and for different types of legal (or non-legal) work.

Using a separate data set that has less rich controls but is a repeated cross-section with many individuals observed at different  $t$ 's, estimation of  $f(t)$  is straightforward, and involves specifying a functional form and estimating it via regression. With an estimate of  $f(t)$ , both  $w_t$  and  $p_t$  can be computed. Finally, combining these estimates of the premium over the career with information on the costs of obtaining a JD lead to estimates of the returns to a JD.

## 5 Data

The analyses in this paper primarily rely on two data sets. The first, constructed from the March supplement of the Current Population Survey (CPS), is used for various robustness checks and to estimate the wage profile. The second, a combination of the Baccalaureate and Beyond, a survey of college graduates, and the After the JD survey, as survey of JD holders, is used to estimate the JD premium.

### 5.1 Data for Estimating the Income Profile

The CPS has a long history of use in labor economics, and provides general demographic and labor market characteristics, including occupation and wage, of a nationally representative sample

of workers annually. I obtained data from 1996 through 2007 surveys. I restricted the sample to four-year college graduates who report working at least 35 hours each week.

Table 1 shows summary statistics of the 2007 CPS data. Ideally, the data would identify which workers had law degrees. But the educational attainment variable only provides the general type of degree—bachelor’s, master’s, professional, or doctorate—but does not specify the field of the degree. The best I can do then is to exploit the fact that most, but certainly not all, JD-holders become lawyers. To show how JDs compare to the rest of the college-graduate population, the table juxtaposes the summary statistics for these two groups.

Table 1: Summary Statistics, CPS data, year 2007

	<b>Non-lawyers</b>	<b>Lawyers</b>	<b>All</b>
<i>Female</i>	0.45	0.29	0.45
<i>Nonwhite</i>	0.18	0.08	0.18
<i>Married</i>	0.65	0.77	0.65
<i>Experience</i>	21.60	20.43	21.57
<i>Wage (2007)</i>	81000	171000	83000
	(82000)	(144000)	(85000)
<i>Age</i>	42.42	45.84	42.49
<i>Bachelor’s Degree</i>	0.24	0.00	0.24
<i>Master’s Degree</i>	0.04	0.14	0.05
<i>Professional Degree</i>	0.04	0.86	0.06
<i>Ph.D.</i>	0.00	0.00	0.00
<i>Lawyer</i>	0.00	1.00	0.02
<i>N</i>	23362	513	23875

Notes: Sample is CPS, year 2007. Sample weights applied. Standard deviations in parentheses. Wage rounded to thousands, other statistics rounded to hundredths place.

About two percent of the 2007 sample were lawyers. The lawyer population then was disproportionately white and male. Lawyers’ average hours of work were slightly greater. Remarkably, the average reported income was nearly twice as high as that for non-lawyers. While the average relative salary of lawyers to non-lawyers was at its peak in 2007, the general qualitative pattern in this year also holds for the other years I studied in the CPS.

Per convention in wage regressions using CPS data, which lack an explicit years-of-work-experience variable, I construct a proxy from the age and educational attainment variables. This constructed experience variable allows the study of how a worker’s wage evolves over the career,

which is a critical component of the analysis in this paper, as mentioned above. Because of its importance, I repeated the analyses in this paper with various sets of plausible assumptions for constructing the experience variable to ensure that my results are robust.

## 5.2 Data for Estimating the JD Premium

The second data set, the workhorse of estimating the JD premium, is a novel combination of two surveys, that constitutes the richest data available for studying the question of returns to legal education. These surveys are the Baccalaureate and Beyond survey (B&B), the focus of which is college graduates and their subsequent careers, and the After the JD survey (AJD), the focus of which is JD holders and their subsequent careers. These surveys are similar in that they both follow a single cohort of graduates for several waves. Both surveys contain rich information about the educational history of respondents. For example, in addition to years of schooling, they include information on the schools attended, the course of study, and GPA. The AJD survey additionally includes information on respondents' legal education as well as the type of law they practice and the type of organization they work for. These surveys also provide wage and employment information for approximately ten years after college graduation. Also, both surveys were conducted over roughly the same time frame. Therefore, the combination of these two surveys permits a study of what individuals might have earned had they chosen the alternative educational path.

The B&B was compiled by the National Center for Education Statistics. The sample is a nationally-representative cohort that graduated from college in 1993 and is surveyed in 1994, 1997, and 2003. As mentioned, in addition to the standard demographic variables, the data set includes detailed information on schooling, including undergraduate major, undergraduate grades, and the identity of the undergraduate institution. Unfortunately the B&B does not contain many lawyers in its sample, and for the lawyers it does contain it lacks detail—I only observe whether the respondent attended law school, but no information about the law school.

The After the JD survey (AJD) was administered by the American Bar Foundation. This data set follows a group of lawyers that were admitted to the bar in 2000. The first wave was conducted in 2002, the second in 2007, after approximately seven years of labor force experience (as a JD). It

provides information on the quality of the undergraduate institution and law school each respondent attended, as well as each respondent's performance as an undergraduate and a law student. It also specifies what type of career each respondent obtains. A third wave of the survey was administered in 2012, however the data are not yet available to researchers.<sup>8</sup>

I construct the data set for analysis, what I refer as the B&B/AJD data, by finding variables that are common between the two. The B&B component, by construction, is comprised of workers who graduates in 1993. Because the AJD data set is a survey of people who passed the bar in 2000, most but not all of the respondents graduated college in 1996 or 1997. I restrict the AJD component to people who graduated after 1993, out of the concern that workers who obtained their JD when long out of college may be categorically different than those who take the more traditional route to obtain a JD.

The combined data set includes race, undergraduate GPA (in 0.25 grade point intervals), competitiveness of undergraduate institution (by Barron's admissions competitiveness measure, a score of 1-6), and wage from approximately ten years after college graduation or seven years after law school graduation. For the B&B data, this is the 2003 measure of wage. For the AJD data, this corresponds to 2006 wage data.

Ideally, the data would have wage measures from the same years. To account for the difference in years, I employed a simple scaling scheme. I converted the 2003 wages from the B&B data to 2007 dollars, the unit of the wages from the AJD, and proceed as if the wages are commensurate. Indeed, using the CPS data to test the null hypothesis that college graduates real wages were similar in those two years support this strategy.

After removing observations with missing information and dropping observations for which the observed wage is less than \$25,000, there are 793 observations from the AJD, and 4654 from B&B, for a total of 5447 observations used for estimation. The summary statistics in Table 2 show that the B&B sample is somewhat less racially diverse, and slightly more gender balanced than the AJD sample. These findings are at odds with the qualitative implications of the CPS survey because of the focus on a single cohort of workers that are relatively early in their career. This indicates, for

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<sup>8</sup>The ABF has stated the Wave 3 data will be released in 2015.

example, that college-graduate minorities are attending law school more than they did in the past. The summary statistics also show that JD respondents' fathers have substantially higher education and lawyer representation than non-JDs' fathers.

Table 2: Summary Statistics, B&B/AJD data

	<b>B&amp;B</b>	<b>AJD</b>	<b>Combined</b>
<i>Female</i>	0.45	0.41	0.45
<i>Black</i>	0.06	0.08	0.06
<i>Asian</i>	0.05	0.10	0.05
<i>Latino</i>	0.04	0.10	0.04
<i>Married</i>	0.67	0.70	0.67
<i>Dad college grad</i>	0.46	0.58	0.46
<i>Mom college grad</i>	0.44	0.49	0.44
<i>Hours/week</i>	47.10	46.38	47.09
	(9)	(7.7)	(8.9)
<i>Salary (2007)</i>	71000	105000	72000
	(45000)	(54000)	(45000)
<i>Undergrad: Top-Tier</i>	0.03	0.23	0.03
<i>Undergrad: Middle-Tier</i>	0.31	0.55	0.31
<i>Undergrad: Lower-Tier</i>	0.66	0.22	0.66
<i>GPA &gt; 3.5</i>	0.13	0.48	0.13
<i>GPA &lt; 2.5</i>	0.30	0.03	0.29
<i>Major: Business</i>	0.26	0.13	0.26
<i>Major: Engineering</i>	0.08	0.02	0.08
<i>Major: Science</i>	0.11	0.07	0.11
<i>Major: Social Science</i>	0.15	0.36	0.15
<i>LS: Top 10</i>	–	0.11	< 0.01
<i>LS: 11-20</i>	–	0.12	< 0.01
<i>LS: 21-100</i>	–	0.49	< 0.01
<i>LS: 100+</i>	–	0.28	< 0.01
<i>N</i>	4654	793	5447

Notes: Sample is CPS, year 2007. Sample weights applied. Standard deviations in parentheses. Wage rounded to thousands, other statistics rounded to hundredths place.

Unsurprisingly, the AJD respondents have higher average undergraduate grades from better undergraduate schools. This suggests that those who obtain JDs would have gone on to have higher salaries even without law school. A major goal of this paper is to determine how much of the raw differences in income between JDs and non-JDs are due to selection of abler or higher-earning individuals into law school, and how much are actually *caused* by obtaining the JD.

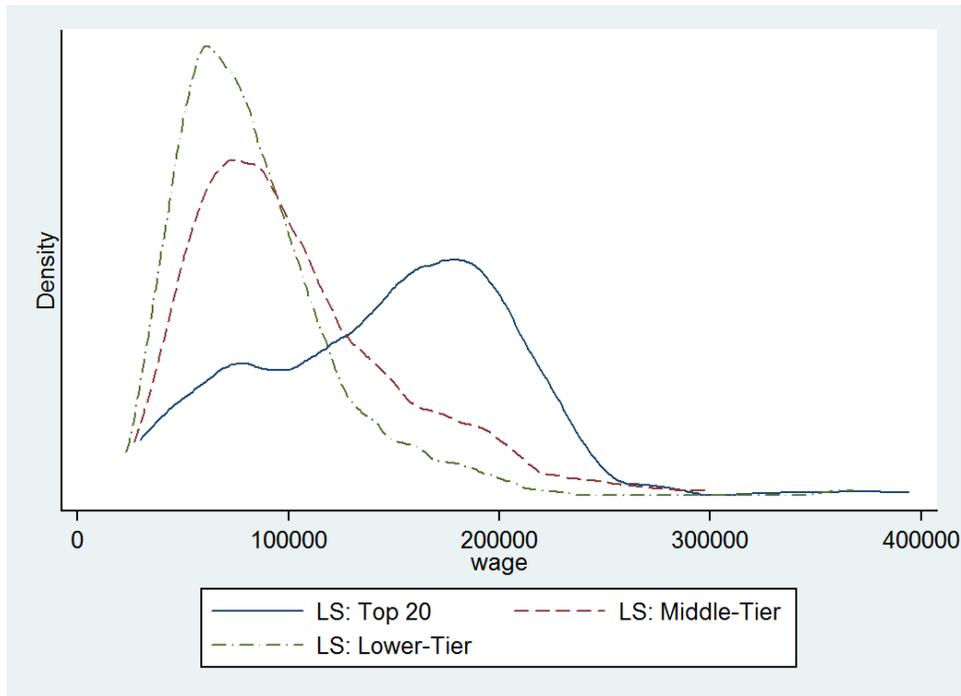


Figure 7: Income Distribution by Law School Quality, with 6 Years of Experience, in 2007\$

The analyses described in this paper focus on the log of income as a dependent variable.<sup>9</sup> As discussed, a key feature of the wage distribution of lawyers is that it is bimodal. This is evident in the AJD data as well, as shown in Figure 7, which displays a kernel density estimate of the wage distribution lawyers from three major quality tiers of law schools. This suggests restricting attention to broad averages—the average wage of lawyers, for example—may obscure some important. For this reason that the more detailed data of the combined B&B-AJD data set are required.

### 5.3 Cost Data

The costs associated with law school are composed of two factors: direct costs and opportunity costs. The lion’s share of the opportunity costs are due to foregone wages; the data discussed above is sufficient to estimate that. As for direct costs, the stated tuitions of law schools are readily available from the schools themselves, as well as several other sources. I obtained cost information from the U.S. News and World Reports guide to graduate schools. While the AJD data do not

<sup>9</sup>I have conducted a parallel set of analyses that study the log of hourly wage that have similar implications.

specify exactly which law school individuals attend, they do give the ranking category of the law school: Top Ten, Ranked 11-20, and so on. I computed the average tuition for students that attend those schools, as displayed in Table 3. Unfortunately, though I do have information on whether family and friends helped shoulder the cost of law school, I do not have information on scholarships or the cost actually paid by students to attend law school. However, whether family and friends helped pay does not in principle affect the rate of return on legal education, fungible as money is.

Table 3: Law School Tuition Costs

	One Year	Total PV
<i>Top-Tier LS</i>	44000	128000
<i>Second-Tier LS</i>	31000	89000
<i>Low-Tier LS</i>	29000	84000
<i>Average</i>	32000	93000

Notes: Tuition costs shows the average law school tuition cost in the year 1997, when the majority of the AJD respondents began law school, expressed in 2007 dollars. The total present value is calculated over three years using a three percent discount rate. Data source is US News & World Reports “Best Grad Schools.”

## 6 Estimating the Returns to Legal Education for the Law School Class of 2000

This section implements the model and estimation framework described in Section 4 to estimate the labor market outcomes of lawyers who passed the bar in 2000. The advantage of this time frame is that it permits the study of mid-career, and not just first-year, earnings. As Section 3 makes clear, while the current legal labor market is different than it was in the mid-2000s, there is ample reason to believe that the relative slowdown in legal hiring is a result of the economy-wide recession and not specific to the legal sector. Whatever the future of legal labor market, understanding the return on a legal education in recent years will shed light on workers’ decisions of whether to attend law school today.

As described, I take a two-stage estimation strategy. In the first stage I determine how a worker's wage evolves with experience in the labor force. Combining these estimated evolution paths with an estimate of JD and non-JD wages at one point in time allows me to estimate the JD and non-JD wage trajectories. The next subsection describes the first stage of this estimation strategy.

## 6.1 Estimating How Wage Evolves with Experience

Letting  $lw_t$  be the log of an individual's earnings  $t$  years after college graduation, I assume that  $lw_t$  is determined by observables  $x$ , year since college graduation  $t$  and a stochastic component  $e$  according to

$$lw_t(X) = lw_0(X) + f(t) + e,$$

where function  $f(t)$  captures how wage evolves with time. This function is the object of interest in this first stage of the estimation.

The B&B/AJD do provide earnings at two points in time, but these two observations per individual are inadequate for estimating  $f(t)$ . Therefore I estimate Equation 6.1 using the CPS data described in the data section. I specify  $f(t)$  as a cubic polynomial in  $t$ . I specify  $lw_0(X)$  as a linear function of a nonwhite indicator variable, a female indicator variable, a married indicator variable, and a married female interaction term. Table 4 presents estimation results from regressions of this type. Column 1 shows results for all workers. On account of a very large sample size, the experience profile parameters are precisely estimated.

The specification of the regression displayed in Column 2 includes interaction terms of the lawyer and the experience variables. This serves as a test of whether the lawyer, and by proxy the JD, experience profile differs from the general profile. The statistical significance of the estimates on those interactions terms at a small level indicate that lawyers have a different profile than the average wage profile of non-lawyer college graduates. Therefore I estimate the experience profile separately for non-lawyers and lawyers; the results are in Columns 3 and 4.

Table 4: Estimation of Income Trajectory Parameters

	(1)	(2)	(3)	(4)
	All workers	All workers	Non-lawyers	Lawyers
<i>Nonwhite</i>	-0.0842*** (0.00474)	-0.0844*** (0.00474)	-0.0834*** (0.00474)	-0.151* (0.0609)
<i>Female</i>	-0.120*** (0.00603)	-0.121*** (0.00604)	-0.121*** (0.00608)	-0.0799 (0.0494)
<i>Married</i>	0.275*** (0.00562)	0.276*** (0.00562)	0.277*** (0.00566)	0.192*** (0.0430)
<i>Female X Married</i>	-0.316*** (0.00732)	-0.315*** (0.00733)	-0.319*** (0.00737)	-0.157** (0.0589)
<i>Experience</i>	0.0726*** (0.00123)	0.0699*** (0.00124)	0.0723*** (0.00125)	0.0853*** (0.00778)
<i>Experience Sq.</i>	-0.00215*** (0.0000569)	-0.00204*** (0.0000573)	-0.00214*** (0.0000576)	-0.00276*** (0.000366)
<i>Experience Cubed</i>	0.0210*** (0.000770)	0.0197*** (0.000776)	0.0209*** (0.000780)	0.0294*** (0.00477)
<i>Lawyer</i>	0.667*** (0.0125)			
<i>Lawyer X Experience</i>		0.103*** (0.00404)		
<i>Lawyer X Exper. Sq.</i>		-0.00434*** (0.000274)		
<i>Lawyer X Exper. Cub</i>		0.0524*** (0.00440)		
<i>Constant</i>	10.17*** (0.0102)	10.18*** (0.0102)	10.17*** (0.0102)	10.71*** (0.0858)
N	209997	209997	205245	4752
R-sq	0.151	0.151	0.138	0.102

Notes: Robust standard errors in parentheses. Sample is college graduates in the CPS March supplement, 1996-2007. Year dummies are included in regression but coefficient estimates are suppressed here. The Experience Cubed estimates are multiplied by 1000. The lawyer-experience interaction variables in Column 2 provide an informal test of the hypothesis that JD wage trajectories differ from non-JD wage trajectories. Column 1 provides estimates of the non-JD wage trajectory, and Column 3 provides estimates of the JD wage trajectory.

## 6.2 Estimating the Premium at One Point in Time

### 6.2.1 OLS Regressions

Using the combined B&B/AJD sample, I estimate a simplified form of the more general income model described above

$$\log(w_i) = \beta X_i + \gamma JD_i + \varepsilon_i \quad (8)$$

The natural log of salary ten years after graduating from college is the dependent variable. The results from this regression are presented in Table 5. The first specification includes only an indicator variable of whether the worker has a JD. This estimation gives the average wage premium at this point in the worker's career. Note that the estimate of 0.447, which implies an approximately 55 percent premium, corresponds precisely to the summary statistics presented in Table 2. For comparison, I also conducted a similar regression on the CPS sample. In place of the JD variable, I used a lawyer indicator dummy. To make the CPS data, which has multiple years of data, better correspond to the B&B/AJD sample, the specification includes a year indicator variable for each year, and is restricted to those workers who were approximately 10 years out of college. It produces a similar, though not as precise, point estimate.

Columns 3 through 5 of Table 5 add progressively more control variables. Column 3 adds information about worker gender, race, marriage status, parents' education, and weekly hours of work. Column 4 then includes undergraduate major. Column 5 adds the quality-tier of the undergraduate institution attended, as well as the GPA the individual attained there.

The results in Column 3 suggest that the JD wage premium is not explained by worker's gender, race, or parental education. The point estimate is slightly reduced, but not statistically different from that of the previous regression. The estimated effects of the controls have signs that are generally consistent with expectations: there is a female wage gap, a marriage wage premium, and workers with higher parental education have higher salaries. There is not, however, a strong black wage penalty. The point estimates are negative though imprecisely estimated. The lack of a stronger effect is probably due to insufficient observations on black workers in the data set. In

Table 5: OLS Earnings Regressions

<b>SAMPLE:</b>	<b>(1)</b> <b>B&amp;B/AJD</b>	<b>(2)</b> <b>CPS</b>	<b>(3)</b> <b>B&amp;B/AJD</b>	<b>(4)</b> <b>B&amp;B/AJD</b>	<b>(5)</b> <b>B&amp;B/AJD</b>
<i>JD</i>	0.447*** (0.0184)	0.461*** (0.050)	0.431*** (0.0183)	0.453*** (0.0187)	0.342*** (0.0206)
<i>Female</i>			-0.120*** (0.0213)	-0.0912*** (0.0217)	-0.100*** (0.0215)
<i>Black</i>			-0.00881 (0.0231)	-0.0151 (0.0233)	0.00173 (0.0231)
<i>Married</i>			0.103*** (0.0190)	0.0972*** (0.0190)	0.103*** (0.0188)
<i>Fem. X Married</i>			-0.130*** (0.0256)	-0.123*** (0.0257)	-0.123*** (0.0254)
<i>Dad is college grad.</i>			0.0797*** (0.0120)	0.0820*** (0.0122)	0.0622*** (0.0122)
<i>Hours/Week</i>			0.0617*** (0.00613)	0.0573*** (0.00637)	0.0584*** (0.00651)
<i>Hours Sq.</i>			-0.0475*** (0.00584)	-0.0435*** (0.00610)	-0.0449*** (0.00626)
<i>Major: Business</i>				0.0997*** (0.0181)	0.107*** (0.0179)
<i>Major: Engineering</i>				0.239*** (0.0191)	0.227*** (0.0191)
<i>Major: Math or Science</i>				0.0432** (0.0166)	0.0340* (0.0164)
<i>Major: Social Studies</i>				0.117*** (0.0201)	0.0962*** (0.0202)
<i>Top-Tier UG: High GPA</i>					0.337*** (0.0445)
<i>Top-Tier UG: Med. GPA</i>					0.294*** (0.0390)
<i>Top-Tier UG: Low GPA</i>					0.148* (0.0611)
<i>2nd-Tier UG: High GPA</i>					0.259*** (0.0325)
<i>2nd-Tier UG: Med. GPA</i>					0.123*** (0.0200)
<i>2nd-Tier UG: Low GPA</i>					0.0741** (0.0242)
<i>Low-Tier UG: High GPA</i>					0.0993*** (0.0249)
<i>Low-Tier UG: Med. GPA</i>					0.0694*** (0.0183)
<i>Constant</i>	11.03*** (0.00647)		9.210*** (0.158)	9.251*** (0.164)	9.163*** (0.167)
<i>N</i>	6291	8975	5630	5447	5447
<i>R-sq</i>	0.089	0.0126	0.226	0.245	0.263

\*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$

Notes: Robust standard errors are in parentheses. The dependent variable is log wage ten years after college graduation. “Top Tier UG: High GPA” is an indicator variable for whether the individual attended a top-tier undergraduate institution and attained a high GPA there, and the other interaction terms are similarly defined. The omitted category is low-tier undergraduate institution and low GPA. The omitted undergraduate major category is humanities.

any event, the significance of the control variables and the increase in the  $R^2$  suggest that, despite being important determinants of a worker's salary, these variables are not strongly related to the JD status of a worker.

Column 4 adds undergraduate major as a control. This addition slightly increases the point estimate, though again, not significantly at the 0.05 level. This could be due to the fact that students with undergraduate majors associated with lower-earning majors, such as social sciences or humanities, are more likely to obtain JDs than higher earnings majors, such as engineering (this empirical claims confirmed by probits in Table 8, that are discussed later). The omission of the college major variable then induces a downward bias in the JD estimate. This source of bias is purged at the inclusion of the major indicator variables. Even with major included, however, the estimate is not greatly changed.

The next specification includes nine undergraduate quality-GPA "cells," created by interacting indicator variables for whether the undergraduate institution was top-tier, middle-tier, or lower-tier, with GPA category indicator variables. The inclusion of these variables does generate a sizeable drop in the coefficient. The results indicate that a approximately 25 percent of the raw salary premium that JDs enjoy was due to selection on these undergraduate characteristics.

**Premia by Law School Tier.** The AJD also has information on the quality of the law school and performance in law school, as well as the type of job JDs have. In particular, the data contain ranking categories, where the rank is determined by the U.S. News & World Report law school rankings. The rankings, whatever their methodological flaws, exert enormous influence on how law schools, firms and undergraduates compare law schools (?). The AJD lists only a ranking category rather than the exact U.S. News rank, thus making identification of the precise law school impossible. Instead, I only observe whether a respondent attended a law school in the Top Ten, Ranks 11-20, Ranks 21-100, Third Tier (ranks 101-200), or Fourth Tier (ranks worse than 200).

This information helps to unpack the average premium estimated above. Table 6 shows regressions that include not just one indicator for having attended any type of law school, but indicators for the various law school quality categories. Columns 1 through 3 show estimates without controls, and Columns 1' through 3' show the analogous estimates with the full suite of controls as

discussed above. (The estimates for the control variables are similar to those presented in Column 5 of Table 5, and therefore not presented in the table.)

Columns 1 and 1' replicate results from the previous table. Columns 2 and 2' include the finest detail on law school attended that the data provide. As one might expect, better schools have higher premia. Schools in the 21-100 range exhibit an average premium that is close to the average for all law schools. Lower-ranked schools, however, are below the grand average.

While the point estimates for Top 10 schools are greater than those for the 11th - 20th ranked schools, and the third tier estimates are higher than fourth tier estimates, the estimates are not statistically significantly different. For this reason, and also for ease of discussion and presentation of results, I recategorize law schools into three groups, hereafter referred to as Top 20, Middle-Tier (corresponding to ranks 21-100) and Lower-Tier (corresponding to any schools ranked worse than 100). The results with this new categorization are presented in Columns 3 and 3'.

The results in the ' columns show the various JD coefficients with controls. For the law school categories that include top 100 schools, the controls significantly reduce the estimated premium. The middle-tier law school premium is close to that of average law schools.

Of course, within each law school ranking category there is likely to be substantial heterogeneity in actual premia. Some Yale, Stanford, and Harvard graduates go on to work as public defenders or take other less remunerative positions. Partners at top New York law firms include people (though they do not comprise a majority) with degrees from middle- and even the occasional lower-tier school.

To further decompose these premia-by-category, I estimated regressions that include the type of law practiced interacted with the quality of the law school attended. The employer organization types include Private Law Firm, Industry, Federal Government, State or Local Government, and General Practice, and "Other." Industry includes in-house counsel. General Practice refers primarily to lawyers the serve individuals in relatively straightforward matters, such as divorces, wills, personal real estate matters. The "Other Category" includes Military, non-profit and other organizations for which there are not many observations and which do not fit into the remaining categories.

Table 6: OLS Earnings Regressions with JD Quality Indicator Variables

Controls?	(1)		(2)		(3)		(1')		(2')		(3')	
	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
<i>JD</i>	0.447*** (0.0184)						0.342*** (0.0206)					
<i>LS: Top 10</i>			0.817*** (0.0486)						0.659*** (0.0487)			
<i>LS: 11 - 20</i>			0.707*** (0.0451)						0.576*** (0.0432)			
<i>LS: 21 - 100</i>			0.409*** (0.0239)						0.324*** (0.0255)			
<i>LS: 101 - 200</i>			0.236*** (0.0417)						0.187*** (0.0423)			
<i>LS: 200+</i>			0.186*** (0.0381)						0.171*** (0.0444)			
<i>LS: Top 20</i>					0.759*** (0.0336)					0.612*** (0.0343)		
<i>LS: Middle Tier</i>					0.409*** (0.0239)					0.323*** (0.0255)		
<i>LS: Lower Tier</i>					0.211*** (0.0287)					0.179*** (0.0314)		
<i>Constant</i>	11.03*** (0.00647)	11.03*** (0.00647)	11.03*** (0.00647)	11.03*** (0.00647)	11.03*** (0.00647)	11.03*** (0.00647)	9.163*** (0.167)	9.163*** (0.139)	9.213*** (0.139)	9.213*** (0.139)	9.211*** (0.139)	9.211*** (0.139)
<i>N</i>	6291	6291	6291	6291	6291	6291	5447	5447	5447	5447	5447	5447
<i>R-sq</i>	0.089	0.111	0.111	0.110	0.110	0.110	0.263	0.277	0.277	0.277	0.277	0.277

\*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$

Notes: Robust standard errors in parentheses. The dependent variable is log wage ten years after college graduation. Regressions 1 through 3 do not include controls, and therefore show average differences in log wage between JDs of the specified type and non-JDs. Column 1 groups all JDs together; Column 2 breaks JDs out into more specific categories, and Column 3 uses the three categories that are used extensively in this paper. Columns 1', 2', and 3' use the full suite of controls that includes basic demographic, employment, and undergraduate education characteristics as described in the body of the paper. The coefficient estimates for those explanatory variables are suppressed in this table, though do not vary significantly between the separate regressions. Complete results for the regression in Column 1' are presented in Table 5.

Table 7 shows results from a regression of log wage for these interactive terms in addition to the controls described above. While many of these estimates are not precise due to a low number of observations in some cells, several features of the results stand out. As expected, JDs from top schools that work in Private Law Firms and in Industry exhibit high salary premia. Of JDs from middle- and lower-tier schools, those who work in industry may in fact earn more than those who work in private firms. The federal government premium at the high end stands out, but drops off steeply with school quality. Also of note is that the salary premium for industry lawyers with JDs from lower-tier schools is not statistically significantly different from the average premium.

### **6.2.2 Instrumental Variable Approach**

While the previous estimation does employ a better set of controls than was used by previous researchers, it is not possible to rule out that selection into law school takes place on remaining unobservables. This section presents an instrumental variable approach to correct for selection.

I propose as an instrument whether the worker has a parent who is a lawyer. To be valid the instrument must satisfy both the relevancy condition—that it is a useful predictor of whether an individual obtained a JD (conditional on other control variables)—and the exogeneity condition—that it does not affect wages (conditional on other control variables).

It is clear that having at least one parent as a lawyer satisfies the relevancy condition. Column 1 of Table 8 shows results of probits on the full set of control variables and the indicator variable of whether a parent is a lawyer. The parent lawyer variable is strongly significant. It is likely that regular exposure to a lawyer as a child predisposes one to become a lawyer.

However, there remains concern about the exogeneity of the instrument. For example, a child of a lawyer who attains a JD may find better job opportunities through his parent’s connections. The presence of a lawyer parent may therefore be positively related to income, even controlling for other factors.

While I cannot definitively rule out this or various other stories that challenge the exogeneity of this instrument, I provide suggestive evidence that having a lawyer parent does not influence wage above and beyond the other control variables. Table 9 shows several regressions with log

Table 7: OLS Regressions with Law School Quality and Employer Organization Type

<i>Controls</i>	<b>log(wage)</b> Yes
<i>Top-Tier LS: Private</i>	0.628*** (0.0508)
<i>Top-Tier LS: Industry</i>	0.725*** (0.0640)
<i>Top-Tier LS: Fed Gov</i>	0.733*** (0.0847)
<i>Top-Tier LS: St/Lo Gov</i>	0.452*** (0.136)
<i>Top-Tier LS: Gen Practice</i>	0.391*** (0.116)
<i>Top-Tier LS: Other Law</i>	0.440*** (0.0849)
<i>2nd-Tier LS: Private</i>	0.351*** (0.0347)
<i>2nd-Tier LS: Industry</i>	0.544*** (0.0548)
<i>2nd-Tier LS: Fed Gov</i>	0.223* (0.0997)
<i>2nd-Tier LS: St/Lo Gov</i>	0.0486 (0.0675)
<i>2nd-Tier LS: Gen Practice</i>	0.309*** (0.0678)
<i>2nd-Tier LS: Other Law</i>	0.169* (0.0768)
<i>Lower-Tier LS: Private</i>	0.216*** (0.0509)
<i>Lower-Tier LS: Industry</i>	0.340*** (0.0790)
<i>Lower-Tier LS: Fed Gov</i>	0.185 (0.143)
<i>Lower-Tier LS: St/Lo Gov</i>	0.00567 (0.0848)
<i>Lower-Tier LS: Gen Practice</i>	0.101 (0.0723)
<i>Lower-Tier LS: Other Law</i>	0.170* (0.0733)
<i>Constant</i>	9.255*** (0.139)
<i>N</i>	5447
<i>R</i> <sup>2</sup>	0.286

\*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$

Notes: See notes for Table 6.

Table 8: Probit Regressions

	(1)	(2)	(3)	(4)
	Any LS	Top-Tier LS	2nd-Tier LS	Low-Tier LS
	Probit	Probit	Probit	Probit
<i>Female</i>	-0.192*	-0.150	-0.206	-0.193
	(0.0938)	(0.156)	(0.123)	(0.128)
<i>Black</i>	0.442***	0.637***	0.492***	0.181
	(0.110)	(0.175)	(0.138)	(0.167)
<i>Top-Tier UG: High GPA</i>	3.467***	7.355***	7.027***	1.955***
	(0.260)	(1.375)	(0.904)	(0.313)
<i>Top-Tier UG: Med. GPA</i>	2.795***	6.632***	6.339***	1.476***
	(0.251)	(1.382)	(0.908)	(0.290)
<i>2nd-Tier UG: High GPA</i>	3.322***	6.792***	6.976***	2.407***
	(0.245)	(1.383)	(0.906)	(0.256)
<i>2nd-Tier UG: Med. GPA</i>	2.051***	5.371***	5.758***	1.431***
	(0.238)	(1.385)	(0.905)	(0.240)
<i>2nd-Tier UG: Low GPA</i>	1.123***	4.269**	4.725***	0.864**
	(0.262)	(1.420)	(0.918)	(0.272)
<i>Low-Tier UG: High GPA</i>	1.979***	5.499***	5.610***	1.377***
	(0.245)	(1.388)	(0.907)	(0.254)
<i>Low-Tier UG: Med. GPA</i>	1.344***	4.683***	5.036***	0.931***
	(0.239)	(1.387)	(0.904)	(0.240)
<i>Major: Business</i>	-0.0539	0.0871	-0.0139	-0.0980
	(0.0798)	(0.147)	(0.0998)	(0.111)
<i>Major: Engineering</i>	-0.862***	-0.861***	-0.705***	-0.994***
	(0.131)	(0.254)	(0.155)	(0.231)
<i>Major: Math or Science</i>	-0.568***	-0.540**	-0.553***	-0.452***
	(0.0934)	(0.167)	(0.121)	(0.132)
<i>Major: Social Sciences</i>	0.323***	0.367***	0.255***	0.248**
	(0.0608)	(0.103)	(0.0771)	(0.0848)
<b><i>Parent Lawyer</i></b>	<b>0.865***</b>	<b>1.003***</b>	<b>0.855***</b>	<b>0.612**</b>
	<b>(0.130)</b>	<b>(0.187)</b>	<b>(0.158)</b>	<b>(0.200)</b>
<i>N</i>	5417	4831	5000	4834
<i>Pseudo-R<sup>2</sup></i>	0.328	0.437	0.308	0.178

\*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$

Notes: Standard errors in parentheses. This table shows the standard probit estimates. The variables married, female X married, hours, and hours sq. were included in the regression but their estimates are not shown in this table.

wage as the dependent variable. The sample for the first regression is the complete B&B/AJD data set. The first regression includes the standard control variables and a parent lawyer indicator variable but does not include a JD indicator variable. Here having a lawyer parent is positive and significant at the 0.05 level. The second column shows a regression of the same sample that adds the JD indicator. The inclusion of the JD dummy completely erodes the explanatory significance of the parent lawyer indicator variable. The third column is a regression on just the lawyers in the sample. This is a direct test of whether having a parent as a lawyer affects the expected log wage. Again, the variable is not significant.

Table 9: Wage Regressions on X and Parent Lawyer

	(1)	(2)	(3)
<b>Sample</b>	<b>B&amp;B + AJD</b>	<b>B&amp;B + AJD</b>	<b>AJD</b>
<i>Parent Lawyer</i>	0.109* (0.0430)	0.0295 (0.0423)	-0.0225 (0.0582)
<i>JD</i>		0.340*** (0.0207)	
<i>Constant</i>	9.116*** (0.177)	9.162*** (0.167)	11.04*** (0.357)
<i>N</i>	5447	5447	793
<i>R-squared</i>	0.224	0.263	0.180

\*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$

Notes: Robust standard errors in parentheses. The dependent variable is log wage 10 years after college graduation. Estimates of parameters of other explanatory variables (as in Table 8) are suppressed.

A possible explanation for this is that law school itself does a thorough job of preparing students to find jobs. Law school is a professional school, and law schools generally devote many resources towards finding well-paying jobs for their students. Indeed, a law school's U.S. News ranking is affected by the portion of its graduates who obtain a job immediately after graduation. Because of the importance of the rankings to law schools, law schools are very keen to help their students find jobs. It is not implausible that the job search assistance a law school provides dominates the help a lawyer parent can provide.

Using lawyer parent as an instrument, I estimate the wage equation 8 again via GMM. Table 10 presents the estimate of the JD parameter in Column 2, with Column 1 being a replication of

the results from the regression discussed earlier. The regression produces a point estimate that is considerably higher than that obtained from simple OLS. Unfortunately it is also imprecisely measured. Nevertheless, the Hausman endogeneity test fails to reject the null hypothesis that the difference in coefficients is not systematic. This suggests that, insofar as the parent lawyer indicator variable is a good instrument, selection on unobservable characteristics is not a major concern. Put another way, the rich set of control variables adequately corrects for self-selection.

The fact that the IV point estimate, imperfect though it may be, is greater than the OLS estimate is encouraging insofar as use of the IV does not lower the upper bound on the estimate. To see why, consider estimation of the simple regression model

$$Y = \beta X + u$$

where  $\text{cov}(X, u) > 0$ , via OLS and IV using  $Z$  where  $\text{cov}(X, Z) > 0$  and  $\text{cov}(Z, u) > 0$  as an instrument for  $X$ . Then

$$\begin{aligned} \text{plim } \hat{\beta}_{OLS} &= \frac{\text{cov}(X, Y)}{\text{var}(X, X)} = \beta + \frac{\text{cov}(X, u)}{\text{var}(X)} \\ \text{plim } \hat{\beta}_{IV} &= \frac{\text{cov}(Z, Y)}{\text{cov}(X, Z)} = \beta + \frac{\text{cov}(Z, u)}{\text{cov}(X, Z)} \end{aligned}$$

Under these conditions, both the OLS and IV estimators of  $\beta$  are biased upwards. While this simple example is not perfectly analogous to the problem here, it makes the point which is shown more generally in Nevo and Rosen (2012), that with these assumptions on  $X$ ,  $Z$ , and  $u$ ,  $\min(\beta_{OLS}, \beta_{IV})$  constitutes an upper-bound for  $\beta$ . Ideally, I would be able to also derive a lower bound, but without a superior instrument this is not possible.

Consider the proposition that selection on unobservables is not important in this model. This would indeed be the case if individuals choose to go to law school based on something unrelated to unobservable characteristics that affect wage. For example, consider the unobservable-to-the-econometrician characteristic of having a strong work ethic. It is not clear why this work ethic would push a student towards law school over some other kind of graduate school or a highly remunerative career straight out of college such, for example, investment banking.

Table 10: GMM Estimations

Estimation Method	OLS	GMM	OLS	GMM
Sample: B&B +	Any LS	Any LS	Top-Tier LS	Top-Tier LS
<i>JD</i>	0.342*** (0.0206)	0.465* (0.181)	0.619*** (0.0379)	0.748* (0.352)
<i>N</i>	5447	5447	4861	4861
<i>R-squared</i>	0.263	0.258	0.265	0.263

Estimation Method	OLS	GMM	OLS	GMM
Sample: B&B +	2nd-Tier LS	2nd-Tier LS	Low-Tier LS	Low-Tier LS
<i>JD</i>	0.322*** (0.0268)	0.604* (0.249)	0.188*** (0.0300)	0.816 (0.706)
<i>N</i>	5030	5030	4864	4864
<i>R-squared</i>	0.225	0.207	0.198	0.133

Notes: Robust standard errors in parentheses. The dependent variable is log wage 10 years after college graduation. For the GMM estimations, the instrument is whether at least one parent was a lawyer. The full set of controls is used in each regression. The sample for each regression is a combination of the B&B sample of college graduates and subsamples of the AJD survey of JD holders, as specified in the columns headers.

One explanation is that the full set of control variables, in particular the undergraduate characteristics, do an effective job at capturing traits that are typically thought of as unobservable in wage regressions. For example, work ethic may be captured by undergraduate GPA. A proficiency towards writing, which may push one towards a JD, may be captured by majoring in the humanities.

**Using an Instrument to Estimate Premia by Tier.** I also use this instrument to study the average effects for each of the three law school quality categories. Ideally I would have at least three instruments. Furthermore, I would need instruments that distinguish how a person picks one tier of law school rather than another. Unfortunately the available data do not provide such a set of instruments.

Instead, I split the sample up and use this instrument to estimate specific tier effects in separate regressions. I take three subsamples of the B&B/AJD data set. These are composed of the B&B respondents plus (1) top-tier law school graduates, (2) middle-tier law school graduates, and (3) lower-tier law school graduates. I estimate the regressions via OLS and IV as for the complete sample. The results are presented in Columns 3 through 8 of Table 10.

First, note that the point estimates of the JD variable in each regression are nearly identical to what the estimates were from the regression on the full sample with the individual dummies. As for the estimation of the average JD effect, estimating via GMM increases the point estimates, yet the estimates are not statistically different from the OLS estimates.

While the lack of significantly different estimates with the IV does not prove there is no selection, it may be taken to support the arguments above the selection on observables assumption is satisfied.

### **6.2.3 Propensity Score Matching**

A distinct way of addressing selection (on observables) is propensity score matching. Matching methods maintain the assumption of selection on observables that is required for the OLS estimates to be unbiased, however it relaxes the assumption that selection is described by a linear function of observables that is implicit in the estimation of a model such as that in Equation 8. While the linearity assumption is innocuous under certain conditions, it may also produce misleading

estimates. Therefore matching provides a useful robustness check on the results described earlier. I adapt the propensity score matching methodology Black and Smith (2004) employ in their study of the effects of college quality on wages.

A requirement of matching is the common support condition that requires that for any set of individual characteristics  $X$  there is at least one individual with characteristics  $X$  that did not receive treatment and another individual with characteristics  $X$  that did receive treatment. Put formally in the notation of my model, it is

$$0 < Pr(JD = 1|X) < 1.$$

The more elements of  $X$ , the less likely this condition is to hold for my data set. In this case, to ensure the matching condition obtains, I replace the eight undergraduate quality-GPA interaction terms (nine combinations with one omitted) with four indicator variables (two GPA category indicator variables with one omitted and two quality variables with one omitted).

I present propensity score matching estimates using nearest neighbor techniques. The basic idea of this methodology is to compare the outcomes of individuals with similar descriptive variables but different treatment statuses. Because it is unlikely to find perfect matches of the propensity score, the nearest-neighbor technique weights the values of “near matches” in a particular way (see, for example, Becker and Ichino (2002) for technical details). It then compares weighted averages of the treatment and control outcomes. Standard errors are computed via bootstrapping.

The results from this propensity score matching are in Table 11. The average JD premium, and the top- and middle-tier premia are very similar to the results from simple OLS regression. The estimate for the premium of the low-tier JD is close, but significantly smaller (at the 0.05 level). This indicates that identification of the OLS estimates is not heavily driven by the linearity of the model.

Combining the estimates of this subsection with the estimates of how wages evolve with experience from the previous subsection generate estimates of wage trajectories over the course of a worker’s career. For example, the wage regression with the full set of control variables implies an expected wage of \$64,000 for non-JDs and \$91,000 for JD at 10 years after graduation from college.

Table 11: Propensity Score Matching Estimates

<b>JD</b>	<b>JD: Top 20</b>	<b>JD: Middle-Tier</b>	<b>JD: Lower-Tier</b>
0.348	0.616	0.312	0.150
(0.031)	(0.060)	(0.040)	(0.051)

Notes: Standard errors in parentheses. This table shows the standard probit estimates. Note that care must be taken in interpreting the marginal effects; due to the binary nature of most of the explanatory variables, computing marginal effects at the mean can lead to implausible estimates.

Combining these numbers with the income trajectory parameters, generates the wage trajectories displayed in Figure 6. The labelled points indicate the expected non-JD wage and the expected JD wage, and the distance between them corresponds to the wage premium.

### 6.3 The Costs and Benefits of Obtaining a JD

The final ingredient required for computing the returns to law school are the costs of law school. The primary drivers of law school cost are law school tuition and foregone earnings at the beginning of one's career.

As described in the data section, I use the average law school tuition for the tier of law school they attended as a proxy for the actual tuition. The top twenty schools charged an average of \$44,000 per year, while middle-tier schools charged an average of \$31,000, and lower-tier charged \$29,000. Using these numbers I computed the net present value of three years of school at various discount rates. These appear in Table 3.

All of the components of the NPV terms in Equations 1 and 2 have been estimated or specified. At this point, estimating the returns is simply a matter of combining them and computing the appropriate standard errors. For example, the average net benefits of law school attendance, controlling for observables, is about \$500,000 over the course of a career. Table 12 shows the net benefits associated with different combinations of undergraduate and law school quality tiers. It shows that at a three percent discount rate, the average salary premium for JDs was positive, even at low-tier law schools. A positive value for a JD career premium does not, however, imply that the JD investment is a good one. The relevant question is how does it compare to other investment

opportunities. For this reason, it is useful to express the net benefit to obtaining a JD as a rate or return, so that it can be readily compared with other investment opportunities. The equivalent rates of return are displayed in Table 13.

Table 12: Net Present Value of Law School Attendance

<b>r=.03</b>	T=40			
	Average	<i>Top-Tier UG</i>	<i>2nd-Tier UG</i>	<i>Low-Tier UG</i>
Average	0.536			
<i>Top-Tier LS</i>	1.243	1.389	1.267	1.195
<i>Second-Tier LS</i>	0.515	0.584	0.513	0.493
<i>Low-Tier LS</i>	0.188	0.232	0.212	0.191

<b>r=.05</b>	T=40			
	Average	<i>Top-Tier UG</i>	<i>2nd-Tier UG</i>	<i>Low-Tier UG</i>
Average	0.303			
<i>Top-Tier LS</i>	0.784	0.88	0.799	0.752
<i>Second-Tier LS</i>	0.29	0.333	0.287	0.276
<i>Low-Tier LS</i>	0.064	0.089	0.079	0.068

<b>r=.03</b>	T=30			
	Average	<i>Top-Tier UG</i>	<i>2nd-Tier UG</i>	<i>Low-Tier UG</i>
Average	0.38			
<i>Top-Tier LS</i>	0.931	1.043	0.949	0.894
<i>Second-Tier LS</i>	0.364	0.415	0.361	0.347
<i>Low-Tier LS</i>	0.106	0.137	0.124	0.109

<b>r=.05</b>	T=30			
	Average	<i>Top-Tier UG</i>	<i>2nd-Tier UG</i>	<i>Low-Tier UG</i>
Average	0.108			
<i>Top-Tier LS</i>	0.169	0.175	0.17	0.168
<i>Second-Tier LS</i>	0.106	0.109	0.104	0.104
<i>Low-Tier LS</i>	0.057	0.062	0.061	0.059

Notes: This table shows the present value of attaining a JD, net of costs, assuming career lengths of 30 and 40 years and discount rates of 3 and 5 percent, as indicated. The units are millions of 2007 dollars.

An important refinement of these numbers is to include tax effects, which so far I have neglected. Given the progressive nature of the U.S. tax system, the tax burden is proportionally higher for higher earners. Thus we might expect including tax effects to reduce the rate of return. Table 14 displays the U.S. federal income and payroll tax rates—these are taxes that would be deducted

Table 13: Internal Rates of Return of JD Investment

T=40	Not Accounting for Taxes			
	Average	<i>Top-Tier UG</i>	<i>2nd-Tier UG</i>	<i>Low-Tier UG</i>
Average	0.113	–	–	–
<i>Top-Tier LS</i>	0.172	0.177	0.172	0.17
<i>Second-Tier LS</i>	0.111	0.115	0.11	0.11
<i>Low-Tier LS</i>	0.066	0.071	0.07	0.068

T=40	Accounting for taxes			
	Average	<i>Top-Tier UG</i>	<i>2nd-Tier UG</i>	<i>Low-Tier UG</i>
Average	0.095	–	–	–
<i>Top-Tier LS</i>	0.144	0.153	0.147	0.138
<i>Second-Tier LS</i>	0.090	0.098	0.096	0.085
<i>Low-Tier LS</i>	0.046	0.060	0.052	0.043

Notes: These are the returns in Table 12 expressed as rates of return according to Formula 4.

from the AJD respondents’ reported earnings. Assuming that these tax schedules were in place for the entire span of the career (this assumption is in part justified by the use of real 2007 dollars through this section), I recomputed the career earnings streams imputing the various tax rates. This resulted in the rates of return shown in the lower pane of Table 13. Indeed, as expected the progressive nature of the tax does serve to reduce the return estimates substantially. The present value of the average JD career earnings premium is reduced from about \$500,000 to about \$400,000, and the average rate of returns is reduced from approximately 11 percent to 9.5 percent. Other changes are as depicted in Table 13.

This subsection studies the returns to legal education by combining two data sets to create a representative sample of workers who graduated from college in the mid-90s. This data set has the essential feature of having rich detail on the educational backgrounds of both JDs and non-JDs alike, and therefore facilitates a more careful comparison of wages and a study of selection than has previously been conducted. After addressing the selection problem through a variety of empirical ways, I estimated that the average return to legal education is on the order of \$400,000 in discounted value. This corresponds to a rate of return of around 9 or 10 percent, which compares favorably with other returns on investment in education, even including the initial investment in

Table 14: 2007 Income Tax Schedules

<b>Federal Income Tax</b>	
Bracket Cutoff	Marginal Tax Rate
\$15,650	10%
\$63,700	15%
\$128,500	25%
\$195,850	28%
\$349,700	33%
\$349,700	35%
<b>Payroll Tax</b>	
Social Security Tax	6.2% up to \$94,200
Medicare Tax	1.45%

college education.

An important qualification of this section’s results is that they apply to the mid-2000s, definitively before the 2008 recession, which ushered in wage stagnation for both lawyers and non-lawyer college graduates. In the next section I extend the results here to illuminate what they convey about the rate of return a law student entering law school in 2014 or beyond might expect.

## 7 Extending Historical Results to Current Legal Labor Market

The estimated returns to a legal education in the previous section are based on the assumption that lawyers’ starting salaries and wage trajectories will follow their historical averages. But this may be an important oversimplification. As the previous section makes clear, there is substantial variation in outcomes by types of schooling. It is possible that the type and wage of a lawyers first job is also important. Moreover, as discussed in Section 3, the historical averages may have little bearing on today. Since the 2008 recession the legal labor market has evidently broken from trend. Many commentators suspect that this slowing of the legal labor market is not merely a temporary aberration but instead reflects structural changes in the way the law is practiced. While there is reason to be skeptical of such claims, the future of the legal labor market is, of course uncertain. In this chapter I combine the results from the previous section with the information on the current labor market for lawyers in Section 3, and consider various scenarios that may shed light

on current decision of whether to attend law school. In particular, I consider the implications on returns to law school (1) when there is a delay between law school graduation and obtaining a legal position; (2) when a recent graduate commits to the “public service” sector of law—which I use as shorthand for relatively-low paying legal jobs such as public advocacy, state and local government, but may include legal jobs that are not strictly speaking in the public service sector—as opposed to private corporate law (“Big Law”); and (3) when a JD takes part in an increasingly common government-backed loan forgiveness programs.

### **7.1 Scenario 1: Delay Between Law School Graduation and Obtaining a Legal Job**

Recent critics of law school point to the declining number of new graduates who get jobs in law as evidence that attending law school is not a good investment. However, careers are long—the current average career length for college graduates is nearly 40 years. Given the substantial wage premiums lawyers enjoy, it could still be beneficial to attend law even if the likelihood of obtaining a law job this year is bleak. Suppose, for example, that it would take a graduate three years to find a JD-appropriate job. Is the magnitude of the JD premium sufficiently large to offset this “lost time”?

Suppose that a new graduate is unable to immediately obtain a job that employs his JD, but after several years begins on the “JD path” described in the previous section. For the intervening years between finishing law school and starting the lawyer job, assume the person works for a wage as expected given his pre-JD characteristics. Also assume that he does not extend his total working career. That is, as a result of his delay to get on the JD path, his career as a lawyer is shorter by the length of his delay in beginning along the path. Table 15 shows estimates of the rates of return for the various law school categories and for various years of delay. Using five percent as a benchmark rate of return on investments, a top-tier law graduate who does not “use his JD” for five years after graduating may still be said to have made a good investment. A graduate of a middle-tier law school beats the benchmark with a four year delay. Even a low-tier law school graduate that does not immediately obtain a law job upon graduating may have a positive real

return on his investment.

Table 15: Rates of Return under Scenario One

	Years between LS Graduation and Obtaining Legal Position				
	1	2	3	4	5
Average LS	0.097	0.084	0.073	0.064	0.057
Top-Tier LS	0.148	0.13	0.117	0.105	0.096
Middle-Tier LS	0.092	0.079	0.069	0.06	0.053
Low-Tier LS	0.054	0.043	0.035	0.027	0.020

Notes: These are the rates of return assuming a law school graduate is unable to secure a legal position for one or more years after graduating, and instead works at the college graduate wage rate.

## 7.2 Scenario 2: “Public Service” vs. “Big Law”

The bimodal income distribution of lawyers makes clear that there are two distinct classes of legal jobs. According to the AJD data, the right mode of the bimodal distribution of starting wages is approximately \$120,000, and the left mode is approximately \$53,000. These constitute very different beginnings to legal careers.

While in reality students have an interest in law for various reasons—some perhaps have a passion for banking regulation while others want to defend the indigent—suppose for this scenario that law students enter law school with the objective of maximizing income. These budding lawyers begin law school knowing that they will either be successful and end up in the right tail of the wage distribution, or be unsuccessful and end up in a lower earning job.

The estimates in Table 16 assume that the non-JD wage earnings are the same for these two types of individuals. This assumption is likely typically false, given the presence of characteristics that both increase the probability of getting a good law job are also likely to increase a person’s non-JD earnings. Nonetheless, the results are useful for indicating how much depends on getting into the higher “hump” of the earnings distribution, and how the averages presented in the previous section may obscure important results.

The returns to obtaining a corporate job are very high. This is as expected, given that the benefits of law school have increased from the average value used in the calculations of the previous chapter to the high value described. To put these high returns in perspective, we can determine

Table 16: Rates of Return under Scenarios Two and Three

“Corporate” Position				
Average LS	0.316	–	–	–
Top-Tier LS	0.286	0.261	0.279	0.295
Middle-Tier LS	0.319	0.289	0.311	0.331
Low-Tier LS	0.325	0.294	0.317	0.337
“Public Service” Position				
Average LS	0.060	–	–	–
Top-Tier LS	0.049	0.019	0.041	0.061
Middle-Tier LS	0.061	0.028	0.052	0.073
Low-Tier LS	0.063	0.029	0.054	0.075
with IBR	0.098	0.052	0.088	0.113

what the starting non-JD wage would need to be to make the returns comparable. To reduce the average rate of return to the benchmark rate of seven percent, the starting non-JD salary would need to be approximately \$95,000, more than double the average starting non-JD salary of \$40,000. The low-paying job scenario shows much more modest returns, hovering on average between seven and eight percent.

### 7.3 Scenario 3: Tuition Assistance

There currently exist a variety of so-called loan repayment assistance programs (LRAPs). LRAPs are almost exclusively targeted at lawyers who work in a public interest sector, and have a manifest to ease the financial burden of choosing to practice law in less remunerative legal fields. Some of these programs are administered through the law schools themselves, while others are offered by the federal or state governments.

This scenario considers the federal government’s Income Based Repayment (IBR) program. Enrollees in IBR, who must demonstrate “partial financial hardship,” are permitted to renegotiate the terms of their loans based on their current income. For those working in public-service jobs, any remaining principal on the loan is forgiven after ten years.

A typical repayment plan consists of monthly payments that are 15 percent of the difference between a worker’s adjusted gross income and 150 percent of the federal poverty line. For example,

150 percent of the federal poverty line for a family of three is about \$40,000. Consider the average public-service starting wage from the AJD of about \$53,000. Under this IBR plan, the monthly payment for such a person would be approximately \$2,000 each month. This repayment would begin after law school, and would last only ten years until the loan was forgiven.

Such a repayment plan vastly changes the direct cost of law school. At the time of entering law school, the plan described above has a present value between \$17,000 and \$19,000 dollars, using the five percent and three percent discount rates, respectively. This compares to the present values listed in Table 3 of \$128,000, \$89,000, and \$84,000 for first-, second- and low-tier law schools respectively. While LRAPs do not affect the opportunity cost of attending law school for three years, the savings of \$65,000 to \$110,000 is sizeable. Table 16 shows the rates of return for a public-service lawyer who takes this repayment plan.

## 8 Conclusion

As for any investment, it is impossible to know what will be the returns to obtaining a JD going into the future. Nonetheless, would-be lawyers have reason to be optimistic about pursuing a career in law. While the returns that previous cohorts of JD graduates have enjoyed may have eroded slightly, there is reason to think that the return is still substantial. Contrary to claims in the popular press, it is not clear that the legal labor market has suffered a localized crash from which it will never recover. As demonstrated in the Section 3 and in Figure 3, legal employment, while still not growing at its pre-recession rate, has fared well relative to other educated professions.

Section 6 of the paper studied the returns to legal education for the JD class of 2000. It estimates that the average rate of return was 9.5 percent. But there is considerable variation in the rates of return by quality of law school as well as quality of pre-law education. For example, graduates of top-tier law schools enjoyed 14 percent rates of return compared to the meager five percent rate of return for graduates of low-tier law schools.

Section 7 extrapolated the historical rates of return estimated for the JD class of 2000 to the current legal labor market, by considering various scenarios. The first scenario considered the effects of a delay in getting a legal position on the rate of return, and shows that each year's delay causes

about a 1.5 percent decrease in the rate of return to the degree. This scenario assumed that in the intervening years between graduation and securing a job that utilizes her JD, the JD graduate is able to obtain the same job as her non-JD counterpart. That is, the scenario corresponds to the situation where it is more difficult to obtain a legal job at a given rate, but not more difficult to obtain a non-legal job. In a recession, however, it presumably would be more difficult to obtain either type of job. In fact, a JD may have an advantage relative to the bachelor's degree counterpart at obtaining a non-legal job. Thus the returns estimated under Scenario One may understate the returns to obtaining a JD in a period of recession.

The intensifying bifurcation of the wage distribution, combined with the uncertainty of the recovery, makes law a riskier pursuit than it once was. But, as indicated by the consideration of Scenario Two, even lawyers in lower paying legal jobs should reap modest rewards. The exception is poor undergraduate performers who are only able to gain admission to low-tier law schools.

Furthermore, as the third scenario considers, lawyers who do take relatively low-paying positions, whether by choice or by default, can take advantage of loan repayment services that significantly reduce the effective cost of obtaining a JD. These typically government funded repayment programs can be viewed as an insurance policy against a bad outcome for JDs who hope to secure a well-paying private sector position. For JDs whose ambition is to work in public service or other low paying jobs, these repayment programs can simply be viewed as a tuition discount.

A feature of obtaining a professional degree, such as a JD, MBA, MD or other medical degree, is that it comes at a high "upfront" cost, in terms of tuition, foregone wages, and commitment. Professional degree students incur these costs for the hope of future payoffs. The JD (and moreso the MD) is a much more specialized degree than the MBA in the sense that the JD target labor market is much narrower. Students who are still in degree programs when there is a downturn in the target labor market are committed to seek a first job in a depressed labor market. These first-time job seekers are at a distinct disadvantage relative to workers who obtained a job prior to the recession, as firms generally find it easier to respond to the downturn by not hiring new employees rather than terminating current ones.<sup>10</sup> This explains the declining rates of new

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<sup>10</sup> Anecdotal evidence indicates that over the recession law firms dramatically reduced new hiring and, when making cuts, focussed on less-productive experienced lawyers rather than newly hired associates. Presumably this is because

law graduates who obtained jobs requiring a JD reported in Section 2. Because the target labor market for most JDs is the legal profession, a niche of all professional jobs, it is readily apparent when JDs fail to find appropriate jobs.

What matters for the returns to the JD however is how JD-holders perform relative to non-JD holders. But given the broad range of the target MBA market (broader still for bachelor's degree holders), it is difficult to measure the MBA counterpart to the statistic of "JD graduates who failed to obtain a position that required a JD." Indeed, there is evidence to suggest that in a recession MBAs obtain positions that would not have required an MBA prior to the recession, and that strong bachelor's degree holders crowd out less able bachelor's degree holders.<sup>11</sup>

Claims that the 2008 recession catalyzed a structural change in how the legal sector operates bolster the view that the economics of investing in a JD have drastically changed. Such claims make little economic sense. Barring a discrete disruptive event—such as the advent of a new technology—it is unclear why a recession would permanently alter the way the legal labor market operates. Recession or not, firms are always profit-maximizing. It should not take a recession to motivate law firms to adopt efficient operating processes. Indeed, it is more likely that the current reduced growth in the legal labor market is a characteristic of the entire economy emerging from a recession rather than a sign of a structural change in the profession. Consequently, as the economy continues to ascend from the recession, there is ample reason to believe the legal market, and thus the returns to attaining a JD, will rise with it.

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the recession gave law firm managers (partners) reason to trim the fat, and new associates were protected because they (1) had lower wages and (2) had yet to reveal their true productivity to the firm.

<sup>11</sup>Incidentally, the health profession weathered the recession remarkably well, as shown in Figure 3.

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