Value of a Law Degree by College Major

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Introduction

Individuals who graduate from law school typically increase their earnings compared to what they would likely have earned with a terminal bachelor's degree. This law earnings premium has outstripped the cost of law school by a wide margin, even toward the bottom of the earnings distribution, and even for graduates who enter the labor force during a recession or with an unusually large cohort of fellow law graduates.[1]

But is the value of the law degree predictably different for subgroups of law students who can be identified before matriculation? Estimates for specific subgroups could help prospective law students and law schools better predict variability in the potential financial benefits of law school and could help inform outreach, admissions, academic support, and scholarship policies.

Among bachelor's degree holders, degrees in some fields are associated with higher earnings and a higher likelihood of employment than others. Degrees in STEM are among the higher-earning fields. Degrees in economics or business (especially finance) also appear to be valued in the labor market. Degrees in the social sciences (excluding economics) are generally associated with lower earnings, while degrees in the humanities are usually among the lowest earnings. These associations hold even after controlling for demographics and institutional quality.[2]

1. Frank McIntyre & Michael Simkovic, *Timing Law School*, 14 J. Empirical Legal Stud. 258 (2017).

2. Peter Arcidiacono, *Ability Sorting and the Returns to College Major*, 121 J. Econometrics 343 (2004); Michael Simkovic, *Risk-Based Student Loans*, 70 Wash. & Lee L. Rev. 527 (2013); National Center for Education Statistics, The Condition of Education 2019, Employment Outcomes of Bachelor's Degree Holders, *available at* https://nces.ed.gov/programs/coe/pdf/coe_sbc.pdf.

While some of these differences may stem from students sorting themselves into majors based on innate earning potential and motivation, recent research suggests different fields of study cause differences in earnings and employment. In Norway and Chile, postsecondary students rank their preferred institutions and fields of study, but are assigned schools and majors based on cutoffs in test scores, which vary from year to year depending on supply and demand for seats. This creates something closer to random assignment into majors around the cutoff points and facilitates causal inference. The estimated boosts to earnings by field of study are generally directionally similar to Ordinary Least Squares ("OLS") estimates—engineering, computer science, and business majors appear to facilitate relatively higher earnings among those with bachelor's degrees, while many humanities majors appear to lead to lower earnings.[3]

Questions remain about whether differences in majors persist among those who go on to pursue graduate degrees. Humanities and social sciences majors are relatively more likely to seek advanced degrees. Some have suggested that humanities and social sciences degrees may provide better preparation for higher levels of education, while STEM degrees might be better preparation for immediate entry into the workforce.[4] A disproportionately large share of law degree holders are humanities and social sciences majors.[5]

Previous studies have found that among those with law degrees, some college majors are associated with higher earnings than others. Using OLS estimation and the 1993 National Survey of College Graduates (NSCG), Black, Sanders & Taylor found evidence that economics majors tend to have relatively high earnings, not only among those with terminal bachelor's degrees, but also among those who complete graduate business degrees or law degrees.[6] Similarly, Craft & Baker, using the same NSCG 1993 data set, and restricting their sample to law graduates working as lawyers or judges, found evidence that among those with law degrees, economics majors have earnings advantages over other majors.[7] However, a replication study using a more recent version of the NSCG only found evidence of advantages for STEM majors, but not for economics majors.[8]

3.   Lars J. Kirkeboen, Edwin Leuven & Magne Mogstad, *Field of Study, Earnings, and Self-Selection*, 131 Q. J. Econ. 1057 (2016); Justine S. Hastings, Christopher A. Neilson & Seth D. Zimmerman, Are Some Degrees Worth More Than Others? Evidence From College Admission Cutoffs in Chile (2013), http://www.nber.org/papers/w19241.

4.   Eric Eide & Geetha Waehrer, *The Role of the Option Value of College Attendance in College Major Choice*, 17 Econ. Educ. Rev. 73 (1998).

5.   Michael Simkovic & Frank McIntyre, *The Economic Value of a Law Degree*, 43 J. Leg. Stud. 249, 263 (2014).

6.   Dan A. Black, Seth Sanders & Lowell Taylor, *The Economic Reward for Studying Economics*, 41 Econ. Inquiry 365, 372-4 (2003).

7.   R. Kim Craft & Joe G. Baker, *Do Economists Make Better Lawyers? Undergraduate Degree Field and Lawyer Earnings*, 34 J. Econ. Educ. 263 (2003).

8.   Samuel Miller, The Case for Majoring in Science, Engineering, and (Perhaps)

Previous studies did not attempt to estimate the boost to earnings from a law degree for certain majors relative to other majors. The marginal increase in earnings from a law degree, less the costs of law school attendance, indicates the financial benefits of law school relative to entering the labor force directly from college. The earnings boost could be an important driver of law school enrollment decisions, and variations in the earning premium might help explain enrollment patterns. This is especially likely if college freshmen and sophomores do not perfectly foresee their subsequent educational and career trajectory when they choose their college majors—that is, if students sometimes choose whether to attend law school conditional on previous choice of college major rather than choosing their college major conditional on anticipation of future law school attendance.[9]

It seems unlikely that either of the two extreme assumptions one could make about choice of undergraduate major—either that the choice of major is made with perfect foresight of future graduate school attendance or that the choice is made completely without regard to the possibility of attending graduate school—accurately describes the decision-making process of all college students who will eventually attend law school. While preferences as a teenager can help predict increased likelihood of law school attendance,[10] the law school admissions process is relatively forgiving to those who do not plan far ahead.[11] In contrast, Many students who apply to medical school do not effectively plan their undergraduate coursework and therefore must enroll in postbaccalaureate programs to meet prerequisites for medical school admissions.[12] Many college students change majors when they discover more about their own preferences and academic abilities, often shifting from more challenging and more lucrative majors to those with higher completion rates.[13]

ECONOMICS: ANOTHER LOOK AT UNDERGRADUATE MAJOR AND LAWYERS' SALARIES (2012) (manuscript on file with the authors).I replicate Craft and Baker's (2003

9. However, because students self-select into majors, with students with higher earning potential tending to choose majors that lead to higher earnings, causal inference would be challenging. *See supra* notes 2 and 3 and accompanying text.

10. Michael Simkovic & Frank McIntyre, *The Economic Value of a Law Degree*, 43 J. LEGAL STUD. 249, 262-66 (2014).

11. Like most advanced degree programs, law school requires standardized test scores, undergraduate transcripts, and application essays. However, law school does not require specific undergraduate courses as prerequisites, unlike medical school and many masters of engineering, computer science, statistics or economics programs.

    Students who are choosing their college major based on early-life commitment to future law school attendance might have greater interest in comparisons among college majors in total earnings with a J.D.

12. Dorothy A. Andriole & Donna B. Jeffe, *Characteristics of Medical-School Matriculants Who Participated in Postbaccalaureate-Premedical Programs*, 86 ACAD. MED. 201 (2011).

13. Arcidiacono, *supra* note 2; Ralph Stinebrickner & Todd R. Stinebrickner, *A Major in Science? Initial Beliefs and Final Outcomes for College Major and Dropout*, 81 REV. ECON. STUD. 426 (2014); Peter Arcidiacono, V. Joseph Hotz & Songman Kang, *Modeling College Major Choices Using*

Enrollment in specific fields of graduate study appears to respond to short-term information about starting salaries that students were unlikely to have known at the time they selected their college major[14]—indeed, students appear to often make choices based on imperfect information about labor market outcomes and field of study.[15] Thus, many students will select an undergraduate major with imperfect information about their future graduate school plans.

We make an original contribution by estimating whether college graduates in some majors benefit more than others from a law degree compared to a terminal bachelor's degree. While J.D. holders with high-value majors such as those in economics or STEM tend to have high total earnings, this does not necessarily mean that law school benefits this group the most. Because economics and engineering majors have relatively high baseline earnings with just a bachelor's degree, high absolute earnings with a law degree would not necessarily mean that they benefit more from the law degree than those whose baseline bachelor's earnings were lower. STEM majors may benefit from their technical background, opening up more technical areas of the law. However, they also start from a higher baseline, with a potentially more lucrative college graduate salary as an alternative to law school.[16]

Overall, we find evidence that the benefits of a law degree are much larger in percentage terms for humanities and social sciences majors than for STEM or business majors. In dollar terms, the differences in the premiums are not as large. Taking into account both base earnings and the boost to earnings from the law degree, STEM and business majors typically have the highest total earnings across education levels. Among the most popular majors for law school graduates, economics, history, and philosophy and religion have

Elicited Measures of Expectations and Counterfactuals, 166 J. Econometrics 3 (2012); Higher Educ. Research Inst., Degrees of Success: Bachelor's Degree Completion Rates Among Initial STEM Majors (2010); Kevin Rask, *Attrition in STEM Fields at a Liberal Arts College: The Importance of Grades and Pre-Collegiate Preferences*, 29 Econ. Educ. Rev. 892 (2010); Joseph G. Altonji, Peter Arcidiacono & Arnaud Maurel, The Analysis of Field Choice in College and Graduate School: Determinants and Wage Effects (2015), http://www.nber.org/papers/w21655.

14.   McIntyre and Simkovic, *supra* note 1 at 260-61, 277, 297 (discussing law school enrollments); Kelly Bedard & Douglas A. Herman, *Who Goes to Graduate/Professional School? The Importance of Economic Fluctuations, Undergraduate Field, and Ability*, 27 Econ. Educ. Rev. 197, 198, 2007 (2008) (discussing cyclicality in male graduate school enrollments).

15.   Arcidiacono, Hotz, and Kang, *supra* note 12; Simkovic, *supra* note 2, at 584-86; McIntyre and Simkovic, *supra* note 1; Julian R. Betts, *What Do Students Know about Wages? Evidence from a Survey of Undergraduates*, 31 J. Hum. Resources 27 (1996).

16.   Future research could compare a law degree with other graduate degrees while being mindful of how college major affects the likely alternatives to law school. For example, STEM majors may find it easier than humanities majors to attend lucrative graduate degree programs such as medical school or programs in computer science or engineering. To simplify the analysis, here we consider only differences by major between a law degree and labor market entry with a terminal bachelor's degree.

the highest law earnings premium, while economics, finance, and mathematics majors have the highest total law earnings.[17]

I. Estimating Earnings Premiums with Longitudinal Data from SIPP and ACS

A. *Data and specification*

We estimate the earnings premium associated with a law degree for specific subgroups by using earnings, education, and demographic data from two sources: (1) U.S. Census Bureau Survey of Income and Program Participation (SIPP); and (2) U.S. Census Bureau's American Community Survey (ACS). Both are nationally representative household surveys. SIPP follows the same individuals for approximately four years, while ACS takes a new cross section each year.

Each source has strengths and weaknesses. The primary advantage of SIPP is that it enables us to identify law degree holders, whereas ACS requires us to use underinclusive and overinclusive proxy groups. The primary advantages of the ACS are its much larger sample sizes and more detailed college major categories, which facilitate very precise estimates even for small subgroups such as law graduates with specific STEM degrees. We restrict our ACS sample to 2009-2014 data because the 2009 and later ACS surveys include detailed data on undergraduate major. In addition, this restriction ensures that our entire ACS sample is based on data after the start of the 2007-2009 economic downturn.

The SIPP is a nationally respresevative survey composed of several overlapping "panels" of respondents, each followed for several years. The earliest data are from 1996, with the latest data coming from the end of 2013.[18] Individuals report monthly earnings three times per year, which we aggregate into average annual earnings over the four years respondents are typically followed.[19] These aggregated measures improve precision by averaging out some of the noise in year-to-year earnings.[20]

17. Note that while we focus on earnings and earnings premiums rather than other factors such as job quality and prestige, these are often correlated with earnings—people in higher-prestige jobs in the same sector typically earn more than those in lower-prestige jobs in the same sector. Even looking within each sector (law firms, other private sector, nonprofit, or government), differences across majors persisted.

18. Because educational attainment is measured at the start of each panel, the most recent law degree holders in the SIPP sample will have graduated in 2008. (The ACS sample includes more recent graduates.) Additional SIPP data are available from 1984 forward, but without important control variables for college major and quality of high school education.

19. We use longitudinal income imputations that simply fill in missing months based on prior and future months' earnings but we do not use any "hard" cross-sectional imputation that attempted to estimate income using the earnings of other people.

20. This noise should not bias our results, but simply makes the estimates less precise. Running the regression on annual data observations, we recovered almost identical differences in

Our SIPP sample contains earnings data from 1996 to 2013 for individuals ages twenty-five to sixty-five with either a bachelor's or law degree.[21] We include in our sample those who report being disabled or unemployed but looking for work. We exclude people who were enrolled in school full time during the panel. Our final regression sample in SIPP consists of just under 1000 law degree holders and about 28,000 bachelor's degree holders.

Summary statistics in Table 1, columns (1) and (2), show a breakdown by sex, race, college major, high school education variables, time to complete a bachelor's degree, and age. College majors are aggregated into five categories: humanities; social sciences; business; science, technology, engineering, and math (STEM); and other.[22] Humanities and social sciences majors are overrepresented among law degree holders relative to those with terminal bachelor's. Whereas only 23% of terminal bachelor's degree holders majored in humanities or social sciences, 48% of law graduates did. Conversely, whereas 42% of terminal bachelor's degree holders majored in business or STEM, only 18% of law graduates majored in these fields. STEM majors with law degrees are particularly rare.

Law degree holders completed college faster than bachelor's degree holders. Though not shown in the table, time to college completion varies by college major, with the higher-earning majors—STEM and business/economics—taking longer to complete than the lower-earning majors, humanities and social sciences.[23] STEM majors took on average 0.25 years longer to complete their bachelor's degrees than humanities majors.

Compared with the bachelor's degree holders, a higher proportion of law degree holders are white men. We also report a breakdown of age by decade. As one can infer by looking at this age breakdown, the law degree holders are

earnings by college major.

21.   We required law degree holders to report earning a professional school degree in the field of law and excluded a small number of individuals reporting a master's or doctorate degree. We also dropped all those imputed to be law degree holders.

22.   The college major categories are based on those in the 1997 version of the International Standard Classification of Education (ISCED), UNESCO, International Standard Classification of Education: ISCED 1997 (1997), modified to maximize compatibility across surveys. The limiting survey is usually SIPP, which offers only eighteen major codes. SIPP sometimes groups together majors that would appear in separate categories under ISCED. For example, "art" and "architecture" appear as a single category in SIPP, whereas, under ISCED, "art" is a humanities field and "architecture" is a STEM field. To maintain compatibility across data sets, we therefore always classify "architecture" as a humanities field. Economics is included in social sciences in ISCED and in SIPP.

23.   This finding in SIPP regarding differences in time to college completion is consistent with the literature on selection of college major and choice of whether to attend graduate school. STEM majors predict higher earnings, but are more challenging and take longer to complete. *See supra* notes 2 to 15 and accompanying text. Within a major, those with greater academic abilities (for example, those who can complete school more quickly) may be more likely to pursue additional education. Gary S. Becker & Barry R. Chiswick, *The Economics of Education, Education and the Distribution of Earnings*, 56 Am. Econ. Rev. 358, 365 (1966).

slightly older (forty-five years on average) than the bachelor's degree holders (forty-two years).

We supplement SIPP data with the U.S. Census Bureau's American Community Survey from 2009 to 2014. ACS has two advantages over SIPP: a larger sample size, and inclusion of individuals who graduated after 2008. The larger sample size is particularly helpful for estimating the law earnings premiums for small subgroups for which data in SIPP are limited. Disadvantages of ACS include more limited control variables and less precise identification of law degree holders.[24]

While ACS does not specifically identify law graduates, it does have variables for occupation and broad education categories, which enable us to identify three proxy groups. The first group is the subset of law graduates working as lawyers.[25] Our sample includes over 40,000 lawyers.

The second group, which introduces an element of overinclusion, is a narrow subset of professional degree holders—we exclude those employed in medical fields, accountants, architects, engineering occupations, elementary or secondary school teachers, education administrators, clergy, and psychologists.[26] Of course, some of these people will be law degree holders, but the vast majority of them will not be, so excluding them will raise the fraction of the sample that has a law degree. This second group includes around 70,000 individuals.

The third group—and the broadest we consider—includes all professional degree holders other than those employed in medical fields. The third group includes almost all law graduates (including those not working as lawyers) as well as non-law graduate professional degree holders such as graduates of education and divinity programs. The third group includes around 85,000 individuals.

Our middle group, "narrow professional degree" holders, includes all of the more than 40,000 individuals working as lawyers. SIPP and *After the JD* suggest that those working as lawyers constitute about two-thirds to three-

24. ACS has fields for level of education and type of advanced degree, such as professional degree or master's degree, but does not have field codes for advanced degrees, such as law or medicine. We therefore cannot identify law degree holders as accurately in ACS as in SIPP.

25. Since almost all of those identifying themselves as lawyers are employed, we include in our bachelor's degree holders comparison group only those who are employed. In ACS, there is a separate occupational category for the never-employed and the very-long-term unemployed (five or more years). Those who have worked within the past five years but are currently unemployed list their most recent occupation. Excluding unemployed bachelor's degree holders helps correct for the undercounting of unemployment in the "lawyer" proxy group (and only slightly overcorrects because of the small proportion of unemployed "lawyers").

26. Our narrow and broad professional degree holder categories will include individuals who may be unemployed if they have some income during the year. Individuals who are unemployed will typically report some income because unemployment among the highly educated typically lasts less than one year.

fourths of law degree holders.[27] Therefore, we expect the narrow sample of professional degree holders to include an extra 10,000 to 15,000 people with a law degree who are not working as lawyers. Thus, of the 70,000 observations in the narrow professional sample, we expect about 70% to 80% are law degree holders. If a lower proportion of law degree holders obtains work as lawyers than previously estimated, then an even larger proportion of the narrow professional sample will consist of law degree holders. Thus, we think the narrow professional sample makes a good starting point for any discussion of the law premium, with the first sample (lawyers) and the third sample (broad professional degree holders) roughly forming upper and lower bounds.

Summary statistics in Table 1, columns (3) to (6), show a breakdown by sex, race, college major, and age for ACS across the three proxy groups for law graduates and for bachelor's degree holders. The descriptive statistics in ACS are generally similar to those in SIPP. The primary differences seem to be in age and college major. The ACS lawyers group has slightly heavier representation of older workers (ages sixty to sixty-five) and slightly lighter representation of middle-aged workers (ages forty to forty-nine) than SIPP. This may be because law graduate cohort sizes grew more rapidly in the 1960s and 1970s than in subsequent decades, and because our ACS sample is newer. It may also be because law graduates tend to remain in the workforce longer in recent years than they have in the past. Additionally, ACS has a somewhat heavier representation of social sciences majors and lighter representation of humanities majors compared with SIPP. This may similarly result from the general trend toward social science as a prelaw degree and the fact that the ACS sample is newer.[28] Among all law proxy groups, whites are slightly overrepresented compared with bachelor's degree holders, as are men and humanities and social sciences majors.

B. Ordinary Least Squares results (see methodology in Appendix 1)

1. Analysis in SIPP

Table 2 reports our base specification using SIPP data. In column (1), we report the log earnings gap between the general population of bachelor's degree holders and law recipients by college major. Columns (2) and (3) give estimates based on subsamples that are exclusively female or male. Column (1), row 1 reports that for both sexes combined, the log premium for humanities majors is 0.76 (or 114%). The second row of column (1) indicates that the law premium is about the same for social sciences majors, 0.69 (99%). Column (1)

27.   Am. Bar Ass'n & NALP Found. of Law Career Research and Educ., After the JD III: Third Results from a *National Study* of Legal Careers 17 (2014), http://www.americanbarfoundation.org/uploads/cms/documents/ajd3report_final_for_distribution.pdf.

28.   "Other major" is a large category in SIPP, because many respondents describe themselves as "other"; but major categories are more granular in ACS, so in ACS there are fewer individuals in the "other" major category and some more in social sciences, business, and STEM. *See also infra* note 32.

rows 3 and 4 estimate a much lower law premium for business majors, at 0.33 (39%), and STEM majors, at 0.24 (27%), with large standard errors for these small college major groups.

Looking at the uninteracted control variables in the lower rows,[29] we see that for the sample as a whole—including those without law degrees—compared with a baseline case of a humanities major, earnings are predicted to be 0.23 (26%) higher for business majors and 0.27 (31%) higher for STEM majors. This is consistent with the literature showing higher earnings among terminal bachelor's degree holders with business and STEM majors.[30]

In Table 2, columns (2) and (3), we see that the results for humanities are substantially similar for subsamples comprising exclusively men or women. There is some evidence that women have a higher premium than men from the social sciences (0.80 vs. 0.59). Some of this may result from men and women selecting different majors within the social sciences; for example, economics majors tend to look very different from other social sciences majors.[31] Unfortunately, the estimates of law earnings premiums for female business majors and STEM majors in SIPP are very imprecise because of sample size limitations. One is relying on the small number of women in the sample who get a STEM undergraduate degree and a law degree.

Overall, these results suggest the law premium is higher for those graduating with low earnings majors. Unfortunately, the large standard errors inhibit our ability to make finer-tuned statements. For this, we turn to our larger ACS sample.

2. Analysis in ACS

To better understand differences in the law premium by college major and sex, we consider supplemental data from ACS. Using ACS data, Table 3 reports an analysis similar to Table 2, column (1). In Table 3, each column reports regressions using a different proxy group for law graduates, as described above in Part A. The results are substantially similar to those in Table 2, column (1). Across law proxies, law earnings premiums are higher for humanities and social sciences majors than for business or STEM majors. In Table 3, column (1), those who work as lawyers, the law log earnings premiums are highest for

29.   Uninteracted control variables in the table show the relation between college major and earnings for the whole sample. The interacted control variables (e.g., law*business) predict the extra earnings of a law degree for those with particular majors. For example, a business major with only a bachelor's degree is predicted to earn twenty-three log points more than the base case of a humanities major with a bachelor's degree. A business major with a law degree is predicted to earn that same extra twenty-three log points, plus an additional thirty-three log points as a result of the law degree.

30.   Controls in the regression affect earnings in predictable ways. For example, students with a strong math background in high school appear to be higher earners than those who lack that preparation.

31.   To maintain compatibility between SIPP and ACS categories, we did not separate economics from other social sciences majors in our main specification. Economics appears as a separate major in Figure 3.

humanities majors, at 0.94 (156%), followed by social sciences majors, at 0.80 (123%). STEM majors' law premiums are 0.66 (93%) and appear to be higher than business majors' premiums of 0.61 (84%). These premiums are higher, since we are looking at working lawyers, but largely in line with our findings in SIPP.[32] The chief advantage is that our precision is vastly higher than before. Standard errors are around 0.01 to 0.02 rather than 0.06 to 0.12.

The two broader proxies, narrow professional degree holders in column (2) and professional degree holders in column (3), match the results in SIPP more closely. Law premiums are similar for humanities and social sciences majors, around 0.7; are intermediate for business majors, just under 0.5; and are lowest for STEM majors, around 0.35. Because the two professional degree holder groups return very similar results, later tables report results only for the narrow group. The narrow group is likely to be composed of a higher fraction of law degree holders.

To consider differences in earnings premium by sex, Table 4 divides our ACS sample into male and female subgroups and performs separate regressions on each subgroup, just as we did with SIPP data in columns (2) and (3) of Table 2. The first two columns of Table 4 use lawyers as a law graduate proxy group, while the last two columns use our narrow professional degree holders. Columns (1) and (3) each consist of an exclusively female sample, while columns (2) and (4) each consists of an exclusively male sample.

The results in ACS are directionally similar to those in SIPP. For each sex and each law proxy group, the law premium is highest for humanities and social sciences majors. The law premium is lower for business and STEM majors.

The specifics vary by sex and proxy group. For lawyers, the premium for women is noticeably higher than for men in every major. Of course, women's earnings start from a lower base, so this higher premium leads to a salutary compression of the gender wage gap. When we look at the broader set of professional degree holders, the two groups are much closer. These differences may relate to differences in selection effects across proxy groups and sexes. For example, the subgroup of female law graduates who work as lawyers may be more different from the larger group of women who completed law school than the subgroup of men who work as lawyers are different from the larger group of men who completed law school. Among the professional degree holder proxy group, there may be sex differences in choices of graduate school field (other than law school) that remain in the sample after certain occupations are excluded. Alternatively, it may be because the strongest benefits to a law degree for women accrue to those who actually end up as lawyers.

32.   The main difference is that in SIPP, but not in ACS, "other major" earnings premiums are in between earnings premiums for humanities/social sciences and business/STEM. In SIPP, "other" is a very large category that includes many individuals who probably should be categorized as either humanities/social sciences or business/STEM and, in ACS, where more granular information is available, would be categorized accordingly. *See supra* note 28 and accompanying text. In ACS, the smaller "other major" category has premiums in line with STEM or business rather than in between the high and low categories.

Regardless of sex, humanities and social sciences degrees benefit the most, with sizable but much more modest benefits to those in STEM or business majors. Although not reported here, in additional work we tested whether the results were different when we used log earnings per hour of work rather than just total earnings, but the outcomes were essentially unchanged.[33, 34]

In sum, the results in ACS support the findings in SIPP that law earnings premiums are highest for humanities and social sciences majors and lower for business and STEM majors. These basic results hold across data sources, law proxy groups, and sex. We also find the same pattern in SIPP and our ACS lawyer sample of larger premiums for women than for men. On the other hand, higher law earnings premiums for women than for men are not obviously on display once we look at a larger set of professional degree holders.

Even though the *premium* is higher, this does not mean that the earnings are higher. As discussed below, the higher premium in the liberal arts sharply narrows the earnings gap with business and STEM majors, but does not entirely close it.

One possibility is that the coefficients in each regression vary with major. Thus the earnings age profile or the effect of advanced math classes on earnings may be different for different majors. We can control for this by re-estimating our model separately on each major. This flexible specification allows every coefficient to vary based on college major. In unreported results, we do this both for SIPP and ACS samples. The premiums are practically identical to what we report in Tables 2 and 3.

C. Quantile regression results

Rather than estimate only average earnings premiums, it is possible to estimate earnings premiums at different points in the distribution of earnings ability levels using quantile regression. Thus we can see whether the relationship between college major and predicted law earnings premiums is different for those at the top or bottom of the distribution. Quantile regressions enable the relationship between each control variable and the earnings premium to vary at different points in the distribution. Quantile regressions at or below the median are also less sensitive than OLS to top-coding procedures, though the upper percentiles can be extremely sensitive to top-coding.

33. Note, however, that hours worked are not necessarily the same as hours billed or client revenue generated. These variables in *After the JD II* have been found to help explain the gender gaps in earnings and promotion among those who work at law firms. Ghazala Azmat & Rosa Ferrer, *Gender Gaps in Performance: Evidence from Young Lawyers*, 125 J. Pol. Econ. 1306 (2017).

34. In unreported results, we looked at earnings premiums rerunning the analysis from Table 2 separately by age group. We saw little difference in results when we looked at subsamples of younger lawyers (ages thirty to forty) versus older lawyers (ages forty-five to fifty-five) in the ACS data.

Results in SIPP are broadly similar to results using ACS data, though SIPP is much noisier because of its smaller sample size. Another disadvantage of SIPP is that it top-codes income responses much more aggressively than ACS. Thus our quantile regression results use ACS data for lawyers and professional degree holders. These samples are so immense that standard errors become a fairly minor concern, and we can report precise estimates.

Figures 1 and 2 report the bachelor's earnings and law premium by major and percentile. Figure 1 reports on this for those working as lawyers, while Figure 2 reports for the narrow professional degree holder sample. The broader professional category gives similar results and is not reported. In each case, we use the underlying distribution of employed bachelor's degree holders to get the twenty-fifth percentile, median, and seventy-fifth percentile of total earnings for bachelor's. We then use a quantile regression with the same controls as previously to calculate the lawyer premium, converted into dollars.[35] Though not reported in the figure, standard errors for our estimates are all quite small, with nothing over 0.03 for the reported values.

For many purposes, the boost to earnings in *dollars* may be more important than the boost as a *percentage* of earnings. Law graduates will generally pay in dollars rather than with a percentage of their earnings when paying for tuition and other direct costs of higher education, as well as virtually all future consumption.[36] In addition, if the results were causal (they may not be because of unobserved ability differences), individuals starting their college careers with the long-term goal of completing law school might wish to select a college major in light of differences in expected financial benefits of that major in combination with a law degree.[37]

Looking first at Figure 1, the first five rows report earnings and premiums for the twenty-fifth percentile of those who are employed as lawyers, compared with their bachelor's degree counterparts. While the law premiums vary by major, the final incomes of those at the bottom end are, with one exception, fairly similar at around $65,000. Thus the premiums are largely undoing differences found at the undergraduate level. The one exception comes from STEM majors, who earn closer to $75,000, even at the low end.

35.   We actually used only a tenth of the bachelor's degree data to form our lawyer premium coefficient. At that point the estimates were quite precise, and quantile regression does not natively deal well with very large samples of over a million observations. We adjusted our sampling weights accordingly.

36.   There are exceptions. Opportunity costs of attending graduate school could be understood as a certain number of years of earnings or a certain percentage of lifetime earnings. The relatively small minority of student loan borrowers who enroll in and complete income-based repayment plans with debt forgiveness will pay for the debt-financed costs of their education as a percentage of their future earnings. John R. Brooks, *Income-Driven Repayment and the Public Financing of Higher Education*, 104 GEO. L. J. 229 (2015); Philip G. Schrag & Charles W. Pruett, *Coordinating Loan Repayment Assistance Programs with New Federal Legislation*, 60 J. LEGAL EDUC. 583 (2011); Michael Simkovic, *The Knowledge Tax*, 82 U. CHI. L. REV. 1981 (2015).

37.   There may be major-specific differences in the *likelihood* of completing law school, which we do not consider here.

The results are similar at the median, where lawyer earnings are about $100,000 for humanities, social sciences, and business majors. For STEM majors who work as lawyers, earnings are much higher–closer to $140,000. Finally, the last five rows consider those at the top end. At the seventy-fifth percentile, humanities and social sciences majors earn around $180,000; business majors earn close to $210,000; and STEM majors earn an exceptional $250,000. We cannot say, though, whether these differences are driven more by exceptional individuals of high ability choosing to major in science and then successfully obtaining work as lawyers or the causal impact of scientific training on the returns to top legal work.

Figure 2 gives a broader picture by not requiring that the graduate actually work as a lawyer. This sample will include most of those who obtained law degrees as well as holders of some other non-law professional degrees. Thus we expect to see much lower premiums. The base sample of employed bachelor's, though, is identical; so the dark "Bachelor's Earnings" portion of each bar is the same as the last figure.

Though earnings premiums are lower for narrow professional degree holders in Figure 2 than for lawyers in Figure 1, the overall pattern is quite similar for the twenty-fifth percentile and the median. STEM majors no longer have exceptionally high earnings, as their high base earnings match up with a very low premium. This could partially result from the STEM majors disproportionately being represented in nonlegal professional degrees contaminating the sample. Or it could result from STEM majors with law degrees being less likely to practice law and more likely to work in lower-earning jobs. At the seventy-fifth percentile, earnings for humanities and social sciences are around $160,000 while business and STEM are higher, at $180,000 to $185,000. While overall earnings are highest for STEM majors, they are no longer spectacularly higher. Thus those exceptional STEM earnings are linked to not just getting a law degree, but actually working as a lawyer.

D. OLS regression results by specific major

The baseline specification aggregates undergraduate majors into five categories. This simplifies the exposition and makes it easy to see broad patterns, but can obscure important differences within each broad category. For example, economics majors tend to have very different earnings profiles compared with psychology or sociology majors, yet all of them are "social sciences" majors in our broad classification.[38] ACS reports roughly 180 specific majors, allowing us to disaggregate our estimates in Figure 3. Figure 3 uses our baseline OLS specification to estimate undergraduate earnings and law premiums using our "Professional Degree, Narrow" sample. We report only majors with at least 700 observations with a professional degree. For most of these majors, 60% to 70% of the professional degree holders report currently working as lawyers. Thus we expect that law degree holders heavily dominate

38.   Arcidiacono, *supra* note 2.

our "professional degrees."[39] Because we restrict our sample to majors with large numbers of potential lawyers, our standard errors remain at or below about 3.5 log points for the premium, and much smaller for the undergraduate average.

Figure 3 shows that economics is the overall winner, combining a high undergraduate earnings rate with a substantial premium to yield about $180,000 in total earnings. Below this is a cluster of majors that typically earn around $150,000: finance, mathematics, history, political science, accounting, and philosophy and religion. The first two of these have high undergraduate earnings of around $90,000 to $100,000, but a smaller premium, close to $60,000. On the other end, history and philosophy have premiums on par with economics of around $80,000, but lower base earnings of $60,000 to $70,000. Moving down the figure, business, English and journalism earn around $125,000, with comparable differences between higher premiums for English and journalism and higher base pay for business. Last, biology, liberal arts, communications, foreign language, sociology, psychology, and criminal justice bring up the tail with earnings of around $100,000, where the premium is around $40,000. Criminal justice is the lowest total earner, at around $90,000, and by far the lowest premium ($26,000).

II. College Major and Law School Tier

In a supplemental analysis using data from AJD, we considered the association between law graduates' college majors and the tier of the law school they attended. Humanities and social sciences majors were skewed toward the top twenty law schools. Business majors were skewed toward law schools ranked below twenty. STEM majors were distributed roughly equally across law school tiers. Our miscellaneous category ("other" majors) was disproportionately skewed toward law schools ranked below twenty, especially fourth-tier law schools. This was particularly pronounced for criminal justice majors. There are several possible interpretations of these results.

One possibility is that large benefits to law school for humanities and social sciences majors might result in part from the benefits conferred by attending a more selective law school, possibly because more selective institutions have more resources and spend more on instruction for each student,[40] or because more selective law schools have a stronger brand name or more successful alumni/ae network.[41] Law schools admit students and allocate merit aid based

39.   The outliers are biology, mathematics, and accounting, where the number employed as lawyers is less than half.

40.   Stacy Berg Dale & Alan B. Krueger, *Estimating the Payoff to Attending a More Selective College: An Application of Selection on Observables and Unobservables*, 117 Q. J. Econ. 1491 (2002); Stacy B. Dale & Alan B. Krueger, *Estimating the Effects of College Characteristics over the Career Using Administrative Earnings Data*, 49 J. Hum. Resources 323 (2014).

41.   Paul Oyer & Scott Schaefer, *The Returns To Elite Degrees: The Case Of American Lawyers*, 72 ILR Rev. 446 (2019); Richard Sander & Jane Bambauer, *The Secret of My Success: How Status, Eliteness, and School Performance Shape Legal Careers*, 9 J. Empirical Legal Stud. 893 (2012).

primarily on standardized test scores and undergraduate grade point averages. Because humanities and social sciences majors typically receive higher grades than students in STEM fields,[42] majoring in fields that grade generously may be an effective strategy for improving one's chances of gaining admission to a more selective law school and to receiving scholarship offers.[43] However, in light of the higher absolute earnings of business and STEM majors with law degrees, majoring in liberal arts may still not be the optimal strategy for maximizing one's total earnings as a lawyer. Even a full scholarship to law school could be exceeded by law graduate earnings differences across majors over the course of a career, especially at the mean and at the upper end of the earnings distribution.

Another possibility is that our analysis underestimates the innate earning potential of law-school-bound liberal arts majors, especially as compared to their non-law-school-bound peers. We find this interpretation less plausible than the interpretation above. Using the National Education Longitudinal Study (NELS) survey discussed in the appendix below, Simkovic and McIntyre find that humanities degree holders do not show a higher "spread" in terms of test scores.[44] Humanities majors headed to law school averaged 0.3 standard deviations higher test scores than other humanities majors, but the gap in other majors averaged an even higher 0.4. Thus there is no evidence that humanities students who pursue a law degree are disproportionately of higher ability compared with the ability gaps shown in Tables 2 and 3.

Given these findings, it may be the case that the higher premium we find in the liberal arts results from their relatively low undergraduate earnings. However, we see little reason to conclude that the results are upward biased due to unobserved higher ability by major.

Conclusion

After controlling for observable differences, we find that a law degree is associated with more than doubling of expected earnings for humanities majors, doubled earnings for social sciences majors, and closer to fifty percent increase for business and STEM majors. The results are similar when looking only at men or only at women. Of course, business and STEM majors' lower-percentage premiums are multiplied by much higher base earnings, such that in dollar terms the gaps are not as noticeable.

Thus the majors that are disproportionately overrepresented among law graduates—humanities and social sciences—are also the majors for which the expected benefits of law school are the greatest. This suggests that the decision

42. After controlling for standardized test scores, institution quality, and self-reported hours of study.

43. Arcidiacono, *supra* note 2; Peter Arcidiacono, Esteban M. Aucejo & Ken Spenner, *What Happens After Enrollment? An Analysis of the Time Path of Racial Differences in GPA and Major Choice*, 1 IZA J. LAB. ECON. 1 (2012); Simkovic, *supra* note 2.

44. Simkovic & McIntyre, *supra* note 5 at 270.

to attend law school may reflect a financial calculation by prospective students, albeit imperfect. Of course, much of this higher premium goes toward making up ground lost at the undergraduate level by liberal arts majors. As we see in Figure 1, overall earnings for liberal arts degree lawyers are still typically at or below those of business and STEM students. Among specific degrees, economics, philosophy and religion, and history show the largest law degree premiums in dollars, on the order of $80,000.

There are important limitations to our study. Because the analysis implicates two complex choices—the choice of college major and the choice to attend or not to attend law school—unobserved ability differences are an important consideration. Caution should be exercised in imposing a causal interpretation on the results. Investigations of ability bias using the NELS sample find little evidence that differences in selection into law school across majors account for differences in measured law earnings premiums by major. Another limitation is that we are measuring population-level differences in earnings. Individual outcomes vary, and we account for only a limited proportion of the total variance in earnings. Another important limitation is that we are comparing law school to only a terminal bachelor's degree rather than an alternative graduate degree. Alternative graduate degrees are an important area for future research.[45]

Nevertheless, our results suggest two conclusions. First, attending law school is generally a better financial decision than terminating education with a bachelor's degree. Even for STEM majors with a relatively low expected boost to earnings from a law degree, a law degree would typically more than pay for itself over the course of a lifetime. Second, a law degree largely erases the disproportionately lower expected earnings from a liberal arts degree, replacing it with one of the more enviable expected earnings trajectories available to a young earner.

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45.   Thus, for example, if an undergraduate STEM degree is good preparation for an advanced degree in a field with high expected earnings such as medicine, the value of a law degree to STEM majors may be even lower than our analysis suggests, perhaps negative when compared with the opportunity cost of not obtaining a medical degree.

Appendix 1: Empirical Specification

We use the following empirical specification for both SIPP and ACS samples:

$$\gamma_i = \alpha \cdot Z_i \cdot Law_i + X_i\beta + \gamma Z_i + \varepsilon_i$$

where γ_i is log annual earnings for worker i averaged over their years in the sample. For the SIPP sample, Law_i is a dummy variable for receipt of a law degree. Our sample includes only those with either a bachelor's degree or a law degree; thus our comparison is the difference between a law degree and a terminal bachelor's degree. Our main coefficients of interest, α, are the law school premiums as a function of college major captured by the variable Z_i. College major is considered both as an interaction term with law graduation and as an uninteracted control variable. X_{it} captures uninteracted controls for sex, race, and ethnicity; a quadratic in age, state of birth, college major; dummy variables for each calendar year, years to college completion interacted with college major; indicators for completing two or more years of advanced high school math, science, foreign language, or English; public or private high school; and college preparatory high school.[46]

Our ACS sample uses the same specification, but has controls for only year, race, sex, age, and state of birth. Also, as discussed above, we consider three proxy variables instead of directly observing law school degree status. SIPP estimates are weighted with sample weights. We also consider specifications that divide our data into subsamples defined by college major or sex and separately estimate the law premium within each subsample.[47]

Outcome variables—those that could themselves be affected by law school attendance—should not be used as controls.[48] Thus, employment status is not a control variable, because additional education might increase the likelihood of finding employment or full-time employment.[49]

46. State of birth is available in SIPP data in panels after the 1996 panel. Thus we include a dummy variable for those observations that lack these data. We also have a dummy variable for all those born outside the United States. We include state of birth as an initial condition but not current state of residence, which for many law graduates is codetermined with their job outcomes and so would be endogenous.

47. A supplemental analysis looking at the association between college major and law school tier uses data from the second wave of the After the JD study (AJD), which tracks law graduates from a single cohort, the class of 2000-2001. *See infra* Part II. Unlike SIPP or ACS, all individuals tracked by After the JD passed a bar exam. The second wave interviewed law graduates seven years after they graduated. Ronit Dinovitzer et al., After the JD II: Second Results from a National Study of Legal Careers (2009).

48. Joshua D. Angrist & Jörn-Steffen Pischke, Mostly Harmless Econometrics: An Empiricist's Companion 49-53 (2009). Angrist and Pischke refer to these as "bad controls."

49. Similarly, *current* geography is not a good control variable, because additional education may increase one's employment opportunities in locations where incomes are typically higher, and therefore one's inclination to move to higher-income areas after law school. Instead, controls are applied for birth state, a geography variable that (like race, sex, and

Appendix 2: College Major and Omitted Variables Bias

Interpreting the above premiums requires us to think about how students choose to go to law school and choose their college major. Our concern is that these choices can lead to unobserved differences in ability or earnings potential that bias our estimated premiums away from the causal effects.

The first concern is that all of the premiums may be systematically too high if those going to law school would likely have earned more than the average bachelor's degree holder even if they had counterfactually completed only a bachelor's degree. There could be an unobserved ability difference confounding the premium estimates. If that is true, the differences we find across majors could be correct, but the overall premium levels would be wrong. Past work has found little evidence for large unobserved ability differences compounding to earnings premium estimates. Instrumental variable (IV) estimates of education in general, which should be robust to omitted variables bias, typically estimate *higher* effects of education on earnings than those estimated by OLS regression, whereas if there were omitted variable bias we would expect lower effects. Twins studies, which are likely to be downward biased by stronger measurement error effects, typically estimate only slightly lower coefficients than OLS. [50]

More specifically, Simkovic and McIntyre investigated omitted variables bias in legal education using data from the National Education Longitudinal Study (NELS) of 1988.[51] NELS is a panel data survey that tracks a large pool of students from middle school until their late twenties. Students, their parents, and their teachers were interviewed repeatedly from 1988 to 2000. This allows researchers to track which factors lead an individual to law school and how those factors predict earnings for those who have only a bachelor's degree. Using an extensive set of variables on the students' ability, parental background, and motivation, they found that those bound for law school were slightly more capable than their non-law counterparts, but that the counterfactual higher earnings explained only about a ten percent wage gap. And some of this gap resulted from demographics (such as race and sex) controlled for in our ACS

date of birth) precedes law school and therefore cannot readily be affected by law school attendance.

Geography of college or law school completed is not available. In an unreported analysis, we found the differences across major in the ACS were essentially the same with or without controls for current location—either state or Census Microdata Area (PUMA). We also considered specifications interacting the law premium with urban, rural, and suburban dummies or with public, legal services, or self-employment. None of these is the main specification because of concerns that these are channels through which the premium manifests itself, rather than exogenous characteristics. These alternative specifications did not affect the differences across majors systematically in either direction.

50. David Card, *The Causal Effect of Education on Earnings*, *in* 3A Handbook of Labor Economics 1801, 1834-52 (Orley Ashenfelter & David Card eds., 1999); Simkovic and McIntyre, *supra* note 10, at 268-70.

51. Simkovic & McIntyre, *supra* note 5 at 262-268.

and SIPP regressions. Since we also have a downward bias from measurement error, this suggests that our estimates are not likely to be heavily biased by omitted ability of law school graduates.

A second concern is that unobserved earnings ability may vary with college major. This will pose a problem for answering some questions but not others, as we can show with a simple model. Let the data generating process for earnings be:

$$\ln(earnings | law = l, major = m) = \mu_l + \delta_{lm} + \gamma_{lm}$$

where μ_l is average log earnings based on whether or not one has a law degree, δ_{lm} is the causal effect of one's major, specific to whether or not one has a law degree, and γ_{lm} is an unobserved ability component that captures additional effects from the average ability of people in one's major and degree. Thus a person with a bachelor's degree coming from major 1 would earn $\ln(earnings) = \mu_o + \delta_{o1} + \gamma_{o1}$. But, counterfactually, had this person been forced into major 2, he or she would earn $\mu_o + \delta_{o2} + \gamma_{o1}$ because the major would shift, but not the inherent ability.

Given this setup, the estimated difference in earnings for a person from major m between a law degree and a bachelor's degree is:

$$(\mu_l - \mu_o) + (\delta_{lm} - \delta_{om}) + (\gamma_{lm} - \gamma_{om})$$

The first term, $(\mu_l - \mu_o)$ is the average law premium. It captures how law degrees typically increase earnings compared with bachelor's degrees, independent of college major or ability level. The second term, $(\delta_{lm} - \delta_{om})$, captures the causal effect of college major m on earnings, and how these major-specific effects differ depending on whether the individual has a law degree or a bachelor's degree. For example, if majoring in engineering in college boosted earnings more than majoring in English, perhaps that engineering boost might matter more for those with only a bachelor's degree than for those who also have a law degree. If this were the case, $(\delta_{lm} - \delta_{om})$ would be negative for engineering majors with law degrees, because they would give up some of their engineering earnings advantage by going to law school. The third term, $(\gamma_{lm} - \gamma_{om})$ captures differences in average innate earnings ability between bachelor's and law degree holders in major m. If this ability translates into the same percentage boost to earnings, regardless of education, then the two γ terms will cancel out. On the other hand, for individuals in majors in which people have innate skills that are valuable in law-related employment, but otherwise not highly priced in the market, $(\gamma_{lm} - \gamma_{om})$ could be strongly positive. Strong verbal skills may, for example, pay off disproportionately well to the jobs one gets with a law degree, compared with a bachelor's degree.

All three of these terms apply to a typical person already in major m and represent a benefit this person can expect from going to law school. While there may be ability bias in that some of these returns result from ability, for

those within a given major the only way to access those ability gains is to attend law school. Thus, for those students, this will be a causal effect of law school on earnings.

On the other hand, consider a student who knows she will go to law school, but has not yet decided on a major. She can observe the difference in earnings for law degree holders of different majors, which, for majors m and n, will be:

$$(\delta_{rm} - \delta_{rn}) + (\gamma_{rm} - \gamma_{rn})$$

The first term is a causal effect, which the student can control (in expectation) by choosing a major. The second term is the difference in average unobserved ability between the two majors for law-related employment, which the student cannot change. We do not know the size of this second term. Thus our empirical results may not be that helpful to inform the choice of college major for those planning on law school, since results may reflect unobserved ability differences across major. Consequently, these results may be more useful for those who have already selected or completed a college major, are contemplating attending law school, and would like estimates of the likely returns based on individuals similar to themselves. We are substantially more skeptical of the value of our results for guiding one's choice of a prelaw major.

Table 1: Summary Statistics for ACS and SIPP Regression Sample

	SIPP (1996-2013)		ACS (2009-2014)			
			Law Proxies			
	(1) Law Degree	(2) Bachelor's	(3) Lawyers	(4) Professional Degree Narrow	(5) Professional Degree Broad	(6) Employed Bachelor's
Percentages						
Sex						
Men	68%	52%	63%	61%	58%	50%
Women	32%	48%	37%	39%	42%	50%
Race / Ethnicity						
White	90%	82%	88%	84%	84%	79%
Asian	5%	8%	4%	5%	5%	7%
Black	3%	3%	3%	4%	3%	4%
Hispanic	3%	8%	5%	7%	8%	10%
College Major						
Humanities	29%	12%	27%	24%	24%	13%
Social Sciences	19%	11%	45%	38%	35%	17%
Business	12%	24%	14%	15%	15%	27%
STEM	6%	18%	8%	13%	13%	19%
Other Major	35%	35%	7%	10%	14%	24%
Time to Complete Bachelor's	3.9	4.8				
Public HS	79%	85%				
College Prep HS	81%	67%				
>2 years Adv. HS work in Math	83%	74%				

Science	81%	74%				
English	94%	88%				
Foreign Lang..	79%	66%				
Age						
25-29	6%	14%	9%	8%	8%	16%
30-39	28%	30%	29%	26%	25%	27%
40-49	34%	30%	25%	26%	26%	26%
50-59	23%	20%	25%	27%	27%	22%
60-65	8%	6%	12%	13%	13%	8%
Total Observations	991	28,135	42,594	70,754	84,995	1,262,512

Note: Percentages in columns may not sum to 100% because of rounding. Major categories in SIPP and ACS do not correspond perfectly because of differences in categorization within the surveys.

Table 2: Difference in Log Earnings Between Bachelor's and Law Degree by College Major and Sex from SIPP			
	(1)	(2)	(3)
	Both sexes	Females	Males
Law Degree interactions with college major			
Law*Humanities	0.76	0.76	0.76
	[0.06]	[0.10]	[0.07]
Law*Social Sciences	0.69	0.80	0.59
	[0.06]	[0.11]	[0.08]
Law*Business	0.33	0.51	0.25
	[0.09]	[0.19]	[0.10]
Law*STEM	0.24	-0.25	0.26
	[0.12]	[0.40]	[0.12]
Law*Other Major	0.54	0.60	0.50
	[0.05]	[0.09]	[0.06]
College Major			
--- baseline Humanities			
Social Sciences	0.02	-0.01	0.05
	[0.02]	[0.03]	[0.03]
Business	0.23	0.17	0.26
	[0.02]	[0.03]	[0.03]
STEM	0.27	0.20	0.29
	[0.02]	[0.04]	[0.03]
Other Major	0.07	0.08	0.07
	[0.02]	[0.03]	[0.03]
Public HS	-0.05	-0.03	-0.05
	[0.01]	[0.02]	[0.02]
College Prep HS	0.06	0.07	0.04
	[0.01]	[0.02]	[0.01]
>2 years Adv. HS work in			
Math	0.08	0.09	0.06
	[0.01]	[0.02]	[0.02]
Sciences	0.00	-0.02	0.02
	[0.01]	[0.02]	[0.02]
English	0.00	-0.03	0.02
	[0.02]	[0.03]	[0.02]
Foreign Lang.	0.05	0.05	0.04

	[0.01]	[0.02]	[0.01]
Observations	29126	14076	15050
R-squared	0.15	0.05	0.13

Sample includes those ages 25-65 with either a law or bachelor's degree. Columns 2 and 3 use subsamples defined by sex. Observations are individuals averaged over all years of the sample. Robust standard errors in brackets. Control variables for age, age-squared, year fixed-effects, sex, race/ethnicity, state of birth, and time to college completion interacted with major included but not reported. College major effects are reported at a four-year graduation window with the baseline being humanities majors.

	(1)	(2)	(3)
Table 3: Difference in Log Earnings Between Bachelor's and Law Degree by College Major from ACS			
	Lawyer	Professional Degree (Narrow)	Professional Degree
Law Degree interactions with college major			
Law*Humanities	0.94	0.75	0.68
	[0.008]	[0.007]	[0.007]
Law*Social Sciences	0.80	0.67	0.63
	[0.007]	[0.006]	[0.005]
Law*Business	0.61	0.49	0.46
	[0.012]	[0.009]	[0.008]
Law*STEM	0.66	0.37	0.33
	[0.015]	[0.009]	[0.009]
Law*Other Major	0.64	0.36	0.34
	[0.017]	[0.011]	[0.008]
College Major			
--- baseline Humanities			
Social Sciences	0.16	0.16	0.16
	[0.003]	[0.003]	[0.003]
Business	0.34	0.34	0.34
	[0.003]	[0.003]	[0.003]
STEM	0.39	0.39	0.39
	[0.003]	[0.003]	[0.003]
Other Major	0.15	0.15	0.15
	[0.003]	[0.003]	[0.003]
Observations	1,305,106	1,333,266	1,347,507
R-squared	0.16	0.15	0.15

Sample includes those ages 25-65 with a bachelor's degree or a proxy for a law degree. In column (1) the proxy is lawyer occupation. In column (2) the proxy is professional degree holder excluding many occupations that are relatively unlikely to be occupied by law degree holders. See text for details. In column (3), the proxy is once again professional degree holders, but is more inclusive, excluding only those in medical occupations. Observations are individuals. Robust standard errors in brackets. Unreported control variables are the same as in Table 2.

	Lawyers		Professional Degree Holders (Narrow)	
	(1)	(2)	(3)	(4)
	Female	Male	Female	Male
Law Degree interactions with college major				
Law*Humanities	1.01	0.89	0.74	0.75
	[0.014]	[0.010]	[0.011]	[0.009]
Law*Social Sciences	0.89	0.73	0.69	0.63
	[0.011]	[0.008]	[0.009]	[0.007]
Law*Business	0.67	0.56	0.47	0.49
	[0.023]	[0.013]	[0.016]	[0.010]
Law*STEM	0.78	0.60	0.44	0.33
	[0.030]	[0.016]	[0.018]	[0.010]
Law*Other Major	0.71	0.59	0.36	0.38
	[0.025]	[0.022]	[0.015]	[0.015]
College Major				
--- baseline Humanities				
Social Sciences	0.12	0.19	0.12	0.19
	[0.004]	[0.004]	[0.004]	[0.004]
Business	0.31	0.36	0.31	0.36
	[0.004]	[0.003]	[0.004]	[0.003]
STEM	0.33	0.43	0.33	0.43
	[0.005]	[0.003]	[0.005]	[0.003]
Other	0.16	0.13	0.16	0.13
	[0.004]	[0.004]	[0.004]	[0.004]
Observations	647,908	657,198	660,074	673,192
R-squared	0.06	0.15	0.06	0.15

Table 4: ACS Estimates by Sex

Each column reports on a subsample regression by sex, using ACS data. Groups and data are otherwise as defined in Table 3. Robust standard errors in brackets. Unreported control variables are the same as in Table 2.

FIGURE I: ACS ANNUAL EARNINGS QUANTILES FOR LAWYERS BY MAJOR (2014 USD THOUSANDS)
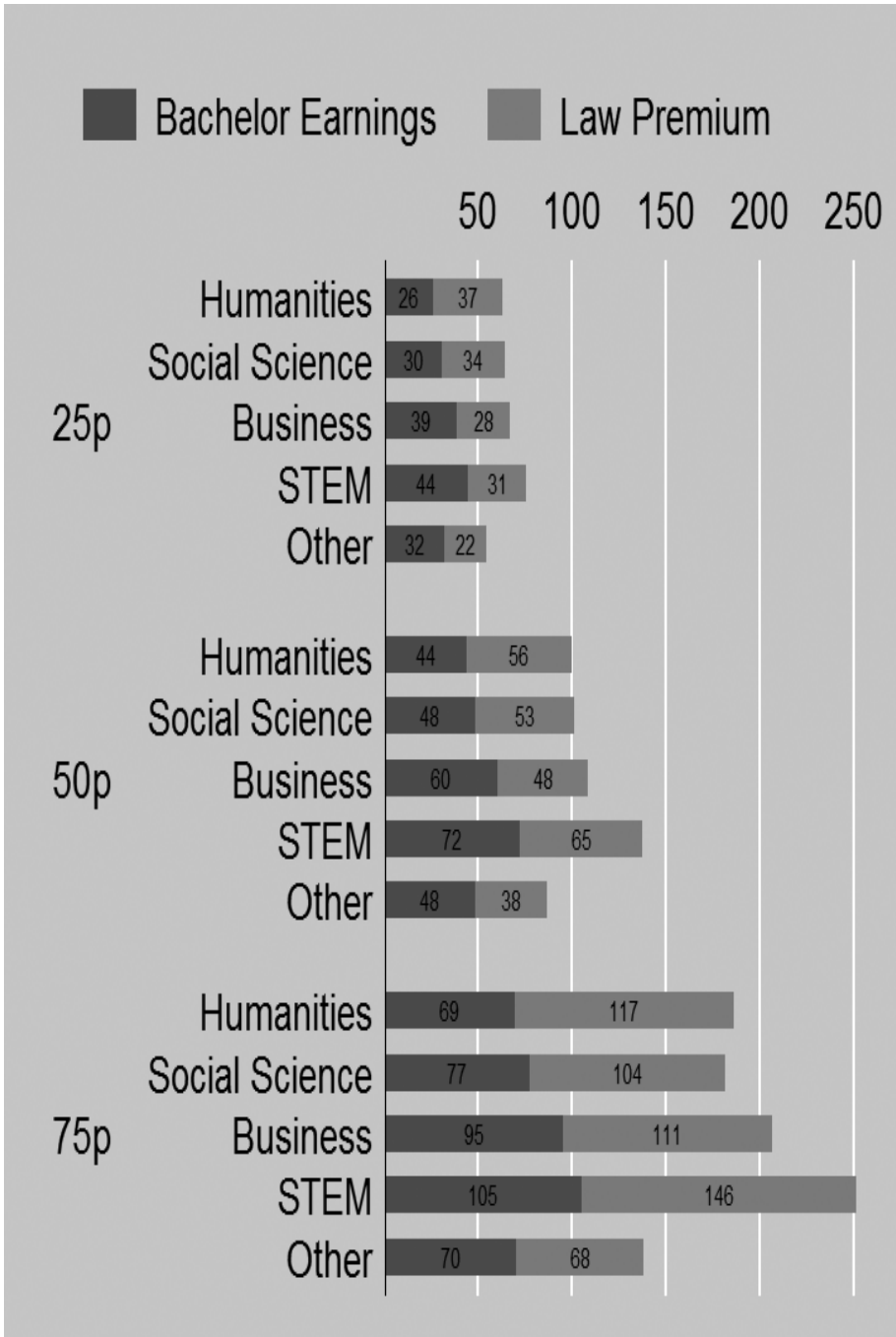
FIGURE 2: ACS ANNUAL EARNINGS QUANTILES FOR PROFESSIONAL DEGREE HOLDERS (NARROW) BY MAJOR (2014 USD THOUSANDS)
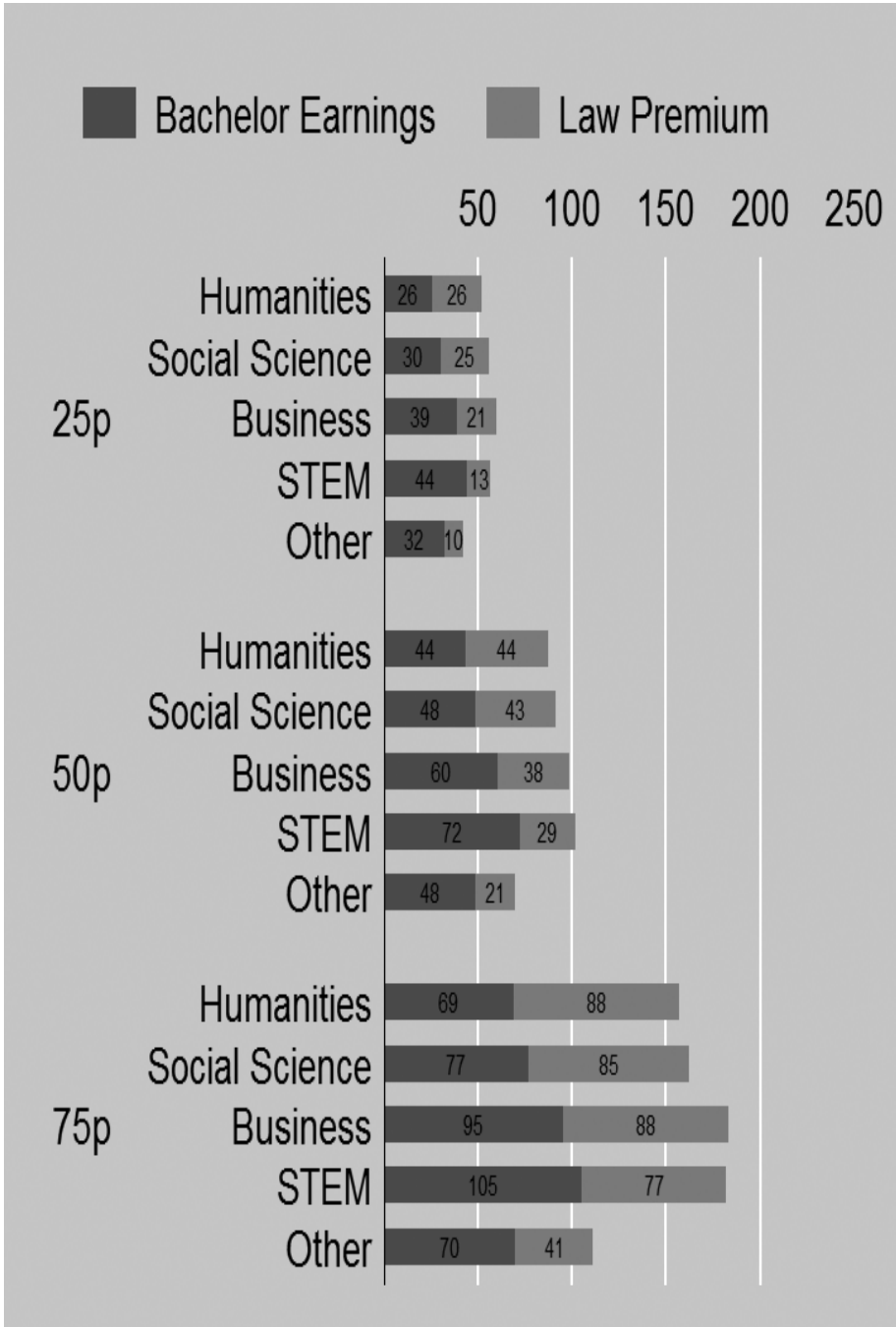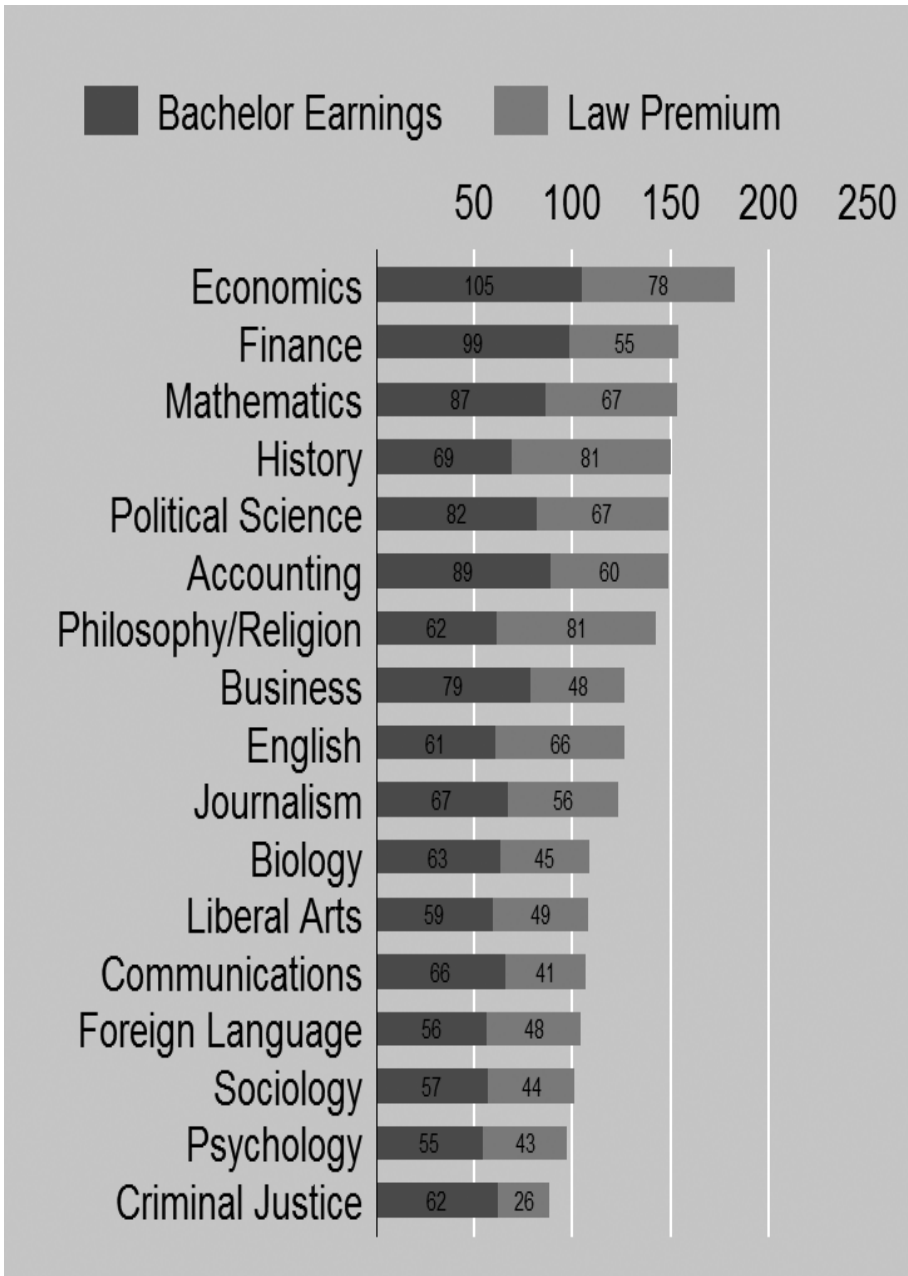
Figure 3: ACS Mean Earnings for Professional Degree Holders (Narrow) by Selected Field of Study* (2014 USD Thousands)

Bachelor Earnings ▪ Law Premium

Field	Bachelor Earnings	Law Premium
Economics	105	78
Finance	99	55
Mathematics	87	67
History	69	81
Political Science	82	67
Accounting	89	60
Philosophy/Religion	62	81
Business	79	48
English	61	66
Journalism	67	56
Biology	63	45
Liberal Arts	59	49
Communications	66	41
Foreign Language	56	48
Sociology	57	44
Psychology	55	43
Criminal Justice	62	26

*Includes degree fields with more than 700 professional degree holders in sample.