## The Pay of Finance Professors\*

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#### Abstract

Using data from over 75,000 professors across fields and U.S. universities, we quantify a 50% wage premium for Finance research faculty. We document a positive correlation between students' future earnings and faculty pay across fields. In addition, within fields, faculty wage elasticity to students' lifetime earnings is three times higher in Finance than in other fields. Evidence suggests that higher student earnings lead to increased university revenues. Competition for talent and fairness considerations may explain why Finance professors obtain a fraction of these additional revenues, hence accounting for a pronounced wage spill-over from the industry to academia in Finance.

JEL classification: J31, I23

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### 1 Introduction

Wages in academia affect faculty effort and productivity, and their distribution may influence the allocation of talent across academic fields. These factors can significantly impact students' academic achievements and their prospects in the labor market, as well as the level of innovation across different sectors. Moreover, faculty wages represent a large share of tuition costs, which have increased in recent years, with important economic consequences such as the build-up of student loans or the sorting of students into high paying fields.<sup>1</sup> Therefore, understanding the determinants of academic pay and of its heterogeneity across fields matters for both academia and the broader economy.

One potential driver of wage heterogeneity across academic fields is the significant variation in compensation by industry, which can influence students' willingness to pay for tuition, donations, or faculty's alternative career options. Since the 1980s, the finance industry, in particular, has offered increasingly higher and more skewed wages compared to other sectors (Philippon and Reshef 2012; Célérier and Vallée 2019). These compensation patterns in the finance industry may spill over to Finance academia, where anecdotal evidence suggests relatively high faculty compensation.<sup>2</sup> Our study aims at quantifying the Finance academia wage premium and investigating the economic forces that underlies it, including the channels potentially linking compensation in the finance industry and academia.

For the purpose of precisely quantifying the Finance-academia wage premium, we build a comprehensive dataset covering information on academic field, compensation, rank, research output and socio-demographics for 75,000 research faculty from 1,450 U.S. universities over the 2005-2018 period. We first collect name-identified wage data from U.S. public universities across 32 states through public record requests in accordance with the state-level freedom of information laws. We

<sup>&</sup>lt;sup>1</sup>The role of faculty wages in driving the growth of college tuition in the U.S. in recent decades has been a subject of debate in academic literature. For instance, Rhoades and Frye 2015 and Gordon and Hedlund 2019 argue that faculty wages have not been a significant factor in the increase of college tuition, while Archibald and Feldman 2008 and Bundick and Pollard 2019 present the opposite argument.

 $<sup>^2{\</sup>rm For}$  example, see the report on business school faculty pay at https://poetsandquants.com/2018/08/11/what-business-school-professors-are-paid-may-surprise-you/.

complement this dataset with information on faculty from *private* and other public universities using green card and H1B application data, thereby leveraging the significant share of faculty employed in U.S. universities that are not U.S. citizens. When possible, we merge individual wage data with the bibliographic database Scopus. We identify the academic field using the occupation code when available, field or publication history from Scopus, or the faculty directory assembled by James Hasselback. We restrict our sample to research tenure track faculty and define "universities" as any post-secondary institutions that award bachelor degrees. In total, universities in our sample include 82% of all 2019 full-time undergraduate students enrolled in four-year colleges.

Controlling for year, university and position fixed effects, we find that finance professors benefit from a wage premium of close to 50% on average. This premium is concentrated in the top of the wage distribution, has been increasing over the 2010-2018 period – from 42% to 57%–, and is comparable in magnitude to the one observed in the finance industry (Philippon and Reshef 2012).<sup>3</sup> This premium is economically large: the wage gap between Finance versus Humanities faculty, which amounts to around 100% within top 50 universities, is comparable to the wage gap between Humanities faculty and kindergarten teachers.<sup>4</sup>

We investigate the rationale behind this Finance-academia wage premium by focusing on the future earnings of students across education fields. Utilizing individual-level data on education, employment, income, and demographics from the American Community Survey covering the years 2008 to 2018, we find a correlation of 0.7 between faculty pay and the expected lifetime earnings of graduates across fields. The result holds even when accounting for wage risk, assuming that consumption equals income and that workers exhibit a relative risk aversion of 2. When focusing specifically on individuals working in the finance industry, we show that graduate students with a Finance degree obtain, on average, a 20% higher wage throughout their career than the ones having studied a different field. More-

 $<sup>^3(\</sup>mbox{Philippon}$  and Reshef 2012) finds the finance wage premium amounts to around 50% in 2005.

 $<sup>^4</sup>$  Annual wages in May 2022: kindergarten teachers - \$60,490, elementary teachers - \$61,690, high school teachers - \$62,360. Data source: Bureau of Labor Statistics, U.S. Department of Labor, Occupational Outlook Handbook.

over, wages are also more skewed for Finance graduates: the wage premium for Finance graduates is the highest at the 90th percentile of the wage distribution, and the Finance industry concentrates the highest number of billionaires of all sectors.

Turning to a within field analysis, we document a significantly higher sensitivity of faculty wages to student earnings in Finance academia, in comparison to other fields. We collect data on student wages one year post graduation across both universities and fields from the College Scorecard Dataset from the U.S. Department of Education. By regressing faculty pay on the post-graduation earnings of students from the same university and field, we find that on average faculty pay increases with students' earnings within an academic field. Furthermore, by introducing an interaction term between student earnings and a dummy for Finance faculty, we show that faculty wage returns to student earnings is three times higher in Finance than in other academic fields. These higher returns explain a significant share of the Finance academic premium. In summary, not only are expected earnings higher for Finance students, and particularly so for highly ranked schools, but a greater share of these high earnings spills over to Finance faculty.

We then provide empirical evidence suggesting that higher and more skewed students' earnings lead to increased university revenues in Finance academia, via tuition fees and donations. Hence, tuition revenues per faculty are higher in Finance than in other academic fields, resulting from both higher tuition fees and a higher student-to-faculty ratio. We obtain data on donations from the *Chronicle of Philanthropy*'s database, which lists all donations to non-profit organizations in the U.S. exceeding 1 million dollars. A textual analysis of the donation purpose indicates that Finance benefits from a higher total donation amount, originating primarily from alumni working in the Finance industry. On average, both donations and tuition per faculty are more than twice higher in Finance than in other fields. In contrast, data on grants from the 2020 National Science Foundation Higher Education Research and Development survey indicate that grant revenues are not higher in Finance.

Finally, we consider possible factors contributing to Finance professors ob-

taining a share of these additional university revenues: competition for academic talent, fairness, or incentives. Using faculty-level data on research output from Scopus that we merge with our faculty wage dataset, we show that faculty wages are twice more sensitive to research impact in Finance than in other fields. We measure research impact using within-field and rank quintiles of citations, h-index, and i-10 index. In addition, we find that the pool of Finance PhD is relatively limited when compared to other fields, with a lower ratio of PhD to faculty in Finance and a higher rate of academic placement. These findings suggest that universities compete for a limited pool of research-active Finance faculty. Hence, the wage premium in Finance academia might partly result from attractive options outside academia for both undergraduate students with the potential to pursue an academic career in finance and finance academics, restricting the pool of talents in Finance academia. However, the absence of pronounced "superstar" effects in Finance academia, and the uniformity of pay within universities and fields we document, all suggest that fairness considerations might also play an important role (Edmans et al. 2023; Chaigneau et al. 2022).

Our work relates to the literature on the finance wage premium (Philippon and Reshef 2012), its underlying mechanism (Acharya et al. 2016; Benabou and Tirole 2016; Célérier and Vallée 2019) and its implications. For example, the finance sector may lure talented individuals away from other industries (Murphy et al. 1991; Philippon 2010; Bolton et al. 2016) or from financial regulators (Shive and Forster 2016; Bond and Glode 2014). This paper shows how wage differentials across industries can have long-reaching effects by driving the wages of academic faculty, which in turn might affect talent allocation, learning, and innovation in the economy.

Second, our paper contributes to the literature on the determinants of wages in academia, such as publications (Katz 1973; Tuckman and Leahey 1975; Swidler and Goldreyer 1998; Garfinkel et al. 2024), citations (Katz 1973; Hamermesh 2018), department performance (De Fraja et al. 2020), seniority (Ransom 1993; Moore et al. 1998; Hilmer and Hilmer 2011), university monopsony power (Ransom 1993; Goolsbee and Syverson 2019), university rank (Kim et al. 2009) and attributes

such as race or gender (Gordon et al. 1974; Hoffman 1976), including a more recent focus on finance within business schools (Sherman and Tookes 2022). By focusing on the Finance-academia wage premium and on across-field heterogeneity in compensation, this paper proposes a novel mechanism. We show how market forces can account for a wage spillover from the Finance industry to academia.

Third, our paper relates to the literature on rent-sharing dynamics between employers and employees, which can be driven by firm competing for a limited pool of talents (Gabaix and Landier 2008; Glode and Lowery 2016; Guadalupe 2007; Terviö 2009), fairness considerations that may lead employees to be rewarded for luck (Bertrand and Mullainathan 2001; Davis and Hausman 2020; Edmans et al. 2023), rent extraction, or incentives. Specifically, this study explores variations in rent-sharing and returns to talent across academic fields.

Finally, our paper complements the literature on the impact of wage heterogeneity across university majors. Several studies show how earnings levels (Arcidiacono 2004; Wiswall and Zafar 2014, 2015), trajectories (Hampole 2023), and risks (Nielsen and Vissing-Jorgensen 2006; Bonin et al. 2007; Dillon 2018; Saks and Shore 2005) affect occupational and education choices. Differences in wage returns to majors can also explain long-term changes in inequality and earnings differences across gender and race (Grogger and Eide 1995; Brown and Corcoran 1997; Weinberger 1998; Gemici and Wiswall 2014). We complete the existing literature by connecting wage heterogeneity across university majors to the one in faculty wages.

The paper is organized as follows. Section 2 provides stylized facts on finance faculty pay. Section 3 connects faculty pay and student earnings. Section 4 discusses the potential channels at play. Section 5 concludes.

# 2 Stylized Facts: The Finance Academia Wage Premium

In this section, we provide a comprehensive analysis of the levels, trends, and distribution of wages in Finance academia compared to other academic fields.

### 2.1 Constructing Data on Faculty Compensation by Fields

We focus our analysis on research tenure track faculty in both private and public U.S. universities. We define "universities" as any post-secondary institutions that award bachelor or graduate degrees. Hence, we do not include community colleges, which typically grant 2-year degrees. Within university faculty, we focus on *research* tenure-track faculty, as they are central to university mission and governance through their research, teaching and administrative roles.

### 2.1.1 Faculty Wages in Public Universities

We collect a comprehensive dataset of research tenure-track faculty wages by performing public record requests across U.S. states. State-level freedom of information laws guarantee the right to access records maintained by state agencies. We conduct these requests in all the states where (1) post secondary institutions are not exempt from disclosing information; (2) the access right is granted to anyone, and not only to citizens of the state. We request data over the longest time period possible, which varies depending on the state legal framework relative to the freedom of information laws. The scope of data coverage differs also across states and universities, with some providing information on all university employees, not exclusively on faculty.

We receive answers from 32 states covering 290 universities over the 2004-2018 period. In 2019, these universities enrolled about 2.8 million full time undergraduate students, corresponding to 33% of all the students enrolled in four year programs in the U.S. at this date (IPEDS 2019). This sample includes 11 of the 15 states with the largest university systems in the US, i.e., California, Ohio, Florida, New York, Georgia, Texas, Utah, New Hampshire, Illinois, Arizona, and Michigan. Table A1 in the Internet Appendix lists the states and sample periods that this sample covers.

In total, this public university wage database includes approximately 400,000 academic employees working in U.S. public universities, amounting to a total of 1.25 million employee-year observations. This public wage dataset includes each individual's first name, last name, base salary, total compensation, position, and

affiliated university. Base salary includes the 9-month wage in most cases, while total compensation includes the summer stipend, grant wage money, and other variable pay.

### 2.1.2 Categorizing Faculty by Academic Fields in Public Universities

A significant challenge to our analysis is 1/ identifying research tenure-track faculty among academic employees and 2/ determining their respective academic fields. Indeed, this information is often missing in our public university wage dataset that we build from public record requests.

To address this challenge, we exploit information from the bibliographic database Scopus. Scopus is one of the leading multidisciplinary citation databases in the world and offers comprehensive coverage of articles from thousands of peer-reviewed journals, conference proceedings, trade publications, books, and patent records.<sup>5</sup> For every author, Scopus offers information on its research output, including the total number of publications, cumulative citations, and the h-index, which quantifies both the productivity and citation impact of an individual's publications.

We link our public university database with Scopus using name and institution and classify as research faculty any individual in our public university dataset with a valid match in Scopus. We then use Scopus' field classification to identify academic fields. Scopus builds this classification using authors' publication history. Given that Scopus categorizes Law within Humanities, we identify law faculty based on the departmental designation, which typically specifies the law school's name.<sup>6</sup>

We arrive at a sample of 53,400 research tenure-track faculty from U.S. public universities with information on their field, wage and research output. This sample includes approximately half of all research faculty included in our public university dataset. Indeed, because of downloading restrictions, we linked a

 $<sup>^5 \</sup>mathrm{We}$  prefer Scopus over Web of Science due to its broader scope in covering various disciplines and sources.

<sup>&</sup>lt;sup>6</sup>We refrain from using departmental information to assign academic fields for disciplines other than Law, as department names often encompass multiple fields. Examples include broad labels such as 'Faculty of Arts and Science', 'Economics, Finance, and Entrepreneurship', or 'Business School.'

50% random sample of academic employees to Scopus.<sup>7</sup> Our sample also excludes visiting, retired and teaching track faculty, often identified as "instructors," "lecturers," "part-time," "visiting," " emeritus," "adjunct," "teaching," "practice," and "clinical" professors in our data.

### 2.1.3 Identifying Finance Faculty

Given that Scopus does not distinguish Finance as a separate field within its classification system, we implement a two-step process to accurately identify Finance professors. In Scopus, the fields of Economics and Finance are combined into a single field labeled as "Econ." Similarly, Scopus groups Business, Management, and Accounting into another combined field, termed "Business."

First, we exploit individual-level information on academic fields from the James Hasselback's faculty directory. For over 35 years, this directory has compiled comprehensive information on faculty members in Accounting, Finance, Marketing, Economics, and Management departments across approximately 700 U.S. public and private institutions. For each faculty member, the directory includes details such as their specific field, department affiliation, position, year of PhD completion, and PhD alma mater.

We identify 3,558 Accounting, Finance, Economics, and Management Sciences professors in our public university wage by linking it with the James Hasselback' 2016-2017 accounting directory, the 2019-2020 finance directory, and the 2006-2007 economic directory. Hence, we identify the exact field for 60% of the faculty identified in Scopus as part of the "Econ" or "Business" fields and 10% of the initial public university data not merged with Scopus from this step.

Second, for faculty listed in Scopus under the "Econ" or "Business" categories but not matched with the James Hasselback's directories, we employ their publication history to identify Finance professors. For each such professor, we calculate the proportion of their publications in finance-specific journals. We then use the

<sup>&</sup>lt;sup>7</sup>We also drop observations in Scopus corresponding to non-unique combination of first name and last name within the same university and year, as we cannot uniquely identify Scopus author's profiles for such individuals (less than 2% of total observations).

<sup>&</sup>lt;sup>8</sup>http://www.jrhasselback.com/FacDir.html

James Hasselback's directories as a training set to determine an appropriate threshold that effectively identifies Finance professors, aiming to minimize both type 1 and type 2 errors. Faculty in the "Econ" or "Business" categories with a publication share exceeding the established threshold of 33% are classified as Finance professors. We apply a similar methodology to single out Accounting professors using a threshold of 43%.

Our final public university dataset covers over 55,000 research faculty across 12 distinct academic fields, including Finance, Economics, and Management Sciences. The Finance field includes accounting faculty, as they are often part of the same department as Finance faculty and their research agenda and teaching scope largely overlaps. Management Sciences encompasses all business-related fields excluding Finance and Accounting, thereby covering marketing, strategy, and operations. The remaining nine fields are Computer Sciences, Engineering, Humanities, Law, Life Sciences, Mathematics, Medicine and Healthcare, Physics, and Social Sciences.

# 2.1.4 Faculty Wages and Fields for Private and Other Public Universities: Immigration Data

We complement our public university dataset with information on faculty from *private* and other public universities using green card and H1B application data, thereby leveraging the large share of faculty employed in U.S. universities that are not U.S. citizens. According to the National Study of Postsecondary Faculty, 17% of academics on tenure track positions but not tenured are not U.S. citizens. The U.S. Department of Labor (DOL) makes the permanent residence and H1B applications publicly available on its Employment and Training Administration webpage (Shen 2021).

We build an anonymized dataset of faculty wages, positions and fields using the H1B or green card application data in the following way. H1B or green card application data includes anonymized data on yearly wages, demographics, country of birth, occupation, position and employer identity for all applicants. We identify academic employees as individuals working for a university, as indicated by the

<sup>&</sup>lt;sup>9</sup>Data are available at https://www.flcdatacenter.com/.

name of the employer. Next, we single out research faculty and fields using both the job title and the occupation code from the Bureau of Labor and Statistics.

We arrive at an anonymized wage dataset of more than 20,000 professors over the 2005-2017 period working across 1,280 universities that we append to our public university dataset.

### 2.1.5 Representativeness and Comparability of our Final Wage Dataset

Our final academic wage dataset comprises over 195,000 faculty-year observations and more than 75,000 professors. This dataset spans the period from 2005 to 2018 and includes faculty members working across over 1,450 universities and in 12 different academic fields.

We assess the representativeness of our final wage sample by computing the share of full-time undergraduate students, professors, and degrees covered by our sample of universities. To do so, we use data from the Integrated Postsecondary Education Data System (IPEDS) on enrolled students and professors across universities and degrees. IPEDS, compiled through annual surveys conducted by the U.S. Department of Education's National Center for Education Statistics, covers all postsecondary institutions that participate in the federal student financial aid programs.

We find that our final sample comprises universities that enroll 82% of all 2019 full-time undergraduate students enrolled in four-year colleges, and 80% of all 2019 full-time undergraduate students enrolled in Business Programs. Finally, our final sample comprises universities that cover 89% of assistant/associate/full professors working at four-year colleges in the years 2019-2020.

A challenge in accurately quantifying wage heterogeneity across academic fields is establishing a uniform measure of compensation. We address this challenge by focusing on the "base salary," which is available for approximately 75% of the faculty in our data. The base salary excludes summer stipends and variable pay and is typically paid over an 8, 9, 10, or 11-month period. To standardize the base salary measure across universities, we utilize data from IPEDS, which provides details on the compensation structure of base salaries at each university. Figure

A1 in the Internet Appendix illustrates the duration of base salary contracts. Notably, for over 80% of our observations, the base salary is for a 9-month period. Therefore, we standardize our base salary measure to reflect a 9-month contract across all universities.

For robustness, we also exploit information on total compensation. This variable includes the summer stipend as well as grant wage money and other variable pay. For faculty with summer stipend, total compensation is 30% higher on average than the base salary. However, the information on total compensation is available for only 40% of our observations.

Table 1 provides summary statistics of faculty wages by field, position, university rank, type and location. Unconditionally, we observe higher pay in Finance and Accounting, with Law and Medicine also ranking high. Full professors, faculty in high rank universities, and located in large cities, also earn higher wages.

### INSERT TABLE 1 HERE

### 2.2 The Finance-Academia Wage Premium

We now investigate wage heterogeneity across academic fields controlling for observable characteristics and potential composition effects arising from our unbalanced panel. To do so, we employ the following specification, using Humanities as the reference field:

$$\ln(w_{i,t}) = \sum_{f=1}^{n} \beta_{field_f} \mu_{field_f} + \eta_{u,t} + \gamma_{rank_i} + \theta_{H1B} + \epsilon_{i,t}, \tag{1}$$

where  $w_{i,t}$  is the 9-month base salary of faculty i in year t,  $\mu_{field_f}$  are field indicator dummies for all fields except humanities.  $\eta_{u,t}$  are university  $\times$  year fixed effects and  $\gamma_{rank_i}$  are academic rank fixed effects controlling for composition effects across fields. We differentiate assistant, associate and full professors, accounting respectively for 37%, 26% and 38% of our observations. Finally,  $\theta_{H1B}$  are fixed effects indicating non U.S. citizen, i.e. H1B or green card applicants. Standard errors are double clustered at the university and year levels.

Figure 1 plots the  $1 + \beta_{field}$  coefficients across fields along with their 95% confidence intervals. Finance ranks as the highest paying field, offering a 75% wage premium over Humanities, which is identified as the lowest paying field. The premium in Finance is also significantly higher compared to related disciplines like Management Sciences and Economics. Consistent with our unconditional statistics, other fields with relatively high wages include Law, Medicine, and Computer Sciences.

### INSERT FIGURE 1

Next, we quantify the Finance academia wage premium more precisely by estimating the following specification:

$$\ln(w_{i,t}) = \beta \mathbb{1}_{Finance} + \eta_{u,t} + \gamma_{rank_i} + \theta_{h1b} + \epsilon_{i,t}, \tag{2}$$

where  $\mathbb{1}_{Finance}$  is an indicator variable for faculty in Finance. Other variables are the same as in equation (1). Standard errors are double clustered at the university and year levels. We estimate this specification across various sub-samples to explore the distribution of the premium along faculty rank and university characteristics.

Panel A in Table 2 reports the results from this analysis when the dependent variable is the 9-month base salary. The wage premium amounts to 45% on average for Finance faculty, as Column 1 indicates. When we include university × year fixed effects in Column 2, the premium increases up to 50%. This premium is the largest for assistant (Column 3) and associate professors (Column 4), at 56% and 50%, respectively, and is significantly lower for full professors (Column 5), or professors with more than 20 years of experience, at 40% (Columns 6). When investigating the premium across university types, it is higher for top 50 universities according to the U.S. News ranking (Column 7), as well as for R1 universities (Column 8), i.e., for universities with very high research activities according to the Carnegie Classification of Institutions of Higher Education. Finally, even within business schools, we observe a premium for Finance faculty, which amounts to 21% (Column 9).

### INSERT TABLE 2

Panel B in Table 2 replicates the same analysis using total compensation instead of the 9-month base salary as dependent variable. Although total compensation is available for around 40% of our sample, we find similar estimates of the Finance academia wage premium when using this measure of compensation.

The Finance-academia wage premium we identify is economically large: the wage gap between Finance versus Humanities faculty within top 50 universities is of the same magnitude, at around 100%, as the wage gap between Humanities faculty and kindergarten teachers. We obtain data on kindergarten teacher wages from the Bureau of Labor Statistics, U.S. Department of Labor. In May 2022, the average wage of a kindergarten teacher amounts to \$60,490, while the average wage of a Humanities professor in our dataset is \$138,000 and Finance faculty's one is \$275,000. Compared to what we observe in other high-skill service professions like consulting, banking, or auditing, the impact of field-specific expertise on wages seems considerably more pronounced in academia.

## 2.3 The Finance-Academia Premium across the Wage Distribution

We investigate disparities within Finance academia by estimating the Finance-academia premium across different segments of the wage distribution. Our aim is to determine whether the premium is largely earned by a small percentage of Finance faculty at the top or bottom of the distribution, or is a broader phenomenon affecting Finance professors at all levels. This analysis provides insights into the labor market dynamics and bargaining power within the Finance academic field.

To do so, we split observations across wage quintiles within each field and faculty rank (assistant, associate and full). We then estimate the following model:

$$\ln(w_{i,t}) = \sum_{i=1}^{5} \beta_i q_i + \sum_{i=1}^{5} \beta_{i,Finance} q_i \times \mathbb{1}_{Finance} + \eta_{u,t} + \gamma_{rank_i} + \epsilon_{i,t},$$
 (3)

where  $\mathbb{1}_{Finance}$  is an indicator variable for Finance faculty and  $\mathbb{1}_q$  are quintile fixed effects. The terms  $\eta_{u,t}$  and  $\gamma_{rank_i}$  account for university and year fixed

effects, and rank or position fixed effects, respectively. Standard errors are doubleclustered at the university and year levels.

Figure 2 plots the regression coefficients  $\beta_{q,finance}$  along with their 95% confidence intervals. Our findings indicate that the Finance-academia wage premium increases progressively along the wage distribution, from around 30 to 60%, and plateaus towards the upper end. This increase of the Finance-academia premium across the wage distribution is similar to what we observe in the finance industry, as documented in the literature (Bell and Van Reenen 2014; Kaplan and Rauh 2010; Philippon 2010). However, academia differs from the industry in one dimension: while the finance industry's wage premium is mostly concentrated among the very top earners, in academia, the wage premium is flat within the top 20% of the wage distribution. We confirm the skewness of the wage distribution in the Finance industry over our sample period, i.e. 2010-2018, using data from the American Community Survey. Results are displayed in Figure A5 in the Internet Appendix.

### **INSERT FIGURE 2**

### 2.4 Evolution of the Finance-Academia Premium

We now investigate the evolution of the Finance-academia wage premium over our sample period. To do so, we estimate the following model:

$$\ln(w_{i,t}) = \sum_{u=2010}^{2018} \beta_t + \sum_{u=2010}^{2018} \beta_{t,Finance} \times \mathbb{1}_{Finance} + \eta_{u,t} + \gamma_{rank_i} + \epsilon_{i,t}, \qquad (4)$$

where  $\mathbb{1}_{Finance}$  is an indicator variable for finance. Fixed effects are the same as in equation (1). Standard errors are double clustered at the university and year levels.

Figure 3 displays the regression coefficients  $\beta_{t,Finance}$  along with their 95% confidence intervals. For comparison, we also plot the evolution of the finance-industry wage premium, which we estimate using data from the American Community Survey. We observe a significant and comparable upward trend for both the finance

academic wage premium and its counterpart in the industry, with both premia increasing by at least 10 percentage points over the sample period, or 20% of the premium in 2010.

### **INSERT FIGURE 3**

### 3 Faculty Pay and Student Earnings

This section investigates the rationale behind the high willingness to pay for Finance professors, and the variations in this willingness across academic fields, by focusing on the future earnings of students across educational backgrounds. We explore both the level of these future earnings and faculty wage sensitivity to these future earnings.

### 3.1 Student Future Earnings across Education Fields

#### 3.1.1 Data

We collect information on wages across educational backgrounds from the American Community Survey over the period 2009-2019. Conducted by the U.S. Census Bureau, this survey reaches around 3.5 million households in the U.S. every year, gathering information on education, employment, family situations, and demographic characteristics. In addition to information on the highest level of education, yearly income, and demographics, the survey provides key information on the undergraduate field of study.

To build our sample, we utilize the multi-year file covering 2009-2019, which encompasses approximately 35 million observations. We refine this dataset by including only workers who possess at least one undergraduate degree, are aged between 23 and 65 and are all residents from the 50 states or the District of Columbia. This process results in a final sample of about 6 million U.S. individuals.

For our main analysis, we also restrict the sample to individuals with at least a master degree, reflecting the fact that research faculty predominantly teach and mentor graduate students. This criterion results in a sample of approximately 1.7 million individuals. Of these, 91.5% report having at least one undergraduate major. We exploit this data on undergraduate majors to categorize individuals into various fields of study, employing the Classification of Instructional Programs system developed by the National Center for Education Statistics.

Panel A in Table 3 provides summary statistics of student wages by education field. One limitation with the data from the American Community Survey is that it is top coded: Wages in the ACS above 99.5% in a state are replaced with the average wage in this state among all observations above 99.5%.

### INSERT TABLE 3 HERE

### 3.1.2 Results

We compute work-life earnings across education fields using the following simple formula:

Total Work-life Earnings<sub>f</sub> = 
$$\sum_{\tau=23}^{67} \beta_{\tau} \omega_{\tau,f}$$
 (5)

where  $\omega_{\tau,f}$  is the yearly income of a worker of age  $\tau$  who graduated from field f. We assume  $\beta = 1/(1+3\%)$ , accounting for a 3% yearly discount rate. We obtain the wage values  $\omega_{\tau,f}$  from the residuals of a wage regression that includes a large set of controls such as gender, race, ethnicity and survey-year fixed effects. We calculate  $\omega_{\tau,f}$  using the average residuals within each field f and age  $\tau$  cell.

Figure 4 plots the expected life-time earnings versus faculty relative wage across fields. We observe a correlation of 0.70 between professors' pay and the expected future wages of their students across fields. As a robustness check, Figure A7 in the Internet Appendix plots the same graph using a broader sample of individuals from the American Community Survey, including also individuals with a bachelor degree only. We observe a positive but smaller correlation of 0.56 between professors' pay and student expected earnings across fields.

### INSERT FIGURE 4

In a second analysis, we follow Philippon and Reshef (2012) to take into account the riskiness of wage profiles. To do so, we assume that individuals are risk averse and compute the value of a career after graduating from field f as follows:

$$Utility_f(0) = \mathbb{E}\left(\sum_{\tau=23}^{67} \beta^{\tau} u(\mathbf{w}_{\tau,f})\right)$$
 (6)

We assume a constant relative risk-aversion utility function  $u(c) = \frac{c(1-\rho)}{(1-\rho)}$ , with  $\rho = 2$ .

Finally, Table 4 provides the coefficient estimates of a Finance education dummy in a simple wage regression which includes a large set of demographic characteristics. We estimate that the average premium enjoyed by Finance graduates amounts to 21% on average as Column 1 indicates.

### **INSERT TABLE 4**

### 3.1.3 Wage Skewness across Education Fields

We investigate the skewness of the wage distribution of Finance graduates, as it can also affect the willingness to pay for Finance professors.

To do so, we first estimate the wage premium of Finance graduates at different points of the wage distribution. Columns 2 to 4 in Table 4 indicate that the premium increases along the wage distribution. The premium amounts to 50% at the 90th percentile.

To confirm this result, we split student wages across percentiles within education fields. We then compute the share of the total wage bill within each education field and percentile share. Figure IA5 in the Internet Appendix plots the share of the total wage bill across percentiles for the finance graduates and other workers. We observe a higher skewness in the wage distribution for students who graduate from a finance major. This results are consistent with Kaplan and Rauh (2010) and Bell and Van Reenen (2014), who find that the increase in the finance wage premium is concentrated at the top percentiles of the wage distribution.

Finally, we exploit Forbes' dataset on billionaires.<sup>10</sup> We collect the list of billionaires in the U.S. in 2021 and plots the number of billionaires across industries. Figure A9 in the Internet Appendix indicates that the Finance industry has the highest number of billionaires, close to 600, then followed by Computer Sciences and Manufacturing.

### 3.2 Faculty Wage Returns to Student Earnings

Next, we measure the elasticity of faculty wages to student earnings within fields, and investigate whether this elasticity varies across academic fields. Our findings indicate three-times higher wage returns to students' future earnings in Finance academia.

### 3.2.1 Data

As the American Community Survey data provides information on education fields but not specific to universities, we utilize the College Scorecard dataset provided by the U.S. Department of Education to obtain wage data across both universities and fields.<sup>11</sup> Introduced in 2015 by the Obama administration to inform higher education choices, the College Scorecard is a publicly available dataset that provides information on nearly all colleges and universities in the U.S. Of particular interest for this study, it provides early-career earnings data collected by the U.S. Department of Treasury for all students who received federal financial aid during college. Earnings are defined as the sum of wages and deferred compensation reported on tax forms.

Although the Scorecard data are limited to federal financial aid recipients, prior research shows that their median earnings are representative of the median earnings of the entire population of students at most colleges (Looney 2017; Mabel et al. 2020). Hence, there is a strong correlation (0.96) between the Scorecard's median earnings and those derived from a more comprehensive U.S. Treasury Department dataset, which includes both aid recipients and non-recipients.

<sup>10</sup>https://www.forbes.com/real-time-billionaires

<sup>11</sup>https://collegescorecard.ed.gov/data/

Our study focuses on the only wage information provided by the College Scorecard that is available at both the university AND field levels, i.e., the median of the earning distribution one year post graduation. The information is available across programs within universities for both undergraduate and graduate students. We average this information over the 2017 and 2018 College Scorecard data and match programs to their respective fields using the Classification of Instructional Programs system developed by the National Center for Education Statistics.

Panel B in Table 3 provides summary statistics from our dataset on student median wages at both university and field levels for undergraduate students. Our dataset includes 11,856 university-field observations, covering 1,075 universities from our sample and representing 75% of the observations in our faculty wage dataset.

#### 3.2.2 Results

Figure 5 suggests that faculty wages are more sensitive to student future wages in Finance than in other fields. For each field, we plot a graph where each dot represents one university. The X-axis is the relative wage premium *students* enjoy in this university (and field), while the Y-axis is the relative wage premium *faculty* enjoy in this same university (and field). Both premia are relative to the overall field average.

The graphs displayed in Figure 5 reveal a positive correlation between faculty and student pay across universities in three fields: Finance, Computer Sciences, and Humanities. Figure A11 in the Internet Appendix confirms that this positive correlation extends across other fields.

In addition, the correlation coefficient, which amounts to 0.5, is significantly higher in Finance compared to other fields, including high-paying ones such as Computer Sciences. It suggests a higher elasticity of Faculty pay to student wages in Finance than in other fields.

### **INSERT FIGURE 5**

We confirm this result by running the following specification:

$$\ln(w_{i,t}) = \beta \ln(\omega_{f,u,t}) + \beta_{Finance} \ln(\omega_{f,u,t}) \times \mathbb{1}_{Finance} + \mu_f + \mu_u + \mu_t + \mu_p + \epsilon_{i,t}$$
 (7)

where  $w_{i,t}$  is the yearly gross wage of faculty i in year t, while  $\omega_{f,u,t}$  represents the university median student wage premium in field f, in %.  $\mathbb{1}_{Finance}$  denotes an indicator variable for Finance faculty.  $\mu_f$ ,  $\mu_u$ ,  $\mu_t$  and  $\mu_p$  are field, university, year and position fixed effects, respectively. Standard errors are double clustered at the university and year levels.

Table 5 displays the coefficients  $\beta$  and  $\beta_{Finance}$ , which document the average sensitivity of academic pay to student wages across all fields and the incremental elasticity in Finance, respectively. Academic wages appear to be significantly more sensitive to both undergraduate and graduate student wages in Finance than in other fields, as Columns 2 and 4 document for undergraduate and master students, respectively.

More precisely, the coefficients  $\beta$  and  $\beta_{Finance}$  of the variables  $StudentWage_{u,f}$  and  $StudentWage_{u,f} \times \mathbb{1}_{Finance}$  indicate returns to undergraduate and graduate student wages that are three times higher in Finance than in other academic fields. Graduating from a university that has a 10 percentage points higher median wage premium at graduation is associated with a 6% higher wage for Finance faculty, while this gap is only 2% for faculty from other fields. In addition, including the interaction term  $StudentWage_{u,f} \times \mathbb{1}_{Finance}$  results in the Finance-academia premium dropping from 40% to 8% and being no longer significant (Column 2). The Finance-academia wage premium is therefore allocated across faculty mostly according to the pay of their students.

In addition, Columns 5 and 6 indicate that this elasticity is also high in the other top paying fields, Economics and Management Sciences, and partly absorbs their respective premium, while not being as high as in Finance. Therefore, Finance faculty obtain a larger share of the surplus obtained by their students as in other academic fields.

### **INSERT TABLE 5**

### 4 Exploration of Underlying Channel(s)

In this section, we investigate potential channels underlying the pronounced "leakage" from financial industry wages to Finance academia.

### 4.1 Higher University Revenue per Faculty in Finance

We first document that the higher and more skewed future earnings of finance students are associated with higher university revenues per faculty in this field. One interpretation of this relationship is that high wages in the financial industry are raising the marginal productivity of finance professors. We investigate the main sources of university revenues, i.e., tuition fees, donations, and grants.

### 4.1.1 Tuition Revenue per Professor

#### Data

For top 50 universities, we manually collect data on tuition across academic programs at the graduate and undergraduate levels from Internet sources. We complete this dataset with information on the number of students per program and university using data from IPEDS. Finally, the number of research-faculty per field is from our central dataset.

We compute the average tuition revenue per research-faculty in field f and university u by computing the weighted sum of tuition revenues across all programs p in each field as follows:

$$Tuition/Faculty_{f,u} = \frac{\sum_{p=1}^{N} Tuition_p \times \#Students_p}{\#Faculty_f}$$
(8)

### Results

Panel A in Figure 6 displays the results. We observe a positive correlation between the average tuition per research faculty and faculty relative wage. Tuitions per research faculty are twice higher in Finance than in other fields on average.

Note that after tuition, state funding is the main source of revenues for public universities. This funding is typically a function of enrolment, which further amplifies the benefits of having a large number of students per faculty, as is the case in finance.

### INSERT FIGURE 6

### 4.1.2 Donations and Endowment Income

Donations are an important source of revenues for universities both through immediate use and endowment accumulation, which in turn produces income. This source of revenue is particularly important for the high research intensity universities. Thus, as per 2015, the top 10 largest public universities endowments total USD \$76 bn.

#### Data

We obtain data on donations from the *Chronicle of Philanthropy*'s database, which lists all donations to non-profit organizations in the U.S. exceeding 1 million dollars. This database provides detailed information on each donation, including the donation amount and a textual description of its intended purpose. Our focus is on donations made to U.S. postsecondary institutions during 2005-2018.

We identify the academic fields benefiting from these donations using information on the department receiving the donation. When this information is not available, we run a textual analysis on the description of the purpose of the donation to match it to an academic field. For example, in 2010, the University of South Carolina at Columbia received a pledge of \$30 million from William and Lou Kennedy to name and establish the Pharmacy Innovation Center. We use the key word *pharmacy* to identify the corresponding field, i.e. Medicine.

Table A4 in the Internet Appendix provides summary statistics on all donations above \$1 million received by universities over the 2005-2018 period. We observe that after Medicine, Finance receives the highest amount of donations.

### Results

Panel B in Figure 6 compares the donation per faculty (scaled) across academic fields. Donation per research faculty is significantly higher in Finance than in other fields, including other business fields.

We calculate donations per research faculty (scaled) in field f as follows:

Donation Intensity<sub>f</sub> = 
$$\frac{\frac{\text{Sum of all donations}_f}{\text{Sum of all donations}}}{\frac{\# \text{ professors}_f}{\text{Total } \# \text{ research faculty}}}$$
(9)

We also find that, on average, fields benefiting from donations corresponds to the donor's industry. Hence, donations disproportionately originate from alumni working in the Finance industry. This is consistent with the literature showing that donors give to their alma mater first, in part to confirm their "sense of identity" (Akerlof and Kranton 2000).

#### 4.1.3 Grants

We exploit information on grants from the 2020 National Science Foundation Higher Education Research and Development survey. The survey collects information on R&D expenditures and sources of funds by field of research across U.S. research universities. We exclude grants dedicated to capitalized equipment as they are not likely to spill over to wages. Grants include both grants from the U.S government and from the private sector.

Figure A12 in the Internet Appendix displays the grant amount scaled by the number of professors in our database. We find that Business receives a lower amount of grants compared to sciences fields, in particular compared to Life Sciences and Engineering. In these fields, grant money is largely used for experiment material. However, compared to non-science fields, the scaled amount of grant is similar and is partly driven by grants from the private sector.

# 4.2 From University Revenues to Faculty Wages: Possible Mechanisms

Higher pay in Finance academia likely results from Finance faculty receiving a fraction of the additional university revenues we observe in Finance academia. We discuss possible mechanisms that can account for Finance faculty receiving a share

of these additional revenues. These mechanisms are competition for talent within academia, outside option, and fairness.

### 4.2.1 Competition for Talent

We investigate competition for academic talent across universities by exploiting measures of research impact as a proxy for academic talent. We also rationalize our findings of higher returns to talent in Finance academia by documenting a limited supply of PhD graduates in Finance compared to other fields.

#### Data

We exploit measures of research impact from the bibliographic database Scopus linked with our public university database, as described in Section 3. Scopus provides information on academic publications, including articles published in academic journals and books from over 30 major publishers. This ensures that our analysis includes research output across all fields, including those where faculty research is predominantly focused on book writing. This merged database includes more than 158,000 faculty-year observations, representing 50,902 professors across 267 public universities.

Table 6 presents summary statistics on the h-index, number of citations, and publication counts across fields. In Finance, the average number of citations, h-index, and publications are 275, 5, and 11, respectively. In contrast, these figures are significantly higher in Physics, reaching 2,936 for citations, 21 for the h-index, and 106 for publications, and lower in Humanities, where the average number of citations is 33. This disparity highlights the heterogeneity in the research production function across different academic fields.

### **INSERT TABLE 6**

#### Returns to Research Impact

We employ three complementary measures of research impact: total career citation counts, the h-index and the i10 index, which quantifies the number of publications with at least 10 citations. For each measure, we compute quintiles

within each field and academic rank. The objective is to control for heterogeneity in the research production function across fields and positions. Next, we run the following specification:

$$\ln(w_{i,t}) = \sum_{i=1}^{5} \beta_i q_i + \sum_{i=1}^{5} \beta_{i,Finance} q_i \times \mathbb{1}_{Finance} + \mu_f + \mu_u + \mu_t + \mu_p + \epsilon_{h,t}$$
 (10)

where  $q_i$  corresponds to the citation, h-index or i-10 quintile i within a given field.

Figure 7 illustrates the higher returns to research impact in Finance compared to other academic fields. The Figure plots the coefficients  $1+\beta$  and  $1+\beta+\beta_{Finance}$  across quintile i for citation counts (Panel A) and h-index (Panel B).

### INSERT FIGURE 7

We confirm this result by running the following specification:

$$\ln(w_{i,t}) = \beta \text{Quintiles}_i + \beta_{Finance} \text{Quintiles}_i \times \mathbb{1}_{Finance} + \mu_f + \mu_u + \mu_t + \mu_p + \epsilon_{i,t}$$
 (11)

where  $w_{i,t}$  is the yearly gross wage of faculty i in year t, while  $Quintiles_i$  represents the within field research output quintiles of faculty i.  $\mathbb{1}_{Finance}$  denotes an indicator variable for being a Finance faculty.  $\mu_f$ ,  $\mu_u$ ,  $\mu_t$  and  $\mu_p$  are field, university, year and position fixed effects, respectively. Standard errors are double clustered at the university and year levels.

Results in Table 7 suggest higher returns to research impact in Finance than in other fields. Column 1 confirms that the Finance academia wage premium on this sample, which amounts to 50%, is of the same magnitude as in our full sample. Columns 2, 3 and 4 indicate that academic wages correlate positively with research impact across our three measures. In addition, the coefficient of the interaction term suggests that returns to research impact are twice larger in Finance as in other fields. Finally, we show in Columns 5 and 6 that these higher returns to research impact are also observed in Economics and Management Sciences, albeit to a lesser extent.

### INSERT TABLE 7

These results are consistent with universities competing for a limited pool of research active professors in Finance, and that this competition is more intense than in other academic fields.

#### PhD Pool

One possible factors driving the higher returns to research output we observe in Finance could be a limited supply of PhD graduates. We exploit data on the number of PhD students across fields from IPEDS and on the academic placement rate from the Survey of Earned Doctorates, which is an annual census conducted by the National Center for Science and Engineering Statistics. We take the average academic placement rate across the 2010 to 2018 surveys and the average number of PhD degrees granted across field over the same period.

Figure 8 plots the ratio of PhD graduates per faculty versus the academic placement rate across fields. While the share of PhD graduates joining an academic career amounts to more than 70% in business fields, including finance, it is significantly lower in other academic fields. In addition, the number of Finance PhD student per faculty per professor is significantly lower than in other fields.<sup>12</sup>

### **INSERT FIGURE 8**

### 4.2.2 Industry Outside Option

Another reason for Finance faculty to have significant bargaining power is the existence of an outside option in the Finance industry, where compensation is high. We assess this hypothesis by empirically investigating whether faculty working in MSAs with a major financial center are better paid. Despite the typically higher cost of living in these areas, we do not observe a higher wage premium for Finance faculty working in these areas, as Columns 1 and 2 in Table 8 indicate. In addition,

<sup>&</sup>lt;sup>12</sup>A related question is why are the numbers of phd graduates across fields not adjusting for the associated job vacancies in the corresponding field in the medium to long run? While institutional rigidities or incentives might be important ingredients, we do not take a stance on the exact friction at play.

the wage elasticity to student earnings is also not significantly different, as shown in Columns 3 and 4.

### **INSERT TABLE 8**

### 4.2.3 Fairness

We now consider whether universities share a fraction of their additional revenues with Finance faculty based on a fairness motive (Edmans et al. 2023).

Such an hypothesis would be consistent with the absence of "superstar" effects we document. Superstar effects would imply a skewed distribution of wages at the very top of the distribution. However, as Figure 2 documents, the Finance-academia wage premium plateaus at the top of the wage distribution.

In addition, we observe that wages are relatively homogenous within university and field. Hence, returns to student earnings are homogenous across positions in the Finance industry.

#### 4.2.4 Incentives

Incentives could account for higher wages if returns to effort or the cost of effort are higher in Finance, leading universities to pay higher wages to better incentivize Finance professors. However, we find that returns to research impact are not higher in Finance than in other fields within universities, i.e., once controlling for university fixed effects. Alternatively, incentives could also imply an increasing premium over the career to increase the benefits of staying in academia and getting the tenure. However, the Finance academia premium decreases with experience, as Table 2 indicates. These findings suggest that incentives are not the main transmission channels for higher university revenues to higher pay in Finance academia.

### 5 Conclusion

This paper documents a wage premium that amounts to close to 50% for Finance professors. This premium is concentrated in the top of the wage distribution, has

been increasing over the 2010-2018 period, and is higher for assistant professors and in top schools.

We investigate possible factors for this Finance-academia wage premium. Our central result is that wages in Finance academia are three times more sensitive to students' lifetime earnings than in other academic fields. We present evidence suggesting that higher students' earnings may lead to higher university revenues per faculty. Finance faculty's bargaining power, as well as fairness concerns within universities, may account for Finance faculty obtaining a share of these additional university revenues. Therefore, our findings suggest that market forces can account for a pronounced spillover from the industry to faculty pay in Finance.

Consequently, the Finance academia premium is allocated disproportionately to professors whose students are paid the most. This could be viewed as efficient, particularly if it ensures that the most talented professors are placed where their monetary value addition is maximized. It may also serve as an incentive to attract talented undergraduate students into academic careers in Finance. However, the decreasing premium with experience raises questions about the long-term incentives for Finance academics. More generally, heterogeneity in academic pay across fields might amplify distortions implied by the rising inequalities observed over the last four decades, through the allocation of academic talent within and across fields.

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# 6 Figures

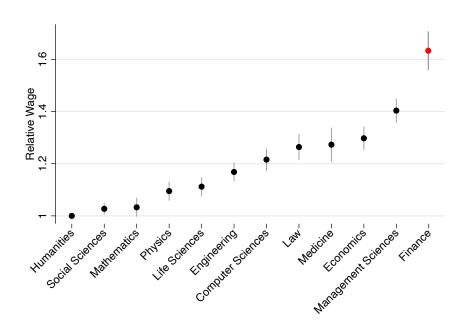


Figure 1. The Finance-Academia Wage Premium

This figure displays the wage premium of each academic field relative to Humanities. It plots the coefficient of the field indicator dummies + 1 in OLS regressions in which the dependent variable is the log of the yearly gross wage that corresponds to the 9 month base salary. Each regression also includes university times year and position fixed effects. The bars indicate 95% confidence bounds based on standard errors double clustered at the year and university levels. The sample comprises around 195,000 faculty-year observations from over 75,000 research faculty from public and private 4-year postsecondary research institutions in the U.S. over the 2005-2018 period.

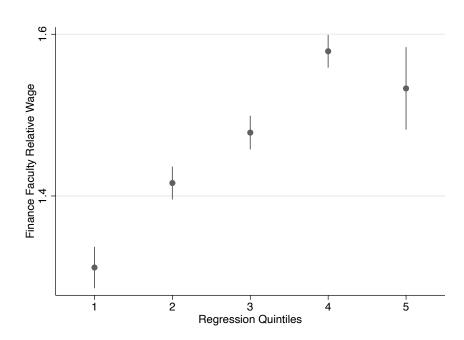


Figure 2. The Finance-Academia Premium across Wage Quintiles

This figure plots the Finance academic wage premium across wage quintiles. The black dots indicate the coefficients of the Finance academic field dummy interacted with quintile fixed effects  $+\ 1$  in OLS regressions in which the dependent variable is the log of the yearly gross wage (9 month base salary). Each regression also includes university, year, and position fixed effects. Quintiles are computed within each field and position.

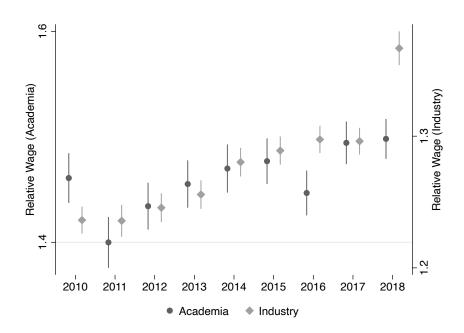


Figure 3. Evolution of the Finance-Academia Wage Premium (2010-2018)

This figure plots the evolution of the Finance academic and industry premia over the 2010-2018 period. The black dots indicate the coefficients of the finance academic field dummy interacted with year fixed effects + 1 in OLS regressions in which the dependent variable is the log of the yearly gross wage (9 month base salary). Each regression also includes university times year and position fixed effects. The sample comprises 195,000 faculty-year observations from around 75,000 tenure-track faculty from public and private 4-year postsecondary research institutions in the United States in an unbalanced panel over the 2010-2018 period. The grey dots indicate the coefficients of a finance industry dummy interacted with year fixed effects + 1 in OLS regressions in which the dependent variable is the log of the yearly gross wage. We exploit data on yearly gross wage across industries from the American Community Survey (ACS). The sample consists of individuals with at least an undergraduate degree who are employed in the industry and includes approximately 6 million observations from 2010 to 2018. Individuals with industry codes 7870-7890 associated with post-secondary institutions are excluded. Finance industry is defined as industry codes 6870-6992 in the census industry classification. Each regression also includes age and levels of education fixed effects. The bars indicate 95% confidence bounds based on standard errors double clustered at the year and university levels.

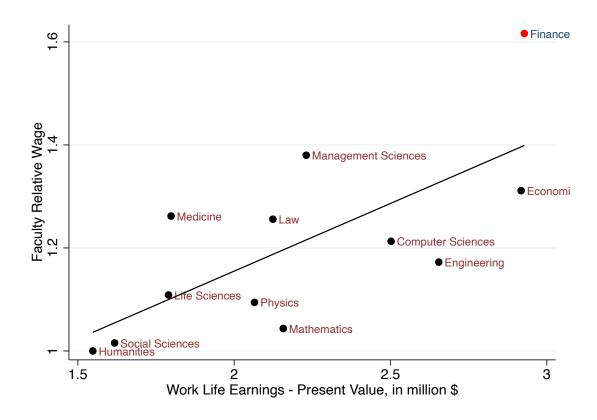


Figure 4. Faculty Wages versus Student Expected Earnings across Fields

This figure illustrates the relationship between the academic wage premium across various academic fields and the present value of graduate students' work-life earnings in those fields. We derived data on students' work earnings from the American Community Survey, which offers individual-level details on wages, demographics, and fields of study, spanning the years 2010 to 2018. For each age group within each field, we calculated the average annual income. The present value of work-life earnings represents the sum of these average incomes from ages 25 to 64, discounted annually at a rate of 3%.

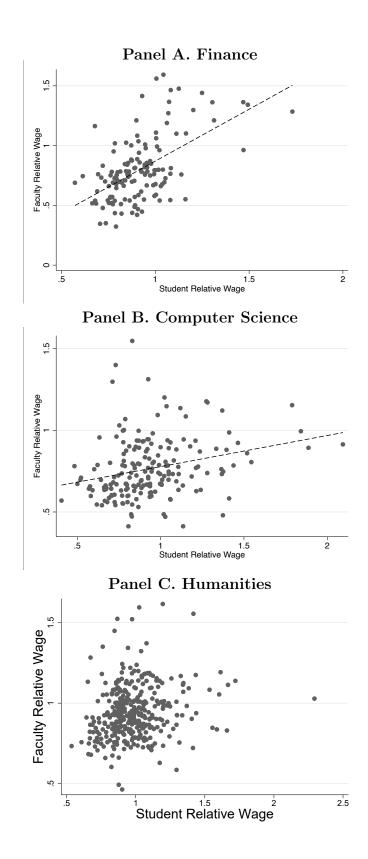


Figure 5. Elasticity of Faculty Wages to Student Wages: Across University Analysis

This figure illustrates the relationship between research faculty and their student wages across universities in the Finance, Computer Sciences and Humanities fields. Each dot on the graph represents one university. The horizontal axis represents the relative wage premium of students graduating from one university and field, while the vertical axis represents the wage premium of the research faculty in this same university and field. The university-field student wage data comes from the College Scorecard, which collects the median wage one year after graduation for each university and program.

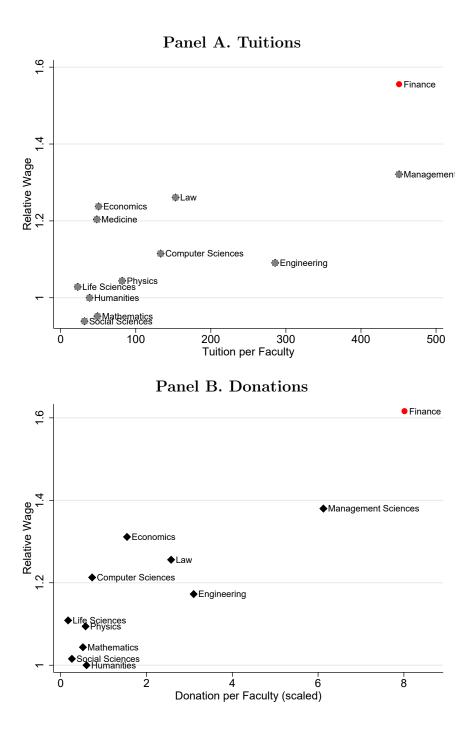


Figure 6. Faculty Wages and Per-Faculty University Revenues across Fields

Panel A illustrates the relationship between the academic wage premium across fields and tuitions per research faculty. We compute tuitions per research faculty using public data on tuitions, IPEDS data on number of students, and our dataset on the number of research faculty across field. Panel B illustrates the relationship between the academic wage premium and donations. In both Panels, the wage premium for each academic field is the same as in Figure 1. The scaled donation per faculty is the share of donations to a field relative to the share of professors in the field using our data. Donation data comes from the Chronicle of Philanthropy database of charitable gifts and includes information on all donations above \$1 million made to U.S. universities in the period 2005-2018.

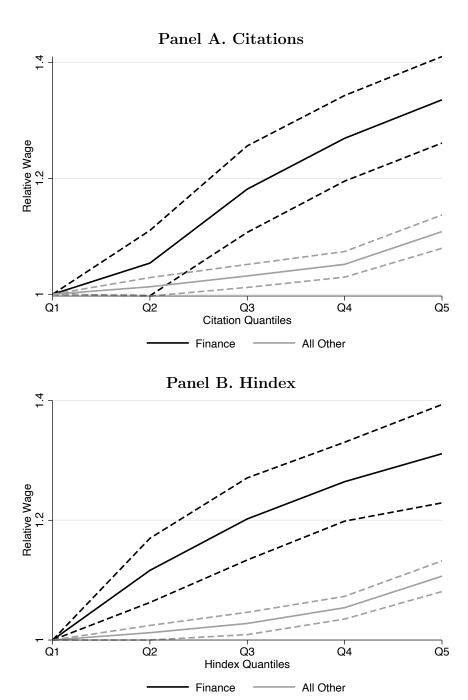


Figure 7. Wage Returns to Research Output

Panel A and B compare returns to research output in finance versus other fields. Research output is measured using citation and Hindex quintiles, in Panels A and B, respectively. Quintiles are defined within fields and positions. The graphs plot the coefficients  $1 + \beta_i + \beta_{i,f}$  in black and  $1 + \beta_i$  in grey in the regression  $\ln(w_{h,t}) = \sum_{i=1}^{5} \beta_i q_i + \sum_{i=1}^{5} \beta_{i,f} \mathbb{1}_f q_i + \mu_f + \mu_u + \mu_p + \mu_t + \epsilon_{h,t}$ . The dependent variable  $\ln(w_{h,t})$  is the log of the yearly base salary. The model includes university, field, position and year fixed effects. Dashed lines indicate 95% confidence bounds based on standard errors double clustered at the year and university levels.

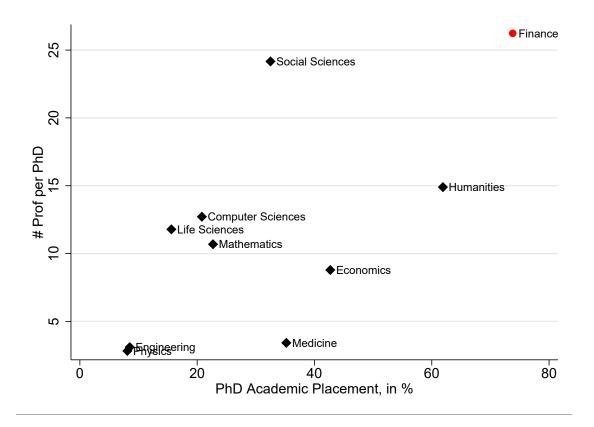


Figure 8. Supply of PhDs across Fields

This figure displays the ratio of PhD students to facultyversus the academic placement rate. The ratio of PhD students to professors for each field equals the total number of PhD students in this field divided by the total number of professors in this field included in our main sample. The data on the number of PhD students is from IPEDS. We take the yearly average of the number of PhD degrees granted across academic fields over our sample period (2010-2018). The academic placement rate across fields comes from the Survey of Earned Doctorates, which is an annual census conducted by the National Center for Science and Engineering Statistics. We take the average academic placement rate across the 2010 to 2018 surveys.

## 7 Tables

Table 1. Summary Statistics: Faculty Wages

		G	ross Bas	e Salary	in 2019	\$	
	Mean	Median	$\mathbf{SD}$	p10	p90	p95	# Obs.
Total Sample	111,429	94,000	171,293	60,923	180,000	220,000	195,348
By Academic Field							
Finance & Accounting	169,838	$153,\!650$	$70,\!645$	$92,\!886$	265,735	300,249	5,760
Law	148,029	134,912	$73,\!618$	$73,\!534$	$238,\!452$	277,716	5,114
Medicine and Health	$138,\!525$	$110,\!566$	139,167	66,982	234,600	299,810	31,947
Management Sciences	130,080	117,195	58,911	72,626	198,730	241,700	6,764
Economics	121,906	108,014	69,227	66,646	197,303	235,817	$6,\!287$
Computer Sciences	111,985	99,666	200,604	66,200	164,462	194,817	9,971
Engineering	111,421	92,717	559,314	67,000	161,405	$191,\!542$	13,339
Life Sciences	107,756	$95,\!189$	49,725	63,007	167,898	200,000	$35,\!357$
Physics	107,297	$96,\!452$	46,671	62,100	164,326	191,717	5,976
Mathematics	93,742	82,679	42,316	56,690	145,550	173,720	$9,\!365$
Social Sciences	92,969	$82,\!179$	37,932	59,922	138,168	167,092	39,628
Humanities	83,491	71,669	83,554	54,100	123,032	151,500	21,313
By Position							
Full Professor	143,082	$126,\!438$	68,910	82,321	220,420	$264,\!433$	$67,\!593$
Associate Professor	99,223	89,080	44,606	$65,\!308$	137,800	168,960	$45,\!663$
Assistant Professor	$93,\!655$	78,460	$277,\!224$	57,000	140,750	182,000	65,049
By University Rank							
Top 50	132,168	115,000	132,040	69,380	213,100	248,101	34,904
Below Top 50	106,917	$90,\!156$	178,376	60,000	168,485	208,108	160,444
R1	125, 131	106,070	95,400	$67,\!587$	203,028	245,000	104,184
Non R1	95,770	82,292	228,064	57,542	141,998	173,247	91,164
By University Type							
Public	113,022	95,767	172,533	62,256	181,307	222,200	174,681
Private	97,963	78,400	159,803	55,000	162,000	197,000	20,667

This table presents summary statistics on faculty wages across various academic fields, positions, university ranks, and types. The reported wages represent the 9-month base salary, exclusive of summer stipends and bonuses. Our dataset is an unbalanced panel consisting of 195,00 faculty-year observations from over 75,000 research professors at more than 1,450 U.S. universities that offer bachelor's degrees, covering the period from 2005 to 2018. For public universities, we gather faculty wage data through public record requests in compliance with state-level freedom of information laws. We identified academic fields using Scopus and the James Hasselback's faculty datasets. We complete this sample with data on faculty salaries in private and other public universities obtained from the U.S. Department of Labor's dataset of green card and H1B applications.

Table 2. The Finance-Academia Wage Premium

	All			Professor Split				University Split		
			Assistant	Associate	Full	Experience	Top 50	R1	Business Schools	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	
		Par	nel A. Deper	ndent Varia	ble: Log	of Base Salara	ay			
1 Finance	0.45*** (0.03)	0.50*** (0.03)	0.60*** (0.03)	0.53*** (0.03)	0.41*** (0.03)	0.59*** (0.03)	0.64*** (0.03)	0.62*** (0.03)	0.21*** (0.02)	
Controls: See Panel C										
Observations	188,351	186,484	63,400	44,961	67,075	193,140	33,204	101,734	11,993	
$R^2$	0.28	0.47	0.43	0.33	0.27	0.36	0.43	0.39	0.61	
Panel B.	Depende	ent Varial	ble: Log of	Total Comp	ensation,	including Sur	mmer Sti	pend and	Other	
1_Finance	0.42*** (0.05)	0.49*** (0.04)	0.59*** (0.06)	0.51*** (0.04)	0.44*** (0.04)	0.59*** (0.05)	0.72*** (0.03)	0.61*** (0.04)	0.20*** (0.02)	
Controls: See Panel C										
Observations $\mathbb{R}^2$	$76,593 \\ 0.24$	$76,\!570$ $0.52$	$17,886 \\ 0.48$	$20,736 \\ 0.45$	$35,038 \\ 0.43$	$76,570 \\ 0.45$	$17,054 \\ 0.52$	$45,915 \\ 0.48$	$5,068 \\ 0.64$	
			Pai	nel C. Conti	rol Varial	oles				
Fixed Effects										
University $\times$ Year	-	Yes								
Position	Yes	Yes	-	-	-	Yes	Yes	Yes	Yes	
Non U.S. Citizen	Yes									

This table reports the Finance-academia wage premium across positions and types of university. We estimate OLS regressions, where the dependent variable is the log of the yearly 9-month base salary in Panel A, and total compensation in Panel B. Total compensation includes the summer stipend, as well as grants and bonuses. Columns 1 and 2 present the Finance-academia wage premium for the whole sample, without and with university × year fixed effects. Other columns show the premia for the following subsamples: assistant professors (Column 3), associate professors (Column 4) and full professors (Column 5). Column 6 is estimated on the whole sample and includes an interaction with dummies for years of experience. Columns 7, 8 and 9 display the premium for top 50 universities according to the U.S. News MBA Ranking, doctoral universities with very high research activity according to the Carnegie Classification, and business schools, respectively. Our dataset is an unbalanced panel consisting of 195,00 faculty-year observations from over 75,000 research professors at more than 1,450 U.S. universities that offer bachelor's degrees, covering the period from 2005 to 2018. Standard errors are doubled clustered at the university and year levels and reported in parentheses. The symbols \*, \*\*, and \*\*\* denote statistical significance at the 10%, 5%, and 1% levels, respectively.

Table 3. Summary Statistics: Student Future Wages

	Mean	Median	$\mathbf{SD}$	p10	p90	# Obs.
Panel	A - Yea	rly Income	e Across	Education	on Fields	
		rican Comn				
Total Sample	85,202	66,000	75,766	28,000	150,000	1,054,746
By Academic Field	,	•	,	,	•	, ,
Finance	131,539	97,000	118,888	37,000	295,000	19,749
Law	96,135	70,000	90,936	25,500	180,000	1,854
Medicine	80,237	70,000	54,729	30,000	130,000	70,111
Management Sciences	101,812	78,000	91,241	30,000	180,000	145,379
Economics	136,185	96,000	130,164	30,000	325,000	22,764
Computer Sciences	108,094	95,000	78,408	39,000	175,000	35,444
Engineering	118,324	100,000	90,410	38,000	200,000	124,146
Life Sciences	80,361	65,000	68,321	25,000	140,000	56,400
Physics	95,802	80,000	80,141	27,000	167,000	30,999
Mathematics	97,614	77,000	86,906	28,700	170,000	20,168
Social Sciences	73,132	59,000	64,997	25,000	125,000	127,552
Humanities	72,420	57,000	68,213	22,000	123,000	104,193
D 1D 4	<b>a</b> 1	. 3.5.11	<b>-</b>		T31 11 A 35	
Panel B - 1-year post		on Media ce: College			Fields AN	ID Universitie
	50ui	ce. Coneye	эсотесити	Dataset		
Total Sample	40,586	37,901	14,143	25,634	60,185	11,856
By Academic Field						
Finance	46,274	45,721	9,417	$36,\!852$	57,348	999
Law	34,951	33,993	$6,\!572$	25,194	41,700	152
Management Sciences	41,247	41,006	8,709	31,742	50,160	1,637
Economics	47,022	45,671	10,686	36,052	61,065	500
Computer Sciences	53,931	52,118	17,209	33,984	71,741	1,064
Engineering	59,120	60,309	9,724	47,128	68,814	570
Life Sciences	29,499	29,336	5,607	22,804	36,347	1,072
Physics	38,141	38,289	7,966	29,685	46,110	391
Mathematics	46,779	44,433	12,473	33,993	61,598	458
Social Sciences	31,857	31,705	5,325	26,545	37,998	1,556
TT 1.1	- ,	- ,	-,	-,	,	,,,,,,

This table provides summary statistics on industry wages by undergraduate major in Panel A and the median undergraduate student wages one year after graduation in Panel B. The data for industry wages by undergraduate major are sourced from the American Community Survey, spanning the period from 2010 to 2018. Our sample includes individuals who have obtained at least a master's degree, are under the age of 66, earn a yearly gross wage and salary income exceeding \$10,000, and are not employed in post-secondary institutions (excluding industry codes 7870, 7880, and 7890). The information regarding student wages one year post-graduation is derived from the College Scorecard dataset, provided by the U.S. Department of Education, covering the years 2017-2018.

6,273

21,488

35,777

27,826

28,460

Humanities

1,373

Table 4. The Wage Premium of Graduate Students with a Finance Degree

	All	Bottom 10%	Median	Top 10%
	(1)	(2)	(3)	(4)
1.Finance Major	0.21*** (0.01)	0.18*** (0.01)	0.23*** (0.00)	0.51*** (0.01)
Fixed Effects				
Year	Yes	Yes	Yes	Yes
Demographics	Yes	Yes	Yes	Yes
Observations	$772,\!560$	$79,\!454$	149,964	$74,\!485$
$R^2$	0.18	0.04	0.22	0.11

This table reports the wage premium of graduate students with a Finance degree. We estimate OLS regressions, where the dependent variable is the log of the yearly income. Column 1 presents finance academia wage premium for the whole sample. Other columns show the premia at the bottom 10%, median and top 10% of the wage distribution. Demographic controls include fixed effects for age deciles, gender, race, work location type, marital status and level of education. Standard errors are doubled clustered at the field and year levels and reported in parentheses. The symbols \*, \*\*, and \*\*\* denote statistical significance at the 10%, 5%, and 1% levels, respectively.

Table 5. Elasticity of Academic Wages to Student Wages across Fields

	Log(Faculty Base Salary)										
Student Earnings Sample	Underg	raduate	Ma	ster	Undergraduate						
	(1)	(2)	(3)	(4)	Undergrad (5)  0.42*** (0.03) 0.22*** (0.02)  0.12*** (0.02)  0.15*** (0.02)	(6)					
$\mathbb{1}_{\mathrm{Finance}}$	0.41*** (0.03)	0.08 (0.06)	0.49*** (0.04)	0.18** (0.07)	· · ·	0.08 (0.06)					
Student Wage $_{university, field}$	0.24*** $(0.02)$	0.23*** (0.02)	0.17*** (0.02)	0.16*** (0.02)		0.21*** (0.02)					
Student Wage_university, field $\times$ $\mathbb{1}_{\text{Finance}}$		0.43*** (0.07)		0.34*** (0.08)		0.45*** (0.07)					
$\mathbb{1}_{ ext{Economics}}$						$0.06 \\ (0.05)$					
$\mathbb{1}_{ ext{Management Sciences}}$						0.02 $(0.04)$					
Student Wages_university, field $\times$ $\mathbbm{1}_{\text{Ecomomics}}$						0.06 $(0.04)$					
Student Wages_university, field $\times \mathbbm{1}_{Management Sciences}$						0.15*** (0.04)					
Fixed Effects											
Position $\times$ Year FE	Yes	Yes	Yes	Yes		Yes					
Experience Quintiles	Yes	Yes	Yes	Yes		Yes					
Observations $R^2$	$157,515 \\ 0.37$	$157,\!515 \\ 0.37$	$\begin{array}{c} 115,931 \\ 0.36 \end{array}$	$\begin{array}{c} 115,931 \\ 0.37 \end{array}$	$157,515 \\ 0.37$	$157,515 \\ 0.38$					

This table reports the coefficients of OLS regressions, where the dependent variable is the log of the yearly faculty base salary. Columns 1 and 2 demonstrate the relation between faculty wages and the median wage of undergraduate students one year after graduation, while Columns 3 and 4 show the relation between faculty wages and the median wage of graduate students one year after graduation. Data on student earnings per university and field are from the 2017 and 2018 College Scorecard datasets that we match with our dataset on academic wages. The variable is the university within field relative premium, in %, calculated using the university-field median of the wage distribution one year post graduation. The final sample includes around 65,500 professors across 1,075 universities. Standard errors are double clustered at the university and year levels and reported in parentheses. The symbols \*, \*\*, and \*\*\* denote statistical significance at the 10%, 5%, and 1% levels, respectively.

Table 6. Summary Statistics: Research Productivity

	Mean	Median	$\mathbf{SD}$	p10	p90	# Obs.		
	Panel	A - Citat	ions					
Total Sample	986	141	2,714	1	2,554	171,796		
By Academic Field			,		,	,		
Finance & Accounting	275	53	828	0	652	5,584		
Law	1,464	225	3,689	3	3,928	7,313		
Medicine and Health	1,337	288	3,147	3	3,638	28,808		
Management Sciences	477	79	1,577	0	1,153	6,238		
Economics	337	98	688	1	886	4,086		
Computer Sciences	980	258	2,093	3	2,746	8,346		
Engineering	876	241	1,775	2	2,325	9,831		
Life Sciences	1,880	719	3,687	28	4,579	35,473		
Physics	2,936	1,231	5,354	28	7,081	5,328		
Mathematics	404	102	1,109	4	908	6,814		
Social Sciences	295	37	1,156	0	633	40,263		
Humanities	$\frac{290}{33}$	6	1,150 $125$	0	68	13,712		
				O	00	10,712		
Panel B - H-Index								
Total Sample	10	6	12	1	25	171,796		
By Academic Field		_						
Finance & Accounting	5	3	5	0	11	$5,\!584$		
Law	12	7	14	1	30	7,313		
Medicine and Health	13	8	13	1	31	28,808		
Management Sciences	6	4	7	0	14	$6,\!238$		
Economics	6	5	6	1	14	4,086		
Computer Sciences	11	8	10	1	25	8,346		
Engineering	11	8	10	1	24	9,831		
Life Sciences	17	13	14	2	34	$35,\!473$		
Physics	21	18	16	2	42	$5,\!328$		
Mathematics	7	5	7	1	15	6,814		
Social Sciences	5	3	7	0	12	40,263		
Humanities	2	1	2	0	4	13,712		
	Panel C	C - Publica	ations					
T-4-1 C1-	20	1 5	c.r	1	01	171 700		
Total Sample	36	15	65	1	91	171,796		
By Academic Field	11	-	1.4	4	00	F F0.4		
Finance & Accounting	11	7	14	1	23	5,584		
Law	60	21	136	3	135	7,313		
Medicine and Health	45	22	66	2	115	28,808		
Management Sciences	14	9	18	1	34	6,238		
Economics	19	13	22	1	43	4,086		
Computer Sciences	50	28	62	3	122	8,346		
Engineering	62	35	77	3	147	9,831		
Life Sciences	50	31	64	5	113	$35,\!473$		
Physics	106	66	143	11	221	5,328		
Mathematics	27	16	32	3	63	6,814		
Social Sciences	14	7	21	1	33	40,263		
Humanities	6	4	8	1	14	13,712		

This table reports summary statistics on research productivity measures by academic field for the sample of research tenure-track faculty obtained through public record requests. Panels A, B and C present summary statistics for the number of citations, h-index and the number of publications, respectively. Academic fields are determined using Scopus and the James Hasselback's faculty datasets. Data on the number of citations, h-index and the number of publications are derived from Scopus.

Table 7. Elasticity of Academic Wages to Research Output

	Log(Faculty Base Salary)									
Research Impact Measure		Citations	H-index	I10 Index	Citations					
	(1)	(2)	(3)	(4)	(5)	(6)				
1_Finance	0.50*** (0.04)	0.26*** (0.03)	0.31*** (0.03)	0.29*** (0.03)	0.50*** (0.03)	0.27*** (0.03)				
Quintiles		0.06*** (0.01)	0.06*** (0.00)	0.05*** (0.00)	0.05*** $(0.00)$	0.06*** (0.01)				
$\label{eq:Quintiles} \\ \text{Quintiles} \\ \times \\ 1.\\ \text{Finance}$		0.07*** (0.01)	0.06*** (0.01)	0.07*** (0.01)		0.07*** (0.01)				
1_Economics					0.20*** (0.03)	0.08** (0.03)				
$Quintiles \times 1. Economics$						0.04*** (0.01)				
1_Management Sciences					0.26*** (0.02)	0.06* (0.03)				
$\label{eq:Quintiles} \mbox{Quintiles} \times \mbox{1.Management Sciences}$						0.06*** (0.01)				
Fixed Effects										
Position × Year FE	Yes	Yes	Yes	Yes	Yes	Yes				
Experience Quintiles	Yes	Yes	Yes	Yes	Yes	Yes				
Observations $R^2$	$131,721 \\ 0.33$	$131,721 \\ 0.37$	$131,721 \\ 0.37$	$131,721 \\ 0.36$	$131,721 \\ 0.35$	$131,721 \\ 0.39$				

This table reports the coefficients of OLS regressions, where the dependent variable is the log of faculty base salary. Columns 2, 3, and 4 interact citation, h-index and i10 quintiles, respectively, with a finance dummy. These three quintile measures of research impact are calculated within field and academic rank. Data are from the merge of our academic wage database with Scopus and include 131,721 faculty year observations representing 50,902 professors across 267 public universities. Columns 5 and 6 reproduce the analysis adding dummies for Economics and Management Sciences. Standard errors are clustered at the university and year levels and reported in parentheses. The symbols \*, \*\*, and \*\*\* denote statistical significance at the 10%, 5%, and 1% levels, respectively.

Table 8. The Finance-Academia Wage Premium and the Elasticity of Academic Wages to Student Wages in Financial Centers

	$\mathbf{Log}(\mathbf{Academic}\ \mathbf{Wage})$						
	Base	Base Salary Total Compensation Base Salary		Base Salar	ary		
	(1)	(2)	(3)	(4)	(5)	(6)	
1 <sub>Finance</sub>	0.28** (0.12)	0.31** (0.12)	0.37*** (0.08)	0.41*** (0.03)	0.08 (0.06)	0.10 (0.06)	
Student Wages $_{\rm university, \; field}$				0.23*** (0.02)	0.23*** (0.02)	0.24*** (0.02)	
Student Wages_university, field $\times$ $\mathbbm{1}_{\textsc{Finance}}$					0.42*** (0.07)	0.41*** (0.06)	
1Financial Center						0.04 $(0.02)$	
Student Wages_university, field $\times$ $\mathbb{1}_{\text{Financial Center}}$						-0.10** (0.04)	
Student Wages_university, field $\times$ $\mathbb{1}_{\text{Finance}} \times \mathbb{1}_{\text{Financial Center}}$						-0.15 $(0.21)$	
Fixed Effects							
University × Year FE	-	Yes	-	-	-	-	
Position × Year FE	Yes	Yes	Yes	Yes	Yes	Yes	
Non U.S. Citizen	Yes	Yes	Yes	- 157515	- 157515	- 157 515	
Observations $R^2$	12,386 $0.27$	12,215 $0.40$	$9,872 \\ 0.18$	157,515 $0.38$	157,515 $0.38$	157,515 $0.38$	

This table reports the Finance-academia wage premium and the elasticity of academic wages to student wages in financial centers. We estimate OLS regressions, where the dependent variables are the log of the yearly 9-month base salary in all Columns except for Column 3 and total compensation in Column 3. Total compensation includes the summer stipend, as well as grants and bonuses. Columns 1 and 3 present the Finance-academia wage premium without university × year fixed effects, while Column 2 presents the Finance-academia wage premium with university × year fixed effects. Columns 4-6 demonstrate the relation between faculty wages and the median wage of undergraduate students one year after graduation. The sample in Columns 1-3 consists of 4,774 faculty members from 128 universities in two metropolitan statistical areas: Chicago-Naperville-Elgin (CBSA code 16980) and New York-Newark-Jersey City (CBSA code 35620). Standard errors are doubled clustered at the university and year levels and reported in parentheses. The symbols \*, \*\*, and \*\*\* denote statistical significance at the 10%, 5%, and 1% levels, respectively.