The Academic Origins of Economics Faculty

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Abstract

In this paper, we document the educational pedigrees of faculty at the top 96 economics programs in the United States. We use roster data of 96 top U.S. economics departments to provide a comprehensive update and expansion on data regarding the academic origins—both undergraduate and doctoral—of tenure-track faculty. Nearly 60% of our sample attended a top 15 university for their PhD; over a third attended a top six university for their PhD; and the mean (median) ranking of faculty doctoral alma maters is 15 (10). We also find that over a third of faculty with U.S. undergraduate degrees received them at a top 15 university.

JEL Codes: J2, J45, I23

1 Introduction

Individuals who would like to become tenure-track professors should have a realistic picture of the competitiveness of the job market. Competition at a Top 10 department will look different than competition at departments ranked 40 and 80.[1] But aspiring academics can better understand the competition they will likely face by knowing the qualifications of current faculty.

Of course, just because a job market candidate attends the same undergraduate and doctoral institutions as professors at a target department does not mean that they will be competitive for a position there. They must also do very well academically and be considered a good match for the position, as indicated by the quality of their job market paper, research interests, prior publications, letters of recommendation, and more (Cawley, 2018; Stock and Alston, 2000; Carson and Navarro, 1988). And, of course, an outstanding job market candidate who comes from an academic pedigree of lower caliber than those of recent hires can still be competitive.

These important caveats aside, there is correlational evidence that candidates from higher-ranked Ph.D. programs received more department interviews in the job market (Stock and Alston, 2000). There is also survey evidence from graduate coordinators that undergraduate school ranking often factors into Ph.D. program admissions decisions (Jones et al., 2020). Undergraduates who understand the rough level of academic rigor required to look competitive are better equipped to gauge whether that path is a good fit for them. Those who do feel that that path is a good fit can better judge what kind of doctoral programs to apply to. And doctoral students who ultimately go on the job market can have a better sense of the positions that more likely match their qualifications.

In this paper, we describe the academic origins of current tenure-track professors (which include both pre-tenure faculty and tenured faculty) for the top 96 U.S. economics departments ("ranked departments", as ranked in the 2017 U.S. News and World Report

[1] Competition will also differ at unranked economics departments (including many liberal arts schools), international schools, and departments with non-tenure-track positions, but we do not consider these in this article for the sake of simplicity.

(USNWR) economics rankings). While our results do not speak to the entire set of U.S. universities, they do provide useful information about the top-ranked departments.

To our knowledge, no prior studies have tracked the entire Bachelors-to-Ph.D.-to-tenure-track professor pipeline across a full range of ranked economics departments. Many have examined important pieces of this pipeline, and those we have found will be noted here. Stock and Siegfried (2014) evaluate the undergraduate origins and job market outcomes of Ph.D.s, but they do not stratify academic job outcomes by the ranking of the hiring university). Similarly, Spellman and Gabriel (1978) documents where economics PhD recipients (not professors specifically) received their PhDs and undergraduate degrees for a time period ending in 1974. Formby and Hoover (2002) compare doctoral and hiring program rankings for new academics during the 1998-99 hiring season. Barbezat (1992) shows that Ph.D. graduates from higher doctoral program tiers more often secure jobs at higher ranked economics department tiers. Bryan (2019) examines doctoral origins and hiring outcomes for a very small subgroup of highly sought-after job market candidates. Pieper and Willis (1999) look only at the doctoral origins of professors at 121 universities, Svorenčík (2018) considers the number of faculty produced by ten of the top doctoral programs, Colander (2015) describes the doctoral origins of professors at several top economics departments, Chen (2014) considers the Ph.D. origins of faculty at 15 top economics departments, Svorenčík (2014) focuses on MIT graduates specifically, Wu (2005) considers the 25 top economics departments (and also considers other disciplines), Klein (2005) considers 25 of the top 200 departments, and Wapman et al. (2022) considers a very large number of economics departments (though generally focuses on broad categories of fields, such as social sciences, as opposed to economics per se).[23] Finally, Wei (2022), Schlauch et al. (2018), Stock and Siegfried (2015), Stock et al. (2009), and Siegfried and Stock (2007) describe the undergraduate origins of

[2]Ph.D. origins/networks of faculty have also been studied to a greater or lesser extent in many fields, such as history, business, computer science, finance, law, political science, sociology, English, political science, anthropology, and management (Clauset et al., 2015; Morgan et al., 2018; Way et al., 2016; Bair, 2003; Jones and Xiong, 2021; Segall and Feldman, 2018; Schmidt and Chingos, 2007; Burris, 2004; Headworth and Freese, 2016; Colander and Zhuo, 2015; Fowler et al., 2007; Kawa et al., 2019; Bedeian et al., 2010).

[3]Also related is Amir and Knauff (2008), who use placement to create a new way to rank departments and documents the number of graduates of a department that are in the top 10 of their rankings.

economics Ph.D. graduates in various respects.[4]

In each of these cases, important components of the pipeline are missing for prospective academics who are trying to understand the market. Knowing both the undergraduate and doctoral origins of professors, and across the spectrum of ranked departments–not just for top schools or for academia generally–can help students chart a smarter path to their desired niche of the job market.[5]

While professors in our sample came from 87 of the 96 ranked departments (as well as international universities, unranked departments, and U.S. departments not otherwise included on the USNWR), we find that graduates from the top 15 Ph.D. programs make up more than half of the faculty in the sample (59%), and Ph.D. graduates from Harvard and MIT make up an entire 15% of the sample, or 391 of 2,686.[6] As discussed below, part of the explanation for this could be that higher-ranked Ph.D. programs tend to produce more Ph.D. graduates. Excluding international B.A.s, 63% of faculty in the sample obtained their B.A. from a top 96 university, and 34% obtained their B.A. from a top 15 university.[7] Among domestic B.A.s outside the top 96 universities, 27% are from top 30 liberal arts colleges.[8]

[4]Stock et al. (2006) focuses on Ph.D. students, some of whom do not graduate. Cawley (2018) references a 2011 working paper by Colander in which doctoral origins of professors are described, but this paper is not publicly available.

[5]For a related literature on the importance of rank in the academic pipeline, see, for example, the following: Carson and Navarro (1988) (surveying hiring economics departments about the importance of doctoral program rank and other factors in the application process); Hilmer and Hilmer (2012) (studying how research, mentorship, and doctoral program rank predict early career publications); Hussey et al. (2022) (connecting doctoral program ranking and gender to coauthorship rates); Stock et al. (2000) (evaluating job market outcomes stratified by PhD program rank with basic consideration of undergraduate program rank); McFall et al. (2015) (evaluating job market outcomes stratified by PhD program rank with consideration of country in which undergraduate degree was obtained); Duncan et al. (2000) (studying how being at a top 20 Ph.D. program and earning and employment at a Ph.D.-granting institution); and Siegfried and Stock (1999), and Stock and Siegfried (2001), and Siegfried and Stock (2004) (in all three cases, evaluating job market outcomes stratified by PhD program rank).

[6]In much of the paper, we will use professors of all ranks (Assistant, Associate, and Full) in our analysis. An advantage of this approach (as opposed to focusing only on Assistant professors) is that the sample sizes are larger. A disadvantage is that this includes professors who began their careers a relatively long time ago and who faced a different job market environment than newer professors. Associate and full professors are also more likely to not be at their initial department. In some cases, we restrict our analysis to assistant professors. With that said, our main results using the full sample in Figure 2 are roughly similar to those considering only assistant professors in Figure A.7. See also Panel B of Figure A.10.

[7]As will be noted below, for simplicity and comparability, we use the same ranking for B.A. as for Ph.D.

[8]Rankings are from the most recent USNWR liberal arts colleges rankings (USNWR, 2022). This calculation excludes B.A.s from Barnard, which we consider to be Columbia. The top-30 liberal arts colleges that produce at least four are: Swarthmore (20), Williams (17), Carleton (13), Wesleyan (12), Amherst College (10), Pomona (8), Vassar (6), Wellesley (6), Haverford (5), Macalester (5), Davidson (4), and Grinnell (4).

We find that, on average, assistant professors in ranked departments obtained positions 26 ranks below that of their own doctoral programs (with a range of 89 ranks below to 39 ranks above).[9] We also find that Assistant professors who also obtained undergraduate degrees from ranked departments moved up an average of 16 rankings (range -77 to +90 ranks) from their undergraduate program to their doctoral program. The average doctoral program rankings of assistant professors range from 4.6 (for those teaching at the Top 10 departments) to 27.7 (for those teaching at departments ranked 83-90).

The 96 ranked economics departments generally hire from Ph.D. graduates of the Top 15 (since the majority of professors in our sample come from these programs). However, 13% of professors also attended doctoral departments ranked 16-26 and 13% attended doctoral departments ranked 27-52, while 66% of professors who attended a domestic undergraduate program did so outside of the top 15.[10]

There are several limitations to our study. Because we do not have data on the job outcomes of all economics Ph.D. job market candidates (or all B.A. students), our sample is limited to the highly-selected sample of individuals who are professors at one of the 96 U.S. departments we consider. This limits the questions we are able to answer. In addition, we cannot speak to the B.A. and Ph.D. origins of professors at universities outside the U.S. or professors at the thousands of U.S. institutions that employ academic economists. Our results are thus not representative for the average graduate of an economics Ph.D. program or for the average U.S. economics professor.

This paper proceeds as follows. We first provide details about the data collection and data in Section 2. We then present results on Ph.D. origins in Section 3 and on B.A. origins in Section 4. We conclude in Section 5.

A further 10% appear, but are unranked, in the USNWR economics PhD rankings; of this 10%, the following produce at least four: Delaware (6), American (5), UMass Amherst (4). Among remaining universities (domestic universities not top 30 liberal arts and not in the USNWR economics PhD rankings, either ranked or unranked), the following produce at least four: Dartmouth (14), Miami Ohio (14), BYU (13), William and Mary (13), Tufts (12), Cal Tech (11), Oberlin (11), Wake Forest (7), Reed (6), and Georgia Tech (5).

[9] 26 is the mean; 24 is the median. This and the other calculations in this paragraph exclude observations with a Ph.D. ranked outside of the 138 departments listed in Appendix Table A.1; the calculations are based on the "USNWR" column as opposed to the "Ranking" column, with the 42 universities outside the top 96 being assigned a USNWR ranking of 97.

[10] Nearly half of professors in our sample completed undergraduate studies at a foreign institution.

2 Description of Data

Our dataset includes the name, rank, gender, current university, Ph.D. university, and B.A. university of the tenure-track faculty of the top 96 USNWR-ranked departments. The sample consists of faculty in economics departments only. See Appendix Table A.1 for a list of these departments. To obtain this information, in the Fall of 2020 we gathered the names and titles (Assistant Professor, etc.) of all faculty at these 96 ranked USNWR departments.[11] Of these, we consider only those that we determine to be tenure track professors and classify these as Assistant, Associate, and Full Professors. When constructing the Ph.D. (B.A.) variable, we consider only the Ph.D. (B.A.) university, not the department or discipline.[12] To fill in the gender and Ph.D. university fields, we merge in data provided by Andrew Langan (Langan, 2018) with our own. We obtain the B.A. university from internet searches and are able to locate this information for 98.8% of the sample; we report B.A. results conditional on this variable being non-missing. We match the current department, the Ph.D. university, and the B.A. university to the 2017 economics program rankings from the U.S. News & World Report (USNWR, 2017).[13] A disadvantage of using a single ranking year (2017) is that rankings may have differed for professors who received their degrees further back in time; to the extent that rankings are similar over time, this is less of an issue.[14] We further classify

[11] A research assistant collected this information from department websites in a random order between August 30th and September 25th, 2020. We use the information on the websites at the time of collection, with the caveat that departments update their websites at different times. The USNWR includes 138 departments in its ranking but only scores the 96 that comprise our sample. We note that notable institutions such as California Institute of Technology and Georgia Institute of Technology are not included in these rankings.

[12] For instance, we would classify both Chicago Economics and Chicago Public Policy as Chicago. We then assign both to the Chicago economics department ranking from the USNWR. We do not have systematic data on the doctoral department an individual was in, and this is often omitted on a CV. This is a shortcoming of this paper. Throughout the paper, we use the terms "department" and "university" interchangeably.

[13] An advantage of using the same ranking for B.A. universities and Ph.D. universities is comparability. However, we acknowledge that these rankings are designed to rank graduate economics programs rather than undergraduate economics programs and that many other quality undergraduate economics programs (such as liberal arts colleges) are considered "Other U.S." for our purposes. We discuss liberal arts schools in Section 4.

[14] We examine the degree of persistence in rankings by comparing the 2017 USNWR rankings to the 2009 USNWR rankings (USNWR, 2009). There are 96 ranked and 42 unranked departments in the 2017 USNWR rankings (138 total). There are 83 ranked and 48 unranked departments in the 2009 USNWR rankings (131 total). Only eight departments appear in 2017 that do not appear in 2009 (and all are unranked in 2017). Among departments that are unranked in 2009, there are 14 that are ranked in 2017, none of which is ranked better than 72. Only one department appears in 2009 but not in 2017 (California Institute of Technology). All but one of the top 10 ranked departments (11 total because of a ties) in 2009 are in the top 11 in 2017.

all US universities outside the top 96 as "Other U.S.," and all international universities as "International." For the figures to have a unique value on the x-axis, we give each department a unique ranking to break the ties (for ties, the rank is assigned alphabetically by school name) (Table A.1). Our sample consists of 2,686 faculty members in 96 departments. The Data Appendix contains additional details about our data.

Departments with higher rankings tend to have larger faculties than lower-ranked universities, with the steepest drop in faculty size between ranks 1 and 25 (Appendix Figure A.1). Princeton, for example, has 59 faculty members, while Oregon State has only 6.[15] The proportion of women on faculty rosters is relatively constant across department rank, generally hovering around 20% (Appendix Figure A.2). Higher-ranked universities typically have a higher proportion of full professors and a lower proportion of associate professors than lower-ranked universities, in which proportions of assistant, associate, and full professor are more equal (Appendix Figure A.3). This trend is driven by male professors; ratios of the three faculty ranks are more equal throughout the distribution among female faculty. There are also disproportionately fewer full professors among women versus men.

3 Ph.D. Origins

3.1 Faculty Produced by Ph.D. Departments

Higher-ranked Ph.D. departments produce more faculty in our sample than lower-ranked Ph.D. departments. Figure 1 Panel A shows that Ph.D. departments ranked 50 and below produce very few faculty among the departments in our sample, while top-ranked departments produce disproportionately many.[16][17] One in seven professors (14.6%) received their

Similarly, all but two (including Cal Tech) of the top 25 ranked departments (26 total because of a tie) appear in the top 25 (26 total because of a tie) in 2017. Considering only the departments that appear and are ranked in both rankings, the pairwise correlation is 0.96. If we reconstruct the rankings using only the departments that appear and are ranked in both rankings, the pairwise correlation is 0.97. We view this as evidence of substantial stabillity in rankings, at least across these two years.

[15] CUNY Graduate School has the most, at 75.

[16] It is uncommon for a faculty member to be at a department ranked higher than their Ph.D. department. See Appendix Figure A.4.

[17] In this footnote, we consider Ph.D. program size. While our main dataset does not include this variable, we obtain the average number of Ph.D. graduates by department for 2002-2006 from the 2010 National

Ph.D. at just one of two universities: Harvard and MIT (Appendix Table A.3). Forty two percent of faculty come from just eight departments (which are also the top 8 ranked departments), and 60% come from just 15 departments (Appendix Table A.3). Moreover, higher-ranked Ph.D. departments place their students at higher-ranked departments than do lower-ranked departments (Appendix Figure A.6).

3.2 Ph.D. Origins by Department Tier

We now turn our attention to hiring departments and describe the concentration of Ph.D.s by department tier. In Table 1, we show the median and mean ranks of professors in a given department tier, limiting to professors with a Ph.D. from a USNWR department (including the 42 unranked departments, to which we assign a rank of 97, but excluding all other departments). Among faculty at the top 30 departments, there is a heavy concentration of those who did their Ph.D.s at top 10 schools: in each of these tiers (1-10, 11-20, and 21-29), both the median and mean professor comes from a Ph.D. program ranked 10.5 or better. At higher tiers, professors come from lower-ranked Ph.D. programs. For instance, professors at departments ranked 83-90 come from a Ph.D. program ranked 32 on average, with a median value of 26.

We next show flows from Ph.D. program tier to department tier. We consider the following department tiers: Harvard/MIT, 3-6, 7-15, 16-26, 27-52, 53-96; the Ph.D. tiers also include "Other U.S." and "International." The Sankey Diagram in Figure 2 documents flows from Ph.D. (middle) to current department (right). (We discuss the B.A. results below in Section 4.) The height of a tier (e.g., Harvard and MIT) denotes the percentage of individuals in that tier, and the height of the flow denotes the percentage of individuals

Research Council (NRC) report, "A Data-Based Assessment of Research-Doctorate Programs in the United States" (Ostriker et al., 2011). Here, we consider the 86 (of 96) ranked departments that appear in these data. The number of Ph.D.s produced is highly correlated with Ph.D. program size, with a correlation coefficient of 0.85. A regression of the number of professors produced on the average number of Ph.D.s produces an R-squared of 0.72. Despite the fact that this variable explains most of the variation, we point out that this is a correlational relationship. Ph.D. program ranking is also negatively associated with Ph.D. program size, and the top 20 programs have, on average, more students than the lower ranked programs. See Appendix Figure A.5. In the next section, we explore the extent to which adjusting for Ph.D. program size influences our findings.

going from a given Ph.D. tier to a given Department tier. Nearly all Ph.D.s come from one of the 96 ranked USNWR universities or from international universities (the most common international universities being London School of Economics and Oxford). Among those from the 96 ranked USNWR universities, fewer than 5% come from universities ranked lower than 52. More than half of all faculty come from the top 15 Ph.D. departments (59%), and more than half of faculty from the top 15 departments (57%) come from the top 6 departments. A substantial proportion of all faculty come from Harvard and MIT (15%). The percentage of faculty with Ph.D.s from Harvard and MIT is much higher at the top 6 departments (44%) and Harvard and MIT (59%). In Appendix Figure A.7, we present the same graph, but limit the sample to assistant professors, who in general have come to their university much more recently than full professors. Results are roughly similar, though these professors are more likely to hold an international BA and somewhat less likely to have received their Ph.D. at Harvard and MIT and more likely to have receive their Ph.D. at departments ranked 7-15.

Panel A of Table 2 presents the information from Figure 2 in table format. It displays the fraction of faculty members from different Ph.D. tiers (rows) for each department tier (columns). Panel B is similar to Panel A but excludes the categories "Other U.S." and "International" to ensure comparability with Panels C and D.

Panel C of Table 2 incorporates the NRC data mentioned earlier to adjust by the *average* number of Ph.D. graduates within a tier.[18] This adjustment accounts for the variation in the number of Ph.D. graduates across departments within different Ph.D. tiers, with higher-ranked departments typically producing far more graduates (refer to Appendix Figure A.4). Here, we hold the average number of Ph.D. graduates within a Ph.D. tier constant. To accomplish this, we divide the total number of faculty members in a given Ph.D. tier-department tier cell by the average number of Ph.D. graduates across Ph.D. departments within that Ph.D. tier. Subsequently, we recalculate the fractions within each department tier (column). Consequently, the values for the Harvard and MIT tier, which have a larger number of Ph.D. graduates on average, are adjusted downward, while the values for the

[18]We impute the 10 missing values in this exercise.

lower tiers (which have fewer Ph.D. graduates on average) increase substantially. However, it is important to note that, even after this adjustment, we continue to find that the higher-ranked Ph.D. tiers produce more faculty members than the lower-ranked tiers, although the differences are not as pronounced as in the unweighted Panel B.[19]

Although Panel C of Table 2 takes into account the average Ph.D. cohort size, it does not consider the fact that there are varying numbers of departments within each tier, ranging from two for Harvard and MIT to 44 for the 53-96 tier. In Panel D, we address this by dividing the total number of faculty members in a particular Ph.D. tier-department tier cell by the *total* number of Ph.D. graduates across departments within that Ph.D. tier. We then recalculate the fractions within each department tier (column). This approach is analogous to considering a representative department within a cell, also holding the number of Ph.D. graduates constant. We observe that, for the most part, the numbers for the top two tiers (Harvard and MIT, and 3–6) increase in Panel D compared to Panel C. Conversely, the bottom three tiers generally show smaller numbers in Panel D than in Panel C. Although departments in these lower tiers have fewer Ph.D. graduates on average, the larger number of departments results in a much higher total number of Ph.D. graduates. Many columns exhibit a monotonically decreasing trend or are close to it. These findings reinforce our main conclusion that graduates from the top-ranked Ph.D. departments are disproportionately represented among faculty members in the 96 departments we study, and this phenomenon is not solely due to these departments having a higher number of Ph.D. graduates.[20]

In Table 3, we present approximate probabilities, based on rough, back-of-the-envelope calculations, of a Ph.D. graduate from a specific Ph.D. tier becoming a professor in a particular department tier. The methodology employed shares similarities to the methodology used to generate Panel D of Table 2: we divide the total number of faculty members in a

[19]We present results using a slightly different method in Panel C of Appendix Table A.4. In particular, we divide faculty members in an individual Ph.D. program-department tier cell by Ph.D. graduates at the individual Ph.D. program level and *add* the values to aggregate to the Ph.D. tier- department tier level. We then compute the fractions within a department tier. Results are very similar.

[20]We present results using a slightly different method in Panel D of Appendix Table A.4. In particular, we divide faculty members in an individual Ph.D. program-department tier cell by Ph.D. graduates at the individual Ph.D. program level and *average* the values to aggregate to the Ph.D. program-department tier level. We then compute the fractions within a department tier. Results are very similar.

given Ph.D. tier-department cell by the *total* number of Ph.D. graduates across departments within that Ph.D. tier, which is multiplied by a specific number of years to account for Ph.D. cohorts. Panel A focuses on assistant professors and utilizes a 6-year timeframe, reflecting the typical duration of an assistant professorship. Panel B considers assistant and associate professors over a 12-year period (6 years as an assistant professor plus an additional 6 years), while Panel C encompasses assistant, associate, and full professors over a 30-year period.[21]

Before discussing the findings from Table 3, it is important to highlight certain limitations of this analysis (some of which also apply to Table 2). First, the measurement of the number of Ph.D. graduates contains some degree of error as it relies on the NRC data, collected between 2002 and 2006, with imputed values for certain departments. Second, our selection of 6, 12, and 30 years as representative time periods may not accurately capture the average experience (and some Ph.D. programs may not have existed for the entire duration). Additionally, these timeframes are certainly not accurate for some individual professors, as their career trajectories may involve postdoctoral positions, tenure extensions, early tenure consideration, longer time to attain full professorship, or other factors.

Moving on to the findings in Table 3, we first examine the last column, which presents the estimated percentage of Ph.D. graduates who become professors at one of the 96 departments included in our sample. It is evident that becoming a professor within our sample is uncommon, with no value exceeding 30%. This implies that even among the top tiers, more than 70% of Ph.D. graduates are in positions outside the 96 departments we examined. The probability is considerably lower for the lower tiers, with less than a 2% chance for the bottom tier. The remaining columns, which represent the percentages that a Ph.D. graduate will become a professor in a given department tier (for a given row), collectively sum up to the total column. Overall, Ph.D. graduates from the top tier of departments exhibit a higher likelihood of becoming faculty members across most department tiers, with the exception of the lowest tier.[22]

[21] If the estimates in Panel C were used to calculate the fraction represented by each row within each column, the results would correspond to Panel D of Table 2.

[22] In Appendix Table A.5, we display results obtained after computing the percentages for individual Ph.D. departments and then averaging these within a Ph.D. tier-department tier cell. Results are very similar.

3.3 Ph.D. Origins by Individual Department

Figure 3 Panel A shows, for a given department (x-axis), the average rank of faculty doctoral alma maters. Faculty members from the 42 unranked USNWR programs are assigned the rank of 97; faculty members from US departments not in the USNWR rankings and international departments are excluded. There is a linear relationship between department rank and the average rank of Ph.D. programs, and the top departments employ faculty who come from very highly-ranked Ph.D. departments on average. The slope coefficient is much smaller than 1, indicating that on average, faculty received Ph.D.s at higher ranked programs than the ones at which they teach.

Figure 4 shows where faculty at individual departments (stacked bars) received their Ph.D.s, where the Ph.D.s are presented in tiers.[23] While the broad patterns seen in Section 3.2 are evident, there is also variation across departments. Some departments draw much more heavily from certain tiers than similarly-ranked departments.

Figure 5 Panel A focuses on only the top eight departments. Each column is a department, and the stacked bars within represent the fraction of faculty who come from a given Ph.D. department, from a department outside of the top 8 departments, or from an international department. More than half of the faculty at each of the eight departments received their Ph.D.s at one of the top eight departments. Approximately 60% of faculty at Harvard and MIT comes from Harvard or MIT.[24] Yale and the University of Chicago have the greatest percentage of faculty from outside the top eight departments: 41.5% and 31.4% of their professors come from either international Ph.D. programs or from U.S. programs outside of the top 8.

[23] For a zoomed-in version, see Appendix Figures A.8 and A.9.

[24] Interestingly, no assistant professors at Harvard (MIT) received their PhD from Harvard (MIT). Bryan (2019) notes that it "is almost unheard of" for top economics job market candidates to be hired by their own institution. In contrast, Amir and Knauff (2008) states that "many non-U.S. departments continue to hire their own graduates on a somewhat regular basis."

3.4 Ph.D. Origins by Faculty Characteristics

How do Ph.D. origins differ by gender and rank? Appendix Figure A.10 Panel A replicates Figure 3, but splits by gender. On average, female professors come from slightly higher ranked Ph.D. programs than do male professors (until about the 80th ranked department), though these differences are very small and the confidence intervals overlap. Another way to look at this is to look at the median and mean value of Ph.D. program ranking, split by hiring department tier. Limiting to assistant professors to give a better sense of recent hires, Panels A and B of Appendix Table A.2 show that while most of the results are not identical for males and females, the patterns are similar (none of the means are statistically different except for the 63-68 group at the 10% level).

We next compare assistant to full professors, keeping in mind that the full professors have survived the tenure process and are more likely than assistant professors to have switched institutions. We also note that the rankings we use are not necessarily the same as when full professors started (though they are likely correlated). Appendix Figure A.10 Panel B shows that assistant and full professors from top 25 departments on average came from similarly-ranked Ph.D. programs, with assistant professors often coming from higher ranked departments.[25] We also compare the median and mean values of assistant professors to those of full professors in Panels C and D of Appendix Table A.2. Results are broadly similar, with only two groups being statistically different at the 5% level (35-39 and 53-59).

4 B.A. Origins

We now consider B.A. origins and largely mirror the discussion of Ph.D. origins above. Figure 1 Panel B shows the number of faculty in the sample produced by B.A. university, where the B.A.s are ranked using the same USNWR rankings as above. The overall pattern reflects that found for Ph.D. origins (Panel A), though the magnitude is smaller. To put this in perspective, consider 1) that there are orders of magnitude more US B.A. programs than

[25] See also Appendix Table A.6 Panels C and D for transition matrices.

there are U.S. economics Ph.D. departments; and 2) as we will see below, only about half of faculty in our sample attended a US B.A. program.[26] The top-ranked B.A. universities produce a disproportionate number of faculty. More than twice as many come from Harvard (106) than from any other university (Berkeley is second with 52; see Appendix Table A.7). Considering only those with U.S. B.A.s, 20% received their B.A. at one of only five universities (Harvard, Berkeley, Princeton, Yale, and MIT); similarly, 20% of those with U.S. B.A.s received their B.A. from a university in the Ivy League.

Figure 2 shows the transition from B.A. (left) to Ph.D. (middle).[27] Nearly half (47%) studied internationally, a much higher percentage than those with international Ph.D.s (9%).[28] A number of international universities produce more Ph.D.s in our sample than do most US institutions. Both Seoul National University and Bocconi University produced more than 35. Among U.S. B.A.s, nearly two-thirds (63%) come from the 96 ranked universities. Among those with B.A.s in the top 96, 53% come from the top 15 (i.e., 34% of U.S. B.A.s are from the top 15).[29] This is striking given that there are thousands of universities in the U.S. It is also relatively common for liberal arts colleges to produce students who will ultimately become faculty in our sample. Swarthmore and Williams contribute 20 and 17 faculty. Carleton College, William and Mary, Tufts, Wesleyan, Oberlin, and Amherst College all produce at least 10.[30]

Figure 3 Panel B depicts the average rank of the B.A. university a department's faculty came from, restricted to the 138 USNWR universities. Broadly speaking, the same pattern is found as with Ph.D.s (Panel A), particularly among higher-ranked departments: on average, faculty at the elite departments received their B.A.s at elite undergraduate

[26]This statement refers to all US B.A. programs, not just the ranked US B.A. programs that are otherwise the focus of our study.

[27]Appendix Figure A.11 shows the stacked bar chart version, analogous to Figure 4.

[28]Appendix Figure A.7, which limits to assistant professors, shows that these professors are more likely to have international B.A.s.

[29]It is also interesting to consider the most common B.A.-Ph.D. pathways. Appendix Table A.8 shows that 47 students attended Harvard for B.A. and Harvard for Ph.D. The next several are: 19 for Harvard (B.A)-MIT (Ph.D.); 17 for Yale-MIT; 13 for Berkeley-Berkeley; 11 for Chicago-Chicago; and 10 for Princeton-Stanford. Considering all three steps: B.A.-Ph.D.-Department, five students did Harvard (B.A.) - Harvard (Ph.D.) - Harvard (Department). Five did Harvard-MIT-MIT. And another five did Harvard-Berkeley-Harvard.

[30]See Stock and Siegfried (2014) for a more in-depth analysis of the liberal arts origins of Ph.D.s.

institutions.

The final figure, Figure 5 Panel B displays the universities at which the faculty of the top eight departments received their B.A.s. In contrast to the Ph.D. version in Panel A, a large percentage of faculty B.A.s are international. There is a good amount of variance, ranging from 33% at Harvard to 63% at Princeton. We also see that five of eight departments (all but Yale, Northwestern, and Chicago) have more than half of their U.S. faculty from one of these same eight universities. A large share of these come from Harvard, and, to a lesser extent, Princeton.

5 Conclusion

As expected, we find that graduates of highly ranked doctoral economics programs are far more common on faculty rosters than graduates of lower-ranked programs. This finding is particularly pronounced for graduates of top-15 programs, top-six programs, and Harvard and MIT. The type of pattern we observe here has been previously studied and criticized in the literature (see, for example, (Colander, 2015; Hilmer and Hilmer, 2012)). We also observe, similarly to previous researchers, strong competition for academic job placements, with a median rank drop of 24 between PhD and tenure track position for assistant professors.[31]

Academic diversity is weaker in top economics programs than in other disciplines (Colander, 2015; Wu, 2005). This weakness could stifle intellectual innovation and growth in the economics discipline (Colander, 2015). We note that previous researchers suggest that hiring departments look less at program rank and more at other factors, such as prior publication record and dissertation advisor reputation, when making hiring decisions (Conley and Önder, 2014).

The path from Ph.D. to professor at an elite institution is just one section of a broader

[31]Noting that the following is not directly comparable to our results, Stock et al. (2000) state that "the vast majority of [new U.S. tenure track faculty participating in their survey] moved to departments ranked at least 50 points below their own. Excluding moves to unranked departments, the average drop in rank was 59 points. Only two respondents moved upward in rankings—both went from economics departments within the top 10 to other economics departments within the top 10. [...] According to [Grimes and Register (1997)], [...] the average drop in rank was 73 points [for the class of 1968]" (p. 179).

pipeline into academia. Lower-ranked schools in the top 96 have a greater proportion of faculty from doctoral programs outside the top 15, and faculty come from a wide variety of undergraduate programs. These two findings are mildly good news at a time when sociological and academic diversity is sorely lacking in economics departments across the country, and in light of recent efforts to expand academic, socioeconomic, racial, and gender diversity in economics departments (Stansbury and Schultz, 2022; Hanspach et al., 2021; Weissman, 2021; Colander, 2015). As Hoxby and Avery (2013) report, many academically gifted high school students, especially from lower income backgrounds, choose to attend non-elite universities. On the other hand, many of the professors in this sample attended top universities even as undergraduates, and undergraduates at such universities are often wealthier and more privileged than those at lower-ranked schools (Aisch et al., 2017; Hoxby and Avery, 2013).[32] However, our data show that individuals from institutions outside of those we rank in the top 96 undergraduate programs can funnel into economic academia at the top ranks. If observant professors at non-elite undergraduate institutions can identify and recruit talented students into competitive doctoral programs, we may see an increase in academic diversity at the faculty level.[33]

Future research could address how B.A.-Ph.D.-professor academic pipelines in economics vary by race and socioeconomic status, how to loosen the tight connection between elite doctoral programs and elite professorships, what full academic pipelines look like for liberal arts colleges and other colleges and universities (including international) not studied here, and how COVID and social/racial justice reforms have affected the academic pipeline in recent years. In addition, it might document the pipeline for those in non-academic positions and show how the results we document compare to those in other fields. Finally, it

[32]Bai et al. (2022) find that attending an Ivy Plus institution is positively correlated with both admission to a top-ranked economics Ph.D. program and securing a top-ranked professorship.

[33]Naturally, helping students choose appropriate doctoral programs is just one small piece of a multi-pronged approach to improving diversity in academia, and many reforms need to occur in order for this to take place. Weissman (2021), for example, suggests that undergraduate economics courses need to be made more relevant to diverse populations. We also note that this statement relies on the assumption that doctoral program rank has a causal effect on obtaining a position at a university in our sample; the validity of this assumption is up for debate.

might consider the Master's degree in the pipeline.[34]

[34]For example, Stock and Siegfried (2015) document that many economics Ph.D. students hold prior graduate degrees.

References

Aisch, G., K. Quealy, A. Cox, and L. Buchanan (2017). Some colleges have more students from the top 1 percent than the bottom 60. find yours. *New York Times, https://www.nytimes.com/interactive/2017/01/18/upshot/some-colleges-have-more-students-from-the-top-1-percent-than-the-bottom-60.html*.

Amir, R. and M. Knauff (2008). Ranking economics departments worldwide on the basis of phd placement. *The Review of Economics and Statistics 90*(1), 185–190.

Bai, J., M. Esche, W. B. MacLeod, and Y. Shi (2022). Subjective evaluations and stratification in graduate education. Technical report, National Bureau of Economic Research.

Bair, J. H. (2003). Hiring practices in finance education: Linkages among top-ranked graduate programs. *American Journal of Economics and Sociology 62*(2), 429–433.

Barbezat, D. A. (1992). The market for new ph. d. economists. *The Journal of Economic Education 23*(3), 262–276.

Bedeian, A. G., D. E. Cavazos, J. G. Hunt, and L. R. Jauch (2010). Doctoral degree prestige and the academic marketplace: A study of career mobility within the management discipline. *Academy of Management Learning & Education 9*(1), 11–25.

Bryan, K. A. (2019). Young "stars" in economics: What they do and where they go. *Economic Inquiry 57*(3), 1392–1407.

Burris, V. (2004). The academic caste system: Prestige hierarchies in phd exchange networks. *American sociological review 69*(2), 239–264.

Carson, R. and P. Navarro (1988). A seller's (and buyer's) guide to the job market for beginning academic economists. *Journal of Economic Perspectives 2*(2), 137–148.

Cawley, J. (2018). A guide and advice for economists on the us junior academic job market 2018-2019 edition.

Chen, Z. (2014). The path to being an economics professor. *Comparative Advantage*, 51.

Clauset, A., S. Arbesman, and D. B. Larremore (2015). Systematic inequality and hierarchy in faculty hiring networks. *Science advances 1*(1), e1400005.

Colander, D. (2015). Intellectual incest on the charles: Why economists are a little bit off. *Eastern Economic Journal 41*(2), 155–159.

Colander, D. and D. Zhuo (2015). Where do phds in english get jobs? an economist's view of the english phd market. *Pedagogy: Critical Approaches to Teaching Literature, Language, Composition, and Culture 15*(1), 139–156.

Conley, J. P. and A. S. Önder (2014). The research productivity of new phds in economics: The surprisingly high non-success of the successful. *Journal of Economic Perspectives 28*(3), 205–16.

Duncan, K., D. Yandell, and K. Doshi (2000). Job search strategies and outcomes for academic economists: A middle-market view. *Eastern Economic Journal 26*(3), 345–361.

Formby, J. P. and G. A. Hoover (2002). Salary determinants of entry-level academic economists and the charactertics of those hired on the thenure track. *Eastern Economic Journal 28*(4), 509–522.

Fowler, J. H., B. Grofman, and N. Masuoka (2007). Social networks in political science: Hiring and placement of ph. ds, 1960–2002. *PS: Political Science & Politics 40*(4), 729–739.

Grimes, P. W. and C. A. Register (1997). Career publications and academic job rank: Evidence from the class of 1968. *The Journal of Economic Education 28*(1), 82–92.

Hanspach, P., V. Sondergeld, and J. Palka (2021). Few top positions in economics are held by women. *VOX, CEPR Policy Portal, https://voxeu.org/article/few-top-positions-economics-are-held-women.*

Headworth, S. and J. Freese (2016). Credential privilege or cumulative advantage? prestige, productivity, and placement in the academic sociology job market. *Social Forces 94*(3), 1257–1282.

Hilmer, M. and C. E. Hilmer (2012). On the search for talent in academic labor markets: easily observable later-graduate study outcomes as predictors of early-career publishing, placement, and tenure. *Economic Inquiry 50*(1), 232–247.

Hoxby, C. and C. Avery (2013). The missing" one-offs": the hidden supply of high-achieving, low-income students. *Brookings Papers on Economic Activity*, 31–66.

Hussey, A., S. Murray, and W. Stock (2022). Gender, coauthorship, and academic outcomes in economics. *Economic Inquiry 60*(2), 465–484.

Jones, A., P. Schuhmann, D. Soques, and A. Witman (2020). So you want to go to graduate school? factors that influence admissions to economics phd programs. *The Journal of Economic Education 51*(2), 177–190.

Jones, T. and H. Xiong (2021). The phd origins of finance faculty. *Working Paper*.

Kawa, N. C., J. A. Clavijo Michelangeli, J. L. Clark, D. Ginsberg, and C. McCarty (2019). The social network of us academic anthropology and its inequalities. *American Anthropologist 121*(1), 14–29.

Klein, D. B. (2005). The ph. d. circle in academic economics. *Econ Journal Watch 2*(1), 133.

Langan, A. (2018). Female managers and gender disparities: The case of academic department chairs. *Princeton, NJ: Job Market Paper*.

McFall, B. H., M. Murray-Close, R. J. Willis, and U. Chen (2015). Is it all worth it? the experiences of new phds on the job market, 2007–10. *The Journal of economic education 46*(1), 83–104.

Morgan, A. C., D. J. Economou, S. F. Way, and A. Clauset (2018). Prestige drives epistemic inequality in the diffusion of scientific ideas. *EPJ Data Science 7*(1), 40.

Ostriker, J. P., C. V. Kuh, and J. A. Voytuk (2011). *A data-based assessment of research-doctorate programs in the United States*. National Academies Press.

Pieper, P. J. and R. A. Willis (1999). The doctoral origins of economics faculty and the education of new economics doctorates. *The Journal of Economic Education 30*(1), 80–88.

Schlauch, G., R. Startz, et al. (2018). The path to an economics phd. *Economics Bulletin 38*(4), 1864–1876.

Schmidt, B. M. and M. M. Chingos (2007). Ranking doctoral programs by placement: A new method. *PS: Political Science & Politics 40*(3), 523–529.

Segall, E. J. and A. Feldman (2018). The elite teaching the elite: Who gets hired by the top law schools? *J. Legal Educ. 68*, 614.

Siegfried, J. J. and W. A. Stock (1999). The labor market for new ph. d. economists. *Journal of Economic Perspectives 13*(3), 115–134.

Siegfried, J. J. and W. A. Stock (2004). The market for new ph. d. economists in 2002. *American Economic Review 94*(2), 272–285.

Siegfried, J. J. and W. A. Stock (2007). The undergraduate origins of phd economists. *The Journal of Economic Education 38*(4), 461–482.

Spellman, W. E. and D. B. Gabriel (1978). Graduate students in economics, 1940-74. *The American Economic Review 68*(1), 182–187.

Stansbury, A. and R. Schultz (2022). Socioeconomic diversity of economics phds. *Peterson Institute for International Economics Working Paper* (22-4).

Stock, W. A. and R. M. Alston (2000). Effect of graduate-program rank on success in the job market. *The Journal of Economic Education 31*(4), 389–401.

Stock, W. A., R. M. Alston, and M. Milkman (2000). The academic labor market for economists: 1995–96. *Atlantic Economic Journal 28*(2), 164–185.

Stock, W. A., T. A. Finegan, and J. J. Siegfried (2006). Attrition in economics ph. d. programs. *American Economic Review 96*(2), 458–466.

Stock, W. A., T. A. Finegan, and J. J. Siegfried (2009). Completing an economics phd in five years. *American Economic Review 99*(2), 624–29.

Stock, W. A. and J. J. Siegfried (2001). So you want to earn a ph. d. in economics: how much do you think you'll make? *Economic Inquiry 39*(2), 320–335.

Stock, W. A. and J. J. Siegfried (2014). Fifteen years of research on graduate education in economics: What have we learned? *The Journal of Economic Education 45*(4), 287–303.

Stock, W. A. and J. J. Siegfried (2015). The undergraduate origins of phd economists revisited. *The Journal of Economic Education 46*(2), 150–165.

Svorenčík, A. (2014). Mit's rise to prominence: Outline of a collective biography. *History of Political Economy 46*(suppl_1), 109–133.

Svorenčík, A. (2018). The missing link: Prosopography in the history of economics. *History of Political Economy 50*(3), 605–613.

USNWR (2009). *U.S. News & World Report Best Economics Schools, 2009 Rankings https://web.archive.org/web/20110214073052/http://grad-schools.usnews.rankingsandreviews.com/best-graduate-schools/top-humanities-schools/economics-rankings.*

USNWR (2017). *U.S. News & World Report Best Economics Schools, 2017 Rankings https://www.usnews.com/best-graduate-schools/top-humanities-schools/economics-rankings.*

USNWR (2022). *U.S. News & World Report National Liberal Arts Colleges Rankings, 2022-2023 Rankings https://www.usnews.com/best-colleges/rankings/national-liberal-arts-colleges*.

Wapman, K. H., S. Zhang, A. Clauset, and D. B. Larremore (2022). Quantifying hierarchy and dynamics in us faculty hiring and retention. *Nature 610*(7930), 120–127.

Way, S. F., D. B. Larremore, and A. Clauset (2016). Gender, productivity, and prestige in computer science faculty hiring networks. In *Proceedings of the 25th International Conference on World Wide Web*, pp. 1169–1179.

Wei, Y. (2022). Would origin and type of undergraduate universities affect ph. d. ranking? evidence from 2021-2022 job market.

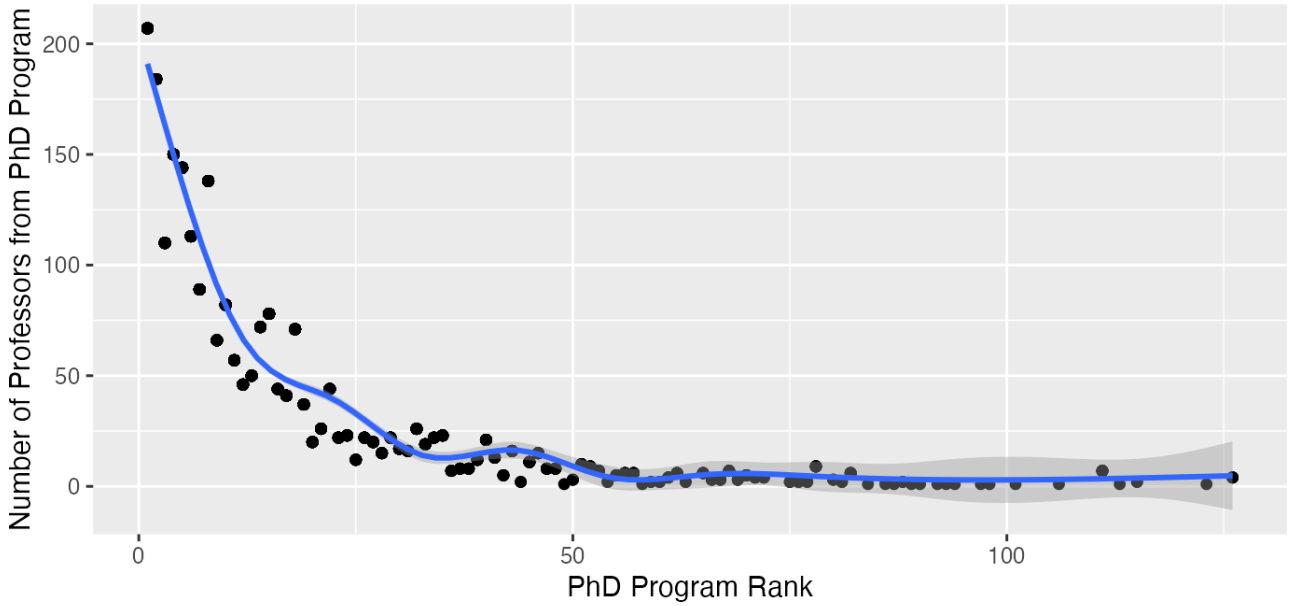
Weissman, S. (2021). Why are economics departments failing to recruit black economists? *Diverse, https://www.diverseeducation.com/home/article/15108577/why-are-economics-departments-failing-to-recruit-black-economists*.

Wu, S. (2005). Where do faculty receive their phds? a comparison across six disciplines. *Academe 91*(4), 53–54.

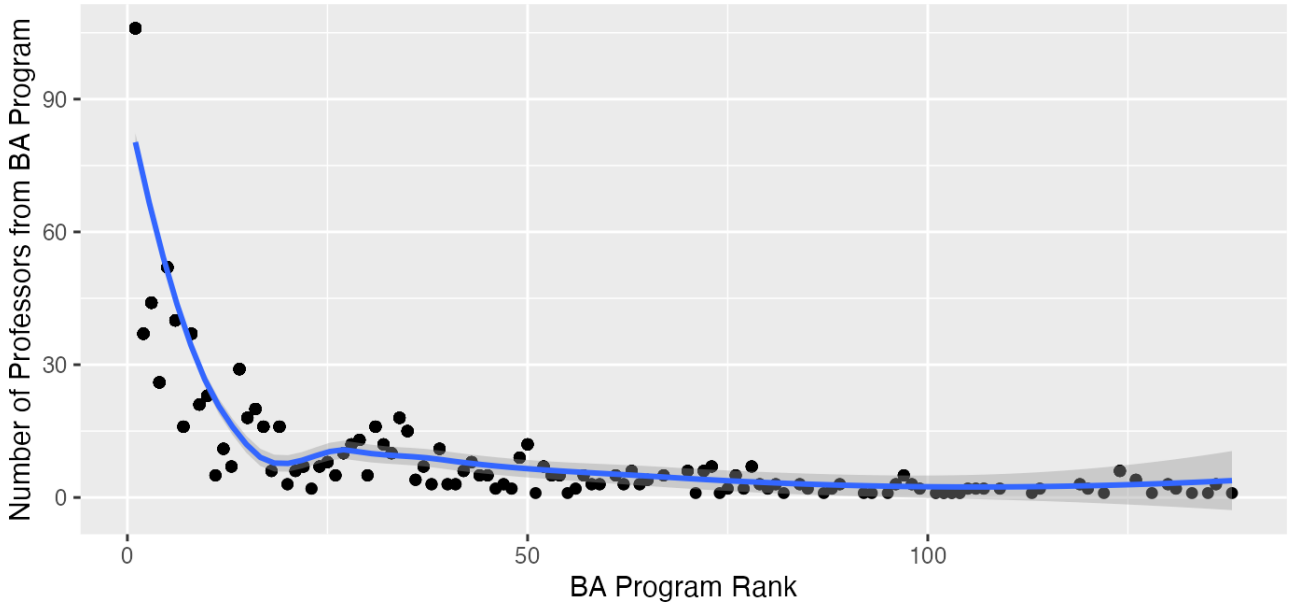
6 Figures

Figure 1: Number of Faculty (in Sample) Produced, by Ph.D. and by B.A. University

Panel A: Faculty Produced by Ph.D. University

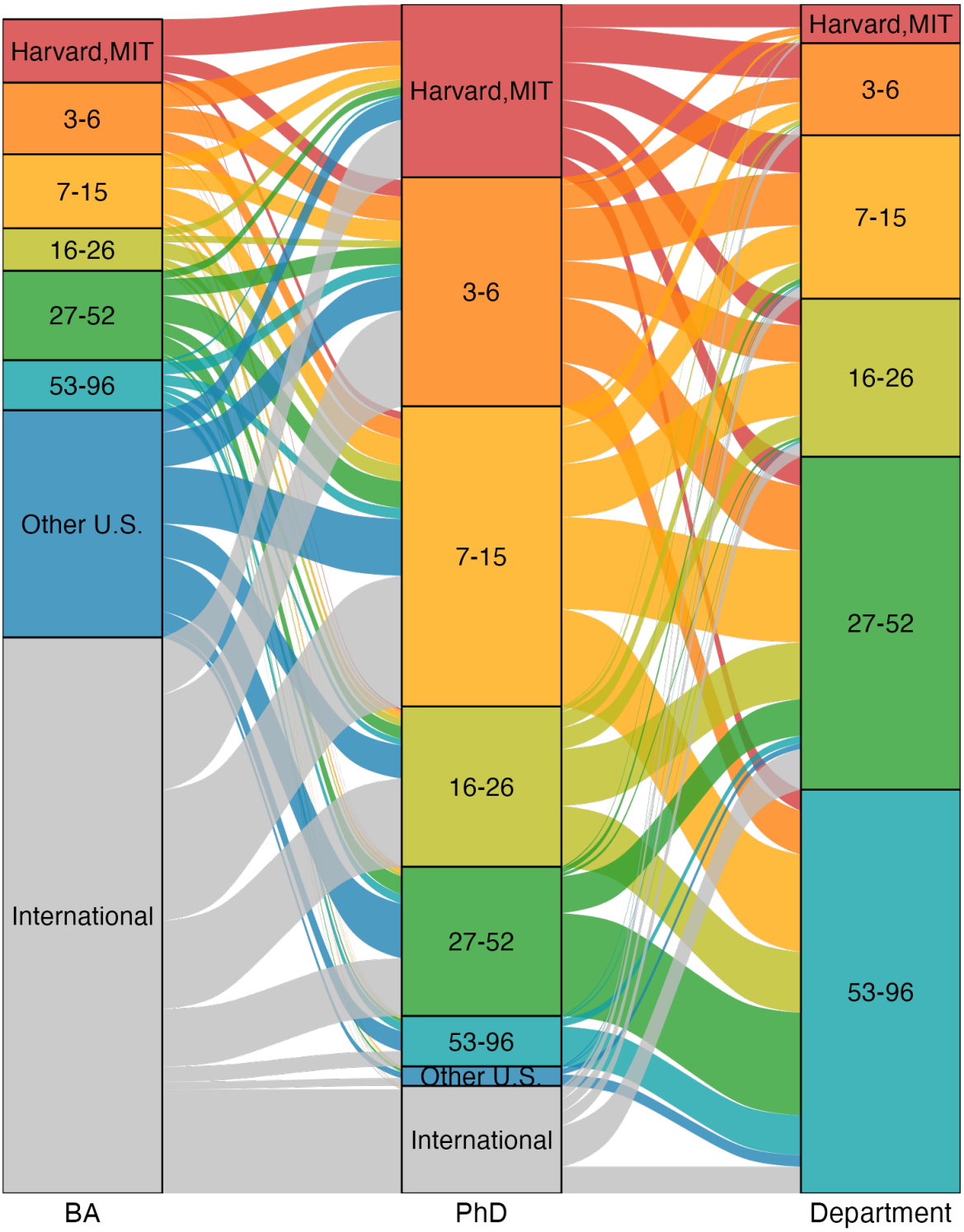


Panel B: Faculty Produced by B.A. University



Notes: This figure displays the number of faculty produced by Ph.D. university (Panel A) and by B.A. university (Panel B), which is ordered according to the "Ranking" column of Appendix Table A.1. In other words, this displays how many graduates of a given Ph.D. or B.A. university are now faculty members at departments in the sample. Because the Ph.D. and B.A. universities use the same ranking, the x axis refers to the same universities in both panels. Ph.D. and B.A. universities are limited to those in Table A.1, including those listed in the table notes. The reason the x-axis extends past 96 is because these graphs display the number of faculty—who are teaching in the sample of 96 ranked departments—produced by the 138 universities included in the USNWR list (assuming they produce at least one faculty), which consist of the 96 ranked universities plus the 42 additional universities listed in the notes of Appendix Table A.1.

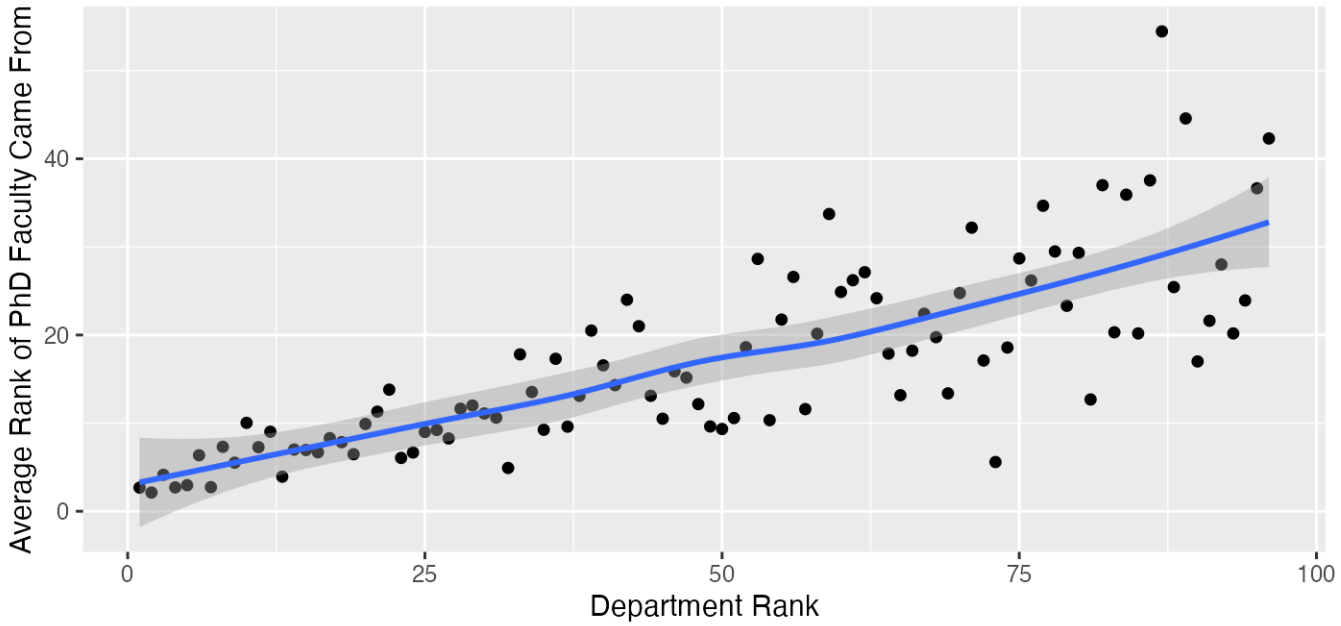
Figure 2: Flows From B.A. Programs (Left) to Ph.D. Programs (Middle) to Departments (Right), by Tier



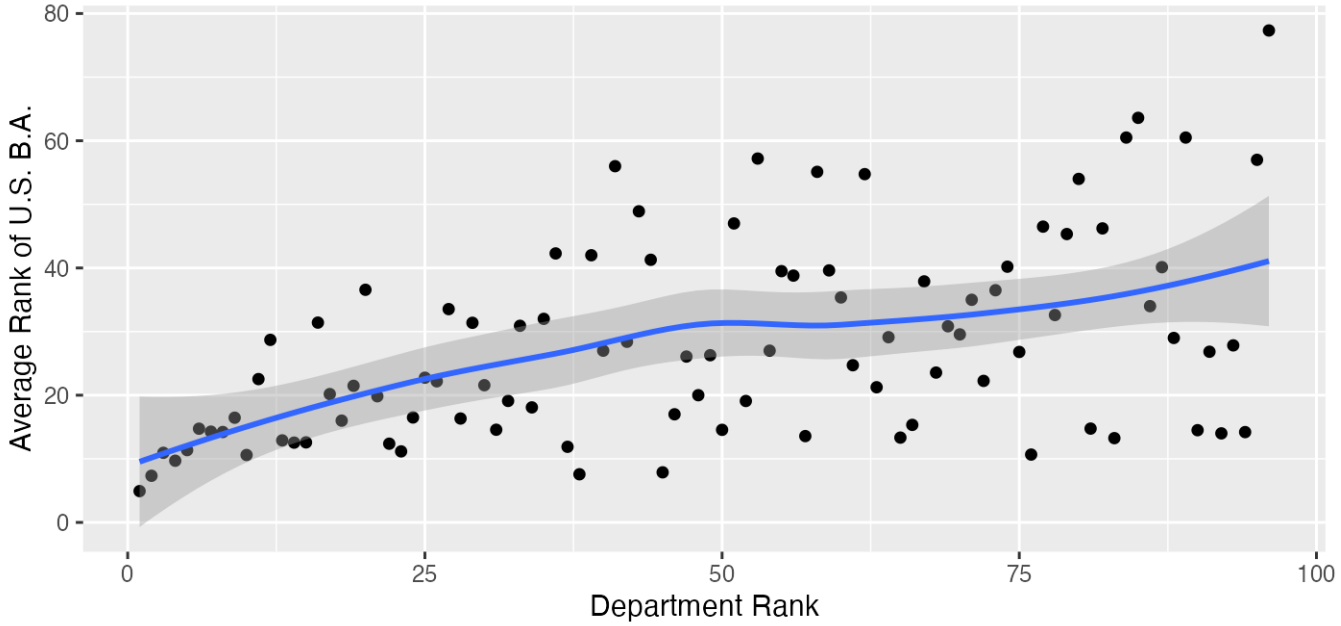
Notes: This Sankey diagram shows flows from B.A. programs (left) to Ph.D. programs (middle) to departments (right). The height of the flow represents the number of individuals going from one group to another. The B.A. column is shorter due to missing data on B.A.s.

Figure 3: Average Rank of Ph.D.s and B.A.s of a Department's Faculty

Panel A: Average Rank of Ph.D.

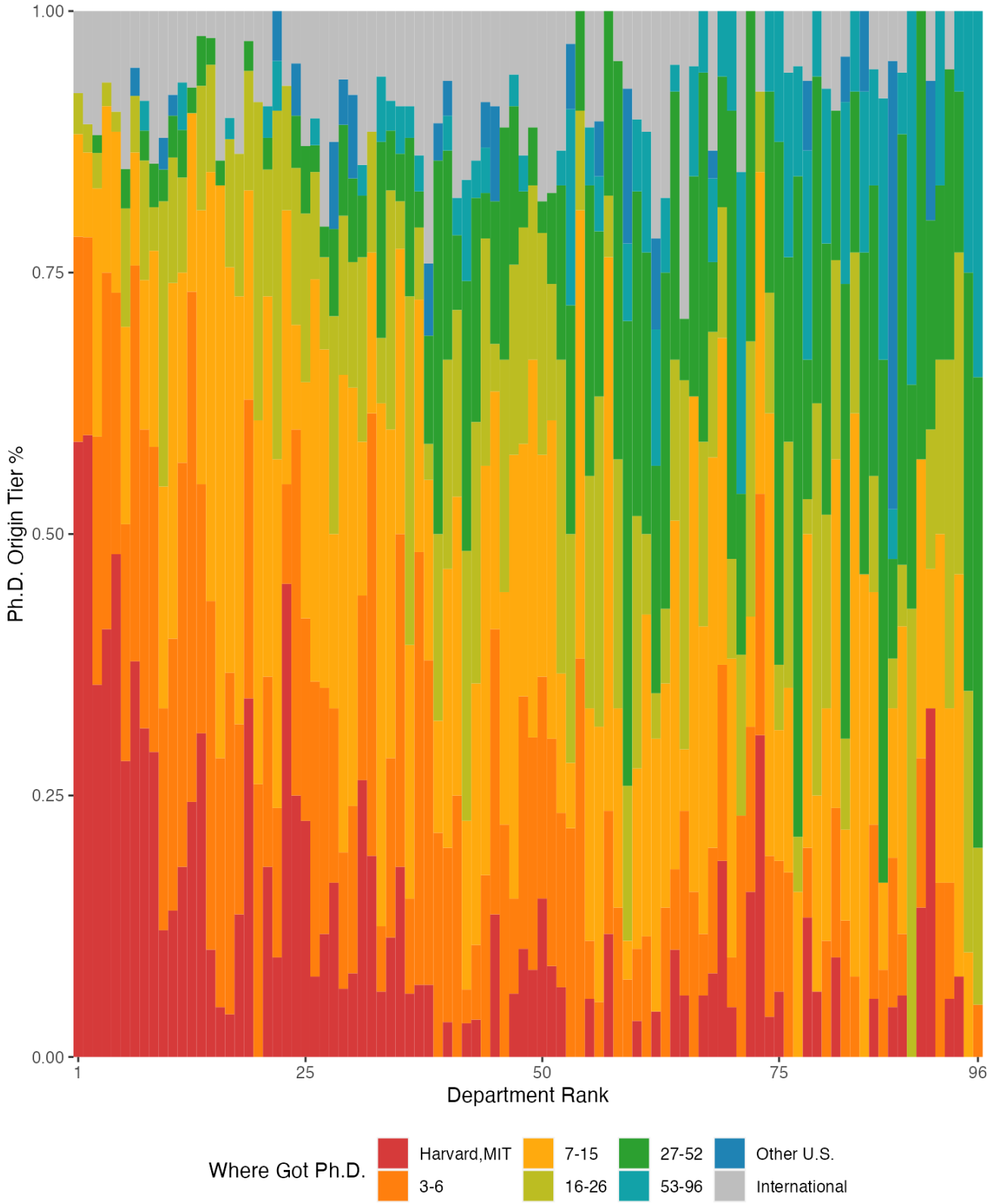


Panel B: Average Rank of B.A.



Notes: This figure displays, for a given department, the average rank of the Ph.D. programs faculty members attended (Panel A) and the average rank of the B.A. programs faculty members attended (Panel B). Departments are ordered on the x-axis according to the "Ranking" column of Appendix Table A.1. Because the Ph.D. and B.A. universities use the same ranking, the x axis refers to the same universities in both panels. The sample is restricted to those who attended schools (for Ph.D. or B.A., depending) included in USNWR rankings.

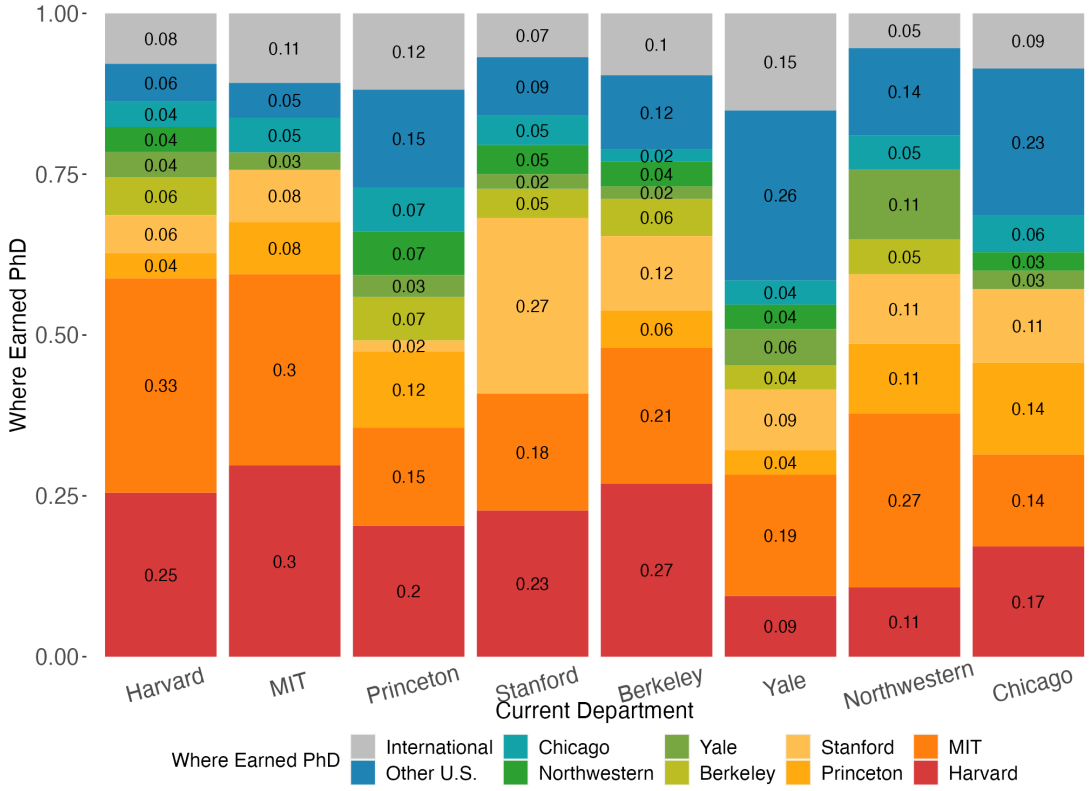
Figure 4: % of Department Faculty from Different Tiers of Ph.D. Program



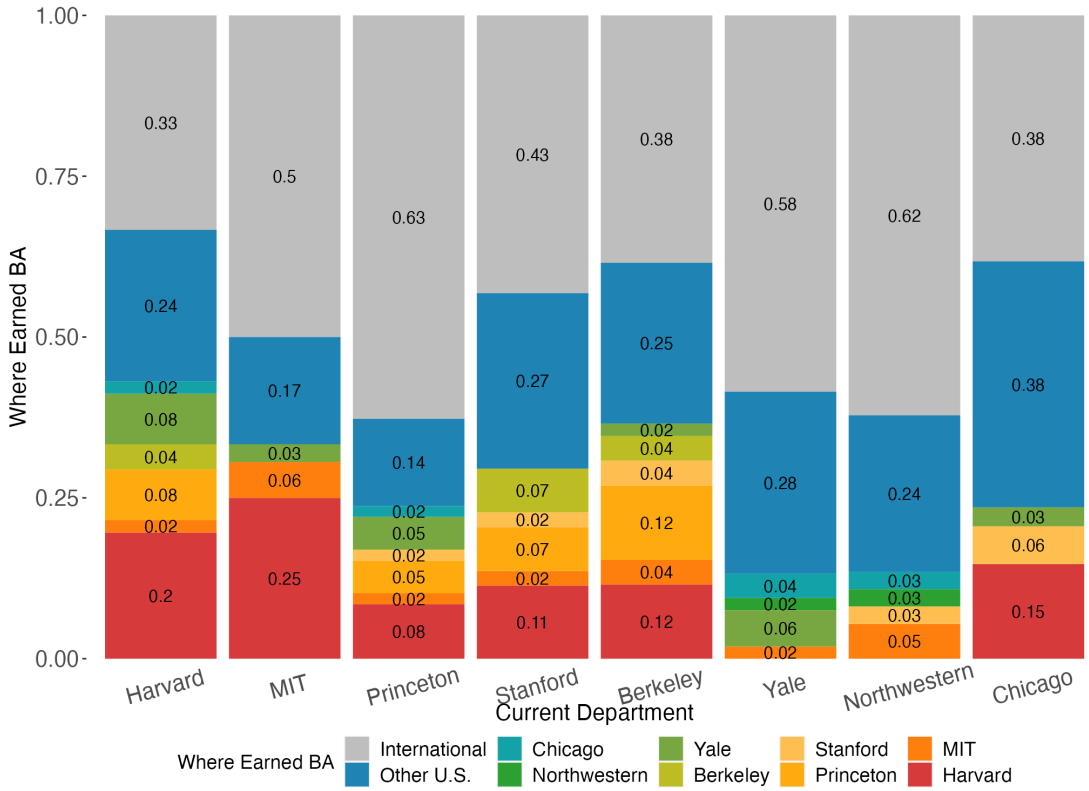
Notes: This bar chart displays the percentage of a department's faculty that came from groupings of Ph.D. program rankings. Each row is a department, and the colorings of the row represent the percentage of faculty that come from the particular Ph.D. program group. Departments are ordered according to the "Ranking" column of Appendix Table A.1.

Figure 5: Ph.D.s and B.A.s of Faculty of Top 8 Departments

Panel A: Ph.D.s of Faculty of Top 8 Departments



Panel B: B.A.s of Faculty of Top 8 Departments



Notes: This figure displays the percentage of a department's faculty that came from top 8 Ph.D. programs (Panel A) and from the same B.A. universities (Panel B). Each row is a department, and the colorings of the row represent the percentage of faculty that come from the particular Ph.D. or B.A. program.

Table 1: Average Rank of Ph.D. Program by Tier of Department

Current Department Bin	Median	Mean	Min	Max	N
1-10	1	4.5	1	68	400
11-20	1	7.2	1	72	357
21-29	7	10.5	1	90	391
35-39	11	14.6	1	97	170
42-50	12	14.6	1	72	256
53-59	19	23.6	1	97	208
63-68	12	20.3	1	97	220
72-78	18	24.7	1	97	216
83-90	26	32	1	97	200

Notes: This table reports the median, mean, minimum, and maximum ranking of Ph.D. program attended by professors in a given current department bin. Sample is limited to professors who attended a university in the USNWR ranking list, with unranked universities assigned a value of 97. Department and Ph.D. rankings include ties and are taken from the "USNWR" column of Appendix Table A.1.

Table 2: Transition Matrix, Ph.D. to Department

Panel A: Unweighted

PhD	Harvard,MIT	3-6	7-15	16-26	27-52	53-96
Harvard,MIT	0.59	0.38	0.23	0.17	0.09	0.05
3-6	0.19	0.26	0.32	0.23	0.19	0.11
7-15	0.09	0.19	0.23	0.34	0.28	0.24
16-26	0.03	0.05	0.10	0.13	0.17	0.15
27-52	0.00	0.01	0.03	0.02	0.11	0.25
53-96	0.00	0.00	0.01	0.01	0.02	0.10
Other U.S.	0.00	0.00	0.01	0.01	0.02	0.03
International	0.09	0.11	0.08	0.09	0.12	0.07

Panel B: Unweighted, Exclude Other U.S. and International

PhD	Harvard,MIT	3-6	7-15	16-26	27-52	53-96
Harvard,MIT	0.65	0.43	0.25	0.19	0.10	0.06
3-6	0.21	0.29	0.35	0.26	0.23	0.12
7-15	0.10	0.21	0.25	0.37	0.32	0.27
16-26	0.04	0.05	0.11	0.15	0.20	0.17
27-52	0.00	0.02	0.04	0.02	0.13	0.28
53-96	0.00	0.00	0.01	0.01	0.03	0.11

Panel C: Weighted by Average Number of Ph.D. Graduates Per Department in Tier

PhD	Harvard,MIT	3-6	7-15	16-26	27-52	53-96
Harvard,MIT	0.57	0.33	0.17	0.12	0.06	0.02
3-6	0.24	0.29	0.30	0.21	0.15	0.06
7-15	0.13	0.24	0.25	0.36	0.25	0.16
16-26	0.07	0.09	0.16	0.21	0.23	0.15
27-52	0.00	0.04	0.08	0.05	0.23	0.38
53-96	0.00	0.00	0.03	0.04	0.07	0.23

Panel D: Weighted by Total Ph.D. Graduates Across Departments in Tier

PhD	Harvard,MIT	3-6	7-15	16-26	27-52	53-96
Harvard,MIT	0.78	0.60	0.41	0.35	0.22	0.15
3-6	0.16	0.26	0.37	0.30	0.31	0.20
7-15	0.04	0.10	0.13	0.22	0.22	0.22
16-26	0.02	0.03	0.07	0.11	0.17	0.17
27-52	0.00	0.01	0.01	0.01	0.07	0.19
53-96	0.00	0.00	0.00	0.01	0.01	0.07

Notes: This table displays the fraction of faculty in a given tier (columns) that come from the different tiers of Ph.D. programs (rows). Departments are grouped according to the "Ranking" column of Appendix Table A.1. Numbers are in fractions, not percentages. Each column adds up to 1 (100%). Panel A shows the raw data (unweighted). Panel B is the same as Panel A, excludes Ph.D.s from the Other U.S. and International categories; we do this for comparison to Panels C and D. Panel C divides by the average number of Ph.D. graduates produced by year by all departments in the tier (using data from the 2010 National Research Council report, "A Data-Based Assessment of Research-Doctorate Programs in the United States" (Ostriker et al., 2011), with missing values imputed). This accounts for different Ph.D. programs having different number of graduates. Panel D divides by the total number of Ph.D. graduates produced by year by all departments in the tier. This adjustment also accounts for there being different numbers of departments within a tier.

Table 3: Percentage of Ph.D. Graduates of a Ph.D. Tier That Are in Department Tier

Panel A: Consider Only Assistant; Denominator Based on 6 Years

PhD	Harvard,MIT	3-6	7-15	16-26	27-52	53-96	Total
Harvard,MIT	1.7	7.1	6.1	5.4	4.4	3.1	27.9
3-6	0.6	1.9	8.0	3.5	9.7	4.7	28.5
7-15	0.2	1.5	2.3	3.3	7.2	8.3	22.8
16-26	0.0	0.1	1.1	1.8	4.5	5.0	12.5
27-52	0.0	0.1	0.4	0.2	1.4	5.2	7.3
53-96	0.0	0.0	0.0	0.0	0.1	1.3	1.4

Panel B: Consider Only Assistant and Associate; Denominator Based on 12 Years

PhD	Harvard,MIT	3-6	7-15	16-26	27-52	53-96	Total
Harvard,MIT	1.5	4.4	4.6	3.6	4.6	3.9	22.6
3-6	0.6	1.2	5.6	3.2	7.9	5.4	24.0
7-15	0.1	1.0	1.9	2.6	6.0	6.3	17.9
16-26	0.0	0.1	0.6	1.7	4.4	5.5	12.3
27-52	0.0	0.0	0.2	0.2	1.5	5.6	7.6
53-96	0.0	0.0	0.0	0.0	0.2	1.6	1.8

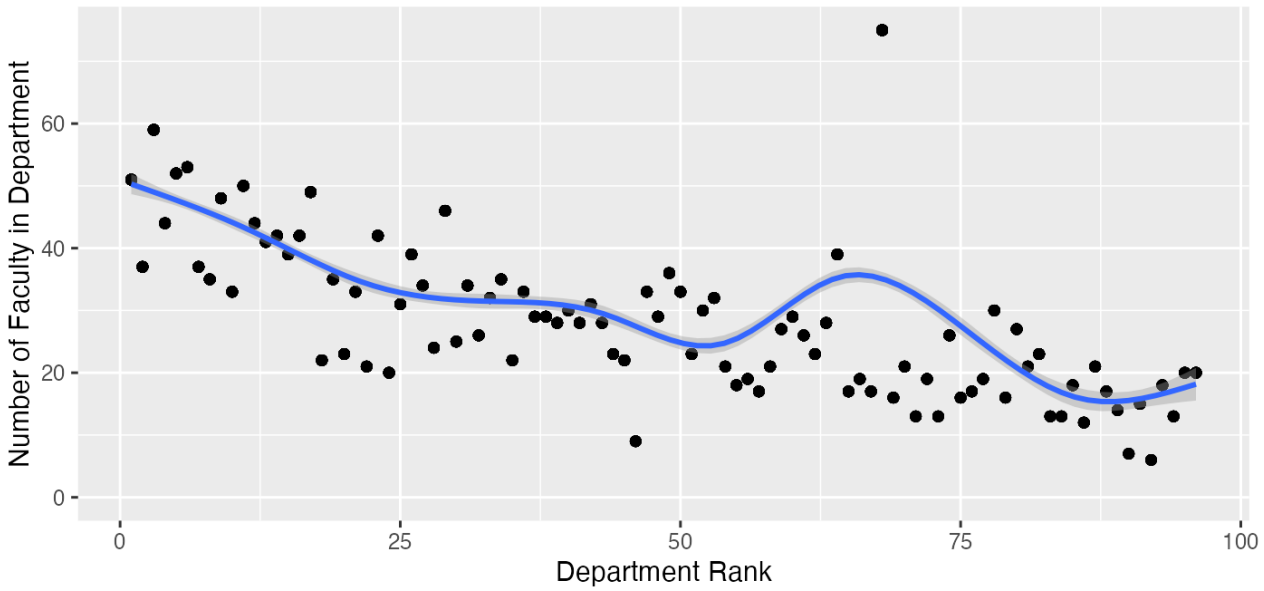
Panel C: Consider Assistant, Associate, and Full; Denominator Based on 30 Years

PhD	Harvard,MIT	3-6	7-15	16-26	27-52	53-96	Total
Harvard,MIT	3.5	5.4	5.8	4.1	4.5	3.3	26.6
3-6	0.7	2.3	5.1	3.6	6.3	4.3	22.3
7-15	0.2	0.9	1.8	2.6	4.6	4.8	14.9
16-26	0.1	0.3	1.0	1.3	3.5	3.7	9.8
27-52	0.0	0.1	0.2	0.1	1.4	4.0	5.8
53-96	0.0	0.0	0.0	0.1	0.3	1.4	1.8

Notes: For a given Ph.D. tier (rows), this table shows the percentage of (the estimated number of) Ph.D. graduates that are now faculty members in a given department tier (columns). Panel A considers only assistant professors; Panel B considers assistant and associate Professors; and Panel C considers assistant, associate, and full professors. Departments are grouped according to the "Ranking" column of Appendix Table A.1. The denominator is computed by multiplying the total number of Ph.D. graduates across departments in a tier by 6 in Panel A, by 12 in Panel B, and by 30 in Panel C (to represent 6, 12, and 30 cohorts of Ph.D. students). The total number of Ph.D. graduates data is from from the 2010 National Research Council report, "A Data-Based Assessment of Research-Doctorate Programs in the United States" (Ostriker et al., 2011), with missing values imputed. As an example, in the first cell of Panel A we estimate that 1.7% of Ph.D. graduates from from Harvard and MIT across 6 cohorts are assistant professors at one of these same faculty departments. As discussed in the text, this table should be interpreted as a rough, back-of-the envelope calculation as it depends on a number of assumptions.

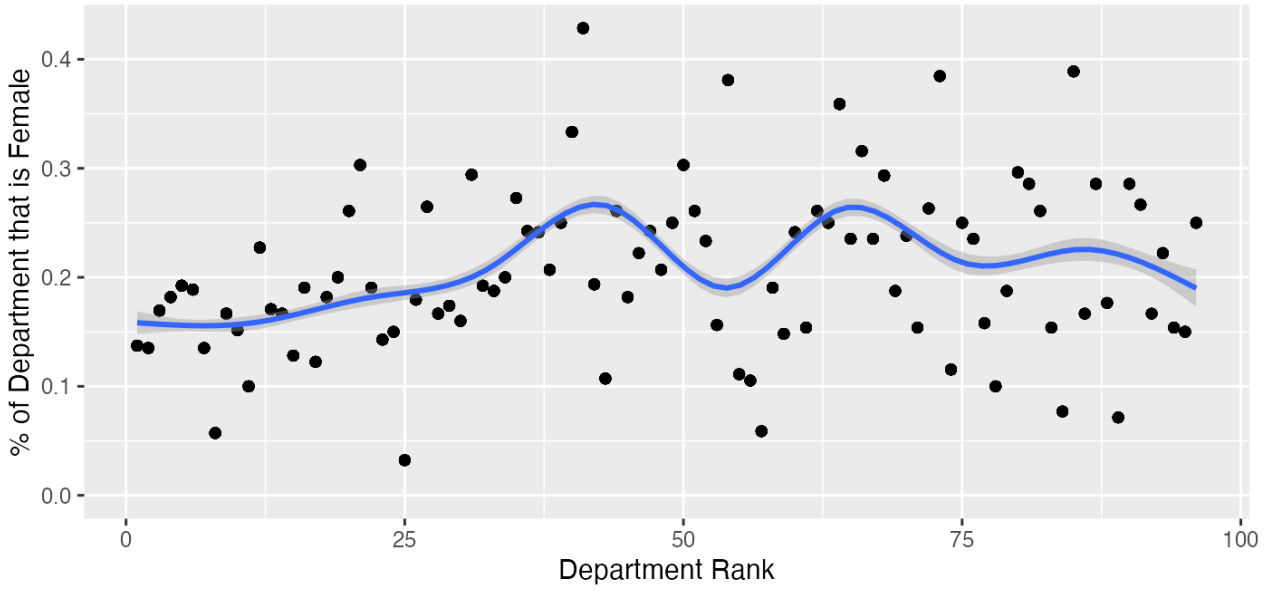
Appendix Figures

Figure A.1: Number of Faculty by Department



Notes: This figure displays the number of faculty by department, which is ordered according to the "Ranking" column of Appendix Table A.1.

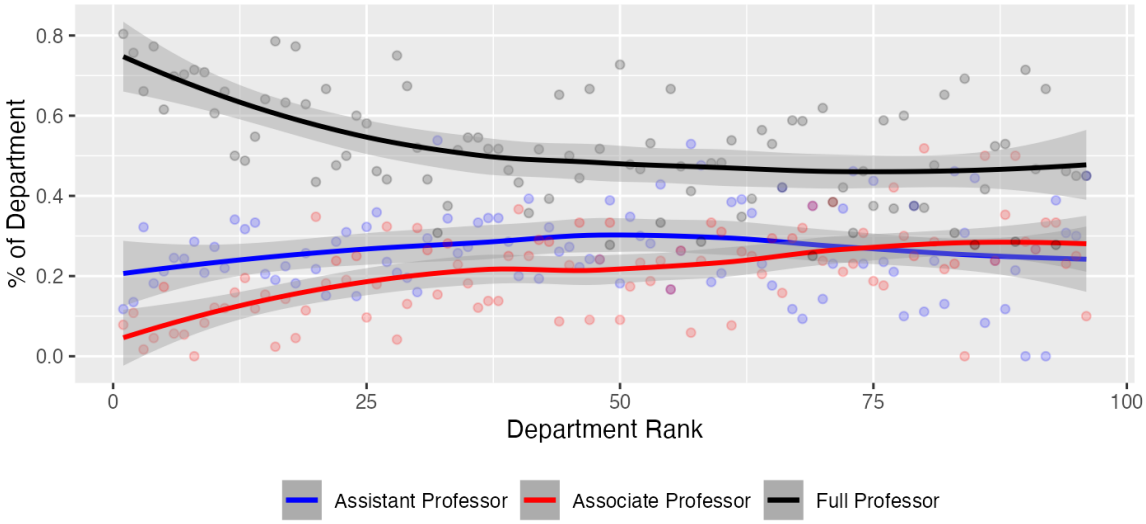
Figure A.2: Percent of Faculty Who Are Female, by Department



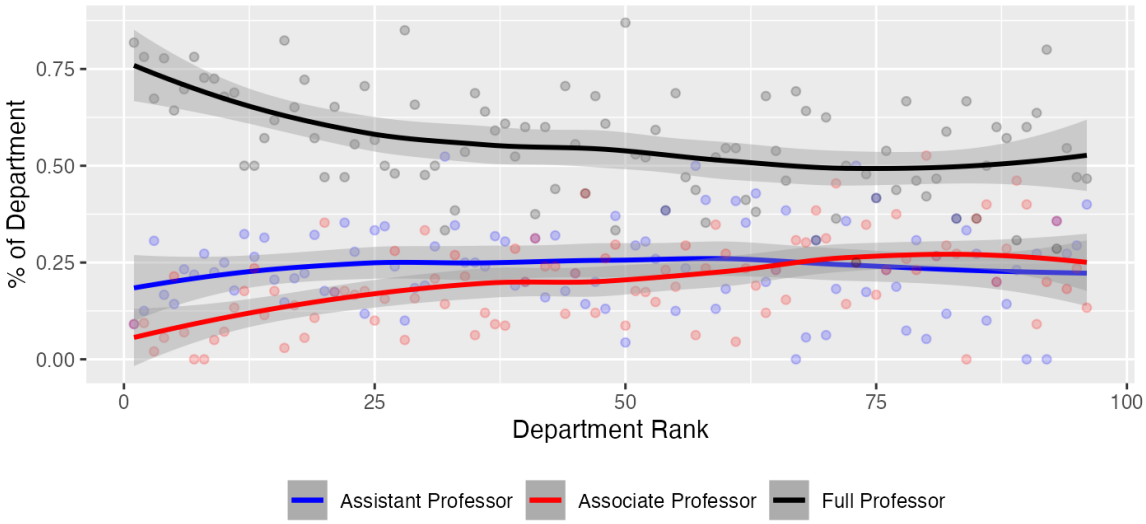
Notes: This figure displays the percentage of faculty who are female by department, which is ordered according to the "Ranking" column of Appendix Table A.1.

Figure A.3: Percent of Faculty Who Are Assistant, Associate, and Full Professors, by Department

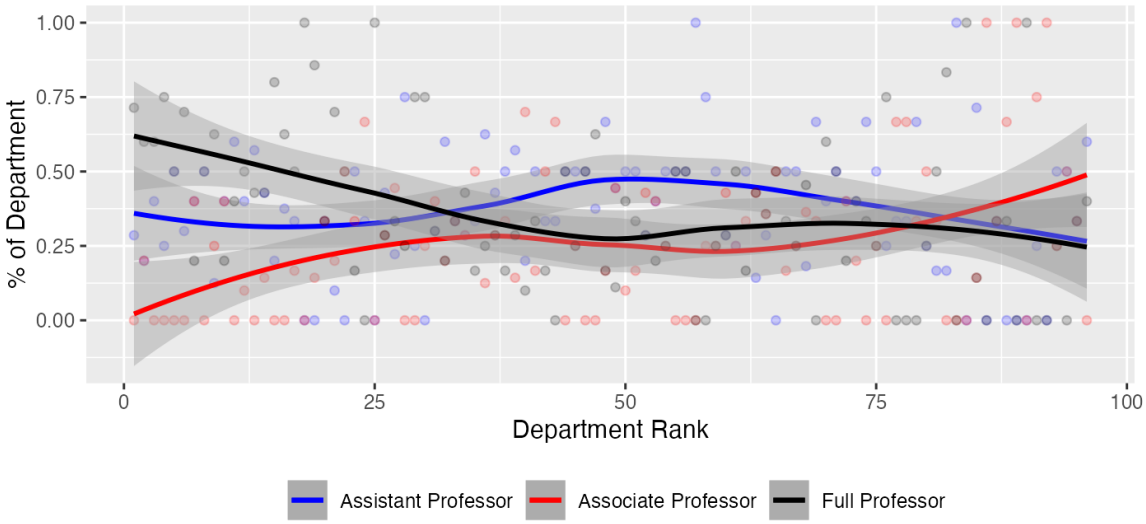
(a) Full Sample



(b) Male Only

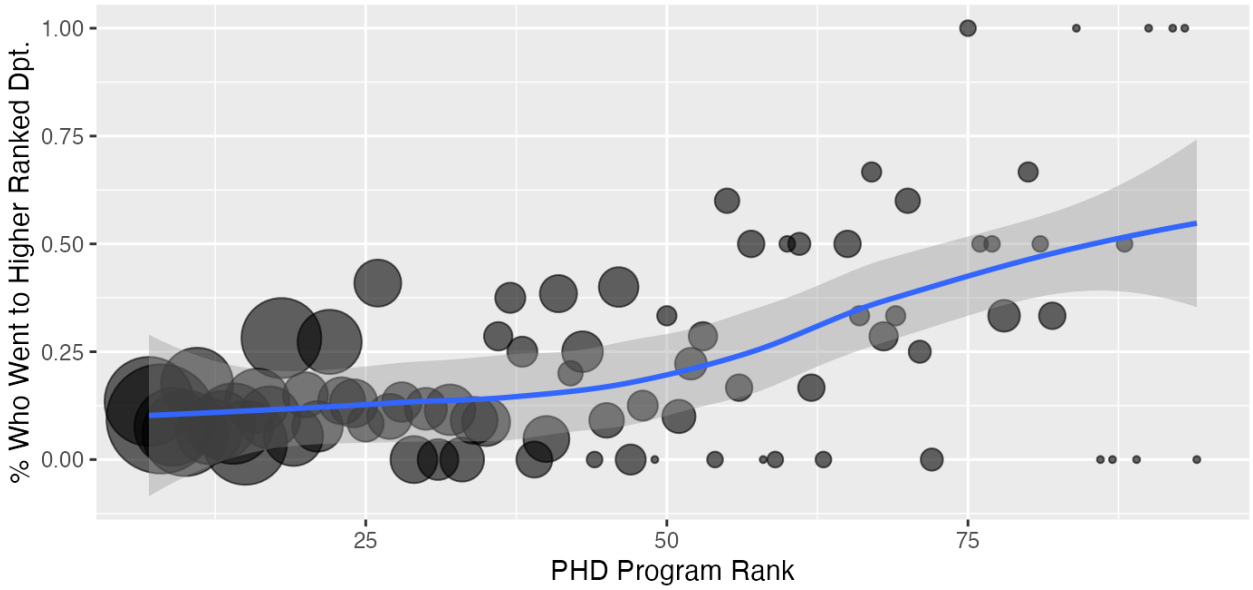


(c) Female Only



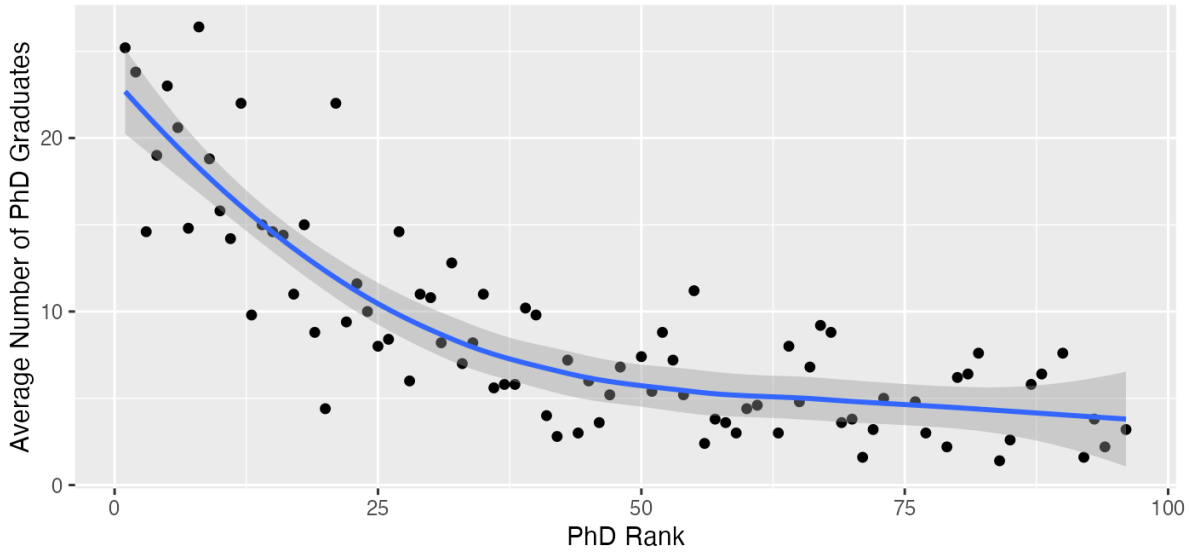
Notes: This figure displays the percentage of faculty who are an assistant professor (blue), associate professor (red), and full professor (black) by department, which is ordered according to the "Ranking" column of Appendix Table A.1. Panel (a) shows the full sample; Panel (b) restricts the sample to male; and Panel (c) restricts the sample to female.

Figure A.4: Percentage of a Ph.D. Programs' Graduates Who Went to Higher-ranked Department, by Ph.D. Program



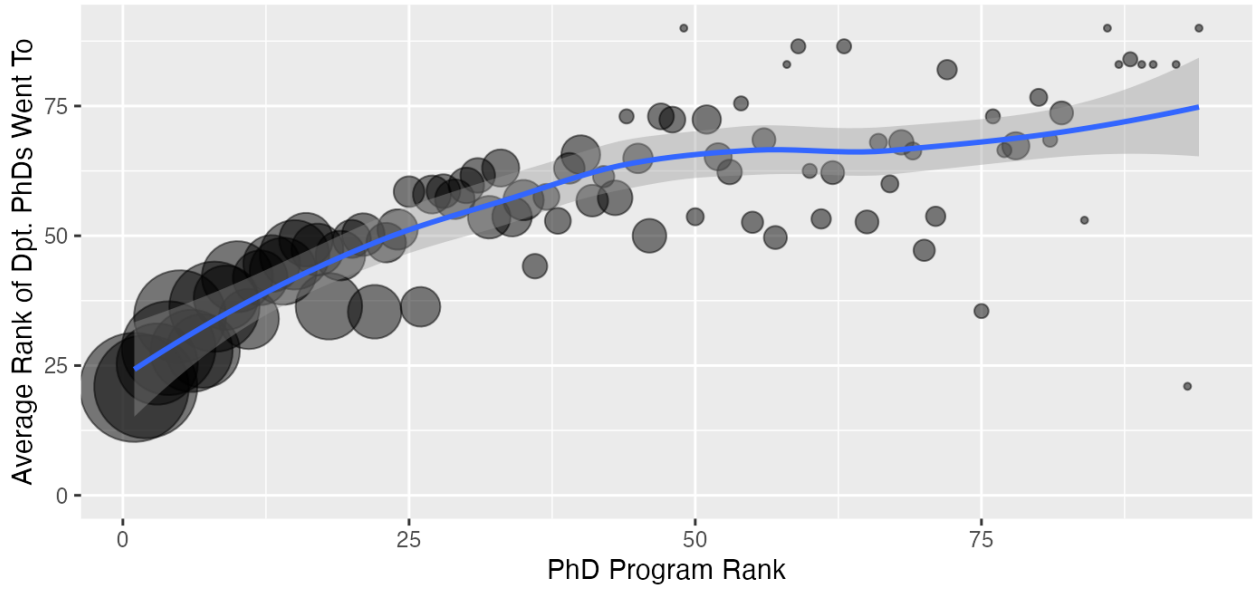
Notes: This figure displays the percentage of a Ph.D. programs' graduates (in the sample) who went to a higher-ranked department than their Ph.D. program. Ph.D. programs are ordered according to the "Ranking" column of Appendix Table A.1. Because by definition those who graduate from the top-ranked Ph.D. programs cannot go to a department ranked higher than theirs, they are excluded. Ph.D. programs are weighted by number of graduates (in the sample).

Figure A.5: Number of Ph.D. Graduates by Department Rankings



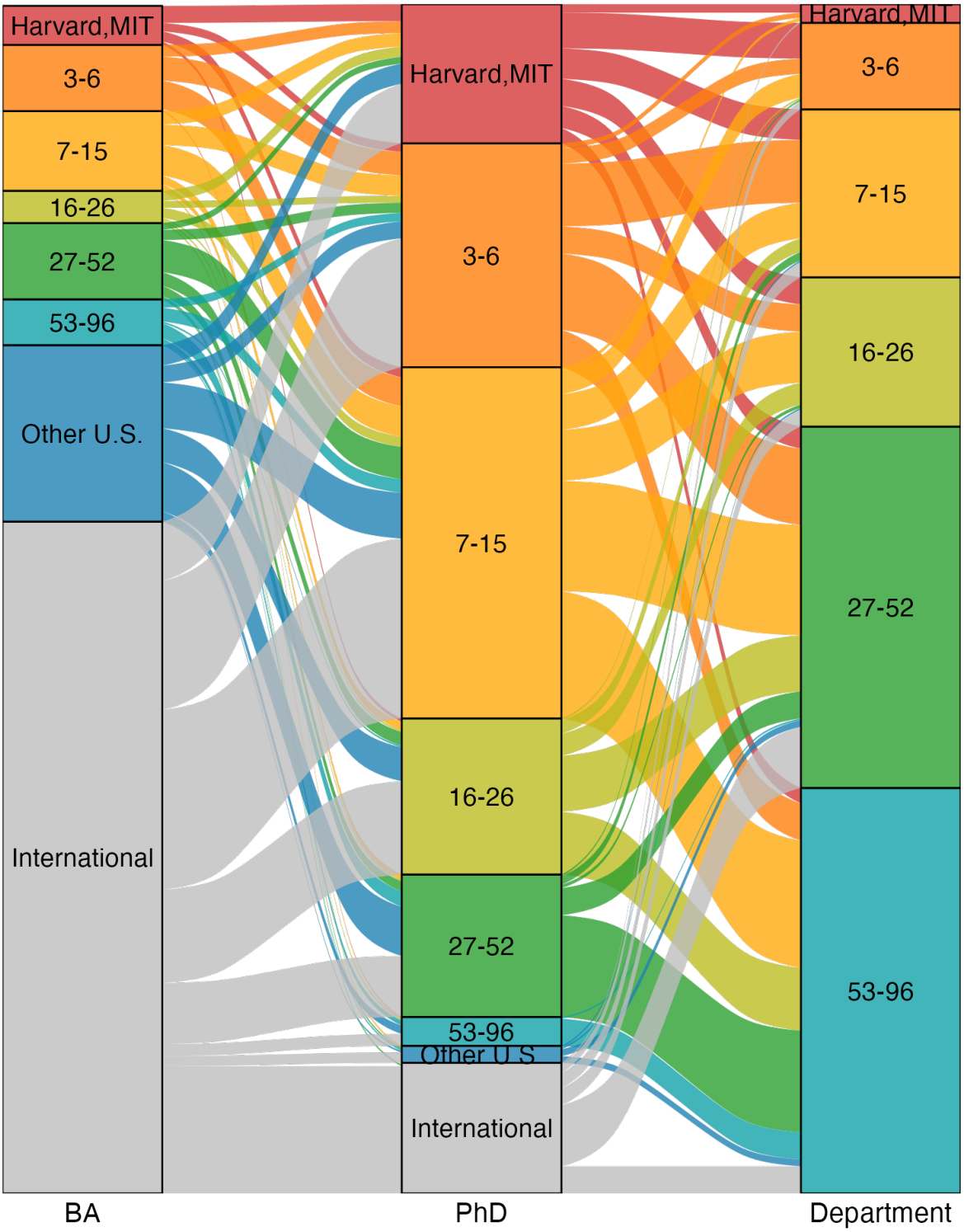
Notes: This figure plots the average number of Ph.D. graduates by Ph.D. program. Ph.D. programs are ordered according to the "Ranking" column of Appendix Table A.1. Ph.D. candidate data is from the 2010 National Research Council report, "A Data-Based Assessment of Research-Doctorate Programs in the United States" (Ostriker et al., 2011)).

Figure A.6: Average Rank of Department a Ph.D. Programs' Graduates Went To, by Ph.D. Program



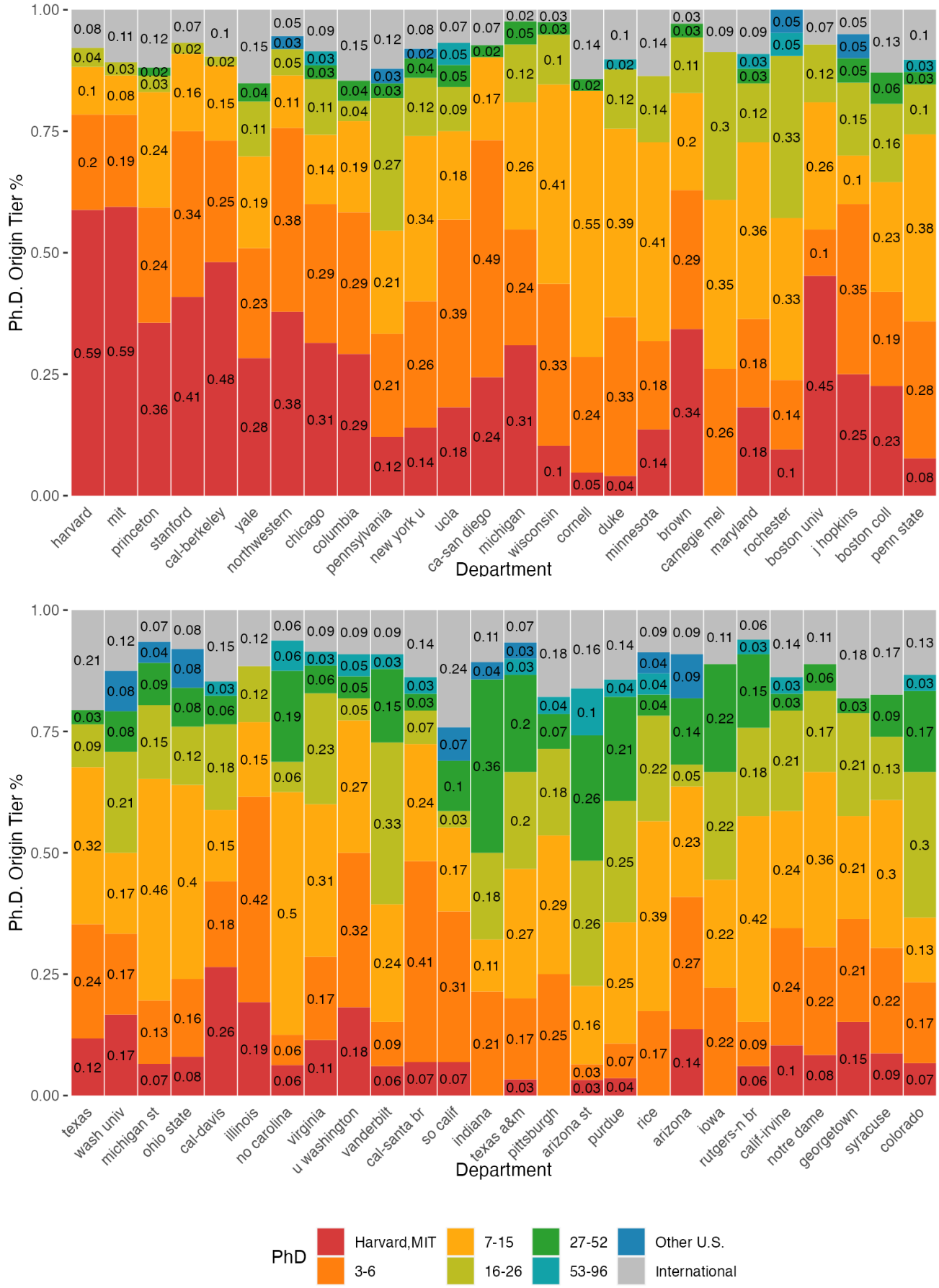
Notes: This figure displays the average department rank that graduates of a particular Ph.D. program went to. Ph.D. programs are ordered according to the "Ranking" column of Appendix Table A.1. Ph.D. programs are weighted by number of graduates (in the sample).

Figure A.7: Flows From B.A. Programs (Left) to Ph.D. Programs (Middle) to Departments (Right), by Tier; Assistant Only



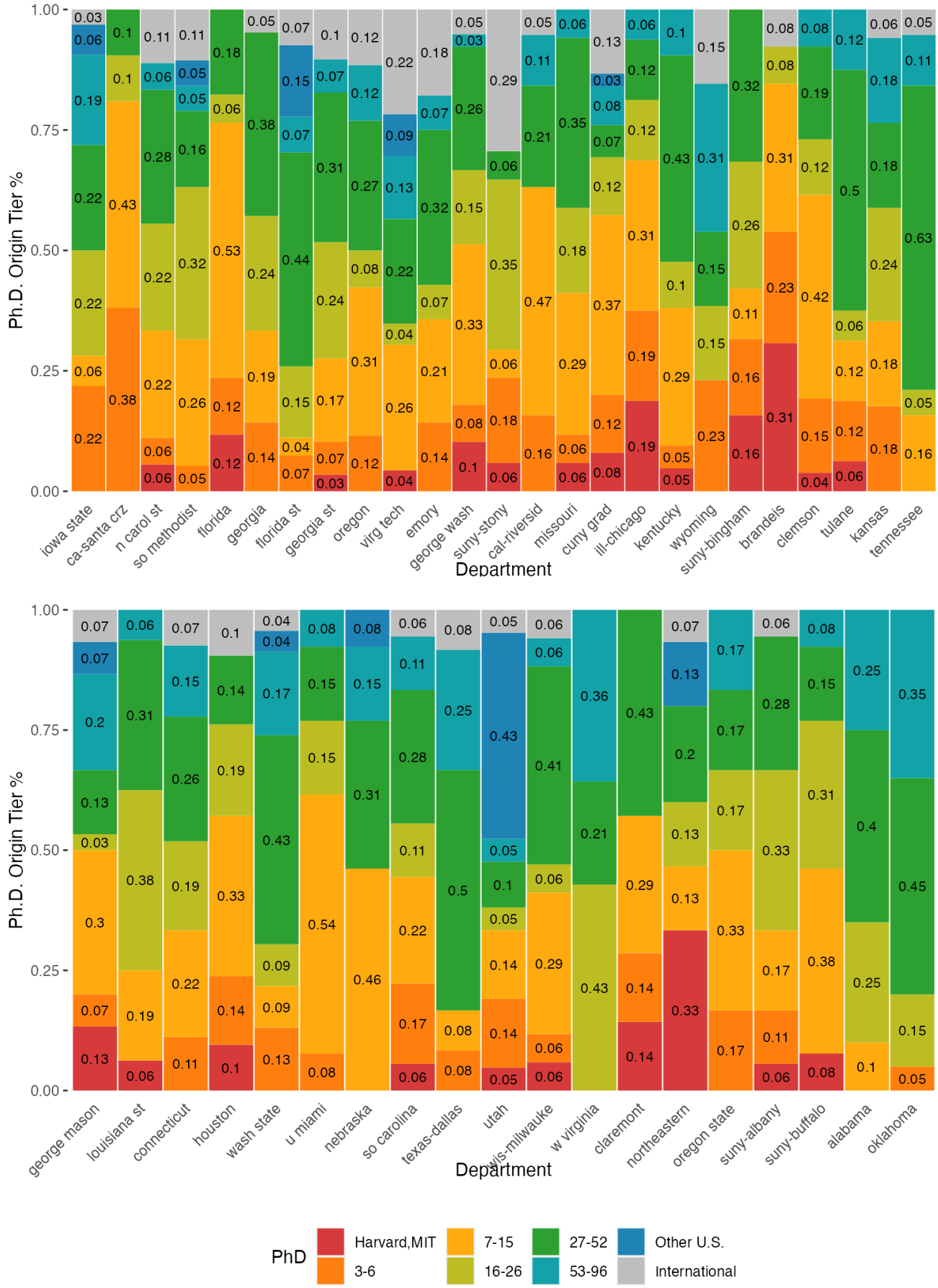
Notes: This Sankey diagram shows flows from B.A. programs (left) to Ph.D. programs (middle) to departments (right). The sample is limited to assistant professors. The height of the flow represents the number of individuals going from one group to another. The B.A. column is shorter due to missing data on B.A.s.

Figure A.8: % of Department Faculty from Different Tiers of Ph.D. Program, Dpts. 1-26 and 27-52



Notes: This figure displays the percentage of a department's faculty that came from groupings of Ph.D. program rankings. Each row is a department, and the colorings of the row represent the percentage of faculty that come from the particular Ph.D. program group. Panel (a) shows department withs ranks 1-26, while Panel (b) shows departments with ranks 27-52.

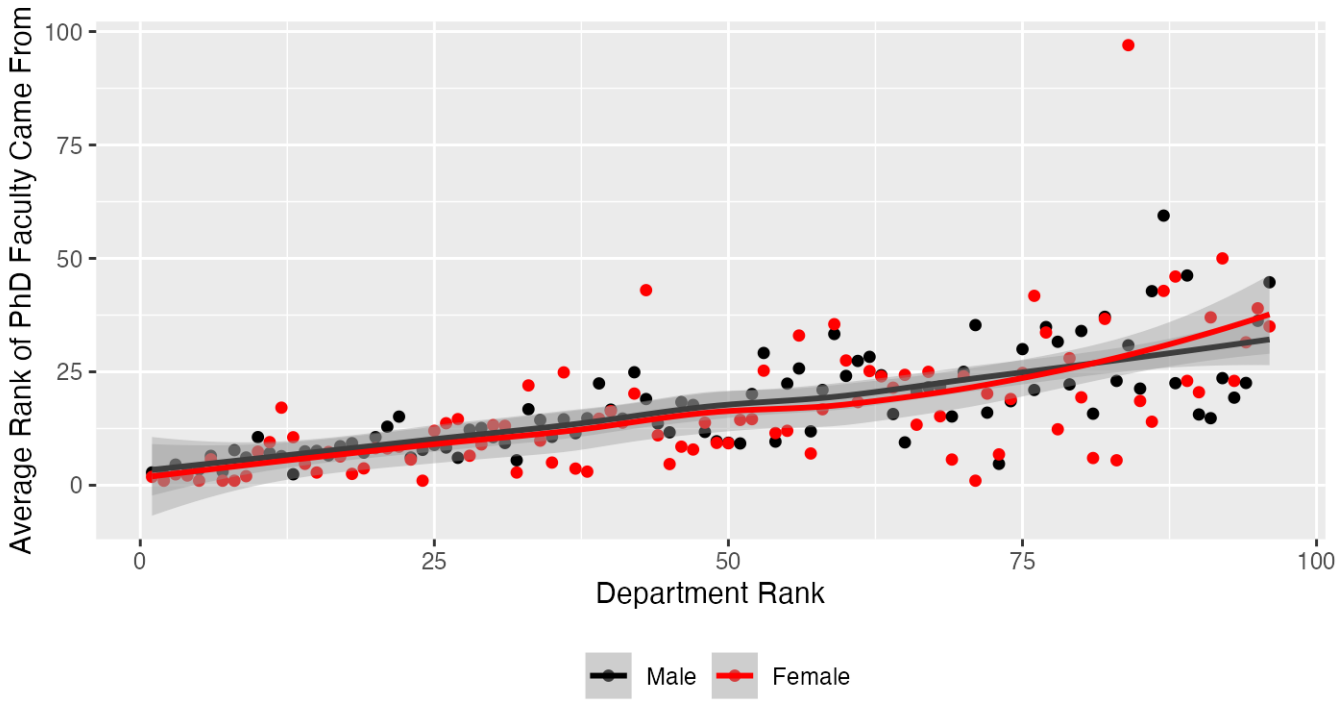
Figure A.9: % of Department Faculty from Different Tiers of Ph.D. Program, Dpts. 53-77 and 78-96



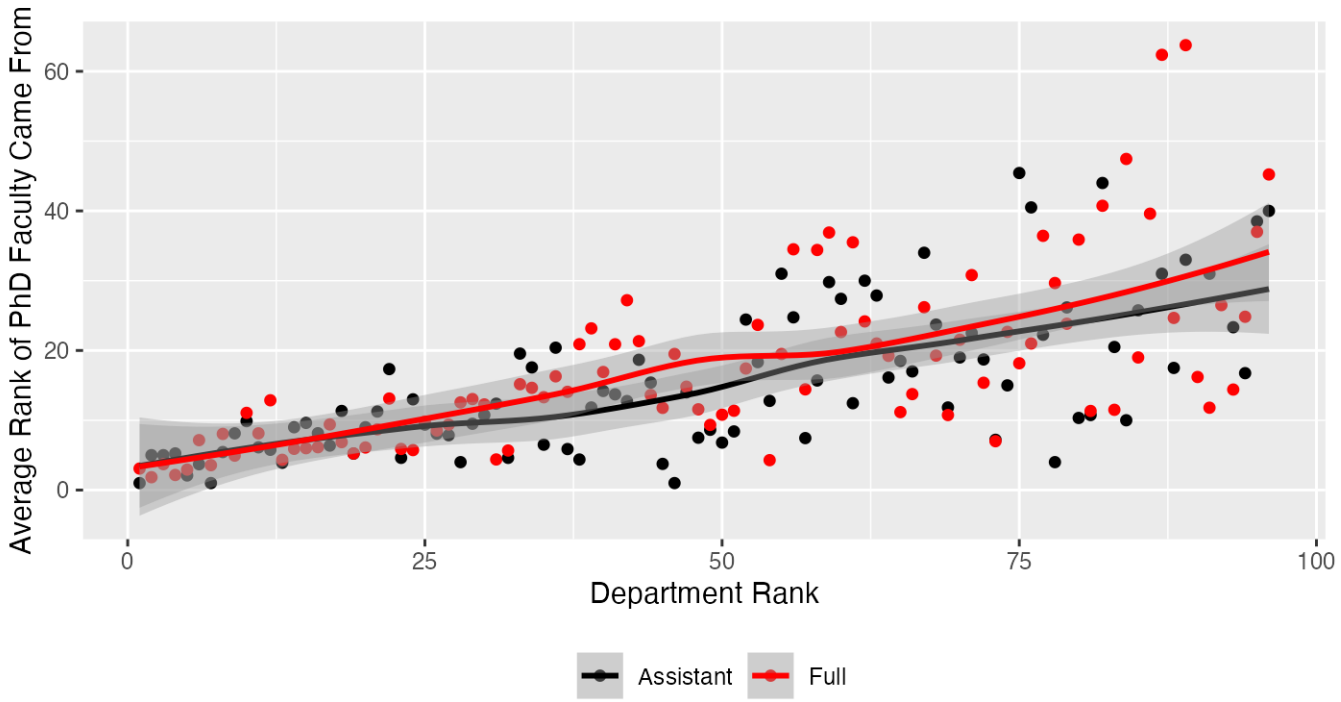
Notes: This figure displays the percentage of a department's faculty that came from groupings of Ph.D. program rankings. Each row is a department, and the colorings of the row represent the percentage of faculty that come from the particular Ph.D. program group. Panel (a) shows department withs ranks 53-77, while Panel (b) shows departments with ranks 78-96.

Figure A.10: Average Rank of Ph.D. Programs of a Department's Faculty, by Male and Female Professors and by Assistant and Full Professors

Panel A: Male and Female Professors

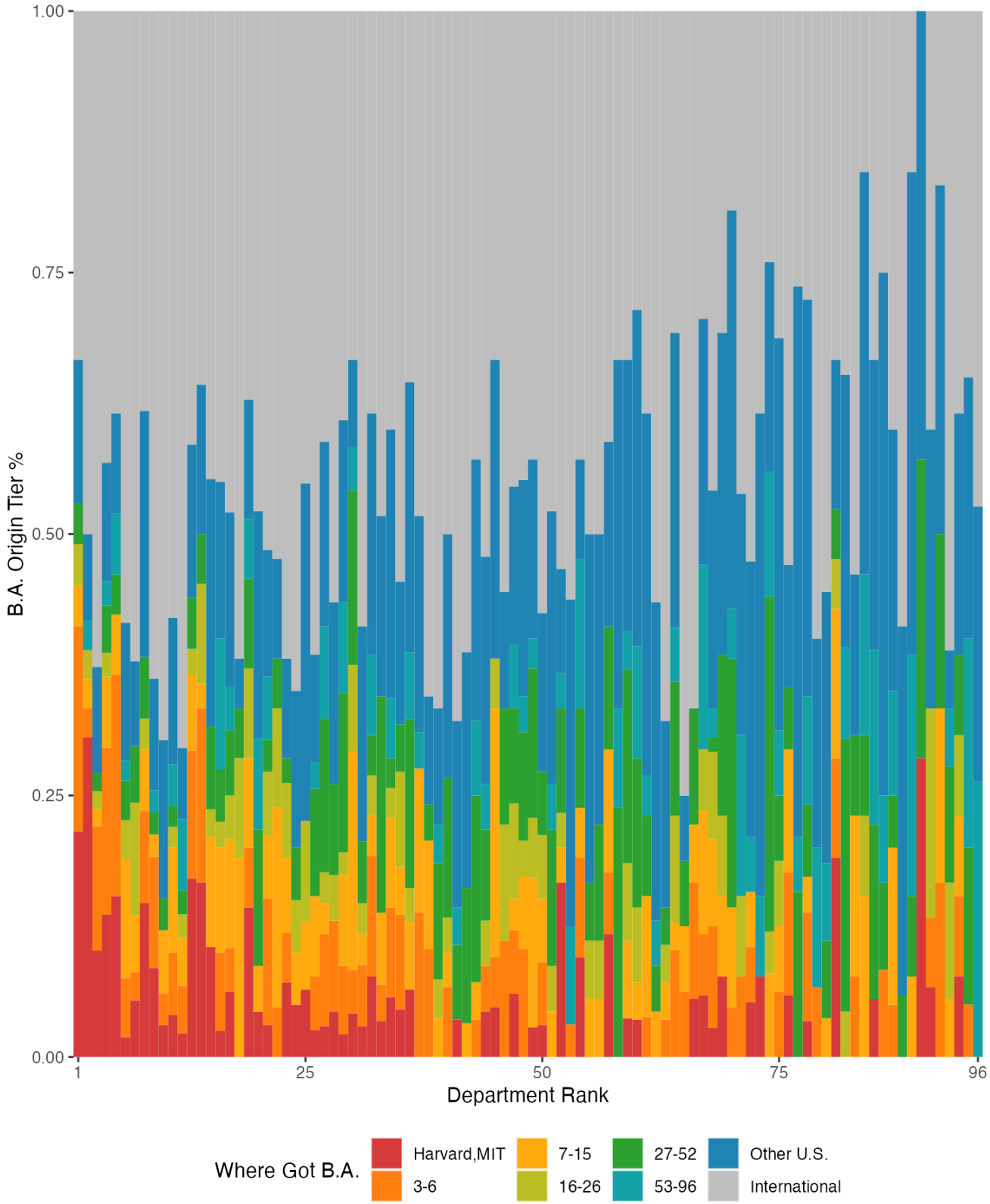


Panel B: Assistant and Full Professors



Notes: This figure displays, for a given department, the average rank of the Ph.D. programs faculty members attended. Panel A compares Male and Female Professors, while Panel B compares Assistant and Full Professors. Departments are ordered on the x-axis according to the "Ranking" column of Appendix Table A.1. The sample is restricted to those who went to USNWR Ph.D. programs.

Figure A.11: % of Dpt. Faculty from Different Tiers of B.A. Program, by Department



Notes: This bar chart displays the percentage of a department's faculty that come from groupings of B.A. program rankings. Each row is a department, and the colorings of the row represent the percentage of faculty that come from the particular B.A. program group. Departments are ordered according to the "Ranking" column of Appendix Table A.1. Observations with missing information on B.A. are excluded.

Appendix Tables

Table A.1: Department USNWR Rankings

School	USNWR	Ranking
Harvard University	1	1
Massachusetts Institute of Technology	1	2
Princeton University	1	3
Stanford University	1	4
University of California–Berkeley	1	5
Yale University	1	6
Northwestern University	7	7
University of Chicago	7	8
Columbia University	9	9
University of Pennsylvania	10	10
New York University	11	11
University of California–Los Angeles	12	12
University of California–San Diego	12	13
University of Michigan	12	14
University of Wisconsin	12	15
Cornell University	16	16
Duke University	16	17
University of Minnesota	16	18
Brown University	19	19
Carnegie Mellon University	20	20
University of Maryland	21	21
University of Rochester	21	22
Boston University	23	23
Johns Hopkins University	23	24
Boston College	25	25
Pennsylvania State University	25	26
University of Texas–Austin	27	27
Washington University in St. Louis	27	28
Michigan State University	29	29
Ohio State University	29	30
University of California–Davis	29	31
University of Illinois–Urbana-Champaign	29	32
University of North Carolina	29	33
University of Virginia	29	34
University of Washington	35	35
Vanderbilt University	35	36
University of California–Santa Barbara	37	37
University of Southern California	37	38
Indiana University	39	39
Texas A&M University	39	40
University of Pittsburgh	39	41
Arizona State University	42	42
Purdue	42	43
Rice University	42	44
University of Arizona	42	45
University of Iowa	42	46
Rutgers	47	47
University of California–Irvine	47	48
University of Notre Dame	47	49
Georgetown University	50	50

School	USNWR	Ranking
Syracuse University	50	51
University of Colorado–Boulder	50	52
Iowa State University	53	53
University of California–Santa Cruz	53	54
North Carolina State University	55	55
Southern Methodist University	55	56
University of Florida	55	57
University of Georgia	55	58
Florida State University	59	59
Georgia State University	59	60
University of Oregon	59	61
Virginia Tech	59	62
Emory University	63	63
George Washington University	63	64
Stony Brook University	63	65
University of California–Riverside	63	66
University of Missouri	63	67
CUNY Graduate School	68	68
University of Illinois–Chicago	68	69
University of Kentucky	68	70
University of Wyoming	68	71
Binghamton University	72	72
Brandeis University	72	73
Clemson University	72	74
Tulane University	72	75
University of Kansas	72	76
University of Tennessee	72	77
George Mason University	78	78
Louisiana State University	78	79
University of Connecticut	78	80
University of Houston	78	81
Washington State University	78	82
University of Miami	83	83
University of Nebraska	83	84
University of South Carolina	83	85
University of Texas–Dallas	83	86
University of Utah	83	87
University of Wisconsin–Milwaukee	83	88
West Virginia University	83	89
Claremont Graduate University	90	90
Northeastern University	90	91
Oregon State University	90	92
University at Albany	90	93
University at Buffalo	90	94
University of Alabama	90	95
University of Oklahoma	90	96

Notes: This table show the 2017 USNWR ranking of economics departments (USNWR, 2017). Departments are often tied; as such, we create a unique ranking ("Ranking" column) in order to distinguish tied schools, which are arranged alphabetically. Departments that are listed but unranked are: American University, Auburn University, Clark University, Colorado School of Mines, Colorado State University, Drexel University, Florida International University, Fordham University, Howard University, Kansas State University, Lehigh University, Middle Tennessee State University, Mississippi State University, New Mexico State University, New School, Northern Illinois University, Oklahoma State University, Rensselaer Polytechnic Institute, Southern Illinois University–Carbondale, Southern New Hampshire University, Suffolk University, Teachers College, Temple University, Texas Tech University, University of Arkansas, University of Central Florida, University of Cincinnati, University of Delaware, University of Hawaii, University of Massachusetts–Amherst, University of Memphis, University of Mississippi, University of Missouri–Kansas City, University of New Hampshire, University of New Mexico, University of New Orleans, University of Rhode Island, University of Southern Mississippi, University of South Florida, Utah State University, Wayne State University, Western Michigan University. We assign each a USNWR rank of 97 and a "Ranking" between 97 and 138, assigned alphabetically. California Institute of Technology is the only other U.S. school that produced Ph.D.s in our sample.

Table A.2: Average Rank of Ph.D. Program by Tier of Department, Male Assistant, Female Assistant, Assistant, and Full Professors

Panel A: Male Assistant Professors

Current Department Bin	Median	Mean	Min	Max	N
1-10	1	5.1	1	42	71
11-20	1	6.6	1	35	65
21-29	9	10.8	1	68	83
35-39	8	10.3	1	39	28
42-50	12	11.7	1	42	42
53-59	12	18.2	1	50	49
63-68	20	24	1	68	28
72-78	16	23.8	1	78	34
83-90	23	29.7	1	97	39

Panel B: Female Assistant Professors

Current Department Bin	Median	Mean	Min	Max	N
1-10	1	2.9	1	16	19
11-20	7	8	1	37	21
21-29	7	7.5	1	37	21
35-39	10	12.5	1	42	22
42-50	12	13.3	1	42	23
53-59	12	18.4	1	78	19
63-68	12	14.5	1	39	18
72-78	21	22.9	1	68	17
83-90	12	23.1	1	97	17

Panel C: Assistant Professors

Current Department Bin	Median	Mean	Min	Max	N
1-10	1	4.6	1	42	90
11-20	4	7	1	37	86
21-29	9	10.1	1	68	104
35-39	10	11.3	1	42	50
42-50	12	12.3	1	42	65
53-59	12	18.3	1	78	68
63-68	14	20.3	1	68	46
72-78	16	23.5	1	78	51
83-90	18	27.7	1	97	56

Panel D: Full Professors

Current Department Bin	Median	Mean	Min	Max	N
1-10	1	4.5	1	68	284
11-20	1	7.3	1	72	222
21-29	7	10.2	1	78	204
35-39	12	17.7	1	97	83
42-50	12	15.1	1	72	137
53-59	19	25.3	1	97	96
63-68	12	19.6	1	97	114
72-78	19	26.1	1	97	103
83-90	29	35	1	97	89

Notes: This table reports the median, mean, minimum, and maximum ranking of Ph.D. program attended by professors in a given current department bin. Panel A is limited to male assistant professors, Panel B is limited to female assistant professors, Panel C is limited to assistant professors, and Panel D is limited to full professors. The sample is limited to professors who attended a ranked USNWR department. Department and Ph.D. rankings include ties and are taken from the "USNWR" column of Appendix Table A.1.

Table A.3: Ph.D. Departments with Highest Number of Faculty Graduates

School	N	CumPerc
Harvard University	207	7.7
Massachusetts Institute of Technology	184	14.6
Stanford University	150	20.1
University of California–Berkeley	144	25.5
University of Chicago	138	30.6
Yale University	113	34.8
Princeton University	110	38.9
Northwestern University	89	42.3
University of Pennsylvania	82	45.3
University of Wisconsin	78	48.2
University of Michigan	72	50.9
University of Minnesota	71	53.5
Columbia University	66	56.0
New York University	57	58.1
University of California–San Diego	50	60.0
University of California–Los Angeles	46	61.7
Cornell University	44	63.3
University of Rochester	44	65.0
Duke University	41	66.5
Brown University	37	67.9
University of Illinois–Urbana-Champaign	26	68.8
University of Maryland	26	69.8
California Institute of Technology	25	70.7
Johns Hopkins University	23	71.6
University of Washington	23	72.4
Boston University	22	73.3
Michigan State University	22	74.1
Pennsylvania State University	22	74.9
University of Virginia	22	75.7
Texas A&M University	21	76.5
Carnegie Mellon University	20	77.3
University of Texas–Austin	20	78.0
University of North Carolina	19	78.7
Ohio State University	17	79.3
Purdue	16	79.9
University of California–Davis	16	80.5
University of Iowa	15	81.1
Washington University in St. Louis	15	81.6
University of Pittsburgh	13	82.1
Boston College	12	82.6
Indiana University	12	83.0
University of Arizona	11	83.4
Syracuse University	10	83.8
George Mason University	9	84.1
University of Colorado–Boulder	9	84.5

Notes: This table displays the number of faculty produced by US Ph.D. department. Departments with fewer than 9 faculty are excluded. The cumulative percentage is the percentage over the entire sample, including those with international degrees.

Table A.4: Transition Matrix, Ph.D. to Department, Panels C and D Computed at Individual Department Level

Panel A: Unweighted

PhD	Harvard,MIT	3-6	7-15	16-26	27-52	53-96
Harvard,MIT	0.59	0.38	0.23	0.17	0.09	0.05
3-6	0.19	0.26	0.32	0.23	0.19	0.11
7-15	0.09	0.19	0.23	0.34	0.28	0.24
16-26	0.03	0.05	0.10	0.13	0.17	0.15
27-52	0.00	0.01	0.03	0.02	0.11	0.25
53-96	0.00	0.00	0.01	0.01	0.02	0.10
Other U.S.	0.00	0.00	0.01	0.01	0.02	0.03
International	0.09	0.11	0.08	0.09	0.12	0.07

Panel B: Unweighted, Exclude Other U.S. and International

PhD	Harvard,MIT	3-6	7-15	16-26	27-52	53-96
Harvard,MIT	0.65	0.43	0.25	0.19	0.10	0.06
3-6	0.21	0.29	0.35	0.26	0.23	0.12
7-15	0.10	0.21	0.25	0.37	0.32	0.27
16-26	0.04	0.05	0.11	0.15	0.20	0.17
27-52	0.00	0.02	0.04	0.02	0.13	0.28
53-96	0.00	0.00	0.01	0.01	0.03	0.11

Panel C: Weighted by Average Number of Ph.D. Candidates Per Department in Tier

PhD	Harvard,MIT	3-6	7-15	16-26	27-52	53-96
Harvard,MIT	0.56	0.34	0.17	0.12	0.05	0.02
3-6	0.25	0.31	0.31	0.21	0.15	0.06
7-15	0.11	0.24	0.23	0.34	0.26	0.16
16-26	0.08	0.09	0.15	0.23	0.24	0.15
27-52	0.00	0.02	0.09	0.06	0.22	0.37
53-96	0.00	0.00	0.05	0.04	0.08	0.24

Panel D: Weighted by Total Ph.D. Candidates Across Departments in Tier

PhD	Harvard,MIT	3-6	7-15	16-26	27-52	53-96
Harvard,MIT	0.78	0.60	0.41	0.34	0.21	0.15
3-6	0.17	0.27	0.37	0.31	0.30	0.19
7-15	0.03	0.10	0.13	0.22	0.23	0.23
16-26	0.02	0.03	0.07	0.12	0.18	0.18
27-52	0.00	0.00	0.02	0.01	0.07	0.18
53-96	0.00	0.00	0.01	0.01	0.01	0.07

Notes: This table displays the fraction of faculty in a given tier (columns) that come from the different tiers of Ph.D. programs (rows). It is similar to Table 2, but Panels C and D are computed at the individual department level before aggregating up; Panels A and B are included for comparison. Departments are grouped according to the "Ranking" column of Appendix Table A.1. Numbers are in fractions, not percentages. Each column adds up to 1 (100%). Panel A shows the raw data (unweighted). Panel B is the same as Panel A, excludes Ph.D.s from the Other U.S. and International categories; we do this for comparison to Panels C and D. Panel C divides the number of faculty produced by a given Ph.D. program in a department tier by the number of Ph.D. graduates produced by that department. It then *adds* these up to collapse to the Ph.D. tier-department tier level before computing the fractions within a department tier. Panel D divides the number of graduates produced by a given Ph.D. program in a department tier by the number of Ph.D. graduates produced by that department. It then *averages* these to collapse to the Ph.D. tier-department tier level before computing the fractions within a department tier.

Table A.5: Percentage of Ph.D. Graduates of a Ph.D. Tier That Are in Department Tier, Computed at Individual Department Level

Panel A: Consider Only Assistant; Denominator Based on 6 Years

PhD	Harvard,MIT	3-6	7-15	16-26	27-52	53-96	Total
Harvard,MIT	1.7	7.1	6.1	5.4	4.4	3.1	27.9
3-6	0.6	1.9	8.3	3.7	9.6	4.7	28.7
7-15	0.2	1.4	2.4	3.3	7.7	9.0	24.0
16-26	0.0	0.1	1.2	1.9	4.2	5.3	12.7
27-52	0.0	0.0	0.5	0.2	1.6	4.8	7.1
53-96	0.0	0.0	0.0	0.0	0.1	1.2	1.3

Panel B: Consider Only Assistant and Associate; Denominator Based on 12 Years

PhD	Harvard,MIT	3-6	7-15	16-26	27-52	53-96	Total
Harvard,MIT	1.5	4.4	4.6	3.6	4.6	3.9	22.6
3-6	0.6	1.2	5.8	3.5	7.9	5.4	24.3
7-15	0.1	0.9	1.9	2.6	6.3	6.8	18.7
16-26	0.0	0.1	0.6	1.8	4.2	6.1	12.7
27-52	0.0	0.0	0.3	0.3	1.6	5.5	7.7
53-96	0.0	0.0	0.0	0.0	0.2	1.8	2.0

Panel C: Consider Assistant, Associate, and Full; Denominator Based on 30 Years

PhD	Harvard,MIT	3-6	7-15	16-26	27-52	53-96	Total
Harvard,MIT	3.5	5.4	5.8	4.1	4.5	3.3	26.6
3-6	0.8	2.4	5.2	3.8	6.2	4.2	22.6
7-15	0.2	0.9	1.8	2.7	4.8	5.0	15.3
16-26	0.1	0.3	0.9	1.5	3.7	4.0	10.4
27-52	0.0	0.0	0.2	0.2	1.4	4.1	5.9
53-96	0.0	0.0	0.1	0.1	0.3	1.6	2.0

Notes: This table is similar to Table 3, but is computed at the individual department level before aggregating up. For a given Ph.D. tier (rows), this table shows the percentage of (the estimated number of) Ph.D. graduates that are now faculty members in a given department tier (columns). Panel A considers only assistant professors; Panel B considers assistant and associate Professors; and Panel C considers assistant, associate, and full professors. Departments are grouped according to the "Ranking" column of Appendix Table A.1. The denominator is computed by multiplying the total number of Ph.D. graduates across departments for a given Ph.D. program (not Ph.D. tier) by 6 in Panel A, by 12 in Panel B, and by 30 in Panel C (to represent 6, 12, and 30 cohorts of Ph.D. students). The values are then computed by averaging the values of individual departments within a Ph.D. tier-department tier cell. As discussed in the text, this table should be interpreted as a rough, back-of-the envelope calculation as it depends on a number of assumptions.

Table A.6: Transition Matrix, Ph.D. to Department: Male, Female, Assistant Professor, Full Professor

Panel A: Male Professors

PhD	Harvard,MIT	3-6	7-15	16-26	27-52	53-96
Harvard,MIT	0.58	0.36	0.23	0.17	0.09	0.05
3-6	0.20	0.25	0.31	0.22	0.19	0.10
7-15	0.09	0.21	0.23	0.33	0.27	0.23
16-26	0.04	0.05	0.10	0.14	0.17	0.15
27-52	0.00	0.02	0.03	0.02	0.12	0.26
53-96	0.00	0.00	0.01	0.01	0.02	0.11
Other U.S.	0.00	0.00	0.01	0.01	0.02	0.03
International	0.09	0.11	0.08	0.10	0.11	0.07

Panel B: Female Professors

PhD	Harvard,MIT	3-6	7-15	16-26	27-52	53-96
Harvard,MIT	0.67	0.45	0.24	0.18	0.09	0.06
3-6	0.17	0.32	0.35	0.27	0.19	0.13
7-15	0.08	0.11	0.20	0.35	0.29	0.27
16-26	0.00	0.03	0.07	0.11	0.18	0.15
27-52	0.00	0.00	0.06	0.03	0.09	0.25
53-96	0.00	0.00	0.02	0.00	0.02	0.07
Other U.S.	0.00	0.00	0.00	0.00	0.00	0.03
International	0.08	0.11	0.06	0.05	0.15	0.04

Panel C: Assistant Professors

PhD	Harvard,MIT	3-6	7-15	16-26	27-52	53-96
Harvard,MIT	0.45	0.41	0.18	0.18	0.06	0.04
3-6	0.27	0.18	0.37	0.18	0.21	0.09
7-15	0.18	0.27	0.21	0.34	0.31	0.31
16-26	0.00	0.02	0.08	0.15	0.15	0.15
27-52	0.00	0.02	0.05	0.02	0.08	0.25
53-96	0.00	0.00	0.00	0.00	0.00	0.07
Other U.S.	0.00	0.00	0.01	0.01	0.02	0.02
International	0.09	0.10	0.09	0.11	0.17	0.07

Panel D: Full Professors

PhD	Harvard,MIT	3-6	7-15	16-26	27-52	53-96
Harvard,MIT	0.62	0.37	0.25	0.19	0.10	0.06
3-6	0.16	0.30	0.29	0.25	0.19	0.11
7-15	0.09	0.15	0.22	0.34	0.26	0.25
16-26	0.04	0.06	0.12	0.11	0.17	0.13
27-52	0.00	0.01	0.03	0.01	0.13	0.24
53-96	0.00	0.00	0.01	0.01	0.03	0.12
Other U.S.	0.00	0.00	0.01	0.00	0.02	0.04
International	0.09	0.10	0.07	0.09	0.10	0.06

Notes: This transition matrix displays the fraction of faculty in a given tier (columns) that come from the different tiers of Ph.D. programs (rows). Panel A is for male professors, Panel B is for female professors, Panel C is for assistant professors, and Panel D is for full professors. Departments are grouped according to the "Ranking" column of Appendix Table A.1. Numbers are in fractions, not percentages.

Table A.7: US BA Universities with Highest Number of Faculty Graduates

BA	N	Cumul. Perc. All	Cumul. Perc. US
Harvard University	106	4.0	7.6
University of California–Berkeley	52	6.0	11.3
Princeton University	44	7.6	14.5
Yale University	40	9.1	17.3
Massachusetts Institute of Technology	37	10.5	20.0
University of Chicago	37	11.9	22.6
University of Michigan	29	13.0	24.7
Stanford University	26	14.0	26.6
University of Pennsylvania	23	14.9	28.2
Columbia University	21	15.6	29.7
Cornell University	20	16.4	31.2
Swarthmore College	20	17.2	32.6
University of Virginia	18	17.8	33.9
University of Wisconsin	18	18.5	35.2
Williams College	17	19.2	36.4
Brown University	16	19.8	37.5
Duke University	16	20.4	38.7
Northwestern University	16	21.0	39.8
University of California–Davis	16	21.6	41.0
University of Washington	15	22.1	42.0
Dartmouth College	14	22.7	43.1
Miami University of Ohio	14	23.2	44.1
Brigham Young University	13	23.7	45.0
Carleton College	13	24.2	45.9
College of William and Mary	13	24.7	46.8
Michigan State University	13	25.2	47.8
Georgetown University	12	25.6	48.6
Tufts University	12	26.1	49.5
University of Illinois–Urbana-Champaign	12	26.5	50.4
Washington University in St. Louis	12	27.0	51.2
Wesleyan University	12	27.4	52.1
California Institute of Technology	11	27.8	52.9
Indiana University	11	28.2	53.7
Oberlin College	11	28.7	54.4
University of California–Los Angeles	11	29.1	55.2
Amherst College	10	29.4	55.9
University of North Carolina	10	29.8	56.7
University of Texas–Austin	10	30.2	57.4
University of Notre Dame	9	30.5	58.0
Boston College	8	30.8	58.6
Pomona College	8	31.1	59.2
Purdue	8	31.4	59.7

Notes: This table displays the number of faculty produced by US B.A. department. Departments with fewer than 8 faculty are excluded. The cumulative percentage all column is the percentage over the entire sample, including those with international degrees (but excluding those with missing B.A. information). The cumulative percentage US column is computed only among those with nonmissing US BAs.

Table A.8: BA-Ph.D. Combinations with Highest Number of Graduates

BA	PhD	N
Harvard University	Harvard University	47
Harvard University	Massachusetts Institute of Technology	19
Yale University	Massachusetts Institute of Technology	17
University of California–Berkeley	University of California–Berkeley	13
University of Chicago	University of Chicago	11
Princeton University	Stanford University	10
Massachusetts Institute of Technology	Massachusetts Institute of Technology	9
Harvard University	Stanford University	8
Princeton University	Harvard University	8
Yale University	Harvard University	8
Harvard University	University of California–Berkeley	7
Massachusetts Institute of Technology	Harvard University	7
Princeton University	Massachusetts Institute of Technology	7
Harvard University	Princeton University	6
Stanford University	Stanford University	6
University of California–Berkeley	Harvard University	6
University of California–Berkeley	Stanford University	6
Amherst College	Massachusetts Institute of Technology	5
Cornell University	University of California–Berkeley	5
Harvard University	University of Chicago	5
Harvard University	Yale University	5
Swarthmore College	Yale University	5
University of Michigan	University of California–Berkeley	5
University of Pennsylvania	Massachusetts Institute of Technology	5
Brown University	Harvard University	4
Massachusetts Institute of Technology	Princeton University	4
Stanford University	Massachusetts Institute of Technology	4
University of California–Berkeley	Massachusetts Institute of Technology	4
University of California–Berkeley	University of California–Los Angeles	4
University of California–Berkeley	Yale University	4
University of Chicago	Harvard University	4
University of Illinois–Urbana-Champaign	University of Illinois–Urbana-Champaign	4
University of Michigan	University of Wisconsin	4
University of Pennsylvania	Harvard University	4
University of Washington	University of Chicago	4
Wesleyan University	Massachusetts Institute of Technology	4

Notes: This table displays the number of faculty produced by US BA-Ph.D. combinations. Combinations with fewer than 4 faculty are excluded.

Data Appendix

We keep individuals who are listed on the directory at the time of data collection even if they have not been removed after a recent move to another department.

We primarily used the titles collected from the faculty rosters to classify individuals to their rank; in some cases, we also used additional information, such as that obtained from faculty webpages. In general, we exclude instructional faculty such as professors of practice, lecturers, and instructors; affiliate and courtesy faculty (including secondary appointments at Duke); emeritus professors; those who have not started yet; fixed term faculty; and research professors. We assume that chairs are full professors unless it explicitly states that they are otherwise, such as associate professors. We also assume department chairs, deans, and those in other university leadership roles are full professors. It sometimes happens that a chaired professor's title is in another discipline such as finance; we include these cases. We note that classification is an imperfect process and that in some cases judgement calls have to be made. We also corrected several errors in the dataset that we became aware of, but a small amount of measurement error likely remains. The gender of the candidate was obtained by photo and/or pronouns and, in some cases in the data provided by Langan (Langan, 2018), using an algorithm of likely gender based on name. Individuals almost always have only one Ph.D., but can have multiple; in such cases we consider only one.[35]

Classifying B.A. institution is often straightforward, but not always. If the person has two Bachelors degrees, we use the one that is in economics. If both or neither are in economics, we use the one that appears to have a later graduation date. We use our judgement when classifying international degrees. If we do not see a Bachelors but do see another (non-doctoral) degree from an international university, we consider the earliest non-doctoral degree to be the B.A. (even if there is a later degree in economics and the earlier one is not); this is necessary due to the sometime imperfect mapping of foreign degrees to B.A.s. If there is a (non-doctoral) school listed with no graduation date or degree (even if they did not graduate from there), we consider that to be the B.A. If they have a dual degree from two universities with one in the U.S., we go with the one in the U.S. We use our judgement in other situations.

[35] A university can be referred to by multiple names or change names over time. It is possible that in rare instances we classify a given university as multiple universities.