The Roads More Traveled: B.A.-Ph.D.-Professor Pipelines in Economics

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Abstract

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JEL Codes: J2, J45, I23

1 Introduction

Individuals who would like to become tenure-track professors in the future 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 at every level, aspiring academics can better understand the competition they will likely face by knowing the qualifications of current faculty. In this paper, we look at one such qualification: academic pedigree.

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, Ph.D. program ranking often factors into economics department hiring decisions (Stock and Alston, 2000),and 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.

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.

[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.

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), and Klein (2005) considers 25 of the top 200 departments.[2][3] 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 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]

[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.

[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

In this paper, we contribute to the literature by describing the academic origins of current tenure-track professors for the top 96 U.S. economics departments ("ranked departments") in the United States. We show how these academic origins differ by department ranking, professorship level (full vs. assistant, as a rough proxy for change over time), and gender.

While professors in the 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 U.S. News and World Report), 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] Excluding international B.A.s, only 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]

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).[8] We also find that members of this group 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

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.6. See also Panel B of Figure A.9.

[7] As will be noted below, for simplicity and comparability, we use the same ranking for B.A. as for Ph.D. Thus, the top 96 B.A. institutions excludes, for example, liberal arts colleges.

[8] 26 is the mean; 24 is the median.

departments) to 27.7 (for those teaching at departments ranked 83-90).

Our findings suggest, as one would expect, that students interested in professorships at Top 50 schools must seriously consider doctoral programs within the Top 10. Moreover, professorships at 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.

These findings should provide mild encouragement to students, job applicants, and mentors, especially 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). True, 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). However, high-achieving students from lower-ranked undergraduate institutions could still be competitive on the market when they succeed in a top doctoral program.

Moreover, with a median doctoral program ranking of 7 (mean 8.7) among assistant professors at top 52 hiring programs, and a median of 16 (mean 22.3) among assistant professors at hiring programs ranked 53-96, students who know in advance what kind of university they'd like to teach at can be strategic in their selection of doctoral program.

These findings suggest that there may be room for change in economics department hiring practices. The Ph.D.-to-professor pipeline at top-ranked universities is particularly narrow–even, as other research has found, in comparison with other disciplines (Colander, 2015; Wu, 2005). However, the primary purpose of this paper is not to criticize the pipeline, but to define and identify strategies for navigating it. Therefore, we do not discuss criticism of the pipeline in great detail.

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 discuss in Section 5 and conclude in Section 6.

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, we gathered the names and titles (Assistant Professor, etc.) of all faculty at these 96 ranked USNWR schools.[9] 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.[10] 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).[11] We further classify 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

[9] A research assistant collected this information from department websites in a random order between August 30th and September 25th, 2020. 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.

[10] 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.

[11] 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.

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.[12] 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.[13][14] One in seven professors (14.6%) received their Ph.D. at just one of two universities: Harvard and MIT (Appendix Table A.3). Forty two

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

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

[14] While not the focus of this paper, we briefly explore 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 Research Council report, "A Data-Based Assessment of Research-Doctorate Programs in the United States" (Ostriker et al., 2011). 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 negatively associated with Ph.D. program size, and the top 20 programs have, on average, more students than the lower ranked programs. It is unclear based on this simple exercise how much program size matters per se or if it just proxies for program quality, quality of student, department value added, etc.

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.5).

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 from a USNWR department (including unranked departments, to which we assign a rank of 97). 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 or fewer. 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 27.7 on average, with a median value of 18.

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).[15] (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 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

[15]Appendix Table A.4 shows this information in table format: for each department grouping (rows), it displays the fraction of faculty that come from Ph.D. groupings (columns).

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.6, 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.

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.[16] 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.[17] Yale and the University of Chicago have

[16] For a zoomed-in version, see Appendix Figures A.7 and A.8.

[17] Interestingly, no assistant professors at Harvard (MIT) received their PhD from Harvard (MIT).

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.

3.4 Ph.D. Origins by Faculty Characteristics

How do Ph.D. origins differ by gender and rank? Appendix Figure A.9 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).

How do these patterns vary over time? While we cannot answer this question perfectly, we can at least 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.9 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. This provides at least a little evidence that these institutions have become more selective (along this metric) over time (though the confidence intervals overlap).[18] 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).

[18]See also Appendix Table A.5 Panels C and D for transition matrices.

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 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. 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.6). 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).[19] Nearly half (47%) studied internationally, a much higher percentage than those with international Ph.D.s (9%).[20] 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).[21] 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

[19] Appendix Figure A.10 shows the stacked bar chart version, analogous to Figure 4.

[20] Appendix Figure A.6, which limits to assistant professors, shows that these professors are more likely to have international B.A.s.

[21] It is also interesting to consider the most common B.A.-Ph.D. pathways. Appendix Table A.7 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.

College all produce at least 10.[22]

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 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 Discussion

Our discussion proceeds in two parts: first, we analyze the narrowest part of the pipeline, from Ph.D. program to elite (top 25) university. Second, we discuss two wider sections of the pipeline: (1) the undergraduate degree to Ph.D. program, and (2) the Ph.D. program to a lower-ranked faculty position in the top 96. We use these findings to discuss possible strategies for prospective academics and their mentors.

5.1 A Narrow Pipeline

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

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

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.[23]

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).[24]

5.2 Two Windows of Opportunity

The path from Ph.D. to professor at an elite institution is really just one small section of a broader 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. As Hoxby and Avery (2013) report, many academically gifted high school students, especially from lower income backgrounds, choose to attend non-elite universities. However, our data show that individuals from a variety of undergraduate programs can funnel into economic academia. 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.[25]

[23]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).

[24]Because the primary purpose of this paper is to identify strategies for prospective academics (rather than to criticize issues with the current pipeline), we will refer readers to these other sources for further discussion on this topic.

[25]Naturally, helping students choose appropriate doctoral programs is just one small piece of a multi-

The second small window of opportunity for aspiring academics could be the strategic selection of a doctoral program based on the type of university at which the individual would like to teach. The conventional wisdom is to attend the highest-ranking doctoral program that one can get into, and in the narrow pipeline of economic academia (particularly at top departments), this wisdom likely often makes sense. However, the median doctoral program ranking of professors in the bottom 50 teaching departments of our sample was 16 (with a mean of 26). So, students interested in teaching at one of these universities might have a little bit of leeway in considering programs that suit their interests. Choosing a slightly lower-ranked school than the best a student can get into could be advantageous (Hilmer and Hilmer, 2009). Conley and Önder (2014) posit that "both students and professors in certain departments may find themselves playing a positional game. The faculty will attempt to identify the top students in an entering class, give them more time and attention, and suggest better projects to them. In turn, the students identified in this way may work harder to preserve their position" (p. 213). Researchers have found that exceptional graduates of lower-ranked programs can (and often do) produce better early career research than average peers from top-ranked programs (Conley and Önder, 2014; Hilmer and Hilmer, 2009). Thus, for some, there may be strategic advantage in choosing the doctoral program where one can receive the best one-on-one mentoring and research opportunities, and not necessarily the highest ranked program they can get into.

6 Conclusion

Although economics pipelines have been criticized as elitist and lacking in academic, socioeconomic, gender, and racial diversity, there are small windows of opportunity for students interested in the field. Tenure track professors come from a wide variety of undergraduate experiences, so successful students from non-elite undergraduate programs should not shy

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. Due to the narrow focus of this paper, these necessary strategies will not be discussed further here.

away from competitive doctoral programs. Moreover, while attending a top economics PhD program (in the top 10, for example) is certainly desirable, the median doctoral program ranking for assistant professors at top 96 institutions is 10 (mean 13.6). Therefore, there may be some wiggle room for students—especially those interested in finding programs tailored to their interests and mentorship needs.

Future research could also address how full 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 undergraduate programs 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 full pipeline for those in non-academic positions and show how the results we document compare to those in other fields.

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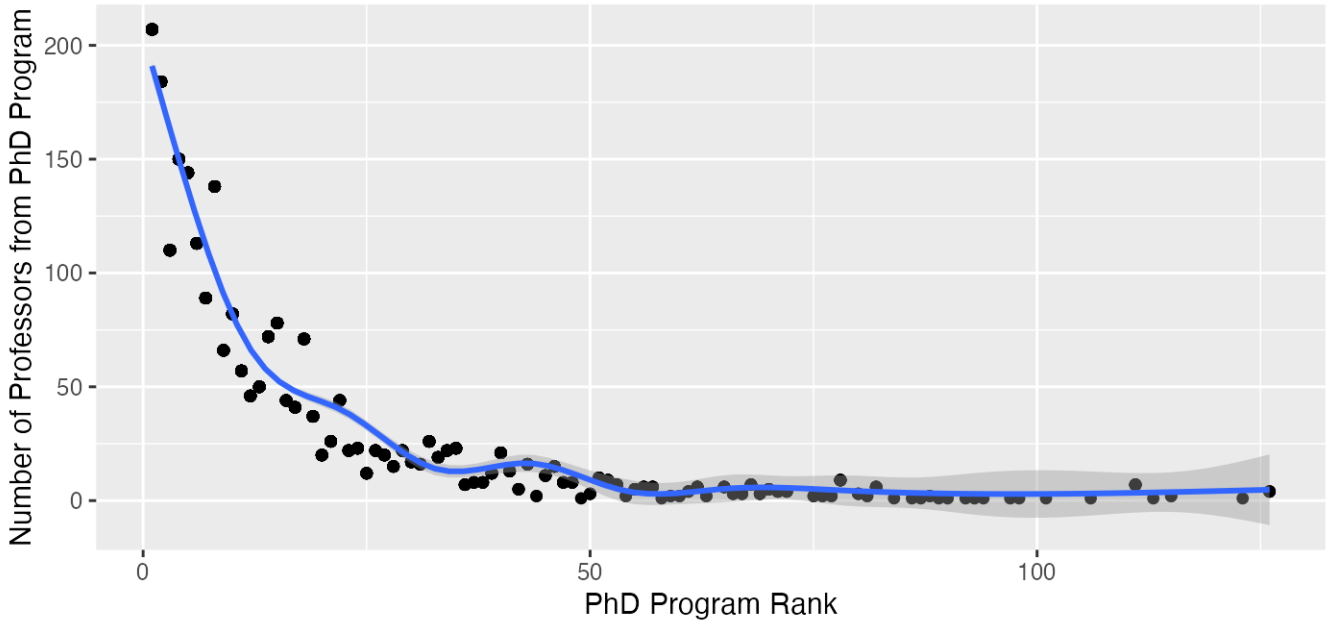
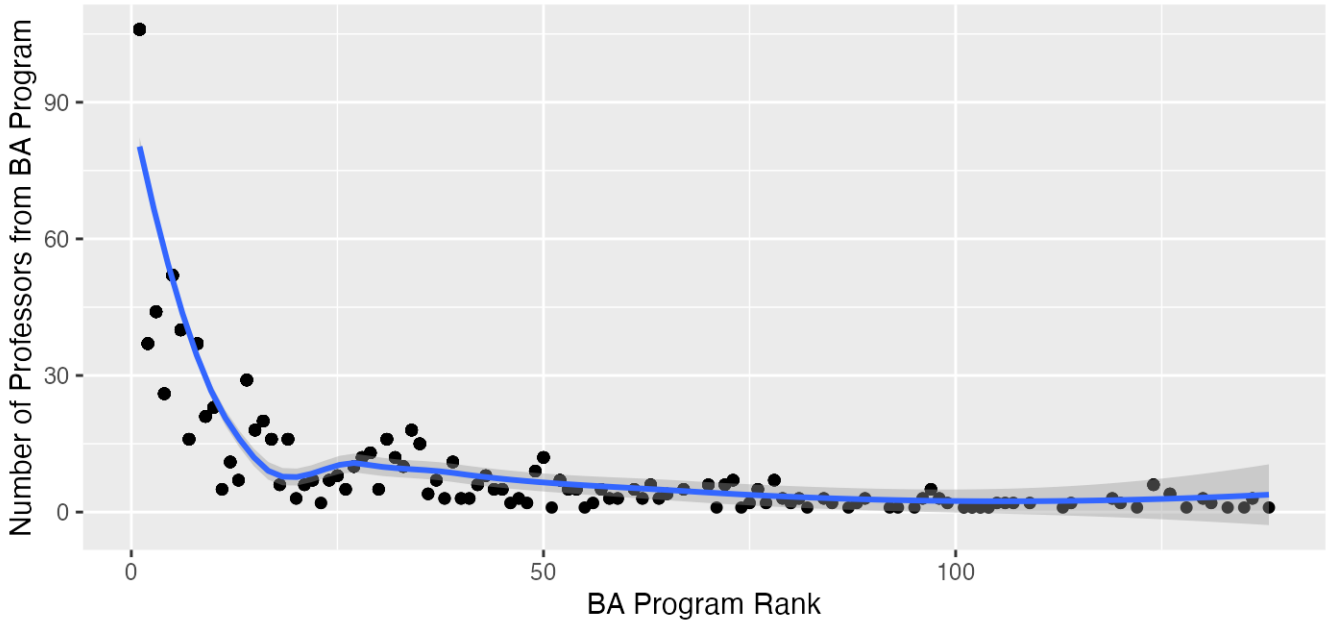
7 Figures

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

Panel A: Faculty Produced by Ph.D. University

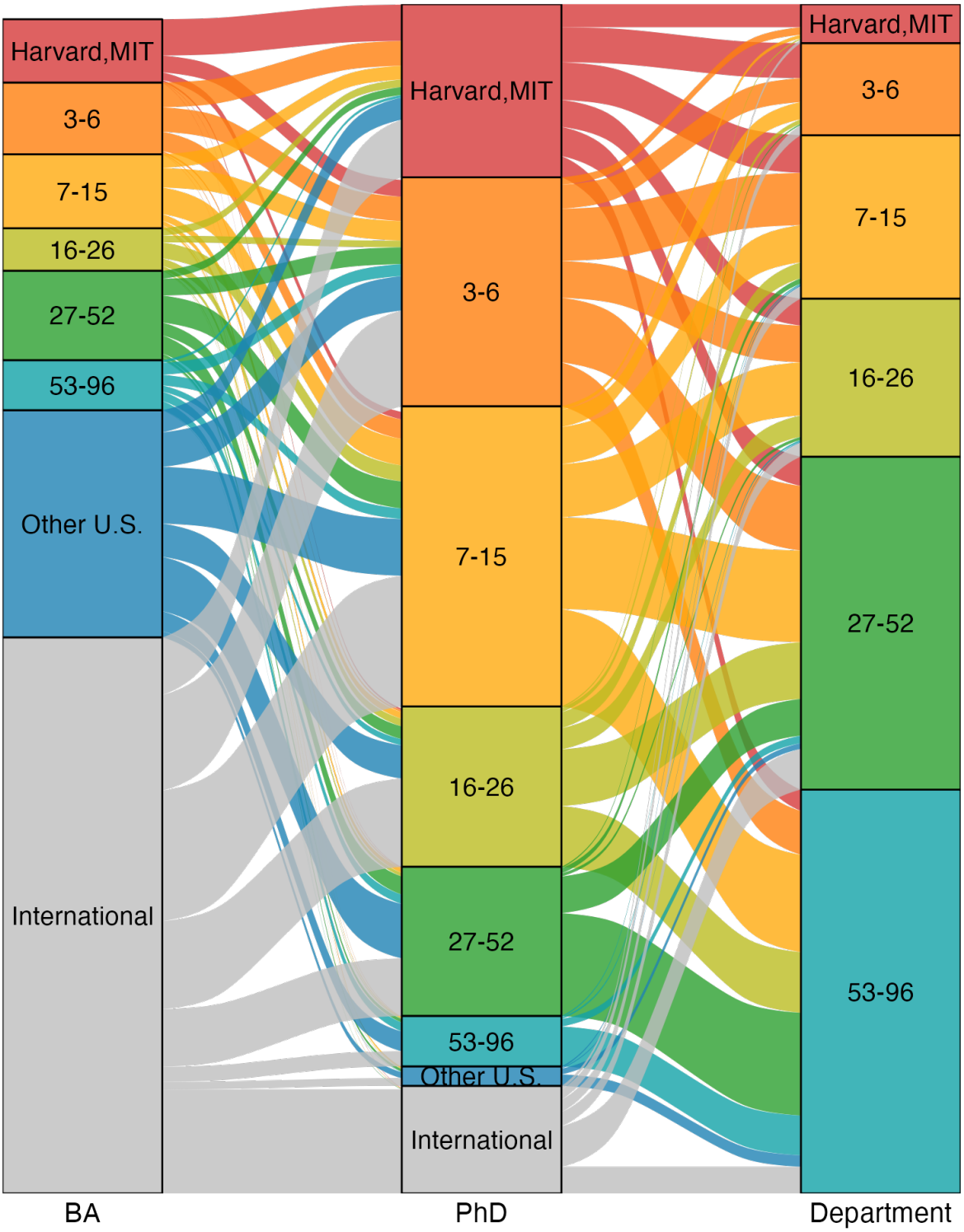


Panel B: Faculty Produced by B.A. University



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 rank (see 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.

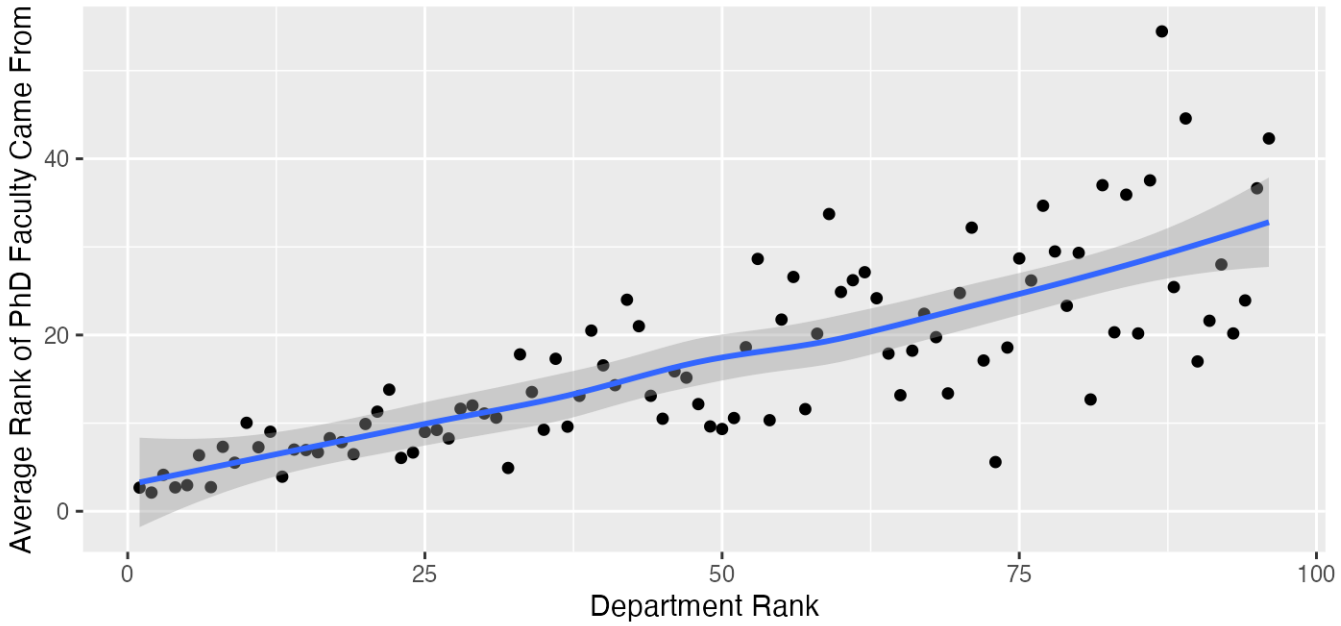
Figure 2: Flows From B.A. Programs (Left) to Ph.D. Programs (Middle) to Departments (Right), by Tier



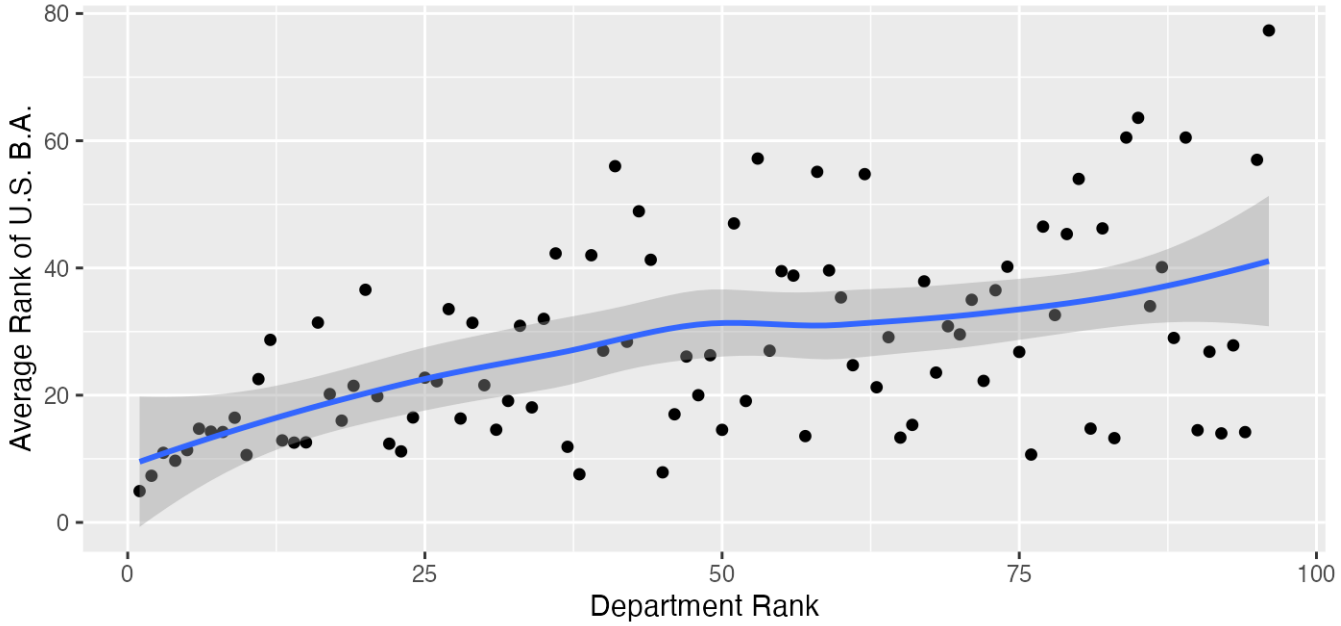
Notes: This Sankey diagram shows flows from B.A. programs (left) to Ph.D. programs (middle) to departments (right). The height of the flow represents the number of individuals going from one group to another. The B.A. column is shorter due to missing data on B.A.s.

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

Panel A: Average Rank of Ph.D.

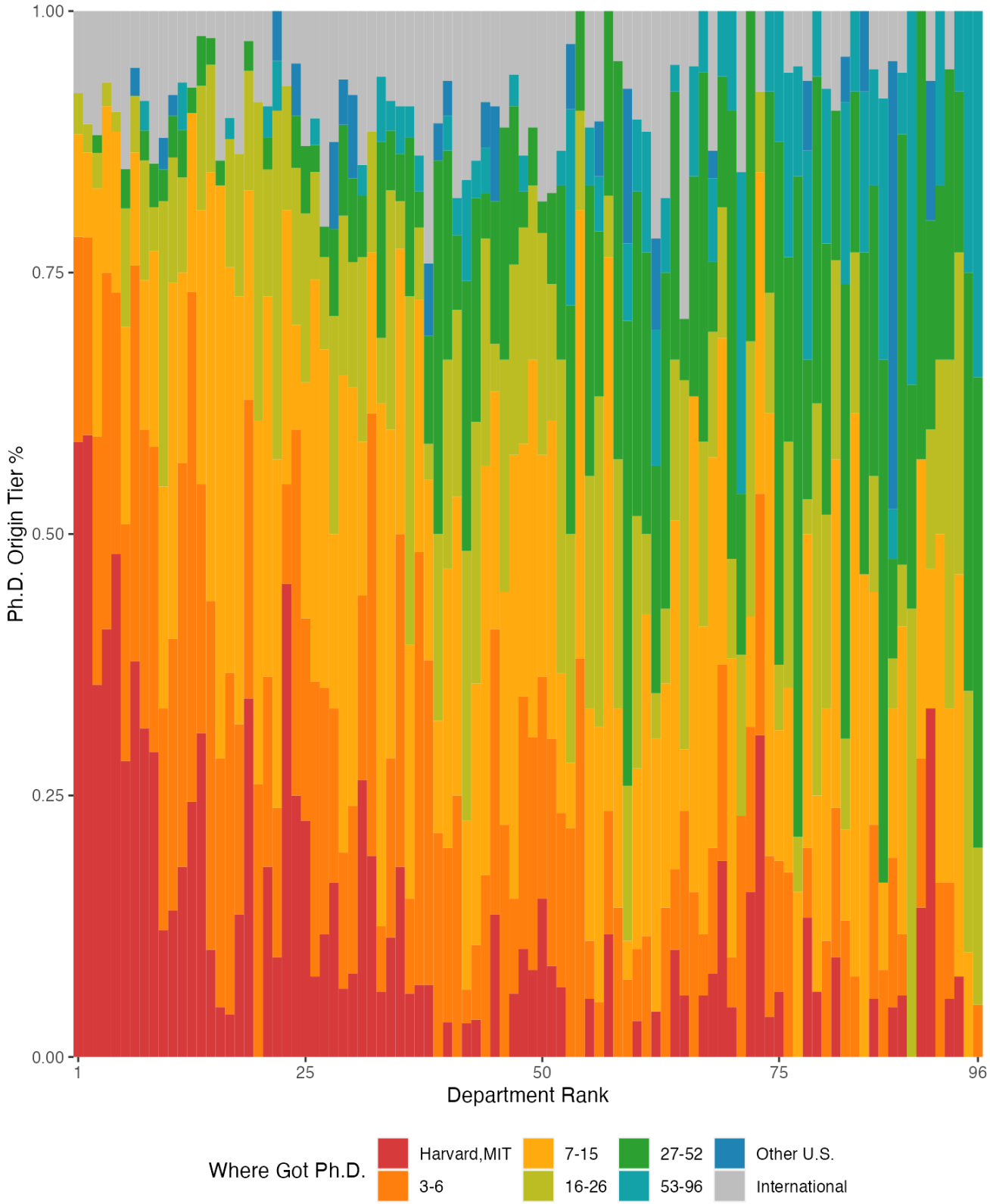


Panel B: Average Rank of B.A.



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 rank (see 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.

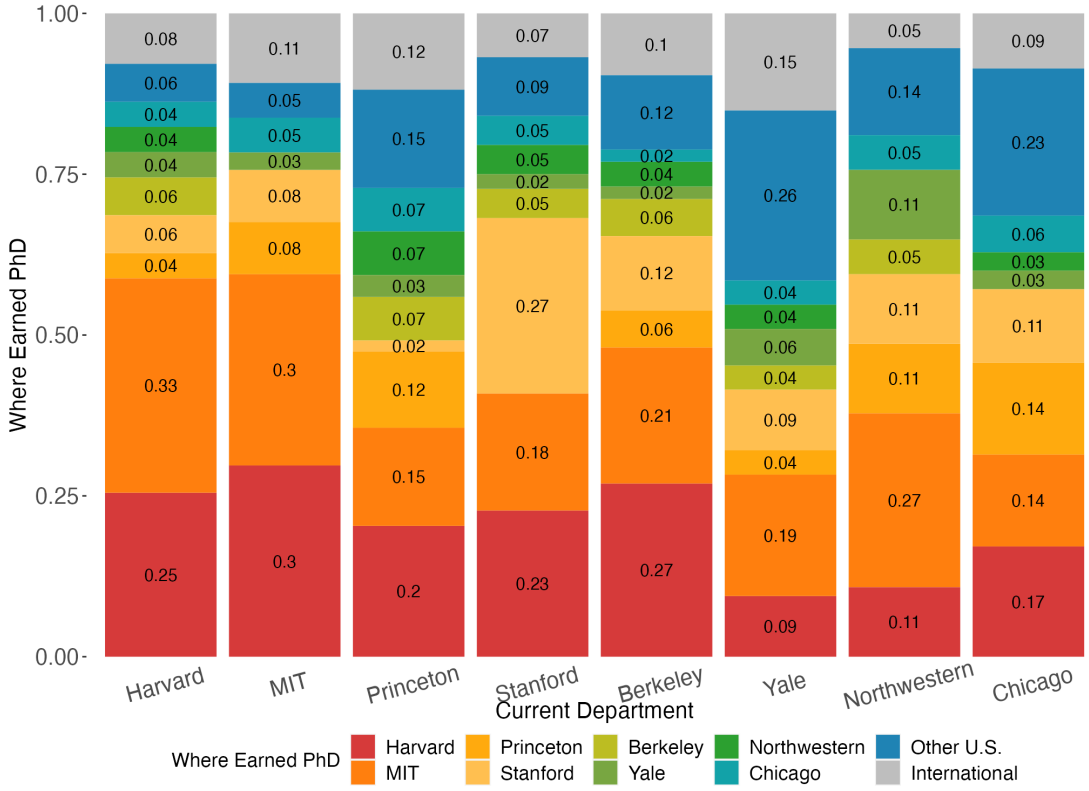
Figure 4: % of Department Faculty from Different Tiers of Ph.D. Program



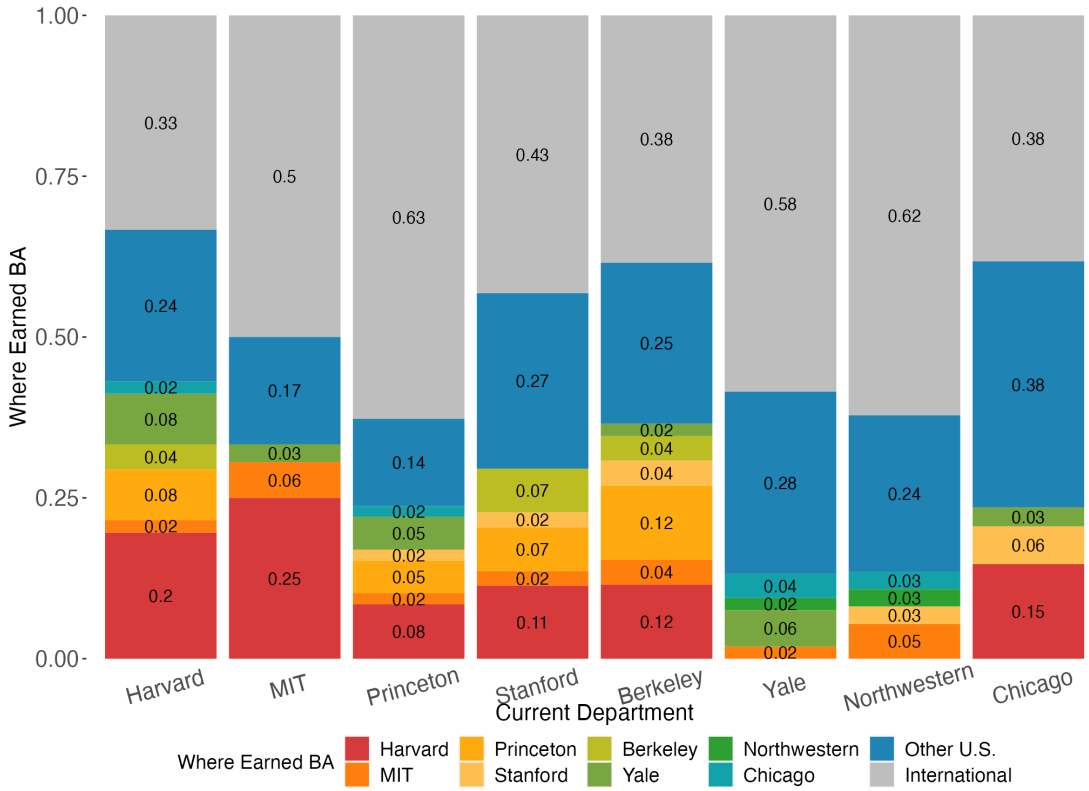
Notes: This bar chart displays the percentage of a department's faculty that came from groupings of Ph.D. program rankings. Each row is a department, and the colorings of the row represent the percentage of faculty that come from the particular Ph.D. program group. Departments are ordered according to rank (see 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.

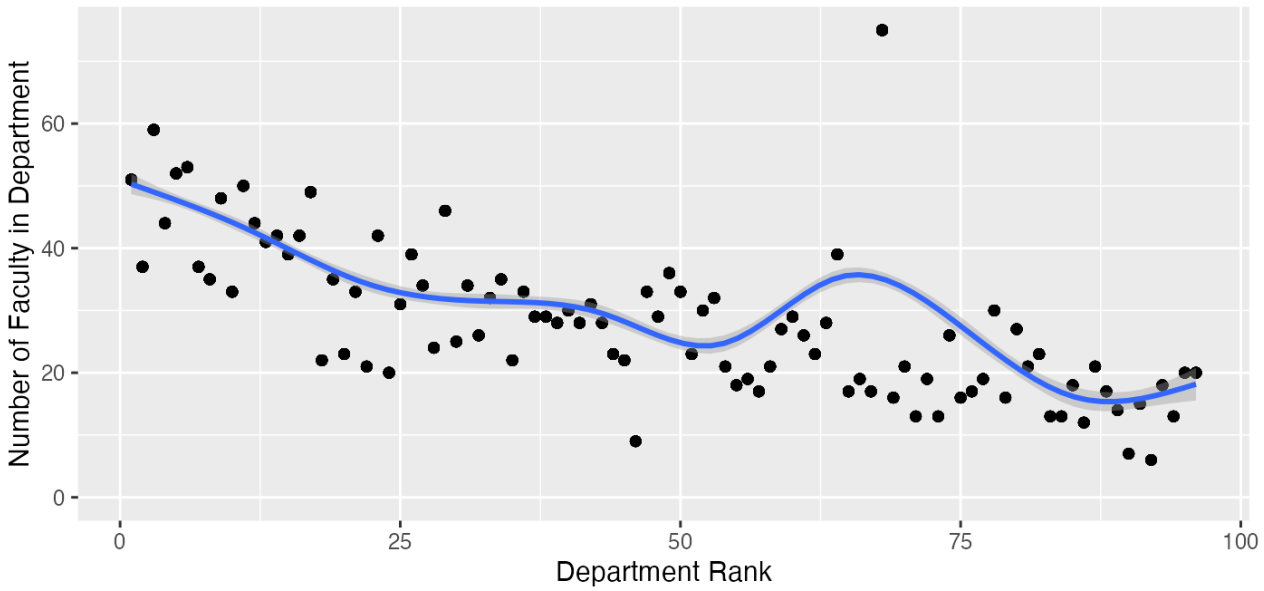
Table 1: Average Rank of Ph.D. Program by Tier of Department, Assistant Professors

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

Notes: This table reports the median, mean, minimum, and maximum ranking of Ph.D. program attended by assistant professors in a given current department bin. 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.

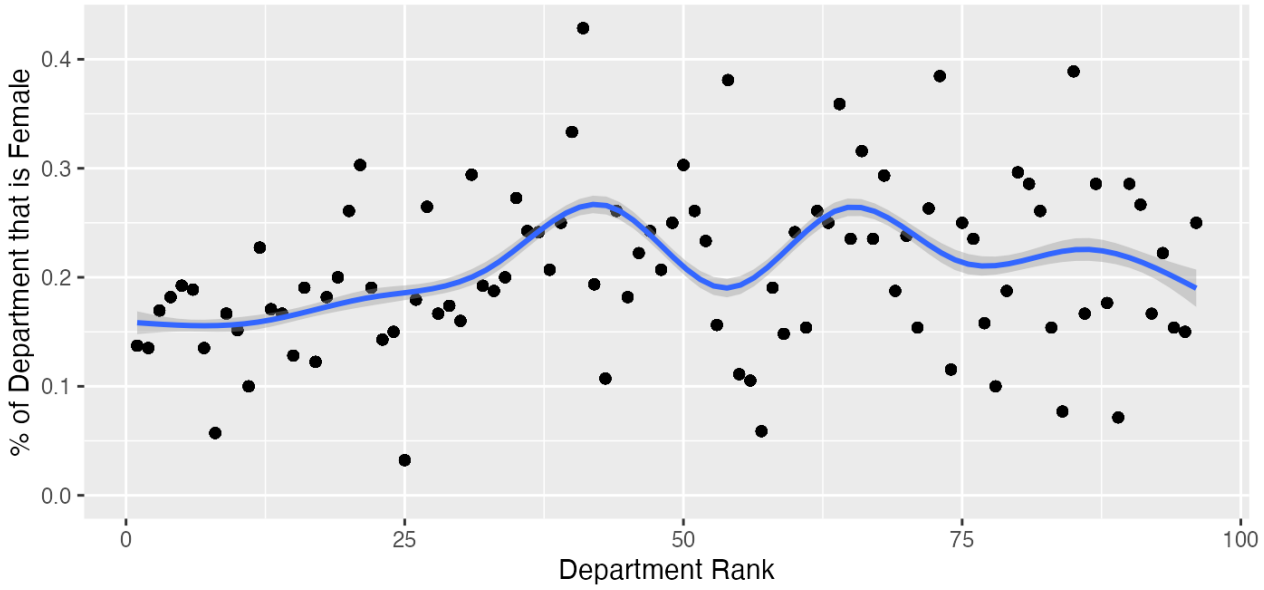
Appendix Figures

Figure A.1: Number of Faculty by Department



Notes: This figure displays the number of faculty by department, which is ordered according to rank (see Appendix Table A.1).

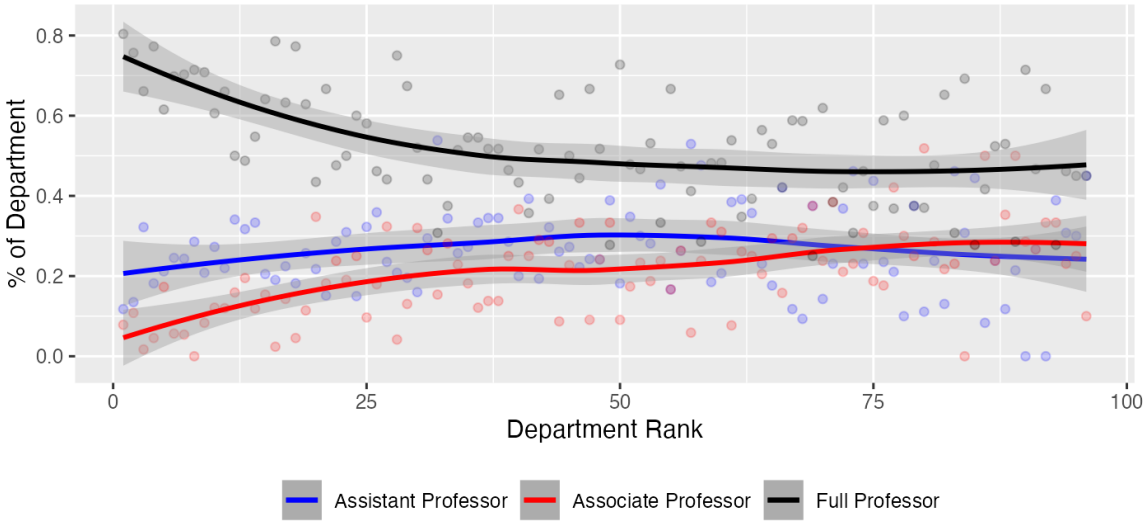
Figure A.2: Percent of Faculty Who Are Female, by Department



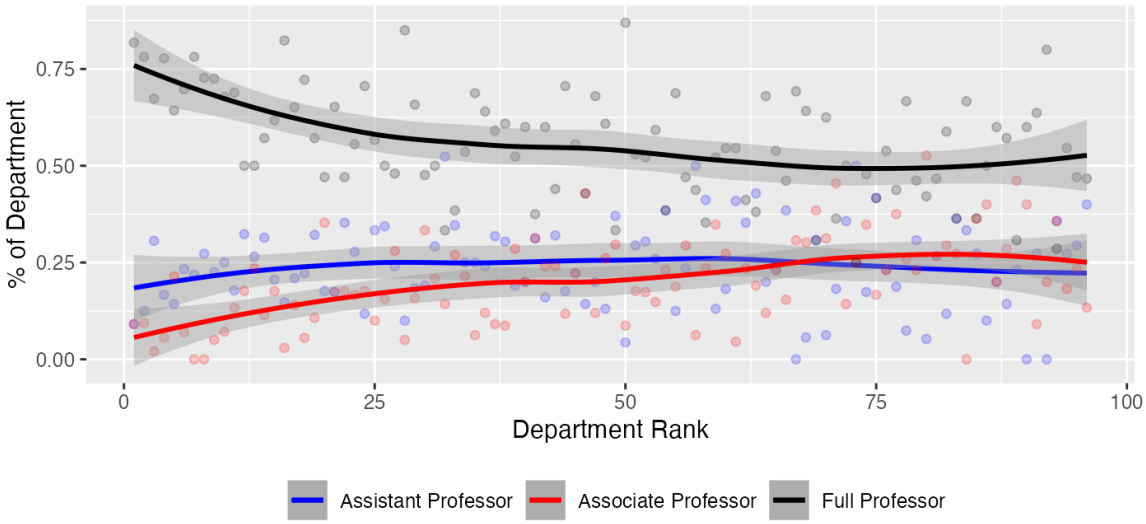
Notes: This figure displays the percentage of faculty who are female by department, which is ordered according to rank (see Appendix Table A.1).

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

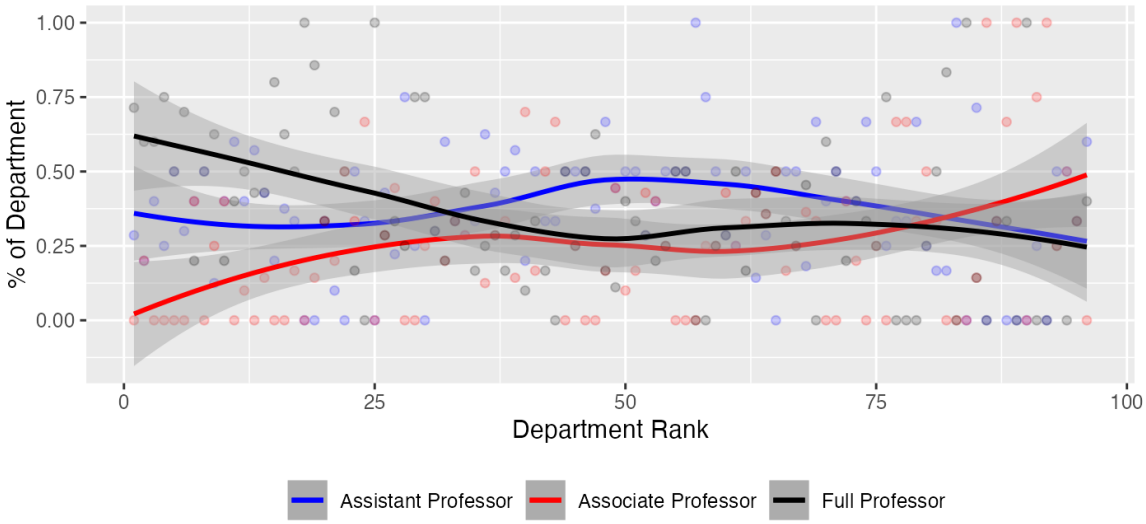
(a) Full Sample



(b) Male Only

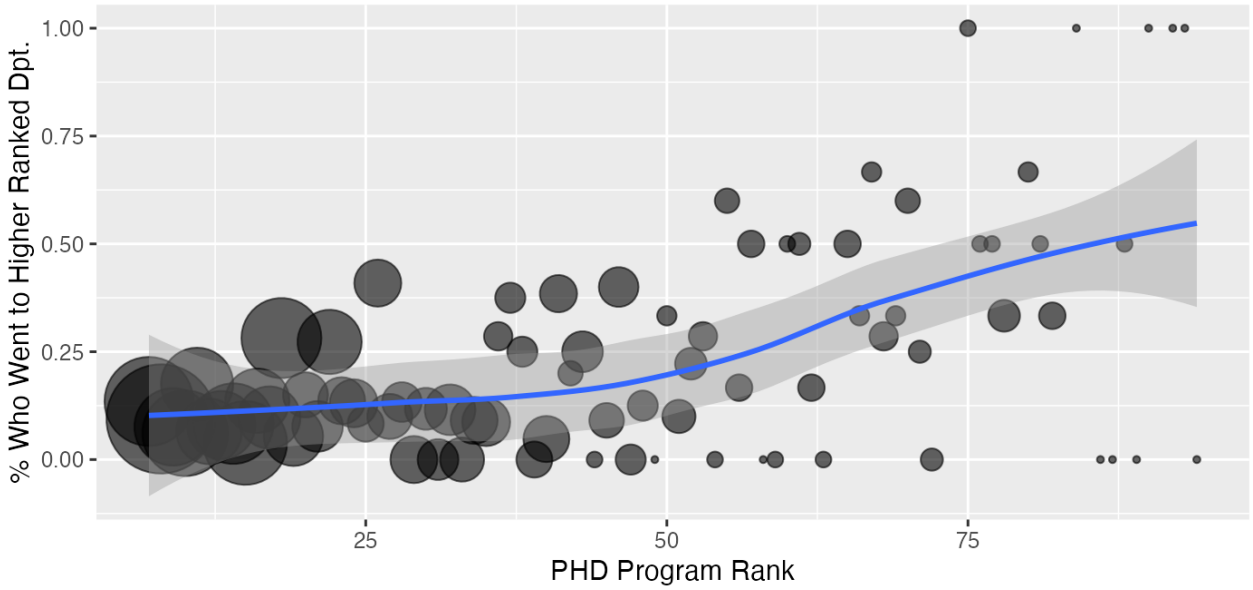


(c) Female Only



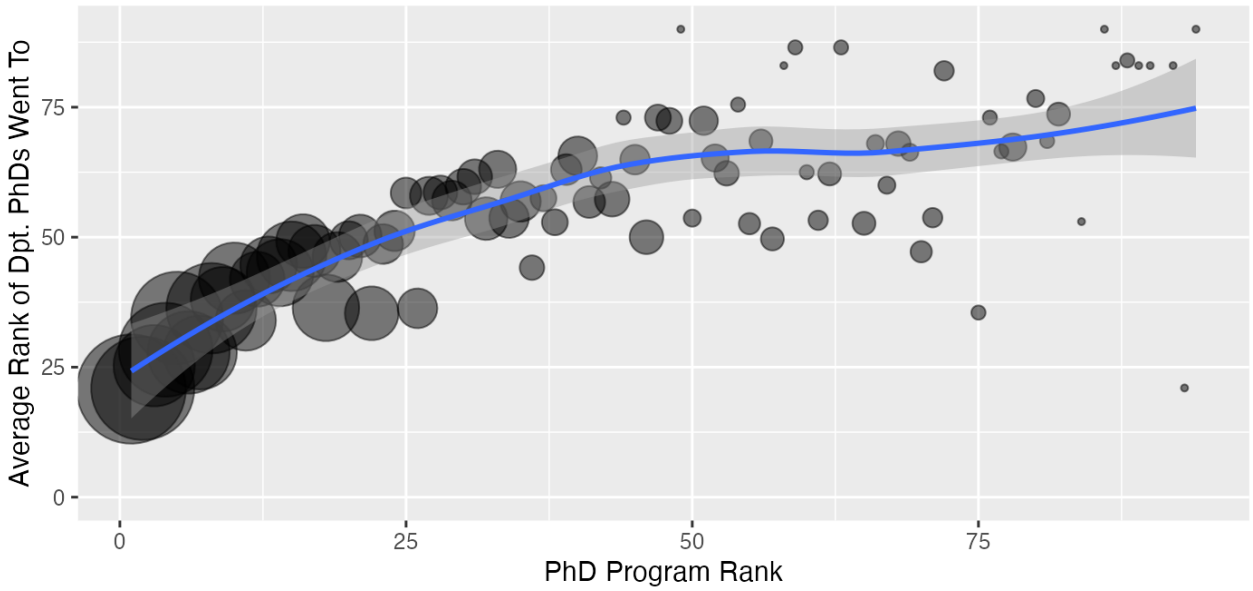
Notes: This figure displays the percentage of faculty who are an assistant professor (blue), associate professor (red), and full professor (black) by department, which is ordered according to rank (see Appendix Table A.1). Panel (a) shows the full sample; Panel (b) restricts the sample to male; and Panel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



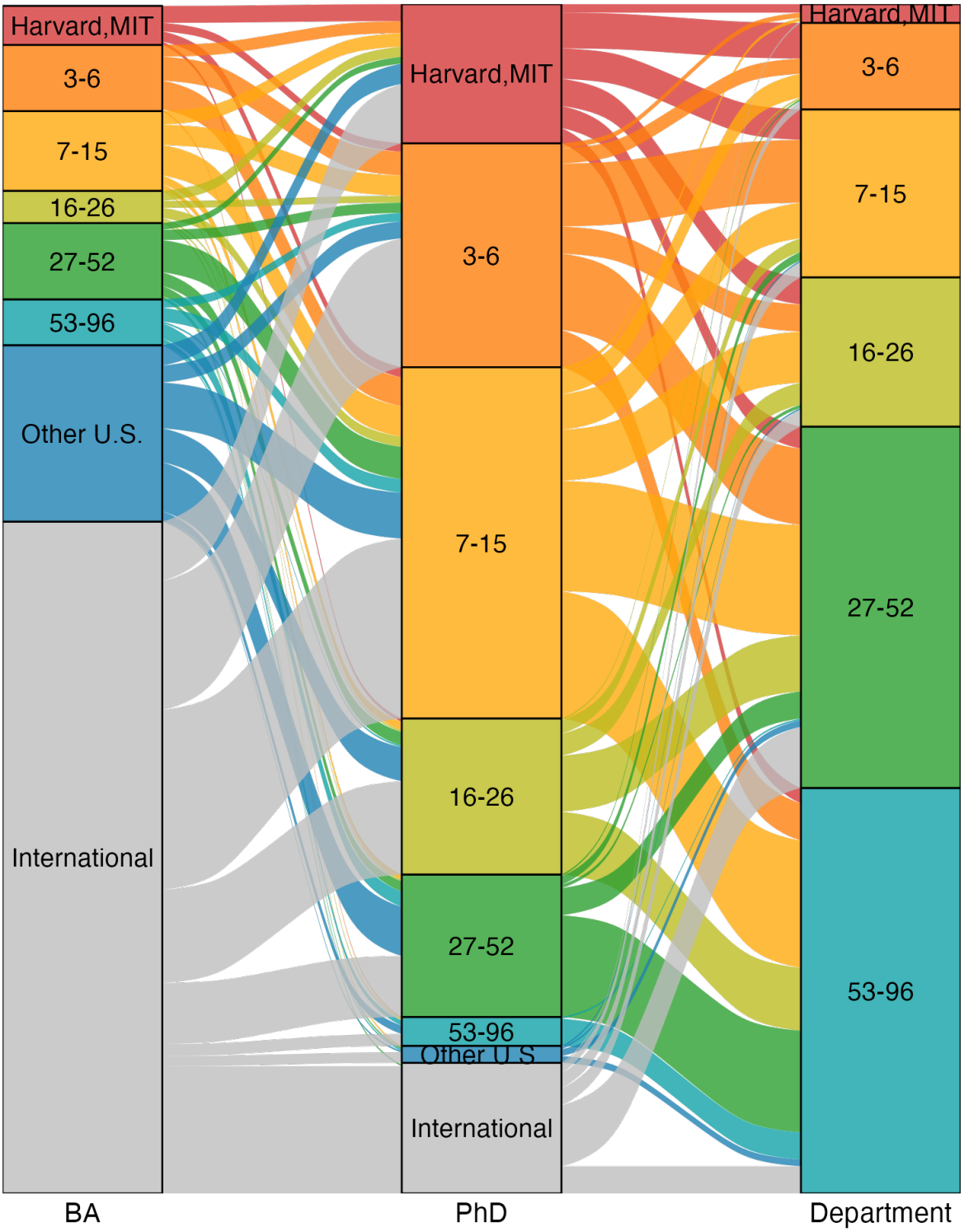
Notes: This figure displays the percentage of a Ph.D. programs' graduates (in the sample) who went to a higher-ranked department than their Ph.D. program. Ph.D. programs are ordered according to rank (see Appendix Table A.1). Because by definition those who graduate from the top-ranked Ph.D. programs 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: Average Rank of Department a Ph.D. Programs' Graduates Went To, by Ph.D. Program



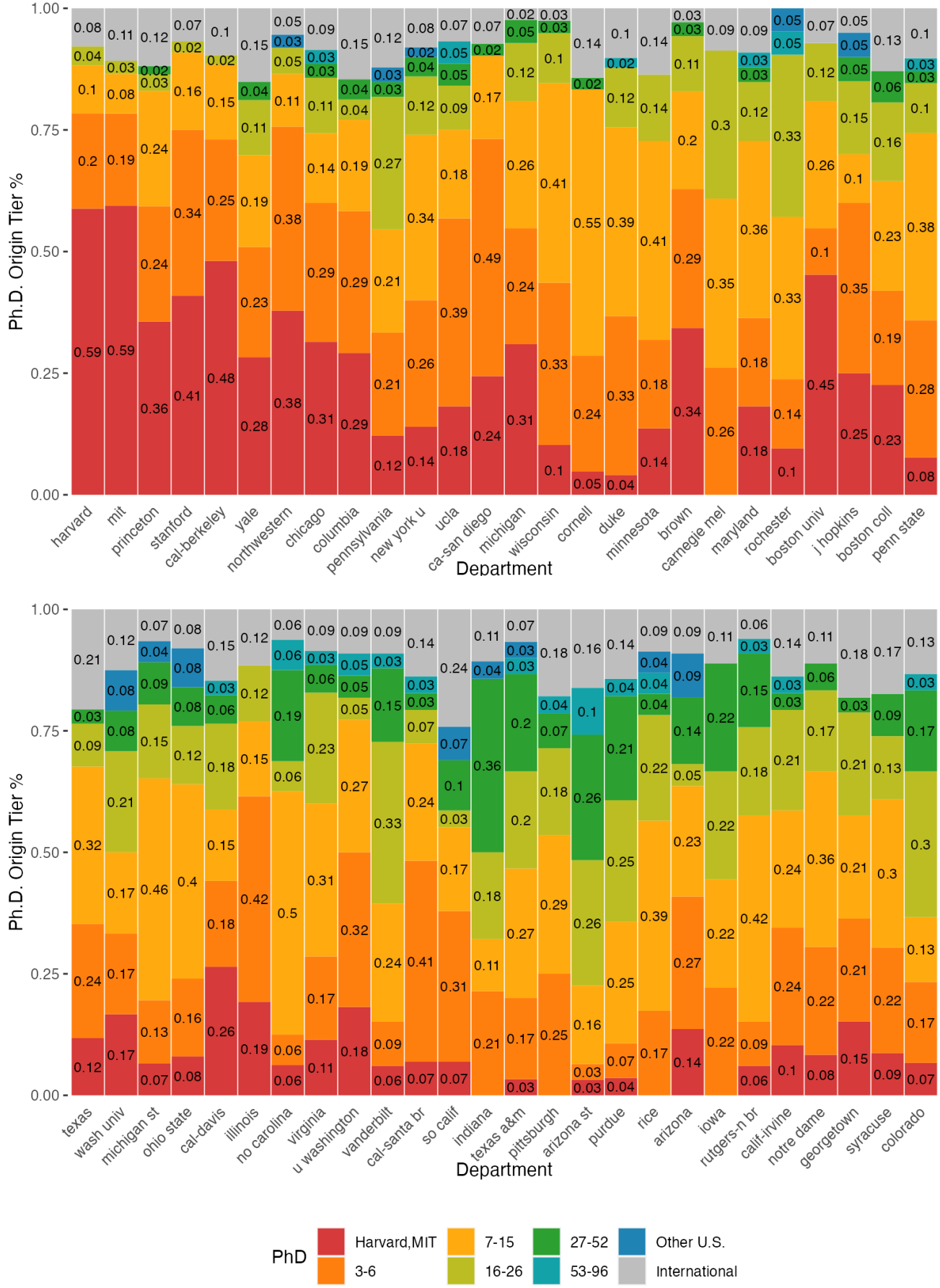
Notes: This figure displays the average department rank that graduates of a particular Ph.D. program went to. Ph.D. programs are ordered according to rank (see Appendix Table A.1). Ph.D. programs are weighted by number of graduates (in the sample).

Figure A.6: Flows From B.A. Programs (Left) to Ph.D. Programs (Middle) to Departments (Right), by Tier; Assistant Only



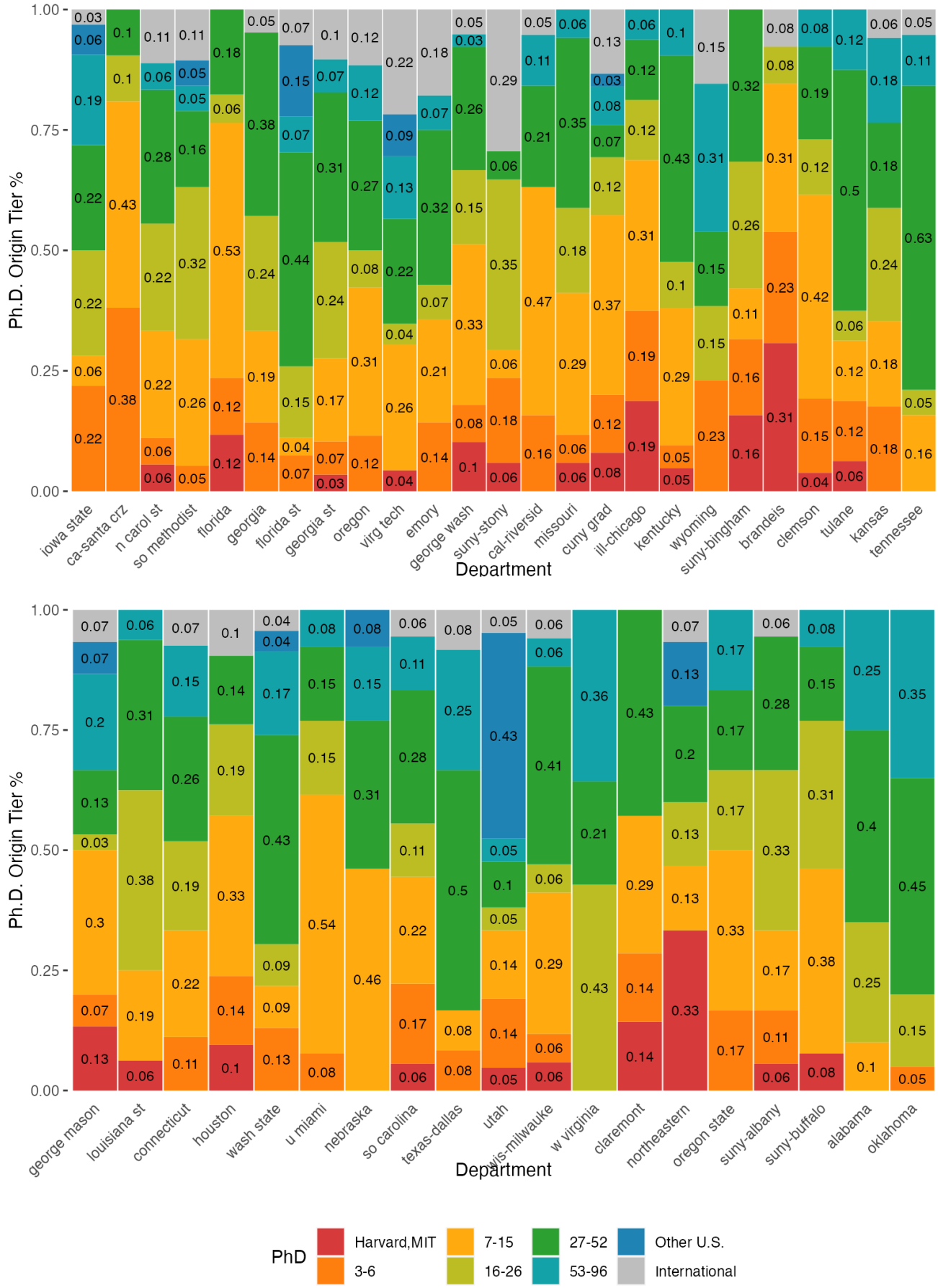
Notes: This Sankey diagram shows flows from B.A. programs (left) to Ph.D. programs (middle) to departments (right). The sample is limited to assistant professors. The height of the flow represents the number of individuals going from one group to another. The B.A. column is shorter due to missing data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

Figure A.7: % 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.

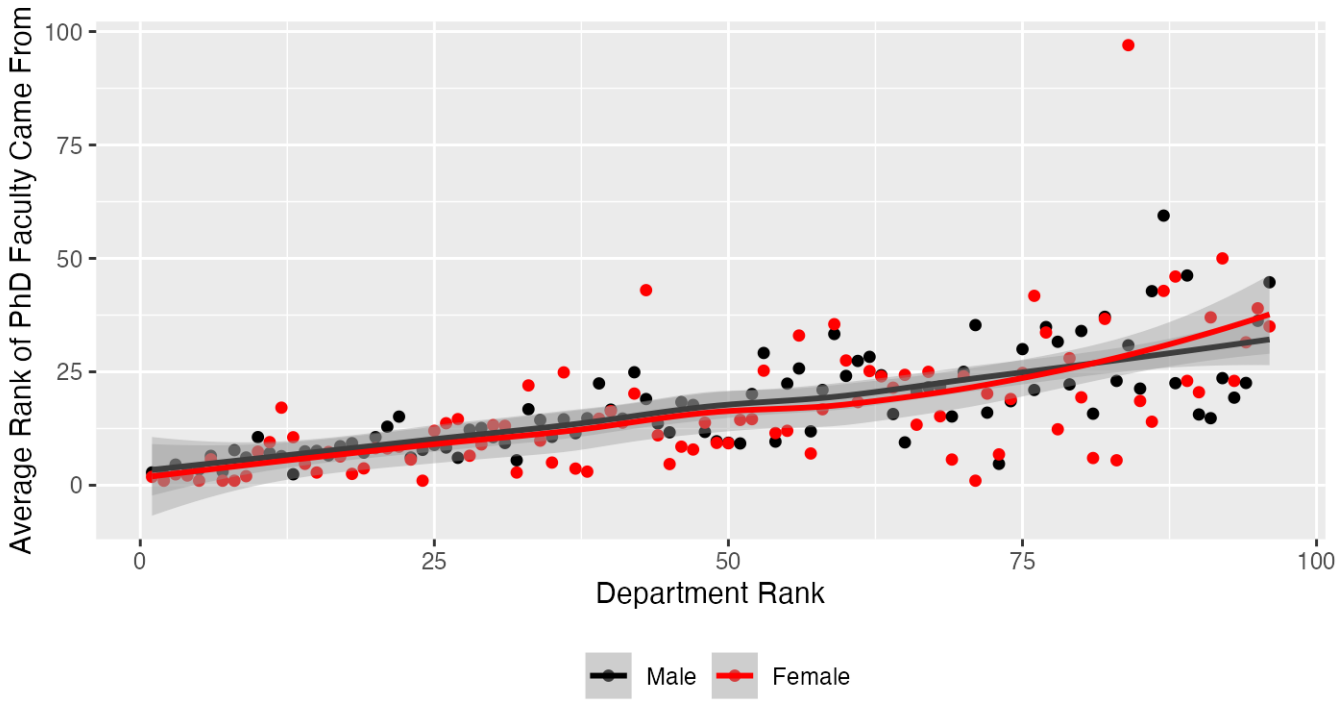
Figure A.8: % of Department Faculty from Different Tiers of Ph.D. Program, Dpts. 53-77 and 78-96



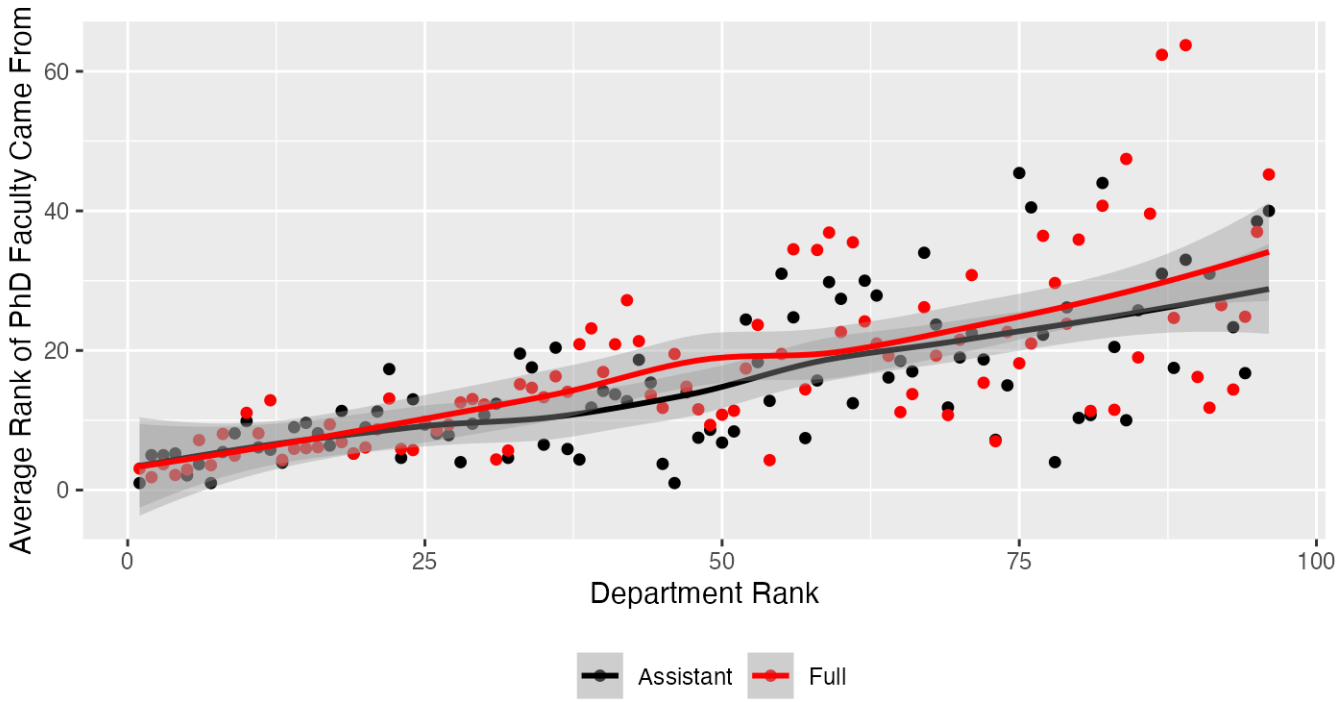
Notes: This figure displays the percentage of a department's faculty that came from groupings of Ph.D. program rankings. Each row is a department, and the colorings of the row represent the percentage of faculty that come from the particular Ph.D. program group. Panel (a) shows department withs ranks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

Figure A.9: 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

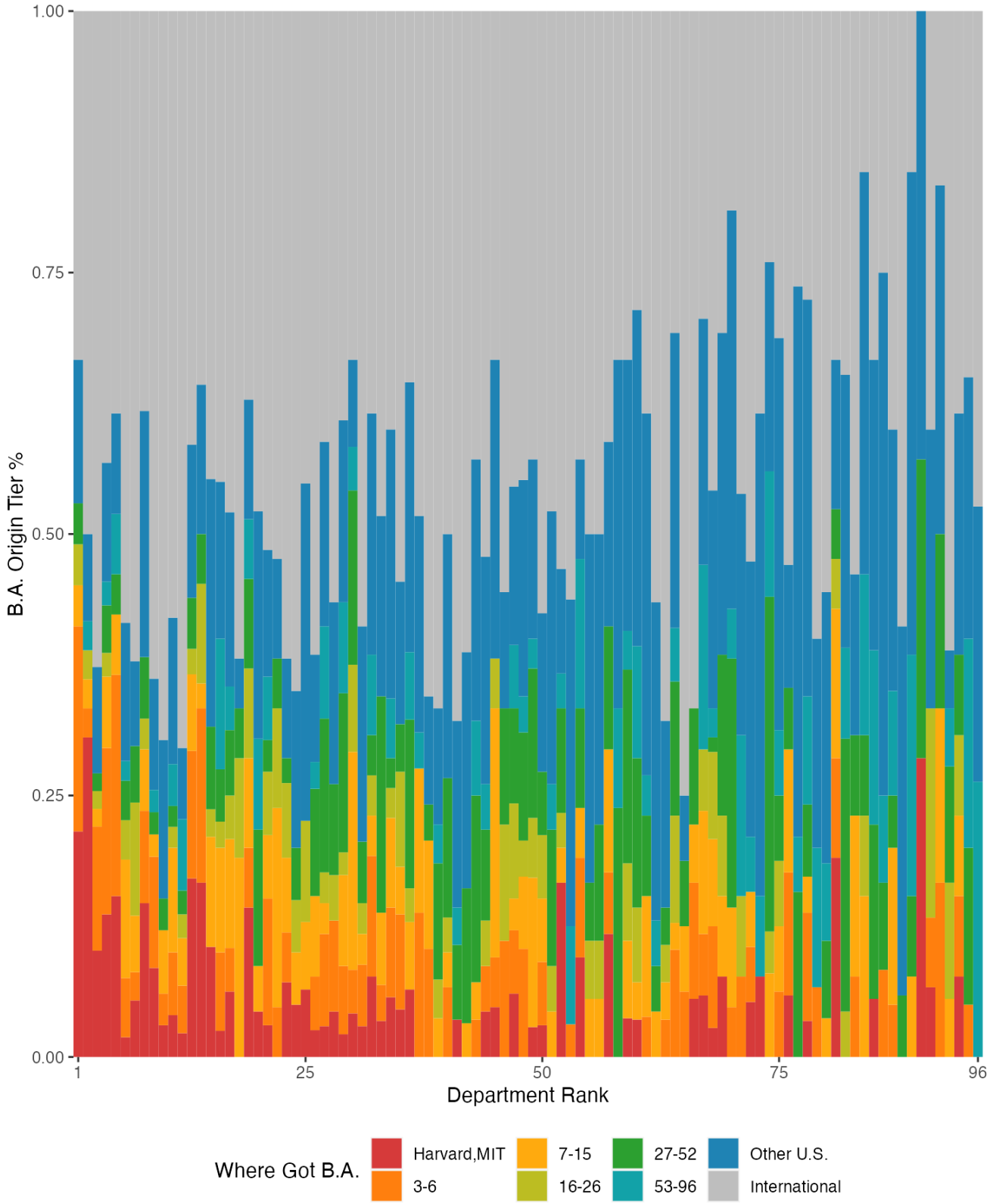


Panel B: Assistant and Full Professors



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 rank (see Appendix Table A.1). The sample is restricted to those who went to USNWR Ph.D. programs.

Figure A.10: % 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 rank (see 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 US News & World Report ranking of economics departments. 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 rank of 97. 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, Assistant 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
New York University	57	58.1
University of California–San Diego	50	60
University of California–Los Angeles	46	61.7
Cornell University	44	63.3
University of Rochester	44	65
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
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
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

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

Notes: This transition matrix displays the percentage of faculty in a given tier (columns) that come from the different tiers of Ph.D. programs (rows).

Table A.5: 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 percentage 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.

Table A.6: US BA Universities with Highest Number of Faculty Graduates

BA	N	Cum_Perc_All	Cum_Perc_US
Harvard University	106	4	7.6
University of California–Berkeley	52	6	11.3
Princeton University	44	7.6	14.5
Yale University	40	9.1	17.3
Massachusetts Institute of Technology	37	10.5	20
University of Chicago	37	11.9	22.6
University of Michigan	29	13	24.7
Stanford University	26	14	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	39.8
University of California–Davis	16	21.6	41
University of Washington	15	22.1	42
Dartmouth College	14	22.7	43.1
Miami University of Ohio	14	23.2	44.1
Brigham Young University	13	23.7	45
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	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
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.7: 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.[26]

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.

[26] 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.