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Staying at the Top: The Ph.D. Origins of Economics Faculty

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Academic origins in economics departments, defined as the universities at which tenure-track faculty completed their doctoral studies, may have implications for how the department's undergraduate and PhD students are trained and placed, as well as the type of research produced. In this project, we use roster data on the academic origins of the tenure-track faculty at 96 U.S. economics departments with graduate degrees. We use these data to document patterns in academic origins across several dimensions, including department ranking, gender, rank (Assistant, Associate, Full Professor), and geography. We find that 1) over half of the faculty of each of eight top departments received their PhD from one of these same universities; 2) at least half of faculty from all top-25 departments come from top-15 universities; 3) over half of Harvard and MIT faculty received their PhD at either Harvard or MIT; and 4) over half of all faculty in the study come from top-15 universities, with Harvard, MIT, and the rest of the top six disproportionately represented. The first and third findings are more pronounced for female faculty.

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Preliminary, working paper

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Abstract

Academic origins in economics departments, defined as the universities at which tenure-track faculty completed their doctoral studies, may have implications for how the department's undergraduate and PhD students are trained and placed, as well as the type of research produced. In this project, we use roster data on the academic origins of the tenure-track faculty at 96 U.S. economics departments with graduate degrees. We use these data to document patterns in academic origins across several dimensions, including department ranking, gender, rank (Assistant, Associate, Full Professor), and geography. We find that 1) over half of the faculty of each of eight top departments received their PhD from one of these same universities; 2) at least half of faculty from all top-25 departments come from top-15 universities; 3) over half of Harvard and MIT faculty received their PhD at either Harvard or MIT; and 4) over half of all faculty in the study come from top-15 universities, with Harvard, MIT, and the rest of the top six disproportionately represented. The first and third findings are more pronounced for female faculty.

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1. Introduction

Each Fall, universities across the world post openings for faculty positions in economics departments (McFall et al. 2014). An applicant's success in this market depends in part on his or her ability to correctly judge which of these postings are an appropriate "fit" for their qualifications (Cawley 2018). Numerous considerations factor into the determination that an applicant and a position make a good fit, such as a candidate's research background, the position's teaching load, and the needs of the program's faculty (Cawley 2018). But most of these considerations take time and research to evaluate—time that applicants do not have when faced with many options and looming deadlines. An initial filtering process must be used.

One possible method (among many) of filtering through faculty postings is to compare the academic ranking of one's PhD program to the rankings of hiring university programs of interest. Numerous academic rankings systems exist, from the popular U.S. News rankings to the international THE-QS World University Rankings (Jones 2011; Morse, Krivian, and Hines 2019). Although these rankings use different metrics, they each attempt to quantify the quality of education that a university provides (Jones 2011; Morse, Krivian, and Hines 2019). Because these rankings are often, if not always, publicly accessible, it is relatively easy to make quick comparisons of the rankings of doctoral alma maters and hiring departments.

The difficulty lies in assessing whether two rankings are close enough to be considered a rough "fit" for a candidate. It is clear that a typical candidate from a bottom-50 program would not be as competitive for a position at a top 10 program. But would a typical candidate from a top 20 program find success teaching at top 10 program? And would a typical candidate from a bottom 50 program be competitive for a position at a program ranked 55?

In this paper, we describe the doctoral origins of economics faculty at the 96 U.S. News-ranked university programs from 2017 based on novel faculty roster data. We find that graduates of top economics doctoral programs, particularly Harvard and MIT, have a substantially larger presence in the departments in our sample than graduates of lower-ranked programs. For instance, graduates from the top 15 PhD programs make up well more than half of faculty in the sample. We also find some unique outliers—a few top universities with larger proportions of female faculty members (Pittsburgh, South Carolina, UC–Santa Cruz, Brandeis, Texas A&M, George Washington), faculty from international and other non-top-8 schools (Yale and Chicago), and particularly high proportions of faculty from other schools (e.g., Harvard and MIT from each other, Clemson from Chicago, Boston University from Harvard, and Stanford from itself). Finally, when we restrict the sample to women, we find that an even greater concentration of faculty at the top PhD programs graduated from the top PhD programs.

We also find relatively little "upward mobility" in the top 96 economics departments, meaning that few economics professors in this group are teaching at department ranked higher than their own PhD programs. We posit three hypotheses for this finding. First is selection. Top-ranked PhD programs likely get many of the best students in the world, so it would make sense that they would secure positions at the top departments. Second is department value-added. It may be the case that the very best departments train their students much better than lower-ranked departments, giving them a much higher level of the skills that the market values. Third is networks. The faculty advisors at top departments are more likely to be well-known in the profession and may be able to exert influence in their students' behalf. We are agnostic as to the extent to which these explanations are correct, but we surmise that it is some combination of all three.

One way to view the patterns that we document is that they are evidence of lack of "intellectual diversity" among top departments.[1] The top schools send their students to positions in these same top schools. If students follow ideologies of their professors, then these ideologies may be perpetuated when these students become professors themselves.

Researchers have studied PhD origins to a greater or lesser extent in other fields, such as history, business, computer science, law, sociology, and English (Clauset, Arbesman, and Larremore 2015; Segall and Feldman, 2018; and Burris, 2004; Colander and Zhuo, 2015). But to our knowledge, PhD origins of economics professors have not been thoroughly studied. Colander (2015) evaluates Ph.D. origins of faculty from the top five economics programs in the U.S. and finds that Harvard and MIT often hired each other's former students. Langan and Boustan (2018) describe how female economics PhD graduates enjoyed uneven rates of success in academia across several metrics relative to men. McFall et al. (2014) study the application and hiring process among new economics job market candidates from 2007 to 2010. To our knowledge, we are the first to focus on the PhD origins of all economics faculty from all ranked programs. Our study serves to help applicants better understand the academic mosaic of different departments and to get a sense of where they might feel most comfortable applying to and working in the long term.

2. Description of Data

Our data collection efforts consisted of several steps to produce our dataset of the name, rank, gender, current university, and PhD university of the tenure-track faculty of the 96 departments we consider. As a baseline, we gathered the names and titles (Assistant Professor, etc.) of all faculty at these 96 ranked USNWR schools.[2] Of these we consider

[1] Colander (2015) makes this point as well.

[2] We collected these departments in a random order and did so between August 30th and September 25th, 2020. The USNWR includes 138 departments in its ranking, but only scores the 96 that we consider. We

only those that we determined to be tenure track professors and classified these as Assistant, Associate, and Full Professors.[3] To fill in the gender and PhD university fields, we merge in data provided by Andrew Langan (2019) and data we previously collected from the internet; we collected the remaining missing data (primarily from departmental rosters and faculty webpages/CVs).[4] We match both the current university and the PhD university to the 2017 economics program rankings from the U.S. News & World Report ("Best Economics Schools", 2017).

In order for the figures to have a unique value on the x-axis, we give each department a unique ID to break the ties (within a tie, the ID is assigned alphabetically by school name) (Table 1). Our sample consists of 2,696 individuals in 96 departments.

3. Sample Characteristics

Figure 1 shows that university economics 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. Princeton, for example, has 59 faculty members, while Oregon State has only 6.[5] The proportion of women on faculty rosters is relatively constant across department rank, generally hovering around 20% (Figure 2). The departments with at

consider the main economics department only; for instance, only Harvard Economics and not other related departments. In additional, notable institutions such as California Institute of Technology and Georgia Institute of Technology are not included in these rankings.

[3] We used the titles and in some cases additional information to classify individuals to their rank. In general, we exclude instructional faculty such as professors of practice, lecturers, and instructors; affiliate and courtesy faculty; 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 as full professors. We note that classification is an imperfect process and that in some cases judgement calls have to be made.

[4] The gender of the candidate was obtained by photo and/or pronouns and, in some cases in the data provided by Langan, using an algorithm of likely gender based on name. Individuals almost always have only one PhD, but can have multiple; in such cases we consider only one.

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

least one third women are Pittsburgh, South Carolina, UC–Santa Cruz, Brandeis, Texas A&M, and George Washington.

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 were more equal (Figure 3). This trend is driven by male professors; ratios of the three faculty ranks are more equal throughout the distribution among female faculty. Also of note is the finding that there are disproportionately fewer full professors among women versus men.

4. Results

Higher-ranked university departments place more faculty than lower-ranked departments (Figures 4, A.1). Moreover, higher-ranked departments both bring in professors from the highest-rank programs (Figure 5) and place students at higher-rank programs on average than lower-rank universities (Figure 6). For example, 386 (14% of all professors in our data set) received their PhDs from Harvard or MIT, placing on average at the 25th-ranked department. Conversely, only 5% of all professors in our data set come from a university department ranked 50 and below (excluding not ranked, which is often international), and on average, these individuals take positions at schools ranked 60 and below. Figure 7 demonstrates that the success of professors in finding a placement ranked higher than their doctoral alma mater is sporadic.

The Sankey Diagram in Figure 8 documents flows from PhD (left) to current department (right), with the width of a category (e.g., Harvard and MIT) denoting the number of individuals in that category and the width of the flow denoting the number of individuals going from a given PhD category to a given Department category. For instance, the top right flow shows that while a small percentage of those in the sample who earn PhDs at Harvard and MIT are currently teaching at Harvard or MIT, a large percentage of those

currently teaching at Harvard or MIT earned their PhDs at Harvard or MIT. Those who earned their PhD at the top 15 departments make up more than half of all faculty in the dataset, with disproportionate numbers from Harvard and MIT and the rest of the top six departments.[6] Few individuals who received their PhDs at a school ranked 53-96 are professors in a department in the top 96, and most who are are teaching at departments in the 53-96 range.

Figures 9-11 visualize similar patterns in bar charts, but do so for each department; figure 9 shows all departments together, while the remaining figures zoom in on a subset. The vast majority of professors at higher-ranked universities come from highly-ranked departments, with many coming from Harvard and MIT and other top-ranked departments.

Harvard and MIT are the least academically diverse of the top 8 universities (Figure 12), with approximately 60% of faculty coming from Harvard or MIT. The most academically diverse are Yale and the University of Chicago; 40% and 35% of their professors, respectively, come from either international Ph.D. programs or from U.S. programs outside of the top 8.

We also consider male and female professors separately At the top-ranked schools, a higher percentage faculty received their PhDs from Harvard and MIT for women (Figures A.3 and A.5) than for men (Figures A.2 and A.4). In addition, all women faculty at four of the top eight departments received their PhDs at one of the top eight departments (Figure A.5), but this is not the case among any of the top eight departments for men (Figure A.4). In general, it also appears that at schools ranked lower than about

[6] We do not have data on the number of PhD graduates per program, but it is our sense that the higher ranked programs tend to have more PhD students. This may be part of the reason that the top schools produce more professors (among the 96 departments we consider).

25, a higher percentage of men received their PhD at higher-ranked departments than did women (Figures A.2 and A.3).

We next split by assistant, associate, and full professors (Figures A.7–A.9). Figure A.9 shows that assistant professors in the top 8 departments seldom obtained their PhD from the same university. This is consistent with not initially hiring newly-minted PhDs from within, but later doing so (Figure A.11). For instance, no Harvard (MIT) *assistant* professors received their PhDs from Harvard (MIT), while 34 (32) percent of Harvard (MIT) *full* professors received their PhD from Harvard (MIT).

Some universities have high percentages of faculty from particular other universities (Table 2). At nine of these universities, at least 20 percent of faculty received their doctorates from Harvard; at six, at least 20 percent came from MIT. Interestingly, several California schools had high percentages of faculty from theirs or other California schools, and some more specific one-on-one school affiliations appear to be present as well. For example, 19% of Cornell faculty received their doctorates from Northwestern University, and 33% of Clemson faculty from the University of Chicago.

5. Discussion and Conclusion

We find that graduates of highly ranked doctoral economics programs are far more common on faculty rosters than graduates of lower-ranked doctoral economics programs. This finding is particularly pronounced for graduates of top-15 programs, top-six programs, and Harvard and MIT. These findings appear to support the finding of Colander (2015) that elite economics programs generally hire from their own or a small number of departments. We go beyond that finding to show that this pattern extends to

most universities and across faculty rosters, but to a lesser degree for the lowest-ranked schools (Figure A.1).[7]

We also find that, while male graduates of top departments are found—in gradually descending proportions—at departments of all rankings (Figures A.2 and A.4; these figures are restricted to men), female graduates of top departments are more commonly found teaching at top departments (Figures A.3 and A.5; restricted to women). There is a particularly high concentration of female Harvard and MIT graduates as well as the rest of the top eight departments among female faculty at the top eight departments.

Finally, we show that some universities have strong hiring ties to other universities that are not strictly based on rank. A number of universities hire from Harvard and MIT, but other hiring ecosystems and relationships appear to exist. Some California schools tend to hire from each other, such as UC–Santa Barbara from Berkeley. Other schools hire from specific programs that they do not have regional ties with, such as Clemson from the University of Chicago. As has been suggested in other fields, these ties may stem from many non-rank and non-geography-related factors, including shared research interests, or networking (Clauset, Arbesman, and Larremore 2015).

[7] Clauset, Arbesman, and Larremore (2015) found similarly for computer science, history, and business programs.

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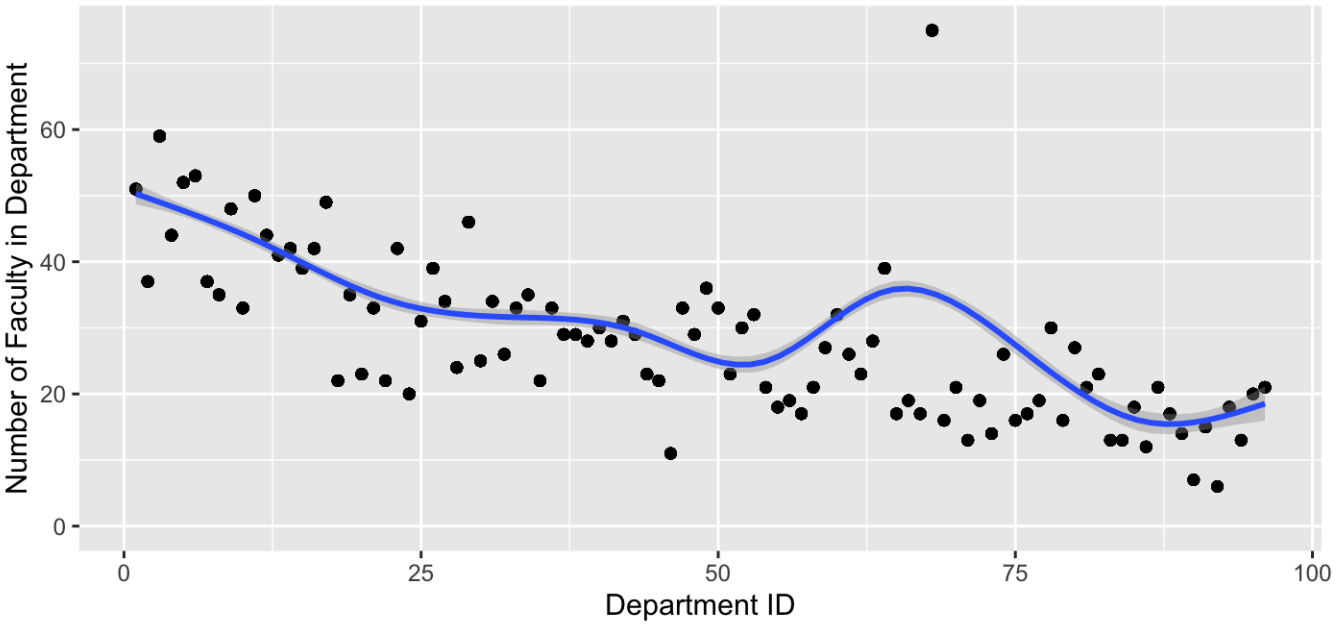
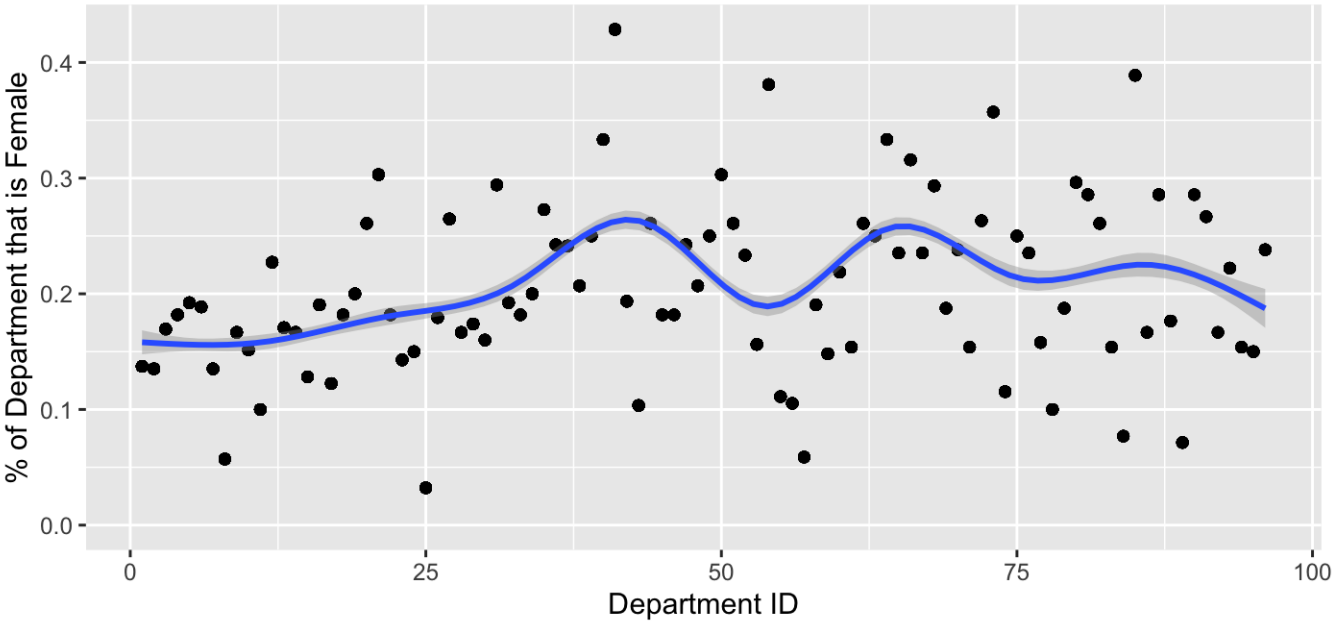
Figure 1: Number of Faculty by Department



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

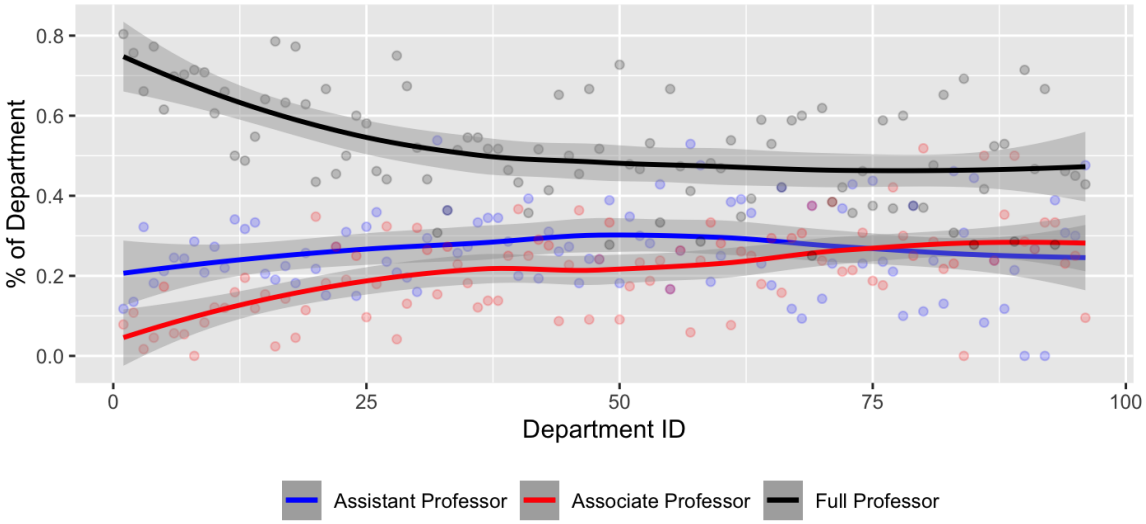
Figure 2: Percent of Faculty Who Are Female, by Department



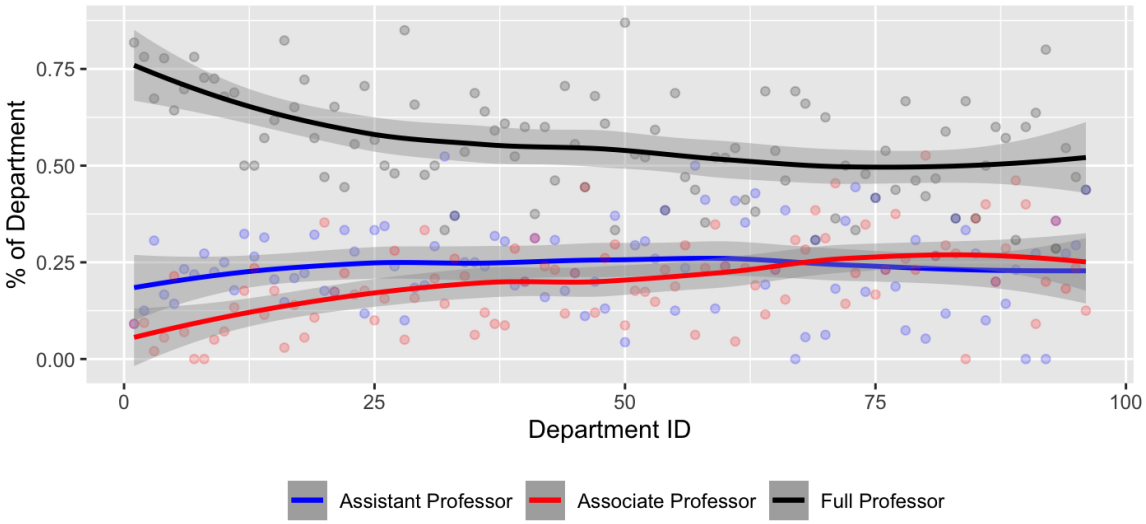
Notes: This figure displays the percentage of faculty who are female by department, which is ordered according to ID (see Table 1).

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

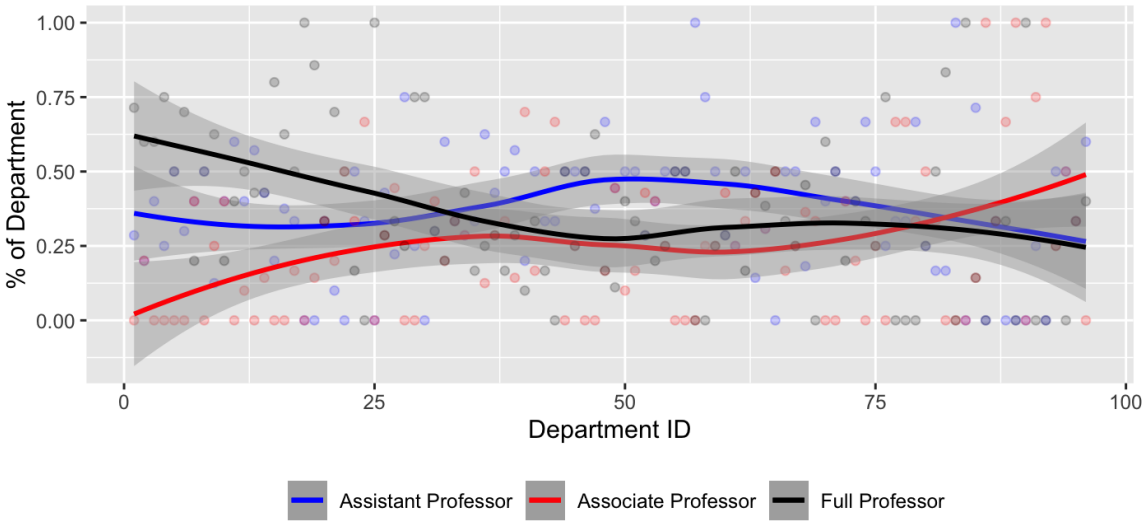
(a) Full Sample



(b) Male Only

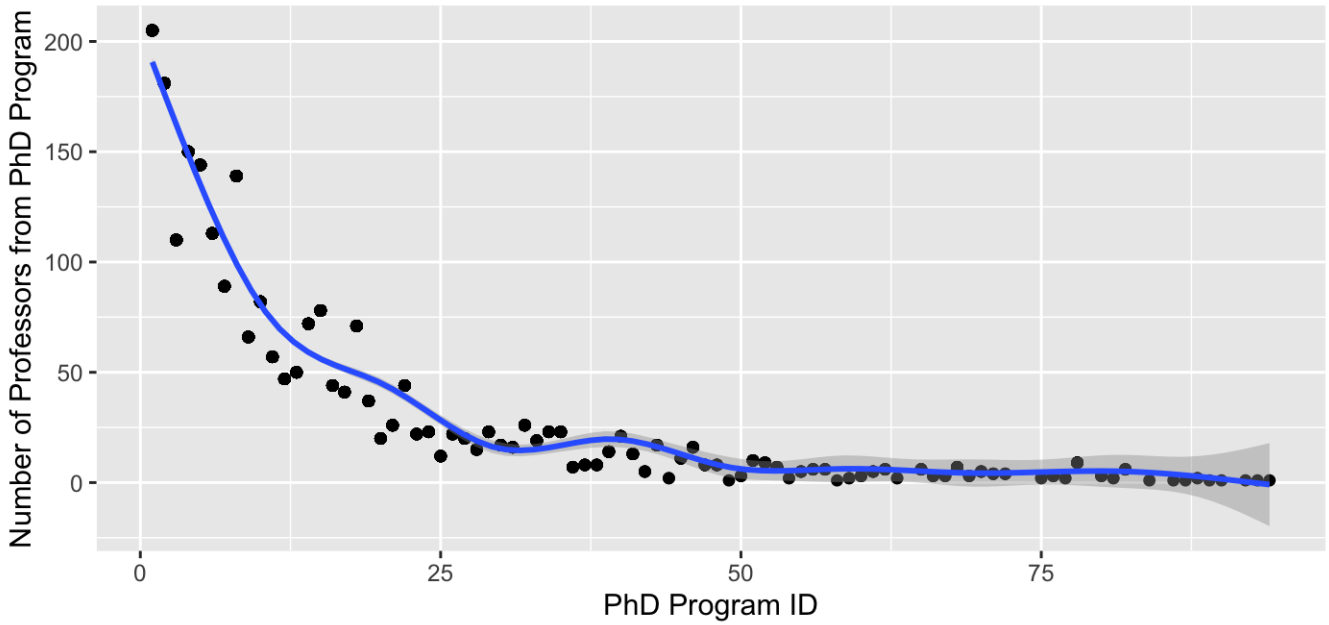


(c) Female Only



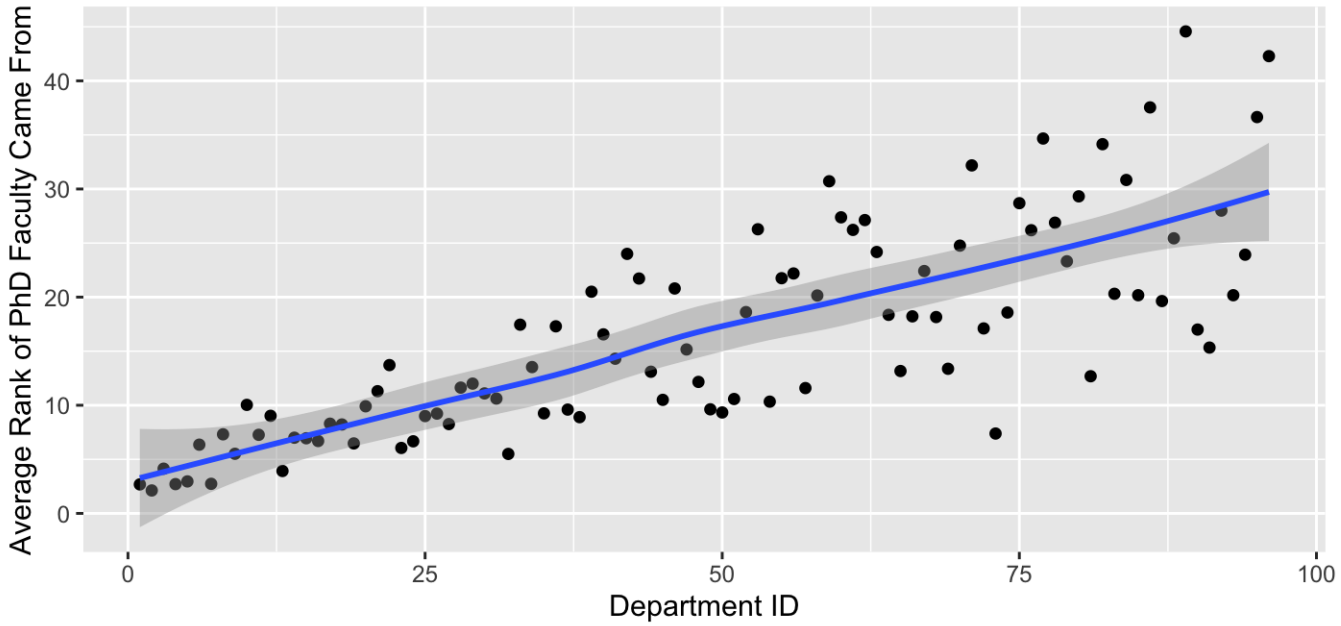
Notes: This figure displays the percentage of faculty who are an assistant professor (blue), associate professor (red), and full professor (black) by department, which is ordered according to ID (see Table 1). Panel (a) shows the full sample; Panel (b) restricts the sample to male; and Panel (c) restricts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

Figure 4: Number of Faculty (in Sample) Produced, by PhD Program



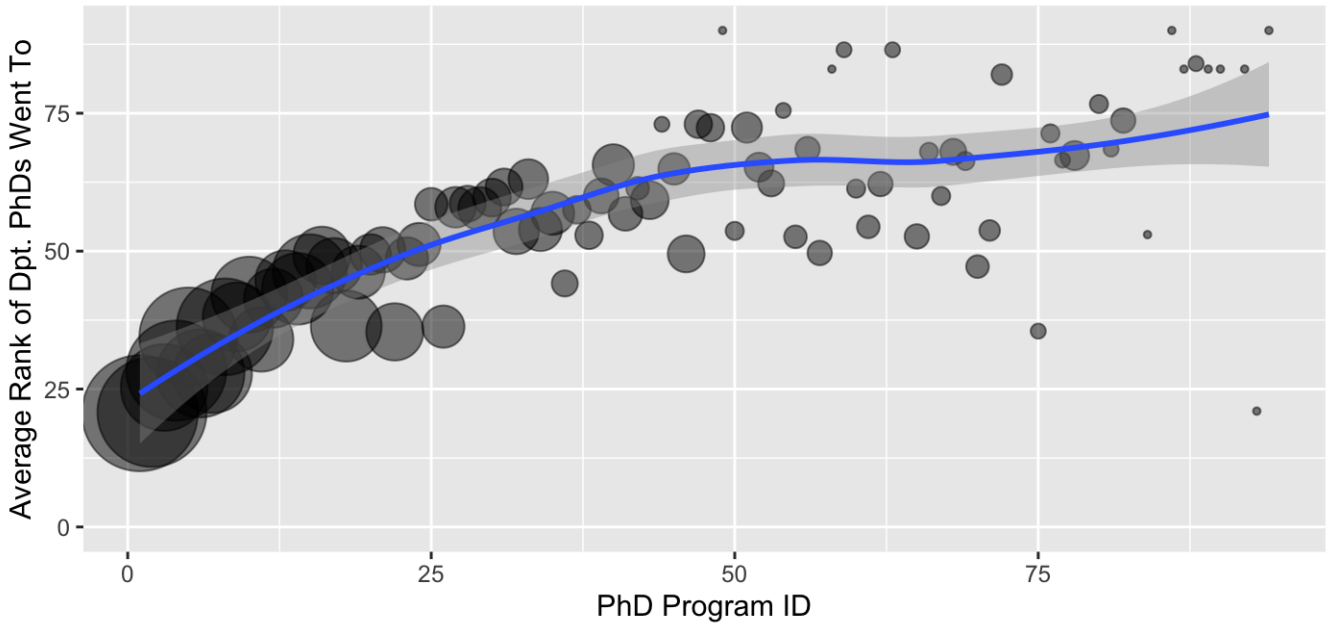
Notes: This figure displays the number of faculty produced by PhD program, which is ordered according to ID (see Table 1). In other words, this displays how many graduates of a given PhD program are now faculty members at departments in the sample. PhD programs are limited to those in Table 1.

Figure 5: Average Rank of PhD Programs of a Department's Faculty, by Department



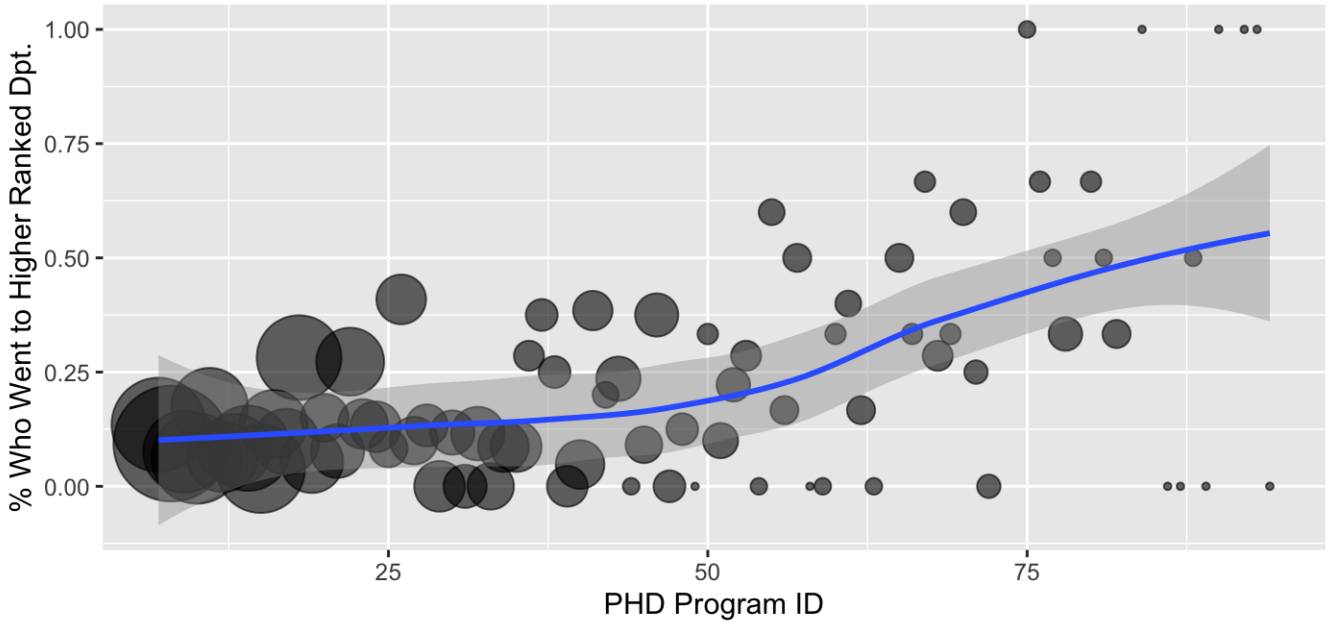
Notes: This figure displays, for a given department, the average rank of the PhD programs faculty members attended. Departments are ordered according to ID (see Table 1). It is restricted to those who went to ranked PhD programs.

Figure 6: Average Rank of Department a PhD Programs' Graduates Went To, by PhD Program



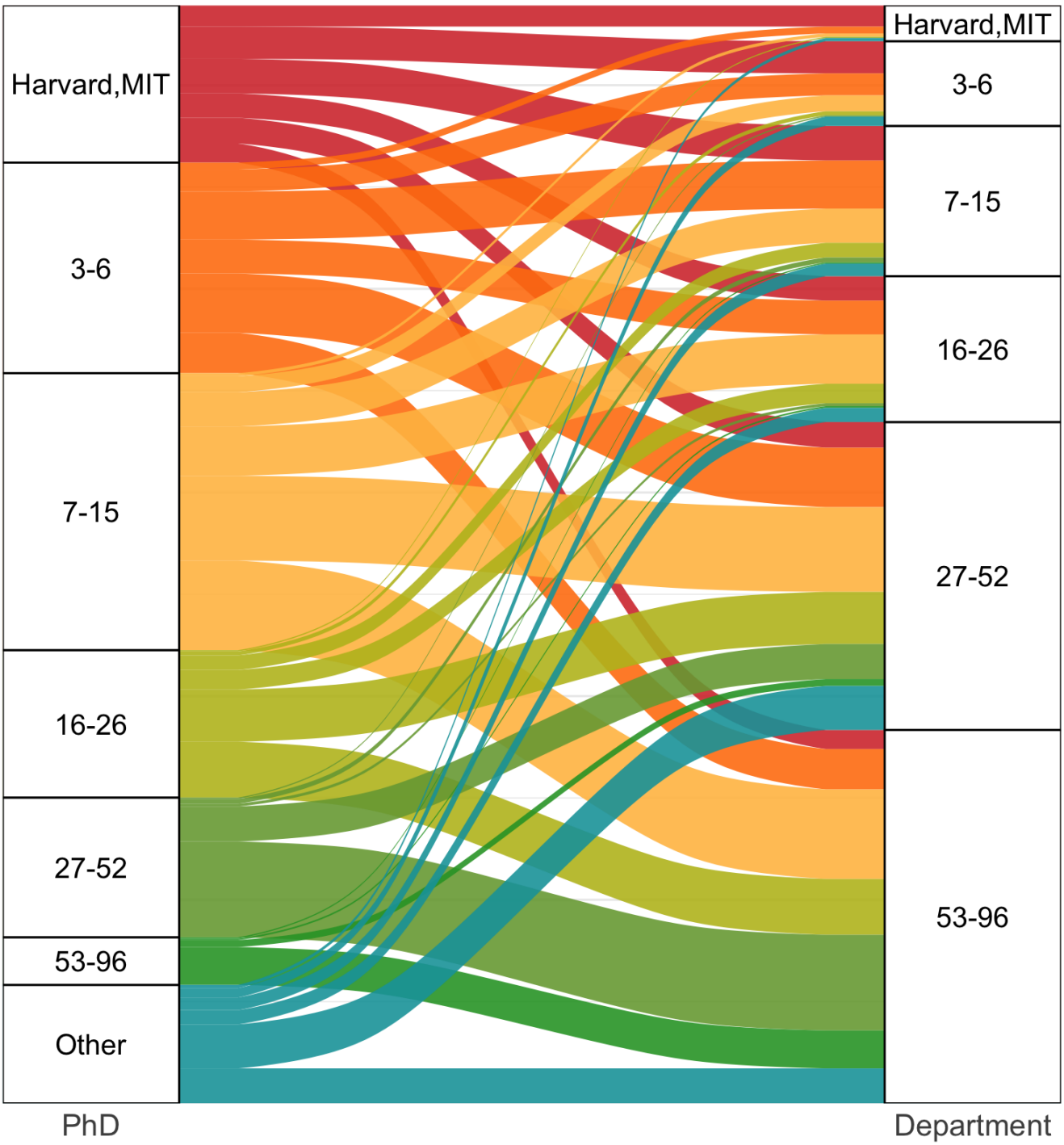
Notes: This figure displays the average department rank that graduates of a particular PhD program went to. PhD programs are ordered according to ID (see Table 1), and are limited to those in Table 1. PhD programs are weighted by number of graduates (in the sample).

Figure 7: Percentage of a PhD Programs' Graduates Who Went to Higher-ranked Department, by PhD Program



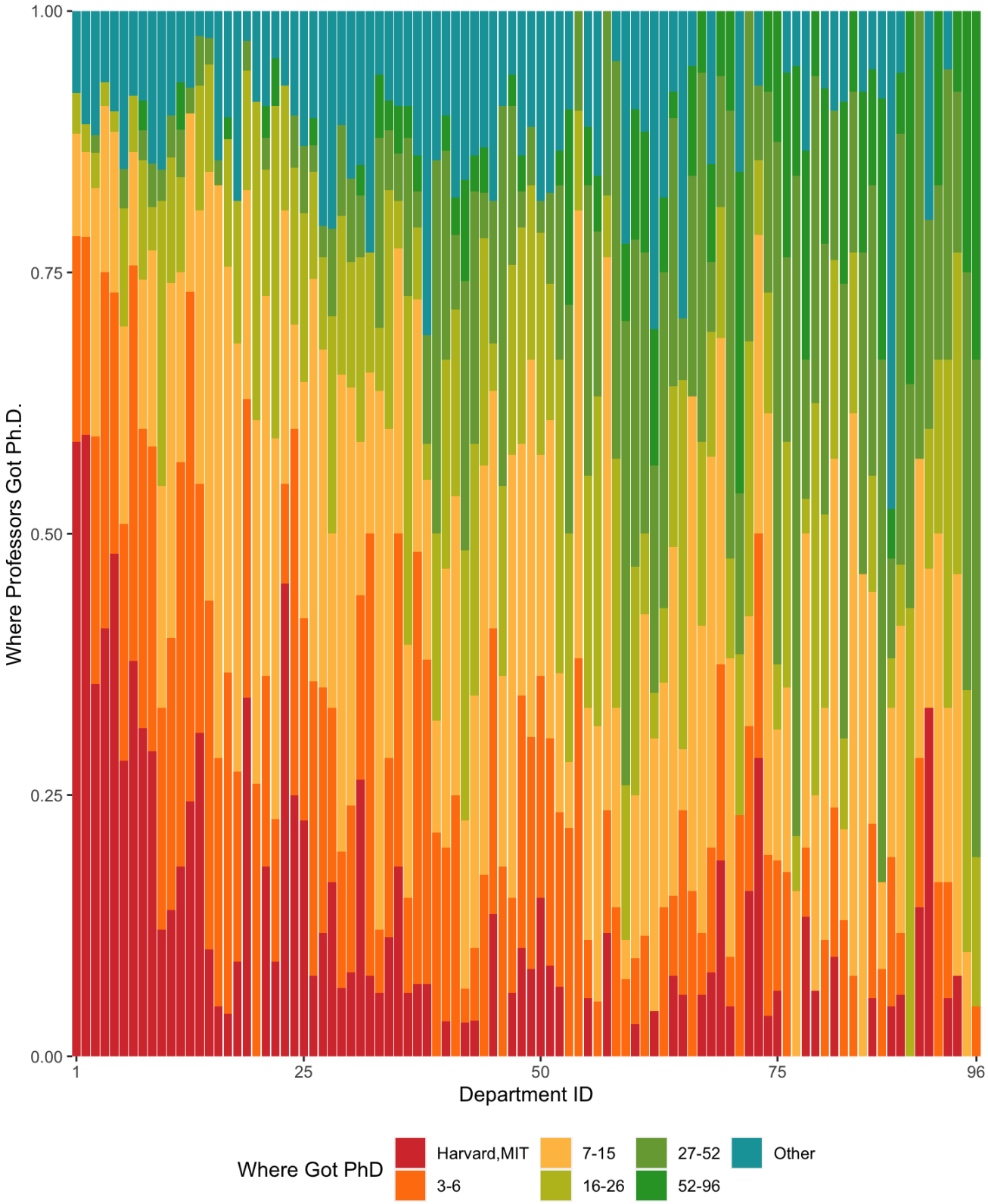
Notes: This figure displays the percentage of a PhD programs' graduates (in the sample) who went to a higher-ranked department than their PhD program. PhD programs are ordered according to ID (see Table 1), and are limited to those in Table 1. Because by definition those who graduate from the top-ranked PhD programs cannot go to a department ranked higher than theirs, they are excluded. PhD programs are weighted by number of graduates (in the sample).

Figure 8: Flows From PhD Programs (Left) to Departments (Right), by Category



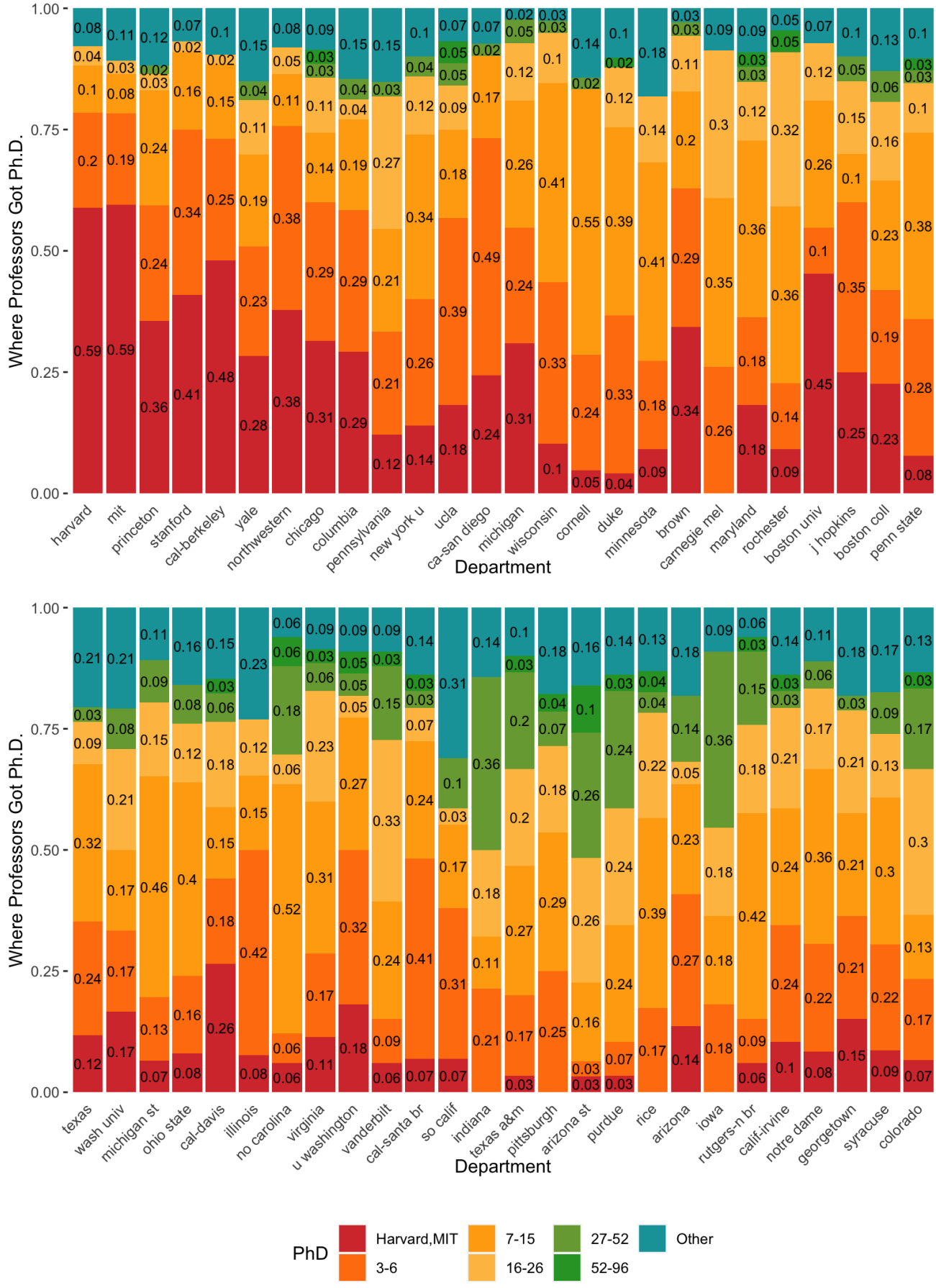
Notes: This Sankey diagram shows flows from PhD programs (left) to departments (right). The width of the flow represents the number of individuals going from one group to another.

Figure 9: % of Dpt. Faculty from Different Tiers of PhD Program, by Department



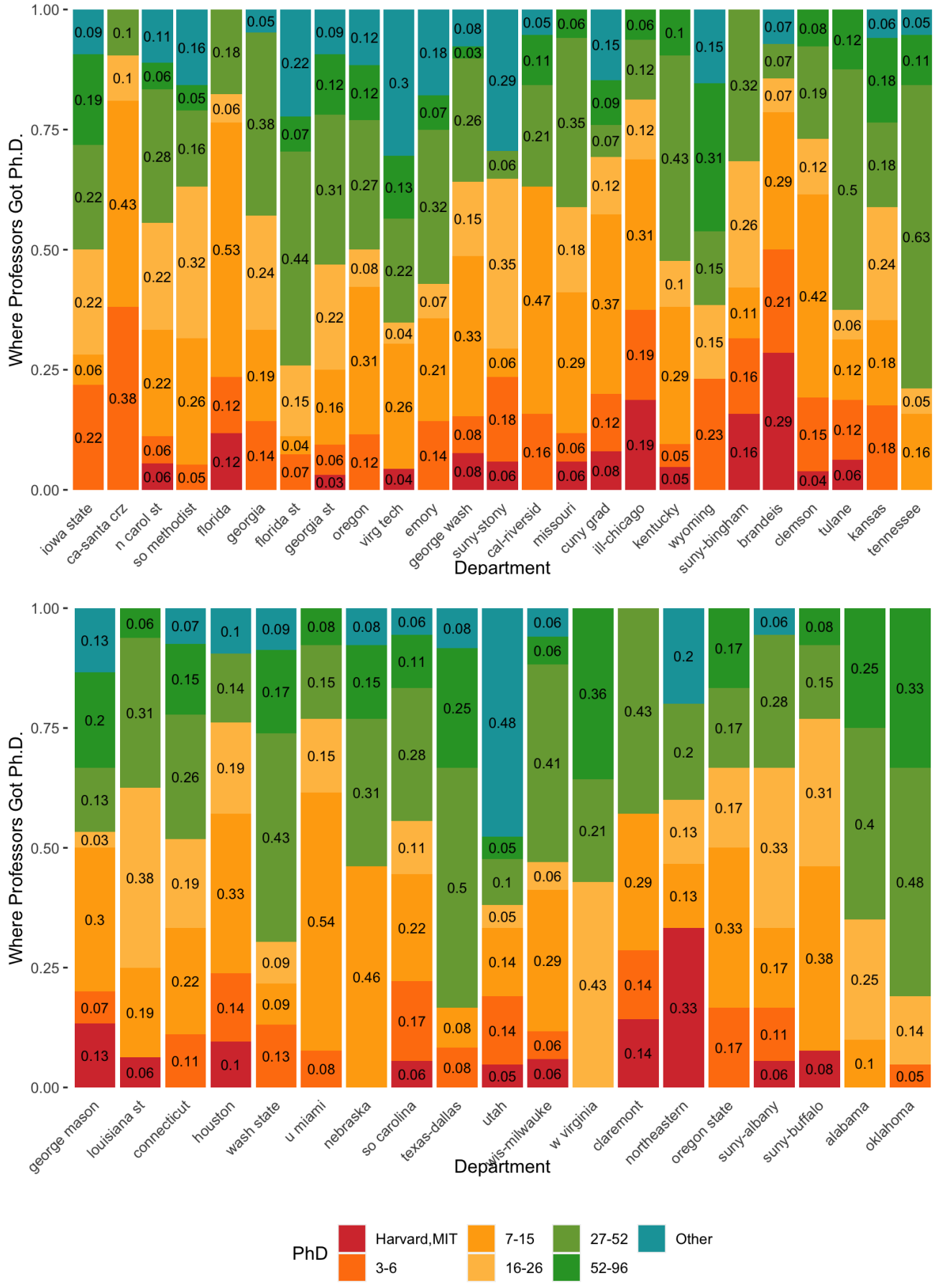
Notes: This bar chart displays the percentage of a department's faculty that came from groupings of PhD program rankings. Each row is a department, and the colorings of the row represent the percentage of faculty that come from the particular PhD program group. Departments are ordered according to ID (see Table 1)

Figure 10: % of Department Faculty from Different Tiers of PhD Program, Dpts. 1-26 and 27-52



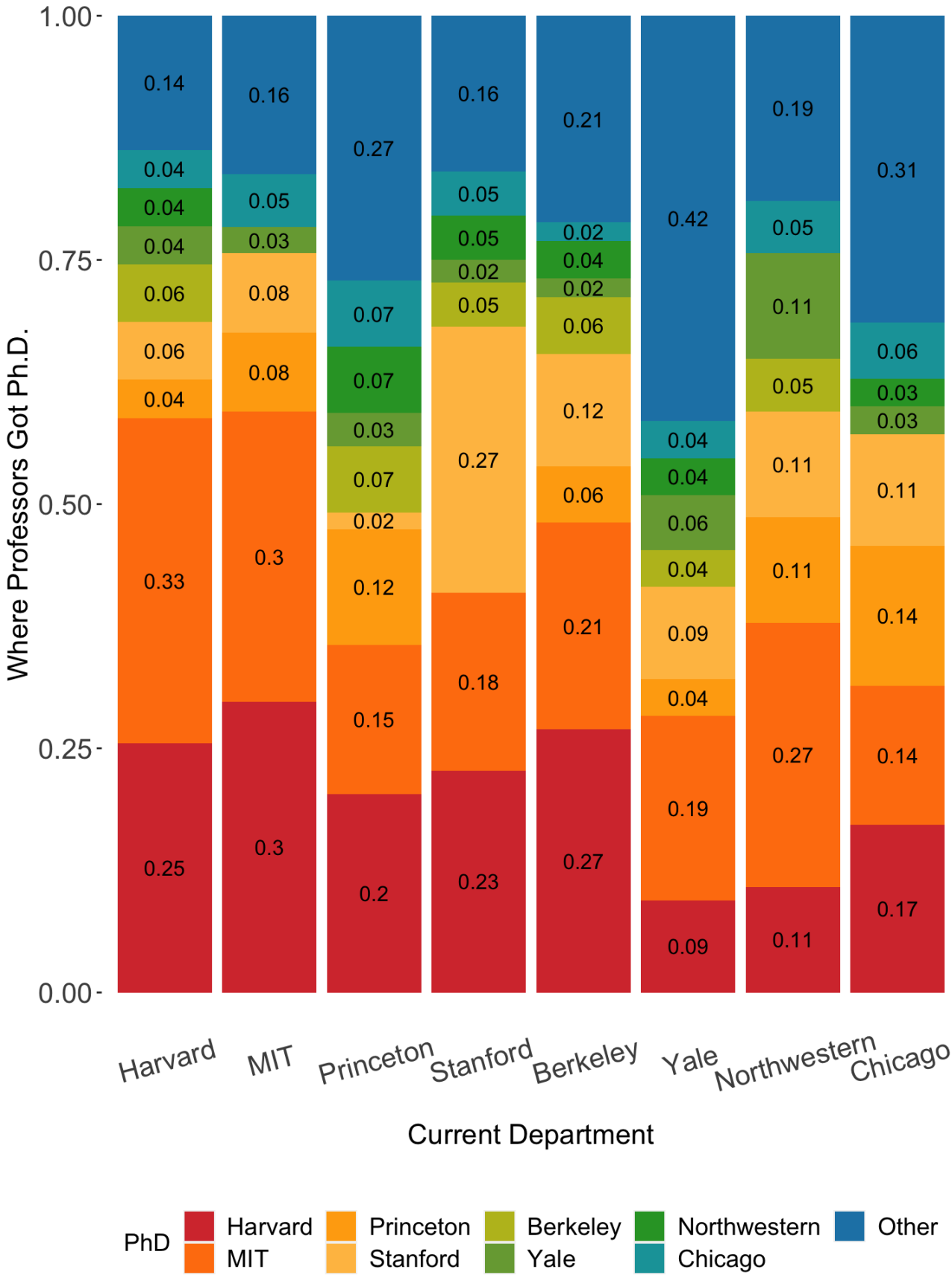
Notes: This figure displays the percentage of a department's faculty that came from groupings of PhD program rankings. Each row is a department, and the colorings of the row represent the percentage of faculty that come from the particular PhD program group. Panel (a) shows department withs IDs 1-26,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

Figure 11: % of Department Faculty from Different Tiers of PhD Program, Dpts. 53-77 and 78-96



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

Figure 12: PhDs of Faculty of Top 8 Departments



Notes: This figure displays the percentage of a department's faculty that came from groupings of PhD program rankings. Each row is a department, and the colorings of the row represent the percentage of faculty that come from the particular PhD program.

Table 1: Department Rankings, 2017 USNWR

Department	USNWR	ID
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–Ann Arbor	12	14
University of Wisconsin–Madison	12	15
Cornell University	16	16
Duke University	16	17
University of Minnesota–Twin Cities	16	18
Brown University	19	19
Carnegie Mellon University	20	20
University of Maryland–College Park	21	21
University of Rochester	21	22
Boston University	23	23
Johns Hopkins University	23	24
Boston College	25	25
Pennsylvania State University–University Park	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–Chapel Hill	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–Bloomington	39	39
Texas A&M University–College Station	39	40
University of Pittsburgh	39	41
Arizona State University	42	42
Purdue–West Lafayette	42	43
Rice University	42	44
University of Arizona	42	45
University of Iowa	42	46
Rutgers, New Brunswick	47	47
University of California–Irvine	47	48
University of Notre Dame	47	49
Georgetown University	50	50

Department	USNWR	ID
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–Raleigh	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–SUNY	63	65
University of California–Riverside	63	66
University of Missouri	63	67
CUNY Graduate School and University Center	68	68
University of Illinois–Chicago	68	69
University of Kentucky	68	70
University of Wyoming	68	71
Binghamton University–SUNY	72	72
Brandeis University	72	73
Clemson University	72	74
Tulane University	72	75
University of Kansas	72	76
University of Tennessee–Knoxville	72	77
George Mason University	78	78
Louisiana State University–Baton Rouge	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–Lincoln	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–SUNY	90	93
University at Buffalo–SUNY	90	94
University of Alabama	90	95
University of Oklahoma	90	96

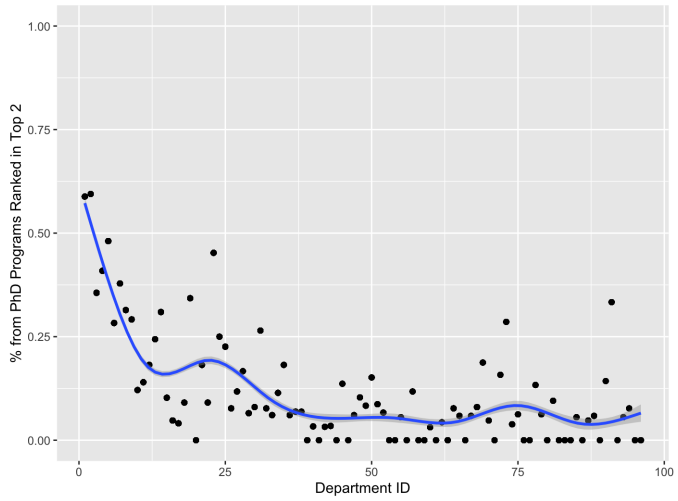
Notes: This table show the 2017 US News & World Report rankings of economics departments. There are many cases in which departments are tied; as such, we create a unique ID in order to distinguish tied schools, which are arranged alphabetically.

Table 2: Departments with Highest Concentration of Faculty from PhD Programs

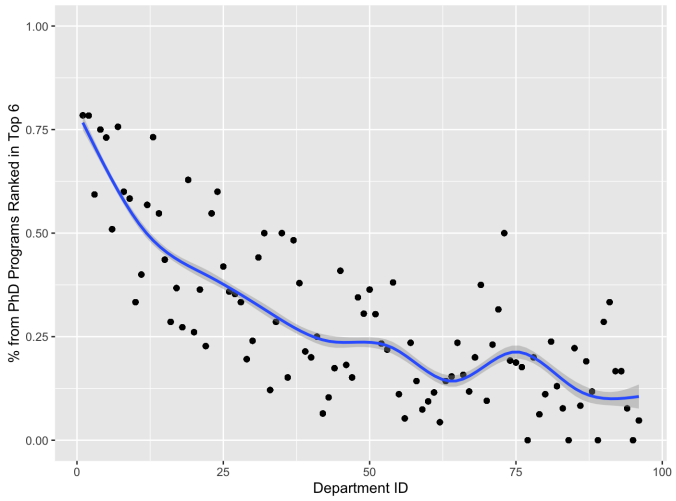
Department	PhD	Percent
Clemson University	University of Chicago	.38
Harvard University	MIT	.33
MIT	Harvard University	.3
MIT	MIT	.3
Boston University	Harvard University	.29
University of California–Berkeley	Harvard University	.27
Northwestern University	MIT	.27
Northeastern University	MIT	.27
Stanford University	Stanford University	.27
Brown University	Harvard University	.26
Johns Hopkins University	Yale University	.25
Harvard University	Harvard University	.25
University of Miami	University of Chicago	.23
University of Wyoming	University of California–Berkeley	.23
University of Miami	University of Pennsylvania	.23
Stanford University	Harvard University	.23
University of California–San Diego	Harvard University	.22
University of California–Berkeley	MIT	.21
West Virginia University	Johns Hopkins University	.21
University of North Carolina–Chapel Hill	University of Pennsylvania	.21
Brandeis University	MIT	.21
University of California–Santa Barbara	University of California–Berkeley	.21
University of Michigan–Ann Arbor	Harvard University	.21
Duke University	Northwestern University	.2
George Mason University	George Mason University	.2
University of California–San Diego	University of California–Berkeley	.2
Princeton University	Harvard University	.2
Cornell University	Northwestern University	.19
University of California–Santa Cruz	Stanford University	.19
Yale University	MIT	.19
University of Wisconsin–Milwaukee	University of Michigan–Ann Arbor	.18
University of Wisconsin–Madison	Yale University	.18
University of Florida	Northwestern University	.18
Stanford University	MIT	.18
Columbia University	Harvard University	.17
Carnegie Mellon University	University of Minnesota–Twin Cities	.17
University of Chicago	Harvard University	.17
Boston University	MIT	.17
Binghamton University–SUNY	Harvard University	.16
University of California–Riverside	University of California–San Diego	.16
University of California–Los Angeles	Stanford University	.16
Johns Hopkins University	Harvard University	.15
University of Illinois–Urbana-Champaign	University of California–Berkeley	.15
University of Nebraska–Lincoln	University of Wisconsin–Madison	.15
Princeton University	MIT	.15
University of Oregon	University of Wisconsin–Madison	.15
Pennsylvania State University–University Park	University of Chicago	.15
University of Wyoming	Cornell University	.15
University of Wyoming	University of Wyoming	.15
University of California–Davis	Harvard University	.15
University at Buffalo–SUNY	University of California–Irvine	.15
University at Buffalo–SUNY	University of Minnesota–Twin Cities	.15
University of Illinois–Urbana-Champaign	Yale University	.15

Notes: This table displays the instances where at least 15% of a department's faculty came from a particular PhD program. Departments with less than 10 faculty are excluded.

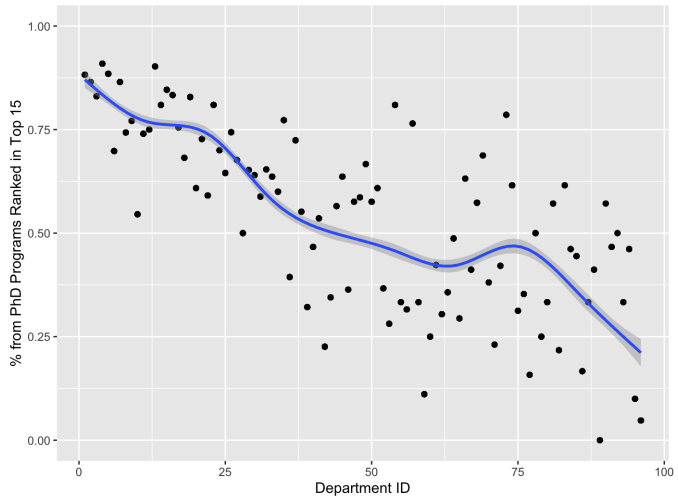
Figure A.1: Percentage of Department Faculty from Top X Ranked Phd Programs, by Department



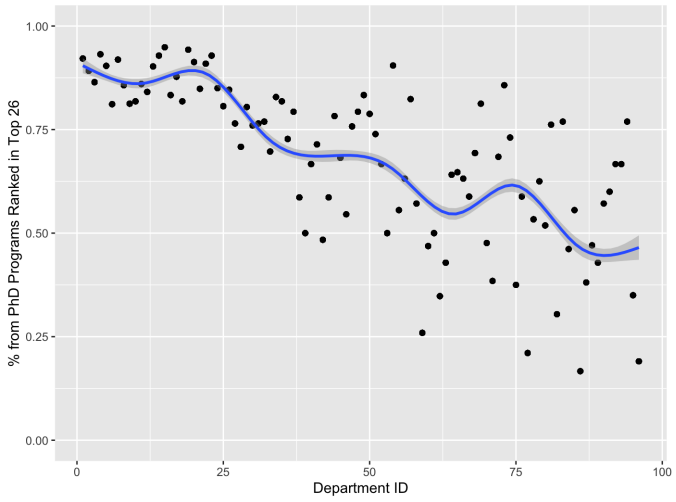
(a) Harvard and MIT



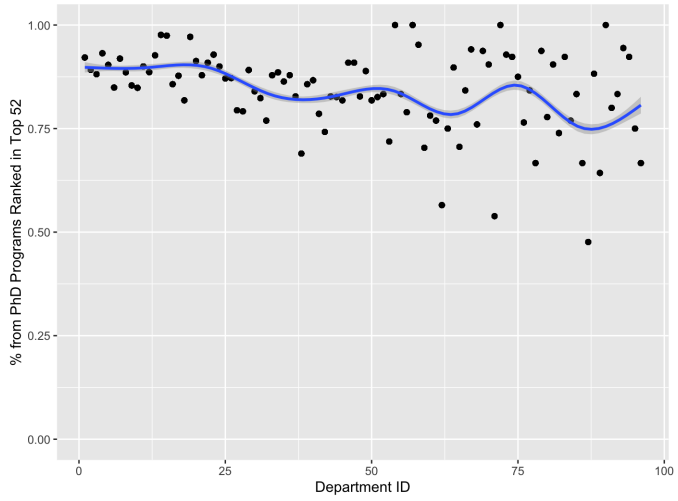
(b) 1-6



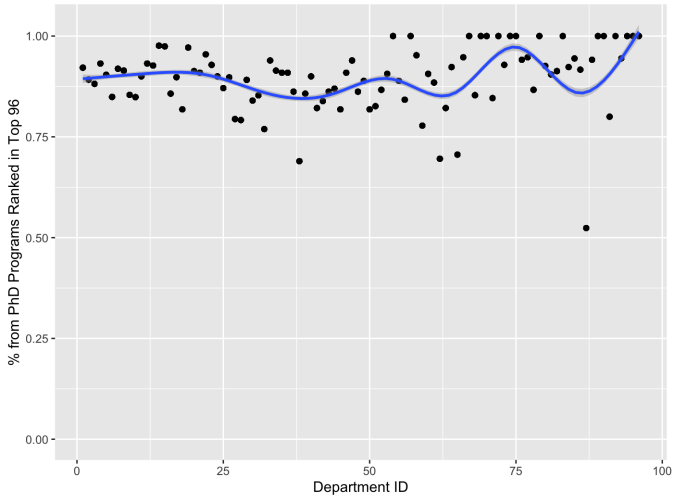
(c) 1-15



(d) 1-26



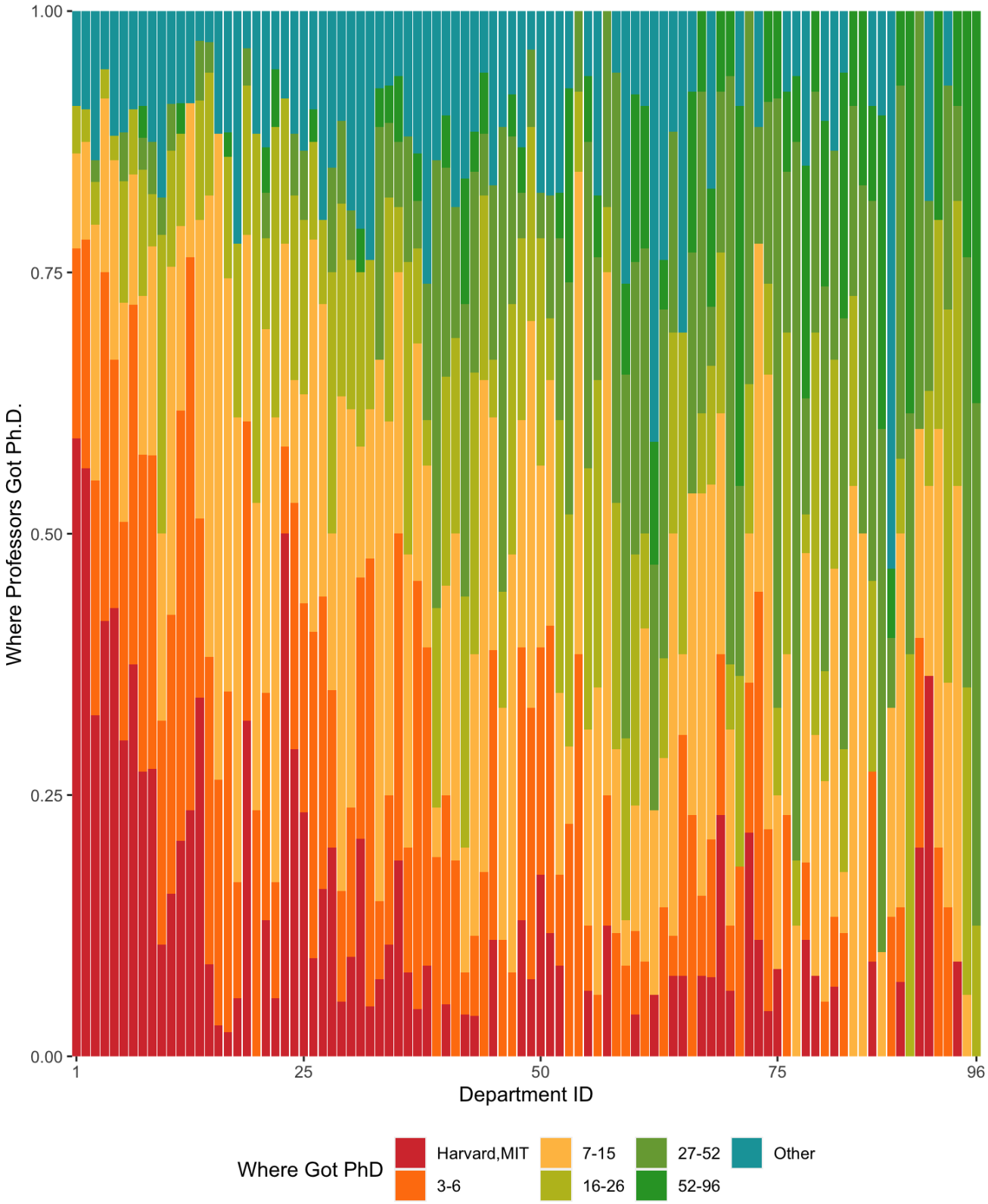
(e) 1-52



(f) 1-96

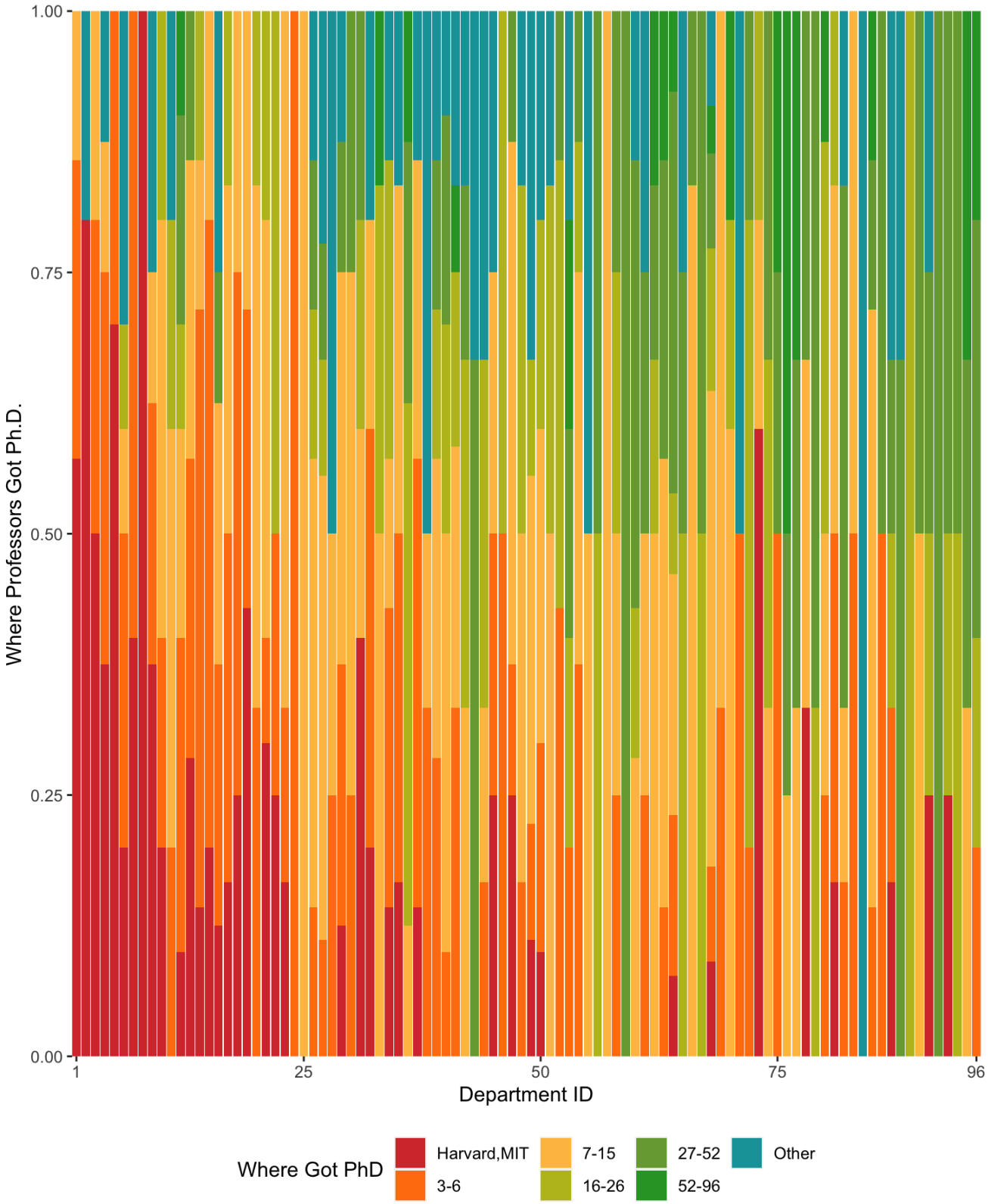
Notes: This graph shows the percentage of a department's faculty from the departments indicated in the Panel title.

Figure A.2: % of Dpt. Faculty from Different Tiers of PhD Program, by Department, Male



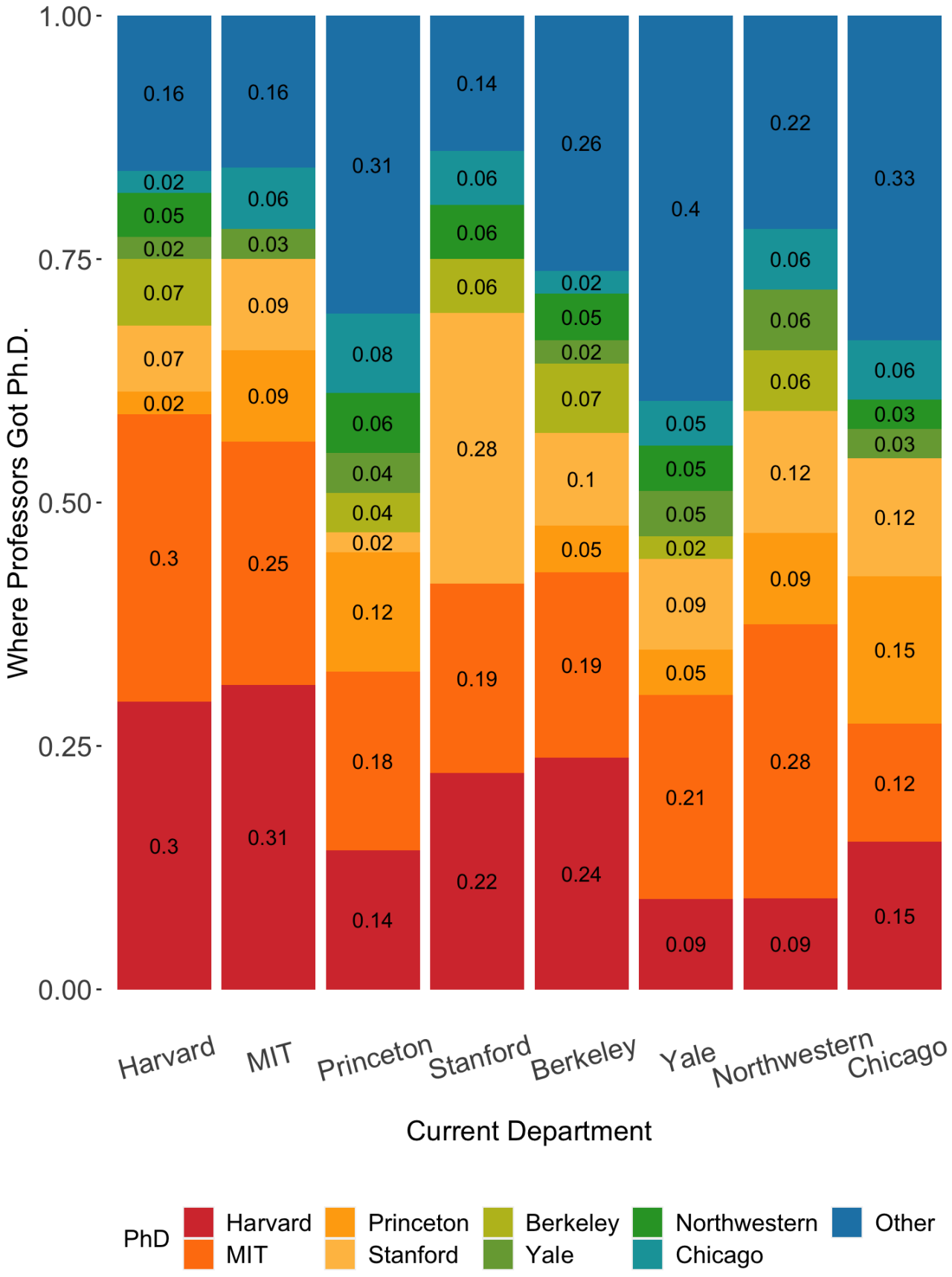
Notes: This bar chart displays the percentage of a department's faculty that came from groupings of PhD program rankings. Each row is a department, and the colorings of the row represent the percentage of faculty that come from the particular PhD program group. Departments are ordered according to ID (see Table 1). The sample is restricted to men.

Figure A.3: % of Dpt. Faculty from Different Tiers of PhD Program, by Department, Female



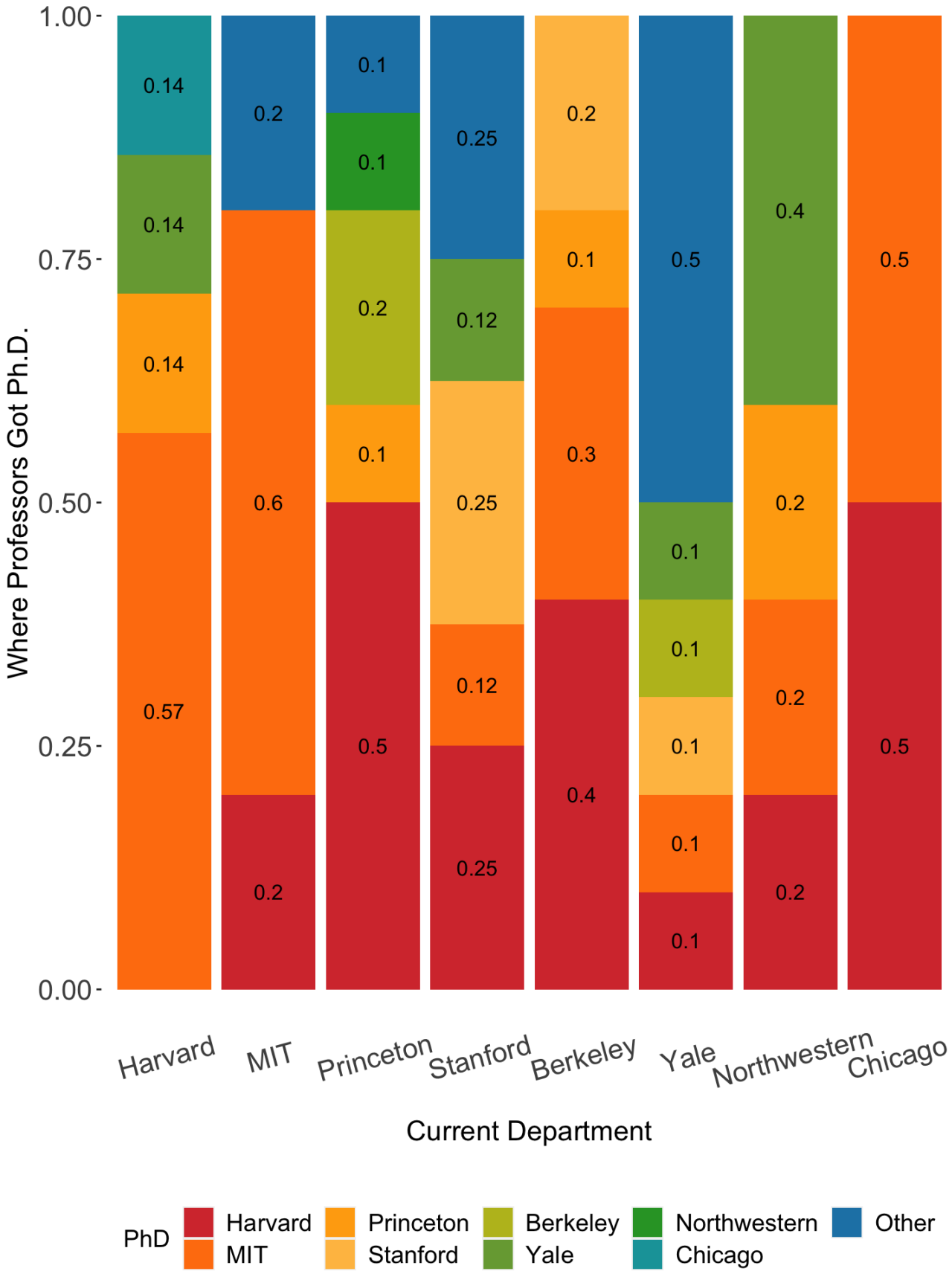
Notes: This bar chart displays the percentage of a department's faculty that came from groupings of PhD program rankings. Each row is a department, and the colorings of the row represent the percentage of faculty that come from the particular PhD program group. Departments are ordered according to ID (see Table 1). The sample is restricted to women.

Figure A.4: PhDs of Faculty of Top 8 Departments; Male



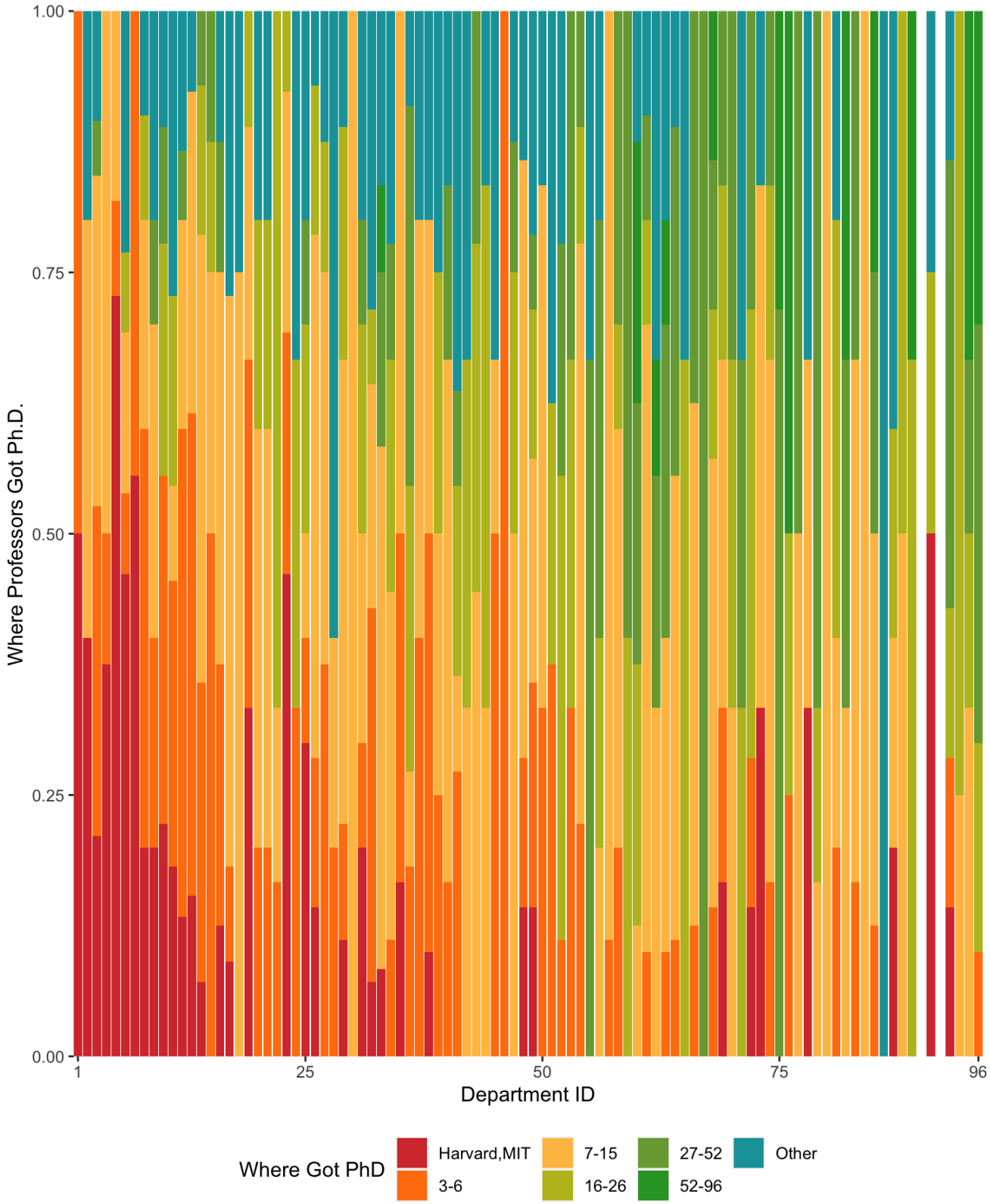
Notes: This figure displays the percentage of a department's faculty that came from groupings of PhD program rankings. Each row is a department, and the colorings of the row represent the percentage of faculty that come from the particular PhD program. The sample is restricted to men.

Figure A.5: PhDs of Faculty of Top 8 Departments; Female



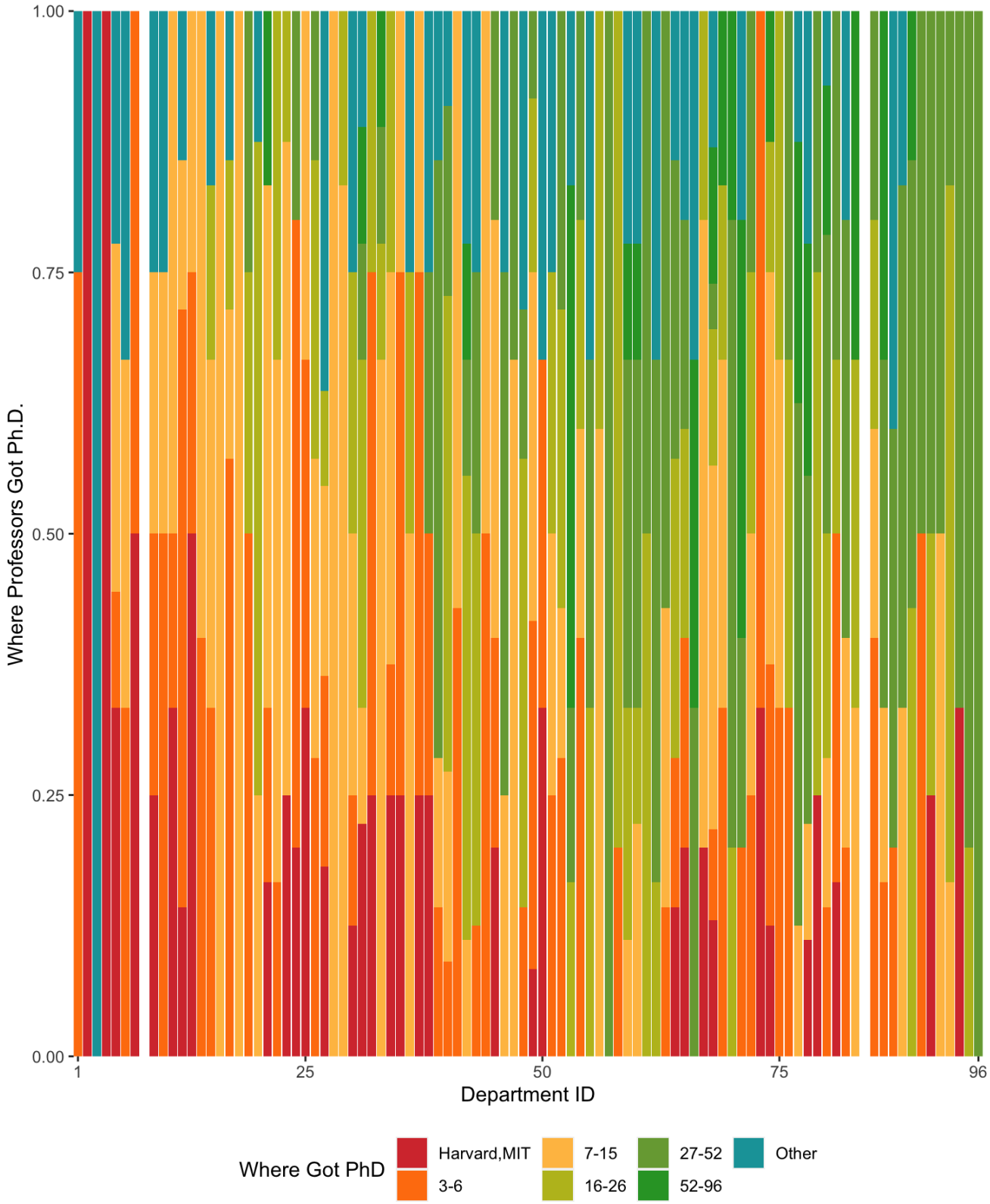
Notes: This figure displays the percentage of a department's faculty that came from groupings of PhD program rankings. Each row is a department, and the colorings of the row represent the percentage of faculty that come from the particular PhD program. The sample is restricted to women.

Figure A.6: % of Dpt. Faculty from Different Tiers of PhD Program, by Dpt., Assistant Professors



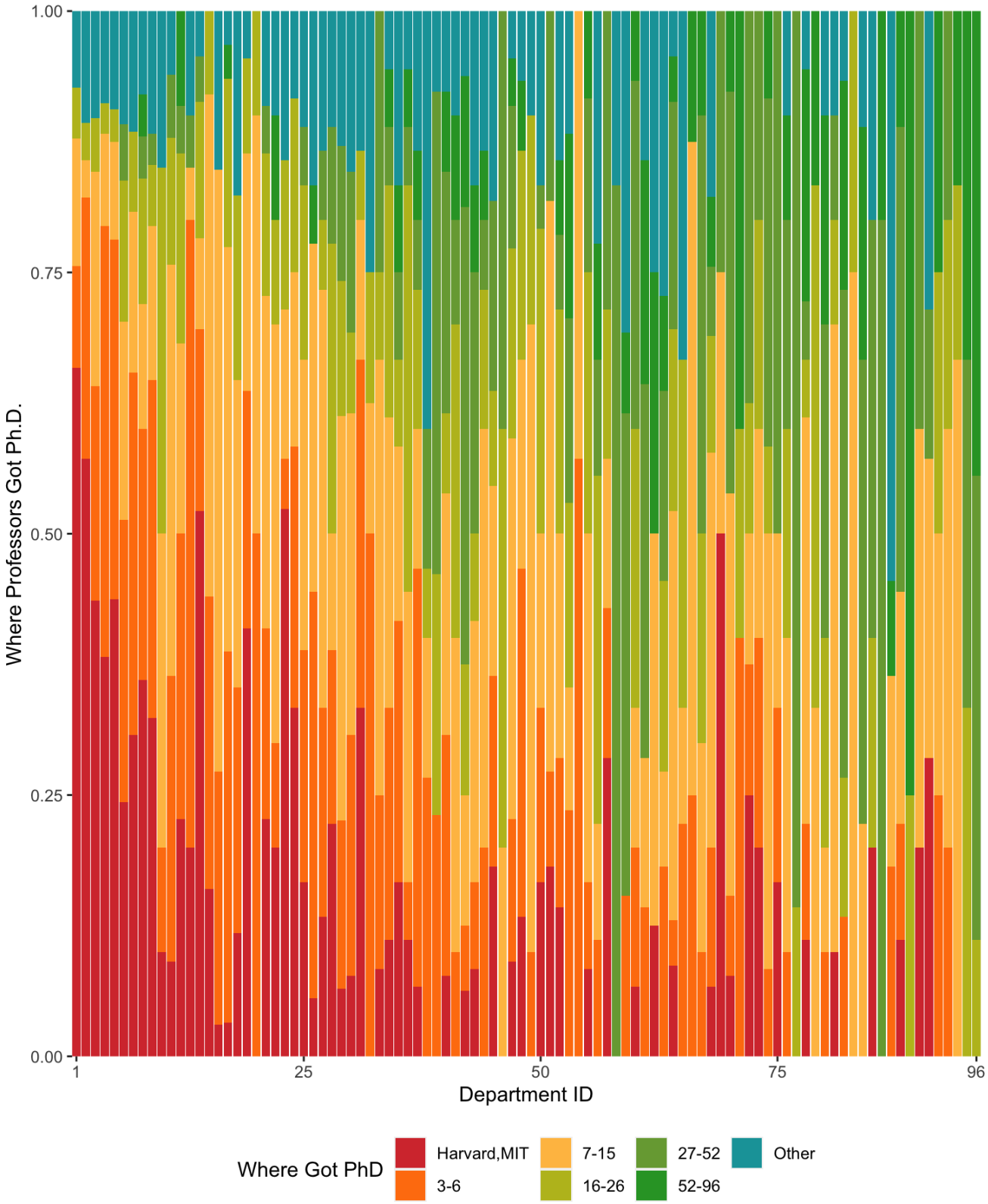
Notes: This bar chart displays the percentage of a department's faculty that came from groupings of PhD program rankings. Each row is a department, and the colorings of the row represent the percentage of faculty that come from the particular PhD program group. Departments are ordered according to ID (see Table 1). The sample is restricted to Assistant Professors.

Figure A.7: % of Dpt. Faculty from Different Tiers of PhD Program, by Dpt., Associate Professors



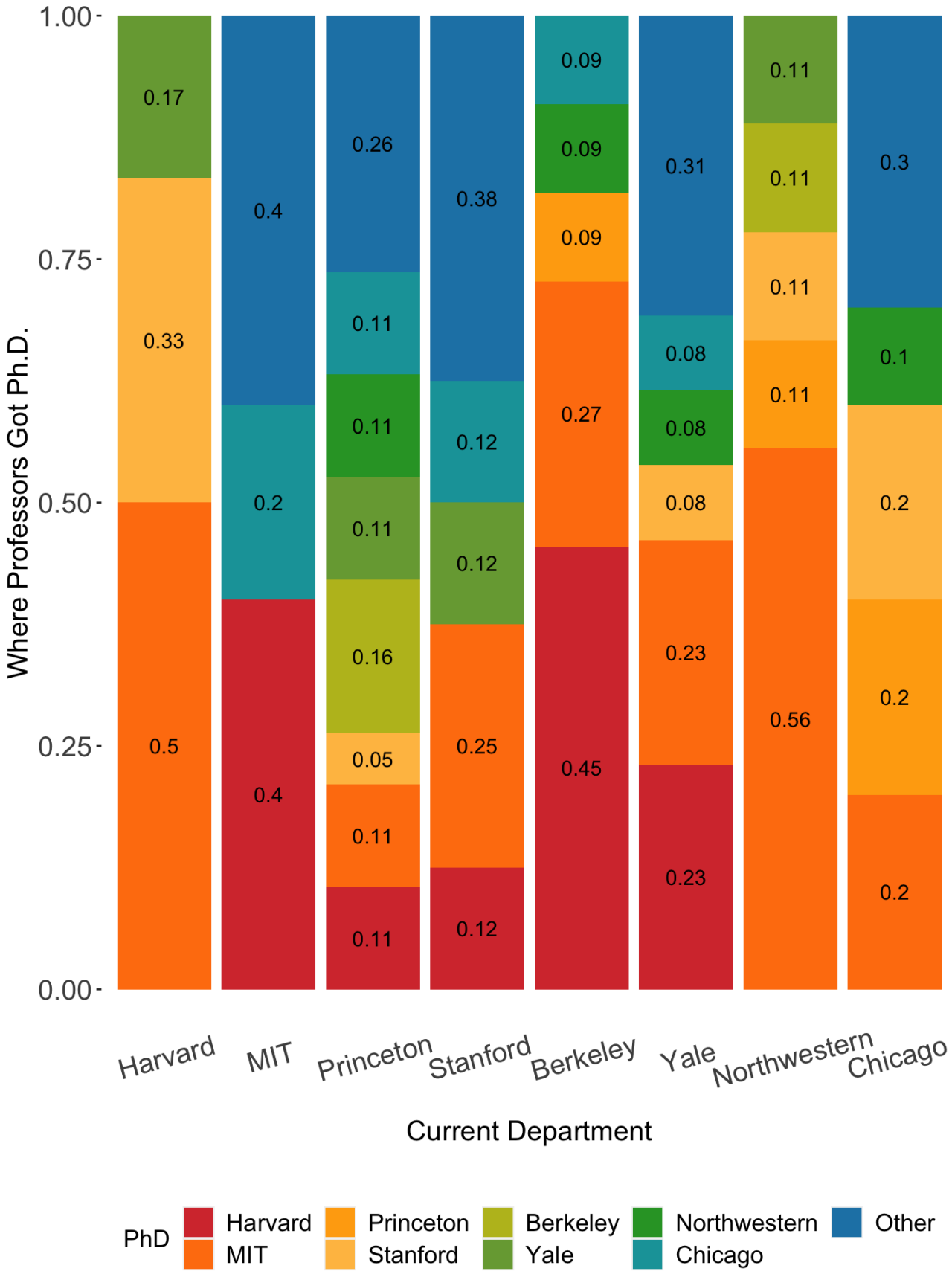
Notes: This bar chart displays the percentage of a department's faculty that came from groupings of PhD program rankings. Each row is a department, and the colorings of the row represent the percentage of faculty that come from the particular PhD program group. Departments are ordered according to ID (see Table 1). The sample is restricted to Associate Professors.

Figure A.8: % of Dpt. Faculty from Different Tiers of PhD Program, by Dpt., Full Professors



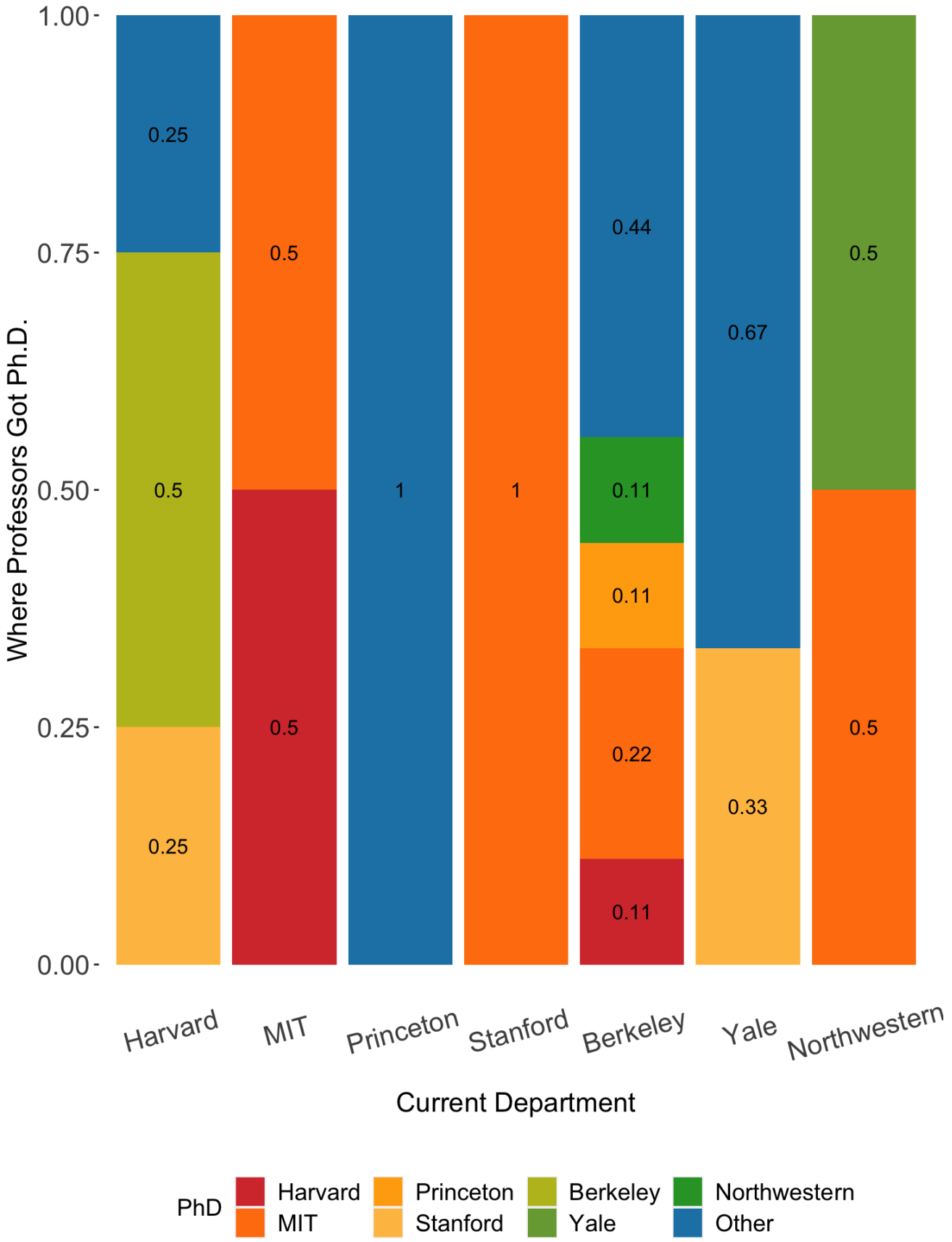
Notes: This bar chart displays the percentage of a department's faculty that came from groupings of PhD program rankings. Each row is a department, and the colorings of the row represent the percentage of faculty that come from the particular PhD program group. Departments are ordered according to ID (see Table 1). The sample is restricted to Full Professors.

Figure A.9: PhDs of Faculty of Top 8 Dpts.; Assistant Professors



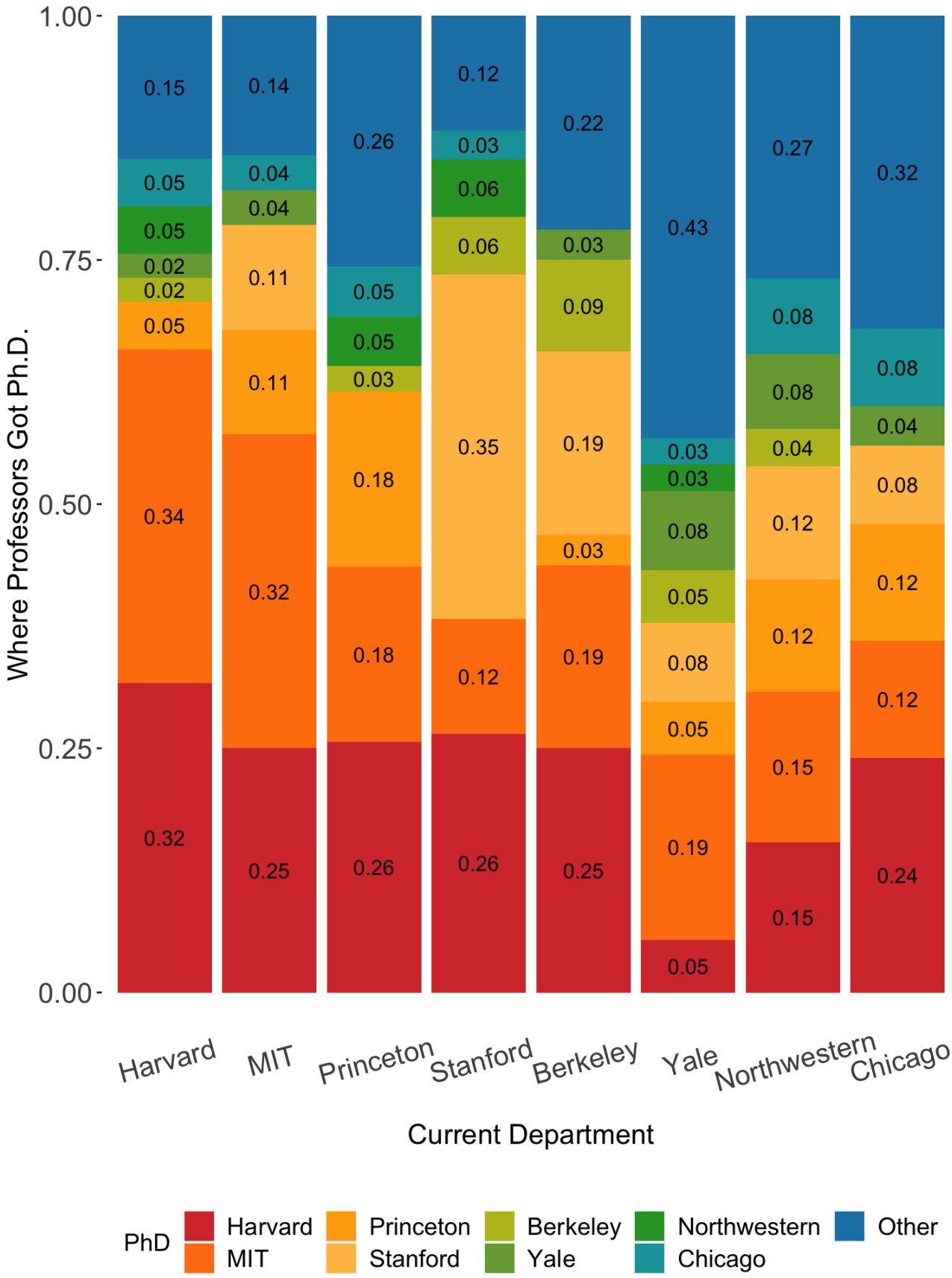
Notes: This figure displays the percentage of a department's faculty that came from groupings of PhD program rankings. Each row is a department, and the colorings of the row represent the percentage of faculty that come from the particular PhD program. The sample is restricted to Assistant Professors.

Figure A.10: PhDs of Faculty of Top 8 Dpts; Associate Professors



Notes: This figure displays the percentage of a department's faculty that came from groupings of PhD program rankings. Each row is a department, and the colorings of the row represent the percentage of faculty that come from the particular PhD program. The sample is restricted to Associate Professors.

Figure A.11: PhDs of Faculty of Top 8 Dpts.; Full Professors



Notes: This figure displays the percentage of a department's faculty that came from groupings of PhD program rankings. Each row is a department, and the colorings of the row represent the percentage of faculty that come from the particular PhD program. The sample is restricted to Full Professors.