Understanding Variation in Post-College Earnings: Evidence from the U.S. Department of Education's College Scorecard

Michael D. Bloem
College Board
225 Liberty Street
New York, NY 10281

Xiaowen Hu
College Board
225 Liberty Street
New York, NY 10281

Michael Hurwitz
College Board
225 Liberty Street
New York, NY 10281

December 2025

Abstract

Using the detailed college level data from the College Scorecard on students' post-college earnings from the near universe of four-year colleges, we assess the usefulness of going beyond comparing colleges based only on median earnings and analyze the descriptive relationship between college selectivity and earnings outcomes and how this relationship may differ by student sex and field of study. We show that considering the full distribution of earnings outcomes can greatly improve our understanding of college level earnings dynamics. Using different points in the distribution other than the median would markedly change how colleges rank on these metrics, largely due to widely overlapping earnings distributions across colleges. On the link between college selectivity and earnings, we find that there is virtually no correlation among less selective colleges but a strong relationship among more selective colleges. Earnings are significantly higher at colleges with lower acceptance rates, especially at the high end of the earnings distribution, and the gender earnings gap is also larger at these colleges. We also show that the relationship between selectivity and earnings varies dramatically by field of study, with some fields showing a large return to college selectivity while others revealing none at all.

1. Introduction

Many college rankings systems—such as from the *US News and World Report*, the *Wall Street Journal*, and *Forbes*—have positioned colleges within a diverse ecosystem for many years using a set of metrics including graduation rates, faculty salaries, and average instructional expenditures per student. However, as more Americans have questioned in recent years whether investing in a college education is worthwhile (Belkin, 2024; Tough, 2023), there has been an increased focus on the outcomes of students after leaving college, especially earnings, and comparing these outcomes across colleges.

In the fall of 2015, the U.S. Department of Education released the College Scorecard—an interactive tool that features a college's graduation rate, annual cost of attendance, and median earnings (of federal student aid recipients) 10 years after entering college. The latter element is the most novel, as no such official measure of post-college earnings sourced from administrative data (in this case, from the Department of Treasury) was available up to this point. These earnings data have grown in their traction since their release as the metrics have gradually been folded into rankings, such as those produced by the *Wall Street Journal* and *US News and World Report*.

While the College Scorecard's consumer-facing search tool displays median earnings data for each college, the College Scorecard houses much more detailed college level earnings data that are publicly available on its website and updated semi-regularly. These enhanced data include the 25th, 50th, and 75th earnings percentiles (and the 10th and 90th earnings percentiles for earlier data releases) for certain cohorts of students 6, 8, and 10 years after entering college. These earnings data also include median earnings by sex,

and in separately released data files, median earnings by field of study. Also, while the College Scorecard's search tool shows median earnings for the cohorts in the most recent data release, all prior data releases are also available on the website which provides the ability to track college level earnings over time both within and across different entry cohorts.

In this paper, we harness the detailed data available through the College Scorecard to gain a better understanding about how post-college earnings vary across colleges. We broadly take our analyses in two directions. First, we assess what insights can be learned about college level outcomes beyond median earnings from a single cohort of students, which is what is displayed on the College Scorecard's search tool.[1] More specifically, we explore how our perceptions of colleges might change when considering the additional data on different earnings percentiles, as well as the longitudinal earnings data across colleges' entry cohorts from prior College Scorecard data releases. Second, we analyze the relationship between college selectivity and post-college earnings. These analyses are inspired by the findings of Chetty, Deming, and Friedman (2023) who show that elite colleges disproportionately propel students into the highest paying jobs. Specifically, we explore the relationship between selectivity and earnings among nearly all four-year colleges in the U.S., how this relationship may vary with different earnings percentiles, and how the relationship differs by student sex and field of study.

[1] Technically, the College Scorecard releases earnings data based on "pooled" entry cohorts, combining data from two consecutive college entry cohorts. But the College Scorecard's search tool does show median earnings data for just one pooled entry cohort.

Our first set of analyses has several main findings: 1) A college's earnings rank order is highly sensitive to the earnings percentile used to create the ranking. Of the roughly 1,400 sampled colleges, nearly 40 percent would shift by more than 150 places in rank order if colleges were sorted by the 90th percentile earnings rather than the median earnings. 2) Despite the fact that the colleges differ markedly in median earnings, there is substantial overlap across colleges in their full earnings distributions, even between colleges with large gaps in median earnings. 3) There is high volatility over time in each of the earnings metrics, particularly for smaller colleges. 4) Post-college earnings vary over time across different college entry cohorts, with apparent sensitivity to the economic conditions when students enter the labor market.

Our analyses of the link between college selectivity and post-college earnings reveal a complex relationship: 1) Among colleges with acceptance rates greater than 40 percent, there exists virtually no relationship between selectivity and earnings, regardless of the earnings metric. But, among more selective colleges, there is a steep relationship between earnings and selectivity. This is true regardless of the earnings metric, but the relationship is especially strong for 75th and 90th percentile earnings. 2) Median earnings for men are about $5,000 more than women 6 years after college entry, which grows to about $9,000 at 10 years after college entry. This disparity is consistent across colleges with admit rates greater than 40 percent but becomes larger—as much as $16,000 or more—among the more selective colleges. 3) There is substantial variation in the relationship between selectivity and median earnings across fields of study. Some fields—such as Social Work and Registered Nursing—show virtually no relationship between college selectivity and

median earnings. While other fields—such as Computer and Information Sciences and Economics—show a strong relationship between college selectivity and median earnings.

Our results yield several implications and suggestions for improving the College Scorecard's consumer-facing college search tool. Overall, there is a wealth of information available in the data that the College Scorecard releases on its website that is not salient on the consumer-facing Scorecard search tool. This data could be useful for students to digest when making comparisons between colleges in terms of post-college earnings outcomes. For instance, the College Scorecard should consider ways to 1) allow students to see more points in the earnings distribution to facilitate college comparisons beyond median earnings [2], 2) allow students to see how college level earnings have trended over time, both within and across entry cohorts, and 3) allow students to see how earnings differ between men and women and possibly other student characteristics, 4) allow students to see the full distribution of earnings (i.e., 10^{th}, 25^{th}, 50^{th}, 75^{th}, 90^{th} percentiles) for a given field across colleges, and 5) reduce data privacy suppression by reporting field of study earnings at a higher level of aggregation, such as, for example, reporting median earnings for all students in Education fields instead of for each of the 16 subcategories within Education.

This paper builds on several different strands of literature. First, we add to the academic literature on the College Scorecard itself. For example, Hurwitz and Smith (2018) show that the introduction of the median earnings had little effect on college enrollment. Most similar to our paper is Mabel, Libassi, and Hurwitz (2020) who also highlight how

[2] SAT scores (for example) are often reported as an interquartile range in IPEDS and rankings systems like *US News and World Report*.

consumers can easily draw misleading conclusions when comparing colleges based on the information presented on the College Scorecard's search tool. We update and significantly expand on Mabel et al. (2020) with more recent data and a novel set of unaddressed research questions, incorporating past data releases for more comprehensive analyses of earnings outcomes over time, and analyzing the relationship between college selectivity and earnings. We also add to a growing body of research that uses College Scorecard data, even though these studies are not explicitly aimed at unpacking the quality and limitations of such data (see e.g., Elu et al., 2019; Boland, Gasman, Samayoa & Bennett, 2021; Carney, 2023; Foote, 2022; and Bettinger and Fidjeland, 2024). Relatedly, we contribute to a much more expansive literature on quality disclosure, which generally shows that consumers adjust their choices when faced with new information. In education settings, for example, parents respond to quality disclosures of K-12 schools (e.g., Hastings and Weinstein, 2008), and students' college application decisions respond to salient rankings changes in the U.S. News and World Report (Luca and Smith, 2013).

Second, we contribute to the literature on the relationship between college selectivity and students' earnings outcomes. Lovenheim and Smith (2023) review this vast body of research, concluding that college selectivity positively impacts earnings with few exceptions. This large literature can be segmented into papers that use an identification strategy to estimate causal impacts of college selectivity on earnings (e.g., Dale and Krueger, 2002; Hoekstra, 2009; Smith, 2013; Zimmerman, 2014; Cohodes and Goodman, 2014; Goodman, Hurwitz, and Smith, 2017; Smith, Goodman, and Hurwitz, 2020; Black,

Denning, and Rothstein, 2023; Bleemer, 2022; Mountjoy and Hickman, 2021; and Chetty, Deming, and Friedman, 2023), and those that explore this relationship descriptively or with a selection-on-observables approach (e.g. Brewer, Eide, and Ehrenberg, 1999; Black and Smith, 2004; Black and Smith, 2006; Long, 2008; Long, 2010; and Andrews, Li, and Lovenheim, 2016). Since our analyses are purely descriptive, we add to the latter side of the literature. We flesh out the descriptive relationship between college selectivity and earnings using data based on administrative sources for the near universe of four-year colleges, with a novel focus on how the relationship varies at different points in the earnings distribution.

We also expand on the literature examining how the relationship between college selectivity and earnings varies by gender or sex (Ma and Savas, 2014; Witteveen and Attewell, 2017; Quadlin, Cohen, and VanHeuvelen, 2021; and Ge, Isaac, and Miller, 2022) and by field of study or college major (Ma and Savas, 2014; Eide, Hilmer, and Showalter, 2016; Quadlin, Cohen, and VanHeuvelen, 2021). Some of our analyses are also related to the literature on the returns to field of study more generally (see e.g., Kirkeboen, Leuven, and Mogstad, 2016; Andrews, Imberman, and Lovenheim, 2017; Bleemer and Mehta, 2022; and Andrews, Imberman, Lovenheim, and Stange, forthcoming).

2. Data and sample description

2.1. Data description

We use publicly available data from the U.S. Department of Education's College Scorecard.[3] The College Scorecard is a project "designed to increase transparency, putting

[3] All data used in this paper can be downloaded here: https://collegescorecard.ed.gov/data/.

the power in the hands of students and families to compare how well individual postsecondary institutions are preparing their students to be successful" (U.S. Department of Education, 2024). The initiative includes a consumer-facing website (https://collegescorecard.ed.gov/) where students can compare institutions, and fields of study within institutions, on graduation rates, cost, median earnings, and median student loan debt. The College Scorecard is made possible by a unique linking of data sources from federal reporting from institutions, federal student aid, and earnings data from de-identified tax records.

The College Scorecard semi-regularly releases data files with 1) institution level data of certain cohorts of students 6, 8, and 10 years after entering college, and 2) institution by field of study level data of certain cohorts of students 1, 4, and 5 years after graduating college. It is worth highlighting here that the institution level data measures earnings among entrants to each college, while the field of study level data measures earnings among degree completers to each college in a given field of study (e.g., engineering). Thus, the underlying samples and corresponding time frames are not necessarily comparable across the datasets, since students complete their degrees in different amounts of time and some don't complete a degree at all.

We primarily make use of the "Most Recent" data files of the June 13, 2024 data release, which is the most recent update of the College Scorecard data at the time this paper was written. For some analyses, however, we additionally make use of the prior releases of the institution level data files to capture insights about earnings over time and across cohorts. Our focus is on the aggregate level earnings information at the institution

and institution by field of study levels. In many of our analyses, we also make use of a college's admit rate (specifically, their fall 2022 admit rate) to characterize a college's admissions selectivity, which is included in the Scorecard data but is sourced from IPEDS (Integrated Postsecondary Education Data System).

A noteworthy limitation of the earnings data reported in the College Scorecard is that only students who received Title IV funding are included in the aggregate earnings calculations. Thus, the earnings metrics may not be representative of colleges with a low proportion of Title IV-eligible students, such as highly selective colleges that have a high share of affluent students who did not receive any federal funding. However, Foote (2022) finds that longer-run earnings for the Title IV-receiving population are significantly lower than the full population of college enrollees.[4] Thus, the earnings metrics for colleges with a low share of students receiving Title IV funding may be underestimated. By contrast and using more complete data, Chetty et al. (2020)—whose data are not subject to the Title IV sample restriction—note that "[the College Scorecard's data on] the earnings of students receiving federal aid are highly predictive of the earnings of the student body more broadly. For example, regressing median earnings in our data on median earnings in the College Scorecard … yields an R^2 of 0.92 (Looney 2017)." Therefore, we view the Title IV sample restriction as unlikely to have a major influence on the takeaways of our analyses.

[4] Title IV funding includes Pell grants and federal loans like the Stafford.

2.2. Sample description

We focus our analysis sample on the 1,513 public and private non-profit four-year colleges in the College Scorecard data.[5] Table 1 displays summary statistics of the distribution of the most recent institution level earnings available, including the 10th, 25th, 50th, 75th, and 90th percentiles among students 6, 8, and 10 years after entering college. Since the College Scorecard has not released data with the 10th and 90th percentiles in several years, the 10th and 90th percentiles come from earlier entry cohorts than the 25th, 50th, and 75th percentiles. For example, the most recent data on the 10th and 90th percentiles for students 10 years after college entry come from the 2003-04 and 2004-05 entry cohorts, while the 25th, 50th, and 75th percentiles come from the 2009-10 and 2010-11 entry cohorts.

[5] Specifically, we exclude for-profit colleges and colleges that primarily grant degrees/credentials lower than the bachelor's degree level as indicated by Carnegie classifications.

Table 1: Summary statistics of institution level earnings data

	Weighted Mean (1)	Standard deviation (2)	Number of institutions (3)	Pooled entry cohort (4)
6 years after college entry				
10th percentile earnings	$12,600	$3,801	1,394	2007-08 & 2008-09
25th percentile earnings	$31,560	$8,761	1,463	2013-14 & 2014-15
50th percentile earnings	$50,001	$10,796	1,471	2013-14 & 2014-15
75th percentile earnings	$70,122	$16,619	1,471	2013-14 & 2014-15
90th percentile earnings	$85,577	$21,403	1,394	2007-08 & 2008-09
8 years after college entry				
10th percentile earnings	$14,831	$4,666	1,389	2005-06 & 2006-07
25th percentile earnings	$35,974	$9,686	1,460	2011-12 & 2012-13
50th percentile earnings	$58,042	$13,434	1,416	2011-12 & 2012-13
75th percentile earnings	$81,636	$19,681	1,468	2011-12 & 2012-13
90th percentile earnings	$100,616	$26,271	1,389	2005-06 & 2006-07
10 years after college entry				
10th percentile earnings	$16,061	$5,172	1,387	2003-04 & 2004-05
25th percentile earnings	$39,186	$10,378	1,457	2009-10 & 2010-11
50th percentile earnings	$65,496	$16,560	1,411	2009-10 & 2010-11
75th percentile earnings	$89,788	$22,273	1,462	2009-10 & 2010-11
90th percentile earnings	$113,050	$28,765	1,387	2003-04 & 2004-05

Notes: The above table displays averages of institution level earnings percentiles, weighted by the number of people in the earnings cohort. All earnings data come from the most recently released variables from the College Scorecard. All earnings percentiles are inflation adjusted into real 2022 dollars.

Table 2 displays summary statistics of the College Scorecard's institution by field of study level median earnings data, focusing on the top 20 fields of study in terms of the number of students in those fields. In contrast to the institution level data, the median earnings are calculated among cohorts of graduating students. The most recent median earnings data for students 5 years after graduation come from the 2014-15 and 2015-16 college graduation cohorts, observed in 2020 and 2021 calendar years. The College Scorecard suppresses earnings data that are based on relatively small number of people for privacy reasons. At the institution by field of study level, privacy suppression is fairly

common, which partially accounts for the smaller number of institutions where data are available in the institution by field of study level data compared to the institution level data.

Table 2: Summary statistics of median earnings 5 years after graduation for top 20 fields of study

	Weighted Mean (1)	Standard deviation (2)	Number of institutions (3)
Psychology, General.	$50,987	$7,446	966
Business Administration, Management and Operations.	$68,360	$13,948	961
Biology, General.	$61,583	$9,747	809
Registered Nursing, Nursing Administration, Nursing Research and Clinical Nursing.	$85,763	$12,998	700
Accounting and Related Services.	$75,747	$15,673	637
Teacher Education and Professional Development, Specific Levels and Methods.	$47,094	$6,570	613
Communication and Media Studies.	$57,046	$10,273	574
English Language and Literature, General.	$49,297	$8,058	534
Health and Physical Education/Fitness.	$55,793	$8,562	515
Criminal Justice and Corrections.	$54,733	$9,011	513
Political Science and Government.	$65,842	$12,064	483
Sociology.	$52,766	$8,201	444
Marketing.	$69,742	$12,352	415
Social Work.	$48,923	$7,723	390
Liberal Arts and Sciences, General Studies and Humanities.	$51,024	$9,260	383
Finance and Financial Management Services.	$86,695	$21,008	367
Economics.	$88,269	$22,181	329
Computer and Information Sciences, General.	$99,515	$28,345	314
Mechanical Engineering.	$93,201	$7,594	275
Multi/Interdisciplinary Studies, Other.	$56,453	$14,097	179

Notes: The above table displays averages institution level earnings 5 years after graduation, weighted by the number of people in the earnings cohort, for the top 20 fields of study in terms of number of students in the field. All earnings data come from the most recently released variables from the College Scorecard. All earnings percentiles are inflation adjusted into real 2022 dollars. Earnings data come from the 2014-15 and 2015-16 college graduation cohorts, observed in 2020 and 2021 calendar years, respectively.

3. Analyses

3.1. Sensitivity of college rankings to the choice of earnings metric

The College Scorecard's consumer facing search tool encourages students to compare colleges based on their student outcomes. In terms of earnings outcomes,

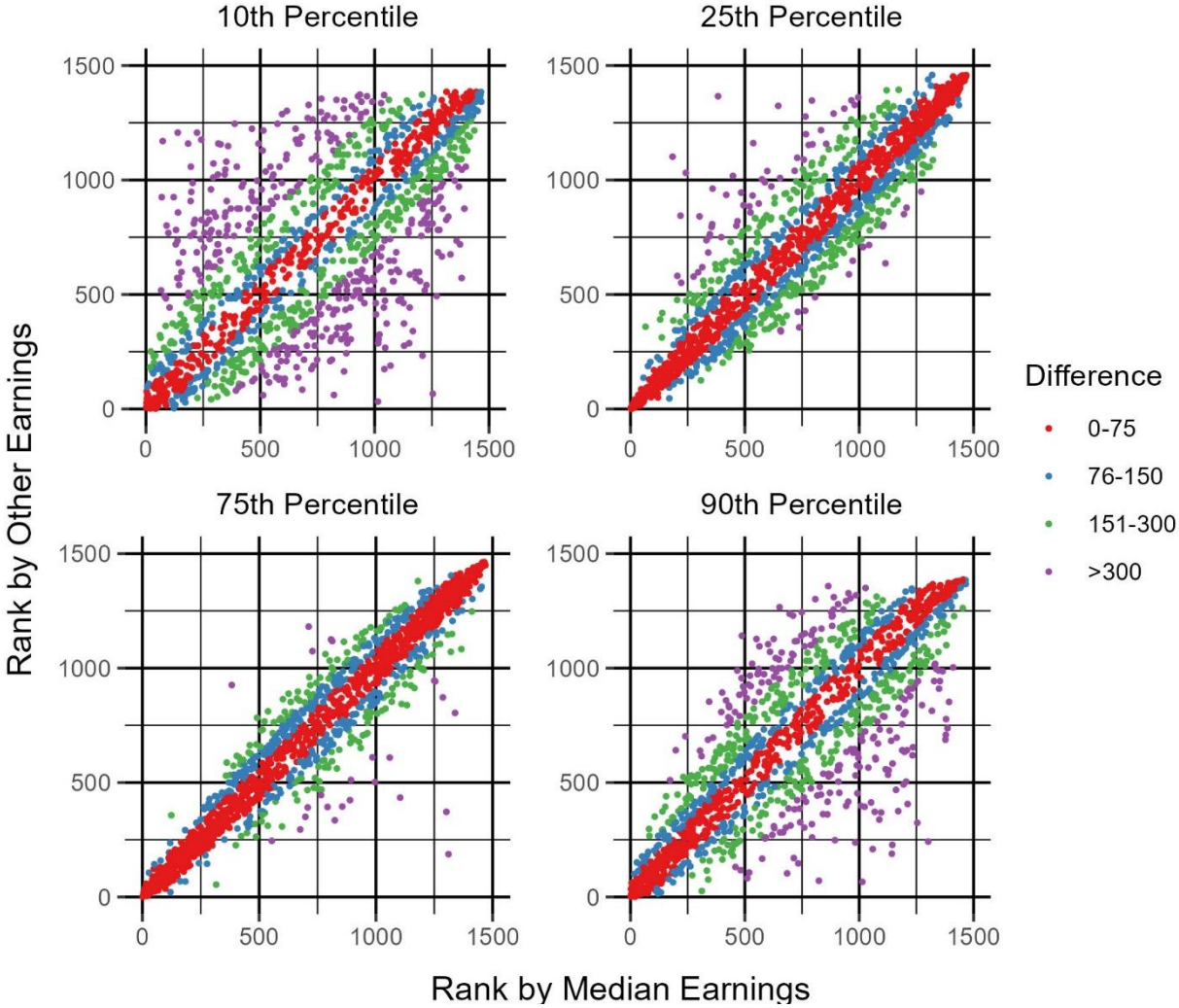
however, the search tool only allows students to see the 50th percentile for each college. Comparing colleges based only on median earnings may be misleading if ordinal rankings of colleges are sensitive to the earnings metric used to create the ranking. Students may put too much weight on differences in median earnings of colleges when there are meaningful, and potentially conflicting, differences at the high and low ends of the earnings distribution. This is particularly true for smaller colleges with fewer students receiving federal student aid.

We use the additional institution level earnings percentiles reported in the College Scorecard data to assess the extent to which college rankings would vary if they were ranked using a different metric than the median earnings. We first compute the ordinal ranking of each college based on the 5 different earnings percentiles. Then in Figure 1, we separately plot the relationship between the college rankings using the 10th, 25th, 75th, and 90th percentiles compared to the ranking using the 50th percentile using the metrics for 10 years after college entry. Similar figures using the metrics for 6 and 8 years after college entry are in Appendix Figures A1 and A2.

We find that a college's earnings rank order is highly sensitive to the metric used. Of the 1,400 sampled colleges, nearly 40 percent would shift by more than 150 places in rank order if colleges were sorted by the 90th percentile earnings rather than the median earnings, and more than 200 colleges would shift by more than 300 places. Differences in the rank order of colleges are even larger when comparing the median and the 10th percentile earnings, with around half of colleges shifting by more than 150 places in rank order and more than 25 percent shifting more than 300 places. While there is less of a

difference when comparing the rankings using the median and the rankings using the 25th and 75th percentiles, nearly a quarter of colleges would still shift by more than 150 places if sorted by the 25th percentile earnings, and about one third would shift by more than 75 places in rank order if sorted by the 75th percentile earnings.

Figure 1: College rank difference by earnings metric (10 years after college entry)



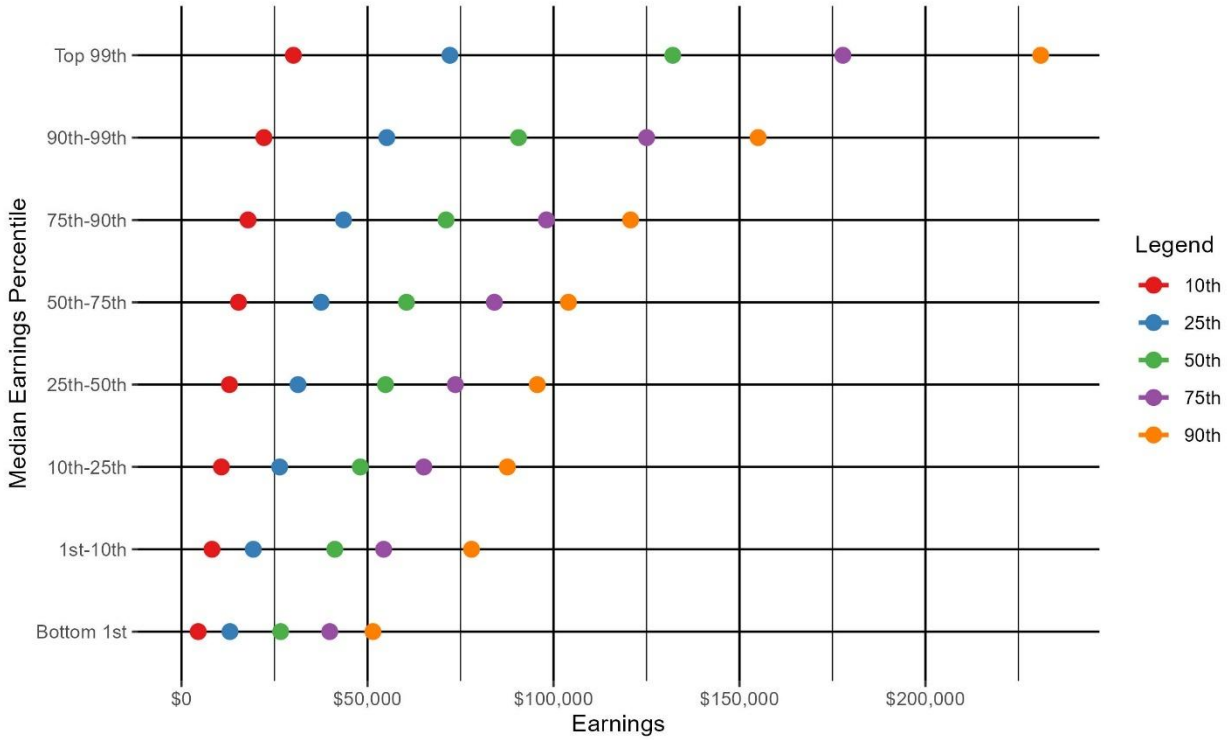
Notes: The above figure shows scatterplots of college ranks using the 10th, 25th, 75th, and 90th percentiles on the vertical axes and college rank using median earnings on the horizontal axes. The color of the dots represents the magnitude of the difference between the ranks. All earnings data come from the most recently released variables from the College Scorecard for earnings 10 years after college entry. All earnings percentiles are inflation adjusted into real 2022 dollars.

3.2. Overlap of college earnings distributions

It is useful to have median earnings to compare the post-college outcomes of students who enroll in different colleges. On its own, however, the median lacks information about the full distribution of earnings for each college and cannot provide insights about what relatively high or low earners look like at different colleges, or how relatively high earners from one college may compare to relatively low earners from another college. In Figure 2, we use the most recently released earnings data 10 years after college entry and group colleges by median earnings and then plot the 10th, 25th, 50th,75th and 90th percentiles for each group to assess the extent of overlap there is among the earnings distributions of colleges with different median earnings.[6] Similar figures using the earnings data for 6 and 8 years after college entry are shown in Appendix Figures A3 and A4.

[6] Since the data for the 10th and 90th earnings percentiles come from different pooled entry cohorts than the 25th, 50th, and 75th earnings percentiles, we show in Appendix Figure A5 the same figure using the most recent College Scorecard data release where all five percentiles were reported for the same pooled entry cohorts. The results and takeaways remain the same when using these consistent pooled entry cohorts.

Figure 2: Full earnings distributions by colleges' median earnings (10 years after college entry)



Notes: The above figure plots the average 10th, 25th, 50th, 75th, and 90th earnings percentiles for different groups of colleges defined by their position in the distribution of median earnings. The averages at each percentile are weighted by the number of students in the earnings cohort at each institution. All earnings data come from the most recently released variables from the College Scorecard for earnings 10 years after college entry. All earnings percentiles are inflation adjusted into real 2022 dollars.

We find that colleges with higher median earnings have wider distributions of earnings outcomes leading to substantial overlap in the full earnings distributions across colleges, even among colleges with large differences in median earnings. For instance, at 6, 8, and 10 years after college entry, students at the 75th percentile from colleges with the lowest median earnings have substantially higher earnings than students at the 10th percentile from colleges at the 99th percentile of median earnings. Moreover, students at the 75th earnings percentile from colleges near the middle of the median earnings distribution often have higher earnings than students at the 25th percentile from colleges with the highest median earnings.

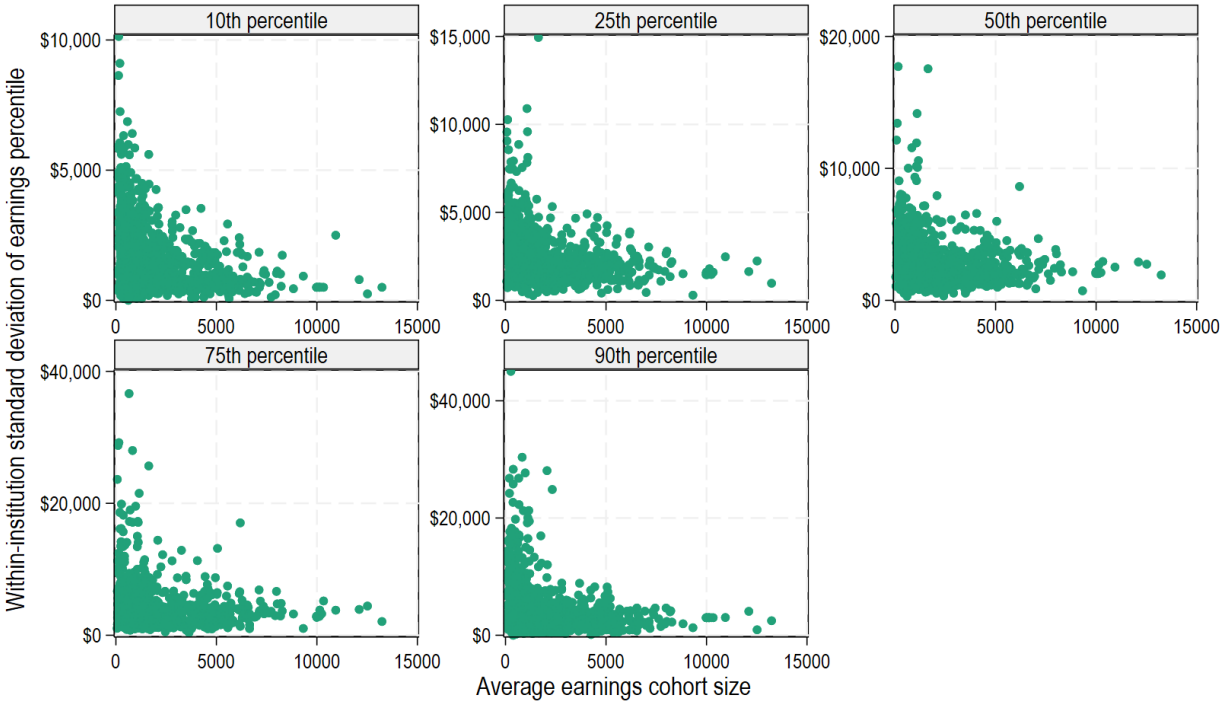
3.3. Variation in college earnings distributions across cohorts

The College Scorecard's consumer facing college search tool only displays the most recently released median earnings data for each college. The College Scorecard pools together 2 consecutive entry cohorts when releasing institution level earnings data to "reduce year-over-year variability" (U.S. Department of Education, 2024). The College Scorecard also suppresses particularly "noisy" observations to "ensure fitness-for-use of the data" (U.S. Department of Education, 2024). Despite these efforts, there may still be year-over-year (or, alternatively, pooled cohort-over-pooled cohort) variation in colleges' earnings metrics released by the College Scorecard, especially for colleges with smaller cohorts. Such variation could be impactful for students using the College Scorecard's search tool to compare colleges.

To assess the over-time variability in institutions' earnings metrics, we combine the College Scorecard's most recent data release with all the prior data releases that include institution level earnings data, creating an institution by pooled entry cohort level panel dataset. We then compute the standard deviation across cohorts for the 10th, 25th, 50th, 75th, and 90th percentiles for each college and plot the relationship between these within-institution standard deviations with the average cohort size of the college. Figure 3 shows these relationships using the earnings data measure 10 years after college entry. Similar figures using the earnings data measured 6 and 8 years after college entry are shown in Appendix Figures A6 and A7.[7]

[7] We also considered how year-over-year earnings volatility relates to colleges' average local labor market conditions and colleges' share of awarded degrees in STEM fields. We present these results in Appendix Figures A17 and A18 which show no noteworthy relationships in both cases.

Figure 3: Earnings volatility by college cohort size (10 years after college entry)



Notes: The above figure shows scatterplots of colleges' standard deviation in their earnings percentiles over time by the average size of the number of people in the earnings cohort. The figure uses all available data for earnings 10 years after college entry ever released by the College Scorecard for the sampled colleges. The figure excludes a small number of colleges from the analysis sample that do not have at least 3 cohorts with reported data for each earnings percentile. All earnings percentiles are inflation adjusted into real 2022 dollars.

We find large across-cohort variation in each of the earnings metrics, particularly for smaller colleges. For median earnings, 16 percent of all sampled colleges, and 27 percent of colleges with an average cohort size less than 500 students, have a standard deviation higher than $4,000.[8] For 75th percentile earnings, 16 percent of all sampled colleges, and 24 percent of colleges with an average cohort size less than 500 students, have a standard deviation higher than $6,000. For a specific example, one small liberal arts college in the Northwest has an average cohort size of about 200 students and a standard deviation for

[8] 30 percent of sampled colleges have an average earnings cohort size of less than 500 students.

median earnings of about $6,500, which is about 10 percent of the median earnings currently reported on the College Scorecard's search tool.

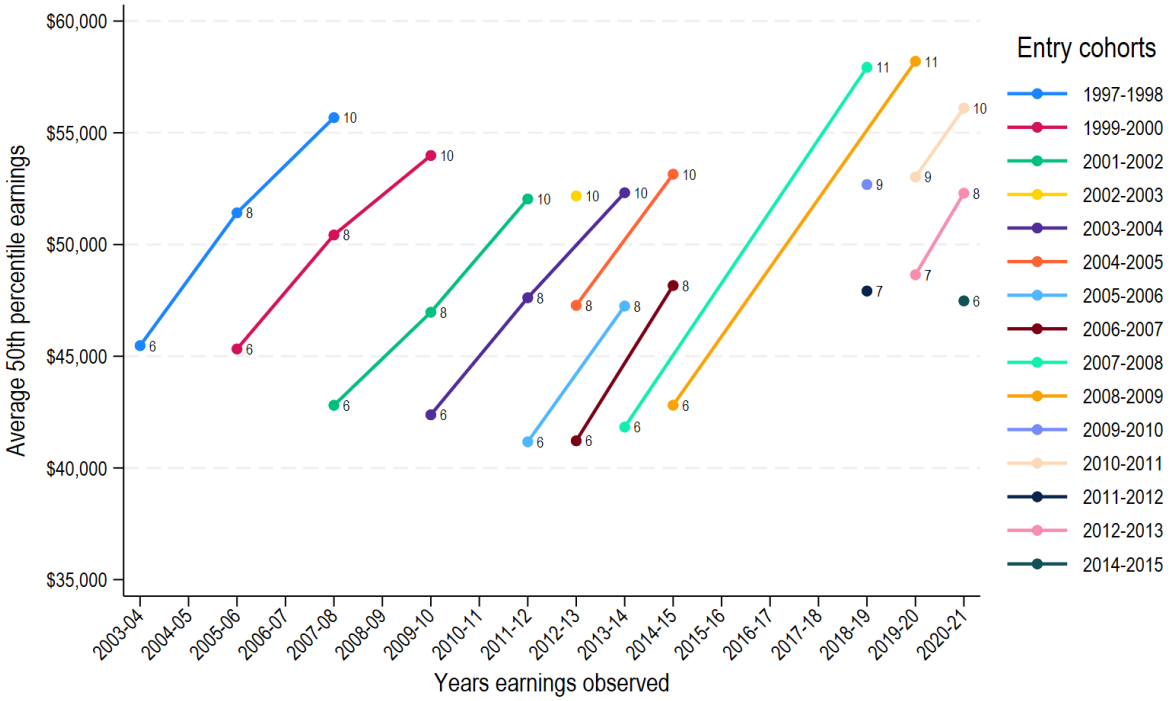
3.4. Cohort level post-college earnings trajectories

We next explore how cohort level post-college earnings trace through time (i.e., from 6 years after college entry, to 8 and 10 years after college entry) and how these earnings trajectories have changed across entry cohorts. While the College Scorecard's consumer-facing search tool only displays median earnings 10 years after college entry, the public data releases include additional earnings data 6 and 8 years after college entry. For an individual data release, the earnings data at 6, 8, and 10 years after college entry typically come from different pooled entry cohorts. However, combining all data releases makes it possible to track how earnings have trended for a single pooled cohort through time. There is value in the simplicity of displaying a single earnings metric, but observing how much these earnings metrics grow over time for a given cohort and how these may differ across cohorts may provide useful information as well. Putting all this information together helps to trace how earnings of college students from a single cohort trend over time, to compare how these trajectories differ across cohorts, and highlight how macroeconomic conditions impact earnings at different career stages.

To do this analysis, we again use the complete history of institution level earnings data released by the College Scorecard to create a dataset at the institution by entry cohort by years since college entry level. We then aggregate across all colleges to get the average of the 25th, 50th, and 75th percentiles weighted by the relevant institution cohort size, and plot the earnings trajectory for each pooled entry cohort that has been reported in the

College Scorecard. Figure 4 plots these trajectories for the weighted average of median earnings. Appendix Figures A8 and A9 show the same plots for the 25th and 75th percentile earnings trajectories by entry cohort.

Figure 4: Median earnings trajectories by college entry cohort



Notes: The above figure traces average median earnings at 6, 8, and 10 years after college entry for each pooled entry cohort ever reported on by the College Scorecard. Due to an error made by the College Scorecard for the data released with earnings measured in 2018-19 and 2019-20, earnings were reported for 7, 9, and 11 years after college entry. To aggregate across colleges, the averages are weighted by the college-level earnings cohort size. All earnings percentiles are inflation adjusted into real 2022 dollars.

A few things stand out from Figure 4. First, there are some cohorts with gaps in the earnings data available in the College Scorecard, particularly for some of the more recent cohorts in the data. Backfilling the cohorts with missing earnings data would be a valuable addition to provide a more complete picture of how earnings have traced over time both within and across cohorts. Second, Figures 4, A8 and A9 illustrate that earnings of college enrollees can vary over time and can fluctuate with macroeconomic conditions.

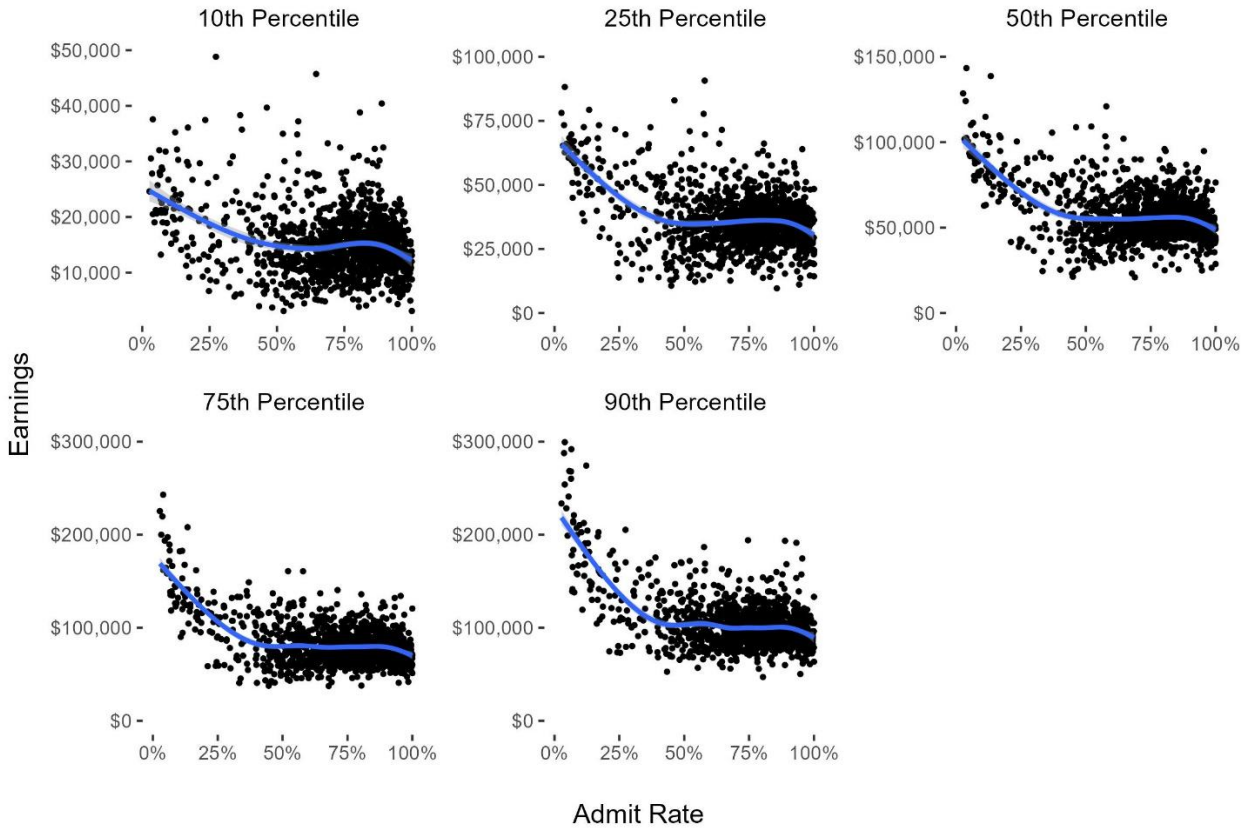
Conditional on the number of years since entering college, earnings of the college enrollees covered by the College Scorecard dropped during the Great Recession (starting with the 2007-08 earnings years) but appear to have rebounded to above pre-Great Recession levels in the most recent data. Looking at earnings 8 years after college entry, for example, the 1997-1998 entry cohorts (measured in 2005-2006) had higher median earnings than all subsequent entry cohorts reported in the data until the 2012-2013 entry cohorts (measured in 2020-2021). The 2001-2002 entry cohorts had the lowest median earnings 8 years after college entry (measured in 2009-2010). Third, these figures highlight that using data from additional entry cohorts, beyond what is most recent available, can be valuable. Moreover, while these figures aggregate across all colleges in our analysis sample, similar figures could be made separately for each college to provide institution-specific context on trends in earnings trajectories.

3.5. The relationship between college selectivity and earnings

Recent research by Chetty, Deming, and Friedman (2023) finds that elite colleges disproportionately propel students into the highest paying jobs. Inspired by these findings, we use the College Scorecard data to explore the descriptive relationship between a college's admissions selectivity and post-college earnings outcomes. In Figure 5, we plot the relationship between colleges' earnings percentiles 10 years after college entry and colleges' admissions rate.[9] We show similar figures for earnings 6 and 8 years after college entry in Appendix Figures A10 and A11.

[9] We find similar results when we plot the relationship between colleges' earnings percentiles and colleges' median SAT scores instead of admissions rates.

Figure 5: Earnings by college selectivity (10 years after college entry)



Notes: The above figure shows scatterplots of each of the college level earnings percentiles by their admit rate. All earnings data come from the most recently released variables from the College Scorecard for earnings 10 years after college entry. All earnings percentiles are inflation adjusted into real 2022 dollars.

We find that the relationship between selectivity and earnings is not straightforward. Among colleges with admit rates of roughly 40 to 90 percent, there exists virtually no relationship between selectivity and earnings. This is true regardless of whether we consider median earnings or at other points in the earnings distribution. By contrast, among more selective colleges, there is a steep relationship between earnings and selectivity. The median earnings of colleges that accept less than 10 percent of applicants is nearly twice as large as the median earnings of colleges accepting 40 percent of applicants. This contrast is even sharper when considering the 75th and 90th percentile of earnings. Among the 64 colleges with admit rates of 20 percent or less, 35 percent have 90th

percentile earnings greater than $200,000. Meanwhile, there is only one college with an admit rate greater than 20 percent that has 90th percentile earnings greater than $200,000.

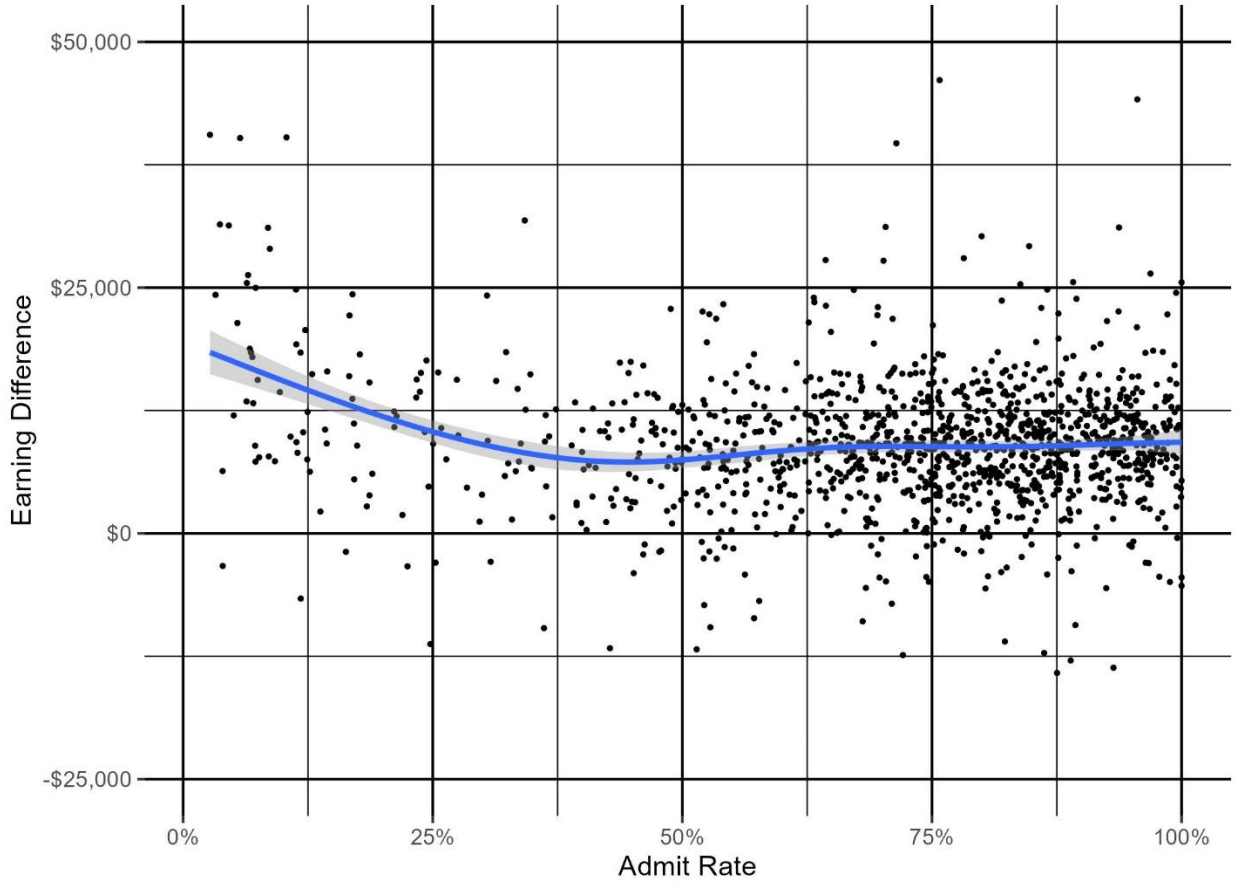
While earnings after graduation is an important factor for students to consider during the college selection process, many students must also consider the differing costs of attendance. Indeed, the College Scorecard prominently features each college's average annual cost on their college search tool. In Appendix Figure A12, we plot the relationship between colleges' average annual cost and their admit rate, which contrasts with the relationships with earnings in a couple of important ways. First, there is much wider variation in average annual costs, conditional on admit rates, relative to earnings. Second, there is a small, but gradual, increase in average annual costs as admit rates decrease among colleges with admit rates greater than 40 percent. But, among more selective colleges with admit rates less than 40 percent, the relationship between costs and admit rates nearly vanishes.

3.6. The relationship between college selectivity and the gender earnings gap

We now turn our attention to the insights the College Scorecard offers into earnings differentials by sex, a topic receiving well-deserved and renewed attention after Claudia Goldin's recently awarded Nobel Prize in economics. Specifically, we add to a vast literature by exploring how earnings differentials by sex relate to colleges' admissions selectivity. To do this, we make use of the median earnings data in the College Scorecard that is reported separately by sex. We calculate the earnings gap between males and females for each college and plot its relationship with the college's admissions rate in Figure 6, using the most recent data available from 10 years after college entry. Appendix

Figures A13 and A14 show the same figures using the data from 6 and 8 years after college entry.

Figure 6: Gender earnings gap by college selectivity (males minus females, 10 years after college entry)



Notes: The figure above plots the within-college difference between the median earnings for males and median earnings for females by the college admit rate. All earnings data come from the most recently released variables from the College Scorecard for earnings 10 years after college entry. All earnings percentiles are inflation adjusted into real 2022 dollars.

On average, median earnings for women are about $5,000 less than men 6 years after college entry, which grows to $9,000 10 years after college entry. Strikingly, we see similar relationships between college admit rates and college-specific earnings disparities by sex to the relationships we observe with overall college earnings outcomes in Figure 5. Sex disparities in median earnings are relatively flat across colleges with admit rates

greater than 40 percent. However, among colleges with admit rates less than 40 percent, we generally see larger earnings disparities by sex among colleges that are more selective. For example, among colleges with admit rates of 20 percent or less, median earnings for women are about $16,000 less than men, on average, 10 years after college entry. The fact that post-college earnings differ by sex and that these differences vary across colleges illustrates that collecting and reporting these data on earnings separately by sex is important and should perhaps take a more prominent role in the College Scorecard's consumer-facing search tool. It also spurs a much larger question that cannot be addressed with the College Scorecard data: 'Why are gender earnings differentials so much steeper at the nation's most selective colleges?'

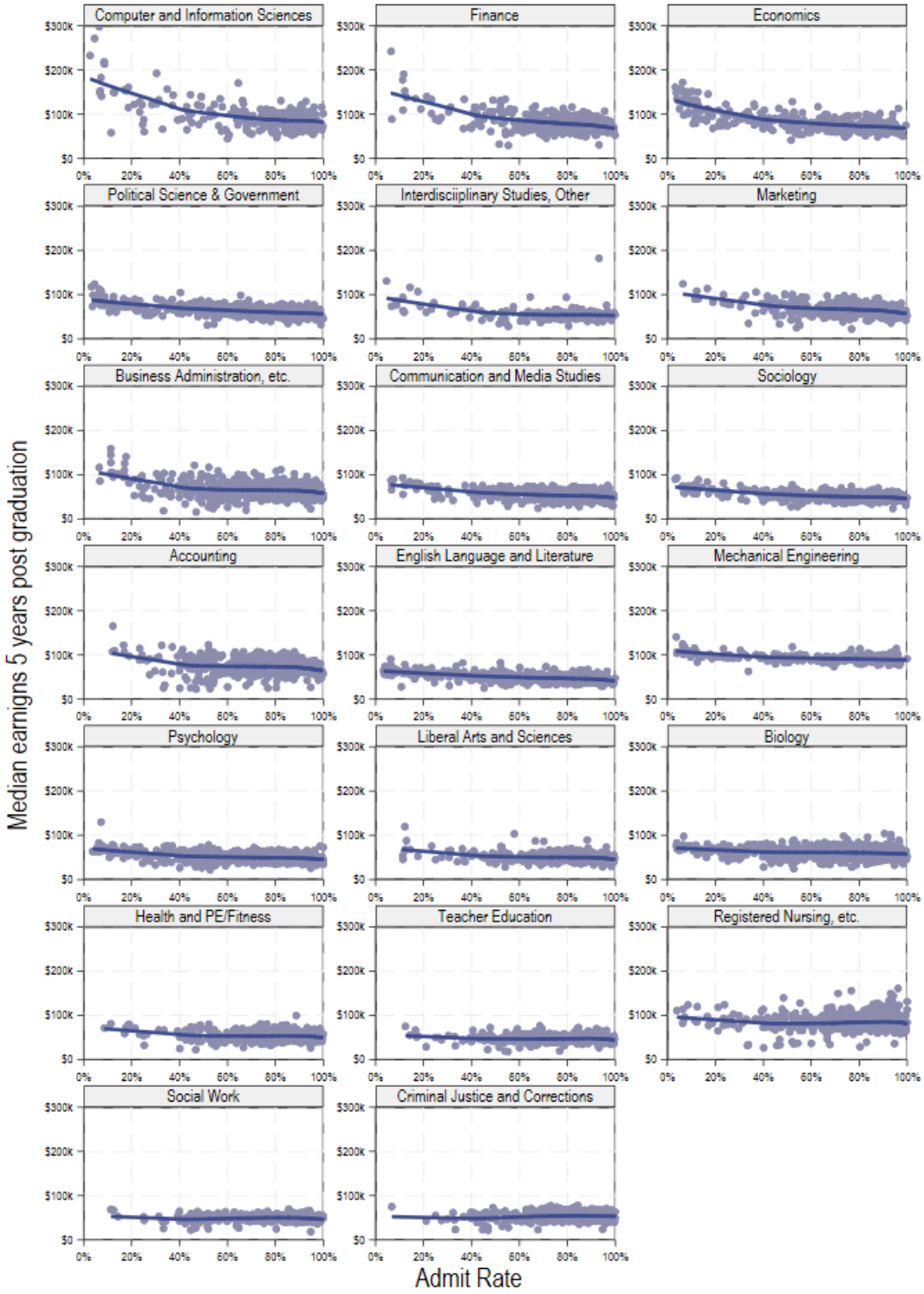
3.7. The relationship between college selectivity and earnings by field of study

One of the most consequential decisions students must make in college, perhaps even more consequential than where to go to college, is choosing a major or field to study. Moreover, students considering colleges may be doing so with a specific field or multiple fields in mind. To supplement the overall earnings data, the College Scorecard also releases median earnings data at the institution by field of study (CIP codes) level. We expand our analysis on the relationship between college selectivity and earnings by exploring how this relationship varies across different fields.

We focus this analysis on the top 20 fields of study in the data, as measured by the total number of students in the relevant earnings cohort across colleges for each field. We then plot the relationship between median earnings and college admit rates separately for each of the top 20 fields. Figure 7 displays these relationships using the earnings data

measured 5 years after college graduation, which represents the 2014-15 and 2015-16 pooled earnings cohort. Appendix Figures A15 and A16 shows similar graphs for earnings data measured 1 and 4 years after graduation, which represent the 2018-19 through 2019-20 and 2014-15 through 2015-16 pooled entry cohorts, respectively.

Figure 7: Median earnings by selectivity for top 20 fields (5 years after graduation)



Notes: The figure above shows scatterplots of median earnings by college admit rate, separately by each of the top 20 fields of study. The top 20 fields of study are determined by the total number of people in the earnings cohorts by field of study. All earnings data come from the most recently released variables from the College Scorecard's field of study data file for median earnings 5 years after college graduation. All earnings data are inflation adjusted into real 2022 dollars.

There are a few noteworthy takeaways from these figures. First, we find considerable variation across fields in the relationship between selectivity and median earnings. Some fields—such as Criminal Justice and Corrections, Social Work, Registered Nursing, and Teacher Education—show virtually no relationship between college selectivity and median earnings. Meanwhile, other fields—such as Computer and Information Sciences, Finance, Economics, Political Science & Government, and Marketing—show a strong relationship between college selectivity and median earnings. Consistent with our findings in Section 3.5, the relationship between college selectivity and median earnings in these fields are particularly strong among the most selective colleges. It is potentially noteworthy that the fields where salaries are negotiated by unions or that involve licensure requirements (e.g. Nursing, Social Work, Teacher Education) have the weakest relationships between earnings and admit rates. Other fields within the liberal arts domain where graduate or professional degrees might be required for higher earnings jobs (e.g. biology, psychology, and English) have similarly shallow relationships between admit rates and earnings. Mechanical engineering stands out as a high-demand field where such a relationship is also absent. This major involves a very specific set of skills, and if graduates can demonstrate these skills in concrete ways, employers might be less inclined to over-index on college prestige. Finally, economics, finance, and computer science emerge as having the steepest relationships between admit rates and earnings. This may be related to focused recruitment activity among prestigious and high-paying technology, consulting, and banking firms at a limited number of elite "feeder colleges" (Chetty et al., 2023).

Second, the figures illustrate how fields of study have different variance in median earnings across colleges. For instance, conditional on admit rates, median earnings in fields like Sociology and Mechanical Engineering are closely clustered across colleges. However, median earnings in fields like Business Administration, Accounting, and Registered Nursing have a wide range across colleges. We cannot prove dispositively why such dispersion exists at similarly selective colleges, but one explanation might involve the geography of colleges offering these majors and the labor shortages or oversupply. For example, wages for nurses are likely higher in local geographies with healthcare shortages (Hanel, Kalb, and Scott, 2014). Graduates from colleges in these locales might benefit from such shortages.

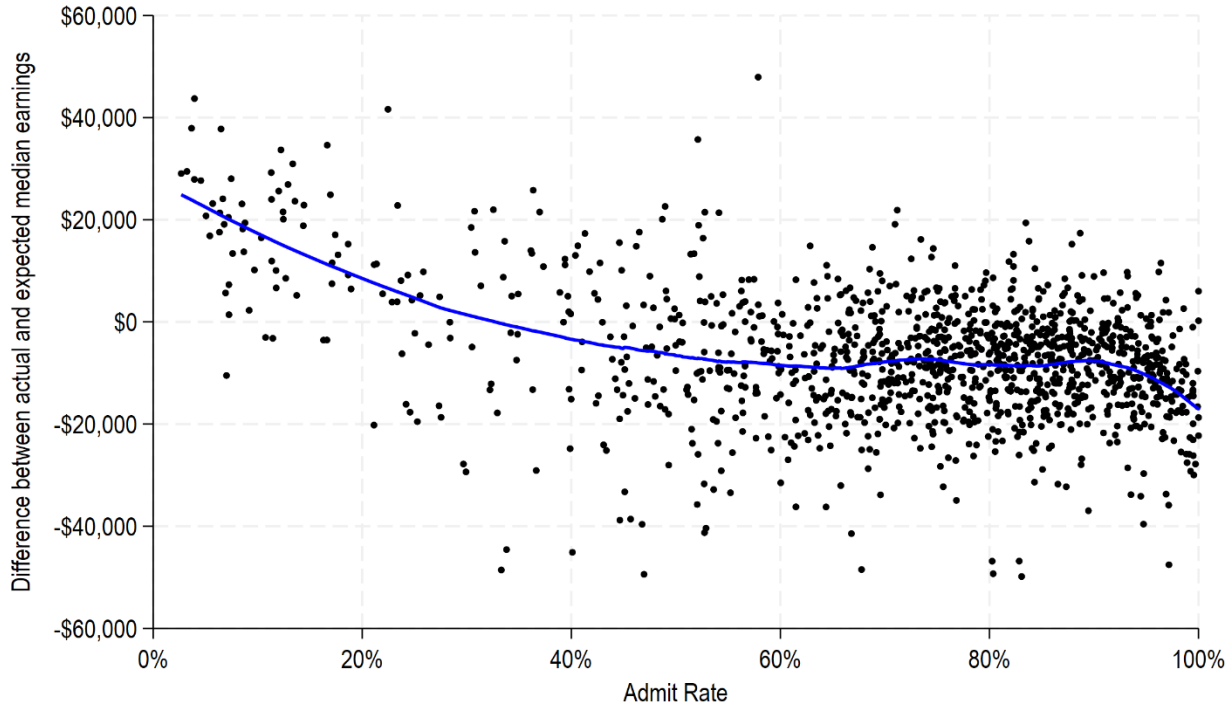
Finally, between higher and lower paying fields of study there are large differences in the number of data points among the most selective colleges. For example, the relatively higher paying Economics field has many data points for colleges with admit rates less than 20 percent, but Teacher Education hardly has any. This is largely a product of substantial privacy suppression for colleges with few graduates in some fields. However, this is also likely due in part to differences in program availability between more and less selective colleges. This finding suggests that the descriptive return to college selectivity is at least partially related to selective colleges offering more programs in higher paying fields and offering fewer programs in lower paying fields.

To get a sense for how much of the relationship between college selectivity and earnings at the institution level is driven by a differential mix of higher/lower paying fields between more and less selective colleges, we calculate an “expected” median earnings for

a college based on each college's composition of fields among its graduates and the "U.S.-wide" median earnings for each field across all colleges in the College Scorecard data. To do this, we 1) calculate a U.S.-wide "median" earnings for each field across all Scorecard colleges, and 2) calculate an institution's "expected" median earnings using the U.S.-wide field-level earnings and the counts provided in the scorecard data of the number of students in each field for each college. We then plot the relationship between college admit rates with the difference between this "expected" median with the actual institution-level median earnings in Figure 8.[10] The slope of the relationship among highly selective colleges is not as steep as we observe in Figure 5, but the overall shape of the relationship is similar. This suggests that some, but not all, of the descriptive earnings return to selective colleges is due to the differential mix of fields at these colleges.

[10] As noted above, data suppression rules means that our construct of expected earnings is an approximation of the typical graduate in a specific major, rather than a perfect estimate of *all* college graduates earning a degree in a specific major.

Figure 8: Difference between actual and expected median earnings



Notes: This figure shows the relationship between college admit rates and the difference between an institution's actual median earnings and its "expected" earnings based on field-level, U.S.-wide median earnings, and the composition of students across those fields within each college. Institution-level earnings data come from the most recently released variables from the College Scorecard for earnings 10 years after college entry for students entering during the 2009-10 and 2010-11 academic years. Field of study earnings data come from the most recently released variables from the College Scorecard's field of study data file for median earnings 5 years after college graduation for students graduating in the 2014-15 and 2015-16 academic years. All earnings percentiles are inflation adjusted into real 2022 dollars.

4. Discussion and Conclusion

In this paper, we conduct a deep dive into post-college earnings outcomes in the publicly available College Scorecard data to better understand variation across colleges in these aggregate earnings outcomes. Our analyses are shaped by two guiding questions: 1) What insights can be gained by going beyond comparing colleges based on only median earnings of a single pooled entry cohort, as is reported on the College Scorecard's consumer-facing college search tool? 2) What is the relationship between college

selectivity and post-college earnings metrics and how does this relationship vary by students' sex and field of study.

Our analyses for the first research question reveal that relying on only median earnings from a single pooled entry cohort can greatly obscure college level earnings dynamics. Ranking colleges by other percentiles in the earnings distribution would be substantially different than a ranking using median earnings. This is partly because there is remarkable overlap in the full earnings distribution across colleges, even between those with large differences in median earnings. We also find that reported earnings metrics can vary noticeably over time across different college entry cohorts.

Presenting median earnings from a single pooled-entry cohort alone may distort perceptions of students' expected earnings after graduation. It may also lead to students over-indexing their college attendance decisions on the salient overall median earnings, which differ markedly from what the student can expect to earn at a given college in a specific major. Moreover, the overall median earnings can obscure how earnings distributions compare across colleges and are also subject to year-over-year volatility. Excessive emphasis on median earnings might also cause students to ignore other important factors in the decision-making process.

On the link between college selectivity and post-college earnings we see a nuanced relationship. The descriptive earnings return to attending a more selective college only appears among colleges with less than a 40 percent admit rate, with little to no return to selectivity among colleges with admit rates greater than 40 percent. However, the earnings return to selectivity depends on field of study, with some fields having very little return to

attending a more selective college, and others showing a large return to selectivity. Finally, we find that there is an earnings disparity by student sex across the entire range of college admit rates, and the disparity grows larger among colleges with admit rates less than 40 percent.

Our findings offer several implications and suggestions for the College Scorecard:

1) Consider reporting the 10th and 90th percentiles (in addition to the 25th, 50th, and 75th percentiles) in the earnings distribution for each college in the public data releases, which has been discontinued for several years. All earnings percentiles should also be salient in the consumer-facing college search tool. A possible alternative to displaying the actual earnings percentiles would be to display an inter-percentile range (i.e. interquartile range) to give students a sense for the distribution of earnings outcomes at a given college.
2) Consider combining earnings data from additional cohorts for relatively small colleges (i.e. with fewer than 500 students in the earnings cohort) to improve the accuracy of the reported percentiles and reduce year-over-year volatility.
3) Consider backfilling the entry cohorts with missing earnings data to provide a more complete picture of how earnings have traced over time both within and across cohorts and consider showing these trends in the consumer-facing college search tool.
4) Consider displaying how earnings differ between men and women on the consumer-facing college search tool. Given the meaningful differences in earnings metrics between men and women, it may also be worth reporting on the earnings metrics by

family income tercile (which the Scorecard already publishes in its downloadable datasets) and collecting data on earnings separately by student race/ethnicity and at least reporting this information in the downloadable datasets.

5) Consider ways that would allow students to see how wide the distribution of median earnings is across colleges for a given field of study, and where each college falls in that distribution.
6) Consider reporting the field of study median earnings at the broader 2-digit CIP code level instead of the current 4-digit level (e.g., reporting median earnings for all students in "Education" fields instead of for each of the 16 subcategories) in some cases to help avoid the extensive privacy suppression that limits the usefulness of the field of study data for many colleges or aggregate 4-digit CIP code level median earnings across additional cohorts.

Overall, there is a wealth of information available in the data that the College Scorecard releases on its website that is not reported on the Scorecard's consumer-facing search tool. Much of this additional information could be useful for students to digest when making comparisons between colleges in terms of post-college earnings outcomes.

References

Andrews, R. J., Imberman, S. A., & Lovenheim, M. F. (2017). *Risky business? The effect of majoring in business on earnings and educational attainment* (No. w23575). National Bureau of Economic Research.

Andrews, R. J., Imberman, S. A., Lovenheim, M. F., & Stange, K. M. (Forthcoming). The returns to college major choice: Average and distributional effects, career trajectories, and earnings variability. *Review of Economics and Statistics*.

Andrews, R. J., Li, J., & Lovenheim, M. F. (2016). Quantile treatment effects of college quality on earnings. *Journal of Human Resources*, *51*(1), 200-238.

Belkin, D. (2024, January 19). Why Americans Have Lost Faith in the Value of College: Three Generations of 'College for All' in the U.S. Has Left Most Families Looking for Alternatives. *The Wall Street Journal*. https://www.wsj.com/us-news/education/why-americans-have-lost-faith-in-the-value-of-college-b6b635f2

Bettinger, E., & Fidjeland, A. (2024). College rankings, labor market outcomes, and alumni satisfaction. *Education Economics*, 1-18.

Black, S. E., Denning, J. T., & Rothstein, J. (2023). Winners and losers? the effect of gaining and losing access to selective colleges on education and labor market outcomes. *American Economic Journal: Applied Economics*, *15*(1), 26-67.

Black, D. A., & Smith, J. A. (2004). How robust is the evidence on the effects of college quality? Evidence from matching. *Journal of econometrics*, *121*(1-2), 99-124.

Black, D. A., & Smith, J. A. (2006). Estimating the returns to college quality with multiple proxies for quality. *Journal of labor Economics*, *24*(3), 701-728.

Bleemer, Z. (2022). Affirmative action, mismatch, and economic mobility after California's Proposition 209. *The Quarterly Journal of Economics*, *137*(1), 115-160.

Bleemer, Z., & Mehta, A. (2022). Will studying economics make you rich? A regression discontinuity analysis of the returns to college major. *American Economic Journal: Applied Economics*, *14*(2), 1-22.

Boland, W. C., Gasman, M., Samayoa, A. C., & Bennett, D. (2021). The effect of enrolling in minority serving institutions on earnings compared to non-minority serving institutions: A college scorecard analysis. *Research in Higher Education*, *62*, 121-150.

Brewer, D. J., Eide, E. R., & Ehrenberg, R. (1999). Does it pay to attend an elite private college? Cross-cohort evidence on the effects of college type on earnings. *Journal of Human Resources, 34(1)*, 104-123.

Carney, M. H. (2023). College Football Performance, Student Earnings, and the Gender Wage Gap. *Education Finance and Policy*, *19*(1), 61-80.

Chetty, R., J. N. Friedman, E. Saez, N. Turner, and D. Yagan (2020). Income Segregation and Intergenerational Mobility Across Colleges in the United States. *Quarterly Journal of Economics*, 135(3), 1567-1633.

Chetty, R., D. J. Deming, and J. N. Friedman (2025). Diversifying Society's Leaders? The Determinants and Causal Effects of Admission to Highly Selective Private Colleges. *NBER Working Paper*, No. 31492.

Cohodes, S. R., & Goodman, J. S. (2014). Merit aid, college quality, and college completion: Massachusetts' Adams scholarship as an in-kind subsidy. *American Economic Journal: Applied Economics*, *6*(4), 251-285.

Dale, S. B., & Krueger, A. B. (2002). Estimating the payoff to attending a more selective college: An application of selection on observables and unobservables. *The Quarterly Journal of Economics*, *117*(4), 1491-1527.

Eide, E. R., Hilmer, M. J., & Showalter, M. H. (2016). Is it where you go or what you study? The relative influence of college selectivity and college major on earnings. *Contemporary Economic Policy*, *34*(1), 37-46.

Elu, J. U., Ireland, J., Jeffries, D., Johnson, I., Jones, E., Long, D., ... & Trotman, J. (2019). The earnings and income mobility consequences of attending a historically black college/University: Matching estimates from 2015 US department of education college scorecard data. *The Review of Black political economy*, *46*(3), 171-192.

Foote, A. (2022). Comparing earnings outcome differences between all graduates and title IV graduates. *Economics of Education Review*, *89*, 102266.

Ge, S., Isaac, E., & Miller, A. (2022). Elite schools and opting in: Effects of college selectivity on career and family outcomes. *Journal of Labor Economics*, *40*(S1), S383-S427.

Goodman, J., Hurwitz, M., & Smith, J. (2017). Access to 4-year public colleges and degree completion. *Journal of Labor Economics*, *35*(3), 829-867.

Hanel, B., Kalb, G., & Scott, A. (2014). Nurses' labour supply elasticities: The importance of accounting for extensive margins. *Journal of Health Economics*, 33, 94-112.

Hastings, J. S. & Weinstein, J. M. (2008). Information, school choice, and academic achievement: Evidence from two experiments. *Quarterly Journal of Economics, 123(4)*, 1373-1414.

Hoekstra, M. (2009). The effect of attending the flagship state university on earnings: A discontinuity-based approach. *The review of economics and statistics*, *91*(4), 717-724.

Hurwitz, M. and J. Smith (2018). Student Responsiveness to Earnings Data in the College Scorecard. *Economic Inquiry*, 56(2), 1220-1243.

Kirkeboen, L. J., Leuven, E., & Mogstad, M. (2016). Field of study, earnings, and self-selection. *The Quarterly Journal of Economics*, *131*(3), 1057-1111.

Long, M. C. (2008). College quality and early adult outcomes. *Economics of Education Review, 27(5)*, 588-602.

Long, M. C. (2010). Changes in the returns to education and college quality. *Economics of Education Review, 29(3)*, 338-347.

Looney, A. (2017). A Comparison between the College Scorecard and Mobility Report Cards. January 2017, Treasury Notes.

Luca, M. & Smith, J. (2013). Salience in quality disclosure: Evidence from the U.S. News college rankings. *Journal of Economics & Management Strategy, 22(1)*, 58-77.

Lovenheim, M., & Smith, J. (2023). Returns to different postsecondary investments: Institution type, academic programs, and credentials. In *Handbook of the Economics of Education* (Vol. 6, pp. 187-318). Elsevier.

Ma, Y., & Savas, G. (2014). Which is more consequential: Fields of study or institutional selectivity?. *The Review of Higher Education*, *37*(2), 221-247.

Mabel, Z., C.J. Libassi, and M. Hurwitz (2020). The Value of Using Early-Career Earnings Data in the College Scorecard to Guide College Choices. *Economics of Education Review*, 75, 101958.

Mountjoy, J., & Hickman, B. R. (2021). *The returns to college (s): Relative value-added and match effects in higher education* (No. w29276). National Bureau of Economic Research.

Quadlin, N., Cohen, E. D., & VanHeuvelen, T. (2021). Same major, same economic returns? College selectivity and earnings inequality in young adulthood. *Research in Social Stratification and Mobility*, *75*, 100647.

Smith, J. (2013). Ova and out: Using twins to estimate the educational returns to attending a selective college. *Economics of Education Review*, *36*, 166-180.

Smith, J., Goodman, J., & Hurwitz, M. (2020). *The economic impact of access to public four-year colleges* (No. w27177). National Bureau of Economic Research.

Tough, P. (2023, September 5). Americans Are Losing Faith in the Value of College. Whose Fault is That? *The New York Times Magazine*. https://www.nytimes.com/2023/09/05/magazine/college-worth-price.html

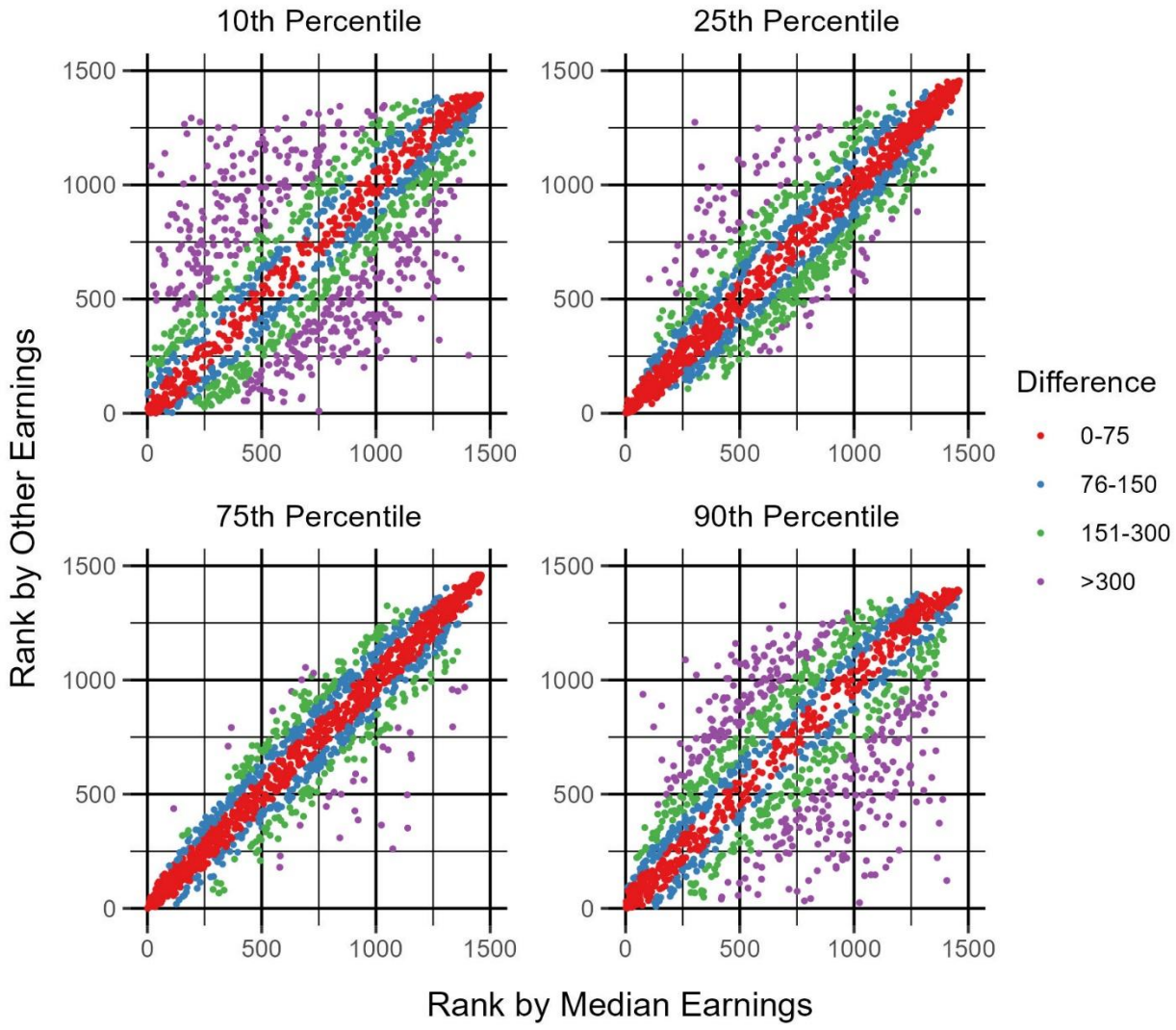
U.S. Department of Education, Technical Documentation: College Scorecard Institution-Level Data. Version: June 2024. https://collegescorecard.ed.gov/assets/InstitutionDataDocumentation.pdf.

Witteveen, D., & Attewell, P. (2017). The earnings payoff from attending a selective college. *Social Science Research*, *66*, 154-169.

Zimmerman, S. D. (2014). The returns to college admission for academically marginal students. *Journal of Labor Economics*, *32*(4), 711-754.

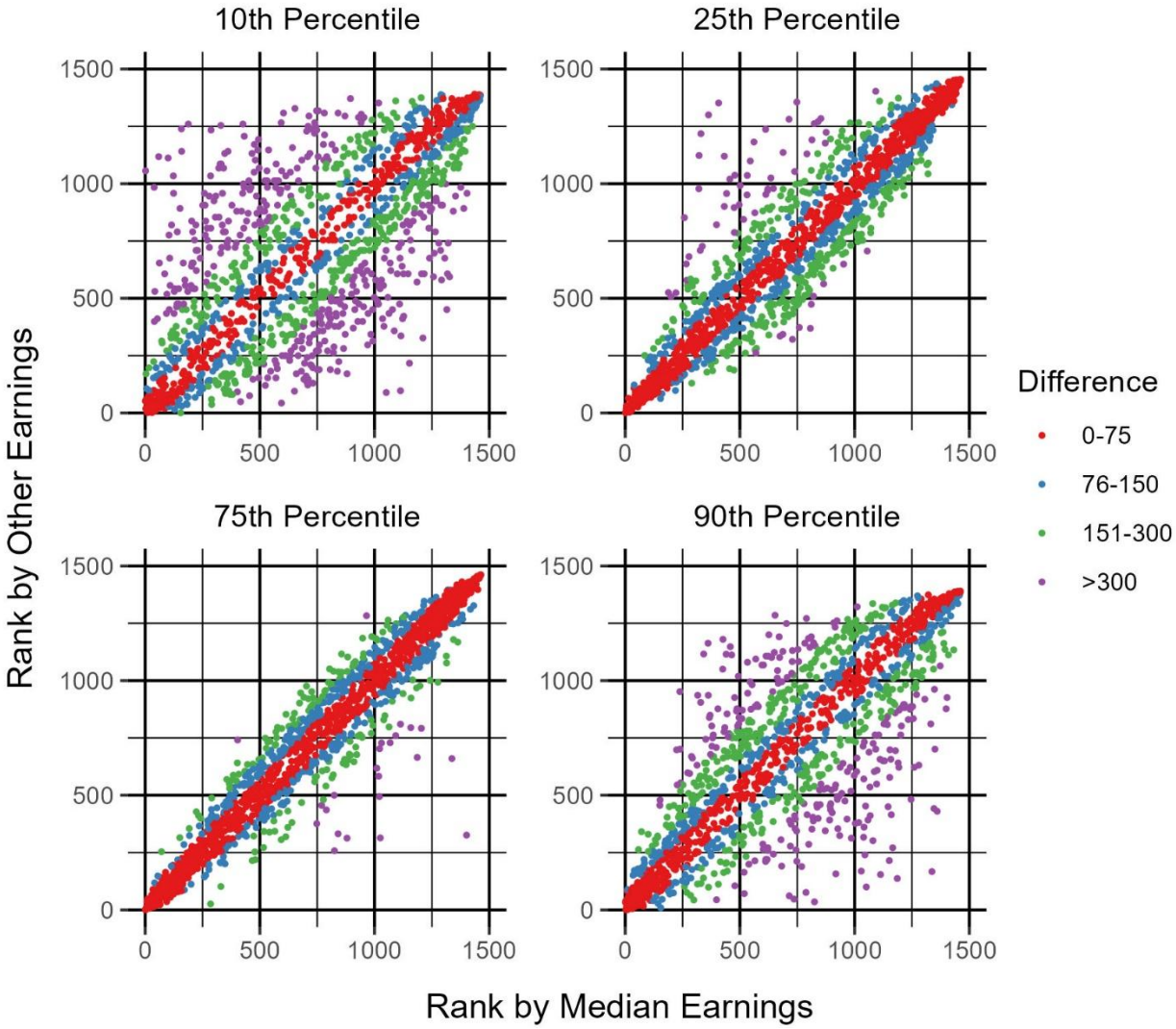
Appendix Figures

Figure A1: College rank difference by earnings metric (6 years after college entry)



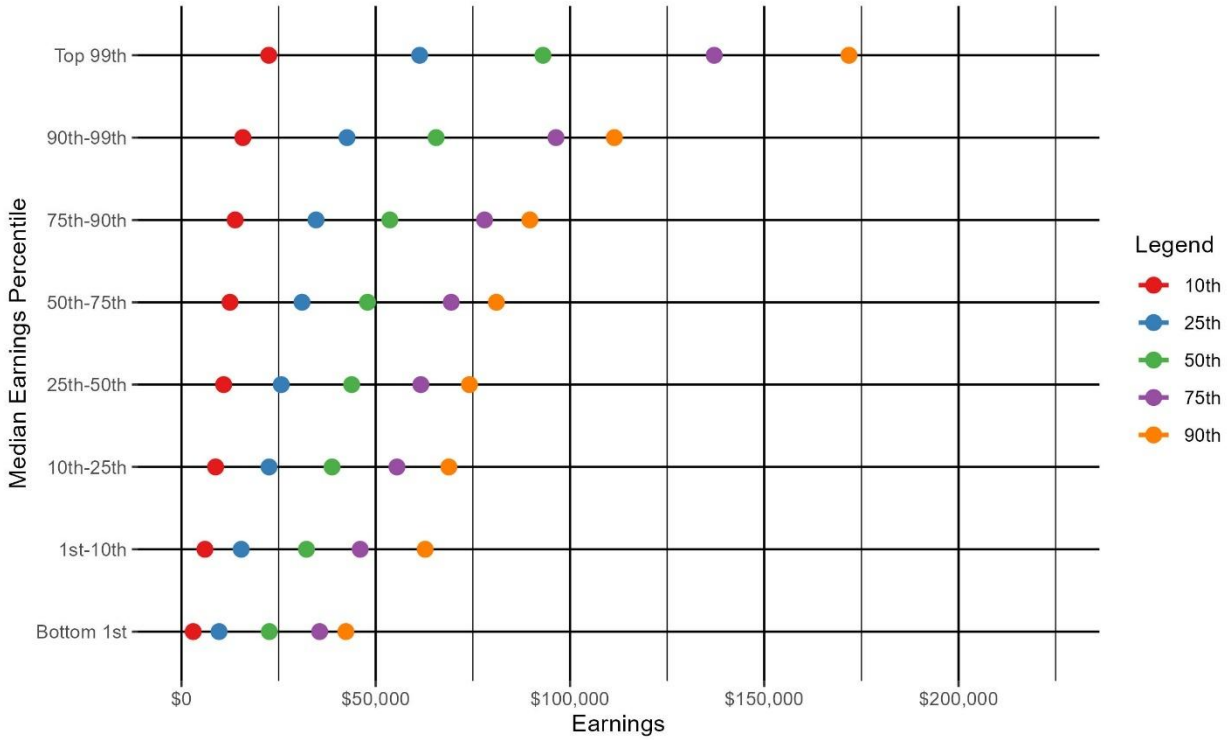
Notes: The above figure shows scatterplots of college ranks using the 10th, 25th, 75th, and 90th percentiles on the vertical axes and college rank using median earnings on the horizontal axes. The color of the dots represents the magnitude of the difference between the ranks. All earnings data come from the most recently released variables from the College Scorecard for earnings 6 years after college entry. All earnings percentiles are inflation adjusted into real 2022 dollars.

Figure A2: College rank difference by earnings metric (8 years after college entry)



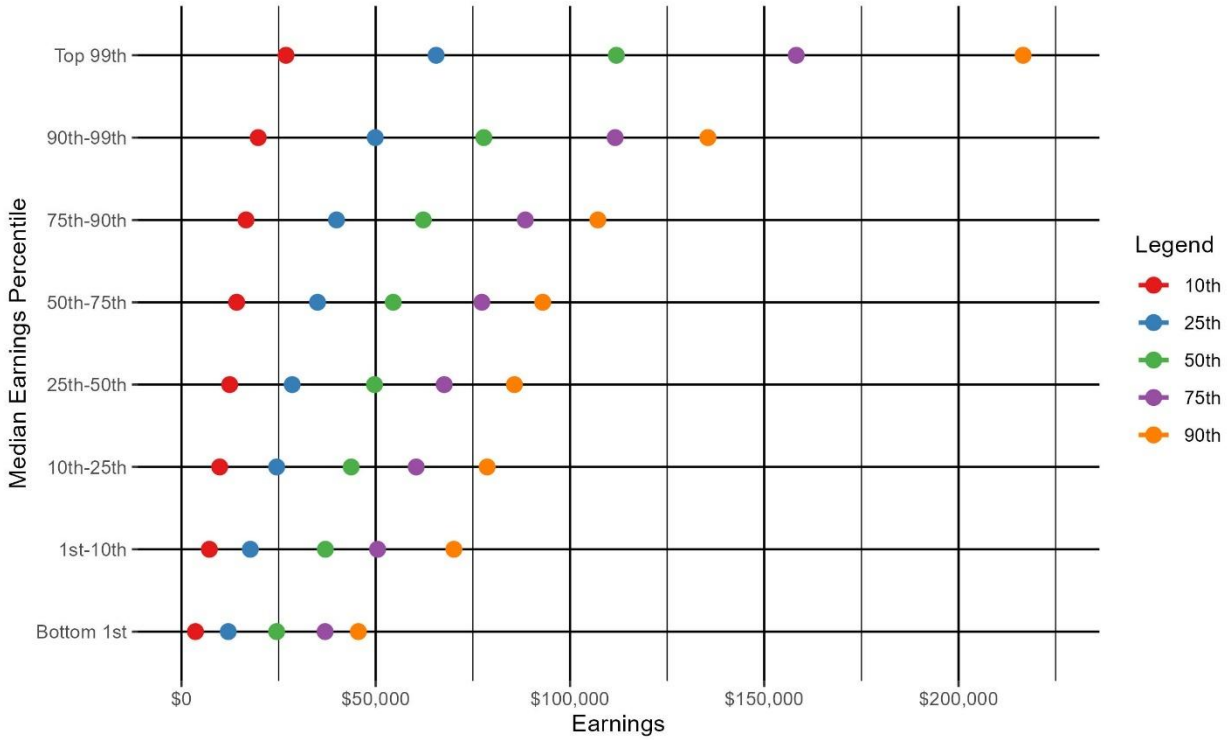
Notes: The above figure shows scatterplots of college ranks using the 10th, 25th, 75th, and 90th percentiles on the vertical axes and college rank using median earnings on the horizontal axes. The color of the dots represents the magnitude of the difference between the ranks. All earnings data come from the most recently released variables from the College Scorecard for earnings 8 years after college entry. All earnings percentiles are inflation adjusted into real 2022 dollars.

Figure A3: Full earnings distributions by colleges' median earnings (6 years after college entry)



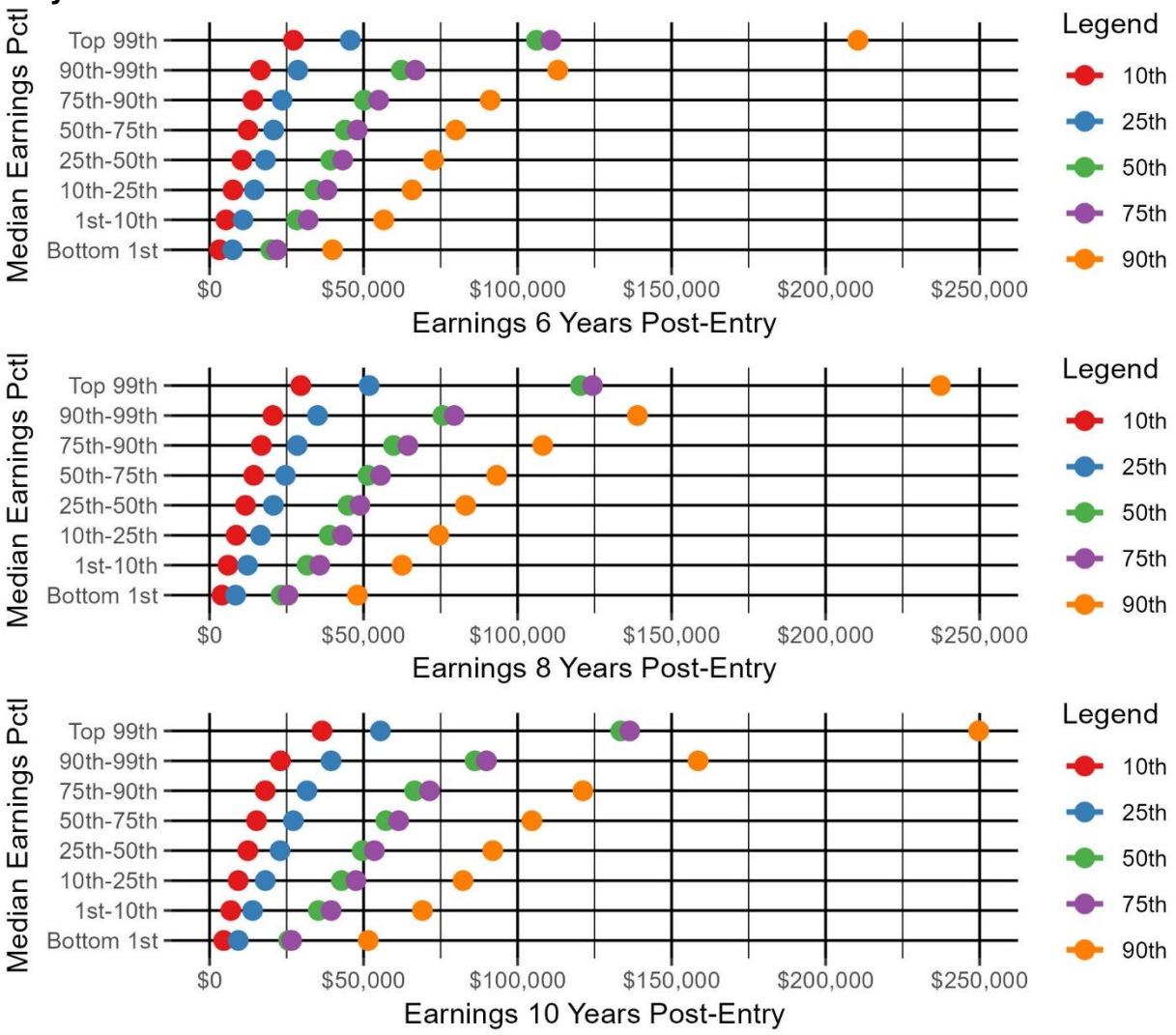
Notes: The above figure plots the mean 10th, 25th, 50th, 75th, and 90th earnings percentiles for different groups of colleges defined by their position in the distribution of median earnings. The averages at each percentile are weighted by the number of students in the earnings cohort at each institution. All earnings data come from the most recently released variables from the College Scorecard for earnings 6 years after college entry. All earnings percentiles are inflation adjusted into real 2022 dollars.

Figure A4: Full earnings distributions by colleges' median earnings (8 years after college entry)



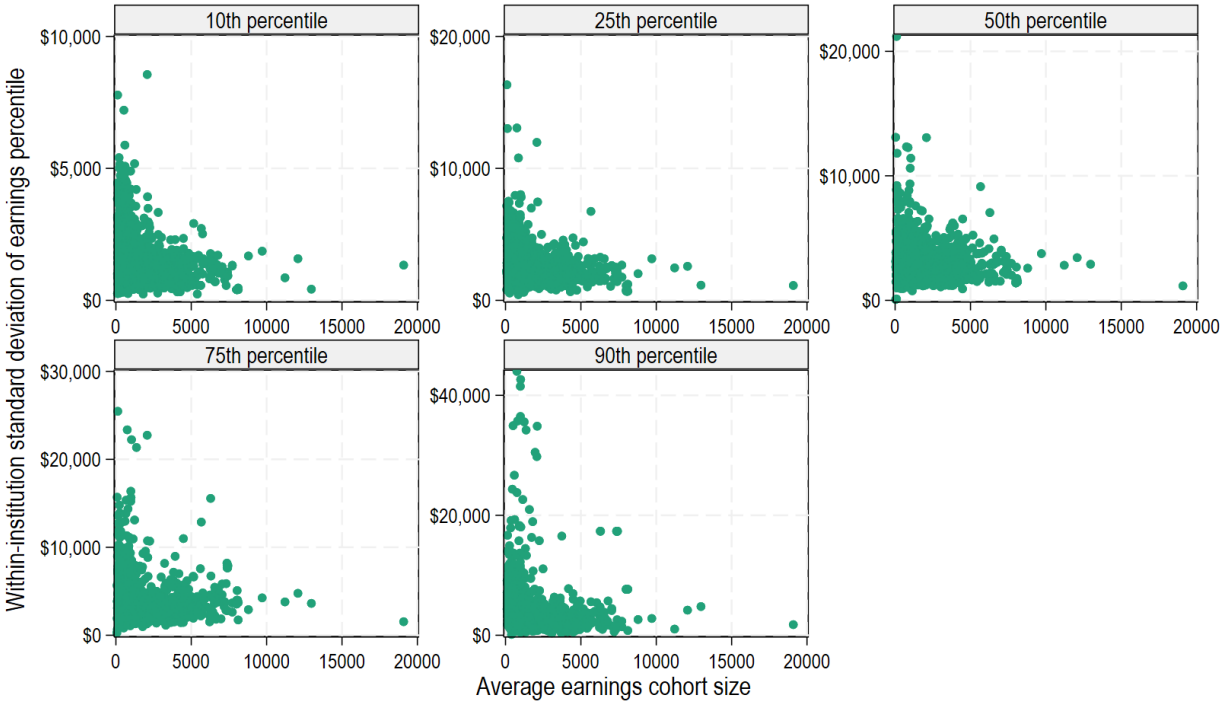
Notes: The above figure plots the mean 10th, 25th, 50th, 75th, and 90th earnings percentiles for different groups of colleges defined by their position in the distribution of median earnings. The averages at each percentile are weighted by the number of students in the earnings cohort at each institution. All earnings data come from the most recently released variables from the College Scorecard for earnings 8 years after college entry. All earnings percentiles are inflation adjusted into real 2022 dollars.

Figure A5: Full earnings distributions by colleges' median earnings with consistent entry cohorts



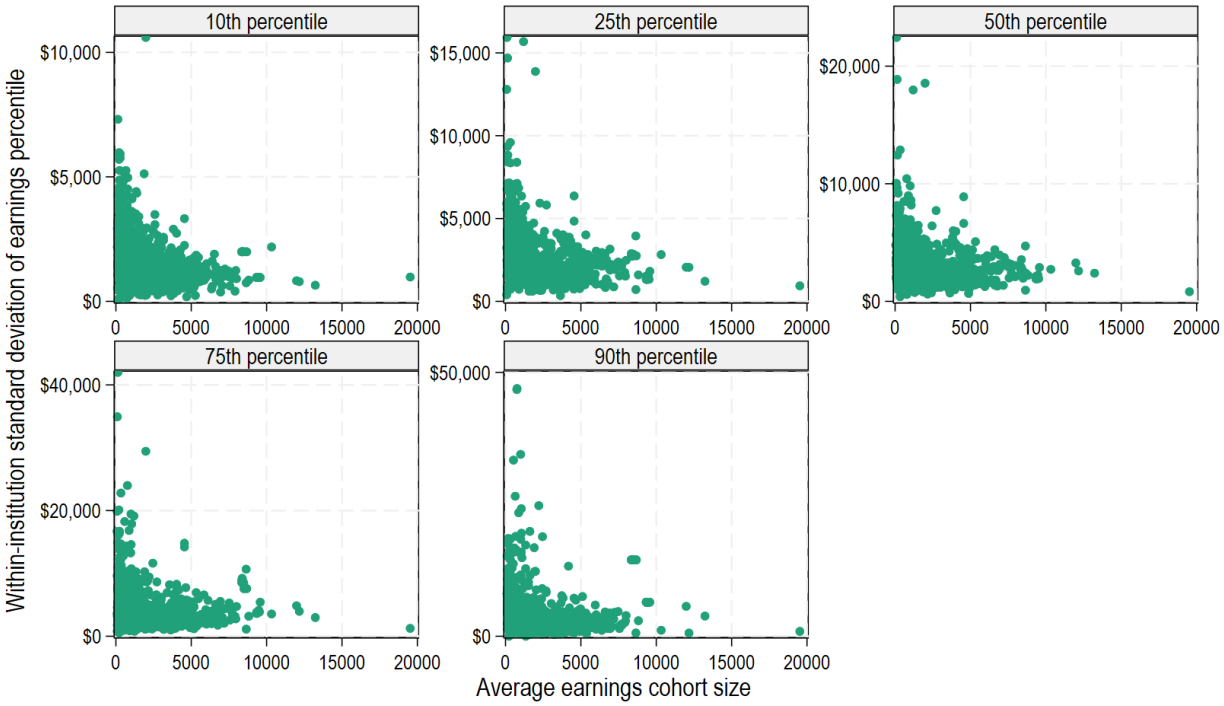
Notes: The above figure plots the mean 10th, 25th, 50th, 75th, and 90th earnings percentiles for different groups of colleges defined by their position in the distribution of median earnings. The figure uses data from the most recently released variables from the College Scorecard where all of the percentiles were reported for the same entry cohort. Specifically, the data come from the "MERGED_2011-12 datafile". The data for 6 years after college entry come from the 2004-05 and 2005-06 pooled entry cohort. The data for 8 years after college entry come from the 2002-03 and 2003-04 pooled entry cohort. The data for 10 years after college entry come from the 2000-01 and 2001-02 pooled entry cohort. The earnings at each percentile are weighted by the number of students in the earnings cohort at each institution. All earnings percentiles are inflation adjusted into real 2022 dollars.

Figure A6: Earnings volatility by college cohort size (6 years after college entry)



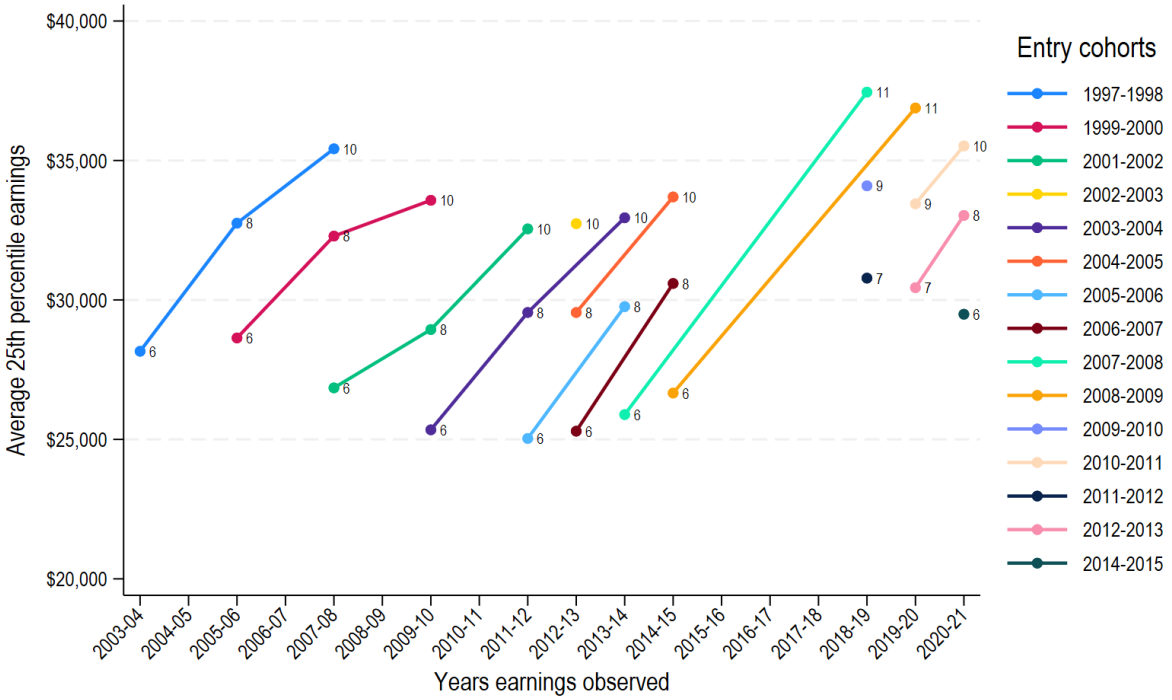
Notes: The above figure shows scatterplots of colleges' standard deviation in their earnings percentiles over time by the average size of the number of people in the earnings cohort. The figure uses all available data for earnings 6 years after college entry ever released by the College Scorecard for the sampled colleges. The figure excludes a small number of colleges from the analysis sample that do not have at least 3 cohorts with reported data for each earnings percentile. All earnings percentiles are inflation adjusted into real 2022 dollars.

Figure A7: Earnings volatility by college cohort size (8 years after college entry)



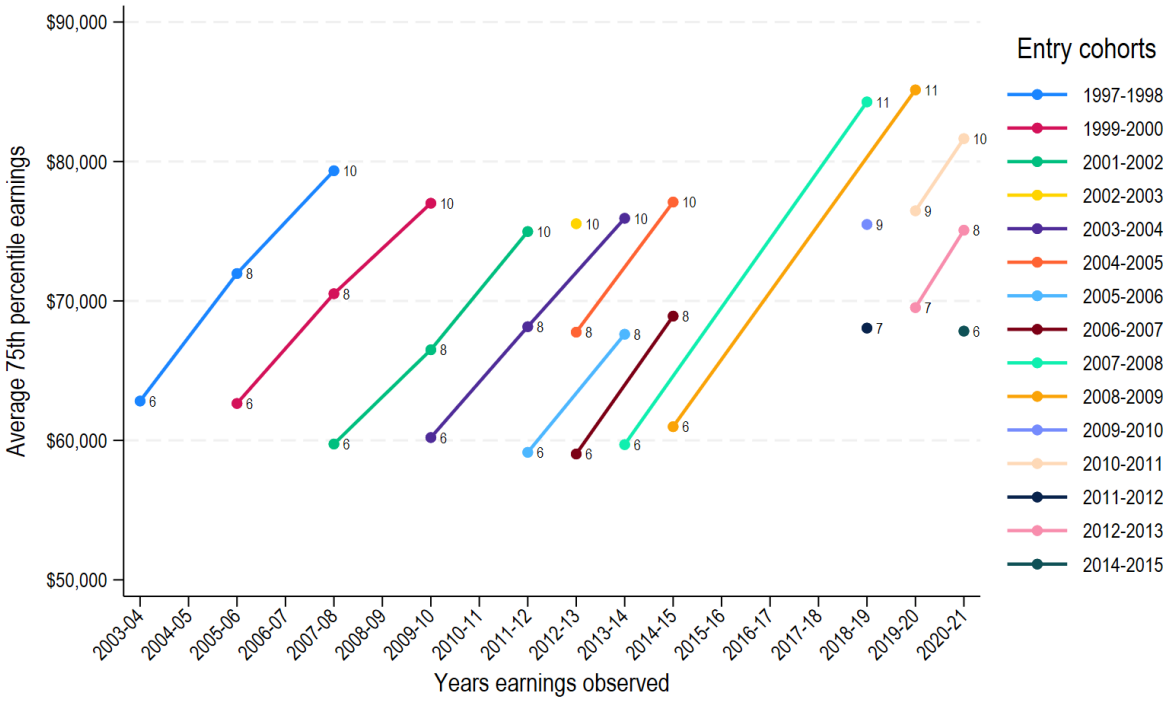
Notes: The above figure shows scatterplots of colleges' standard deviation in their earnings percentiles over time by the average size of the number of people in the earnings cohort. The figure uses all available data for earnings 8 years after college entry ever released by the College Scorecard for the sampled colleges. The figure excludes a small number of colleges from the analysis sample that do not have at least 3 cohorts with reported data for each earnings percentile. All earnings percentiles are inflation adjusted into real 2022 dollars.

Figure A8: 25th percentile earnings trajectories by college entry cohort



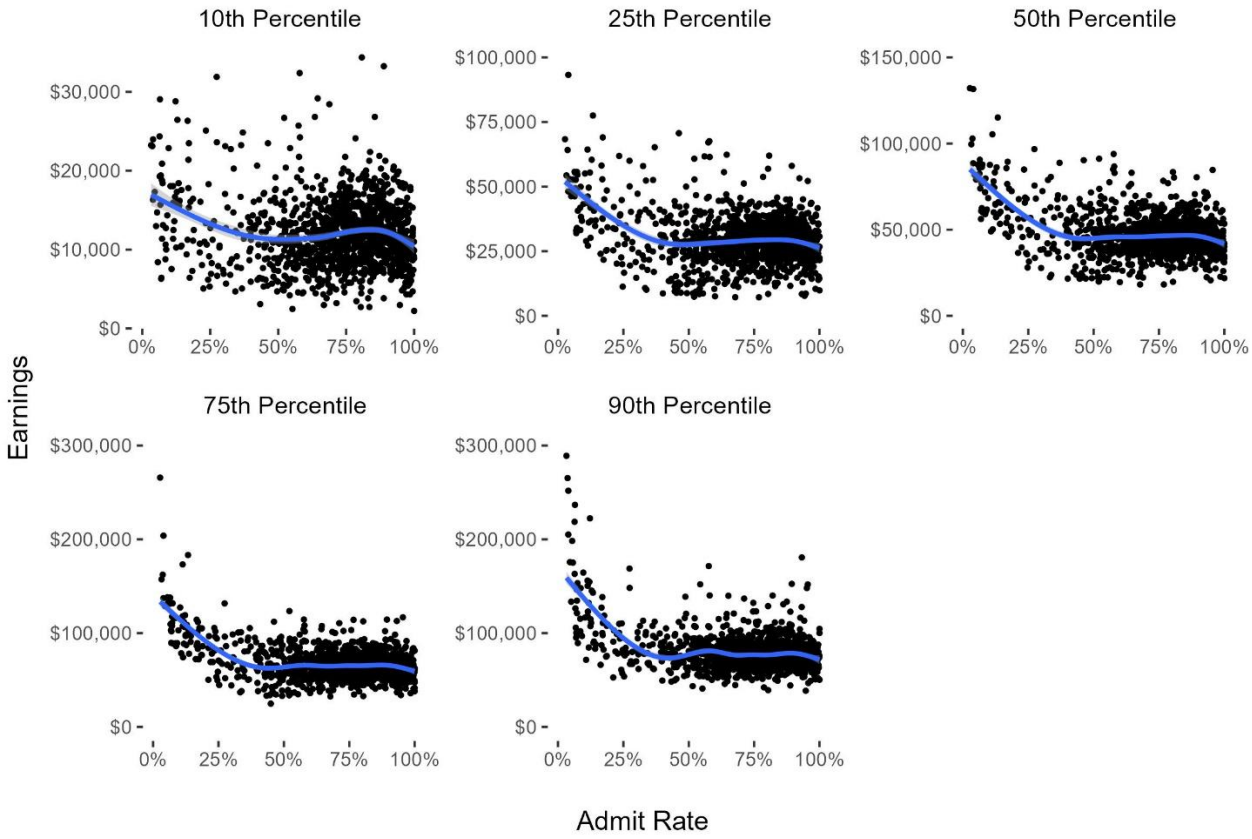
Notes: The above figure traces average 25th percentile earnings at 6, 8, and 10 years after college entry for each pooled entry cohort ever reported on by the College Scorecard. Due to an error made by the College Scorecard for the data released with earnings measured in 2018-19 and 2019-20, earnings were reported for 7, 9, and 11 years after college entry. To aggregate across colleges, the averages are weighted by the college-level earnings cohort size. All earnings percentiles are inflation adjusted into real 2022 dollars.

Figure A9: 75th percentile earnings trajectories by college entry cohort



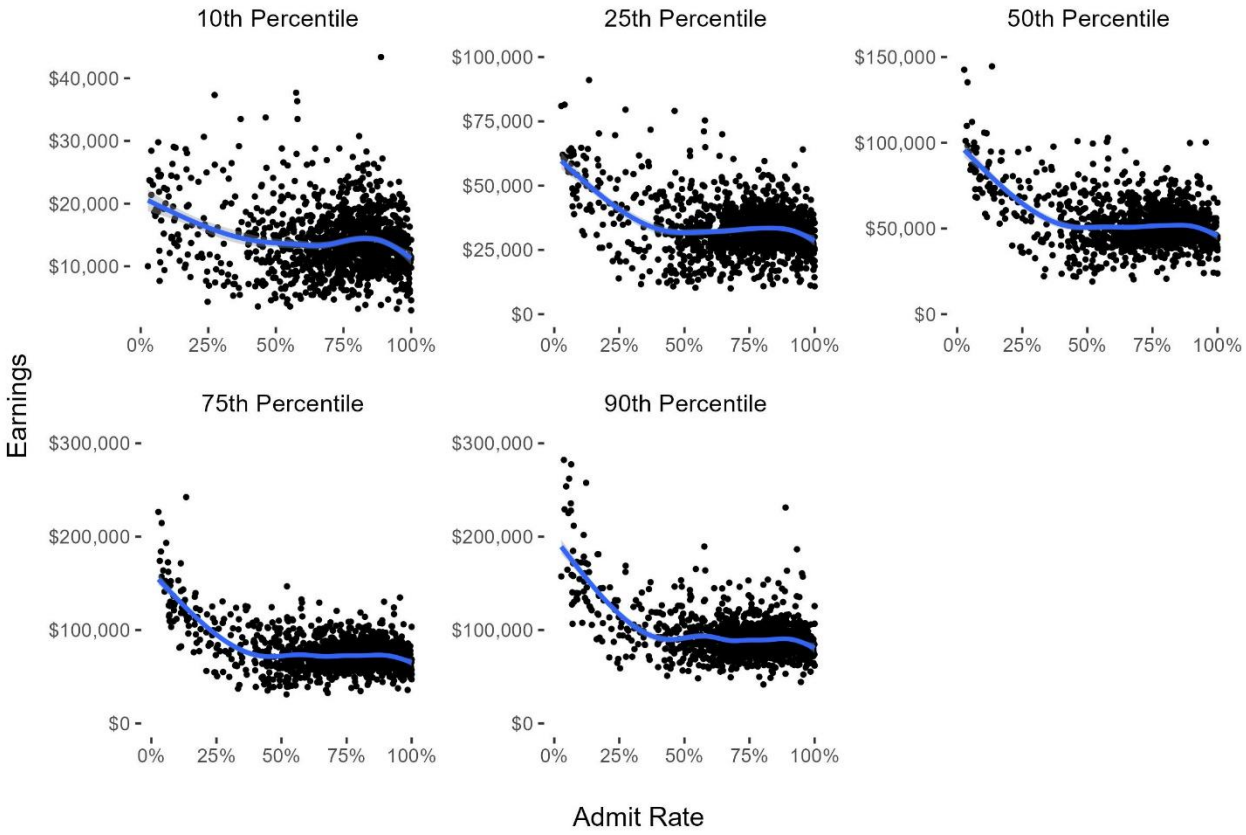
Notes: The above figure traces average 75th percentile earnings at 6, 8, and 10 years after college entry for each pooled entry cohort ever reported on by the College Scorecard. Due to an error made by the College Scorecard for the data released with earnings measured in 2018-19 and 2019-20, earnings were reported for 7, 9, and 11 years after college entry. To aggregate across colleges, the averages are weighted by the college-level earnings cohort size. All earnings percentiles are inflation adjusted into real 2022 dollars.

Figure A10: Earnings by college selectivity (6 years after college entry)



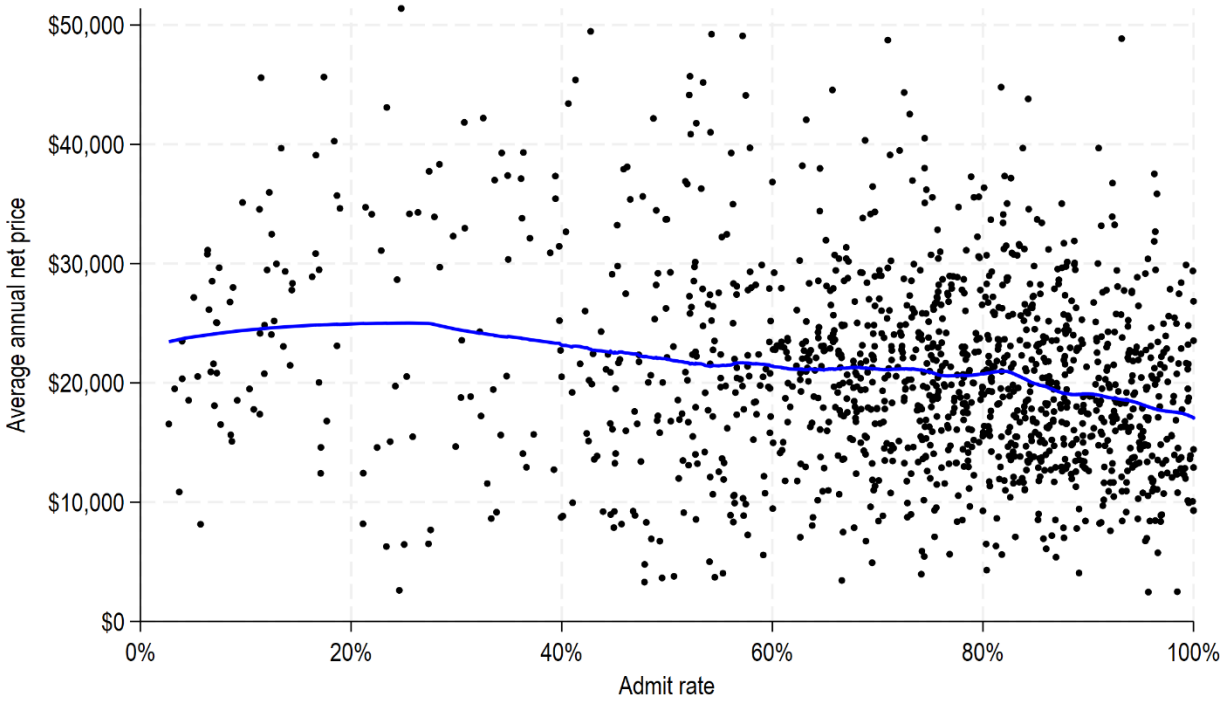
Notes: The above figure shows scatterplots of each of the college level earnings percentiles by their admit rate. All earnings data come from the most recently released variables from the College Scorecard for earnings 6 years after college entry. All earnings percentiles are inflation adjusted into real 2022 dollars.

Figure A11: Earnings by college selectivity (8 years after college entry)



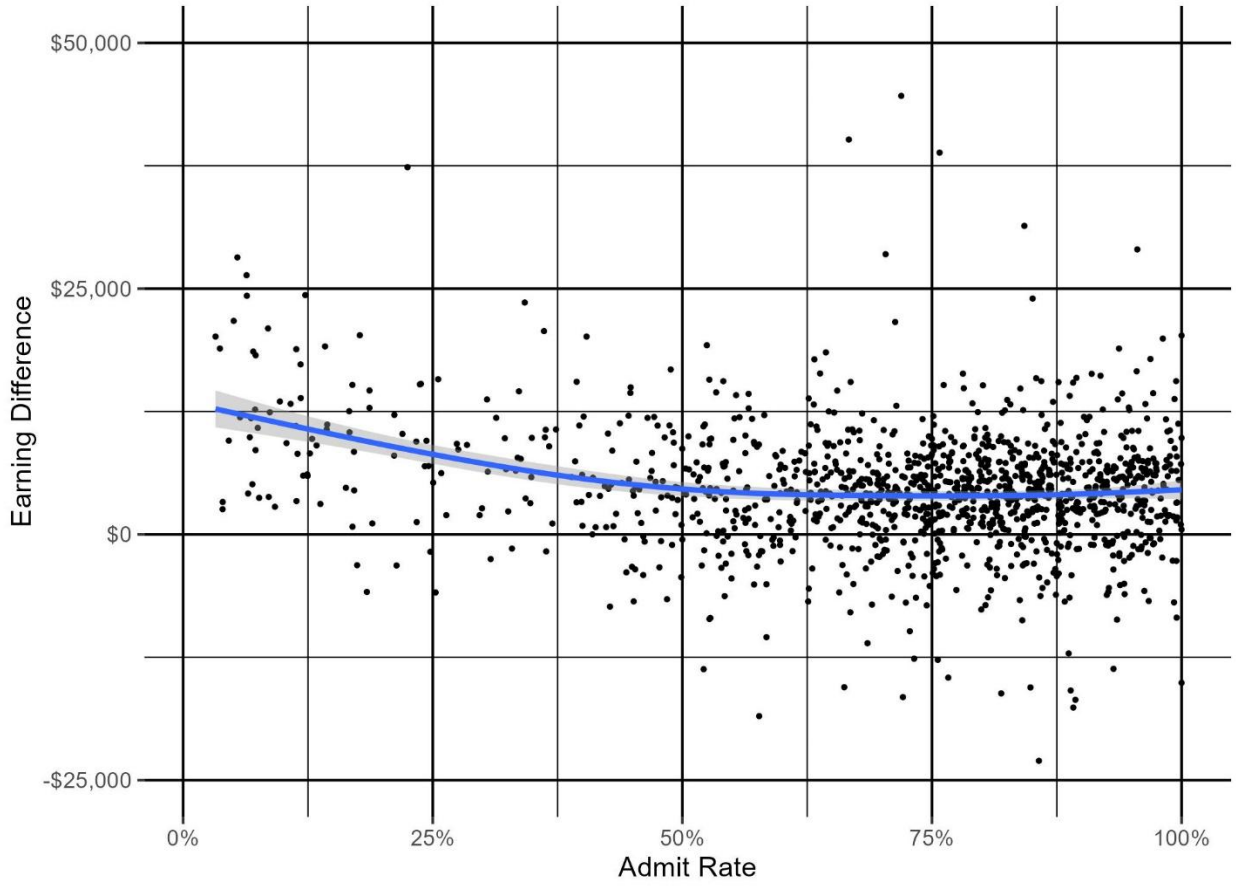
Notes: The above figure shows scatterplots of each of the college level earnings percentiles by their admit rate. All earnings data come from the most recently released variables from the College Scorecard for earnings 8 years after college entry. All earnings percentiles are inflation adjusted into real 2022 dollars.

Figure A12: Average annual net price by college selectivity



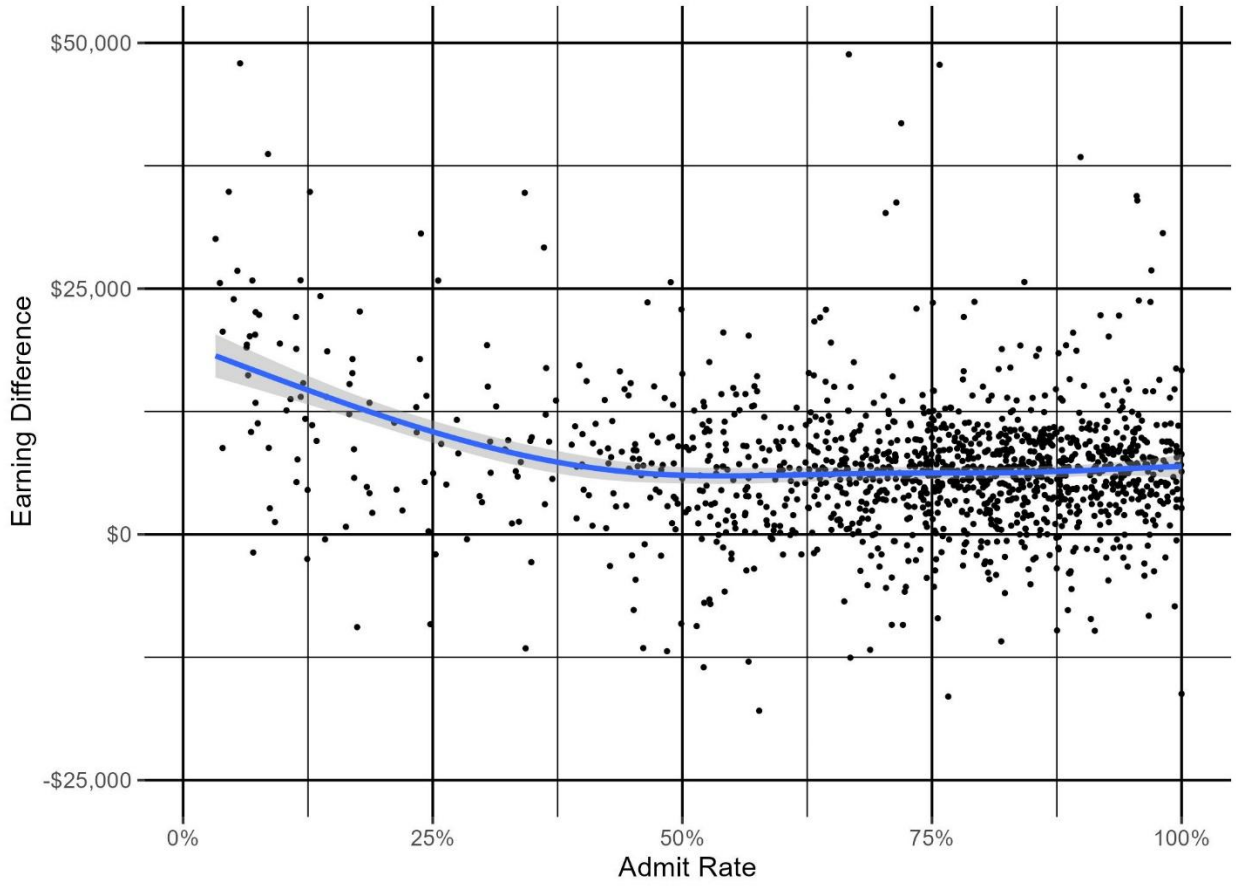
Notes: The above figure shows scatterplots of colleges' average annual net price by their admit rate. All data come from the most recently released variables from the College Scorecard.

Figure A13: Gender earnings gap by college selectivity (males minus females, 6 years after college entry)



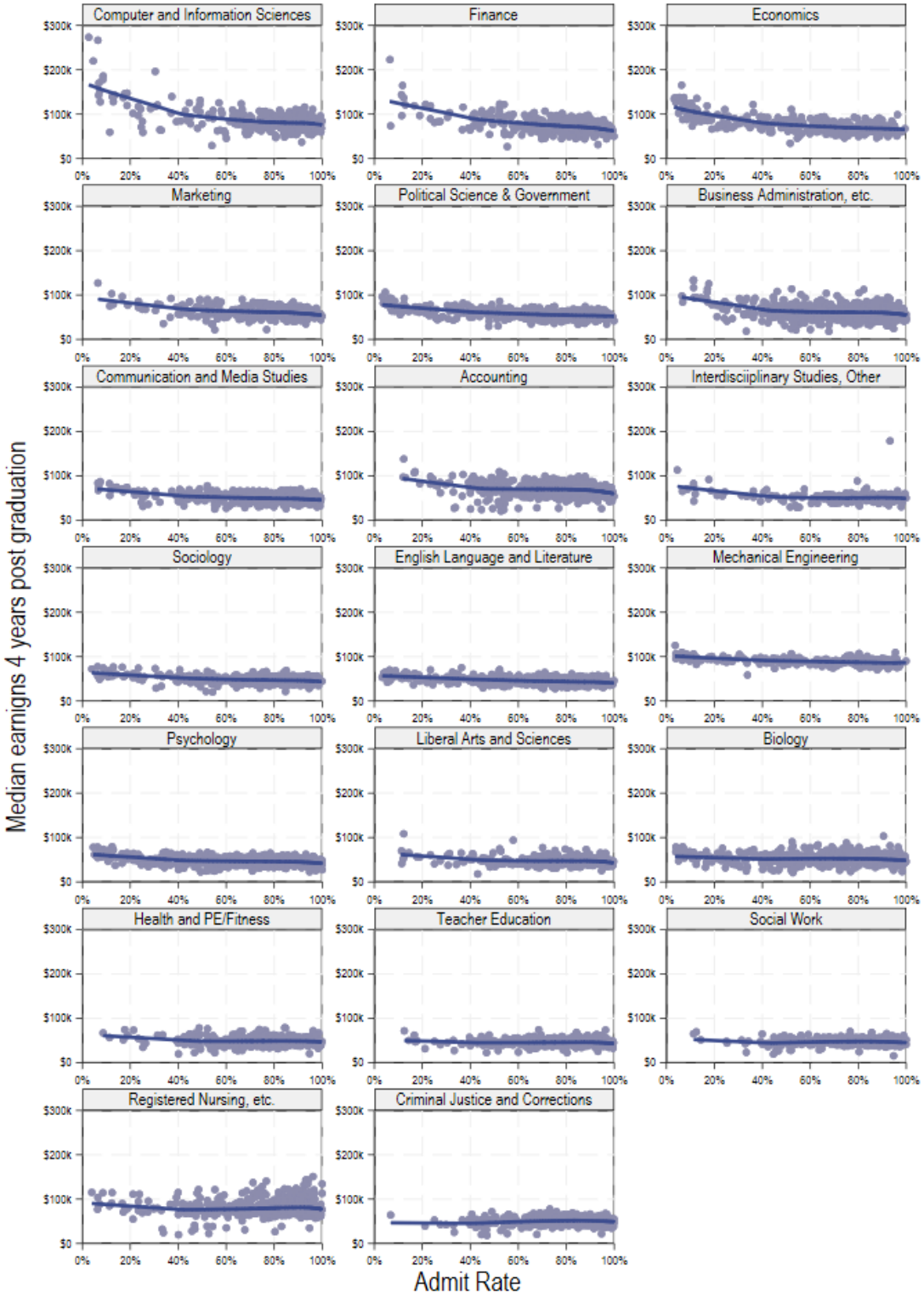
Notes: The figure above plots the within-college difference between the median earnings for males and median earnings for females by the college admit rate. All earnings data come from the most recently released variables from the College Scorecard for earnings 6 years after college entry. All earnings percentiles are inflation adjusted into real 2022 dollars.

Figure A14: Gender earnings gap by college selectivity (males minus females, 8 years after college entry)



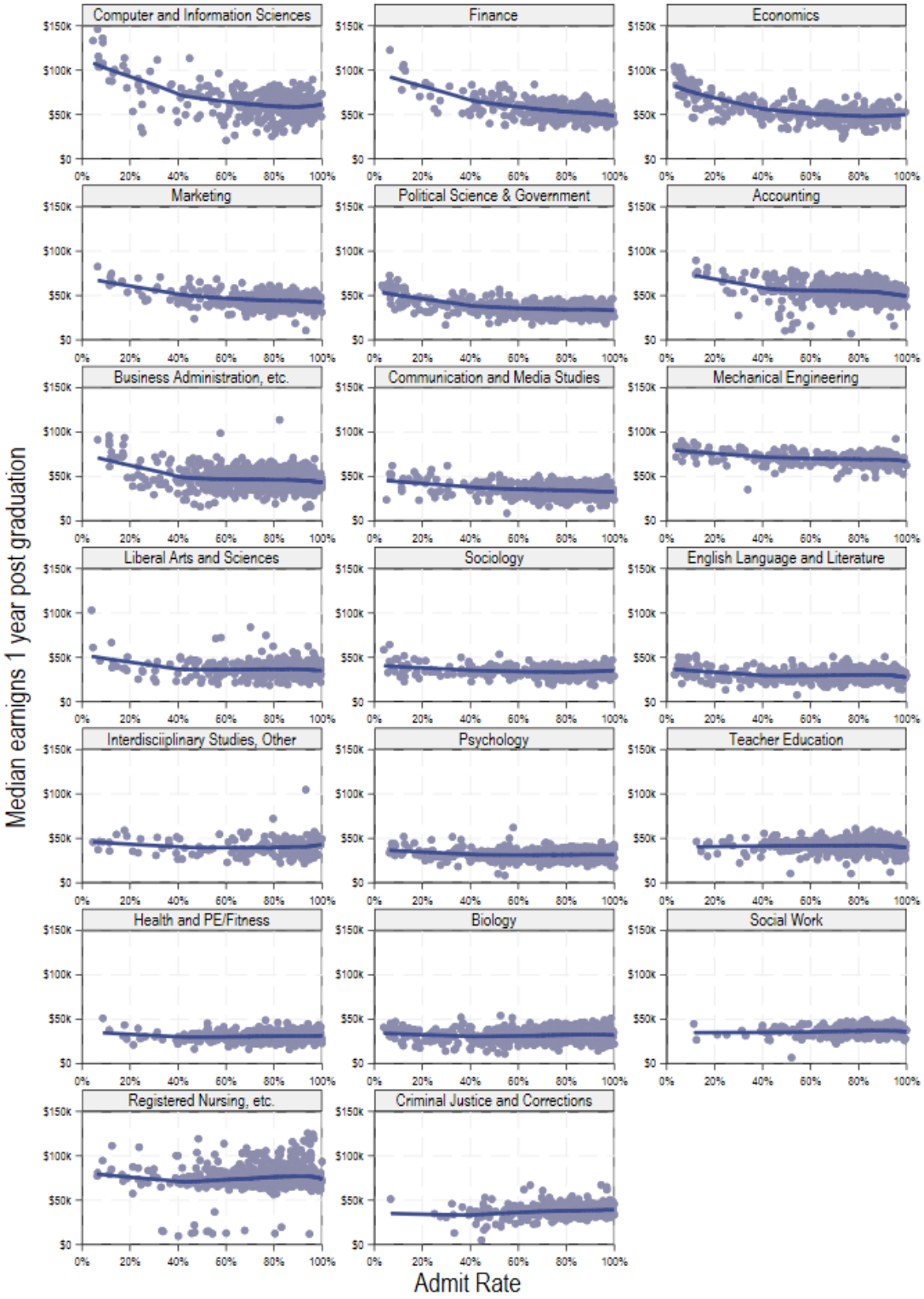
Notes: The figure above plots the within-college difference between the median earnings for males and median earnings for females by the college admit rate. All earnings data come from the most recently released variables from the College Scorecard for earnings 8 years after college entry. All earnings percentiles are inflation adjusted into real 2022 dollars.

Figure A15: Median earnings by selectivity for top 20 fields (4 years after graduation)



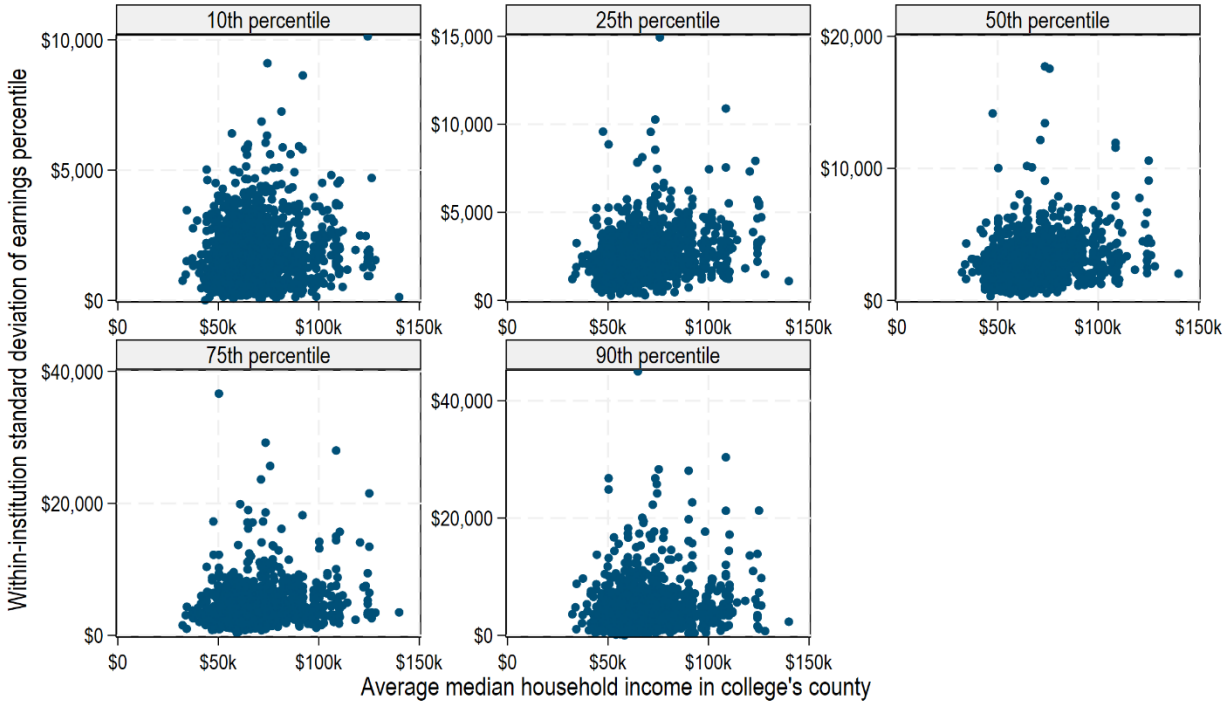
Notes: The figure above shows scatterplots of median earnings by college admit rate, separately by each of the top 20 fields of study. The top 20 fields of study are determined by the total number of people in the earnings cohorts by field of study. All earnings data come from the most recently released variables from the College Scorecard's field of study data file for median earnings 4 years after college graduation. All earnings data are inflation adjusted into real 2022 dollars.

Figure A16: Median earnings by selectivity for top 20 fields (1 year after graduation)



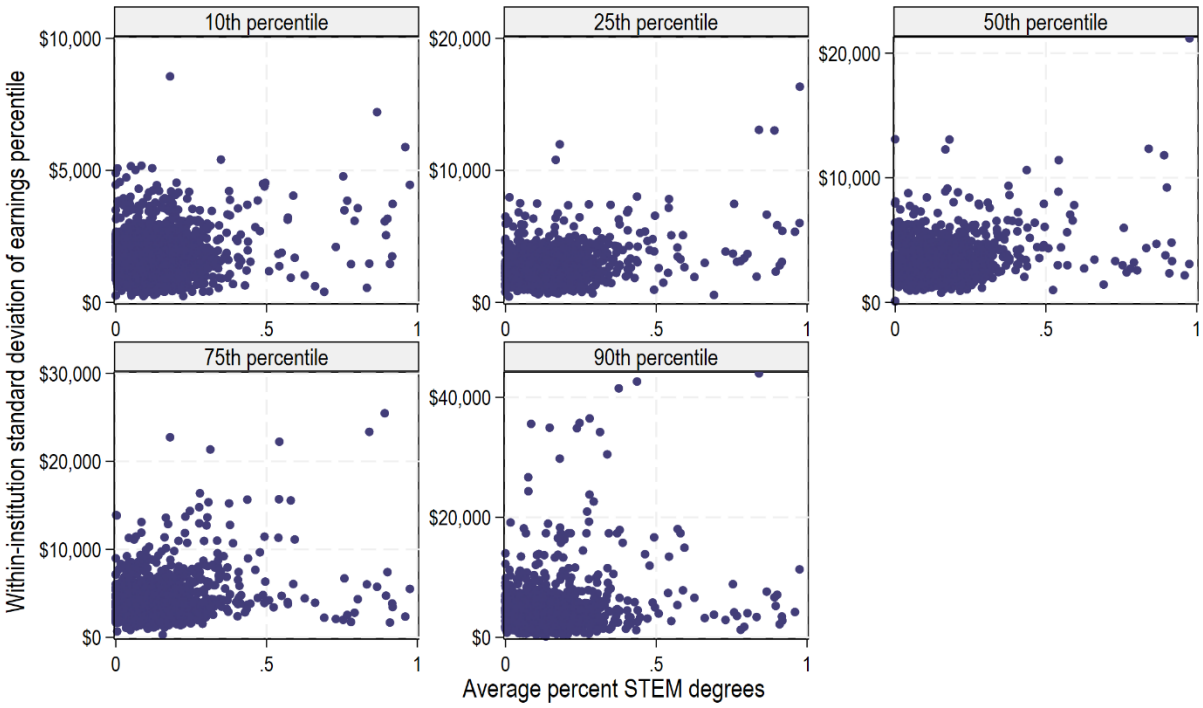
Notes: The figure above shows scatterplots of median earnings by college admit rate, separately by each of the top 20 fields of study. The top 20 fields of study are determined by the total number of people in the earnings cohorts by field of study. All earnings data come from the most recently released variables from the College Scorecard's field of study data file for median earnings 1 year after college graduation. All earnings data are inflation adjusted into real 2022 dollars.

Figure A17: Earnings volatility by average median household income in colleges' county



Notes: The above figure shows scatterplots of colleges' standard deviation in their earnings percentiles over time by colleges' average median household income in their county over the same time-period. The figure uses all available data for earnings 10 years after college entry ever released by the College Scorecard for the sampled colleges. The figure excludes a small number of colleges from the analysis sample that do not have at least 3 cohorts with reported data for each earnings percentile. All earnings percentiles are inflation adjusted into real 2022 dollars. Average median household income data comes from the U.S. Census.

Figure A18: Earnings volatility by average share of degree awarded in STEM fields



Notes: The above figure shows scatterplots of colleges' standard deviation in their earnings percentiles over time by colleges' average share of degree awarded over the same time-period. The figure uses all available data for earnings 10 years after college entry ever released by the College Scorecard for the sampled colleges. The figure excludes a small number of colleges from the analysis sample that do not have at least 3 cohorts with reported data for each earnings percentile. All earnings percentiles are inflation adjusted into real 2022 dollars. The share of degrees awarded in each field of study is available in the College Scorecard data.