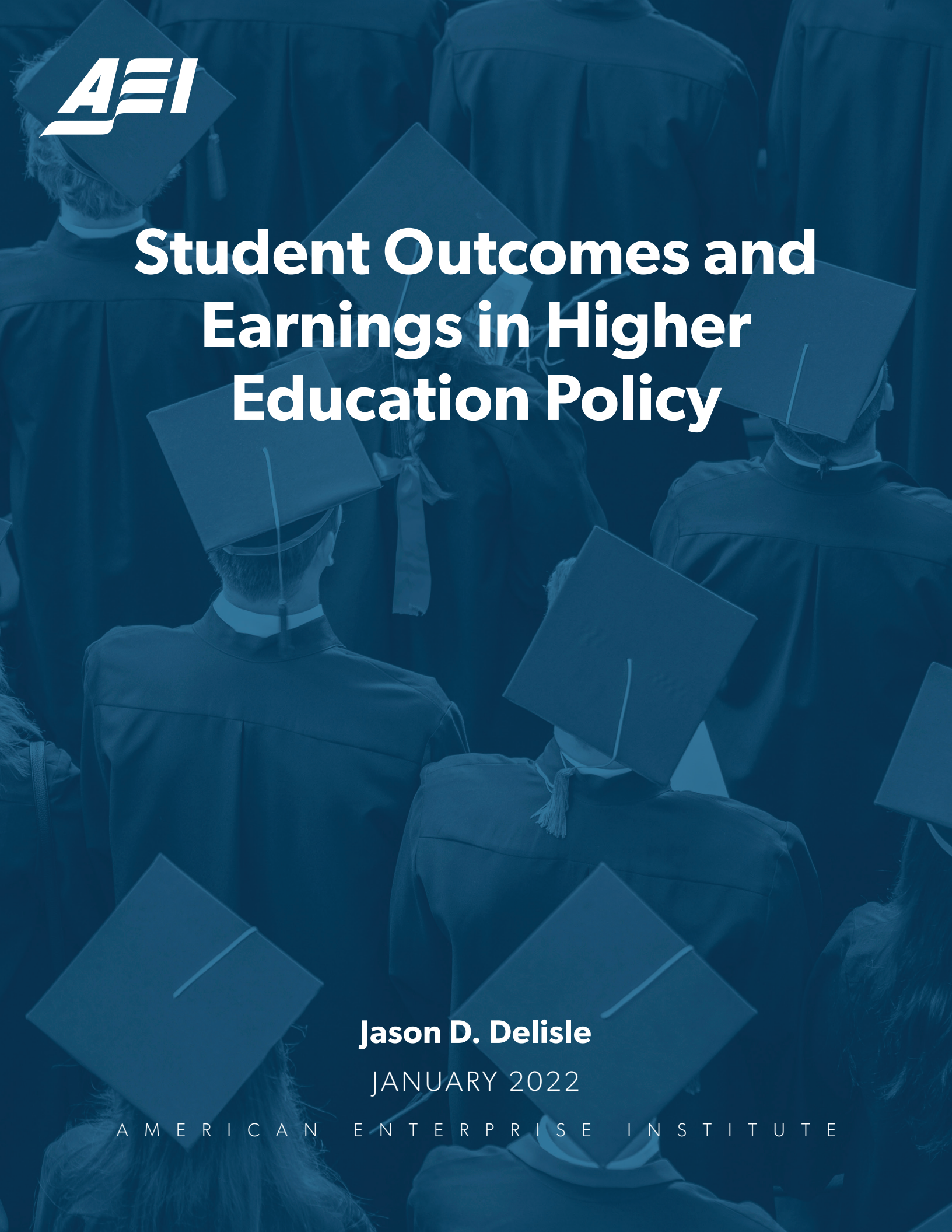


Student Outcomes and Earnings in Higher Education Policy

Jason D. Delisle

JANUARY 2022

AMERICAN ENTERPRISE INSTITUTE

Student Outcomes and Earnings in Higher Education Policy

Edited by **Jason D. Delisle**

JANUARY 2022

AMERICAN ENTERPRISE INSTITUTE

Contents

Introduction

A long overdue, much needed transformation is underway in our higher education system. It started a decade ago, when federal and state policymakers first began to collect data on what students earn after pursuing a postsecondary education. In all fairness, that might not sound transformational. After all, statistics about how much an individual with a college degree or someone in a certain profession earns have been available for public consumption for some time.[1]

But these new data are fundamentally different. Unlike broad-based national statistics, such as how much someone with a bachelor's degree earns on average, this new information reveals what individual cohorts of students earn after they complete a *particular program* in a *particular institution* of higher education.

For example, it is now possible to observe that recent graduates from the University of Iowa with bachelor's degrees in mechanical engineering earn median salaries of $64,581 two years after leaving school.[2] In another example, the data reveal that students who completed associate degrees in vehicle maintenance and repair technologies at Northern Virginia Community College typically earn $33,993 shortly after leaving school.[3]

This type of data was collected for the first time as part of Obama administration regulations to identify programs at for-profit colleges where graduate earnings were too low to justify the debt students incurred. Now, the data cover virtually all institutions through the US Department of Education's (ED) College Scorecard, with several states operating their own initiatives.

Before these efforts, policymakers and students may have had a general idea about what a degree from a given institution was worth, but they really could only assume that it was in-line with national averages. Now, they can weigh the price—and the debt they would incur—for a particular college or program with knowledge of what their future earnings will likely be. The data can also reveal colleges and programs that are doing more harm than good for their students, where graduate earnings are so out of line with the cost of attending that the mismatch almost constitutes fraud. That is where these data could reshape our higher education system.

Consider how these more detailed data can quickly change stakeholders' views about the value of a particular degree from a specific institution. In 2017, the *New York Times* (and several other publications) used these newly available data to expose a graduate certificate program in theater at Harvard University where students earned incomes of just $36,000 shortly after graduating.[4] It was an alarming figure given the institution's prestige but even more so for the $78,000 in debt that its students typically incurred. These outcomes were—until the data were made available in 2017—virtually invisible to everyone except the graduates themselves. Once public, however, the data pushed Harvard to shutter the program.[5]

Most graduate programs were excluded from the 2017 data release that affected the Harvard program, but a subsequent Trump administration expansion of the data in 2019 applied to a broader set of programs and was similarly revealing.[6] Shortly after these data were made public, the *Wall Street Journal* published several investigative reports about graduate degrees at other highly selective institutions where former students' earnings are well below what would be needed to pay off the debt they incurred to attend the program.[7] As one example, the article reported how graduates of the University of Southern

California's marriage and family counseling program borrow a median $124,000 but typically earn just $50,000 a year shortly after completing the degree.

While it remains to be seen whether or how the institutions will respond in these cases, the *Wall Street Journal* articles, like the *New York Times* piece that helped end the Harvard theater program, were only possible because of the newly available data on student earnings. The data exposed the huge gap between the cost of the credential and what those who completed it could expect to earn, creating the opportunity for students, regulators, and other stakeholders to hold the institutions accountable.

The data in these specific examples were collected and released as part of the Obama administration's "gainful employment" rule for federal student aid programs, which sought to identify programs that routinely left graduates with unaffordable debt.[8] Although the gainful employment regulation is in flux (the Trump administration repealed it, but the Biden administration appears likely to reinstate some version of it), the regulation formed the basis for the data collection in the College Scorecard, which remains available today.[9] The scorecard is by far the most comprehensive and regularly updated source of earnings data that covers specific institutions of higher education and individual programs.

To be sure, these efforts are not exclusively federal. A growing number of states are also reporting earnings data for institutions of higher education, either through their own collection systems or by partnering with the US Census Bureau.[10]

Catalysts for Data Collection and Reform

The trends that set these new data collection initiatives in motion also help illustrate the potential transformative role they can play in the higher education system. Perhaps the strongest motivation for collecting earnings data, at least initially, was concern over the quality of programs offered by rapidly expanding for-profit institutions. To strengthen oversight of these institutions, the Obama administration sought to judge whether the students were in fact obtaining gainful employment, which was required under law but never defined or enforced.[11] In that effort, the administration opted to assess what former students actually earned after completing these programs, which required the ED to collect earnings data for the first time, program by program.

Policymakers' interest in earnings data soon expanded beyond cracking down on for-profit colleges. Growing anxiety about college prices and rapidly rising student debt—fueled partly by high unemployment rates after the Great Recession in the early 2010s—raised questions about whether college was worth the cost and the subsequent loan payments.[12] The ability to know what students actually earn after completing a particular degree at a particular institution would help answer exactly those questions. If the earnings were high enough, the price and the debt would be worth it.[13] In light of rising costs and debt, earnings data could help ensure the higher education system was producing a good return on investment. Policymakers could then attach rewards and penalties for institutions based on these new earnings data.

Alternatively, the new data would address concerns about high prices and debt by helping students and families make more informed decisions, without the government weighing in. The new data on earnings would help students and families avoid overpaying or overborrowing relative to what a credential would provide in the form of future earnings. In other words, the information alone would do the work; the government's role would be only to collect and publish it. And notably, only the federal government has access to national wage and income records (i.e., through payroll tax reporting, income tax filings, or unemployment insurance wage reporting systems) that could be matched to college enrollment records, making it nearly impossible for the private sector, or colleges and universities themselves, to fulfill this role.

Of course, another trend that contributed to the effort to collect earnings data was that the technology was within reach. Building a dataset that can be routinely updated and matches the earnings records to cohorts of students at thousands of institutions,

down to the program level, would have been unthinkable in an earlier era.

Decisions and Challenges with the Data

Although the end goals for collecting earnings data are fairly straightforward, the work to build these data systems turned out to be more complicated. The government agencies and policymakers that built these systems confronted several restrictions and challenges. Building the data systems was still a worthy pursuit, but these challenges hold lessons for policymakers.

For one, collecting and displaying data on earnings, like in the College Scorecard or state systems such as seekUT in Texas, necessitates that policymakers decide what data to show and how.[14] In building these sites, for example, policymakers had to decide whether students who go on to earn additional degrees (i.e., a master's degree) should still be included in the cohorts for their undergraduate degree program at a specific institution. Including them would conflate their presumably higher earnings with what they would have earned from their undergraduate degree alone; excluding them would provide a less-than-comprehensive assessment of what students who attended that program actually earned. There is no ideal choice, but each results in different information presented to the public. The same is true for the decision about whether to include only students who complete the degree or certificate program or include all who attended, even if they dropped out. The data sites discussed here have in fact gone in opposite directions on exactly these issues.

In other cases, policymakers must decide what to display on websites that are designed as consumer tools. In building the College Scorecard website, the Obama administration opted to mainly feature institutions that offered degree programs, not those offering shorter-term credentials. In an effort likely meant to highlight exactly those types of credentials, the Trump administration adjusted the site so that institutions offering certificates and other shorter-term programs would be more visible to consumers.

In another example, the Obama administration opted to order institutions that appeared through search functions based on student earnings, which pushed for-profit colleges farther down the list. The Trump administration ordered institutions based on graduation rates, which moved for-profit institutions up, even if students' earnings were subpar.

The Obama administration had also included national statistics for median earnings alongside those for each institution displayed in the search results for comparative purposes, but the Trump administration removed those references, arguing they were misleading. Critics claimed that excluding such references was misleading.[15] Regardless of who had the more convincing argument, those who collect and display the data clearly put their thumb on the scale, whether they intend to or not.

Other challenges in collecting and displaying earnings arise from barriers policymakers have intentionally put in place to make data collection more difficult. In some cases, these rules protect privacy, such as when student cohorts are small and information about individuals could be revealed. The current practice is to exclude these cohorts altogether, meaning earnings data for many programs are missing in the datasets, although researchers have suggested solutions to mitigate this issue.[16]

Separately, a provision in federal law also effectively prohibits the ED from collecting data on students who are not participating in the agency's grant or loan programs.[17] Thus, the College Scorecard actually excludes about half of all undergraduate students, or more at some institutions.[18] Of course, repealing that provision would alleviate this issue, but critics argue that the federal government collecting data on students outside the federal aid programs invites unwarranted federal oversight.[19]

Limitations and Adjusting Expectations

Many of the challenges discussed thus far are surmountable or only slightly diminish the value and reliability of earnings data in higher education accountability. However, other limitations are more

intractable and may have a bigger impact on the potential for earnings data to improve our higher education system. These will require policymakers to think more broadly about solutions or rethink how earnings data can be leveraged to ensure a college or a program proves to be a worthwhile investment for students and taxpayers.

Much of the earnings data that have been collected and published in the College Scorecard or through state initiatives aim to inform consumer decisions. In that regard, students and their families are the end users of the data, and their decisions will influence the change in the system. The hope is that they will optimize their choices regarding what school to attend, what degree to pursue, and how much to borrow.

However, the emerging evidence does not lend much support for this view. Differences in earnings among institutions and programs appear—at least in the limited literature—to have little bearing on students' decisions after they are presented with the data.[20] And many students may actually have too few choices in institutions to attend, based on affordability, admissions standards, and other criteria, for earnings data to factor into their choices.

This is not necessarily a failure in the theory that the data can improve the higher education system. Other actors in the system, such as regulators, counselors, and even investors, can and do use the data to influence the system in ways that proponents of earnings data originally imagined. These groups can be additional agents for change because they have a stake in students' outcomes and have as much or more influence on the higher education system as students themselves. Nevertheless, much of the motivation for collecting earnings data assumes that students will be the primary—if not the sole—audience for this information.

In reality, policymakers at all levels of government can use the data to identify institutions with weak outcomes and adopt policies that will incentivize schools to improve or impose restrictions on institutions with such outcomes. While students themselves might not respond strongly to earnings data in their own choices, counselors and advisers who help them make their decisions—especially low-income and first-generation students—are increasingly using this information in their work. And nonprofit organizations that offer private financing such as income share agreements use the data to identify schools where students are likely to get a good return on their investment. Other investors, such as those who finance private for-profit colleges, now scrutinize student earnings data, which imposes its own sort of discipline on how these institutions are managed and what programs they offer. In short, it may not matter if students ultimately do not use the earnings information to make college decisions; these other stakeholders clearly want and need the information and will act on it in their respective ways to protect students from low-quality institutions and programs.

One limitation inherent in the earnings data, however, will likely be more difficult to accommodate than any of the others. Former students' earnings tend to correlate with student demographics, such as family income, race, and gender. Policies and market responses that penalize institutions with lower graduate earnings may hurt the educational options of disadvantaged groups in unforeseeable ways. Understanding those potential effects in advance and developing appropriate policy responses will be key in advancing the use of earnings in higher education accountability.

The Reports in This Collection

This collection of reports expands on these themes with a group of authors who bring a diverse range of perspectives to the discussion. Several reports cover the early work to collect earnings data, revealing not only the promise these initiatives hold but also the internal debates among stakeholders and the technical and legal challenges they confronted. Other reports in the collection hone in on some of the overlooked limitations to what these new data can accomplish, which can help stakeholders and policymakers develop optimal uses for the information. Another set of reports offers case studies on nonconsumer actors in the higher education market, such as counselors, nonprofit organizations, and even private

investors, who are using the data to reshape the higher education landscape.

In the first report, Nicole Ifill of the Bill & Melinda Gates Foundation and Amy Laitinen of New America place the earnings information agenda in its larger context by detailing the historical role of employment and earnings data in federal higher education policy. The authors show that federal policymakers have long pursued data on earnings to inform national policies but that these data's focus has changed over time. Early efforts to collect these data focused on understanding broad economic trends related to vocational training. But after the federal government started providing aid directly to students, policymakers recognized that information on employment and earnings was essential to guard against low-quality programs. The authors explain how that theme has continued through to contemporary policies.

In the second report in this collection, the Higher Education Advisory Group's Michael Itzkowitz provides an important retrospective on how the College Scorecard became the preeminent source for data on student earnings and other outcomes. He takes readers through the genesis and evolution of the College Scorecard, detailing the political context that drove its development and how earnings came to play a prominent role on the site. He also discusses the mechanics of the data collection and the subtle ways the Obama and Trump administrations have each influenced the tool.

The third report in the collection, by Stephanie Huie of the Western Association of Schools and Colleges Senior College and University Commission, provides a similar look back, but on a state-led initiative: the University of Texas System Administration's seekUT tool. This consumer-facing dashboard is designed to help students plan their academic futures and make cost-effective decisions about paying for college. Huie guides readers through the political environment that led policymakers to develop the tool, the challenges of working with wage data at the state and national levels, and the new information the site has been able to provide to students, university stakeholders, and the public.

In the fourth report, the University of Virginia's Diego Briones and Sarah E. Turner examine what newly available data on earnings reveal about educational and workforce training options for older students. Through this lens, they provide a unique analysis of not only data from ED's College Scorecard but also earnings data provided by the Department of Labor's Eligible Training Providers, many of which are postsecondary institutions. Both data sources, the authors find, are plagued by missing data due to the small size of the programs that typically enroll older students. The authors identify other similarities in the data and note that the two agencies could collaborate on their efforts to improve the data's availability, reliability, and usability.

Kristin Blagg of the Urban Institute authors the fifth report in this collection, in which she reviews the emerging literature on how consumers respond to the newly available earnings data for individual programs. She adds to this research by analyzing the extent to which earnings vary between the programs that students might choose from in their geographic location. Overall, her report casts doubt on whether earnings data can influence student choices. She is more hopeful that policymakers, rather than students, will use the data to advance accountability policies and improve the quality of institutions and programs available to students.

The sixth report, authored by Nexus Research and Policy Center's Jorge Klor de Alva, shows that earnings among former students tend to correlate with student demographics, particularly race and income. This poses challenges for policymakers seeking to use earnings data to sanction or reward colleges for their students' earnings outcomes. Klor de Alva explains how a risk-adjusted accountability system can mitigate these issues while still realizing the promise that these new data have to improve outcomes.

In the seventh report, Carrie Warick and Sara Melnick of the National College Attainment Network explore how college advising programs, particularly those focused on low-income and first-generation college students, are incorporating earnings into their programs. Warick and Melnick illustrate that students themselves may not always be the most

important audience for earnings data, as advisers and counselors often play an intermediary role in students' decisions. Warick and Melnick show these actors are increasingly using earnings as a key part of their work to help students decide which institutions and programs are going to offer them the best chances for success. They also suggest recommendations and best practices for how advisers can incorporate earnings information into their own programs and what data policymakers should make available to facilitate these initiatives.

In the eighth report, Kevin James of Better Future Forward and Barry Cynamon of the Student Freedom Initiative outline another way in which intermediaries are using earnings data to help inform students' choices. They detail how organizations such as Better Future Forward rely on student outcomes data to identify high-quality pathways to career success for students and then provide students with affordable financing for those pathways in the form of income share agreements. This innovative model would likely not be possible without policies to make data on student earnings for particular institutions and programs available to the public.

The ninth and final report in the collection, by Tyton Partners' Trace Urdan and higher education journalist Paul Fain, offers a case study in how yet another group—investors—can use earnings data to hold higher education institutions accountable for their outcomes. Specifically, through numerous interviews, Urdan and Fain examine how investors responded to the student earnings information on for-profit colleges that were made available through the Obama administration's gainful employment regulation. They illustrate how little was known about these outcomes, even among sophisticated investors, before the federal government's efforts to make earnings data available. More importantly, they show that making these data available can improve how markets function, which creates disincentives for colleges to operate programs that fail to pay off for students.

Taken together, these reports capture what is clearly a paradigm shift in higher education policy. The reports show how the availability of data on student earnings outcomes at the institution and program level opens up major opportunities to improve educational options for students. That transformation is already underway, just as those who helped make the data available originally intended, but it is clearly in its early stages. As these reports show, stakeholders are only just beginning to use the data to reshape the higher education system, and there is much work to be done to improve and expand this new source of information.

Notes

1. For example, US Bureau of Labor Statistics, "Earnings," September 16, 2021, https://www.bls.gov/cps/earnings.htm#education.

2. US Department of Education, College Scorecard, "University of Iowa," https://collegescorecard.ed.gov/school/?153658-University-of-Iowa&fos_code=1419&fos_credential=3.

3. US Department of Education, College Scorecard, "Northern Virginia Community College," https://collegescorecard.ed.gov/school/?232946-Northern-Virginia-Community-College&fos_code=4706&fos_credential=2.

4. Sophie Haigney, "$78,000 of Debt for a Harvard Theater Degree," *New York Times*, August 7, 2017, https://www.nytimes.com/2017/08/07/theater/harvard-graduate-theater-debt.html; US Department of Education, "Fact Sheet: Department of Education Announces Release of New Program-Level Gainful Employment Earnings Data," https://www2.ed.gov/documents/press-releases/ge-fact-sheet-online.pdf; and US Department of Education, Federal Student Aid, "Gainful Employment Information," https://studentaid.gov/data-center/school/ge.

5. Sarah Wu, "A.R.T. Institute to Shutter for 3 Years After 'Failing' Debt Grade," *Harvard Crimson*, July 28, 2017, https://www.thecrimson.com/article/2017/7/28/art-institute-shutter-three-years/.

6. US Department of Education, "Secretary DeVos Delivers on Promise to Provide Students Relevant, Actionable Information Needed to Make Personalized Education Decisions," press release, November 20, 2019, https://content.govdelivery.com/accounts/USED/bulletins/26d1286.

7. Andrea Fuller and Melissa Korn, "'Financially Hobbled for Life': The Elite Master's Degrees That Don't Pay Off," *Wall Street Journal*, July 8, 2021, https://www.wsj.com/articles/financially-hobbled-for-life-the-elite-masters-degrees-that-dont-pay-off-11625752773; and Anthony DeBarros and Melissa Korn, "Journalism Schools Leave Graduates with Hefty Student Loans," *Wall Street Journal*, September 10, 2021, https://www.wsj.com/articles/journalism-schools-leave-graduates-with-hefty-student-loans-11631275201.

8. US Department of Education, "Program Integrity: Gainful Employment-Debt Measures," *Federal Register* 76, no. 113 (June 13, 2011), 34385–539, https://www.federalregister.gov/documents/2011/06/13/2011-13905/program-integrity-gainful-employment-debt-measures; and US Department of Education, College Scorecard, "Most Recent Data by Field of Study," https://data.ed.gov/dataset/college-scorecard-all-data-files-through-6-2020/resources?resource=ff68afc4-6d23-459d-9f60-4006e4f85583.

9. Andrew Kreighbaum, "DeVos Issues Final Repeal of Gainful Employment," *Inside Higher Ed*, July 2, 2019, https://www.insidehighered.com/quicktakes/2019/07/02/devos-issues-final-repeal-gainful-employment; and US Department of Education, "Negotiated Rulemaking for Higher Education 2021–22," https://www2.ed.gov/policy/highered/reg/hearulemaking/2021/index.html.

10. University of Texas System, "About the Data," https://seekut.utsystem.edu/about-the-data.

11. US Department of Education, "Program Integrity."

12. Andrew W. Lehren and Andrew Martin, "A Generation Hobbled by the Soaring Cost of College," *New York Times*, May 12, 2012, https://www.nytimes.com/2012/05/13/business/student-loans-weighing-down-a-generation-with-heavy-debt.html; Mary Pilon, "Student-Loan Debt Among Top Occupy Wall Street Concerns," *Wall Street Journal*, October 12, 2011, https://www.wsj.com/articles/BL-REB-14922; and Dylan Matthews, "College Is Still a Great Investment. But It's Getting Worse.," *Washington Post*, September 11, 2012, https://www.washingtonpost.com/news/wonk/wp/2012/09/11/college-is-still-a-great-investment-but-its-getting-worse/.

13. White House, "Remarks by the President on College Affordability—Buffalo, NY," press release, August 22, 2013, https://obamawhitehouse.archives.gov/the-press-office/2013/08/22/remarks-president-college-affordability-buffalo-ny.

14. US Department of Education, College Scorecard, website, https://collegescorecard.ed.gov/; and University of Texas System, seekUT, website, https://seekut.utsystem.edu/.

15. Andrew Kreighbaum, "College Scorecard Drops National Comparison Data," *Inside Higher Ed*, October 1, 2018, https://www.insidehighered.com/quicktakes/2018/10/01/college-scorecard-drops-national-comparison-data; and Aarthi Swaminathan, "College Scorecard Ex-Director Says Trump Administration Is Scrubbing Important Information," Yahoo Finance, June 15, 2020, https://finance.yahoo.com/news/trump-administration-college-scorecard-information-145318348.html.

16. US Department of Education, College Scorecard, "Technical Documentation: College Scorecard Institution-Level Data," July 2021, https://collegescorecard.ed.gov/assets/FullDataDocumentation.pdf; and Kristin Blagg et al., *The Feasibility of Program-Level Accountability in Higher Education*, Urban Institute, February 2021, https://files.eric.ed.gov/fulltext/ED613287.pdf.

17. 20 USC § 1015c(a).

18. Author's calculation based on the National Postsecondary Student Aid Study 2016–17, which shows that 46 percent of undergraduates did not receive federal student aid. US Department of Education, Institute of Education Sciences, National Center for Education Statistics, "National Postsecondary Student Aid Study (NPSAS)," https://nces.ed.gov/surveys/npsas/.

19. Amy Laitinen and Clare McCann, *College Blackout: How the Higher Education Lobby Fought to Keep Students in the Dark*, New America, March 2014, https://d1y8sb8igg2f8e.cloudfront.net/documents/college-blackout.pdf.

20. Kristin Blagg et al., *Rethinking Consumer Information in Higher Education*, Urban Institute, July 12, 2017, https://www.urban.org/research/publication/rethinking-consumer-information-higher-education.

The Data Driving Higher Education Reform

THE HISTORICAL ROLE OF EMPLOYMENT AND EARNINGS INFORMATION IN FEDERAL POLICY

Nicole Ifill and Amy Laitinen

Despite seemingly interminable hand-wringing in articles asking whether the cost of college is worth it, the answer is a resounding "yes"—on average. But average students are not paying average prices to go to average programs at average schools. There are only particular students paying particular prices for particular programs at particular schools. For millions of students who enroll—or consider enrolling—in college every year, the question of what college is worth is significant and complicated.

That calculation becomes nearly impossible to make when you realize most students cannot answer basic questions such as how long it will take them to graduate, how much their credential will actually cost, whether they will be able to comfortably pay down their debts, whether they are likely to be in poverty-wage jobs for an extended period, or how much more they are likely to make after graduation than if they don't go to college.

On top of that are public narratives around a student debt crisis, with $1.6 trillion owed by borrowers, persistent media reports of the underemployed college graduate working as a coffee shop barista, and a pandemic that has forced students to attend school online and drained income sources from low-wage workers. Cumulatively, these make it all that much harder for opportunity seekers to make data-informed decisions about college.

As prospective students and their families raise concerns, so do policymakers at all levels. Federal, state, regional, local, and institutional leaders are trying to understand how to better help students reach the American dream of social and economic mobility.

To do this, they have wanted to turn to data. But despite increasing consumer, researcher, and policymaker interest in these topics, state and federal agencies face significant barriers to connecting educational outcomes with employment and earnings information, especially to better understand longitudinal trends in the labor market. Too often, those interested in understanding the value of education or estimating a student's return on investment must rely on incomplete information, whether from federal sources such as the Department of Education or Census Bureau or from college rankings such as those in *US News & World Report* or *Washington Monthly*.

Despite these limits, the state of outcomes data for higher education has improved dramatically in recent years. One of the most significant improvements has arguably been in the reporting of earnings and employment outcomes for each institution of higher education and, increasingly, for specific programs in those institutions. A combination of shifting attitudes and increased capacity have brought what once seemed an impossible task within reach. Executive-branch leadership encouraging the development and use of outcomes data, increasing

Timeline of Key Events in the History of Earnings Data and Higher Education

- 1867: The earliest version of the Department of Education is founded.
- 1870: The predecessor agency to the modern Department of Education begins the first collection of higher education enrollment and degree data.
- 1884: The Bureau of Labor is established.
- 1944: Congress passes the Servicemen's Readjustment Act, also known as the GI Bill of Rights.
- 1952: A House select committee releases a report on its investigation of GI Bill expenditures, finding many programs did not improve employment opportunities.
- 1963: Congress passes the Vocational Education Act, requiring states to develop information on future occupational education requirements.
- 1965: Congress passes the Higher Education Act.
- 1969: The Bureau of Labor Statistics releases its first industry projections.
- 1972: Congress amends the Higher Education Act to extend federal aid eligibility to proprietary (i.e., for-profit) institutions.
- 1975: The Department of Education publishes a regulation, later rescinded, requiring institutions to provide consumer information about employment outcomes.

state-federal data-sharing partnerships, technological advancements in data storage and processing, and an influx in federal funding to support data infrastructure development have all contributed to a promising set of new initiatives that may finally remove these persistent barriers to connecting education to workforce outcomes.

These recent developments represent a realignment in higher education policy. Whereas stakeholders were once focused on college access and completion, today they increasingly aim to scrutinize earnings and employment disparities between specific schools, programs, and students. However, as is often the case with gradual shifts in policy and attitudes, the pivotal moments that brought such changes are underappreciated. Yet it is precisely these moments that can provide important insights for contemporary policy debates over how to achieve the best outcomes for students in our postsecondary higher education system.

How Did We Get Here? Two Different Paths

Early on, federal workforce training programs focused on the importance of labor market information and related longitudinal data, while federal education policy focused inward, on the state and quality of instruction. The first federal legislation that focused on collecting earnings data began in 1884, when Congress established the Bureau of Labor (then housed in the Department of the Interior). The Bureau of Labor was tasked with "collect[ing] information upon the subject of labor, its relation to capital, the hours of labor and the earnings of laboring men and women, and the means of promoting their material, social, intellectual and moral prosperity."[1] The new office, which would eventually become the US Department of Labor, moved quickly to establish a Bureau of Labor Statistics for the assignment.[2]

As early as 1913, the commissioner of labor statistics was promoting vocational training as a corollary to academic education that could provide resources and guidance to unskilled workers and reduce

- 1976: The Bureau of Labor Statistics adds the first questions about postsecondary education to its data collection about industry job projections.
- 1990: Congress passes the Student Right-to-Know and Campus Security Act, requiring collection of data on graduation in higher education.
- 1991: The Nunn Commission of the Senate Governmental Affairs Committee releases a report deriding waste, fraud, and abuse in federal aid programs.
- 2006: The Commission on the Future of Higher Education (i.e., the Spellings Commission) releases a report calling for more data and accountability.
- 2007: Congress passes the America Creating Opportunities to Meaningfully Promote Excellence in Technology, Education, and Science Act, extending federal funds to support P–16 state data systems.
- 2008: Congress passes the Higher Education Opportunity Act, barring the Department of Education from creating a student unit record system, among other things.
- 2009: Congress passes the American Recovery and Reinvestment Act, building on state data systems to further incorporate workforce, higher education, K–12, and early education data.
- 2011: The Department of Education finalizes the first round of gainful employment rules, holding for-profit and nondegree programs to new standards for debt-to-earnings rates.

unemployment.[3] And while the Department of Labor was officially elevated to a cabinet-level agency, what would become the Department of Education was still embedded in the Department of the Interior.[4]

The first data collection that focused on higher education is from the 1869–70 academic year and only included statistics on student enrollment, degrees conferred, and faculty. In these early days of data collection at the Department of Education, the bulk of the information gathered focused on elementary and secondary schools, with only basic enrollment statistics for college-going students. This is unsurprising, given that fewer than 3 percent of the population age 18–24 enrolled in college before the mid-1910s.

Over the subsequent decades, Congress convened several postwar committees that issued reports on education and labor interests, but their focus was on education's benefit to the labor market writ large rather than the benefit to individuals or the payoff of a postsecondary education.[5] While the 1944 passage of the GI Bill spurred a rapid increase in college enrollment of returning service members, corresponding data collection efforts were fairly limited. First, the fall enrollment survey cadence was shifted from biennial to annual. Then major field-of-study details were added to the earned degrees conferred survey in 1948. Awards below the baccalaureate were not added until 1966.

The 1960s ushered in a new wave of education and training legislation that maintained the separate goals of vocational and academic education programs. In response to the 1963 Vocational Education Act requirement that states develop education and training programs in select industries aligned with future occupational education requirements, the Department of Labor began collecting job availability projections by occupation. This connected vocationally oriented higher education to students' return on investment more directly.[6]

The act also expanded vocational education programs to address emerging workforce needs, including funding for fast-growing occupations, four-year work-study and residential vocational schools, and explicit funding for research

- 2012: The Senate Education Committee releases a report on abuses in the for-profit college industry.
- 2014: The Department of Education finalizes the second round of gainful employment rules after the first round is struck down in court.
- 2015: The Department of Education releases the College Scorecard, including the first federally produced, comparable earnings data for institutions of higher education.
- 2017: The first round of official debt-to-earnings rates are released under the gainful employment rules.
- 2019: The Census Bureau and the University of Texas system release the first earnings data under the Post-Secondary Employment Outcomes project.
- 2019: The Department of Education finalizes a new rule rescinding previous gainful employment regulations.

into quality vocational programs.[7] A 1965 Office of Education report noted that one of the fastest-growing segments of the labor market was technical and semiprofessional jobs requiring one to three years of postsecondary education, but it fell short of connecting the implications of increasing postsecondary job demand with outcomes for *specific* institutions of higher education. Instead, the Department of Education was focused on increasing college access and enrollment and, with the passage of the Higher Education Act of 1965, expanding financial assistance to all students enrolling in institutions of higher education. No additional data collection related to so-called "academically focused" education programs was included in the legislation, and another major federal push to increase outcomes measures for institutions of higher education did not happen until the 1990s.[8]

The first legislation to establish authority for vocational data collection and reporting in the Department of Education (via the National Center for Education Statistics) was the Carl D. Perkins Vocational Education Act of 1984.[9] The passage of the second Perkins Act, in 1990, went even further in reflecting the changing views of vocational education on the Hill. It expanded eligibility to all learners and, even more importantly, included explicit objectives to integrate academic and technical education.[10] A mere six weeks later, Congress passed the landmark Student Right-to-Know and Campus Security Act, which required institutions of higher education receiving federal financial assistance to provide data on graduation rates.

While ostensibly focused on the academic performance and graduation rates of student athletes, the legislation opened the door for broader accountability measures. Under the Student Right-to-Know Act, the Department of Education was required to evaluate how it might collect student outcomes data, including "other institutional outcomes that may be appropriate."[11] While much attention is paid to the final result—a cohort-based graduation rate measuring completion within 150 percent of the time expected—the study also explored collecting and reporting employment outcomes data. The report concluded that these data could be gathered by linking to state unemployment insurance wage data but that institutions and states faced significant implementation challenges, including costs and staff capacity.[12] It had taken a century, but the 1990 passage of the Student Right-to-Know Act and the second Perkins Act finally ushered in requirements for aligned reporting on technical and academic programs while increasing outcomes reporting expectations for postsecondary institutions receiving federal financial aid.

While the initial Student Right-to-Know Act data-collection requirements were modest, data on completion became more important to policymakers in the late 2000s. Their efforts included additional reporting requirements for institutions via

the Higher Education Opportunity Act of 2008. And to meet the demand for more comprehensive outcomes data, federal policymakers made significant investments in data infrastructure, focusing on connecting individual-level data records over time (i.e., longitudinally) to connect student progress and learning across early learning, K–12, postsecondary education, and entry into the workforce.

Lawmakers expanded an existing grant program for states to construct longitudinal K–12 data systems in the American Reinvestment and Recovery Act (ARRA), passed in the wake of the Great Recession. States could cover the costs of not just incorporating K–12 education data but also connecting these data to postsecondary, workforce, and prekindergarten data.

While agencies focused on responding to federal legislation with broader data-collection efforts and corresponding support and technical assistance for data infrastructure development, they lagged behind bad actors in the field trying to game the system of accountability every step of the way. Increasingly, policymakers pointed to rising student loan debt as a driver for new accountability measures, given that increasing numbers of students left school with debt and no degree or graduated into a labor market that increasingly demands advanced credentials.

For Black students in particular, the combination of a racial wealth gap that leaves many with high levels of debt and a job market that persistently discriminates against them in terms of well-paying opportunities has forced questions about the equity of higher education beyond long-standing questions concerning access to elite colleges. Political candidates have made student debt a cornerstone of stump speeches and platforms. And lawmakers regularly introduce legislation ostensibly designed to tackle the rising costs of college while playing a Sisyphean game of whack-a-mole, disproportionately focused on the predatory behavior of proprietary colleges while only recently expanding those measures to a broader set of programs at public and private nonprofit institutions.

Protecting Students and Taxpayers

Policymakers have always been interested in employment outcomes—mainly to ensure that career-oriented colleges are providing the economic benefits for which students and taxpayers are explicitly paying—and particularly so during recessionary periods and following both World Wars. One reason this interest may be growing more rapidly now, including a focus on more traditional academic programs, is that postsecondary students are borrowing more often—and taking out larger loans—than they once did to attend college.[13]

Some of the earliest federal investments in higher education were made to veterans through the 1944 GI Bill, an unprecedented program that helped millions of World War II veterans enroll in college and job-training programs. These programs were explicitly aimed at helping veterans successfully enter, or reenter, the civilian workforce. But in the years after the passage of the GI Bill, government officials reported skyrocketing numbers of programs in recreational and other fields for which no jobs would be available.[14]

Outrage among policymakers was high, and in 1950, Congress passed a law to create the House Select Committee to Investigate Educational, Training, and Loan Guaranty Programs Under the GI Bill. A 1952 report issued by this committee did not mince words, particularly when it came to the job-training programs funded through the GI Bill. Lawmakers concluded that "many [proprietary] schools have offered courses in fields where little or no employment opportunity existed"[15] and that many of those institutions "offered training of doubtful quality."[16]

But with future rounds of federal investment came continued problems with ensuring that postsecondary programs—and especially job-training programs—would pay off. In 1965, Congress passed the Higher Education Act, signed into law as part of President Lyndon Johnson's Great Society.[17] The legislation expanded student aid in the form of the Basic Educational Opportunity Grant Program (since renamed the Pell Grant Program) and a new federal student loan program that went beyond service

members and veterans to include other students from low- and middle-income families.[18] Right as lawmakers made this new investment in students, a new wave of veterans returned from the wars in Korea and Vietnam, and the combination sparked another wave of concern among lawmakers about the value provided by taxpayer-financed postsecondary education programs.[19]

By the early 1970s, the Federal Trade Commission had become active in enforcement against proprietary institutions it alleged were deceiving students, particularly about their job prospects.[20] The Education Department in 1975 issued regulations for student loan programs, which, among other things, required all institutions with a vocational focus to provide prospective students with information such as the average starting salary for students employed in the field for which programs purported to prepare students.[21]

The focus on employment outcomes has long been largely limited to vocational programs—and still is today. The discussion about using earnings data nearly always centered on programs that defined themselves as career-oriented, since economic benefits are explicit promises of those programs. There is little evidence that lawmakers in the past ever seriously considered holding liberal arts or academically oriented programs to the same bar.

In part, that is likely because of the heady promises from liberal arts institutions and their advocates that a postsecondary education would help the learner to appreciate the meaning of life.[22] They argue that an emphasis on earnings necessarily means sacrificing "the opportunity to promote the benefits of a liberal arts education that define [liberal arts colleges'] institutional missions and . . . educational values."[23]

In part, though, postcollege earnings developed as an important metric of vocational programs for policymakers because many of those programs, particularly where there was evidence of trouble, were in the for-profit (or proprietary) sector. Policymakers were concerned with the experiences of students who enrolled in the for-profit sector and saw inflated promises about landing in a well-paying career burst when they enrolled in low-quality institutions that under-delivered.

Despite this consternation among regulators about the quality of for-profit institutions, the Higher Education Amendments of 1972 expanded eligibility for programs such as the Pell Grant and federal student loans to proprietary institutions, provided they offered a program of at least six months "to prepare students for gainful employment in a recognized occupation."[24] In this sense, Congress essentially adopted labor market outcomes as a defensive strategy to try to limit the worst abuses by proprietary institutions that they had seen in the earlier decades.

But the gainful employment requirement was largely unenforced at the time, and, fueled by the expansion of federal student aid dollars to proprietary institutions, the problems persisted and increased.[25] In 1991, the Senate Governmental Affairs Committee, led by Sen. Sam Nunn (D-GA), published an astonishing report detailing abuses in the federal student aid programs. The report found "overwhelming evidence" that the federal student loan program had been exploited by shady providers who left "hundreds of thousands of students with little or no training, no jobs, and significant debts that they cannot possibly repay." The report said, "The American taxpayer has been left to pick up the tab for the billions of dollars in attendant losses."[26]

Years later, little had changed. In 2012, Sen. Tom Harkin (D-IA) published yet another investigation into for-profit colleges, this time finding that proprietary college alumni were unemployed at rates above the national average and that for-profit college dropouts had unemployment rates only slightly higher than the rates for graduates of for-profit associate- and certificate-granting schools.[27] The report also found that while "for-profit colleges market themselves as career focused, and entice students to enroll by offering the prospect of better jobs and better wages . . . some for-profit colleges' job placement statistics have been plagued by irregularities and falsified data."[28]

Since then, the equity implications of uneven labor market outcomes have grown even greater within and beyond the proprietary college sector. Over the past several decades, the share of Black and Hispanic young adults enrolled in higher education has increased

substantially,[29] yet those students are disproportionately enrolled in programs at for-profit and two-year institutions, where the payoff is typically lower than that for a four-year degree program.[30] Department of Education and Social Security Administration data on certificate programs at public and for-profit colleges revealed that many of these led graduates to typical wages below even that of a full-time minimum wage worker.[31]

Those who leave college with debt but no degree are far more likely to default on their loans. Black students are at a far greater risk of leaving school before they graduate; for the 2010 entering cohort, just 21 percent of Black students graduated from a bachelor's degree program within four years, compared with 45 percent of White students.[32] Black students are also more likely to borrow (and to borrow more) than White students and owe even more in student loan debt years after leaving school, while White borrowers have begun to pay down their loans at that time.[33] And Black students face labor market discrimination—far beyond the amount or type of education that Black students earn[34]—that further suppresses their wages after leaving college, forcing those students to shoulder more heavily the costs of low-value postsecondary education.[35]

The Quest for Better Data

While policymakers have long been concerned about postcollege labor market outcomes, such data have not always been easily within reach. Efforts to measure the salaries or job-placement rates of graduates have relied largely on self-reported information from surveys run by institutions.

In addition to being expensive and burdensome for the school to run, earnings surveys have significant limitations. To ensure the data are meaningful and accurate, surveys require high response rates from former students, but research has shown people are unlikely to respond to surveys asking for income information.[36] Institutional surveys are also challenging to conduct longitudinally (to show the income trajectories of the same group of alumni), and wages are self-reported, which contributes to sometimes-significant errors in the data.[37]

Similarly, job-placement information is often difficult to access outside of institutional surveys, which face the same challenges as earnings surveys in ensuring sufficient response numbers to make the results reliable and in validating the responses are accurate.[38] Moreover, definitions vary from institution to institution and survey to survey, making it virtually impossible for prospective students—and policymakers—to compare the information fairly across colleges.[39]

These types of labor market outcome surveys have been used to undermine efforts to ensure even a bare minimum bar of quality. For instance, a law passed in 1974 required career-oriented schools participating in the GI Bill program to demonstrate to the Department of Veterans Affairs (VA) that at least half of veterans who had graduated in the prior two years had found jobs. Leaving aside that more than 10,000 programs failed even to report job-placement rates to the VA, the news out of the 26,000 for-profit and correspondence school programs that did report seemed positive. About 97 percent of programs met the modest 50 percent job-placement rate. But Congress later concluded, through its oversight work, that states and the VA never reviewed or verified the data.[40]

The VA also wrote implementation regulations that created loopholes schools could use to render this already low bar effectively meaningless. A Federal Trade Commission report found the VA's rules made it so

> only those graduates who are available for [job] placement be included within the final computation [of the 50 percent placement figure]. Moreover, schools are free to remove from the data any student who did not possess the requisite vocational intention, was on active duty, pregnant, changed marital status, was unwilling to move to a new locality, or who for other "valid" reasons was not included within the [school's] survey. Each school freely defines for itself what each of these exclusions should entail, and it is little wonder that the surveys have many schools

eliminating the majority of their students from the final computations.[41]

The chronic weaknesses of efforts to understand students' post-program success, or lack of success, have been allowing schools to largely define their own employment outcomes and failing to even verify what is being self-reported. It has left the door wide open to specious employment measures or calculations to bolster job-placement rates. In more recent cases, colleges have counted individuals as employed when, in reality, they were in positions that lasted only a few days; counted part-time jobs as successful employment; counted out-of-field employment as job placements; excluded certain students from being counted in a particular cohort; or directly employed (or arranged employment for) students in temporary positions solely for the purposes of counting them as a success in the job-placement rate.[42] In still other cases, colleges have lied about their placement rates, reporting the wrong numbers to states, accreditors, and students.[43]

Unintended Consequences and Gaming

Self-reported earnings or job-placement rates are not the only outcome measures with significant weaknesses. Other metrics are similarly complex to calculate reliably or to rely on as markers of higher education quality or value, particularly in the context of accountability. This is increasingly the case for some measures as policies and student or borrower behavior change.

For instance, the rates at which students graduate from their programs have long been considered an important marker of institutions' success in serving students. Yet attempts to measure and hold schools of all types accountable for them, particularly through state "performance-based" funding models that award some state funds based on certain outcome measures such as completion rates, have had unintended consequences.

Numerous studies find that state performance-based funding formulae have resulted in increases in offerings and completions of short-term certificate programs at the expense of longer (associate degree) programs, which tend to have a higher payoff.[44] Some institutions have also tightened their admissions processes to weed out those likeliest to struggle to graduate in response to the state funding formula changes. That has major consequences for equity, since low-income students and students of color are most likely to be excluded.[45]

Completion rates are also difficult to measure accurately given varying degrees of rigor across institutions. A study of grade inflation, for instance, found that for-profit colleges were particularly likely to engage in such practices to retain students, especially with associate degree programs, which could also boost graduation rates.[46]

Student loan default rates are another common metric used in higher education. This is because all colleges participating in the federal financial aid programs are required under the law to maintain a default rate, called the cohort default rate, below a particular threshold.[47] However, given the severe consequences of failing the cohort default rate measure—potential loss of eligibility for billions in federal aid dollars each year—many institutions have hired so-called default management companies that reach out to students at risk of default and ensure they avoid tripping the default wire. Often, these companies use the lowest-burden way to remain out of default, sometimes pressuring students to enter a deferment or forbearance on their loans that will provide only a short-term fix.[48]

The Government Accountability Office analyzed data on student loan borrowers and found that between 2009, when Congress began measuring the cohort default rate over three years instead of two years, and 2013, the share of borrowers using long-term forbearances doubled.[49] When the default rate measurement window is extended to five years, it is clear that those efforts are mostly just pushing off eventual default rather than giving borrowers long-term stability; the national cohort default rate climbs from 10 percent to nearly 16 percent in the last two years of the measurement and to one in four borrowers from for-profit colleges.[50] This suggests the

cohort default rate may not always be a comprehensive measure of which students are struggling most.

Policymakers and researchers have also looked to repayment rates—the rate at which a cohort's student loans are being paid down or the percentage of borrowers who have paid back at least $1 of the principal they originally borrowed (i.e., who are making payments large enough to cover interest accrual)—to identify whether most borrowers at a school can repay their loans or whether they are stuck in forbearances, deferments, or delinquencies that will increase the long-term costs of their loans.[51] But with borrowers flocking to income-driven repayment plans in large numbers and some of those plans generous enough that many borrowers make little progress in the early years of their repayment, those, too, have raised questions about the usefulness of that metric in judging institutions' value to students.[52]

Actual postcollege earnings gleaned from reliable administrative data are harder to game and may reveal more about students' ultimate outcomes and successes than the previously discussed measures do. Data on employment or job placement may answer the basic question of whether students are working but not whether they are also earning a family-sustaining wage in those jobs. Only earnings data can answer that question. Especially as more students borrow, and borrow more, to pay for college, the question of whether that education is affordable—whether the return is worth the investment—takes on heightened importance.

The largest flaws in earnings data have been minimized with more sophisticated uses of administrative data. As previously noted, colleges' earnings surveys are burdensome, inaccurate, and imprecise. Not all state data systems include robust links to workforce data, many exclude colleges outside of the public systems, and earnings data available to states typically derive from unemployment insurance databases that exclude the growing sector of self-employed Americans, service members and other federal employees, and those who cross borders to work in another state.[53]

As the federal government has grown more capable of using its administrative datasets—including establishing data-matching agreements among the Education Department, the IRS, and the Social Security Administration to produce institution- and program-level earnings data—access to such information has improved exponentially. Moreover, those federal administrative datasets lower the barriers to good information by reducing the onus on institutions and ensuring the data are more accurate, comparable, and comprehensive.[54]

Earnings and employment data are also important to many students. A 2015 nationally representative survey of prospective and recently enrolled college students age 16–40 revealed that improving job opportunities, making more money, or getting a good job were important reasons for going to college for nine of 10 respondents.[55] The same survey found that, while the most significant factors in selecting a college related to the costs, program offerings, and location of the school, a job-placement rate—how many graduates find full-time employment in the field within six months—was important to nearly one in four respondents. That is far more than the share who said they were concerned about starting salaries (12 percent), graduation rates (11 percent), or student loan default rates (5 percent).[56]

A 2016 survey from the Pew Research Center confirmed that, particularly among those with relatively little or no college experience, Americans believe the main mission of higher education is to teach specific skills and knowledge needed in the workplace.[57] Focus-group testing conducted on behalf of the Department of Education found that job-placement rates and annual earnings, along with completion rates, were among the metrics most salient to students.[58]

Building and Fixing State Data Systems

The federal investment in examining earnings data extended to supporting states—both in building the infrastructure required to measure them and in efforts to use the information in new and compelling ways. Since 2005, the Department of Education has granted over $800 million to states for improving

technical infrastructure through the Statewide Longitudinal Data Systems Grant Program.[59]

While early rounds focused on connecting data for K–12 students longitudinally, Congress later began to encourage states to extend their data systems. This was done first with the America Creating Opportunities to Meaningfully Promote Excellence in Technology, Education, and Science Act in 2007 (which provided funding for states to build data collection into a system that captured postsecondary education, known as "P–16"—prekindergarten through up to four years of postsecondary education) and then again with the 2009 ARRA (which prompted states to establish multisector data linkages).[60]

Those systems frequently fall short of policymakers' needs. State earnings data, typically linked from state unemployment insurance databases, and other state postsecondary data systems are limited in their coverage. For example, a 2019 National Bureau of Economic Research paper comparing the earnings data from in-state data sources to a national data source housed at the Census Bureau estimates that omitting out-of-state workers understates the earnings gains made by college graduates at public flagship institutions by 26 percent. Out-of-state mobility bias increases over time, particularly for the highest earners, 50 percent of whom are working out of state after 10 years.[61]

Nonetheless, states have gone to great pains to make their data useful—and used. To help fill the gaps in earnings data, some states have developed cross-state data exchanges that allow the systems to follow students' outcomes even if they move and work across state lines. Nearly every state and territory uses the data to report to state policymakers, plan for the future, and provide information to their public institutions. Some states also use labor market outcomes such as job-placement rates in their performance-based funding models, allocating at least some of their aid for higher education based on those metrics.[62]

The Department of Education Pushes for Better Data

As federal lawmakers made funding available to states to improve their longitudinal data systems, the Department of Education increasingly called for more and better information about how students were faring. In 2006, the Commission on the Future of Higher Education, also known as the Spellings Commission, pushed the field further when it released a highly influential report calling for reforms that would ensure postsecondary education was preparing students for a 21st-century workplace.[63] The report called for new measures to ensure colleges offered rigorous and high-quality academics, and it called for the creation of a consumer information-focused federal data system. The proposed data system would gather and publish information about colleges' persistence and completion rates, costs, and learning outcomes, to provide students and families with a better foundation for their college decision-making.

Despite highlighting the impact a higher education degree has on lifelong earnings, however, the commission declined to make any recommendations about ensuring institutions provide economic value to students—perhaps signaling controversy in the higher education community. But even a more limited set of outcomes raised concerns among some in the higher education lobbying industry. The National Association of Independent Colleges and Universities, representing private nonprofit institutions, pushed Congress to ban the kind of data system the Spellings Commission had called for. This ensured that the Education Department could not collect and report essential information on institutional outcomes, including the learning outcomes called for in the Spellings Commission or the earnings data that grew in demand in the years that followed.[64]

This so-called student unit record ban has been challenging for federal, state, and institutional policymakers looking to access comprehensive federal outcomes data. The ban prohibits the Department of Education from collecting information on students who do not receive Department of Education

aid, such as Pell Grants and loans. This can result in some misleading public data. Only 60 percent of students in public four-year colleges receive federal financial aid, and only about 40 percent of students in public two-year colleges do.

Despite the ban, federal policymakers have sought to make use of what administrative data they did have. In 2009, the Education Department, under the Obama administration, doubled down on the use of earnings data and launched an accountability-focused regulatory effort to finally define what it meant for a vocational program to lead to "gainful employment in a recognized occupation."[65]

The legislative provision, which had been in the Higher Education Act since 1972, applied only to for-profit programs and public and nonprofit certificate programs. But while the Education Department had previously defined what it considered a "recognized occupation," the agency said during negotiations that it was concerned "there is no standard for what constitutes 'gainful employment'"—and there had not been any substantive way to define the term since the 1970s, when the term was added to the law.[66] In June 2011, the Education Department finalized a regulation that required institutions to pass both a loan-repayment-rate test and a debt-to-earnings ratio test.[67]

Given the centrality of earnings to this gainful employment rule, it was crucial to get the most accurate possible data and the actual earnings of students in particular programs. So, the Education Department collaborated with the Social Security Administration to produce unofficial rates that revealed thousands of programs leaving big swaths of their students earning below $20,000 per year.[68]

The rule did not stick. The for-profit college association[69] filed suit against the regulations, and a judge struck down a piece of the rule (the repayment-rate test) that sent the entire accountability rule crumbling.[70] Shortly thereafter, the Education Department set about conducting a new rulemaking process.[71] The new rules, finalized in October 2014, set a stricter test of students' earnings by excluding the repayment-rate measure altogether and requiring institutions to instead pass one of the debt-to-earnings tests.[72]

Putting the rules into effect was no easy feat, and it was not until November 2016 that the first earnings data were released under the new regulations (and it took another three months before the administration released the first year of debt-to-earnings ratios, just days before the end of President Barack Obama's term).[73] The rules stipulated that no institutions would lose federal financial aid eligibility from a single year of failing programs; following the change in presidential administrations, additional years of data were never released.[74]

Despite the de-prioritization of the new rules by the incoming Trump administration and lack of enforcement, remarkably, the new rules still had an immediate positive impact on affected colleges' decision-making about their course offerings and other strategic changes. Interviews with leaders of for-profit colleges during the regulatory process found that institutions planned to ensure they could meet the test through a number of actions, including finding ways to lower student indebtedness and improving career services.[75]

Research into the offerings of for-profit and certificate programs before and after the gainful employment rules took effect found that low-performing programs and colleges were more likely to close down altogether. The study's authors posited that the release of the data prompted many of those colleges to realize how poorly some of their programs were performing for the first time or, perhaps, resulted in additional pressure from accrediting agencies, states, and other regulators and actors with influence.[76] Even Harvard University shut down an overpriced graduate theater program after it failed the gainful employment test due to astonishing amounts of debt and low annual salaries.[77]

If the Education Department had relied on estimated earnings of particular programs rather than actual earnings of program participants, the good, the bad, and the ugly would not have been laid bare so clearly for policymakers and institutions to see. Measuring actual earnings data changed institutional behavior significantly.

As mentioned, the Trump administration quickly initiated plans to delay implementation of the Obama administration's gainful employment rules and established a new rule to take it off the books altogether. Seizing on the results from a 2017 court ruling requiring the Department of Education to relax its rules on appeals for the cosmetology programs that had filed the lawsuit,[78] Education Secretary Betsy DeVos rewrote the gainful employment guidance to allow colleges to replace the administrative earnings data with institutional surveys.[79]

In July 2019, the Education Department finally published a new rule that it argued was "the best way to improve transparency and inform students and parents," by pursuing "the development of a comprehensive, market-based, accountability framework" on its consumer information website, the College Scorecard. And it rescinded the prior gainful employment rules. Importantly, the memorandum of understanding that allowed for data sharing between the Social Security Administration and the Department of Education to produce the earnings data for gainful employment had already been terminated.[80] (The IRS and the Education Department have a separate data-sharing agreement to power the earnings data produced for the College Scorecard.)

Whatever the Biden administration does on this front, it is clear that the production of earnings data under the gainful employment rules was an earthshaking event in the career-education world. In 2014, during the rulemaking process, the Education Department estimated over 37,000 gainful programs were in operation; by 2017, when the first data were released, it estimated the number of programs had fallen under 30,000.[81] While not all these closures were due to the gainful employment rules themselves, the fact that failing programs were most likely to close highlights the rule's impact.[82]

College Scorecard

The Obama administration's efforts to report data on employment outcomes for students goes well beyond the gainful employment regulations. In August 2013, President Obama announced his administration's intention to create a new college and university rating system to supplant popular consumer rankings systems, such as the *US News & World Report* ranking. He described the effort as a way to reduce the numbers gaming inherent in private rankings that emphasize selectivity and to focus on opportunity, debt repayment, on-time graduation, and workforce outcomes as essential components to the new system.[83]

Unsurprisingly, the announcement created quite a stir. A wide-ranging list of membership associations such as the American Council on Education, the National Association of System Heads, and the American Association of Community Colleges expressed concerns, pointing to challenges with data accuracy, federal overreach, and potential negative impacts on college access for low-income students.[84]

Two years later, after numerous focus groups, comment periods, and rounds of institutional engagement, the administration quietly abandoned the ratings component in favor of releasing a new transparency tool. The College Scorecard allowed students and parents to compare two- and four-year colleges and universities across all sectors on critical data elements. These included the average annual cost of attendance, graduation rates, and—nationally available for the first time—postcollege earnings, based on the tax records of students who received any federal financial aid (not including other forms of federal aid such as GI Bill benefits or tax credits) to attend college.[85]

Despite the difficult road to release, the initial 2015 College Scorecard website and its trove of newly publicly available data served as a turning point in federally provided student outcomes data. Unlike the gainful employment regulations that were swiftly scaled back and ultimately rescinded under the Trump administration, the College Scorecard has been popular across political parties. In fact, the website and its underlying data were expanded during the Trump administration to include program-level earnings data, the lack of which was one of the most common criticisms of the initial release (which provided only institution-level outcomes). Its success

in changing college-going behavior among prospective students remains a topic of disagreement, with researchers making widely different conclusions about its utility to consumers.[86]

While the data are leaps and bounds better than what had been publicly available before, they still have significant limitations.[87] But that has mostly served as a catalyst for policymakers, with members of Congress on both sides of the aisle demanding better student outcomes data in the years subsequent to the initial 2015 release.

Census Partnerships Provide Another Approach

The existing governance of state unemployment insurance records means that states have virtually always been unable to access individual-level administrative employment data for those working outside the state, those working for federal agencies (including the military), or self-employed workers. With federal attention focused elsewhere, individual federal departments began exploring other opportunities for improving state data coverage, beginning in the late 1990s, when the Census Bureau partnered with several universities to combine Maryland state wage data with individual and business data collected by the census, including demographic information. Following the success of this effort, other states began to take notice, and the Local Employment Dynamics (LED) partnership was born.

Despite its voluntary nature, the LED has been wildly successful, with 47 states and the District of Columbia participating a mere 20 years after the pilot.[88] Its success is a testament to the value states find in having more complete workforce data. While the partnership was initially focused on improving employment data access for individual states, the enthusiastic participation of so many spurred the Census Bureau to create the Longitudinal Employment-Household Dynamics program.

This program combines unemployment insurance earnings data and employer and industry data from the Bureau of Labor Statistics' Quarterly Census of Employment and Wages program with other census, survey, and tax information housed at the Census Bureau. Through this program, states now have access to comprehensive workforce data for approximately 96 percent of wage and salary jobs, and the Census Bureau can release several public-use data tools online to highlight job-to-job flows and cross-state worker migration patterns.[89]

Institutional use of this rich set of administrative data for measuring postsecondary outcomes was finally made possible in 2019 through an experimental Census Bureau data product called Post-Secondary Employment Outcomes (PSEO).[90] PSEO was spearheaded by researchers at the University of Texas (UT) at Austin who were interested in adding program-level earnings and employment data for UT graduates to an online resource that helps students and families make informed decisions about academic careers (named seekUT). PSEO allows the public to access program-level earnings information one, five, and 10 years after graduation. After two years of development and negotiation, the first data were released in spring 2018.[91]

This collaboration between the UT system and the Census Bureau was the first of its kind and, similar to the initial LED partnership two decades prior, has spurred other states and state systems to pursue similar data-sharing agreements with the Census Bureau. Now, only three years later, the Census Bureau has released undergraduate earnings data for over a dozen states, with other states in negotiations to do the same. While initially developed as part of the Census Bureau's research and development arm, federal policymakers would need to secure line-item funding to sustain the pilot and expand to all 50 states.

Coleridge Initiative Builds Public-Private Partnerships

In addition to the recent federal activity and federal-state partnerships described above, another emerging platform for connecting education and workforce data has emerged out of the 2017 final

report recommendations of the US Commission on Evidence-Based Policymaking, a body created by law.[92] Incubated at New York University, the Coleridge Initiative's Administrative Data Research Facility (ADRF) is a secure, cloud-based computing platform that supports federal, state, and local agency collaboration. Seed funding provided by the Office of Management and Budget and supported by the Census Bureau has created a promising new voluntary platform that addresses the cross-state data-sharing needs of policymakers at all levels while maintaining stringent privacy protocols. One recent pilot project has focused on the very issue described in these pages—connecting education and workforce data within and across states.

In March 2021, the Kentucky Center for Statistics (KYstats) released a new, publicly available Multi-State Postsecondary Report dashboard that allows users to review earnings and employment outcomes for public colleges and universities.[93] While differentiating student outcomes by credential is a well-established practice, this new resource also disaggregates graduate earnings data by in- and out-of-state employment. Without the voluntary partnership through the ADRF platform, KYstats' ability to access the individual-level earnings data of neighboring states, such as Ohio, was limited.

The new data highlighted, for example, that Northern Kentucky University saw three-year overall employment percentages for graduates increase from 37 percent to 81 percent when including other states' administrative data, a huge increase not previously measurable with available state data sources.[94] Now, Kentucky policymakers have increasingly rich data to use for decision-making, and by using the ADRF platform, this type of information is possible for any state.

The Next Reform Agenda

Even with all the policy changes and data improvements that have been made over the past two decades, there is still much to do to improve the use and interpretation of earnings data in higher education.

Data challenges persist, and there are several critical gaps to understanding institution- and program-level outcomes for students. One critical gap is reporting outcomes for "non-completers"—those who leave school before graduating. Postsecondary institutions have done a good job arguing that their responsibility for student outcomes lies solely with those who complete the offered program in its entirety. The 36 million Americans with some college education but no degree would beg to differ, as the cost of higher education continues to rise and loan debt for these students becomes increasingly difficult to pay back.[95]

While it is reasonable to expect that non-completers will have different (and possibly less favorable) employment outcomes than their peers, it is imperative that colleges and universities make clear how partial program completion affects students who leave, especially as students leverage federal financial aid upfront, with the intention of completing. With almost half of first-time students leaving college before earning a degree, focusing on completers tells only part of the story.

Similarly, combining employment outcomes with requirements for industry licensure and certification is another critical shortcoming in current outcomes data reporting. Researchers and policymakers have struggled to answer the question of whether positive earnings gains after graduating with career or technical credentials are attributable to the degree or to extant licensure or certification requirements needed to enter the chosen field. Often, students' pathways to a well-paying job include a combination of skills and competencies not solely derived from their academic education.

Without comprehensive longitudinal data that connects the historically siloed categories of workforce training and degree completion, drawing a direct line from educational attainment to labor market returns is challenging. The partnerships highlighted above help mitigate this challenge, but more work (and state participation) is required to adequately account for the various ways adults apply skills to their jobs. Similarly, the alignment between field of study and occupation and industry placement is less

well understood. Students who are employed outside their field of study may have worse employment outcomes; more research is needed to understand whether this challenge is because of the available jobs in the market or because of the credential received.

While cross-state and state-federal partnerships have increased the information available to policymakers, these partnerships—and broader federal efforts to increase transparency—are constrained by the 2008 ban on a student-level data network. For example, while more than a quarter of undergraduate students are enrolled in private institutions, only 10 states collect postsecondary data from colleges and universities in the private sector.[96]

With growing interest in outcomes data from a variety of consumers and policymakers has come growing pressure to address data limitations, particularly at the federal level. And the most notable movement in this regard is a piece of legislation that would count all students by removing the Department of Education ban on collecting student-level data and mandating increased cross-agency data sharing and robust privacy protections, with the goal of reporting on the aggregate postcollege outcomes for all colleges and universities participating in federal financial aid programs. The College Transparency Act has been introduced in the past three consecutive congressional sessions, with significant bipartisan and bicameral support behind it.[97] The act also includes requirements around disaggregating data by race or ethnicity, socioeconomic status, and veteran status to address current limitations of data reported in the federal Integrated Postsecondary Education Data System.

With pressures on all sides for better information about how students fare after leaving college, it is no wonder that so many in the higher education community have converged around the concept of examining employment outcomes—especially for programs that promise to prepare students directly for a specific career. After all, as far back as the post–World War II rush to higher education, lawmakers have been asking whether taxpayers and students get what they pay for. With concerns about college costs and college value continuing to rise, the pressure for outcomes data is unlikely to relent. The growing availability of information for policymakers is likely to eventually push institutions to respond to demands for greater value.

Acknowledgments

We thank Clare McCann for the contributions she made to this report while at New America.

Notes

1. Joseph P. Goldberg and William T. Moye, *The First Hundred Years of the Bureau of Labor Statistics* (Washington, DC: Government Printing Office, 1985), https://fraser.stlouisfed.org/files/docs/publications/bls/bls_2235_1985.pdf.
2. Goldberg and Moye, *The First Hundred Years of the Bureau of Labor Statistics*.
3. Goldberg and Moye, *The First Hundred Years of the Bureau of Labor Statistics*, 124.
4. While the Department of Education was created as a stand-alone federal agency in 1867, it was quickly relegated to an Office of Education that fell under numerous other federal agencies over the years. Finally, in 1979, Congress passed the Department of Education Organization Act and restored the office to a full cabinet-level agency, where it has remained ever since. Throughout this report, we refer to the "Department of Education," even where the agency may have been in operation in a different form at the time. US Department of Education, "An Overview of the U.S. Department of Education," September 2010, https://www2.ed.gov/about/overview/focus/what.html.
5. See, for example, *Unemployment in the United States*, 70th Cong. III–XV, (1929) (Causes of Unemployment), https://fraser.stlouisfed.org/title/unemployment-united-states-98. See also the 1938 Advisory Committee on Education guidance on career counseling that led to the Occupational Outlook Program, a precursor to the Occupational Outlook Handbook. Advisory Committee on Education, *Report of the Committee*, February 1938, https://babel.hathitrust.org/cgi/pt?id=umn.31951d02987102t&view=1up&seq=3.
6. US Department of Health, Education, and Welfare, Office of Education, *The Vocational Education Act of 1963*, Government Printing Office, 1965, https://files.eric.ed.gov/fulltext/ED019402.pdf.
7. Smith-Hughes Vocational Education Act, 20 USC § 11 (1917); and George Barden Act, 20 USC § 15h (1946).
8. One small exception is the introduction of questions about educational attendance for 16- to 24-year-olds in the 1976 Bureau of Labor Statistics' Current Population Survey. This additional data collection increased understanding of the intersection of education choice and its impact on employment, helping with understanding labor market trends in general, but no corresponding changes addressed the role institutions play in preparing students for the workforce.
9. Carl D. Perkins Vocational Education Act, Pub. L. No. 98-524.
10. Gerald Hayward and Charles Benson, "Vocational-Technical Education: Major Reforms and Debates 1917–Present," US Department of Education, Office of Vocational and Adult Education, 1993, https://files.eric.ed.gov/fulltext/ED369959.pdf.
11. Student Right-to-Know and Campus Security Act, Pub. L. No. 101-542.
12. Roslyn Korb, *Postsecondary Student Outcomes: A Feasibility Study*, US Department of Education, Office of Educational Research and Improvement, National Center for Education Statistics, February 1992, https://www.google.com/books/edition/Postsecondary_Student_Outcomes/8QKQA2eMhFIC?hl=en&gbpv=0. Implementation took another seven years, and graduation-rate data was first collected in 1997–98.
13. US Department of Education, Institution of Education Sciences, National Center for Education Statistics, "Percentage of Full-Time, Full-Year Undergraduates Receiving Financial Aid, and Average Annual Amount Received, by Type and Source of Aid and Selected Student Characteristics: Selected Years, 1999–2000 Through 2015–16," 2020, https://nces.ed.gov/programs/digest/d20/tables/dt20_331.35.asp?current=yes.
14. David Whitman, "Truman, Eisenhower, and the First GI Bill Scandal," Century Foundation, January 24, 2017, https://tcf.org/content/report/truman-eisenhower-first-gi-bill-scandal/.
15. Investigating Education and Training Programs Under GI Bill, H.R. 1375, 82nd Cong., 2nd sess., February 14, 1952, 3, https://drive.google.com/file/d/0B7aqI03eYEUtZzJYWnpRbVkwZE0/view.
16. Investigating Education and Training Programs Under GI Bill.
17. Higher Education Act of 1965, Pub. L. No. 89-329.
18. Lumina Foundation and Institute for Higher Education Policy, *Student Loans: How Did We Get Here? Growth of Federal Student Loans*, https://ihep.org/wp-content/uploads/2016/01/uploads_docs_pubs_loans_viewing_guide_final_web.pdf.

19. David Whitman, "Vietnam Vets and a New Student Loan Program Bring New College Scams," Century Foundation, February 13, 2017, https://tcf.org/content/report/vietnam-vets-new-student-loan-program-bring-new-college-scams/.

20. Whitman, "Vietnam Vets and a New Student Loan Program Bring New College Scams."

21. US Department of Health, Education, and Welfare, Office of Education, "Rules and Regulations: Guaranteed Loan Program," *Federal Register* 40, no. 35 (February 20, 1975): 7596, https://drive.google.com/file/d/0B7adHdBE6w3mbGp3ZHRncW1HdzQ/view.

22. Ellen Condliffe Lagemann and Harry Lewis, *What Is College for? The Public Purpose of Higher Education* (New York: Teachers College Press, 2011).

23. Cate Rowen, "So Much More Than Salary: Outcomes Research in the Liberal Arts," *New Directions for Institutional Research* 2016, no. 169 (September 6, 2016): 52, https://onlinelibrary.wiley.com/doi/epdf/10.1002/ir.20169.

24. Education Amendments of 1972, Pub. L. No. 92-318.

25. Whitman, "Vietnam Vets and a New Student Loan Program Bring New College Scams."

26. Abuses in Federal Student Aid Programs, S. Rept. 102nd Cong., 1st sess., May 17, 1991, 10, https://drive.google.com/file/d/0B7aqI03eYEUtQzRuX0JCQ3BIT3c/view.

27. For Profit Higher Education: The Failure to Safeguard the Federal Investment and Ensure Student Success, S. Prt. 112-37, 112th Cong., 2nd sess., July 30, 2012, 148, https://www.govinfo.gov/content/pkg/CPRT-112SPRT74931/pdf/CPRT-112SPRT74931.pdf.

28. For Profit Higher Education: The Failure to Safeguard the Federal Investment and Ensure Student Success, 197.

29. US Department of Education, Institution of Education Sciences, National Center for Education Statistics, "Percentage of 18- to 24-Year-Olds Enrolled in College, by Level of Institution and Sex and Race/Ethnicity of Student: 1970 Through 2019," 2020, https://nces.ed.gov/programs/digest/d20/tables/dt20_302.60.asp.

30. US Department of Education, Institution of Education Sciences, National Center for Education Statistics, "Fall Enrollment of Males and Females and Specific Racial/Ethnic Groups in Degree-Granting Postsecondary Institutions, by Control and Classification of Institution and Percentage of U.S. Resident Enrollment in the Same Racial/Ethnic Group: 2018," 2019, https://nces.ed.gov/programs/digest/d19/tables/dt19_306.40.asp?current=yes.

31. US Department of Education, "Fact Sheet: Department of Education Announces Release of New Program-Level Gainful Employment Earnings Data," https://www2.ed.gov/documents/press-releases/ge-fact-sheet-online.pdf.

32. US Department of Education, "Fact Sheet: Focusing Higher Education on Student Success," press release, https://www.krwg.org/post/fact-sheet-focusing-higher-education-student-success; and US Department of Education, Institution of Education Sciences, National Center for Education Statistics, "Indicator 23: Postsecondary Graduation Rates," February 2019, https://nces.ed.gov/programs/raceindicators/indicator_red.asp.

33. Judith Scott-Clayton, "Shrinking Racial Gaps in Student Debt and Default: Recommendations to Congress," Columbia University, Teachers College, Community College Research Center, March 6, 2019, https://ccrc.tc.columbia.edu/easyblog/shrinking-racial-gaps-student-debt-default-congress.html.

34. William A. Darity Jr. and Patrick L. Mason, "Evidence on Discrimination in Employment: Codes of Color, Codes of Gender," *Journal of Economic Perspectives* 12, no. 2 (Spring 1998): 63–90, https://pubs.aeaweb.org/doi/pdfplus/10.1257/jep.12.2.63.

35. Judith Scott-Clayton and Jing Li, "Black-White Disparity in Student Loan Debt More Than Triples After Graduation," Brookings Institution, October 20, 2016, https://www.brookings.edu/research/black-white-disparity-in-student-loan-debt-more-than-triples-after-graduation/.

36. Rachel Zinn, *Classroom to Career: Leveraging Employment Data to Measure Labor Market Outcomes*, Institute for Higher Education Policy, May 2016, 3, http://sites.ihep.org/sites/default/files/uploads/postsecdata/docs/resources/leveraging_employment_data_0.pdf; and Jeffrey C. Moore, Linda L. Stinson, and Edward J. Welniak Jr., "Income Measurement Error in Surveys: A Review," *Journal of Official Statistics* 16, no. 4 (2000): 331–61, https://www.scb.se/contentassets/ff271eeeca694f47ae99b942de61df83/income-measurement-error-in-surveys-a-review.pdf.

37. Zinn, *Classroom to Career*, 4.

38. Institute for College Access & Success, *Of Metrics and Markets: Measuring Post-College Employment Success*, December 2018, 15, https://ticas.org/wp-content/uploads/legacy-files/pub_files/of_metrics_markets.pdf.

39. RTI International, "Report and Suggestions from IPEDS Technical Review Panel #34: Calculating Job Placement Rates," 3, https://www2.ed.gov/policy/highered/reg/hearulemaking/2012/ipeds-summary91013.pdf.

40. David Whitman, *The Cautionary Tale of Correspondence Schools*, New America, December 10, 2018, 26, https://d1y8sb8igg2f8e.cloudfront.net/documents/The_Cautionary_Tale_of_Correspondence_Schools_2018-12-10_132917.pdf.

41. Federal Trade Commission, Bureau of Consumer Protection, *Proprietary Vocational and Home Study Schools. Final Report to the Federal Trade Commission and Proposed Trade Regulation Rule (16 CFR Part 438)*, December 10, 1976, 281, https://files.eric.ed.gov/fulltext/ED134790.pdf.

42. Institute for College Access & Success, *Of Metrics and Markets,* 17, Table 5.

43. Institute for College Access & Success, *Of Metrics and Markets,* 17, Table 5; For Profit Higher Education: The Failure to Safeguard the Federal Investment and Ensure Student Success, 3–4; *California v. Corinthian College*, Case No. BC374999, Consent Judgment entered July 31, 2007; *State of Colorado v. Alta Colleges d/b/a Westwood College, et al.*, Case No. 12 CV1600, Consent Judgment entered March 14, 2012; *State of New York v. Career Education Corp.*, Assurance of Discontinuance entered August 19, 2013; *Commonwealth of Kentucky v. National College*, complaint filed September 27, 2011; and *Commonwealth of Kentucky v. Sullivan University System d/b/a Spencerian College*, complaint filed January 16, 2013.

44. Federal Trade Commission, Bureau of Consumer Protection, *Proprietary Vocational and Home Study Schools*, 19.

45. Amy Y. Li, "Lessons Learned: A Case Study of Performance Funding in Higher Education," Third Way, January 25, 2019, https://www.thirdway.org/report/lessons-learned-a-case-study-of-performance-funding-in-higher-education.

46. Andrew F. Baird, J. Scott Carter, and J. Micah Roos, "Seeking Evidence of Grade Inflation at For-Profit Colleges and Universities," *Sociological Focus* 52, no. 4 (October 31, 2019): 12, https://www.tandfonline.com/doi/full/10.1080/00380237.2019.1668321?scroll=top&needAccess=true.

47. A default rate of 30 percent within three years of entering repayment in three consecutive years or 40 percent in a single year is considered failing and puts the institution at risk of losing federal financial aid eligibility.

48. US Government Accountability Office, *Federal Student Loans: Actions Needed to Improve Oversight of Schools' Default Rates*, April 2018, https://www.gao.gov/assets/gao-18-163.pdf.

49. US Government Accountability Office, *Federal Student Loans*, 22, Figure 6.

50. Ben Miller, "The Student Debt Problem Is Worse Than We Imagined," *New York Times*, August 25, 2018, https://www.nytimes.com/interactive/2018/08/25/opinion/sunday/student-debt-loan-default-college.html.

51. Ben Miller, "Getting Repayment Rates Right," Center for American Progress, July 10, 2018, https://www.americanprogress.org/issues/education-postsecondary/reports/2018/07/10/453199/getting-repayment-rates-right/; Tiffany Chou, Adam Looney, and Tara Watson, "Measuring Loan Outcomes at Postsecondary Institutions: Cohort Repayment Rates as an Indicator of Student Success and Institutional Accountability" (working paper, National Bureau of Economic Research, Cambridge, MA, February 2017), https://www.nber.org/papers/w23118; and Andrew Kreighbaum, "Trying Anew to Jump-Start Overhaul of Higher Ed Law," *Inside Higher Ed*, February 5, 2019, https://www.insidehighered.com/news/2019/02/05/alexander-lays-out-vision-new-higher-ed-law.

52. Johnathan G. Conzelmann, Nichole D. Smith, and T. Austin Lacy, "The Tension Between Student Loan Accountability and Income-Driven Repayment Plans," Brookings Institution, July 11, 2016, https://www.brookings.edu/blog/brown-center-chalkboard/2016/07/11/the-tension-between-student-loan-accountability-and-income-driven-repayment-plans/.

53. John Armstrong and Katie Zabrack, *Assessing and Improving State Postsecondary Data Systems*, Institute for Higher Education Policy, May 2016, http://sites.ihep.org/sites/default/files/uploads/postsecdata/docs/resources/state_postsecondary_data_systems.pdf.

54. David A. Bergeron, *Leveraging What We Already Know: Linking Federal Data Systems*, Institute for Higher Education Policy, May 2016, http://sites.ihep.org/sites/default/files/uploads/postsecdata/docs/resources/linking_federal_data_systems.pdf. Federal earnings data available through the IRS, for instance, include self-employed workers and federal employees (including service members) and can be matched to identify cross-state workers.

55. Rachel Fishman, *Deciding to Go to College: 2015 College Decisions Survey: Part I*, New America, May 28, 2015, 6, https://www.newamerica.org/education-policy/policy-papers/deciding-to-go-to-college/.

56. Fishman, *Deciding to Go to College*, 9.

57. Pew Research Center, *The State of American Jobs,* October 6, 2016, 77–84, https://www.pewresearch.org/social-trends/2016/10/06/5-the-value-of-a-college-education/.

58. Holly Bozeman and Meaghan Mingo, *Summary Report for the Gainful Employment Focus Groups,* Westat, February 10, 2016, https://www2.ed.gov/about/offices/list/ope/summaryrptgefocus216.pdf.

59. Julia Bloom-Weltman, "Statewide Longitudinal Data Systems (SLDS) Survey Analysis: Descriptive Statistics," US Department of Education, Institution of Education Sciences, National Center for Education Statistics, October 2019, 31, Table A-18, https://nces.ed.gov/pubs2020/2020157.pdf.

60. America Competes Act of 2007, Pub. L. No. 110-69; and American Recovery and Reinvestment Act of 2009, Pub. L. No. 111-5.

61. Andrew Foote and Kevin Stange, "Attrition from Administrative Data: Problems and Solutions with an Application to Higher Education" (paper presented at the Education Program Meeting, Cambridge, MA, November 2019), https://conference.nber.org/conf_papers/f131000.pdf; and Brian T. Prescott and Patrick Lane, *Fostering State-to-State Data Exchanges*, Institute for Higher Education Policy, May 2016, http://sites.ihep.org/sites/default/files/uploads/postsecdata/docs/resources/fostering_state-to-state_data_exchanges.pdf.

62. Li, "Lessons Learned."

63. US Department of Education, *A Test of Leadership: Charting the Future of US Higher Education*, September 2006, https://www.learningoutcomesassessment.org/wp-content/uploads/2019/08/SpellingsReport.pdf.

64. Clare McCann and Amy Laitinen, *College Blackout: How the Higher Education Lobby Fought to Keep Students in the Dark*, New America, March 2014, https://www.luminafoundation.org/files/resources/collegeblackoutfinal.pdf.

65. Definition of Institution of Higher Education for Purposes of Student Assistance Programs, 20 USC § 1002 (2006).

66. US Department of Education, "Issue Paper #6: Team 1—Program Integrity Issues," 2009, 13, https://www2.ed.gov/policy/highered/reg/hearulemaking/2009/integrity-session1-issues.pdf.

67. US Department of Education, "Program Integrity: Gainful Employment-Debt Measures," *Federal Register* 76, no. 113 (June 13, 2011): 34385–539, https://www.federalregister.gov/documents/2011/06/13/2011-13905/program-integrity-gainful-employment-debt-measures.

68. From the glossary: The higher of the median or mean annual earnings for the gainful employment program's former students who completed the gainful employment program in the cohort period. Libby A. Nelson, "Missing the Mark on 'Gainful,'" *Inside Higher Ed*, June 26, 2012, https://www.insidehighered.com/news/2012/06/26/education-department-releases-data-gainful-employment-rule; and US Department of Education, Federal Student Aid Office, "Gainful Employment Electronic Announcement #37—Release of 2011 Gainful Employment Informational Rates to Institutions," press release, June 22, 2012, https://fsapartners.ed.gov/knowledge-center/library/electronic-announcements/2012-06-22/gainful-employment-electronic-announcement-37-release-2011-gainful-employment-informational-rates-institutions. The earnings averages are provided by the Social Security Administration. US Department of Education, Federal Student Aid Office, "Information About the Gainful Employment Downloadable Spreadsheet," 2012, https://studentaid.gov/data-center/school/ge/data.

69. The association representing many for-profit colleges was then known as the Association of Private Sector Colleges and Universities; it is now called Career Education Colleges and Universities.

70. *Association of Private Colleges and Universities v. Arne Duncan and the US Department of Education*, F. Supp. 2d 133 (D.D.C. 2012). The repayment-rate provision was struck down, and because it was a critical element of the rule, it necessitated reregulating. A subsequent ruling also struck down the reporting requirements because they required gainful employment programs to submit data on all students, not just federal financial aid recipients, which conflicted with the student unit record ban. *APSCU v. Duncan*, 930 F. Supp. 2d 210 (D.D.C. 2013). Details in email from Dan Zibel (vice president, chief counsel, and cofounder of National Student Legal Defense Network), March 18, 2021.

71. US Department of Education, "Negotiated Rulemaking Committee; Public Hearings," *Federal Register* 77, no. 84 (May 1, 2012): 25658, https://www.govinfo.gov/content/pkg/FR-2012-05-01/pdf/2012-10488.pdf.

72. US Department of Education, "Program Integrity: Gainful Employment," *Federal Register* 79, no. 211 (October 31, 2014): 64890–5103, https://www.regulations.gov/document/ED-2014-OPE-0039-2390. The two debt-to-earnings ratios measure (1) the annual

earnings relative to the borrowers' debt for a given program and (2) the discretionary earnings available to borrowers relative to their debt for the program.

73. White House, "Fact Sheet: Department of Education Announces Release of New Program-Level Gainful Employment Earnings Data," press release, 2016, https://www2.ed.gov/documents/press-releases/ge-fact-sheet-online.pdf; and US Department of Education, "Ed. Dept. Releases Final Debt-to-Earnings Rates for Gainful Employment Programs," press release, January 9, 2017.

74. Programs had to fail twice before losing eligibility.

75. Guilbert C. Hentschke and Shirley C. Parry, "Innovation in Times of Regulatory Uncertainty: Responses to the Threat of 'Gainful Employment,'" *Innovative Higher Education* 40, no. 2 (April 2014), https://www.researchgate.net/publication/271921676_Innovation_in_Times_of_Regulatory_Uncertainty_Responses_to_the_Threat_of_Gainful_Employment.

76. Robert Kelchen and Zhuoyao Liu, "Did Gainful Employment Regulations Result in College and Program Closures?," *Education Finance and Policy*, February 1, 2021, 1–51, https://direct.mit.edu/edfp/article/doi/10.1162/edfp_a_00340/97144/Did-Gainful-Employment-Regulations-Result-in.

77. Kevin Carey, "Programs That Are Predatory: It's Not Just at For-Profit Colleges," *New York Times*, January 13, 2017, https://www.nytimes.com/2017/01/13/upshot/harvard-too-obamas-final-push-to-catch-predatory-colleges-is-revealing.html.

78. *American Association of Cosmetology Schools v. Elisabeth DeVos*, Case 1:17-cv-00263-RC. The suit, brought by the American Association of Cosmetology Schools, argued that tax data are only as reliable as individuals' tax filings, which might understate alumni actual earnings, particularly in fields where under-the-table tipped income is common.

79. Center for American Progress, "Statement: Changes to Gainful Employment Are Extralegal and Don't Prioritize Student Interests, Says CAP's Ben Miller," press release, August 17, 2017, https://www.americanprogress.org/press/statement/2017/08/17/437151/statement-changes-gainful-employment-extralegal-dont-prioritize-student-interests-says-caps-ben-miller/.

80. In fact, it appears that when the Education Department accessed earnings data from the Social Security Administration (SSA) for an illegal purpose (i.e., to determine whether and how much loan forgiveness to provide to borrowers whose schools had lied to them), the SSA terminated the memorandum of understanding. Andrew Kreighbaum, "Agencies at Loggerheads over Gainful-Employment Data," *Inside Higher Ed*, December 6, 2018, https://www.insidehighered.com/news/2018/12/06/education-department-says-data-dispute-behind-failure-enforce-gainful-employment.

81. US Department of Education, "Ed. Dept. Releases Final Debt-to-Earnings Rates."

82. Kelchen and Liu, "Did Gainful Employment Regulations Result in College and Program Closures?"

83. White House, "Remarks by the President on College Affordability—Buffalo, NY," press release, August 22, 2013.

84. Michael D. Shear and Tamar Lewin, "On Bus Tour, Obama Seeks to Shame Colleges into Easing Costs," *New York Times*, August 22, 2013, https://www.nytimes.com/2013/08/23/us/politics/obama-vows-to-shame-colleges-into-keeping-costs-down.html; and Michael Stratford, "Staking Out Positions," *Inside Higher Ed*, November 21, 2013, https://www.insidehighered.com/news/2013/11/21/higher-education-associations-stake-out-positions-ratings-system.

85. Michael Shear, "With Website to Research Colleges, Obama Abandons Ranking System," *New York Times*, September 13, 2015, https://www.nytimes.com/2015/09/13/us/with-website-to-research-colleges-obama-abandons-ranking-system.html.

86. Kristin Blagg et al., *Rethinking Consumer Information in Higher Education*, Urban Institute, July 12, 2017, https://www.urban.org/research/publication/rethinking-consumer-information-higher-education; and Michael Hurwitz and Jonathan Smith, "Student Responsiveness to Earnings Data in the College Scorecard," *Economic Inquiry* 56, no. 2 (February 22, 2018): 1220–43, https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3127898.

87. For example, only about one in four students attending college in California is counted in the College Scorecard, largely because the state provides generous financial support and few students augment that support with federal financial aid. Unfortunately, a potential California community college student using the Department of Education's tool would not know that the presented student outcomes exclude nearly three-quarters of its students. It is also worth noting, but not necessarily apparent to consumers, that students who receive other significant federal benefits—including tax benefits, GI Bill dollars, or Department of Defense Tuition Assistance dollars—are not reflected in Department of Education data.

88. US Census Bureau, Center for Economic Studies, Longitudinal Employer-Household Dynamics, "State Partners," October 9, 2020, https://lehd.ces.census.gov/state_partners/.

89. Christina Peña, "Making Wage Data Work: Creating a Federal Resource for Evidence and Transparency," National Skills Coalition, https://www.nationalskillscoalition.org/wp-content/uploads/2021/03/WDQC_MakingWageDataWork_web.pdf.

90. US Census Bureau, Center for Economic Studies, Longitudinal Employer-Household Dynamics, "PSEO Coverage Map," 2015, https://lehd.ces.census.gov/data/pseo_experimental.html.

91. University of Texas System, "First-of-Its-Kind Collaboration Unveils Nationwide Earnings of Graduates by Program of Study and Institution," press release, March 26, 2018, https://utsystem.edu/news/2018/03/26/first-its-kind-collaboration-unveils-nationwide-earnings-graduates-program-study.

92. Commission on Evidence-Based Policymaking, *The Promise of Evidence-Based Policymaking*, September 2017, https://bipartisanpolicy.org/wp-content/uploads/2019/03/Full-Report-The-Promise-of-Evidence-Based-Policymaking-Report-of-the-Comission-on-Evidence-based-Policymaking.pdf.

93. Kentucky Center for Statistics, "Multi-State Postsecondary Report," https://kystats.ky.gov/Reports/Tableau/2021_MSPSR.

94. WTVQ News Desk, "First-of-Its-Kind Analytics Tool Helps Colleges Eliminate Blind Spots in Jobs and Salary Data," March 17, 2021, https://www.wtvq.com/2021/03/17/first-of-its-kind-analytics-tool-helps-colleges-eliminate-blind-spots-in-jobs-and-salary-data/.

95. Paul Fain, "Some College, No Degree," *Inside Higher Ed*, October 31, 2019, https://www.insidehighered.com/news/2019/10/31/new-data-36-million-americans-who-left-college-without-credential.

96. Christina Whitfield, John Armstrong, and Dustin Weeden, *Strong Foundations 2018: The State of State Postsecondary Data Systems*, State Higher Education Executive Officers Association, 2019, https://postsecondarydata.sheeo.org/wp-content/uploads/2019/04/SHEEO_StrongFoundations_18.pdf.

97. Most recently, the College Transparency Act was reintroduced in the 117th Congress as S. 839 in the Senate and H.R. 2030 in the House.

Building the College Scorecard

A TOOL TO ASSESS VALUE AND AID CONSUMER CHOICE

Michael Itzkowitz

Some people may assume that the federal government has been assessing the outcomes of higher education institutions for decades. Considering the approximately $120 billion in federal grants and loans that are disbursed to colleges every year, you would think that lawmakers have a general idea of whether it is being used effectively and efficiently to move students up the socioeconomic ladder.[1] However, the effort to gather federal data on whether individual institutions are actually preparing their students to enter and succeed in the workforce has only occurred recently. Until 2015, there were no federal data on the number one reason students attend college: to earn more than they would have otherwise by obtaining a postsecondary credential.[2]

One of the most notable efforts to measure college outcomes began in 2006 under President George W. Bush.[3] Bringing together a group of education and industry experts, Education Secretary Margaret Spellings formed a commission that cited concern that higher education in the United States was falling behind its foreign competitors.

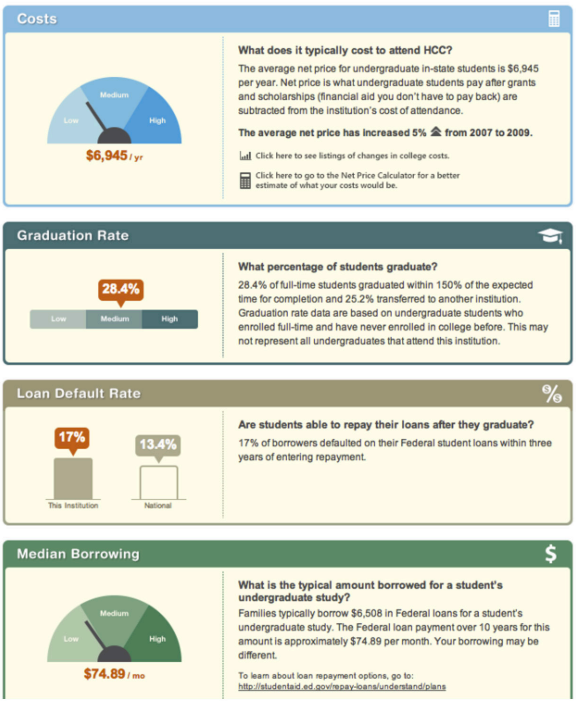
One solution offered was to create a public database of institutional outcomes. This would clarify the haziness of holding institutions accountable for how well they serve students. The thought was that higher education institutions would have more incentive and a vested interest in improving student outcomes if such information were publicly available to those pursuing a postsecondary credential. While this was a starting point, the project didn't come to fruition until years later.

In 2008, Congress made progress on helping students make better college choices. Through the Higher Education Opportunity Act, it directed the US Department of Education (ED) to add information to its College Navigator website, its main college search tool at the time.[4] Some of the specifics included the cost for students to attend, the change in annual tuition, and the percentage of students who completed their credential within 150 and 200 percent of the time expected at institutions across the US.[5] However, the legislation still lacked a directive to produce information on post-enrollment earnings for students.[6] That information would eventually be made available for the first time through a different initiative: the College Scorecard.

The Initial Scorecard

While the federal government provided billions in subsidies to help keep college more affordable, there was limited accountability to ensure institutions kept costs down and provided good outcomes for students. Citing the need to keep college accessible and ensure value for middle-class families, President Barack Obama announced the creation of the College Scorecard during his State of the Union address in 2013. Specifically, he said that his administration would "release a new 'College Scorecard' that parents and students can use to compare schools based on a simple criteria—where you can get the most bang for your educational buck."[7]

Figure 1. 2013 College Scorecard



Source: White House, "Obama Administration Launches College Scorecard," press release, February 13, 2013, https://obamawhitehouse.archives.gov/blog/2013/02/13/obama-administration-launches-college-scorecard.

While information on graduation rates and cost had been previously available, there was limited information on whether a degree actually offered a return on investment to students. Nor was it available in a centralized, consumer-friendly website. The Obama administration had begun a process of measuring the debt and earnings of a subset of college programs a few years earlier, but the College Scorecard would move to expand beyond that—providing post-enrollment earnings for every federally funded institution across the US.

During its initial release, the College Scorecard presented only four key pieces of information to prospective students: costs, completion rates, cohort default rates, and the average amount borrowed. (See Figure 1.) It also promised to make a fifth piece of information available in the near future: the earnings potential that each institution provided its former students.[8] All this information was important in helping understand college performance, but each piece alone did not provide a comprehensive picture of whether an institution offered a good return on investment. That was the underlying motivation for the College Scorecard: to put everything in one place and add the crucial elements that can answer the return-on-investment question.

To be sure, the information available before the College Scorecard's development was still useful. Cost is, of course, important. Ultimately, students want to enter an institution they can afford and leave with the least amount of debt possible. However, some institutions are less expensive but still leave students with limited to no economic returns. Conversely, some institutions cost more, but the earnings premiums help students recoup the costs of the credential quicker than more affordable options.

Completion rates are also critical, as they are correlated with higher earnings and the ability to pay down college debt. Some colleges boast 90 percent completion rates, while others show only one of 10 students completing their credential.[9] However, completion rates do not tell the full story: There are hundreds of schools that show students graduating yet still earning less than someone with no college experience whatsoever.[10] Economically, those degrees simply are not worth it.

Lastly, students are rightly concerned with the amount of debt they will incur at each institution and whether they will be able to pay it back. However, those who incur more debt are often able to manage it more effectively; they are more likely to have been in school longer and earned a credential. Conversely, those who incur the least amount of debt are also the most likely to default on their college loans, as they are often the students who started a college program and took on debt but left with no degree in hand.[11]

For these reasons, obtaining data on how much students earn after attending an institution was necessary to evaluate whether students were actually getting good "bang" for their "educational buck."

Rating and Sanctioning Colleges

In the years immediately following President Obama's announcement about developing a scorecard, the ED set out to collect the earnings information needed to make it a reality. But before that process was complete, the White House announced a bolder idea—to provide a federal rating for each college based on the outcomes they produce.

Beyond only making this information available to prospective students, President Obama suggested a policy that tied college outcomes to financial incentives for institutions. During a speech at the University at Buffalo in the fall of 2013, he said, "It is time to stop subsidizing schools that are not producing good results."[12] Being that institutions of higher education receive over $100 billion annually through federal grants and loans, this policy—if enacted—could have big consequences for colleges around the country.[13]

The idea was this: First, the federal government would produce ratings with information gathered through the College Scorecard. Then, the Obama administration would work with Congress to pass legislation tying federal student aid access to the institutions' outcomes. If an institution produced poor results for too long, it would not be able to receive these federal subsidies. However, if an institution remained affordable and provided good value to its students, it could be rewarded with extra federal money to fund its operations.[14]

While this idea seemed logical on its face, it was not going to come without significant pushback from the thousands of institutions that rely on federal subsidies to operate or the politicians with colleges in their districts that could potentially be in jeopardy of funding cuts. To put this in perspective, some institutions receive as much as 90 percent of their students' tuition funding from the federal government,[15] so withholding federal grants and loans could be a death sentence. And from a political perspective, an institution closing in a congressperson's district comes with consequences—a reduced workforce with, potentially, thousands of jobs lost. In other words, it is a tough sell to presidents of institutions and those tasked with creating the legislation President Obama proposed.

Beyond an institution losing access to federal dollars, a ratings system could cast a negative light on institutions, as it would ultimately present them as being either poor performing, mediocre, or good. Being that the federal government was interested in taking on this endeavor, you could imagine that the uncertainty in the process of creating a ratings system left institutional administrators uneasy, to say the least.

For example, what if you were the college president at an open-access institution that traditionally enrolled underserved students? How would the federal government take your students' college readiness into consideration? And what other schools would an institution like yours be compared to in order to ensure fairness? These are concerns that the administration would have to consider over the next 18 months as it prepared its plan to present to the broader higher education community.

Building and selling the idea of a college ratings system was no easy task, either logistically or politically. Over the next year and a half, the higher education branch of Obama's ED worked tirelessly, meeting with constituents, presenting options, and gathering feedback on the president's broad proposal. Federal officials conducted more than 160 outreach sessions with institutional leaders and advocacy organizations to gather input, garner political support, and inform how a ratings system could ensure transparency, accountability, and equity in the US higher education system.[16] Topics included which institutions should be included, how institutions should be compared, which metrics they should be rated on, and how the ED should recognize improvement over time. The ED also released a draft proposal in December 2013 and put out a "Request for Information," which received more than 140 comments from individuals, researchers, organizations, and institutions.[17]

Many of the most influential institutional advocates and political players in Washington, DC, expressed strong opposition to the idea. For example, Molly Broad, president of the American Council on

Education—the top college lobbying group—argued that there were too many limitations to fairly rate institutions against each other, saying that "several of the data points that the Department is likely to include in a ratings system, such as retention and graduation rates, default rates and earnings data—are flawed."[18]

Other critics worried that using earnings data to evaluate colleges could also result in institutions discontinuing lower-paying programs that have high societal value, such as social work or early childhood education. Opposition was also shared by Sen. Lamar Alexander (R-TN), the top Republican senator on the Committee on Health, Education, Labor, and Pensions. He went as far as to block any efforts to create a ratings system through legislation and even questioned the ED's ability to do so. He deemed the idea a "taxpayer popularity contest" that would ultimately be used to "pick winners and losers." He also expressed uncertainty about whether it was appropriate for the federal government to be involved in such a role.

The Revamped 2015 College Scorecard

Following the criticisms directed at the ratings idea, and with the unlikelihood that any bill that tied federal student aid to college performance would be able to pass Congress, the ED eventually backed away from creating a college ratings system. Rather than rating institutions of higher education and determining whether they offered good, mediocre, or poor value to students who enroll, the administration refocused its efforts on providing the most information possible to students and families.

The goal was to provide descriptive and comparable data on institutional outcomes in an easy-to-understand format—an iterative process that has changed the presentation of the college search tool time and time again. But by 2015, the ED was ready to launch a more advanced version of the initial College Scorecard. And the ED now had the most important piece of information that students consider when choosing to pursue a postsecondary education credential—the actual earnings of those who attended each higher education institution across the US.[19]

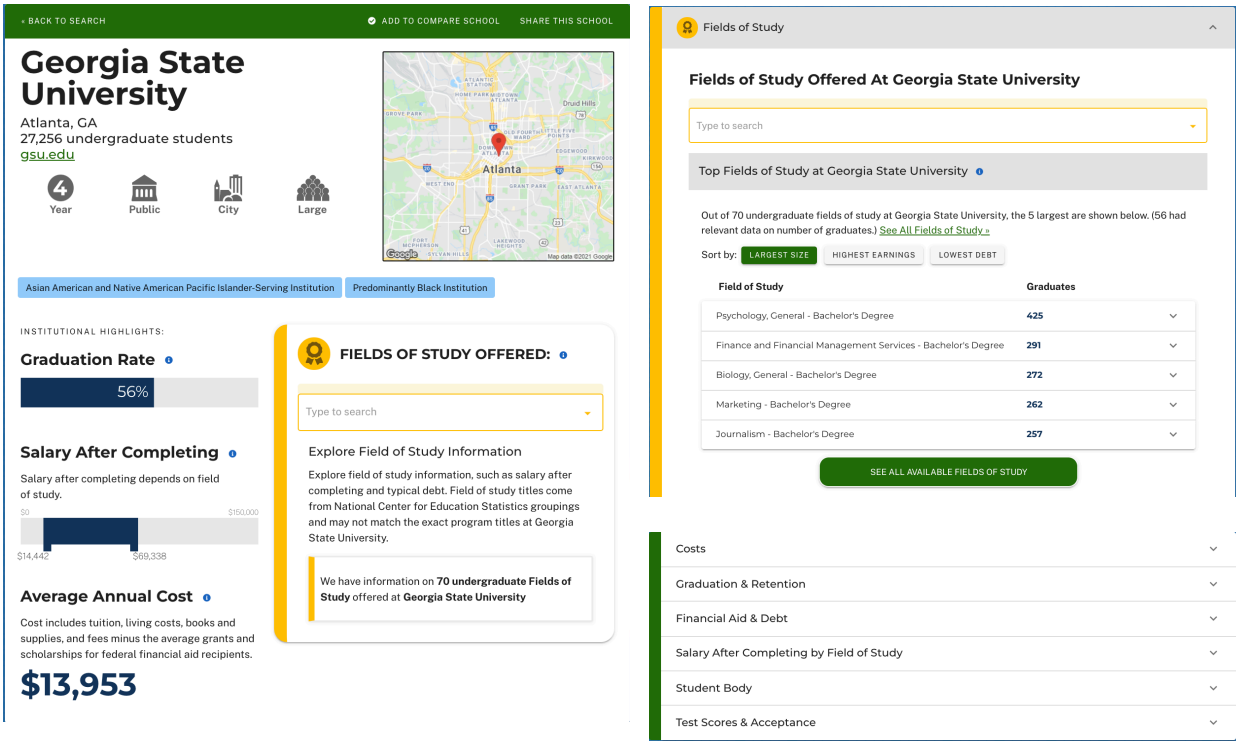
Consumers who visited the revamped website could now see whether most students graduate, the debt they took out, and—for the first time ever—the post-enrollment earnings of former students of each institution. Incorporating actual wage data was a crucial piece of information for prospective students to better ensure they were getting the best bang for their educational buck, as the president had proposed two years earlier.

For example, looking at the College Scorecard today, if students are interested in attending Georgia State University, they can search for the institution on the College Scorecard website and quickly see that it costs approximately $15,000 per year to attend, 57 percent of students graduate within eight years of entering, and graduates make between $14,000 and $69,000 shortly after graduation, depending on their field of study (Figure 2).[20] Digging deeper, users can also find the typical debt that students leave with, the proportion of borrowers who are paying down their loans, and the socioeconomic diversity of the student body. Furthermore, new advancements allow users to scroll through each specific major and the amount that graduates earn two years after they complete the program.

Beyond the consumer-facing part of the College Scorecard was a trove of data on higher education outcomes, much of which had never been publicly released. The College Scorecard data—available in spreadsheet format to the public—provided over 1,700 data points on approximately 7,000 institutions across the US.[21] This allowed analysts and policymakers to examine institutional outcomes for specific student demographics that were previously unavailable.

For example, if someone wanted to find out whether there were differences in loan repayment rates between students who complete their degree versus those who do not, now they could. Researchers and policymakers could also dig deeper, exploring these—and similar outcomes—for first-generation students and students from low- or high-income backgrounds or the disparities between those who

Figure 2. College Scorecard Interface



Source: US Department of Education, College Scorecard, "Georgia State University," https://collegescorecard.ed.gov/school/?139940-Georgia-State-University.

identified themselves as male or female, just to name a few. Approximately one million users now visit the College Scorecard annually.[22]

The Data Behind the College Scorecard

The College Scorecard is unique in that it pulls multiple data sources from different parts of the federal government into one comprehensive database. It also adds new data on student outcomes—such as loan repayment rates and post-enrollment earnings—into a centralized, more consumer-friendly website that is accessible to the general public.

Previously, the most widely used data from the ED came from the Integrated Postsecondary Education Data System (IPEDS).[23] Students and researchers could access IPEDS data through an ED website—the College Navigator—but the site was often viewed as clunky and difficult to use.[24] It contains a large amount of self-reported data from federally funded institutions of higher education, such as student demographics, enrollment, average cost, and graduation rates.

There are, however, two key things that IPEDS does not provide that the College Scorecard adds: information on loan repayment outcomes and the post-enrollment earnings of former students. While loan repayment rates were something that the ED already had in its data systems, they were not readily available to consumers. Thus, those data needed only to be calculated and added to the new College Scorecard. No new collection efforts were required.

Loan information, such as balances and repayment rates, comes from the National Student Loan Data System (NSLDS), which is located in the Federal Student Aid office. This comprehensive internal database contains information on all federal student

loan borrowers, currently around 45 million.[25] Within this student-level information, internal analysts can track borrower trends in multiple ways.

For example, the loan information can be used to measure the proportion of borrowers who enter default, those who are paying down their loan principal, the typical debt of borrowers, and other repayment statuses, such as those who have entered forbearance or deferment. It can be used to look at national trends or individual institutions of higher education and then incorporated into the College Scorecard. NSLDS users can also disaggregate the above information in various ways, including whether borrowers completed their degree, whether they identify as male or female, and if they are the first in their family to attend college.

While loan data were already available to build into the College Scorecard, that was not the case for post-enrollment earnings data. That information was not part of the existing ED data collection process, so the ED had to figure out how to accurately retrieve it. Its effort toward this end built on a regulation initially proposed in 2011, known as the "gainful employment" regulation, which was intended to measure debt and earnings at individual career college programs.[26] If a program left a majority of its graduates with too high of a debt-to-earnings ratio after completion, the ED would restrict that program from accessing federal student grants and loans, as it was determined to be of little value to students and taxpayers.

Since no individual student-level earnings data were available to ED officials during the development of this regulation, the ED used earnings data from the Bureau of Labor Statistics (BLS) to inform its initial gainful employment policy. However, the final regulation would require actual data from the college programs it aimed to hold accountable, so the ED needed to act.

This first effort to collect post-enrollment earnings data resulted in a memorandum of understanding with the Social Security Administration (SSA), an agency that has access to incomes through the taxes individuals report quarterly or annually. The SSA had the ability to provide this kind of information to federal agencies.

The partnership worked as such: The ED would send over a data file containing a protected list of personally identifiable information on federal aid recipients from NSLDS, grouped by the college program that they graduated from. The SSA would then match these data with individual tax records. To further protect student privacy, the SSA would only return aggregate information on the mean and median earnings for students who completed each program of study and had positive earnings in that calendar year. Additionally, if the cohort of students was too small for any given program, no information would be returned, as it could allow someone to reverse engineer the data and obtain the earnings of a specific individual. These strict privacy protocols help keep an individual's personal information safe while allowing the gathering of earnings information for students who attended institutions and graduated from college programs across the country.

While these gainful employment data provided a first glimpse into how actual graduates were performing postcollege, they were also limited in that they were not easily accessible (they were only available via a clunky spreadsheet) and did not provide information on how well institutions perform as a whole. Nor did they provide employment outcomes for all institutions or college programs. Due to how gainful employment is defined in federal statute, the rule was limited to programs at all for-profit institutions and certificate-granting programs at public and private, nonprofit institutions. The College Scorecard aimed to fill this gap by providing earnings and debt information on all institutions and college programs, regardless of whether they were in the for-profit or nonprofit sector.

Upon release of the initial College Scorecard in February 2013, the ED was still in the process of gathering this information at the institution level. While the simplified College Scorecard released at that time had information on graduation rates, student debt, and cohort default rates, it ominously had a box for employment left blank, suggesting this information would come later.

Similarly to when it was developing the gainful employment regulations, the ED had considered

featuring the salaries for the top majors at each institution on the College Scorecard—gathered from the BLS—until it could work through the process of obtaining the actual incomes of former students. However, using industry averages, rather than actual wage data, could mask the good or poor performance of actual college programs at individual institutions.

So, for example, the University of Toledo's most popular degrees are marketing, nursing, and mechanical engineering. If BLS data were used, the College Scorecard would present these fields of study and the typical salaries they garner in the labor market, but not necessarily the salaries of students from that university; the data reflected only what students with that degree earn on average in the entire profession.

While this seemed reasonable at the time, after running the data, the ED noticed an underlying issue. There was little variability in the most popular majors across all institutions. Therefore, the earnings statistics often looked similar across institutions and would do far less to encourage consumer choice than was initially expected. As a result, rather than using information from BLS, employment information was left out on the initial release of the College Scorecard until the ED could gather the aggregate earnings of former students.[27]

The ED worked toward a subsequent release of College Scorecard data that included the post-enrollment earnings of former students, which came to fruition in September 2015. To do so, it used a similar process as it did to gather information for the gainful employment regulation, using cohorts of federal student loan borrowers, except now from entire institutions rather than only from career education college programs. Instead of working with the SSA, it formed an agreement with the US Department of the Treasury, which gathers identical earnings information from the IRS to what the SSA does. Furthermore, this helped create an avenue for the ED to obtain information on the program-level earnings for all college programs—not just those that fall under the gainful employment regulation—which exist on the College Scorecard today.

What Should Consumers See?

As mentioned, the College Scorecard has two key aspects: (1) the massive amount of data that are publicly available in spreadsheets and intended mainly for researchers, policymakers, and analysts and (2) the consumer website, where users can view important information to help guide their college decision-making process. While the former is much more comprehensive and allows researchers to choose which variables they want to use to examine college outcomes, the consumer site by its nature must limit what is displayed.

The information presented on the College Scorecard has often changed depending on who holds the presidency. While one administration may think certain college outcomes are most important, another may disagree. Consequently, the presentation of outcomes on the College Scorecard has changed over time from one administration to the next, potentially guiding prospective students toward different types of institutions that do well on one sort of outcome metric or another. Ultimately, what is presented on the College Scorecard—and how it is presented—is based on the current administration's values, potentially guiding prospective students toward different types of institutions.

Under President Obama, the first release of earnings data in September 2015 presented two key indicators of economic success to prospective students using the consumer site. The first measure was the proportion of students who earned more than the typical high school graduate at each institution six years after entry—measured to be $25,000.

Many ED staff thought this to be an even more important economic measurement than median earnings, at least in terms of identifying institutions that offer little to no return on investment. The thought was this: If an overwhelming majority of students did not earn more than those with no college experience, it may not be worth the time and investment to attend. Furthermore, as website users searched by state or ZIP code, the default order would present schools where the highest percentage of students earned more than the average

high school graduate first. This could help guide consumer decision-making if they were uncertain about where to apply.

The second measure that users could view was the median salaries for former students at each institution 10 years after enrolling. The ED decided to use the median, rather than the mean, as this better represents the typical student who attended an institution. It also helps control for outliers. For example, if one former student happened to become a billionaire after attending an institution, using a mean would heavily inflate the earnings of an entire cohort. The median better represents outcomes of the typical student, where 50 percent earned more than him or her and 50 percent earned less.

The Obama administration had plans to eventually produce post-enrollment earnings for all institutions at the program level. This was because the outcomes among various fields of study can vary significantly, even for students who attend the same institution.[28] For example, there will be different earnings outcomes depending on whether a student majors in education, engineering, or business. This production of program-level data for all institutions would eventually come to fruition under the subsequent administration.

Following the election of President Trump and the confirmation of Secretary Betsy DeVos, the new administration took actions to change some features on the College Scorecard, many of which appeared to favor short-term, for-profit institutions.[29] For example, the initial release of the College Scorecard consumer site under the Obama administration only included institutions that focused on degree-granting programs, excluding those that mainly focused on granting shorter-term certificates. Soon after entering office, Secretary DeVos included these on the consumer site, many of which were concentrated in the for-profit sector.

Another adjustment influenced which institutions were featured first when students visited the website. Under the Obama administration, when students filtered by state or a certain geography, institutions that left the highest proportion of their students earning more than a high school graduate would pop up first. Under Secretary DeVos, this changed to featuring schools with the highest graduation rates.

Institutions that show the highest completion rates are often short-term certificate programs, also concentrated in the for-profit sector. Being that these programs are shorter in length, students are more likely to complete them. However, they also show some of the poorest employment outcomes.[30] Yet, this change in the presentation allowed many poor-performing schools to be viewed at the top of students' searches, regardless of whether they led students to strong employment outcomes.

The most prominent action that took place under Secretary DeVos was the rollback of Obama-era regulations put in place to withhold federal student aid from college programs that left students without enough earnings to pay down their education debt. Finalized in 2015, the gainful employment regulations were completely rescinded in 2019.[31] In their place, the administration said it would be revamping the College Scorecard. The thought was that deregulating the higher education industry, while providing better information, would be more effective in steering students away from the shoddiest colleges and toward those that offered the best value.

The administration presented the tool as a way to not only improve and expand consumer choice but also improve higher education. Specifically, it stated that

> failing to have reached consensus during negotiations, the Department determined that the best way to improve transparency and inform students and parents was through the development of a comprehensive, market-based, accountability framework that provides program-level debt and earnings data for title IV programs.[32]

While producing program-level data was the Obama administration's stated goal, it didn't come to fruition until 2019, during the Trump years, presented as a substitute to the rescinded gainful employment regulations.[33] While this information was initially made available on only a spreadsheet format, it eventually made its way to the consumer

site, replacing the post-enrollment median earnings of all students who attended an institution (including non-completers) with only graduates from specific college programs. To date, the information presented on the consumer site includes the debt that graduates leave each program with and the annual earnings they obtain two years after graduation. While this provides more detailed information, it does not include outcomes on the many who never graduate, leaving out a large number of students around the country.

Influence and Research

While approximately one million users visit the College Scorecard annually, limited studies exist on its effectiveness in guiding college decision-making. Some studies suggest that post-enrollment earnings helped influence decisions for some students, but not all equally. In a 2016 study by the College Board, the graduation rate and average cost on the College Scorecard did little to affect whether students were likely to apply to colleges with better outcomes.[34]

However, post-enrollment earnings did show an increased likelihood that students would send their SAT scores to schools with better results. For every 10 percent earnings increase that an institution displayed on the College Scorecard, the number of SAT scores sent went up by 2.4 percent. But this came with a caveat: Those who were more likely to send their scores to schools with higher post-enrollment salaries were mostly from well-resourced high schools.

Furthermore, it was also correlated with whether the student had a parent who attended college and whether the student came from a White or Asian racial and ethnic background. More research is needed on whether this has changed over time and if better outreach to underrepresented populations would influence who was benefiting—and how much—through College Scorecard use.

While the College Scorecard's effectiveness remains murky in terms of college consumer choice, researchers have undoubtedly taken advantage of this trove of newly available data. The release of federal earnings data, specifically, has led to numerous studies highlighting the value of college in ways previously unseen.

For example, in 2015, the Center for American Progress ran the numbers and found that nearly a third of undergraduate students made less than the average high school graduate—$25,000—10 years after initial enrollment.[35] In a similar study conducted in 2019, Third Way found that over half of institutions left the majority of their students earning less than the typical high school graduate—then measured to be $28,000—six years after initial enrollment. About three in 10 institutions showed the same result 10 years after initial enrollment.[36]

This has also spurred research on the value and return on investment that certain institutions have to offer. The Georgetown University Center on Education and the Workforce used College Scorecard earnings data to estimate the return on investment of different institutions up to 40 years after enrollment.[37] To do this, they specifically looked at the net present value that it costs students to earn a credential relative to the overall projected lifetime earnings they obtain by doing so. Their study showed that community colleges and many certificate programs show a high short-term return on investment, yet bachelor's degrees show a higher return given a longer time frame.

Others have used program-level earnings data to look at debt-to-earnings ratios that specific majors provide—similar to gainful employment metrics.[38] Researchers and analysts will clearly continue to use post-enrollment earnings as a measure of economic success when assessing the value that higher education institutions and college programs can provide to their students.

Challenges and Limitations

One of the main limitations with earnings data reported in the College Scorecard is that it fails to capture all students who attend a postsecondary institution. Specifically, the ED is statutorily limited

in that it can only gather income information for students who have received federal aid, such as grants or loans. This may not reflect how an institution is performing as a whole, since non–federally aided students are left out of the equation—about 30 percent of all undergraduate students nationally.[39] A bipartisan group of lawmakers has aimed to address this gap through the College Transparency Act.[40] Unless there is change in the law that allows the ED to collect information on all postsecondary students, post-enrollment earnings will continue to reflect only those who have received federal funding.

The current information in the College Scorecard database also has some limitations on what is available to consumers or researchers. Being that the Trump administration moved toward program-level earnings—and away from institutional earnings—it stopped updating information on how well an institution's former students are doing as a whole both on the website and in the underlying data made available to researchers. This can be critical information, as it helps identify whether there is institutional failure rather than just a poor-performing program here or there. This recent exclusion applies to mean and median earnings in addition to the percentage of students who earn more than the typical high school graduate. The data are no longer being updated.

Another limitation is that researchers cannot disaggregate loan and earnings information among key demographics, such as the racial and ethnic background of former students. This is not, however, due to design decisions made by different administrations; the federal government has never collected this information, at least not in a way that would allow it to be included in the College Scorecard. Nevertheless, such data are important. Throughout society and postcollege, we have seen large disparities in loan and employment outcomes between White students and students of color.[41]

Another information gap in the program-level data results from privacy protections. While the program-level data allow users to see the typical debt and earnings for specific fields of study in specific institutions—which can vary considerably—they cover only about 20 percent of all programs nationwide (albeit a larger proportion of students).[42] Data for the remaining programs have been privacy suppressed, as the ED determined their cohort size too small to provide publicly.

To further protect privacy, the suppression protocol is not made publicly available but takes the number of students, the different types of students, and the number of programs available at an institution into account when determining what to release. While larger programs have these data available, this does not help students who may be considering the other 80 percent of programs of study for which no outcomes data are available.

Furthermore, program-level data cover only graduates. They do not account for non-completers. Because students often take general education classes before declaring a major, incorporating non-completers into program-level outcomes is logistically difficult to implement. However, this exclusion may inflate outcomes, as many students start a college program but never finish. These students are likely to earn less and are the most likely to have trouble paying down their educational debt; however, the program-level data do not reflect this.

Lastly, on the issue of limitations, the College Scorecard provides only descriptive information. Therefore, while it does provide the proportion of low- and moderate-income students that attend an institution, it does not indicate whether an institution or college program provided such students with socioeconomic mobility after attending.

Given that students have different levels of college readiness when they enter institutions, this can make a big difference in the outcomes they produce. For example, a more selective institution may enroll students who are more likely to come from affluent backgrounds with strong academic credentials. Another may focus more on open access, allowing any student who obtains a high school diploma to enroll in classes. Descriptive data, as presented on the College Scorecard, do not account for these differences. Consumers and policymakers who use the data for accountability purposes should take this into account.

What Is Next?

The College Scorecard is unique in that it has survived multiple administrations, while many other presidential priorities have been rescinded. There is support for transparency efforts on both sides of the political aisle, and the Biden administration will likely continue to build and grow the College Scorecard for years to come. The Biden administration may focus on three things to improve college outcomes: (1) improving the college options that students have to choose from, (2) featuring colleges with stronger employment outcomes more prominently on the College Scorecard consumer website, and (3) continuing to build on the program-level data already available.

To improve college decision-making, students need better options. As we can see from available College Scorecard data, many institutions leave the vast majority of their students degreeless, underemployed, and with unmanageable debt. The Biden administration will likely work to improve this through an updated gainful employment regulation, unless Congress passes more comprehensive legislation to hold institutions accountable for the outcomes of their students. As mentioned, the gainful employment regulation was put in place during the Obama administration but rescinded by Secretary DeVos before it could ever be enforced. Issuing new rules could better ensure that college programs are leaving their students with better career outcomes.

Furthermore, Secretary DeVos made an effort to promote and feature many shorter-term, for-profit institutions more prominently on the College Scorecard consumer site. These institutions and college programs have been shown to disproportionately leave students with less earnings potential and unmanageable debt after graduation.[43] As the new administration gets settled, it will likely consider adjustments to the College Scorecard, more focused on employment outcomes than completion rates.

Lastly, the Biden administration will be pressed to build on the program-level data envisioned under the Obama administration and implemented by Secretary DeVos. To date, the ED has produced program-level earnings data for students up to two years after they graduate from a specific program. The ED will be encouraged to explore longer-term outcomes as more data become available.

Conclusion

Eight years after its initial launch, the College Scorecard will continue to be the ED's most prominent tool focused on transparency, shining a light on outcomes for students, researchers, and policymakers to consider. Its first iteration provided four key metrics on college outcomes. Advancements now cover approximately 2,000 data points on nearly 7,000 institutions.

From a consumer perspective, the ED will promote its effectiveness in providing students with information to aid in their decision-making. And being that prospective students' number one reason to attend postsecondary education is to increase their employability, it will continue to build on the economic measures of success that it currently makes available.

Notes

1. US Department of Education, Federal Student Aid Office, "Title IX Volume Reports," https://studentaid.gov/data-center/student/title-iv.

2. Rachel Fishman, *2015 College Decisions Survey: Part 1. Deciding to Go to College*, New America, May 2015, https://static.newamerica.org/attachments/3248-deciding-to-go-to-college/CollegeDecisions_PartI.148dcab30a0e414ea2a52f0d8fb04e7b.pdf.

3. US Department of Education, Office of the Secretary, *Great Expectations: Holding Ourselves and Our Schools Accountable for Results*, January 2009, https://files.eric.ed.gov/fulltext/ED504194.pdf.

4. College Navigator, website, https://nces.ed.gov/collegenavigator/.

5. Higher Education Opportunity Act, Pub. L. No. 110-315.

6. Ellen Bara Stolzenberg et al., *The American Freshman: National Norms Fall 2019*, University of California, Los Angeles, Higher Education Research Institute, Cooperative Institutional Research Program, 2020, https://www.heri.ucla.edu/monographs/TheAmericanFreshman2019.pdf.

7. White House, "Remarks by the President in the State of the Union Address," February 12, 2013, https://obamawhitehouse.archives.gov/the-press-office/2013/02/12/remarks-president-state-union-address.

8. White House, "Weekly Address: A New College Scorecard," press release, September 12, 2015, https://obamawhitehouse.archives.gov/the-press-office/2015/09/12/weekly-address-new-college-scorecard.

9. Michael Itzkowitz, "Are College Accreditors Actually Improving Student Outcomes?," RealClearPolicy, January 25, 2019, https://www.realclearpolicy.com/articles/2019/01/25/are_college_accreditors_actually_improving_student_outcomes__111007.html.

10. Michael Itzkowitz, "The State of American Higher Education Outcomes in 2019," Third Way, April 8, 2019, https://www.thirdway.org/report/the-state-of-american-higher-education-outcomes-in-2019.

11. US Executive Office of the President, Council of Economic Advisers, *Investing in Higher Education: Benefits, Challenges, and the State of Student Debt*, July 2016, https://obamawhitehouse.archives.gov/sites/default/files/page/files/20160718_cea_student_debt.pdf.

12. Michael D. Shear and Tamar Lewin, "On Bus Tour, Obama Seeks to Shame Colleges into Easing Costs," *New York Times*, August 22, 2013, https://www.nytimes.com/2013/08/23/us/politics/obama-vows-to-shame-colleges-into-keeping-costs-down.html; and White House, "Remarks by the President on College Affordability—Buffalo, NY," press release, August 22, 2013, https://obamawhitehouse.archives.gov/the-press-office/2013/08/22/remarks-president-college-affordability-buffalo-ny.

13. US Department of Education, Federal Student Aid Office, "Title IV Program Volume Reports," https://studentaid.gov/data-center/student/title-iv.

14. Shear and Lewin, "On Bus Tour, Obama Seeks to Shame Colleges into Easing Costs."

15. Robert Kelchen, "How Much Do For-Profit Colleges Rely on Federal Funds?," Brookings Institution, January 11, 2017, https://www.brookings.edu/blog/brown-center-chalkboard/2017/01/11/how-much-do-for-profit-colleges-rely-on-federal-funds/.

16. US Department of Education, "For Public Feedback: A College Ratings Framework," https://www.ed.gov/collegeratings.

17. US Department of Education, "A New System of College Ratings—Invitation to Comment," https://www2.ed.gov/documents/college-affordability/framework-invitation-comment.pdf.

18. Molly Corbett Broad, "Postsecondary Institution Ratings Response," January 31, 2014, https://www.acenet.edu/Documents/Higher-Ed-Assoc-PIRS-Comments.pdf.

19. Michael D. Shear, "With Website to Research Colleges, Obama Abandons Ranking System," *New York Times,* September 12, 2015, https://www.nytimes.com/2015/09/13/us/with-website-to-research-colleges-obama-abandons-ranking-system.html.

20. This reflects information available today, and post-enrollment earnings metrics on the College Scorecard have changed over time.

21. US Department of Education, Office of Planning, Evaluation, and Policy Development, College Scorecard, January 19, 2021, https://data.ed.gov/dataset/college-scorecard-all-data-files-through-6-2020/resources.

22. Author's calculations based on data from Analytics.USA.Gov, "Number of People Using Scorecard Annually," July 16, 2021, https://analytics.usa.gov/education/.

23. Integrated Postsecondary Education Data System, "Use the Data," https://nces.ed.gov/ipeds/use-the-data.

24. US Department of Education, Institution of Education Sciences, National Center for Education Statistics, "College Navigator," https://nces.ed.gov/collegenavigator/.

25. Danielle Douglas-Gabriel, "Congress Makes Student Debt Forgiveness Tax-Free, Limits Revenue That For-Profit Colleges Get from Enrolling Veterans," *Washington Post*, March 10, 2021, https://www.washingtonpost.com/education/2021/03/10/student-debt-forgiveness-for-profit-colleges-stimulus/.

26. US Department of Education, "Program Integrity: Gainful Employment-Debt Measures," *Federal Register* 76, no. 113 (June 13, 2011): 34385–539, https://www.federalregister.gov/documents/2011/06/13/2011-13905/program-integrity-gainful-employment-debt-measures.

27. This consideration was gathered from discussions with former Department of Education officials after their tenure with the federal government had ended.

28. White House, "Fact Sheet: Empowering Students to Choose the College That Is Right for Them," press release, September 12, 2015, https://obamawhitehouse.archives.gov/the-press-office/2015/09/12/fact-sheet-empowering-students-choose-college-right-them.

29. Aarthi Swaminathan, "College Scorecard Ex-Director Says Trump Administration Is Scrubbing Important Information," Yahoo Finance, June 15, 2020, https://finance.yahoo.com/news/trump-administration-college-scorecard-information-145318348.html.

30. Itzkowitz, "The State of American Higher Education."

31. US Department of Education, "Program Integrity: Gainful Employment," *Federal Register* 84 (July 1, 2019): 31392–453, https://www.federalregister.gov/documents/2019/07/01/2019-13703/program-integrity-gainful-employment.

32. US Department of Education, "Program Integrity."

33. White House, "Fact Sheet: Empowering Students to Choose the College That Is Right for Them."

34. Michael Hurwitz and Jonathan Smith, "Student Responsiveness to Earnings Data in the College Scorecard," September 1, 2017, https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2768157.

35. Ben Miller and Antoinette Flores, "Initial Analysis of College Scorecard Earnings and Repayment Data," Center for American Progress, September 17, 2015, https://www.americanprogress.org/issues/education-postsecondary/news/2015/09/17/121485/initial-analysis-of-college-scorecard-earnings-and-repayment-data/.

36. Michael Itzkowitz, "Higher Ed's Broken Bridge to the Middle Class," Third Way, September 25, 2019, https://www.thirdway.org/report/higher-eds-broken-bridge-to-the-middle-class.

37. Anthony P. Carnevale, Ben Cheah, and Martin Van Der Werf, *A First Try at ROI: Ranking 4,500 Colleges*, Georgetown University, McCourt School of Public Policy, Center on Education and the Workforce, 2019, https://cew.georgetown.edu/cew-reports/collegeroi/.

38. Texas Public Policy Foundation, "TPPF: First-of-Its-Kind Tool Helps Students Determine Debt and Earning Potential by College Degree," press release, January 15, 2020, https://www.texaspolicy.com/press/tppf-first-of-its-kind-tool-helps-students-determine-debt-and-earning-potential-by-college-degree.

39. US Department of Education, Institution of Education Sciences, National Center for Education Statistics, "Table 331.90. Percentage of Full-Time and Part-Time Undergraduates Receiving Federal Aid, by Aid Program and Control and Level of Institution: 2007–08 and 2011–12," July 2014, https://nces.ed.gov/programs/digest/d14/tables/dt14_331.90.asp.

40. Alexis Gravely, "College Database Bill Raises Concerns About Student Privacy," *Inside Higher Ed*, April 26, 2021, https://www.insidehighered.com/news/2021/04/26/bill-would-provide-students-more-information-about-colleges.

41. Judith Scott-Clayton, "The Looming Student Loan Default Crisis Is Worse Than We Thought," Brookings Institution, January 11, 2018, https://www.brookings.edu/research/the-looming-student-loan-default-crisis-is-worse-than-we-thought/.

42. US Department of Education, Office of Planning, Evaluation, and Policy Development, "College Scorecard."

43. Itzkowitz, "The State of American Higher Education."

Developing Student-Facing Tools Using Wage Data

THE TEXAS EXPERIENCE

Stephanie Huie

Higher education institutions face a significant challenge: providing high-quality educational experiences while maintaining affordability so students can access that education without excessive debt. Unfortunately, higher education costs and student debt have risen over the past two decades, while earnings among former students have remained largely unchanged after accounting for inflation.

In an early effort to address these issues, the University of Texas (UT) System convened a Student Debt Reduction Taskforce in 2012 to better understand the factors influencing unmanageable student debt and develop solutions. Their efforts culminated in the development of seekUT, a free, web-based dashboard meant to help students and families make more-informed decisions about their higher education choices.[1] But unlike other public online tools providing information on colleges at the time, seekUT was one of the first to display information about former students' actual earnings and average student loan debt by degree program.

The efforts to develop seekUT offer many important lessons for policymakers and others in the higher education industry. The story illustrates the important role of partnerships between organizations and agencies in collecting and displaying information about student outcomes, particularly information on earnings. It also reveals the challenges and trade-offs that policymakers often confront in collecting and publishing this information. A better understanding of these challenges and trade-offs is key to helping policymakers improve and expand on seekUT so that this already successful, groundbreaking initiative can achieve its full potential.

A New Focus on Wages

The Student Debt Reduction Taskforce concluded that the UT System and its 14 campuses needed to do more to help students and their families understand the costs of and returns to higher education.[2] With better information, students would be less likely to take on debt they could not afford to repay. It quickly became clear, however, that the type of data best suited for that task—data on exactly how much debt students take on and what they earn after attending a UT institution—was not readily available, at least not from consistent, administrative (i.e., not survey-based) sources.

At the time, most colleges, universities, and policymakers focused on different measures of success: signs of progress toward degree completion such as graduation, retention, and course credit accumulation. As the student debt crisis intensified, however, stakeholders like those on the Student Debt Reduction Taskforce realized that students needed to know more than graduation rates when making college choices. In doing so, they joined a broader movement around the country calling for a new accountability landscape—one where higher education institutions would be judged by their students'

postgraduation outcomes, based on wage data and online exploration tools.

Several online tools existed when the UT System's Office of Strategic Initiatives (OSI) began work to implement the task force's recommendations. However, the OSI quickly concluded it could not simply adopt these tools for its efforts. There were significant shortcomings in terms of data collection, quality, and scope on these sites.

One example was PayScale, an organization among the first to collect and publish salary information through an online survey that asks those who visit the site about their salaries, occupations, skill sets, workplace locations, and workplace environments.[3] All salary data are self-reported and so are vulnerable to misreporting and other biases endemic to survey responses. These include response bias, in which respondents may not have an accurate recall of the facts or may intentionally provide false information. False information in the case of salary data may be related to concerns about status or professional prestige (e.g., respondents feel underpaid and view this as negatively reflecting on themselves or their profession, so they report a higher salary). PayScale's college salary report does not provide a representative sample of wages for students, either by major or institution, as this is based on self-initiated visits and the choice to provide data to the site.[4]

Student-Wage Dashboard Project

In addition to data on debt and earnings, another component of the effort to put more information into the hands of students was how and where to display this information. For that, UT System staff had to develop an interactive web tool or dashboard. The goal was to populate this web tool or dashboard with the data that would help students and their families better understand the lasting impact of the choices—both financial and academic—they made during the college experience.

To do this with accuracy and the level of detail needed to satisfy the task-force recommendations, the UT System needed to link several administrative records for each former student: an educational record, an earnings record, and a financial aid (i.e., loan) record. Any effort to create this type of one-to-one record linkage would require an administrative data source so that records could be linked using a common identifier (i.e., on a student-by-student basis).

While each individual UT campus held some of the necessary records (namely, the educational and financial aid records), they did not have access to information on how much each individual student earns after leaving school. For that, the UT System contacted the Texas Workforce Commission (TWC) about creating a partnership to use Texas unemployment insurance (UI) wage data. Employers report employee wages to state UI agencies like the TWC quarterly to calculate UI wages. The UI wage records include both employee name and Social Security number (SSN), which are identifiers that can create linkages to other data sources, such as a student's financial aid record and debt loads.

To create such linkages, the UT System had to share identifiable student records with the TWC for the purpose of matching. This involved making sure the contract was compliant with the Family Educational Rights and Privacy Act (FERPA). FERPA is a federal statute that protects the privacy of student records, but it permits a research exemption for educational institutions with a legitimate educational interest in use of the data. In 2012, the Department of Education (ED) expanded this exemption in a way that incidentally helped the UT System's initiative.

The exemption would now allow federal and state agencies to access educational records without student consent for the purpose of linking personally identifiable information to UI, workforce development, and military service. The ED explained in a 2011 notice that the exemption was to allow for the effective use of data to evaluate educational programs and promote transparency.[5] The expansion of FERPA cleared the way for the UT System's student-wage dashboard project and an agreement between the UT System and the TWC to match student educational records with UI wage records.[6]

In 2013, under the negotiated memorandum of understanding between the two organizations, the UT System received 11 years of matched earnings data one, five, and 10 years after graduation for students who graduated from a UT System institution and are working in Texas. The matching process involved pulling 1.1 million SSNs from the UT System's in-house data warehouse, along with student last names, and sending them to TWC via a secure portal designed to house the wage data. This was a first step in an unprecedented opportunity to understand the UT System's student outcomes in new ways and at a high level of granularity.

It became immediately clear in this process that UI wage records are by no means a silver bullet for collecting data on the earnings of former students. Of the 1.1 million SSNs sent to TWC, 918,370 matched SSNs (83 percent) were returned to the UT System.[7] After the matched data were returned, UT System staff began the data-cleaning process. (Cleaning matched workforce data is critically important before any use of the data.) The data-cleaning process uncovered several instances of one SSN linked with multiple or unrelated names, indicating potential SSN fraud, and those cases had to be eliminated from the dataset.

In addition, invalid SSNs and duplicate records were deleted. Of the 918,370 SSNs that matched, UT System staff removed 207,000 SSNs (22 percent) from the dataset.[8] The cleaning also involved using the SAS software's fuzzy match procedure to identify legitimate last-name changes over time. Without this painstaking cleaning process, the wage information presented on the online tool would have been artificially inflated and distorted because of duplicate or false earnings records.

While UI wage records are still some of the best available data on the earnings of former students, institutions and policymakers should consider the advantages and drawbacks when reporting student outcomes. Advantages include data reliability (since it is reported by employers rather than self-reported), the ability to link UI wage records with other datasets (since both name and SSN are collected), and the availability of consistent data for multiple years. As for the drawbacks (in addition to the matching errors mentioned earlier), while most wage and salaried workers are reported, self-employed and federal employees working in the state are not included, and the categories of workers reported as part of the UI wage records vary from state to state.

Another limit is that state UI wage records cover only those working in the state. This can affect the reliability of wage figures for universities with large numbers of graduates who move outside the state for work. For the academic institutions in the UT System, 85 percent of graduates were found working in Texas one year after graduation. This figure decreases five years (77 percent) and 10 years (66 percent) after graduation.[9]

The graduate and wage record match rate was high for Texas. This is not the case in all states, as others, especially smaller states with smaller, less diverse labor markets than Texas, have higher rates of graduate emigration. A further issue to consider is that what is reported as part of the UI wage record varies from state to state. In Texas, occupational title, hours worked, and whether a person has full- or part-time status are not collected. This required the UT System to develop decision rules to create novel definitions and procedures for identifying full-time employment.

Despite the limits of the UI wage data in Texas, the high match rates between the education and workforce records and the reliability of the data ultimately rendered a powerful data source for understanding graduates' earnings and employment outcomes.

One of the goals of the UT System project was to provide students with a reliable idea of the potential range of postgraduation earnings by academic program. As such, the UT System wanted to present an accurate picture of a student who earned a degree and was employed full-time in Texas. However, the absence of certain data fields in the UI wage records forced the OSI to develop some creative analytical work-arounds.

One of these was finding a proxy for full- and part-time employment status in the wage records; the UI wage records do not include this information. Therefore, the UT System had to establish a decision rule to approximate it by defining full-time, full-year

employment for anyone with reported annual earnings of at least $13,195. This figure is based on the minimum wage at the time, $7.25, multiplied by 35 hours and then by 52 weeks. Thus, only students who earned at least $13,195 and graduated from a UT System institution were included in the dataset.[10]

Earnings data were calculated for students one year, five years, and 10 years after graduation. To understand the wages associated with students' programs of study upon graduation, the UT System matched the salaries of students included in the dataset to the Classification of Instructional Programs (CIP) code.

However, wage and instructional program matches required further censorship of the dataset. The UT System only displayed programs with five or more graduates, because including programs smaller than that risked that someone could identify a particular student. Students who continued their education immediately after receiving a degree were excluded because their salaries, if working while enrolled, may have been artificially low. To determine which students continued with their education, the UT System matched the student records with National Student Clearinghouse (NSC) data. Even with censoring the data to only include full-time, full-year employment; students not enrolled in an educational program after graduation; and programs with five or more graduates, the match rate remained at 49 percent or greater, depending on number of years after graduation (one, five, or 10) and institution type (academic or health).[11]

A Focus on Student Debt

Another goal of the project was to understand the economic return of UT students' investments in higher education: Are graduates able to repay debt upon graduation, and what is the severity of the student debt burden? At the academic program level, information about economic return on investment is important for understanding, at least in part, the program's ability to prepare students for work, their anticipated salary range, and how well students are faring in paying off their debts.

For students, it is important to have a realistic idea of what postgraduation income may look like when deciding how much debt to take on. Programs typically associated with high earnings may still leave students struggling to repay debt if they attend an institution with high tuition.

Some important considerations when calculating debt metrics include identifying the appropriate population of students and acknowledging that the debt figure reflects only the debt incurred at the UT institution. The UT System decided to limit the population to those enrolled as "first time in college" and those who completed a degree, therefore avoiding transfer students and capturing a realistic picture of debt associated with completing an undergraduate degree at the institution of origin.

Once the population is defined, there are a couple ways to understand student debt. One option is to look at the average loan debt by major. But another, more powerful way to understand the totality of the debt burden is to examine debt by academic major in the context of earnings. To do this, the UT System calculated a debt-to-income (DTI) ratio for one, five, and 10 years after graduation and as a percentage of projected monthly salary using the Texas Higher Education Coordinating Board's Financial Aid Database (FADS) data.

Texas FADS data provide an academic year record of financial aid for each student at an institution of higher education who enrolled and completed either a federal or Texas financial aid application. These data were matched to the student-wage record data to create a measure of student loan payment as a percentage of monthly salary (i.e., the DTI). The DTI is the median monthly student loan payment divided by the median monthly salary for students who received loans. The monthly student loan payment was calculated using the standard 10-year repayment plan. Ideally, debt decreases and monthly salary increases over the one-, five-, and 10-year time frames, reducing the student's DTI over time. The goal was to provide students important information about the relationship between future debt payments and future earnings to inform conversations with their financial aid advisers about responsible debt management.

Building the Student-Wage Dashboard User Interface

Once the UI wage, education record, and financial aid data were matched and cleaned and the decision rules and definitions for the primary metrics were identified, the work of creating a student-oriented, user-friendly interface was ahead. The project goals guided the next steps: provide students information to make informed decisions about major and career choice, help students set realistic expectations, demonstrate the value added by higher education, move the concept of success beyond graduation to employment, and develop a national proof of concept to lay the groundwork for wide-scale availability of administrative data to do such interagency data matching.

With these goals in mind, staff worked with a marketing firm to develop a name and logo for the wage dashboard. The goal was to have something short but meaningful. Ultimately, the group decided on seekUT: search + earnings + employment = knowledge.[12]

Since the UT System had access to a business intelligence platform and a staff trained to develop and program the dashboards, it made sense to use the technology and staff already in-house to develop the student-wage data interface. The design process started with meetings to determine how to best organize the flow of the information. They needed to present the information concisely and logically, and the site needed a graphically appealing and navigable interface to aid students and their families in their decision-making process.

A critical breakthrough while drafting the design and organization of the dashboards came when the team started to think about how students would approach this wealth of information. This change in perspective yielded a list of topics and answers to related questions students were likely to ask. While postgraduation earnings and student debt were the centerpiece of the dashboard, it was important to provide a full complement of information about the postgraduation labor market. Some of the important topics the UT System staff worked to incorporate as part of the seekUT tool include pursuing a degree, understanding costs by major, exploring career opportunities, and realizing return on investment.

Once a working prototype of the dashboard was developed, it was time to seek feedback. In seeking feedback, key topics included look and feel, ease of use, and effectiveness of the visuals. Should explanatory or help text be included, and is anything missing? The feedback process started with a handful of colleagues in the UT System administration and a group of faculty advisers from UT System campuses; revisions and updates were iterative. The approach to student feedback was novel in that staff decided not to provide students with much information about the project but rather to present the prototype to them to see if they could figure the tool out, understand the information that was being communicated, and easily navigate the various dashboards. Student groups were gathered in computer labs and asked a series of questions about content, navigation, look, and feel.

The student feedback was the most useful. The chart type that staff felt was most complicated, the bubble chart, was a favorite for the students. Some of the most important feedback had to do with metrics. When the dashboard prototype was initially created, the DTI ratio was an annual figure. One student offered the helpful feedback, “I pay my cell phone bill by the month; I would like to see this figure monthly.” This input was the impetus for creating the monthly student loan payment using the median student loan debt at graduation and the standard repayment plan of paying a fixed amount each month over 10 years (120 payments), using the most accurate interest rate information available.[13]

The interest rate for federal loans was based on the interest rate of the year, loan program, and student level during the year the loan was disbursed. The interest rate for other types of loans was based on the average of interest rates for federal loans at different student levels and the year in which the loan was disbursed. Another student requested posttax earnings—which was not possible to calculate using the available data—but the high level of engagement and understanding students’ thinking about what information would be

most useful to them was valuable in developing an effective tool.

An eye-opening category of feedback from the student reviewers was on how the wage tool could be used. Initially, the staff created the tool primarily for helping students choose a major, understand how much loan debt might be reasonable to take on, and recognize the financial and time commitments of that major. For example, some undergraduate majors require more credit hours and typically take five years for graduation. That additional year of schooling has obvious financial implications. The tool also provided information on the percentage of students by major who continued to graduate school. It is important for students to understand before they start their educational journey if graduate school is important to obtain a job in that field.

All these use cases conceived by the staff pertained to the early stages of the educational journey. However, students pointed out a different use for the tool nearing and just after graduation—understanding the salary range for graduates in their major and then using that as a talking point for salary negotiation.

The UT System quickly learned that when developing any type of user tool or interface, the best feedback will come from the target audience. As a result, staff continued to consult with students throughout the development process.

A Debate over Audience

Audiences for the dashboard would include prospective and current college students as the primary audience but also their families, the media, and policymakers—or would they?

The UT System has been a leader among higher education institutions in making data accessible to the public by being an early adopter and launching a public data dashboard in 2011.[14] This public dashboard included web-based applications for extracting and analyzing institutional data and provided current data, trends over time, and comparative benchmarking across a variety of metrics.

The metrics in the 2011 dashboard were reported by institutions to Texas or the federal government and were already in the public realm. The student-wage dashboard project contained data not previously in the public sphere, and measures of earnings by major were new and not well understood. These special conditions set the stage for conversations about whether the dashboard should be made available widely to the public or through log-in to only students, administrators, and faculty.

The conversations initially started with the vice chancellor for strategic initiatives, who was leading the project; the vice chancellor for external relations; and the vice chancellor for federal relations. It was essential to know the ins and outs of public relations and the federal conversation around access to and use of higher education data from a federal policy perspective. The goal was to develop a coherent recommendation for the executive officers and the UT System chancellor, who would ultimately decide whether to allow public access to seekUT.

The group mapped out the issues on both sides of this decision. Then the vice chancellor for strategic initiatives visited campuses, demonstrated the tool, and discussed the pros and cons of going public with small groups of faculty and administrative staff in admissions, marketing, financial aid, and student affairs.

There were several arguments in favor of going public: A public dashboard promotes transparency and reflects well on the institutions (a "we have nothing to hide" approach). Public wage data provide an opportunity for recruiters and marketing arms of universities to use the information in recruiting efforts. Making the data public demonstrates that it is possible to link education data with other data sources and maintain students' privacy. Additionally, a public dashboard provides a systematic basis and source of information for conversations around postgraduation outcomes and the value of higher education with external audiences such as the media, parents, and higher education policymakers.

On the other hand, making the data public may lead to false assumptions on the part of the consumer, especially since the data are nuanced. For example,

the linked education and UI wage data have no geographic identifiers. This means there is no record of where in the state the graduates live. The address associated with the UI wage record is the address of the organization that does the payroll, and many large companies have centralized payroll operations. The geographic location is important because the cost of living varies widely across metropolitan areas in Texas, and salaries may reflect these differences. Thus, the salaries reflect the local economy, education and training, and a host of other factors.

Another shortcoming of the UI wage data is the absence of occupational titles; only industry "code" designations are given. These designations come from the 2017 North American Industry Classification System and are the standard used by federal statistical agencies in classifying business establishments. With only industry codes, it is difficult to determine if the graduate is working in their major field of study.

The relationship between major and industry of employment is complicated. In some cases, the relationship is clear: Students who graduate with accounting degrees and then work in the accounting, tax preparation, bookkeeping, and payroll services industry have found jobs matching their degree. But less clear is when a student graduates with an accounting degree and is later working in the accommodations and food service industry. Is this graduate doing the books for the restaurant or working as a member of the waitstaff?

To add to this growing list of shortcomings, the data only capture the salaries of students working in Texas, potentially under- or overestimating wages associated with the major, depending on how many students worked out of state. When estimating wages, an important additional consideration is where outside of the state the graduates are working. Metropolitan areas like New York or Los Angeles tend to be higher paying than rural areas for identical industry-coded jobs.

Remarkably, 79 percent of the students who received a bachelor's degree from one of the UT System's institutions were found working in Texas their first year out of college.[15] Despite having gaps in coverage for students moving out of state, the UT System had a healthy sample. However, for smaller states where more graduates migrate out, not having national wage data can pose a significant hurdle.

Some of the conversations about shortcomings of the wage data and whether to make the data available to the public tended toward the technical and academic, turning on the precise distinctions that could confound some nuanced analyses. But one question of perhaps the greatest import for policy implications presented itself quickly: What about low-paying majors? Will those majors be perceived by students, parents, and institutions as less valuable or important once the wage data are made public? Do those wages reflect the institution's ability to prepare a student for work?

Conversations with liberal arts faculty revealed a genuine concern that wage data would lead to a mass exodus from the liberal arts or their specific departments. They worried that an overwhelming number of students might opt to instead major in engineering after learning how much engineers earn. Higher education is still grappling with these issues, but the seekUT wage data had a surprise in store: It dispelled some commonly suggested notions about wages in the liberal arts.

Liberal arts graduates make more than skeptics thought. Specifically, median first-year earnings for 67 percent of graduates of UT System non-STEM programs were higher than the national individual median income of $35,380. Graduates from several UT System programs had higher-than-expected median incomes their first year after graduation—for example, programs in music ($50,856), rhetoric and composition ($46,790), romance languages and literature ($42,841), and philosophy ($39,729). While returns on educational investment are greater for STEM majors their first year out and over time, the liberal arts data demonstrate that making a reasonable living with a liberal arts degree is possible.

Ultimately, given the UT System's commitment to transparency and leadership as an early adopter of publicly displaying performance data, the executive officers and the UT System chancellor decided to make the wage data public. Despite that decision, there was still a question of whether to display data

aggregated across majors for all 14 UT System campuses or to identify wages and majors associated with individual campuses. Initially, the decision was to use seekUT to display the data aggregated across all UT System institutions, but stakeholder feedback changed that.

When the tool was launched in 2014,[16] staff traveled to campuses across the state and held stakeholder meetings to demonstrate the tool and its uses. The UT System vice chancellor for strategic initiatives received strong feedback from campus presidents that they wanted the data for their own campus to be identified and displayed. Presidents were concerned that aggregating data across all 14 campuses, with varying missions and student populations, would falsely inflate or deflate the postgraduation wages by major. This feedback prompted a revision to allow users to view wage data by major and UT System campus individually. The change was well received by all consumers of the tool—especially students who were interested in specific outcomes by major from their institution and in their major of choice.

The Missing Data

The seekUT tool was launched with a national press release in January 2014 and corresponding announcements in student newspapers of the UT System campuses. Many local and national news articles describing the release followed.[17] As part of the launch plan, UT System staff continued to visit UT System campuses and met with students, faculty, and administrators to help users understand seekUT's capabilities and how the information could be used to support informed decision-making for students.

At the same time, seekUT was incomplete. The tool did not include wage data on students who moved outside of Texas upon graduation. Match rates were lowest among students from the flagship institution and health-related institutions, where students are more likely to move outside the state after graduation.

The vice chancellor for strategic initiatives, in coordination with the UT System Office of Federal Relations (OFR), took several trips to Washington, DC, to inform policymakers and federal agencies about the tool. They also discussed how seekUT could include wage data for students nationally to address the missing data for these students.

Their primary concern was a provision of federal law that limits what data about students can be collected by the ED. The Higher Education Opportunity Act of 2008 banned the ED from creating a database of information that collects individual-level data on all students enrolled in higher education and only allows the ED to operate student-level databases necessary for federal student aid programs.[18] The ban thus prevents the ED from linking to other databases held by the federal government that contain information on student outcomes, such as salary, occupation, and workforce information. This ban has been a major and contentious issue in policy debates. Many oppose lifting the ban due to student privacy concerns, while the other side supports lifting the ban to promote transparency and better data on student outcomes.

Public university systems are generally supportive of lifting the ban.[19] However, the National Association of Independent Colleges and Universities, a group that advocates for private universities, has been a strong voice against implementing the federal unit record data system. The organization suggests that the risks for violating students' privacy outweigh the benefits of such a system.[20]

However, such a system could reduce the reporting burden for colleges and universities, provide more accurate and more relevant data on the postgraduation labor market, and provide a clearer, evidence-based understanding of returns on investment in higher education. For example, such a system would allow the calculation of employment rates and whether a student's field of study translates into a career in a related industry. This type of data could more concretely demonstrate the value added by higher education and help colleges and universities develop more targeted programs to support the postgraduation success of students.[21]

Without a national student-level unit record database, unlocking access to the data already collected

by federal agencies like the Social Security Administration (SSA) and the IRS and linking that data to UT System student educational records seemed a natural path forward in the effort to expand the scope of seekUT. In response, the OFR met with the ED and the White House to discuss seekUT, the administration's experiences working with linked education and wage records in developing the College Scorecard[22] (discussed below), and the potential for developing and sharing federal student unit record data. At the same time, UT System staff were pursuing an agreement with the SSA to get access to its national workforce data, hoping that meetings with ED and White House officials might help with that effort. Despite these conversations, the SSA was unyielding in its denial of requests for salary data to match with UT System educational records.

The UT System also attempted to work with the IRS to establish a research use case for IRS data. There was a precedent for IRS data sharing: Two researchers, Raj Chetty of Harvard University and Emmanuel Saez of the University of California, Berkeley, had famously received IRS records through an IRS call for research proposals.[23] However, the IRS commissioner was not receptive to a formal request to discuss a partnership with the UT System, and conversations between UT System and IRS staff about ways to form a mutually beneficial research agenda did not yield a pathway to partnership. UT System staff began to look for alternative sources of national-record-level wage data—enter the US Census Bureau.

Partnership with the US Census Bureau

The UT System learned that through a partnership with state labor offices in 49 states, including the District of Columbia, Puerto Rico, and the US Virgin Islands, the Census Bureau's Longitudinal Employer-Household Dynamics (LEHD) program was collecting quarterly UI earnings data nationwide. The LEHD program is a quarterly database of jobs covering over 96 percent of employment in the United States. LEHD staff integrate existing data from state UI wage records for workers and match the data with existing censuses, surveys, and other administrative records to create a longitudinal data system on US employment.[24]

In 2015, the UT system OFR arranged a meeting with top LEHD administrators and UT System staff at the Census Bureau offices to demonstrate seekUT and discuss a potential data-sharing partnership. The first meeting was promising and led to a series of additional meetings. The reason for the synergy between the two organizations was twofold: First, the UT System brought to the table the visual and interactive demonstration of a working proof of concept tool showing the possibilities of a UT System and Census Bureau collaboration. Second, the Census Bureau was looking to expand the scope of its work beyond simply providing data to consumers and to partner with consumers on research projects.

The majority of LEHD's work focused on labor market analyses and outcomes; any data on education was from surveys and incomplete. An opportunity to link administrative educational records with workforce outcomes at the individual level would greatly expand the Census Bureau's understanding of factors that drive the labor market.

Despite the success of the initial meeting, making substantive progress toward the project goals over the following year required persistence on the part of the UT System staff and frequent communication with the Census Bureau. In the end, though, the Census Bureau's desire to expand the scope of its research partnerships and the UT System proof of concept established a solid foundation on which to establish a mutually beneficial partnership. In September 2016, the UT System and the Census Bureau established a partnership to evaluate UT graduates' postgraduation labor market outcomes using the LEHD national UI wage data.[25]

To match the data, the UT System sent a basic set of information to the Census Bureau through a secure portal, including student name, SSN, University of Texas institution attended, degree and year earned, and CIP code for area of study. The agreement with the Census Bureau included a plan to send matched data back to the UT System to create a national

corollary to the Texas wage tool seekUT. The Census Bureau also planned to create its own interactive web-based wage tool called the Post-Secondary Employment Outcomes (PSEO) Explorer. The PSEO data tool would provide earnings and employment outcomes for postsecondary graduates by major, degree level, and institution.

The plan was to use Texas as the pilot for the PSEO Explorer and then expand the tool to other states. In April 2018, the Census Bureau launched the PSEO Explorer with Texas data, and shortly afterward, in March 2018, the UT System launched the national version of seekUT.[26] The partnership with the Census Bureau provided a more complete picture of postgraduate earnings by capturing data for UT System graduates who had moved from Texas to another state.

The basis for the Census Bureau data is UI wage data for multiple states, which has many advantages, such as universal coverage of postsecondary graduate population, longitudinal information on earnings and employment after graduation, and the ability to measure earnings and employment irrespective of a student's location in the US. However, the drawbacks of using state UI wage data extend to the national earnings dataset—and there were additional complications, since eventually the PSEO Explorer would include multiple states.

Before working with the Census Bureau, each state had developed methodologies to calculate earnings based on UI wage data, and across states there were idiosyncrasies in terms of calculation methodology. For example, some states included only three fiscal quarters of reported UI earnings to calculate annual wages, while others included four fiscal quarters. In some instances, states included all reported nonzero wages, and in others, states only included wages greater than the minimum wage. The Census Bureau's goal was to create a consistent methodology for calculations across all states.

Among the challenges, earnings data provided by LEHD do not include federal employees and members of the armed forces, nor do they include hours worked or occupation title. In addition, Census Bureau privacy standards require the restriction of cell sizes with fewer than 30 students. Small institutions or programs may have high levels of missing data due to these restrictions. Another challenge was determining which methodological approach to use for calculating wage data, as each state UI wage system has a different method for calculating annual earnings.

The goal for the pilot was to develop a method to calculate earnings for the Texas UI wage data that could be standardized across UI wage data for all states. After testing various options, the Census Bureau decided to use the total calendar year earnings from all jobs and include data from earners if the following conditions were met: The wage earners graduated from a participating institution, have at least three quarters of positive earnings, and are earning at least the full-time equivalent of the prevailing minimum wage. Since the launch of the PSEO Explorer, the Census Bureau has established agreements and published data from Colorado, Michigan, New York, Pennsylvania, and Wisconsin.

Comparing SeekUT with the College Scorecard

The UT System was the first higher education institution to create a public-facing tool matching state UI wage data with student-level educational records and then subsequently matching national UI wage data with student-level educational records through collaboration with the Census Bureau. All this work was taking place simultaneously with the ED development of the College Scorecard. Comparing the two tools helps illustrate how decisions about design and data collection limitations can affect what students see.

For example, the College Scorecard began tracking students when they first enrolled at the institution, and it only displays one earnings data point 10 years after entering school. It then interprets 10th-year data as the sixth year of earnings if a student graduated in four years and is not currently enrolled in higher education. Census Bureau and seekUT data begin tracking students *upon graduation* and display

earnings data for students one year, five years, and 10 years after graduation.

But even when data for a similar point in time are compared, the results between the two sites differ significantly. An analysis using the UT System wage data found that College Scorecard earnings are much lower than those reported by seekUT. Differences for the five-year comparisons range from $3,588 to $10,743, and differences from the 10-year comparison range from $9,162 to $20,244.[27]

This could be because College Scorecard cohorts for salary figures include students who did not graduate. SeekUT was designed to include only graduates. A data point that includes graduates and nongraduates will almost always be lower than one that includes only graduates, because nongraduates are likely to have lower salaries.

Another factor driving the differences may be less about design decisions regarding nongraduates and more about data availability—and policy. Recall that only students who received federal aid are included in the College Scorecard salary data. Again, this is due to restrictions on the ED creating a student unit record system, a limitation that does not apply to seekUT. As a result, 50 percent or less of the students attending several of the UT System campuses are included in College Scorecard salary figures.[28]

Reflections on the Journey

The story of seekUT should not leave out one of the most critical pieces of how the work was accomplished: the human relationships—the chance meetings at a conference or event or the introduction to someone who turned out to be a key collaborator by a friend of a friend. While the UT System project was sparked by rising public pressure around seemingly uncontrollable student debt and related concerns about underemployment and unemployment, the project's success is largely based on the personal relationships formed during its development and the commitment of the UT System leadership and staff.

This dedication to the cause was even more important because, in the early 2010s, higher education was still grappling with how to demonstrate student learning outcomes and progress to completion while enrolled. The radical idea that higher education was accountable for students' postgraduation wages and employment trajectories was slow to gain traction. The fact that the UT System was early in understanding the relationship between the higher education journey and postgraduation employment outcomes was partly due to the political climate in Texas, where accountability for the taxpayer dollar at a state-funded system of higher education was paramount. But that early adoption was also partly due to the vision of the leadership of the UT System administration—leaders who understood that the information needed to research postgraduation outcomes required novel partnerships with the organizations that held information.

At the time, state and federal administrative agencies were strange bedfellows for higher education institutions. Higher education institutions and government agencies tend to speak a different language and have different cultures and interests. Yet, at a TWC conference in the early 2010s, the vice chancellor for strategic initiatives had an important conversation with one of the TWC commissioners about a potential data-sharing partnership that opened the doors for a UT System–TWC agreement on UI wage data. This partnership was the first time the UT System and the TWC had shared data in this manner. Everyone on both staffs was learning, and there were many data challenges. When the project expanded to seeking Census Bureau data, personal commitment and relationships became even more important.

Having an OFR in Washington, DC, was the UT System's entrée into the federal policy world. UT System leadership was seeking federal data on students working outside Texas to improve the accuracy of their wage tool. What the UT System did not know early on was that there was a larger policy world advocating for national student-level wage data. The two worlds connected with the launch of seekUT in Washington, DC. The policy advocates helped the UT System leadership make connections, and the UT System helped the policy advocates by providing a

tool that demonstrated a successful proof of concept for their advocacy.

The real highlight of this meeting was the demonstration of the seekUT tool and the discussion of a potential partnership. While the meeting went well, the process of solidifying the partnership took another year. Someone once asked the Census Bureau representative why they partnered with the UT System. During the year leading up to signing the partnership agreement, the UT System kept in close contact with the Census Bureau, reaching out to them every couple of weeks to check in and make sure the project was on track. There were also several meetings in DC during that time to work out the details of how everything would work. These in-person meetings helped establish a rapport between the Census Bureau and UT teams, as they both knew the partnership would require many hours of hands-on collaboration.

The investment of time and effort was well worth it, as the project made many important contributions to the students and families that higher education serves, to higher education itself as an important institution, and to the field of higher education research. The most important contribution was in providing prospective and current students reliable information on postgraduation finances to help them get an idea of what their salary range could be upon graduation and the ability to compare that to student debt payments. This type of information helped students weigh important decisions about major choice and financing their college education, which students before this tool had mostly made in the dark.

In terms of higher education as an institution, the salary information helped institutions understand the salaries associated with different programs and the debt load of students in those programs—an important piece of program review. The institution cannot control the salary marketplace for their programs, but it can put in place targeted interventions to help students in lower-paying programs reduce their postgraduation debt burden.

The tool also helped the UT System demonstrate the value of its degrees and, in particular, dispel common stereotypes about liberal arts students barely making a living wage. Yes, liberal arts graduates sometimes struggle, but as mentioned above, median first-year earnings for 67 percent of graduates of UT System non-STEM programs were higher than the national individual median income of $35,380.[29]

In terms of higher education research, seekUT provided a model for how to develop an interactive postgraduation outcomes tool. The UT System actively and widely shared how the tool was created with higher education institutions throughout the nation during conferences, in one-on-one meetings, in literature, and even by hosting a national conference on the topic of aligning higher education and the workforce.[30] While the seekUT tool benefited the UT System, the UT System leadership aspired to benefit the field by helping higher education institutions access and use data to demonstrate value.

Notes

1. University of Texas System, Student Debt Reduction Task Force, *College "Credit": Reducing Unmanageable Student Debt and Maximizing Return on Education*, December 2012, https://www.utsystem.edu/sites/default/files/documents/publication/College%20Credit%3A%20Reducing%20Unmanageable%20Student%20Debt%20and%20Maximizing%20Return%20on%20Education/college-credit-student-debt-report.pdf.
2. University of Texas System, *College "Credit."*
3. PayScale, website, https://www.payscale.com/.
4. Another notable example was a project led by the American Institutes for Research called Launch My Career, formerly College Measures. College Measures partnered with several state governments to identify postgraduation labor market outcomes using information reported by employers to the unemployment insurance system. The project initially provided an online interface to explore wage data, but that online tool is no longer available. Now the project provides a series of research reports on postgraduation labor market outcomes using data from various partner states.
5. US Department of Education, "Family Educational Rights and Privacy, Final Rule," *Federal Register* 76, no. 232 (December 2, 2011), https://www.govinfo.gov/content/pkg/FR-2011-12-02/pdf/2011-30683.pdf.
6. Before the transfer of data and matching process began, all employees involved in the project received Family Educational Rights and Privacy Act training from the University of Texas (UT) System's Office of General Counsel, after which they were cleared to work with the identifiable student data.
7. These numbers come from internal calculations by the UT System Administration staff.
8. These numbers come from internal calculations by the UT System Administration staff.
9. These numbers come from internal calculations by the UT System Administration staff.
10. These numbers come from internal calculations by the UT System Administration staff.
11. These numbers come from internal calculations by the UT System Administration staff.
12. University of Texas System, "seekUT," https://seekut.utsystem.edu/.
13. The student quotation comes from the internal records of the UT System Administration staff.
14. University of Texas System, "UT System Dashboard," https://data.utsystem.edu/.
15. This number comes from internal calculations by the UT System Administration staff.
16. University of Texas System, "University of Texas System First in Nation to Provide Salary and Student Debt Data: 'SeekUT' Online Resource Will Help Prospective UT Students Make Informed Decisions," January 16, 2014, https://www.utsystem.edu/news/2014/01/16/university-texas-system-first-nation-provide-salary-and-student-debt-data.
17. Doug Lederman, "Texas Takes On Student Outcomes," *Insider Higher Ed*, January 17, 2014, https://www.insidehighered.com/news/2014/01/17/ut-system-creates-database-track-graduates-earnings-debt.
18. Higher Education Opportunity Act of 2008, Pub. L. No. 110-315, Sec 113.
19. Andrew Kreighbaum, "Push for 'Unit Records' Revived," *Inside Higher Ed*, May 16, 2017, https://www.insidehighered.com/news/2017/05/16/bipartisan-bill-would-overturn-federal-ban-student-unit-record-database.
20. Andrew Kreighbaum, "Private Colleges Give Ground on Student Data," *Inside Higher Ed*, June 8, 2018, https://www.insidehighered.com/news/2018/06/08/nonprofit-colleges-signal-potential-support-more-federal-data-student-outcomes.
21. Several congressional bills have been introduced that address the issue of a student unit record system in recent sessions. Two notable 2017 bills were the Promoting Real Opportunity, Success, and Prosperity Through Education Reform (PROSPER) Act and the bipartisan College Transparency Act of 2017. The College Transparency Act—sponsored by Sens. Bill Cassidy (R-LA), Orrin Hatch (R-UT), Elizabeth Warren (D-MA), and Sheldon Whitehouse (D-RI)—would direct the National Center for Education Statistics to develop a secure data system by coordinating with other federal agencies. It would prohibit the creation of a single database in the Department of Education and instead authorize the federal government to link data it already collects. The 2017 PROSPER Act,

introduced by Rep. Virginia Foxx (R-NC), does not go so far as overturning the ban on student unit record data, instead authorizing a feasibility study to investigate whether to expand the National Student Clearinghouse to set up a third-party data system to analyze student outcomes. As of this publication, neither bill has been adopted.

22. College Scorecard, website, https://collegescorecard.ed.gov/.

23. Jeffrey Mervis, "How Two Economists Got Direct Access to IRS Tax Records," *Science*, May 22, 2014, https://www.sciencemag.org/news/2014/05/how-two-economists-got-direct-access-irs-tax-records.

24. Longitudinal Employer-Household Dynamics, website, https://lehd.ces.census.gov/.

25. Jeremy Bauer-Wolf, "A 'Workaround' to U.S. Ban on Student-Level Data," *Inside Higher Ed*, March 27, 2018, https://www.insidehighered.com/news/2018/03/27/university-texas-system-releases-new-student-outcome-database.

26. US Census Bureau, "New U.S. Census Bureau Data Links College Degrees and Earnings," press release, April 2, 2018, https://www.census.gov/newsroom/press-releases/2018/education-pilot.html; and Bauer-Wolf, "A 'Workaround' to U.S. Ban on Student-Level Data."

27. These numbers come from internal calculations by the UT System Administration staff.

28. This number comes from internal calculations by the UT System Administration staff.

29. These numbers come from internal calculations by the UT System Administration staff.

30. University of Texas System, "UT System Convenes National Experts to Explore Ways to Better Align Higher Education and the Workforce," March 29, 2016, https://www.utsystem.edu/news/2016/03/29/ut-system-convenes-national-experts-explore-ways-better-align-higher-education-and-w.

Performance Measures and Postsecondary Investments for Adult Students

AVAILABLE "YARDSTICKS" AND THE CHALLENGES OF INSTITUTIONAL COMPARISONS

Diego Briones and Sarah E. Turner

Adult students often make postsecondary choices from local or regional markets without the benefit of institutional performance measures. This puts these students—many of whom are low income and minorities—at risk of attending poorly performing (and sometimes predatory) institutions. Too often, these students enroll at institutions in which high default rates, low rates of program completion, and weak earnings are endemic.[1]

Postsecondary performance measures of students' credential attainment, employment, and earnings outcomes can improve student outcomes through two main channels. First, consumers—students and advisers guiding program selection—can use these data to inform choices about where (or whether) to pursue degrees and other credentials. Second, policymakers can use the information to enact accountability and consumer protection measures.

Adult education and training tie to both the "education" and "labor" domains of federal policy. Adult postsecondary students are an economically significant part of higher education, with students over age 21 accounting for about 42 percent of the 16.7 million undergraduate students enrolled at degree-granting institutions. Further, nearly 54 percent of students in 2017–18 who received Pell Grants—administered by the Department of Education (ED) and available to low- and middle-income undergraduate students—were older than age 21. Providing education and training services to workers, also falls under the purview of the Department of Labor (DOL), with the Employment and Training Administration administering federal government job training and programs to assist dislocated workers, along with unemployment insurance benefits. Many of the postsecondary institutions that serve adult students under the ED's Title IV financial aid programs also serve adults under the DOL's Workforce Investment and Opportunity Act (WIOA) training programs.[2]

Until recently, publicly available data on student outcomes such as completion rates and earnings for individual postsecondary programs were scarce.[3] Yet in the past decade, two broadly parallel efforts have put these performance measures for programs of study and postsecondary institutions in the public domain: the College Scorecard produced by ED and the Eligible Training Provider (ETP) lists compiled by the DOL. The College Scorecard measures are now widely known in higher education policy circles since they were first released in 2015; measures from the DOL for external training programs (often offered by postsecondary institutions) are only recently coming online, even as there is a long-standing policy of DOL performance indicators that

measure outcomes for local workforce development core programs.[4]

In this chapter, we focus on the postsecondary performance measures from the DOL and ED that potentially inform the choices of adult students. These students often have prior labor market experience, and they may be disproportionately likely to have family and employment commitments that limit the range of their educational choices.[5] In the main, these students are choosing among nonresidential institutions, which include public community colleges, for-profit institutions, and regional universities. While some adult students make postsecondary choices in the context of federally sponsored job training programs, the vast majority access postsecondary choices directly, often without professional guidance. Because not all colleges and universities serve adult students and not all training options for adult students are provided by colleges and universities, performance indicators from the ED and the DOL cover an overlapping but not identical set of institutions. An added complexity in this domain is that some postsecondary institutions (particularly community colleges) offer both credit-bearing and noncredit programs.

While there is little explicit coordination between ED and the DOL around collecting postsecondary performance measures, providing adults with the skills and training needed to thrive in the labor market would seem to be a shared objective. This chapter considers the overlap, complementarity, and common deficiencies of these metrics. At question is whether the distinct efforts of ED and the DOL lead to wasteful, duplicative efforts or whether there are complementarities from the two systems. In comparing postsecondary performance measures available in recent years, technology and policy changes have led to the development of these resources. Advancements in data processing and computing have enabled linking of datasets and tracking of outcomes that would have been impossible at one point, while the creation of state longitudinal data systems (partially funded by the American Recovery and Reinvestment Act) has expanded the technical capacity to link archival records at the state level.[6]

Our focus in this chapter is on data availability and quality. Do resources such as College Scorecard from ED and the ETP measures from the DOL provide meaningful indicators of outcomes for adult students? In the way that a window sticker on a car provides basic information on fuel efficiency and expected safety, can students learn basic information about expected costs, educational outcomes, and expected employment outcomes? Neither ED nor DOL measures tackle the challenge of value-added measurement, distinguishing the role of institutions from baseline individual characteristics, and the related important empirical and methodological challenges not addressed in our discussion.[7] We also leave for another day the challenge of providing consumers with an effective user interface to convey performance information.

"Availability"—the absence of missing data—is a necessary but not sufficient condition for usable performance measures; we demonstrate that "missing data" are a much larger issue among institutions traditionally attended by adult students than those chosen by recent high school graduates. In our comparison of key performance indicators, we find that earnings measures are highly correlated among different temporal and demographic points within institutions. Yet, between-institution comparisons require additional context about local labor markets and—in large institutions—programs of study to provide meaningful information to students.

The first section provides a baseline introduction of and comparison between ED (College Scorecard) and DOL (ETP) student outcome measures available on postsecondary institutions. The second section focuses on the baseline availability of College Scorecard performance measures across the array of institutions most likely to serve adult students, with consideration of the reliability and appropriate context of these data. The third section presents data availability from the newer ETP measures and assesses the overlap with College Scorecard in several exemplar states where data are currently available.

On the one hand, the developments over the past decade are cause for considerable optimism; the supply of performance measures for postsecondary

institutions has gone from near zero to a multitude of variables recording completion, earnings, employment, and student debt. On the other hand, use of these data for decision-making by potential students and policymakers appears limited, while the proliferation of different metrics may actually confuse students and contribute to the kind of information overload that inhibits choice. There are also unexploited complementarities between DOL and ED measures. Our objective is to catalog existing measures and then examine deficiencies and opportunities to better use potentially formidable data about postsecondary institutions.

Expanding Data Sources

Looking back a quarter century, all postsecondary students would have found it difficult to access data to inform postsecondary choice. Data sources like the federal Integrated Postsecondary Data System (IPEDS) provided some information on program inputs, offerings, and completion rates for those willing to wrangle large administrative data.[8] In addition, measures of cohort default rates on student loans at the institution level have long been maintained by ED's Federal Student Aid (FSA) office.[9] Students choosing among bachelor's and graduate-level programs could also avail themselves of third-party rankings from sources such as the *Princeton Review* and *US News & World Report*. But for the millions of adult students pursuing sub-baccalaureate credentials or attending nonresidential institutions, data resources have been notably scarce.

For those viewing the question of postsecondary performance indicators through a higher education lens, eligibility for Title IV financial aid, which includes Pell Grants and federal student loans, serves to demarcate ED's universe of interest and oversight.[10] While nearly all institutions awarding associate and bachelor's degrees reside in the Title IV universe, not all institutions that provide training leading to occupational licensure or certification fall under Title IV, even as the Title IV institutions serve the majority of students. The Title IV universe is large, containing more than 6,000 institutions, and embodies heterogeneity in scale, institutional mission, programmatic focus, and control, including large public universities (e.g., Ohio State University); selective private universities (e.g., Stanford University); community colleges; degree-granting, for-profit institutions; and many small, nondegree-granting institutions from the for-profit sector (with this sector including cosmetology schools, massage training, medical professions, and tech training). As Table A1 indicates, scale varies immensely—from institutions typically serving thousands of students to those serving relatively small numbers.

For those who look at performance indicators for adult students through the lens of job training and workforce services, programs available to adults under Title I of WIOA are the subject of interest. Title I authorizes the job training services facilitated by workforce center locations (American Job Centers) through three state formula grant programs—for youth, adults, and dislocated workers—with the aim of furthering workforce development to meet local labor market demand. Job training services under WIOA are largely produced by postsecondary institutions and independent providers, with choices for ETPs maintained by the states. Even as WIOA was introduced in 2014, it was the successor to a long line of federal-state initiatives under the heading of job training beginning with the Manpower Development and Training Act in 1962, followed by the Comprehensive Employment and Training Act in 1973, the Job Training Partnership Act (JTPA) in 1982, and the Workforce Investment Act (WIA) in 1998.

There is a long-standing history of evaluation and compliance measurement in these programs, and under WIOA, states are required to report annual performance of ETPs including program completion and earnings using ETA-9171 reports. Moreover, while WIOA job training is small in scale relative to the overall pool of adults enrolled in postsecondary education, many of the institutions and programs that participate in WIOA are also part of the Title IV universe of postsecondary institutions.[11]

The broad overlap between ED and DOL interests in performance measures for adult postsecondary

enrollment is more substantial than commonly acknowledged. For example, while about 10 percent of unemployment insurance recipients in their 20s and 30s pursue postsecondary training, more than 95 percent of these recipients who choose to enroll do so outside WIOA program. (See Figure A1.)

In the remainder of this section, we discuss the distinctions between College Scorecard and ETP measures of postsecondary performance (summarized in Table A2).[12] A broad distinction in the architecture of these performance measures is worth emphasizing: The federal government assembles College Scorecard data; ED data come from federal data sources, including individual-level records; and ETP measures come from state data sources, which are then reported to the DOL. We continue in this section by comparing these resources in terms of their source data, universe of coverage, and the performance measures released.

College Scorecard. The release of the College Scorecard measures in 2015 was not just a repackaging of data already in the public domain (like the consumer-facing College Navigator tool from ED). It also entailed the release of new measures that had not been used for analytic purposes by researchers or policymakers. The innovation was linking federal student aid records maintained in the National Student Loan Data System (NSLDS), federal tax data recording earnings from W-2 forms, and the more standard characteristics of colleges and universities from the ED's IPEDS surveys.[13]

While the College Scorecard contains many data elements, three broad types of measures distinguish it from other sources: (1) measures of earnings and employment outcomes at different points in time and for different subgroups; (2) measures of borrowing and repayment behavior, with these measures aligned with earnings; and (3) measures of completion outcomes for all students (not just the first-time, full-time students recorded in IPEDS). A limitation of the data released is that earnings data include only those students participating in federal financial aid programs such as Title IV, as such students fall under the federal purview for expenditure accountability, while outcomes for the full population of students would likely run afoul of the congressional ban on unit record collection.

The impact of this constraint varies with the proportion of students receiving federal financial aid. For adult students attending for-profit institutions, coverage is quite high; more than 75 percent of students enrolled receive federal financial aid. However, public four-year and two-year institutions pose a larger challenge, as 60 percent and 40 percent of students, respectively, receive federal financial aid.[14]

In addition, note that updating longer-term institution-level measures was suspended during the Trump administration. Data for the six-year, eight-year, and 10-year post-entry earnings remain on the public-release College Scorecard file but have not been updated in recent years. It is hoped that these measures will be reinstated in coming cycles of data release.[15]

Expanding on the initial mandate, the data reported in the College Scorecard have grown to include program-level indicators for degree and certificate recipients (defined by a four-digit Classification of Instructional Programs code), again for students who had received federal financial aid.[16] This turns out to be an exponential increase in the potential scope of data collection given the wide array of degree types across different fields of study. The measures reported include median earnings, debt by different types (e.g., Stafford loans, Plus loans, etc.), and repayment rates. These additional program measures responded to the wide-ranging critique that choice of program may be more important than choice of institution in some cases, given wide variation in earnings levels for graduates of different fields.[17] At present, these program-level measures are available over a much shorter horizon (one to two years) than the institution-level measures are, since the information in the student aid records needed to collect program of study was added only recently.

While the release of program-level data addresses a long-standing concern about heterogeneity within institutions, it magnifies a more basic concern about missing data and noisy metrics. When there are few observations at a postsecondary institution

or within a program, data are suppressed—set to "NULL" or missing.[18] As we demonstrate below, this issue of missing data becomes particularly problematic for some of the small institutions that focus on adult postsecondary training. Because many subbaccalaureate programs are small in scale, less than 35 percent of those receiving certificates are in a "reportable" field of study, while about 82.5 percent of bachelor's degrees are awarded in fields in which earnings and debt data are reported.[19] Because the level of coverage is so low at the program level, we focus the bulk of our analysis on institution-level data while noting that a number of policy analysts[20] have made constructive suggestions for data pooling, adding up related small fields and pooling over years to improve data coverage.

DOL Training Performance Indicators: WIOA and ETP. The origins of modern accountability systems in US labor market programs date to at least the JTPA, in which performance monitoring was a key tenet to driving federal investment in training programs. Statutory provisions for performance measurement under the JTPA, however, fell short of mandating common measures of labor market outcomes and providing local agencies with guidance on collecting data.[21] Issues surrounding data quality and opportunities for "gaming" strategies ensued.[22]

A set of common performance metrics to evaluate training providers was not adopted until WIA. As a replacement to JTPA, WIA initially established four measures for the adult program: employment rate, employment retention rate, earnings change, and the employment and credential rate.[23] Among other changes to the labor market accountability systems, WIA notably specified the use of collecting post-exit performance data through state unit records.[24]

Relative to its predecessors, WIOA represents a shift toward standardized protocol for training provider evaluation. Among other performance-related stipulations, WIOA mandates state governors and workforce development boards establish eligibility criteria for providers, develop statistical adjustment models to account for differences in state-specific economic conditions and participant characteristics, and ensure that outcomes for all program participants—not just WIOA participants—be collected.[25] The primary performance indicators under adult-serving WIOA training programs include (1) the percentage of program participants who are in unsubsidized employment during the second and fourth calendar quarters after exit from the program, (2) the median earnings of program participants who are in unsubsidized employment during the second calendar quarter after exit from the program, (3) the average earnings of program participants who are in unsubsidized employment during the second and fourth quarters after exit from the program, and (4) the percentage of program participants who obtain a recognized postsecondary credential (or secondary school diploma or equivalent) during participation or within one year after program exit.[26]

These metrics have historically been used for compliance, and only recently have these performance measures begun to shift to the public domain as a consumer-facing tool. Specifically, WIOA mandates annual state submissions of performance data using ETA-9171 reports and requires that these data be made available to the public. In practice, we find that while states consistently maintain online directories of eligible training programs with basic details on cost and duration, these directories are often "long lists" (e.g., comma-separated values files) rather than user-friendly interfaces.[27]

The DOL's newly launched TrainingProviderResults.gov represents perhaps the most significant shift in the consumer use of these performance data. Launched on December 15, 2020, TrainingProviderResults.gov displays the performance and cost-related information for eligible training providers from state submissions of ETA-9171 forms with the explicit intent to provide the public with an interactive tool to compare programs across a set of geographic and provider-level characteristics. As WIOA mandates the collection of program-level outcomes for all participants, TrainingProviderResults.gov may plausibly provide performance information complementary to College Scorecard. In particular, WIOA-mandated reports on eligible training providers may address a lack of information on the non–Title IV

institutions where adult students enroll, missing data at the provider and program levels, and evidence of short-term labor market outcomes not captured in College Scorecard.

We next turn to the exploration of data available to inform adult students in the College Scorecard and then consider the overlap with ETP data in greater detail later in this chapter. To preview a central conclusion: Greater integration between these sources would markedly strengthen the postsecondary performance measures available to postsecondary students.

Scorecard Data: Availability and Reliability of Earnings Outcomes

A key innovation of the College Scorecard data is the presentation of earnings outcomes, along with borrowing and debt burdens. Earnings measures and corresponding counts of employment are available at different intervals relative to enrollment (e.g., six, eight, and 10 years) and representing different moments of the earnings distribution (e.g., mean, median, standard deviation, and various percentiles). These measures are also generated for different subpopulations within institutions based on tercile of family income, dependent or independent status, and sex. As noted earlier, these earnings data reflect only Title IV aid recipients and are computed from Treasury records, thus representing reported earnings (with informal compensation or tips unlikely to be properly recorded). These data are also available only when the number of observations in a cell does not invoke privacy-related suppression requirements (approximately 30 observations in a cell); naturally, as one looks at more finely defined subgroups or among groups that are sparsely populated at any institution type, these suppression rules are more likely to bind.

Questions of data availability and reliability are the basic starting point for understanding the utility of College Scorecard data. We will expand on two key observations below. The first is availability: Small institutions and subgroups within these institutions are less likely to have earnings data presented, and adult students are disproportionately likely to attend these small institutions. The second is reliability: When earnings data are available, there is a strong correlation among measures at different points in time (i.e., cohorts) and among different subgroups, even as levels often vary across measures. We conduct the basic analysis at the level of the institution, leaving to the next section the important questions of program and geographic contextualization.

Data Availability. Taken as a whole, the College Scorecard data on earnings provide excellent coverage at postsecondary institutions attended by the modal student. At the level of the institution aggregate, earnings data measured six years after enrollment are available for about 75 percent of the Title IV institutions. Weighted to reflect the distribution of students, institutions attended by nearly 97 percent of students would have earnings data. While this is impressive coverage overall, some institutions are far less likely to have data available, owing to both small-scale and relatively recent entry to the market.

First, our analysis shows that at traditionally large-scale institutions—public universities and community colleges—missing earnings data are essentially a nonissue. Private nonprofit and for-profit four-year institutions represent an intermediate case, as these sectors include both large institutions and a nontrivial number of small institutions. Thus, while 15–20 percent of institutions have missing earnings data, the proportion of students affected by missing data in these sectors is again fairly modest (less than 5 percent in aggregate for the six-year measure). Finally, private-sector two-year institutions and less-than-two-year institutions more generally present a different case with average enrollment in hundreds, not thousands, and, in turn, a high fraction of institutions that are missing earnings data. (See Tables A10 and A11.)

Yet, the examination of the earnings outcomes that *are* observed for the less-than-two-year institutions leads to questions and concerns about outcomes at the institutions for which no data are available. The private for-profit institutions awarding less-than-two-year certificates record average median

earnings of about $20,600 six years after enrollment, which is below the poverty line. In contrast, those attending four-year institutions in the public and nonprofit sectors can expect much stronger earnings—medians of $35,700 and $40,850, respectively. And while students at four-year institutions and community colleges experienced earnings growth of over 20 percent between the six- and 10-year points of observation, earnings growth for the less-than-two-year sector was much weaker.

A challenge is that many of the institutions missing earnings data are likely to be quite small and disproportionately serve adult students. Figure A2 shows the distribution of institutions with small (i.e., fewer than 100 students) and very small (i.e., fewer than 50 students) levels of undergraduate enrollment. For the less-than-two-year institutions, more than half have fewer than 100 students, and more than a quarter have fewer than 50 students.[28] While this multitude of small institutions missing earnings data necessarily account for a relatively modest share of overall enrollment (and adult enrollment), the observation of weak performance among their peers is cause for concern.

While small institutions with missing data (which predominate among those awarding only certificates) represent one challenge for the utility of scorecard measures, a second type of challenge dominates the large institutions with many programs of study and degree levels. Many community colleges (along with the largest for-profit institutions) offer hundreds of programs across fields as diverse as welding, computer programming, and humanities, with multiple levels of certificates and degrees. In these cases, evidence on the difference in outcomes among fields may be particularly important, as we discuss below.

Reliability: Comparing Earnings Measures. The many points of observation of earnings presented in the College Scorecard data are important indicators of the trajectory in earnings and variation by subgroup. Our interest is in assessing the correspondence among these measures. One type of concern that would push for the careful examination of multiple measures by policymakers and student consumers would be the case when some institutions represent modest or low initial earnings only to then show substantial growth at later points of observation. A different type of concern would occur if institutions differed in their impact on earnings for subgroups.

In sum, we find that—among institutions with available earnings data—the measures are highly correlated across indicators. Table A3 shows the correlation among earnings measures by type of institution with the comparison between the six- and 10-year measures.[29] Overall, institutions that have high or low median earnings measures in year six are also likely to be high or low in year 10, suggesting little difference in "rank" that would be generated by choice of instrument. Table A3 also examines gender comparisons by institutional sector for basic earnings measures. Other demographic disaggregation is both possible and desirable—at least in an abstract sense—but also exacerbates the challenge of disclosure, particularly for subgroups that are a small share of the student population and those at relatively small institutions.

Contextualization: Geography and Field. Contextualization and, in some cases, disaggregation are needed for the College Scorecard measures to be of use to students or policymakers. A first issue concerns the importance of local labor markets for contextualizing earnings outcomes. Looking at postsecondary performance measures in a local context is significant in two dimensions. First, for place-bound adults, localities define postsecondary options. Second, local labor markets define both the opportunity costs of attendance and the expected returns for different types of credentials.

In addition, the large and varied roles played by states in the financing and delivery of postsecondary educational options (with in-state residents receiving discounted tuition options) affects the expected range of college costs for adult students. To illustrate, tuition and fees at community colleges range from $1,271 in California to $7,599 in New Hampshire, mean level of earnings for high school graduates ranges from about $26,400 in Mississippi to more than $36,000 in Wyoming, and average earnings for those

with an associate degree vary from about $45,000 in Idaho to more than $68,000 in New York. (See Table A12.) And while individuals need to contextualize local labor markets in making choices, so too do policymakers. Using "national" norms to reward or punish institutions will likely confound the strength or weakness of a local labor market with institution-specific factors affecting earnings.[30] Thus, providing regional and local context with earnings data is likely of particular importance.[31]

A further challenge of the College Scorecard measures is the variation in earnings across credential level and program of study. The issue of variation within institutions in the returns to postsecondary study and the technical reviews of the College Scorecard have been noted by numerous scholars.[32] The 2019 release of the program-level data in the College Scorecard is a meaningful response to this concern. It is evident that field variation is, indeed, large, with earnings typically varying by a factor of two between the highest- and lowest-earning program areas within credential levels.[33]

While program-level data represent a formidable collection with 217,365 observations (at the institution, field, and credential levels), the utility of these resources differs markedly across type of institution. For large public community colleges and four-year universities that enroll thousands of students, the program-level observations provide considerable refinement to complement institutional measures. However, in the case of the many very small institutions (often private), the addition of the program-level data only underscores the basic missing data problems.

To illustrate how institutions differ in their specialization, Table A4 shows program counts by degree level and sector of institutions for credentials at the bachelor's level and below. A typical public communitycollege awards about 24 certificate-level credentials (with some awarding as many as 85) and more than 30 associate-level credentials (with the maximum at 88). In contrast, of the more than 1,500 for-profit institutions for which one- to two-year certificates are typically the highest credential award, the average number of programs is 1.8, with about 70 percent only indicating one program-level credential, thus demonstrating a high level of specialization in which program-level classifications add little.

An example highlights the need for some differentiation of programs among large institutions while illustrating the challenge of missing data. Northern Virginia Community College, which enrolled more than 50,000 students in the fall of 2019, shows 40 distinct certificate programs and 39 associate-level programs. While cell size affords disclosure for only 20 associate-level programs, the difference in median earnings for completers was marked, with a low of $25,525 (human development and family) and a high of $69,757 (dental support services).

The "tension" illustrated by this case that extends more broadly concerns how to recognize large differences in outcomes among programs of study while maintaining units of analysis that are large enough to permit disclosure. Overall, program-level data are an acknowledged problem in College Scorecard data that is particularly acute at the sub-baccalaureate level, as only about 44 percent of credential recipients and 69.5 percent of associate degree recipients are in programs with earnings disclosure, relative to more than 86 percent of bachelor's degree recipients.[34] As others have suggested,[35] the current observation of "missing data" at the program level can be resolved in many (but not all) circumstances with aggregation conventions—adding up both adjacent program codes and using multiple years of data with small programs. A final point that we flag for the comparative discussion is that the College Scorecard program-level measures are for completers only and, as a result, do not provide a full window on outcomes such as completion likelihood, which may affect individual decision-making.

Connecting WIOA and Employment Training Providers

The consideration of College Scorecard measures and the newly released ETP measures, which are partially available on state websites and TrainingProviderResults.gov, presents an opportunity for

comparison of earnings measures gathered from different sources. Potentially, complementarities across data sources may yield more complete data to inform objectives of those focused on postsecondary education and those focused on workforce services. We note at the outset that the national reporting system TrainingProviderResults.gov is new and faces the challenge of accommodating a variety of state reporting infrastructures. Aggregating data across multiple program years alone (as the DOL intends) will almost surely improve the availability of data in the coming years.

This section follows the primary themes of our discussion on College Scorecard: availability, the proportion of performance data that is not missing; reliability, the correlation among available measures for institutions in College Scorecard and ETP data; and the extent to which these sources may be complementary to one another. While we leverage data from the national TrainingProviderResults.gov, we focus the bulk of our earnings analysis on Washington and Texas ETP data. Notably, Washington and Texas are in the minority of states with available data on all student outcomes as opposed to WIOA participants only.[36] Given that these data are relatively new and many states continue to build the necessary data infrastructure to track participant outcomes, our findings from the ensuing analysis should be considered within the context of these exemplar states.

Overview of the Data. Relative to College Scorecard, ETP data contain a small number of variables measuring student outcomes and characteristics. Outcomes fall into three groups: (1) employment (number employed in the second or fourth quarter after exit), (2) earnings (median earnings in the second quarter after exit and average earnings in the second or fourth quarter after exit), and (3) completion (the number of individuals who did not withdraw or transfer out from the program within the reporting period).[37] We observe outcomes at the provider-program level (e.g., provider or institution: the Construction Industry Training Council of Washington, program: Residential Wireman 101, median earnings second quarter after exit: dollar amount); thus, the structure of these data is much like the disaggregated programs of study data from College Scorecard. Note, however, the shorter follow-up in the ETP earnings measures relative to College Scorecard (e.g., second quarter after exit versus six years after exit). While one would also prefer to check for consistency in measurement across data sources, the differences in follow-up allow us to check for correlations in "performance" within an institution. (That is, we can check whether institutions where graduates have higher earnings in College Scorecard also have higher earnings outcomes measured in the ETP data.)

Data Availability. At a national level, TrainingProviderResults.gov has more than 73,500 provider-program observations, with nearly half these programs offered by postsecondary institutions. Of the TrainingProviderResults.gov providers matched to College Scorecard, 43 percent are public, two-year colleges (Figure A5). The intersection of College Scorecard and ETP data includes nearly the full national universe of community colleges. While there is state-level variation that reflects local requirements for inclusion in the ETP universe, the nonoverlapping institutions are of the following types: (1) non–Title IV certificate-granting programs included in ETP but not College Scorecard (e.g., Washington Trucking School) and (2) some Title-IV four-year universities that do not regularly serve adult undergraduates not included in the ETP data (e.g., Gonzaga University). Figure A3 illustrates this Title IV–ETP overlap for Washington and Texas.

The proportion of missing data on outcomes across states is striking.[38] This is likely a reflection of most states receiving waivers from reporting outcomes on all students in program year 2019; however, we also find evidence of inconsistencies in suppression and reporting rules between states and TrainingProviderResults.gov. (See Table A13.)

Focusing on the Washington and Texas ETP data for the remainder of our analysis, Tables 5 and 6 present sample sizes and means for Title IV and non–Title IV providers in each state. We make this distinction to draw comparisons to College Scorecard, where all providers are Title IV institutions.

Thus, using ETP data, we can measure the relative size and outcomes of postsecondary institutions not captured by College Scorecard and examine the correlation between ETP and College Scorecard performance measures within institutions.

Washington Title IV institutions are well represented in the ETP data. Our ETP data cover about 75 percent of the Title IV institutions in Washington. There seems to be no consistent, observable attribute among the 28 Title IV institutions *not* serving as ETPs besides having a relatively small enrollment. Together, these 28 providers constitute only 9 percent of the total Washington undergraduate enrollment. (See Table A5.)

Texas ETPs, on the other hand, represent less than a quarter of the state's Title IV institutions. The differences in Title IV representation between Texas and Washington present a useful comparison of the state-level variation in programs approved for federal funding from WIOA and Title IV. Revisiting Figure 5, of the Title IV institutions *not* serving as ETPs in Texas, about 32 percent (more than 100 providers) are cosmetology certificate programs. This is in stark contrast to Washington, where virtually all Title IV cosmetology programs are ETPs and thus eligible for WIOA funding.[39] (See Table A6.)

Regardless, in both states, Title IV institutions represent a disproportionate share of the eligible training *programs* offered. This likely reflects the differences in scale at which these institutions operate, with many more programs per institution at Title IV providers than non–Title IV providers. In fact, although Title IV institutions constitute less than 20 percent of all Washington ETPs at the institution level, they offer nearly 75 percent of the offered programs. In Texas, Title IV institutions offer over 80 percent of the 2,941 programs offered.

Indeed, non–Title IV providers are largely represented by apprenticeship and for-profit institutions specializing in one or two programs. For example, Washington's American Energy School of HVAC offers one program: furnace installation. Conversely, the University of Washington and Texas' South Plains Community College alone offer more than 200 and 130 eligible programs, respectively.

Institutional and program-specific characteristics seem to affect both the availability and quality of the ETP data. First, employment measures are often of poor quality, resulting in part from limited data and misalignment in the points of observation.[40] (For examples of this, see Figures A6 and A7.) Therefore, we omit these employment outcomes from our analysis.

Turning to the remaining metrics—earnings and completion rate—Table A7 displays the percentage of missing values for the Washington and Texas samples overall and by Title IV status at the program level. In general, a large percentage of the eligible training programs has no performance measures available, with non–Title IV institutions particularly suffering from missing data. This, in part, is a function of the relatively small size of apprenticeship and for-profit programs (Table A8). In addition to the suppression of programs with relatively few program participants, data may be missing because insufficient time has passed to capture program outcomes. The data, unfortunately, do not allow us to distinguish how these factors contribute to the missing data problem.

Of the non–Title IV institutions for which we *do* observe performance outcomes, mean quarterly earnings for Washington providers are roughly 57 percent higher than the state's minimum wage level (about $7,119 in quarterly earnings).[41] However, within this group, we only see mean quarterly earnings in the fourth quarter after exit for 12 apprenticeship programs, five private nonprofit organizations, and five postsecondary institutions. Even for private for-profits, the institutional sector from which most of the non–Title IV–populated earnings data draw from, 37 percent of the programs have quarterly earnings below $8,000. We are therefore hesitant to draw any meaningful conclusions about the performance of these institutions.

Reliability. We focus our analysis on the matched sample of College Scorecard and ETP institutions.[42] First, we note that the vast majority of the matched institutions have earnings measures populated in both College Scorecard and ETP.[43] Table A9 further reinforces the distinction of assessing missing

data by enrollment-weighted measures. Washington, for example, has mean earnings in the fourth quarter after exit for institutions attended by nearly 99.82 percent of the undergraduate enrollment in Washington Title IV institutions.

Moreover, Figure A4 depicts a series of correlations between ETP and College Scorecard earnings measures. Mean earnings outcomes are highly correlated across the two data sources despite being measured at different points in time, indicating—at least within the context of Washington and Texas—earnings are a consistent measure of performance.

Second, a small set of institutions have earnings measures populated in either College Scorecard or ETP only. College Scorecard generally provides a more robust set of performance measures to evaluate institutions relative to ETP. However, relatively small, private institutions present a useful case study to examine the extent to which ETP and College Scorecard may be complementary given their higher likelihood of data suppression across both datasets. For example, six Washington ETPs fill a missing earnings measure gap in College Scorecard.

In short, the combination of the data sources only provides a minor "fix" to missing data issues. That said, the combination of these data resources serves to afford a broader array of measures (e.g., including debt from scorecard or near-term quarterly earnings) for those institutions with available data in both sources.

Looking Ahead: Making Meaningful Use of Performance Measures for Adult Students

There has been much progress in the past decade in designing and developing metrics that can help adult students understand earnings and employment outcomes associated with different postsecondary institutions and the range of programs of study within these institutions. A decade ago, neither the ED nor DOL released *any* measures of earnings reflecting outcomes at programs funded by Title IV financial aid from ED- or WIOA-sponsored training from DOL. In this light, the advances and efforts that have produced earnings data in College Scorecard and ETP measures merit recognition, even as both resources need significant refinement.

Perhaps the most important shortcoming of efforts to date is the limited coordination between ED and the DOL, along with the relevant postsecondary and workforce agencies at the state level. Providing adult students with access to training and skill development to rebound from unemployment and to realize opportunities for economic mobility more generally is a mandate shared across agencies. Yet to date, the development of performance measures has occurred largely on separate tracks, with the College Scorecard measures developing centralized measures from federal data assets while the ETP measures are collected on a decentralized basis from states. Looking ahead, there are significant opportunities for strengthening performance measures with greater coordination.

At the federal level, there have been some rudimentary steps in this direction. In the summer of 2020, the College Scorecard added reference and a link to the DOL WIOA program while TrainingProviderResults.gov now lists College Scorecard as a partner site. But, such "cross-listing" does not address the user-level problem that potential adult students, particularly those who may have lost jobs, are not afforded a clear road map that articulates the relationship between ED and DOL programs supporting training.

Common Coding and Cross-Referencing. Many postsecondary providers and corresponding programs of study are represented in both College Scorecard and ETP measures. In assembling data assets, common taxonomies for institutional identification (Office of Postsecondary Education Identification and UnitID) and program of study (Classification of Instructional Programs) would greatly facilitate the alignment of these resources.

Missing Data and Small Programs and Institutions. Missing data are not ignorable. Because small institutions and relatively new programs often serve students who are most at risk, it is imperative

to develop aggregations over time and, as applicable, related fields to achieve a greater level of data population.[44] For consumers, the presence of missing data should prompt greater attention to other available measures. For accountability policy, there is cause to devote more attention to other measures of program function in the absence of standardized measures.[45]

Location-Specific Context. For adult students who are likely tied to local or regional labor markets and educational opportunities, it is particularly important to understand expected earnings and employment outcomes in the context of local labor demand. Simply "ranking" institutions by metrics like earnings will miss the crucial significance of the local wage structure in determining the rate of return on collegiate investments. Assuming limited mobility among adult students, differences in earnings among institutions attended by adult students will likely confound the strength of the local labor market with the strength of the institution.

Conclusion

There has been significant progress in the development of performance measures with earnings outcomes in the College Scorecard and the nascent ETP measures. Indeed, there are opportunities for more flexible metrics that better account for individual student backgrounds and prospects with the growing integration of state longitudinal data systems.

But the availability of these performance measures is a necessary but not sufficient condition for better-informed choices by adult students and stronger consumer protections from policymakers. For students, the absence of a straightforward user interface, guidance, and scaffolding in the process of application and matriculation means that much of this information will go underused. For policymakers, disclosure (often in obscure places) and reporting for the sake of meeting compliance requirements are not substitutes for consumer protections, which would limit access to federal financial aid and other government subsidies when postsecondary programs are not providing a pathway to economic security.

Acknowledgments

We thank Jason Delisle, Olivia Shaw, Kristin Blagg, and Doug Webber for helpful discussion and guidance. We are also extremely grateful to Burt Barnow and Jeff Smith for many detailed comments. Data access on eligible training providers in Washington was facilitated by members of the Workforce Training and Education Coordinating Board, to whom we are also grateful.

Appendix

Table A1. Counts and Enrollment Levels of Title IV Postsecondary Institutions

	Institutions		Undergraduates		
Sector	N	Percentage	N	Percentage	Average Size
Public, Four Years	771	12	6,925,310	46	8,982
Private Nonprofit, Four Years	1,604	26	2,655,240	18	1,655
Private For-Profit, Four Years or Above	362	6	572,591	4	1,582
Public, Two Years	955	15	4,400,687	29	4,608
Private Not-For-Profit, Two Years or Less	205	3	57,647	0	281
Private For-Profit, Two Years	617	10	191,825	1	311
Public, Less Than Two Years	230	4	42,456	0	185
Private For-Profit, Less Than Two Years	1,442	23	199,387	1	138
Total	6,186		15,045,143		

Source: Authors' tabulations of College Scorecard data.

Table A2. Comparison of Employment and Earnings Outcomes for WIA, WIOA, and College Scorecard

	WIA (1998)	WIOA (2014)	College Scorecard
Source	Those who exited the program matched to state User Interface (UI) records	Those who exited the program matched to state UI records (supplemented by post-exit surveys when necessary)	Title IV recipients merged to Treasury data (W-2) • Also includes IPEDS plus National Students Loan Data System data on debt and repayment
Provider Eligibility		Rules governing eligible training providers list set by governor and state workforce development board; local workforce boards may be more restrictive in eligible providers than at the state level	Title IV–eligible institutions
Range of Providers		Postsecondary institutions (both Title IV and non–Title IV) • For-Profit • Nonprofit • Public • Apprenticeships	Degree-granting and other postsecondary institutions offering "gainful employment" (Title IV only) • For-Profit • Nonprofit • Public
Employment	• Entry into unsubsidized employment • Retention in unsubsidized employment six months after entry into the employment	• Number employed in second and fourth quarter after exit from the program	• Employment counts indicated by positive earnings in tax year
Earnings	• Average earnings received in unsubsidized employment six months after entry into the employment	• Median earnings in the second quarter after exit from the program • Average earnings in the second and fourth quarter after exit from the program	• Total cohort earnings measured at six to 10 years • Median, mean, percentiles • Subgroup indicators by completion, independent or dependent, sex, and so forth • Program-level data measured at one to two years

Source: Authors' calculations of College Scorecard data.

Table A3. Association Between Earnings Variables by Sector

	Correlation Coefficient	
Institutional Sector	Six-Year and 10-Year Median Earnings	Male and Female Six-Year Mean Earnings
Public, Four Year	0.9558	0.8935
Public, Two Year	0.8409	0.6148
Public, Less Than Two Year	0.9175	0.7168
Private Not-For-Profit, Four Year	0.9529	0.8442
Private Not-For-Profit, Two Year	0.9399	0.6577
For-Profit, Four Year	0.6412	0.9078
For-Profit, Two Year	0.9277	0.8318
For-Profit, Less Than Two Year	0.8744	0.7185

Note: Correlation coefficients are weighted by the institution's fall 2018 enrollment of undergraduate certificate- or degree-seeking students as reported to IPEDS. All correlations are significant at the 0.05 level.
Source: Authors' calculations from the College Scorecard data.

Table A4. Program-Level Data Availability by Sector (College Scorecard)

Degree Type	Number of Institutions	Mean Number of Programs	Standard Deviation	Minimum	Maximum	Single-Program Institutions (Percentage)	Number of Institutions	Mean Number of Programs	Standard Deviation	Minimum	Maximum	Single-Program Institutions (Percentage)
Public, Four Years							Public, Two Years (Community College)					
Certificate	501	13.09	13.22	1	62	9.2	951	24.01	12.73	1	85	1.1
Associate	422	15.55	16.59	1	91	7.7	884	30.74	16.77	1	88	1.3
Bachelor's	758	37.65	27.54	1	135	6.7	24	3.08	5.73	1	23	1.5
Nonprofit, Four Years							For-Profit, Two Years					
Certificate	593	4.11	5.21	1	42	13.1	724	4.02	3.11	1	22	25.9
Associate	718	5.01	5.56	1	57	11.6	521	3.84	3.49	1	29	18.1
Bachelor's	1,422	25.53	19.97	1	98	10.4	18	3.44	5.32	1	23	1.3
For-Profit, Four Years							For-Profit, Less Than Two Years					
Certificate	291	4.58	3.76	1	26	9.5	1,553	1.86	1.80	1	14	69.5
Associate	346	6.28	4.83	1	27	8.7	74	1.80	1.83	1	11	3.5
Bachelor's	417	6.99	6.43	1	59	16.7	5	1.60	0.55	1	2	0.1

Source: Authors' tabulations of College Scorecard program-level data collection.

Table A5. Means and Counts for Washington ETPs (Program Year 2019)

Sample Size	Title IV	Non–Title IV
Providers	107	447
Programs	4,526	1,623
All Participants	295,719	23,632
All Exited	143,946	11,410
All Completed	90,121	9,699
Institutional Sector		
Higher Education: Associate	0.3271	0
Higher Education: Baccalaureate	0.3271	0.0045
Higher Education: Certificate	0.0093	0
National Apprenticeship	0.0093	0.4018
Private Nonprofit	0	0.0201
Private For-Profit	0.3271	0.5112
Public	0	0.0022
Other	0	0.0603
Outcomes: All Participants	**Mean**	**Mean**
Participants	65.34	14.56
Exited	31.80	7.03
Completed	20.53	6.45
Median Earnings in Second Quarter After Exit	$8,221.02	$9,525.59
Average Earnings in Second Quarter After Exit	$8,869.60	$10,227.46
Average Earnings in Fourth Quarter After Exit	$10,026.02	$10,963.36

Note: Washington ETPs are considered Title IV institutions if they also report to College Scorecard. Mean outcomes are unweighted. Data are for program year 2019 and were submitted to the US Employment and Training Administration (ETA) in October 2020.
Source: Authors' calculations using Washington ETP data accessed through a request to the Washington Workforce Training and Education Coordinating Board.

Table A6. Means and Counts for Texas ETPs (Program Years 2018–19)

Sample Size	Title IV	Non–Title IV
Providers	129	148
Programs	2,410	531
All Participants	274,837	43,994
All Exited	144,532	38,512
All Completed	79,809	30,281
Outcomes: All Participants	**Mean**	**Mean**
Participants	127.24	104.50
Exited	70.64	94.16
Completed	41.10	75.51
Median Earnings in Second Quarter After Exit	$6,590.68	$7,063.53
Average Earnings in Second Quarter After Exit	$7,097.27	$7,651.42
Average Earnings in Fourth Quarter After Exit	$7,474.14	$7,893.01

Note: Texas ETPs are considered Title IV institutions if they also report to College Scorecard. Mean outcomes are unweighted.
Source: Authors' calculations using state ETP data. Texas ETP data are publicly available through the Texas Workforce Commission website. See Texas Workforce Commission, "Eligible Training Providers," https://www.twc.texas.gov/partners/eligible-training-providers. The version of the data from the "Statewide ETPL Performance Report" used in our analysis was accessed on April 30, 2021.

Table A7. Missing Data Statistics for Washington and Texas ETPs: Program Level

Washington Percentage Missing Overall				
	Completion Rate	**Median Earnings Q2**	**Mean Earnings Q2**	**Mean Earnings Q4**
N = 6,149	0.381	0.484		
Washington Percentage Missing by Title IV Status				
	Completion Rate	**Median Earnings Q2**	**Mean Earnings Q2**	**Mean Earnings Q4**
Title IV N = 4,526	0.246	0.346	0.346	0.306
Non–Title IV N = 1,623	0.755	0.869	0.869	0.855
Texas Percentage Missing Overall				
	Completion Rate	**Median Earnings Q2**	**Mean Earnings Q2**	**Mean Earnings Q4**
N = 2,941	0.274	0.322	0.322	0.487
Texas Percentage Missing by Title IV Status				
	Completion Rate	**Median Earnings Q2**	**Mean Earnings Q2**	**Mean Earnings Q4**
Title IV N = 2,410	0.271	0.299	0.299	0.470
Non–Title IV N = 531	0.290	0.427	0.427	0.563

Source: Authors' calculations. Data for Washington come from the Washington ETA-9171 report for program year 2019 submitted to the DOL in fall 2020. Data for Texas come from the Texas Workforce Commission and reflect approved program outcomes from July 1, 2018, through June 30, 2020.

Table A8. Means and Counts by ETP Institutional Sector (Washington Program Year 2019)

	N Providers	N Programs	Total Served	Total Exited	Total Completed	Median Earn Q2	Mean Earn Q2	Mean Earn Q4
Title IV								
Higher Education	71	4,344	66.648	32.525	20.922	8,287	8,949	10,122
Private, For-Profit	35	181	34.243	14.663	11.241	6,115	6,334	6,976
Non–Title IV								
Higher Education	2	16	28.938	9.625	4.455	9,596	10,156	10,463
Apprenticeship	181	468	16.366	3.737	2.974	9,734	10,282	13,538
Private, For-Profit	228	1,025	14.0839	8.570	8.236	9,628	10,351	10,959
Private, Nonprofit	9	22	23.136	19.364	12.455	5,234	5,937	6,169
Public	1	6	—	—	—	—	—	—
Other	27	87	6.678	3.460	2.940	9,324	9,458	9,222

Source: Authors' calculations. Data for Washington come from the Washington ETA-9171 report for program year 2019 submitted to the DOL in fall 2020.

Table A9. Missing Data Statistics for Title IV Washington ETPs: Provider Level

Percentage Missing (Student Weighted)						
	Matched Institutions	Total Enrollment	Completion Rate	Median Earnings Q2	Mean Earnings Q2	Mean Earnings Q4
All Sectors	80	326,792	0.000	0.029	0.029	0.0002
Percentage Missing by Institutional Sector (Institution Weighted)						
Sector	Matched Institutions	Total Enrollment	Completion Rate	Median Earnings Q2	Mean Earnings Q2	Mean Earnings Q4
Public, Four Years	35	194,078	0.000	0.000	0.000	0.000
Private, Not-For-Profit, Four Years	7	107,610	0.000	0.143	0.143	0.000
Private, For-Profit, Four Years	2	3,726	0.000	0.000	0.000	0.000
Public, Two Years	6	18,756	0.000	0.000	0.000	0.000
Private, Not-For-Profit, Two Years	2	1,050	0.000	0.000	0.000	0.000
Private, For-Profit, Two Years	1	337	0.000	0.000	0.000	0.000
Private, Not-For-Profit, Less Than Two Years	1	41	0.000	1	1	0.000
Private, For-Profit, Less Than Two Years	8	1,194	0.000	0.125	0.125	0.125

Note: Washington ETP data are aggregated to the provider level and matched to institutions in College Scorecard.
Source: Authors' calculations using state ETP data. Texas ETP data are publicly available through the Texas Workforce Commission website. See Texas Workforce Commission, "Eligible Training Providers," https://www.twc.texas.gov/partners/eligible-training-providers. The version of the data from the "Statewide ETPL Performance Report" used in our analysis was accessed on April 30, 2021.

Table A10. Missing Earnings Outcomes by Sector

Sector	Public, Four Years	Private, Nonprofit, Four Years	Private, For-Profit, Four Years or Above	Public, Two Years	Private, Not-For-Profit, Two Years or Less	Private, For-Profit, Two Years	Public, Less Than Two Years	Private, For-Profit, Less Than Two Years
Institution Weighted								
Undergraduates	9,348	1,974	1,890	4,617	288	327	188	143
Percentage Older Than 25	0.223	0.237	0.647	0.319	0.520	0.503	0.494	0.483
Miss P50 Earn, Six Years	0.027	0.157	0.187	0.038	0.379	0.262	0.382	0.476
Miss P50 Earn, Eight Years	0.028	0.161	0.220	0.043	0.404	0.296	0.387	0.522
Miss P50 Earn, 10 Years	0.031	0.168	0.233	0.054	0.414	0.310	0.396	0.546
Miss Mean Earn, Six Years	0.027	0.157	0.187	0.038	0.379	0.262	0.382	0.476
Miss Mean Earn, 10 Years	0.031	0.168	0.233	0.054	0.414	0.310	0.396	0.546
Miss Mean, Low Income	0.041	0.295	0.260	0.095	0.646	0.409	0.782	0.682
Miss Mean, Dependent or Independent	0.056	0.449	0.317	0.083	0.707	0.449	0.911	0.692
Miss Mean, Male or Female	0.042	0.275	0.307	0.077	0.702	0.584	0.849	0.856
Student Weighted								
Undergraduates	19,032	11,620	22,024	12,489	6,569	782	1,064	371
Percentage Older Than 25	0.182	0.226	0.729	0.330	0.599	0.514	0.464	0.488
Miss P50 Earn, Six Years	0.011	0.021	0.047	0.014	0.122	0.183	0.160	0.357
Miss P50 Earn, Eight Years	0.014	0.025	0.058	0.017	0.127	0.233	0.163	0.408
Miss P50 Earn, 10 Years	0.015	0.037	0.102	0.024	0.140	0.250	0.172	0.442
Miss Mean Earn, Six Years	0.011	0.021	0.047	0.014	0.122	0.183	0.160	0.357
Miss Mean Earn, 10 Years	0.015	0.037	0.102	0.024	0.140	0.250	0.172	0.442
Miss Mean, Low Income	0.012	0.073	0.054	0.020	0.273	0.251	0.503	0.510
Miss Mean, Dependent or Independent	0.015	0.213	0.134	0.018	0.349	0.282	0.683	0.526
Miss Mean, Male or Female	0.013	0.060	0.067	0.017	0.331	0.362	0.532	0.720

Note: "Miss" stands for "Missing," "P50" stands for "50th Percentile," and "Earn" stands for "Earnings."
Source: Authors' tabulations of College Scorecard data.

Table A11. Means of Earnings Variables

Sector	Public, Four Years	Private, Nonprofit, Four Years	Private, For-Profit, Four Years or Above	Public, Two Years	Private, Not-For-Profit, Two Years or Less	Private, For-Profit, Two Years	Public, Less Than Two Years	Private, For-Profit, Less Than Two Years
N Inst	738	1,340	300	953	198	577	225	1,314
Institution Weighted								
Completion (IPEDS)	0.472	0.557	0.411	0.327	0.626	0.641	0.754	0.695
Completion (NSLDS)	0.447	0.531	0.384	0.210	0.590	0.593	0.550	0.630
Median Earnings, Six Years	34,291	35,950	31,239	25,506	30,719	24,669	28,972	19,099
Median Earnings, Eight Years	38,633	40,518	35,394	28,443	33,679	26,679	31,104	20,738
Median Earnings, 10 Years	42,485	44,416	37,038	30,656	36,170	28,579	32,392	21,771
Mean Earnings, Six Years	37,532	39,237	34,677	28,710	32,472	26,883	30,298	21,795
Mean Earnings, 10 Years	48,094	50,187	41,963	34,771	38,680	31,366	34,340	25,065
Student Weighted								
Completion (IPEDS)	0.553	0.632	0.322	0.264	0.592	0.603	0.716	0.686
Completion (NSLDS)	0.501	0.578	0.310	0.154	0.530	0.595	0.434	0.652
Median Earnings, Six Years	35,707	40,585	33,216	26,035	26,753	26,623	26,557	20,691
Median Earnings, Eight Years	40,468	45,792	39,694	29,515	29,306	28,723	28,485	22,757
Median Earnings, 10 Years	44,723	50,321	44,208	32,261	29,197	31,202	30,060	24,048
Mean Earnings, Six Years	39,166	44,897	38,048	29,517	28,760	28,937	28,990	23,487
Mean Earnings, 10 Years	50,809	58,148	50,236	36,863	32,111	33,868	32,764	27,479

Source: Authors' tabulations of College Scorecard data.

Table A12. State-Level Earnings and Tuition and Fees

	Average Earned Income, Age 25–34			Tuition and Fees	
	High School Graduate	Some College	Associate of Arts Degree	Four Years, Public	Two Years, Public
Alabama	27,766	30,945	51,456	10,138	4,770
Alaska	28,280	39,265	56,587	8,396	—
Arizona	28,569	34,057	55,283	10,666	2,161
Arkansas	27,820	30,130	50,419	8,391	3,291
California	31,073	37,298	67,672	8,118	1,271
Colorado	31,950	36,598	57,695	9,394	3,655
Connecticut	31,499	36,811	66,180	12,959	4,434
Delaware	29,468	36,597	55,111	10,607	—
District of Columbia	30,425	37,559	81,383	5,888	—
Florida	27,228	32,976	53,183	4,443	2,506
Georgia	27,350	31,656	57,343	7,319	2,916
Hawaii	33,523	37,011	52,894	9,952	3,140
Idaho	28,123	31,595	44,599	7,586	3,345
Illinois	30,111	35,890	61,223	14,259	3,966
Indiana	29,629	34,071	50,248	9,225	4,368
Iowa	30,367	35,495	52,067	9,966	5,137
Kansas	28,644	33,628	51,625	8,941	3,435
Kentucky	27,694	32,559	52,079	10,674	4,274
Louisiana	31,984	34,986	53,606	9,358	4,143
Maine	26,785	33,393	45,817	9,930	3,753
Maryland	31,787	39,020	63,476	9,521	4,225
Massachusetts	34,440	38,922	67,178	13,286	5,192
Michigan	26,765	32,382	53,991	12,888	3,582
Minnesota	31,887	38,680	57,443	11,381	5,389
Mississippi	26,417	30,852	46,455	8,340	3,262
Missouri	28,607	32,025	51,546	8,554	3,358
Montana	30,303	33,318	44,667	6,972	3,756
Nebraska	29,433	35,357	50,840	8,467	3,174
Nevada	31,665	37,130	54,864	5,845	—
New Hampshire	32,035	36,938	55,386	16,329	7,599
New Jersey	32,687	38,234	65,227	13,963	4,715
New Mexico	27,726	29,970	49,265	6,902	1,705
New York	30,973	36,584	68,000	8,184	5,367
North Carolina	26,659	31,293	53,805	7,174	2,504
North Dakota	35,715	42,595	54,532	8,091	4,895
Ohio	27,878	32,784	54,264	10,068	4,082
Oklahoma	31,025	33,913	51,187	7,866	4,112

(continued on next page)

Table A12. State-Level Earnings and Tuition and Fees (Continued)

	Average Earned Income, Age 25–34			Tuition and Fees	
	High School Graduate	Some College	Associate of Arts Degree	Four Years, Public	Two Years, Public
Oregon	28,422	33,442	52,858	10,286	4,709
Pennsylvania	30,170	34,705	55,293	14,812	5,284
Rhode Island	31,306	35,315	55,873	12,576	4,564
South Carolina	27,415	32,217	51,525	13,013	4,728
South Dakota	29,550	34,313	47,966	8,772	6,170
Tennessee	27,093	31,497	51,602	9,789	4,287
Texas	30,358	36,125	61,409	8,678	2,259
Utah	31,958	34,845	51,229	6,731	3,843
Vermont	27,350	34,533	46,248	16,604	7,120
Virginia	29,429	35,522	62,567	13,413	5,241
Washington	32,726	38,901	62,860	7,036	4,169
West Virginia	29,826	32,181	49,128	8,016	4,276
Wisconsin	30,704	36,426	53,774	8,697	4,411
Wyoming	36,437	39,666	51,130	4,596	3,219

Source: Authors' calculations from the American Community Survey and Digest of Education Statistics.

Table A13. Missing Data Analysis: TrainingProviderResults.gov

Percentage Missing by State or Territory					
		Completion Rate	Employment Q2	Employment Q4	Earnings Q2
	N = 73,556	0.8812	0.4713	0.8098	0.9047
Percentage Missing by State or Territory					
State or Territory	**Count**	**Completion Rate**	**Employment Q2**	**Employment Q4**	**Earnings Q2**
Alaska	N = 995	76.38	61.71	90.75	80.20
Alabama	764	90.74	87.53	95.84	79.22
Arkansas	491	99.59	99.59	100.00	16.09
Arizona	1,168	81.42	79.28	88.96	1.54
California	4,848	98.95	98.64	99.94	90.97
Colorado	854	57.85	41.22	78.45	29.51
Connecticut	520	93.27	92.31	95.77	71.92
District of Columbia	74	74.32	83.78	97.30	68.92
Delaware	378	96.83	87.57	95.24	3.17
Florida	3,492	95.50	94.39	99.26	78.12
Georgia	927	96.98	96.33	98.81	84.03
Hawaii	32	93.75	87.50	96.88	65.62
Iowa	1,221	95.82	99.43	99.84	93.69
Idaho	140	98.57	85.00	100.00	71.43
Illinois	2,768	99.89	99.96	99.96	2.20
Indiana	2,173	86.47	76.71	87.94	59.83
Kansas	1,408	97.80	97.73	98.86	10.37
Kentucky	1,443	99.31	99.17	99.51	96.33
Louisiana	2,389	95.60	73.64	82.71	67.10
Massachusetts	809	98.27	97.28	98.76	27.07
Maryland	528	79.63	74.43	98.11	53.98
Maine	1,866	100.00	91.10	99.89	0.05
Michigan	2,549	78.74	61.99	99.69	12.20
Minnesota	2,704	60.80	39.90	51.22	29.77
Missouri	3,586	99.00	98.55	99.64	88.46
Mississippi	872	98.28	98.05	99.43	4.70
Montana	343	99.42	99.71	100.00	2.62
Nebraska	1,855	82.86	74.66	81.94	53.91
Nevada	1,547	93.67	92.37	99.48	76.60
New Hampshire	887	99.66	99.77	100.00	5.07
New Jersey	147	52.83	21.09	99.32	4.76
New Mexico	825	94.67	93.70	97.33	78.79
New York	1,089	94.86	94.12	98.71	2.20
North Carolina	3,582	95.84	95.00	99.61	77.25

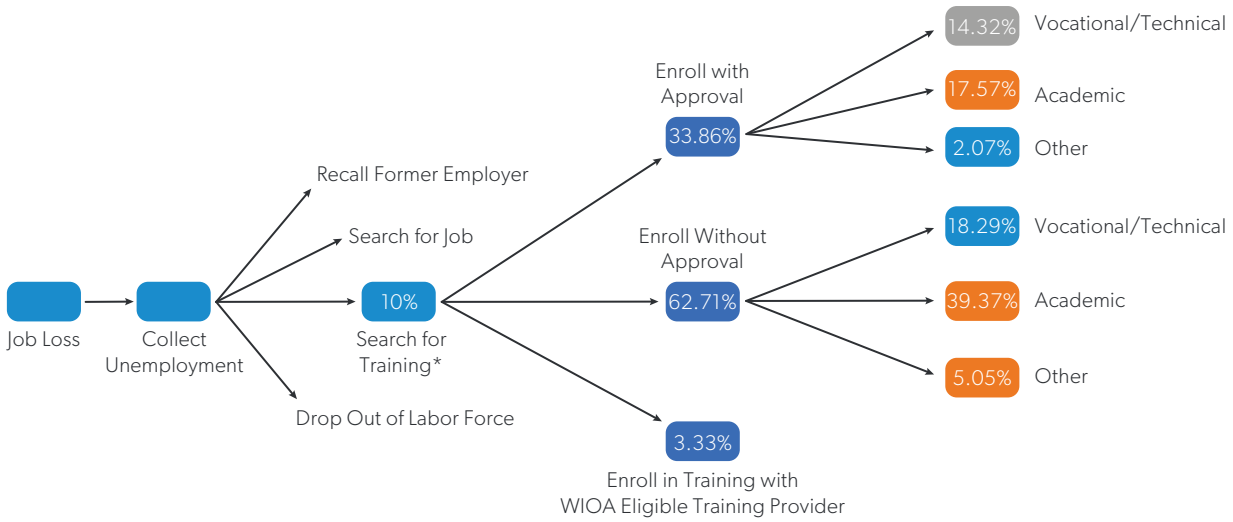
(continued on next page)

Table A13. Missing Data Analysis: TrainingProviderResults.gov (Continued)

Percentage Missing by State or Territory					
State or Territory	Count	Completion Rate	Employment Q2	Employment Q4	Earnings Q2
North Dakota	237	97.89	95.78	96.62	3.38
Ohio	2,024	97.83	96.59	98.62	3.31
Oklahoma	1,073	97.11	90.87	94.13	0.19
Oregon	1,142	95.36	73.29	83.27	0.00
Pennsylvania	1,782	92.42	92.59	97.81	0.56
Rhode Island	128	93.75	92.19	98.44	66.41
South Carolina	1,892	96.56	95.25	98.10	83.25
South Dakota	155	100.00	100.00	100.00	98.06
Tennessee	2,999	95.63	92.96	98.67	84.29
Texas	3,261	64.83	37.53	77.28	17.26
Utah	1,073	87.79	52.47	67.19	10.34
Virginia	831	93.14	90.49	98.92	54.99
Virgin Islands	31	100.00	100.00	100.00	0.00
Vermont	68	98.53	98.53	100.00	2.94
Washington	5,305	63.90	55.14	66.80	40.11
West Virginia	216	93.98	93.52	98.61	59.72
Wyoming	408	100.00	99.75	100.00	91.91

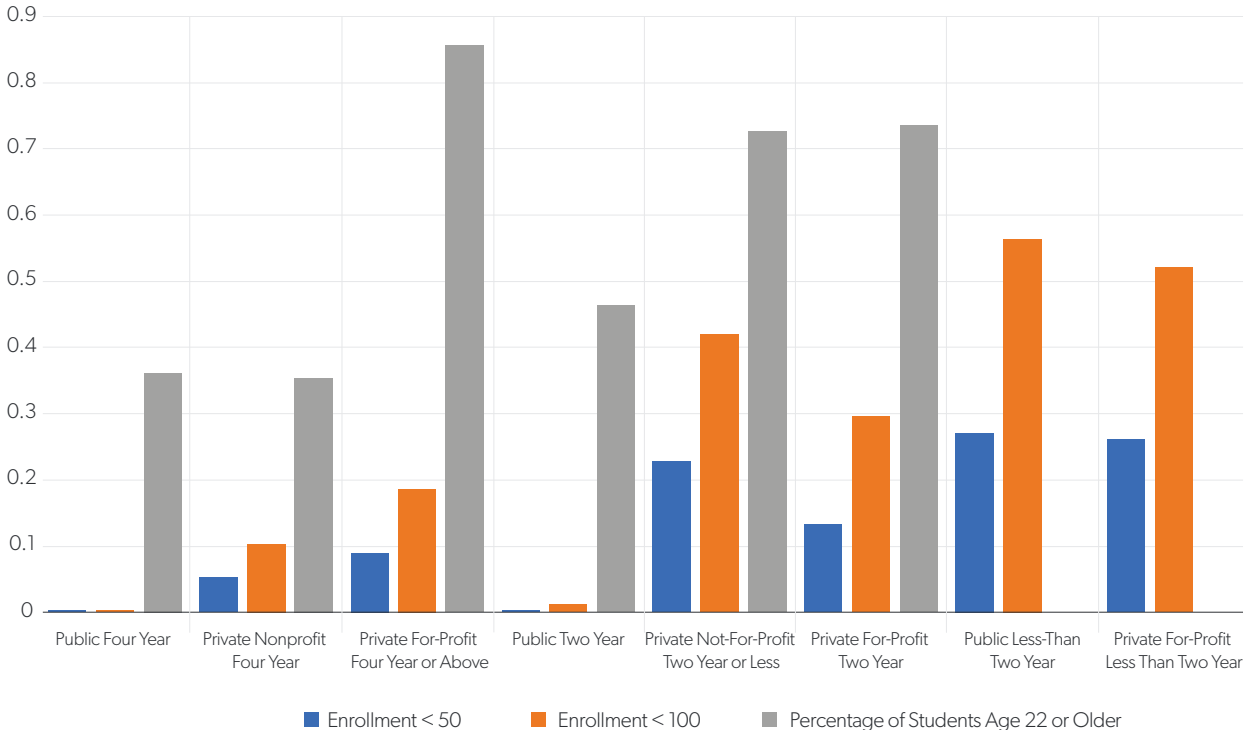
Note: As discussed, there are particular concerns with data quality for employment outcome measurements. Misalignment in the cohort counts results in unreliable employment rates. Exactly 64,817 observations report a completed percentage greater than 1, and 604 observations have percentages greater than 1 for the Q2 employment rate measurement.
Source: Authors' calculations using data web scraped from TrainingProviderResults.gov on January 29, 2021.

Figure A1. Unemployment Insurance to Postsecondary Enrollment



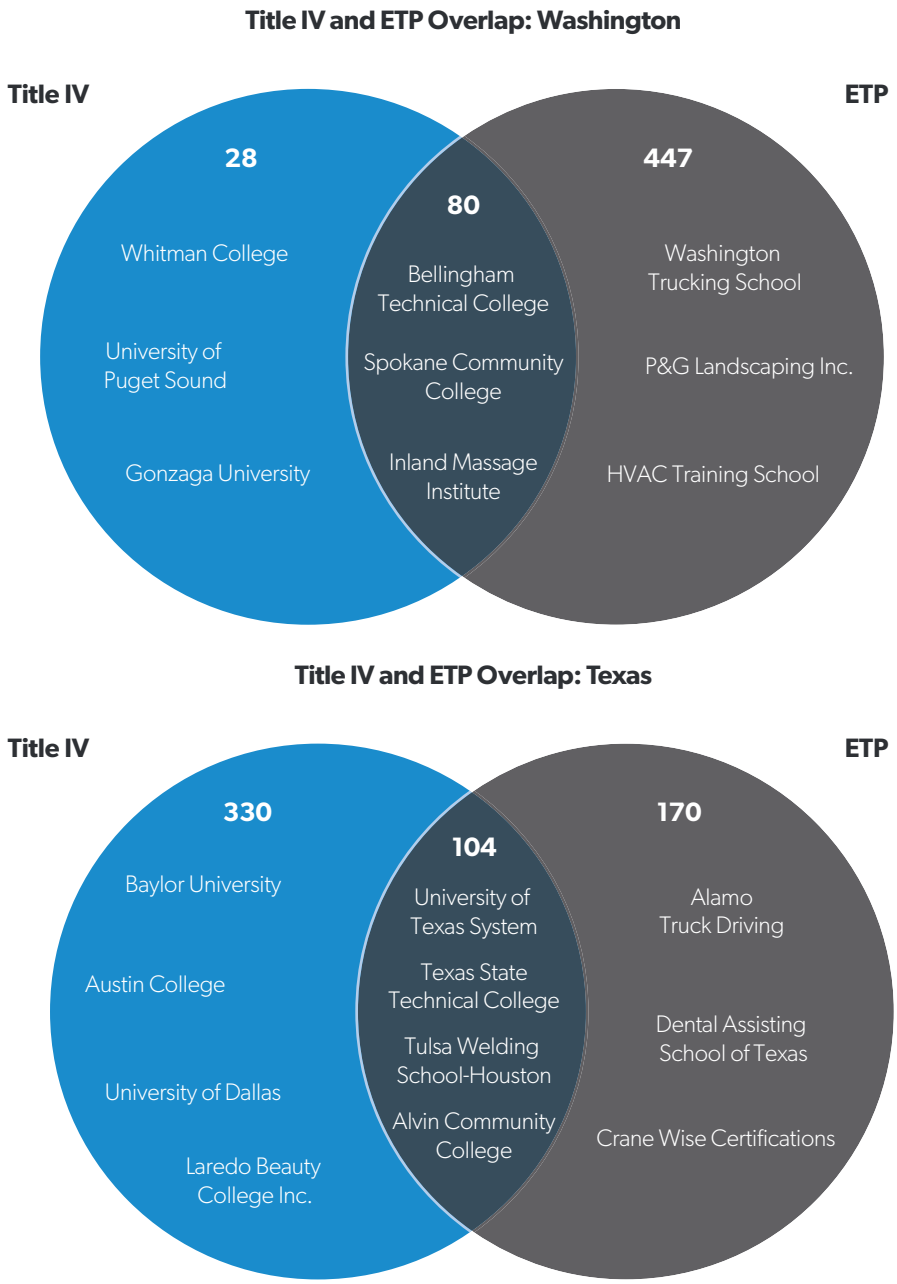
Source: Andrew Barr and Sarah Turner, "Data Resources Connecting UI and Post-Secondary Measures," Bill & Melinda Gates Foundation and Kresge Foundation, https://docplayer.net/212687564-Data-resources-connecting-ui-and-post-secondary-measures-executive-summary.html.

Figure A2. Distribution of Institutions by Scale and Sector



Note: No age data are available for nondegree-granting institutions.
Source: Institution size based on authors' tabulations from College Scorecard data. Age by sector from Institute of Education Sciences, National Center for Education Statistics, Digest of Education Statistics, "Table 303.50. Total Fall Enrollment in Degree-Granting Post-secondary Institutions, by Level of Enrollment, Control and Level of Institution, Attendance Status, and Age of Student: 2019," https://nces.ed.gov/programs/digest/d20/tables/dt20_303.50.asp.

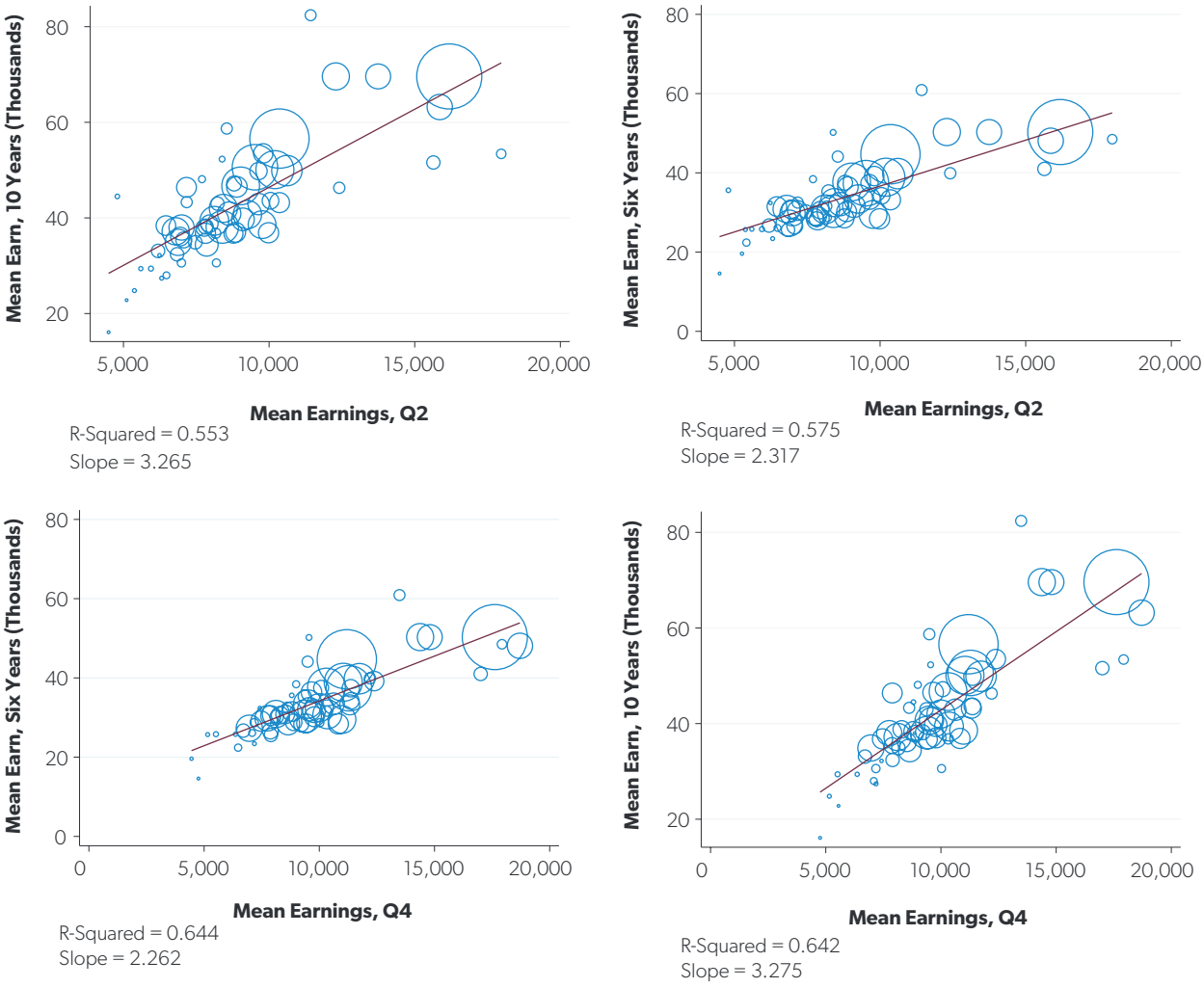
Figure A3. Intersection of State-Eligible Training Providers and Title IV Institutions: Washington and Texas



Note: This figure displays the institutional counts and examples of Title IV institutions (from College Scorecard) and state eligible training providers (ETPs) for Washington and Texas separately.
Source: Authors' calculations. Data for Washington come from the Washington ETA-9171 report for program year 2019 submitted to the DOL in fall 2020. Data for Texas come from the Texas Workforce Commission and reflect approved program outcomes from July 1, 2018, through June 30, 2020.

Figure A4. Association Between ETP and College Scorecard Earnings

Panel A. Washington

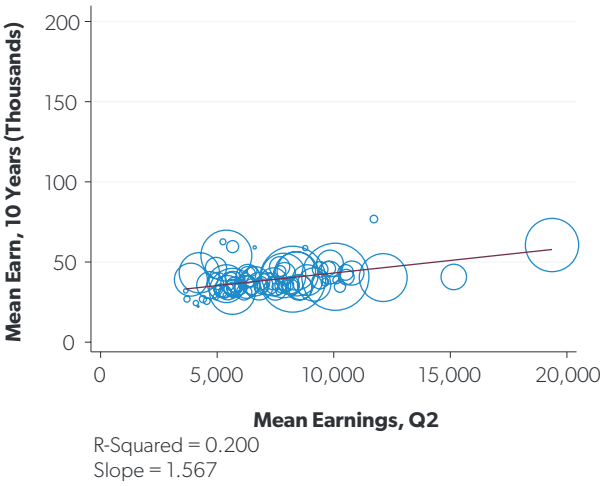


(continued on next page)

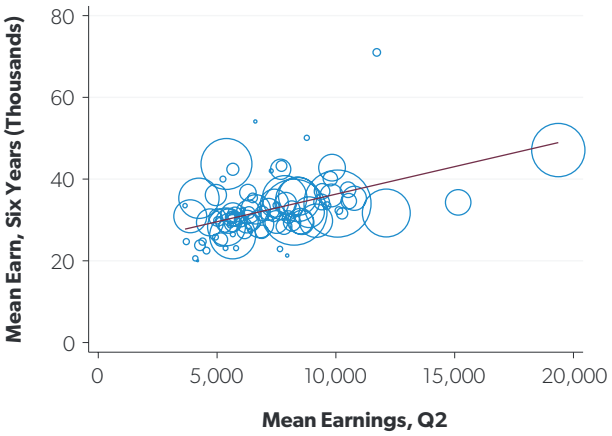
Note: Y-axis variables are College Scorecard earnings measures, while x-axis variables come from state ETP data. Each observation is an institution. Size of observation bubble is weighted by total undergraduate enrollment as measured in College Scorecard.
Source: Authors' calculations from the College Scorecard data downloaded from data.ed.gov on January 11, 2021, and state ETP data. Data for Washington come from the Washington ETA-9171 report for program year 2019 submitted to the DOL in fall 2020. Data for Texas come from the Texas Workforce Commission and reflect approved program outcomes from July 1, 2018, through June 30, 2020.

Figure A4. Association Between ETP and College Scorecard Earnings (Continued)

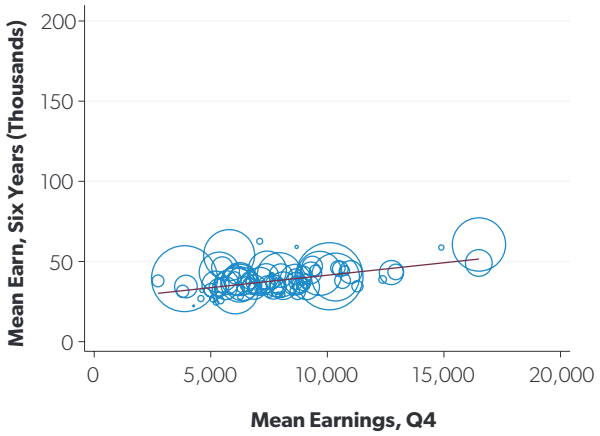
Panel B. Texas



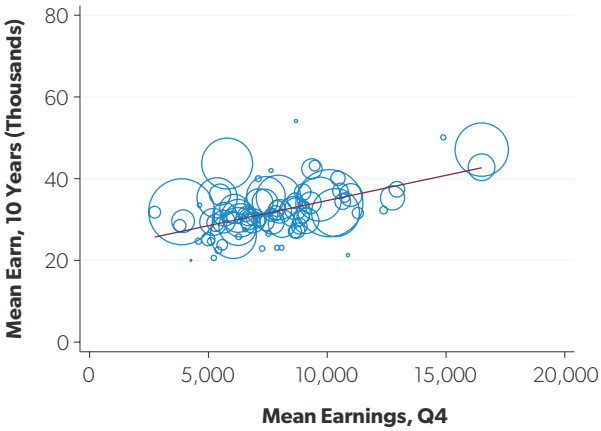
R-Squared = 0.200
Slope = 1.567



R-Squared = 0.206
Slope = 1.348



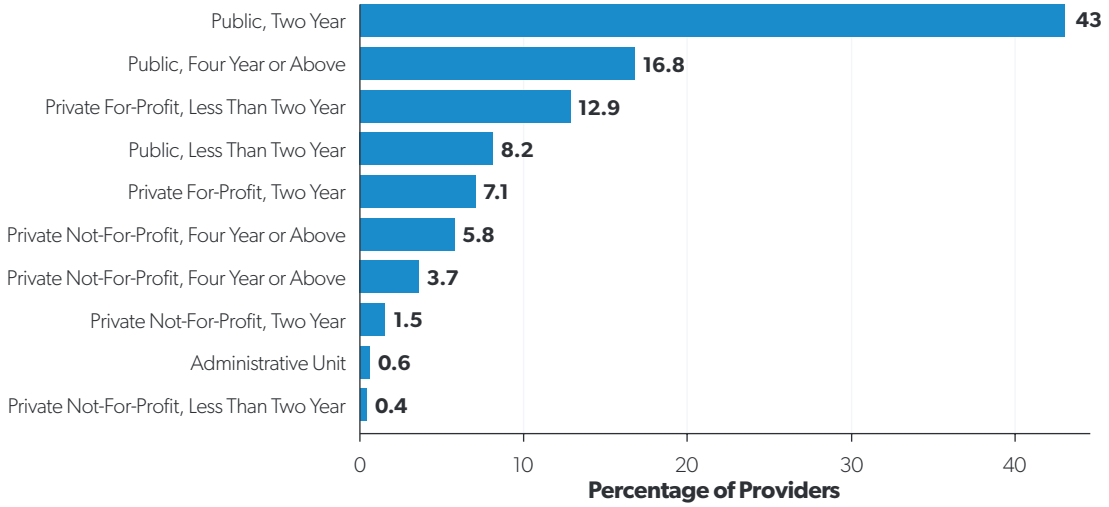
R-Squared = 0.290
Slope = 1.554



R-Squared = 0.273
Slope = 1.232

Note: Y-axis variables are College Scorecard earnings measures, while x-axis variables come from state ETP data. Each observation is an institution. Size of observation bubble is weighted by total undergraduate enrollment as measured in College Scorecard.
Source: Authors' calculations from the College Scorecard data downloaded from data.ed.gov on January 11, 2021, and state ETP data. Data for Washington come from the Washington ETA-9171 report for program year 2019 submitted to the DOL in fall 2020. Data for Texas come from the Texas Workforce Commission and reflect approved program outcomes from July 1, 2018, through June 30, 2020.

Figure A5. Distribution of Eligible Training Providers by Institutional Sector: TrainingProviderResults.gov—College Scorecard Matched Sample

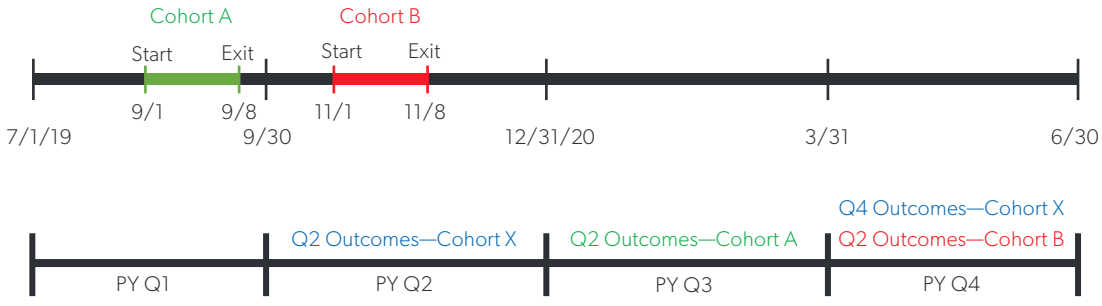


Source: Authors' calculations using data web scraped from TrainingProviderResults.gov on January 29, 2021.

Figure A6. Eligible Training Provider Cohort Misalignment Illustration

ETP Reporting and Program Length
Example below:
PY 2019
One Week Certification Program

PY 2018—Cohort X
enrolled June 1, 2018
to June 8, 2018

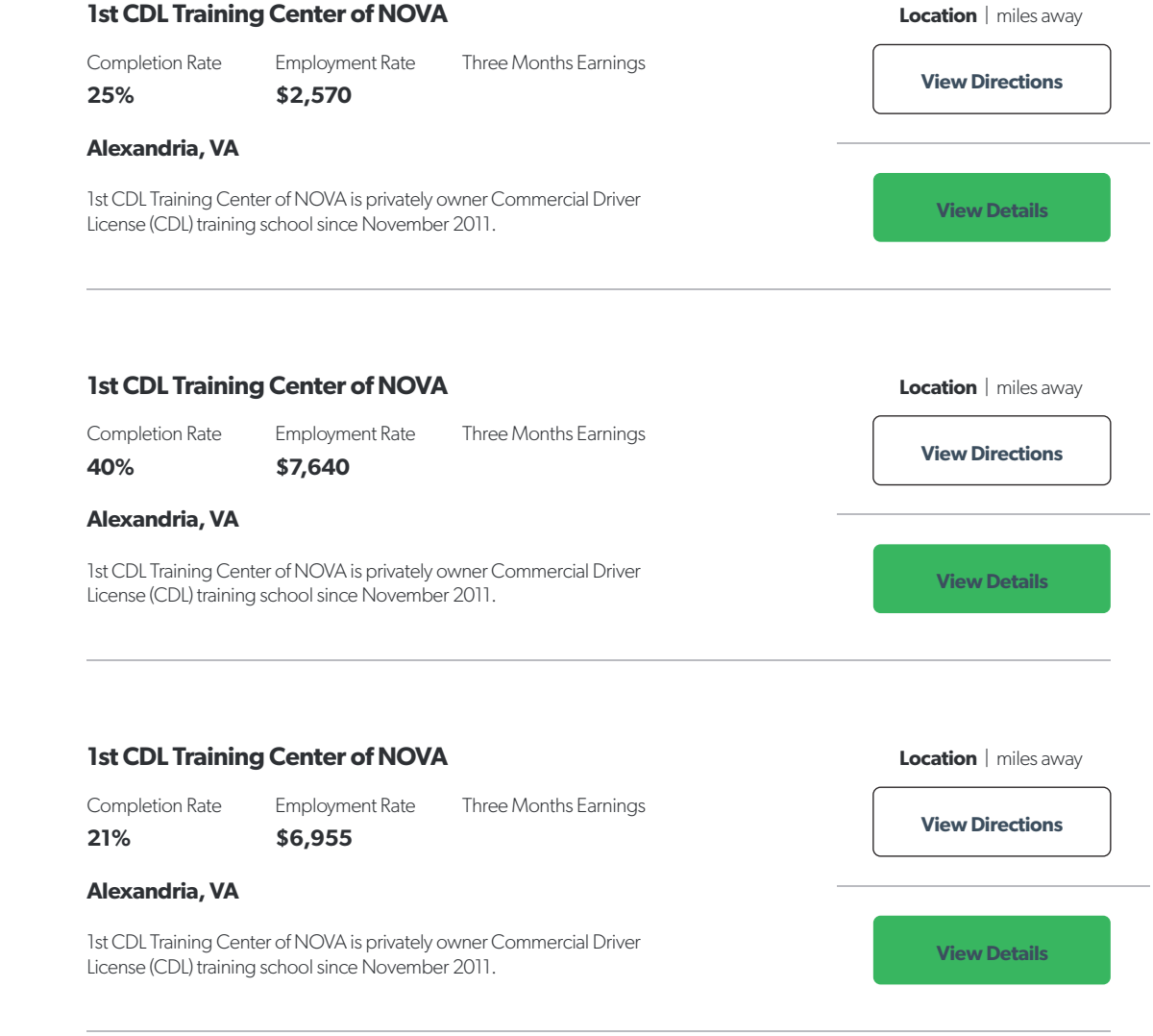


Variable Cohort Map for PY 2019

Variable	Cohorts
Exited	A, B
Completed	A, B
Q2 Outcomes	X, A, B
Q4 Outcomes	X

Note: This is not specific to a program and will be true regardless of program length; an example is a demonstration of how timing of individually reported data may create misalignment between characteristics of a particular program year.
Source: Authors' calculations using DOL ETP reporting guidance to states. Public report can be accessed here: Rosemary Lahasky to state and local stakeholders in the workforce, Innovation and Opportunity Act, and state workforce agencies, "Eligible Training Provider (ETP) Reporting Guidance Under the Workforce Innovation and Opportunity Act (WIOA)," https://wdr.doleta.gov/directives/attach/TEGL/TEGL_3-18_acc.pdf.

Figure A7. Example of Provider-Level Data from TrainingProviderResults.gov



Note: This figure illustrates the current ambiguity of the provider-level data in TrainingProviderResults.gov. We see duplicate observations of training providers without knowing how these observations match to the program-level data.
Source: TrainingProviderResults.gov.

Notes

1. In a 2015 report, Adam Looney and Constantine Yannelis found that about 30 percent of nontraditional borrowers required to start repayment on loans in 2011 defaulted within three years, compared to 13 percent among traditional undergraduate borrowers. See Adam Looney and Constantine Yannelis, "A Crisis in Student Loans? How Changes in the Characteristics of Borrowers and in the Institutions They Attended Contributed to Rising Loan Defaults," Brookings Institution, 2015, https://www.brookings.edu/bpea-articles/a-crisis-in-student-loans-how-changes-in-the-characteristics-of-borrowers-and-in-the-institutions-they-attended-contributed-to-rising-loan-defaults/. For more information, see Adam Looney and Constantine Yannelis, "How to Fix Federal Student Loan Programs," *Journal of Policy Analysis and Management* 39, no. 2 (Spring 2020): 540–47, https://onlinelibrary.wiley.com/doi/abs/10.1002/pam.22209; and Harry J. Holzer and Sandy Baum, *Making College Work: Pathways to Success for Disadvantaged Students* (Washington, DC: Brookings Institution Press, 2017).

2. There are many other training programs under the purview of the Department of Labor (DOL). For a table of major US employment and training programs, see Burt S. Barnow and Jeffrey Smith, "Employment and Training Programs" (working paper, National Bureau of Economic Research, Cambridge, MA, October 2015), 2–154, https://www.nber.org/papers/w21659.

3. Strictly speaking, some measures—such as those collected by the DOL under the Workforce Innovation and Opportunity Act (WIOA), Workforce Investment Act (WIA), and the Job Training Partnership Act (JTPA)—were compiled, but they were generally used only for a long-standing tradition of collecting performance indicators for participants in job training internal compliance reporting rather than informing individual choice.

4. To be clear, what we call Eligible Training Provider (ETP) "performance" data are distinct from (but related to) WIOA Performance Indicators and Measures. US Department of Labor, Employment and Training Administration, "WIOA Performance Indicators and Measures," https://www.dol.gov/agencies/eta/performance/performance-indicators. We use data on participant outcomes from state ETP lists because they are the only WIOA data we are aware of that provide student outcome data at the institution by program level. This ultimately allows us to draw comparisons of institution and program outcome measures between College Scorecard and training programs sponsored by WIOA.

5. Of course, moving across labor markets is an important channel that may allow some people to improve circumstances and the returns to postsecondary training.

6. Some states such as Virginia posted indicators of earnings outcomes from postsecondary institutions in advance of the release of the federal College Scorecard measures. One of the earliest analyses to demonstrate the substantial differences across institutions and program-level differences in earnings is a 2012 report that uses the match of credential information to Virginia Unemployment Insurance records. See Mark Schneider, Tod R. Massa, and Ben Vivari, *The Earning Power of Recent Graduates from Virginia's Colleges and Universities: How Are Graduates from Different Degree Programs Doing in the Labor Market?*, American Institutes for Research, College Measures, October 15, 2012, https://www.air.org/sites/default/files/downloads/report/Virginia_EMS_Report1_0.pdf.

7. The general challenges tied to constructing performance measures have been well-documented in other settings, including the assessment of medical services and K–12 education. See Amitabh Chandra and Douglas O. Staiger, "Identifying Sources of Inefficiency in Health Care" (working paper, National Bureau of Economic Research, Cambridge, MA, November 2017), https://www.nber.org/system/files/working_papers/w24035/w24035.pdf; and Caroline M. Hoxby, "Online Postsecondary Education and Labor Productivity," in *Education, Skills, and Technical Change: Implications for Future US GDP Growth*, ed. Charles R. Hulten and Valerie A. Ramey (Chicago: University of Chicago Press, 2018), https://www.nber.org/system/files/chapters/c13709/c13709.pdf. The great diversity of institutions in postsecondary education likely increases the degree of difficulty in designing performance measures or an effective accountability system. David J. Deming and David Figlio, "Accountability in US Education: Applying Lessons from K–12 Experience to Higher Education," *Journal of Economic Perspectives* 30, no. 13 (Summer 2016): 33–56, https://pubs.aeaweb.org/doi/pdfplus/10.1257/jep.30.3.33.

8. The Higher Education General Information Survey, the predecessor to the Integrated Postsecondary Data System (IPEDS), is available in machine-readable form beginning in 1966. The inclusion of cohort completion rates in the IPEDS surveys began with the 1996 cohort, placing 2002 as the first year for the observation of bachelor's degree completion within 150 percent of time. The history of federal collection of graduation rates ties to the National Collegiate Athletic Association requirement that colleges report graduation rates beginning in 1985. Subsequently, in 1990 Congress passed the Student Right-to-Know and Campus Security Act to provide completion rate information for all students.

9. Cohort default rates on student loans have been a long-standing performance measure used in determining eligibility for Title IV aid, with institutions exceeding 40 percent in a single year or a 30 percent cohort default rate threshold for three consecutive years losing eligibility. See Stephanie R. Cellini, Rajeev Darolia, and Lesley J. Turner, "Where Do Students Go When For-Profit Colleges Lose Federal Aid?," *American Economic Journal: Economic Policy* 12, no. 2 (May 2020): 46–83, https://pubs.aeaweb.org/doi/pdfplus/10.1257/pol.20180265.

10. "Title IV eligibility," as tied to the Higher Education Act of 1965, requires institutions to offer degree-granting programs or those leading to "gainful employment," along with meeting other criteria including thresholds on default rates, adherence to policies on student recruitment, and the limit that no more than 90 percent of revenues are derived from federal student aid. The minimum length of programs eligible for Title IV aid is generally 600 clock hours (16 credit hours), though some programs as short as 300 clock hours are eligible. Accurate representation of job placement rates and other program characteristics is another criterion for Title IV eligibility, although these thresholds seem to be only enforced in the most egregious cases. Congressional Research Service, *Institutional Eligibility for Participation in Title IV Student Financial Aid Programs*, February 14, 2019, https://fas.org/sgp/crs/misc/R43159.pdf.

11. Relative to the spending on the Pell Grant program of $30.6 billion in 2014–15, Title I of WIOA—the successor to the Workforce Investment Act (WIA)—which covers employment and training services, received only about $2.6 billion, while workforce development in all parts of WIA plus programs dispersed in other agencies totaled $12 billion in 2009–10. In addition, WIOA recipients account for roughly 2 percent of the population age 25 or older in degree-granting postsecondary institutions (the Title IV universe). In program year 2019 (July 1, 2019–June 30, 2020), 147,365 WIOA adult participants accessed training services. Authors' calculation using data from National Center for Educational Statistics and the Department of Labor, Employment and Training Administration, "PY 2019 WIOA National Performance Summary," https://www.dol.gov/sites/dolgov/files/ETA/Performance/pdfs/PY%202019%20WIOA%20Performance%20Summary.pdf. Total adult postsecondary enrollment is based off the 2018 estimates from the National Center for Educational Statistics (NCES). WIOA adult training services are available to individuals age 18 or older, and not all ETPs are degree-granting postsecondary institutions. Thus, 2 percent is likely an upper estimate on the proportion of adults in these postsecondary programs. About half of the eligible training programs with WIOA participants in program year 2019 were administered by institutions of higher education. Following the institutional sector definitions of ETA-9171 reports, the distribution of programs were (1) postsecondary (47.65 percent); (2) apprenticeship (1.20 percent); (3) private, for-profit (12.25 percent); (4) private, nonprofit (3.22 percent); (5) public (9.43 percent); and (6) other (26.26 percent).

12. While we focus on ED and DOL metrics, a third source of data is in development from the US Census Bureau (Department of Commerce) under the heading of the Post-Secondary Employment Outcomes (PSEO) resource. This experimental data product presents a novel opportunity to evaluate earnings and employment outcomes from postsecondary participation, with measures generated by matching institutional transcript information with national job data. For further documentation and the PSEO public-use data, see US Census Bureau, "Longitudinal Employer-Household Dynamics," lehd.ces.census.gov.

13. US Department of Education, *Using Federal Data to Measure and Improve the Performance of U.S. Institutions of Higher Education*, January 2017, https://collegescorecard.ed.gov/assets/UsingFederalDataToMeasureAndImprovePerformance.pdf.

14. US Department of Education, "Technical Documentation: College Scorecard Data by Field of Study," January 2021, Exhibit 3, https://collegescorecard. ed.gov/assets/FieldOfStudyDataDocumentation.pdf.

15. Appendix B of the January 2021 version of the College Scorecard's "Technical Documentation: College Scorecard Data by Field of Study" notes several metrics that are no longer updated. The current iteration of the mean, median, and threshold earnings data was last updated in the fall of 2018. US Department of Education, "Technical Documentation: College Scorecard Data by Field of Study."

16. The decision to add these fields was announced in the November 2019 publication "Improving Free Inquiry, Transparency, and Accountability at Colleges and Universities Executive Order" and followed from then–Secretary of Education Betsy DeVos' Rethink Higher Education Initiative. See Executive Office of the President, "Improving Free Inquiry, Transparency, and Accountability at Colleges and Universities," *Federal Register* 84, no. 58 (March 26, 2019): 11401–04, https://www.federalregister.gov/documents/2019/03/26/2019-05934/improving-free-inquiry-transparency-and-accountability-at-colleges-and-universities.

17. Grover J. "Russ" Whitehurst and Matthew M. Chingos, "Deconstructing and Reconstructing the College Scorecard," Brookings Institution, October 15, 2015, https://www.brookings.edu/wp-content/uploads/2016/07/Deconstructing-and-Reconstructing-the-College-Scorecard.pdf.

18. Institutions or programs in which the cell size is fewer than 30 students are not populated in the public-facing site. Somewhat more nuanced suppression rules, combined with data perturbation, are used in the full data files; details of the suppression rules are not released.

19. US Department of Education, "Technical Documentation: College Scorecard Data by Field of Study."

20. See Kristin Blagg et al., *The Feasibility of Program-Level Accountability in Higher Education*, Urban Institute, February 2021, https://www.urban.org/research/publication/feasibility-program-level-accountability-higher-education/view/full_report.

21. JTPA "suggested but did not require that measures for adults include the employment in unsubsidized employment, employment retention for six months, an increase in earnings and/or the wage rate, a reduction in welfare dependency, and acquisition of skills. In practice, the performance measures used for JTPA were primarily program outcomes that, at best, served as proxies for program impact. Initially, the measures focused on the status of participants at the time of exit from the program or shortly thereafter, but by the time the program was replaced by WIA, a follow-up period of 13 weeks was used for most measures." Burt Barnow, "Lessons from the WIA Performance Measures," in *The Workforce Investment Act: Implementation Experiences and Evaluation Findings*, ed. Douglas J. Besharov and Phoebe H. Cottingham (Kalamazoo, MI: Upjohn Press, 2011), 209–31.

22. Barnow, "Lessons from the WIA Performance Measures."

23. These measures were modified in 2006 to (1) entered employment rate, (2) employment retention in the second and third quarters after exit, and (3) average earnings in the second and third quarters after exit.

24. For more details on changes to accountability measurement under WIA, see Dianne Blank, Laura Heald, and Cynthia Fagnoni, "An Overview of WIA," in *The Workforce Investment Act: Implementation Experiences and Evaluation Findings*, ed. Douglas J. Besharov and Phoebe H. Cottingham (Kalamazoo, MI: Upjohn Press, 2011), 49–78; Christopher T. King and Burt S. Barnow, "The Use of Market Mechanisms," in *The Workforce Investment Act: Implementation Experiences and Evaluation Findings*, ed. Douglas J. Besharov and Phoebe H. Cottingham (Kalamazoo, MI: Upjohn Press, 2011), 81–111; and Barnow, "Lessons from the WIA Performance Measures."

25. Performance metrics may be used in state program eligibility requirements but are not required. For example, Washington sets the following minimum performance standards for programs: (1) 20 percent completion rate, (2) 50 percent employment rate, and (3) an earnings level of $3,943 in a calendar quarter, or $10.64 an hour. In Texas, minimum performance standards were in place from May 9, 2017, to November 26, 2018, but are not part of the current eligibility criteria for training providers.

26. In practice, data collection on all program participants for the ETP data is still in development with 28 states and Puerto Rico and the Virgin Islands receiving waivers to report only outcomes on WIOA participants for the 2019 program year. These states include Connecticut, Delaware, Georgia, Hawaii, Idaho, Illinois, Iowa, Kentucky, Massachusetts, Michigan, Minnesota, Missouri, Montana, Nebraska, Nevada, New Hampshire, New Jersey, North Carolina, North Dakota, Ohio, Rhode Island, South Carolina, South Dakota, Tennessee, Texas, Virginia, Wisconsin (partial approval), and Wyoming.

27. State labor market information "dashboards" seem to be a commonly used tool displaying workforce programs, postsecondary training outcomes, and overall employment statistics. In our brief survey of these dashboards, we noted program-level outcomes and details are sparse in favor of more aggregate statistics. We leave these dashboards for further investigation as potential data tools for policymakers and prospective students. A notable exception is Washington Career Bridge, website, careerbridge.wa.gov.

28. No data on the age distribution of enrollment are available for the less-than-two-year institutions. Even if all the students enrolled at these institutions were adults, this would constitute only about 4.5 percent of adult enrollment with community

colleges (40 percent), public four-year institutions (30 percent), and four-year for-profit institutions (12 percent) attracting the bulk of adult students.

29. While the within-institution type correlations are high, more detailed analysis afforded by the PSEO data shows that earnings growth differs by degree type, with bachelor's degree recipients showing greater earnings growth between first- and 10th-year earnings measures than those who complete short-term certificates. See US Department of Education, "Technical Documentation: College Scorecard Data by Field of Study," Exhibit 4.

30. Caroline M. Hoxby and Sarah Turner, "Measuring Opportunity in U.S. Higher Education" (working paper, National Bureau of Economic Research, Cambridge, MA, January 2019), https://www.nber.org/system/files/working_papers/w25479/w25479.pdf.

31. This point was emphasized by the RTI International–sponsored Technical Review Panel. Table A1 in this chapter provides evidence of the state-level variation in labor markets, tuition, and institution-level earnings.

32. Holzer and Baum, *Making College Work*.

33. US Department of Education, "Technical Documentation: College Scorecard Data by Field of Study," 16.

34. US Department of Education, "Technical Documentation: College Scorecard Data by Field of Study," Exhibit 2.

35. Blagg et al., *The Feasibility of Program-Level Accountability in Higher Education*.

36. Thirty states received a waiver to report outcomes for all students in program year 2019; Texas and Washington were unique in their capacity to produce measures for all students. Now, national data are incomplete and challenging to work with in a comparative environment because there is no unique identifier matching institutions in the ETP data to IPEDS or College Scorecard (e.g., UnitID and Office of Postsecondary Education Identification), manually matching training providers to postsecondary data is both cumbersome and relatively inefficient.

37. We limit our analysis to the "All Participants" outcome measures. The outcome measures for WIOA participants do not include the average earnings outcomes. Demographic characteristics on program participants such as age, gender, race, and barriers to employment (e.g., English language learner and ex-offender) are available only for the WIOA population.

38. Further details on TrainingProviderResults.gov missing data including a cross-state comparison can be found in Table A2 in this chapter.

39. Cosmetology programs also highlight an interesting comparison point for earnings measures. On average, mean earnings 10 years after completion are about $22,600 (with a range of $15,300 to $32,800) for Texas beauty colleges. Texas ETPs that are Title IV institutions, on the other hand, have mean earnings of about $40,200 (with a range of $22,300 to $91,600). For reference, Texas follows the current federal minimum wage of $7.25 per hour ($15,080 in annual earnings).

40. This is a documented issue that the DOL is aware of. In a report from the Departments of Labor and Education, the departments note, "Under the current collection [of WIOA accountability measures], the denominators of the performance indicator cohorts do not align to the numerator cohorts, nor are they aligned to WIOA reports submitted as a part of the PIRL reports submitted. This is not only out of alignment, but can result in scenarios where states report accurate counts that cannot be converted into accurate rates over 100%, which is not helpful to consumers." US Department of Labor and US Department of Education, *Workforce Innovation and Opportunity Act* (*WIOA*) *Common Performance Reporting*, November 23, 2020, https://www.dol.gov/sites/dolgov/files/ETA/Performance/pdfs/Comments%20and%20Responses_Joint%20ICR.pdf. Indeed, in our analysis, we note instances in which employment rates exceed 100 percent or are undefined because some programs have zero students exiting but positive values of total employed. We illustrate this issue using an example program in Figure A2.

41. This number follows from Washington's 2021 $13.69 per hour minimum wage and the assumption of 40 weekly hours.

42. With a high incidence of missing data, there is little to learn from evaluating the sample of institutions not captured in College Scorecard at the aggregate level. There is certainly some utility to the non-missing performance measures for the non–Title IV institutions. However, with nearly 75 percent of these institutional providers missing earnings outcomes across all their programs of study, we do not make them a central part of our analysis.

43. To assess the availability of earnings measures in our Scorecard-ETP matched sample of Texas and Washington institutions we aggregate the Washington and Texas ETP data to the provider level and match those institutions to College Scorecard. We consider outcomes available if at least one of the earnings measures is populated (e.g., if mean earnings Q2 is missing and mean earnings Q4 is

populated, then we consider the ETP having available outcomes). We find that of the 80 matched institutions in Washington, 71 have earnings measures in both sources, one institution has earnings outcomes in College Scorecard only, and six have earnings in ETP only. Of the 104 matched Texas institutions, 89 have earnings measures in both sources, four institutions have earnings outcomes in College Scorecard only, and 11 have earnings in ETP only.

44. Blagg et al., *The Feasibility of Program-Level Accountability in Higher Education*.

45. Sarah Turner, "Déjà Vu All over Again? The COVID-19 Recession and Adult Participation in Postsecondary Education," Third Way, September 18, 2020, https://www.thirdway.org/report/d%C3%A9j%C3%A0-vu-all-over-again-the-covid-19-recession-and-adult-participation-in-postsecondary-education.

The Limits and Potential of Program-Level Earnings in Higher Education Accountability

A REVIEW OF THE EVIDENCE AND A NEW LOOK AT GEOGRAPHIC LIMITATIONS

Kristin Blagg

Policymakers have pursued the development of institution- and program-level earnings metrics with the aim of steering prospective students to schools and careers with stronger labor market outcomes. But there are reasons to worry that these new earnings data likely will not move the needle on college choice for most students.

Research evidence suggests that some students—namely, high-achieving students—do appear to use data on institutions to make different higher education choices. Students applying to highly selective colleges have changed their application patterns when institutions move up and down annual *US News & World Report* (*USNWR*) rankings.[1] Informing high-achieving, low-income students of their college choices leads them to a better-match school,[2] and students from private high schools tend to change college choice in response to new College Scorecard data.[3]

But when comparative data in higher education are aimed at all students, rather than an elite few, a small share of students appear to use this information to make their choices. In particular, the provision of program-level earnings data does not appear to substantially change college enrollment patterns.[4] I review the current evidence on when consumer information appears to work (and not work) in the market for higher education, and I use this research to point to reasons that earnings information alone likely will not steer students to their best match and cannot substitute for higher education accountability.

Building on previous work looking at earnings information in Virginia, I focus on geography's role in limiting choice, especially choice that could be informed by program-level earnings data. Policymakers have proposed that increasing consumer information about institutions and programs will serve as a form of informal accountability for higher education, prompting applicants to "vote with their feet" and select away from programs with poor outcomes. One of the chief constraints on this approach is geographic location. The majority of higher education students are place bound. The need to stay within a given range of home, combined with relatively low availability of program-level information due to small sample sizes, means many students simply cannot use earnings data to make a meaningful choice between programs.

I use data from the College Scorecard to illustrate which populations have access to informed choices among programs in their local area. I find that, even with a generous set of assumptions around program availability, only about 60–70 percent of potential applicants would have access to meaningful choice

among programs based on earnings information. In this case, I define "meaningful choice" as having at least two of the same programs within 50 miles of where they live, with information about earnings and at least $5,000 (for undergraduate programs) or $10,000 (for master's programs) difference in median wages two years after graduation. These results vary substantially by region of the country and by race and ethnicity.

Rather than abandoning program-level earnings metrics or similar granular data, policymakers should aim to (1) better contextualize and integrate these data into student decision-making outside of College Scorecard, (2) use program-level earnings data to inform formal and informal accountability metrics, and (3) explore ways to expand access to high-quality online programs.

The Effect of Non-Earnings Information on Higher Education Choices

The use of information and data to drive college applications and decision-making is not new. Specific data points on colleges—such as availability of different programs, cost of attendance, availability of financial aid, selectivity, and the success of alumni—have long been a part of the decision-making process for prospective students. However, use of these data has generally been confined to a relatively small subset of students who tend to decide between highly selective institutions. In this highly selective market, data about institutions and post-enrollment outcomes—especially data that rank or sort colleges—do appear to have informed and altered student choice. But outside this nationally competitive market, the role of institutional data points seems much less influential.

Examining the effect of institution-level data on college choice before the development of College Scorecard, researchers typically focused on how changes in the *USNWR* rankings have affected the choices of students applying to selective schools. During the late 1980s and 1990s, James Monks and Ronald G. Ehrenberg looked at a small group of selective national universities and liberal arts institutions (e.g., "IvyPlus" schools) as ranked in *USNWR*. They and others find that a change to a less favorable ranking among these highly ranked schools leads to a decline in institution selectivity and average SAT scores (i.e., a change in student choice around where to enroll).[5] Even after controlling for other factors that might affect student choice, such as changes in campus demographics, placement on the front page (top 50) of the rankings is associated with a lower acceptance rate and a higher share of incoming freshmen from the top 10 percent of their class.[6] Although there is anecdotal evidence that changes in *USNWR* rankings affect enrollment outcomes for lower-ranked schools,[7] quantitative evidence suggests that the effect of change in rank on student enrollment, at least during the 1990s, was generally limited to the 25 most selective schools.

USNWR rankings for highly selective institutions may shift student choice and enrollment patterns, but the magnitude of response to ranking changes appears to depend on other student demographic characteristics. Among those applying to highly selective colleges, unaided students are more responsive to changes in rankings than are students who receive financial aid, and women are less sensitive to the rankings than men are.[8]

Evidence from research on *USNWR* rankings indicates that highly selective institutions participate in a national competitive market for high-achieving students.[9] High-achieving students—particularly those who have fewer financial constraints on where to attend college—appear to rely more on measures such as *USNWR* as an indicator of institutional "quality" when making higher education decisions. This small subgroup of students, who are more likely to be from high-income backgrounds and have strong academic records, do appear to be using information to sort and decide among a small group of highly selective schools.

To address the financial constraints that low-income, high-achieving students (those who score in the top decile on the SAT or ACT) could perceive when applying to college, a related line of research focuses on "nudging" students with personalized information on selective colleges. Caroline Hoxby

and Sarah Turner developed an information intervention, the Expanding College Opportunities-Comprehensive (ECO-C) Intervention, to provide application fee waivers and information on net price and graduation rates to high-achieving students from low-income families.[10] These intervention choices lead students to apply to more institutions and enroll in schools that are more selective and tend to yield better academic outcomes for students. Similarly, the High Achieving Involved Leader (HAIL) Scholarship, an intervention providing low-income, high-achieving students with information about eligibility for free tuition and fees, was implemented at the University of Michigan. Students exposed to the intervention were substantially more likely to apply to, be admitted to, and enroll in the University of Michigan.[11]

Students with strong academic backgrounds and some confidence in their ability to fund their education through either family wealth or generous financial aid do appear to make choices based on available institution information. However, when informational "nudges" to inform college choice and selection are expanded to a broader, more typical group of potential applicants, the effect of information on student outcomes appears to diminish substantially. For example, the College Board implemented a scaled-up informational intervention for students from low- and middle-income families that were identified as "high achieving" (top decile on the PSAT or SAT) or "on track" (scoring in the top half on the PSAT or SAT).[12] These students were exposed to informational interventions such as personalized mailers on college options, small incentives such as application fee waivers or free SAT score sends, and biweekly emails. Overall, these interventions did not yield changes in college enrollment patterns.

Other large-scale informational interventions have explored informing potential consumers of educational tax benefits,[13] student loan debt load,[14] the availability of the Free Application for Federal Student Aid (FAFSA),[15] and FAFSA filing information without further completion assistance.[16] Although these interventions were aimed at broadly improving student choices around college enrollment and financial aid, they generally did not have a statistically significant effect on student outcomes.

The Effect of Earnings Information on Higher Education Choices

Given the evidence of how informational nudges on college selectivity and financial aid availability do (or often do not) sway college decision-making, we might not hold out much hope for the effect of earnings information. But earnings information by institution or program could be different in ways that might matter for student decision-making. Upon release of updated College Scorecard data in December 2020, then–Secretary of Education Betsy DeVos framed the release as a matter of providing concrete information for student choice, stating that

> as students make choices that impact their future careers and earning potential, it's imperative they have access to relevant, actionable information like how much money they might make after graduating in their chosen field of study, or how much debt they may have to take on.[17]

Data on earnings might be more actionable than previous measures. Data on postgraduate median incomes are relatively straightforward and may be easier for prospective students to rank and order (relative to the myriad of factors that go into *USNWR* rankings or other more comprehensive indexes). Although information about loans and estimated net cost of attendance might induce neutral or negative feelings of avoidance or deferment,[18] information about post-enrollment employment prospects might be a more engaging metric to consider. Such measures may even be more relevant for those who are coming to higher education after spending time in the labor market, as they can compare potential post-program earnings with their current pay.

The choice of a major or program can have a larger effect on a student's return on investment than their choice of an institution can,[19] and evidence suggests that students are often misinformed about the

economic returns to certain majors.[20] Perhaps data on program-level earnings are "new" and useful information for applicants and could sway decisions more than less novel data on college costs and graduation rates could.

Several states publish data on earnings by institution or program, typically through use of a longitudinal data system that links enrollment to state-level unemployment insurance wage records or through a partnership with the US Census Post-Secondary Employment Outcomes (PSEO). The only national dataset of post-enrollment earnings is the College Scorecard, which displays earnings data by program of study (median annual earnings of students two years after graduation). These national program-level data are relatively new, as they were first published in November 2019.[21] Previously, the College Scorecard also displayed data on overall earnings for students who were working and not enrolled six to 10 years after initial enrollment in the institution.[22] Although national in scope, the current College Scorecard earnings data are subject to some substantial constraints.[23]

Program-level data can, by definition, only be produced for graduates of a program, as students who leave school before graduating may not have selected a program of study yet or may have switched between programs. Providing information on only program graduates may exclude substantial shares of students who left the institution before graduation and artificially inflate the expected value of wages for students who are uncertain about their ability to complete the program.[24] The metrics in College Scorecard are also subject to selection of students into certain institutions, and naively using earnings data without accounting for the characteristics of enrolled students could lead to misinterpretation of earnings data.[25]

Evidence on how prospective students use earnings data to inform college decision-making is still emerging. When institution-level earnings data were first published as part of the College Scorecard in 2015, researchers from the College Board observed that score sends (students' SAT scores sent to colleges in preparation for applying) increased by 2.4 percent for each 10 percent increase in reported earnings at the institution level.[26] However, much of the effect was driven by the score sends of students from well-resourced high schools. Also exploiting the publication of new information in the College Scorecard, Nick Huntington-Klein finds small increases in Google searches for institutions that have higher reported earnings, higher graduation rate, or lower tuition.[27]

Researchers have found little evidence that students respond only to the provision of program-level information on earnings. Providing college students with information on postgraduate earnings by program changes students' expectations for their future earnings but does not appear to affect their major choice.[28] An intervention aimed at providing Virginia high school students with information on earnings by major did not significantly change student enrollment decisions.[29]

Although evidence is still emerging, students broadly do not appear to substantially change higher education decisions in response to differences in earnings potential by institution or program. However, students do appear to be responsive to broad changes in labor market outcomes for certain majors, as enrollments in certain programs tend to rise as occupations fed by those programs experience increases in wages.[30] For example, community college completions in a given program, driven by increases in student demand, rise when the associated occupation increases in share of employment.[31] And during the 1970s and 1980s energy boom and bust, enrollment in energy industry majors tracked with expected labor market outcomes.[32]

Assessing Geographic Earnings Choice Constraints

Evidence on college information and student choice indicate that new data on institutions or majors—such as a change in rankings or previously unknown information on earnings—are most likely to change the college application and enrollment patterns of students who are eligible for highly selective institutions. Interventions aimed at a broader audience of college applicants or at providing more complex

information about financial aid for college tend to be less successful at swaying college decision-making.

A constellation of factors likely contributes to the distribution of these results. Some of these factors include the availability of personalized assistance (a factor that did shift FAFSA filing outcomes in a 2012 experiment[33]) or the provision of a guaranteed or low-risk next step for students who perceive cost as a barrier (e.g., free tuition and fees in the HAIL intervention or fee waivers in ECO-C). Another factor could simply be the students' willingness to engage with the informational intervention (e.g., open and refer back to an email or make multiple visits to a website). The complexity of completing financial aid tasks or building a set of program-level earnings metrics to compare may be more daunting than reviewing a single metric such as the *USNWR* ranking of Harvard University versus Yale University.

A substantial but sometimes overlooked factor in college choice is geography. Since the post–World War II era, students applying for highly selective schools have faced an increasingly competitive nationwide market, but most students enroll in institutions that are geographically close to home.[34] Forty-six percent of students enrolled in non-online undergraduate education in 2015–16 attended an institution that was 10 miles or less from their home (Table 1). Moving away from home is far more common for undergraduates enrolled in institutions that grant primarily bachelor's degrees and for graduate students.

The effect of geography and spatial mismatch on college enrollment and choice has been well-documented, especially for students who are not applying directly from high school.[35] Nicholas W. Hillman coined the term "education desert" for geographic areas with poor availability of open-access degree-granting institutions.[36]

For place-bound college applicants (typically, those who are considering only nearby open-access options), data on program-level earnings may be less meaningful. For example, there may only be a single institution offering a given program, so a place-bound student has no choice by default. Even in areas with the same program offering at two or more institutions, data on earnings from these programs may not be available due to small sample size. Finally, earnings data may be available for more than one nearby program, but the programs may not provide substantial variation in median earnings outcomes.

In earlier work on Virginia earnings data based on students' location, academic record, and program interest, slightly more than a third of high school seniors appeared to have access to earnings information that meaningfully varies within a given major.[37] In the next section, I expand on this analysis by building a simplified but nationwide assessment of program-level earnings by geography. I look at the share of adults who have access to meaningful choice among similar programs within a given distance from their home.

Assessing Variation in Program-Level Earnings Information by Geography

To conduct this analysis, I use the most recent version of the College Scorecard data (updated January 19, 2021). This version of the data presents median program-level earnings two years after graduation for those who were supported by federal aid and graduated in the academic years 2014–15 or 2015–16. Information on program of study for graduates is school-reported and not verified by the Department of Education.

Earnings data are suppressed for programs graduating a small number of students, and some "noisy" median income data are suppressed.[38] Overall, about 40 percent of program-level earnings data were deemed reportable on College Scorecard at the Office of Postsecondary Education Identification six-digit level (OPEID6). Due mainly to small cohorts and privacy suppression, earnings data are less likely to be reported on the College Scorecard for undergraduate certificate programs (32 percent reported), associate degree programs (35 percent), and doctoral degrees (17 percent). Earnings data are more likely to be available for first professional degrees (71 percent).

My analysis is limited by the data available. Earnings data are reported at the OPEID6 level, a broad institution definition that reflects participation in federal student aid programs. In many cases, this level is the same as the UnitID, which is typically what a student may think of as the institution they attend. For this analysis, I calculate distance to institutions at the UnitID level. Even at this level, my analysis likely does not capture the full geographic availability of programs "on the ground," as UnitIDs may encompass multiple campus branches.[39] I believe that using UnitID is the correct decision for this analysis, since the College Scorecard data present information at this level (and, consequently, students will be using this level of information for any earnings-based decisions).

In a previous Virginia analysis, I used individual academic data on high school graduates to assess a loose academic "match" to more selective institutions. The inability to include academic indicators may result in an overestimate of the utility of earnings data. For example, if an individual has an earnings choice between only two nearby institutions but one institution is a highly selective school, then they may not have "true" choice. This concern is most likely prevalent for the analysis of bachelor's and master's degree programs. For this analysis, I exclude earnings data for programs at highly selective institutions, defined as those that admit less than 35 percent of applicants.[40] Although selectivity data for master's degree programs are not uniformly available, I assume that institutions that meet this highly selective threshold for undergraduates also have selective graduate programs.

For my nationwide analysis, I rely on only block-group and tract-level American Community Survey (ACS) estimates of the adult population with at least a high school degree (for associate and bachelor's degree programs) and the population with at least a bachelor's degree (for master's programs). As a check on my outcomes, I assess proximity to meaningful earnings choice for associate and bachelor's degree programs for the population age 18–29 (regardless of degree status). I also look at the availability of earnings choice by race and ethnicity.

In this analysis, I assume that prospective applicants are looking to enroll in a given program and are assessing the availability (and variability) of earnings data for the same type of program across institutions within a given geographic area. This is a strong assumption; students may switch between programs or majors during their enrollment in an institution. However, switching majors is relatively uncommon for students. Just a third of graduates in 2012–14 reported ever formally changing their undergraduate major.[41] Switching majors may be even less prevalent in certificate and graduate degree programs, where students typically apply to be admitted to a particular program (e.g., a practical nursing certificate or a master's of business administration) as much as to a particular school.

Even if students are unsure of what they want to major in before they matriculate, they may still want to compare program-level earnings between schools for areas they are interested in. Indeed, the College Scorecard is structured to push potential applicants to review program-level earnings through a framework similar to the one I am using. Upon landing at the College Scorecard site, users can search for either schools or fields of study. The search for a field of study brings up all available options, which may be further narrowed down by credential, location, earnings, or total student loan debt.

For my analysis, I look at the associate, bachelor's, and master's programs that are the most populated with earnings data in the College Scorecard. (This also tends to mean these programs are among the most popular for students to enroll in.)

I classify earnings at two different programs as providing meaningful choice if the difference between the median earnings two years after graduation is at least $5,000 for undergraduate programs and at least $10,000 for graduate programs. Because choice is geographically constrained in this case, I do not adjust earnings for local cost of living. However, it is conceivable that my predefined threshold for meaningful choice could mean less in an area with a high cost of living and more in an area with a low cost of living. As a check on my findings, I also calculate the share of individuals who have at least one program

option that produced median earnings above the median local (county-level) earnings for a high school graduate (for associate and bachelor's programs) or the median earnings for a graduate with a bachelor's degree (for master's programs). The results of this meaningful differentiation from not pursuing further education analysis is available in the appendix.

I calculate the share of the eligible population with a meaningful earnings choice within 10, 25, and 50 miles (straight-line distance). In 2015–16, only 23 percent of students traveled farther than 50 miles to attend their undergraduate institution, so my analysis represents the choice set for the majority of students (Table 1). Graduate students are more likely to travel farther, but 65 percent still attend within 50 miles of home.

Although 50 miles may be easier to traverse in a rural area than an urban area, students who go farther than 50 miles are generally moving away from home to live on or near campus. Among those who attended a single non-distance institution more than 50 miles from home in 2015–16, just 10 percent reported living at home with their parents (9 percent of dependent students, 11 percent of independent).[42]

Findings on Geographic Variation in Program-Level Earnings

My results indicate that, even for the most popular undergraduate and graduate programs, potential applicants do not always have a meaningful choice between nearby programs. Table 2 shows the share of the population that has access to choice within 10, 25, and 50 miles from their home (as defined by census block group).

According to College Scorecard data, few American adults (less than 20 percent) with at least a high school degree (or who are age 18–29) have access to programs with meaningfully different earnings for the same type of associate degree program within 10 miles of their home. For the most popular bachelor's programs, a higher share of adults has access to meaningful choice within 10 miles. Those seeking to compare earnings for a bachelor's in business administration would be most likely to have meaningful choice, as roughly 31–38 percent of potentially eligible adults could compare two programs with at least $5,000 difference in earnings within 10 miles.

As the geographic range increases, the share of students with choice also increases. At 50 miles from home, just under half of adults would have a meaningful choice in earnings information for some of the most popular associate programs. For meaningful choice among bachelor's programs, there is more variation. The majority of adults have at least two options with a $5,000 earnings difference for a bachelor's degree in business or nursing.

Fewer adults have meaningful choice in bachelor's programs such as teaching. This variation indicates that, to a certain extent, the availability of meaningful choice may be driven by not only the availability of program options but also the structure of, and variation of pay within, the local labor market for program graduates. For example, early-career teachers may be subject to a relatively narrow band of pay among local school districts, making it harder for programs to yield substantial differences in postgraduate pay.

Although fewer individuals pursue master's degrees, we see similar levels of meaningful earnings choice among these programs on College Scorecard (Table 3). The threshold of meaningful earnings is raised to $10,000, and the share of individuals with at least a bachelor's degree who have a meaningful choice within 10 miles ranges from 6 percent to 15 percent for the most popular master's programs. The outlier is master of business administration programs, in which 33 percent of the population has a choice within 10 miles. Within 50 miles, the majority of adults who are eligible to consider a master's degree tend to have a meaningful earnings choice among business, educational administration, and nursing programs.

There are a few different reasons we may see similar levels of earnings choice, even across undergraduate and graduate degree levels. First, those with a bachelor's degree and who are deemed eligible for a master's program in my simplified model may be more likely to live in urban areas[43] and

Table 1. Distance of Institution from Home, by Type of Enrollment

	Distance from Student's Home				
Share of Students Enrolled in 2015–16	10 Miles or Less	11 to 25 Miles	26 to 50 Miles	51 to 100 Miles	More Than 100 Miles
Total Undergraduates	46%	21%	9%	7%	16%
Institutional Category (Undergraduates)					
Degree-Granting, Primarily Baccalaureate or Above	35%	16%	11%	12%	27%
Degree-Granting, Primarily Sub-Baccalaureate	51%	29%	8%	4%	8%
Degree-Granting, Associate and Certificates	57%	25%	9%	3%	6%
Non-Degree-Granting, Sub-Baccalaureate	58%	24%	7%	4%	7%
Total Graduate Students	39%	16%	10%	9%	26%

Note: Distance is calculated as a straight-line distance between two points and rounded to the nearest mile.
Source: Author's calculations using 2015–16 data from US Department of Education, National Center for Education Statistics, "National Postsecondary Student Aid Study (NPSAS)," https://nces.ed.gov/surveys/npsas/.

Table 2. Share of Population with Meaningful (Greater Than $5,000 Earnings Difference) Choice by Program

		Age 18–29			Associate or Bachelor's Eligible		
Degree	Program	Within 10 Miles	Within 25 Miles	Within 50 Miles	Within 10 Miles	Within 25 Miles	Within 50 Miles
Associate	Registered Nursing, Nursing Administration	20%	47%	74%	16%	42%	73%
	Liberal Arts and Sciences, General Studies and Humanities	15%	41%	70%	11%	37%	68%
	Business Administration, Management and Operations	16%	42%	65%	12%	38%	63%
	Criminal Justice and Corrections	16%	39%	64%	12%	34%	61%
Bachelor's	Business Administration, Management and Operations	38%	68%	87%	31%	63%	85%
	Psychology, General	21%	50%	72%	16%	45%	69%
	Biology, General	23%	53%	74%	18%	47%	71%
	Registered Nursing, Nursing Administration	25%	57%	78%	20%	52%	76%
	Teacher Education and Professional Development	14%	34%	60%	11%	31%	58%

Source: Author's analysis of Integrated Postsecondary Education Data System (IPEDS), College Scorecard, and ACS data.

therefore potentially closer to a choice of institutions offering the same program. And master's degree program cohorts may be generally larger. These programs may enroll more students relying on any Title IV aid (including loans) or may be more likely to graduate their enrolled students, leading to more programs that are sufficiently large enough to have graduate earnings.

These national-level estimates conceal some variation in the availability of meaningful program earnings choice by region of the country and by race and ethnicity. To analyze the availability of meaningful

Table 3. Share of Population with Meaningful (Greater Than $10,000 Earnings Difference) Choice by Program

		Master's Eligible		
Degree	Program	Within 10 Miles	Within 25 Miles	Within 50 Miles
Master's	Business Administration, Management, and Operations	33%	67%	85%
	Educational Administration and Supervision	15%	40%	60%
	Registered Nursing, Nursing Administration	11%	41%	64%
	Teacher Education and Professional Development	6%	23%	37%
	Accounting and Related Services	10%	27%	47%

Source: Author's analysis of IPEDS, College Scorecard, and ACS data.

earnings choice at the state level, I use the most popular and available program—a bachelor's in businessadministration,management,andoperations—and assess the share of the population with a choice within 25 miles for those with at least a high school degree. I do not limit availability by border; an option across state lines is still considered an option.

Results do vary substantially by state (Table A2). In Alaska, the District of Columbia, Montana, Rhode Island, and Wyoming, no adults have a meaningful choice (greater than $5,000) of business programs with earnings information within 25 miles.[44] Similarly, in Arkansas, Iowa, and Mississippi, less than 25 percent of adults have a meaningful choice. In contrast, more densely populated areas are more likely to see nearly all the population have meaningful choice (97 percent in Connecticut, 91 percent in Massachusetts, and 88 percent in Maryland, New Jersey, and Utah).

Given variation in earnings data availability and choice by region, we may also expect to find variation by race and ethnicity. To conduct this analysis, I look at adults with at least a high school degree (or at least a bachelor's degree, for a master's program), by race and ethnicity, within census tract. In general, access to meaningful choice based on earnings data is somewhat better for adults who are Black, Hispanic, or Asian or who identify as some other race, particularly when looking for options within 10 miles (Table 4). Broadly, access is lower for adults who are White, American Indians or Alaska natives, or native Hawaiians or other Pacific Islanders.

Notably, access is still quite low for eligible adults who are American Indians or Alaska natives, even when the geographic scope is expanded to 50 miles, a finding that echoes previous research on education deserts disproportionately affecting Native American individuals. In contrast, widening the geographic scope to 50 miles appears to substantially increase the share of eligible White and native Hawaiians or other Pacific Islander adults who have access to meaningful choice, closer to parity with adults who are Black, Hispanic, or Asian or who identify as some other race.

Building Program-Level Earnings into a Meaningful College Choice Framework

This simplified model generally considers the best-case scenario for the value of earnings choice: ability to enroll in all but the most selective institutions, interest in the most prevalent programs (e.g., nursing, business, and education), and mobility of up to 50 miles in any direction without regard to geographic barriers. Even under this scenario, a large number of adults (in some cases, more than half) would not see programs in the College Scorecard that provide at least $5,000 or $10,000 difference in median annual earnings.

When program-level information on nearby higher education choices is not meaningfully different or when it simply is not available, we cannot expect that prospective students will amend their

Table 4. Share of Population with Meaningful Choice by Ethnicity

Program	Race or Ethnicity	Within 10 Miles	Within 25 Miles	Within 50 Miles
Associate, Registered Nursing, Nursing Administration, Nursing Research, and Clinical Nursing	White	11%	36%	70%
	Black	23%	52%	79%
	Hispanic	31%	58%	79%
	Asian	33%	66%	83%
	American Indian or Alaska Native	13%	29%	52%
	Native Hawaiian or Other Pacific Islander	17%	38%	54%
	Other	35%	64%	84%
	Two or More Races	19%	47%	73%
Bachelor's, Business Administration, Management, and Operations	White	24%	58%	84%
	Black	48%	76%	92%
	Hispanic	44%	74%	86%
	Asian	50%	84%	94%
	American Indian or Alaska Native	20%	39%	60%
	Native Hawaiian or Other Pacific Islander	33%	69%	80%
	Other	48%	80%	90%
	Two or More Races	36%	67%	85%
Master's, Educational Administration and Supervision	White	14%	38%	58%
	Black	21%	48%	65%
	Hispanic	18%	48%	63%
	Asian	22%	59%	77%
	American Indian or Alaska Native	7%	21%	35%
	Native Hawaiian or Other Pacific Islander	10%	33%	53%
	Other	24%	54%	70%
	Two or More Races	19%	46%	63%

Source: Author's analysis of IPEDS, College Scorecard, and ACS data.

higher education decisions. For many students, a nearby option may be the only option, as community ties or financial constraints (e.g., a local part-time job or the availability of in-district or in-state tuition) keep them close to home.

Early research suggests that students are more likely to use the new earnings data in the same way that *USNWR* rankings were used. High-ability students conducting a national search for selective four-year colleges may be the most likely to find cross-program differences and to be swayed by new information on earnings. Additionally, students who are conducting a national search (and may be the most likely to be swayed) might tend to be less focused on choosing a particular program than on other aspects of the college, such as selectivity, overall "fit," and the availability of financial aid options. Indeed, for this population, majors or programs generally are not identified until a student's second year (except for some "schools" within universities, which nonetheless may offer different programs within a single "school").

These findings, combined with previous evidence on how potential students use data to make decisions about where to apply and enroll in college, indicate that policymakers should think differently about how to leverage new program-level earnings data to help facilitate better college decision-making. Rather

than abandoning these metrics, policymakers should aim to (1) better contextualize and integrate these data into student decision-making outside of College Scorecard, (2) inform formal and informal accountability metrics, and (3) explore ways to expand access to high-quality online programs.

We have some evidence that personal context is important to integrate data into an individual student's college decision-making. Christine Mulhern finds that students adjust their college choices when they are given access to individual- and school-specific information on classmates' admission experiences (especially when the likelihood of admission is high).[45] In contrast to many other interventions, this information most affects the decision-making of disadvantaged students. In this case, data were presented through Naviance, a software used by over 40 percent of US high schoolers to help counsel them through the college decision-making process. It might be possible to reframe program-level earnings data in the same way.

Naviance already imports data from the College Scorecard application programming interface, and these data could be further contextualized to a student's individual circumstances. For example, the platform could inform students that a program's typical postgraduate earnings are 20 percent higher than the median earnings for a high school graduate in their local area. Using data available from National Student Clearinghouse, platforms like Naviance may even be able to use historic data from larger school districts to help students understand whether others have graduated from a given program at an institution. For example, a student at an arts-focused high school may take comfort seeing data that alumni from their school have succeeded in graduating from a nursing program at a local community college. Individualized recommender system "nudges" could also help by prompting students to look at options they are academically eligible for but might not otherwise consider (i.e., "If you like program A, you might also consider program B").

Another idea for the role of earnings data in student decision-making is to link the program data to broader trends in local labor markets. Program-level enrollment does respond to substantial changes in demand for given occupations, even without concrete information about earnings. Policymakers could use local program-level earnings data, tracked over time, to better predict where student enrollments may flow, even absent students accessing and using the data themselves.

In extreme cases, these data could be used to prevent potential "cobwebbing," the phenomenon in which wages rise in an occupation and students oversaturate the market by training for the occupation. As a result, wages may fall, resulting in the undersupply of newly trained workers and starting a new cycle. Institutions could use these data to better allocate resources to programs and to suggest alternatives to oversubscribed programs, to both stabilize enrollments in the long run and ensure that students realize the return that they perceived in the data.

Aside from informing individual or collective college decision-making, program-level earnings data could be used for accountability, whether informal (i.e., "name and shame") or formal (i.e., using earnings data, perhaps with other metrics, to determine whether a program is eligible for federal student aid). We have evidence that college leaders respond to data published about their institution, such as the publications of *USNWR*, even if these metrics have no bearing on their institution's accreditation or ability to provide financial aid. Although it is too early to tell if institutions will implement changes in response to the publication of program-level earnings, we can find some evidence for both informal and (potential) formal program-level accountability in the development of gainful employment metrics under the Obama administration.

Gainful employment used earnings and student loan debt to create a set of accountability metrics for for-profit and career training programs. Broadly, programs that failed the gainful employment metric (by saddling students with more student loan debt than they could reasonably pay off in earnings) would eventually lose access to providing Title IV aid. Although these formal accountability measures never took full effect, they did generate some informal

responses. For example, in response to its American Repertory Theater Institute graduate theater program being identified as failing, Harvard froze enrollment to the program to revamp its offerings.[46]

Although formal program-level accountability through gainful employment was not implemented, any future formal measure based in whole or in part on earnings measures should carefully account for the impact that the revocation of aid for a given program may have on student populations. Gainful employment, should it have been fully implemented, would have disproportionately affected students of color, women, and students from low-income backgrounds.[47]

A third potential way to improve higher education choice though program-level earnings metrics would be to focus on improving outcomes for online degree programs. Virtual programs allow access to a large share of students regardless of location, although students in areas with low internet access may still have difficulty logging on.[48] The transition to remote learning for a wide swath of higher education during the 2020–21 school year may have helped broaden acceptance of online higher education, and it is in online degrees that policymakers may be able to derive a more effective "market" for the earnings value of certain programs.

A key consideration for measures aimed at improving the outcomes for online programs is the level of the program. Online master's degree programs have quickly become popular, while programs that serve undergraduates have not grown as rapidly.[49] Master's degree programs may be more successful in a virtual format because the students have already developed skills that allow them to succeed in getting the prerequisite bachelor's degree and because those in a master's program may have a more discrete focus on improving earnings outcomes. Given that master's degrees are often funded by student loans (rather than need-based grants) and that nearly all programs admit students to a given field, graduate education—particularly virtual master's degrees—may be an ideal test case for policymakers seeking to push applicants to programs that yield a high return on investment.

The generation of an effective online "market" for shorter-term degrees—particularly undergraduate certificates and associate degrees—may be more difficult. Many of these degrees involve practical or "hands-on" elements, which are difficult to replicate virtually. In addition, these degrees may not attract as uniform a selection of academically prepared candidates (in contrast to graduate programs, which require completion of a four-year degree), which might bias outcomes. Policymakers may be able to overcome some of these challenges through controls for the needs of students enrolling or the use of a "value-added" metric, but the development of a true virtual market at this level may be more difficult.

Conclusion

The college applicant as a discerning consumer is an appealing model. However, in practice, this model appears to be mostly limited to highly resourced students choosing among highly selective institutions. Students constrained by geography, prior academic record, or financial need may rely more on other factors, rather than outcomes data, to make their higher education choices. Geography in particular severely constrains options for students who want to use program-level earnings to meaningfully choose between two nearby schools. Although meaningful choice access varies—and may be somewhat more available for potential students who are Black, Hispanic, or Asian or who identify as some other race—policymakers should not blindly assume that publishing program-level information will change student choice.

This does not mean that program-level earnings data are not useful. Indeed, they may be very useful for a small subset of students. Additionally, they have tremendous unrealized value for policymakers. Policymakers can push program-level earnings metrics into college selection formats that students already use, such as Naviance, and push for districts and institutions to provide personalized information to help students visualize their success in a given program. These data could also inform decisions about when

to expand or narrow the size of a given program in response to market demand. In particular, historic data (updated from the initial cohort and moving forward) could yield new insights for institutions and policymakers about how different program inputs affect labor market outcomes. And publishing data can informally or formally motivate accountability, prompting action by higher education institutions to manage what is being measured. Finally, looking beyond the location of physical colleges, earnings data could increase the outcomes of programs offered online, as a market unconstrained by geography could be a platform for allowing students to vote with their virtual feet.

Appendix

Table A1. Availability of Published Median Program Earnings Higher Than Local Median Earnings

		Share with Nearby Published Earnings Above Local Median Earnings for High School Graduate (Associate and Bachelor's) or Bachelor's (Master's)		
Degree	Program	Within 10 Miles	Within 25 Miles	Within 50 Miles
Associate	Registered Nursing, Nursing Administration	56%	86%	97%
	Liberal Arts and Sciences, General Studies and Humanities	11%	24%	43%
	Business Administration, Management, and Operations	26%	47%	66%
	Criminal Justice and Corrections	25%	47%	71%
Bachelor's	Business Administration, Management, and Operations	53%	80%	95%
	Psychology, General	5%	13%	22%
	Biology, General	7%	16%	30%
	Registered Nursing, Nursing Administration	53%	80%	94%
	Teacher Education and Professional Development	27%	48%	67%
Master's	Business Administration, Management, and Operations	59%	85%	95%
	Educational Administration and Supervision	30%	58%	76%
	Registered Nursing, Nursing Administration	49%	76%	89%
	Teacher Education and Professional Development	9%	18%	29%
	Accounting and Related Services	35%	62%	78%

Source: Author's analysis of IPEDS, College Scorecard, and ACS data.

Table A2. Meaningful Choice of Earnings for a Bachelor's in Business Administration, Management, and Operations, for Adults with at Least a High School Diploma

	No Program Earnings Data Available Within 25 Miles	No Meaningful Program Earnings Choice Available (Less Than $5,000 Difference)	Meaningful Earnings Choice Available (Greater Than $5,000 Difference)
Alabama	28%	43%	29%
Alaska	46%	54%	0%
Arizona	21%	28%	51%
Arkansas	36%	44%	20%
California	12%	16%	71%
Colorado	19%	6%	75%
Connecticut	0%	3%	97%
Delaware	15%	28%	57%
District of Columbia	0%	100%	0%
Florida	8%	17%	75%
Georgia	18%	31%	51%
Hawaii	26%	8%	66%
Idaho	39%	18%	43%
Illinois	12%	24%	65%
Indiana	17%	38%	45%
Iowa	31%	49%	20%
Kansas	27%	41%	32%
Kentucky	40%	25%	35%
Louisiana	17%	46%	37%
Maine	23%	44%	33%
Maryland	7%	5%	88%
Massachusetts	4%	5%	91%
Michigan	16%	12%	72%
Minnesota	30%	16%	54%
Mississippi	61%	18%	21%
Missouri	34%	12%	54%
Montana	57%	43%	0%
Nebraska	36%	27%	37%
Nevada	14%	16%	71%
New Hampshire	9%	29%	62%
New Jersey	1%	10%	88%
New Mexico	42%	20%	38%
New York	5%	11%	84%
North Carolina	19%	21%	61%
North Dakota	37%	23%	40%
Ohio	8%	19%	73%
Oklahoma	33%	17%	51%
Oregon	32%	19%	49%

(continued on next page)

Table A2. Meaningful Choice of Earnings for a Bachelor's in Business Administration, Management, and Operations, for Adults with at Least a High School Diploma (Continued)

	No Program Earnings Data Available Within 25 Miles	No Meaningful Program Earnings Choice Available (Less Than $5,000 Difference)	Meaningful Earnings Choice Available (Greater Than $5,000 Difference)
Pennsylvania	3%	16%	81%
Rhode Island	0%	100%	0%
South Carolina	11%	28%	61%
South Dakota	32%	41%	27%
Tennessee	18%	26%	57%
Texas	16%	24%	60%
Utah	10%	2%	88%
Vermont	18%	28%	54%
Virginia	13%	23%	64%
Washington	17%	22%	61%
West Virginia	21%	36%	43%
Wisconsin	22%	30%	49%
Wyoming	96%	4%	0%

Source: Author's analysis of IPEDS, College Scorecard, and ACS data.

Notes

1. James Monks and Ronald G. Ehrenberg, "The Impact of *U.S. News & World Report College Rankings* on Admissions Outcomes and Pricing Policies at Selective Private Institutions" (working paper, National Bureau of Economic Research, Cambridge, MA, July 1999), https://www.nber.org/system/files/working_papers/w7227/w7227.pdf.

2. Caroline Hoxby and Sarah Turner, "Expanding College Opportunities for High-Achieving, Low Income Students" (working paper, Stanford Institute for Economic Policy Research, Stanford, CA, March 2013), https://siepr.stanford.edu/sites/default/files/publications/12-014paper_6.pdf.

3. Michael Hurwitz and Jonathan Smith, "Student Responsiveness to Earnings Data in the College Scorecard," Social Science Research Network, September 29, 2017, https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2768157.

4. Alexander I. Ruder and Michelle Van Noy, "Knowledge of Earnings Risk and Major Choice: Evidence from an Information Experiment," *Economics of Education Review* 57 (April 2017): 80–90, https://www.sciencedirect.com/science/article/abs/pii/S0272775716300334; and Kristin Blagg et al., *Rethinking Consumer Information in Higher Education*, Urban Institute, July 2017, https://www.urban.org/sites/default/files/publication/91666/rethinking_consumer_information_in_higher_education_3.pdf.

5. Monks and Ehrenberg, "The Impact of *U.S. News & World Report College Rankings*"; and Marc Meredith, "Why Do Universities Compete in the Ratings Game? An Empirical Analysis of the Effects of the *U.S. News and World Report College Rankings*," *Research in Higher Education* 45, no. 5 (August 2004): 443–61, https://doi.org/10.1023/B:RIHE.0000032324.46716.f4.

6. Nicholas A. Bowman and Michael N. Bastedo, "Getting on the Front Page: Organizational Reputation, Status Signals, and the Impact of *U.S. News and World Report* on Student Decisions," *Research in Higher Education* 50, no. 5 (August 2009): 415–36, https://link.springer.com/article/10.1007/s11162-009-9129-8.

7. Ronald G. Ehrenberg, "Reaching for the Brass Ring: The *US News & World Report* Rankings and Competition," *Review of Higher Education* 26 (December 2003), https://www.researchgate.net/publication/297869093_Reaching_for_the_brass_ring_The_US_News_World_Report_rankings_and_competition.

8. Amanda Griffith and Kevin Rask, "The Influence of the US News and World Report Collegiate Rankings on the Matriculation Decision of High-Ability Students: 1995–2004," *Economics of Education Review* 26, no. 2 (April 2007): 244–55, https://www.sciencedirect.com/science/article/abs/pii/S0272775705001184?via%3Dihub.

9. Caroline M. Hoxby describes the history and evolution of this market further in her 2016 Martin Feldstein Lecture. See National Bureau of Economic Research, "8th Annual Feldstein Lecture—Summer Institute 2016," YouTube, May 21, 2020, https://www.youtube.com/watch?v=YkR4PLv8Qy8.

10. Hoxby and Turner, "Expanding College Opportunities for High-Achieving, Low Income Students."

11. Susan Dynarski et al., "Closing the Gap: The Effect of a Targeted, Tuition-Free Promise on College Choices of High-Achieving, Low-Income Students" (working paper, National Bureau of Economic Research, Cambridge, MA, December 2018), https://www.nber.org/papers/w25349.

12. Oded Gurantz et al., "Realizing Your College Potential? Impacts of College Board's RYCP Campaign on Postsecondary Enrollment" (working paper, Brown University, Annenberg Institute, Providence, RI, May 2019), https://www.edworkingpapers.com/sites/default/files/ai19-40_v1.pdf.

13. Peter Bergman, Jeffrey T. Denning, and Dayanand Manoli, "Is Information Enough? The Effect of Information About Education Tax Benefits on Student Outcomes," *Journal of Policy Analysis and Management* 38, no. 3 (March 14, 2019): 706–31, https://doi.org/10.1002/pam.22131.

14. Rajeev Darolia and Casandra Harper, "Information Use and Attention Deferment in College Student Loan Decisions: Evidence from a Debt Letter Experiment," *Educational Evaluation and Policy Analysis* 40, no. 1 (October 13, 2017): 129–50, https://doi.org/10.3102/0162373717734368.

15. Kelli A. Bird et al., "Nudging at Scale: Experimental Evidence from FAFSA Completion Campaigns," *Journal of Economic Behavior and Organization* 183 (March 2021): 105–28, https://doi.org/10.1016/j.jebo.2020.12.022.

16. Eric P. Bettinger et al., "The Role of Application Assistance and Information in College Decisions: Results from the H&R Block Fafsa Experiment," *Quarterly Journal of Economics* 127, no. 3 (August 2012): 1205–42, https://doi.org/10.1093/qje/qjs017.

17. US Department of Education, "Secretary DeVos Expands on Revamped College Scorecard, Adding Second-Year Post Graduation Earnings and Cumulative Loan Data to Help Students Make Informed Choices," press release, December 2, 2020, https://content.govdelivery.com/accounts/USED/bulletins/2af4a43.

18. Darolia and Harper, "Information Use and Attention Deferment in College Student Loan Decisions."

19. Douglas A. Webber, "Are College Costs Worth It? How Ability, Major and Debt Affect the Returns to Schooling," *Economics of Education Review* 53 (August 2016): 296–310, https://doi.org/10.1016/j.econedurev.2016.04.007; and Eric R. Eide, Michael J. Hilmer, and Mark H. Showalter, "Is It Where You Go or What You Study? The Relative Influence of College Selectivity and College Major on Earnings," *Contemporary Economic Policy* 34, no. 1 (January 2016): 37–46, https://doi.org/10.1111/coep.12115.

20. Rachel Baker et al., "The Effect of Labor Market Information on Community College Students' Major Choice" (working paper, University of Michigan, Gerald R. Ford School of Public Policy, Education Policy Initiative, Ann Arbor, MI, April 2017), https://www.edpolicy.umich.edu/files/02-2017-labor-market-major-choice.pdf; and Peter Arcidiacono, V. Joseph Hotz, and Songman Kang, "Modeling College Major Choices Using Elicited Measures of Expectations and Counterfactuals" (working paper, National Bureau of Economic Research, Cambridge, MA, February 2010), https://www.nber.org/system/files/working_papers/w15729/w15729.pdf.

21. US Department of Education, "Secretary DeVos Delivers on Promise to Provide Students Relevant, Actionable Information Needed to Make Personalized Education Decisions," press release, November 20, 2019, https://content.govdelivery.com/accounts/USED/bulletins/26d1286.

22. US Department of Education, "Technical Documentation: College Scorecard Institution-Level Data," July 2021, https://collegescorecard.ed.gov/assets/FullDataDocumentation.pdf.

23. Data are only available for students who received federal financial aid (i.e., grants or loans) during their enrollment. Data can only be displayed if the cohort of students is sufficiently large to present an aggregate measure (about 20 students). This constraint is particularly important for metrics produced at the program level. Data are pooled across two years, but many programs (defined at the four-digit Classification of Instructional Programs level) are still too small to be included.

24. Kristin Blagg and Kelia Washington, "Which Dollars Get Measured? Assessing Earnings Metrics Using Data from Connecticut," Urban Institute, January 2020, https://www.urban.org/sites/default/files/publication/101637/which_dollars_get_measured_0.pdf.

25. Zachary Mabel, C. J. Libassi, and Michael Hurwitz, "The Value of Using Early-Career Earnings Data in the College Scorecard to Guide College Choices," *Economics of Education Review* 75 (April 2020), https://doi.org/10.1016/j.econedurev.2020.101958.

26. Hurwitz and Smith, "Student Responsiveness to Earnings Data in the College Scorecard."

27. Nick Huntington-Klein, "The Search: The Effect of the College Scorecard on Interest in Colleges" (working paper, California State University, Fullerton, Fullerton, CA, April 25, 2017), https://www.nickchk.com/Huntington-Klein_2017_The_Search.pdf.

28. Ruder and Van Noy, "Knowledge of Earnings Risk and Major Choice."

29. Blagg et al., *Rethinking Consumer Information in Higher Education*.

30. Mark C. Long, Dan Goldhaber, and Nick Huntington-Klein, "Do Completed College Majors Respond to Changes in Wages?," *Economics of Education Review* 49 (December 2015): 1–14, https://doi.org/10.1016/j.econedurev.2015.07.007.

31. Michel Z. Grosz, "Do Postsecondary Training Programs Respond to Changes in the Labor Market?," Social Science Research Network, December 3, 2019, https://dx.doi.org/10.2139/ssrn.3499831.

32. Luyi Han and John V. Winters, "Industry Fluctuations and College Major Choices: Evidence from an Energy Boom and Bust," *Economics of Education Review* 77 (August 2020), https://doi.org/10.1016/j.econedurev.2020.101996.

33. Bettinger et al., "The Role of Application Assistance and Information in College Decisions."

34. National Bureau of Economic Research, "8th Annual Feldstein Lecture—Summer Institute 2016."

35. David Card, "Using Geographic Variation in College Proximity to Estimate the Return to Schooling" (working paper, National Bureau of Economic Research, Cambridge, MA, October 1993), https://www.nber.org/system/files/working_papers/w4483/w4483.pdf;

Christopher Jepsen and Mark Montgomery, "Miles to Go Before I Learn: The Effect of Travel Distance on the Mature Person's Choice of a Community College," *Journal of Urban Economics* 65, no. 1 (January 2009): 64–73, https://www.sciencedirect.com/science/article/abs/pii/S0094119008000910?via%3Dihub; Sarah Ovink et al., "College Match and Undermatch: Assessing Student Preferences, College Proximity, and Inequality in Post-College Outcomes," *Research in Higher Education* 59, no. 5 (August 2018): 553–90, https://doi.org/10.1007/s11162-017-9482-y; and Noah Hirschl and Christian Michael Smith, "Well-Placed: The Geography of Opportunity and High School Effects on College Attendance," *Research in Higher Education* 61, no. 5 (August 2020): 567–87, https://doi.org/10.1007/s11162-020-09599-4.

36. Nicholas W. Hillman, "Geography of College Opportunity: The Case of Education Deserts," *American Educational Research Journal* 53, no. 4 (August 1, 2016): 987–1021, https://journals.sagepub.com/doi/abs/10.3102/0002831216653204?casa_token=klk8QQLFPk0AAAAA%3Aw8WzcqXY8drovNCiEfNRABOQS2PUEh7KXbLXZ_4f7qbxKGWz803nT5_KI8yvor7AtZ64xPE2SGLC&-journalCode=aera.

37. Kristin Blagg and Matthew M. Chingos, "Choice Deserts: How Geography Limits the Potential Impact of Earnings Data on Higher Education," Urban Institute, December 2016, https://www.urban.org/sites/default/files/publication/86581/choice_deserts_3.pdf.

38. US Department of Education, "Technical Documentation."

39. Colleen Campbell does an excellent job of identifying branches and campuses using the Postsecondary Education Participants System in Colleen Campbell, *Those Left Behind: Gaps in College Attainment by Race and Geography*, Center for American Progress, June 2019, https://files.eric.ed.gov/fulltext/ED597154.pdf.

40. I also exclude institutions that provide only virtual instruction.

41. US Department of Education, National Center for Education Statistics, "Data Point: Beginning College Students Who Change Their Majors Within 3 Years of Enrollment," December 2017, https://nces.ed.gov/pubs2018/2018434.pdf.

42. US Department of Education, National Center for Education Statistics, "National Postsecondary Student Aid Study (NPSAS), https://nces.ed.gov/surveys/npsas/; and DataLab, website, https://nces.ed.gov/datalab/powerstats/output.aspx.

43. Campbell, *Those Left Behind*.

44. All Rhode Island and District of Columbia residents have program earnings data available, but no bachelor's program of business administration differentiates itself by more than $5,000.

45. Christine Mulhern, "Changing College Choices with Personalized Admissions Information at Scale: Evidence on Naviance" (working paper, Harvard University, Cambridge, MA, April 2019), https://scholar.harvard.edu/files/mulhern/files/naviance_mulhern_april2019.pdf.

46. Amy Gorel, "Harvard's A.R.T. Institute Freezes Enrollment After Federal Report Cites High Student Debt," WBUR, January 17, 2017, https://www.wbur.org/artery/2017/01/17/art-institute-harvard.

47. Anthony J. Guida Jr. and David Figuli, "Higher Education's Gainful Employment and 90/10 Rules: Unintended 'Scarlet Letters' for Minority, Low-Income, and Other At-Risk Students," *University of Chicago Law Review* 79, no. 6 (2012): 131–58, https://lawreview.uchicago.edu/sites/lawreview.uchicago.edu/files/06%20Guida%20Figuli%20SYMP.pdf; and Ian McDonough, "The Impact of Gainful Employment Regulations on the Access to Higher Education," Social Science Research Network, September 24, 2017, https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2732872.

48. Victoria Rosenboom and Kristin Blagg, "Disconnected from Higher Education: How Geography and Internet Speed Limit Access to Higher Education," Urban Institute, January 2018, https://www.urban.org/sites/default/files/publication/96191/disconnected_from_higher_education_2.pdf.

49. Kristin Blagg, "The Rise of Master's Degrees: Master's Programs Are Increasingly Diverse and Online," Urban Institute, December 2018, https://www.urban.org/sites/default/files/publication/99501/the_rise_of_masters_degrees_1.pdf.

Accounting for Demographics, Selectivity, and Risk in Postcollege Earnings

Jorge Klor de Alva

Imagine how absurd it would be to expect the same results from a hospital that serves primarily young, healthy people and one that serves elderly patients with multiple morbidities. But that is exactly what is done in the realm of higher education. As M. Peter McPherson, president of the Association of Public and Land-Grant Universities, has argued, you cannot expect the outcomes of an institution that admits all applicants to match those of highly selective colleges when their student bodies are so different.[1] Today, whether a college is open to all or is highly selective, they are both accountable for their outcomes without considering the varying populations they enroll.

This is not to say that at-risk students have been neglected; after all, nearly 30 states have experimented with performance-based funding, which allocates small amounts of additional capital to incentivize the improvement of admission, retention, and graduation rates of underserved students.[2] But without some form of accountability system that adjusts for the risks represented by the students they enroll, colleges in search of the best institutional outcomes will continue to be incentivized to select the top students, especially those who can pay full tuition, and colleges with poor outcomes will continue as they are, with few incentives to improve their low performance.

At the federal level, the Obama administration tried but failed to resolve the problems leading to creaming and to the poor performance of colleges serving low-income students by proposing an accountability structure based on a ranking of schools that would reward those that increased the success rates of low-income students.[3] This effort was continued, unsuccessfully, by Barack Obama's Education Department with its establishment of sanctions for career college programs that failed to graduate students who earned enough to permit them to pay back their student loans.[4] More recently, as education leaders and policymakers debate higher education accountability models, some have argued for greater accountability through risk sharing;[5] others have focused on problems related to access, affordability, and the need to make schools accountable for their results;[6] and still others, considering how to promote equity, social justice, and economic mobility, want to focus on judging colleges based on student outcomes, particularly postcollegiate earnings.[7]

There are several reasons for this growing focus on student earnings. The soaring cost of a degree and the high risk of non-completion for millions who attempt to earn one have led to a growing skepticism about the value of a college degree.[8] Yet a college degree has become a necessary if not sufficient condition to succeed in the knowledge-based economy today. Meanwhile, efforts to make higher education institutions accountable for their outcomes have been both difficult to implement and only marginally successful.[9]

While policymakers and regulators have tried to hold colleges and universities accountable for their students' learning and postcollegiate earnings, given the difficulty of assessing student learning, partly due to the lack of agreement around any standard

measures,[10] accountability has been shifting to measuring earnings—for example, through the application of the Gainful Employment Rule. These earnings, like loan default and repayment rates, are a more easily quantifiable metric.[11]

However, as is well-known, the demographic and economic background of families closely correlates with academic preparedness, the type of college a student attends, and the likelihood that the student will graduate. Future earnings are likewise associated with these factors.[12]

Consequently, higher education accountability systems that rely primarily on institutional or programmatic outcomes, such as graduation rates, postgraduation earnings, and student loan default and repayment rates, make sense, but if they fail to consider the students' social, economic, and demographic circumstances, they are simply rewarding selective institutions while incentivizing less selective schools to become more selective—which may be unfair to the growing legions of low-income applicants struggling to be admitted.[13] Furthermore, it does not serve the nation's best interest to have accountability systems that, without rewards and sanctions based on peer-to-peer comparisons, leave little to incentivize schools to improve their at-risk students' successes. That leaves many of those attending "dropout factories" unable to find an education that can lead to secure and financially rewarding jobs.[14]

Besides being easier to quantify than learning outcomes, postcollegiate earnings have become the focus of accountability debates because most students go to college to equip themselves with a way to earn a living. This chapter, then, focuses on postcollege earnings. To help move the debate on what to do about these earnings being closely correlated with both demographic factors and institution type, the first part of this investigation examines these associations.

The second part explores how a risk-adjusted accountability system, because it assesses an institution's performance by comparing it to peers facing similar challenges, might be an improvement over one focused solely on outcomes. In acknowledgment of the complexity entailed in constructing such a risk-adjusted model, I conclude by briefly examining two sets of institutions, those whose students earned significantly more than predicted, thereby "beating the odds," and those whose students made less than predicted after controlling for some key demographic and institutional characteristics. This second group of schools did not meet the odds, let alone beat them.

Demographics Matter

A family's assets—educational, social, and financial—can make it possible for a student to attend the best-resourced schools from pre-K through high school. Not only can they make going to college an expected part of what one and one's peers do, but by providing academic rigor, extracurricular experiences, advanced courses, and test preparation tutorials, these assets provide a leg up on the application process, the college culture, and the postcollege networking that opens the doors to employment opportunities. Without these resources, a student enters college, if they enroll at all, with serious disadvantages that will affect everything from their academic accomplishments to their earnings potential.

As a result, an assessment of a college's performance would be more relevant, transparent, and likely to lead to improvement if it considered the performance of institutions enrolling comparable groups of at-risk students. This conclusion, pertaining to K–12 education, was reached as early as 1966, when the Equality of Educational Opportunity report, commonly referred to as the Coleman Report, noted that "schools are remarkably similar in the effect they have on the achievement of their pupils when the socioeconomic background of the students is taken into account."[15]

This observation countered much of the accepted wisdom of the time, which gave more importance to a school's resources than the students' characteristics when assessing performance. An analogous concern exists in the current debates concerning college rankings, in which metrics such as per-student expenditures are used to represent academic quality

or when retention and graduation rates are assigned a higher value than are value-added metrics, which, as one methodologist working on college rankings said, "attempt to compare colleges to institutions with similar characteristics, [thus helping] to address concerns about outcomes being correlated with student demographics."[16]

In this chapter, I explore one potential solution to the problem with accountability systems that judge institutions based on student outcomes—such as earnings—without considering the challenges faced by the students they serve. To do so, I established a simple test to illustrate that the demographic problem is easy to see.

I first identified 444 public and 688 private not-for-profit, primarily four-year colleges and universities for which the relevant data on wages and demographics were available. These data are drawn from the US Department of Education's Integrated Postsecondary Education Data System (IPEDS) and the department's College Scorecard data on median earnings of students working and not enrolled 10 years after entry. The most recently reported data are for calendar years 2014–15. Additional data come from the Opportunity Insights dataset[17] and *Barron's Profiles of American Colleges*.[18]

I divided the colleges into quintiles based on average median earnings of students who are working 10 years after they first enrolled. The available data include all students, whether they graduated or dropped out and with no regard to the time they spent in school. I chose 10 years because this longer-term period has a higher correlation with lifetime earnings and is therefore a better measure of the value an institution adds.[19]

To test how strongly demographics are correlated with postcollegiate earnings, I chose five student groups likely to experience lower earnings: Black, Hispanic, and poor students (whose federal Pell Grant eligibility serves as a proxy for socioeconomic status); less academically prepared students (those facing a greater risk of not graduating); and women (many of whom are single parents, enter low-paying careers, or face workplace discrimination that affects their earnings). I chose another group that could be expected to lead to higher earnings: students coming from households in the highest quintile of income distribution. Because this study is meant to be illustrative, rather than comprehensive, I limited the number of demographic variables examined to these, although other variables, such as age, marital status, and parents' education, are also significant.

Table 1 shows the results, with the selected demographic characteristics correlated with average median earnings that are reported for institutions' former students. (I average the statistics for median earnings reported in the data for the groups of institutions and thus describe it here as the "average median earnings.") Institutions are ranked in Table 1 by quintile (Q) according to the earnings among their former students and grouped as either private not-for-profit or public institutions.

First, Table 1 shows the systemic variations in earnings associated with the concentration of each student group. For example, private institutions whose former students have the highest earnings (Q5) enroll only 5.6 percent Black students and approximately 19 percent low-income students (those eligible for Pell Grants). They also have the highest percentage of students with high-income parents (55.5 percent) and the highest graduation rates (81 percent).

In contrast, private colleges in the lowest earnings quintile (Q1) enroll more than three times the percentage of Black students (18.6 percent), and nearly 43 percent of their students had Pell Grants. They also had the lowest graduation rates (50 percent) and the lowest percentage of students coming from affluent households (27 percent). An analogous set of contrasts is found in the public college data.

As Table 1 makes evident, whether one looks at private or public colleges, the percentage of Black students increases from the institutions with the highest earnings among former students to those with the lowest earnings. Likewise for the percentage of Pell-eligible (i.e., low-income) students; the percentage increases as earnings decline. And the reverse takes place when observing overall graduation rates: The higher the earnings quintile that an institution is in, the higher the percentage of completers. The same applies to the percentage of students coming from

Table 1. Average Median Earnings by Demographic Characteristics and Institutional Sector

Earnings Quintile Among Private and Public Institutions	Number of Colleges	Average Median Earnings of Former Students ($)	Percentage Black	Percentage Hispanic	Percentage Female	Percentage Pell	Graduation Rate	Percentage of Parents in Top Income Quintile
Private Q1	137	36,009	18.55	7.69	59.21	42.71	50.25	27.18
Private Q2	137	41,428	11.98	9.87	58.16	36.23	56.2	31.03
Private Q3	138	45,132	10.76	12.49	60.73	33.25	60.7	35.44
Private Q4	138	50,368	8.91	12.16	59.5	27.28	67.43	41.09
Private Q5	138	64,563	5.57	11.17	52.66	19.12	80.89	55.54
Public Q1	89	32,997	33.74	6.82	61.16	49.2	39.19	20.81
Public Q2	89	38,148	13.71	11.36	58.9	38.16	44.64	29.34
Public Q3	89	42,111	10.4	12.85	56.57	34.89	53.42	31.39
Public Q4	89	46,129	7.6	19.63	54.93	34.72	60.1	35.36
Public Q5	88	57,364	6.07	14.63	47.64	26.98	72.44	42.91

Source: Author's calculation based on College Scorecard, IPEDS, and the Opportunity Insights dataset.

high-income households: Institutions whose former students go on to earn the highest incomes tend to enroll students who come from high-income families. Additionally, the data captured in Table 1 make abundantly clear that low earnings are closely correlated with low graduation rates, a point many researchers have made.

Interestingly, Hispanic students present a markedly different picture than the one generally assumed by most advocates of equity and social justice. Hispanic students, who can be of any race, represent the inverse of what is found for Black students. While the percentage of Black students increases as the median earnings decrease, the reverse is true of Hispanic students: In the public and private four-year colleges with the highest earnings (those in Q3 through Q5), a higher percentage of Hispanic students are found than in the sampled schools with the lowest median earnings.

Although a similar study has not been undertaken for two-year colleges, this phenomenon is likely to not be reflected in the two-year colleges attended by many low-income Hispanic students,[20] but this remains to be researched in detail.[21] What appears evident is that the social, economic, and geographic factors determining educational, employment, and housing opportunities affect these two ethno-racial groups in remarkably different ways.[22] In particular, unlike most Black students, Hispanic students are primarily concentrated in states with high levels of wage inequality, which have been shown to correlate with high levels of social mobility for college-educated populations.[23]

Regarding gender, as shown in Table 1, a higher percentage of low-income women are concentrated in schools in the lower quintiles, particularly in public institutions, and have the lowest representation in the schools with the highest earnings.[24] Indeed, current research points to the fact that women generally still have much lower earnings levels than do men at all levels of degree attainment.[25]

The bottom line is that an accountability system that judges schools only on former students' earnings outcomes will reward schools with certain demographic profiles over others—in the context of this

study, colleges with fewer Black, low-income, and female students. The implication, of course, is that schools with too many Black, poor, or female students are likely to be perceived as inferior, assumed to be failing, and ultimately unworthy of support no matter how much value they may actually be creating for their students.[26]

To be sure, then, demographics matter. Institutions of higher education are not dealt an even hand; some must serve large numbers of under-resourced students, many of whom had few opportunities—social, cultural, and financial—to prepare for college-level work and therefore face formidable challenges as they strive to complete their degree. Other schools, typically better funded and with stronger reputations, work hard at admitting only the most promising students hoping to maintain or improve their outcomes metrics. But as I have shown in previous studies, even similarly situated institutions vary greatly in their results, making comparisons among peer schools all the more important to undertake.[27]

Consequently, to apply any kind of accountability metric fairly, it's necessary to account for the hand a school is dealt in the demographic makeup of its students, just as it's necessary to be able to assess how well or how poorly a school is doing in comparison to peers facing similar challenges. To fail to do this is to leave schools free to continue either admitting only the most prepared students they can attract or doing a poor job while excusing themselves because they serve a large percentage of low-income and minority students.

Institution Type Matters

Some colleges deploy strategies to try to influence their students' profiles. But most regional public institutions and small private colleges known primarily in their neighboring communities serve a broad range of students. This means it is difficult for them to screen students for the qualities that lead to better earnings. Being limited by geography, funding, and reputation in who they can successfully recruit, it is difficult for them to stand out in outcomes-based accountability systems. For colleges such as these, institutional type also correlates with lower student earnings than those enjoyed by schools that can limit who they admit because of their strong reputation and abundant resources.

To illustrate this point, I have chosen two additional characteristics strongly associated with postcollegiate financial success: level of selectivity and instructional expenses per full-time equivalent (FTE) student.

High levels of selectivity imply the ability of a school to filter out students who, because of their educational, social, or economic background, are assumed unlikely to complete their studies or go on to add to the institution's prestige. Highly selective public or private colleges with reputations that lead to large numbers of applicants can also accumulate large reserves of money that they can use to increase the quality of their instructional resources—for example, highly paid faculty, effective academic support and student services, and up-to-date libraries, labs, and research opportunities. Together, these lead to high graduation rates and high postcollegiate earnings. Table 2 shows how these two important institutional characteristics, selectivity and per-student funding, are correlated with earnings.

I begin with selectivity, which I have divided into three categories based on the widely used *Barron's Profiles of American Colleges*.[28] Table 2 highlights the striking difference in the distribution of colleges between private not-for-profit and public institutions. Of the 688 private institutions in the sample, 130 (19 percent) are categorized as most and highly competitive, while among the 444 public colleges, only 41 (9 percent) are in that level of selectivity. Put another way, in at least nine states, students desiring to attend a highly selective public institution would have to study in another state.

Meanwhile, 106 public colleges versus 92 private schools are in the lowest selectivity category. And as Table 1 shows, public colleges enroll higher concentrations of low-income students than their private counterparts do, which correlates with lower earnings.

Highly selective colleges are not always associated with higher earnings, partly because some of their students graduate into low-paying fields.[29]

Table 2. Average Median Earnings by Institutional Characteristics

Earnings Quintile Among Public and Private Institutions	Number of Colleges	Average Median Earnings of Former Students ($)	Number of Non- and Less Competitive Colleges	Number of Competitive and Very Competitive Colleges	Number of Most and Highly Competitive Colleges	Median Spending on Instruction per FTE ($)
Private Q1	137	36,009	39	94	4	8,189
Private Q2	137	41,428	26	105	6	9,306
Private Q3	138	45,132	15	112	11	10,390
Private Q4	138	50,368	11	101	26	12,638
Private Q5	138	64,563	1	54	83	25,760
Public Q1	89	32,997	43	46	0	8,438
Public Q2	89	38,148	26	63	0	8,293
Public Q3	89	42,111	20	69	0	9,751
Public Q4	89	46,129	14	70	5	10,313
Public Q5	88	57,364	3	49	36	14,631

Source: Author's calculation based on College Scorecard and IPEDS.

Nonetheless, because private institutions have a higher concentration of highly selective schools, at every earnings quintile, they have an average median earnings advantage of approximately 8.5 percent over public colleges. It follows that many low-income students, screened out of many selective private institutions, are not studying where the best resources that can lead to high earnings are located.

Table 2 also shows that instructional expenses per student likewise track with earnings. This is not surprising given that increased financial support correlates with both higher selectivity and higher graduation rates, both of which correlate with higher earnings. At each quintile except the lowest, private institutions spend more on instruction than do public one. At Q5, private schools spend over 43 percent more, and at Q4, they spend over 18 percent more.

Additionally, the difference between the expenditures in Q1 and Q4 among private institutions is 54 percent, but the same difference among public schools is only 22 percent. This suggests that regional public colleges across the country tend to fund instruction-related expenditures per student at somewhat comparable levels. For an accountability system in which student populations are considered when assessing performance metrics, like the one I am proposing, this limited variability in funding could help make comparisons among regional institutions easier to do.

In effect, Table 2 shows the extent to which higher instructional expenditures correlate with better outcomes—outcomes that allow schools to clear accountability tests. In other words, wealthy schools, which are also selective schools, have a leg up when the same performance metrics are applied to all institutions. This rigs the accountability system, leaving public institutions that have fewer resources at a disadvantage.

The data show that completion rates and post-collegiate earnings vary according to the populations schools enroll. For public institutions, outside of flagships, the primary factor determining the profile of their student body is their location, as they mostly serve a local or regional community. What four-year colleges can do to help enhance their student outcomes is limited. For example, they can work on strengthening their student services to make them more effective, and they can maximize the use of merit-based scholarships to attract the most prepared students possible. Still, to incentivize them to improve and avoid the creaming will require a different accountability system, one that adjusts for the

risks represented by the students they enroll while being focused on peer-to-peer comparisons.

What Factors Are Most Correlated with Earnings?

As Tables 1 and 2 show, systematic variations in earnings are associated with school types and student demographics. But the descriptive statistics in these tables are only a first step in the attempt to understand the correlations between earnings and the key demographic and the selected institutional characteristics. I now go a step further in my examination by using another form of analysis.

Following widely used statistical methods, for this section I conducted a multivariate regression analysis. Simply put, this method makes it possible to examine the correlation of each of the selected characteristics (the independent variables, such as Pell Grant eligibility) on earnings (the dependent variable). For each factor, I ran a standard regression in which the "real" observed earnings were "regressed" against the selected characteristics (percentage Pell, selectivity, and so on).[30] In doing this, I was able to calculate the degree of correlation each characteristic had on earnings, controlling for the effects of other measures.

By applying this method, it's also possible to explore which schools are doing better (or worse) than expected based on the characteristics of the student populations they serve. This is possible because my regression model generates "predicted" wage levels that consider each of my selected characteristics.

For example, according to the Department of Education's College Scorecard, 10 years after enrollment, students at, say, the University of Maryland, Baltimore, earned on average a median salary of $89,700. This is the "observed" or "real" wage level. But once the characteristics of the university are considered (e.g., its high concentration of Pell students), my model predicts these students "should" be making only $55,506. Since the observed wages are $34,194 higher than the predicted wages, students from the University of Maryland, Baltimore, are doing better than expected; they are beating the odds.

I acknowledge that my analysis is primarily illustrative because building a system of risk-adjusted metrics is no easy matter. The selection of which student and institutional characteristics to include is not only difficult but also likely to lead to much controversy among competing stakeholders, some of whom would be loath to accept one or another characteristic as relevant. After all, many factors affect student success—see, for example, the list of risk factors the US Department of Education recognizes—and competing statistical models that might be employed to understand their significance.[31] But in what follows, I hope to show that, if the desire is to judge the performance of higher education institutions and hold them accountable for student success, it's necessary to invest the time and energy into perfecting a model for doing that risk adjustment.

My analysis is not meant to show a causal relationship between student characteristics and outcomes. Correlations between my selected institutional and demographic characteristics and earnings may be driven by other factors that have been left out of my analysis or are unobservable, including grit, ambition, talent, and a willingness to work hard. Other factors that could affect earnings outcomes, such as the strength of the local, regional, and national economies, would also need to be incorporated into a full accountability model that had stakes associated with it.

A more complete analysis based on a larger set of institutional measures would have to be constructed and analyzed before any stakes are attached. However, my argument is that even my simple analysis points to the need for work to come up with such a model.

Table 3 illustrates this point well and builds on what is shown in Tables 1 and 2. For example, in this multivariate regression model, earnings increase about $180 with an increase of 1 percent in Hispanic undergraduates, while they decline by $192 for each percentage increase in female students and by $240 for each percentage increase in Pell-eligible undergraduates.

Table 3. Associations with Earnings and Demographic and Institutional Characteristics

Characteristics	Estimated Change ($) per Percentage Change in Measured Characteristic	Standard Error	T-Statistic
Percentage Black	78	16.36	4.76
Percentage Hispanic	180	18.35	9.82
Percentage Female	–192	17.01	–11.28
Percentage Affluent Parents	–7	20.72	–0.32
Percentage Pell	–240	27.02	–8.89
Six-Year Graduation Rate	264	19.81	13.34
Non- and Less Competitive	161	556.20	0.29
Most and Highly Competitive	485	735.03	0.66
Median Earnings (Constant)	43,000	1,783.01	24.09

Source: Author's calculation based on College Scorecard and IPEDS.

The results for this part of the analysis also differ from the simpler quintile analysis used for Tables 1 and 2. Note, for instance, the small but positive correlation with earnings and the share of Black undergraduate enrollment levels. This unexpected result, given the earlier analysis by quintiles that shows the opposite, is likely due to the quintile analysis including both men and women in the Black classification.

Although there are many more Black women than Black men in college, Black male median earnings of full-time workers age 25 to 64 are substantially higher than those of Black women at every level of educational attainment.[32] Consequently, the finer-grained regression analysis captures the otherwise masked wide gap in both numbers and earnings between Black men and women. This helps explain the unexpected result in the regression analysis.

It also bears noting the effect of instructional expenditures: Students sufficiently prepared to be admitted to schools that invest more in instruction, which is correlated with higher levels of selectivity, seem to reap significant benefits downstream. Interestingly, in this analysis, considering other conditions such as the high correlation of earnings with graduation, earnings of students do not vary in a statistically significant manner with selectivity level. (The "competitive schools" are the reference group and are therefore not included in the table.)

To summarize, Table 3 shows that among the selected characteristics, graduation is the most highly correlated with earnings. But the data show that graduation rates are also closely correlated with selectivity and financial resources. This raises an important question for accountability systems based on earnings: If the performance of a school is heavily dependent on the students it can enroll and the funding it can set aside for instruction, which I have shown here, is it fair to hold all schools to the same standard of student earnings?

I would argue it is not. It is no more equitable to do that than it is to expect hospitals serving older patients with multiple morbidities to heal the same percentage of patients (and at the same cost) as hospitals serving primarily young, healthy patients. To do the right thing, hospitals, insurers, and health plans have adopted risk-adjusted plans. This analogy begs the question: Has the time come for higher education to catch up to health care with a risk-adjusted accountability plan of its own?

What Does Risk Adjustment Mean, and Has the Time Come to Apply It to Higher Education Accountability?

I begin by distinguishing between equality and equity. Current accountability in higher education is

primarily focused on equality—the application of the same metrics to all schools in the same sector. But as shown above, schools serve varying populations of students representing different "risk profiles," to borrow the term used for evaluation of hospital performances. If *equality of opportunity* for all students is the goal, including those at high risk of failure, an *equitable accountability system* is needed—one that promotes continuous improvement through the allocation of resources based on need.[33]

To have an equitable system, it's necessary to be able to identify risk factors and model them into a system that permits policymakers to compare apples to apples. Such a risk-based model was first developed in the late 1970s among economists to facilitate the measurement of financial performance across different types of businesses.[34] By the 1990s, its utility was recognized in the medical world, resulting in risk adjustment being mandated in the Balanced Budget Act in 1997 and ultimately implemented in the Medicare Advantage Plans by 2004.

Risk-adjustment payment to providers, based on the individual's risk-adjustment score, was quickly applied by Medicare, Medicaid, and commercial insurers to determine payments for services based on the risk factors of populations of patients and the makeup of insured groups. The risk-adjusted models helped make equitable comparisons among health plans by considering the health status of members. In doing so, they helped minimize the incentives for insurers and health plans to select only the healthiest populations by providing adequate financing for plans treating high-risk patients.

In addition, risk-adjusted models created a way to promote continuous improvement by making it possible for patients, insurers, and health officials to be informed about the relative performance of comparable health providers. This was put in practice as early as 2003, when the Centers for Medicare & Medicaid Services (CMS) introduced a payment mechanism based on performance to incentivize hospitals to improve the quality of their care. This rewards-and-penalties mechanism went hand in hand with the ranking of hospitals' quality of care, which served as a warning to the public to choose hospitals prudently. By 2020, more than 75 million individuals were covered by a risk-adjustment payment methodology, permitting higher-risk patients to find and afford health insurance.[35]

With nonprofit and for-profit establishments and the federal government so well versed in the deployment of risk-adjusted metrics and mechanisms, it is not a bridge too far to imagine how this kind of accountability model could be applied to higher education.

While colleges have reported for some time on access and enrollment as part of the requirements for funding, by 1992, when Congress passed the Student Right to Know and Campus Security Act, colleges were made to report on an outcome for the first time: graduation rates. This effort at measuring performance has grown, especially since the late 2000s, as states implemented performance-based funding arrangements with varying degrees of success and as the federal government began to track more outcome measures in IPEDS.[36] Nevertheless, risk-adjusted models for higher education have not managed to gain much traction among most policymakers, despite a body of academic research and the endorsement of some political leaders.[37]

Risk-adjusted models not only can be applied to different areas (such as investment strategies or health insurance plans) but also can be constructed to serve an array of purposes. For instance, the most notable effort to introduce reward metrics using a simplified version of adjustment for risk-taking at the national level came in 2013, when President Obama advocated ranking universities based partly on how well they succeeded in admitting, educating, and graduating underserved student populations. Students enrolled in better-performing institutions (those able to successfully address the challenges faced by their at-risk students) would have access to larger Pell Grants and lower-interest loans, making their students' college experience more affordable. That year, in a speech before University at Buffalo students and administrators, President Obama declared,

> There are schools out there [that] are terrific values. But there are also schools out there that have higher default rates than graduation rates. And taxpayers shouldn't be subsidizing students to go to schools where the kids aren't graduating. That doesn't do anybody any good.
>
> And our ratings will also measure how successful colleges are at enrolling and graduating students who are on Pell grants. And it will be my firm principle that our ratings have to be carefully designed to increase, not decrease, the opportunities for higher education for students who face economic or other disadvantages.[38]

Not surprisingly, the proposed ranking system—whose metrics were calibrated to reward and sanction schools depending on their performance in serving lower-income students—turned out controversial. Critics jumped on the plan, some arguing that a resulting "shame list" of poor performers could encourage perverse incentives that would drive schools to discriminate against at-risk students. Others, pointing to the limitations of the College Scorecard then being formulated, argued that relevant data to pull this off were incomplete or nonexistent.

Meanwhile, some worried that using earnings outcomes as part of the criteria was unfair, because many small regional colleges graduated students in low-paying but essential jobs or in regions with limited employment options.[39] Many, defending the status quo, argued there is no equitable way to rate the diverse colleges and universities with their distinct missions; other critics were simply fearful that whatever factors were selected as important in a ratings system would skew the proposed results favoring the chosen variables, and the main lobbying group of higher education opposed the initiative as an attempt to link federal aid to performance metrics.[40]

Facing relentless opposition, the presidential proposal for a ranking system based on outcomes adjusted to reflect the characteristics of a school's students died quickly. Nonetheless, risk-adjusted metrics for colleges enjoyed the support of some organizational leaders, such as McPherson, the aforementioned president of the Association of Public and Land-Grant Universities. Today, with an improved College Scorecard database and with the push by states and researchers for student- and program-level data, some of the attacks on Obama's input-adjusted proposal are dated.[41]

But other concerns still need to be addressed. Among these is the belief that using risk-adjusted metrics in an accountability system would lead to stereotyping, a lowering of expectations, a possible double standard, and discriminatory tracking that could justify fewer resources for students most in need of support.[42] Resistance to using risk-adjusted metrics for accountability has also centered on two important concerns: the potential absence of both minimal thresholds to guarantee that colleges meet specific performance baselines and the mechanisms necessary to promote continuous improvement to make sure institutions do not remain at the baselines, but rather constantly strive for better performance.[43]

While there is resistance to risk-adjusted metrics based on fears about stereotyping, lower expectations, double standards, and discriminatory tracking, those that support the idea, such as hospitals and insurers, can recognize its social and economic utility. Risk adjustment could help ensure more rational funding by adjusting it to the needs of the specific challenges an institution faces due to the populations it enrolls. An accountability system that adjusts for risk could also mitigate the effect of potential adverse selection because instead of punishing a school for low performance due to enrolling high percentages of at-risk students, it would reward schools serving these students well. This last point is crucial because the most compelling concern of those uncertain about the application of risk-adjusted metrics is to ensure that any accountability system that uses such metrics has both minimal thresholds of performance and a monitoring arrangement of incentives and sanctions that can promote continuous improvement.

By considering the risks arising from the varying circumstances of a college's student population, relative performance could be measured against schools with similar challenges. And the promotion of continuous improvement could be made part of

an equitable allocation of resources based precisely on the need to reach progressively better outcomes. Like poorly performing hospitals, colleges that cause more harm than good should be able to be identified as such and should be made to improve or close without being permitted to hide behind the claim that they enroll poorly prepared students. But this cannot be done unless good and bad performers can be identified by metrics that can account for the populations they serve.

Is Risk Adjustment Too Complex for Higher Education?

This chapter is not the place to try to outline how a risk-adjusted accountability mechanism might be structured. Although there are many examples of how such a system can work in health care, relatively little work is published on the topic for higher education. While some academic researchers have advocated for its use, they have not detailed a proposed mechanism.[44] Others have dismissed a risk-adjusted accountability system as either not as important as determining, say, how many years after graduation earnings should be measured[45] or simply too complex to undertake when a "bonus" system "that balances the need to recognize student characteristics with the need for equity" is simpler and easier to implement than an approach using regression-adjusted metrics.[46]

These criticisms point to the fact that there are as many models of accountability as there are competing interests. Indeed, a brief survey of the fate of risk-sharing proposals, prepared in response to a "skin in the game" accountability initiative begun by US senators in 2015,[47] shows just how different models that adjust for the populations being served can be, even when they have the same goal (in this case increasing loan repayment rates). Some proposals wanted sanctions to be the drivers of improvement, some focused on bonuses, some wanted to include student loan default rates, others included loan repayment rates, and still others were based on completion rates.

Given the limited literature on my topic, it follows that my focus has been solely to show how, in the case of four-year colleges and universities, some key demographic and institutional factors are correlated with earnings and how these data might be interpreted, for purposes of an accountability system, using widely employed statistical methods. I have noted that an accountability system that does not consider the characteristics I have selected and other relevant attributes will likely continue to lead to perverse incentives to reward schools that enroll a more affluent, Whiter, and more male student body. Although I do not claim to have presented the necessarily complicated model for a high-stakes accountability system, I have presented enough data to show what factors might be considered if and when accountability for higher education institutions is revisited not with an eye on a single neutral set of rules, but rather one that can produce a fair and equitable outcome.

To examine more closely whether a risk-adjusted accountability structure—applied, as in my case, to postcollegiate earnings—is too complex for higher education, in the remainder of this chapter, I look at another important aspect of such a risk-adjusted approach: identifying examples of schools that are beating the odds and ones that are lagging.

The Importance of Identifying Winners and Laggards

I began by using the risk-adjusted linear regression model discussed above to calculate predicted average median earnings for all the schools in our sample. I then separated the schools into two sectors, public and private, and divided each into quintiles, from lowest to highest average median observed and predicted earnings.[48] The difference between the predicted earnings and the observed earnings can be understood as the institution's "value added." Whether, and by how much, they over- or underperform is based on what one would expect of them given the selected characteristics.

The results, found in Table 4, show the significant differences in earnings across the universe of

Table 4. Average Median Observed and Predicted Earnings by Earnings Quintile

Earnings Quintile Among Public and Private Institutions	Number of Colleges	Average Median Earnings Observed ($)	Average Median Earnings Predicted ($)
Private Q1	137	36,009	39,585
Private Q2	137	41,428	43,072
Private Q3	138	45,132	45,136
Private Q4	138	50,368	49,012
Private Q5	138	64,563	59,123
Public Q1	89	32,997	35,879
Public Q2	89	38,148	39,541
Public Q3	89	42,111	43,481
Public Q4	89	46,129	46,755
Public Q5	88	57,364	53,548

Source: Author's calculation based on College Scorecard and IPEDS.

four-year private and public institutions. Among *private* colleges, those in the lowest *two* quintiles are associated with students whose earnings 10 years after enrollment are *lower* than the school's institutional and demographic characteristics predict. Meanwhile, schools in the upper two quintiles *exceed* the earnings predicted for them, while earnings for colleges in Q3 are roughly where they are expected to be. Among *public* institutions, an important difference is found: Earnings among students who attended the schools in the lowest *four* quintiles are *lower* than predicted by my model, which, again, is based on all colleges, public and private.

Not surprisingly, among public universities in Q5, where the most highly selective flagship universities are found, earnings are 7 percent higher than expected, while in all other quintiles, where the great majority of less selective colleges are located, earnings are below the predicted amounts—ranging from slightly more than 1 percent to nearly 9 percent below the anticipated earnings. For private colleges, earnings are 9 percent above predicted in Q5 and 3 percent in Q4, while the lowest two quintiles range from 4 to 10 percent below the predicted earnings.

All this is to say that private and public institutions differ in important ways that may have implications for accountability purposes. While not all private institutions outperform, most public institutions underperform, at least from the perspective of accountability metrics that consider the handful of factors I have been examining.

My data in Tables 5 and 6, now focused on specific colleges, highlight potential problems entailed in creating sets of peer institutions, which are a basic building block of risk-adjusted metrics. Peers are generally thought of as sharing at least three characteristics: analogous percentages of at-risk populations, similar levels of selectivity, and membership in the same sector (be it Carnegie classification; two-year, four-year, or less-than-one-year institutions; and tax status). But, as noted earlier, many other factors are also relevant.

Using a regression analysis, in Tables 5 and 6, I compare the "observed earnings," as reported in the College Scorecard, to the "predicted earnings" based on my model. Institutions in which the predicted earnings exceed the observed are to some degree or another beating the odds. Conversely, when an institution's observed earnings lag the predicted ones, they are falling behind where they should be, given the selected characteristics.

An unsurprising kind of commonality exists in the "Top Dozen" in Table 5: The schools are largely focused on areas associated with high earnings potential, such as technology, business, and the professions. Nonetheless, schools that beat the odds are

Table 5. Top and Bottom Dozen Private Not-For-Profit Colleges by Difference Between Observed and Predicted Median Earnings

Top Dozen	Location	Observed Median Earnings ($)	Predicted Median Earnings ($)	Difference ($)
Babson College	Massachusetts	96,100	61,558	34,542
Georgetown University	Washington, DC	93,500	64,713	28,787
Bentley University	Massachusetts	86,900	61,501	25,399
Massachusetts Institute of Technology	Massachusetts	104,700	80,114	24,586
Carnegie Mellon University	Pennsylvania	83,600	62,874	20,726
Lehigh University	Pennsylvania	81,900	62,007	19,893
Harvey Mudd College	California	88,800	69,261	19,539
University of the Pacific	California	71,700	52,977	18,723
Harvard University	Massachusetts	89,700	71,071	18,629
Embry-Riddle Aeronautical University—Worldwide	Florida	66,200	48,073	18,127
Villanova University	Pennsylvania	77,900	59,907	17,993
Milwaukee School of Engineering	Wisconsin	71,300	54,029	17,271
Bottom Dozen				
University of Chicago	Illinois	68,100	81,695	(13,595)
Kenyon College	Ohio	48,700	62,401	(13,701)
Warren Wilson College	North Carolina	25,600	39,594	(13,994)
Taylor University	Indiana	38,000	52,353	(14,353)
St. John's College	Maryland	36,900	51,913	(15,013)
Reed College	Oregon	42,200	59,617	(17,417)
Colorado College	Colorado	45,400	63,081	(17,681)
Earlham College	Indiana	35,000	53,360	(18,360)
Bard College	New York	39,700	58,279	(18,579)
Oberlin College	Ohio	40,800	61,809	(21,009)
Bennington College	Vermont	29,500	51,240	(21,740)
Washington University in St. Louis	Missouri	70,100	92,929	(22,829)

Source: Author's calculation based on College Scorecard and IPEDS.

a mixed lot. If this list is extended to the top 25, seven of them are faith-based colleges, including Brigham Young University, Ursuline College, and Xavier University; some are small and suburban (Harvey Mudd College); some are based in small towns (Clarkson University); and some are large and in big cities (University of Pennsylvania).

In the "Bottom Dozen" in Table 5, many very selective private institutions (national liberal arts schools) have students with earnings 10 years after admission that are not only lower than the median earnings of all the schools in our sample (around $43,000, see Table 3) but also substantially lower than their institutional and demographic characteristics would predict. Indeed, if the bottom 12 listed in Table 5 were extended to 25, the following well-known schools that likewise failed to meet, let alone beat, the odds could be added: Carleton University, Morehouse College, Pitzer College, and Williams College, among others.[49]

While it seems unlikely that students attending these well-known colleges would have chosen other schools if they had known their future earnings would be lower than those expected given the schools' characteristics, it is not a stretch to assume regulators would be interested in the reasons such a gap exists. I return to this consumer versus regulator issue below.

Turning to public institutions, the "Top Dozen" in Table 6, like in Table 5, is also filled with specialized schools—colleges that emphasize fields in technology or the maritime area. Surprisingly, none are flagship universities. Indeed, only two flagship campuses appear when the list is extended to the top 25: University of California, Berkeley, and University of Alaska Anchorage.

The "Bottom Dozen" of Table 6 contains a mix of schools. One is a member of the historically Black colleges and universities, six are Hispanic-serving institutions, three have a White enrollment of over 70 percent, and six have a graduation rate of 70 percent or more, while others have graduation rates below 40 percent. If it were expanded to 25, some major research institutions such as Indiana University Bloomington; the University of California, Los Angeles; and the University of Oregon would be included. On average, top performers graduate 16 percent more of their students, have nearly twice the percentage of White students, have half as many low-income or Pell-eligible students, and are more likely to be in cities—all of which point to the importance for equity purposes of comparing schools using a model that adjusts for the students they enroll and their location.

Of course, my argument runs up against what many people think. From a consumer perspective, Oberlin College, for example, with observed earnings of $40,800, might seem like a good place to attend. But given its student body, Oberlin College is not adding value to the prospects of its students—but on average costing them over $20,000 a year in lost earnings.

By analogy, from an accountability perspective (rather than from a consumer perspective), government subsidies via Title IV, for example, are allowing students to buy a fancy Tesla rather than a perfectly fine Ford. While much of federal higher education subsidies support such choices, risk-adjusted metrics can be used, in an ideal world, to adjust the size of those subsidies to match performance. For example, imagine a system in which interest rates for student loans are pegged, on the margin, to risk-adjusted performance. This would reduce the taxpayer subsidy to schools that are not helping students do better in the labor market—one of the most important ways in which society recoups the money it lays out for higher education.

This is but one example of what a risk-adjusted accountability system could contribute; other examples aimed at promoting equity and economic mobility have already been noted. But a final observation is in order. Risk-adjusted approaches have much to say about value added. There is a significant contrast between what consumers want and what regulatory accountability schemes are providing. Consumers, parents, students, and employers need an education that adds value, but with numbers all over the place, as noted in Tables 5 and 6, a standardized metric that permits degrees of value added to be compared is needed. Consumers can make their own choices about what institutions to attend among the options available to them, but they should know that if they send their child to Reed College, it will cost a fortune to receive a return that lags the payback expected from it.

One is left to wonder what the outcomes would look like if value added were a key metric and whether such value-added information would affect a student's choice of what school to attend. After all, while students who have a choice may not be attracted to a college that greatly surpasses its predicted earnings success, if it graduates only 40 percent of its students, another student with no choice as to what college to attend may be quite satisfied with a school that adds significant value to them, even if other institutions serving different populations have higher graduation rates. If I compared similarly situated top and bottom colleges by the size of the gap between observed and predicted earnings, I would still gain more insights into

Table 6. Top and Bottom Dozen Public Colleges by Difference Between Observed and Predicted Median Earnings

Top Dozen	Location	Observed Median Earnings ($)	Predicted Median Earnings ($)	Difference ($)
Maine Maritime Academy	Maine	95,600	55,165	40,435
University of Maryland, Baltimore	Maryland	89,700	55,506	34,194
Massachusetts Maritime Academy	Massachusetts	86,600	59,672	26,928
Colorado School of Mines	Colorado	84,900	60,148	24,752
State University of New York Maritime College	New York	82,800	58,260	24,540
California State University Maritime Academy	California	82,900	59,584	23,316
Georgia Institute of Technology—Main Campus	Georgia	79,100	60,213	18,887
Missouri University of Science and Technology	Missouri	71,200	55,298	15,902
Michigan Technological University	Michigan	66,400	52,952	13,448
University of Maryland Global Campus	Maryland	51,200	40,063	11,137
Oregon Institute of Technology	Oregon	56,600	45,542	11,058
New Jersey Institute of Technology	New Jersey	68,500	57,478	11,022
Bottom Dozen				
Western New Mexico University	New Mexico	30,900	38,644	(7,744)
Texas A&M University–Kingsville	Texas	42,600	50,509	(7,909)
Appalachian State University	North Carolina	38,800	47,580	(8,780)
Miami University	Ohio	47,100	55,953	(8,853)
University of North Carolina at Asheville	North Carolina	34,500	43,883	(9,383)
The Evergreen State College	Washington	33,200	43,646	(10,446)
Francis Marion University	South Carolina	33,100	43,911	(10,811)
University of New Mexico—Main Campus	New Mexico	36,400	47,893	(11,493)
New Mexico State University—Main Campus	New Mexico	34,600	49,078	(14,478)
State University of New York at Purchase College	New York	35,200	49,686	(14,486)
Eastern New Mexico University—Main Campus	New Mexico	29,500	44,025	(14,525)
Mississippi Valley State University	Mississippi	23,200	38,428	(15,228)

Source: Author's calculation based on College Scorecard and IPEDS.

the significance of this last point for consumers and regulators.

While such an accountability mechanism would clearly face many challenges, that is not to say that a risk-adjusted accountability system is impossible to construct. The place to start is by establishing a minimum threshold of expected performance—for example, minimal completion rates—followed by a risk-adjusted plan for continuous improvement to assure more than minimal results. As President Obama noted, "Taxpayers shouldn't be subsidizing students to go to schools where the kids aren't

graduating. That doesn't do anybody any good."[50] Indeed, it does not. We need to figure out how to risk adjust accountability metrics to help improve schools and thereby help advance the education that millions of diverse students need if the nation is to remain competitive on the world stage.

Appendix

I have constructed an illustrative risk-adjusted linear regression model to demonstrate the relationship between institutional inputs (e.g., student characteristics, parental income, and institutional selectivity) and educational outcomes (here, student earnings 10 years after entering repayment). While these data and methodologies often have considerable nuances, my purposes are only to demonstrate the relationships in support of future analyses.

To build the universe of institutions for this analysis, I began with the Department of Education's College Scorecard dataset and isolated four-year public and private not-for-profit institutions reporting the dependent variable: median earnings of students working and not enrolled 10 years after entry (*md_earn_wne_p10*). The most recently reported data were measured in calendar years 2014–15 and reflect earnings of students entering repayment in academic years 2003–05.[51]

I then gathered illustrative independent variables from various sources (outlined below in more detail). These independent variables were:

- Percentage of undergraduate student population that is Black (*p_enr_bkaa*),
- Percentage of undergraduate student population that is Hispanic (*p_enr_hisp*),
- Percentage of undergraduate student population that is female (*p_enr_fem*),
- Percentage of undergraduate student population that received a Pell Grant (*upgrntp*),
- Overall six-year graduation rate (*GR6yr_total*),
- Percentage of parents in top earnings quintile (*normed_par_q5*),
- Selectivity—noncompetitive and less competitive (*barrons_NL*),
- Selectivity—competitive and very competitive (*barrons_CV*),
- Selectivity—most competitive and highly competitive (*barrons_MH*), and
- Instructional expense per full-time equivalent (FTE) students (*instr_exp_fte*).

These variables allowed me to model the following regression equation[52]:

md_earn_wne_p10 = b0 + b1p_enr_bkaa + b2p_enr_hisp + b3p_enr_fem + b4upgrntp + b5GR6yr_total + b6normed_par_q5 + b7barrons_NL + b8barrons_MH + b9instr_exp_fte + e

Independent variables *p_enr_bkaa*, *p_enr_hisp*, and *p_enr_fem* are all sourced from the US Department of Education's Integrated Postsecondary Education Data System's (IPEDS) 12-Month Enrollment survey data and were cross-walked to current IPEDS race and ethnicity coding. Each variable reflects the percentage of the undergraduate student body considered of that subpopulation from the 2005 survey year to match the earnings variable cohort.

Independent variable *upgrntp* is sourced from IPEDS Student Financial Aid survey data. This variable reflects the percentage of the undergraduate student body that received federal Pell Grants in the 2007–08 survey year (the first year Pell Grant receipt

was reported separately) to match the earnings variable cohort.

Independent variable *GR6yr_total* is sourced from IPEDS Outcomes Measures survey data. This variable reflects the overall six-year graduation rate from across all entering student populations, regardless of enrollment intensity or prior enrollment, in the 2017 survey year (the first year Pell Grant outcomes were reported separately) to match the earnings variable cohort.

Independent variable *normed_par_q5* is sourced from Opportunity Insights data. This variable reflects the locally normed fraction of parents earning in the fifth (top) income quintile for students "who attended college between ages 19 and 22 in the early 2000s."[53] For simplicity, "super-OPEIDs" (Office of Postsecondary Education Identifications)—that is, groups of institutions for which data were only reported once or as a whole—were deconstructed directly without manipulation and applied to all constituent institutions with an OPEID.

Independent variables *barrons_NL*, *barrons_CV*, and *barrons_MH* are sourced from *Barron's* college admissions competitiveness data from 2019.[54] These initially categorical data were integrated into the regression analysis as dummy variables, with *barrons_CV* as the reference variable (and as such, the intercept of the model captures the median earnings for *barrons_CV institutions*), *barrons_NL* reflecting the difference between competitive and very competitive institutions and noncompetitive and least competitive institutions, and *barrons_MH* reflecting the difference between competitive and very competitive institutions and most competitive and highly competitive institutions.

Independent variable *instr_exp_fte* is sourced from IPEDS's frequently used or derived variables (financial indicators, core expenses per FTE enrollment related to instruction). This variable reflects the National Center for Education Statistics' derived variable for instructional expenses per FTE calculated using survey year data from 2006, combined across Governmental Accounting Standards Board– and Financial Accounting Standards Board–reporting institutions.

The above independent variables were joined onto the dependent variable data using IPEDS unit ID (and, for *normed_par_q5*, OPEID) such that all rows from the College Scorecard median earnings data were kept. Institutions or rows missing Opportunity Insights data and three or more independent variable sources in total were removed. No outliers were removed.

Notes

1 Goldie Blumenstyk, "'Risk Adjusted' Metrics for Colleges Get Another Look," *Chronicle of Higher Education*, April 28, 2014, https://www.chronicle.com/article/risk-adjusted-metrics-for-colleges-get-another-look/.

2. Amy Y. Li, *Lessons Learned: A Case Study of Performance Funding in Higher Education*, Third Way, January 25, 2019, https://www.thirdway.org/report/lessons-learned-a-case-study-of-performance-funding-in-higher-education; and Justin C. Ortagus et al., "Performance-Based Funding in American Higher Education: A Systematic Synthesis of the Intended and Unintended Consequences," *Educational Evaluation and Policy Analysis* 42, no. 4 (September 14, 2020): 520–50, https://journals.sagepub.com/doi/10.3102/0162373720953128.

3. White House, "Remarks by the President on College Affordability—Buffalo, NY," August 22, 2013, https://obamawhitehouse.archives.gov/the-press-office/2013/08/22/remarks-president-college-affordability-buffalo-ny. Throughout the chapter, the terms "college," "university," "school," and "institution" are used interchangeably.

4. Erica L. Green, "DeVos Repeals Obama-Era Rule Cracking Down on For-Profit Colleges," *New York Times*, June 28, 2019, https://www.nytimes.com/2019/06/28/us/politics/betsy-devos-for-profit-colleges.html.

5. See, for example, Ben Miller and Beth Akers, "Designing Higher Education Risk-Sharing Proposals: Evaluating Choices and Tradeoffs," Center for American Progress, May 22, 2017, https://www.americanprogress.org/issues/education-postsecondary/reports/2017/05/22/432654/designing-higher-education-risk-sharing-proposals/.

6. There have been many iterations of this approach, which is best summarized in the US Department of Education, *A Test of Leadership: Charting the Future of US Higher Education*, September 2006, https://www.learningoutcomesassessment.org/wp-content/uploads/2019/08/SpellingsReport.pdf.

7. For example, see Kimberly Dancy et al., *Equitable Value: Promoting Economic Mobility and Social Justice Through Postsecondary Education*, Postsecondary Value Commission, May 2021, https://www.postsecondaryvalue.org/wp-content/uploads/2021/05/PVC-Final-Report-FINAL.pdf.

8. Abigail Johnson Hess, "College Grads Earn 80% More—but Only 51% of Americans See College as Very Important," CNBC, December 20, 2019, https://www.cnbc.com/2019/12/19/only-51percent-of-americans-see-college-as-important-despite-benefits.html. See also Beth Akers, *Making College Pay: An Economist Explains How to Make a Smart Bet on Higher Education* (New York: Penguin Random House, 2021).

9. Robert Kelchen, *Higher Education Accountability* (Baltimore, MD: Johns Hopkins University Press, 2018).

10. Jeffrey Steedle, "On the Foundations of Standardized Assessment of College Outcomes and Estimating Value Added," in *Accountability in American Higher Education*, ed. Kevin Carey and Mark Schneider (London: Palgrave Macmillan, 2010).

11. The so-called Gainful Employment Rule, suspended during the Trump administration, compares the earnings of career-college graduates to their student loan debt to assess whether the program attended led graduates to jobs that permitted them to repay their loans. See US Department of Education, "Obama Administration Announces Final Rules to Protect Students from Poor-Performing Career College Programs, New Regulations Put Tough Standards in Place for Career Training Programs to Help Protect Students from Being Saddled with Debt They Cannot Repay," press release, October 30, 2014. Two other earnings-related accountability measures in play today are student loan default rates and student loan repayment rates; see Bipartisan Policy Center, *A New Course for Higher Education: Strengthening Access, Affordability, and Accountability*, January 2020, https://bipartisanpolicy.org/wp-content/uploads/2020/01/WEB_BPC_Higher_Education_Report_RV8.pdf.

12. Anna Manzoni, "Equalizing or Stratifying? Intergenerational Persistence Across College Degrees," *Journal of Higher Education*, April 15, 2021, https://www.tandfonline.com/doi/full/10.1080/00221546.2021.1897966?scroll=top&needAccess=true; Timothy J. Bartik and Brad J. Hershbein, "Degrees of Poverty: The Relationship Between Family Income Background and the Returns to Education" (working paper, W. E. Upjohn Institute for Employment Research, Kalamazoo, MI, March 2018), https://www.econstor.eu/bitstream/10419/202882/1/1016149662.pdf; and Anthony P. Carnevale, Ban Cheah, and Andrew R. Hanson, *The Economic Value of College Majors*,

Georgetown University, Center on Education and the Workforce, 2015, https://cew.georgetown.edu/cew-reports/valueofcollegemajors/.

13. See, for example, the reports "that evaluate input-corrected quantitative measures of postsecondary outcomes" that make up HCM Strategists, "Context for Success: Measuring Colleges' Impact," http://www.hcmstrategists.com/contextforsuccess/; and Higher Education Research Institute's Expected Graduation Rate Calculator, which applies risk-adjusted measures to predict expected degree completion rates. See Higher Education Research Institute, "Expected Graduation Rate Calendar," https://www.heri.ucla.edu/GradRateCalculator.php.

14. On colleges as "dropout factories," see Michael Dannenberg and Mary Nguyen Barry, *Tough Love: Bottom-Line Quality Standards for Colleges*, Education Trust, June 2014, https://edtrust.org/wp-content/uploads/2013/10/ToughLove_0.pdf.

15. James S. Coleman, "Equality of Educational Opportunity (COLEMAN) Study (EEOS), 1966 (ICPSR 6389)," Johns Hopkins University, April 27, 2007, https://www.icpsr.umich.edu/web/ICPSR/studies/6389/versions/V3.

16. Kelchen, *Higher Education Accountability*, 127.

17. To identify the percentage of parents in top income quintiles, I used the dataset employed for Raj Chetty et al., "Mobility Report Cards: The Role of Colleges in Intergenerational Mobility" (working paper, National Bureau of Economic Research, Cambridge, MA, July 2017), https://www.nber.org/papers/w23618.

18. For additional information, see the appendix.

19. I want to thank Jordan Matsudaira, former chief economist for the White House Council of Economic Advisers and later deputy undersecretary of education, for his insights on the utility of using this 10-year measure.

20. Approximately 41 percent of Hispanic students attend public two-year colleges. Excelencia in Education, "Hispanic-Serving Institutions (HSIs) Fact Sheet: 2019–20," 2021, https://www.edexcelencia.org/research/publications/hispanic-serving-institutions-hsis-2019-2020-fact-sheet. See also J. Oliver Schak et al., *Broken Mirrors II: Latino Student Representation in Public State Colleges and Universities*, Education Trust, September 11, 2019, https://edtrustmain.s3.us-east-2.amazonaws.com/wp-content/uploads/2014/09/10123122/Broken-Mirrors-Latino-Student-Representation-at-State-Public-Colleges-and-Universities-September-2019.pdf.

21. Relevant research on the economic returns to education by gender, race, and ethnicity is found in Dancy et al., *Equitable Value*.

22. For an analysis of some of these differences, see Raj Chetty and Nathaniel Hendren, "The Impacts of Neighborhoods on Intergenerational Mobility II: County-Level Estimates," *Quarterly Journal of Economics* 33, no. 3 (February 10, 2018): 1163–228, https://academic.oup.com/qje/article/133/3/1163/4850659.

23. See Jason D. Delisle and Cody Christensen, "Economic Mobility Conundrums: A Closer Look at the Opportunity Insights University Rankings," American Enterprise Institute, June 2020, https://www.aei.org/wp-content/uploads/2020/06/Economic-Mobility-Conundrums.pdf; and Caroline M. Hoxby and Sarah Turner, "Measuring Opportunity in U.S. Higher Education" (working paper, National Bureau of Economic Research, Cambridge, MA, January 2019), https://www.nber.org/papers/w25479.

24. The relevance of intersectionality (i.e., the interconnection of race and gender) to my examination is discussed in Dancy et al., *Equitable Value*.

25. Manzoni, "Equalizing or Stratifying?"

26. On the value added of minority-serving institutions, see, for example, Lorelle L. Espinosa, Robert Kelchen, and Morgan Taylor, *Minority Serving Institutions as Engines of Upward Mobility*, American Council on Education, 2018, http://acenet.edu/news-room/Documents/MSIs-as-Engines-of-Upward-Mobility.pdf.

27. Jorge Klor de Alva, *Is the University Next Door the Way to Upward Mobility?*, American Enterprise Institute, April 4, 2019, https://www.aei.org/research-products/report/is-the-university-next-door-the-way-to-upward-mobility/; and Jorge Klor de Alva and Cody Christensen, *Winners and Losers: Universities and the Pursuit of the American Dream*, American Enterprise Institute, July 9, 2020, https://www.aei.org/research-products/report/winners-and-losers-universities-and-the-pursuit-of-the-american-dream/.

28. *Barron's Profiles of American Colleges* distinguishes among six levels of selectivity by using the most recent data available on median SAT and ACT scores, percentage of freshmen scoring above certain levels, percentage of freshmen who ranked in the upper fifth and the upper two-fifths of their high school graduating classes, minimum class rank, GPA required for admission (if any), and, for most categories, the range of the percentage of applicants who were accepted. See Barron's College Division Staff, *Barron's Profiles*

of American Colleges (Denver, CO: Peterson's Publishing, 2019). For this study, the six *Barron's* classifications were reduced to three by grouping the top two (most and highly competitive), the next two (very competitive and competitive), and the bottom two (less competitive and noncompetitive) categories together to increase the size of each competitiveness grouping.

29. Carnevale, Cheah, and Hanson, *The Economic Value of College Majors*.

30. For additional information, see the appendix.

31. National Center for Education Statistics, "Profile of Undergraduates in U.S. Postsecondary Education Institutions: 1992–93," https://nces.ed.gov/pubs/web/96237.asp.

32. See Dancy et al., *Equitable Value*.

33. I owe this distinction to the insights of Jeffrey Hines, medical director for diversity, inclusion, and health equity at Wellstar Health System in Atlanta. See Akilah Johnson, "For Immigrants, IDs Prove to Be a Barrier to a Dose of Protection," *Washington Post*, April 10, 2021, https://www.washingtonpost.com/health/2021/04/10/covid-vaccine-immigrants-id/.

34. Richard Herring, Francis X. Diebold, and Neil A. Doherty, eds., *The Known, the Unknown, and the Unknowable in Financial Risk Management: Measurement and Theory Advancing Practice* (Princeton, NJ: Princeton University Press, 2010), 347.

35. For additional details, see Michael Passanante, "Healthcare Risk Adjustment—Your Top Ten Questions Answered," Besler, June 20, 2018, https://www.besler.com/healthcare-risk-adjustment-your-top-ten-questions-answered-podcast/.

36. For a review of such programs, see Ortagus et al., "Performance-Based Funding in American Higher Education."

37. See, for example, Judith M. Delaney, "Risk-Adjusted Returns to Education," *Education Economics* 27, no. 5 (July 10, 2019): 472–87, https://www.tandfonline.com/doi/abs/10.1080/09645292.2019.1639625?journalCode=cede20; and Thomas Bailey and Di Xu, *Input-Adjusted Graduation Rates and College Accountability: What Is Known from Twenty Years of Research?*, Context for Success, HCM Strategists, September 2012, http://www.hcmstrategists.com/contextforsuccess/papers/LIT_REVIEW.pdf.

38. White House, "Remarks by the President on College Affordability—Buffalo, NY."

39. Kelly Field, "Obama Plan to Tie Student Aid to College Ratings Draws Mixed Reviews," *Chronicle of Higher Education*, August 22, 2013, https://www.chronicle.com/article/obama-plan-to-tie-student-aid-to-college-ratings-draws-mixed-reviews/.

40. See, for example, Douglas Belkin, "Obama Spells Out College-Ranking Framework," *Wall Street Journal*, December 19, 2014, https://www.wsj.com/articles/obama-spells-out-college-ranking-framework-1418965261; Paul Fain, "Performance Funding Goes Federal," *Inside Higher Ed*, August 23, 2013, https://www.insidehighered.com/news/2013/08/23/higher-education-leaders-respond-obamas-ambitous-ratings-system-plan; and Doug Lederman and Paul Fain, "The Higher Education President," *Inside Higher Ed*, January 19, 2017, https://www.insidehighered.com/news/2017/01/19/assessing-president-obamas-far-reaching-impact-higher-education.

41. For example, the College Transparency Act, introduced in 2019, calls for establishing a secure and privacy-protected data system containing information about postsecondary students, including data on student enrollment patterns, progression, completion, and postcollege outcomes. See College Transparency Act, S. 800, 116th Cong., https://www.congress.gov/bill/116th-congress/senate-bill/800.

42. Trey Miller, "Higher Education Outcomes-Based Funding Models and Academic Quality," Lumina Foundation, March 2016, https://www.luminafoundation.org/files/resources/ensuring-quality-1.pdf; and Blumenstyk, "'Risk Adjusted' Metrics for Colleges Get Another Look."

43. For insights on concerns surrounding using risk-adjustment metrics in higher education, I want to thank Julie Peller, executive director of Higher Learning Advocates and former senior policy adviser and deputy staff director for the US House of Representatives' Committee on Education and Labor.

44. For example, see Heather W. Collins et al., *Ranking and Rewarding Access: An Alternative College Scorecard*, Penn Center for Minority Serving Institutions, 2014, https://repository.upenn.edu/cgi/viewcontent.cgi?article=1399&context=gse_pubs; and Lezli Baskerville, "Postsecondary Institution Ratings Response," National Association for Equal Opportunity in Higher Education, January 29, 2014, http://www.nafeonation.org/wp-content/uploads/2015/01/HBCU_PBI-Community-Comments-to-Request-for-Information-Regarding-Technical-Ratings-Factors-2DOEd-BOD.pdf.

45. Veronica Minaya and Judith Scott-Clayton, "Labor Market Outcomes and Postsecondary Accountability: Are Imperfect Metrics Better Than None?" (working paper, National Bureau of Economic Research, Cambridge, MA, December 2016), www.nber.org/papers/w22880.pdf.

46. Spiros Protopsaltis, *Searching for Accountability in Higher Education: A Balanced Framework of Goals & Metrics*, New America, October 2019, https://vtechworks.lib.vt.edu/bitstream/handle/10919/97803/SearchingAccountability.pdf.

47. See Protect Student Borrowers Act of 2015, S. 1102, 114th Cong., https://www.congress.gov/bill/114th-congress/senate-bill/1102; and Lamar Alexander, "Risk-Sharing/Skin-in-the-Game Concepts and Proposals," Senate Committee on Health, Education, Labor and Pensions, March 23, 2015, https://www.help.senate.gov/imo/media/Risk_Sharing.pdf.

48. After constructing my model and gathering the relevant data, I ran the regression model using my universe of institutions to calculate the statistical relationship between the independent variables and observed earnings. Using these relationships (described in the resulting coefficients of each independent variable) with each institution's observed independent variable values allowed me to calculate predicted earnings for each institution.

49. These data are available upon request.

50. White House, "Remarks by the President on College Affordability."

51. For more details, see US Department of Education, College Scorecard, "Data Documentation," https://collegescorecard.ed.gov/data/documentation/.

52. The regression and related data management activities were conducted in *R*; the regression conducted was the base *lm* command for fitting linear models using the equation described. I would like to thank Cameron Smither for his assistance with the statistical modeling used in this chapter.

53. For more information on the Normed Parent Income and Mobility Rate Estimates Readme, see Opportunity Insights, "Data Library," https://opportunityinsights.org/data/.

54. *Barron's Profiles of American Colleges* distinguishes among six levels of selectivity by using the most recent data available on median SAT and ACT scores, percentage of freshmen scoring above certain levels, percentage of freshmen who ranked in the upper fifth and the upper two-fifths of their high school graduating classes, minimum class rank, GPA required for admission (if any), and, for most categories, the range of the percentage of applicants who were accepted. See Barron's College Division Staff, *Barron's Profiles of American Colleges*.

Using Earnings Data in College Advising

HOW NEW INFORMATION IS SHAPING ACCESS INITIATIVES

Carrie Warick and Sara Melnick

The college access and attainment community has historically focused on financial fit and academic match in the college-advising process. However, as the cost of college continues to rise and student loan debt along with it, advisers are beginning to incorporate labor market and earnings data into their toolbox. More than ever, they are encouraging students to consider their career paths and potential earnings as crucial factors in the college-selection process. This is partly because labor market and earnings data at the national, state, and local levels have become more accessible—and advisers want to ensure their students receive the best return on investment (ROI) from a postsecondary degree.

The National College Attainment Network (NCAN), a membership association of nonprofit college access and success programs, has a unique vantage point to observe these trends. At the national level, NCAN advances programs and policies that give students the support to apply to, enter, and succeed in postsecondary education, with the goal of closing equity gaps in postsecondary attainment for all students. NCAN's over 600 member organizations, including nonprofits, school districts, colleges, state agencies, and partners, serve more than three million students annually in every US state. NCAN's members work closely with students and their families in school- and community-based settings as they navigate the college search and application process, complete the Free Application for Federal Student Aid, choose a course of study, and make career choices.

From this perspective, NCAN members offer important insights into how the increasing availability of earnings and employment information affects college advising for students from low-income backgrounds, students of color, and first-generation students. While much of the policy discussions in Washington and state capitals focus on how these data are collected and published, NCAN members show how the data are being used on the ground. As such, they illustrate both the promise these data hold to improve outcomes for students and the new challenges they pose for advisers.

A New Focus on Careers and Wages

The type of postsecondary advising in which NCAN members primarily engage has undergone significant shifts over the past two decades. This field, rooted in closing equity gaps in postsecondary education, has morphed from one that helps students *access* a postsecondary education to one that guides students *through* that postsecondary experience—and now to one that helps students make postsecondary decisions with a chosen *career path and its earnings potential* front and center.

As the focus of advising has changed, so have the tools advisers use in their practices. Whereas it was once enough to have students consider size, location, and affordability when deciding which college to attend, advisers are now encouraging students to factor in how higher education choices can offer a positive ROI on their time and money.

Until recently, career interest inventories and assessments were not commonly used as part of the postsecondary advising process. But as college costs continue to rise—and earnings and labor market data are increasingly accessible through online, user-friendly tools—it has become easier for students to balance those costs and the debt they might incur to pursue one degree, major, or credential over another. This does not mean that students should always pursue the highest-earning fields but that they should understand the potential earnings of their chosen field and consider the amount they pay for education—especially debt incurred—when deciding which institution to attend.

Balancing student interests and abilities with the earnings potential of certain careers can present a challenge for advisers, who must walk a fine and unbiased line between encouraging students to follow their passion and focus on future wages. This is when having access to a variety of information—including labor market and earnings data, college cost information, and career interests—can be helpful in making decisions about a postsecondary education. The adviser's role is not necessarily to steer students toward in-demand, high-wage jobs, but simply to make them aware of the job opportunities and growth and earnings potential in *any* of the career paths they are considering.

One challenge of which NCAN members are acutely aware is related to equity in postsecondary advising and the integration of labor market and earnings data into the advising process. It has become clear that a high school diploma is no longer sufficient for providing a family-sustaining wage, so the majority of today's students will benefit from pursuing a high-quality postsecondary degree or credential. Although many sub-baccalaureate credentials can yield significant financial return, it's crucial to look through the lens of equity at which students are being advised to pursue a four-year degree and which students are being encouraged to think first about the economic outcomes of their postsecondary decisions.[1]

The job market and required skills are changing quickly, and advisers need to stay apprised of these trends so they can best assist their students with postsecondary and career planning. That is why many NCAN member programs are breaking new ground by intentionally incorporating a career-planning component into their advising toolbox. As with the access and success portions of their programs, they are developing evaluation methods to assess the benefits and outcomes of adding the use of labor market and earnings data to the ever-evolving college decision matrix.

NCAN Case Studies

NCAN invited three member organizations to share their journeys toward incorporating earnings and employment data into their programs: two college access programs and one state agency. The learnings from these programs' experiences serve as a guide for how other programs can begin to think about incorporating these data into their advising practices. Woven throughout this part of the report is how each program considered issues of equity—not only how advising practices are implemented with all students but also how current inequitable labor market and wage trends might be addressed and overcome by helping students use data to make postsecondary decisions. We briefly describe each organization's programs below.

The Denver Scholarship Foundation. The Denver Scholarship Foundation (DSF) is a nonprofit organization in Denver, Colorado, where it serves the city and county of Denver. DSF's role is to influence the college-going culture by increasing the college-going rate across all Denver Public Schools graduates. DSF serves students by providing:

- A college access program that offers college and career advising to all the nearly 6,000 ninth through 12th grade students in Denver Public Schools,

- A multiyear scholarship program, and

- A college success program that provides wraparound support services to over 1,700 DSF scholars, most of whom are first-generation college students, have limited income, and are Black, Indigenous, or people of color.

Over the past 15 years, DSF's advising practices have evolved to intentionally include the use of credential- and degree-completion data as a connector to high-wage career opportunities for its students. DSF develops an annual report on each of its postsecondary partners that advisers can use to inform their work with students. The annual report details outcomes for DSF's scholarship recipients, including financial aid gaps, completion and persistence data, success rates for students from DSF's target communities, and data on each institution's ability to connect students to high-wage career opportunities.

The Scholarship Foundation of St. Louis. The Scholarship Foundation of St. Louis (SFSTL) supports students from low-income backgrounds in the St. Louis, Missouri, region in their pursuit to attend and complete their postsecondary education. SFSTL's services are organized around three core organizational strategies:

- Advising services reach approximately 6,000 students and their families in areas with high eligibility for federal free and reduced meals and where there is a dearth of existing college access and success services.

- SFSTL awards $4.8 million in last-dollar grants and interest-free loans and secures paid internships for 500 students annually.

- SFSTL's origins are rooted in advocacy. The organization was founded in 1920 in support of eastern European Jewish immigrants fleeing pogroms and arriving without skills suitable for participation in an advancing industrial economy. SFSTL's advocacy work continues today through robust student-led policy research and advocacy activities that engage 11 policy fellows and a statewide coalition of 100 students.

SFSTL's approach to the use of earnings and workforce data in advising is influenced by a philosophy that there is much more to learning than earning.

The Washington Student Achievement Council. The Washington Student Achievement Council (WSAC) is a cabinet-level agency that serves 100,000 financial aid recipients annually. WSAC oversees the Washington state postsecondary attainment goal that 70 percent of all Washingtonians earn a postsecondary credential, so their interest in helping students access data on program outcomes, earnings, and labor market data is to encourage more students to see the value in pursuing a postsecondary degree or credential. Washington's workforce requires trained talent with postsecondary credentials, but currently only 60 percent of high school seniors go directly to college.

WSAC hopes to contribute to the goal through its new interactive digital tool called College and Career Compass.[2] The tool has two primary areas: one search tool to explore programs of study and one to explore the institutions that offer them. Compass includes information on the multiple pathways available to attain a postsecondary degree or credential and interactive content on topics related to preparation, enrollment, affordability, pathways, and student support.

Ultimately, the goal is to connect students to a campus adviser who can assist students with enrolling in a postsecondary program. Phase two of the College and Career Compass will incorporate apprenticeship and occupational data, career cluster information, and regional labor market information to make a comprehensive database that connects program

outcomes, earnings, and labor market trend data specific to the state.

Recognizing the Need

One of the most important lessons that has emerged from the three organizations' efforts is that college attainment programs aiming to incorporate earnings and workforce data into their advising practices should start by setting an explicit organization-wide goal to do so. Preferably, this would be part of an advising framework that also includes academic match and financial fit. Once established by leadership, the goal should be clearly communicated to staff and phased into the work using the steps outlined in the following sections. Below are some examples of how the three NCAN member programs started on their journeys of using these data in an advising process with students.

DSF. The DSF has been using labor market and wage data for 15 years to connect credential and degree completion to high-wage career opportunities. The DSF decided to incorporate these data into its advising tool kit because it sees them as integral to framing its students' postsecondary aspirational goals; helping students, scholarship recipients, families, and communities see an ROI; and validating the investments financial stakeholders made.

SFSTL. Because the SFSTL was founded with a heavy element of advocacy, it holds that the purposes of higher education are manifold and, specifically, that there is much more to learning than earning. However, since its inception, the SFSTL has acknowledged the relationship between household well-being and earnings. The SFSTL's mission influences the use of earnings and workforce data so that the organization's advising approach continues to be broader than a "learn to earn" approach.[3]

WSAC. The WSAC developed the College and Career Compass in March 2020 to help Washington students navigate educational programs, explore guidance content, and connect to campus outreach staff. The tool was developed in response to the workforce trends demonstrating an increase in required trained talent with postsecondary credentials. Nearly 70 percent of projected job openings in Washington require postsecondary education, with 30 percent requiring a bachelor's degree or above and 40 percent of openings at the middle-skill level.[4] However, as mentioned above, only 60 percent of the state's high school seniors go directly to college.

Further, employers offer many of the high-skill jobs to individuals recruited from out of state for their skills. Compass was created with input from an advisory committee with representation from campuses, state agencies, and workforce partners. Lumina Foundation provided support and consultation from other initiatives,[5] and states were instrumental in the development. Compass is marketed to both high school students and adult learners to motivate users to explore it, connect to a campus adviser, and ultimately undertake a postsecondary experience.

Choosing a Data Tool

Once the goal of incorporating earnings and employment data into the advising program is set, organizations need to review the list of tools and data sources available to determine which best meets their needs. Available tools can be grouped into two categories: one category that offers information about job opportunities and labor market trends and another that is more relevant for choosing an institution and program to attend. In the former, these data have been available for many years, yet advisers have only recently begun using them to help students make postsecondary decisions. In the latter, the accessibility of the data in this category is relatively new, having only become available within the past 10 years.

Briefly, common sources for job opportunities and labor market trends include:

- **The US Census Bureau.**[6] It collects and reports data on the state of the nation's workforce,

including employment and unemployment levels in certain geographic areas and industries.

- **The Bureau of Labor Statistics.** It produces the online, searchable "Occupational Outlook Handbook."[7] Users can search by factors such as occupational groups and job trends, and the results provide detailed information on specific jobs in each group, including job outlook and median pay. For example, the handbook indicates the median pay for a high school teacher in 2020 was $62,870 per year, the position typically requires a bachelor's degree at the entry level, and the projected change in employment from 2019 to 2029 is 4 percent. The Bureau of Labor Statistics also provides state-level labor market projections through the Projections Management Partnership website.[8]

- **O*Net.**[9] This uses Department of Labor data to provide more information on specific jobs, including related careers, required knowledge, required skills and abilities, required education and credentials, where to get the credential, and a wages and employment trends feature that can be searched by geographic location. For example, O*Net will provide information on what education is required to be a high school teacher, but it also offers links to specific institutions that offer a degree in secondary education and links to local salary information and job openings.

- **The 12 Federal Reserve Banks.** These provide regional economic and employment information and the Survey of Household Economics and Decisionmaking (SHED), which offers a big-picture review of how financially stable individuals feel based on their degree type and institution attended.[10] Additionally, SHED provides information on the top fields and month-to-month income volatility.

Briefly, common sources for students to choose institutions and programs include:

- **The College Scorecard.** This online, searchable tool helps students compare postsecondary institutions on various factors, including cost, postgraduation employment, graduation rate, average amount borrowed, and loan default rate.[11] Many of the data used in the scorecard come from information on students who have received some form of federal student aid.

- **Launch My Career.**[12] This emerged from the College Measures initiative[13] and uses state-level data to help students understand the ROI for that state's postsecondary institutions, specific majors, and degree programs. The goal is to show students data on the long-term outcomes—including earnings potential—before they enroll in an institution and pursue a certain degree and field of study. Launch My Career databases have been implemented in several states including Florida and Utah.[14] Other similar databases are available in states such as Colorado.[15]

- **The Good Jobs Project.** This is based at Georgetown University's Center for Education and the Workforce, which has searchable and interactive tools that show the ROI on degrees and colleges, state occupational trends, and "good jobs" that do not require a bachelor's degree.[16]

- **Other Publicly Available Websites.** These websites, including Payscale and GradReports, aggregate salary information on graduates of postsecondary institutions.[17]

DSF. The career and wage data source most used by DSF advisers is O*Net, which is consistent, accessible, and easy to navigate. O*Net's national and state data and career profiles are updated annually and align with the "Occupational Outlook Handbook." Its multifunctional website includes a wide breadth of tools and data, including a career interest inventory that easily links interest themes to careers, wage

data, and related academic pathways. An adviser can use the site to support a deep exploration in an ongoing career counseling relationship and the quick search bar to send a student on a quick fact-finding mission. The ease of use of the O*Net tools are especially important given the large caseloads each adviser handles.

SFSTL. The SFSTL uses Department of Education College Scorecard, Bureau of Labor Statistics, and Federal Reserve Bank of St. Louis data to analyze the reasonableness of cost of attendance and provide debt advising. These sources are publicly available and can be consistently accessed year to year. They are also free of the distracting or dangerous influence of marketing, paid advertising, sponsorship, or interested funding sources. Further, the greater the degree of disaggregation, the more useful. And these sources all offer several variables by which the data can be disaggregated. Often, advisers are working with students to find relevant outcome information by race, gender, ethnicity, geography, or type of higher education institution.

WSAC. The WSAC chose to build its own tool from scratch to meet the specific needs of its students and the employment trends and needs in the state. This decision was made after conducting a review of the existing state-level and other publicly available datasets and determining they were out-of-date or incomplete.

WSAC started populating its customized database with information from postsecondary institutions that included program titles, length, modality, and descriptions and indicators related to specific credentials. The data also included Classification of Instructional Programs codes for each educational program to enable matching through a standard crosswalk with Standard Occupation Classification.[18] The goal was to enable a user to see information on jobs with the associated labor market demand, growth, and wages.

After evaluating data from several outside vendors, the WSAC ultimately chose to incorporate labor market information directly from the state employment security agency. However, several issues arose during the building of the state-specific database, including concern about giving misleading information on the way certain programs might lead to a broad array of occupations. For example, many liberal arts programs indicate they lead primarily to teaching careers, and some of the trend data about this could also appear misleading. In general, the WSAC was concerned about appearing to guarantee employment outcomes. Currently, College and Compass phase one does not connect program or campus information to specific occupational data; these data will be connected during phase two.

Tailoring the Program to the Population

Accessibility to labor market and earnings data and how those data are used in advising may differ depending on the population served by the program. The three NCAN member organizations profiled here have each tailored their programs to their unique missions and student populations.

DSF. The DSF assists large numbers of students through its Future Centers, which operate in 21 Denver public high schools. The look and feel of a Future Center initially included college pennants, scholarship announcement boards, and a wealth of resources to help students research and apply for admissions and financial aid and ultimately enroll in college. Although these centers attracted traditional four-year-oriented, academically confident students, those who were considering certificate and applied studies options did not feel included and were less engaged.

To meet the needs of the broader population, DSF rebranded the Future Centers, transforming the visuals and displays to include the variety of pathways available to achieve a certificate or degree. Earnings data were made available across multiple career pathways and by level of postsecondary education completed. The rebranded centers increased the engagement of students who did not see themselves as "college bound" for a four-year degree.

It was during the rebranding of the Future Centers when DSF more formally and methodically integrated the use of labor market and earnings data into its advising process. The more practical earnings data made clear to students the diversity of postsecondary options available and invited larger groups of students into the DSF Future Centers to talk about career, education, and pathways planning. Since these changes to the Future Centers, the number of Denver Public Schools graduates enrolling in postsecondary education the fall after graduation has continued to rise, and fundamentally, these graduates are better informed about their pathway options, timing, and potential wage outcomes than graduates were before the changes.

SFSTL. The SFSTL reaches approximately 6,000 students and their families through its advising services and an additional 500 students with its scholarship and internship opportunities. Its student advisers support existing college access efforts in schools and communities. It recruits students through partnerships with schools and community-based organizations, and the entities with which they partner are based on the size of the high school population, rate of participation in federal free and reduced meals programs, staff willingness to support the partnership, and the provision of college access services to populations and in areas not yet sufficiently served. Additionally, the SFSTL partners with youth programs to serve as scholarship providers for program participants.

Students may also "walk in" or call in for services from the foundation's advising team. SFSTL starts its advising relationship with students with the students' goals in mind. Advisers introduce rising seniors to the resources they have to offer during a school assembly, a college night presentation, or a school-sponsored fair. Students may then request a follow-up by email or simply schedule an appointment. Some students are referred by teachers or counselors because of more complicated family and financial circumstances requiring special attention and support navigating the financial aid process.

Students have access to advising services regardless of whether they are applying for or awarded grants or loans from the foundation. Those awarded grants or loans are invited and encouraged—but not required—to participate in advising to receive funding.

WSAC. The WSAC's College and Career Compass is marketed to both high school students and adult learners. Through email marketing (e.g., 400,000 emails to former financial aid students, high school seniors, parents, and adult learner prospects from CollegeAPP,[19] a consumer marketing database) and social media and digital advertising, this new digital tool reached 156,000 users over roughly the first year (approximately March 2020–May 2021).

The broad marketing effort is more important now than ever under current circumstances in which public enrollments have shown a precipitous drop—especially in the two-year sector, in which Alaska Native, American Indian, Asian, and Hispanic student enrollments fell by more than 20 percent.[20] Compass has been promoted through state agencies and community-based partnerships to reach those most affected by the current economic and health care crisis precipitated by the spread of COVID-19.

Assessing Student Interests

One of the key steps in helping students use earnings and labor market data is to encourage them to take stock of their education and future career interests and then identify courses of study, majors, institutions, and credentials necessary to turn those interests into a job. Below are some examples of how NCAN member programs do this with their students.

DSF. The DSF uses the tools and search capabilities provided through O*Net for career advising. Students are encouraged to engage in a quick exploration exercise before digging into O*Net. The breadth of tools and data allows advisers to link a student's interests, whether formally assessed through the free tool or through a standard advising interview (exploring likes, dislikes, abilities, and interests), to interest themes, careers and wage data, and related academic pathways. DSF advisers use

the O*Net site to support deep exploration in an ongoing career counseling relationship and can use the quick search to glean facts such as a career's potential wages in specific geographic locations, wages for incumbents in that career with differing levels of education, and which postsecondary institutions offer the credentials required to qualify for that job.

WSAC. The WSAC's College and Career Compass tool is intended to motivate users to connect to a campus adviser and relies on users to be self-directed in their initial search for potential careers and programs. Although the tool does not include an interest survey per se, it does include a "backpack" component, with interactive content on topics related to preparation, enrollment, affordability, pathways, and student support. It has customized pathways for high school students and adult learners and a college search component that allows users to search by program of study and provides information on the institutions that offer degrees, majors, and credentials that prepare for related careers. When an institution of interest is identified, the user is encouraged to reach out to an adviser to learn how to potentially gain access to that institution.

Designing the Advising Process

Integrating earnings and employment information into the advising process goes beyond designing a data tool or selecting a website to use. Organizations must decide that adding these data to the array of topics already covered in postsecondary advising—such as admissions, fit and match, and financial aid—meets the needs of their students. Then the organization must build the use of data and related sites into their advising process. Here, again, the three NCAN organizations we profiled had to make numerous decisions about enhancing their college-advising initiatives.

Each NCAN member program was clear that it wanted to be able to share with students and families that investing in postsecondary education will yield a return—both financially and career-wise. The SFSTL perspective is that earnings and labor market data are important in student advising but should not be the cornerstone of the advising process. At this program, advising staff use the data to inform student decision-making regarding degree, major, and school. Typically, students present advisers with a plan or the outline of a plan. Advisers help students fill in the necessary details so students have as much information as possible to make their decision. Information is tailored to the student, not only because it is specific to the schools they are considering and the majors they intend but also because it is based on their specific financial circumstances.

For instance, students comparing similar programs at proprietary (i.e., for-profit) institutions and community colleges will receive both cost and time-to-degree data so they can understand that a longer-term, less expensive program at community college may result in higher earnings and less debt. Data are not used to limit or shape college choice or restrict or require students to correlate award levels with anticipated earnings. Students seeking the shortest degree or credential to the workforce will be referred to earnings data to test their assumptions on starting salaries and projected lifetime earnings. Such students will also receive counsel regarding subsequent transferability of credits or stackable credentials should they choose to continue education after a period in the workforce.

Earnings data can also be used to advise students on how much debt is optimal to assume given future earnings potential. DSF finds that wage and labor market data are extremely useful in examining the likelihood of achieving a desired future financial outcome (i.e., salary) and informing a student's ability to pay back loans. For example, future earnings data are helpful to examine when a potential English or education major is considering attending an expensive private liberal arts college. That conversation could touch on the likely student loan debt given that college choice and the potential wages of an entry-level English teacher.

Likewise, a different discussion is likely to take place with a student who plans to major in engineering,

attend a low-cost state school, and take on some loan debt to ensure completion of the degree. Given that the likely earnings of an entry-level engineer are high, an adviser can inform the student that taking on debt may result in a high ROI and therefore would be a prudent decision. Each student and family conversation is unique, and using workforce wage data strategically can be invaluable in many of these situations.

Another use of earnings and labor market data is to help students choose among institutions to which they have been accepted. For example, SFSTL advisers use earnings data to examine which schools offer the best programs aligning with the student's interests. They also help students understand and evaluate the schools' top-earning majors, average debt load at graduation, and net price by family income. Students consider this information, along with family factors (e.g., distance from home, living arrangements, employment, and health), to decide for themselves which school will be the best fit.

SFSTL advisers also use earnings data to help students *compare projected earnings and salary data* in light of financial aid offers. Evaluating net price (i.e., the price after student aid has been factored in) by income level helps frame a discussion about affordability and the relative importance of nonmonetary factors. SFSTL uses the College Scorecard for this since it provides information on the highest-earning majors from a school and data on degrees with the lowest debt.

The SFSTL encourages students to use these data to offer context as part of the decision-making process but to not use future earnings data as the only factor in this decision. For example, a student eligible for a federal Pell Grant who is planning to study computer engineering will have different considerations than a similar student who wishes to become an elementary school teacher will have.

Conclusion

The college access—and now success—field came together in the 1990s as the price of college rose along with the need for a college degree to support a middle-class lifestyle. Long-standing scholarship programs added wraparound support services, new programs sprung up, nine programs formed the national association that is now NCAN, and a focus emerged on supporting students in the college application process.

A decade into the 21st century, it was clear that these college access programs needed to incorporate college success services, both supporting students through college and working with sources such as the National Student Clearinghouse to measure outcomes. As the field enters its third phase, the college access and success pieces are now intertwined with career planning, which incorporates the use of data on earnings potential.

Students report the number-one reason they attend college is to get a good job.[21] As evidenced by the examples described above from the case studies of NCAN member programs, incorporating labor market and earnings data into the college-advising framework of financial fit and academic match is a crucial part of helping students make an informed college choice. Helping students understand how these three segments of college decision-making intertwine is the next frontier in college advising that college access programs are currently pursuing.

To this end, the DSF expanded Future Centers to include information on sub-baccalaureate degrees and credentials based on what they understood about the needs of their students. At the SFSTL, the career-earnings data are used to inform their students' postsecondary decisions but not to steer students into the highest-earning fields. The WSAC believes in the importance of broadly accessible data tools that help students regardless of where they are on their educational journey.

As these evolving practices expand across the college access and success field, programs will begin to measure the impact of their integration. The ultimate goal is completion with a job in the desired field and manageable student debt. It should be noted, however, that these supports do not replace the need to address the growing college affordability crisis, as the students affected by it either never start or are

unable to finish. Rather, the field will continue to gather this evidence, and effective practices on how to do this work will continue to emerge. Direct service programs will be better equipped about how to incorporate these practices into their advising as this happens.

The integration of earnings and labor market data into postsecondary and career advising represents the next frontier in the college-advising field. There is a benefit to incorporating earnings, workforce data, and career planning as part of the college-selection process. Incorporating this new element with an equity-focused approach that focuses on student interests and ability, not solely an earnings focus, should help students make better-informed choices about the type of program and institution to attend. This practice is still nascent, and as outcome data are collected and shared, there is a potential for positive economic impact on the students served by NCAN member programs.

Notes

1. Aspen Institute, College Excellence Program, *From College to Jobs: Making Sense of Labor Market Returns to Higher Education*, April 14, 2015, https://cew.georgetown.edu/wp-content/uploads/LaborMarketReturns_0.pdf.
2. College and Career Compass: Washington, website, https://compass.wsac.wa.gov/.
3. "Learn to Earn" is an advising philosophy that encourages students to pursue education or career pathways with high earnings potential rather than those aligned with their interest or ability. See Faith Sandler, "Learning, Earning, Building Community: College IS Worth It, If . . .," Scholarship Foundation of St. Louis, October 4, 2018, https://sfstl.org/learning-earning-building-community-college-is-worth-it-if/.
4. Daryl Monear et al., *Washington's Skilled and Educated Workforce 2019–20: An Analysis of Postsecondary Education, Workforce Preparation, and Employer Demand in Washington*, Washington Student Achievement Council, State Board for Community and Technical Colleges, and Workforce Training and Education Coordinating Board, https://wsac.wa.gov/sites/default/files/2019-20.WASkilledEducatedWorkforce.pdf.
5. Washington Student Achievement Council, "Washington College and Career Compass," https://wsac.wa.gov/compass.
6. US Department of Commerce, Census Bureau, "Labor Force Statistics Data," https://www.census.gov/topics/employment/labor-force/data.html.
7. US Department of Labor, Bureau of Labor Statistics, "Occupational Outlook Handbook," April 9, 2021, https://www.bls.gov/ooh/.
8. State of Utah Division of Technology Services, "Projections Central," https://projectionscentral.org/.
9. O*Net, "O*NET Resource Center," May 25, 2021, https://www.onetcenter.org/.
10. Board of Governors of the Federal Reserve System, "Structure of the Federal Reserve System," October 28, 2016, https://www.federalreserve.gov/aboutthefed/structure-federal-reserve-banks.htm; and Board of Governors of the Federal Reserve System, "Survey of Household Economics and Decisionmaking," May 17, 2021, https://www.federalreserve.gov/consumerscommunities/shed_publications.htm.
11. US Department of Education, "College Scorecard," https://collegescorecard.ed.gov/.
12. American Institutes for Research, "Launch My Career," https://www.air.org/project/launch-my-career.
13. American Institutes for Research, "College Measures," https://www.air.org/project/college-measures.
14. UtahFutures, "Launch My Career: Utah," https://launchmycareer.utahfutures.org/; and American Institutes for Research, "Launch My Career: Florida," http://launchmycareerfl.org/ (site discontinued).
15. My Colorado Journey, website, https://www.mycoloradojourney.com/journey.
16. Georgetown University, McCourt School of Public Policy, Center on Education and the Workforce, "Good Jobs Project," https://cew.georgetown.edu/good-jobs-project/.
17. Payscale, website, https://www.payscale.com/; and GradReports, website, https://www.gradreports.com/.
18. US Bureau of Labor Statistics and US Department of Education, National Center for Education Statistics, "CIP SOC Crosswalk," https://nces.ed.gov/ipeds/cipcode/post3.aspx?y=56.
19. CollegeAPP, website, https://yourcollegeapp.com/.
20. Isaac Kwakye et al., *Fall Enrollment Report: Exploring the Impact of COVID-19 on Postsecondary Enrollment in Washington*, Washington Student Achievement Council, January 12, 2021, https://wsac.wa.gov/sites/default/files/2021-01-12-Fall-Enrollment-Report.pdf.
21. Rachel Fishman, "College Decisions Survey: Deciding to Go to College," New America, May 28, 2015, https://www.newamerica.org/education-policy/edcentral/collegedecisions/.

Innovations in Higher Education Finance

USING INCOME DATA TO BUILD BETTER OPTIONS FOR STUDENTS

Kevin James and Barry Cynamon

In 2017, we launched a 501(c)(3) nonprofit called Better Future Forward (BFF), with the goal of building a more equitable approach to student finance.[1] Using philanthropic contributions and impact investment funding, BFF develops community-based funds to help underserved students cover financial aid gaps after exhausting government aid. BFF's community-based funds are income share agreements (ISAs)—contracts in which an individual agrees to make a fixed number of affordable payments, for a set period, when earning above a specified amount. While ISAs are the subject of much debate, we believe they offer the best approach for our mission. When combined with private support, ISAs offer the flexibility and sustainability that enable us to equitably support students.

In developing BFF's programs, we recognized that access to funding is not the only impediment students face. That is why BFF's funds are built in partnership with local college access and success organizations (or other community-based organizations or institutions) that offer mentoring and coaching to address the nonfinancial impediments many students face in pursuing their degree. These organizations do tremendous work helping underserved populations. But they can only do so much when students have financial aid gaps and few options to fill them.

Our work with BFF is also informed by our country's troubled experience with student debt. While federal student loan programs have helped equalize rates of access, strong disparities in degree completion persist. A Black or Latino student pursuing a bachelor's degree is roughly 18 percent less likely to complete that degree after six years than a White student is.[2] On the repayment side, 32 percent and 20 percent of Black and Latino borrowers, respectively, default on their federal student loans within six years of entering repayment, compared to 13 percent of their White peers.[3]

The federal student loan program falls short in another way: Too frequently it does not provide enough financing for students. Consider a traditional-age, low-income student pursuing a bachelor's degree. To attend a public four-year institution during the 2020–21 academic year, a student from a family earning below $30,000 per year would face net tuition, fees, and room and board of $14,850 and a net cost of attendance of $19,490—after grants and scholarships.[4]

The next logical place for that student to turn is federal student loans. But a freshman can typically borrow just $5,500 in federal Stafford loans. From there, the student's options become worse. The parents could take out a Direct Plus Loan; however, low-income parents would be understandably reluctant to take on such debt. The student could

also consider a private loan, but most private loans require a strong credit score or a creditworthy cosigner. These loans are also expensive and offer virtually no protection to students struggling in repayment.

Faced with these options, many underserved students work extensive hours while in school—essentially managing two full-time jobs. Even the most resilient students struggle with this schedule, putting them at risk of dropping out or delaying graduation. Students also face a persistent uncertainty about whether it is all worth it—whether their sweat and toil will yield them a credential that enables them to reach economic self-sufficiency and fulfillment. Nobody should have to go through higher education like this, particularly students who have already struggled with disadvantage in their lives.

To help provide students with better options, BFF's mission is to address student needs through three routes: (1) providing financing broadly accessible to all students who can benefit; (2) creating strong protections for students' future financial health through an assurance that their payments will be affordable at any moment in time, their total cost of financing will be reasonable, and their obligation will be time limited; and (3) sustaining the financing model by ensuring students graduate and reach economic self-sufficiency.

While we are in an early stage, BFF's students have persisted or graduated at an 85 percent rate despite our program being open to virtually all our partner organizations' students who are enrolled full-time and meeting Satisfactory Academic Progress (SAP). It is an indication that broadly accessible and protective financial support is helping students stay in school and complete their degree.[5]

A Better Financing Approach

In designing our community funds, our first goal was to completely change students' education financing experience. We want students to count on this fund as a source of financial support that can cover any remaining gaps (after grants, scholarships, and federal loans) they face in enrolling full-time and paying for living expenses. We also want the experience to be simple and flexible. For example, if students have unexpected needs arise in the middle of the term and cannot access emergency scholarship funds, they can come back for additional support, including for smaller dollar increments of funding.

Students can also use BFF's community fund dollars to cover any prior balance at the institution they are attending or an institution from which they are transferring, so long as they are reenrolling after the hold is lifted.[6] We want our students to have the experience that every one of us would like to have: to focus on their academics and participate fully in their educational experience so they can graduate on time and smoothly transition to the next phase of their life. It is also important to us that our funds not be limited to those students who are the highest academic achievers. Many students can be successful in higher education, even if they are not the best-performing students in their class.

We are often asked how BFF "selects" the students to whom it will issue financing. The answer is that we do not select students, in the sense that we do not have a black box process for choosing among applicants. Money from our program is available first come, first served to students who meet our eligibility criteria—a purposeful design feature so that students can count on this support so long as they are doing their part to advance in their education.

Once students are issued financing, their repayment obligation is structured in the following way: First, a funding recipient has a payment obligation only when earning above the minimum income cutoff of $40,000 (adjusted annually for inflation), and then the payment amount is a percentage of the individual's income.[7] Second, the recipient agrees to make 120 income-determined payments back to the fund when earning above the $40,000 minimum income cutoff (or until 240 months elapse, whichever occurs first). If his or her payments do not cover the amount advanced, it is the fund's loss.

In that sense, students have two key assurances: Their future payment commitment (if any) will be manageable in relation to their income, and they will

never face a circumstance in which, despite continued payments, their obligation balloons uncontrollably into the future, forcing them to make payments indefinitely. Finally, the program also protects students with high after-school earnings from making payments to the fund that are unaffordable overall. If a recipient's payments are such that he or she would have paid off a loan with a 7.5 percent interest rate, the recipient finishes the ISA obligation in fewer than 120 payments.

An Earnings Data Foundation

Access to high-quality data about what students earn after leaving an institution of higher education is essential to any student finance option built around our principles. This is true for two reasons: First, earnings data are essential in thinking about the quality of the education pathway students are pursuing. After all, BFF's program depends partly on helping ensure students are getting meaningful value from their education. Second, to continue supporting students, BFF must set the terms on its agreements so its community funds will be sustainable. Access to earnings data is central to assessing the viability of these programs. The programs will fail if the payments received from participants are too low, as they might be if the terms are set without reference to sound models informed by strong underlying data sources.

Policymakers have already made great strides in making earnings data available through programs such as the Department of Education's College Scorecard and public-private collaborations such as the Equality of Opportunity Project (now Opportunity Insights).[8] Those efforts have made our work with BFF possible. But making more robust data available would make it possible to further strengthen these programs in crucial ways—making BFF's community funds both more cost-effective and scalable and improving BFF's ability to confidently identify which pathways are most effectively producing outcomes for underserved students.

Working Toward Sustainability and Scale. We made a deliberate decision to create a payment obligation as part of this program—rather than offering this support through a scholarship—because it is core to our mission that these programs are able to eventually support all students who can benefit from them. There are many factors in achieving sustainability, but the core component is obviously the program's financial model.

In developing the financial model for BFF's program, we had to approach the question differently than traditional lending models do. This is because of our desire to eschew individualized underwriting criteria—such as credit score and cosigner requirements—that create inequities in access to financial support. Conventional lenders underwrite borrowers based on their assets, income, and credit scores (or those of a cosigner). Lending for the purchase of an asset, such as a car or house, that can be seized and sold is less risky because there is an asset that acts as security for the loan.

But consumer lending without collateral, such as student lending, is much riskier. These models therefore tend to require documented income and a satisfactory credit history (or that of a cosigner)—a standard many students will not be able to meet without the support of a parent or other person in their life who is willing to cosign the loan and would otherwise meet the loan's underwriting criteria.

In contrast, in offering an income-determined financing alternative, we chose to focus on the likely future income trajectories associated with the student's educational pathway—which, in our programs so far, have been underserved students pursuing a bachelor's degree. The income forecasting required for this modeling approach is based on historical income data as our best approximation for what will happen in the future.

The way we approached this modeling exercise was to simulate individual student trajectories through school and the labor market. First, we modeled student trajectories during the in-school period using graduation rate data for the public and nonprofit institutions that are part of our pilot funds in Illinois, Minnesota, and Wisconsin. Second, we

modeled students' likely future income trajectories using institutional earnings data from the College Scorecard. Each simulated after-school earnings profile is also influenced by whether a given simulated profile represents a graduate or a dropout.

What Types of Earnings Data Did We Seek to Model BFF's Funds? To do this exercise, we sought earnings data that had characteristics that would make them an effective tool for modeling an ISA fund. Specifically, the higher-quality data we sought had three components that go beyond reporting a simple average: The data show (1) the distribution of earnings across participants, (2) the variation by age or time since entering the workforce rather than lumping together all participants, and (3) the persistence of higher or lower earnings for individuals over time. The datasets we used—described further below—did not capture these elements perfectly but did shed light along these dimensions of the data nonetheless.

To understand why these additional dimensions of income data matter, it is important to consider the various features that would be reasonably expected to be part of one of these financing programs. Without a minimum income cutoff or a cap on total payments, the modeling exercise would be simpler. A funder could assume that the revenue from each student during each year of the payment term would simply be the student's payment percentage multiplied by an estimate of all students' average future income for each year of the term.

However, when there is a minimum income cutoff and a cap—as is reasonable to expect—the funder cannot simply rely on the average future incomes of students participating in the program. After all, some portion of the income contributing to the average comes from low earners who fall below the minimum income cutoff and have no payment obligation for the year. Some portion of the income from persistent high earners is untouched, because a persistent high earner will hit the total payment cap and finish making payments before the end of the payment term.

When the income data do not provide the three key elements mentioned above, different underlying realities could be indistinguishable in the data representing them. Consider a simple example showing the incomes of five people over five years. Suppose the five people each received an ISA with a payment percentage of 10 percent, a minimum income cutoff of $50,000, and a total payment cap of $25,000. This is an imaginary contract devised to make the key points easier to grasp.

We will consider four different cases of the "true" incomes of these five people and see how lower resolution income data fail to distinguish between economically impactful differences based on the shape of the distribution and the persistence of high or low earnings across individuals over time. In the first case, all people earn $50,000 in all years (Table 1). In the second case, the average earnings are $50,000 with a standard deviation of $25,000, and there is no persistence of earnings over time (Table 2). In the third case, the average earnings are $50,000 with a standard deviation of $25,000, and there is a perfect persistence of earnings over time (Table 3). In the fourth case, the average earnings are $50,000 with a standard deviation of $25,000, and there is a high persistence of earnings over time (Table 4).

All four cases would look identical if the income data reported only the average income of the group each year. The second, third, and fourth cases would be indistinguishable if the income data reported the mean and standard deviation of incomes of the group each year but contained no information about individual persistence. With a payment percentage of 10 percent and no minimum income cutoff or total payment cap, the funder would receive $125,000 in each of the four cases. Because of the simplicity of the contract, only the average earnings would matter, and the inability to distinguish between the four cases, each with the same average each year, would not matter.

On the other hand, we assumed a contract with a minimum income cutoff of $50,000 and a total payment cap of $25,000. In that case, there would be a material difference between the different cases. The funder would receive between $66,000 and $125,000, depending on the true underlying pattern of incomes. Even if the funder had access to

Table 1. Mean of $50,000 in Earnings, Standard Deviation of Zero (Thousands)

	Year One	Year Two	Year Three	Year Four	Year Five	Total	Payments
A	$50	$50	$50	$50	$50	$250	$25
B	$50	$50	$50	$50	$50	$250	$25
C	$50	$50	$50	$50	$50	$250	$25
D	$50	$50	$50	$50	$50	$250	$25
E	$50	$50	$50	$50	$50	$250	$25
Total	$250	$250	$250	$250	$250	$1,250	$125

Source: Authors.

Table 2. Mean of $50,000 in Earnings, Standard Deviation of $25,000—No Persistence (Thousands)

	Year One	Year Two	Year Three	Year Four	Year Five	Total	Payments
A	$18	$37	$50	$63	$82	$250	$20
B	$37	$50	$63	$82	$18	$250	$20
C	$50	$63	$82	$18	$37	$250	$20
D	$63	$82	$18	$37	$50	$250	$20
E	$82	$18	$37	$50	$63	$250	$20
Total	$250	$250	$250	$250	$250	$1,250	$98*

Note: * The payments from each of the five people would be $19,515, so they round to $20,000, but their sum rounds to $98,000.
Source: Authors.

Table 3. Mean of $50,000 in Earnings, Standard Deviation of $25,000—Perfect Persistence (Thousands)

	Year One	Year Two	Year Three	Year Four	Year Five	Total	Payments
A	$82	$82	$82	$82	$82	$410	$25
B	$63	$63	$63	$63	$63	$316	$25
C	$50	$50	$50	$50	$50	$250	$25
D	$37	$37	$37	$37	$37	$184	$0
E	$18	$18	$18	$18	$18	$90	$0
Total	$250	$250	$250	$250	$250	$1,250	$75

Source: Authors.

Table 4. Mean of $50,000 in Earnings, Standard Deviation of $25,000—High Persistence (Thousands)

	Year One	Year Two	Year Three	Year Four	Year Five	Total	Payments
A	$60	$66	$70	$74	$80	$351	$25
B	$55	$60	$64	$67	$50	$296	$25
C	$50	$55	$58	$42	$45	$250	$16
D	$45	$50*	$33	$37	$40	$204	$0
E	$40	$18	$25	$30	$35	$148	$0
Total	$250	$250**	$250	$250	$250	$1,250**	$66

Note: * The original value was $49,942, so it's below the minimum income cutoff but rounded up to $50,000 in the table.
** These values are correct even though the rows sum to different values because of the way these have been rounded.
Source: Authors.

data that revealed the standard deviation of incomes each year, they would still be unable to distinguish between the second, third, and fourth cases. The result is that they could receive between $66,000 and $98,000 with the same contract and the same mean and standard deviation of income, depending on the degree of persistence.

If the funder wanted to target payments of $75,000 to sustain the program, access to information about persistence would help them better serve students. Without information about persistence, they could not rule out being in the high-persistence fourth case, and they would need to modify their terms to be more conservative. They could raise their total payment cap to $29,500 and increase the total financing cost for higher earners. Alternatively, they could decrease the minimum income cutoff to $45,000 and decrease the affordability of the contract for those earning between $45,000 and $50,000. Without any sense of the degree of persistence of earnings, the funder would need to make assumptions that make the program more expensive than it would be if such information were available.

The goal of the exercise is to give the reader an intuition for the type of model the funder must create to provide income forecasts for use in setting the terms of these programs. The funder needs to have a model that accounts for the average income, the dispersion of income, and the persistence in earnings ranks. In this simplified discussion, we assume that the average level of incomes was constant from one year to the next, but reality is more complex.

The average level of incomes for a given group of students rises over time, based on their increasing work experience and progression in their career, and the average level of incomes for those of a given level of work experience (e.g., new graduates) grows over time due to inflation and economic growth. To be fully confident in their model for students pursuing a particular education program, the funder should have models of the cumulative distribution function for the incomes each year following the program, the persistence in earning rank, and the impact on incomes of economic growth.

The examples in this section bear only passing resemblance to the complexity of the real world. They are as simple as possible to accentuate a point about the importance of multiple dimensions of income data. If a set of data lacks any of those dimensions, then the funder will design their model based on the dimensions they have and act conservatively with the dimensions they lack.

They will act conservatively because variation in the dimensions they do not see will matter for the sustainability of the fund. In turn, this will make the program costlier for students. It will also decrease potential funders' confidence, making it more difficult to grow the program to serve more students. Better earnings data and higher resolution modeling increase the funders' ability to offer terms that are as student friendly as possible.

The Actual Data Used for BFF's Programs. With this context in mind, it is worth discussing the data we considered and ultimately used to build BFF's programs. The American Community Survey provides rich information about individual respondents, including age, educational attainment, place of residence, employment status, and degree field. Released annually by the Census Bureau, it is nationally representative and draws from a large sample—roughly 1 percent of the US population. That said, it does not contain information about the specific institution attended by the respondent. This means it has quite a bit to say about earnings by age and degree field, but it cannot say anything about the performance of students from particular institutions.

On the opposite side, the College Scorecard provides information for just about every US institution of higher learning and helpfully provides distributional information (e.g., 10th percentile, 25th percentile, etc.). So it provides basic inputs for modeling the cross section of incomes, but it reports for only a handful of years relative to the entry of a given cohort (e.g., six or 10 years from the time the students started college).

Therefore, it does not shed light on people who are more than roughly six years past graduation. The College Scorecard has started releasing data at the

program level, too, meaning the statistics are published by school and major, but this has somewhat limited value because the data for many combinations of school and major are privacy suppressed because they are based on a small number of students.

In addition to the expanding data available through the College Scorecard, another slowly emerging source is the Post-Secondary Employment Outcomes (PSEO), developed by researchers at the Census Bureau. PSEO data provide earnings and employment outcomes for college and university graduates by degree level, degree major, and postsecondary institution.

The PSEO statistics are generated by matching university transcript data with a national database of jobs and are made possible through collaboration among universities and university systems, state departments of education, state labor market information offices, and the Census Bureau. PSEO data are available for a limited number of postsecondary institutions in a handful of states.

Furthermore, these datasets do not provide a way to model the persistence of earnings. That cannot come from any data source that provides only repeated cross sections; it must come from a longitudinal data source that follows the same individuals over time. Few panel datasets (the National Longitudinal Survey of Youth and the Panel Study of Income Dynamics) follow the same individual year after year.

To the extent that earnings persistence differs systematically among different groups based on their program of study or other salient characteristics, the modeler is forced to rely on assumptions for this component even more than for others. Determining the weights for the permanent and transitory components of income for students from a given program is simply not possible by direct investigation and can be done only by reference to the group of all college degree holders in one of the two panel datasets mentioned above.

When we began, we built our model around data issued by the Equality of Opportunity Project team as part of its Mobility Report Cards study. Those data were population level, covering roughly 30 million people, and were assembled by matching 2014 tax returns to Department of Education records for individuals born between 1980 and 1991. The published data made it possible to estimate income distributions for students associated with each of the colleges or college systems in the United States for a range of ages, roughly 23–34, in one year—2014.

By layering in assumptions about persistence of earnings for individuals from one year to the next and about the earnings premium of degree completers over non-completers, we ran our models with the Mobility Report Cards data as our primary input. More recently, we have migrated toward using the earnings data provided through the College Scorecard as the foundation for BFF's model.

Because of the limitations of these publicly available datasets, we needed to make some significant assumptions to make BFF's model a reality. These data were not bad, and it might have been impossible for us to build a program like this without the existing investments in earnings data by policymakers and others, for which we are grateful. That said, the data could be made better, because we should want more programs built around these principles of broad access to financial support, protection against hardship, and sustainability through student outcomes and for them to be cost-effective and scalable. In working to achieve those things, better data enable organizations to offer the most protective and student-centric terms possible, consistent with program sustainability. Organizations also need to convince outside funders to contribute, and the availability of high-quality data buttresses the confidence of everybody involved.

The Ideal Dataset for BFF's Funds. The ideal dataset for our purposes would be large, would contain information about the dynamics of individual earnings over the life cycle of the student, and would include degree attainment, schools attended, program of study, and degree field, including separate distributions for Pell Grant recipients. Micro data, including those fields, could be used to derive a model of earnings over the life course of the student conditioned on institution, majors of study, and degree attainment.

Access to that type of model would be helpful for an organization interested in providing income-determined financing to college students, because it would make it possible to run simulations. Specifically, these would simulate participant incomes and payments without forcing the modeler to make assumptions about features of the income process that could really undermine their confidence in the output.

Since it would be a privacy concern to release more granular data and allow individual entities to access and analyze them, the best way to support providers interested in building financing options around these principles might be for researchers in a government agency to analyze the tremendous population-level data they uniquely can access. They could then publish model parameters rather than the underlying data, allowing private-sector entities to build on top of that data. With access to model parameters (e.g., regression coefficients for a tractable model of earnings conditioned on age, degree attainment, schools attended, and major studied along with variance estimates and earnings autocorrelations), funders would be well equipped to set terms for financing offered to students attending different schools and pursuing different fields of study.

There will always be some degree of uncertainty no matter how great the available data. There will never be a perfect match between the external circumstances that prevailed at the time the data were generated and the circumstances that will prevail in the uncertain future. For example, there may have been different economic conditions during graduates' early working years reflected in the data, while a future graduate may or may not experience the same shocks. Or a given academic program could be on a path of improvement or deterioration, so the completion rate or quality of workforce contacts and career placement could differ between the students' experience reflected in the data and the future.

In this sense, historical income data are more like a telescope than a crystal ball: Looking at the result of a graduate 10 years past entry is like gazing at a star 10 light-years away. But the main point remains that the higher the quality of the historical income data, the better it will translate into greater certainty in modeling and, in turn, lower costs, allowing us to create more protective programs for students.

Identifying High-Quality Pathways

The prior section highlighted how earnings data are crucial to the financial models that undergird BFF's community funds. That said, there is a second way in which earnings data are essential to the success of these programs. As mentioned in the introduction, what sustains BFF's funds is our students' success. We give that success a strong boost by providing support to eliminate key financial impediments students face (and structuring it in a way that students are comfortable using because of the protections it offers).

But addressing financial impediments is only half this equation. Students should receive nonfinancial support through our partners and attend educational institutions that will give them a strong foundation for success in school and afterward. Fundamentally, we can provide the best-structured financing in the world, but it does not serve our students or our program well if students are attending institutions not built around their success.

To that end, a key part of BFF's work is identifying what we call "high-quality pathways"—educational institutions with or without wraparound support from outside community-based organizations—that provide a strong foundation for student success. This process requires looking at institutions' outcomes, such as their graduation rates and graduates' after-school earnings, to understand which institutions and programs are doing well by students, particularly underserved students. To be sure, we are not in a position to conduct a comprehensive audit of the quality of each institution nor represent that to students. But over time, BFF's vision is to have identified a rich set of educational pathways in each community that have strong outcomes for underserved students with a diverse set of educational and career preferences. BFF's community fund would then make it possible for underserved

students to pursue those pathways without financial barriers.

BFF's work on its definition of high-quality pathways is still in the early stages. Our initial work has focused on supporting underserved students in the context of one type of pathway: students pursuing a bachelor's degree and participating in a core group of college success partners with whom we have partnered in this early stage of our work and with a relatively small number of institutions generally local to our program.[9] For this reason, this section will describe the contours of our thinking with respect to identifying new high-quality pathways as we grow and the role of earnings data in that process.

Many readers will likely notice a parallel between this discussion and debates around accountability measures for federal aid programs. This is no coincidence; the problem is quite similar. Accountability policies like the gainful employment rule are an attempt to ensure that programs not living up to a certain quality or value standard cannot receive federal aid dollars. We face similar questions in BFF's programs. In short, we want to make sure we are opening doors to educational options that will truly be of value to the students we are serving.

One of the challenges of any approach we produce for choosing high-quality pathways is what criteria to use to assess value. Postsecondary education can offer value in many ways, ranging from improvements in economic circumstances to cultivating stronger citizens. Students also have their own feelings about what they value. Fortunately, BFF's mission can help narrow this question, which in turn makes it easier to think about the most impactful types of data for a program like this. Specifically, BFF's mission is to help underserved students achieve economic self-sufficiency and the agency needed for them to build the life they want to have. It is not to push them to fields that maximize their earnings.

With this context in mind, it becomes easier to think about how a good program looks. We want high-quality pathways that help *underserved students* achieve economic self-sufficiency. Obviously, even this narrower standard requires further definition. One place to look is an "educational adequacy" standard Anthony P. Carnevale, Artem Gulish, and Jeff Strohl proposed in their paper "Educational Adequacy in the Twenty-First Century."[10]

This chapter argues for an educational adequacy standard rooted in a program's ability to get students to a minimum level of earning ($35,000) within 10 years of graduation and a return-on-investment standard that considers the program's cost. Applying this proposed standard to BFF's mission, we would seek programs that give the underserved students we are serving a strong chance of reaching that earnings level in that period.

We are often asked about fields, such as social work or teaching, that have public benefits but are not the highest-earning occupations. We *do* believe part of our broad access mission is to open pathways across a wide array of educational and career preferences. However, we do not see these goals as in conflict. To use these two fields as examples: The salaries for entry-level social workers and teachers are roughly $43,000 and $45,000, respectively, an amount that is over three times the poverty level for a single individual.[11]

The point is not to take a position on whether these professions are adequately compensated. Instead, it is to say that even jobs in these public-interest fields tend to pay at levels that support basic economic self-sufficiency. As such, we should not let the importance to our mission of supporting students who aspire to enter these occupations alter the basic expectation that we want all our educational pathways to give students a strong chance at reaching economic self-sufficiency.

There is an important subtlety worth drawing out in the definition above. If one is simply looking at the average earnings of students coming out of a program or institution, this metric will mask important differences across institutions. In particular, from the perspective of our mission, we would prefer a pathway that helps a high fraction of underserved students achieve economic self-sufficiency rather than a pathway that helps a smaller fraction of students achieve high earnings, leaving many students failing to escape poverty. For this reason, distributions of earnings outcomes are important.

We would prefer to look at how a pathway is serving underserved students at the 25th percentile of after-school earnings rather than looking at the average earnings of underserved students who have pursued that option.

As mentioned earlier, we have not fully operationalized a standard that would provide a scalable process for selecting which institutions and programs are doing well by our students. But in the analysis so far, we can see both how advancements in the data available can support this work and the limitations of those data. The College Scorecard, for example, provides after-school earnings data by institution and program. These data are broken into distributions, which is helpful for the reasons mentioned earlier.

That said, the data are not broken out by completers and non-completers, something that creates a challenge in implementing the educational adequacy standard mentioned earlier, which is premised on completers' earnings. Furthermore, College Scorecard data are provided for six and 10 years after *enrollment* rather than after the student leaves school, which can make it difficult for determining typical earnings patterns at a defined point. Finally, College Scorecard data are available only in the universe of programs eligible for federal aid, making it difficult to measure and support innovative pathways that exist outside the federal aid system. All this represents potential areas for improvement that could further build on the strong foundation of earnings data already made available in the system.

Another way to measure the efficacy of different educational pathways is to look at the degree to which they can *lift* students from their current level of earnings to a higher level of earnings. While BFF's thinking about pathways is more focused on its ability to get students to an objective standard of living, there are ISA providers interested in a program's ability to help students reach a higher level of economic success—often tied to the typical salaries in the field or fields that are the focus of the educational program.

To this end, while likely a more complicated process, it could be valuable for policymakers to use datasets available through the Department of Education and the Treasury Department to make available distributions of after-school incomes by institution and program and break them out by the income brackets students were in before enrolling in the program (or those of their parents, for traditional-age students). This would allow funders to understand which programs are truly helping students lift their income potential relative to where it was when they entered the program.

Conclusion

For the past several years, we have sought to build a financing option for underserved students that overcomes key impediments these students face to reaching graduation. These programs are showing promise, with strong persistence and graduation rates for students BFF has served. In a higher education system plagued by inequities in access to financial support and substantial hardship from fixed-payment student loans, policymakers should strive to encourage new models.

Programs such as ours, by their nature, depend on access to student outcome data. This is the case, fundamentally, because these programs are designed to be *sustained* based on student outcomes—and thus they must be modeled on that same data. Furthermore, done correctly, these programs should help students access educational pathways that will set them up for success. As a result, organizations building and managing these programs must have access to institution- and program-level data with which to help identify those pathways truly doing right by students—and, particularly, underserved students. The substantial investments that policymakers and other private actors have made in earnings data have made this work possible, and further improvements should be welcomed.

Notes

1. Barry Cynamon has since moved to the Student Freedom Initiative, a nonprofit also using income-contingent financing to support students at minority-serving institutions. However, he still engages with and supports Better Future Forward's (BFF) work.

2. Andrew Howard Nichols and Marshall Anthony Jr., "Graduation Rates Don't Tell the Full Story: Racial Gaps in College Success Are Larger Than We Think," Education Trust, March 5, 2020, https://edtrust.org/resource/graduation-rates-dont-tell-the-full-story-racial-gaps-in-college-success-are-larger-than-we-think/.

3. Ben Miller, "The Continued Student Loan Crisis for Black Borrowers," Center for American Progress, December 2, 2019, https://www.americanprogress.org/issues/education-postsecondary/reports/2019/12/02/477929/continued-student-loan-crisis-black-borrowers/.

4. Jennifer Ma, Matea Pender, and CJ Libassi, *Trends in College Pricing and Student Aid 2020*, College Board, 2020, https://research.collegeboard.org/pdf/trends-college-pricing-student-aid-2020.pdf.

5. To be eligible for BFF's program, a student must be enrolled full-time at a public or nonprofit eligible institution; participate with one of BFF's college success partners; meet the standards for Satisfactory Academic Progress; be a US citizen, permanent resident, or "Dreamer" with Deferred Action for Child Arrivals status; and pass an adverse credit-event check that mirrors the check required for a Direct Plus Loan. Credit score is not a consideration.

6. For example, students often end up with an unpaid balance at their institution, something that can be a higher education cul-de-sac. With a prior balance, the institution will often place a hold on the student's record, making it impossible for the student to reenroll. The student typically cannot use traditional aid sources such as grants and federal loans to cover these prior balances. In addition, if the student tries to transfer to another institution, they are often stymied because they cannot transfer their records until the balance is paid. This can occur when students are forced to either delay paying a tuition bill because they lack money or withdraw from a prior semester in the middle of the term (often due to family circumstances). In the latter case, withdrawing in the middle of the term can cause the student to lose a portion of their financial aid even as they still owe most or all their tuition for the term to the institution—creating an unpaid balance.

7. This percentage of income only varies by the amount of funding a student receives. It does not vary by institution, a student's major, or any other characteristic.

8. Opportunity Insights, website, https://opportunityinsights.org/.

9. Our mission in this stage is to prove we can create a new model for student finance that (1) serves a diverse population of students (academically, demographically, geographically), (2) helps students persist and graduate at high rates, (3) helps student success translate into financial sustainability for our community fund (in accordance with our models), and (4) achieves all this while being demonstrably protective of students on the back end when they have a payment obligation to the fund.

10. Anthony P. Carnevale, Artem Gulish, and Jeff Strohl, "Educational Adequacy in the Twenty-First Century," Century Foundation, May 2, 2018, https://tcf.org/content/report/educational-adequacy-twenty-first-century/.

11. Salary.com, "Entry Level Social Worker Salary in the United States," July 28, 2021, https://www.salary.com/research/salary/posting/entry-level-social-worker-salary; and Salary.com, "Entry Level Teacher Salary in the United States," July 28, 2021, https://www.salary.com/research/salary/posting/entry-level-teacher-salary.

Show Me the Data

THE ROLE OF CAPITAL MARKETS IN FOR-PROFIT COLLEGE ACCOUNTABILITY

Trace Urdan and Paul Fain

> Investors will act on information if they have it. . . . People ask the question now, more than they did, about what the salaries are when you graduate. That is unquestionably true. Investors are asking for that. Schools are providing it.
>
> —A public market investor in for-profit higher education[1]

A decade ago, Sen. Tom Harkin (D-IA) told a reporter what he saw as the key problem with for-profit colleges. "They're on the hook to Wall Street," said Harkin, who at the time chaired the Senate's education committee and was leading an aggressive investigation of the for-profit sector. He went on to specifically criticize the University of Phoenix, which he said started with a "pretty good model" that went downhill once it became publicly traded in 1994. "What really turned this company is when they started going to Wall Street," said Harkin, who retired in 2015. He added that Phoenix "started raising hedge fund money, and then they had to meet quarterly reports, and all they were interested in, basically, was 'How much money ya makin?'"[2]

Harkin's take reflects a common belief among critics of for-profit schools. The argument is that institutional investors in public equities (i.e., "hedge fund money") and their private market counterparts (i.e., private equity firms) as a rule press management teams of for-profit colleges to make money at the expense of high-quality instruction to students. These institutional investors, the argument posits, care only about near-term profits, even if it means the value of the product being offered—in this case, an education that leads to gainful employment—is poor or not worth the price being charged. But this perspective ignores well-established theory and practice in professional investing.

Instead of reflecting a company's earnings today, the price of an equity reflects the net present value of a company's future earnings, which of course depend on a strong, sustainable value proposition and brand. And as we know from recent events,[3] student outcomes can make or break both the value proposition and the brand of a for-profit college. In short, investors', students', and policymakers' interests are often more aligned than popular views suggest. They each have a stake in the quality of student outcomes that a for-profit college delivers.

All three stakeholder groups also confront a related challenge. Assessing the value that a for-profit college provides requires high-quality information about student outcomes—information that has historically been in short supply. But that is changing; in recent years, vast amounts of data on what students who attended individual institutions and programs go on to earn—and whether that justifies the tuition and debt they must pay—have been made

available to the public for the first time. This development will have a major effect on the way investors value for-profit institutions and in turn will improve quality across the sector.

To elucidate these points, we spoke with a range of institutional investors in for-profit school companies: both those invested in public equities who read the "quarterly reports" cited by Sen. Harkin[4] and private equity investors who control the boards of directors to whom school operators answer. We asked them about their perceptions of the value proposition among students attending for-profit schools and how their views may have changed because of the Obama administration's efforts to measure and regulate the value proposition through the gainful employment rule.[5]

The rule used program-level data for cohorts of graduates to compare student debt loads to postgraduate income. The US Department of Education then made judgments about what were appropriate ratios (backed by the threat of sanctions, including the loss of federal aid eligibility). Although some broad federal data about student borrowing had been available previously at the college level, this was the first time such debt information was provided for specific programs. And the income data, negotiated through an interagency agreement with the Social Security Administration, had never been available to regulators or college operators, much less to investors.

Our interviews focused on institutional investors versus individual or family owners of colleges, because of the widely held sentiments expressed by Sen. Harkin and because of the stakes associated with investor involvement. These investors represent billions of dollars, and their opinions of management competencies and practices can determine whether a CEO or a board retains their position.

Furthermore, professional investors are inherently analytical. Whether they represent a hedge fund, a pension fund, or a private equity firm, these investors employ teams of analysts to determine what may be a good or bad investment. Companies that they judge as a good investment receive a high price, while those they deem a poor investment receive a low one. In this respect, investors are constantly measuring and judging schools' value propositions.

A Modern History of For-Profit College Investment

The modern era of institutional ownership of for-profit schools began in the 1990s, with the listing on public exchanges of several entirely (at that time) brick-and-mortar schools. DeVry Institute (later DeVry University), perhaps the best-known trade school in the country, in 1991 became the first such school to go public. Its initial public offering (IPO) on the Nasdaq had a market capitalization of $119 million in today's dollars.[6]

But it was the IPO of Apollo Education (parent company of the University of Phoenix) in 1994 and the university's subsequent growth—first geographically and then online—that captured investors' imaginations and firmly established for-profit colleges as an investable sector.[7] This was followed by more colleges with IPOs, large investments, and school consolidation by private equity firms that could now see the public markets as an eventual exit.

While public and private market investors share the goal of a return on investment, the two groups feature important distinctions. Public market investors must rely on publicly available information provided by the company or other open sources to judge a school's practices and prospects. To a large extent, they must also rely on attestations provided by the managers of the companies in which they invest and their own judgment of the operators' competence and transparency.

Operators themselves are obliged to disclose material information, whether positive or negative, but are permitted to set the parameters of that disclosure to avoid providing competitively sensitive data. While these investors analyze large amounts of data, they also discount that information based on their impression of management's trustworthiness. Private market investors, on the other hand, are much more intimate owners and have access to far better information and the ability to direct operations or

proscribe systems to affect performance and, in this case, student outcomes.

In the 1990s, professional investors initially were attracted to the large market of working adult students who had previously been mostly ignored by traditional institutions. And the potential for making college convenient and relevant for these prospective students grew toward the end of that decade when schools began offering their courses via the internet—the ultimate expression of convenience.

Investors also liked the financial characteristics of these institutions, including positive working capital (as long as they continued to grow) resulting from the traditional practice of charging tuition in advance of service. They were attracted as well by the economies of scale, which compounded in the online model because fixed costs could be shared across large numbers of students. Finally, all this growth was fueled by a federal financial aid program explicitly designed to expand access to higher education.

Efforts by the Obama administration to increase regulation of the sector, including through the gainful employment rule, sparked a period of intense and sustained scrutiny from legislators, regulators, and the press. Consumer advocates were particularly energized by these efforts and have helped keep a negative spotlight on the colleges during the subsequent 12 years.

The increased attention to schools' recruitment practices and the labor market outcomes of their graduates contributed to some high-profile institutional collapses and severe enrollment declines across the sector. Amid the turmoil, critics pointed to private ownership as the root problem behind poor student outcomes, rather than the actions of the so-called bad-actor colleges themselves, many of which collapsed.

The Case Against Markets

Behind this theory of systemic abuse in the for-profit school sector is the idea that typical market mechanisms do not reward quality or punish fraud in higher education. Unlike other consumer goods and services—where higher-quality offerings thrive and lower-quality offerings fail based on a buyer's evaluation and experience with the product—this mechanism doesn't work for higher education because it represents a "trust good," meaning the consumer relies on the provider to define quality, even as they deliver it.[8]

If a student graduates with strong assessments from a low-performing school, they may not understand that they have received an inferior product until much later. And even then, the student may be disinclined to broadcast those inferior outcomes to others. According to the logic of this concept, nonprofit and public institutions are the best providers of trust goods because they do not distribute excess cash flow and therefore their operators are less interested in maximizing revenue and more inclined to consider and protect student interests.

The corollary to this argument suggests that the opaque and ill-defined nature of quality education and the distorting effect of third-party payers, in which students may feel insulated from the cost of their education, encourage fraud by self-interested owners of for-profit colleges and their agents. This argument insists that economic drivers inevitably lead for-profit schools to maximize profits through underspending on instruction and misrepresenting outcomes as a marketing technique. Even if the inevitable market correction follows, it comes too late and inefficiently to avoid hurting large quantities of students.

According to this logic, there are no good actors—only bad incentives—and therefore strict and intrusive government oversight is the only effective remedy for abuse in this sector. This argument rests on three fundamental assumptions:

- That consumers themselves have no ability to effectively gauge whether their instruction has been acceptable or sufficient relative to price,

- That there is no timely and effective mechanism to communicate poor customer satisfaction to prospective consumers, and

- That owners see no long-term advantage to delivering a quality product.

Criticism of the industry and the corresponding bad publicity, particularly in relation to comparably positioned nonprofit programs, represent reasonable refutations of the first two assumptions.[9] In this chapter, we examine the third assumption: whether the institutional owners of for-profit colleges know or care about long-term student outcomes and how they have responded to the emergence of better student outcomes data, in particular the program-level debt-to-earnings data that were the foundation of the gainful employment rule. Understanding how professional capital providers assess value when making and monitoring their investments in for-profit colleges supplies important context for the regulatory process. It also provides important context for the question of whether market forces can effectively supplement or in any meaningful way supplant regulatory controls.

The idea that investors care about consumer value is routinely dismissed by critics, who tend to view investors as being mindlessly fixated on near-term, year-over-year top-line growth and unable or unwilling to consider consumer benefit or value. This philosophy was part of a new wave of consumer advocacy and an aggressive reform agenda during the Obama administration. And in recent years it has become a meaningful component of the political identities of Sen. Elizabeth Warren (D-MA), Vice President Kamala Harris, and other leading progressive political figures.

A good example of this line of thinking is a 2014 essay by Bob Shireman, a senior fellow at the Century Foundation who helped lead the Education Department's gainful employment push during the Obama administration. In the piece, which was published by the Center for American Progress and titled *Perils in the Provision of Trust Goods*, Shireman argues that these institutions' desire to produce profit subverts or corrupts the otherwise normal capitalist impulse to serve consumers' best interests.[10]

The conceit of this market failure argument is that unwitting—or worse, uncaring—investors happily support institutions despite being aware of their poor market value, provided the colleges produce growth and effective financial returns. In this framing, the assumption is that as long as students generate a return in excess of the cost to acquire and serve them, investors have little interest in whether students complete their studies and even less in whether the students realize an effective return on their investment.

In another article, published by the Century Foundation, Shireman argues that the relatively easy access to federally sponsored grant and loan programs renders unreliable the sort of consumer behavior that might normally signal an acceptable level of product quality.

> In education, however, the simplistic and narrow indicators of business "success," such as growth in the number of paying customers, lead for-profit schools astray, especially when federal aid makes the sales job so easy. Lacking the restrictions and oversight of public and nonprofit entities, the business navigation systems steer them into practices that trample students' interests.[11]

Explicit in this argument is that the governing boards of public and nonprofit institutions can be relied on to protect against any poor service that might be provided by college administrators and faculty members. Implicit in the argument is that the for-profit equivalent—company boards of directors—cannot. Industry critics presume that investors overseeing the operation of a school see no explicit benefit in providing value to consumers but rather are motivated simply to maximize near-term gains. Shireman writes:

> Investor pressure to reduce costs and to grow an enterprise is constructive when the product or outcome is well defined. However, when the product is intangible—such as with higher education—those same pressures can destroy consumer value without the consumer even being aware. Nonprofit status addresses this problem by eliminating owners and investors from the equation, leaving the institution's

> management answerable to a board that uses criteria other than personal financial benefit to set organizational priorities.[12]

This frame may be too simplistic for several reasons. First, nonprofit and public entities face pressure to grow and maintain revenue above costs that is similar to the pressure felt by privately owned institutions. And for this reason, these sectors of higher education are subject to the same potential incentive to sacrifice the quality of an intangible product or permit the cost of attendance to rise beyond the point of reasonable value for money. Additionally, investors in for-profit schools are able to appreciate the logic associated with ensuring that consumers are receiving value in exchange for money.

Critics' take on for-profit colleges often rests on the notion that higher education's value is intangible. This may be true for selective liberal arts institutions, but in the case of for-profit colleges, the resultant product is not so esoteric. An attractive labor market outcome (e.g., a new job, advancement, or promotion) is the clearly identifiable validation of school quality and value. In the internet age, these outcomes are increasingly easy to investigate through informal channels.

Another argument holds that the diffuse and delayed nature of labor market benefits associated with obtaining a postsecondary credential disrupts the feedback loop that would otherwise cause poorly constituted programs to fail in the market, allowing colleges to continue to grow and flourish with low-quality offerings. For example, whether a graduate of a diesel technology program has generated a relatively good earnings return for a certificate may not be clear for several years after they complete the program.

But the rapid advancement of the internet and social media over the past 12 years has sapped this objection of its force in real time. While it may have been somewhat true in 2009, when the Obama administration's first efforts to reregulate for-profit schools began, it was less true in 2014 and even less so eight years later. All the ways that markets work efficiently to share and digest complex information about goods and services for prospective customers also apply to the purchase of a career-oriented education in 2021.

Furthermore, strong word of mouth is the most efficient and lowest-cost source of new students. As a result, smart, ethical operators have ample motivation to provide good quality for money, as this is the best way to guarantee a strong and stable return on investment and to generate the strongest net present value. It is perfectly reasonable to assume that schools with the lowest cost of student acquisition—which are therefore the fastest-growing institutions—are those providing the most value for money. Few have questioned whether this is the case with the dramatic enrollment growth of the nonprofit Southern New Hampshire University, currently the largest university in the United States.[13] Instead, Southern New Hampshire University's remarkable expansion typically has been hailed as evidence of its strong value proposition.[14]

Less-ethical operators and investors eager to perpetrate a short-term scam exist in every industry. But this is not an inevitable or even common result of the incentive system for for-profit school operators. In fact, it is anathema to a professional class of operators and sponsors. In the modern era of for-profit education, when larger schools are increasingly owned by professional investors in both the public and private markets, a focus on student outcomes is paramount.

Investors' interest is not simply in growth but in sustainable growth. And while faster near-term growth may be appreciated, information that qualifies or challenges the sustainability of that growth drives investors to pressure management to make corrections or alternatively causes them to exit or avoid the investment, creating an effective control on inappropriate behavior. In this way, rather than being a force that pushes schools toward lower educational quality, it pushes them toward producing higher value for the dollars invested.

Public market investors are attracted to companies that demonstrate strong long-term value and high customer satisfaction. And despite assertions to the contrary, strong student demand is one measure

of that value in higher education. However, when contradictory measures emerge, such as poor outcomes data, consumer complaints, and other forms of negative publicity about student outcomes, stock prices have fallen.[15]

Similarly, the goal of private equity investors is to add value to portfolio investments and to sell those assets—in this case, schools—for a higher price. In the process of evaluating the value of assets in such a transaction, objective measures of student value and satisfaction are paramount once again. This includes low student acquisition costs, high rates of student persistence and completion, strong labor market outcomes, and healthy loan-repayment rates.

Nowhere has investors' reliance on student outcomes data been more apparent than during the gainful employment era. As these data have become more widely available, they increasingly have become a tool for both public and private market investors to understand and assess the fundamental value proposition of colleges. And while an important component of the data's effectiveness was the explicit regulatory threat to certain programs' viability, we heard repeatedly from investors who made decisions about schools' fundamental value based on these data or metrics like them, absent any specific regulatory threat.

Earnings Data Reality Check

The cases of ITT Tech and Strayer University provide two vivid examples of how the introduction of hard data around student outcomes affected investor behavior. In 2010, the Obama administration released preliminary data on student outcomes for thousands of for-profit programs as it prepared to develop its gainful employment rule.[16] Because these data were the first to provide debt and earnings for recent program graduates and information about loan repayment rates, investors had a new, more precise, and more reliable way to assess the value proposition that for-profit colleges offered students. Its effect on the market was immediate and profound.

Most of the investors we interviewed for this report said they previously relied on reports that for-profit college companies themselves put together on student outcomes, such as earnings or alumni satisfaction. As such, there was a risk that the information was incomplete and unreliable. They also had access to data from the Education Department on student retention, graduation, and loan default rates.[17] While these metrics were arguably more reliable, having come from the government, they still say little to nothing about how former students fare in the labor market. Only data on earnings can do that. As a result, available information about students' return on investment was either inadequate or dependent on potentially self-interested and unstandardized reporting from for-profit college companies.

The initial data release as part of the gainful employment rule had several immediate and visible effects in the public markets. Of course, it depressed the prices of for-profit college stocks that had a material number of failing programs, presumably due to fears over regulatory consequences. But in a couple instances, it had a more pointed effect, demonstrating specific pressure from investors due to substantially changed perceptions about the consumer value of the schools' products. Because these revelations were associated with potential penalties, we have no clean test of investors' influence over service quality. But the cases of ITT Tech and Strayer may be instructive.

For several years before the Obama administration's release of gainful employment data, criminal justice programs had been a major growth driver at ITT Technical Institutes (owned and operated by publicly traded parent ITT Educational Services). The programs were enormously popular with students. Investors closely followed their rollout schedule across the school's network of campuses, anticipating the enrollment growth to follow.

The secret to the programs' success was the ability to market them on the backs of procedural crime shows on cable television. Advertising during the commercial breaks of *CSI: Crime Scene Investigation* lit up the phone lines with enthusiastic new student

inquiries. As a result, the student acquisition costs for criminal justice degree programs, whether at the associate or bachelor's level, were low, which made the programs especially profitable for the company.[18]

However, unbeknownst to investors, the employment outcomes associated with these fairly novel offerings were especially poor, leading to jobs in retail security rather than police crime labs. The ITT criminal justice programs that had been a reason to invest in the stock months earlier failed the department's proposed debt-to-earnings test across the board due to low graduate earnings. The data release was shocking to investors and led the company to terminate the programs shortly afterward.[19] In many ways, this revelation was the first in a series of events that would dramatically alter investors' views of the quality of ITT's programs, the judgment of its management, and the sustainability of its business model. The company later collapsed, thanks in part to sanctions imposed by the Obama administration.[20]

A similarly shocking surprise came with repayment-rate data released about Strayer University (then owned and operated by publicly traded Strayer Education). As part of the original gainful employment regulatory proposal, the data showed how many graduates in a given program cohort had successfully repaid at least $1 of principal on their outstanding loan balance.[21] The publicly posted repayment data for Strayer, which had previously been considered irreproachable and among the highest-quality assets in for-profit higher education, were far weaker than investors expected.[22]

The revelation sparked a decline in the share price and valuation multiple from which the company has never fully recovered. Strayer insisted these preliminary data were erroneous. The repayment data were not ultimately part of the final rule, and Strayer never faced any direct regulatory consequences resulting from its weak showing. However, together with several other factors, the gainful-employment numbers contributed to investors never again holding Strayer in quite the same regard.

Public market valuations are always a complex and difficult-to-decipher mixture of considerations. The share prices of publicly held for-profit colleges are primarily influenced by earnings expectations and sustainability. But regulatory risk, perceived management ability, and even social good also are factors. At some level, irrespective of their assessment of regulatory consequences, public market investors punished ITT and Strayer stock for not delivering the value to consumers they had previously expected of those institutions.

Investors understand that bad products lead to big problems for consumer service companies, regardless of possible regulatory consequences. And the development of better information on student outcomes feeds a very real market-based enforcement mechanism that supports the delivery of a quality education product beyond mere good intentions or moral motives.

The example of the introduction of gainful employment and the reaction of professional investors to that information suggest that the issue with for-profit schools may not have been insufficient oversight but rather insufficient information for the operators and their overseers. And when asked to reflect on the rule and its impact, several investors—even some of the ones who took a financial hit during that period—said outcomes metrics are here to stay and that their introduction was a welcome development, at least in retrospect.

Before Gainful Employment: How Investors Thought About Outcomes

Investors paid a range of attention to student outcomes before the introduction of the debt-to-earnings and loan repayment data through gainful employment. What we heard from both public and private market investors was that outcomes were either assumed or inadequately measured. Public market investors were occasionally oblivious to the issue or reliant on limited data and attestations by school executives. Common proxies for quality included graduation rates, cohort-default-rate measures, and self-reported or accreditor-mandated job-placement rates. In most cases, however, these investors relied on anecdotal information presented

by school managers through student and employer testimonials, often delivered face-to-face at investor meetings.

Private market investors claimed a better focus on student outcomes. But that information also was limited by what they could survey from graduates. Their judgment of adequate outcomes tended to be more in line with the employment-placement requirements of national accrediting bodies, which are more liberal than the standards eventually imposed by the gainful employment rule.

In our interviews with public market investors, we heard a common refrain: Before the emergence of gainful employment metrics, school quality was nominally valued in that different school companies with similar earnings traded at various prices, but the specific basis for these judgments was hard to pin to a specific set of measures.

Quality was assessed through multiple inferior proxies. Regionally accredited schools, which could claim the same accreditation as elite institutions, were viewed as superior to nationally accredited vocational schools. Institutions that offered master's and doctoral programs were valued over schools offering primarily pre-baccalaureate certificates or associate degrees. And schools with lower two- and three-year cohort loan-default rates were viewed as higher quality, with no real awareness of how many students might be in deferment or forbearance (and so were excluded from the measure).

According to one long-time investor relations executive:

> There was just a general understanding of who the quality providers [were]. And I think [investors] assumed that the more degree oriented, the more credential oriented, and the higher you go up in the degree category, were higher-quality students. . . . They were willing to take the idea of regional accreditation and higher degree levels as the measures of quality.

Other public market investors were less charitable toward their peers and credited the ignorance around outcomes before gainful employment as having been more willful, with one saying, for example, "A lot of people were investing in these [stocks] without doing that much research. . . . They're not thinking for 10 minutes about what the outcomes were."

This investor also described a desire by his colleagues to understand outcomes but without any useful data:

> We were thinking about this and trying to understand it. But we didn't have the data to actually do that. . . . Most of what I was doing was talking to the company about it. And it wasn't clean data to analyze. Then you come down to the question of whether you trust the [company executives] and what they're telling you.

Investors also cited how inadequate previously existing metrics were as a proxy for outcomes quality, such as whether students repaid their loans. They had access to data that could hint at repayment rates but not data on actual repayment rates. The two turned out to be quite different, as another said,

> Prior to [the gainful employment rule], the metric that was most accessible was two-year [cohort default rates], also deferment and forbearance: these were all Latin for not repaying your loans. We didn't really understand what the magnitude of that looked like until we got the repayment data itself.

Private market investors had similar, if more nuanced, responses, given their greater proximity to the operations and their ability as majority owners to obtain better information. Several longtime investors insisted that they examined a wide range of outcomes data before the introduction of the gainful employment measures, including starting salaries, student loan default rates, student satisfaction surveys, time to completion, graduation rates, and their own measure of value. One investor said, "To us what was really important was the quality of the programs, the quality of the outcomes. So, we would always look at completion rates, graduation rates, time to graduation. We would also look at [a return-on-investment] measure."

Still other private market investors acknowledge that before the gainful employment rule, good data were in short supply, and many private equity investors then active in the college market were unsophisticated, saying, for example, "What private equity did, and where they fell short in the early 2000s, is to conflate financial success with quality. And think that because something is growing and enrolling more students it must be good."

According to another private equity investor, before the gainful employment rule and the data it made available, investors generally underestimated how difficult it was for students to successfully complete the degree and find an attractive job placement.

After Gainful Employment: The Effect of Better Outcomes Data on Investing

Rather than measuring simple completion or the fact of employment through placement rates, the gainful employment data provided the first information about the quality of that employment. In the case of ITT's criminal justice programs, security guard positions qualified as "employment in field."[23] But the job placements—and the earnings—fell far short of an outcome that justified the prices ITT was charging for its programs. In addition, the loan repayment rate data were the first glimpse offered to investors of how the availability of federal-loan relief programs, such as forbearance, had made schools' loan default rates appear much better than the burdens their students were actually experiencing.

The responses of public and private market investors to this new and higher-quality data reflected their different positions. Public market investors were more surprised by the data and more apt to be offended by the disconnect between popular perceptions (or management claims) of institutional quality and the results presented in the regulatory data. Private market investors found the information equally revelatory but were more apt to see the flaws in the measurement or datasets and the challenges associated with making inflexible rules around the data.

All the public market investors we spoke with acknowledged that the disclosure of the gainful employment information had a dramatic effect on their opinions of the schools and their programs. Even schools with strong reputations had bad programs per the measures. And these investors' views extended beyond regulatory risk to a reassessment of quality. One investor said, "When the rules were proposed, everybody focused on it. When the department dumped the data to everybody about the programs, we sorted through it and saw how people stood. And it was eye opening."

If some had been oblivious to outcomes, or imprecise in their definitions, the release of the data focused their attentions on specific measures. One investor said, "[Reregulation] forced a lot of investors to ask the question more precisely: What is the definition of quality? Persistence, graduation, cohort default rates. Things they could see and quantify."

If some investors focused on the earnings and debt data, others focused more on the loan repayment rate disclosures, which revealed something that has since become more widely understood across all of higher education. That is, many graduates were making poor progress in repaying principal on their student loans. One investor said,

> When we got that initial snapshot of how many people in the prior four years were able to repay a dollar of loan principal, it shed an enormous light on all of higher education. That was the initial time that I appreciated just the overall magnitude of how bad the student loan repayment issue in the United States of America was.

Given their greater proximity to the schools, private market investors had a more ambivalent view of the gainful employment data, which they viewed as less revelatory and regarded with a greater degree of skepticism due to the limitations of the data and the conclusions it suggested. One private investor told us, "It's a starting point. . . . You're going to see numbers that are skewed. Unfortunately, [the gainful employment rule] doesn't capture appropriately a lot of different scenarios."

Another noted, "It was definitely helpful from the standpoint of understanding the cost of the program versus the employment outcomes. A lot of the data was flawed. But we were already running similar types of metrics."

Understandably, some investors, whose assets lost enormous value in the reregulation of the sector, including schools that had to be shut down or sold at severe discounts, were bitter that the rules seemed to change so suddenly. They complained that the colleges had too little control over the debt taken on by students and that the federal metrics were ultimately too ham-handed. As one of the investors said,

> [Program outcomes] should be individually measured based on what students are promised. Financial related outcomes . . . may be a way to help you figure out where the bad cases are first. But the accreditors should have been there five years ago.

The Role of Outcomes Data Today

The introduction of the gainful employment data and its ongoing maintenance in some form by the affected schools has fundamentally changed the nature of investing in the for-profit school sector. Investors who remain in the sector have maintained a focus on value for money and are far more concerned with the underlying return on investment than simple regulatory compliance, though that remains important too. This concern has—indirectly with public market investors and directly with private market investors—created a new market-based control mechanism around program quality.

Now that the measures exist and investors are more aware of the measurable disparity of outcomes among schools, investors have pressed for-profit colleges on these points. The labor market return of credentials goes a long way toward understanding the value an institution provides to students, particularly in career education. Investors know this, and college operators seek to demonstrate quality through their performance on these metrics. Whether that pressure is sufficient and whether it can be sustained is unclear. But it does represent markets working effectively and should be acknowledged in future regulatory efforts toward the sector.

More than a decade after these measures were first unveiled, publicly traded companies typically are resigned to their existence and have continued to track the data, even after the Trump administration eliminated the gainful employment rule. The schools in the hands of professional investors, whether publicly traded or in the private markets, measure, operate, and price their programs as if the rules were in complete effect, as they fully expect them to return.

Neither category of investor will own schools that underperform these metrics, tying their value quite directly to the measures. And school operators feel pressure to eliminate programs that are viewed as substandard. Several investors we spoke with—even those resentful of what the regulatory skirmishes cost them—acknowledged that the increased focus on student outcomes was a positive, if painful, step for the entire sector. As one public company executive acknowledged:

> The regulatory change that we went through at the end of the day ended up being a net positive for the industry. It caused poor performers to step up and be better. And that is good for us. And it caused the poor-quality assets to go out of business.

Meanwhile, transparent results around retention, on-time completion, placement, and salaries have become expected by public market investors. Those we spoke with who had invested before, during, and after reregulation believe that operators and investors remain far more careful about monitoring and insisting on strong outcomes. One investor said,

> Before gainful employment, the schools didn't care. They were too aggressive. It was like a buyer beware mentality. [Now, that attitude] is a lot less prevalent. Or it is checked by fear. Because these guys have been through the regulatory ringer.

Another investor expressed specific regret over the withdrawal of the repayment data disclosures, which were removed from the final measure after an industry association prevailed in litigation by arguing that the thresholds used for sanctions were arbitrarily determined.

> This data should be out there in the open and being constantly discussed, not just on the for-profit level but in higher education in the aggregate. . . . If we're not publishing the data, I feel like it's easier to avoid the conversation.

Private market investors see evidence that the criteria for investment in for-profit schools have remained focused on outcomes despite the inconstancy of the actual rule. Schools owned by private equity firms have maintained the gainful employment data, even without the rules, and, perhaps more importantly, their orientation toward outcomes has fundamentally changed. One investor said his firm is constantly asking the question, "How do we make sure that the students are getting placed and that they're actually seeing a return on their investment?"

The consensus among all the investors we spoke with was that even without the implementation of the gainful employment rule, investors are focused on student outcomes. One investor said,

> Investors will act on information if they have it. . . . People ask the question now more than they did about what the salaries are when you graduate. That is unquestionably true. Investors are asking for that. Schools are providing it.

The gainful employment process forced investors to grapple with the question of what determines institutional quality far more precisely than they had previously. It also guaranteed they would apply that and any other available information to their investment decisions going forward.

We are not so Pollyannaish to suggest that simple disclosure could solve all compliance issues. But, at minimum, we would posit that disclosures counter the idea that investor interests necessarily diminish quality. Given better information about outcomes, investor pressure helps students be better served across the entire system.

As the same investor quoted above put it, "If you put the outcomes front and center, and really use that information, it can make you a better long-term investor."

Notes

1. The authors conducted interviews with seven public market investors for this report. All the interviews were conducted in spring 2021, mostly in March, via Zoom.

2. Emily Hanford, "The Case Against For-Profit Colleges and Universities," American Public Media, http://americanradioworks.publicradio.org/features/tomorrows-college/phoenix/case-against-for-profit-schools.html.

3. Ayelet Sheffey, "5 of the Biggest For-Profit Colleges That Were Accused of Defrauding Their Students," Insider, March 23, 2021, https://www.businessinsider.com/for-profit-colleges-alleged-fraud-student-loans-debt-cancelation-education-2021-3.

4. Hanford, "The Case Against For-Profit Colleges and Universities."

5. US Department of Education, "Program Integrity: Gainful Employment; Final Rule," *Federal Register* 79, no. 211, https://www.govinfo.gov/content/pkg/FR-2014-10-31/pdf/2014-25594.pdf; and Student Assistance General Provisions, 34 CFR § 668 (2014).

6. Reference for Business, "DeVry Inc.—Company Profile, Information, Business Description, History, Background Information on DeVry Inc.," https://www.referenceforbusiness.com/history2/18/DeVry-Inc.html.

7. Investor's Business Daily, "This Apollo Launched into Orbit from Tight IPO Base," April 24, 2015, https://www.investors.com/how-to-invest/investors-corner/apollo-education-formed-ipo-base/.

8. Robert Shireman, *Perils in the Provision of Trust Goods: Consumer Protection and the Public Interest in Higher Education*, Center for American Progress, May 21, 2014, https://www.americanprogress.org/issues/education-postsecondary/reports/2014/05/21/90131/perils-in-the-provision-of-trust-goods/.

9. Eduardo Porter, "The Bane and the Boon of For-Profit Colleges," *New York Times*, February 25, 2014, https://www.nytimes.com/2014/02/26/business/economy/the-bane-and-the-boon-of-for-profit-colleges.html; Bourree Lam, "The For-Profit College Conundrum," *Atlantic*, February 11, 2016, https://www.theatlantic.com/business/archive/2016/02/for-profit-college-fraud/462219/; and Robert Shireman, "The For-Profit College Story: Scandal, Regulate, Forget, Repeat," Century Foundation, January 24, 2017, https://tcf.org/content/report/profit-college-story-scandal-regulate-forget-repeat/?session=1.

10. Shireman, *Perils in the Provision of Trust Goods*.

11. Robert Shireman, "The Policies That Work—and Don't Work—to Stop Predatory For-Profit Colleges," Century Foundation, May 20, 2019, https://tcf.org/content/report/policies-work-dont-work-stop-predatory-profit-colleges/.

12. Shireman, *Perils in the Provision of Trust Goods*.

13. Kamaron McNair, "Student Enrollment Rises the Most in New Hampshire, Least in Alaska—Plus the Colleges with the Biggest Growth," Student Loan Hero, August 25, 2021, https://studentloanhero.com/featured/student-enrollment-by-state-study/.

14. Susan Adams, "Meet the English Professor Creating the Billion-Dollar College of the Future," *Forbes*, March 28, 2019, https://www.forbes.com/sites/susanadams/2019/03/28/meet-the-english-professor-creating-the-billion-dollar-college-of-the-future/?sh=23e901ce426b.

15. See, for example, Amy Thielen, "Declines at For-Profit Colleges Take a Big Toll on Their Stocks," TheStreet, May 8, 2015, https://www.thestreet.com/personal-finance/education/decline-in-for-profit-colleges-takes-a-big-toll-on-their-stocks-13144238.

16. US Department of Education, Federal Student Aid, "(General) Subject: Release of Data and Technical Documentation for NPRM on Gainful Employment," August 13, 2010, https://fsapartners.ed.gov/knowledge-center/library/electronic-announcements/2010-08-13/general-subject-release-data-and-technical-documentation-nprm-gainful-employment.

17. These data are self-reported by schools and in some cases apply only to first-time, full-time students, excluding many for-profit students who are completing a degree elsewhere.

18. Chris Francescani, "Florida ITT Tech Campus Used 'CSI Miami' Pitch to Sign Students," NBC News, September 17, 2016, https://www.nbcnews.com/news/us-news/florida-itt-tech-campus-used-csi-miami-pitch-sign-students-n646896.

19. Katie Lobosco, "ITT Tech: The For-Profit College That Went Up in Smoke," CNN Money, September 26, 2016, https://money.cnn.com/2016/09/26/pf/college/itt-tech-lawsuits/index.html.

20. Lobosco, "ITT Tech: The For-Profit College That Went Up in Smoke."

21. Kevin Carey, "Court Strikes Down 'Gainful Employment' Repayment Rate That Was Embarrassingly Low to Begin With," New America, July 1, 2012, https://www.newamerica.org/education-policy/higher-education/higher-ed-watch/court-strikes-down-gainful-employment-repayment-rate-that-was-embarrassingly-low-to-begin-with/.

22. Strayer insisted the data were erroneous. The dispute was never resolved, as the Department of Education subsequently dropped the repayment rate metric. See Reuters, "Update 2-Strayer, Capella Dispute DoE Data on Loan Repayment," August 16, 2010, https://www.reuters.com/article/strayereducation/update-2-strayer-capella-dispute-doe-data-on-loan-repayment-idUSSGE67F0GA20100816.

23. *Jorge Villalba et al. v. ITT Educational Services*, No. 16-07207-JMC-7A (S.D. Ind. January 3, 2017), https://www.legalservicescenter.org/wp-content/uploads/2012/10/1-Adversary-Complaint.pdf.

About the Authors

Kristin Blagg is a senior research associate in the Center on Education Data and Policy at the Urban Institute. Her research spans K–12 and higher education, with a focus on funding and finance policy.

Diego Briones is a PhD economics student at the University of Virginia. His research focuses broadly on labor economics, public finance, and the economics of education.

Barry Cynamon is the director of program design at the Student Freedom Initiative, a nonprofit dedicated to ensuring freedom in professional and life choices for students attending minority-serving institutions.

Jason D. Delisle is a senior policy fellow in the Center on Education Data and Policy at the Urban Institute and a former resident fellow at the American Enterprise Institute.

Paul Fain is a journalist, author of "The Job" newsletter, and cofounder of Work Shift, a publication focused on connections between higher education and the workforce.

Stephanie Huie is a vice president with the Western Association of Schools and Colleges Senior College and University Commission. She previously served as vice chancellor for the Office of Strategic Initiatives at the University of Texas System administration.

Nicole Ifill is a senior program officer on the postsecondary success team at the Bill & Melinda Gates Foundation, where she focuses on strengthening the current postsecondary data infrastructure.

Michael Itzkowitz is the founder and president of the HEA Group, where he works with various higher education organizations and advocacy groups across the country. Previously, he was the director of the College Scorecard.

Kevin James is the CEO of Better Future Forward, a nonprofit that designs and deploys income share agreement funds to expand educational opportunity for disadvantaged students.

Jorge Klor de Alva is the president of Nexus Research and Policy Center, a nonprofit research and policy advocacy organization whose goal is the improvement of colleges striving to educate nontraditional and underserved students.

Amy Laitinen is the director for higher education with the education policy program at New America, where she focuses on federal policies to increase quality and transparency in higher education.

Sara Melnick is the deputy director of the National College Attainment Network, where she oversees projects focused on college access and success and manages the organization's budget.

Sarah E. Turner is the Sounder Family Endowed Chair and Professor of Economics and Education at the University of Virginia. She is also a research associate at the National Bureau of Economic Research.

Trace Urdan is a managing director at Tyton Partners, an education-focused professional services firm, where his responsibilities extend across the firm's investment banking and consulting practices.

Carrie Warick is the director of policy and advocacy for the National College Attainment Network (NCAN), where she leads the organization's policy agenda setting at both the federal and state levels and oversees NCAN's advocacy work and related professional development for NCAN member programs.