POSTSECONDARY

VALUE COMMISSION

MEASURING RETURN ON INVESTMENT FOR POSTSECONDARY EDUCATION: THE CASE FOR USING EARNINGS AND LOAN REPAYMENT METRICS

Ben Miller
In his former capacity with the Center for American Progress

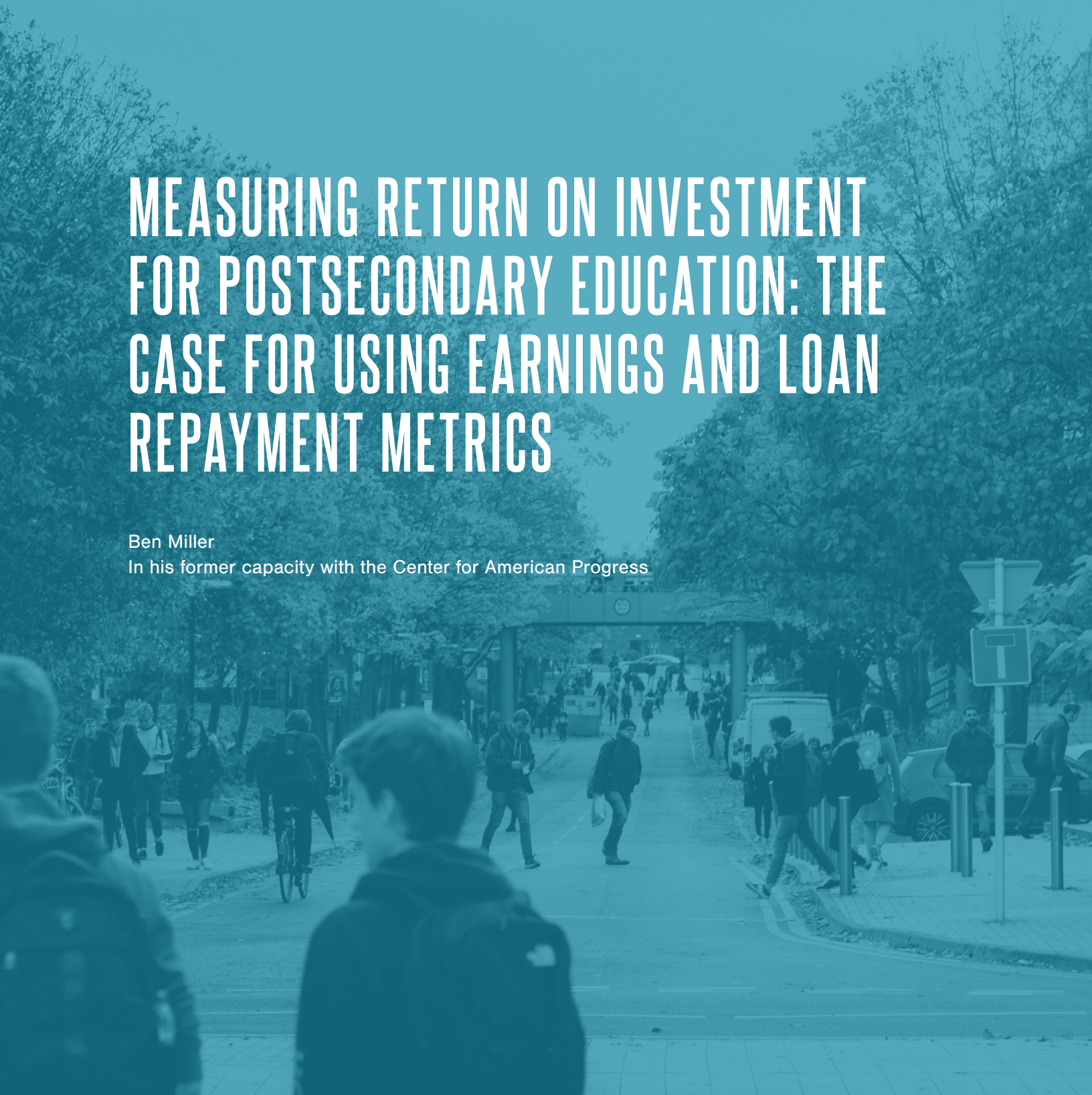

TABLE OF CONTENTS

This paper is one in a foundational research series for the Postsecondary Value Commission authored in summer 2019 by scholars with diverse backgrounds and expertise. The research presented in these papers applies an equity lens to the philosophical, measurement, and policy considerations and assumptions underlying key components of postsecondary value to students and society, including investment, economic and non-economic returns, mobility, and racial and socioeconomic justice.

The Postsecondary Value Commission consulted this foundational research as it developed a conceptual definition of postsecondary value, a framework for measuring how institutions and programs create value and ensure equitable outcomes, and an action agenda with recommendations for applying the definition and framework to change policies and practices. Through this breadth of scholarship, the commission was better able to define the value of postsecondary education and the role institutions can play in creating a more equitable and fair United States.

Following the May 2021 release of the commission's findings, these foundational papers were prepared for publication. The views and opinions expressed in these papers do not necessarily reflect the positions of individual members of the Postsecondary Value Commission or the organizations they represent.

The Postsecondary Value Commission along with the Bill & Melinda Gates Foundation and Institute for Higher Education Policy are deeply grateful to the authors of this series. The authors' extensive expertise and thoughtful engagement in this work provided the foundation for the commission to develop an informed, innovative, and equity-driven framework. They also thank Deborah Seymour for editing the written products and the team at GMMB for their creative design and layout.

Suggested citation: Miller, B. (2021). Measuring Return on Investment for Postsecondary Education: The Case for Using Earnings and Loan Repayment Metrics. Postsecondary Value Commission.

This paper examines indicators related to earnings and student loan debt for evaluating return on investment (ROI) for postsecondary education. It first considers four different options for measuring earnings, arguing that measures of postsecondary value should include investment-to-earnings and earnings growth metrics. The paper then discusses how earnings should be measured at the program and institutional levels. Student loan debt metrics are examined next, with preference for a status-based over balance-based repayment rate, followed by a discussion on repayment rates by race/ethnicity, gender, and completion status. The paper concludes by discussing the challenges of using publicly available data to examine earnings and repayment rates as well as areas for future research.[a]

OPTIONS FOR USING EARNINGS TO MEASURE POSTSECONDARY VALUE

While there are a number of ways to measure earnings in the context of postsecondary value (Table A1), this paper examines the four most common ways: (1) mean or median earnings levels, (2) the share of graduates meeting a baseline earnings threshold, (3) investment-to-earnings ratios, and (4) earnings growth. This section explores each of these options and recommends using the third and fourth to measure ROI.

Mean or Median Earnings Levels

Measures of earnings levels reflect mean or median earnings of graduates without any further contextual information. While this straightforward calculation is intuitive, it can also be misleading.

There are a few challenges with using mean or median earnings levels on their own as a measure of value. First, simply looking at the programs with the highest mean or median earnings will draw attention to the programs with the best pay—even if there are many others that still provide a meaningful return that grants students access to a middle-class life. Second, mean or median earnings do not reflect the costs of postsecondary education to students. This is especially problematic for comparing graduates in different institutions in a particular field that have similar earnings levels but had different postsecondary costs.[1] Finally, mean or median earnings are also going to be affected by regional variation, which can make places that tend to have graduates who move to expensive urban areas look more valuable without producing a better return. Because of the issues associated with this metric, this paper does not recommend mean or median earnings as a standalone measure of postsecondary value.

Share of Graduates Meeting a Baseline Earnings Threshold

Earnings threshold measures capture how many students earn more than a baseline minimum—such as $25,000 or $28,000 (the benchmarks used in the College Scorecard to approximate earnings of a high school graduate with no college experience) or 150 percent of the poverty level ($18,735 in 2019).[2] Where to set the benchmark depends on the purpose of the measure. An aspirational measure designed to encourage programs to improve should pick a higher bar, such as median earnings for graduates at that credential level nationwide. This makes it possible to see how graduate earnings from a particular program compare to those of similar students from elsewhere.

---

a Miller authored this paper in summer 2019 while serving as vice president of postsecondary education at the Center for American Progress.

By contrast, the minimum acceptable earnings thresholds used for accountability purposes should use a lower bar tied to the poverty level as a way of assessing that college attendees are at the very least not impoverished. This can be used to ensure that graduates' earnings will be above the poverty level and that they will earn more than someone who never attended.

College Scorecard data for the 2002-03 and 2003-04 cohorts displayed in Table 1 show that most institutions have typical earnings above either 150 percent of the poverty level or $28,000 at 10 years after entry (results are similar at six and eight years, so they are not presented). The data show that a test based on median earnings is tougher to pass than one relying on mean. Given that these results include non-completers it is likely that a test based only on graduates would have even higher passage rates. There are no good federal data on earnings for students who did not receive federal aid.

Table 1. Share of Institutions with Mean or Median Earnings Compared to Minimum Baselines

		Mean Earnings		Median Earnings	
	# Institutions	% Above 150% of the Poverty Level for a Single Individual	% Above $28,000	% Above 150% of the Poverty Level for a Single Individual	% Above $28,000
Public 4-year	542	100%	99%	100%	98%
For-Profit 4-Year	67	100%	97%	100%	91%
Private Nonprofit 4-Year	1,101	100%	96%	99%	92%
Public 2-Year	688	100%	92%	99%	71%
For-Profit 2-Year	189	99%	59%	97%	50%
Private Nonprofit 2-Year	108	99%	78%	95%	66%
Public Less Than 2-Year	487	100%	77%	99%	52%
For-Profit Less Than 2-Year	893	90%	27%	67%	19%
Private Nonprofit Less Than 2-Year	87	97%	60%	83%	51%
Historically Black Colleges and Universities (HBCU)	94	100%	73%	99%	55%
Predominantly Black Institutions (PBI)	72	100%	72%	100%	42%
Alaska Native and Native Hawaiian Serving Institutions (ANNHI)	9	100%	100%	100%	89%
Tribal Colleges and Universities (TCU)	28	100%	7%	64%	4%
Native American Serving, Nontribal Institutions (NASNTI)	22	100%	91%	100%	73%
Asian American and Native American Pacific Islander-Serving Institutions (AANAPISI)	56	100%	91%	98%	88%
Hispanic Serving Institutions (HSI)	339	100%	93%	98%	80%

Note: Results 10 years after starting college for 2002-03 and 2003-04 entrants who received federal aid. Excludes students who are not working or who are enrolled in college at measurement point in time.

Source: Author analysis of data from the College Scorecard.

One downside of earnings benchmarks is that they may be set too low or too high. In addition, much like earnings levels, benchmarks ignore students' investment in postsecondary education. Further, thresholds often fail to acknowledge that the poverty level changes based on household size. Due to these challenges, this metric is not recommended for measuring value.

Investment-to-Earnings Ratios

This metric determines whether graduates' earnings justify their investment in a program. The Department of Education's (ED) gainful employment regulation was the first to operationalize this concept at the federal level, by incorporating debt-to-earnings ratios into the standards career programs must meet. Debt payments for graduates of these programs must be less than or equal to 8 percent of their annual earnings or 20 percent of their discretionary income (earnings over 150 percent of the poverty level for a single individual).[3]

A broader measure of investment-to-earnings would include the total student investment in their college education, regardless of whether or how much a student borrowed. This includes federal and state grants, work-study, private scholarships, loans, and out-of-pocket spending. Institutional grants and discounts should not be included because these do not always represent an actual cash transfer to the student. Nor should state spending on operating support since the goal is looking at the price faced by the student, not the total cost of delivering an education, which can and must be subsidized in many situations. This acknowledges that all forms of investment matter for assessing value, not just loans.

There are challenges in constructing an investment-to-earnings measure. One is how to compare a one-time investment like an out-of-pocket tuition payment to a loan. It is easy to judge the long-term cost of a loan because we can calculate what the monthly payment would be and the duration of payments. Looking at the long-term cost of an out-of-pocket tuition payment would require making assumptions about what would happen to that money if it were invested in other purposes for some period of time. Another issue is how to handle amounts paid for non-academic expenses, such as room and board. Colleges sometimes control these expenses—as is the case for dorms or cafeterias—but other expenses, such as transportation, may be outside of the institution's control. In addition, students would face some of these expenses regardless of college enrollment. It may be necessary to exempt a base amount of living expenses from the calculation to reflect costs students would have anyway and that are not truly reflective of students' "investment." Answering these questions is best done through robust data on student investment in order to model different scenarios and evaluate the implications of different assumptions.[4]

A lack of data makes it impossible to recommend a proper benchmark for an investment-to-earnings measure. However, current investment to earnings ratios should mirror those used in debt-to-earnings metrics, since this would put educational investments on similar footing regardless of whether they were made through borrowing or out-of-pocket spending. Ultimately, this paper recommends starting with a debt-to-earnings rate tied to the 20 percent discretionary standard, while accumulating data to construct an investment-to-earnings rate.

Earnings Growth

Earnings growth metrics capture the difference between what graduates earned before and after completing a program to assess whether they received an income boost after leaving school. For example, the "Salary Surfer" tool constructed by the California Community College system shows, by program, earnings two years before entering a program and then two- and five-years after completing.[5]

For earnings growth measures to be more effective they need to be looking at populations of students who had earnings beforehand. Otherwise, any amount of growth will look impressive if the baseline is someone who has never worked before. This means a measure of earnings growth is likely to be more useful at community colleges or institutions that enroll large numbers of adult students with previous work experience than at highly selective bachelor's degree programs where most students come straight from high school.

One other challenge with this measure is that it cannot capture the value of programs that help someone avert job loss or move into a role with similar earnings but with other non-economic benefits (e.g., shift from retail to office environment). Apart from some state data systems, there are also no comprehensive data sources that include pre- and post-college earnings, nor clear benchmarks for what growth expectations should be. Thresholds for growth expectations should ultimately vary by credential level and be based upon actual earnings data.

Despite the challenges, earnings growth measures have value. Particularly for students who are currently working, they can help someone understand how much more money they may earn as a result of the credential—assisting in assessments of whether that pay raise is sufficient given a program's price.

MEASURING EARNINGS AT THE PROGRAM- AND INSTITUTION-LEVEL

Earnings of graduates only should be considered when examining program-level outcomes. Why? Evidence shows that earnings of non-completers are similar across program types while graduates have very different results depending on the program attended.[6] In addition, programmatic measures of earnings that include all students require determining which program a non-completer attended,[7] a decision that is far from straightforward at colleges that do not require students to apply to a specific program or declare a major right away.

However, earnings measures at the institution-level should consider the outcomes of both graduates and non-graduates. These earnings measures should be reported separately for graduate and undergraduate students, and ideally by credential level as well. Including non-completers in institution-level earnings measures is more fitting given that these students' outcomes are a concern that should be shared across the entire school.

> **"Earnings measures should be reported separately for graduate and undergraduate students, and ideally by credential level as well.**

Undergraduate programs should be defined by the level of credential—including certificates of different lengths, associate's, and bachelor's degrees—and the meta-major, or broad category of fields of study that combines similar majors, and notably treats all liberal arts programs as a single category.[8] This approach helps to avoid sample size issues created by separating students into each individual major, and reflects the interdisciplinary nature of many undergraduate liberal arts programs.[9] At the graduate level, the combination of credential level and four-digit Classification of Instructional Program (CIP) code is appropriate for defining programs.

OPTIONS FOR USING LOAN REPAYMENT RATES TO MEASURE POSTSECONDARY VALUE

Repayment rates offer additional and important information that is crucial for measuring ROI (Table A2). This approach sets a higher bar for success—paying down loan principal—than avoiding the worst possible student loan outcome of default. This section first discusses how to best define a repayment rate and then examines the importance of looking at repayment rates by race/ethnicity and gender and completion status when considering the value of postsecondary education.

Defining a Repayment Rate

There are two common approaches to defining a repayment rate.[10] The first is to categorize borrowers who have not defaulted on their loans and have paid down at least $1 of their original principal balance as successfully repaying. This is the definition used by the College Scorecard and is similar to the 2011 version of the gainful employment rule.[11] In 2018, Representative Virginia Foxx (R-NC) proposed a different measure of repayment when she was chairwoman of the House education committee.[12] Instead of looking at the share of borrowers paying down their principal balance, the new repayment rate proposal would consider borrowers as successfully repaying their loans if they were either in active repayment and current on their loans (defined as less than 90 days late) or were pausing their payments to attend school or serve in the military.[13]

This paper recommends an expanded version of Rep. Foxx's repayment rate that would consider a borrower to have a positive repayment status if they were current or less than 90 days late, had paid off the loan in full, were pausing payments to enroll in a postsecondary program, serve in the military, or pursue other service commitments such as the Peace Corps, or seeking teacher loan forgiveness. Any borrower who defaulted during the measurement window would not be considered as successfully repaying their loans even if they later returned their loan to good standing. This measure is more than just the inverse of a default rate—it requires borrowers to be staying current or engaging in specific loan pauses. Because this test for success is potentially easier to meet than paying down $1 of principal, institutions should be required to demonstrate higher levels of performance than the 45 percent threshold proposed by Rep. Foxx. Table 2 models the potential effects of a few different thresholds. It suggests drawing a threshold of at least 50 percent and no higher than 67 percent given the steep decline in results above that level.

Table 2. Share of Institutions Passing a Status-based Repayment Rate Based upon Different Thresholds

	# Schools	45%	50%	67%	75%
Public 4-year	558	100%	98%	80%	53%
For-Profit 4-Year	101	96%	84%	48%	39%
Private Nonprofit 4-Year	1,179	99%	98%	87%	70%
Public 2-Year	633	94%	80%	16%	6%
For-Profit 2-Year	247	74%	53%	11%	6%
Private Nonprofit 2-Year	114	87%	75%	46%	32%
Public Less Than 2-Year	290	86%	74%	24%	13%
For-Profit Less Than 2-Year	1,120	71%	57%	23%	11%
Private Nonprofit Less Than 2-Year	79	77%	65%	47%	38%
Historically Black Colleges and Universities (HBCU)	90	88%	68%	6%	1%
Predominantly Black Institutions (PBI)	64	83%	63%	9%	0%
Alaska Native and Native Hawaiian Serving Institutions (ANNHI)	8	100%	88%	63%	13%
Tribal Colleges and Universities (TCU)	3	67%	67%	0%	0%
Native American Serving, Nontribal Institutions (NASNTI)	22	86%	77%	18%	5%
Asian American and Native American Pacific Islander-Serving Institutions (AANAPISI)	56	98%	93%	61%	39%
Hispanic Serving Institutions (HSI)	299	95%	87%	43%	23%

Note: A status-based repayment rate considers borrowers a success if they have paid off their loans, are less than 90 days late, or on an in-school or military deferment. Borrowers entering repayment in FY2012, tracked for three years.

Source: Author's analysis of College Scorecard data and information obtained from a Freedom of Information Act request, which is available at Ben Miller, "How You Can See Your College's Long-Term Default Rate," Center for American Progress, August 30, 2018, https://www.americanprogress.org/issues/education-postsecondary/news/2018/08/30/457296/can-see-colleges-long-term-default-rate/.

A status-based measure is also less potentially misleading than one based on principal reduction. The primary areas of concern related to principal reduction are:

1. Borrowers whose balances grow for legitimate reasons could be labeled as failures. A borrower who enters repayment and then goes to graduate school or re-enrolls could see their loan balance grow due to interest accumulation while they are in school, even if they made all required payments.[14]
2. Debt from multiple colleges may affect repayment. A borrower who accumulates $30,000 in debt in equal amounts from three colleges might fail a repayment test, even if they could have repaid the $10,000 amount borrowed from any individual college.[15]
3. Income Driven Repayment (IDR) options can lower repayment rates. A borrower who uses IDR could appear to fail the repayment test early on in repayment if their earnings are low, but may later begin to pay off principal.[16] Considering borrowers in IDR whose payments are not sufficient to offset accumulating interest could also discourage institutions from getting borrowers to use this safety net option.

A status-based repayment rate addresses most of the drawbacks of a measure based on balance paydown, such as the one used on the College Scorecard. Because it only focuses on whether borrowers are current or pausing payments for a limited number of valid reasons, issues related to interest accumulation or how debt levels affect payment strategy become less relevant. At the same time, this approach could be considered too forgiving because it potentially allows for institutions to encourage borrowers to adopt IDR plans that are classified as a repayment success. Concerns about IDR can be captured through a measure of how often borrowers use these options or a debt-to-earnings rate.

Table 3 models the difference between a principal reduction and status-based repayment rate.[17] The table shows that a $1 reduction in principal test is tougher than a status-based rate at the same threshold. This is unsurprising because there are many repayment options that result in overall balance increases despite borrowers making on-time payments. It is also why a status-based rate needs a higher threshold.

Table 3. Comparing Measures of Repayment

	# Schools	Both Under 45%	At or Over 45% on Good Loan Status, Scorecard Repayment Under 45%	Under 45% Good Loan Status, Scorecard Repayment at or Over 45%	Both Over 45%
Public 4-year	544	0%	15%	0%	85%
For-Profit 4-Year	79	4%	59%	0%	37%
Private Nonprofit 4-Year	1,036	1%	12%	0%	87%
Public 2-Year	617	6%	62%	1%	31%
For-Profit 2-Year	187	27%	52%	1%	20%
Private Nonprofit 2-Year	99	12%	33%	0%	55%
Public Less Than 2-Year	282	13%	50%	0%	37%
For-Profit Less Than 2-Year	924	24%	51%	0%	25%
Private Nonprofit Less Than 2-Year	70	21%	30%	1%	47%
Historically Black Colleges and Universities (HBCU)	87	13%	79%	0%	8%
Predominantly Black Institutions (PBI)	64	17%	73%	0%	9%
Alaska Native and Native Hawaiian Serving Institutions (ANNHI)	8	0%	25%	0%	75%
Tribal Colleges and Universities (TCU)	3	33%	67%	0%	0%
Native American Serving, Nontribal Institutions (NASNTI)	22	14%	45%	0%	41%
Asian American and Native American Pacific Islander-Serving Institutions (AANAPISI)	56	2%	29%	0%	70%
Hispanic Serving Institutions (HSI)	298	4%	52%	0%	43%

Note: A status-based repayment rate considers borrowers a success if they have paid off their loans, are less than 90 days late, or on an in-school or military deferment. Three-year repayment rates based upon a borrower's loan status or a reduction of at least $1 in principal.

Source: Author's analysis of College Scorecard data and information obtained from a Freedom of Information Act request, which is available at Ben Miller, "How You Can See Your College's Long-Term Default Rate," Center for American Progress, August 30, 2018, https://www.americanprogress.org/issues/education-postsecondary/news/2018/08/30/457296/can-see-colleges-long-term-default-rate/.

Examining Repayment Rates by Race/Ethnicity and Gender

In order to have a more nuanced understanding of ROI, repayment rates need to be examined by race/ethnicity and gender. Survey data from the National Center for Education Statistics shows that Black borrowers experience lower rates of repayment than other students. By 2015, the typical Black borrower who entered college in 2003-04 owed 113 percent of what they originally borrowed, whereas White and Latinx borrowers respectively owed 65 and 83 percent of their original debt load.[18]

> **“ In order to have a more nuanced understanding of ROI, repayment rates need to be examined by race/ethnicity and gender.**

Regardless of sector, roughly 60 percent of Black borrowers owed more than they originally borrowed over this same time period.[19] These results are driven partly by the fact that half of Black borrowers in this sample defaulted within 12 years of entering college.[20]

The differences in principal reduction repayment by gender are smaller. On average, men have repayment rates about 1 to 5 percentage points higher than women, depending on the sector.[21] The median difference by institution is 1 percentage point everywhere except public four-year institutions. However, the gap may be worse because women have higher completion rates than men and completers tend to have better repayment rates.

Examining Repayment Rates for Completers and Non-Completers

To fully understand the value of postsecondary education, repayment rates must be examined for both completers and non-completers separately. There is a 20-percentage point difference in principal reduction repayment rates between completers and non-completers, a result that is consistent across sectors.[22] Table 4 shows this difference by sector.

Table 4. Differences in Three-year Repayment Rates by Completion Status

	Overall	Completer	Non-Completer	Median Gap
Public 4-year	60%	73%	48%	22%
For-Profit 4-Year	29%	45%	24%	21%
Private Nonprofit 4-Year	60%	75%	47%	20%
Public 2-Year	38%	58%	33%	22%
For-Profit 2-Year	29%	40%	21%	17%
Private Nonprofit 2-Year	36%	51%	28%	21%
Public Less Than 2-Year	34%	53%	29%	21%
For-Profit Less Than 2-Year	32%	38%	21%	17%
Private Nonprofit Less Than 2-Year	23%	35%	14%	17%
Total	46%	62%	36%	20%

Note: Only includes colleges that have data on both completers and non-completers. Borrowers entering repayment in 2013 and 2014.

Source: Author's analysis of data from the College Scorecard.

THE CHALLENGE OF USING PUBLICLY AVAILABLE DATA TO MEASURE ROI

While there are a number of challenges associated with using publicly available data to measure postsecondary value, two are particularly problematic: limited data available for non-completers and limited data on earnings and repayment rates by race/ethnicity.

“While there are a number of challenges associated with using publicly available data to measure postsecondary value, two are particularly problematic: limited data available for non-completers and limited data on earnings and repayment rates by race/ethnicity.

Limited Data on Non-Completers

Students who attend but do not finish college represent a challenge for an earnings measurement, especially at the programmatic level. Non-completers can stop out at different points, which likely affects the extent to which their earnings will be influenced by their educational experience. It also makes it difficult to assign a student to a particular program since, in many cases, students leave school before officially declaring a field of study.

Given all these challenges, it is better to address the issue of non-completers through more specific measures of graduation or completion rates. This rightfully holds institutions responsible for low levels of student completion, but avoids the more complex question of what role an institution plays in the earnings of someone who enrolled only for a short time. This approach also makes it possible to consider multiple outcomes from non-completion, such as students who transfer from a community college to a four-year institution before completing a degree.

Importantly, the College Scorecard does not currently differentiate earnings for completers versus non-completers.[b] In the context of these data limitations, an earnings growth measure will better reflect value for non-completers than investment to earnings. That’s because students who stopped out after a brief period of enrollment would have relatively low levels of investment, making earnings from even minimum wage work appear to outweigh the costs of their education. Earnings growth for non-completers should be limited to individuals who earned at least six credits (or a minimum share of a program’s total required credits) because students who finished very few courses might have distorted results.

Limited Data on Earnings Outcomes and Repayment Rates by Race/Ethnicity

There are well-known differences in earnings by race/ethnicity. A study by the Economic Policy Institute notes that the racial wage gaps across education levels have increased from 2000 to 2018, and that a Black college graduate earns about 80 percent of that of a White college graduate and a Latinx graduate earns roughly 85 percent.[23]

b This paper was written in 2019 before the College Scorecard added data on completers only at the program level.

Unfortunately, data on racial earnings differences by institution, program, and degree level are limited to just a few institutions and not available nationally through the College Scorecard. Also, national data show gaps in employment rates by race even among individuals with similar educational attainment, meaning that measures, such as those on the College Scorecard, that only compare earnings of working adults may understate racial earnings gaps.[24]

Better national earnings data that are disaggregated by race/ethnicity are necessary to evaluate whether students' returns to their educational investment are equitable. Better data would also allow for identifying programs that pay off for students of color, or those that help limit disparities in earnings across these groups.

Similar to earnings outcomes, ED does not publish institution-level data on repayment rates by race/ethnicity. Moreover, ED does not produce student-level data for researchers to construct other repayment definitions or analyze status-based rates by completion status, race, or gender. It also has not published data on how IDR usage or enrollment at multiple institutions affects repayment rates.

CONCLUSION

This paper considers measures of ROI for postsecondary education using indicators related to earnings and student loan debt and recommends using both to assess postsecondary value. Based on this assessment, the following value measures should be reported for all graduates at the program and credential level: **investment to earnings ratio**, which captures the economic return a program produces for the investment students make; **and earnings growth**, which ensures earnings are not just a function of prior employment. Both of these indicators should be disaggregated by race/ethnicity and gender.

The following four principles guide the use of earnings in a ROI calculation:

1. Earnings measures should include only students who graduate, with exclusions for students who have re-enrolled or are serving in the military during the measurement year. Students who leave without a degree may stop out at different times, which makes it hard to create fair comparisons. Research on the contribution of specific institutions to the earnings of someone who did not finish a degree is also less established. The issue of non-completion is a crucial element of value and should be handled by other indicators.
2. Earnings are better in context. The share of graduates exceeding a minimum earnings threshold, or a comparison of student's debt and earnings levels, can provide richer insights than average or median earnings alone. That's because certain metrics can be strongly influenced by the mix of majors at a particular school, and in many cases reflects a very narrow definition of economic success by ignoring the social value of higher education.
3. Earnings are better suited to program-level analyses. Multiple classification schemes exist for grouping individual programs into similar categories; and in choosing between these, it is critical to consider the need for aggregation to protect students' privacy while conducting subgroup analysis, while still creating meaningful categories so that important differences between fields do not get hidden. A program-level approach balances these considerations. At the institution-level, the share of students with earnings above a minimum bar is more fitting.

4. Earnings should be measured at multiple points in time. Looking at earnings of graduates just one year after finishing school may be too soon since students may take more than a few months to get on their feet. Instead, multiple measurement points should be used, starting with three years out, to mirror common measurement windows for loan repayment and default. Additional measures of earnings five and ten-years after graduation should be used to provide more detail on a student's long-term employment outcomes.[25]

In addition, for all student loan borrowers at the institution **a status-based repayment rate** is needed to judge what share of individuals are current on their loans as an initial indicator of whether and to what extent student borrowers may have problems with their loans. This approach sidesteps significant problems with measuring repayment through principal balance reduction. Specifically, a balance-based repayment measure raises concern due to the variety of repayment options and the effects of debt from multiple institutions. In contrast, a status-based repayment measure defines successful repayment as borrowers who have never defaulted and who have paid their loans in full, are less than 90 days delinquent, or are pausing payments for acceptable reasons. A passing threshold on a status-based measure should be between 50 percent and 67 percent based upon initial data analysis. This measure should be evaluated at the institutional level, separated by credential level, measured at three, five, and ten years into repayment, and it should include all students regardless of completion status and report results of parent borrowers by level. Moreover, while overuse of IDR can be a policy concern, it would be better tackled through a more direct measure such as IDR usage or debt-to-earnings.

As with any research project, more questions were raised than answered. As a result, the Commission should consider the following to better capture ROI:

1. How to account for students who are not employed—and may not be in the labor force—during the measurement year.[26]
2. How to convert non-loan payments into an investment similar to a loan for comparison purposes.
3. How to account for time spent by students in measures of investment.
4. How to incorporate students who pursue advanced degrees in measures of post-school earnings.
5. The best ways to construct and evaluate earnings measures for students who do not complete their programs of study.
6. How debt from multiple colleges affects loan repayment performance.
7. How feasible it is from a systems standpoint to assess repayment in terms of on-time payments made versus an overall delinquency rate at the end of a tracking period.
8. The proper way to assess over-reliance on IDR.
9. The demographic correlations of repayment rates and race/ethnicity.

In sum, these earnings and student loan debt measures capture important elements of ROI, yet they should be used in concert with other indicators to provide important context, especially related to completion. A better understanding of completion rates of institutions will account for situations where an institution or program may appear to be successful based on its graduates but has large numbers of students who do not finish.

APPENDIX

Table A1. Federal and State Measures of Earnings

	Federal Measures of Earnings			
Measure Type or Source	**Debt-to-Earnings**	**Mean or Median Earnings**	**Earnings Above a Set Threshold**	**Postsecondary Employment Outcomes**
Purpose	Accountability	Disclosure	Disclosure	Disclosure
Description	The ratio of annual payments on student loan debt compared to two measures of the earnings of graduates. Measured both on an annual basis and by looking at earnings over 150% of the poverty level.	The average or 50th percentile earnings of students who received financial aid within a set period of time of first entering college.	Percentage of students earning more than a set dollar amount, typically expressed as either a percentage of the poverty level or the earnings of high school graduates.	The 25th, 50th, and 75th percentile earnings for graduates at a small number of institutions who earned a bachelor's degree or a graduate credential, broken down by major.
Earnings Source	Social Security Administration	U.S. Treasury	U.S. Treasury	U.S. Census' Longitudinal Employer-Household Dynamics (LEHD) data
Location	2014 Gainful employment regulation	College Scorecard	College Scorecard	U.S. Census Beta tool
Unit of Analysis	Programs within institutions	Institutional*	Institutional*	Programs within institutions and institutions
Coverage	All programs at private for-profit colleges and non-degree programs at public and private nonprofit colleges.	All colleges	All colleges	All public colleges in Colorado, the University of Texas System, the University of Michigan-Ann Arbor, and the University of Wisconsin-Madison.
Students Captured	All students who received federal financial aid and graduated.	All students who received federal financial aid and are working, regardless of completion status.	All students who received federal financial aid, regardless of completion status.	All students who graduated at certain schools and in certain degree levels at those schools, except for those with no earnings for half the year or who earned less than the minimum wage.
Timeframe	The third and fourth year after graduating.	Reported six, eight, and 10 years after first entering college.	Reported six, eight, and 10 years after first entering college.	One, five, and 10 years after graduation.
Thresholds	8% of annual earnings, 20% of discretionary earnings	N/A	$25,000 or $28,000	N/A

*Note: *Since the time this was written, the Department of Education updated the College Scorecard to include program-level earnings.*

	State Measures of Earnings Examples				
Measure Type or Source	California Salary Surfer	California Community College Data Mart	SCHEV Research	Florida Education and Training Placement Information Program	Texas State Technical Colleges
Purpose	Disclosure	Disclosure	Disclosure	Disclosure	Funding
Description	Median salary two years before and two and five years after finishing a degree or certificate program at a California Community College, broken down by major.	Median salary three years after graduating broken down by institution and major.	Salary 18 months, three years, and five years after completing by program and institution at Virginia public and private nonprofit colleges.	Average earnings for one quarter of recent graduates of bachelor's degree or higher from Florida public colleges, broken down by institution and major.	Institutions receive part of the difference in tax revenues collected between graduates from an institution and the minimum wage, measured over a five-year average.
Earnings Source	State unemployment insurance database	State unemployment insurance database	State unemployment insurance database	State unemployment insurance database	State unemployment insurance database
Location	California Community Colleges	California Community Colleges' Chancellor's Office	State Council of Higher Education for Virginia	Florida Department of Education	Texas Higher Education Coordinating Board
Unit of Analysis	Programs aggregated across all California community colleges	Programs within institutions and institutions	Programs within institutions and institutions	Programs within institutions and institutions	Institutions
Coverage	Students who earned a "terminal" degree or certificate at a California community college, meaning they did not transfer and are not enrolled and who are covered by state unemployment insurance records.	Students who earned a "terminal" degree or certificate at a California community college, meaning they did not transfer and are not enrolled and who are covered by state unemployment insurance records.	Students who graduated from a public or private nonprofit college in Virginia, who have a Social Security number and who are not unemployed, self-employed, federal employees, in the military, or living out of state.	Students who earned a bachelor's degree or graduate degree from a public college in Florida, who have a Social Security number and who are not unemployed, self-employed, federal employees, in the military, or living out of state.	Students who graduated from a Texas State Technical College and who can be tracked by the Texas Workforce Commission. That means students need a Social Security number and cannot be self-employed, federal employees, in the military, or living out of state.
Students Captured	Students who have a Social Security number, who are not unemployed, self-employed, federal employees, in the military, or living out of state.	Students who have a Social Security number, who are not unemployed, self-employed, federal employees, in the military, or living out of state.	Students who have a Social Security number, who are not unemployed, self-employed, federal employees, in the military, or living out of state.	Students who have a Social Security number, who are not unemployed, self-employed, federal employees, in the military, or living out of state.	Students who have a Social Security number, who are not unemployed, self-employed, federal employees, in the military, or living out of state.

	State Measures of Earnings Examples				
Measure Type or Source	California Salary Surfer	California Community College Data Mart	SCHEV Research	Florida Education and Training Placement Information Program	Texas State Technical Colleges
Timeframe	Two years before entering a program, as well as two and five years after finishing a program.	Three years after finishing, aggregated across eight years.	Graduates 18 months, five years, and eight years after finishing, with longer-term data available at the program but not institutional level. Data are aggregated across five years.	The fourth quarter of the calendar year for the year that students graduated (e.g., Q4 2017 for 2016-17 graduates). Data are also broken down by the number of students in earnings ranges.	A five-year average of recent graduates.
Thresholds	N/A	N/A	N/A	N/A	Earnings over the minimum wage
Source	*https://salarysurfer.cccco.edu/SalarySurfer.aspx*	*https://datamart.cccco.edu/datamart.aspx*	*https://research.schev.edu/*	*https://www.fldoe.org/accountability/fl-edu-training-placement-info-program/*	*https://www.tstc.edu/*

Table A2. Repayment Rates

	2011 Gainful Employment	2014 Gainful Employment	College Scorecard	Borrower Defense Rule	PROSPER Act	Student Protection and Success Act	Lamar Alexander Proposal
Usage	Accountability	Disclosure	Transparency	Disclosure and Warnings	Accountability	Accountability	Accountability
Level of Analysis	Programmatic	Programmatic	Institutional	Institutional	Programmatic	Institutional	Programmatic
Unit of Analysis (Dollar or Borrower)	Dollar	Dollar	Borrower	Borrower	Borrower	Borrower	Borrower
Numerator	Sum of all original loan balances where a borrower paid at least $1 of principal at the time of measurement.	Sum of all original loan balances where a borrower paid at least $1 of principal at the time of measurement.	Number of borrowers who had not defaulted and paid down at least $1 of their original principal balance.	N/A	Number of borrowers in a positive repayment status, defined as having paid off the loan, being less than 90 days late, or pausing payments because they were enrolled back in school or serving in the military.	Borrowers who have not defaulted and paid at least $1 of their original loan principal balance.	"Whether students are actually paying off their loans."
Denominator	Sum of all original loan balances for borrowers who entered repayment during the cohort measurement period.	Sum of all original loan balances for borrowers who entered repayment during the cohort measurement period.	Number of borrowers who entered repayment during the cohort measurement period.	N/A	Number of borrowers who entered repayment during the cohort measurement period.	Number of borrowers who entered repayment during the cohort measurement period.	Number of borrowers who entered repayment during the cohort measurement period.
Threshold	35% for three consecutive years while also failing two measures of debt relative to earnings.		N/A	The median borrower must have paid off their loan or reduced their original principal balance by at least $1.	Under 45% for two consecutive years.	Equal to or less than 15% for three consecutive years.	Unstated
Number of Cohorts in the Measure	Two	Two (four for small programs)	Two	Two	One	One	Unstated

	2011 Gainful Employment	2014 Gainful Employment	College Scorecard	Borrower Defense Rule	PROSPER Act	Student Protection and Success Act	Lamar Alexander Proposal
Years Into Repayment Measured	Three and four years	Three and four years	1, 3, 5, and 7 years into repayment		Three years	Three years	Unstated
How is Income-Driven Repayment Handled?	Up to 3 percentage points of original loan balances on income-driven repayment can be included in the numerator, even if they are not reducing principal.	No special treatment.	No special treatment.	No special treatment.	No special treatment, but changes terms of IDR plans so all borrowers must make at least a $25 payment.	No special treatment.	Unstated
Source	*https://www.federalregister.gov/documents/2011/06/13/2011-13905/program-integrity-gainful-employment-debt-measures*	*https://www.federalregister.gov/documents/2014/10/31/2014-25594/program-integrity-gainful-employment*	*https://collegescorecard.ed.gov/data/*	*https://www.federalregister.gov/documents/2016/11/01/2016-25448/student-assistance-general-provisions-federal-perkins-loan-program-federal-family-education-loan*	*https://www.congress.gov/bill/115th-congress/house-bill/4508/text#toc-HF2FEB004E73A415B974B56B6C7D121DF*	*https://www.congress.gov/bill/116th-congress/senate-bill/1525*	*https://www.aei.org/wp-content/uploads/2019/01/190205-Senator-Lamar-Alexander-event-transcript.pdf*

ENDNOTES

1 Consider the spread of earnings and debt payments within programs at the same level in Anthony P. Carnevale et. al, "Buyer Beware: First-Year Earnings and Debt for 37,000 College Majors at 4,400 Institutions," Georgetown Center on Education and the Workforce," 2020, available at *https://cew.georgetown.edu/cew-reports/CollegeMajorROI/*.

2 U.S. Department of Health and Human Services, "Poverty Guidelines 2019," 2019, available at *https://aspe.hhs.gov/topics/poverty-economic-mobility/poverty-guidelines/prior-hhs-poverty-guidelines-federal-register-references/2019-poverty-guidelines*.

3 The latter threshold came from the following paper which examined how much debt is too much: Baum, Sandy and Saul Chwartz. "How Much Debt is Too Much?" College Board, 2006, available at *https://eric.ed.gov/?id=ED562688*.

4 Cheng, Diane. "Recommendations for Measuring Student Investment in College." Postsecondary Value Commission, 2021, *https://www.postsecondaryvalue.org/wp-content/uploads/2021/05/PVC-Cheng-FINAL.pdf*.

5 "Salary Surfer," California Community College Chancellor's Office," *https://salarysurfer.cccco.edu/SalarySurfer.aspx*.

6 Miller, Ben. "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/*.

7 Colleges must report a program code for all students who took out their first federal student loan on or after July 1, 2013. Unfortunately, this does not address the issue of undeclared students because the institution may just report them as being in a general studies program as a catch-all program option. See U.S. Department of Education, "150% Direct Subsidized Loan Limit—Frequently Asked Questions," available at *https://fsapartners.ed.gov/knowledge-center/faqs/150-direct-subsidized-loan-limit-frequently-asked-questions* (last accessed August 2019).

8 Julia Haskins, "How meta-majors guide students toward on-time graduation," Education Advisory Board, July 26, 2016, available at *https://eab.com/insights/unknown/student-success/how-meta-majors-guide-students-toward-on-time-graduation/*.

9 Ibid.

10 For a discussion of ideas for repayment rates that have been used over time see Janice, Amanda and Mamie Voight. "Making Sense of Student Loan Outcomes," Institute for Higher Education Policy, January 2016, *https://www.ihep.org/publication/making-sense-of-student-loan-outcomes-how-using-repayment-rates-can-improve-student-success/*.

11 The 2011 gainful employment rule defined repayment success using this $1 test but measured it at a program level based on a borrower's loan balance. In other words, if a program had two borrowers–one who owed $10,000 and repaid and one who owed $20,000 and did not, then the program's repayment rate was 33% ($10,000 divided by $30,000). The College Scorecard, meanwhile, tracks results on a borrower basis.

12 Foxx, Virginia. "H.R. 4508 PROSPER Act." 115th Cong., 2nd sess., February 8, 2018, *https://www.congress.gov/bill/115th-congress/house-bill/4508*.

13 The College Scorecard excluded individuals in these groups if they were in school or in service at the time of measurement.

14 The College Scorecard excludes students who are in school at the time of measurement, but does not adjust cohorts if the borrower goes to graduate school, accumulates more interest, and goes back into repayment.

15 A potential fix for this problem would be to treat each borrower payment as if it went to the set of loans for each school. In other words, if the borrower has $10,000 from three schools and pays $100, that payment gets treated like it went to each set of $10,000 loans. But that is a complicated fix and could also have challenges due to the tracking of loans when they are consolidated.

16 For example, a borrower who owes $60,000 and starts out making $16,000 a year on the Revised Pay As You Earn plan will actually start touching principal in their sixth year and pay off their debt before receiving forgiveness if they see wage growth of 5 percent a year.

17 The data are not completely a one-to-one match because the FOIA data include only students who entered repayment in 2012, while the Scorecard data combines the 2011 and 2012 cohorts. Because the status-based test has multiple repayment categories it also has greater levels of data suppression. Finally, the status-based measure excludes borrowers whose status was "unknown" or "other." Adding those back into the denominator could result in a much lower repayment rate for many institutions.

18 Miller, Ben. "New Federal Data Show A Student Loan Crisis for African American Borrowers." Center for American Progress, October 16, 2017, *https://www.americanprogress.org/issues/education-postsecondary/news/2017/10/16/440711/new-federal-data-show-student-loan-crisis-african-american-borrowers/*.

19 National Center for Education Statistics. "Beginning Postsecondary Student Aid Study. 2003:09." Table dbgbmdfd, available at *https://nces.ed.gov/datalab/powerstats/output.aspx*.

20 Miller, Ben. "New Federal Data Show a Student Loan Crisis for African American Borrowers."

21 Author analysis of data from the College Scorecard.

22 Author analysis of data from the College Scorecard for borrowers entering repayment in FY2013 and FY2014.

23 Gould, Elise. "State of Working America Wages 2018." Economic Policy Institute, February 20, 2019, *https://www.epi.org/publication/state-of-american-wages-2018/*.

24 Andolfatto, David. "Why do unemployment rates vary by race and ethnicity?" Federal Reserve Bank of St. Louis, February 6, 2017, available at *https://www.stlouisfed.org/on-the-economy/2017/february/why-unemployment-rates-vary-races-ethnicity*.

25 Programs with internship or residency components should define their measurement windows by the end of the residency. Students enrolled in college or serving in the armed forces at any point during the year of measurement of should be excluded from the numerator and denominator.

26 The inclusion or exclusion of non-working individuals matters a lot for earnings assessments. For example, the College Scorecard shows that between 10 and 20 percent of students who entered in 2004-05 or 2005-06 and received financial aid were not working and not enrolled eight years after entry. Excluding non-workers thus significantly alters the share of students at less-than-two-year for-profit colleges who earned over $25,000 from 38 percent to 47 percent.

	Share of Students that are not working and not enrolled	Median % of students earning over $25k	Change in Median % of students earning over $25k by excluding non-working individuals
Public 4-year	10%	73%	7%
For-Profit 4-Year	17%	64%	11%
Private Nonprofit 4-Year	11%	73%	7%
Public 2-Year	17%	56%	11%
For-Profit 2-Year	19%	52%	10%
Private Nonprofit 2-Year	17%	59%	10%
Public Less Than 2-Year	18%	54%	11%
For-Profit Less Than 2-Year	22%	36%	9%
Private Nonprofit Less Than 2-Year	22%	50%	16%
Historically Black Colleges and Universities (HBCU)	12%	50%	6%
Predominantly Black Institutions (PBI)	17%	50%	9%
Alaska Native and Native Hawaiian Serving Institutions (ANNHI)	16%	64%	12%
Tribal Colleges and Universities (TCU)	26%	33%	14%
Native American Serving, Nontribal Institutions (NASNTI)	16%	57%	13%
Asian American and Native American Pacific Islander-Serving Institutions (AANAPISI)	17%	66%	13%
Hispanic Serving Institutions (HSI)	16%	59%	13%

Note: Not working, not enrolled students affect comparisons of earnings to high school graduate 2004-06 entry cohorts measured eight years after enrollment.

Source: Author analysis of College Scorecard data.