

# Appendix: Educational Adequacy in the Twenty-First Century

MAY 2, 2018 – ANTHONY P. CARNEVALE, ARTEM GULISH, AND JEFF STROHL

Several challenges, detours, and opportunities usually arise during the time period in which a student enrolls, progresses from lower-division to upper division courses, selects and perhaps changes majors, transfers from one postsecondary institution to another, earns a credential, and attains full-time employment (Figure A1). At each of these junctures, individuals can make a different choice. They might want to move to the next stage in this traditional education-to-work pathway, but not be able to make it for a number of personal, financial, or institutional reasons.

The simplified economic self-sufficiency analysis presented in this report is based on the established notions of two years for an associate’s degree and four years for a bachelor’s

degree. In practice, students take different amounts of time to complete a program. The average time-to-completion is three years for an associate’s degree and five years for a bachelor’s degree, and many students do not complete at all. Someone who completes a certificate program in a year faces different benefits and costs than someone who takes six years to earn an associate’s degree. Non-completers also face a very different set of benefits and costs, often ending up saddled with debt from their studies without reaping most of the benefits experienced by program graduates. Thus, if the program’s time-to-degree or completion rates fall outside the expected norm, the estimates of cost and benefits will have to be adjusted based on those differences. Additionally, the simplified model in this paper assumes that

FIGURE A1

**Students have to progress through multiple junctures before the economic self-sufficiency of their postsecondary education program can be assessed.**



This report can be found online at: <https://tcf.org/content/report/educational-adequacy-twenty-first-century/>.

all students bear the full opportunity cost, through foregone earnings, for the number of years they take to complete their credential. In practice a substantial share of students, especially at community colleges, work while enrolled and thereby do not forego all wages. If that is the case among students in a particular program, practitioners and policymakers will need to make appropriate adjustments in their calculations of annual foregone earnings.

## Geographical Variations Based on Cost of Living

We also recognize that geographical differences in the cost of living could lead to different earnings outcomes for workers who graduate and enter full-time employment. Annual earnings of \$35,000 will allow workers to buy substantially more in Little Rock, Arkansas, for example, than in New York City. Therefore, policymakers will need to consider appropriate adjustments for regional price parities to determine appropriate earnings standards for different states. For example, this will mean that the national base for an adequacy earnings standard (\$35,000) would translate to \$30,000 in Mississippi and \$41,000 in Washington, D.C. (Figure A2).<sup>1</sup>

## Earnings Trajectories

While \$35,000 per year is an average for prime-age (25–64) FTFY workers, workers generally do not earn the same throughout a career. Workers generally start out with lower wages, and their compensation tends to increase as they become more experienced and gain more substantive responsibilities. Also, workers with different education levels often have different earnings trajectories. Those with short-term postsecondary occupational credentials, such as certain certificates, tend to earn more than associate’s degree holders in the early years of their career, but as their careers progress, associate’s degree holders catch up to and overtake certificate holders. In other words, while associate’s degree-holders’ earnings grow, those of certificate holders’ remain flat.<sup>2</sup> Workers’ earning outcomes will differ depending on which point in their career is examined and which education program or programs they completed. For the simplified

approach we adopt in this paper, we consider workers at age 35—a decade after they complete their education at the traditional age of 25—in examining their ability to reach a wage level above the \$35,000 per year threshold.

Based on our simplified model, 33 percent of FTFY workers with an associate’s degree and 15 percent of FTFY workers with a bachelor’s degree do not meet the test of earning more than \$35,000 a year by the time they reach age 35 (see Table A1).

## Occupational Choice and Field of Study

The field of study makes a substantial difference in the chances of attaining earnings of more than \$35,000 per year by the time a person reaches age 35. For example, among FTFY workers with a bachelor’s degree, those who majored in theology and religious vocations; public affairs, policy and social work; and linguistics and foreign languages are more likely to not meet the \$35,000 per year earnings standard by the time they reach age 35. Those who majored in transportation sciences and technologies; construction services; engineering; and engineering technologies are most likely to earn more than \$35,000 per year by the time they reach age 35 (see Table A2).

A look at occupational selection combined with field of study demonstrates how individual and social choices influence labor market outcomes. For example, some students choose to go into socially beneficial professions, which do not pay wages commensurate with the skill requirements they demand of workers but provide an important social benefit. The intellectual and caring professions (ICPs), such as teachers, social workers, clergy, and early childhood educators, require relatively high education levels but do not garner commensurate wages in the labor market. Among FTFY workers in ICPs, 70 percent of associate’s degree holders and 23 percent of bachelor’s degree holders do not earn more than \$35,000 by age 35 (see Table A3).

These professionals typically do not operate in free-market conditions. They use their higher-level skills to provide a social good, such as teaching, caring for the sick, working

TABLE A1

**Full-time, full-year workers by whether they attain earnings above \$35,000 annually by age 35, by degree type.**

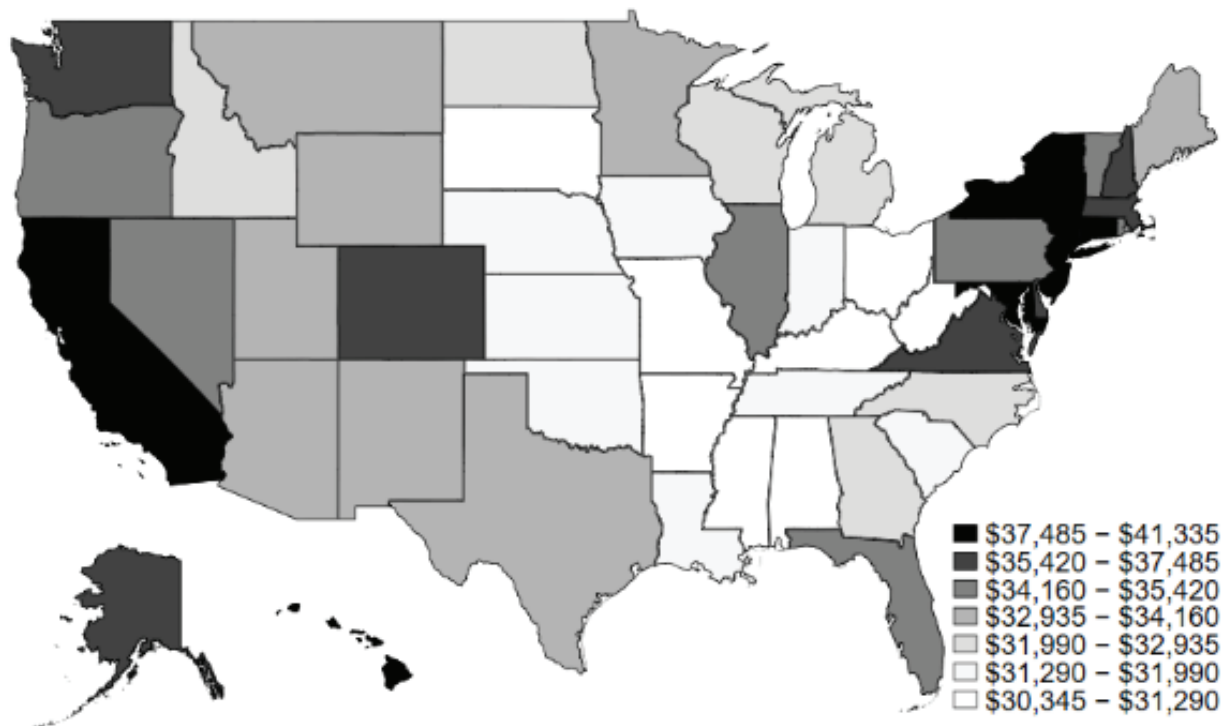
<i>35-year old, full-time, full-year (FTFY) workers:</i>		
	Share who earn \$35,000 or less per year	Share who earn more than \$35,000 per year
Associate's Degree	33%	67%
Bachelor's Degree	15%	85%

Note: Based on inflation-adjusted earnings to 2015 dollars.

Source: Georgetown University Center on Education and the Workforce analysis of American Community Survey data, 2009–2015 (pooled).

FIGURE A2

**College graduates have to earn substantially more in some states than others to have adequate incomes (regional equivalent to \$35,000).**



Source: Georgetown University Center on Education and the Workforce analysis based on U.S. Bureau of Economic Analysis, "Real Personal Income for States and Metropolitan Areas, 2014," 2016.

TABLE A2

## Full-time, full-year workers with a bachelor's degree by whether they attain earnings above \$35,000 annually by age 35, by major.

<i>35-year old, full-time, full-year (FTFY) workers:</i>		
	Share earning \$35,000 or less per year	Share earning \$35,000 more per year
Theology and Religious Vocations	31%	69%
Public Affairs, Policy, and Social Work	30%	70%
Linguistics and Foreign Languages	27%	73%
Law	24%	76%
Education Administration and Teaching	24%	76%
Fine Arts	22%	78%
Family and Consumer Sciences	21%	79%
Psychology	21%	79%
English Language, Literature, and Compos	18%	82%
Agriculture	18%	82%
Liberal Arts and Humanities	18%	82%
Interdisciplinary and Multi-Disciplinary	18%	82%
Physical Fitness, Parks, Recreation, and	17%	83%
Cosmetology Services and Culinary Arts	17%	83%
Social Sciences	16%	84%
Communication Technologies	16%	84%
Criminal Justice and Fire Protection	16%	84%
Communications	16%	84%
Area, Ethnic, and Civilization Studies	16%	84%
Philosophy and Religious Studies	16%	84%
Biology and Life Sciences	15%	85%
History	15%	85%
Business	13%	87%
Physical Sciences	12%	88%
Mathematics and Statistics	12%	88%
Environment and Natural Resources	11%	89%
Medical and Health Sciences and Services	11%	89%
Architecture	10%	90%
Computer and Information Sciences	10%	90%
Engineering Technologies	9%	91%
Engineering	7%	93%
Construction Services	5%	95%
Transportation Sciences and Technologies	5%	95%

Note: Based on inflation-adjusted earnings in 2015 dollars. The following majors were excluded because the sample size was too small for meaningful analysis: library science; military technologies; nuclear and industrial radiology, and biological technologies; and precision production and industrial arts.

Source: Georgetown University Center on Education and the Workforce analysis of American Community Survey data, 2009–2015 (pooled).

TABLE A3

### Full-time, full-year workers with an associate's degree in intellectual and caring professions by whether they attain earnings above \$35,000 annually by age 35, by degree type.

<i>35-year old, full-time, full-year (FTFY) workers in intellectual and caring professions (ICPs):</i>		
	Share who earn \$35,000 or less per year	Share who earn more than \$35,000 per year
Associate's Degree	70%	30%
Bachelor's Degree	23%	77%

Note: Based on inflation-adjusted earnings in 2015 dollars. ICPs encompass the following occupations: counselors; social workers; social and human service assistants; miscellaneous community and social service specialists, including health educators and community health workers; clergy; directors, religious activities and education; religious workers, all other; preschool and kindergarten teachers; elementary and middle school teachers; secondary school teachers; and special education teachers. Source: Georgetown University Center on Education and the Workforce analysis of American Community Survey data, 2009-2015 (pooled).

TABLE A4

### Women, blacks, and Latinos are less likely to reach the \$35,000 per year earnings threshold by age 35.

<i>35-year old, full-time, full-year (FTFY) workers:</i>		
	Share who earn \$35,000 or less per year	Share who earn more than \$35,000 per year
<b>Men</b>		
Associate's Degree	70%	30%
Bachelor's Degree	23%	77%
<b>Women</b>		
Associate's Degree	43%	57%
Bachelor's Degree	20%	80%
<b>Whites</b>		
Associate's Degree	28%	72%
Bachelor's Degree	13%	87%
<b>Blacks/African Americans</b>		
Associate's Degree	44%	56%
Bachelor's Degree	23%	77%
<b>Hispanics/Latinos</b>		
Associate's Degree	39%	61%
Bachelor's Degree	21%	79%

Note: Based on inflation-adjusted earnings in 2015 dollars.

Source: Georgetown University Center on Education and the Workforce analysis of American Community Survey data, 2009-2015 (pooled).

in charities, or other service to vulnerable populations or society as a whole. Thus, they give up the wages they could have earned with the same level of skills in an alternative occupation. The ICP careers are in a certain sense a combination of paid employment and public service. They also reflect political and policy choices that we as a society have made. These choices put a substantial share of the cost of delivering these public services on these professionals, rather than distributing it more broadly across the society and paying these workers' wages commensurate with the value of their contributions. The educational programs that prepare these professionals to be successful in their chosen field may provide an adequate benefit to society even if they do not meet the economic self-sufficiency standard based on wages earned by their graduates. In such cases, a relative economic threshold that compares program graduates to others in their field may be more appropriate.

## Social Inequities in the Labor Market

Postsecondary institutions cannot change wider social inequities in the labor market, but they can influence them. Existing inequalities and biases in the labor market based on characteristics such as gender, race, ethnicity, age, or disability have a major impact on workers' earnings. Even if two people, a man and a woman for instance, receive an equivalent education (same institution, same level, same program of study), often they do not face the same prospects in the labor market. Among women FTFY workers with an associate's degree, 43 percent do not earn more than \$35,000 per year by age 35, compared to 23 percent for men. Among women FTFY workers with a bachelor's degree, 20 percent do not earn more than \$35,000 per year by age 35, compared to 11 percent for men (see Table A4). Similarly, among FTFY workers with an associate's degree, 44 percent of blacks and 39 percent of Latinos do not earn more than \$35,000 per year by age 35, compared to 28 percent of whites. Also, among FTFY workers with a bachelor's degree, 23 percent of blacks and 21 percent of Latinos do not earn more than \$35,000 per year by age 35, compared to 13 percent of whites.

While society may be willing to accept that people in the intellectual and caring professions receive lower earnings on average, it should not accept that some groups of students receive lower earnings in the labor market based on prejudice or bias. Colleges should be expected to address any bias in their admissions and administration of educational programs, as well as to work with employers, policymakers, and other stakeholders to root out prejudices and inequities in society. However, it is, practically speaking, unrealistic to expect colleges single-handedly to remedy discrimination and prejudice in broader society in general and in the labor market in particular. While no group of students should have the bar set lower for it due to bias, the educational adequacy standard should also avoid giving colleges incentives to cherry-pick students from privileged backgrounds, which would unproductively create more access barriers to quality postsecondary education for disadvantaged groups.<sup>3</sup>

## Nontraditional Students

In examining costs and benefits, our economic self-sufficiency analysis focuses on people with a full career ahead of them. They have ten years to recoup the costs of their education, and another thirty years to reap the benefits afforded by wage premiums relative to workers with no more than a high school diploma.<sup>4</sup> Also, the earnings for these workers tend to follow a typical trajectory, where they have a lower earnings level when they first start in the labor market following graduation, and those earnings then grow over time as they gain work experience in their field. These are reasonable assumptions for traditional-age college students who enter their program of study upon graduating high school. However, postsecondary education and training providers, especially community colleges, serve a growing number of older, nontraditional students, who either seek advancement in their careers or are looking to change their careers altogether.<sup>5</sup> Among community colleges, 35 percent of students are now age 25 or older.<sup>6</sup> For these students, the general economic self-sufficiency analysis presented in this paper will need major adjustments or a different approach. Comparison of earnings before enrollment in the program with earnings after graduation is one potential option to

gauge marginal labor market benefits for these students. Since community college programs serve a mix of traditional and nontraditional students, practitioners should consider ways to combine the outcomes for the two groups of students into a weighted adequacy score for each program of study.

## Multiple Institutions and Programs of Study

Labor market outcomes also do not differentiate the contributions of individual institutions to students who attended multiple institutions, nor do they assess the contributions of multiple programs to students who switched majors or majored in two or more disciplines. This is a concern for evaluating the economic self-sufficiency of community college programs in particular, as many community college students seek to transfer to a four-year college or university. While the costs of each education program can be clearly distinguished, the benefits of education are cumulative, making it impossible to pinpoint which program is responsible for which share of the benefits.

## Delay between Program Delivery and Availability of Labor Market Outcomes

Another practical issue is that it often takes years for college graduates to attain meaningful earnings. Students have to graduate from their program, enter the labor market, and start earning stable, regular wages. Ideally, data on graduates' earnings for ten years or more after they complete their program would provide information for a comprehensive assessment of economic self-sufficiency. However, it takes at least a decade before this information becomes available, making the delay between performance and feedback too long for substantive use in continuous evaluation and performance improvement. By the time meaningful labor market outcomes become available, leadership of the program may change, faculty and staff may change, and the program may not even be around anymore.

Thus, by the time they become available, labor market outcomes reflect past policies, practices, spending, and funding levels, not current ones. For shorter-

term assessments of institutional performance and of progress in meeting educational adequacy standards, supplementary intermediate metrics should be considered. These intermediate metrics can provide some indication as to whether students are well positioned to complete their programs with sufficient labor market potential and capacity to obtain additional education. These metrics include measures of factors such as enrollment, progression (persistence and retention), transfer, major selection, and completion, as well as the attainment of additional education and training credentials upon leaving the educational program.

## Contribution of Nonmonetary Benefits

In addition, focusing on monetary benefits of higher education obscures the fact that higher education also provides important nonmonetary benefits. While economic self-sufficiency is a necessary component of educational adequacy, it is not by itself sufficient, and should not be the sole focus of postsecondary educators to the detriment of other outcomes. This report focuses on economic self-sufficiency and does not consider nonmonetary benefits in any substantial depth. In order to get a holistic assessment of educational adequacy, the working group will need to account for these additional outcomes and dimensions of postsecondary education.

## Notes

1 Georgetown University Center on Education and the Workforce analysis using regional price parities from U.S. Bureau of Economic Analysis, "Real Personal Income for States and Metropolitan Areas, 2014," 2016.

2 Veronica Minaya and Judith Scott-Clayton, "Labor Market Trajectories for Community College Graduates," Community College Research Center, 2017, <https://ccrc.tc.columbia.edu/publications/labor-market-trajectories-community-college-graduates.html>.

3 As Chou, et al. acknowledge, any potential accountability metric based on students' post-enrollment financial performance may lead to colleges avoiding enrolling students they deem as "high risk," which may limit access and opportunities for disadvantaged students. Tiffany Chou, Adam Looney, and Tara Watson, "A Risk-Sharing Proposal for Student Loans," The Hamilton Project Policy Proposal, 2017. Overall, at community colleges, this is less of an issue because they are open-enrollment institutions, but since the economic self-sufficiency metric is proposed for application at the program level and there are selective programs at community colleges, this consideration is still relevant even within narrower community college context.

4 Alternatively, the working group could consider the mortgage market criterion of a debt burden being acceptable if it doesn't exceed 27 percent of income.

5 Sarah Turner, "Labor Force to Lecture Hall," The Hamilton Project Policy Proposal, 2017.

6 National Center for Education Statistics (NCES), Digest of Education Statistics tables, U.S. Department of Education, 2015–2016, table 303.55.