



THE ECONOMIC RECORD OF THE OBAMA ADMINISTRATION: INVESTING IN HIGHER EDUCATION

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Contents

Executive Summary.....	2
Introduction	5
I. The Economic Rationale for Federal Policies and Reforms to Support Higher Education.....	7
Individual Returns to Higher Education	7
Positive Externalities	10
Credit Constraints.....	10
Information Failures and Procedural Complexities.....	12
The Role of Family Income	14
II. Key Accomplishments	16
Helping Students Pay for College	16
Investments in Grant and Tax Aid.....	17
America’s College Promise	19
Reducing Credit Constraints and Improving Student Debt Outcomes.....	22
Providing More Flexible Repayment Plans	25
Improving Information and Reducing Procedural Complexities	31
College Scorecard	32
FAFSA Simplification	36
Protecting Students from Low-Quality Programs and Encouraging Schools to Improve	39
Gainful Employment Regulations	42
Protecting Against Fraud and Deception.....	42
III. Next Steps	44
IV. Conclusion.....	46
References	47
Appendix: Pell Grant Quantification	57

Executive Summary

In today's economy, a high-quality college education is one of the most important investments young people can make, both for themselves and for our country, as well as one of the clearest paths to the middle class. Despite the high average returns to a college degree, several challenges prevent many students who may benefit from a college degree from enrolling in and graduating from college within a reasonable amount of time and repaying their loans on manageable terms. The Obama Administration has taken several steps to address these obstacles to ensure that all students, regardless of their background, have access to a college education that prepares them for success in the workplace and in life. In fact, CEA estimates that the Administration's increase in the average Pell Award between award years 2008-2009 and 2014-2015 alone will lead to an additional \$20 billion in aggregate earnings, a nearly 2:1 return on the investment.

This report documents the economic importance of investing in higher education, the barriers that students and families face in making that investment, the policies enacted by this Administration to address those challenges, and the work that lies ahead to build upon this progress.

Investments in higher education typically yield large returns. However, the return to college varies substantially across individuals, institutions, and programs.

- Over the course of a career, the median worker with a bachelor's degree earns nearly \$1 million more than a worker with just a high school diploma, when both work full-time, full-year from age 25. The same type of worker with an associate degree earns about \$330,000 over a worker with a high school diploma. In present value, these premiums equal roughly \$510,000 and \$160,000 for bachelor's and associate degrees respectively. Individuals with college degrees also see lower unemployment rates and have increased odds of moving up the economic ladder.
- While data suggest that the overall return to a college education is at a historical high, there is substantial variation in outcomes, much of which is related to the schools that students attend and the programs in which they enroll.

Despite the high average returns to a college degree, there are several challenges to ensuring that the individual and societal benefits of higher education are realized to the fullest extent possible. The circumstances of the Great Recession amplified many of these obstacles.

- An individual's postsecondary education level has spillover benefits to society, or positive "externalities," that individuals usually do not consider when deciding whether to attend college. These societal benefits, such as greater productivity, larger tax revenues, higher levels of voting, and less crime, are hard to quantify, but are numerous and potentially very large.
- Since the knowledge, skills, and enhanced earnings potential that a student obtains from going to college cannot be offered as collateral to secure a loan, the private market is

often unwilling to supply educational loans. In the absence of federal student aid, credit constraints would prevent many students from financing their education.

- Because students' earnings typically grow over time after they complete college, some borrowers may also be constrained by the standard 10-year repayment period, which forces them to repay their loans at a time when only a small share of the benefits have been realized.
- Limited information about the associated benefits and costs of college leads both to sub-optimal choices and to under-investment, and the informational and procedural complexities of applying for college and financial aid further inhibit some students from enrolling in college or selecting the best value college for themselves.
- Increasing enrollment and declining state budgets during the Great Recession exacerbated the trend of rising tuitions at public institutions and stretched capacity at low-cost community colleges. The changing market also led to a spike in enrollment in the for-profit college sector, where many colleges offer programs with higher tuitions and worse outcomes.

To ensure that the societal benefits of a college-educated population are realized and to promote college access, this Administration has put forward numerous policies and proposals to reduce college costs.

- The Administration has increased the maximum Pell Grant award by \$1,000 and tied it to inflation. Pell Grants reduce the cost of college by an average of \$3,700 for 8 million students a year. CEA estimates that the Administration's increase in the average Pell Grant award will provide a nearly 2:1 return on investment by increasing the expected earnings of recipients.
- This Administration established the American Opportunity Tax Credit (AOTC), which provides a maximum credit of \$2,500 per year—or up to \$10,000 over four years—to expand and replace the Hope scholarship credit. The bipartisan tax and budget agreement signed into law in December 2015 made the AOTC permanent. In 2016, the AOTC will cut taxes by over \$1,800, on average, for nearly 10 million families.
- The President's America's College Promise proposal to make community college tuition-free for responsible students by creating a new partnership with states would offer 9 million students the chance to earn the first half of a bachelor's degree and the skills needed in the workforce at no cost. Since the President's announcement, over 36 free community college programs have launched in states, cities, and community colleges. Altogether, these programs are raising more than \$150 million in new public and private investments and are supporting at least 180,000 students.

The Obama Administration has enacted key reforms to help make sure that the federal student loan system is able to best serve students who wish to invest in higher education.

- In 2010, President Obama signed student loan reform into law, generating over \$60 billion in savings and redirecting that money back to students and taxpayers. In 2013, he signed into

law further reforms that lowered interest rates on student loans for nearly 11 million borrowers.

- The President's Pay As You Earn and related income-driven repayment plans have allowed about 5.5 million student borrowers, up from roughly 1 million in 2012, to cap their monthly student loan payments at as little as 10 percent of discretionary income, to ensure their debt is manageable especially in the critical years after college.
- The Administration has also focused on strengthening loan servicing to support Americans struggling with student loan debt.

To help address the informational and procedural complexities that prospective students face, the Administration has worked to get more data into the hands of students and make it easier than ever to apply for student aid.

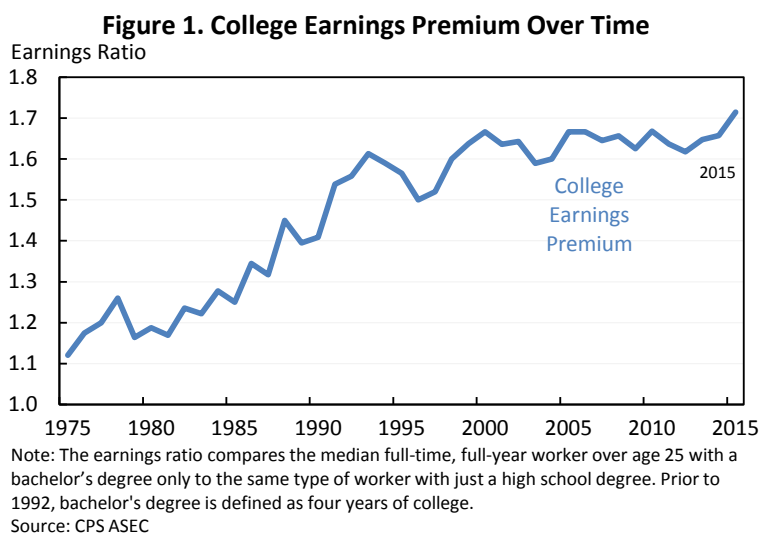
- The new College Scorecard gives students access to the most reliable and comprehensive data on students' outcomes at individual colleges, including data on former students' earnings, student debt for graduates, and borrowers' repayment rates. By providing students and families with high-quality, easily understood information, the Scorecard helps students make better investment decisions.
- The Administration has made the FAFSA simpler by reducing the number of questions presented to students and families and by making it easier for applicants to directly transfer data from the IRS. This fall the FAFSA will also be available earlier, improving the information students have about their financial aid packages when they make decisions about where to apply and further reducing the complexity of the application.

This Administration has taken comprehensive actions to protect students and taxpayers from the subset of institutions that engage in fraudulent, deceptive, and other predatory practices.

- The Department of Education's Gainful Employment regulations strengthen accountability by requiring institutions to provide key information on whether students graduate, how much they earn, and how much debt they accumulate. The regulations distinguish programs that provide affordable training that leads to well-paying jobs from programs that leave students with poor earnings prospects and unmanageable debt, and will cut off federal aid to career college programs that consistently fail accountability standards.
- Among other critical accountability measures to protect students and taxpayers, 2010 regulations strengthened the Department's authority to take action against institutions engaging in deceptive advertising, marketing, and sales practices and prohibited schools from compensating admissions recruiters based solely on their success in securing student enrollment. Proposed 2016 Borrower Defense to Repayment regulations would further protect borrowers and taxpayers against fraud, deception, and other misconduct by postsecondary institutions.

Introduction

The Obama Administration has been committed to ensuring that all students, regardless of their background, have access to a college education that prepares them for success in the workplace and in life. In today's economy, a high-quality education is more than just the first step in one's career; it is one of the most important investments young people can make in their futures. Currently, college graduates enjoy an earnings premium that is at a historical high, reflecting a trend over several decades of increasing demand for skilled workers. In 2015, the median full-time, full-year worker over age 25 with a bachelor's degree (but no higher degree) earned roughly 70 percent more than a worker with just a high school degree (CPS ASEC, CEA calculations). Moreover, people with a college degree are more likely to be employed—benefitting from both lower unemployment rates and higher rates of labor force participation.



But despite the high average returns to a college degree, federal policy in higher education has had to confront several longer-term challenges. On the one hand, research shows that college enrollments have not kept up with the rising demand for college-related skills in the workplace (Goldin and Katz 2008)—suggesting that on the whole, Americans are investing too little in higher education. At the same time, a minority of students who attend college do not reap the high returns, especially when they attend low-quality programs or fail to complete a degree. These challenges are particularly acute for students from disadvantaged backgrounds, who are less likely to enroll in college and to complete a high-quality program. As a result, as a growing number of students borrow to finance their education, too many struggle to manage their debt.

As President Obama took office, the challenges to ensuring broad access to a quality college education were becoming magnified by the Great Recession. Rising unemployment lowered the implicit cost of forgoing earnings to attend college, and many sought to invest in higher education to improve their skills and job prospects. But at the same time, state budgets declined, exacerbating the trend of rising tuitions at public institutions and stretched capacity at low-cost

community colleges. The changing market also fostered further expansion of the for-profit college sector, where many colleges offer low-quality programs.

Over the past seven years, the Obama Administration has met these challenges with a complementary set of evidence-based policies and reforms. These policies have been instrumental in helping students from all backgrounds finance investments in higher education and in helping to improve the quality of those investments. To help expand college opportunity, the President doubled investments in grant and scholarship aid through Pell Grants and tax credits. To help more students choose a college that provides a worthwhile investment, the Administration provided better and more accessible information about college costs and outcomes through the College Scorecard, simplified the Free Application for Federal Student Aid (FAFSA), and protected students from low-quality schools through the landmark Gainful Employment regulations. To help borrowers manage debt after college, income-driven repayment options like the President's Pay As You Earn (PAYE) plan have capped monthly student loan payments at as little as 10 percent of discretionary income to better align the timing of loan payments with the timing of earnings benefits.

The benefits of some of these policies are already evident today, while many more will be realized over the coming decades. For example, CEA analysis finds that the Pell Grant expansions since 2008-2009 enabled at least 250,000 students to access or complete a college degree in 2014-2015, leading to an additional \$20 billion in aggregate earnings. This represents a nearly 2:1 return on the investment. In addition, millions more will benefit from lower college costs and improved college quality in the future.

This report begins by surveying the evidence on the individual and societal returns to higher education and the challenges to ensuring that all students have an opportunity to benefit from attending college regardless of their background. It then describes the many ways in which the Administration's policies have addressed these challenges, and concludes with a discussion of next steps to build on this progress.

I. The Economic Rationale for Federal Policies and Reforms to Support Higher Education

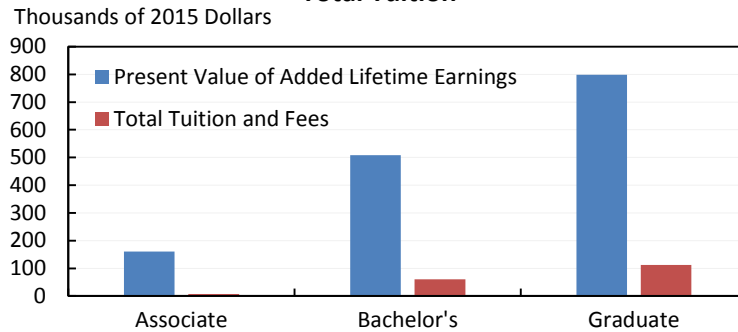
A large body of evidence shows that on average, college attendance yields high returns to individuals and has important benefits for society as well. Typically, the individual returns far exceed the costs of a degree, suggesting that individuals have a strong incentive to make investments in higher education. Even in good times, however, individuals face a number of barriers that lead to underinvestment, and the potential benefits of higher education would often go unrealized in the absence of federal policies. The barriers to finding, financing, and accessing a high quality education are especially high for those from low-income families, first-generation college families, and other disadvantaged groups. As President Obama took office in 2009, these challenges were intensified by the Great Recession. Though more Americans than ever wished to enroll in college, they were stymied by financial hardship, rising tuitions, variation in program quality, lack of information to help them make good choices, and a federal student aid system that had become so complex that many eligible students did not apply (Page and Scott-Clayton 2015). This setting called for a new set of policies and reforms to the existing system of federal student aid.

Individual Returns to Higher Education

While research suggests that college graduates experience a wide range of non-monetary benefits such as greater health and happiness (Oreopoulos and Salvanes 2011), a primary benefit that motivates most students is the expected gain in future earnings (Eagan et al. 2014; Fishman 2015). Over a career, the median full-time, full-year worker over age 25 with a bachelor's degree earns nearly \$1 million more than the same type of worker with just a high school diploma (CPS ASEC, CEA calculations). The same type of worker with an associate degree earns about \$330,000 more. The present values of these earnings premiums are also high, amounting to roughly \$510,000 and \$160,000 for bachelor's and associate degrees respectively.¹ As shown in Figure 2 below, the present value of the additional lifetime earnings far exceeds the cost of tuition. Though tuition does not capture all of the costs of a college education—in particular, it does not capture the opportunity cost of forgone earnings while in school—even when those costs are included, the present value of added earnings typically exceeds the total cost of college by an order of magnitude (Avery and Turner 2012).

¹ The net present value calculation here and elsewhere in the report uses a discount rate of 3.76 percent, corresponding with the current interest rate on undergraduate loans.

Figure 2. Present Value of Added Lifetime Earnings versus Total Tuition



Note: Lifetime earnings are calculated by summing median annual earnings for full-time, full-year workers at every age between 25 and 64 by educational attainment, subtracting earnings for the same type of worker with only a high school degree, and converting to present value using a 3.76% discount rate. Tuition for associate (bachelor's) is the full-time tuition for two- (four-) year schools multiplied by two (four), and for graduate, it is the average graduate tuition multiplied by three added to bachelor's tuition.

Source: CPS ASEC 2015 and 2016; NPSAS 2012; NCES 2015

To be sure, the earnings differentials shown in Figure 2 are caused, at least in part, by factors other than educational attainment. For example, students who attend college may have been more skilled or more connected and thus would earn more regardless of their education. But a body of rigorous economic research supports the conclusion that higher education does indeed cause large increases in future earnings. Using a range of sophisticated techniques to compare individuals who differ in their educational achievement but who are otherwise similar in their earnings potential, researchers have estimated that individuals who attend college earn between 5 to 15 percent more on average per year of college than they would if they had not gone to college.²

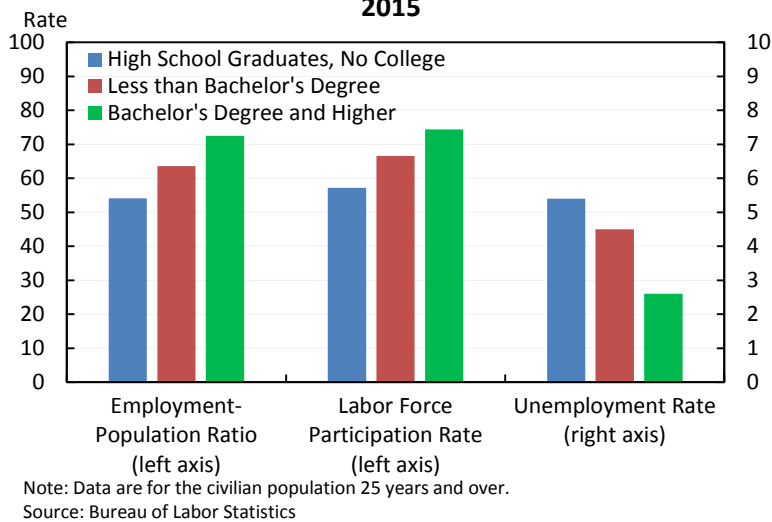
Importantly, some research also suggests that the returns to college have been just as high, if not higher, for “marginal students”—that is, students who are on the border of either attending or completing college versus not doing so. These students often come from low-income families and their decisions hinge on the perceived cost or accessibility of college. Early studies used variation in college proximity to identify the returns to college and found especially large returns to students for whom proximity was a decisive factor (Kane and Rouse 1993; Card 1995). A more recent study by Zimmerman (2014) compares students whose GPAs are either just above or just below the threshold for admission to Florida International University, a four-year school with the lowest admissions standards in the Florida State University System. This study finds that “marginal students” who are admitted to the school experience sizable earnings gains over those who just miss the cutoff and are thus unlikely to attend any four-year college, translating into meaningful returns net of costs and especially high returns for low-income students. Using a similar methodology, Ost, Pan, and Webber (2016) study the benefit of completing college among low-performing students whose GPAs are close to the cutoff for dismissal at 13 public universities in Ohio. They find substantial earnings benefits for those who just pass the cutoff and

² See, for example, Kane and Rouse 1993; Card 1995; Zimmerman 2014; Ost, Pan, and Webber 2016; Turner 2015; Bahr et al. 2015; Belfield, Liu and Trimble 2014; Dadgar and Trimble 2014; Jacobson, LaLonde, and Sullivan 2005; Jepsen, Troske and Coomes 2012; Stevens, Kurlaender, and Grosz 2015.

complete their degree. Turner (2015) similarly finds that women who attend college after receiving welfare benefits experience large and significant earnings gains if they complete credentials.

In addition to having higher earnings, college graduates are also more likely to work than high school graduates. Data from the Bureau of Labor Statistics, summarized in Figure 3, show that college graduates with at least a bachelor’s degree participate in the labor force at a higher rate than high school graduates (74 vs. 57 percent in 2015)³ and also face a lower unemployment rate among those who participate (2.6 vs. 5.4 percent in 2015). As a result, people over the age of 25 with a bachelor’s degree or higher are 30 percent more likely to be working than those with only a high school degree. A somewhat smaller but still sizeable employment premium is seen for those with some college but without a bachelor’s degree.⁴ Consistent with college premiums in both earnings and employment, Haskins, Isaacs, and Sawhill (2008) find that individuals with college degrees have increased odds of moving up the economic ladder to achieve a higher level of income compared to their parents.

Figure 3. Likelihood of Working by Educational Attainment, 2015



Overall, higher education helps Americans become more productive in the labor market, building the skills our economy demands and establishing a stronger foundation for the economic prosperity and security of our families and communities. Though the large individual returns to college imply that individuals have strong incentives to invest in higher education, much of the potential benefit of higher education would go unrealized in the absence of federal policies to support these investments due to positive externalities, credit constraints, and information failures and procedural complexities.

³ See CEA’s 2014 and 2016 reports on labor force participation for a more detailed discussion about educational attainment and labor force participation (CEA 2014, 2016d).

⁴ This category includes both individuals who attended college but received no degree and those who received an associate degree.

Positive Externalities

An individual's postsecondary education level has spillover benefits to others in society that the individual does not capture, or positive "externalities." Since individuals usually do not consider the societal benefits when deciding whether to attend college, such externalities are an important motive for federal student aid.

These societal benefits, while hard to quantify, are numerous and potentially very large (Baum, Ma, and Payea 2013; Hill, Hoffman, and Rex 2005; OECD 2013). To begin with, higher individual earnings lead to higher tax revenue and lower government expenditure on transfer programs. Further, research shows that increased educational attainment can lead to higher levels of volunteering and voting (Dee 2004), lower levels of criminal behavior (Lochner and Moretti 2004), as well as improved health (Cutler and Lleras-Muney 2006; McCrary and Royer 2011). Individual investments in education can thus benefit other members of society through reduced victimization and lower health care and law enforcement costs. Other social contributions associated with higher education—such as teaching, inventions, or public service—also are not fully captured by the individual's wages. Finally, research shows that when individuals invest in their own college education, they can actually make *other* workers more productive. A study by Moretti (2004) finds that increasing the share of college graduates in a labor market leads to significant increases in the productivity and wages of others where those college graduates live and work. Indeed, research using international comparisons suggest that the cognitive skills or "knowledge capital" of a nation are essential to long-run prosperity and growth (Hanushek and Woessmann 2015).

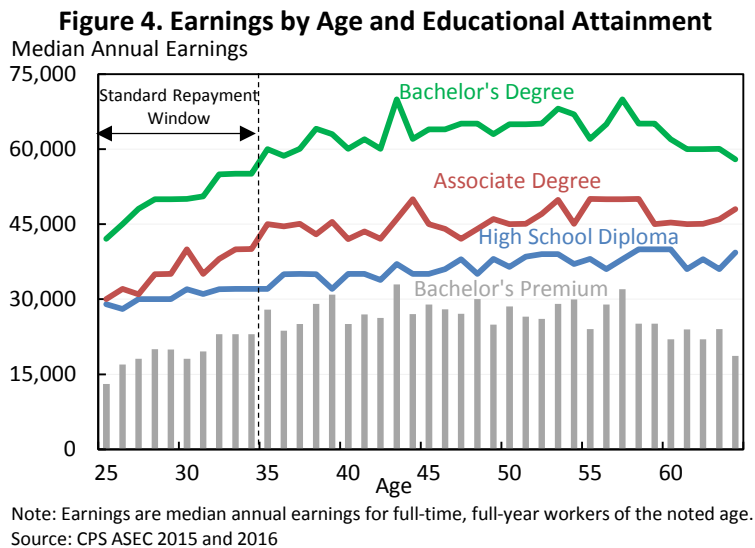
Credit Constraints

While the social benefits of education provide a strong justification for federal support, equally important is the fact that even when the private returns to college are high, the private market is often unwilling to supply educational loans—especially to students from low-income families. A key reason for this market failure is that the knowledge, skills, and enhanced earnings potential that a student obtains from going to college cannot be offered as collateral to secure the loan. The lack of a physical asset makes educational loans very different from mortgages or auto loans, which provide lenders with recourse in the form of foreclosure or repossession if the borrower is unable to repay. For this reason, the private market alone would under-supply loans to finance education.

From an individual's perspective, attending college makes financial sense whenever the present value of the benefits outweighs the present value of the costs, when both are discounted based on preferences for current outcomes versus future outcomes. But while the benefits of attending college are spread out over a long future, most of the costs—including both the direct cost of tuition and fees and the foregone earnings while in school—must be paid up front. While some students are able to finance their college educations through savings or help from their families, many need to borrow to make the investment.

A major function of the federal student loan system is to ease the credit constraints caused by imperfections in the private loan market, thereby ensuring broad access to affordable loans and a means to invest in one’s future earnings potential.⁵ However, while the student loan system has helped to alleviate credit constraints at the time of college enrollment, the traditional standard repayment plan’s 10-year repayment period with equal payments each month does not account for income volatility or dynamics once the student has left school. As a result, this standard plan—in which students are enrolled by default—may adversely affect some students’ investment decisions and hinder others from successfully managing their debt.

The constraint imposed by the 10-year repayment plan is illustrated in Figure 4, which shows the lifetime earnings trajectory of a typical bachelor’s degree recipient working full-time and year round from age 25 to retirement. As the figure shows, there is a strong positive relationship between age and earnings. This relationship is especially strong for those with a bachelor’s degree and it persists for at least 15 to 20 years after many students graduate from college. In short, a college investment pays off over several decades, and a 10-year repayment window forces borrowers to pay the costs at a time when only a small share of the benefits have been realized. Indeed, the discounted values for the earnings levels used in Figure 4 suggest that less than a third of the earnings gains over a 40 year career are realized during the standard repayment window.



⁵ Although a private loan market exists, the loans typically require a co-signer and often do not come with the consumer protections that federal loans have, including discharge in instances of death or permanent disability. Today the private market constitutes only a small share of student loans—in 2012, 6 percent of undergraduates used private loans to finance their education (NPSAS 2012, CEA tabulations). In the 2000s, private student loans accounted for a larger share of student loans; see CFPB (2012) for a detailed analysis about how and why the private market for student loans has changed over the last decade.

While many borrowers who work when they leave school earn enough to pay their student debt on the standard 10-year plan,⁶ there is significant variation both in the size of student loans and in the returns to college. Further, because borrowers may face temporary unemployment or low earnings—especially at the start of their career (Abel and Deitz 2016)—some borrowers are needlessly constrained if they remain on the standard plan. Such considerations are especially pertinent to recent cohorts of students who graduated during or shortly after the Great Recession. Research shows that college graduates entering the labor market during a recession tend to experience sizeable negative income shocks and that it can take years to recover (Kahn 2010; Oreopoulos, von Wachter, and Heisz 2012; Wozniak 2010). More generally young workers are often affected more severely by recessions (Hoynes, Miller, and Schaller 2012; Forsythe 2016; Kroeger, Cooke, and Gould 2016). A short repayment window could therefore lead to poor loan outcomes for these students despite a longer-term ability to repay.

The economics literature provides some evidence that credit constraints faced by students upon graduation can affect career choices. In particular, Rothstein and Rouse (2011) find that having more debt to repay reduces the probability that graduates choose lower-paid public interest jobs, especially jobs in education. Similarly, Luo and Mongey (2016) estimate that larger student debt burdens cause individuals to take higher wage jobs at the expense of job satisfaction, likely due to credit constraints after graduating, and that this reduces well-being among borrowers.

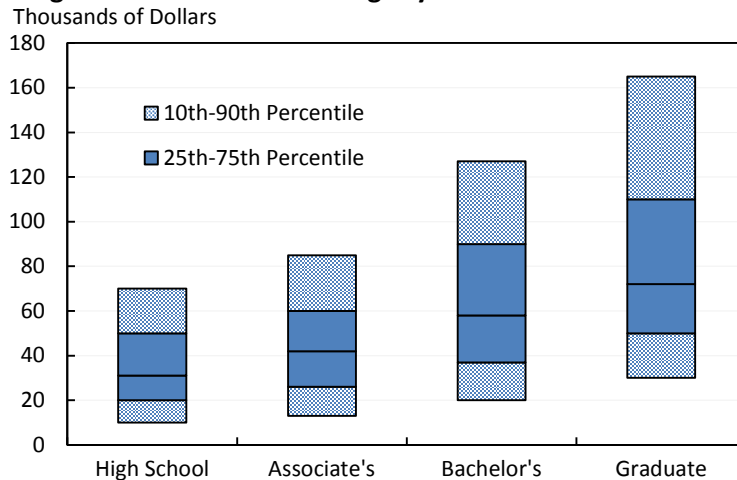
Information Failures and Procedural Complexities

Yet another obstacle that prevents some individuals from making high-return investments in college is limited information about the associated benefits and costs, which leads both to poor decisions and to under-investment. Survey-based research yields mixed findings on whether students underestimate or overestimate the returns to college (Betts 1996; Wiswall and Zafar 2013; Baker et al. 2016) but suggests that students generally view their future earnings as uncertain (Dominitz and Manski 1996). Consistent with this view, one study estimates that only 60 percent of the variability in returns to schooling is forecastable (Cunha, Heckman, and Navarro 2005).

Underlying this uncertainty about the return to college is the fact that while this return is high on average, it is also quite variable. This variation is illustrated in Figure 5, which shows the distribution of earnings by educational attainment. For example, while workers with a bachelor's degree are far more likely to have greater earnings than those with only a high school diploma, there are a fraction whose earnings are similar to the earnings of those with only a high school diploma. Ten percent of workers age 35 to 44 with a bachelor's degree had earnings under \$20,000, compared with 25 percent of workers with only a high school diploma (CPS ASEC, CEA Calculations).

⁶ CEA calculations using the CPS ASEC and NPSAS 2012 show that at age 25, the earnings premium seen by a typical bachelor's degree recipient working full-time and year-round is \$16,000 a year, well above the \$3,500 annual payment corresponding to a typical debt amount of about \$27,000. Similarly, for an associate degree, the annual earnings premium of roughly \$3,000 is above the annual payment of \$1,500 associated with the typical amount of about \$11,000 that students borrow for this type of degree.

Figure 5. Variation in Earnings by Educational Attainment



Note: Data are for workers ages 35-44 with positive wage and salary income.
Source: CPS ASEC 2016, CEA calculations

The variation in the returns to college is driven by a number of factors; however, one important determinant of both the variability and student uncertainty about these returns is the large variation in the quality of schools and programs of study—which can be hard for potential students to assess. A growing body of literature shows that college quality matters both for completion and for earnings,⁷ with some pointing to relatively poor returns at for-profit institutions (Cellini and Turner 2016). Studies have also estimated highly variable returns by college major for bachelor’s degree recipients (e.g., Altonji, Blom, and Meghir 2012), and have found that students’ forecast errors regarding earnings differences across majors can affect their major choice (Arcidiacono, Hotz, and Kang 2012).

The effects of poor information and large, difficult-to-forecast variation in earnings can be particularly detrimental since students cannot diversify their college enrollment selections. That is, students generally attend only one school at a time and focus on one or two programs. If they make a poor selection of college or major, it is costly to switch, as it can be difficult to transfer credits (NCES 2014). This can potentially lock students into a low-quality program. For some students, the uncertainty of returns itself may prevent them from enrolling in the first place if they are sufficiently risk-averse (Heckman, Lochner, and Todd 2006). The combination of high variability and uncertainty with limited ability to diversify means that some students will realize small or even negative returns from college even if the expected return is high. The associated uncertainty may also cause risk-averse students to invest less than they otherwise would.

In addition to lacking information about the benefits from specific college investments, prospective students also lack good information about costs. Students often overestimate college costs—with low-income and first-generation prospective students overestimating the cost by as much as two or three times the actual amount (Avery and Kane 2004)—and parents overestimate

⁷ For example, see Bound, Lovenheim, and Turner (2010); Cohodes and Goodman (2014); Goodman, Hurwitz, and Smith (2015); Hoekstra (2009).

costs as well (Grodsky and Jones 2007). Moreover, Hastings et al. (2015) finds that students who overestimate costs are less likely to enroll in and complete a degree program, confirming that misinformation about costs can be a barrier to investing in college.

When attempting to assess the costs of college, an important obstacle for many students is the complexity of the financial-aid system (Lavecchia, Liu, and Oreopoulos 2015). Behavioral economics shows that onerous processes can impact choices, especially when the individuals making decisions are young (Thaler and Mullainathan 2008; Casey, Jones, and Somerville 2011), and can therefore prevent some students who would benefit from investing in college from doing so. In a study of Boston public school students, Avery and Kane (2004) find evidence that low-income students are discouraged by the procedural complexity of applying both financial aid and admission into college, even if they are qualified and enthusiastic about going to college. These findings are consistent with those of Dynarski and Scott-Clayton (2006) who use lessons from tax theory and behavioral economics to show that the complexity of the FAFSA is a serious obstacle to both the efficiency and equity in the distribution of student aid. Page and Scott-Clayton (2015) calculate that 30 percent of college students who would qualify for a Pell Grant fail to file the FAFSA, which is required to receive a Pell Grant. In total, an estimated 2 million students who are enrolled in college and would be eligible for a Pell Grant never applied for aid, and an unknown number failed to enroll in college because they did not know that aid was available.

The Role of Family Income

Overall, the evidence points to a number of factors—including social externalities, credit constraints, poor information, and complexity—that cause some individuals to invest too little in their educations or otherwise make poor education investment choices. Importantly, these factors do not affect all students equally; they are all more likely to affect disadvantaged individuals. First, students from low-income families, with lower levels of savings, are more likely to be credit constrained and, thus, in need of student loans. Further, the costs of financial-aid complexity also falls most heavily on disadvantaged students, who may have fewer resources available to help them navigate the system (Dynarski and Scott-Clayton 2006). Similarly, research shows that low-income students are less likely to accurately estimate the costs and returns to college (Avery and Kane 2004; Grodsky and Jones 2007; Horn, Chen, and Chapman 2003; Hoxby and Turner 2015). In part, this may be because popular information channels like U.S. News and World Report do not contain detailed information on many colleges disproportionately attended by low-income students. In addition to the barriers they face specific to higher education, low-income students are less likely to receive a PreK-12 education that prepares them for college, making college access and success an even greater challenge for these individuals.

In light of the evidence, many of the Administration's policies have been targeted at removing barriers to education for those who face the greatest challenges and so represent the largest opportunities for improved efficiency and equity. The remainder of this report describes the set of evidence-based policies enacted and proposed by the Obama Administration to help correct market failures and improve the investment decisions and outcomes of all students who wish to invest in higher education.

ANTI-POVERTY EFFORTS AND EDUCATIONAL ATTAINMENT

Research suggests that this Administration's anti-poverty efforts will help expand college access and success, either directly through improving college outcomes or indirectly through improved childhood health and academic performance, with clear evidence in support of the expansions of Medicaid and the Children's Health Insurance Program (CHIP), the Earned Income Tax Credit (EITC), and the Supplemental Nutrition Assistance Program (SNAP).

Medicaid/CHIP improves early childhood health and protects families facing health problems from financial hardship (Currie 2000; Kaestner 2009; Kaestner, Racine, and Joyce 2000; Dave et al. 2015; Finkelstein et al. 2012), both of which are positively associated with higher educational attainment (Case, Fertig, and Paxson 2005). Cohodes et al. (2016) find that a 10 percentage point increase in Medicaid/CHIP eligibility for children increases college enrollment by 0.5 percent and increases the four-year college attainment rate by about 2.5 percent. Brown, Kowalski, and Lurie (2015) also find that female children with more years of Medicaid/CHIP eligibility are significantly more likely to attend college. In his first month in office, President Obama signed the Children's Health Insurance Program Reauthorization Act, which provided additional tools and enhanced financial support to help states cover more children through Medicaid and CHIP, and subsequent legislation has extended funding for CHIP through fiscal year 2017. In parallel, the Affordable Care Act's comprehensive coverage expansions through Medicaid and the Health Insurance Marketplaces are helping ensure all children and their families have access to affordable, high-quality health insurance coverage.

The EITC reduces the amount of taxes that qualified working people with low to moderate income owe and provides refunds to many of these individuals. It has been shown to raise student test scores (Dahl and Lochner 2012) and future educational attainment. Research finds that raising the maximum EITC by \$1,000 increases the probability of completing one or more years of college by age 19 by 1.4 percentage points (Maxfield 2013) and of completing a bachelor's degree among 18-23 year olds by 0.3 percentage point (Michelmore 2013). For families whose household income lies near the EITC eligibility cutoff, another study provides evidence that a \$1,000 increase in credits received during the spring of their senior year of high school increases college enrollment the following fall by 0.5 percentage point (Manoli and Turner 2014). Through the American Recovery and Reinvestment Act (ARRA), President Obama expanded the EITC for families with more than two children and for working couples, and he made these expansions permanent in 2015; the refundable portion of the Child Tax Credit (CTC) was also expanded in parallel with these changes. Together, the EITC and CTC improvements reduce the extent or severity of poverty for about 8 million children each year.

Research has found that lower family food budgets are associated with greater discipline problems and lower test scores among school children (CEA 2015b). SNAP provides nutrition assistance to millions of eligible, low-income individuals and families and helps to combat these problems. A study by Almond, Hoynes, and Schanzenbach (2016) finds that early childhood access to the Food Stamp Program (as SNAP was previously known) led to higher rates of high school completion among children who grew up in disadvantaged households. By expanding SNAP benefits in ARRA, President Obama prevented hundreds of thousands of families from experiencing food insecurity (Nord and Prell 2011), enabling more children to be well-nourished and prepared for school.

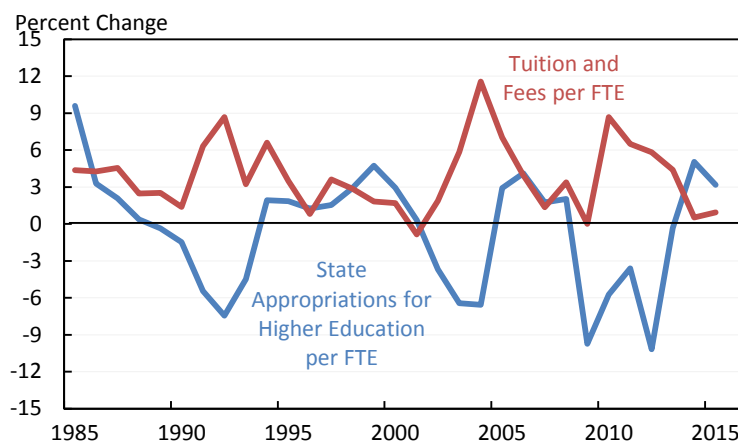
II. Key Accomplishments

Over the last seven years, the Obama Administration has made great strides to help students make more effective investments in higher education. These efforts have been guided by the available evidence and have addressed the challenges identified in Section I by helping to offset the cost of college, reducing credit constraints and improving student debt outcomes, providing better information about the costs and benefits of colleges, simplifying the financial aid application process, and holding the most poorly performing colleges accountable. In addition, Administration efforts to improve PreK-12 outcomes have aimed to better prepare students for college and their careers. Some of the effects of these policies are already evident today, while many more will be realized over the coming decades. Despite these important steps, more work remains to ensure that all students have the opportunity to pursue higher education if they wish to and that they can do so affordably (see section III).

Helping Students Pay for College

With the onset of the Great Recession, the college earnings premium was near a historical high and the number of Americans who wished to attend college was rising. But at the same time, falling tax revenues and state budget shortfalls led to sharp declines in state funding for public institutions, which in turn contributed to rising tuitions and fees (Figure 6; Mitchell, Palacios, and Leachman 2014). While the costs of college were increasingly shifted to students through higher tuition, rising unemployment and financial hardship also meant more families faced credit constraints and uncertainty as to whether a college investment was feasible. With large returns at stake, reducing the cost of college became an urgent priority and has been a cornerstone of this Administration's higher education policy since its beginning.

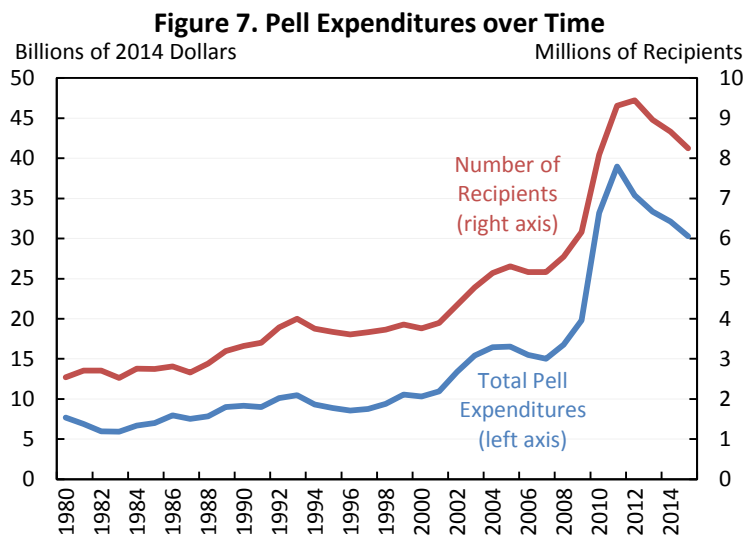
Figure 6. Annual Percent Change in State Funding for Higher Education and Public Tuition and Fees over Time



Note: Figures are inflation adjusted.
Source: College Board (2015a)

Investments in Grant and Tax Aid

Since coming into office, President Obama has worked aggressively to increase the maximum Pell Grant award, the primary form of financial aid for many students. On average, Pell Grants reduce the cost of college by \$3,700 for 8 million students a year. Pell Grant funding increased by more than \$12 billion from academic year 2008-2009 to 2014-2015, a 67 percent increase, and the maximum Pell Grant award has increased by \$1,000 (Figure 7). Moreover, for the first time, Pell Grant funding has been tied to inflation to ensure the value of the aid does not fall over time.



Source: College Board (2015b)

A growing body of research confirms the potential for need-based grants to improve college access and success.⁸ For example, Dynarski (2003) examines the elimination of the Social Security Student Benefit Program in 1982, and her estimates suggest that an offer of \$1,000 in grant aid increases the probability of attending college by about 3.6 percentage points and appears to increase completed schooling. Abraham and Clark (2006) find similar impacts on college attendance in their study of the District of Columbia Tuition Assistance Grant Program instituted in 1999. A more recent study that examines the effects of a need-based program in Florida with a strict eligibility cutoff likewise finds significant increases in four-year college enrollment and completion (Castleman and Long 2013).

Using these studies to estimate the effects of this Administration's expansions of Pell Grants, CEA analysis finds that the Pell Grant expansions since 2008-2009 led at least 250,000 students to attend college or complete a college degree in 2014-2015 who would have not otherwise done so. The increase in educational attainment among these students translates to an additional \$20 billion in aggregate earnings, representing a nearly 2:1 return on the investment. However, the actual returns on the Administration's Pell Grant investments are likely even larger, as this

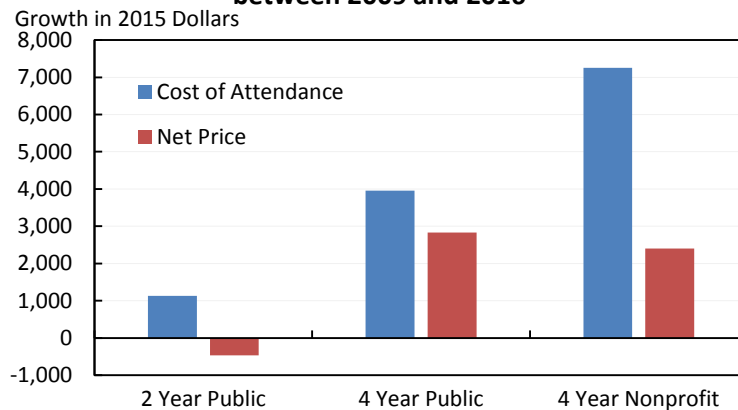
⁸ A few early studies focusing on the initial implementation of the Pell Grant find mixed results (Hansen 1983; Kane 1996; Seftor and Turner 2002; Bettinger 2004); however, the initial benefits of the program may have been limited by the newness of the program and the complexity of the eligibility rules and application process. These complexities have been reduced in recent years.

estimate does not account for social externalities from increased educational attainment nor for other benefits to those receiving larger Pell Grants, including the opportunity to select from a broader range of options, spend more time on school instead of work, and finish sooner (see the Appendix for more details on this calculation).

The Administration has also reduced taxes for low- and middle-income families that attend college. In 2009, the Administration established the American Opportunity Tax Credit (AOTC), which provides a maximum credit of \$2,500 per year—or up to \$10,000 over four years—to expand and replace the Hope higher education credit. Along with providing a more generous credit, the AOTC also is partially refundable and thus provides more benefits for low-income households as well. Before the AOTC, only 5 percent of credit and tuition deduction dollars went to filers with incomes under \$25,000; by 2013, that share had risen to 24 percent (Dynarski and Scott-Clayton 2016; College Board 2015b). Although research shows that AOTC has little impact on college enrollment (Hoxby and Bulman 2015; Bulman and Hoxby 2015), the AOTC lowers the costs of college for millions students and their families; in 2016, it will cut taxes by over \$1,800 on average for nearly 10 million families. The bipartisan agreement that President Obama signed into law in 2015 made the AOTC permanent as part of a package that collectively provided about 24 million working and middle-class families a year each with a tax cut of about \$1,000.

Thanks in part to the Administration’s historic investments in grant and tax aid, the net price of college that students are responsible for paying grew far more slowly than the published cost of attendance between academic years 2008-2009 and 2015-2016 (Figure 8). Although more work remains to make college more affordable, the impact of the Administration’s Pell Grant and tax credit expansions have helped lower the cost of college for millions of students and their families every year.

Figure 8. Growth in the Cost of Attendance and Net Price between 2009 and 2016



Note: Years are academic years, and prices are for undergraduate students. Public costs are for in-state students. Cost of attendance includes tuition, fees, room, and board. Net price subtracts grant and tax aid from cost of attendance.
Source: College Board (2015a)

FEDERAL INVESTMENTS IN K-12 EDUCATION DURING THE RECESSION

As the effects of the Great Recession set in, public universities were not alone in suffering the consequences of declining state revenues; almost all states found that their projected revenues were insufficient to achieve their education plans. As a result, since state and local governments provide about 90 percent of school funding, officials were preparing for significant funding cuts for K-12 teachers, principals, and support staff, in addition to higher education personnel. Such cuts would have severely disrupted educational services for many of America's students (EOP 2009).

In response to the fiscal crisis, ARRA appropriated more than \$60 billion to state education agencies. In doing so, it shielded schools from the worst effects of their states' budgetary shortfalls (Evans, Schwab, and Wagner 2014). While funding alone is not a panacea for solving problems in K-12 education, research suggests it is a necessary component. If invested in the most productive inputs, it can contribute to improved educational outcomes, especially for students living in poverty (Jackson, Johnson, and Persico 2016; LaFortune, Rothstein, and Schanzenbach 2016). A key way in which increased ARRA funding helped improve outcomes was by keeping experienced teachers in the classroom and staving off increases in class sizes, as it enabled states to save or create more than 400,000 jobs, most of which were for teachers, principals, and other school staff. Research finds that students in smaller classrooms in the early grades perform higher on standardized tests, earn higher wages, and are more likely to attend college than peers in larger classrooms (Chetty et al. 2011), and that the effects may be larger for minorities and low-income students (Krueger 1999). Due to the swift action of the Obama Administration, states were provided the resources to keep teachers in the classroom and ensure that students had the educational services necessary to succeed.

In addition, ARRA was able to catalyze a wave of reform through targeted investments. The Race to the Top initiative led nearly every state to raise the bar on expectations for student learning, and an independent analysis found that Race to the Top led to significant changes in education policy across the United States (Howell 2015). The Investing in Innovation (i3) fund also put a new focus on validating, funding and scaling innovative programs.

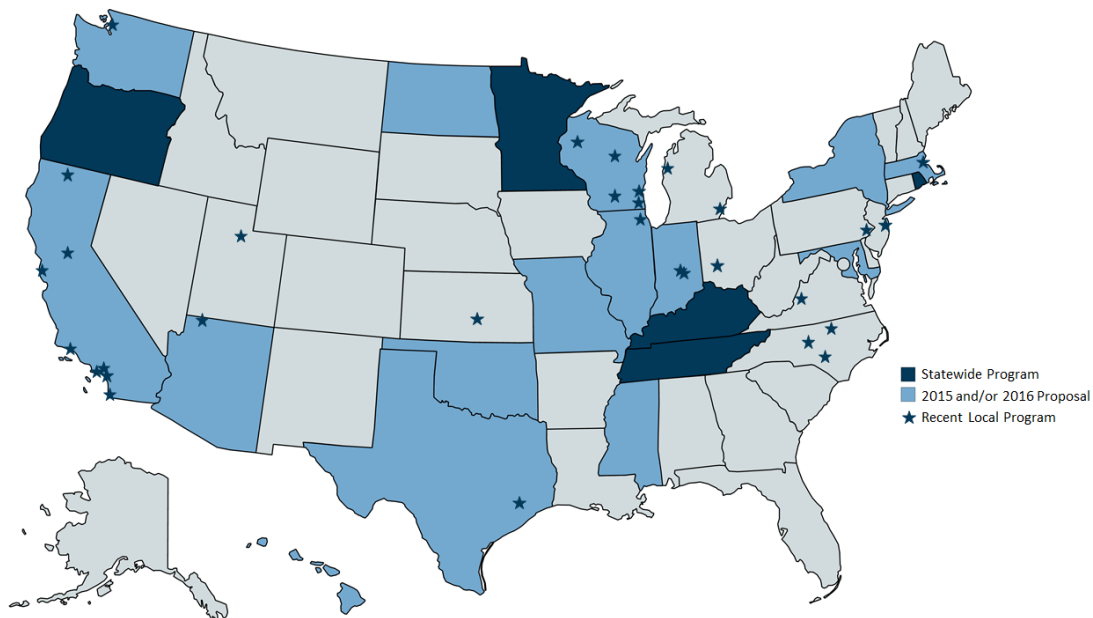
America's College Promise

Although investments in grant and tax aid have helped make college more affordable for many students, too many families still feel as if college is out of reach. In order to make sure that all responsible students are able to attend college, President Obama unveiled his America's College Promise (ACP) plan in January 2015 to make two years of community college free for hard-working students. Over 1,300 American community colleges provide over 40 percent of undergraduates with educations that deepen their knowledge, make them more informed citizens, and lead to a quality, affordable degree or credential that improves their opportunities in the labor market. If all states participate in the President's ACP plan, an estimated 9 million students could benefit from such an education, and a full-time community college student could save an average of \$3,800 in tuition per year.

In fewer than two years since the President challenged more states and communities to make America's College Promise a reality for their students, at least 36 Promise programs—or free

community college programs—have launched in states, cities, and community colleges in all corners of the United States, increasing the total estimated number of Promise programs to more than 150 across the country. Altogether these new programs are raising more than \$150 million in new public and private investments in community colleges to serve at least 180,000 students; and the number of free community college programs continues to grow.

Figure 9. Promise Programs Across the Country



Free community college promotes college access not only by reducing financial barriers,⁹ but also by eliminating barriers related to misinformation about college costs (Baum and Scott-Clayton 2015). By clearly messaging that a post-secondary education is within reach, Promise programs help students cross the first hurdle to applying and enrolling in college. Removing such barriers at community colleges is especially important, as community college students tend to be poorer than students attending four-year schools—over half of community college students have family incomes below 185 percent of the federal poverty line—and are less likely to have parents who attended college to help them navigate the student aid application process (NPSAS 2012, CEA tabulations). Indeed, research shows that Promise programs have been highly effective, which is why the President proposed his vision for free community college in America’s College Promise.

Evaluations of early local Promise programs show that these programs can significantly improve high school graduation, college enrollment, and college graduation rates. A number of research studies have examined the effects of Kalamazoo Promise, the first place-based Promise program. Initiated in 2005, Kalamazoo Promise offers full in-state college tuition to graduates of the Kalamazoo Public Schools in Michigan who have enrolled in the district for at least four years. Using variation in high school eligibility, length of enrollment in the school district, and/or the

⁹ Researchers have found that students facing lower community college prices are more likely to enroll in college (Denning 2016b; Martorell, McCall, and McFarlin 2014).

timing of the program's announcement and implementation, researchers have found that the program reduced suspensions in high school, improved high school credit completion, led to students sending their test scores to more selective in-state institutions, and substantially increased college enrollment and graduation (Andrews, DesJardins and Ranchhod 2010; Bartik and Lachowska 2013; Bartik, Hershbein, and Lachowska 2015; Miller-Adams 2009). Research suggests that the program has had a high rate of return, particularly for African American students (Bartik, Hershbein, and Lachowska 2016).

Carruthers and Fox (2016) likewise find large positive effects of another Promise program, Knox Achieves. Knox Achieves covered the gap between tuition and fees and grant aid from federal, state, and institutional sources to first-year community college students making an immediate transition between high school and one of the state's public community colleges or technology centers. Comparing outcomes before and after the program began between students in eligible districts and students in non-eligible districts, Carruthers and Fox find large impacts on high school graduation and college enrollment, with some shift from the four-year to two-year sector. The effects were strongest for lower-achieving and lower-income students. Given the success of Knox Achieves, 27 counties adopted the program to expand eligibility to nearly half of Tennessee's population in 2014, and the program became the model for the state-wide Tennessee Promise program rolled out in 2015, which guarantees free community college tuition and fees to high school seniors who sign up, apply for financial aid, and meet with a mentor. Analyses of Promise programs in Pittsburgh, El Dorado, and New Haven also show sizeable effects on educational outcomes (Page and Iritri forthcoming; Ritter and Ash 2016; Gonzalez et al. 2014; Daugherty and Gonzalez 2016).

Despite the positive findings in the studies outlined above, the economics literature suggests that program design matters, and some Promise initiatives may see less success. For example, LeGower and Walsh (2014) suggest that merit-based Promise programs may have more limited effects on college access as they disproportionately benefit wealthier and white households. An analysis of one program, which provides free community college only to students with at least a 3.0 high school GPA who test out of remediation, found that these conditions limited eligibility to only about 15 percent of the city's high school graduates (Page and Scott-Clayton 2015; Fain 2014). Additionally, research finds that reducing the cost of lower-quality options can lead to worse outcomes for students, so attention to college quality in the context of lowering prices to students is essential (Peltzman 1973). A recent report by the Department of Education (2016b) outlines the design features that localities creating Promise programs should consider. The report exemplifies the Administration's commitment to expanding quality free community college through Promise programs at the local, state, and national level.

EXPANSIONS OF EARLY EDUCATION PROGRAMS

The Administration has been committed to helping students access a high-quality education at all levels of schooling, and the President's calls for universal preschool and a child care guarantee for working families with young children serve as critical complements to his other proposals. Gaps in educational achievement occur early in life and grow over time, and early intervention is critical for ensuring that all children receive the educational foundation to succeed in school and life. On nearly every measure of school readiness, from health to early human capital, children born into low-income households enter kindergarten at a substantial disadvantage relative to their higher-income peers. Indeed, disparities in physical and mental health, cognition, and socio-emotional and behavioral skills develop in children as young as 9 months (Halle et al. 2009). By the time children enter school around age 5, those in poor households are nearly 4 times more likely to score "very low" on assessments of math skills and over 4 times more likely to score "very low" on reading skills than their peers in more well-off households (Isaacs 2012). This gap remains relatively constant through the beginning of high school, suggesting that achievement gaps in later years are established in the earliest years of childhood (CEA 2016b).

Research shows that enrollment in high quality early childhood education accelerates cognitive and non-cognitive development during primary school years (see CEA 2016b for a review), and can lead to significantly better outcomes later in life—such as greater educational attainment and earnings and less involvement with the criminal justice system (e.g., Heckman et al. 2010; Reynolds et al. 2011; Campbell et al. 2012). That is why, in addition to calling for preschool for all and high-quality care for all infants and toddlers, the Obama Administration has increased investments by over \$6 billion in early childhood programs from fiscal year 2009 to fiscal year 2016, including high-quality preschool, Head Start, early Head Start, child care subsidies, evidence-based home visiting, and programs for infants and toddlers with disabilities. Since 2009, 38 states and the District of Columbia have increased investments in preschool programs by more than \$1.5 billion.

Reducing Credit Constraints and Improving Student Debt Outcomes

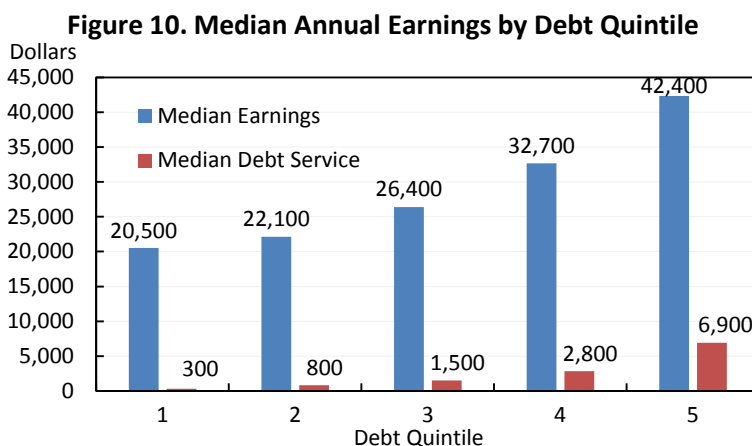
While the Administration has worked aggressively to lower the cost of college, it has also taken important steps to ensure that students can access credit to finance their college educations. For a growing number of Americans, federal student loans are an essential means to realizing the benefits of higher education. In the fall of 2013, over 20 million students enrolled in an institution eligible for federal aid, and roughly half of these students used federal student loans to help finance their education. Both economic theory and empirical evidence suggests that without access to federal student loans, financially constrained students are less likely to attend college, more likely to work while in school, and less likely to complete a degree (Denning 2016a; Wiederspan 2015; Dunlop 2013; Sun and Yannelis 2015).

Key policies signed into law by the President have maintained the accessibility and affordability of student loans for borrowers. In 2010, President Obama signed student loan reform into law, which ended student loan subsidies for private financial institutions and banks and shifted over \$60 billion in savings back to students. Prior to the reform, banks and other private financial institutions provided federally-guaranteed loans, meaning that these institutions provided the

underlying loan principal and earned a profit when students paid back their loans but were compensated by the government when the students failed to repay. To remove this subsidy to financial institutions, the 2010 reform required that all new loans be financed directly by the federal government as Direct Loans, eliminating the middleman and saving money for taxpayers and students. In 2013, President Obama signed into law further reforms that lowered interest rates on student loans for nearly 11 million borrowers. To date, interest rates have remained low and currently stand at 3.76 percent for undergraduate borrowers.

As an increasing number of students have been borrowing to finance a college education, the volume of outstanding federal debt has risen, standing at a high of over \$1.3 trillion dollars today. This rise in debt has made it especially important to ensure that loans serve students well and do not present a burden to borrowers once they leave college.

The evidence suggests that on average, student loans continue to facilitate very high returns for college graduates, and most borrowers are able to make progress paying back their loans (CEA 2016c). In addition, although there has been an increase in the typical amount of debt that borrowers accumulate, most students accumulate only modest amounts of debt. Fifty-nine percent of borrowers owed less than \$20,000 in debt in 2015, with undergraduate borrowers holding an average debt of \$17,900. Large-volume debt remains more prevalent among graduate loans, for which loan limits are much higher, and among borrowers who completed their undergraduate degrees. Consistent with their greater educational attainment, borrowers with greater debt tend to have larger earnings and therefore tend to be well-equipped to pay back that debt (Figure 10; Looney and Yannelis 2015).

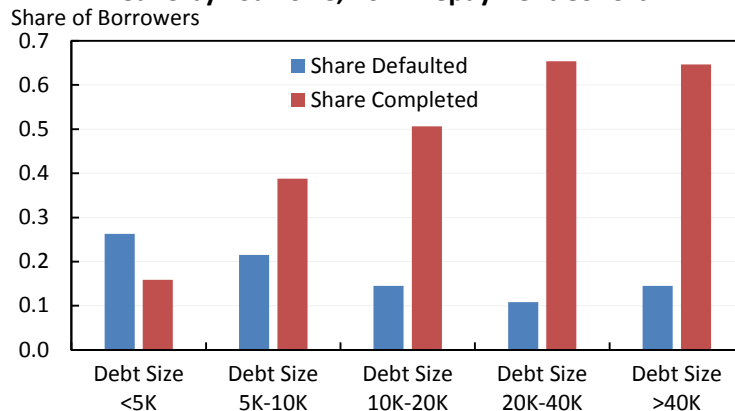


Note: Data are for the 2013 cohort, using the NSLDS 4 percent sample matched to de-identified tax records. Data are for both undergraduate and graduate borrowers. Debt-service figures assume a 10-year standard repayment plan and 3.76% interest.
Source: Looney and Yannelis (2015)

However, borrowers who attend low-quality schools or fail to complete their degrees face real challenges with repayment. In fact, the highest rates of student loan default occur among

students with the smallest amounts of debt because these students are much less likely to have completed, having left school before paying for the full cost of a degree, as shown in Figure 11.¹⁰

Figure 11. Share of Undergraduate Borrowers Who Default by Year 3 by Loan Size, 2011 Repayment Cohort



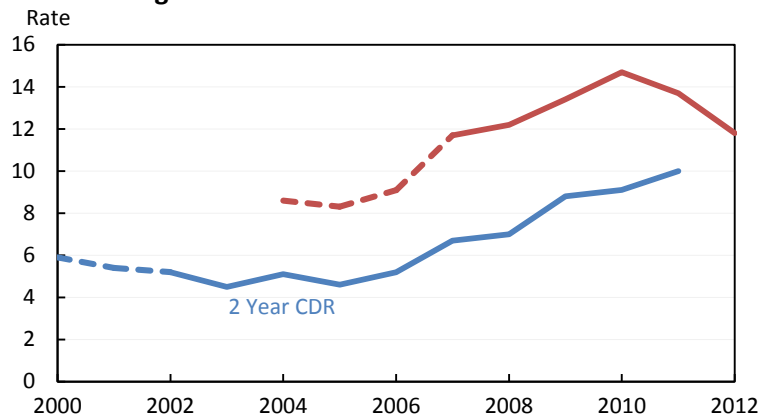
Note: Years are fiscal years. Loan size is based on balance of loan when entering repayment.

Source: Department of Education

The Great Recession also created some acute challenges for student loan borrowers. During the recession, many borrowers went back to school to shelter from the collapsing labor market, but a disproportionate number of these students attended schools that had relatively low graduation rates and did not provide affordable pathways to good jobs. Along with this change in the quality of schools they attended, changes in the demographics of borrowers entering repayment and the challenges they faced when entering the labor market during a deep recession contributed to rising default rates during the recession and in the period that followed. In recent years, the number of students attending low-quality schools has declined, labor market conditions have improved, and default rates, as measured by the official three-year Cohort Default Rate, have gone down (Figure 12).

¹⁰ Loans of less than \$10,000 accounted for nearly two-thirds of all defaults for the 2011 cohort three years after entering repayment. Loans of less than \$5,000 accounted for 35 percent of all defaults.

Figure 12. Cohort Default Rates Over Time



Note: Solid lines represent official rates while dashed lines are estimates by the Department of Education. Through the fiscal year 2008, official cohort default rates were measured after two years, after which they were measured after three years; during the transition period, estimates for both time periods were provided.
Source: Department of Education

In response to rising default rates, the Administration has worked to ensure that students attend high quality schools and that borrowers who have left school and entered repayment have affordable loan payments. The following section focuses on this Administration's efforts to expand flexible repayment plans while later sections describe efforts to improve the quality of schools that borrowers attend. In addition, the Administration has focused on strengthening loan servicing to support Americans struggling with student loan debt. In 2015, the Administration released a Student Aid Bill of Rights reflecting the President's vision that every borrower has the right to quality customer service, reliable information, and fair treatment, even if they struggle to repay their loans. And, in 2016, the White House announced new actions to help Americans with student loan debt understand their repayment options and to ensure they have access to high-quality customer service, strong consumer protections, and targeted support to repay their student debt successfully.

Providing More Flexible Repayment Plans

As described in Section I, the constraint imposed by the standard 10-year student loan repayment plan (in which students are enrolled by default) can hinder debt management since it requires the same monthly payment at the beginning of a borrower's career, when earnings are lowest, as it does mid-career when earnings are higher. This can create repayment difficulties and dissuade students from investing in their education even when the investment has large net benefits over a lifetime. In response, the Administration has made payment plans more flexible and loan payments more manageable through the expansion of income-driven repayment plans. These plans increase flexibility in several ways. First, by expanding the period of repayment, they allow borrowers to spread their student loan payments over a longer period of time, while retaining the option of paying sooner with no pre-payment penalty. Second, by tying payments to borrowers' incomes, income-driven repayment plans link the timing of repayment more closely to the time path of earnings gains from higher education, and they remove needless credit constraints in times when income is temporarily low. Finally, income-driven repayment plans can

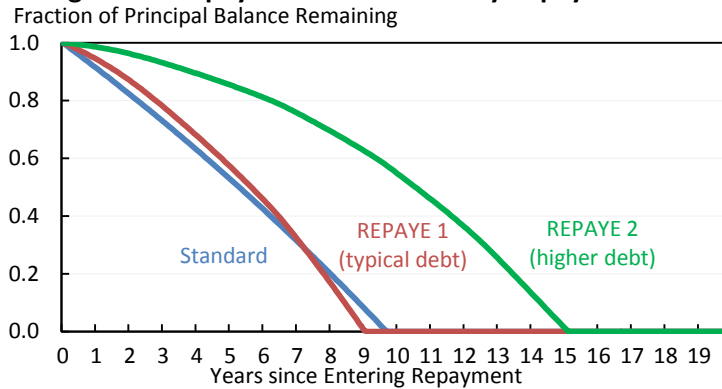
serve as a form of insurance against uncertain returns to college, helping to address some barriers associated with risk.

With the new repayment plans, borrowers will never have to pay more than 10 percent of their discretionary income to repay their debt. The Administration initially expanded income-driven repayment with the Pay As You Earn (PAYE) plan in 2012, which reduced monthly payments to 10 percent of borrowers' discretionary income—lower than the 15 percent required under the original Income Based Repayment Plan in place. Under PAYE, borrowers could also have their remaining loan balances forgiven after 20 years of qualifying payments, 5 years earlier than the original Income Based Repayment plan. PAYE extended more affordable loans to 1.6 million borrowers; however, many borrowers remained ineligible. That is why in 2015, the Administration expanded PAYE with the Revised Pay As You Earn (REPAYE) repayment plan which provides eligibility to all Direct Loan student borrowers, including any student with a consolidated loan (excluding PLUS loans to parents). With REPAYE, these borrowers can cap their monthly payments at 10 percent of their discretionary income, regardless of when they borrowed, and after making the appropriate number of qualifying payments, will have any outstanding balance forgiven. Under REPAYE, borrowers with only undergraduate loans can have their remaining loan balances forgiven after 20 years of qualifying payments; borrowers with any graduate school loans can have their remaining balances forgiven after 25 years of qualifying payments.

Figure 13 below illustrates how the theoretical repayment curve for the standard 10-year plan differs from REPAYE for a typical borrower graduating with a four-year degree.¹¹ Data from the Baccalaureate and Beyond study show that seniors graduating college in 2008 held a median debt of \$17,125 and earned a median income of \$31,000 upon leaving school. The figure assumes an interest rate of 3.76 percent consistent with the current student loan rate, real earnings growth consistent with trends in Figure 4, 2 percent inflation, and a single-person family (for ease of REPAYE calculations). The "Standard" line corresponds to the standard 10-year repayment plan with an initial income of \$31,000 and an initial debt of \$17,125, consistent with the Baccalaureate and Beyond data. The line labelled "REPAYE 1" uses the REPAYE formula with the same initial income and debt, while "REPAYE 2" uses the same initial income but an initial debt of \$31,000 to show how repayment patterns differ by debt amounts. The Standard plan line is relatively flat, reflecting the constant rate at which the principal balance is paid off under this plan. In contrast, both REPAYE lines show that principal repayment is initially slow and accelerates over time. In some cases, such as in "REPAYE 1," borrowers may pay off their debt faster under REPAYE than the Standard plan if their wages are sufficiently high. Further, a comparison of the two REPAYE lines shows that the larger the debt is in comparison to income (or the smaller income is in comparison to debt), the less the REPAYE repayment curve will look like the Standard curve.

¹¹ It should be noted that a number of alternative repayment plans also exist, some of which have longer payment schedules.

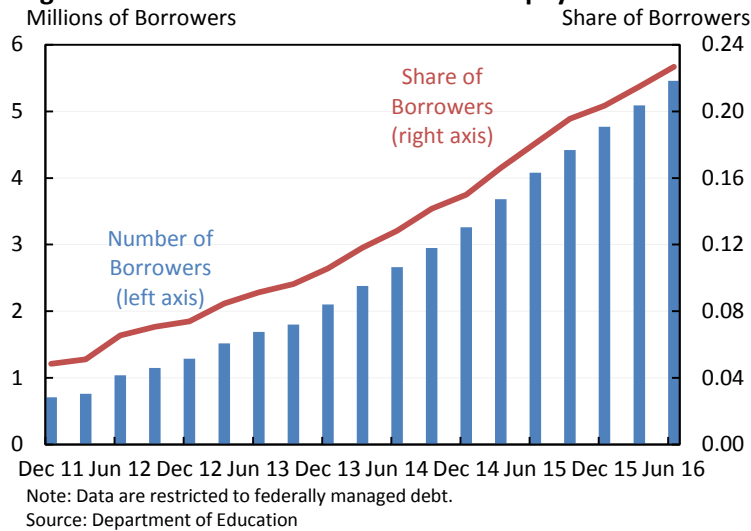
Figure 13. Repayment Distribution by Repayment Plan



Note: Calculations assume a real interest rate of 3.76%, 2% inflation, income growth corresponding with Figure 4 describing earnings by age for full-time full-year workers, that borrowers are in single person families, and assumptions about income and debt from the 2008 Baccalaureate and Beyond Study. REPAYE 1 and 2 differ in their original principal debt amounts, with REPAYE 2 corresponding with a higher debt amount.
Source: CEA Calculations

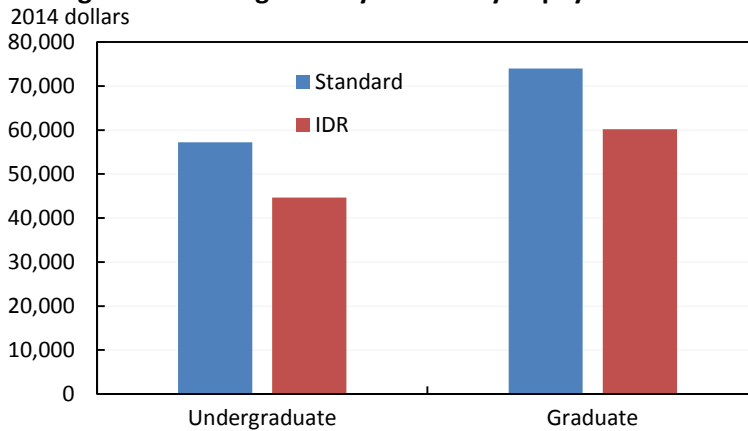
Continuing to expand enrollment in income-driven repayment plans for students who would benefit remains a key priority for this Administration. As of the third quarter of fiscal year 2016, about 5.5 million (more than 1 in 5) borrowers with federally managed debt were enrolled in income-driven repayment plans. The share of borrowers with federally managed debt who are enrolled in income-driven repayment has more than quadrupled over the last four and a half years from 5 percent in the first quarter of fiscal year 2012 to 23 percent in the third quarter of fiscal year 2016 (Figure 14). To help borrowers access this debt management tool, the Administration has improved loan servicer contract requirements, pushed efforts associated with the President’s Student Aid Bill of Rights, put forward a student debt challenge to gather commitments from external stakeholders, and increased and improved targeted outreach to key borrower segments who would benefit from PAYE or REPAYE. Although barriers related to recertifying income and interfacing with the income-driven repayment enrollment tools online persist, the Administration continues to explore options for how to address these remaining shortcomings.

Figure 14. Borrowers in Income Driven Repayment over Time



Recent data suggest that income-driven repayment plans appear to be drawing in many of those borrowers who may most benefit (Figure 15). In general, the data show that income-driven repayment borrowers tend to have lower reported family incomes than borrowers on the standard repayment plan. Among borrowers with undergraduate loans who were enrolled in income-driven repayment as of the third quarter of fiscal year 2015, the average family income (in real 2014 dollars) based on the first FAFSA filed was \$45,000, compared with \$57,000 for those on the standard repayment plan. For borrowers with graduate loans, the average income among those enrolled in income-driven repayment was \$60,000, compared with \$74,000 for borrowers on the standard plan. Even within sectors of educational institutions, borrowers enrolled in income-driven repayment tended to come from lower income backgrounds than those enrolled in the standard plan. One factor contributing to lower incomes among undergraduate income-driven repayment enrollees was that these borrowers were more likely to be classified as independent, and independent borrowers tend to have lower reported incomes since their parents' incomes are not counted as part of their family's income. Overall, 52 percent of borrowers in income-driven repayment were classified as independent, as opposed to 42 percent of borrowers under the standard repayment plan.

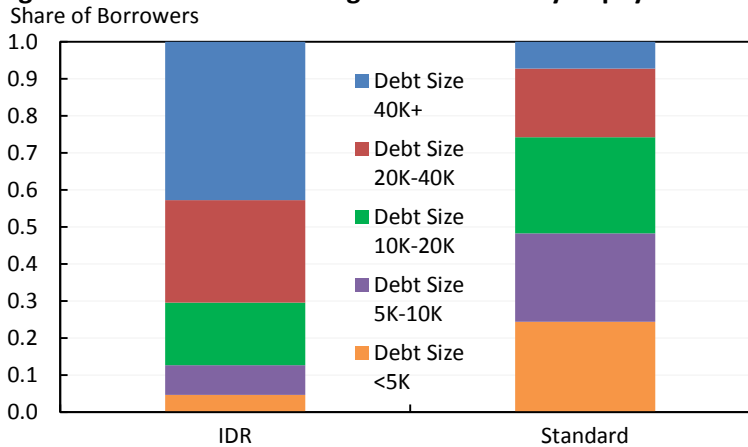
Figure 15. Average Family Income by Repayment Plan



Note: Data are as of the third quarter of fiscal year 2015. Income based on first FAFSA filed, converted to 2014 dollars. Undergraduate and graduate are broken apart at the loan level.
Source: Department of Education

Given that income-driven repayment plans tend to change repayment schedules more dramatically for borrowers whose debt is high relative to their incomes, it is perhaps unsurprising that borrowers in income-driven repayment tend to have larger loan balances outstanding (Figure 16). As of the third quarter of fiscal year 2015, the median debt for these borrowers was \$34,000, while the median was just \$10,000 for borrowers in the standard plan. This difference partly reflects a larger share of graduate borrowers; 30 percent of income-driven repayment borrowers had graduate loans, compared with 10 percent of borrowers under the standard plan. However, substantial differences remain even among graduate and undergraduate borrowers. Differences in outstanding balances also remained when looking within sector, and data for the 2011 repayment cohort suggest they were partly driven by the fact that borrowers entering income-driven repayment typically have larger principal loan balances than borrowers in the standard repayment plan.

Figure 16. Size of Outstanding Loan Balance by Repayment Plan



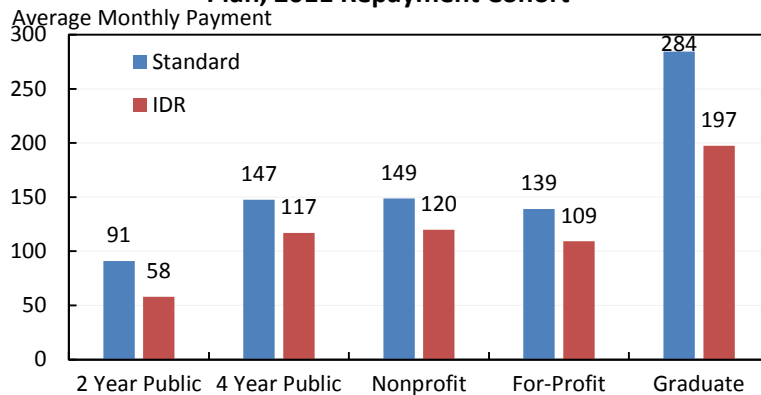
Note: Data are as of the third quarter of fiscal year 2015. Debt size is based on outstanding loan balance.
Source: Department of Education

Consistent with both the larger debt and the prevalence of graduate student debt among borrowers in income-driven repayment, these borrowers are more likely to have completed their undergraduate degrees than borrowers in the standard repayment plan. Among those in the 2011 repayment cohort, 64 percent of borrowers in income-driven repayment had completed, compared to only 48 percent of borrowers in the standard plan. Many of those who completed their undergraduate degree accumulated more debt because they subsequently enrolled in graduate school. But even among borrowers with no graduate school debt, those enrolled in an income-driven repayment plan were still slightly more likely to have completed a degree.

The positive relationship between completion and income-driven repayment enrollment suggests that students who enroll in income-driven repayment are more likely to have large long-run returns to their college investments and to be able to eventually pay off their loans. However, data on prior repayment behavior also show that income-driven repayment is being used by individuals with short-run repayment difficulties. Among borrowers entering repayment in fiscal year 2011, a sizeable fraction who enrolled in income-driven repayment had experienced difficulty in repaying their loans prior to entering income-driven repayment, with slightly higher signs of distress compared to borrowers under the standard plan. Over 40 percent of these borrowers had defaulted, had an unemployment or economic hardship deferment, or had a single forbearance of more than 2 months in length before entering their first income-driven repayment plan. A much smaller fraction of these borrowers, roughly 10 percent, experienced difficulty in repayment after entering income-driven repayment.

A key way that income-driven repayment helps to improve outcomes for borrowers is by reducing monthly payments, since payment amounts are spread over a longer time period and are tied to earnings. For the 2011 repayment cohort, Figure 17 shows that borrowers in income-driven repayment had lower monthly payments across all sectors, despite serving borrowers who accumulated larger amounts of debt.

Figure 17. Average Monthly Payment by Sector and Repayment Plan, 2011 Repayment Cohort



Note: Data are for the fiscal year 2011 cohort as of fiscal year 2014. Some small sectors are excluded from this chart. Data contain some duplication across and within categories.
Source: Department of Education

Some borrowers in income-driven repayment plans may have zero dollar monthly payments. These plans allow borrowers who attended low-quality schools and subsequently experienced low earnings to stay out of default, and give borrowers who experience temporary periods of economic difficulty time to get back on their feet. Data show that the same types of borrowers who have more difficulty repaying their loans in terms of college sector, debt size, and borrower characteristics are also more likely to have zero dollar scheduled payments, highlighting the importance of income-driven repayment in helping these borrowers manage their debt. It is important to note, however, that another factor driving the group of income-driven repayment borrowers with zero dollar scheduled payments is that, on average, borrowers in income-driven repayment entered repayment relatively recently. As of the end of fiscal year 2015, income-driven repayment borrowers had been in repayment for an average of about three years. As Figure 4 above shows, earnings increase over a career, so as borrowers progress through their careers, their scheduled payments are also likely to increase.

In order to further expand income-driven repayment to borrowers who could benefit from more manageable monthly payments, the Administration has announced a series of new actions to enroll 2 million more borrowers into income-driven repayment plans. Data about the characteristics of borrowers enrolled in income-driven repayment highlight the importance of these initiatives. For example, although low balance borrowers and borrowers who did not complete are more likely to default on their loans, they represent a relatively smaller share of borrowers in income-driven repayment. Enrolling more of these types of borrowers in flexible repayment plans like income-driven repayment will help make their debt more manageable and help them to avoid costly and unnecessary defaults.

At the same time, as research has shown, college choice is a crucial factor. It is critical to help borrowers avoid investing in colleges that are unlikely to increase their lifetime earnings and are instead likely to leave them with high debt and low earnings. This Administration's policies have focused on strengthening the information available to students and college accountability to help students make good decisions.

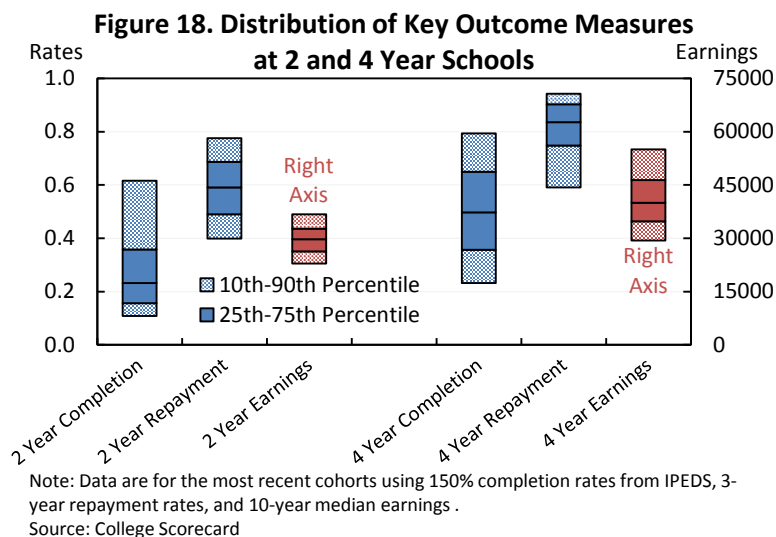
Improving Information and Reducing Procedural Complexities

When students have better information, they can make better choices about their education. When choosing a college, students need information on college quality and cost to know whether their investment in higher education will pay off. Research shows that for high-achieving, low-income students, providing information about college cost and quality, like semi-customized net price and graduation rates, enables students to attend and progress at schools that better match their qualifications (Hoxby and Turner 2013). Further research shows that clear and detailed information about earnings can lead students to revise their employment expectations (Ruder and Van Noy 2014; Wiswall and Zafar 2013; Oreopoulos and Dunn 2012) and change their major choice (Ruder and Van Noy 2014; Baker et al. 2016). Accessible information about costs and economic outcomes thus plays a crucial role in encouraging students to make informed decisions about enrolling in higher education and choosing the best college for their needs.

At the same time, evidence suggests that while prospective students can benefit from improved information, procedural complexities may prevent some individuals from using the information and other resources available to them. In particular, as described in Section I, the complexity of the FAFSA has created barriers to efficiency and equity in the distribution of student financial aid, deterring many students who would benefit from aid from applying. It follows that reducing this complexity should help students access federal student aid to better invest in their education, and the research supports this conclusion. In an experiment that provided low-income families with personalized aid eligibility information, and in some cases, assistance completing the FAFSA, only families who got both assistance and information, were more likely to see the benefits of greater financial aid and college enrollment (Bettinger et al. 2012). This section details key Administration initiatives to improve information and reduce procedural complexities for students.

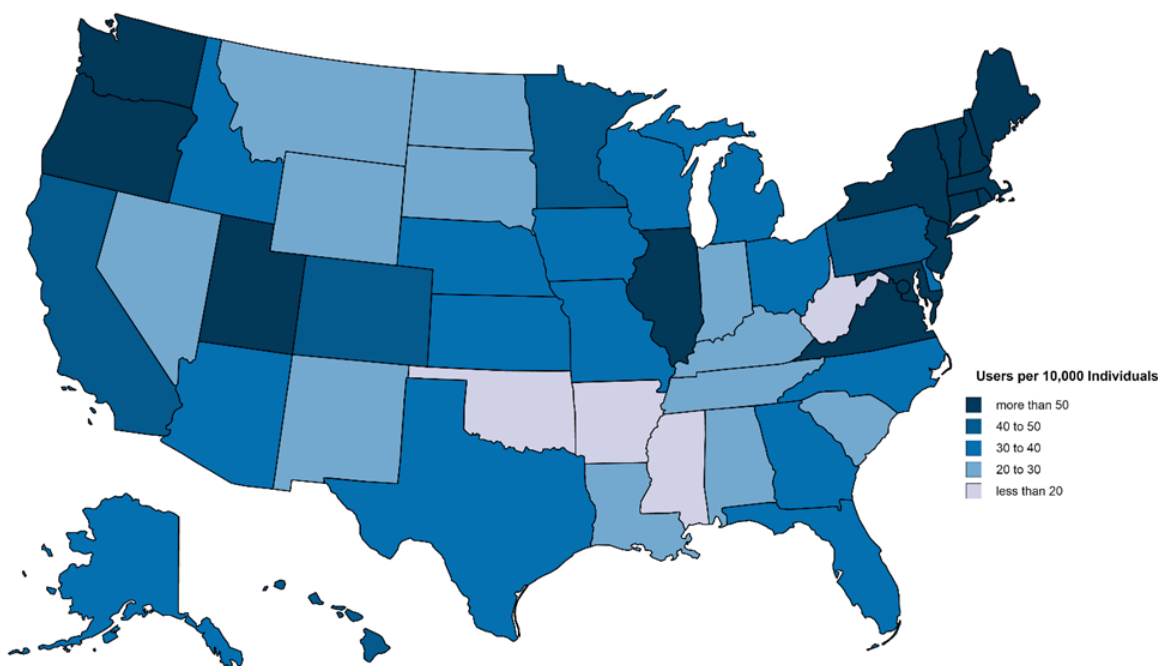
College Scorecard

In 2015, the Department of Education launched the redesigned College Scorecard to help empower Americans to select colleges based on what matters most to them. The online Scorecard provides reliable, unbiased, comprehensive, and nationally comparable data on college outcomes for about 4,500 institutions. These outcomes include former students' earnings, student debt for graduates, and debt repayment rates; the data are also broken down by demographic group, allowing all students to assess how well colleges are serving students like themselves before deciding where to apply and attend. Figure 18 highlights the importance of these data, showing the large variation in outcomes at two- and four-year colleges. CEA's technical report on using federal data to measure and improve the performance of U.S. institutions of higher education provides more information about the Scorecard, including a guide to the available measures, methods for assessing college quality, and data driven lessons for performance management (CEA 2015c).



Within its first year, the College Scorecard has reached students and families across the country (Figure 19), and students now have multiple opportunities use Scorecard to make better decisions. For example, the College Scorecard data will be clearly featured in the hundreds of millions of Google searches related to colleges and universities taking place in the US each year, and other companies like College Board are integrating the data into their college application products and programs. College rankings like Forbes, Money, The Brookings Institution, The Economist, Wall Street Journal, and Washington Monthly are also using new outcomes data included in the Scorecard. To date, Scorecard data have been accessed nearly 13 million times through the College Scorecard tool itself and by users of the Scorecard’s open application programming interface (API).

Figure 19. Scorecard Usage by State, Normalized by Population in 10,000s

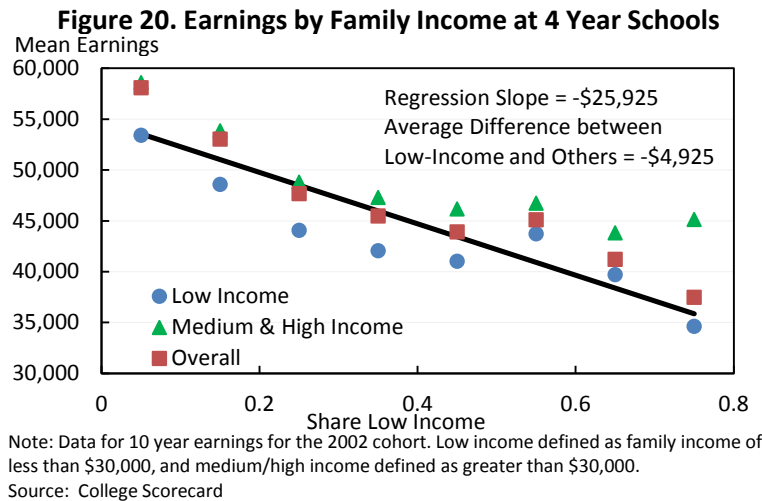


Note: Usage data are as of September 12, 2016. They only represent unique visitors to the Scorecard tool itself and exclude calls for the data through the API. The data are for individuals of all ages and are normalized with 2015 Census data.

The revised College Scorecard contains a variety of information that is useful for students, parents, and administrators when considering the right college for a particular student. For example, although earnings and employment are primary motivations for students to attend college, students also care about cost, completion rates, and debt repayment outcomes, as well as broader goals like becoming a better person (Eagan et al. 2014; Fishman 2015). Based on academic literature and consumer testing, the Administration developed a series of measurable outcomes that students had identified as important. Because students value each factor differently depending on their own circumstances and preferences, the Scorecard presents each indicator independently so that students can emphasize the attributes most important to them.

Additionally, because students come from a variety of backgrounds, it is helpful to provide information about how prospective institutions serve students like them. Ideally, a single

measure of college quality would isolate the effect that attending an institution has on its students' outcomes from other inputs such as the types of students it enrolls. However, it is very difficult to disentangle these effects since they tend to be closely related, as demonstrated in Figure 20. This figure shows that low-income students tend to have lower outcomes both because they disproportionately attend schools with poorer outcomes for all students and because of other, unobservable characteristics, such as academic preparation. In light of these challenges, the College Scorecard presents information on both student outcomes as well as characteristics of the students attending a university to help users assess quality. Moreover, the Scorecard includes data disaggregated by student subgroup to help researchers and policymakers assess institutions' successes and failures in serving disadvantaged students.



The Scorecard includes a combination of short-term measures, which are more responsive to changes in school practices, and long-term measures, which may better represent the more permanent outcomes associated with attending a particular institution. It also notes the program mix of the institution and other factors that may relate to wide variation in outcomes, and makes efforts to ensure the reliability of performance measures and information for smaller schools where small changes could lead to substantially different results. Overall, the College Scorecard that was released in September 2015, and updated in September 2016, represents a significant step forward in providing transparent and comprehensive data on college costs and outcomes.

In addition to the College Scorecard, the Administration has focused on more directly getting information into the hands of students in key areas of high impact, such as when they are applying for student aid or in the form of disclosures related to accountability measures. These initiatives are discussed in further detail in the following sections.

IMPROVING INFORMATION TO DRIVE EVIDENCE-BASED POLICIES

Building an evidence base to determine what works and what does not work has been a cornerstone of this Administration's education policy. Educational leaders, federal and state policymakers, and researchers are increasingly interested in questions of institutional outcomes to better share and adopt best practices, steward taxpayer dollars, and determine how resources can be more efficiently allocated to benefit students. Efforts to improve data quality and facilitate research and innovation have also helped educators to learn both from their own experiences and from others and to ensure that resources are spent on the most effective practices.

In higher education, the Administration has encouraged greater innovation and a stronger evidence base around effective strategies to promote college access and success through 42 First in the World (FITW) grants. These grants support the development, replication, and dissemination of innovative and evidence-based interventions at institutions of higher learning across the nation. Though the program has since been de-funded by Congress, the grants already made to institutions target adult learners, working students, part-time students, students from low-income backgrounds, students of color, students with disabilities, first-generation students, and other students at risk of not persisting in or completing college. In addition, through the Experimental Sites Initiative, the Administration has piloted reforms to existing higher education policies. Some of these programs include, on a limited basis, making Pell Grants available to low-income high school students that dually enroll in college programs and to incarcerated individuals.

Through investments in ARRA, the Administration was also able to advance the use of data through three critical investments: i3; Race to the Top; and Statewide Longitudinal Data Systems grant program. With similar goals as FITW but targeted at the K-12 level, the i3 program was designed to fund school districts and nonprofits developing and scaling innovative and evidence-based strategies that address challenges in K-12 classrooms, particularly those serving disadvantaged students. Since its establishment in 2009, more than \$1.3 billion of grant money has been invested in 157 projects.

Additionally, the Administration's Race to the Top program provided support to states implementing system changes in four areas, including the use of data systems and technology to inform and enhance instruction. Recent research has shown that better integration of data in the classroom can help teachers tailor instruction according to student needs and improve test scores (Dobbie and Fryer 2011; Fryer 2014). Furthermore, by relying on data to inform daily instruction, researchers can compare what is and is not effective across districts and provide teachers with new insights on how to address the academic needs of their students. In addition, under the Administration, the Statewide Longitudinal Data Systems program has expanded support for states to create and link data systems across early learning, K-12, postsecondary, and labor systems so that states have better information on what works. Several states, such as Florida, North Carolina, and Texas, have collected and maintained extensive PreK-12 population-level data on public school students that have been used to study the long-term impact of schooling over time on post-secondary education, the labor market, and even the criminal justice system (Figlio et al. 2015).

(continued)

Finally, in an effort to better understand where educational inequities currently exist, in 2011-2012, the Administration changed the Department of Education Civil Rights Data Collection (CRDC) from a sample to universe collection, requiring every U.S. public school and school district to participate. The CRDC provides data on leading civil rights indicators related to access and barriers to educational opportunity at the PreK-12 levels. Having access to a full set of data helps policymakers to make more informed decisions concerning how federal resources should be expended and to what extent schools are making progress in closing achievement and opportunity gaps.

FAFSA Simplification

In light of the evidence about the benefits of simplifying aid, the Administration has undertaken a number of reforms to streamline the FAFSA process so that it can better serve students and their families. Many initiatives have focused on reducing the number of questions presented to students and families and by making it easier for applicants to directly transfer data from the IRS. The Administration has revamped the online form for all families so they can skip questions that are not relevant to them. In addition, over 6 million students and parents took advantage of the ability to electronically retrieve their income information from the IRS when completing their 2014-2015 FAFSA, an innovation that improves both speed and accuracy. These efforts have translated to a meaningfully simpler FAFSA for students.

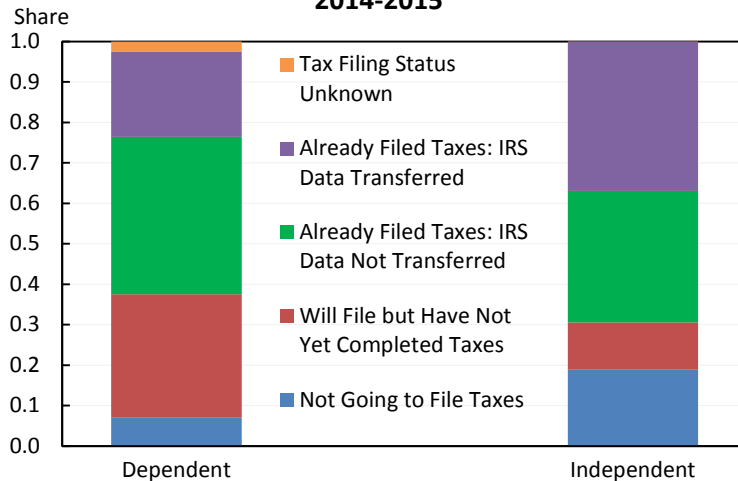
Additionally, in 2015, the Administration announced an earlier and easier process for applying for federal financial aid, allowing students to apply to colleges and for financial aid in tandem. Beginning in 2016, FAFSA applicants will be able to complete the form on October 1st for the following academic year, three months earlier than the original January 1st start date, and use income from two-years prior to fill out the form. This reform will benefit students in two key ways.

First, students and their families will now have a reliable understanding of their federal aid eligibility as early as the fall—the same time that many high school students are searching for, applying to, and even selecting colleges. An earlier FAFSA helps clear an important hurdle in reducing information barriers related to cost. Importantly, the Administration is also working with states and colleges to provide financial aid award information on this earlier timeline. Moreover, the early FAFSA presents an opportunity to provide students with more timely information about the schools where they are applying to. Starting with the 2018-2019 application, the Department of Education will present Scorecard data through the FAFSA so that students can make more informed decisions about the schools at which they plan on applying for admission and student aid based on both cost and student outcomes.

Second, more students and families will be able to complete their FAFSAs using information retrieved electronically directly from the IRS. In past years, a significant portion of FAFSA filers

were unable to electronically retrieve their income and tax information from the IRS because they had not yet filed their tax returns before completing their FAFSA forms (Figure 21). For example, 34 percent of parents of dependent students had not yet filed their 2013 tax returns when they were initially completing their 2014-2015 FAFSA. Such applicants had to manually input their estimated income and tax information into their FAFSA, or worse did not submit a timely FAFSA because they erroneously believed that they were not allowed to do so unless then had filed their tax returns. By utilizing tax information from two years prior, the early FAFSA reform will eliminate the barrier presented to individuals who have not yet filed their taxes. This will not only simplify the aid application process for students and their families and reduce the burden on institutions, it will also improve the accuracy of the information used in the determination of students' aid eligibility.

Figure 21. FAFSA Tax Filing Status during Initial Application, 2014-2015



Source: Department of Education

MAKING SURE STUDENTS ENTER COLLEGE WELL-PREPARED

Too many students enter college unprepared to tackle college-level courses and benefit from their higher education. A recent study found that half of all undergraduate students will take at least one remedial course before enrolling in a college-level course, averaging to an annual national cost of nearly \$7 billion dollars (Scott-Clayton, Crosta, and Belfield 2014). This Administration has implemented a number of policies to help ensure that all Americans graduate from high school prepared for college and their careers, and over the past 7 years, students have seen important gains. Today, high school graduation rates are at an all-time high and dropout rates are at an all-time low. This Administration has also seen national test scores in reading and math for 4th and 8th graders reach new highs (NCES 2016).

Encouraging Reform with Flexibility: When President Obama entered office, No Child Left Behind (NCLB) was two years overdue for reauthorization and in serious need of repair. In the absence of congressional action, the Department of Education offered states relief from the most onerous requirements in NCLB in exchange for a commitment to engage in needed reforms. Between 2011 and 2015, more than 40 states and D.C. applied for and received this flexibility while working to improve their schools using many of the policy options detailed below. Many of these reforms were codified in the bipartisan Every Student Succeeds Act (ESSA), which the President signed in December 2015.

Higher Standards: The Administration encouraged all states to adopt high standards and aligned, high-quality assessments, based on college- and career-ready expectations, through incentives in ARRA funding provided to states through the Administration's Race to the Top program. Today, 49 states and the District of Columbia now have higher standards than before. In the future, every state will be required to hold students to standards that prepare them for college and career as a result of ESSA. Higher standards have been linked to higher test scores (Wong, Cook, and Steiner 2011) and can help identify whether students are well-equipped with the skills and content knowledge necessary for college-level coursework.

Excellent Teachers: This Administration has supported teacher development and excellence by encouraging the expansion of high quality educator evaluation and support systems that help equip schools to use multiple measures, which are fair and reliable, to provide timely and meaningful feedback to educators. Economics research highlights that teacher quality can be measured as a predictor of student achievement (Chetty et al. 2014; Bacher-Hicks, Kane, and Staiger 2014), and feedback from evaluations can help teachers substantially improve their methods and performance (Taylor and Tyler 2012; Kane et al. 2011). The long-term impacts of improving teacher quality on outcomes such as college attendance and earnings are large (Chetty, Friedman, and Rockoff 2014).

STEM Initiatives: The Obama Administration has made Science, Technology, Engineering, and Math (STEM) education in K-12 schools a national priority. In 2011, President Obama pushed to recruit 100,000 excellent STEM teachers to work in public schools over the next ten years, and today, we have exceeded 30 percent of that goal and are on track to achieve it. The future of America's workforce will require a growing number of workers with an education in STEM fields (Sargent 2014; Rothwell 2014), and research shows that exposure to and training in advanced math and science courses during high school are linked with higher earnings and later labor market outcomes in STEM fields (Rose and Betts 2004; Black et al. 2015; Levine and Zimmerman 1995).

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Closing Gaps: The racial and socioeconomic gaps in educational inputs and outcomes hold back too many American students from reaching their potential, and the Administration worked to close these gaps by targeting support among those who need it most.

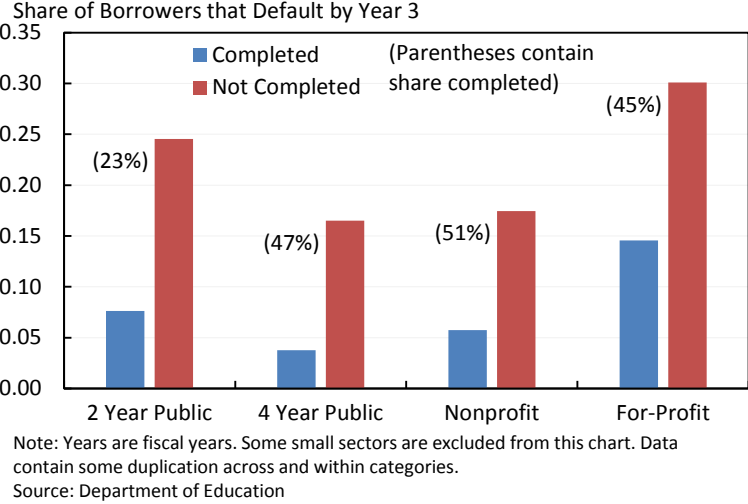
- The Administration issued School Improvement Grants (SIG) to more than 1,800 of the nation's persistently lowest achieving public schools since the program's creation in ARRA. A study of California schools by Dee (2012) found that SIG contributed to closing performance gaps between on-target schools and schools considered "lowest-achieving" by 23 percent.
- In 2014, President Obama established the My Brother's Keeper (MBK) Task Force to address academic, disciplinary, and economic disparities for disadvantaged youth, particularly young men of color. CEA's 2015 analysis finds that closing these gaps would potentially yield significant economic gains, with an estimated increase in U.S. GDP of at least 1.8 percent (CEA 2015a).
- The President has also focused on developing underserved communities via the Promise Neighborhood program, building on evidence that neighborhood quality plays an important role in children's outcomes (Chetty and Hendren 2015; Chetty, Hendren, and Katz 2016). Through this program, the Administration has partnered with local public and private organizations and invested nearly \$270 million in low-income communities, producing significant gains in English and math test scores (Department of Education 2016a).

Protecting Students from Low-Quality Programs and Encouraging Schools to Improve

As described in the previous section, better information can help students to choose higher quality institutions, and Administration efforts have significantly improved the information available to students. However, some colleges fail to meet baseline levels of college quality, and this Administration has targeted its more rigorous accountability efforts on those schools in order to protect students and taxpayers. In particular, it has strengthened accountability efforts in higher education by setting standards for career training programs, including many programs offered in the for-profit sector where high costs and poor outcomes are more highly concentrated.

Descriptive analysis comparing students who attended for-profit colleges to those who attended community colleges or non-selective four-year schools shows that those who attend for-profits have lower earnings on average, and hold larger amounts of debt. These students are also more likely to be unemployed, to default on their loans, and to say that their education was not worth the cost (Deming, Goldin, and Katz 2012, 2013). Loan default data presented in Figure 24 also shows similar patterns, especially when disaggregated by completion status.

Figure 24. Relationship Between Undergraduate Default and Sector by Completion Status, 2011 Repayment Cohort

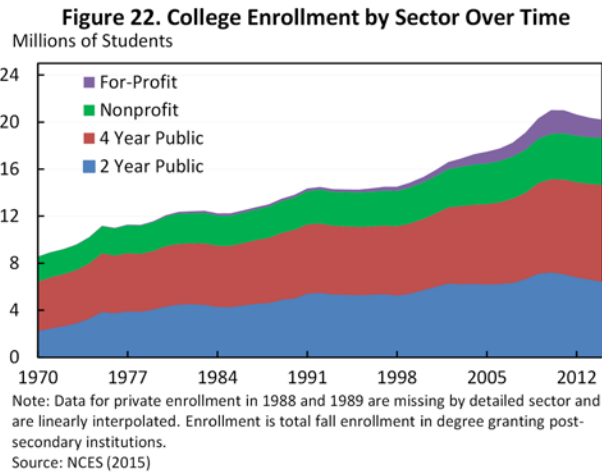


Additionally, research that compares earnings of the same students before and after attending college—including a recent analysis using individual-level administrative and tax data for federal student aid recipients enrolled in Gainful Employment programs (Cellini and Turner 2016)—finds that for-profit colleges offer lower returns than the returns that have been estimated for other sectors (Cellini and Chaudhary 2013; Liu and Belfield 2014).¹² These lower returns are especially concerning in light of evidence that for-profit colleges are more expensive than community colleges, even when adding in the value of the extra government support community colleges receive (Cellini 2012). Experimental evidence from resume-based audit studies further suggests that despite their relatively high cost, degrees from for-profit institutions are valued less by employers than degrees from non-selective public institutions (Deming et al. 2014; Darolia et al. 2015). Despite these poor outcomes, for-profit institutions have accounted for a large share of enrollment growth since the early 2000s.

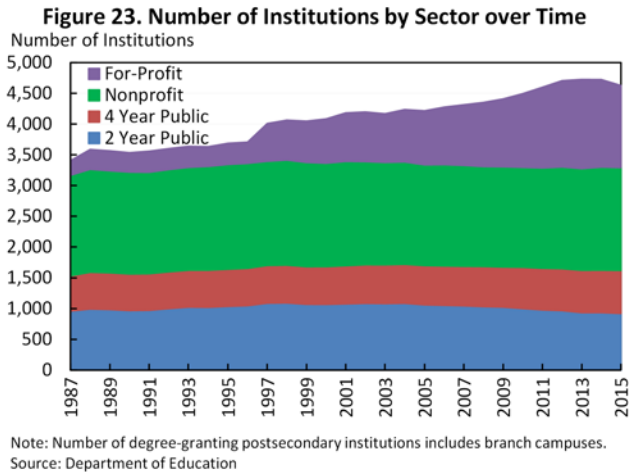
¹² However, one study, which focuses on the returns to for-profit colleges in the state of Ohio, finds more positive results (Jepsen, Mueser, and Jeon 2016).

THE RISE OF THE FOR-PROFIT SECTOR

The for-profit sector represents a small share of college enrollment, but it has grown rapidly in recent years. At its peak in 2010, for-profit enrollment reached over 2 million students, up from only 240,000 in 1995 (NCES 2015), in part driven by funding constraints at community colleges (Deming, Goldin, and Katz 2012, 2013). Since then, for-profit enrollment has ticked down, standing at 1.6 million in 2014 and representing 8 percent of total enrollment at degree-granting institutions. The total amount of student loan dollars disbursed at for-profit colleges has also declined, standing at \$15.7 billion in award year 2014-2015, down from the 2009-2010 peak of \$24.3 billion.



Coupled with the rise in for-profit enrollment has been an increase in the number of for-profit institutions. The number of for-profit institutions, including branch campuses, increased from 345 in 1995 to 1,451 at its peak in 2012-2013. As with for-profit enrollment, for-profit institution counts have declined in recent years. The growth of the for-profit sector has presented a challenge to ensuring that students receive a high-quality education. A growing body of research, described in the section above, has found that outcomes for students at for-profit colleges are on average worse than at similar institutions they might otherwise attend.



Gainful Employment Regulations

With the landmark Gainful Employment regulations, the Administration will eliminate federal aid to career college programs that consistently fail accountability standards. While some career college programs are helping to prepare America's workforce for the jobs of the future, far too many students at these schools are taking on unsustainable debt in exchange for degrees and certificates that carry limited value in the job market.

Under the Gainful Employment regulations, programs whose graduates have annual loan payments of less than 8 percent of total annual earnings or less than 20 percent of discretionary annual earnings are considered to have passed the requirements. Programs whose graduates have annual loan payments between 8 percent and 12 percent of total earnings or between 20 percent and 30 percent of discretionary earnings are considered to be "in the warning zone" and at risk of failing the requirements. Programs are deemed to have failed the requirements if their graduates have annual loan payments greater than 12 percent of total earnings and greater than 30 percent of discretionary earnings. Programs that fail in two out of any three consecutive years or are in the zone for four consecutive years are no longer eligible for federal student aid for a minimum of three years.

Based on available data, the Department of Education estimates that about 1,400 programs serving 840,000 students—of which 99 percent are at for-profit institutions—would not pass the accountability standards. All programs will have the opportunity to make immediate changes that could help them avoid sanctions, but if these programs do not improve, they will ultimately become ineligible for federal student aid—which often makes up nearly 90 percent of the revenue at for-profit institutions.

The Gainful Employment regulations also require institutions to provide disclosures to current and prospective students about their programs' performance on key metrics, like earnings of former students, graduation rates, and debt accumulation of student borrowers. This disclosure requirement complements the accountability measures in the regulation and provides additional program-level detail to the institution-level information provided in the College Scorecard.

Protecting Against Fraud and Deception

In addition to improving the information available to students, the Administration has worked to directly protect students and taxpayers from the subset of institutions of higher education who engage in fraud, deception, and other misconduct that harms students. A two-year investigation by the Senate Committee on Health, Education, Labor, and Pensions published in 2012 revealed such practices occurring in the for-profit sector. The investigation found that the 30 for-profit colleges examined spent about 30 percent more per student on marketing, advertising, recruiting, and admissions staffing than on instruction. The report also highlighted a number of tactics (consistent with a 2010 Government Accountability Office report) that misled prospective students about program costs, the availability of aid, and information about student success rates and the school's accreditation status.

In 2010, the Obama Administration released a comprehensive set of rules—known as Program Integrity and Improvement rules—to strengthen the Department of Education's authority to protect students from aggressive recruiting practices fueled by incentive compensation; to take action against colleges engaging in deceptive advertising, marketing and sales practices; and to clarify minimum requirements for states to oversee postsecondary programs and handle student complaints. The Obama Administration is also proposing new Borrower Defense to Repayment regulations to protect borrowers and taxpayers against fraud, deception, and other misconduct by postsecondary institutions. The proposed regulations would create a clear, consistent, and transparent process for borrowers who have been harmed by their school's misconduct to seek debt relief. In addition, the proposed regulations include measures that would require new warnings to help students steer clear of poorly performing for-profit schools and financially risky schools. They would also end the use of both so-called “pre-dispute, mandatory arbitration agreements” and of class action bans that prevent students from having their day in court.

These regulations build upon a record of action by this Administration which has encouraged states to step up oversight in their role as authorizers, encouraged accreditors to focus on student outcomes, and created a new Student Aid Enforcement Unit to respond more quickly and efficiently to allegations of illegal actions by higher education institutions.

III. Next Steps

Despite the substantial progress made by the Obama Administration to expand a high quality college education to all Americans, some challenges remain.

First, the costs of college remain too high for too many individuals, especially those from disadvantaged backgrounds. Expanding this Administration's work to provide free community college for responsible students will be a critical next step to make sure that all Americans can access a college education. However, at the same time, policymakers, community colleges, and other stakeholders will also have to work to improve student success at community colleges so that students who enroll receive the supports needed to complete a degree that raises their labor market prospects.

Additionally, Pell Grants can be better structured to put more low- and moderate-income students on the path to success, and the Administration's 2017 budget identifies various ways to improve the current program. To begin, the proposed budget further simplifies the FAFSA by eliminating burdensome and unnecessarily complex questions to make it easier for students and families to access federal student aid and afford a postsecondary education. The Administration has also called upon Congress to indefinitely index Pell Grants to inflation in order to protect and sustain their value for future generations. Furthermore, it has included two key proposals to promote completion, creating incentives supported by academic research (MDRC 2016). The first would make additional Pell Grant funds available for an additional semester to full-time students, and the second would increase students' Pell Grants by \$300 each year if they take at least 15 credit hours per semester, the amount typically needed to complete a two- or four-year degree on-time. Finally, the Administration has requested that Pell be expanded to incarcerated individuals eligible for release, with the goals of helping them complete college, get jobs, support their families, and strengthen their communities.¹³

There are also important changes to the education tax code that could reduce barriers to college access and success. In particular, the Administration has proposed streamlining and further expanding education tax benefits by: first, consolidating the Lifetime Learning Credit into an expanded AOTC, which would be available for five years and refundable up to \$1,500 for students enrolled half-time or more; second, exempting Pell Grants from taxation and the AOTC calculation; and third, eliminating the tax on student loan debt forgiveness, while repealing the complicated student loan interest deduction for new borrowers.

In addition to the work needed to reduce the cost of college, there is work needed to make sure that all borrowers can pay back their debt with an affordable repayment plan. Today income-driven repayment plans are helping millions of borrowers stay on track with their payments, but too many borrowers do not take advantage of these plans, as described in Section II. Complexities related to repayment plan selection, income verification, and recertification all present barriers to enrollment. In its 2017 budget, the Administration called upon Congress to improve and

¹³ See CEA's 2016 criminal justice report for a more detailed overview of the importance of this policy (CEA 2016a).

streamline PAYE and other income-driven repayment plans to create a single simple and better targeted plan for borrowers. Academics have also proposed innovative ways to reduce the complexity of income-driven repayment plans (e.g., Dynarski and Kreisman 2013). Such improvements will be critical to help borrowers manage their debt and stay out of default.

Better information and regulation of low-quality schools will also help students attend colleges that serve them well and enable them to pay back the debt they incur. The College Scorecard was a significant achievement, but additional efforts to improve the data's usage, the consumer tool, and the underlying data will help to expand the impact of the Scorecard. The Administration's efforts to protect students from low-quality schools have likewise been important accomplishments, and future policymakers must continue to be responsive to an ever-changing higher education landscape.

Lastly, work remains to continue strengthening outcomes at earlier levels of education to help ensure that students enter college well-prepared to benefit from their investment in higher education. Despite this Administration's accomplishments, racial and socioeconomic gaps in PreK-12 educational inputs and outcomes remain, and these disparities must be addressed in tandem with the inequities in higher education access. ESSA has codified into law many initiatives created and championed by the Obama Administration to set the stage for this future policy, but further progress will require additional effort by policymakers.

IV. Conclusion

Over the past seven and a half years, the Obama Administration has enacted policies to lower college costs, improve information, simplify student aid, and cap monthly student debt payments at a manageable portion of borrowers' incomes. The Administration has also promoted excellence and equity in PreK-12 education to better prepare students for college and their careers. Together, these policies represent a significant step forward in building an educational system that supports and encourages all Americans who wish to invest in an affordable, high quality college education to do so. Still, more work is needed to address the challenges that remain.

References

- Abel, Jason R. and Richard Deitz. 2016. "Underemployment in the Early Careers of College Graduates following the Great Recession." NBER Working Paper No. 22654.
- Abraham, Katharine and Melissa Clark. 2006. "Financial Aid and Students' College Decisions: Evidence from the District of Columbia Tuition Assistance Grant Program." *The Journal of Human Resources* 41(3): 578-610.
- Almond, Douglas, Hilary Hoynes, and Diane Whitmore Schanzenbach. 2016. "Long-Run Impacts of Childhood Access to the Safety Net." *American Economic Review* 106 (4): 903-934.
- Altonji, Joseph G., Erica Blom, and Costas Meghir. 2012. "Heterogeneity in Human Capital Investments: High School Curriculum, College Major, and Careers." *Annual Review of Economics* 4: 185-223.
- Andrews, Rodney J., Stephen DesJardins, and Vimal Ranchhod. 2010. "The Effects of the Kalamazoo Promise on College Choice." *Economics of Education Review* 29(5): 722-737.
- Arcidiacono, Peter, V. Joseph Hotz, and Songman Kang. 2012. "Modeling College Major Choices Using Elicited Measures of Expectations and Counterfactuals." *Journal of Econometrics* 166(1): 3-16.
- Avery, Christopher and Thomas Kane. 2004. "Student Perceptions of College Opportunities: The Boston COACH Program." In *College Choices: The Economics of Where to Go, When to Go, and How to Pay For It*: 355-394. Edited by Caroline M. Hoxby. University of Chicago Press.
- Avery, Christopher and Sarah Turner. 2012. "Student Loans: Do College Students Borrow Too Much — Or Not Enough?" *The Journal of Economic Perspectives* 26(1): 165-192.
- Bacher-Hicks, Andrew, Thomas J. Kane, and Douglas O. Staiger. 2014. "Validating Teacher Effect Estimates Using Changes in Teacher Assignments in Los Angeles." NBER Working Paper No. 20657.
- Bahr, Peter, Susan Dynarski, Brian Jacob, Daniel Kreisman, and Alfredo Sosa, and Mark Wiederspan. 2015. "Labor Market Returns to Community College Awards: Evidence from Michigan." CAPSEE Working Paper.
- Baker, Rachel, Eric Bettinger, Brian Jacob, and Ioana Marinescu. 2016. "The Effect of Labor Market Information on Community College Students' Major Choice." Working Paper.
- Bartik, Timothy J. and Marta Lachowska. 2013. "The Short-Term Effects of the Kalamazoo Promise Scholarship on Student Outcomes." *Research in Labor Economics* (38): 37-76.
- Bartik, Timothy J., Brad Hershbein, and Marta Lachowska. 2015. "Longer-Term Effects of the Kalamazoo Promise Scholarship on College Enrollment, Persistence, and Completion." Upjohn Institute Working Paper.
- Bartik, Timothy J., Brad Hershbein, and Marta Lachowska. 2016. "The Merits of Universal Scholarships: Benefit-Cost Evidence from the Kalamazoo Promise." Upjohn Institute Working Paper.
- Baum, Sandy, Jennifer Ma, and Kathleen Payea. 2013. "Education Pays: The Benefits of Higher Education for Individuals and Society." College Board Trends in Higher Education Series.
- Baum, Sandy and Judith Scott-Clayton. 2015. "Four Important Considerations Regarding the Free Community College Proposal." Urban Institute UrbanWire.

- Belfield, Clive, Yuen Liu, and Madeline Trimble. 2014. "The Medium-Term Labor Market Returns to Community College Awards: Evidence from North Carolina." CAPSEE Working Paper.
- Bettinger, Eric. 2004. "How Financial Aid Affects Persistence." *College Choices: The Economics of Where to Go, When to Go, and How to Pay for It*. Edited by Caroline Hoxby. University of Chicago Press.
- Bettinger, Eric, Bridget Terry Long, Philip Oreopoulos, and Lisa Sanbonmatsu. 2012. "The Role of Application Assistance and Information in College Decisions: Results from the H&R Block FAFSA Experiment." *The Quarterly Journal of Economics*.
- Betts, John. 1996. "What Do Students Know About Wages? Evidence from a Survey of Undergraduates." *The Journal of Human Resources* 31(1): 27-56.
- Black, Sandra E., Ziwei He, Chandra Muller, and Alexandra Spitz-Oener. 2015. "On the Origins of STEM: The Role of High School STEM Coursework in Occupational Determination and Labor Market Success in Mid-Life." Working Paper.
- Bound, John, Michael Lovenheim, and Sarah Turner. 2010. "Why Have College Completion Rates Declined? An Analysis of Changing Student Preparation and Collegiate Resources." *American Economic Journal: Applied Economics* 2: 129-157.
- Broton, Katharine M., Sara Goldrick-Rab, and James Benson. 2016. "Working for College: The Causal Impacts of Financial Grants on Undergraduate Employment." *Educational Evaluation and Policy Analysis*.
- Brown, David W., Amanda E. Kowalski, and Ithai Z. Lurie. 2015. "Medicaid as an Investment in Children: What is the Long-term Impact on Tax Receipts?" NBER Working Paper No. 20835.
- Bulman, George and Caroline Hoxby. 2015. "The Returns to the Federal tax Credits for Higher Education." NBER Working Paper No. 20833.
- Campbell, Frances A. Elizabeth P. Pungello, Kirsten Kainz, Margaret Burchinal, Yi Pan, Barbara H. Wasik, Oscar Barbarin, Joseph J. Sparling, and Craig T. Ramey. 2012. "Adult Outcomes as a Function of an Early Childhood Educational Program: An Abecedarian Project Follow-Up." *Development Psychology* 48 (4): 1033-1043.
- Card, David. 1995. "Using Geographic Variation in College Proximity to Estimate the Return to Schooling." *Aspects of Labor Market Behaviour: Essays in Honour of John Vanderkamp*. Edited by Louis Christofides, E. Kenneth Grant, and Robert Swidinsky. University of Toronto Press.
- Carruthers, Celeste K. and William F. Fox. 2016. "Aid for all: College Coaching, Financial Aid, and Post-Secondary Persistence in Tennessee." *Economics of Education Review* (51): 97-112.
- Case, Anne, Angela Fertig, and Christina Paxson. 2005. "The Lasting Impact of Childhood Health and Circumstance." *Journal of Health Economics* 24 (2): 365-389.
- Casey, BJ, Rebecca Jones, and Leah Somerville. 2011. "Braking and Accelerating of the Adolescent Brain." *Journal of Research on Adolescence* 21(1): 21-33.
- Castleman, Benjamin L. and Bridget Terry Long. 2013. "Looking Beyond Enrollment: The Causal Effect of Need-Based Grants on College Access, Persistence, and Graduation." NBER Working Paper No. 19306.
- Cellini, Stephanie. 2012. "For-Profit Higher Education: An Assessment of Costs and Benefits." *National Tax Journal* 65(1): 153-180.

- Cellini, Stephanie and Latika Chaudhary. 2013. "The Labor Market Returns to a For-Profit College Education." Working Paper.
- Cellini, Stephanie, and Nicholas Turner. 2016. "Gainfully Employed? Assessing the Employment and Earnings of For-Profit College Students Using Administrative Data." NBER Working Paper No. 22287.
- Chetty, Raj, John N. Friedman, Nathaniel Hilger, Emmanuel Saez, Diane Whitmore Schanzenbach, and Danny Yagan. 2011. "How Does your Kindergarten Classroom Affect your Earnings? Evidence from Project STAR" *The Quarterly Journal of Economics* 126 (4): 1593-1660.
- Chetty, Raj, John N. Friedman, and Jonah E. Rockoff. 2014. "Measuring the Impacts of Teachers II: Teacher Value-Added and Students Outcomes in Adulthood." *American Economic Review* 104 (9): 2633-2679.
- Chetty, Raj and Nathaniel Hendren. 2015. "The Impacts of Neighborhoods on Intergenerational Mobility: Childhood Exposure Effects and County-Level Estimates." Working Paper.
- Chetty, Raj, Nathaniel Hendren and Lawrence F. Katz. 2016. "The Effects of Exposure to Better Neighborhoods on Children: New Evidence from the Moving to Opportunity Experiment." *American Economic Review* 106 (4) 855-902.
- Cohodes, Sarah, Daniel Crossman, Samuel Kleiner, and Michael F. Lovenheim. 2016. "The Effect of Child Health insurance Access on Schooling: Evidence from Public Insurance Expansions." *Journal of Human Resources* 51(3): 727-759.
- Cohodes, Sarah and Joshua Goodman. 2014. "Merit Aid, College Quality and College Completion: Massachusetts' Adams Scholarship as an In-Kind Subsidy." *American Economic Journal: Applied Economics* 6(4): 251-285.
- College Board. 2015a. "Trends in College Pricing: 2015." *Trends in Higher Education*.
- College Board. 2015b. "Trends in Student Aid: 2015." *Trends in Higher Education*.
- Committee on Health, Education, Labor, and Pensions United States Senate. 2012. "For Profit Higher Education: The Failure to Safeguard the Federal Investment and Ensure Student Success."
- Consumer Finance Protection Bureau. 2012. "Private Student Loans." Report to the Senate Committee on Banking, Housing, and Urban Affairs, the Senate Committee on Health, Education, Labor, and Pensions, the House of Representatives Committee on Financial Services, and the House of Representatives Committee on Education and the Workforce.
- Council of Economic Advisers. 2014. "The Labor Force Participation Rate since 2007: Causes and Policy Implications."
- Council of Economic Advisers. 2015a. "Economic Costs of Youth Disadvantage and High-Return Opportunities for Change."
- Council of Economic Advisers. 2015b. "Long-Term Benefits of the Supplemental Nutrition Assistance Program."
- Council of Economic Advisers. 2015c. "Using Federal Data to Measure and Improve the Performance of U.S. Institutions of Higher Education."
- Council of Economic Advisers. 2016a. "Economic Perspectives on Incarceration and the Criminal Justice System."
- Council of Economic Advisers. 2016b. "Inequality in Early Childhood and Effective Public Policy Interventions." Economic Report of the President.

- Council of Economic Advisers. 2016c. "Investing in Higher Education: Benefits, Challenges, and the State of Student Debt."
- Council of Economic Advisers. 2016d. "The Long-Term Decline in Prime-Age Male Labor Force-Participation."
- Cunha, Flavio, James J. Heckman, and Salvador Navarro. 2005. "Separating Uncertainty from Heterogeneity in Life Cycle Earnings." NBER Working Paper No. 11024.
- Currie, Janet. 2000. "Do Children of Immigrants Make Differential Use of Public Health Insurance?" *Issues in the Economics of Immigration* Ch. 7. 271-308.
- Cutler, David M. and Adriana Lleras-Muney. 2006. "Education and Health: Evaluating Theories and Evidence." NBER Working Paper No. 12352.
- Dadgar, Mina and Madeline Trimble. 2014. Labor Market Returns to Sub-Baccalaureate Credentials: How Much Does a Community College Degree or Certificate Pay? *Educational Evaluation and Policy Analysis*.
- Dahl, Gordon B. and Lance Lochner. 2012. "The Impact of Family Income on Child Achievement: Evidence from the Earned Income Tax Credit." *American Economic Review* 102 (5) 1927-1956.
- Darolia, Rajeev, Cory Koedel, Paco Martorell, Katie Wilson and Francisco Perez-Arce. 2015. "Do Employers Prefer Workers who Attended For-Profit Colleges? Evidence from a Field Experiment." *Journal of Policy Analysis and Management* 34(4): 881–903.
- Dave, Dhaval M., Sandra L. Decker, Robert Kaestner, and Kosali Ilayperuma Simon. 2015. "The Effect of Medicaid Expansions in the Late 1980s and Early 1990s on the Labor Supply of Pregnant Women." *American Journal of Health Economics* 1 (2): 165-193.
- Dee, Thomas. 2004. "Are There Civic Returns to Education?" *Journal of Public Economics* 88: 1697-1720.
- Dee, Thomas. 2012. "School Turnarounds: Evidence from the 2009 Stimulus." NBER Working Paper No. 17990.
- Deming, David J., Claudia Goldin, and Lawrence F. Katz. 2012. "The For-Profit Postsecondary School Sector: Nimble Critters or Agile Predators?" *Journal of Economic Perspectives* 27(1): 139-164.
- Deming, David J., Claudia Goldin, and Lawrence F. Katz. 2013. "For-Profit Colleges." *Future of Children* 23(1): 137-163.
- Deming, David J., Noam Yuchtman, Amira Abulafi, Claudia Goldin, and Lawrence F. Katz. 2014. "The Value of Postsecondary Credentials in the Labor Market: An Experimental Study." NBER Working Paper No. 20528.
- Department of Education. 2016a. "Fiscal Year 2017 Budget Request."
- Department of Education. 2016b. "The America's College Promise Playbook: Expanding the Promise of a College Education and Economic Opportunity for All Students."
- Denning, Jeffrey. 2016a. "Born Under a Lucky Star: Financial Aid, College Completion, Labor Supply, and Credit Constraints." Working Paper.
- Denning, Jeffrey. 2016b. "College on the Cheap: Consequences of Community College Tuition Reductions." Working Paper.
- Dobbie, Will and Roland G. Fryer, Jr. 2013. "Getting Beneath the Veil of Effective Schools: Evidence from New York City." *American Economic Journal: Applied Economics* 5 (4): 228-60.

- Dominitz, Jeff and Charles F. Manski. 1996. "Eliciting Student Expectations of the Returns to Schooling." *Journal of Human Resources* 31: 1-25.
- Daugherty, Lindsay and Gabriella C. Gonzalez. 2016. "The Impact of the New Haven Promise Program on College Enrollment, Choice, and Persistence." RAND Corporation.
- Department of Education. 2015. "2014-2015 Federal Pell Grant Program End-of-Year Report."
- Dunlop, Erin. 2013. "What Do Stafford Loans Actually Buy You? The Effect of Stafford Loan Access on Community College Students." American Institutes for Research Working Paper.
- Dynarski, Susan. 2003. "Does Aid Matter? Measuring the Effect of Student Aid on College Attendance and Completion." *The American Economic Review* 93(1): 279-288.
- Dynarski, Susan and Daniel Kreisman. 2013. "Loans for Educational Opportunity: Making Borrowing Work for Today's Students." The Hamilton Project.
- Dynarski, Susan and Judith Scott-Clayton. 2006. "The Cost of Complexity in Federal Student Aid: Lessons from Optimal Tax Theory and Behavioral Economics." NBER Working Paper No. 12227.
- Dynarski, Susan and Judith Scott-Clayton. 2016. "Tax Benefits for College Attendance." NBER Working Paper No. 22127.
- Eagan, Kevin, Ellen Bara Stolzenberg, Joseph Ramirez, Melissa Aragon, Maria Ramirez Suchard, Sylvia Hurtado. 2014. "The American Freshman: National Norms Fall 2014." Cooperative Institutional Research Program at UCLA.
- Evans, William N., Robert S. Schwab and Kathryn Wagner. 2014. "The Great Recession and Public Education." University of Notre Dame Working Paper.
- Executive Office of the President. 2009. "Educational Impact of the American Recovery and Reinvestment Act."
- Executive Office of the President. 2016. "Giving Every Child a Fair Shot: Progress Under the Obama Administration's Education Agenda."
- Fain, Paul. 2014. "Benefits of Free." Inside Higher Ed.
- Figlio, David N., Krzysztof Karbownik, and Kjell G. Salvanes. 2015. "Education Research and Administrative Data." NBER Working Paper No. 21592.
- Finkelstein, Amy, Sarah Taubman, Bill Wright, Mira Bernstein, Jonathan Gruber, Joseph P. Newhouse, Heidi Allen, and Katherine Baicker. 2012. "The Oregon Health Insurance Experiment: Evidence from the First Year." *The Quarterly Journal of Economics* 127 (3): 1057-1106.
- Fishman, Rachel. 2015. "2015 College Decisions Survey Part 1: Deciding to Go to College." New America Education Policy Program.
- Forsythe, Eliza. 2016. "Why Don't Firms Hire Young Workers During Recessions?" Working Paper.
- Fryer, Roland G., Jr. 2014. "Injecting Successful Charter School Strategies into Traditional Public Schools: Evidence from Field Experiments." *The Quarterly Journal of Economics* 129 (3): 1335-1407.
- Goldin, Claudia and Lawrence Katz. 2008. *The Race between Education and Technology*. Harvard University Press.
- Gonzalez, Gabriella, Robert Bozick, Lindsay Daugherty, Ethan Scherer, Reema Sing, Monica Suarez, Sarah Ryan, and Jonathan Schweig. 2014. "An Early Look at College Preparation, Access, and Enrollment of New Haven Public School Students (2010-2013)." RAND Corporation.

- Goodman, Joshua, Michael Hurwitz, and Jonathan Smith. 2015. "College Access, Initial College Choice and Degree Completion." NBER Working Paper No. 20996.
- Government Accountability Office. 2010. "For-Profit Colleges: Undercover Testing Finds Colleges Encouraged Fraud and Engaged in Deceptive and Questionable Marketing Practices." Testimony Before the Committee on Health, Education, Labor, and Pensions, U.S. Senate.
- Grodsky, Eric and Melanie Jones. 2007. "Real and Imagined Barriers to College Entry: Perceptions of Cost." *Social Science Research* 36: 745-766.
- Halle, Tamara, Nicole Forry, Elizabeth Hair, Kate Perper, Laura Wandner, Julia Wessel, and Jessica Vick. 2009. "Disparities in Early Learning and Development: Lessons from the Early Childhood Longitudinal Study – Birth Cohort (ECLS-B)." Publication No. 2009-52. Washington, DC: Child Trends.
- Hansen, W. Lee. 1983. The Impact of Student Financial Aid on Access. *Proceedings of the Academy of Political Science* 35(2): 84-96.
- Hanushek, Eric and Ludger Woessman. 2015. *The Knowledge Capital of Nations: Education and the Economics of Growth*. MIT Press.
- Haskins, Ron, Julia Isaacs, and Isabel Sawhill. 2008. "Getting Ahead or Losing Ground: Economic Mobility in America." The Brookings Institution.
- Hastings, Justine S. et al. 2015. "(Un)informed College and Major Choice: Evidence from Linked Survey and Administrative Data." NBER Working Paper No. 21330.
- Heckman, James J., Lance J. Lochner, and Petra E. Todd. 2006. "Earnings Functions, Rates of Return and Treatment Effects: The Mincer Equation and Beyond." *Handbook of the Economics of Education* 1: 307-458.
- Heckman, James J., Seong Hyeok Moon, Rodrigo Pinto, Peter A. Savelyev, and Adam Yavitz. 2010. "The Rate of Return to the High/Scope Perry Preschool Program." *Journal of Public Economics* 94 (1): 114-128.
- Hill, Kent, Dennis Hoffman, and Tom R. Rex. 2005. "The Value of Higher Education: Individual and Societal Benefits." Productivity and Prosperity Project.
- Hoekstra, Mark. 2009. "The Effect of Attending the Flagship State University on Earnings: A Discontinuity-Based Approach." *The Review of Economics and Statistics* 91(4): 717-724.
- Horn, Laura, Xianlei Chen, and Chris Chapman. 2003. "Getting Ready to Pay for College: What Students and Their Parents Know About the Cost of College Tuition and What They Are Doing to Find Out." U.S. Department of Education National Center for Education Statistics.
- Howell, William G. 2015. "Results of President Obama's Race to the Top: Win or Lose, States Enacted Education Reforms." *Education Next* 15(4).
- Hoxby, Caroline and George Bulman. 2015. "The Effects of the Tax Deduction for Postsecondary Tuition: Implications for Structuring Tax-Based Aid." NBER Working Paper No. 21554.
- Hoxby, Caroline and Sarah Turner. 2013. "Expanding College Opportunities for High-Achieving, Low Income Students." SIEPR Discussion Paper No. 12-014.
- Hoxby, Caroline and Sarah Turner. 2015. "What High-Achieving Low-Income Students Know About College." NBER Working Paper No. 20861.
- Hoynes, Hilary, Douglas Miller, and Jessamyn Schaller. 2012. "Who Suffers During Recessions?" *Journal of Economic Perspectives* 36(3): 27-48.
- Isaacs, Julia B. 2012. "Starting School at a Disadvantage: The School Readiness of Poor Children." *Brookings Social Genome Project Research* (3)5: 1-22.

- Jackson, C. Kirabo, Rucker C. Johnson, and Claudia Persico. 2016. "The Effects of School Spending on Educational and Economic Outcomes: Evidence from School Finance Reforms." *The Quarterly Journal of Economics* 131 (1):157-218.
- Jacobson, Louis, Robert LaLonde, and Daniel Sullivan. 2005. "The Impact of Community College Retraining on Older Displaced Workers: Should We Teach Old Dogs New Tricks?" *Industrial and Labor Relations Review* 58(3): 398-415.
- Jepsen, Christopher, Kenneth Troske, and Paul Coomes. 2012. "The Labor-Market Returns to Community College Degrees, Diplomas, and Certificates." IZA Discussion Paper No. 6902.
- Jepsen, Christopher, Peter Mueser, and Kyung-Seong Jeon. 2016. "The Benefits of Alternatives to Conventional College: Labor-Market Returns to Proprietary Schooling." IZA Discussion Paper No. 10007.
- Kaestner, Robert, Aaron Racine, and Ted Joyce. 2000. "Did Recent Expansion in Medicaid Narrow Socioeconomic Differences in Hospitalization Rates of Infants?" *Medical Care* 38(2): 195-206.
- Kaestner, Robert. 2009. "The Effects Medicaid Expansions and Welfare Reform on Fertility and the Health of Women and Children." NBER Reporter 2009 Number 4.
- Kahn, Lisa B. 2010. "The Long-Term Labor Market Consequences of Graduating from College in a Bad Economy." *Labour Economics* 17: 303-316.
- Kane, Thomas. 1996. "Lessons from the Largest School Voucher Program Ever: Two Decades of Experience with Pell Grants." *Who chooses? Who loses? Culture, institutions and the unequal effects of school choice*. Edited by B. Fuller, R. Elmore, and G. Orfield. Teachers College Press.
- Kane, Thomas and Cecilia Rouse. 1993. "Labor Market Returns to Two and Four Year Colleges: Is a Credit a Credit and Do Degrees Matter?" NBER Working Paper No. 4268.
- Kane, Thomas J., Eric S. Taylor, John H. Tyler, and Amy L. Wooten. 2011. "Identifying Effective Classroom Practices Using Student Achievement Data." *The Journal of Human Resources* 46 (3): 587-613.
- Kroeger, Teresa, Tanyell Cooke, and Elise Gould. 2016. "The Class of 2016: The Labor Market is Still Far from Ideal for Young Graduates." Economic Policy Institute.
- Krueger, Alan B. 1999. "Experimental Estimates of Education Production Functions." *The Quarterly Journal of Economics* 114 (2): 497-532.
- LaFortune, Julien, Jesse Rothstein, and Diane Whitmore Schanzenbach. 2016. "School Finance Reform and the Distribution of Student Achievement." NBER Working Paper 22011.
- Lavecchia, Adam, Heidi Liu, and Philip Oreopoulos. 2015. "Behavioral Economics of Education: Progress and Possibilities." IZA Discussion Paper No. 8853.
- LeGower, Michael and Randall Walsh. 2014. "Promise Scholarship Programs as Place-Making Policy: Evidence from School Enrollment and Housing Prices." NBER Working Paper No. 20056.
- Levine, Phillip B. and David J. Zimmerman. 1995. "The Benefit of Additional High-School Math and Science Classes for Young Men and Women." *Journal of Business & Economic Statistics* 13 (2): 137-149.
- Liu, Yuen Ting and Clive Belfield. 2014. "The Labor Market Returns to For-Profit Higher Education: Evidence for Transfer Students." CAPSEE Working Paper.

- Lochner, Lance and Enrico Moretti. 2004. "The Effect of Education on Crime: Evidence from Prison Inmates, Arrests, and Self-Reports." *The American Economic Review* 94(1): 155-189.
- Looney, Adam and Constantine Yannelis. 2015. "A Crisis in Student Loans? How Changes in the Characteristics of Borrowers and in the Institutions they Attended Contributed to Rising Loan Defaults." *Brookings Papers on Economic Activity*.
- Luo, Mi and Simon Mongey. 2016. "Student Debt and Initial Labor Market Decisions: Wages, Job Satisfaction and Search." Working paper.
- Manoli, Dayanand S. and Nicholas Turner. 2014. "Cash-on-Hand & College Enrollment: Evidence from Population Tax Data and Policy Nonlinearities." NBER Working Paper No. 19836.
- Martorell, Paco, Brian McCall, and Isaac McFarlin. 2014. "Do Public Tuition Subsidies Promote College Enrollment? Evidence from Community College Taxing Districts in Texas." U.S. Census Bureau Center for Economic Studies Paper No. CES-WP- 14-32. Available at.
- Maxfield, Michelle. 2013. "The Effects of the Earned Income Tax Credit on Child Achievement and Long-Term Educational Achievement." Michigan State University Job Market Paper.
- McCrary, Justin and Heather Royer. 2011. "The Effect of Female Education on Fertility and Infant Health: Evidence from School Entry Policies Using Exact Date of Birth." *American Economic Review* 101: 158-195.
- MDRC. 2016. "Using Financial Aid to Speed Degree Completion: A Look at MDRC's Research." MDRC Issue Focus.
- Micheltmore, Katherine. 2013. "The Effect of Income on Educational Attainment: Evidence from State Earned Income Tax Credit Expansions." Working Paper.
- Miller-Adams, Michelle. 2009. *The Power of a Promise: Education and Economic Renewal in Kalamazoo*. W.E. Upjohn Institute for Employment Research.
- Mitchell, Michael, Vincent Palacios, and Michael Leachman. 2014. "States Are Still Funding Higher Education Below Pre-Recession Levels." Center on Budget and Policy Priorities.
- Moretti, Enrico. 2004. "Estimating the Social Return to Higher Education: Evidence from Longitudinal and Repeated Cross-Sectional Data." *Journal of Econometrics* 121: 175-212.
- National Center for Education Statistics. 2014. "Transferability of Postsecondary Credit Following Student Transfer or Coenrollment."
- National Center for Education Statistics. 2015. "Digest of Education Statistics."
- National Center for Education Statistics. 2016. "Digest of Education Statistics."
- Nord, Mark and Mark Prell. 2011. "Food Security Improved Following the 2009 ARRA Increase in SNAP Benefits." U.S. Department of Agriculture.
- Oreopoulos, Philip and Kjell G. Salvanes. 2011. "Priceless: The Nonpecuniary Benefits of Schooling." *Journal of Economic Perspectives* 25(1): 159-184.
- Oreopoulos, Philip and Ryan Dunn. 2012. "Information and College Access: Evidence from a Randomized Field Experiment." NBER Working Paper No. 18551.
- Oreopoulos, Philip, Till von Wachter, and Andrew Heisz. 2012. "Short- and Long-term Career Effects of Graduating in a Recession." *American Economic Journal: Applied Economics* 4(1): 1-29.
- Organization for Economic Cooperation and Development. 2013. "Education Indicators in Focus."

- Ost, Ben, Weixiang Pan, and Doug Webber. 2016. "The Returns to College Persistence for Marginal Students: Regression Discontinuity Evidence from University Dismissal Policies." IZA Discussion Paper No. 9799.
- Pallais, Amanda, Josh Angrist, David Autor, and Sally Hudson. 2015. "Leveling Up: Early Results from a Randomized Evaluation of Post-Secondary Aid." Working Paper.
- Page, Lindsay and Jennifer E. Iritri. Forthcoming. "On Undermatch and College Cost: A Case Study of the Pittsburgh Promise." In *Matching Students to Opportunity*. Harvard Education Press.
- Page, Lindsay and Judith Scott-Clayton. 2015. "Improving College Access in the United States: Barriers and Policy Responses." NBER Working Paper No. 21781.
- Peltzman, Sam. 1973. "The Effect of Government Subsidies-in-Kind on Private Expenditures: The Case of Higher Education." *Journal of Political Economy* 81(1): 1-27.
- Reynolds, Arthur J., Judy A. Temple, Suh-Ruu Ou, Irma A. Arteaga, and Barry A.B. White. 2011. "School-Based Early Childhood Education and Age-28 Well-Being: Effects by Timing, Dosage, and Subgroups." *Science* 333 (6040): 360-364.
- Ritter, Gary and Jennifer Ash. 2016. "The Promise of a College Scholarship Transforms a District." *Phi Delta Kappan*.
- Rose, Heather and Julian R. Betts. 2004. "The Effect of High School Courses on Earnings." *The Review of Economics and Statistics* 86 (2): 497-513.
- Rothstein, Jesse and Cecilia Rouse. 2011. "Constrained After College: Student Loans and Early-Career Occupation Choices." *Journal of Public Economics* 95: 149-163.
- Rothwell, Jonathan. 2014. "Still Searching: Job Vacancies and STEM Skills." Brookings.
- Ruder, Alex and Michelle Van Noy. 2014. "The Influence of Labor Market Outcomes Data on Major Choice: Evidence from a Survey Experiment." Heldrich Center for Workforce Development.
- Sargent Jr., John F. 2014. "The U.S. Science and Engineering Workforce: Recent, Current, and Projected Employment, Wages and Unemployment." Congressional Research Service.
- Scott-Clayton, Judith, Peter M. Crosta, and Clive R. Belfield. 2014. "Improving the Targeting of Treatment: Evidence from College Remediation." *Educational Evaluation and Policy Analysis* 36 (3): 371-393.
- Seftor, Niel and Sarah Turner. 2002. "Back to School: Federal Student Aid Policy and Adult College Enrollment." *Journal of Human Resources* 37(2): 336-52.
- Stater, Mark. 2009. "The Impact of Financial Aid on College GPA at Three Flagship Public Institutions." *American Educational Research Journal* 46(3): 782-815.
- Stevens, Ann, Michal Kurlaender, and Michel Grosz. 2015. "Career Technical Education and Labor Market Outcomes: Evidence from California Community Colleges." NBER Working Paper No. 21137.
- Sun, Stephen and Constantine Yannelis. 2015. "Credit Constraints and Demand for Higher Education: Evidence from Financial Deregulation." *The Review of Economics and Statistics*.
- Taylor, Eric S., and John H. Tyler. 2012. "The Effect of Evaluation on Teacher Performance." *American Economic Review* 102 (7): 3628-3651.
- Thaler, Richard and Sendhil Mullainathan. 2008. "Behavioral Economics." *The Concise Encyclopedia of Economics*. Library of Economics and Liberty.

- Turner, Lesley. 2015. "The Returns to Higher Education for Marginal Students: Evidence from Colorado Welfare Recipients." *Economics of Education Review*.
- Wiederspan, Mark. 2015. "Denying Loan Access: The Student-Level Consequences When Community Colleges Opt Out of the Stafford Loan Program." CAPSEE Working Paper.
- Wiswall, Matthew and Basit Zafar. 2013. "How Do College Students Respond to Public Information about Earnings?" Federal Reserve Bank of New York Staff Reports No. 516.
- Wong, Manyee, Thomas D. Cook, and Peter M. Steiner. 2011. "No Child Left Behind: An Interim Evaluation of Its Effects on Learning Using Two Interrupted Time Series Each With Its Own Non-Equivalent Comparison Series." Northwestern University Working Paper Series 09-11.
- Wozniak, Abigail. 2010. "Are College Graduates More Responsive to Distant Labor Market Opportunities?" *Journal of Human Resources* 45(4): 944-970.
- Zimmerman, Seth. 2014. "The Returns to College Admission for Academically Marginal Students." *Journal of Labor Economics* 32(4): 711-754.

Appendix: Pell Grant Quantification

Quantifying the impact of all of the Administration’s higher education accomplishments is challenging, given a lack of data and ability to attribute a causal effect. Focusing on where we can construct the most accurate estimates using the literature, the calculation in this appendix attempts to estimate the economic returns of increasing Pell Grants between the 2008-2009 and 2014-2015 academic years, specifically through increased enrollment and graduation (but omitting any other channels, such as faster completion and better performance, as discussed at the end of this section). It begins by estimating the population of potentially impacted individuals, then multiplies this by the predicted fractions induced to enroll in and graduate from college, and finally by the estimated economic returns to enrolling and graduating.

The calculated overall economic benefit of the Administration’s increase of Pell Grants has a lower bound of \$20.0 billion for the 2014-2015 academic year, nearly double the \$10.8 billion increase in Pell Grant expenditures between 2008-2009 and 2014-2015. This estimate reflects the returns from enabling at least an additional 30,000 students to attend and 220,000 to graduate college each year. The calculation is an underestimate for a variety of reasons, as discussed at the end of this quantification.

Step 1. Identifying the Potentially Impacted Population

Enrollment

The potentially impacted population is all potential college students who are Pell-eligible, but who have not previously enrolled in college. Because Pell Grants are mainly available only to low-income students, we limit our population to this group of individuals. This calculation assumes that Pell-eligible individuals have household incomes of less than \$50,000, though in reality, the income threshold is more complicated and depends on factors such as the number of children in the household. Roughly 90 percent of Pell Grant recipients fell into this income group in 2014-2015 (Department of Education 2015).

One way to estimate a lower bound of the population of potentially impacted students is by focusing only on Pell-eligible graduating high school students. To estimate this number, we multiply 38.1 percent, or the percent of 16- to 17-year olds with a family income less than \$50,000 in 2014-2015 (CPS ASEC 2015, CEA Calculations), by 3,332,780, or the projected number of high school graduates in 2014-2015 (NCES 2015), obtaining about 1.3 million Pell-eligible graduating high school students. Alternative methods of calculating this figure yield similar results.

However, 47 percent of Pell recipients in 2014-2015 were over the age of 23 (College Board 2015b), suggesting that the focus on recent high school graduates could substantially underestimate the effects of Pell Grants. As an estimate, we assume the ratio of Pell-eligible potential students to Pell recipients is equal across those entering college immediately after high school and those entering later. In reality, college-seeking individuals at different stages of life might be more or less likely to know about or to apply to Pell—older individuals might be more

aware of grants, but younger students might receive more targeted information about Pell. Under this assumption, we scale our Pell-eligible graduating high-school population by the inverse of 59.1 percent, or the percent of Pell recipients who enrolled in college immediately after higher school (BPS 2012/2014). We obtain an overall potentially induced population of 2.1 million.

Graduation

The potentially impacted population is all current college students receiving Pell Grants. The 2014-2015 Pell recipient population was 8.3 million (Department of Education 2015). Note that unlike with enrollment, we include more than one cohort, as students may be influenced to undertake actions that increase the chance that they will graduate—such as complete credits and stay in school—each year they receive a Pell Grant.

Step 2. Determining the Percent Induced

Enrollment

Estimates for the percent of this population induced to enroll in college are taken from Dynarski (2003) and Castleman and Long (2013).¹⁴ Dynarski finds a 3.6 percentage point increase in college enrollment per a \$1,000 increase in grant aid in year 2000 dollars. Adjusting for inflation between 2000 and 2014, we obtain a 2.6 percentage point increase per \$1,000 in 2014 dollars. Using the baseline low income college enrollment in the study of 35.2 percent, we obtain a 7.4 percent increase in college enrollment per \$1,000 in 2014 dollars. Castleman and Long, meanwhile, find a 3.2 percentage point increase in college enrollment per a \$1,300 increase in grant aid in 2000-2001 dollars. Adjusting for inflation between 2000 and 2014, we obtain a 1.8 percentage point increase per \$1,000 in 2014 dollars, and using their baseline low income college enrollment of 61 percent, we obtain a 2.9 percent increase in college enrollment per \$1,000 in 2014.¹⁵

We use the average, or a 5.2 percent increase in college enrollment per \$1,000. Multiplying by the 2014 low-income college enrollment of 57.8 percent (NCES 2015)¹⁶, we obtain a 3.0 percentage point increase in college enrollment. Assuming constant returns and scaling this by the inflation-adjusted average Pell Grant increase between 2008-2009 and 2014-2015 of \$465 (Department of Education 2015), we identify an enrollment inducement effect of 1.4 percentage

¹⁴ Hansen (1983) and Kane (1996) find little effect of the introduction of the Pell Grant overall. However, part of this may be due to complexity and confusion surrounding the eligibility and application process (Dynarski and Scott-Clayton 2006; Bettinger et al. 2012) Although these issues still likely limit Pell success, they have improved in recent years, and, indeed, most recent literature finds similar effects to those cited in this calculation.

¹⁵ Both papers examine extensive margin changes in aid availability (i.e. receiving a grant versus not) while the increase in Pell Grants is an intensive margin change, which may have different impacts. Also, Castleman and Long's result was only statistically significant for four-year public institutions.

¹⁶ This definition of low-income (or those in the bottom 20 percent of the income distribution) is narrower than the ones used to determine Pell eligibility (those under \$50,000), in Dynarski (those with deceased fathers, a group with an average income of \$44,935 in 2014 dollars) and Castleman and Long (those within \$1,000 of Florida Student Access Grant eligibility, the threshold examined in the paper, a group with an average income of \$38,511 in 2014 dollars).

points. Multiplying this by our estimated potentially impacted population of 2.1 million, we find that 30,000 additional students enrolled in college due to the increase in Pell Grants in 2014-2015.¹⁷

Graduation

Estimates for the percent of the population potentially induced to graduate from college are taken from Castleman and Long (2013) who find a 22 percent increase in college graduation for an additional \$1,300 in 2000-2001 dollars. Adjusting for inflation between 2000 and 2014, we obtain a 12.3 percent increase per \$1,000 in 2014 dollars. This is over 2 times the estimated impact on college enrollment. Multiplying 12.3 percent by the 2008-2009 6-year Pell graduation rate of 46.3 percent (NCES 2015), we obtain a 5.7 percentage point increase. Scaling by average increase in Pell Grants of \$465, we identify a graduation inducement effect of 2.7 percentage points. Multiplying this by our potentially impacted population of 8.3 million, we find that over 220,000 additional students graduate from college in 2014-2015 due to the increase in Pell Grants.

Step 3. Estimating an Economic Return

Enrollment

We calculate the returns to enrolling in college using the literature on the economic returns to receiving a college education for marginal students. Using Zimmerman (2014)'s estimated threshold-crossing effect on earnings scaled by his change in state university enrollment rates, we calculate an average return of 43 percent. Note, however, that Zimmerman focuses only on Florida International University, the least selective four-year public college in Florida. Although his estimate should still reasonably estimate the marginal returns to four-year institutions, it does not necessarily for two-year ones.

As an alternate method, literature on four- and two-year institutions suggests returns of 8 to 14 percent per additional year of schooling for marginal students (Kane and Rouse 1993; Card 1995; Zimmerman 2014; Turner 2015). Using the mean of 10.75 percent and an average of 29 months a Pell student remains in college for (BPS 2004/2009), we calculate a return of 26 percent. It makes sense that this number is smaller as it does not account for any initial bonus from simply enrolling in college.

As a lower bound, using the average of these numbers, or 34.6 percent, and \$38,626 as the mean earnings of someone with a high school diploma or GED (CPS ASEC 2016), we calculate an earnings gain of \$399 million. Over a 40-year career and using an annual discount rate of 3.76 percent, we obtain a lower bound of \$8.6 billion in added earnings.

¹⁷ The non-casual increase in Pell recipients during the six-year period from 2008-2009 and 2014-2015 was 2.2 million (Department of Education 2015). Over 6 years, our calculation would imply a casual increase of about 180,000 or 8.3 percent of this, which does not seem out of line. If anything, this suggests our calculation is an underestimate.

Graduation

We similarly calculate the economic returns to graduating from college. Ost, Pan, and Webber (2016) calculate returns of 5.6 percent.¹⁸ Calculating our annual earnings gain using \$42,659 as the mean earnings of someone with some college education but no degree (CPS ASEC 2016), we obtain an earnings gain of \$527 million. Over a 40-year career and using an annual discount rate of 3.76 percent, we obtain a lower bound of \$11.4 billion in added earnings.

Combined

Our overall lower bound is the sum of the earnings gain from the enrollment and graduation effects, or \$20.0 billion in added earnings.

Comparison to Pell Expenditures

For comparison, the increase in Pell Grant expenditures between 2008-2009 and 2014-2015 adjusted for inflation was \$10.8 billion (Department of Education 2015). Our lower bound is nearly twice this amount. Increased college enrollment and graduation may also incur additional costs to individuals and schools—however, even adding lost wages from attending college to total college expenses per full-time-equivalent student and scaling by the number of students induced to enroll, we obtain additional costs of \$3.7 billion, and thus still find an overall larger benefit from the increase in Pell Grants. (CPS ASEC 2016; NCES 2015).

Additional Benefits Not Included in This Estimate

This estimate likely underestimates the true benefits of the Administration's higher education policies in a number of ways.

First, the estimate does not account for other benefits accrued to enrolled college students due to increases in Pell Grants, including the opportunity to focus more on their studies in place of work, finish sooner, and attend better programs. For example, Broton, Goldrick-Rab, and Benson (2016) finds that students offered grant aid were 8.56 percent less likely to work and worked 14.35 percent fewer hours. Castleman and Long (2013) find that a \$1,300 increase in grant aid results in a 10.8 percent increase in the number of credits a student earns within three years. Such students are potentially able to finish college sooner, resulting in lower overall costs. Although looking at financial aid and not grant aid, research by Denning (2016a) supports this theory—he finds that financial aid increased the chances of graduating, which he attributes to additional credit hours made possible through reduced work. Other literature, meanwhile, finds that an increase in grant aid may lead to shifts in college choice (Dynarski 2000), including away from two-year and less selective institutions towards four-year and more selective institutions (Pallais et al. 2015), motivating the idea that Pell may increase students' choice sets thereby inducing them to go schools better suited to them. Other studies have suggested financial aid positively impacts measures of student performance such as GPA (Stater 2009).

¹⁸ Combining our estimated enrollment and graduation impacts, we obtain total returns from college of approximately 41.1 percent. This is less than the reported 71 percent premium of a bachelor's degree as compared to a high school diploma (Figure 1), suggesting our estimates are reasonable.

Second, it does not capture externalities from education such as lower government expenditure on transfer programs, higher levels of volunteering and voting, lower levels of criminal behavior, or improved health as described in Section I.

Third, it omits the impacts of all other higher education policies pursued by this Administration, many of which are discussed in the rest of this report. These policies include expansions of Pell Grants for high school students taking college coursework; the new College Scorecard, which could encourage students to attend better colleges, as demonstrated by a similar policy intervention in Chile (Hastings et al. 2015), or even encourage some students to apply; FAFSA simplification; the Gainful Employment regulations and other accountability measures; low interest rates and the expansion of income-driven repayment plans; and community college Promise programs that have arisen since the President's call for free community college.