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Should Everyone Go To College?

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Summary

For the past few decades, it has been widely argued that a college degree is a prerequisite to entering the middle class in the United States. Study after study reminds us that higher education is one of the best investments we can make, and President Obama has called it "an economic imperative." We all know that, on average, college graduates make significantly more money over their lifetimes than those with only a high school education. What gets less attention is the fact that not all college degrees or college graduates are equal. There is enormous variation in the so-called return to education depending on factors such as institution attended, field of study, whether a student graduates, and post-graduation occupation. While the average return to obtaining a college degree is clearly positive, we emphasize that it is not universally so. For certain schools, majors, occupations, and individuals, college may not be a smart investment. By telling all young people that they should go to college no matter what, we are actually doing some of them a disservice.

The Rate of Return on Education

One way to estimate the value of education is to look at the increase in earnings associated with an additional year of schooling. However, correlation is not causation, and getting at the true causal effect of education on earnings is not so easy. The main problem is one of selection: if the smartest, most motivated people are both more likely to go to college and more likely to be financially successful, then the observed difference in earnings by years of education doesn't measure the true effect of college.

Researchers have attempted to get around this problem of causality by employing a number of clever techniques, including, for example, comparing identical twins with different levels of education. The best studies suggest that the return to an additional year of school is around 10 percent. If we apply this 10 percent rate to the median earnings of about $30,000 for a 25- to 34-year-old high school graduate working full time in 2010, this implies that a year of college increases earnings by $3,000, and four years increases them by $12,000. Notice that this amount is less than the raw differences in earnings between high school graduates and bachelor's degree holders of $15,000, but it is in the same ballpark. Similarly, the raw difference between high school graduates and associate's degree holders is about $7,000, but a return of 10% would predict the causal effect of those additional two years to be $6,000.

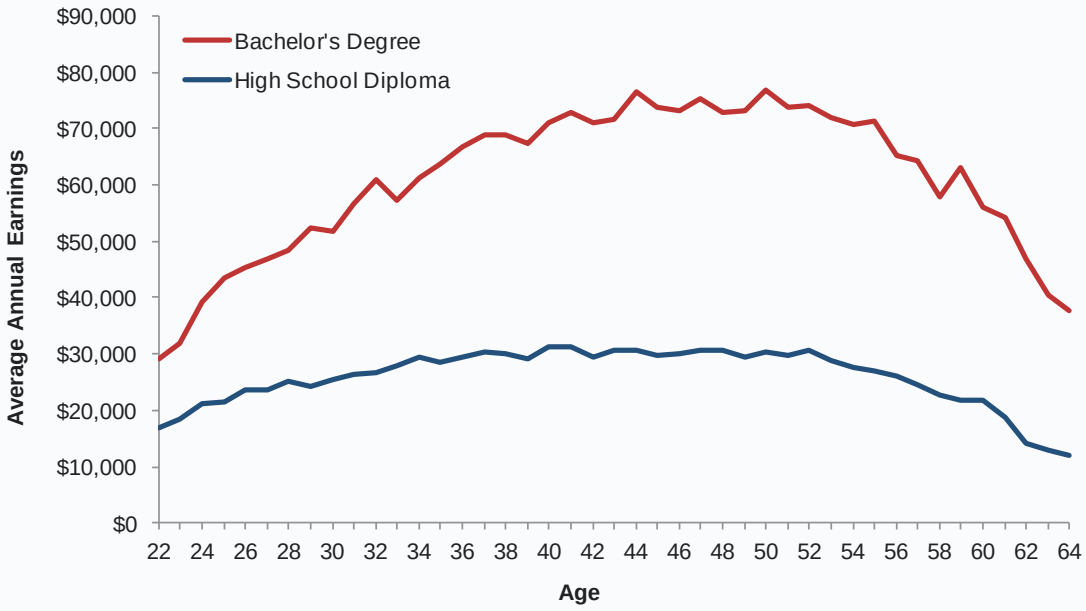
There are other factors to consider. The cost of college matters as well: the more someone has to pay to attend, the lower the net benefit of attending. Furthermore, we have to factor in the opportunity cost of college, measured as the foregone earnings a student gives up when he or she leaves or delays entering the workforce in order to attend school. Using average earnings for 18- and 19-year-olds and 20- and 21-year-olds with high school degrees (including those working part-time or not at all), Michael Greenstone and Adam Looney of Brookings' Hamilton Project calculate an opportunity cost of $54,000 for a four-year degree.

In this brief, we take a rather narrow view of the value of a college degree, focusing on the earnings premium. However, there are many non-monetary benefits of schooling which are harder to measure but no less important. Research suggests that additional education improves overall wellbeing by affecting things like job satisfaction, health, marriage, parenting, trust, and social interaction. Additionally, there are social benefits to education, such as reduced crime rates and higher political participation. We also do not want to dismiss personal preferences, and we acknowledge that many people derive value from their careers in ways that have nothing to do with money. While beyond the scope of this piece, we do want to point out that these noneconomic factors can change the cost-benefit calculus.

As noted above, the gap in annual earnings between young high school graduates and bachelor's degree holders working full time is $15,000. What's more, the earnings premium associated with a college degree grows over a lifetime. Hamilton Project research shows that

23- to 25-year-olds with bachelor's degrees make $12,000 more than high school graduates but by age 50, the gap has grown to $46,500 (Figure 1). When we look at lifetime earnings—the sum of earnings over a career—the total premium is $570,000 for a bachelor's degree and $170,000 for an associate's degree. Compared to the average up-front cost of four years of college (tuition plus opportunity cost) of $102,000, the Hamilton Project is not alone in arguing that investing in college provides "a tremendous return."

Figure 1
Earnings Trajectories by Educational Attainment



Source: Greenstone and Looney (2011).
Note: Sample includes all civilian U.S. citizens, excluding those in school. Annual earnings are averaged over the entire sample, including those without work. Source: March CPS 2007-2010.

It is always possible to quibble over specific calculations, but it is hard to deny that, on average, the benefits of a college degree far outweigh the costs. The key phrase here is "on average." The purpose of this brief is to highlight the reasons why, for a given individual, the benefits may not outweigh the costs. We emphasize that a 17- or 18-year-old deciding whether and where to go to college should carefully consider his or her own likely path of education and career before committing a considerable amount of time and money to that degree. With tuitions rising faster than family incomes, the typical college student is now more dependent than in the past on loans, creating serious risks for the individual student and perhaps for the system as a whole, should widespread defaults occur in the future. Federal student loans now total close to $1 trillion, larger than credit card debt or auto loans and second only to mortgage debt on household balance sheets.

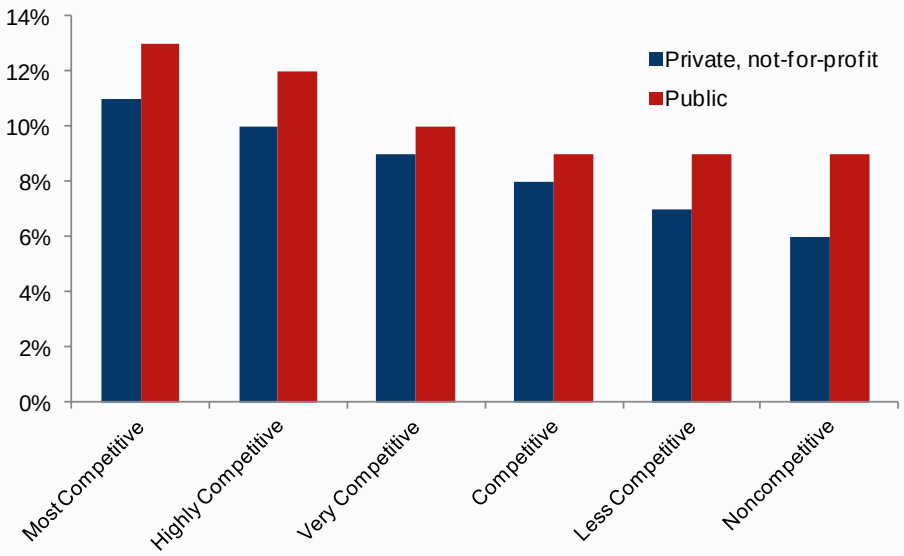
Variation in the Return to Education

It is easy to imagine hundreds of dimensions on which college degrees and their payoffs could differ. Ideally, we'd like to be able to look into a crystal ball and know which individual school will give the highest net benefit for a given student with her unique strengths, weaknesses, and interests. Of course, we are not able to do this. What we can do is lay out several key dimensions that seem to significantly affect the return to a college degree. These include school type, school selectivity level, school cost and financial aid, college major, later occupation, and perhaps most importantly, the probability of completing a degree.

Variation by school selectivity

Mark Schneider of the American Enterprise Institute (AEI) and the American Institutes for Research (AIR) used longitudinal data from the Baccalaureate and Beyond survey to calculate lifetime earnings for bachelor's earners by type of institution attended, then compared them to the lifetime earnings of high school graduates. The difference (after accounting for tuition costs and discounting to a present value) is the value of a bachelor's degree. For every type of school (categorized by whether the school was a public institution or a nonprofit private institution and by its selectivity) this value is positive, but it varies widely. People who attended the most selective private schools have a lifetime earnings premium of over $620,000 (in 2012 dollars). For those who attended a minimally selective or open admission private school, the premium is only a third of that. Schneider performed a similar exercise with campus-level data on college graduates (compiled by the online salary information company PayScale), calculating the return on investment (ROI) of a bachelor's degree (Figure 2). These calculations suggest that public schools tend to have higher ROIs than private schools, and more selective schools offer higher returns than less selective ones. Even within a school type and selectivity category, the variation is striking. For example, the average ROI for a competitive public school in 2010 is 9 percent, but the highest rate within this category is 12 percent while the lowest is 6 percent.

Figure 2
Return on Investment of a Bachelor's Degree by Institution Type



Source: Schneider (2010).
Note: Data uses PayScale return on investment data and Barron's index of school selectivity.

Another important element in estimating the ROI on a college education is financial aid, which can change the expected return dramatically. For example, Vassar College is one of the most expensive schools on the 2012 list and has a relatively low annual ROI of 6%. But when you factor in its generous aid packages (nearly 60% of students receive aid, and the average amount is over $30,000), Vassar's annual ROI increases 50%, to a return of 9% (data available at http://www.payscale.com/college-education-value-2012).

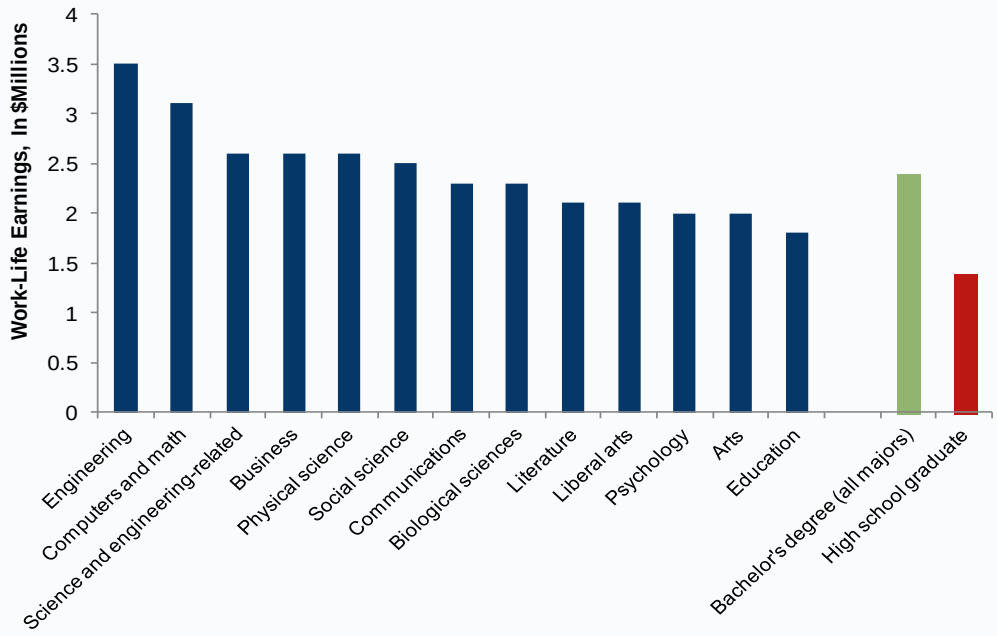
One of the most important takeaways from the PayScale data is that not every bachelor's degree is a smart investment. After attempting to account for in-state vs. out-of-state tuition, financial aid, graduation rates, years taken to graduate, wage inflation, and selection, nearly two hundred schools on the 2012 list have negative ROIs. Students may want to think twice about attending the Savannah College of Art and Design in Georgia or Jackson State University

in Mississippi. The problem is compounded if the students most likely to attend these less selective schools come from disadvantaged families.

Variation by field of study and career

Even within a school, the choices a student makes about his or her field of study and later career can have a large impact on what he or she gets out of her degree. It is no coincidence that the three schools with the highest 30-year ROIs on the 2012 PayScale list—Harvey Mudd, Caltech, and MIT—specialize in the STEM fields: science, technology, engineering, and math. Recent analysis by the Census Bureau also shows that the lifetime earnings of workers with bachelor's degrees vary widely by college major and occupation. The highest paid major is engineering, followed by computers and math. The lowest paid major, with barely half the lifetime earnings of engineering majors, is education, followed by the arts and psychology (Figure 3). The highest-earning occupation category is architecture and engineering, with computers, math, and management in second place. The lowest-earning occupation for college graduates is service (Figure 4). According to Census's calculations, the lifetime earnings of an education or arts major working in the service sector are actually lower than the average lifetime earnings of a high school graduate.

Figure 3
Work-Life Earnings of Bachelor's Degree Holders by College Major

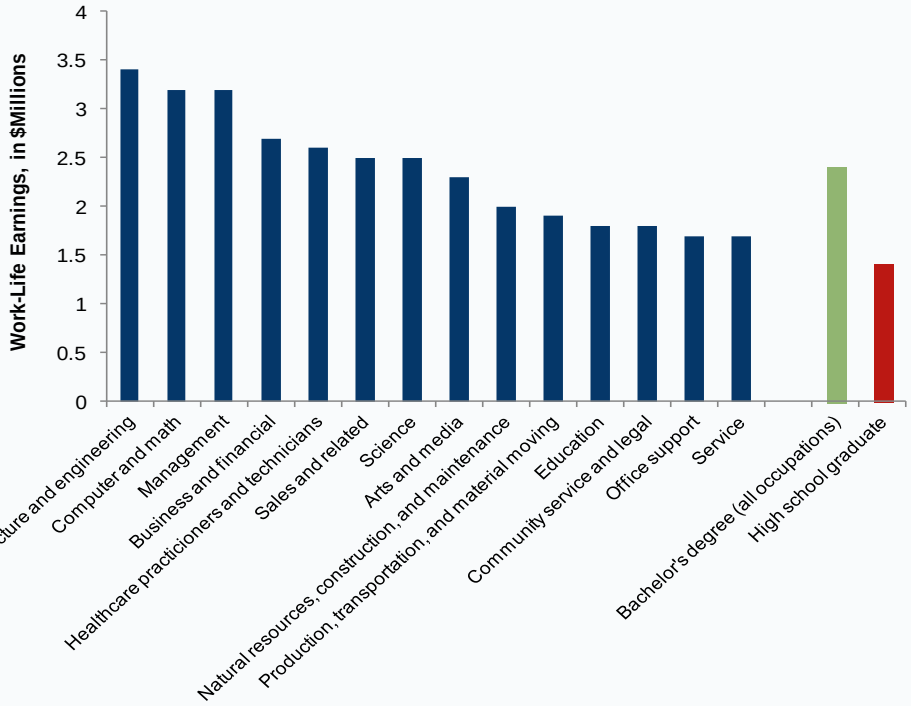


Source: Julian (2012).
Note: Synthetic work-life earnings estimates are calculated by finding median earnings for each 5-year age group between 25 and 64 (25-29, 30-34, etc.). Earnings for each group is multiplied by 5 to get total earnings for that period, then aggregated to get total lifetime earnings. This is done for high school graduates, bachelor's degree holders, and bachelor's degree holders by major.

When we dig even deeper, we see that just as not all college degrees are equal, neither are all high school diplomas. Anthony Carnevale and his colleagues at the Georgetown Center on Education and the Workforce use similar methodology to the Census calculations but disaggregate even further, estimating median lifetime earnings for all education levels by occupation. They find that 14 percent of people with a high school diploma make at least as much as those with a bachelor's degree, and 17 percent of people with a bachelor's degree make more than those with a professional degree. The authors argue that much of this finding is explained by occupation. In every occupation category, more educated workers earn more.

But, for example, someone working in a STEM job with only a high school diploma can expect to make more over a lifetime than someone with a bachelor's degree working in education, community service and arts, sales and office work, health support, blue collar jobs, or personal services.

Figure 4
Work-Life Earnings of Bachelor's Degree Holders by Occupation



Source: Julian (2012).
Note: Synthetic work-life earnings estimates are calculated by finding median earnings for each 5-year age group between 25 and 64 (25-29, 30-34, etc.). Earnings for each group is multiplied by 5 to get total earnings for that period, then aggregated to get total lifetime earnings. This is done for high school graduates, bachelor's degree holders, and bachelor's degree holders by occupation.

The numbers above are for full-time workers in a given field. In fact, choice of major can also affect whether a college graduate can find a job at all. Another recent report from the Georgetown Center on Education and the Workforce breaks down unemployment rates by major for both recent (age 22-26) and experienced (age 30-54) college graduates in 2009-2010. People who majored in education or health have very low unemployment—even though education is one of the lowest-paying majors. Architecture graduates have particularly high unemployment, which may simply reflect the decline of the construction industry during the Great Recession. Arts majors don't fare too well, either. The expected earnings (median full-time earnings times the probability of being employed) of a young college graduate with a theater degree are about $6,000 more than the expected earnings of a young high school graduate. For a young person with a mechanical engineering degree, the expected earnings of the college graduate is a staggering $35,000 more than that of a typical high school graduate.

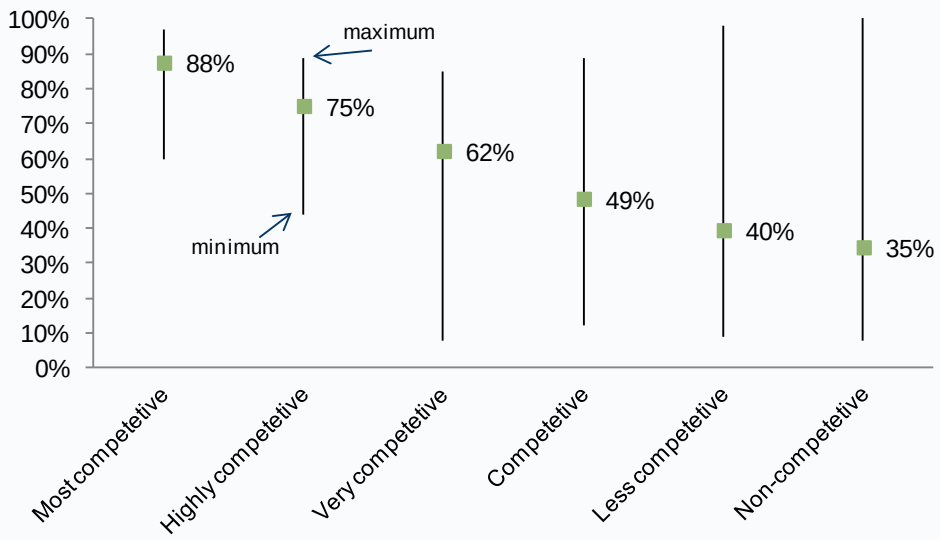
Variation in graduation rates

Comparisons of the return to college by highest degree attained include only people who actually complete college. Students who fail to obtain a degree incur some or all of the costs of a bachelor's degree without the ultimate payoff. This has major implications for inequalities of income and wealth, as the students least likely to graduate—lower-income students—are also the most likely to take on debt to finance their education.

Fewer than 60 percent of students who enter four-year schools finish within six years, and for low-income students it's even worse. Again, the variation in this measure is huge. Just within Washington, D.C., for example, six-year graduation rates range from a near-universal 93 percent at Georgetown University to a dismal 19 percent at the University of D.C. Of course, these are very different institutions, and we might expect high-achieving students at an elite school like Georgetown to have higher completion rates than at a less competitive school like UDC. In fact, Frederick Hess and his colleagues at AEI have documented that the relationship between selectivity and completion is positive, echoing other work that suggests that students are more likely to succeed in and graduate from college when they attend more selective schools (Figure 5). At the most selective schools, 88 percent of students graduate within six years; at non-competitive schools, only 35 percent do. Furthermore, the range of completion rates is negatively correlated with school ranking, meaning the least selective schools have the widest range. For example, one non-competitive school, Arkansas Baptist College, graduates 100 percent of its students, while only 8 percent of students at Southern University at New Orleans finish. Not every student can get into Harvard, where the likelihood of graduating is 97 percent, but students can choose to attend a school with a better track record within their ability level.

Unfortunately, recent evidence by Caroline Hoxby of Stanford and Christopher Avery of Harvard shows that most high-achieving low-income students never even apply to the selective schools that they are qualified to attend—and at which they would be eligible for generous financial aid. There is clearly room for policies that do a better job of matching students to schools.

Figure 5
Average Six-Year Graduation Rates by School Selectivity



Source: Hess et al (2009).

Policy Implications

All of this suggests that it is a mistake to unilaterally tell young Americans that going to college—any college—is the best decision they can make. If they choose wisely and attend a school with generous financial aid and high expected earnings, and if they don't just enroll but

graduate, they can greatly improve their lifetime prospects. The information needed to make a wise decision, however, can be difficult to find and hard to interpret.

One solution is simply to make the type of information discussed above more readily available. A study by Andrew Kelly and Mark Schneider of AEI found that when parents were asked to choose between two similar public universities in their state, giving them information on the schools' graduation rates caused them to prefer the higher-performing school.

The PayScale college rankings are a step in the right direction, giving potential students and their parents information with which to make better decisions. Similarly, the Obama Administration's new College Scorecard is being developed to increase transparency in the college application process. As it operates now, a prospective student can type in a college's name and learn its average net price, graduation rate, loan default rate, and median borrowed amount. The Department of Education is working to add information about the earnings of a given school's graduates. There is also a multi-dimensional search feature that allows users to find schools by location, size, and degrees and majors offered. The Student Right to Know Before You Go Act, sponsored by Senators Ron Wyden (D-OR) and Marco Rubio (R-FL), also aims to expand the data available on the costs and benefits of individual schools, as well as programs and majors within schools.

The College Scorecard is an admirable effort to help students and parents navigate the complicated process of choosing a college. However, it may not go far enough in improving transparency and helping students make the best possible decisions. A recent report by the Center for American Progress (CAP) showed a draft of the Scorecard to a focus group of college-bound high school students and found, among other things, that they are frequently confused about the term "net price" and give little weight to six-year graduation rates because they expect to graduate in four. It appears that the White House has responded to some of these critiques, for example showing median amount borrowed and default rates rather than the confusing "student loan repayment." Nevertheless, more information for students and their parents is needed.

There is also room for improvement in the financial aid system, which can seem overwhelmingly complex for families not familiar with the process. Studies have shown that students frequently underestimate how much aid they are eligible for, and don't claim the tax incentives that would save them money. Since 2009, the Administration has worked to simplify the FAFSA, the form that families must fill out to receive federal aid—but more could be done to guide low-income families through the process.

In the longer run, colleges need to do more to ensure that their students graduate, particularly the lower-income students who struggle most with persistence and completion. Research suggests that grants and loans increase enrollment but that aid must be tied to performance in order to affect persistence. Currently, we spend over $100 billion on Pell Grants and federal loans, despite a complete lack of evidence that this money leads to higher graduation rates. Good research on programs like Georgia's HOPE scholarships or West Virginia's PROMISE scholarships suggest that attaching strings to grant aid can improve college persistence and completion.

Finally, we want to emphasize that the personal characteristics and skills of each individual are equally important. It may be that for a student with poor grades who is on the fence about enrolling in a four-year program, the most bang-for-the-buck will come from a vocationally-oriented associate's degree or career-specific technical training. Indeed, there are many well-paid job openings going unfilled because employers can't find workers with the right skills—skills that young potential workers could learn from training programs, apprenticeships, a vocational certificate, or an associate's degree. Policymakers should encourage these alternatives at the high school as well as the postsecondary level, with a focus on high-demand occupations and high-growth sectors. There has long been resistance to vocational education in American high schools, for fear that "tracking" students reinforces socioeconomic (and racial) stratification and impedes mobility. But if the default for many lower-achieving students was a career-focused training path rather than a path that involves dropping out of traditional college, their job prospects would probably improve. For example, Career Academies are high schools organized around an occupational or industry focus, and have partnerships with local

employers and colleges. They have been shown by gold standard research to increase men's wages, hours worked, and employment stability after high school, particularly for those at high risk of dropping out.

Conclusions

In this brief, we have corralled existing research to make the point that while on average the return to college is highly positive, there is a considerable spread in the value of going to college. A bachelor's degree is not a smart investment for every student in every circumstance. We have outlined three important steps policymakers can take to make sure every person does make a smart investment in their choice of postsecondary education. First, we must provide more information in a comprehensible manner. Second, the federal government should lead the way on performance-based scholarships to incentivize college attendance and persistence. Finally, there should be more good alternatives to a traditional academic path, including career and technical education and apprenticeships.

Additional Reading

Anthony P. Carnevale, Ban Cheah, and Jeff Strohl, "Hard Times: College Majors, Unemployment, and Earnings: Not All College Degrees Are Created Equal," (Washington, D.C.: The Georgetown University Center on Education and the Workforce, January 2012).

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