



Education and Earnings

August 2009

"We have entered an age in which education is not just a luxury permitting some men an advantage over others. It has become a necessity without which a person is defenseless in this complex, industrialized society."

—Lyndon B. Johnson

Annual statistics provided by the U.S. Census Bureau show that the relationship between earnings and education is [very strong](#). In 2008 workers with a bachelor's degree earned 65 percent more than workers with only a high school diploma and nearly 130 percent more than workers without a high school diploma (see [chart](#) and Bureau of Labor Statistics [BLS], 2008). The income difference between individuals with a college education and those with only a high school education is known as the "[college premium](#)." According to well-known labor economist [Kevin Murphy](#) (2009), the college premium has roughly doubled since the 1970s. This widening premium suggests that employers value educated workers more highly than ever. Accordingly, statistics also show that in 2008 college graduates had significantly lower rates of unemployment (2.8 percent) relative to high school graduates (5.7 percent) and individuals who did not finish high school (9.0 percent) (BLS, 2008).

The unique set of skills and abilities that an individual brings into the labor market is known as [human capital](#). Education is an investment in human capital, because it delivers specialized skills and boosts worker productivity. As a result, higher levels of education generally lead to increased earning power. Economists refer to this higher earning power as the "return on education." On average, studies show that an additional year of schooling increases annual earnings by 10 percent (Card, 1999). It is possible, however, that another investment earns a higher rate of return, and an individual seeking to maximize future earnings must consider all options.¹ In this vein, a person also must factor into account the earnings he or she will forgo and the tuition that he or she will owe should the choice be to attend school rather than work. These factors represent the "[opportunity cost](#)" or true price of education. An individual seeking to maximize future earnings will choose to remain in school only if the long-term payout for an additional year of education exceeds the opportunity cost.

The magnitude of the impact of education on earnings not only carries important weight for individual decisionmaking, but it is also very significant for policymakers. With an estimated 10 percent annual rate of return, education likely represents one of the best investments a government can make in the face of scarce resources and financial limitations. By subsidizing schooling, policymakers can make education more accessible and more affordable. Many argue that investment in education is the surest way to improve the economic outcomes and standard of living for low-income individuals. Additionally, higher average educational attainment across society likely has other beneficial, less quantifiable effects, such as lower crime and better personal health. In today's economy, individuals face strong incentives to stay in school, and policymakers have significant motivation to promote higher education. After all, according to Kevin Murphy, "gains to society are the sum of the gains to individuals."

—By Douglas C. Smith, Research Associate, Federal Reserve Bank of St. Louis

References

Bureau of Labor Statistics, Current Population Study 2008, www.bls.gov/emp/emptab7.htm.

Card, David E. "The Causal Effect of Education on Earnings," in Orley Ashenfelter and David E. Card, eds., *Handbook of Labor Economics*. Volume 3A. Amsterdam: Elsevier Science, 1999, pp. 1801-63.

Murphy, Kevin. "[Interview with Kevin Murphy](#)." *The Region*, June 2009, pp. 15-23.

¹ "Another investment" includes any other investment that provides a return or interest (e.g., stocks, bonds, 401(k)s).

Recent Articles and Further Reading on Education and Earnings

[“Joint Economic Committee Study: Investment in Education: Private and Public Returns,”](#) by Jim Saxton, vice chairman of the Joint Economic Committee Study, January 2000.

In this study, Saxton gives a comprehensive overview of education’s impact on both individuals and the general public, providing relevant theory, statistics, and charts.

[“From Community College to a Bachelor’s Degree and Beyond: How Smooth Is the Road?”](#) by Natalia Kolesnikova, economist, Federal Reserve Bank of St. Louis, *The Regional Economist*, July 2009, 17(3), pp. 10-11.

Kolesnikova examines the opportunities and payoffs for students who begin their postsecondary education at community colleges and then continue to four-year institutions. She provides empirical analysis comparing this population with those who attend four-year institutions without an associate degree.

[“High Returns: Public Investment in Higher Education,”](#) by Philip A. Trostel, University of Maine, in Federal Reserve Bank of Boston *Communities & Banking*, Spring 2008, 19(2), pp. 31-34.

Trostel discusses the growing importance of government investment in higher education. He argues that the public receives high returns or “fiscal payoffs” on these investments, and he contends that the current level of investment fails to make college education widely accessible.

Free Data Sources and Reports

Data: “Education pays...”
Description: This chart and the accompanying data show unemployment and median weekly earnings for each level of education.
Published by: Bureau of Labor Statistics, Current Population Survey
Location: <http://www.bls.gov/emp/emptab7.htm>

Data: Earnings by Occupation and Education
Description: This dataset from the 2000 U.S. Census delivers useful earnings statistics categorized by both age and education level.
Published by: U.S. Census Bureau, 2000
Location: <http://www.census.gov/hhes/www/income/earnings/call1usboth.html>

Data: Labor Force Statistics Bureau of Labor Statistics Data Retrieval (Education and Earnings)
Description: This data search engine provides a simple interface for looking at historical earnings statistics by educational attainment, as well as race and gender.
Published by: Bureau of Labor Statistics Data Retrieval (Education and Earnings)
Location: <http://www.bls.gov/webapps/legacy/cpswktab4.htm>

The *Liber8® Economic Information Newsletter* is published 9 times per year, January through May and August through November. The newsletter is a selection of useful economic information, articles, data, and websites compiled by the librarians of the Federal Reserve Bank of St. Louis Research Library. Please visit our website and archives liber8.stlouisfed.org for more information and resources.

[Add me to the mailing list](#) | [Remove me from the mailing list](#) | [RSS](#)
[E-mail](#) questions or comments regarding the Liber8 Newsletter