

Educational Notes

Do College Students Borrow Enough?

William L. Holahan

University of Wisconsin-Milwaukee
and

Mark C. Schug

University of Wisconsin-Milwaukee

Every fall, journalists punctuate their stories about the joy of beginning college with references to the debt college graduates are likely to accumulate by graduation. Journalists are good at explaining the growing cost of a college education. However, they are bad at explaining the benefits. They often convey the idea that borrowing money to pay for college is a flat-out bad idea. This paper presents a different perspective. We argue that not only is borrowing a good idea, it could be that many students may not be borrowing enough. How could that be? The answer lies in helping students to apply what we know about investment in human capital and the economic way of thinking to their own decisions as college students.

Investing in Human Capital

Investing in human capital is a common topic in many college courses including principles of economics, business, political science, and law. Human capital refers to the education and training that contribute to a worker's future output and income. Investment in human capital includes formal education such as degrees in high school and college. It also includes informal education such as on-the-job training.

Gary S. Becker (1995) explains that high school and college education raises a person's income even after netting out direct and indirect costs of schooling and adjusting for IQ and parental wealth. The earnings of more-educated people are almost always well above the averages in other nations as well. Like an investment in physical capital, investing in human capital is an important means of improving income.

Some researchers have studied the annual return of investments in education. Cohn and Hughes (1994) estimated that the rate of return for a college education declined from 1969 from about 15% in 1969 to about 11% in 1974. Subsequently, it increased in 14% in 1978 and increased still further to 18% in 1982. The rates remained essentially unchanged in 1985. Thus it appears that investing in college education is a good one when compared to other alternatives such as investing in the stock market.

Do College Students Borrow Enough?

We suspect that many college students are terrified at the prospect of increased college loan debt. At first glance, they might be right to worry. Students graduating with a bachelor's degree from the University of Wisconsin-Madison in 2001 had over \$15,000 in student loans. In 1991, students from the same university were graduating with about \$6,000 in student loans. And, students are not the only ones who are worried. Others, such as Fossey (1998), argue that college loan programs are out of control and that students are condemning themselves to years of long-term indebtedness.

At our university, it is common for many of our students to work part-time while in college. They do this, they say, in order to avoid taking on large amounts of college loans. These same students often change majors to accommodate work schedules.

What insights might the economic way of thinking provide in regard to the amount of college debt a student should acquire? Are college loans the same as, say, credit card loans? Are students acting in their own best interest when they work more hours, risk being unable

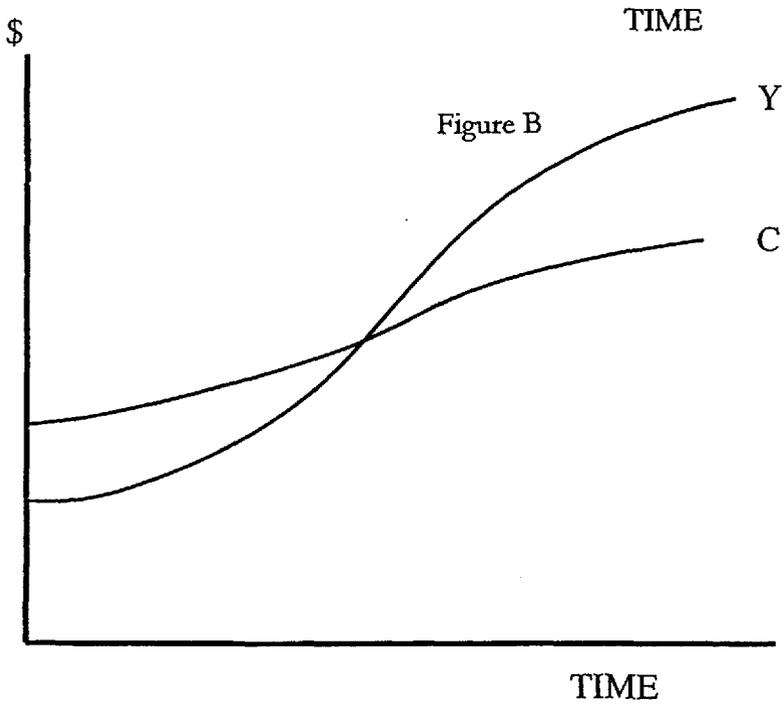
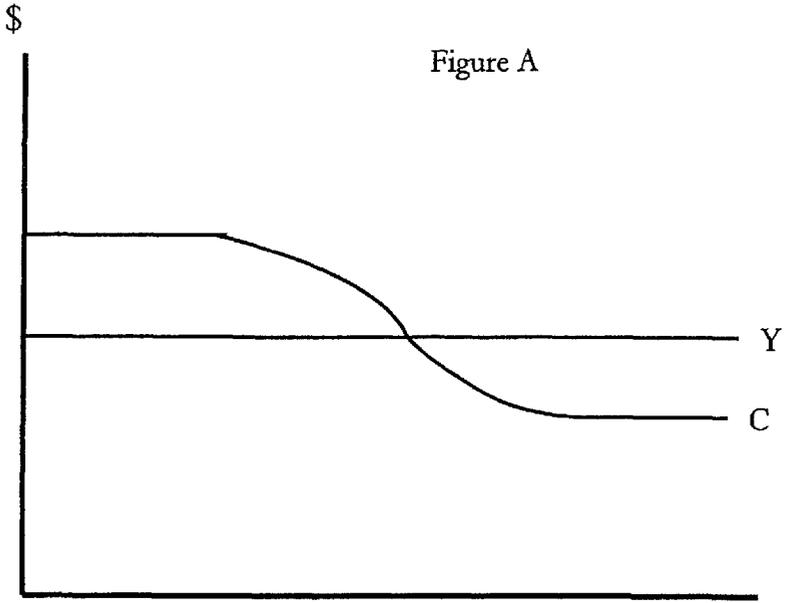
to complete the best possible major, and perhaps graduate late? We offer a way to teach students about their investment in their education and the importance of taking out loans to pay for it.

We apply standard income accounting equations from the principles of economics course. It is common in macroeconomics to use the relationship between income and consumption, with the difference being savings. The arithmetic applies to personal finance too. That is: $Y = C + S$, and $S = Y - C$. Savings equals income minus consumption. Moreover, in this paper, savings is assumed to be invested in education, so that $S = I$, and $I = Y - C$.

Figure A shows the time trends of income (Y) and consumption (C). The vertical axis shows dollars while the horizontal axis shows time. The time trend of income is flat, showing a case of constant income over time. In order to consume more than income at a given period of time, the student must borrow. During the borrowing period, the consumption can be higher than income, or $C > Y$, as shown in Figure A. However, since the loans must be repaid despite the constant income, consumption must fall. The flat income line refers to the student-borrower who does not add to human capital, essentially borrowing to consume more than income. Since income remains the same throughout the analysis, geometry requires that consumption must fall as C curve crosses the Y curve.

A good classroom example to illustrate the situation described in Figure A would be the analogy of a person who borrowed to go to a gambling casino and returned in debt. The experience is pure consumption, and the sadder but wiser person is facing the repayment of her gambling debt. Since the income line is flat, the only way to repay the loans is to reduce consumption below income. The analogy is to an education that is pure consumption (certainly economics!). The only way to repay loans for such an education is to reduce consumption below income.

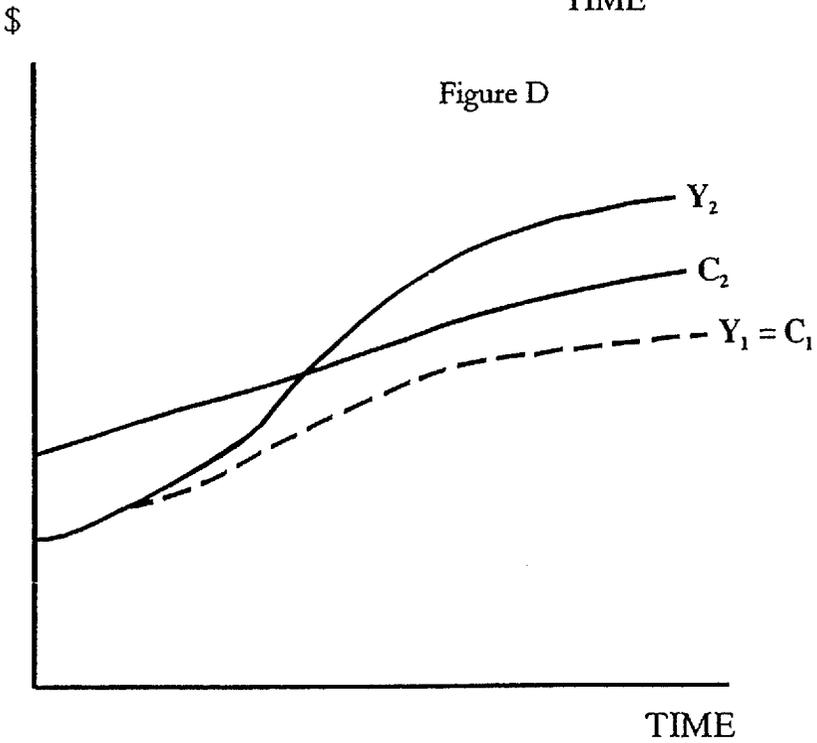
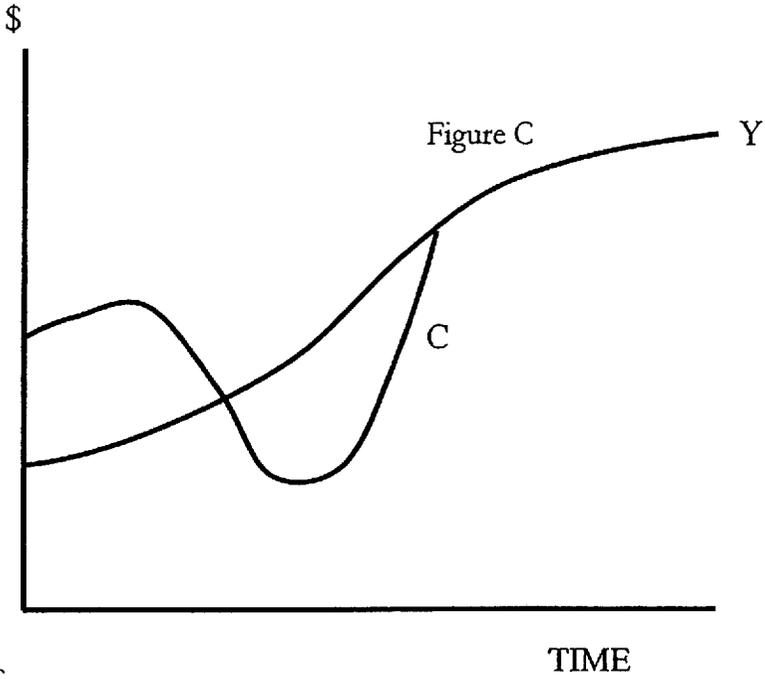
Figure B shows a rosier scenario. In Figure B there is a period of borrowing in which consumption lies above income. This time,



however, the income rises due to the loan-supported education. As we move to the right in the diagram, both income and consumption rise. Although consumption must lie below income when the loans are being repaid, income rises sufficiently to permit consumption to rise throughout the period. This illustrates an education that has a financial payoff, in the form of enhanced income. The Y curve rises sufficiently to permit the C curve to continue to rise even as it intersects the rising Y curve. The student should learn from this demonstration that consumption can rise even during loan repayments if a proper investment is made in an income-enhancing education. That is, while she may have a large loan balance, she need not suffer a decline in future consumption despite the fact that the loans need to be repaid.

Figure C returns us to the gloomier side. It shows students what happens when the loans are paid off too fast. Even though the education has a financial payoff, shown by the rising Y curve, the term of the loan is so short as to require consumption to fall as the loan is repaid. While a college loan is an investment in an asset that provides benefits over time, the most appropriate way to repay a college loan is over the longer time period so that consumption does not have to fall far below income.

Figure D shows the time trend lines for two occupations. Y_1 is the trend line for an occupation with rising income due to on-the-job skill development, or "learning-by-doing." Without any borrowing, such a worker will enjoy a rising standard of living. Since this acquisition of human capital does not require borrowing, $Y_1 = C_1$, i.e., income equals consumption in occupation 1. However, if such a person decides to switch from occupation 1 to occupation 2, to enjoy the higher income path $Y_2 > Y_1$, education is required. The C_1 and Y_2 curves in Figure D correspond to those in Figure B, showing how the student must consume more than income during the period of borrowing. This time, the Figure shows a very important point: when borrowing to pay for an education permits occupation-switching, consumption can be higher in occupation 2 than income in occupation 1 in all time periods, both during the borrowing periods and the repayment periods.



Conclusion

This analysis reveals that not all student debt is a bad thing. Student borrowing provides a way for students to avoid working part-time jobs, to pursue “solid” majors, and to graduate on time. Properly planned, with sufficiently long loan terms, student borrowing can enable students to enjoy consumption higher than at anytime in the lower path occupation, even net of borrowing. Students should not fear borrowing, but rather plan on borrowing as a strategy that will raise lifetime income in a pattern that never requires a reduction in consumption.

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