

Real World Graduation: Question 5

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Question 5

A study by the U. S. Department of Education in 2006 [1] reported that college tuition, fees, and room and board are continuing to rise. The data in Figure 5-1 shows the costs of tuition, fees, books, and room and board for in-state students attending public four-year universities, living on-campus. A separate study [2] concluded that a college graduate with a 4-year degree in 2005 will earn 63% more than a person with only a high school diploma (approximately \$57,000 per year vs. \$35,000 per year). This means, on average, that a college graduate earns approximately 75% more over their working lifetimes (\$2.1 M vs. \$1.2 M) as compared to a person with only a high-school diploma. Given the costs of a college education shown in Figure 5-1, and the earnings benefits of a college education, what is a good federal policy regarding college costs?

- a) The federal government should ensure all tuition, fees, and room-and-board is free.
- b) Congress should enact price controls on tuition, fees, and room and board to keep the annual rate of increase at or below the rate of inflation.
- c) Congress should pass a law requiring that tuition costs be frozen at the rates that prevailed during the freshman year.
- d) Attendance at college should be mandatory so that everyone's income will rise.
- e) Some combination of a), b), and c) should be adopted to improve the current system.

School Year	Tuition & Fees (\$)	% Increase in Tuition & Fees	Room and Board (\$)	% Increase in Room and Board
1998-1999	3640	-	4985	-
1999-2000	3768	3.52	5144	3.19
2000-2001	3979	5.60	5342	3.85
2001-2002	4273	7.39	5675	6.23
2002-2003	4686	9.67	5918	4.28
2003-2004	5363	14.45	6316	6.73
2004-2005	5939	10.74	6649	5.27
2005-2006	6399	7.75	7025	5.65

Figure 5-1

[1] Digest of Education Statistics, 2006, (NCES 2007-017), U. S. Department of Education, Washington DC: Institute of Education Statistics, Table 319 (Jul 2007)

[2] National Center for Education Statistics (NCES), 2004, Table 14-1; NCES 2006, Table 22-1 (based on U. S. Census Bureau, Current Population Survey, and U. S. Census Bureau, 2006. PINC-03.

Answer to Question 5

This is a trick question. All of the answers are wrong.

Answer (a) is illogical, because nothing is free and the federal government does not actually pay for anything. Everything the federal government pays out has either come from the taxpayers or is added onto the national debt to be paid by future taxpayers. So, if option (a) were enacted, everyone who pays taxes would indirectly pay for the tuition of all students. Many people thus would be forced to pay for something from which they do not benefit, while those who attend college will receive the benefit from higher wages. In other words, this policy amounts to public costs but private gain. Shall the children of the wealthy be educated at public expense, paid for by the people of the lower and middle economic classes?

Answer (b) cannot work because the cost of something cannot be determined by arbitrary fiat. If the cost dictated by Congress is below the actual cost of providing the service, the private colleges will simply close. A college education will either become even more difficult to obtain (i.e., only those with influence or connections will be able to get in to the few remaining schools), or of lesser quality. Likewise, public colleges will either require a greater amount of funding to maintain its standards, requiring more taxes to be paid by many who will not benefit, or will lower the quality of the education provided. It is exactly the same phenomena that prevailed when the Soviet Union placed price controls on bread at 2 kopeks per pound. They discovered that bread cannot be produced for 2 kopeks per pound, even in a slave-labor command system. Therefore, the official price was 2 kopeks per pound, but there was never any available for purchase by the typical person (on major holidays commemorating the Revolution). The Communist Party ruling elite, however, got all the bread they wanted.

Answer (c) will not work because the colleges will simply adjust their freshman-year rates to include the expected increases over the four years, plus a little more for insurance in case their estimate is low. The average tuition rates will actually increase slightly faster than they otherwise would.

Option (d) cannot work because it forces many people to do something they either do not want to do or are not capable of doing. Coercion is always bad policy. The trend will be that the standards will have to be watered down to prevent so many from flunking out; in the end the quality and thus the value of a college education will sink to the current value of a high-school diploma. Note also that room and board cost more than tuition; if anything were to be done to help the average student, reducing those costs would be more effective.

This should be looked at in a whole different light. If it is true that a college education is worth \$900,000 over one's working lifetime, the investment is well worth it. If one started college in 2002, the total cost of tuition would be approximately \$23,000. If one took out a loan, and ended up paying \$75,000 for the interest and principal, the return on investment over one's working lifetime is still a factor of 12 (900/75). This is a very good investment. It assumes, of course, that one majors in a field for which there is some demand (unlike anthropology, ancient Chinese art, or the social benefits of rock 'n roll). Keep in mind that \$6399 per year for tuition is \$17.53 per day, a figure that is not overwhelming for most people. We should be thankful that a college education is as cheap and as beneficial as it is.

One word of warning is in order, however, regarding the taking out of "student loans". Formerly, up until the early 1990's "student loans" were made through a cooperative government/private industry system in which the government partly subsidized the loan by in effect paying part of the interest. It did this by requiring lenders to charge a lower interest rate than they otherwise could, and providing the lenders with other offsetting incentives (through tax breaks or exemptions). The government also restricted the amount that a student could borrow. So, a student could borrow nominal amounts at fairly low interest

rates, the net result being that the student would be able, after graduation, to pay the loan back to the lender. But, Congress decided to "improve" the program by allowing greater amounts to be borrowed; sometimes students borrowed so much that they had great difficulty paying it back. Also, many students abused the system by defaulting on the loans. In response, the government passed legislation such that student loans cannot be discharged (forgiven) by a bankruptcy determination - the student is now liable for the loan repayment no matter what other financial problems he has. The government (now the initiator of all student loans) has the advantage: it is certain to always get repayment unless the student dies. As a result, the student has to be wary of the risk: taking out a very large student loan means that he or she could conceivably end up with very large debts which they must pay regardless of other financial pressures. Therefore, one should restrict their borrowing on student loans unless: a) it is only for a nominal amount, or b) is to obtain an education in a field that will result in a high-paying job, such as engineering, mathematics, physics, chemistry, nursing, medicine, etc. Do not borrow heavily to get a degree in library science or sociology because the economic payback (the subsequent job) will not cover the cost of the loan necessary to obtain it.

Figure 5-2 shows how this works in practice; that is, how the amount borrowed, the number of years of the term of the loan, and the required monthly payment are related. The left panel shows the monthly amortization of a \$1000 loan at various interest rates over various terms of the loan. The legend API means "annual percentage rate", i.e. the interest rate on the loan). For example, a loan of \$1000 at 4% for 12 years has a monthly amortization of about \$8.50 (actually, \$8.76). The right panel shows the total monthly payment as a function of the monthly amortization. Combined, these two show how much the monthly payment would be over a given number of years at a given interest rate. The dashed lines show two examples.

Suppose you have calculated that you have to borrow \$25 K ($K = \1000) in order to get the degree you desire from the school you want to attend. But suppose you are only willing to pay \$ 360 per month in repayment, and you can borrow money at 10% interest. How many years will you have to repay? Starting on the right panel, start at \$360 on the x-axis, and read up to where it intersects the \$25 K line; then read across to the left panel until it intersects the 10% interest line. Then read down to get the required number of years to meet these conditions. In order to meet this repayment schedule, you will have to take the loan out for about 8 years and 9 months. In reality, the lender will require an integer number of years; for 8 years, \$25,000 at 10% comes to a monthly repayment of 379.36, and for 9 years comes to \$351.97. Figure 5-2 gives you a sense of where the answer lies.

A second example is demonstrated by the blue dashed line. Suppose you are only willing to make payments for 10 years, and you can borrow at 6% interest. How much will your monthly payment be if you must borrow \$40 K? Start on the left panel at 10 years, read up to the 10% interest line. Then read across until you find about where the \$40 K line would be (you can interpolate between \$25 K and \$50 K by eye). Then read down until you get about \$475 per month (actually \$480.23). Conversely, you could easily answer the question of how much you can afford to borrow if you can borrow at a certain interest, and only want to pay a given amount monthly for a certain number of years. This chart can also be used to find the total payment for different loan amounts at different rates for different terms. Just solve each one separately and add the results.

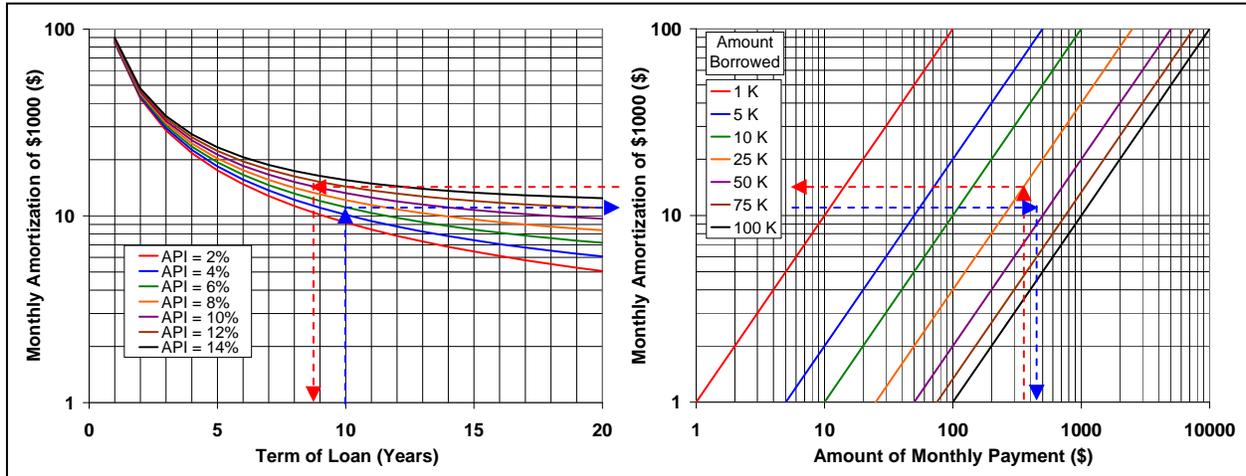


Figure 5-2: Nomograph for Student Loan Repayment