

**Q- The National Center for Education Statistics has publicly available data on the cost of higher education in the United States and the number of students. Go to their website, find these data, and paste them into a spreadsheet (I recommend Microsoft Excel). Try to find annual data (reported every year) and get as close the present as possible. In your writeup, explain what you found and why you chose your data.**

Based on the data I found on the NCES website, I was able to make the following observations.

1. The number of total students enrollment has steadily increased since 1970 up until 2011 where it first began to decrease.
2. The cost of tuition has increased by 67% since 1995, the average cost back in 1995 was about \$13,822 whereas the cost in 2016 was \$23,091.
3. The growth rate in total enrollments every year has gone down every year since 2011. In 2011 the total number of enrollments were 18,077,303 whereas in 2019 the total number was 16,877,000.

I was able to find the enrollment statistics from 1970 to a predicted number for 2025. I found the data for the average cost every year for only 1995 - 2016. I chose the data for total number of enrollments across all institutions including both fulltime and parttime students. To maintain consistency with the number of students, the data I collected for cost of tuition was also for all institutions, including 2 years and 4-year institutions, both public and private.

**Q- In your spreadsheet, calculate average values for both of your variables. Report the results.**

To find out the average values for the total number of undergraduate enrollment and the average total cost of attending an undergraduate institution, I selected the sample set of data to be for the years 2000 to 2016. This is because for this sample set I was able to find consistent data for both the variables.

The average values came out to be:

*Average Total Number of Undergraduate Enrollment : 16,031,886*

*Average Total Cost of Attending an Undergraduate Institution : \$19,228*

**Q- Calculate the annual growth rate of the cost of attending institutions of higher education. Do the data suggest that the growth rate of college costs is slowing down?**

Based on the data I was able to find, the growth rate of college costs for years 2000 - 2016 can be found in the table below. The data suggest that the growth rate is slowing down as since 2008 the growth rate has gone down from an annual increase of 3.85% in 2008 to 1.04% in 2016. However, this doesn't take into account the missing data from the last 3 years which means it is hard to say if the growth rate is actually slowing down or not.

Year	Growth Rate of College Costs
2000	8.48% (Since 1995)
2001	3.34%
2002	3.29%
2003	5.51%
2004	3.36%
2005	2.20%
2006	3.13%
2007	1.08%
2008	3.85%
2009	2.27%
2010	2.61%
2011	2.02%
2012	2.58%
2013	2.16%
2014	2.57%
2015	1.04%
2016	1.04%

**Q- One explanation for the rising costs of higher education is “cost disease.” Find a reference that discusses cost disease in higher education. Your writeup should define cost disease and provide a proper citation.**

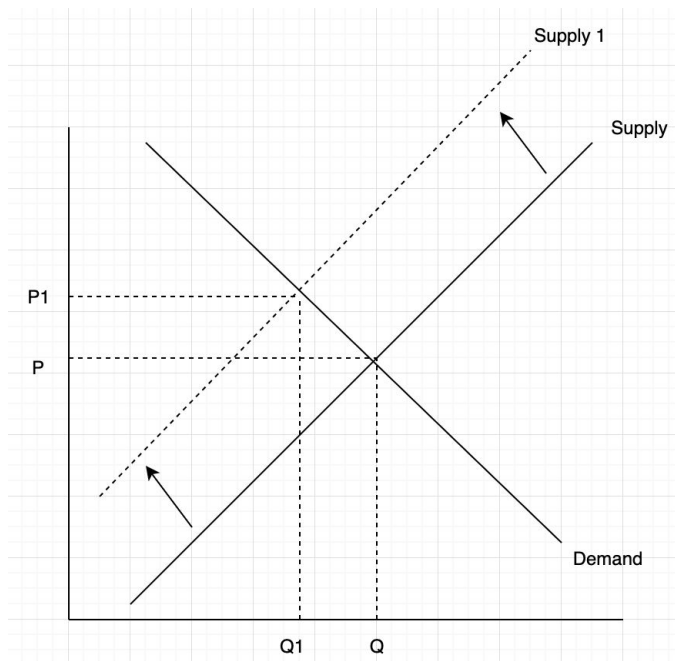
“With his colleague, William Bowen, Baumol proposed the “cost disease” theory to explain why prices rise faster than overall inflation in certain sectors of the economy, such as healthcare and education.”<sup>1</sup>

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<sup>1</sup> Cooper, Preston. “The Exaggerated Role Of ‘Cost Disease’ In Soaring College Tuition.” Forbes, Forbes Magazine, 10 May 2017,

Baumol's cost disease theory states that the growth rate of labor productivity in some areas of the economy drives the total cost, including wages, up for the other areas of the economy as well. As a result of this, the areas where labor productivity hasn't changed or has changed very little still benefit from the rising costs, due to rising labor productivity, in other areas.

**Q- Using a graph of supply and demand, show how cost disease could help explain the growing cost of higher education. If cost disease is the only explanation, what should happen to college enrollments?**



From this graph, we can understand the impact of cost disease. As a result of growing labor productivity the total cost of production would increase which will drive the supply inward to the left. This means that the price would go up and the demand would go down.

If cost disease was the only explanation, then simply the cost of education would have continued to increase whilst the quantity demanded for this would have continued to decrease. However, this is not the case as even though the cost has been increasing the quantity demanded have increased along with it for years and

years.

**Q- Another explanation for rising tuition costs is the increased availability of student loans and other forms of financial aid. Provide a source that discusses this possibility. Your write-up should very briefly summarize your source while also providing a proper citation.**

In 2017, Forbes published this article "how Unlimited Student Loans Drive Up Tuition"<sup>2</sup> that explaining how the federal government-run loan programs are driving up the cost of tuition. The article stated how an unlimited source of borrowing available through federal funds, such as the Parent PLUS loan program, incentivizes college to hike up their tuition. It explained how the

[www.forbes.com/sites/prestoncooper2/2017/05/10/the-exaggerated-role-of-cost-disease-in-soaring-college-tuition/#bf3ecea2b4e8](http://www.forbes.com/sites/prestoncooper2/2017/05/10/the-exaggerated-role-of-cost-disease-in-soaring-college-tuition/#bf3ecea2b4e8).

<sup>2</sup> Cooper, Preston. "How Unlimited Student Loans Drive Up Tuition." Forbes, Forbes Magazine, 22 Feb. 2017, [www.forbes.com/sites/prestoncooper2/2017/02/22/how-unlimited-student-loans-drive-up-tuition/#7dc0cc1652b6](http://www.forbes.com/sites/prestoncooper2/2017/02/22/how-unlimited-student-loans-drive-up-tuition/#7dc0cc1652b6).

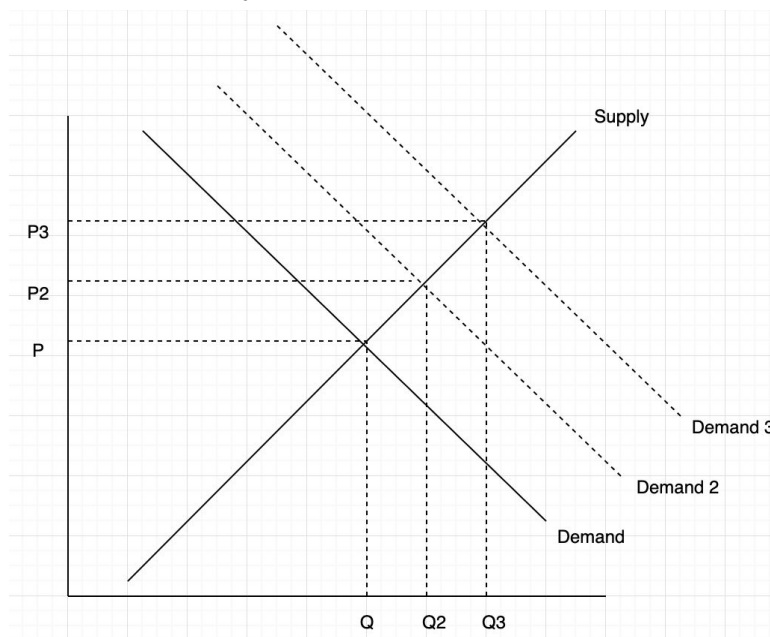
availability of these funds which have no set limit and the parents can borrow more money as per their needs. It then explained how it all allowed private colleges to hike up their total cost because they know that the parents will be able to access these funds and provide for their children's education regardless.

The article included statistics found from several studies and research conducted around this issue. It stated how the "Parent PLUS loans currently account for 20% of all undergraduate loans disbursed by the federal government". "The Parent PLUS program lent out \$12 billion during the 2015-16 academic year. The program has nearly quadrupled in size since 1995". The article stated results from a 2014 study showing how the colleges eligible for federal student aid cost 78% higher than similar colleges who weren't eligible for federal student aid.

**Q- Using a graph of supply and demand, show how the increased availability of financial aid could help explain the growing cost of higher education. If this is the only explanation, what should happen to college enrollments?**

Increasing availability of financial aid would make college education more accessible for people. This would result in an increase in demand as now more people would be able to afford college education. All else constant or ceteris paribus, this will shift the demand outward, as can be seen in the graph, and the increased demand will drive up the price from P to P2 and increase the total demand from Q to Q2.

The easy availability of these financial aids will continue to push the demand outward and will lead to an increase in overall quantity demanded and the total prices as well



**Q- Another explanation is that macroeconomic forces have made the earnings premium from higher education (the extra income a college graduate can expect to receive from**

**having a college degree) higher. Would this factor work through supply or demand? If correct, does it suggest that college is a normal or inferior good?**

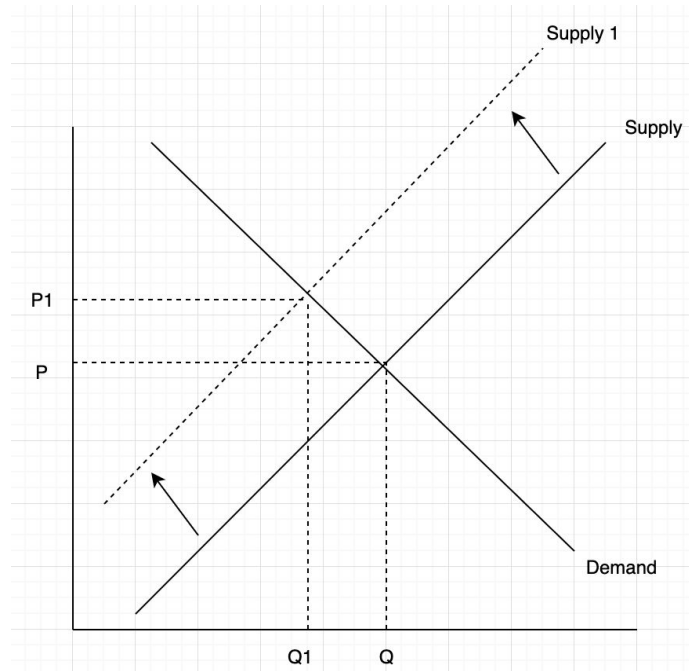
This factor would work through demand as the demand for these colleges is what would determine and distinguish college education as a normal or inferior good. The reason why it is driven by demand is because of the earnings premium due to college education. Based on the rising premium, people would demand more of college education in order to experience same benefits.

It is not enough to determine if college is a normal good or an inferior good because even though the earnings of a college graduate is rising, there is more nuance to the entire situation. College education might be inferior for a college graduate because with the rising level of income, college graduates will experience a decrease in the demand for college education because they no longer need it as they are already earning well. But for someone who is not a college graduate, college education is still a normal good and despite the earnings post college, they would pursue a college education regardless of their current level of income. This is because college education is mostly considered to be mandatory in our society and is set as a societal standard.

**Q- A final explanation is that colleges and universities have chosen (or have been compelled by increased regulation) to hire more administrative and support personnel. Would this factor work to increase tuition through supply or demand.**

This factor would work to increase tuition through supply as the increased government regulations will force these institutions to hire more administrative and support personnel. As a result of this, the total cost of production for these institutions to provide its students with the same quality of education will increase because of the increase in total factors of production and labour costs.

This could be understood with the help of the graph below. As the cost of providing education goes up, the supply shift inward increasing the total price and decreasing the overall quantity provided.



**Q- Suppose policy makers identify a positive externality where college graduates provide benefits to the rest of society (e.g more innovation, lower crime, etc.). Provide a policy that could improve efficiency by increasing college attendance.**

Legislative policy making education compulsory or mandatory for every student to attend college whilst incentivising this education by providing free undergraduate education to everyone.