

# Examining the Rising Cost of Attendance at the University of California System

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## **Abstract**

This paper examines the economic, historical, and political reasons behind the rising cost of attendance for undergraduate in-state students enrolling in a University of California campus. It examines the political history of state funding of the UC system, in-state cost of attendance at a UC campus, and data on applicants to demonstrate that cost of attendance is more expensive in the present and to develop reasons for the rise in cost of attendance. The paper concludes that declining state funding, a perceived inelastic demand for a University of California education and tuition priced below market equilibrium have contributed to and enabled the rising cost of attendance at these universities, but also suggests that further research is necessary to ascertain other reasons for this phenomenon.

## **Introduction**

Across the UC system during the 2014-2015 school year, thousands of students staged protests and sit-ins, outraged over a UC Regents vote to increase tuition by as much as 5% a year over the next half a decade (Ceasar). In recent years, rising costs of attendance for a college education have become a controversial topic. This has been particularly true at public universities – places of higher learning that were originally created to offer cheaper alternatives to students living in their state jurisdictions.

The University of California System was developed through the 1868 Organic Act, which united a recently-chartered and humanities-based College of California with colleges of Agricultural, Mining, and Mechanical Arts desired by the state (“A Brief History”). Since 1869, the UC System has evolved into ten campuses scattered throughout California; UC Merced, having opened in 2005, is the youngest of the ten, while UC Berkeley is the system’s oldest and flagship campus (“Key Features”). In-state tuition was originally free for students, as the UC system had been created for the purpose of providing California students with an opportunity to pursue higher education. In 1960, the California Master Plan maintained this promise, while also formalizing the structure of its higher education systems into a three-tier system: the UC system accepting the top California students, the CSU system open for other students who desired a 4-year education, and 2-year community colleges for the rest (“A Master Plan”). However, in 1970 this promise was broken, and a symbolic “educational fee” of \$150 was listed in the 1970-71 general catalogue for students.

The purpose of this paper is not just to develop examine the increased cost of attendance at the UC system for these California residents, but also to determine whether the recent outcry over tuition increases is warranted. In particular, an examination into the in-state historical cost

of attendance, historical number of applicants, and funding avenues for the UC system yield some rationale behind the increasingly expensive cost of a UC education.

### **The Rising Cost of Attendance**

The data I have gathered demonstrates almost yearly increases in cost of attendance, with some fluctuations. In nominal values, the cost of attending a UC has ranged from an estimated \$752.00 in the 1950-1951 year to \$35,327.94 in 2014-2015 year<sup>†</sup>. Through my research, I have made several interesting observations about the history of UC tuition. First of all, cost estimates were usually segmented into different categories (thus providing different cost estimates) until the past couple decades. These segments included separating costs for men versus women, for minimal, moderate, and loose budgets, and for different status in residency on campus and marital status. To attempt to maintain the uniformity of cost estimates, I have used the more conservative estimate of a “minimal cost” that best compares to determination of cost estimates provided later on. Another interesting observation is that in-state tuition was free until 1970, when the “educational fee” of \$150 was first imposed. By 1985, total tuition and fees had risen to \$1,296, and by 1995, to \$4,354. In the 2014-2015 year, total tuition and fees equaled almost \$15,000, though tuition had been frozen at \$11,220 since the 2011-2012 school year<sup>†</sup>.

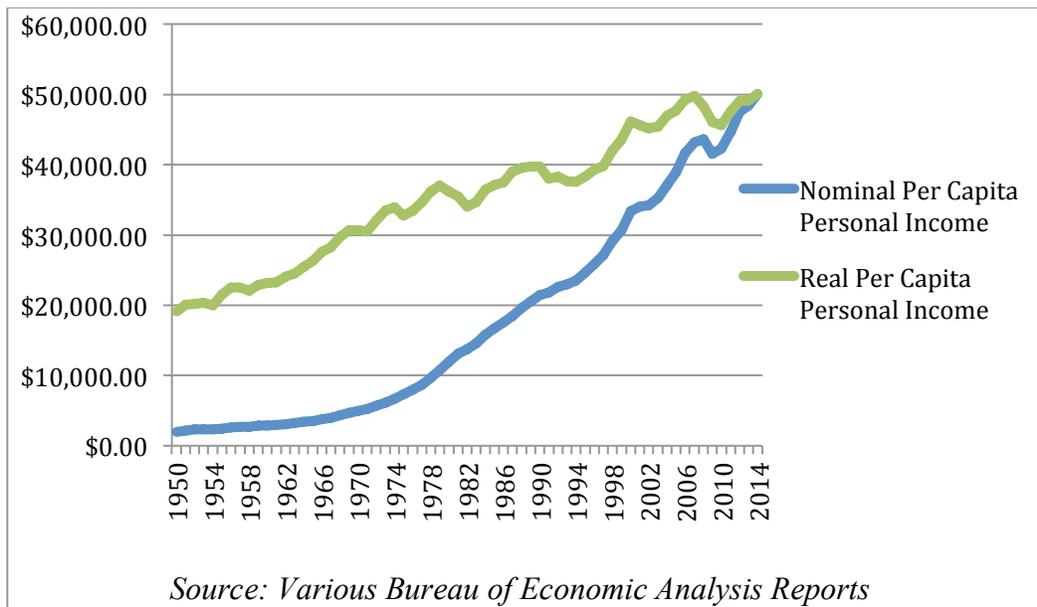
To gather data on the cost of attending a UC, I made extensive use of archived General Catalogue yearly reports provided by UCLA. Certain caveats about my data must be stated. Firstly, the estimate cost of attendance within these General Catalogue reports pertain to UCLA. However, given that I used cost of attendance estimates that assume students live on campus, and given the fact that any student within the University of California system is charged the same tuition price (as well as comparable mandatory fees), I believe that these tuition estimates could provide a reasonable estimate of any University of California Campus. When the cost of

<sup>†</sup> *Source: Various UCLA General Catalogue reports*

attendance estimated by UCLA was split into male and female estimates during 1950 to 1959 (with female cost estimates always higher presumably because they would have more needs related to personal expenses), I averaged the two values for the conservative estimate of cost of attendance. For the year 1984, I estimated the cost of attendance using mandatory fee data from the year 1983, and multiplying the estimated cost of attendance from the year 1983 by inflation from 1983 to 1985.

While students are outraged over the rapid increases to what is supposed to be an affordable public university, what does the data really show regarding the cost of attendance to a UC for California residents? To calculate how these changes in the cost of attending a UC have affected residents, something must be compared to the cost of attendance. As a result, I compiled data on California per-capita nominal and real personal income (using CPI deflator) from 1950 to 2014, which is displayed in the figure below:

**Figure 1: Nominal and Real Per Capita California Personal Income (1950-2014)**



During this time period, it appears that real per capita personal income (using 2014 dollars) has increased in a near-linear trend. This would suggest that if the UC cost of attendance

was rising at a similar rate, the protests over tuition hikes and increasing costs for room and board – two of the biggest expenditures for a college student in the UC system – would be moot. For a comparison of UC cost of attendance to the money people have available to pay those costs, I calculated the ratio of nominal cost of attendance of a UC over nominal California per-capita personal income:

**Figure 2: In-state cost of attendance as a percentage of CA per-capita personal income (1950-2014)**

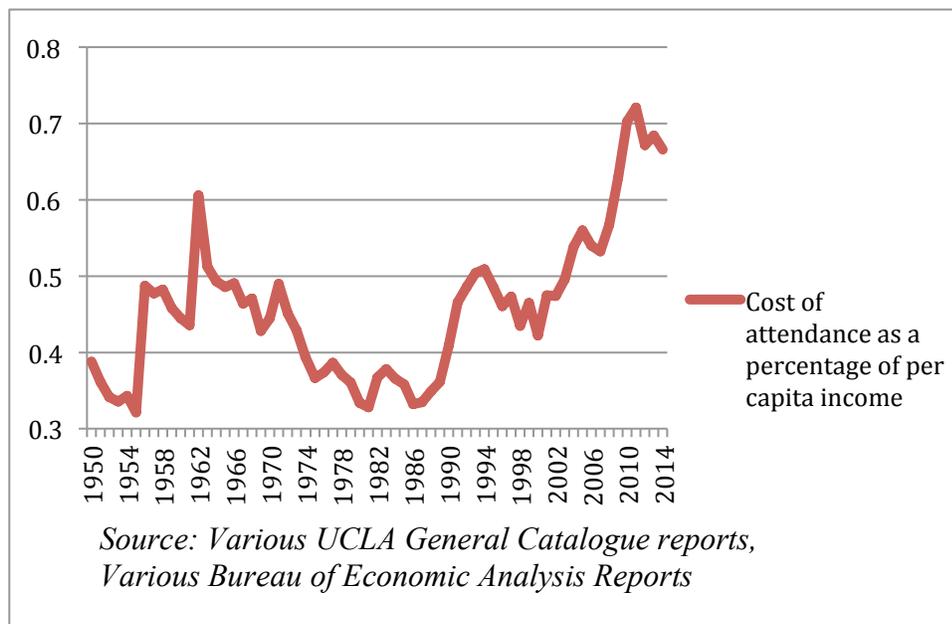


Figure 2 demonstrates that the cost of attendance to a UC indeed comparatively puts more strain on a budget during the past four years than it has at any time since 1950, with a peak at 2011 at 72% of nominal per-capita personal income. This peak corresponds to a tuition freeze that the UC system has implemented for the past four years, resulting in a subsequent drop in the ratio due to income rising faster than estimated additional (non-tuition-based) costs. Since 1950, cost of attendance has always been equal to over 30% of per-capita personal income, making a UC education a very significant expense on the average person. It is worth noting that the ratio appears to dramatically increase right after recessions in the US end. For example, after the

recession of 1953-1954, the 1956 cost of attendance ratio rose to 48% from 32% the year before. Even though nominal per capita income only rose 5%, the cost of attendance rose from \$792.50 to \$1260, an increase of nearly 60%. Likewise, in 2009 tuition increased by over 15%, while nominal per-capita income increased by less than 2%. As Figure 2 demonstrates, readjustments made by the UC system in boom cycles for the American economy, while failing to adjust for family budgets during bust times, have since the 1980s become an increasingly costly part of the average person's budget.

### **Inelastic Demand for A UC Education**

When evaluating the reasons for why the UC system would raise cost of attendance so much, it is warranted to consider the basic concepts of supply and demand to examine why the UC System *could* raise the cost of attendance. If prices were determined by simple supply and demand equilibrium, then for the cost of the item in question – a University of California education for an in-state resident – to increase, one of the following would have had to occur: an increase in demand greater than any simultaneous increase in supply, a decrease in supply greater than any simultaneous decrease in demand, or both a rightward shift in demand and a leftward shift in supply.

A leftward shift in supply, with demand held constant, would imply that the UC System would have declining numbers of enrollment. However, data provided by UCOP indicates that this is not the case. UC in-state enrollments rose from around 20,000 students in 1989 to over 33,000 in 2014, indicating that the UC System is actually expanding the supply of spots open for applicants. Additionally, with the opening of the UC Merced campus, the UC System is actually better-equipped to enroll more students than ever before. While examining the historical supply, it is also worth noting future expectations for supply. A recent statement from Janet Napolitano,

President of the University of California, in the midst of budget negotiations revealed an explicit cap on in-state residents would be enforced if more state funds were not granted. In this extreme measure, the supply of spots for a UC education would become perfectly inelastic. However, the supply curve has shown no signs of a leftward shift that could explain the UC System’s ability to raise the cost of its brand of education.

Next, I look to demand as one reason why the UC System can raise their tuition prices and cost of attendance overall. Based on the data I have gathered on in-state freshman applicants, the number of those applicants has been rising in a near-linear trend since the end of the 1980s.

**Figure 3: Total CA Freshman Applicants, Admitted, and Percentage Admitted (1989-2015)**

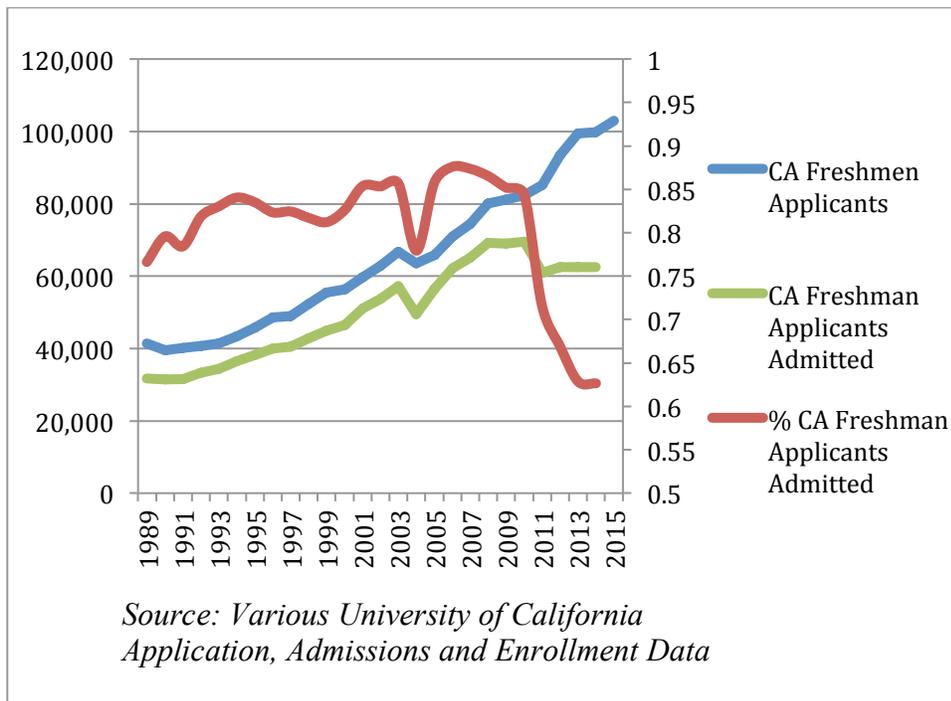


Figure 3 shows that this upward trend continues for applicants up to 2015, even as a large drop in the percent of these applicants has led to stagnant admission of the in-state applicants recently, hovering around 60,000 admits since 2011. This trend is important in affirming the inelastic demand, reflecting in part the “necessity” of college education nowadays. Additionally, the relative cost of attendance has continued to rise over this period, with Figure 2 demonstrating

that the in-state cost of attendance has been no less than 40% of CA per-capita personal income since 1989.

This then implies that the UC system must consider demand for a UC education to be inelastic, by which I mean people are not acting price-sensitive to the increases in price. The idea of inelastic demand for a UC education is also supported when one considers the “prestige” associated with attending a UC and the UC system’s role in the market for colleges. A full examination of the extent to which certain colleges are imperfect substitutes of one another is outside the scope of this paper, but it is fair to say that the social benefits associated with a UC education lead to it being highly desirable by in-state students. In fact, demand has actually continued to increase in accordance with price changes, leading to the next reason for why the UC system can raise tuition and cost of attendance.

### **Pricing Below Market Equilibrium**

Since demand continues to rise even though prices are rising, it would appear that a UC education is priced below the competitive market equilibrium, which has been especially evident in the past few years as the percent of in-state applicants accepted has dramatically dropped. Granted, a reason for this pricing could be the desirability of selecting from a wider pool of good applicants; by having lower prices, the UC System gets to select from a greater variety of potential students. An examination into the full reasons why the UC system would adopt this pricing system is again beyond the scope of my paper, but the fact that the UC system was originally created as an affordable institution for in-state applicants, that colleges with excess applicants earn higher rankings in the US News and World Report on colleges, and that not all people who are accepted to a UC ultimately enroll within the system may have something to do with this pricing.

As a result of this artificially low pricing, should the UC system need more revenues it is entirely possible for hike tuition prices accordingly. Since the demand for a UC education has risen even with price increases, the UC system theoretically has not yet shifted its tuition ceiling upward enough to stagnate the number of applicants, which means there is still room for tuition increases. Thus, because the cost of attendance is below the market equilibrium and because the UC system acts in accordance to believing that demand for a UC education is inelastic, the UC system is able and willing to continue to raise its tuition and overall cost of attendance.

### **Political Context**

When examining the reasons for the rise in cost of attendance to the UC system in recent years, the political context behind such rationale must be examined. More specifically, the results of California Proposition 13 (1978), Proposition 98 (1988), and Proposition 30 (2012) directly relate to the issue of the rising cost of attendance in the University of California system.

In 1978, Proposition 13 was passed, subsequently lowering property taxes across California to no more than 1% of appraised home value (“California Proposition 13”). Up until this proposition’s passing, education in California had been more reliant on local property taxes; the result was a much heavier burden placed on the state funds to fund education of all public education within the state. By the 1980s, California saw greatly decreased education spending.

Because of large decreases in spending per person on education, Prop 98 was passed in 1988. This proposition required a minimum percent of the discretionary spending within the state budget to be spent on K-12 education (this was later extended to “K-14” education, inclusive of community colleges), tied to the overall economic well-being of the state (“California Proposition 98”). While this has stabilized the funding of many education systems in California, the minimum percentages do not include the UC system. Thus, when a recession occurs, the UC

system suffers the most.

Proposition 30, passed in 2012, is a temporary rise in personal taxes on the wealthy and sales taxes created to help boost educational funding in California (“California Proposition 30”). This proposition summarily represents the lasting effects of Propositions 13 and 98, as the dearth of revenues associated with property taxes (which are often used to fund educational systems in local areas) and the requirements of minimum percentage spending on other educational forms has led to the need for new revenue streams to fund the entire educational system.

**Declining State Funds**

The political context gives a small glimpse into the politics over funding education in California. For the UC system, however, the propositions have failed to guarantee it funds from the state. For example, the loophole present in Prop 30 is that the UC system still lacks a guaranteed percentage or amount of the state budget for education. Additionally, the proposition does not allocate all funds raised by the measure to education, meaning that other education systems in California will drain a smaller allocation of Prop 30 funds before the UC system than the sum total. Thus, the long-term trend of declining funding from the state continues to affect the decisions of the UC system, including its decisions regarding tuition.

**Table 1: Comparison of Real In-State Tuition to State funding of the UC System**

Year	Real In-State Tuition*	State funds as % of UC Revenues	% State General Funds allotted for UC
1966	\$0.00	No Data Available	8.1%
1974	\$1,440.58	33%	6.1%
1984	\$549.12	27%	5.3%
1994	\$1,789.10	21%	4.6%
2004	\$3,911.34	16%	3.3%
2014	\$11,220.00	10.5%	2.7%

\*Using CPI Deflator, 2014 Dollars

Sources: Various UCLA General Catalogues, Various UC Operating Budgets, UC Accountability Report 2014

Data presented in Table 1 shows that the UC's share of the state's General Fund has fallen from 8.1% in 1966 to 2.7% in 2014, which makes sense in relation to the demands instigated by Prop 98. As demonstrated in this table, not only has the percent of funds from the state diminished, but the UC's reliance on these funds has also been tested. Over the past four decades, the UC system has gone from 1/3<sup>rd</sup> of its revenues coming from the state of California slightly more than 1/10<sup>th</sup> of its revenues. As evidenced by the real in-state tuition column, larger tuition increases in the past two decades correspond with large decreases in state funds as a percent of UC revenues. Based on the ideas of inelastic demand and pricing below market equilibrium, it is possible that tuition was increased to make up for the budget shortfalls.

Of course, correlation is not necessarily causation; a reasonable counterargument to this rationale would be to suggest that rising administrative and employee costs are pushing the UC System to balance their budget with increased tuition, rather than the decrease in state funds. Further research into the institutional costs of California's higher education has recently been conducted by the Public Policy Institute of California, which I bring into this paper to refute this counterargument. The publication addresses the recent debate over planned tuition hikes for the UC and CSU systems, and examines costs within the respective educational tiers. Contrary to the belief that administrative expense are to blame, the paper reveals that teacher and administrative expenditures have not significantly increased over the past couple of decades, while "state support for UC students... has fallen to the lowest level in nearly three decades" (Johnson et. al). This confirms my theorized effects of Propositions 13, 98, and 30 on Californian higher education over the past few decades, and supports the idea that declining state funds are leading to the rising cost of a UC education.

## **Caveats**

This paper has been focused on the rising tuition and cost of attendance for in-state applicants, and both directly and tangentially related to this category several caveats must be emphasized. First, I have not attempted in this paper to ascertain the impact of different pricing patterns for a cost of a UC education, namely through financial aid policies. While it is undeniable that the stated tuition and cost of attendance have greatly increased, expansion of financial aid policies could mean that the subset of in-state applicants in lower-income socioeconomic brackets are paying less for their education than they historically would have, or at least not paying as dramatically more than for their peers who pay the costs in full.

Second, while California applicants still make up the majority of applicants to the UC system, the number of out-of-state and foreign applicants continues to rise. Because these applicants are charged significantly higher tuition prices than their in-state counterparts, they have a different quantities of demand for a UC education, as well as a slightly different demand curve do to additional opportunity costs of having to move to a different state. Additionally, Janet Napolitano's proposal to alternately fund the UC system by capping in-state enrollment and recruiting more out-of-state students means that the supply curve for non-resident students will now differ from in-state applicants, shifting rightward more so than in the past ("University of California Plans to Limit Resident Enrollment") My paper's limitation to in-state applicants means that the additional dimension of these other applicants has not been examined in similar depth.

## **Conclusion**

The cost of attendance for a University of California education has indeed become comparatively more expensive for in-state applicants over the past few decades. From an

application of economic history, I have determined that an inelastic and increasing demand for a UC education and the pricing of a UC education below market equilibrium contribute to the rationale of why the UC system could make the cost of attendance more expensive without fearing the diminishment of applicants or the student body. The underlying political propositions affecting state revenues, and the declining state revenues of which the UC system has historically been heavily reliant on are both the contributing factors for why the University of California system has been making its education more costly.

As I conclude this paper, California Governor Brown recently conceded in negotiations to give the UC system more funds from greater-than-projected state revenues, further lending credibility to the idea that lack of state funding is an important factor realized in the necessity for rising cost of attendance (Gordon et al.). This end to the 2014-2015 school year, starting out with protests over planned tuition increases, now resolves with a two-year tuition freeze imposed across the University of California campuses. However, this fix is a temporary one; without obtaining a guaranteed percentage income stream from the state, the UC system will continue to see erosion of its state support whenever the coffers run low, and with strong inelastic demand for a UC education, students will subsequently see tuition start to rise again at one point or another.

To fully explain the rising cost of a UC education, I believe that further research would yield additional useful explanations. In particular, research into close substitutes for a UC education, the current pension system in place for University of California employees, and the impact of financial aid offers on students' preferences for the University of California system, could help clarify and expand the rationale behind the rising cost of a University of California education.

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gives 1989-2015 applicants to UC system

<http://www1.ucsc.edu/oncampus/currents/98-99/01-25/ucop.apps.htm>

<http://accountability.universityofcalifornia.edu/documents/accountabilityreport11.pdf>

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<http://legacy-its.ucop.edu/uwnews/stat/>

total enrollment since 1992

[http://www.nytimes.com/2015/04/05/opinion/sunday/the-real-reason-college-tuition-costs-so-much.html?\\_r=0](http://www.nytimes.com/2015/04/05/opinion/sunday/the-real-reason-college-tuition-costs-so-much.html?_r=0)

Op-ed stating administrative salaries are to blame

<http://nces.ed.gov/fastfacts/display.asp?id=76>

National average cost of attending college, since 1981

<http://www.sacbee.com/news/politics-government/capitol-alert/article12266870.html>

UC system will limit California resident enrollment

[http://www.ppic.org/main/publication\\_quick.asp?i=1119](http://www.ppic.org/main/publication_quick.asp?i=1119)

Tuition increases due to state budget cuts

[http://articles.latimes.com/1988-02-12/news/mn-28445\\_1\\_uc-system](http://articles.latimes.com/1988-02-12/news/mn-28445_1_uc-system)

1988: est. 50,000 students applied to UC campus, “we have to start turning away qualified people”

<http://www.gao.gov/assets/670/667557.pdf>

state funding trends (students pay way more of their tuition now)

<http://www.latimes.com/local/education/la-me-ln-uc-budget-20150514-story.html>

Brown gives more funds

[http://ucop.edu/student-affairs/\\_files/aa\\_final2.pdf](http://ucop.edu/student-affairs/_files/aa_final2.pdf)

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Why increase in tuition costs (from a historical perspective)?

Table: compactly indicate that there might be competition between funding support

Prop 13, prison funding, changed dynamic of support for local schools

Create range of extrapolated levels of support, extend a trend, look at it as share of total state budget (Political side)

You can just look at gov aid, tuition, focus on one thing, compare it to other comparable school