

## Why Higher Education Appears Less Efficient than it Really Is to Legislators and the Public

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### **Introduction**

This work explains the two primary factors that contribute to the largely false impression of higher education's wastefulness which, unfortunately pervades both legislatures and the general public today. Additionally, relevant background for these and related issues is provided, as are some possible methods for increasing funding and curtailing costs. Certain specific detail is provided for Florida and the University of South Florida (USF), because such detail was available.

The primary causal factors of higher education's perceived spendthrift nature are:

1. The Cost Disease of the Public Sector (Baumol & Oates, 1976), which assures that higher education's costs must rise more rapidly than general societal costs, and
2. government-based "Shadow Statistics," which make these cost increases look far greater than they actually are (Williams, 2006).

### **Background**

*Primary Higher Education Costs, Cost Drivers and Cost Offsets*

Micceri (2000) made the following statement:

Between 1976 and 1996, while the Consumer Price Index (CPI) rose 296%, average college tuition rose about 500%. Identifying higher education cost drivers and working to limit their effects appears to be a necessity if we wish to retain the support historically allocated by society. This appears particularly true in light of the recent report by The National Center for Public Policy and Higher Education (1999) which states: "...even with normal economic growth over the next eight years, the vast majority of states will face significant fiscal deficits. ... (*which*) will lead to increased scrutiny of higher education in almost all states, and to curtailed spending for public higher education in many states."

Many higher education cost drivers are difficult, if not impossible to control. Among these are technology upgrades, meeting deferred maintenance needs, increasing salaries to remain competitive for qualified personnel, and meeting the needs of increasingly diverse student populations. Continually increasing regulations and accreditation requirements result from bureaucratization and the effects of "increased scrutiny" due to perceptions of higher education's inefficiency. These add additional, unnecessary expenses onto higher education's already difficult costing task.

Micceri (2000) further explains why higher education's costs must increase more rapidly than most industries:

Baumol & Oates (1976) convincingly argue that service sector costs (education, health care, etc.) must rise faster than inflation because they "...have shown themselves over the centuries to be relatively resistant to productivity-increasing innovation." They note '...there is no painless cure for this disease' and we should therefore expect it to continue. In the non-personal services economic sector, when production becomes more efficient, fewer hours are required to produce a given product of the same or better quality, for example, an ear of corn or a widget. Unfortunately, for personal services (life-enhancers such as education, health care, or musical performance) to produce the same quality requires, approximately the same amount of time today as it did 200 years ago. For example, a 30-minute Schubert trio requires 1.5 hours (90 minutes) of skilled labor whether performed today or 100 years ago. A teacher reading and providing feedback to a student on an assignment will require about the same amount of time now, in the past, or in the future. As non-service production becomes more efficient, less time and smaller percentages of the labor force are used to produce the products, thereby lowering per-unit cost. For example, in 1900, about 50% of the civilian labor force worked in agricultural jobs, today, less than 5% do so with greater production. Therefore, as productivity increases, greater labor force percentages necessarily are allocated to personal services (40% of the U.S. labor force in 1929, 55% in 1967), increasing their comparative cost. Further, 'If wages of policemen, teachers, or street cleaners fall significantly behind those in manufacturing, in a prosperous economy labor will simply move out of the former occupation and look for jobs in the latter....The evidence suggests that over longer periods wages in the personal services keep up with those paid elsewhere much more frequently than is sometimes believed....So long as wages in the two sectors of the economy maintain approximate parity, whether they rise or fall, the relative cost of the personal services must increase....'

Supporting the preceding is the claim from Taylor & Glander (2006, p. 4) that "Payroll costs comprise more than 80 percent of current school district expenditures."

Micceri (2000) summarizes higher education's primary cost drivers and issues:

- Reduced support by state and federal government has increased the percentage of costs paid by students.
- Programs and students are growing more diverse and require a broader array of support. For example, the average costs to institutions of complying with the Americans with Disabilities Act range from \$700,000 for public two-year institutions to \$13 million for public research institutions. This is a relatively new and real cost. Increasing hours of availability for non-traditional students is another comparatively recent cost increase.
- Continually increasing technology requires constant upgrades and faculty/staff development. NCCHE (1998) states: "Although technology holds promise for making educational operations more efficient and less costly, there is no evidence to date to indicate that the use of technology in higher education has resulted in widespread cost savings to colleges and universities."

- Remediation costs have increased as broader segments of the population attend higher education (e.g. Florida community colleges spend about \$53 million per year on remedial courses).
- Growth in higher education enrollments over the past 30 years has caused construction of new classrooms, laboratories and dormitories. Now, a decaying, aging infrastructure, and massive deferred maintenance will cause considerable future costs (NACUBO deferred maintenance estimates for the nation are some \$26 billion).
- Faculty salaries - Over the last couple of decades faculty have seen significant increases in salary and benefits, some of which has offset earlier losses. These cost increases have been offset somewhat by hiring more part-time and non-tenured faculty and by increasing the number of hours faculty spend in the classroom.
- Costly regulation increases (e.g. Stanford estimates that their costs for complying with increasing regulations works out to 7.5 cents of every tuition dollar.). This cost driver exhibits two primary characteristics:
  - Increasing numbers of accreditation agencies, in particular, specialized agencies. Currently, some 60 specialized agencies oversee more than 100 different types of academic programs.
  - Increases in the number of administrators to handle more regulations and provide more services.
- Increases in institutional financial aid may add to increasing tuition, since much of this financial aid comes from tuition revenues (Lapovsky, 1999).

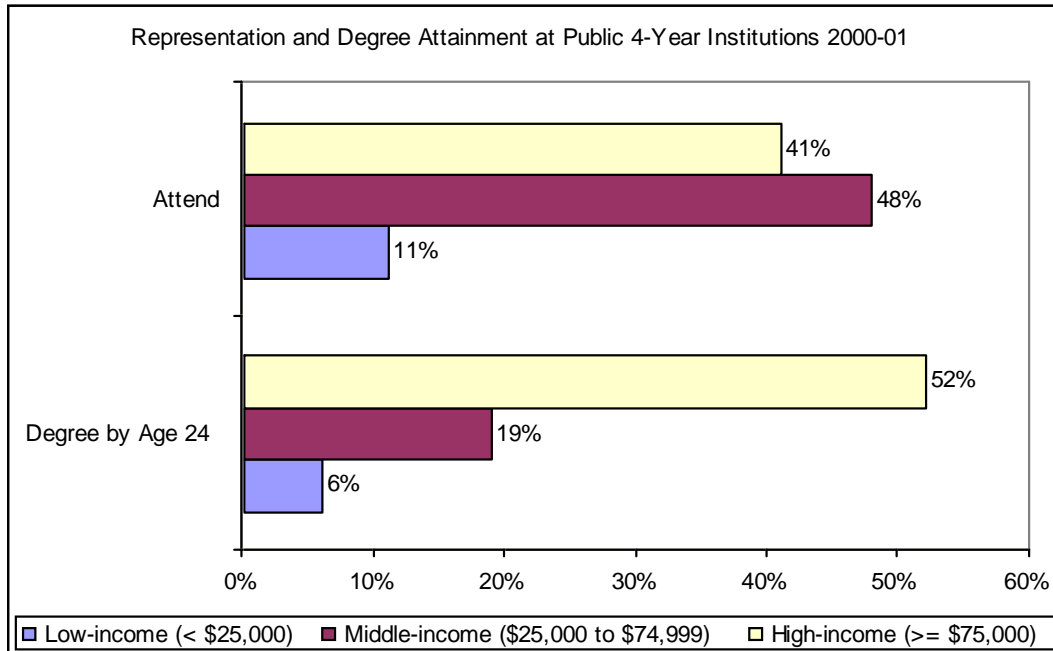
#### *Offsetting Increased Costs for Students*

Over the past 30 to 40 years, the cost of college to students and families has risen. This is documented successively from 1970 through 2006 by Mclaughlin and Euler (1988) and the CollegeBoard (2005). Further, Pell Grants, which have historically represented an important cost reduction technique for low-income students have steadily paid a lower proportion of tuition costs, and, by 2006 only covered about 33 percent of tuition at the average public 4-year institution (Ward, 2006). Many consider only tuition and fees in student costs, however, at public institutions; those usually represent but a small portion of total college costs. Room and board, transportation, communication and book prices have also been increasing at least as fast as the Higher Education Price Index (HEPI, Commonfund, 2005), or about 5% per year, and probably more nearly at the rate of the Housing Wage Index (HWI, NLIHC, 2005), which has averaged 7.5% per year over the past nine years. The net effect is depicted in

The nationwide representation of students at public four-year institutions was: low-income 11 percent, middle-income 48 percent, and higher-income 41 percent. The average cost of a four-year public institution comprises 60 percent of the yearly income for a low-income family, compared with 5 percent for the highest-income group. Low-income student representation has dropped at four-year institutions in recent years, as has the total percentage of individuals between 18 and 24 years old who attended at least some higher education, from 59% to 57% (O'Brien & Engle, 2005).

Figure 1 depicts the effects of the preceding and indicates that although affluence is an important factor in attendance it represents an even more important factor relative to graduation. Note that many of the high-income group's children attend private institutions.<sup>1</sup>

Figure 1



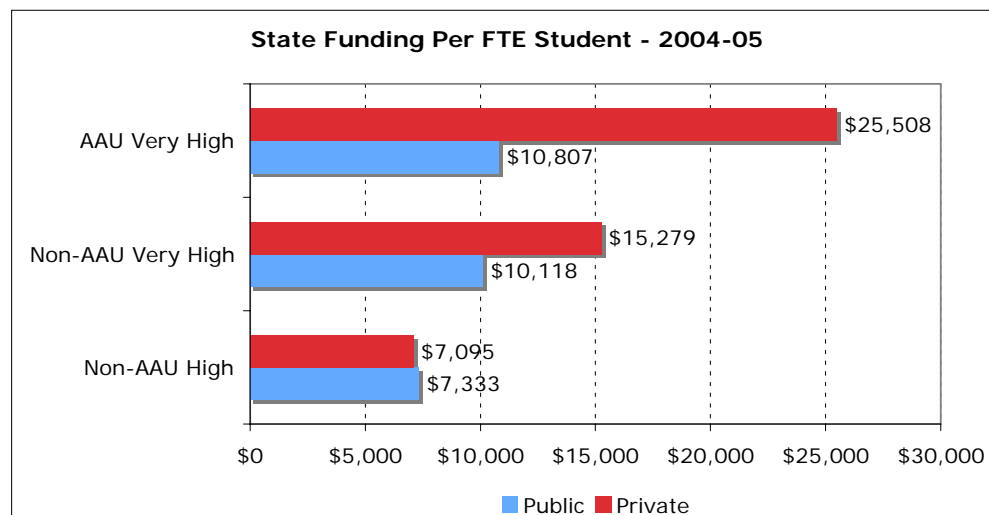
States that are concerned with an educated populace and institutions themselves, who depend on students, have developed several techniques to help reduce costs for students and families. As early as 1971, Byrnes & Tussing recommended that the Federal Government provide substantial support for higher education, and one could argue that this has occurred in the form of HOPE tax credits, Pell Grants, federally guaranteed loans, and significant research investments in the form of federal grants that have very large overhead and therefore bring extra money to the institutions receiving such grants. In addition to these, many states have developed HOPE-type merit scholarships modeled after Georgia's and prepaid college tuition programs as well as funding for resident students in private colleges grants like the Florida Resident Access Grant (FRAG). Additionally, hundreds of different types of grants and scholarships are available, many from philanthropies or industry. Finally, most institutions provide institutional aid to help select students pay the cost of their education. All of the above are available to students who can navigate the financial aid labyrinth.

The various price offsets mentioned above mean that there can be a large difference between the sticker price (published price) and the net price (actual costs) to students and families. Unfortunately, from an access perspective, the CollegeBoard (2005, p. 18) notes: "Over the past decade, in both public and private institutions, net price as a percentage of income has risen significantly only for those in the lower half of the income distribution."

<sup>1</sup> In 2000, household incomes of \$75,000 or more represented a comparatively small proportion of the population, when median household income was \$40,385 nationwide (Demographia, 2007).

Further, on p. 15 they state that "...both federal education tax benefits and the changing distribution of state and institutional grant aid have reduced the average net price for middle- and upper-income students relative to the net price for lower-income students." This statement relates to a recent and comparatively substantial movement of aid from lower to higher-income individuals. Several factors bear on this effect, not the least of which is that elite universities receive far more funding support, both public and private, than do non-elite institutions. Figure 2 shows the state monies allocated per FTE student to public and private high and very high research universities. AAU institutions are treated separately. These data were truncated due to two extremely high values in the IPEDS data files. It is interesting that Very High Research private institutions (non-AAU = 7 cases) receive considerably more support than public institutions from State Government. It is also interesting that little difference occurs between AAU Public and non-AAU public Very High Research universities. We can also see that High Research private institutions receive less than half of the Very High group, while public institutions receive about 30% less. Clearly, the higher ranking institutions receive greater support than less highly ranked. In Florida, the University of Florida received over \$11,000 per FTE student, while FSU and USF received about \$8,000 per student, and other research institutions (UCF, FIU, FAU) circa \$6,000. Some of this relates to the prevalence of doctoral programs. Haycock & Gerald (2006, p. 22) state, regarding public flagship institutions, most of which are in the AAU: "Even as the number of low-income and minority high school graduates in their states grows, often by leaps and bounds, these institutions are becoming disproportionately whiter and richer." Further, they record how institutional support aid has moved to higher income families: "... institutional aid dollars in Flagship Universities dwarf federal and state grant dollars. Over the past eight years, the amount spent on students from families above \$100,000 per year increased from \$51 million to \$257 million, while the amount spent on students from families below \$20,000 per year went down." Some distinct state-based and institution-based preferences occur among these data, for example, Stanford, Johns Hopkins, Cal Tech and MIT all receive more than \$50,000 per FTE student (truncated for mean computation), while Southern California, Brandeis and NYU all receive \$10,000 or less. The same is true for public, with Pittsburgh and Stony Brook receiving more than \$18,000 while Texas-Austin, Illinois-Urbana-Champaign, Virginia, Indiana and Kansas all receive less than \$7,000 per FTE student.

**Figure 2**



Source: IPEDS Peer Analysis System

Despite recent cost increases, most will pay for college, or even go deeply into debt, because few question the economic value of higher education to individuals. Day & Newburger (2002, p. 2) portray how individuals holding an associate's and a bachelor's degree average respectively 26% and 72% more annual income than those with a high school diploma. Further, as O'Brien & Engle (2005) report: "Every year, data citing the benefits of increased education for individuals are released—including recent information from the U.S. Census Bureau (2005) regarding the increased earnings enjoyed by college graduates."

#### *Privatizing Will Not Slow Higher Education's Cost Increases to Taxpayers*

The following discussion does not relate to the for-profit sector of higher education such as the University of Phoenix, which does in fact reduce taxpayers' expenses (Sperling & Tucker, 1997). Not-for-profit independent (private institutions) have experienced essentially the same cost increases and for the same reasons as have public institutions. Following up on the data displayed in Figure 2, although they are called independent, and do lack much of the costly bureaucratic overhead with which state institutions such as those in the Florida State University System (SUS) must contend, Florida's and all other states' private not-for-profit institutions receive substantial funding from taxpayer dollars. Five funding sources for Florida institutions that are either usually or always available include:

1. Tax-Free Status (This eliminates both local property and state sales taxes.)
2. Florida Resident Access Grant - FRAG
3. Florida Bright Futures Merit Scholarships
4. Federal Pell Grant (A greater percentage of students at Florida's independent institutions receive Pell Grants than at SUS institutions – Hicks, 2007)
5. Federally Guaranteed Loans

All of the above reduce the net amount of tuition and fees students must pay to fund independent institutions programs. Independent institutions frequently provide institutional, foundation or private donor scholarships or grants to further reduce student costs. As Warren (2006) notes: "This year's *national* average net tuition (published price minus grants) for a student at a private college is more than 40 percent below the average published tuition—\$13,200 versus \$22,218." <sup>2</sup>

Except for FRAG, these funds are also available to public universities. FRAG effectively represents a state appropriation for private institutions.

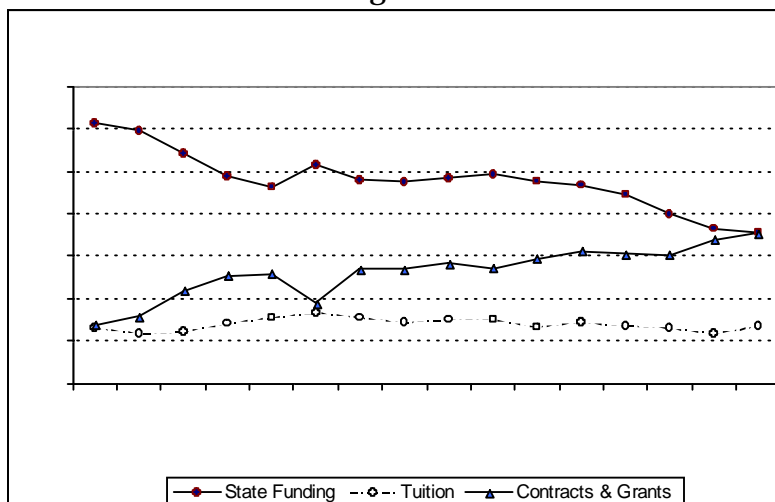
#### Decreasing State Support for Higher Education

Figure 3 shows the effect of decreasing state support for USF over a 20-year period. During this time, state appropriations dropped from 62% of expenditures in 1984-85 to 38% in 2003-04. In this period, although tuition increased by between 206% for resident undergraduates to 470% for non-resident graduates, tuition remained near the same relative portion of expenditures at between 12% and 15%. The loss in state appropriations was largely offset by growing contract and grant funding, which increased from 13% to 37% of expenditures, and by 2005-06 had increased to 42% (Micceri, 2007, p. 33). Increased reliance on grant funding may or may not be a beneficial phenomenon. Today, USF, at 42% of expenditures, is far more dependent on less reliable contracts and grants for revenue than the average public non-Florida Very High Research institution, who average between

<sup>2</sup> These costs do not reflect room and board costs for students attending away from home.

23% and 30% from contracts and grants. Thus, these other institutions receive a far greater portion of their funding, between 35% and 82% more, from more dependable sources than does USF. The other SUS very high research institutions also depend heavily on grant funding, with FSU at 35% and UF at 46%. These figures reflect the lack of support from more dependable tuition and state appropriations sources to fund public higher education in Florida..

Figure 3



Regarding state support, public institutions in Florida experience the unfortunate situation of having both low tuition and receiving among the lowest state appropriations in the nation. For example, among 16 SREB states, which include several of the poorest in the country<sup>3</sup>, Florida ranks 12<sup>th</sup> lowest in total state support/funding<sup>4</sup> for 4-year institutions, and 15<sup>th</sup> among 2-year institutions. Among these 16 states, only West Virginia and Louisiana provide substantially less support than Florida for four-year institutions, and only North Carolina for two-year schools. Florida's low tuition is a big factor, reflecting the state's interest in accessibility. Unfortunately, this is not offset adequately by higher state funding levels, and, as

Figure 1 shows doesn't help less affluent students much.

CollegeBoard (2005) provides specific numbers regarding higher education's average net price to students (tuition and fees minus grants and loans). At private four-year institutions, the 2005-06 national net tuition and fees price averaged \$11,600 (p. 15), compared with \$2,200 at public four-year institutions (p. 16) and \$400 at public two-year institutions (p. 17). The above explication demonstrates that privatizing higher education in Florida would only reduce state expenditures minimally due to the already large subsidies independent schools receive, while increasing costs to students and families by a large amount. For states with an access priority, this doesn't appear a feasible solution to the funding problem.

### The Causes – Why Are Costs Rising So Rapidly

<sup>3</sup> SREB States include Alabama, Arkansas, Delaware, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, Virginia and West Virginia.

<sup>4</sup> Total state support/funding includes appropriations, tuition and fees, local taxes and other earmarked revenues.

## A Short Primer on Inflation, Its Causes and Effects

"To preserve our independence, we must not let our rulers load us with perpetual debt. We must make our election between economy and liberty, or profusion and servitude."

Thomas Jefferson

The primary causes of inflation (increasing prices over time) are two:

- government debasement of the medium of exchange, and
- increased demand for limited supplies

### *Debasement – Some History and Effects*

The U.S. Constitution states that only gold or silver can be used as a medium of exchange, and the Coinage Act of 1892, which established the U.S. mint, made debasement of the currency a crime punishable by death. Unlike modern day legislators, the constitution's framers were both intelligent and well versed in history. Unfortunately, following the 1907 Bank Panic, the Federal Reserve was created in 1913<sup>5</sup>, and debasement became feasible.<sup>6</sup> Debasement is an easy way for governments or kings to increase taxes without appearing to, and is the primary cause of inflation.

The method is simple. When a king/queen, emperor or president reduces the intrinsically valuable silver or gold content of a coin by introducing, for example, three percent of a base metal like bronze, tin or zinc, s/he produces three percent more coins from the same amount of silver/gold, thereby increasing the money available for government<sup>7</sup> purposes by three percent (effectively a three percent tax increase without letting the citizens know). Of course, it doesn't take merchants, with their equal-arm balances; long to realize that their newer silver coins are lighter than the old ones. Also, because more money is now available for the same goods, the average price tends to rise. Thus, used to cost \$100 now costs \$103.<sup>8</sup> Archaeological evidence of debasement begins in Magnesia, Persia during the reign of the Athenian Themistocles circa 450-430 B.C. (see Gardner, 1989 for dates).

Naturally, the price increase effect requires further debasement of the coinage to increase available money to meet the ever-increasing demands of citizens for glorious temples and amphitheatres and the kings for pleasures, monuments and armies. Over time this process ends with money that is completely debased (contains no intrinsic value). Today, this is accomplished through the use of a paper currency such as those of all modern nations. Until 1964, in the U.S., every dollar bill was backed by \$1 of silver and could be traded for that between 1878 and 1964. Since 1964 U.S. paper currency has been backed by nothing other than the government's name. 1964 was also the last date of issue for 90% silver coins.

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<sup>5</sup> Shortly thereafter, income tax appeared, as the Government ran out of Indian lands to auction, and despite the fact that the Constitution clearly states that wealth (e.g. land), and not labor, was to be taxable.

<sup>6</sup> Thomas Jefferson warned strongly against having a Central Bank, and the two times the U.S. Congress created such an institution, the Supreme Court voted it unconstitutional prior to 1913. The Federal Reserve is a private institution with a presidential appointee as its head, and this independent entity, completely free of citizen oversight, controls the U.S. money, thereby exerting a large influence on the U.S. economy for private purposes.

<sup>7</sup> For those who don't know, the word government means mind control, derived as it is from govern – control or guide, and mental, or mind.

<sup>8</sup> Note that the classic phrase "bad money drives out good" means that people will tend to hoard coins having greater intrinsic value (silver or gold content) and use those having less.



By 1966, no silver was included in any U.S. coinage.<sup>9</sup> At that point, all U.S. money became token (money lacking intrinsic value). When this occurs, it frequently marks the beginning of the end for a nation's economy.

What is the long-term effect of debasement? We have approximately 1,800 years of good records that show a consistent effect. It begins with gradually increasing debasement/inflation that ultimately reaches the hyperinflation stage. This eventually causes an almost complete destruction of the economy, widespread poverty and not infrequently, the government's overthrow when a desperate populace rises up in anger.

Most are familiar with the effects of hyperinflation in post WWI Germany, when people carried around suitcases and sometimes even wheel barrels full of worthless currency to buy a loaf of bread.<sup>10</sup> This led to political destabilization and ultimately the triumph of the Nazi party. One of the most succinct and clearly written references on debasement is White (1923). Mcleod (1989) tells of inflation in pre- and post-revolutionary New England before the U.S. Mint opened in 1792.

#### *Increased Demand for Limited Supplies*

The primary assumption underlying modern economic theory is limited supply and unlimited demand. All resources and products are necessarily limited in a finite universe. Only the resources available to a so-called consumer, however, may limit demand. When demand outstrips supply, costs for a product increase. When supply outstrips demand, prices fall. As populations increase, demand for limited resources grows (for example, oil, higher education, land, gold, food, etc.). Having more money available because of debasement aggravates the effects of price increases that result from increased demand.

#### *The Ultimate Net Effect*

The net effect of the preceding two phenomena is increasing cost for the same goods. Given stable money with intrinsic value, money earned one year will have the same purchasing power 10 or 50 years later (limited by demand and resource availability). However, as the amount of money increases but the amount of resources (land, oil, gold, education, etc.) doesn't, the same amount of a product requires more money to purchase as more dollars compete for the limited supplies.<sup>11</sup> As supplies decrease relative to populations, increasing demand exacerbates this inflationary effect. The combined effects of these two causal factors will henceforth be termed inflation.

#### *A Key Factor - The Relationship between Power (Fuel) and Inflation*

Almost everything in today's world, from food production to computers, and from transportation to communication depends on external power sources. Most of this power comes from oil, although coal, hydroelectric and nuclear power contribute a noticeable amount, while wind, thermal differential and solar power sources contribute very little. Today's world differs from an economy based on animal and human energy sources, and, it is for this reason, that the depletion of oil reserves, which has accelerated rapidly over the past 30 years, has resulted in increasing fuel costs worldwide thereby intensifying inflation. A 1997 Norwegian study (Hartman, 2004) predicted that the first oil war would occur in 2002. They were one year off from the U.S. 2003 invasion of Iraq. The U.S. production of

<sup>9</sup> Prior to 1933, the U.S. had a bimetallic coinage consisting of Gold and Silver.

<sup>10</sup> In December 1923, \$1 US was worth 4.2 Trillion German marks (<http://tinyurl.com/2hlo2x>).

<sup>11</sup> Note that productivity increase effects such as those described by Baumol & Oates (1976), can cause some products to decrease in price (e.g. computers), even in the presence of high inflation.

oil maximized in about 1970 and has dropped substantially since then as recoverable supplies drop. Recently, several of the major oil field fields in the Middle East have begun dropping in production, and, with China increasing its fuel consumption by over 3% each year, demand worldwide is steadily increasing, while supplies are becoming continually smaller. This phenomenon also heightens inflation effects and therefore, higher educations and everyone else's costs increase at an accelerated pace as the primary underlying resource becomes more and more scarce.

### *A Losing Battle*

Monetary debasement and the resulting inflation not infrequently end in societal collapse and revolution. Initially it appears feasible to live with the small early inflationary effects. However, through 1,800 years of history, it only rarely happens that inflation effects remained small. Because favored segments of an economy are more likely to keep up with or outstrip inflation, this means that as time goes on, those in less favored segments of the economy like low-skill or low-wage employees realize continually greater deficits in their buying power (e.g. relative to higher education). This, combined with the almost inevitable tendency to increase the rate of inflation, means that difficulties steadily increase for greater and greater portions of the population over time, until eventually the system fails and is replaced by another, usually less democratic government. A few among many examples of such changes over the past 200 years, aside from Germany after WW I, include Bonaparte in France, Hungary after WWII and Bolivia in 1985.

### **The Negative Influence of Government Shadow Statistics on Higher Education**

Williams (2006), on his Shadow Statistics web site, documents the process by which the U.S. government creates biased reports to make the economy appear better than it actually is. Due to these misleading estimates, higher education appears more inefficient and costly than it actually is. The use of shadow statistics is a well-known process with a long history. For governments, the worse things become, the better they must be made to look in order to maintain the *status quo* and keep the powerful in power. We see similar approaches in higher education where statements that might appear negative never escape from institutional media offices. An example from business involves reports on computer virus and hacking attacks, which ceased after 1998 when over 300,000 were reported. The average cost to business of a successful cyber attack is roughly \$2 million (Allen, 2005), so those with weak defenses (virtually all) don't wish to lose investor and customer confidence due to reports about the continual danger. Another good example is the fact that the U.S. Government stopped reporting M3 in March, 2006, as the Federal Reserve began printing numerous greenbacks to bail out the wealthy, and the U.S. dollar has recently begun to look like the 1920 German Mark.

Williams (2006) details the recent history of false economic statistics:

- Kennedy reduced unemployment estimates by eliminating "discouraged workers."
- Johnson kept sending growth reports (GNP) back to the Commerce Department until they got it "right."
- Nixon wanted to report the unemployment rate as the lower of the seasonally adjusted or unadjusted number, at any given time. This technique was considered unethical at the time, but today is the method used.
- The Carter administration was caught deliberately understating inflation.

- Systemic changes were introduced during the Reagan administration to boost reported GNP/GDP growth and to lower CPI inflation on a regular basis.
- The first Bush Administration began efforts at the systematic reduction of the reported rate of CPI inflation.
- Former Labor Secretary Bob Reich explained in his memoirs how the Clinton administration discovered that inflated economic reports could swing a close election. Whatever integrity had survived in the economic reporting system disappeared during the Clinton years.
- The current Bush administration has expanded upon the Clinton era initiatives, particularly in setting the stage for the adoption of a new and lower-inflation CPI and in further redefining the GDP and the concept of seasonal adjustment.

"As a result of the systemic manipulations, if the CPI and GDP methodologies of 1980 were applied to today's data, you would get 8%-plus inflation and flat economic growth...the 1960 unemployment methodology generates a current estimate of 12% unemployment (Williams, 2006)."

Williams goes on to suggest that "When Main Street, U.S.A., does not believe the government's reporting; the reality of common experience usually is the better estimate of what is happening in the economy." As an example of how citizen perceptions differ from shadow statistics reports, the recently created and scientifically designed Comparable Wage Index (CWI) of Taylor & Glander (2006) was compared with the reported Consumer Price Index (CPI) between 1997 and 2004. During this seven-year span, according to the CWI, the average American wage increased by 4.4% per annum. In the same period, the CPI reported an average inflationary increase of 2.4% per year. Therefore, comparing these statistics, the average American realized a net gain of 16.8% in income against the cost of living between 1997 and 2004. Learning this would surprise most of us because we recall things became more expensive relative to our incomes during that time period. If we chose to use, rather than the extraordinarily low CPI estimates, the all too real Housing Wage Index (HWI, NLIHC, 2005), which increased by 7.5% annually during that time, we would compute roughly a 22.7% loss against costs. The second statistic appears closer to what John Q. Citizen experienced than the 16.8% gain in net purchasing power that results from CPI-based estimates. Note also that IPEDS uses the CPI in their risk index estimates, as does almost everyone else who compares higher education costs to national costs, and thereby gives a false impression of higher education's relative cost increases.

#### *Detrimental Effects Caused by Inflation Underestimates on Higher Education*

Higher education's costs must rise faster than those of non-public economic sectors (Baumol & Oates, 1976). However, the use of the falsely low CPI exaggerates higher education's cost increases creating a sense of wasted resources and inefficiency among citizens funding entities. Using either HEPI (Halstead, 2007), or better yet the HWI (NLIHC, 2005), to compute constant dollars, would more accurately reflect cost increases.

To reiterate this important fact, the ultimate effect of the bloated constant dollar higher education cost estimates that result from using the CPI, is to create a false impression that higher education inefficiently wastes more money than other industries. This perspective tends to add additional costs in the form of accountability loads as governments and citizens attempt to document that they receive something worthwhile for the billions of taxpayer dollars spent on higher education institutions each year.

## **The Current and Future Financial Status of Higher Education**

In addition to the preceding information, numerous documents tell us that, except for a few very elite, well funded and/or endowed institutions, higher education in general has been facing a financial crisis over the past 15 to 20 years. This was predicted as early as Byrnes & Tussing explication in 1971. As the current work explains the problem results partly from the "Cost Disease of the Public Sector," (Baumol & Oates, 1976), partly from the general effects of an inflationary economy, partly from resource reduction as populations increase, and partly from reduced support from historical state funding sources (Figure 3). The last results partly from "shadow statistics" detrimental effects. As higher education enrollments have increased<sup>12</sup> a reduced funding source pie divides up among more institutions and more students. As a result, today we frequently see larger classes taught more frequently by graduate assistants and adjuncts, higher prices in all areas for students and a steady movement in higher education financing away from the drying up traditional streams of state revenues<sup>13</sup> to alternative streams like tuition, grant funds, entrepreneurial enterprises, profit-making institutes and other alternative sources of dollars. It will surely occur that things will get worse, and perhaps much worse before they get better.

### **Some Methods to Increase Funding and Curtail Costs**

It appears unlikely that higher education will be able to keep cost increases down in the future due to the several factors noted such as the "cost disease," technology needs and the need for highly skilled and therefore marketable employees. Further, the declining government support for higher education is world-wide (Bloomberg, 2006). Nonetheless, several ways exist that allow higher education to increase available funding, to eliminate unnecessary costs and to reduce necessary ones.

#### Methods to Increase Funding

- Academic Entrepreneurship (see DeVol & Bedroussian (2006) and Shane (2004).
- Profit-Making Institutes, Programs and Services
- Increase Donations - One source that frequently is inadequately tapped for these purposes is foreign alumni, many of whom come from wealthy families.

#### Methods to Curtail Costs

NCCHE (1998) suggested the following national cost containment recommendations:

1. Strengthen Institutional Cost Control.
2. Improve Market Information and Public Accountability.
3. Deregulate Higher Education.
4. Rethink Accreditation.
5. Enhance and Simplify Federal Student Aid.

#### *Eliminate Barriers, Rules and Bureaucratic Regulations*

The NCCHE (1998) recommendations regarding deregulating higher education, rethinking accreditation and simplifying federal student aid largely deal with the costs of rules and regulations for an entity. The presence of numerous rigid rules and regulations produces several costs: (1) they must be followed; (2) someone must make sure that they are

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<sup>12</sup> In Florida's SUS, between 1996 and 2003 a 70% increase in FTIC enrollments occurred (Borman, *et. al*, 2006).

<sup>13</sup> The traditional stream of state tax money has been spent in steadily increasing amounts on the prison industry since Ronald Regan's "War on Drugs" began in 1980 (Boothe, 2007), with necessarily decreasing amounts of the tax pie remaining available for higher education.

followed, and (3) someone must verify that they were followed frequently through costly auditing. Further, because rules require ways around them for the always-common "anomalies," ultimately there are so many exceptions to every rule that regulations proliferate in an almost geometric fashion thereby creating vast documents that waste enormous amounts of employee time. The threefold costs incurred by heavily bureaucratic systems assure that they must be more costly than would otherwise be necessary. Every rule that can be eliminated without reducing the quality of the product benefits all concerned both from a fiscal and from an emotional standpoint. Gargantuan bureaucracy was one important reason why American railroads lost their initial transportation monopoly.

#### *Move to Open Source (Free) Software*

Software comes in two forms: proprietary and open source. Essentially, the difference boils down to proprietary software costing substantial amounts of money for a very restrictive license while open source is essentially free. Open source means that the source code from which software operating systems and applications are compiled is accessible and open for users to change, as they need or desire. Open source software is free, non-discriminatory, non-restrictive, non-specific and technology neutral. Open source software is frequently distributed as part of proprietary software for which one must pay licensing or purchase fees. Neil Stephensen's (1999) treatise *In the Beginning Was the Command Line* provides numerous arguments supporting open source software in addition to an instructive explanation of the corporate versus non-corporate approaches to computing. His metaphor on the nature of open source software is worthy of repeating here:

The people who live there are making tanks. These are not old-fashioned, cast-iron Soviet tanks; these are more like the M1 tanks of the U.S. Army, made of space-age materials and jammed with sophisticated technology from one end to the other. But they are better than Army tanks. They've been modified in such a way that they never, ever break down, are light and maneuverable enough to use on ordinary streets, and use no more fuel than a subcompact car. These tanks are being cranked out, on the spot, at a terrific pace, and a vast number of them are lined up along the edge of the road with keys in the ignition. Anyone who wants can simply climb into one and drive it away for free.

Kinney (2006), reports that, as of December, 2006:

- Over 75,000,000 copies of Open Office had been downloaded.
- All Israeli government agencies use only Open Office, to guarantee citizen access.
- Massachusetts and Minnesota have mandated its use for all workstations in State agencies, with Texas considering this action
- The State of Brazil: 300,000 government workstations converted to Open Office.
- The U.S. Defense Information Systems Agency: 12,000 known Open Office installations.
- French Gendarmerie (national police): 80,000 Open Office installations on desktop computers.
- Largo, Florida: 1,300 workstations with Open Office.
- Health First, Inc., Brevard Co., Florida: 6,000 workstations changed from MS Office to Open Office
- LVM Insurance, Munster, German: 7,700 workstations with Open Office
- SUNY-Albany: Open Office is issued to all students on enrollment.

- Portuguese Ministry of Education: 15,000 workstations with Open Office
- South Korean Postal Service: Uses only Open Office
- Singapore Ministry of Defense: 20,000 workstations with Open Office
- Sun Microsystems: 36,000 workstations with Open Office
- Novell: 5,000 workstations with Open Office
- Google: Over 50% of desktop systems at the Google campus run Open Office
- European Union: Most EU agencies use Open Office as their inter-office document standard, and work is underway to formalize the ANSI/ISO Open Document Standard as the only permissible form for EU inter-agency communications and electronic archive documents.
- India: Over 3,000,000 copies of Open Office distributed Nationwide
- Venezuela: Open Office is the standard, and the nation created a factory for the production of Open Source software to reduce reliance on proprietary software.

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