



Examining the Fiscal, Economic, and Social Impacts of the California State University

Report prepared for

**The
California Faculty Association**

by

Tim Gage
Matt Newman
Trisha McMahon

Blue Sky Consulting Group

April 29, 2008

ABOUT THE AUTHORS AND SPONSORS

This report was prepared by the Blue Sky Consulting Group, which was founded by Tim Gage and Matthew Newman in 2005 and specializes in public policy analysis, development of custom forecasting models, and providing insights into high-level budget and fiscal policy issues.

The report was prepared on behalf of the California Faculty Association, a union of 23,000 professors, lecturers, librarians, counselors and coaches who teach in the California State University system.

EXECUTIVE SUMMARY

Together with the University of California (UC) and the California Community Colleges (CCC), the California State University (CSU) provides the bedrock of California's post-secondary education system. The CSU educates a majority of the state's graduates in critical economic fields, such as business and engineering, and a majority of the state's college-going students of color. The CSU is the largest, the most diverse, and one of the most affordable university systems in the country.¹

With a shift toward service-related industries, the California economy faces increasing demand for college-educated workers. According to the Public Policy Institute of California, by 2020, 39 percent of jobs will need college-educated workers, but only 33 percent of the state's working age population will hold bachelor degrees.²

In spite of the importance of higher education, the state's publicly financed colleges and universities are facing a potential loss of funding as a result of the state's current fiscal condition. As a means for addressing the state's budget gap, the Governor has proposed to cut funding for each of the higher education segments by ten percent relative to a workload budget calculated by the department of finance. This report examines the CSU's role in California's higher education system; the positive economic, fiscal and social benefits of higher education that accrue to the state; and how the proposed budget for the CSU affects California's ability to realize these benefits.

Economic, Fiscal, Social Effects of Higher Education

Research indicates that there are important economic, fiscal, and social returns to investments in higher education.

The CSU is responsible for generating two distinct and important types of economic benefits. First, universities are in effect large business entities that collect and spend significant amounts of money in the regional economy. A 2005 economic impact study of the California State University system found that, overall, \$1 of expenditures by the university generates \$1.83 for local economies.³

The second type of economic benefit is less quantifiable, but no less important. Researchers have shown that universities play a role in developing economically valuable employees and increasing the opportunity for innovation and technological change throughout the state's economy. In a review of the effect of universities on high technology firm location, activity, and knowledge transfer, Varga (2002) found that the location choice of high technology facilities is affected by university presence. In their review of the regional economic impact of universities, Drucker and Goldstein (2007) assessed studies that uncovered university impacts on knowledge creation; human capital; knowledge transfer; technological innovation; capital investment; and

¹ California State University's Office of the Chancellor.

² Hanak, E. and M. Baldassare (Eds.). 2005. *California 2025: Taking on the Future*. San Francisco: Public Policy Institute of California.

³ ICF Consulting. 2005. *Working for California: The Impact of the California State University*. California State University. and California State University. 2004. "Table 2: Residence of Total Enrollment, Systemwide, from Fall 1975." *CSU Origin of Fall Term Enrollment, Fall 2003 Profile*. http://www.calstate.edu/as/stat_reports/2003-2004/FOR03TOC.shtml

knowledge infrastructure production, ultimately concluding that “the majority of empirical analyses do demonstrate that the impacts of university activities on regional economic development are considerable.”

In addition to the economic benefits associated with expenditures on higher education, the fiscal benefits the state receives from individuals’ degree attainment are directly felt in the state budget. Quite simply, the state receives more in taxes and pays less for government programs – such as prisons, health care, and welfare – for citizens with higher education levels. As a consequence, research indicates that investments in publicly supported higher education pay for themselves.

Residents with higher educational attainment have higher incomes over their lifetimes. Baum and Payea (2004) found that college graduates will earn 73 percent more than high school graduates. Brady et al (2005) found that in California, a bachelor’s degree will earn a graduate more than twice what a high school diploma can. These increased incomes lead to higher tax revenues for the state. Nationally, Trostel (2007) found that over a lifetime, a bachelor’s degree created \$47,602 more in state income taxes and increased state and local sales taxes by more than \$11,033.

In addition to estimating increased tax revenues, researchers have attempted to estimate the impact of education on the use of government programs. Trostel demonstrates savings for a variety of public assistance programs including welfare, Medicaid, Medicare, Social Security, Supplemental Security Income (SSI), unemployment compensation, worker’s compensation, corrections, and public health care.

Aside from these generally quantifiable fiscal and economic benefits of higher education, researchers often cite non-market effects from increased educational attainment. These include increased civic participation, better health and longevity, and intergenerational benefits. A long history of research shows correlations between education and these other social benefits, and increasingly sophisticated research methods are looking to uncover causal links.

Current Budget Proposal

Despite the social, economic and fiscal importance of the California State University (and publicly supported higher education generally), the Governor’s 2008-09 proposed budget includes significant reductions in support for the CSU, relative to a workload budget developed by the Department of Finance. The Governor’s Budget proposed state General Fund support for the CSU of \$2,873 million, a \$312.9 million reduction from the estimated workload budget.

The 2008-09 budget proposal operates in a context set by prior budgets. As a result of the “dot com” bust of the early part of this decade, numerous state programs suffered significant funding reductions. During the past decade, state spending on higher education decreased, when measured as a share of General Fund spending. The CSU estimates that, although funding has increased in recent years, these increases have not fully offset the budget reductions of the early part of this decade. Specifically, the CSU indicates that it experienced a cumulative funding shortfall of \$522 million over the three-year period beginning in 2002-03, which has not been restored.

Conclusion

The proposed reduction in funding for the California State University comes at a time of increasing enrollment pressures. The number of college-age Californians is at a record level, while the college age population is increasingly diverse. Furthermore, these cuts follow a previous round of budget cuts from which the CSU has not fully recovered financially. As a result of these twin pressures the ability of the CSU to absorb these budget reductions without restricting access and potentially compromising educational quality is limited.

The net effect of the governor's budget proposals if adopted would, therefore, be to deny the state the economic, fiscal, and social benefits of higher education. Research has demonstrated that investments in publicly supported higher education pay dividends in terms of increased economic activity, reduced government service costs, and increased tax payments from more highly educated workers. As the state looks ahead, demographic and economic trends clearly argue for increasing, rather than decreasing, the available supply of college educated workers.

INTRODUCTION

Together with the University of California (UC) and the California Community Colleges (CCC), the California State University (CSU) provides the bedrock of California's post-secondary education system. These three institutions serve the spectrum of the state's educational needs from vocational training and liberal arts education to professional schooling and academic research grooming. These institutions play a significant role in providing the training and education needed to meet California employers' demands. Over 90 percent of college-going Californians choose to attend college in-state, with 85 percent of those going to California's public institutions of higher education.⁴ The importance of the state's systems of higher education is well known to the state's populace, with 76 percent of Californians stating that these institutions are "very important" to the state's economic vitality.⁵ The public's view has also been confirmed by economists; research shows that investments in publicly financed higher education pay dividends in terms of increased economic activity, lower government service costs, and higher tax revenues.

In spite of the importance of higher education, the state's publicly financed colleges and universities are facing a potential loss of funding as a result of the state's current fiscal condition. As a means for addressing the state's budget gap, the Governor has proposed in the 2008-09 budget to cut funding for each of the higher education segments by ten percent relative to a workload budget calculated by the department of finance. This report examines the CSU's role in California's higher education system; the positive economic, fiscal and social benefits of higher education that accrue to the state; and how the proposed budget for the CSU affects California's ability to realize these benefits.

An Educated Workforce is Vital to the State's Continued Economic Prosperity

In the current climate, California can hardly afford to inhibit college attendance and completion. According to the Public Policy Institute of California (PPIC), the state already faces a future shortage of college-educated workers. With a shift toward service-related industries, the California economy faces increasing demand for college-educated workers. Even continued trends in minority graduation improvement and continued attraction of out-of-state educated workers will not bring the supply of college-educated workers up to meet increased demand. According to the PPIC, by 2020, 39 percent of jobs will need college-educated workers, but only 33 percent of the state's working age population will hold bachelor degrees.⁶

A 2006 report by Dr. Robert Fountain of the Applied Research Center, College of Continuing Studies, at the California State University, Sacramento, also found that the state has an unmet need for additional college graduates over the coming years:⁷

⁴ Brady, Henry, Michael Hout, and Jon Stiles. 2005. *Return on Investment: Educational Choices and Demographic Change in California's Future*. Survey Research Center.

⁵ Baldassare, Mark, Dean Bonner, Jennifer Paulch, and Sonja Petek. 2007. *Californians and Higher Education*. Public Policy Institute of California.

⁶ Hanak, E. and M. Baldassare (Eds.). 2005. *California 2025: Taking on the Future*. San Francisco: Public Policy Institute of California.

⁷ Fountain, Robert and Cosgrove, Marcia "Keeping California's Edge: The Growing Demand for Highly Educated Workers." Report published and funded by the Campaign for College Opportunity and the California Business Roundtable.

- *California employers and industries are demanding greater levels of education.* Through 2022, the study finds that demand for higher-educated employment with a college degree will grow by 1,808,000 – 48% growth – while employment requiring less than a higher education degree will grow by 3,575,800 – 33% growth.
- *A major retirement wave of talented, highly-skilled workers with college educations is about to hit California industry.* The largest higher-educated cohort of workers to date – the Baby Boom generation – is approaching retirement. California needs to meet not only the expected growth of industries, but also to replace 1.4 million workers with higher education who will be retiring or otherwise leaving their occupations.
- *The potential lack of workers with a higher education will be felt throughout the economy, but a constrained supply of these workers will hit certain industries hard.* The three top industries in terms of the number of highly educated workers needed in 2022 are professional, scientific and technical services; education; and healthcare. In three additional industries, the highly educated workforce will yield substantial value added economic impacts: finance, manufacturing, and information.
- *The largest part of the demand for a higher educated workforce, both currently and in terms of growth, is at the Bachelor's degree level, while percentage increases are highest at the Associate and graduate levels.*
- *Small changes in the proportion of the workforce with higher education result in substantial economic impacts.* A 1 percent increase in the share of population with a Bachelor's degree, combined with a 2 percent increase with an Associate degree or some college, results in \$20 billion in additional economic output, \$13 billion in value added, \$1.2 billion more in state and local tax revenues annually, and 174,000 new jobs created

In the California Postsecondary Education Commission's report, *The Nexus Between Postsecondary Education and Workforce Development: A Workforce and Employer Perspective*, data is examined that shows that four of the ten occupations with the largest growth between 2004 and 2014 require postsecondary degrees. Moreover, eight of the ten *fastest* growing jobs require degrees. These results presented below in Table 1.

Table 1: California Occupations with Largest and Fastest Projected Growth that Require Higher Education

Occupational Title	Annual Average Employment		Numerical Change	Percent Change	Median Hourly Wage	Education Level
	2004	2014				
Registered Nurses	230,300	291,200	60,900	24.40%	\$33.85	AA
General and Operations Managers	219,900	264,300	44,400	20.20%	\$46.47	BA/BS
Elementary School Teachers, Except Special Education	174,900	219,300	44,400	25.40%	N/A	BA/BS
Business Operations Specialists	140,500	182,600	42,100	30.00%	\$26.38	BA/BS
Network Systems and Data Communications Analysts	24,200	38,500	14,300	59.10%	\$32.74	BA/BS
Computer Software Engineers, Applications	84,400	123,600	39,200	46.40%	\$42.84	BA/BS
Computer Software Engineers, Systems Software	51,100	74,500	23,400	45.80%	\$44.28	BA/BS
Network and Computer Systems Administrators	29,600	42,000	12,400	41.90%	\$33.11	BA/BS
Dental Hygienists	19,900	28,200	8,300	41.70%	\$38.93	AA
Database Administrators	11,300	16,000	4,700	41.60%	\$34.88	BA/BS
Physician Assistants	5,900	8,100	2,200	37.37%	\$39.72	BA/BS

Source: California Postsecondary Education Commission (2006)

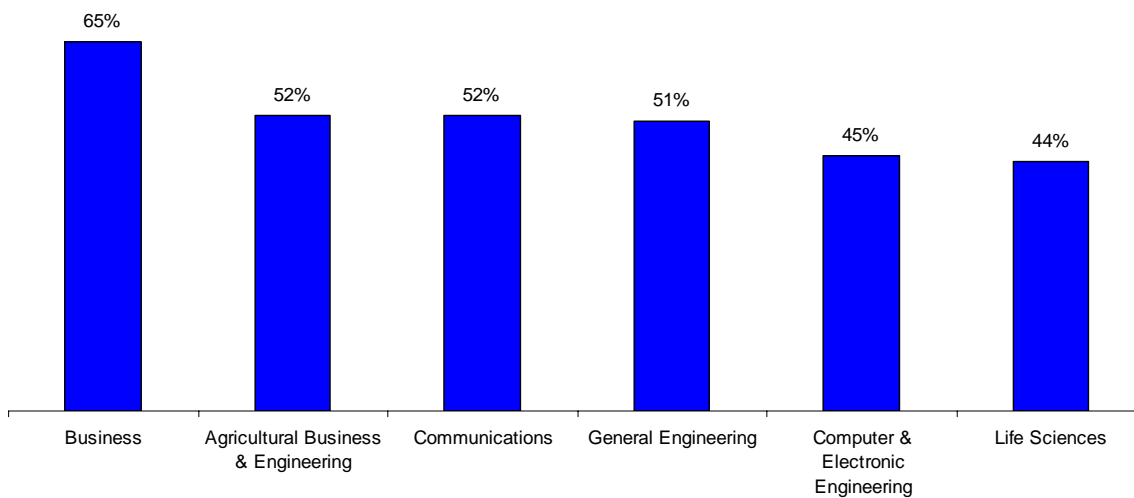
This increased industry need for college graduates is complicated by a demographic trend: an increasingly diverse college-going population. Over time, a larger proportion of college-age students will be from historically underrepresented communities with lower levels of educational attainment. If California is to meet its workforce needs over the coming years, it will need to continue to increase the proportion of college-going students from these communities. This means that the state will have to work harder in order to attract these students and enable them to succeed. However, current over-enrollments and budget pressures are already leading to decreased space and services for these students.

What this research makes clear is that there is an increasing need for highly skilled and educated workers in California. If current trends continue, California will face a significant shortage of these workers in coming years. And, unlike other important economic inputs, the supply of skilled and educated workers cannot simply be increased at a moments notice. There is no “just in time” inventory system for educated workers. Although there is a role for private colleges and universities to play in meeting these needs, the publicly supported institutions of higher education, by virtue of their sheer size and importance, will inevitably play a major role in meeting this need.

THE CSU: AN IMPORTANT PROVIDER OF HIGHER EDUCATION

The CSU is the largest, the most diverse, and one of the most affordable university systems in the country.⁸ Ninety thousand graduates leave the CSU every year and enter the workforce, making CSU an important driver of California's economy. In fact, the CSU alone educates the majority of the state's bachelor degree recipients in several critical economic fields, including business, agricultural business and engineering, communications, and general engineering. In addition, the CSU awards degrees to almost half of the graduates in the life sciences and computer and electronic engineering fields.⁹

**Figure 1: Critical Economic Fields -
CSU's Percent of All Bachelor's Degrees Awarded in California, 2001-2002**

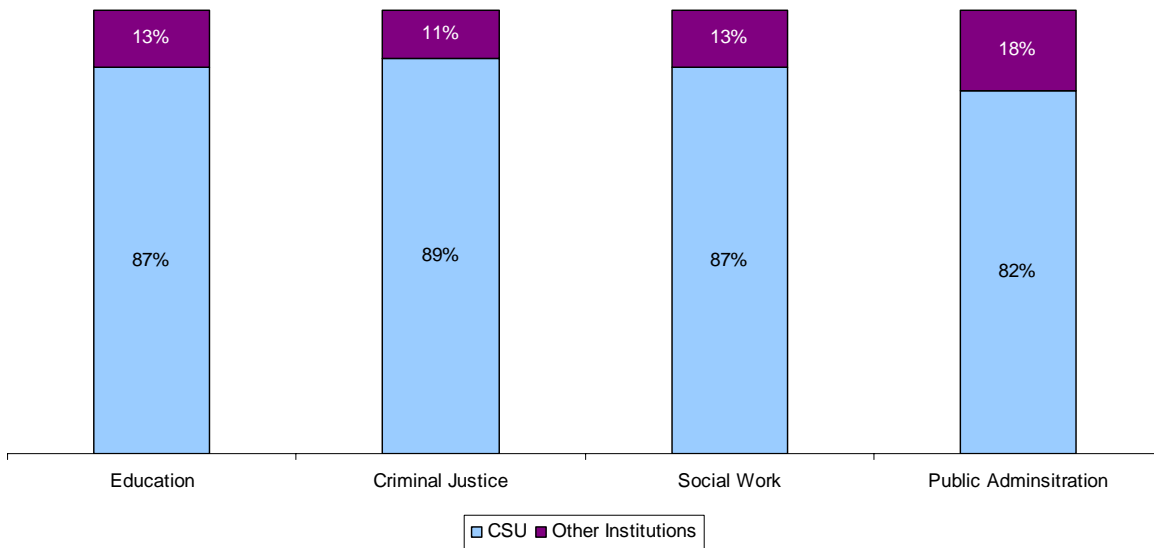


Source: ICF Consulting (2004)

In addition to serving the needs of key business sectors, the 23 campus CSU system grants over 80 percent of the degrees awarded in important public service fields, including education, criminal justice, social work, and public administration.

⁸ California State University's Office of the Chancellor.

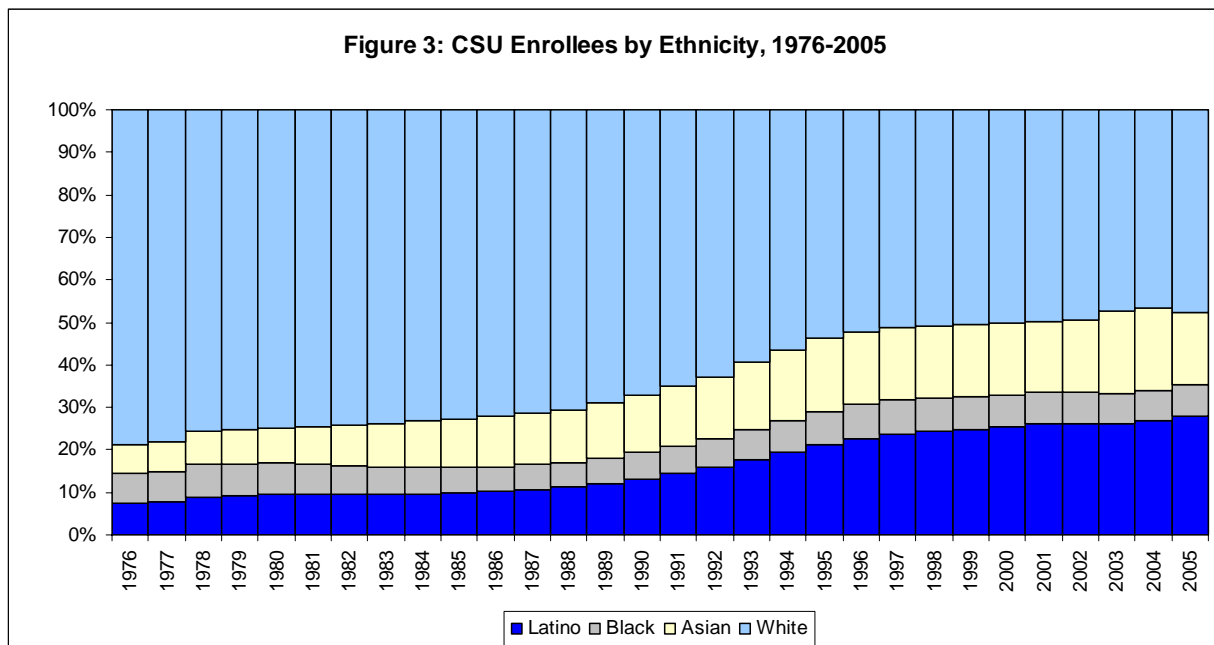
⁹ ICF Consulting. 2004. *Working for California: The Impact of the California State University*. California State University.

Figure 2: CSU's Percent of All Bachelor's Degrees Awarded in California, 2001-2002

Source: ICF Consulting (2004)

Increasing Access and Opportunity

Beyond the CSU's vital role in fueling the state's demand for workers in critical fields, the CSU plays an integral role in making sure the benefits of higher education are available to all Californians. Over half of all Latino, African-American, and Native American college graduates attended the CSU in 2001-02. As Figure 3 shows, the CSU has increasingly served minority populations over the last thirty years. Since 2003-04, the CSU has seen almost yearly double digit increases in first-time freshman enrollments of African-American and Latino students. The CSU is recognized as the most diverse university system in the nation; minority students represented more than 53 percent of the 2003 student body, closely reflecting the demographic make up of the state as a whole.



Source: Postsecondary Education Commission

Current higher education participation rates and demographic trends in California make it extremely important to continue and even increase access for historically under represented groups. According to estimates in *Return on Investment: Educational Choices and Demographic Change in California's Future*, nearly 43 percent of 18 year-old Asians will graduate with a bachelor's degree while only 10 percent of Latinos and 9 percent of African-American 18 year-olds will. This is compared to 20 percent of white college-age Californians.

Demographically, these traditionally low-participating and degree-gaining minority groups will become larger segments of the populace. Thus, Shulock et al (2005) find that, as the Latino share of the population increases over the next decade, overall participation rates in college will fall unless Latino participation rates increase significantly. Indeed, if participation rates simply continue on their current trajectory *without decline* then there will be a reduction of two percentage points in overall participation rates by 2015. These trajectories "bode poorly for the social and economic health of the state," according to Shulock.

The CSU is an important facilitator in the participation and success of minority students. Two-thirds of first-time entrants to the CSU are transfer students who would very likely not be earning a degree without access to the CSU. Nearly half of all California's Latino and African American bachelor degree graduates transferred to either the CSU or UC before earning their degree.¹⁰ Of these, about four-fifths attended the CSU, meaning that transfers to the CSU represent almost half of all graduates in these two groups.

¹⁰ Brady, Henry, Michael Hout, and Jon Stiles. 2005. "Table 4.2 Progression through the Public Educational Pipeline by Ethnicity." *Return on Investment: Educational Choices and Demographic Change in California's Future*. Survey Research Center.

As we discuss later in the report, the budget reductions to the CSU put intense pressure on the system's ability to serve these populations by decreasing both access to educational opportunities as well as the services students need to successfully complete their degrees.

HIGHER EDUCATION: A GOOD INVESTMENT FOR THE STATE OF CALIFORNIA

According to a study by Bound and Turner (2006), a reduction in state support for higher education *will* result in declines in both the quality and quantity of college graduates. In fact, California can expect to feel the repercussions of lower funding for higher education long into the future:

Changes in the funding for public colleges and universities have a large impact on both the quantity and the quality of college graduates in the country. Reductions in state appropriations limit the flow of resources to higher education and reduce collegiate attainment, ultimately lowering the long-term supply of college-educated workers in the labor market.

The lower supply of college-educated workers will have negative repercussions on the state. Setting aside the equity concerns that low-income Californians are more likely to be hurt by limited higher education opportunities, the state is likely to suffer fiscal, economic, and social consequences should it elect to reduce the available resources for public higher education.

Economic Benefits

The CSU is responsible for generating two distinct and important types of economic benefits. First, universities are in effect large business entities that collect and spend significant amounts of money in the regional economy. That is, individual CSU campuses themselves bring-in and pay-out large sums of money in the form of payments to employees and purchases from private sector businesses. The second type of economic benefit is less quantifiable, but no less important. Universities play a role in developing economically valuable employees and increasing the opportunity for innovation and technological change throughout the state's economy.

Employment and Spending Effects

Economic impact studies have become a standard way for universities to measure their impact on geographic regions, whether it be a city or a state. Colleges bring in money from out-of-state students, retain in the state's economy money from students who would have gone elsewhere, and earn federal research funds for faculty work and other programs. In addition, the imported and retained students spend money on housing, food, and services. These funds are "new money" to the state's economy and are a direct economic impact of universities. In addition to these direct effects, funds received by the university go on to be spent by hired faculty and staff, as well as by purchasing departments on various goods and services. At the same time, money spent by students is cycled through the economy and gets spent again and again by affected businesses. These funds are called the indirect effects. Thus, every time a university spends a dollar, more than a dollar in economic activity is created. These additional economic effects are known as "multiplier effects."

Although these multiplier effects are not unique to universities (almost all industries have a multiplier effect), the sheer size of the CSU system makes these effects important to the state's

economy. For example, the CSU alone has 23 campuses throughout the state and attracted over 12,000 out-of-state and foreign students in 2003.¹¹ A 2005 economic impact study of the California State University system found that, overall, \$1 of expenditures by the university generates \$1.83 for local economies. These rates vary somewhat by campus. For example, \$1.88 is created for every \$1 of spending at the five CSU campuses in the Los Angeles region while \$1.65 is created for every \$1 in the Inland Empire region.

The impact per dollar of state government spending was found to be higher, at \$4.41, since the university is able to leverage each dollar of state funding with additional revenue sources, including student fees and grants and contracts. Overall, the CSU was shown to have cycled \$13.6 billion through the economy, and supported over 207,000 California jobs annually.¹²

Similar results were found for the University of California. An economic impact study found that the system was responsible for between \$14.29 and \$16.65 billion in economic activity and 370,000 jobs in 2002. The study's authors found that overall \$1 of expenditures by the universities created \$1.30 for regional economies.¹³ While it is not possible to know the exact magnitude of the economic impact of the CSU, it likely represents a significant benefit to the communities in which the campuses are located, and the state as a whole.

Universities and Innovation

While many economic impact studies attempt to capture these “backward linkages” or expenditure effects, few attempt to quantify or successfully capture “forward linkages,” or knowledge effects. Universities produce skilled college graduates and advancements in knowledge. If these outputs remain concentrated in the local region or state, they may produce additional economic benefits to the area over and above the wage benefits that the graduates themselves earn from their degrees. Like most positive social externalities, however, these effects are hard to prove and quantify.

Researchers have shown that higher education institutions do play a role in economic growth through innovation. In a review of the effect of universities on high technology firm location, activity, and knowledge transfer, Varga (2002) found that the location choice of high technology facilities is affected by university presence but also influenced by industrial sectors, ownership status of firms, firm size, and city size. In their review of the regional economic impact of universities, Drucker and Goldstein (2007) assessed studies that uncovered university impacts on knowledge creation; human capital creation; knowledge transfer; technological innovation; capital investment; and knowledge infrastructure production. They find:

Although there is considerable variety in the magnitude and confidence of the results obtained, and often, non-university regional factors are more influential than

¹¹ ICF Consulting. 2005. *Working for California: The Impact of the California State University*. California State University. and

California State University. 2004. “Table 2: Residence of Total Enrollment, Systemwide, from Fall 1975.” *CSU Origin of Fall Term Enrollment, Fall 2003 Profile*. http://www.calstate.edu/as/stat_reports/2003-2004/FOR03TOC.shtml

¹² ICF Consulting. 2005. *Working for California: The Impact of the California State University*. California State University.

¹³ ICF Consulting. 2003. *California's Future: UC's Contributions to Economic Growth, Health, and Culture*. University of California.

university factors, the majority of empirical analyses do demonstrate that the impacts of university activities on regional economic development are considerable.

Davies (2003) also concludes that there is substantial evidence of dynamic, positive externalities (i.e. benefits beyond the direct economic benefits) associated with education, although he cautions that there remains considerable uncertainty about their magnitudes.

California's public universities and colleges are deeply involved in these "less tangible and less immediately measurable" but likely more significant activities supporting economic development (Felsenstein, 1996). CSU campuses are directly involved in four separate, but related, innovation-related economic development activities: applied research, technology institutes and centers, education and technical services to entrepreneurs, and research and technology parks to bring industry closer to campuses. Thus, the state of California benefits significantly from the CSU's substantial economic presence in numerous communities in multiple ways; substantial spending, employment, and innovation effects are associated with investment in higher education.

Fiscal Benefits

In addition to the economic benefits associated with expenditures on higher education, the fiscal benefits the state receives from individuals' degree attainment are directly felt in the state budget. Quite simply, the state receives more in taxes and pays less for government programs – such as prisons, health care, and welfare – for citizens with higher education levels. As a consequence, research indicates that investments in publicly supported higher education pay for themselves.

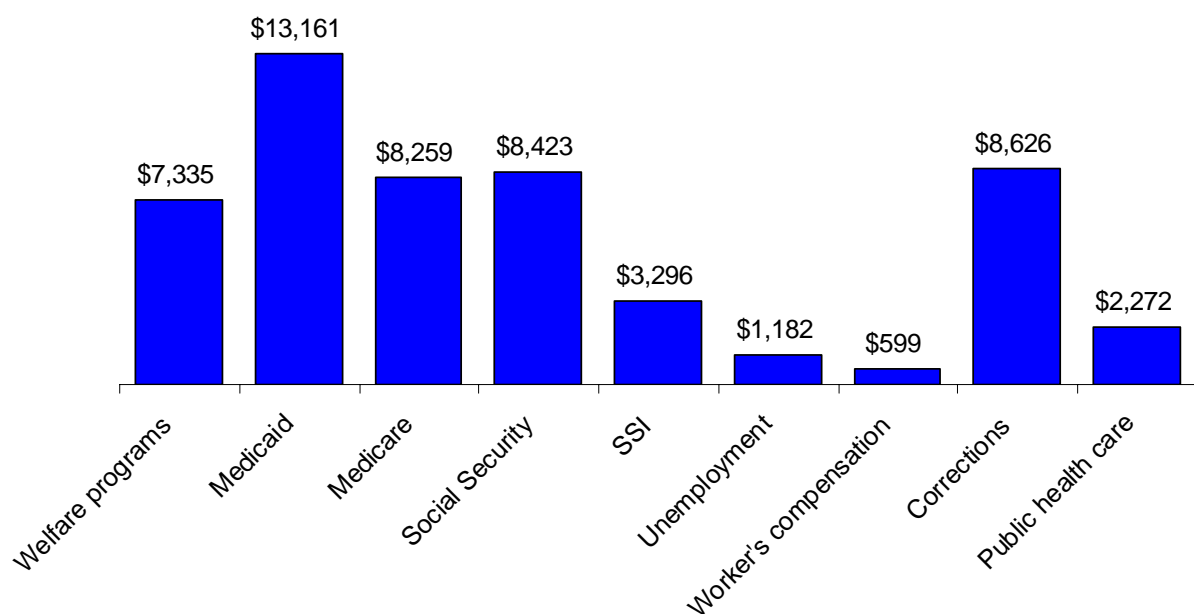
Residents with higher educational attainments have higher incomes over their lifetimes. On a national level, Baum and Payea (2004) found that college graduates will earn 73 percent more than high school graduates. Brady et al (2005) found that in California, a bachelor's degree will earn a graduate more than twice what a high school diploma can; a high school degree is likely to yield \$934,000 over the course of a working lifetime while a bachelor's degree will earn almost \$2 million, on average. These increased incomes lead to higher tax revenues for the state. Nationally, Trostel (2007) found that over a lifetime, a bachelor's degree created \$47,602 more in state income taxes and increased state and local sales taxes by more than \$11,033. Baum and Payea find that the average college graduate working full-time year-round pays over 78 percent more in total federal, state, and local taxes than the average high school graduate.¹⁴ Therefore, to the extent that additional funding for the state's systems of higher education increase the number of college graduates, the state can expect to see a return in the form of additional tax receipts. Conversely, cuts in higher education funding, to the extent that they reduce the number of college graduates, will cost more over the long run than the amount of the state general fund "savings."

In addition to estimating increased tax revenues, researchers have attempted to estimate the impact of education on the use of government programs. Trostel demonstrates savings for a variety of public assistance programs including welfare, Medicaid, Medicare, Social Security,

¹⁴ Aside from utilizing different data sources, different researchers make different underlying assumptions when calculating lifetime returns. Baum and Payea (2004) calculate lifetime earnings on data for those 25 to 64 with a discount rate of 5%. Their tax findings are based on those 25 and older while Trostel (2007) is based on adults 25-64 and a 3% real interest rate. Brady (2005) also uses data on those 25 to 64, but does not disclose his discount rate.

Supplemental Security Income (SSI), unemployment compensation, worker's compensation, corrections, and public health care. He examines differences in various sources of income depending on education level and derives lifetime savings amounts.¹⁵ Medicaid is by far the costliest program aimed toward the low-income population and about 40 percent of the estimated \$13,000 in lifetime savings estimated by Trostel is accrued by state governments. Deferred corrections costs are also significant at about \$8,600 and would be felt strongly by state governments. Other benefits, such as lower expenditures for welfare programs like food stamps, school lunches, cash assistance, and housing subsidies, are partially or exclusively paid by the federal government.

**Figure 4: Estimated Lifetime Government Savings for a College Graduate
(in Present Value)**



Source: Trostel, Phillip A.

Brady calculates the average change in program use associated with higher education, and then uses average cost figures to calculate savings. On average in California, a college graduate is 78 percent less likely to use welfare, 74 percent less likely to use SSI, and 87 percent less likely to be incarcerated relative to a high school graduate. For correctional costs, he estimates that the state saves \$25,000 per year of incarceration. For poverty-related programs he uses a cost to the state general fund of \$3,000 per person per year of poverty. This is based on state expenditures for MediCal, CalWORKs, and state supplements to SSI reported in the state budget, divided by Census Bureau estimates of the number of persons in poverty.

¹⁵ Lifetime figures are measured from 19 to 79 and utilize a 3% real interest rate to bring it to present value. Savings reflect values to the recipients and not total fiscal costs. Costs were calculated for corrections and public health using data on the average national costs, which were \$29,877 for corrections costs and \$823 in 2005 dollars.

Do Investments in Higher Education Pay for Themselves?

Combining the additional tax revenue and program savings and comparing them to the costs the state incurs for higher education, these researchers have also calculated the rate of return for higher education. Trostel uses national government education spending data to calculate a cost of education that includes endowment revenues and costs of research and service activities while excluding capital costs. Comparing these costs to benefits, he finds an average annual rate of return for state and local governments is 3 percent per year

Brady does not estimate a standard rate of return but instead looks at several different funding scenarios. Two scenarios are of particular interest: one that analyzes the outcomes of the status quo and another that estimates the effects of restraining college capacity. Even under the status quo scenario, where educational achievements by ethnic group stay the same, the state will see fiscal losses due to demographic changes over the next ten years.¹⁶ Net costs to the state over the lifetime of a typical 18 year-old will increase by \$2,500. Thus, when the capacity of the educational system is held constant and cannot grow with the increase in California high school graduates, the state will lose even more money: \$2 for every \$1 it saves in curtailed support for the universities, a net cost of between \$3,000 and \$5,000 over the lifetime of each 18 year-old.

While most analysts are right in cautioning that variation in wage rates and government program usage may not all be directly attributable to education and may reflect unobserved characteristics like drive and skill, they are still confident that the differences in attainment and costs do provide an insight into the types of benefits California would miss out on if higher education rates decline or remain static. Without college completion, the state faces increased costs for public services and significant reductions in tax revenue. Over a lifetime these costs add up to significant amounts. The state should, therefore, be wary of decreasing access to college degrees in search of short-term budget savings, especially given the demographic dynamics already pushing college completion rates downward.

Social Benefits

Aside from these generally quantifiable fiscal and economic benefits of higher education, researchers often cite non-market effects from increased educational attainment. These include increased civic participation, better health and longevity, and intergenerational benefits. A long history of research shows correlations between education and these other social benefits, and increasingly sophisticated research methods are looking to uncover causal links.

Research has long shown a correlation between increased civic participation and increased levels of educational attainment (although efforts to prove a causal link have proven more elusive). Dee (2003) and Milligan, Moretti, and Oreopoulos (2003) found such a causal link, while Tenn (2007) disputed these findings. Dee finds that educational attainment affects voter participation and support for free speech in addition to increasing the quality of civic knowledge, as measured by newspaper readership. Milligan, Moretti, and Oreopoulos also found that higher education

¹⁶ Brady finds that between 2000 and 2013, the population of 18 to 24 year-olds will “add more than 900,000 members to its ranks and grow by 27%....Increases in the numbers of young Hispanics will account for between half and two-thirds of the growth, depending on assumptions about international migration patterns. Increases in Asians/Pacific Islanders will account for about 9% of the growth, and increases in non-Hispanic Blacks account for 13-17% of the growth.”

increases voting behavior and raises the quality of people's involvement in society, measured by such things as:

- Following news and political campaigns
- Attending political meetings
- Working on community issues
- Discussing political matters with friends
- Considering themselves close to a particular party
- Trusting the federal government

Tenn, however, finds that voter turnout is influenced by underlying factors that explain both educational attainment and voting behavior.

Researchers are also attempting to tease out the causal relationship between education and intergenerational benefits. Wolf and Haveman (2001) surveyed the literature and found persuasive findings indicating that parents with higher levels of education have children with higher levels of education, higher levels of cognitive development, and higher future earnings. In addition, increased parental educational attainment decreases the probability that daughters become pregnant teenagers. The research also shows that a mother's education level, specifically, improves the health of infants and children.

In their survey of the literature, Wolf and Haveman also highlight the health benefits of higher educational attainment and, like Riddell (2004), caution that the reasons for these better outcomes are unknown. Better health and increased life expectancy may come from occupational differences, residential choices, more information or skills in obtaining health-related information, better nutrition, fewer unhealthy behaviors or any combination thereof. However, better health and increased longevity are related to higher education levels.

Thus, reducing access to higher education not only deprives the state of economic and fiscal benefits, but also the benefits of a healthier and more engaged citizenry that is more likely to pass on success and vitality to their offspring. While these benefits are not easily quantified, they are nonetheless vital for a thriving populace.

THE PROPOSED BUDGET'S EFFECTS

Despite the social, economic and fiscal importance of the California State University (and publicly supported higher education generally), the Governor's 2008-09 proposed budget includes significant reductions in support for the CSU, relative to a workload budget developed by the Department of Finance.

Governor's 2008-2009 Proposed Budget

Facing a substantial shortfall for the 2008-09 budget year, the Administration proposed a combination of major spending reductions, additional borrowing and accounting changes to close the gap. In many instances, including proposals for the CSU and the UC, the budget

identified the cost of a “workload” budget for 2008-09 and then imposed a roughly 10 percent reduction in funding from that level.¹⁷

For the CSU, the Administration estimated the General Fund cost of a “workload” budget for 2008-09 at \$3,186 million. This workload budget projected a higher funding need over 2007-08 of \$215.3 million, including \$70.1 million for an increase in enrollment of 8,572 students. The Trustees also planned to increase most student fees by 10 percent.

The Governor’s Budget proposed state General Fund support for the CSU of \$2,873 million, a \$312.9 million reduction from the estimated workload budget. The budget’s proposed funding level represents a reduction from 2007-08 of \$97.6 million, a 3.3 percent decline. Including estimated revenue from student fees, assuming a 10 percent fee increase yields, a 1.1 percent increase in total funding over 2007-08.

The budget proposes to allocate \$43.2 million of budget-year reduction to Institutional Support, which includes campus administration and the Chancellor’s Office, and permits the Trustees to allocate the remainder of the reduction. Again, the budget states that the balance of the reduction likely will result in a combination of fee increases, limitations on enrollment levels, increased efficiency and reductions to other existing programs.

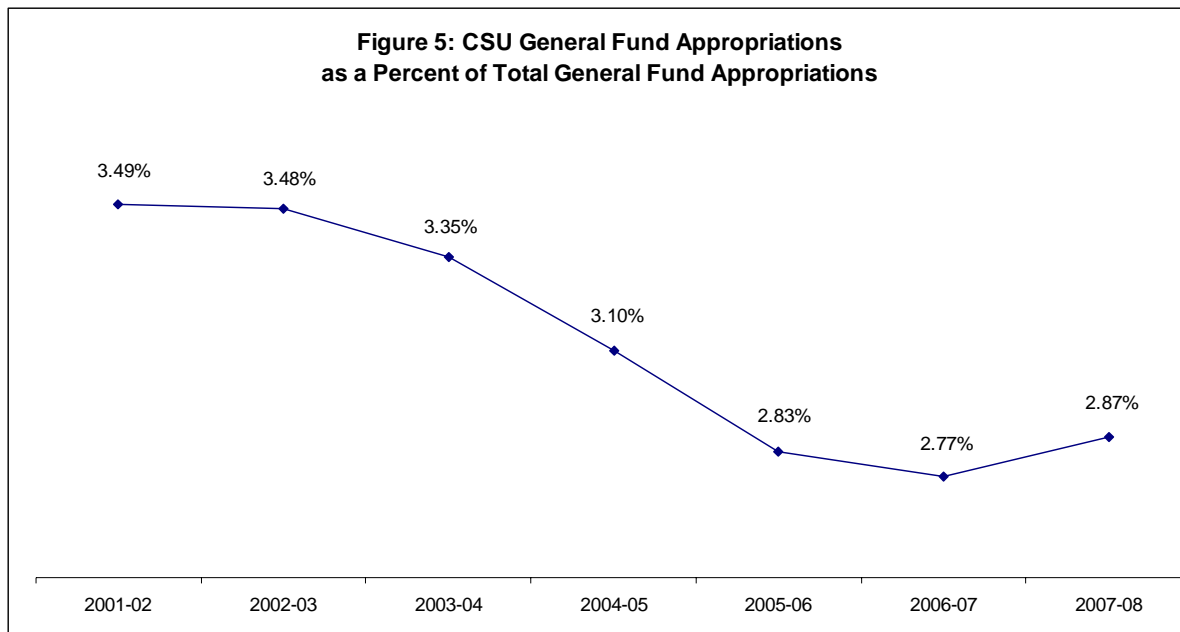
The UC and CCC also face substantial cuts to their working budgets. UC’s workload budget for 2008-09 anticipated a higher funding need over 2007-08 of \$233.4 million, including \$56.4 million for an increase in enrollment of 5,000 students. The Governor’s Budget proposed a \$331.9 million reduction from this workload budget and 3 percent decline from 2007-2008 budget levels. When taking into account a 7.4 percent student fee increase, UC will experience a 1.5 percent increase in revenue (fees plus General Fund) over 2007-08. CCC had expected a \$517.3 million increase. Instead, the Governor’s Budget proposed a \$484.6 million reduction from this workload budget for a .6 percent increase from the 2007-08 budget.

Budget Context

The 2008-09 budget proposal operates in a context set by prior budgets. As a result of the revenue decline resulting from the “dot com” bust of the early part of this decade, numerous state programs suffered significant funding reductions, and have experienced varying degrees of recovery from those reductions. Each of the public higher education segments had one or more years during this period when it experienced reductions in state General Fund support and total revenue. In general, these reductions were accompanied by major increases in student fee revenue.

As a result of these funding reductions, during the past decade state spending on higher education decreased, when measured as a share of General Fund spending. Because the base on which shares of the budget is calculated can change significantly and for reasons unrelated to the level of support for higher education, this measure may not necessarily indicate a lack of support for higher education, but it at least raises concerns that warrant further examination.

¹⁷ The Department of Finance determines the cost of a workload budget by calculating the budget year cost of currently authorized services, adjusted for changes in enrollment, caseload, population and other adjustments as defined by Section 13308.05 of the California Government Code.



Source: Governor's budget, Blue Sky Consulting Group

As state support has waned, student fees have increased. Since 1998-99, fees for students at the CSU have increased by 81 percent. This represents a 36 percent increase after adjusting for inflation. As a result of these fee increases displacing state support, the share of cost for higher education borne by students and their families has risen from 17 percent in 1998-99 to 25 percent currently.

The CSU estimates that, although funding has increased in recent years, these increases have not fully offset the budget reductions of the early to mid 2000s. Specifically, the CSU indicates that it experienced a cumulative funding shortfall of \$522 million over the three-year period beginning in 2002-03, which has not been restored.

The CSU has at least temporarily accommodated these reductions by pursuing a number of different strategies. Economies have been forced on them, some of which presumably are permanent adjustments. Other strategies, such as increasing class sizes, are viewed as temporary measures that, if not reversed, will result in a reduction in educational quality over time. And other measures, such as eliminating classes or class sections, clearly can have an impact on the time it takes students to earn their degrees and frustrate students' educational plans, resulting in lower levels of persistence and success. Because it is difficult to measure the effect of these strategies on educational outcomes in the short term, it is impossible to determine the impact on the reductions of the early 2000s.

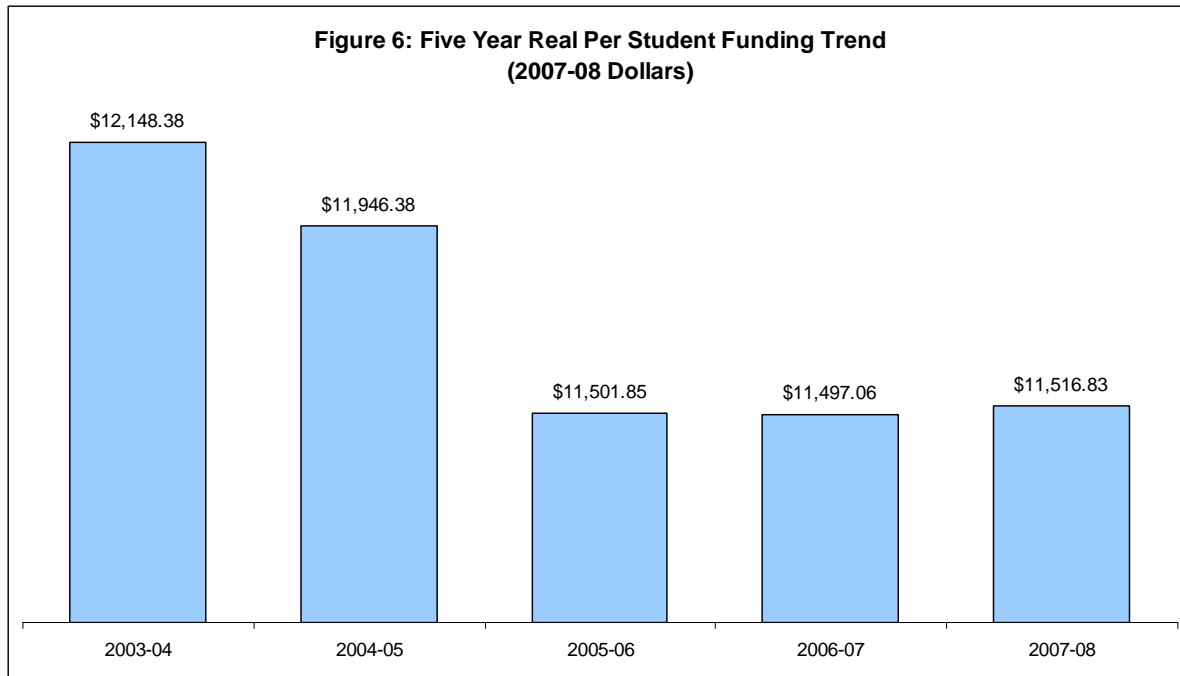
Context: Funding Growth Since 2003-04

An analysis of total revenues available to the CSU indicates that their resources have at best grown modestly over the last five years.¹⁸ From 2003-04 through the budget's proposed 2008-09

¹⁸ "Total Revenues" includes general fund plus student fees.

spending level, total revenues have grown by an average annual rate of 4 percent. This growth rate is not adjusted for inflation, which over this period is estimated to have averaged 3 percent per year. Accounting for inflation means that funding has grown slightly more than inflation over this period.

However, a more appropriate measure by which to assess the adequacy of support for the CSU is growth in funding per full-time student after inflation. On a real per-student basis, funding has declined by 5.2 percent over the past five years. Thus, on a per student basis, funding has not kept up with inflation.



Source: Governor's budget, Blue Sky Consulting Group

Context: Student Fee Increases

As noted in the above discussion, fee increases are one of the ways to mitigate recent budget reductions. The LAO has indicated that fee increases have tended to fluctuate with growth in state spending. Periods of rapid growth in spending have been accompanied by declining inflation-adjusted fees and periods of slow growth in spending have been accompanied by rapid growth in fees.

The LAO also points out that fees are low compared to fees at comparable colleges nationally. However, recent, rapid fee increases create significant challenges to access. The state's higher education institutions must work to combat the perception that fee increases make going to college impossible for low and middle income students and families. News of large, unplanned fee increases can significantly disrupt families' financial plans and send a discouraging message even if financial aid is available. Fee increases and current levels of financial aid create pressure on students to work while attending school and/or to borrow heavily to stay in school. Because

of students' personal circumstances or family or cultural attitudes regarding debt, the willingness of some students to tap these resources may be limited, resulting in a loss of access.

Impact of Budget Proposals on Enrollment

Typically, the budget provides funding for additional students in recognition of the marginal cost of enrolling new students. However, the number of students enrolled in the current year exceeds the amount of funding provided. Currently, the CSU is over enrolled by about 10,000 students. Because the proposed 2008-09 Budget provides no funding for additional enrollment for the upcoming academic year, this funding shortfall will be exacerbated.

The CSU's planned enrollment growth for 2008-09 was 8,572 new students. Combined with the current-year shortfall, the budget's failure to fund enrollment for 2008-09 leaves the CSU without funding for over 18,000 students – generating a funding shortfall of more than \$150 million. In the face of the budget proposal, the CSU closed applications for impacted campuses for first-time freshmen as of February 1 and remaining campuses as of March 1 of this year. The CSU also plans to admit fewer new students in future years in order to bring funding into line with the number of enrolled students. The CSU's recent outreach efforts have resulted in double-digit annual increases in student enrollment from underserved communities. Lack of funding for new enrollments likely will reduce the effectiveness of these efforts.

Beyond the impacts of enrollment underfunding, the lack of inflation adjustments in the budget proposal may have several important effects. The CSU will need to determine whether it will provide cost-of-living adjustments to faculty and staff. In some instances, it may be bound by contractual obligations. In addition, the CSU will face some unavoidable cost increases for all budget items that increase with inflation, such as utilities, supplies, and other important expenditure categories.

In the absence of funding for these costs, the CSU will need to identify cost savings that can be achieved or it may be forced to reduce class offerings or student services or increase class sizes. Because of the budget reductions earlier this decade, the ability of the university to achieve additional savings or economies without affecting the quality of services delivered is extremely limited.

Going Forward: Impact of the Proposed Budget Cuts Over Time

To estimate the extent of resources available for higher education and other General Fund supported programs during the coming decade, we developed a model designed to project General Fund revenues and expenditures through 2017-18, under a variety of assumptions.

Previous work by the LAO, Department of Finance, and others provides a foundation from which to build such a projection model. Building on these sources, we extended and refined the projections produced by the LAO, incorporating more current information from the Governor's Budget where appropriate. With respect to higher education specifically, the model calculates the cost of the higher education segments for a given year based on higher education fee levels, enrollment growth rates, and other parameters.

Our projection model indicates that, if the proposed cuts are adopted, it will take until 2013-14 before real per student funding regains the level of 2003-04, and until 2016-17 to reach the level of funding provided in 2001-02. Even this projection assumes that the current proposed cuts are a one-time event, and that growth in General Fund support for the CSU will resume previous levels starting in the 2009-10 fiscal year.

This lower level of funding per student could be addressed by increasing student fees, reducing university costs or a combination of both. If fee increases above the level assumed in the above scenario were used to cover the entire difference in per student spending, fees would have to increase by about 6.5 percent during each year of the projection period. Increasing fees by this amount would increase the share of cost borne by CSU students from 26 percent to 31 percent.

If instead, fees were not raised, this funding gap would need to be made up by increasing class sizes, reducing class sections, reducing pay increases for faculty and staff or reducing various services to students. We do not know which of these strategies would be pursued in advance, but it is likely that most of these strategies, if pursued over the course of the decade, would have an adverse impact on educational success.

In addition, given that the CSU is already overenrolled, if it were to keep total enrollment at the current level over the next several years until their student load was fully supported by future funding increases, they would have to stop taking new students above the current level for a minimum of nearly two and a half years in order to catch up. This scenario assumes that the CSU would get “catch up” funding equal to the amount provided for a year’s quota of new students in addition to whatever funding is provided for new enrollment. It also assumes that the state’s fiscal position has improved enough by 2009-10 that this additional funding could be provided. The amount of additional funding required amounts to about \$200 million annually for the CSU.

Even under this optimistic set of assumptions, this would mean denying access to over 18,000 students at the CSU. If the state’s fiscal situation does not improve as dramatically as assumed under this scenario, either additional students would need to be denied enrollment or additional reductions in class sections and student services would need to be pursued. As discussed above, given the important role the CSU plays in terms of providing skilled workers for California’s economy, denying these many students access would have a potentially significant negative impact on the state’s economy. In addition, fewer slots in the state’s public colleges would reduce access to higher education by historically underserved communities.

CONCLUSION

The Governor’s Proposed 2008-09 Budget calls for a 10 percent reduction in funding for the California State University, as well as cuts of a similar magnitude for the University of California and the California Community Colleges.¹⁹ These funding reductions come at a time of increasing enrollment pressures, as the number of college-age Californians is at record levels and is

¹⁹ The 10 percent cut is relative to a workload budget developed by the Department of Finance.

increasingly diverse. Furthermore, they follow a previous round of budget cuts adopted in response to the “dot com” bust, cuts from which the CSU has not fully recovered financially.

As a result of these twin pressures – restricted available funding and increasing enrollment pressures – the ability of the CSU to absorb these budget reductions without restricting access and potentially compromising educational quality is limited. Thus, reductions in course offerings, decreases in services, or increases in student fees above and beyond the 10 percent increase already proposed are, in effect, the only options left on the table.

The net effect of the governor’s budget proposals if adopted would, therefore, be to deny the state the economic, fiscal, and social benefits of higher education. Research has demonstrated that investments in publicly supported higher education pay dividends in terms of increased economic activity, reduced government service costs, and increased tax payments from more highly educated workers.

As the state looks ahead, demographic and economic trends clearly argue for increasing, rather than decreasing, the available supply of college educated workers. Demographers and economists have concluded that the state faces a looming shortage of skilled, college educated workers. If the state is to meet this challenge, it will need to maintain its historic investment in publicly supported higher education, not curtail it for short-term gain.

WORKS CITED

- Baldassare, Mark, Dean Bonner, Jennifer Paulch, and Sonja Petek. 2007. *Californians and Higher Education*. Public Policy Institute of California.
- Baum, Sandy and Kathleen Payea. 2004. *The Benefits of Higher Education for Individuals and Society*. The College Board.
- Bound, John and Sara Turner. 2006. *Cohort Crowding: How Resources Affect Collegiate Attainment*. National Bureau of Economic Research Working Paper 12424.
- Brady, Henry, Michael Hout, and Jon Stiles. 2005. *Return on Investment: Educational Choices and Demographic Change in California's Future*. Survey Research Center.
- California Postsecondary Education Commission. 2006. *The Nexus Between Postsecondary Education and Workforce Development: A Workforce and Employer Perspective*.
- Davies, Jim. 2003. *Empirical Evidence on Human Capital Externalities*. RBC Financial Group Economic Policy Research Institute EPRI Working Paper Series. Working Paper 2003-5.
- Dee, Thomas S. 2004. "Are There Civic Returns to Education?" *Journal of Public Economics*. Vol. 88.
- Felsenstein, Daniel. 1996. "The University in the Metropolitan Arena: Impacts and Public Policy Implications." *Urban Studies*. Vol. 33, No. 9.
- Fountain, Robert and Cosgrove, Marcia. *Keeping California's Edge: The Growing Demand for Highly Educated Workers*. Campaign for College Opportunity and the California Business Roundtable.
- Goldstein, Harvey and Joshua Drucker. 2006. "The Economic Development Impacts of Universities on Regions: Do Size and Distance Matter?" *Economic Development Quarterly*. Vol. 20, No 1.
- Hanak, E. and M. Baldassare (Eds.). 2005. *California 2025: Taking on the Future*. San Francisco: Public Policy Institute of California.
- ICF Consulting. 2003. *California's Future: UC's Contributions to Economic Growth, Health, and Culture*. University of California.
- - 2004. *Working for California: The Impact of the California State University*. California State University.
- Milligan, Kevin, Enrico Moretti and Philip Oreopoulos. 2004 "Does Education Improve Citizenship? Evidence from the United State and the United Kingdom." *Journal of Public Economics*. Vol. 88.
- National Center for Public Policy and Higher Education. 2006. *Measuring Up 2006: The State Report Card on Higher Education, California*.
- Riddell, W. Craig. 2004. "The Social Benefits of Education: New Evidence on an Old Question." Prepared for the conference *Taking Public Universities Seriously*, University of Toronto.
- Shullock, Nancy, Colleen Moore, and Mary Gill. 2005. *Shared solutions: A Framework for Discussing California Higher Education Finance*. Institute for Higher Education Leadership and Policy.

- Tenn, Steven. 2007. "The Effect of Education on Voter Turnout." *Political Analysis*. Vol. 15.
- Trostel, Phillip A. 2007. *The Fiscal Impacts of College Attainment*. New England Public Policy Center at the Federal Reserve Bank of Boston.
- Varga, Attila. 2002. "Knowledge Transfers from Universities and the Regional Economy: A Review of the Literature." *Innovation, Entrepreneurship and Regional Economic Development: International Experiences and Hungarian Challenges*. Varga, Attila, Laszlo Szerb (Eds). Pécs: University of Pécs Press.
- Wolf, Barbara and Robert Haveman. 2001. "Accounting for the Social and Non-Market Benefits of Education." *The Contribution of Human and Social Capital to Sustained Economic Growth and Well-Being*. Helliwell, John (Ed). Vancouver: University of British Columbia Press.