
SUMMARY

For over 35 years, California's policy of providing a college education to all citizens who could benefit from it has enabled California to lead the nation in making public higher education available and has helped the state generate great wealth and social mobility. Now, in the emerging information economy, this provision of widespread higher education is more important than ever.

Several trends, however, suggest that California's ability to maintain, much less increase, high levels of college education may be at risk. First, with the state's growing population, many more students will seek access to higher education. This "Tidal Wave II" could present California public colleges and universities with a million or more additional students. Second, the fraction of state resources devoted to higher education has been dropping in recent years because of growing demands on the state budget that compete with education, such as corrections, health, and welfare. Without a significant change in priorities, it is likely that funding for higher education will continue to be limited. Third, the costs of higher education have been rising faster than inflation over the past 35 years. While many sectors of the economy have slowed rising output costs through significant productivity improvements, the higher education sector has not shown comparable improvements in productivity.

The challenge for policymakers is to assure access to California higher education in the face of these trends. The problem is complicated by the fact that each of these trends is uncertain. No one knows precisely how many students will seek access to higher education, nor what funds will be available from the state, nor which

productivity improvements are possible or desirable in higher education. A number of studies have assessed these trends and recommended actions state policymakers should take. These studies take the traditional approach of basing their recommendations on a single best estimate of each of these trends, essentially ignoring much of the uncertainty that exists about the future.

When uncertainties are large, however, projections of the future are often wrong. Policies based on best estimates can fail if the future turns out differently than expected. In addition, decision makers can spend too much time debating the most likely future rather than developing flexible, robust strategies that can take advantage of fortuitous opportunities and avoid unexpected difficulties.

Our study, conducted in 1997, used a new approach to make a quantitative assessment of the various trends facing California higher education and to suggest the implications they have for current policy choices. This approach combines two previously distinct strands of strategic planning methodology. The traditional forecasting techniques employed in most studies of California higher education use sophisticated models and available data to project likely trends. These approaches provide much rigor but have difficulty coping with the uncertainty inherent in most decisions. Recently, many public and private sector organizations have begun to use scenario planning techniques that help decision makers bring uncertainty into their planning and help different stakeholders agree on a framework for discussion. However, scenario planning as currently practiced cannot make use of available quantitative information.

Our new approach, called *exploratory modeling*, exploits new computer capabilities to combine quantitative forecasting with scenario planning. Using this approach, we examined how the interrelationship of three key factors—demand for higher education, competition for state revenues, and potential productivity improvements—may affect the future of California higher education. We used computer simulation models and data similar to those used by other studies. Rather than projecting the most likely trends, however, we examined a large number of plausible scenarios for the future. We made visual representations of these scenarios and then used these “landscapes of plausible futures” to clarify key uncertainties facing decision makers, to provide a framework that can be used by the different

stakeholders to debate differing views of the future, and to compare the effects of different policy choices.

While it may seem that abandoning a best estimate for a large set of plausible futures complicates the decision-making problem, it actually provides real and very useful information. Perhaps surprisingly, when we trade the question “What is most likely to happen in the future?” for “Which policy choice deals best with the uncertainty we face?” the complexity posed by an unpredictable future often falls away and reveals a small set of clear choices.

This report focuses on the first step in an exploratory modeling analysis: creating landscapes of plausible futures for California higher education and using these landscapes to identify the uncertainties and trends most salient to decision makers’ choices. In a subsequent effort, we hope to compare the performance of a large number of potential policy choices against these landscapes to help policymakers choose the best policy.

Our study shows that trends in two key areas dominate the question of future access to California higher education: future state funding and feasible improvements in productivity. We found that

- If the fraction of the state general fund allocated to higher education remains close to current levels (breaking a 20-year downward trend) and if productivity increases at faster than historic rates, California will avoid serious access deficits. If either of these fails to occur, however, California could face large access deficits.
- If the fraction of the state general fund allocated to higher education continues to fall, California can maintain access only by increasing fees well beyond any amount now envisioned in the political debate or by achieving productivity increases that are very large relative to historical rates of improvement. At present, it is not known whether such productivity improvements are possible and, if they are, how to achieve them.
- The above conclusions are largely insensitive to any plausible trends in future demand for higher education.

The uncertainties related to the future of California higher education are real and are a fundamental part of the challenge facing policy-makers. Large uncertainties are not, however, a barrier to effective decision making. This study suggests that a flexible, robust strategy for ensuring future access to California higher education must pay close attention to three critical questions: Can the state readjust its financial commitments in order to maintain current funding levels for higher education? Can the higher education system improve its productivity significantly faster than it has over the past 35 years? and Can a public higher education system with high fees and high aid successfully serve a broad spectrum of California's diverse population?