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Closing the Gap

Meeting California's Need for College Graduates

H J • R S

with contributions from Patrick Murphy

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SUMMARY

alifornia is facing a serious shortfall in its supply of college-educated workers. Projections of the state's economy show that it is continuing along a trajectory of steadily

The Need for More College Graduates

The primary focus and function of state and local public policy in California is education. Expenditures on education represent the largest source of state spending, constituting about half of the state's general fund expenditures.

surpassed levels of education reached by young adults in the United States. Indeed, the United States is the only nation in the Organisation for Economic Co-operation and Development (OECD) in which the share of adults with a postsecondary degree is lower among 25- to 34-year-olds than among 45- to 54-year-olds. Among the 30 developed nations in the OECD, the United States has a commanding lead in the percentage of 55- to 64-year-olds with a postsecondary education, but it ranks tied for seventh among younger, working-age adults (ages 25 to 34) with a postsecondary education.[5]

There is some disagreement regarding the "correct" level of college attendance and college graduation and whether increasing the number of college graduates is desirable. One concern is that increasing college attendance and graduation rates will diminish the importance of a college degree and will draw less-able students into college who will benefit only marginally from earning a degree. However, even as college graduation has become more common over the last couple of decades, economic returns to a college education have, in fact, increased. Wage premiums for college graduates are probably at record highs and are certainly at the highest level in decades in both California and the nation (Reed, 2008). Brand and Xie (2007) analyze economic returns to a college education by following several cohorts across time and find that individuals with the lowest propensity of completing college, identified as lower-performing students from disadvantaged socioeconomic backgrounds, actually benefit the most in terms of improved wages after they complete college.

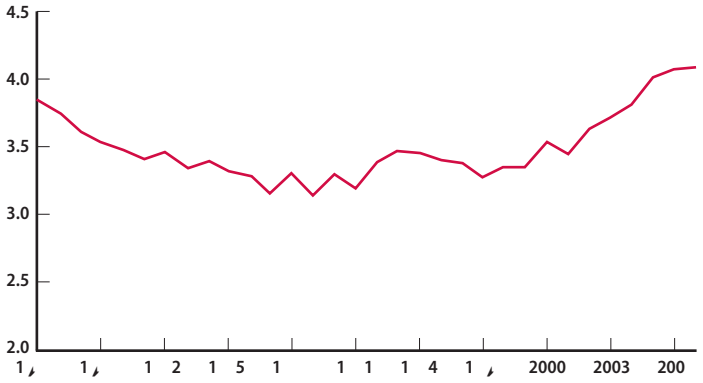
Another concern is whether shortages will exist only in some occupations and industries and thus whether the state needs to encourage study in particular majors in its efforts to improve graduation rates. Aside from the difficulty of projecting the nature of the new skills that might be in demand in 2025 and the specific majors that might offer training in those skills, current research on the returns to a college education suggests although earnings do vary substantially with major, returns are high regardless of major.[6] For example, Robst (2007), using the National Survey of College Graduates, finds that a large share of college graduates work in occupations that are not a good match with their major (55% closely related, 25% somewhat related, 20% unrelated). But he also finds that working in an occupation that is not a good match with a student's major is associated with only a moderate wage penalty (compared to college graduates with a good match) for those least matched (12%) and a very small wage penalty for those somewhat matched (2%). In contrast, the wage premium for college graduates compared to workers with only some college but no degree was over 40 percent in both California and the nation in 2005 (Johnson and Reed, 2007), far higher than any wage penalty associated with working in a job that does not match a college graduate's major. Reed (2008) found that average hourly wages

ing the labor force in large numbers over the next couple of decades; in the past, smaller and less-educated older cohorts were replaced in the labor force by younger, larger, and better-educated cohorts. The retirement of baby-boomers will be the first time that the United States and California have experienced the labor force departure of so many college graduates. Second, California's young adult population is increasingly composed of groups, particularly Latinos, that historically have relatively low levels of educational attainment. Although we see strong intergenerational progress in educational attainment among Latinos, rates of college attendance and especially college graduation remain fairly low, even within the second generation. According to a 2004 college eligibility study by the California Postsecondary Education Commission (CPEC), Latino high school graduates' eligibility at CSU grew from 13 percent in 1996 to 23 percent in 2003, and their eligibility at UC grew from 4 percent to 7 percent. However, these eligibility rates are significantly lower than the rates of other racial/ethnic groups and exclude students who did not graduate from high school.

Although California has fallen behind many other states, the number of college graduates produced by the state's public and private universities has kept pace with the state's population growth over the past several decades. The number of bachelor's degrees awarded annually climbed from 83,000 in 1977 to 153,000 in 2007, an increase of 84 percent. This percentage increase in the number of bachelor's degrees awarded is somewhat greater than the percentage growth in the state's population over the same period (69%).[7] The number of bachelor's degrees awarded per thousand state residents declined from the mid-1970s to the late 1980s but has risen since then (Figure 1). These fluctuations reflect changes in the age structure of the population and changes in college attendance and graduation rates. The most recent increases coincide with considerable growth in the population of young adults as large numbers of children of the baby-boomers enter their prime college-going years.

In the following sections, we first project the number of baccalaureates that would be needed to close, or at least partially close, the education skills gap. We then describe three pathways for arriving at this goal: increasing college attendance, increasing transfer rates from community colleges to four-year universities, and increasing graduation rates at four-year universities. Working with these three pathways, we create two scenarios for closing or partially closing California's education skills gap by 2025, and we then conclude the report with a discussion of the policy implications of our findings.

Figure 1. Bachelor's degrees awarded per thousand state residents, 1976–2007



SOURCE: Authors' calculations based on CPEC and Department of Finance data.

How Many Graduates Will California Need?

If past trends continue, we project that California's economy will demand almost one million more college graduates in 2025 than is likely to be supplied by the state's population (Figure 2).[9] The state's public institutions currently produce slightly over 110,000 baccalaureates each year, and private institutions account for another 40,000 (see the text box, "The Role of Private Institutions"). Altogether, the colleges and universities in California would need to increase the production of baccalaureates by almost 60,000 per year (about 40% above current levels) to meet projected economic demand by 2025. This is a daunting task, of course, and in the near term very unlikely to be achieved.

As we noted above, the projected skills gap is driven primarily by shi□s in population trends rather than by changes in economic trends. Our economic projections represent continuations of long-standing trends in California. For example, from 1990 to 2006, the share of workers with a college degree increased from 25 to 34 percent; our projections indicate that this trend will continue at about the same pace, so that by 2025, 41 percent of workers will need to hold a college degree if the workforce is to meet the demands of the California economy. □ is projected increase will occur partly as the state's economy shi□s to occupations and industries that require more highly educated workers but also as employers demand more highly educated workers within industries and occupations (Reed, 2008). Historic increases in the share of college graduates

Researchers use numerous methods to measure historical trends in transfer rates from community colleges to four-year institutions. Unlike at UC and CSU, where nearly all undergraduate students intend to earn a bachelor's degree, students in community colleges have many di erent goals in mind. us, it is di cult to measure any type of transfer rate without making assumptions about who should be included in the pool of students. A previous PPIC study de ned a transfer-seeking student as one who enrolled in a majority of transfer-level courses in his or her

enrolling in transfer-level English courses without the necessary writing skills. □

fees have risen substantially at the state's public universities, they remain lower in California than in public systems in many other states and are far lower than those of private colleges, although factoring in the cost of living does substantially increase total student costs.

Research on persistence and completion suggests that college costs are an impediment to both college attendance and college graduation but that the burden may be alleviated to some degree by financial assistance. Bettinger (2004) finds that receipt of Pell Grants leads to greater persistence,[17] and Dynarski (2005) estimates that large state merit aid programs in Georgia and Arkansas increase graduation rates by 5–11 percent. However, Dynarski also notes that even with improved aid programs, large shares of students continue to drop out. A concomitant problem is that increasing costs in the form of fees, living expenses, and other education costs have led many college students, especially those at CSU, to work while attending school—a factor associated with lower persistence (CPEC, 2006). California's CalGrant program provides aid for low-income students who meet certain academic criteria and can cover

school graduates in particular, would eventually lead to an increase in the number of bachelor's degrees awarded in California as more students traveled through the system.

Certainly there is room for improvement in college enrollment among California's high school graduates. The share who directly enroll at baccalaureate-granting colleges and universities is lower in California than in other states. In 2004, California ranked 19th among the 20 most populated states, with only 26 percent of high school graduates going directly to four-year colleges. Only Arizona ranked below California, and in four states (Indiana, Massachusetts, New York, and Pennsylvania), direct college-going rates approached 50 percent (CPEC, 2007b). In Texas, the second most populous state and one with a large Latino population, 31 percent of high school students went directly to four-year colleges. Community colleges play a larger role in California than in most other states, but including community colleges in the calculation still leaves California near the bottom in college enrollment rates (Table 1).

Ironically, California's large community college system is also a factor in the state's low attendance rate at baccalaureate-granting institutions. In 2004, 30 percent of California high school graduates enrolled directly in community colleges. However, even including high school graduates who go to community colleges, California ranks 40th among the 50 states in college attendance rates. Only 56 percent of California's high school graduates go on to any college the following year, compared to the national average of 62 percent and rates exceeding 70 percent in New York and Massachusetts (National Center for Public Policy and Higher Education, 2008). Within California, college attendance rates at UC and CSU are especially low among high school graduates from rural counties. However, representative rates in some of the more-populated counties of the San Joaquin Valley are also low, and even below average in the Inland Empire.

An assessment of high school outcomes is beyond the scope of this report, but it is important to note that increases in academic performance and high school graduation rates might also lead to increased numbers of students eligible for college. California's high school dropout rate is estimated by the Department of Education to be 24 percent. (Although there is some debate about the accuracy of the measure, statewide longitudinal data are, for the first time, available to calculate the rate.) Reducing the high

In a similar vein, CSU added course requirements for high school students in 2003, including additional years of history, social science, and laboratory science. CSU eligibility in 2007 stood right at the Master Plan level, with 32.7 percent of high school graduates eligible for enrollment in the CSU system. Were it not for the more-stringent eligibility requirements at both UC and CSU, as well as the California High School Exit Exam, which has restricted the pool of high school graduates in recent years, increasing numbers of high school students would be eligible for UC and CSU.

Of course, not all college students are young adults who enter college directly from high school. Many enter at

older ages and still more return to complete college at older ages. Among freshmen at community colleges in 2007, 36 percent were age 25 or older and 19 percent age 30 or older. At UC and CSU, only about 1 percent of freshmen were age 25 or older. However, some students leave the UC and CSU systems and eventually return as older students, and other older students transfer from the community colleges to UC and CSU. Older students represent a substantial share of seniors at CSU. In 2007, two of every five seniors at CSU were at least 25 years old, and 17 percent were age 30 or older. UC students, in contrast, are typically much younger: Only 11 percent of seniors in 2007 were age 25 or older, and just 3 percent were age 30 or older. College attendance among older adults is generally less promising than among younger adults, at least in terms of economic returns. Older students are less likely to complete college, and the benefits in terms of improved economic outcomes will be smaller, both for the individual and for the state, since older students are likely to be employed for fewer years.

Research shows that tuition costs and parental education can substantially influence trends in college attendance (Kane, 1994). Because California has such a large share of children from relatively poor families and with parents who do not have any college experience,[18] providing information about pathways to college before a child starts high school can be an important and relatively inexpensive way to encourage college attendance. In 2008, the legislature passed and the governor signed SB 890, establishing an "Early College Commitment" program. The program is designed to provide low-income students and their parents with a roadmap to college. Students and their parents sign a pledge to meet certain academic requirements; in return, students are "guaranteed" a spot in college with tuition assistance if their incomes warrant. The tuition assistance is really nothing more than the financial aid already available to low-income students; hence, the program is more of an informational than a financial intervention designed to set children on a pathway to college. California's program is modeled after Indiana's "Twenty-First Century Scholars Program," a statewide early college commitment program developed in 1990 and

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made through improving graduation rates at CSU—the least expensive fiscal option—as well as improving transfer rates, the second-least-expensive option. Still, it would not close the gap entirely, and other forms of postsecondary education including career technical education would be necessary to improve workforce skills and outcomes.

Measuring the fiscal costs of each scenario is not an entirely straightforward process. However, a general relative cost can be considered by comparing instruction-related expenditures per FTE. These figures in 2006–07 were $15,548 for UC, $13,336 for CSU, and $5,751 for the community colleges (Table 3).[22] The much lower expenditures for community college students are notable. However, other issues should also be considered. For example, reducing time to degree will not by itself affect the number of baccalaureates produced in the long run, but it could lead to greater efficiencies and higher completion rates. On average, it takes incoming freshmen at CSU six years to earn a degree, and it takes five years for those at UC. Students can spend four years or more at a community college before successfully transferring, and the cost of large numbers of students who fail to transfer should also be considered. Certainly, increasing college attendance is the most expensive pathway, and it would be less expensive for students to navigate quickly toward transferring from community colleges. However, the least expensive pathway is to improve persistence and graduation rates of students already attending either CSU, where there is much room for improvement, or UC, where there is not much room for improvement. For example, FTE instructional costs for a UC student who graduates in four years would be about $62,000 (four years at $15,548 per year), compared to $42,000 for a UC graduate who goes to a community college for two years and transfers to UC as a junior (two years at $15,548 per year and two years at $5,751 per year). Comparable estimates for a CSU graduate would be $53,000 for those who entered as freshmen and about $38,000 for those who transferre(u) -19 (n)

are qualified do not have the opportunity to go to college, with 81 percent of Latinos voicing this concern. One sign of unmet demand for opportunities within California is that the state, once a net importer of new freshmen, is now a net exporter of freshmen to other states. Net outflows are highest for freshmen attending doctoral or research universities, whether public or private.[26] The flows are relatively small compared to the number of students who remain in the state, but they serve as a marker for opportunities within California relative to other states.

Like many other states, California has pulled back from its commitment to fund public higher education. California's Master Plan was ambitious for its time. In 1960, when the Master Plan was developed, only 20 percent of 19- to 21-year-olds in California were enrolled in college (including community colleges), yet the Master Plan allowed fully one-third of high school graduates to be eligible for UC or CSU. By 2006, the Master Plan had become regressive. More than half (51%) of 19- to 21-year-olds were in college, yet the Master Plan still only allowed one-third of high school graduates to be eligible for UC or CSU.[27] Far higher proportions of high school and community college students intend to complete college than actually succeed in doing so, yet UC and CSU have both raised their eligibility requirements to keep the share of eligible students at levels close to those outlined in the Master Plan.

State policymakers and education leaders could play an important role in revitalizing the state's public higher education system. Certainly a more highly educated population will generate greater tax revenue and, to the extent that education improves cognitive abilities, lead to more rapid economic growth (Hanushek and Wößmann, 2007). Aside from economic and

remediation strategies are essential, as large numbers of students who are not fully equipped to succeed at college-level coursework graduate from high school. Clarifying desired outcomes and aligning fiscal policies with those desired outcomes for all three public school systems would provide the right set of incentives for colleges to identify and incorporate effective policies.

Enrolling and graduating more students from college in California will require additional expenditures. Yet across the nation, tuition and fees doubled from 1970 to 2001 (in constant dollars) but government support per capita rose only 3 percent (National Center for Education Statistics [NCES], 2005). In California, the trends are similar and higher education's share of the state budget is lower now than in 1970. Even the moderate scenario would

Notes

[1] Authors' calculations based on 2006 American Community Survey data; the number includes all students regardless of age

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