



# Student Debt and the Value of a College Degree

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Hans Johnson • Marisol Cuellar Mejia • David Ezekiel  
Betsey Zeiger

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## SUMMARY

**S**kyrocketing tuition and fees, increasing student debt, and a weak economy have led many to wonder whether the benefits of going to college are worth the costs. More students than ever are taking on student loans—a troubling trend that suggests that college is becoming less accessible to many students, even as our economy requires greater numbers of highly educated workers. In this report, we review the status of undergraduate student debt in California and consider it in light of the economic benefits of attaining a college degree.

We find that student debt has increased notably in recent years. In 2010, almost half of California freshmen took out a student loan—ten years earlier, only one-third did so. Moreover, the size of those loans has increased. The average loan amount for freshmen in California increased 36 percent (adjusted for inflation) between 2005 and 2010, reaching almost \$8,000 for that first year alone. Students at private colleges are much more likely than students at the state’s public colleges to take out loans, and the amounts of those loans are substantially higher at private institutions. Of particular concern are students at private for-profit colleges. Almost all students attending those institutions take out loans, and the loan amounts are higher than at any other type of institution.

Despite the increase in debt, college is a good investment for the vast majority of students. Labor market outcomes, including employment and wages, remain far better for college graduates than for less educated workers, and all but the lowest-paid college graduates

earn sufficient wages to pay off average debts. However, certain students do not fare so well. Those who do not finish college have far lower earning potential than those who do. And a small share of students take out massive loans and have trouble paying them back. Default rates are particularly high for students who attend private for-profit colleges.

By keeping tuition low in the past (and even now at community colleges) and, more recently, by expanding grant aid to those attending public institutions, California policymakers and higher education officials have ensured that student debt is lower in California than in the rest of the United States. Relatively high graduation rates coupled with strong labor market outcomes have kept default rates on student loans very low for attendees of the University of California and the California State University, and at almost all private non-profit colleges. Efforts by policymakers to limit state aid to institutions with poor student outcomes, including high student loan default rates, should continue. Almost all of the poorly performing schools are private for-profit institutions.

In an era with seemingly ever-increasing college tuition, the state should find additional ways to make college affordable for greater numbers of Californians. Improving pathways from community colleges, with their very low tuition, to four-year colleges should be a high priority. The new associate degree for transfer is a step in the right direction. Finding ways to help families save for college should be another state priority. One option would be to create a college savings program that guarantees full tuition at the state's public universities. Numerous states have adopted such programs, and hundreds of thousands of families are participating in them. Finally, to keep costs down, state policymakers and higher education officials need to ensure adequate funding of higher education institutions, as well as efficiency in the delivery of higher education. Online offerings are one—as yet unproven—possibility for efficiency gains.

Ultimately, the significance of a college education is larger than the gains enjoyed by any one person. California's future prosperity depends on public policies that promote college enrollment and completion for increasing numbers of Californians.

For the full report and related resources, please visit our publication page:  
[www.ppic.org/main/publication.asp?i=1056](http://www.ppic.org/main/publication.asp?i=1056)

## Introduction

Recent rapid increases in student debt are troubling for a number of reasons. Some have posited that the total amount of student debt has become so large that it will have serious economic consequences, a kind of sequel to the mortgage debt crisis that led to the Great Recession. Another concern is that increasing college costs, coupled with uncertainties about the labor market, will deter students from attending college, even as long-term projections show strong increases in the demand for greater numbers of highly educated workers.

Indeed, lowered rates of college enrollment could have harmful long-term effects on the economy, as employers would not be able to find the skilled workers they need, and less skilled individuals would not be able to find the work they need. PPIC has projected that by 2025, California will face a shortage of one million workers with at least a bachelor’s degree, and others have identified an even greater shortage of workers with other kinds of post-secondary education (Johnson and Sengupta 2009; California Competes 2012).

The cost of attending public colleges and universities has risen primarily because states have withdrawn fiscal support, not because the institutions are becoming less



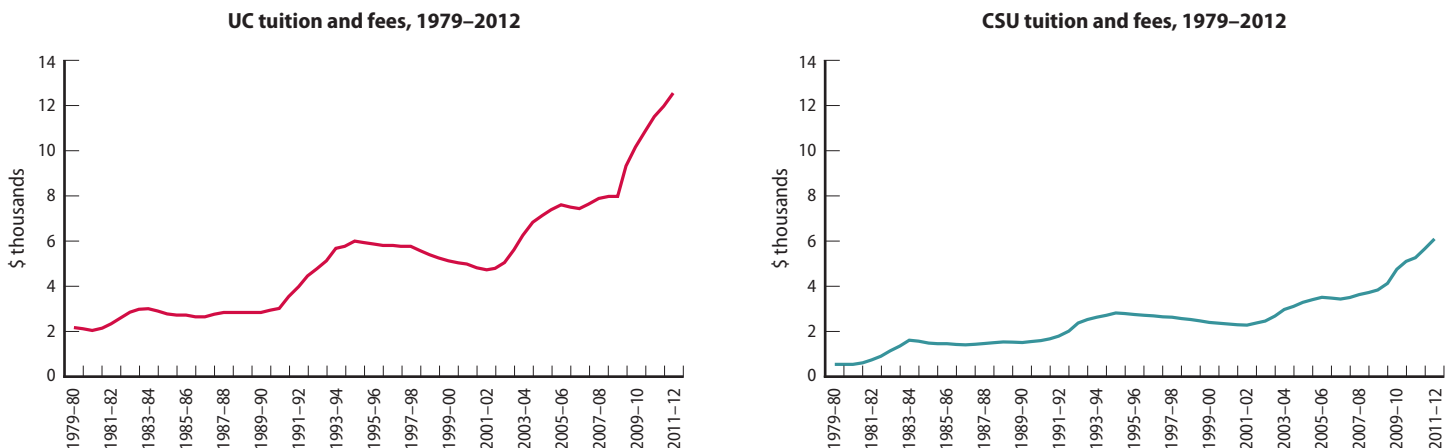
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*Today, nearly half of California freshmen take out student loans, a sharp increase from one-third just ten years ago.*

efficient. In California, reductions in state support have been unprecedented, with total general-fund contributions to the University of California (UC), the California State University (CSU), and the community colleges falling by one-third between 2001–02 and 2011–12. These reductions have occurred even as enrollment has increased.<sup>1</sup>

Tuition and fees have risen dramatically (Figure 1), but not enough to make up for the loss in state revenue.<sup>2</sup> As a result, UC and CSU spend less per capita to educate

**Figure 1. Tuition and fees have risen dramatically**



SOURCES: University of California Office of the President and California State University Chancellor’s Office.

students today than they did just a few years ago. Californians are worried about the affordability of higher education, and the governor has recently attended meetings of the CSU trustees and the UC regents, urging no additional increases in tuition. Student debt is an especially strong concern of Californians, with 78 percent agreeing that “students have to borrow too much money to pay for their college education” (Baldassare et al. 2011).

In this report, we examine undergraduate student debt in light of employment and other labor market outcomes of college graduates in California. First, we examine trends in student debt—the numbers of students taking out loans, the size of those loans, and rates of default. Next, we look at a range of labor market outcomes, including employment, wages, and lifetime earnings, for those with education levels from less than high school to graduate degrees. We also consider the economic returns to particular college majors. Finally, we suggest a number of ways that public policy can address student debt and support college-going in California.

## How Has Student Debt Changed?

Student debt has increased dramatically over the past few years. More students are taking out loans, and the size of those loans has increased, even after adjusting for inflation. The type of institution students attend largely determines their borrowing patterns.<sup>3</sup> For example, the share of students taking out loans and loan amounts themselves are

**The increase in student loans has been particularly sharp in recent years, coinciding with tuition hikes at UC and CSU.**

much higher at private colleges, especially for-profit private colleges, than at public colleges.

The good news for California is that students in the state are less likely than students in the rest of the country

### Measuring student debt

In this study, analyses of student debt are derived primarily from two sources. To examine trends and levels of student debt across time, we rely on institutional data collected by the federal government and made available from the Integrated Postsecondary Education Data System (IPEDS) of the National Center for Education Statistics (NCES) via the Delta Cost Project Database. These data provide the most comprehensive and consistent information on student debt across time, institutions, and states but are limited to summary data based on first-time full-time freshmen.<sup>4</sup> One advantage of focusing on first-time full-time freshmen is that these students are likely to be the group most responsive to changes in the financial demands of attending college.

To examine determinants of student debt and to identify students with very high levels of debt, we use individual records from the Beginning Postsecondary Survey (BPS). The BPS follows a national cohort of college students for six years, providing detailed individual-level data from a relatively limited sample (16,000 participants) of students first entering college in 2003–04. The BPS data allow us to identify California residents at California colleges. Loans other than education loans, such as home equity loans taken out by parents, are not included in the datasets.<sup>5</sup>

Other sources of institutional data that we rely on provide additional measures of student debt, including total debt of recent graduates, but they are less comprehensive across time and institutions (the Common Data Set, for example). The National Postsecondary Student Aid Study (NPSAS) provides institutional measures of debt of all enrolled students (rather than only first-time full-time freshmen), but the most recent NPSAS data are from 2007–08.

Technical Appendix A describes our methods and provides further details about the data.

to take out loans. An important factor in this difference is the large role the public sector plays in higher education in California. A relatively large share of college students in California attend low-cost community colleges. The Cal-Grant program and grants provided by UC and CSU also help to keep loan burdens lower than in the rest of the country. Still, the rise in student debt in California has prompted concern among policymakers, educators, and families.

In this section, we examine the share of students taking out loans and the amount of those loans. We focus on patterns among first-time freshmen, but we note other measures as well (see “Measuring student debt”). We also consider the role of different types of higher education institutions (see “The higher education sector”).

### What Proportion of Students Take Out Loans?

Just ten years ago, less than one-third of California freshmen took out student loans; today, almost half do so (Figure 2). The increase in student loans has been particularly sharp in recent years, coinciding with tuition hikes at UC and CSU. But other factors are also at work—in particular, a rise in the share of students attending private for-profit institutions, where student loans are especially ubiquitous.<sup>6</sup>

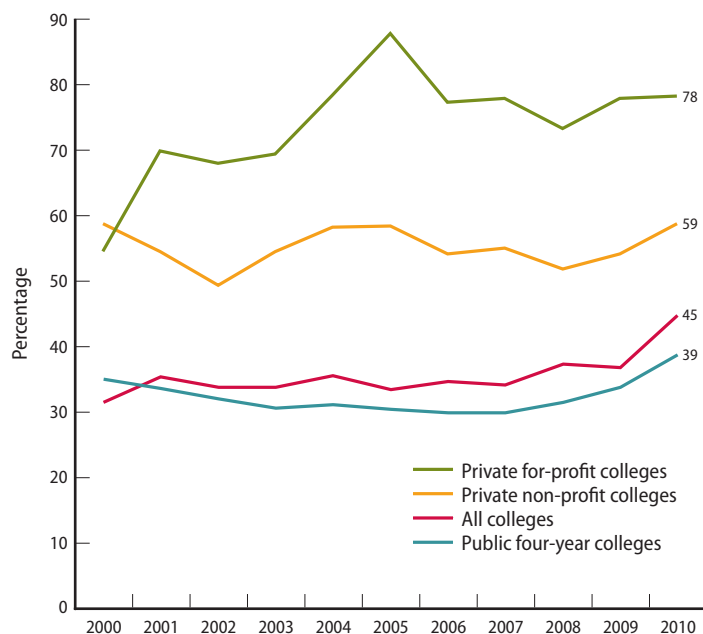
In California, the vast majority of undergraduates, including first-time freshmen, attend one of the state’s public colleges (UC, CSU, or a community college). Both nationally and in California, students at public institutions are less likely than those at private institutions to take out

### The higher education sector

We consider several different sectors of undergraduate higher education in this report, including

- Public four-year colleges and universities. In California, these are the UC campuses and the CSU campuses. In 2010, almost one-third (31%) of full-time freshmen in California attended one of these campuses.<sup>7</sup>
- Public two-year colleges. In California, these are the community colleges. Slightly less than half (45%) of full-time freshmen in California in 2010 attended a community college.
- Private non-profit colleges and universities. These include dozens of colleges in California ranging in size from the University of Southern California, with over 15,000 undergraduates, to very small colleges with fewer than 500 undergraduates. Overall, only 10 percent of full-time freshmen in California in 2010 attended a private non-profit institution.
- Private for-profit colleges and universities. The three largest for-profit educational institutions in California are the University of Phoenix, the Academy of Art University, and DeVry University. In 2010, 14 percent of full-time freshmen in California attended a for-profit college.

**Figure 2. Nearly half of first-year students in California take out loans**



SOURCE: Authors’ calculations based on IPEDS Delta Cost institutional data for first-time full-time freshmen; institutional classification based on Carnegie 2005 classifications.

a loan. Moreover, students at public colleges in California are less likely than students at public colleges elsewhere to take out a loan. This difference is especially pronounced for community college students—in California, only 4 percent of community college freshmen took out loans, compared with 21 percent nationally. This difference is large but not surprising, given that California’s community colleges have the lowest fees in the country and waive those fees for a large share of low-income students.<sup>8</sup>

The small share of students taking out loans at public four-year colleges in California can be wholly attributed to CSU. At CSU, only 33 percent of full-time freshmen took out a loan in 2010, compared with almost half (47%) of freshmen at UC. Lower tuitions help explain the relatively small share of CSU students with loans.<sup>9</sup> Notably, however, the share of students taking out loans at the state’s public research universities (including most of the UC campuses) is similar to the share doing so at public research universities elsewhere in the country.<sup>10</sup>



Private colleges tend to be more expensive than public colleges. Consequently, the share of students taking out loans at these institutions is much higher. In 2010, 59 percent of full-time freshmen at private non-profit colleges in California took out loans, compared with only 39 percent of freshmen at public four-year colleges.<sup>11</sup> The share of full-time freshmen taking out loans is particularly high at private for-profit colleges—about 80 percent. Even when we control for student demographic and economic characteristics, students at private colleges, especially for-profit colleges, are much more likely to take out loans than those at public colleges.<sup>12</sup>

Aside from the type of college a student attends, what factors predict student borrowing? Time in college matters most: The longer students remain in college, the more likely they are to take out a loan. Also, students with less educated parents and those from low-income families are much more likely to take out loans than otherwise similar students. Children of immigrants and Asian Americans are less likely to take out loans, while African Americans are more likely to do so.<sup>13</sup>

### How Large Are Student Loans?

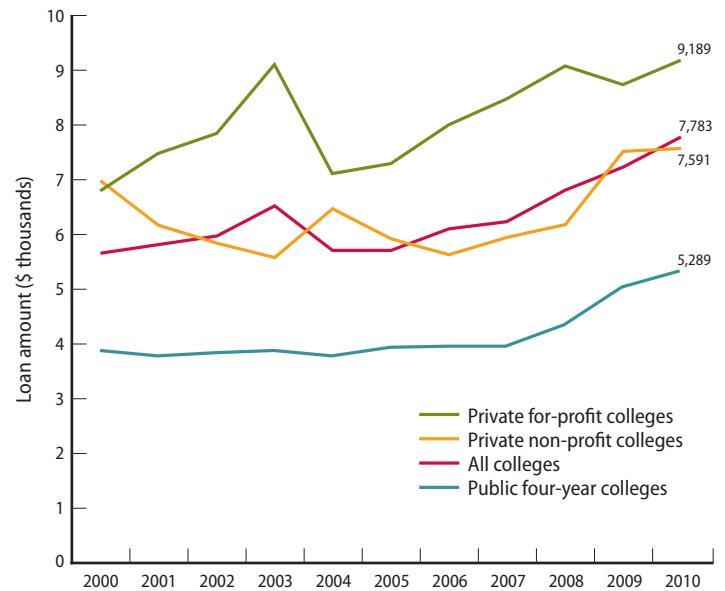
Not only are more California students taking out loans, the amount they borrow has also increased. Between 2005 and 2010, average loan amounts among full-time freshmen rose 36 percent, even after adjusting for inflation (Figure 3).

Loan amounts vary tremendously between public and private colleges. Average loan amounts for freshmen at private for-profit colleges are almost double those for students at public four-year colleges. In 2010, first-year students at private for-profit colleges had loans averaging \$9,189, while first-year student loans at public four-year colleges averaged \$5,289.

In general, loan amounts at California's public colleges are relatively modest. Indeed, freshmen at California's public four-year colleges have lower loan amounts than their counterparts at public colleges in the rest of the country. Average loan amounts are slightly higher at UC than at CSU.

But what happens after that first year? How does student debt accumulate? We looked at debt levels in 2009 for students who had entered college six years earlier.<sup>14</sup> The median accumulated debt for students who had attended

**Figure 3. Loan amounts in California are highest at private for-profit colleges**



SOURCE: Authors' calculations based on IPEDS Delta Cost institutional data for first-time full-time freshmen; institutional classification based on Carnegie 2005 classifications.

NOTES: Sample restricted to students with loans. Loan amounts are converted into 2011 dollars using the CPI-U.

a public four-year college in California was \$14,600. For those who attended a private non-profit college, the median was \$25,500. And for those who attended a private for-profit college, the median was \$12,000 (Table 1). One of the strongest predictors of accumulated debt is the amount of time a student spends in college—more time correlates with higher debt. Although time to degree has declined at UC and CSU, a large share of students take more than four years to complete their degrees.

The lower accumulated median debt among students who attended a private for-profit college may seem surprising, given that we found higher loan amounts among freshmen at those colleges. But students attending these schools are much less likely to finish their degrees and therefore spend less time in college. When we control for years spent in school, we find that students at private institutions—both non-profit and for-profit—acquire substantially more debt than those at public colleges.<sup>15</sup> In fact, students at private colleges, including for-profit colleges, are much more likely to take on large amounts of debt than those at public colleges.

Table 1. Students at private colleges take on more debt

	Accumulated debt (\$)				
	10th percentile	25th percentile	50th percentile	75th percentile	90th percentile
<b>California</b>	3,800	9,500	15,000	25,000	40,000
Public four-year	3,000	9,700	14,600	19,800	26,000
Private non-profit	4,800	11,100	25,500	41,900	53,000
Private for-profit	3,400	5,400	12,000	29,000	45,800
<b>Rest of U.S.</b>	4,200	9,900	17,100	28,000	42,900
Public four-year	3,700	8,500	16,500	25,000	39,800
Private non-profit	6,000	12,300	20,000	34,100	49,900
Private for-profit	4,200	9,900	16,800	29,500	45,000

SOURCE: Authors' estimates based on the BPS.

NOTE: Based on 2009 data for a sample of students with loans who entered four-year colleges as freshmen in 2003–04.

For example, 10 percent of students at private non-profit colleges in California accumulate at least \$53,000 in debt, compared with \$45,800 at private for-profit colleges and only \$26,000 at public colleges (Table 1). These patterns hold true even when we control for a variety of student characteristics, including family income, and for net tuition costs.

We find that, among students at four-year colleges, Asian and Latino students are less likely than others to take on debt and less likely to take on large amounts of debt. In addition, students who attend colleges with high tuition (not offset by grants) are more likely to take on excessive debt. (See Technical Appendix C for full results.)

### Default Rates

Many are concerned that student debt may constitute a future credit crisis similar to the recent crisis in the housing market. One way to assess the urgency of this concern is to look at default rates. According to the U.S. Department of Education, which calculates borrower default rates by institution for federal student loans, California's default rates are similar to the national average but have risen sharply in recent years.

Default rates are very low at UC, CSU, and private non-profit colleges in California but quite high at community colleges and private for-profit institutions (Table 2). The share of community college students who take out

loans is extremely low, so even though the default rates are high, the number of students involved is quite small. In contrast, students at private for-profit institutions make up 49 percent of students in default, although they account for only about 10 percent of all enrolled students in the state.<sup>16</sup> Clearly, the students most at risk of defaulting are those who attend private for-profit institutions.

In general, students who attend for-profit colleges appear to be at risk of not making strong returns on their college investment. Specific information for California is hard to come by, but one study based on national data suggests that these students have annual wage earnings \$1,800 to \$2,000 lower than they would have had if they had gone to a public or non-profit institution (Deming, Goldin, and Katz 2012). The same study found that beginning students at for-profit institutions accumulate larger student debt, are more likely to default on their student loans, and have poorer employment outcomes in the medium term. In addition, completion rates of students at for-profit institutions are much lower than those of students starting in four-year public and non-profit schools (an estimated 12-percentage-point completion deficit for students starting bachelor's programs at for-profit institutions).

These differences are significant even after adjusting for student characteristics (for-profit institutions disproportionately attract minority, older, independent, and disadvantaged

**Table 2. Half of California students in default attended private for-profit colleges**

	Number of institutions	Students in default	Students in repayment	Default rate (%)
Public	154	8,406	128,009	6.6
UC	11	759	33,690	2.3
CSU	23	3,300	66,205	5.0
Community colleges	114	4,326	27,952	15.5
Private non-profit	136	4,113	88,141	4.7
Private for-profit	238	12,211	126,174	9.7
California total	528	24,730	342,324	7.2

SOURCE: U.S. Department of Education, "Official Cohort Default Rates for Schools."

NOTES: Official two-year cohort default rates published for schools participating in Title IV student financial assistance programs. See Appendix E for more information. State summary tables show similar statistics. Total includes institutions that do not grant degrees.

students). Students who begin at for-profit colleges are also less likely to state that their education was worth the amount they paid for it and less likely to think their student loans were a worthwhile investment, according to the same study.

## Is College Still Worth It?

For students who cannot afford college without taking out loans, the key economic question is whether it is better to go into debt to attend college or go to work directly out of high school. The answer depends a great deal on how much a college degree can improve one's wages and employment prospects. In this section, we examine labor market outcomes—wages, employment, and lifetime earnings—for a range of education levels. We also break down wages according to college major and look at the wages of individuals who earn more than a bachelor's degree.

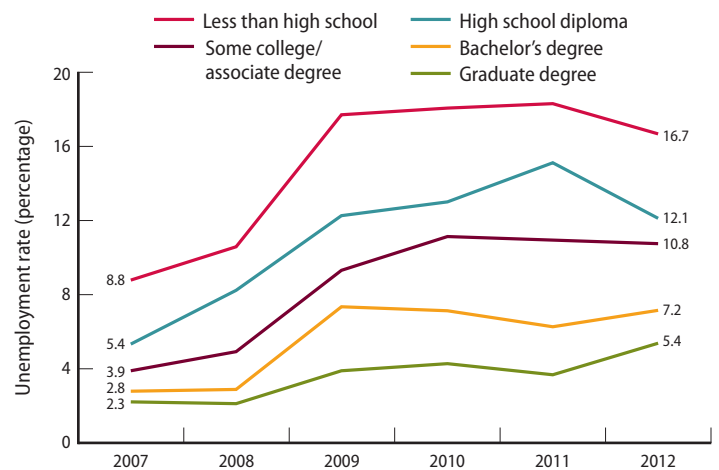
### Employment

The Great Recession and subsequent slow recovery have hurt the employment and wage prospects of college graduates, but workers with a college degree still fare far better in the labor market than less educated workers. Indeed, differences in unemployment rates between highly educated and less educated workers are wider now than they were before the recession. Pre-recession, the unemployment rate for workers with only a high school education

was 5.4 percent, 2.6 percentage points above the rate for those with a bachelor's degree. By 2012, the unemployment rate was 12.1 percent for high school graduates and 7.2 percent for four-year college graduates—a 5-percentage-point difference (Figure 4).<sup>17</sup>

For new entrants to the labor market, the distinctions are even sharper. The unemployment rate of high school graduates 18 to 22 years of age increased from 16.9 percent in 2007 to 29 percent in 2011, while for four-year college graduates 22 to 26 years of age, the unemployment rate increased from 6.7 percent to 10.5 percent.<sup>18</sup>

**Figure 4. Less educated Californians face higher unemployment rates**



SOURCE: Authors' analysis of Current Population Survey, Annual Social and Economic Supplement.

NOTE: Civilian population 25 years old and older.



Not only are college graduates more likely to be employed, they are also more likely to end up in jobs with greater stability. Among full-time year-round workers, 24.1 percent have a bachelor's degree and 18.7 percent have a high school diploma only.<sup>19</sup> In contrast, among those who work less than full-time year round, 18.7 percent have a bachelor's degree and 19.8 percent have a high school diploma only.

Underemployment is much higher among those with less education. Underemployed workers include those who

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### Differences in unemployment rates between highly educated and less educated workers are wider now than they were before the recession.

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are unemployed but actively seeking employment, potential workers who want work and are able to work but are not actively looking for a job, and part-time workers who want full-time work but cannot find it due to economic reasons. High school graduates have an underemployment rate of 23 percent, while those with a bachelor's degree or higher have an underemployment rate of 11.8 percent.<sup>20</sup>

Finally, labor force participation is lower among those with a high school diploma only. Among people 25 to 64 years of age, 72 percent of those who had completed high school (but did not attend college) participated in the civilian labor force in 2012, compared with 83 percent of those with a bachelor's degree. A recent study found that over the course of their working lives, adults with a bachelor's degree or more will spend 6.8 more years employed than those with a high school diploma only (Stiles, Hout, and Brady 2012).

### Wages

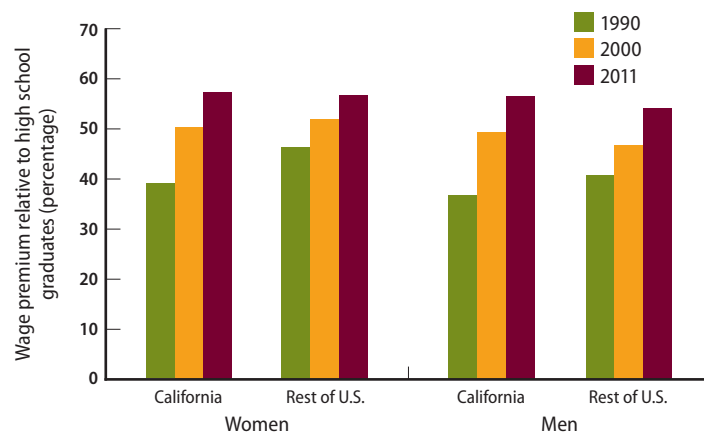
Measuring the causal effect of college on wages is difficult. In this analysis, we use the standard ordinary least-squares approach to estimate wage differentials between college graduates and high school graduates controlling for personal characteristics. Research evidence suggests that this approach overestimates the effect of college on an indi-

vidual's earnings, given that wage earnings potentially correlate with unobservable characteristics that determine education choice (for example, higher skilled people are more likely to attend and finish college). However, a thorough survey of the literature suggests that this upward bias is rather small—about 10 percent.<sup>21</sup>

On average, college graduates earn significantly higher wages than those with a high school diploma only, a phenomenon known as the college wage premium. In California, the college wage premium increased rapidly through the 1980s and 1990s. This growth occurred even as the share of workers with a bachelor's degree grew. During the 2000s, the premium has experienced a much slower rate of growth but has persisted at historically high levels. These trends are not unique to California—they are also occurring nationally.

In 1990, a woman with a bachelor's degree working in California earned 39.1 percent more than one who had only a high school diploma (Figure 5). In the case of male workers, the difference was 36.7 percent. By 2011, the difference had grown to 57.3 percent for women and 56.5 percent for men. This means more than an 18-percentage-point increase over a 20-year period. (In the rest of the nation, college wage premiums are slightly lower, and the increase between 1990 and 2010 was more modest.)

**Figure 5. The returns to a college education have grown significantly**



SOURCE: Authors' analysis of the 1990 and 2000 Decennial Census and 2009–2011 multiyear ACS.

NOTES: Full-time year-round workers ages 25 to 64. See Technical Appendices B and D for more information.

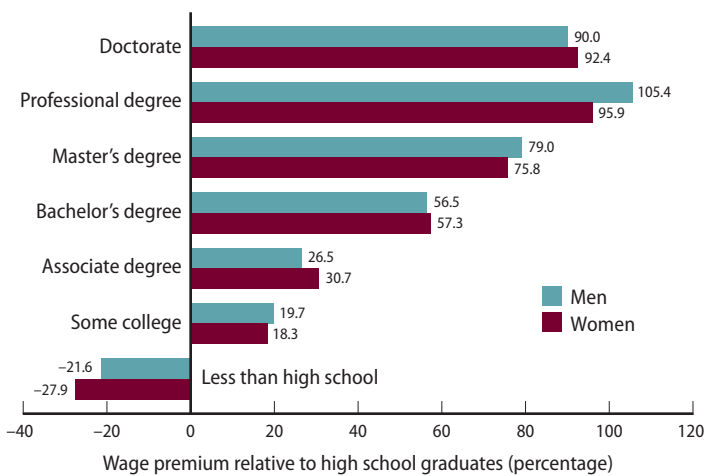
Workers with an associate degree and even those with some college education but no degree still enjoy an important wage premium over those who completed only high school. Wage premiums for those who earn a graduate degree are even higher, between 75 percent and 105 percent over the premiums for those who earn a high school diploma only (Figure 6).

**Do College Majors Matter?**

Wages vary tremendously depending on the worker’s college major (Figure 7). At the high end, those with an engineering degree earn a median annual wage of \$96,000. At the low end, those with a degree in education administration and teaching have a median annual wage of \$57,000. But even this lower amount is substantially more than the wages of those with a high school diploma only—their median annual wage is \$39,000.<sup>22</sup>

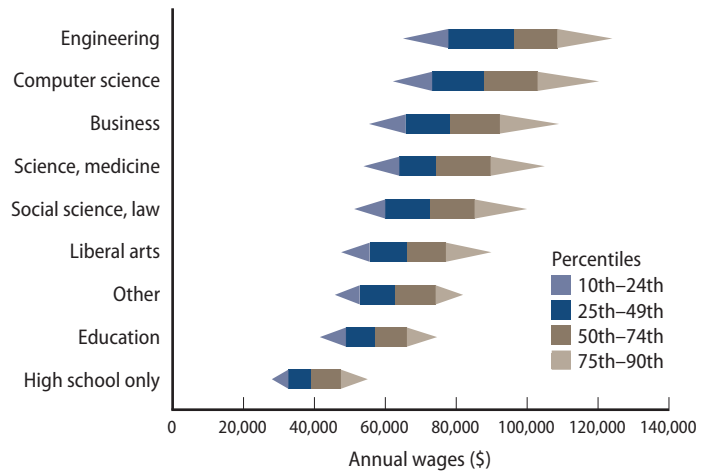
Regardless of major, there is a wide disparity in wages between the highest- and lowest-paid college graduates. For example, annual wages for someone with a bachelor’s degree in liberal arts range from \$48,000 to \$90,000 (comparing graduates at the 10th percentile of the wage distribution with those at the 90th percentile). For those with an

**Figure 6. All levels of higher education confer significant wage premiums**



SOURCE: Authors’ analysis of the 2009–2011 multiyear ACS.  
 NOTES: Full-time year-round California workers ages 25 to 64. See Technical Appendices B and D for more information.

**Figure 7. Wages vary tremendously depending on the worker’s college major**



SOURCE: Authors’ analysis of the 2009–2011 multiyear ACS.  
 NOTES: Full-time year-round California workers ages 25 to 64. See Technical Appendices B and D for more information.

engineering degree, the range is even wider, from \$65,400 to \$124,200. Given these wide ranges, it is difficult for students to easily predict their future wages and therefore to weigh the economic value of a college degree and their ability to pay back loans.

Furthermore, some high school graduates are high earners, and some college graduates are low earners.<sup>23</sup> A worker with a college degree who is at the bottom of the wage distribution could very well earn less than a high-wage worker with only a high school diploma. For example, 15.6 percent of high school graduates earn more than education majors, who are at the bottom (the 25th percentile) of their wage distribution. The share of high-wage high school graduates (the 90th percentile) who earn more than low-wage college-educated workers (the 10th percentile) varies from 8.5 percent to 42.7 percent, depending on major. But for every major, the median wage of high school graduates is below that of college-educated workers.

Not only is there a wide disparity in wages among the most highly paid and least highly paid college graduates, the gap has grown over time. Wages at the higher percentiles have grown faster than those at the bottom of the wage distribution. This increase in wage inequality among

college graduates could be due to an increase in the disparity of skills or to dispersion in labor market demand for college graduates.<sup>24</sup>

### Lifetime Earnings and the Cost of College

The difference between the wages earned by higher- and lower-educated workers compounds over a lifetime. A typical California worker with only a high school diploma can expect to earn about \$1 million over a 40-year work life. A worker with a bachelor's degree can expect to earn \$1.9 million.<sup>25</sup> In addition, lifetime earnings across college majors vary substantially. The estimated 40-year work-life earnings of workers with only a bachelor's degree range

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from \$1.36 million for those with a degree in education administration and teaching to \$2.27 million for those with a degree in engineering.<sup>26</sup>

How does the cost of college stack up against these lifetime earnings? And how much income do students lose by paying for college rather than earning money right off high school? The average individual return to education is only one component in a full analysis of the private returns to education, which would have to balance individual costs against a flow of such returns over a working life.

Tuition and fees vary significantly depending on where students attend college. Currently, the estimated gross expenses for tuition and fees at a four-year public institution in California are about \$52,800. This figure is an upper threshold, as it does not take into account grant aid and federal income tax benefits. For most students, out-of-pocket expenses are significantly lower.

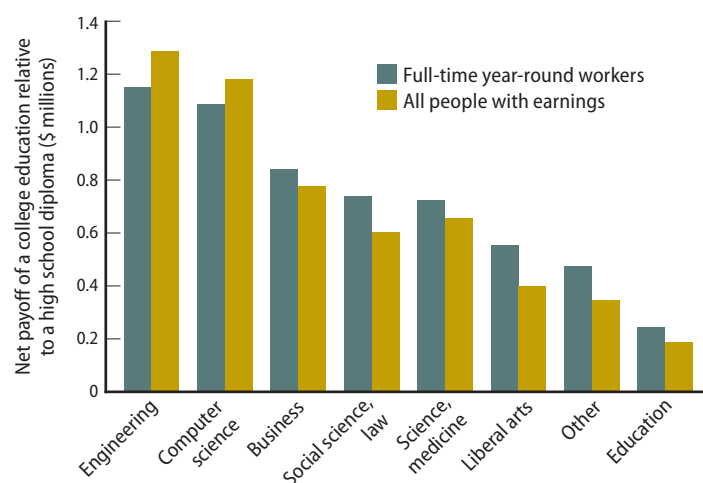
Let us assume that a student completes a bachelor's degree in four years. The median wage for a high school graduate in prime college-going years is \$20,300 a year,

which means that someone pursuing a bachelor's degree will forgo about \$81,300 in earnings.<sup>27</sup> When the cost of attending college and the forgone earnings are subtracted from the lifetime wage gains that college graduates experience, the net payoff of pursuing a bachelor's degree is still significant, varying on average from \$0.24 million to \$1.15 million during a hypothetical 40-year working life (Figure 8).<sup>28</sup>

As this exercise shows, the economic returns of attaining a bachelor's degree are, on average, quite large regardless of major. Average loan debts are relatively low in comparison with the average economic returns to earning a college degree; consequently, paying back student loans should not pose a huge financial problem for the typical college graduate.

Still, some students and their families might have trepidation about taking out loans because of uncertainty about future wages. Graduates in the least remunerative majors who are at the bottom of the wage distribution and have large student debts may very well have difficulty paying back their loans. Those who took out loans for college but never graduated are at higher risk still. Even though our estimates suggest that the typical college graduate will enjoy a significant wage premium over the individual with

**Figure 8. Lifetime wage differences between college graduates and high school graduates vary by major**



SOURCE: Authors' analysis of the 2009–2011 multiyear ACS.

NOTES: California workers ages 25 to 64. See Technical Appendices B and D for more information.

a high school diploma only, there are, of course, no guarantees. The recent increases in student debt are worrisome in part because it is difficult to predict where in the wage distribution a college graduate will end up—which inevitably affects his or her ability to make good on student loans.

## Policy Recommendations

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A highly educated and highly skilled population confers both public and private benefits. Research has shown strong public returns (including higher tax revenues) to public investments in higher education in California (Stiles, Hout, and Brady 2012). Nevertheless, the state has increasingly shifted the burden of paying for higher education from the state to the student, and even gaining access to college has become more difficult (Bohn, Reyes, and Johnson 2013; Johnson 2012). For growing numbers of students, loans are an essential component of financing a college education.

This report has shown that for most students, future incomes will be sufficient to repay student loans. Indeed, if taking out loans allows a student to enroll in and complete college, assuming debt can be a very smart economic choice. In such cases, public policy should seek to provide more opportunities for students by making loans more available and affordable. However, student debt can be a problem if graduates are not able to pay back their loans—especially if they cannot pay off their loans because they received a low-quality education and/or took on an exorbitant amount of debt. Public policy should seek to find ways to prevent such outcomes.

Of particular concern are students at private for-profit colleges. Labor market outcomes are worse and debt levels much higher for these students. In contrast, most students who attend private non-profit and public four-year colleges have quite manageable student debt, and their labor market outcomes tend to be stronger. In recognition of these differences, policymakers and higher education officials have enacted new requirements that limit institutional eligibility for grants and loans. For example, the California state legislature has recently required higher education institutions

to meet specified default rates and graduation rates in order to participate in the Cal Grant program.<sup>29</sup> Efforts by policymakers to limit state aid to institutions with poor student outcomes, including high debt loads, should continue.

In many ways, California has done a good job of helping students afford college. Higher education policies have until recently kept tuition low at UC and CSU. In addition, as tuition has increased, more grant aid has been provided for low-income students. California's policy of directing many students to community colleges rather than the more expensive public four-year colleges has also kept debt levels in check.<sup>30</sup>

However, tuition has continued to increase rapidly, and many students still need loans. Some have suggested that the state establish its own loan program, as several other states have done. Massachusetts, for example, has established an educational financing authority that offers low-cost loans to students attending college in the state. The authority is self-financing and issues bonds to generate the initial capital required to fund the program. Interest rates on the loans it provides are lower than those for unsubsidized loans, and repayment periods can be longer.

While there might be merit in developing such a program in California, a better option is to ensure greater use of federal student loans, as well as federal and state grants. Providing accurate information to students is key. One study indicates that a majority of undergraduates with private loans (which tend to be risky and expensive) could have taken out more in federal loans.<sup>31</sup> Income-based repayment plans are an important component of federal student loans that allow students to repay their debt even if their wages are relatively modest.

In addition, California could create programs to encourage parents to save more money for their children's education. State prepaid savings programs are one option (see Technical Appendix F). In Florida, for example, more than 300,000 students have attended college under a prepaid savings plan. For such programs to be successful, the state must make accurate actuarial projections and its public colleges must have agreements with it regarding future funding and tuition.

Increasing efficiencies in higher education is yet another way to lower student debt. Improving completion rates and decreasing time to degree (or time to transfer) are two of the most important efficiency gains policymakers and higher education officials can pursue, since the more quickly students complete their education, the lower their loan amounts are likely to be. Several efforts in these areas are under way or have been proposed recently, including efforts by the community colleges (based on recommendations of the Student Success Task Force), CSU's graduation initiative, and the governor's proposal to eliminate state

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**For every dollar California spends on its public colleges, it receives more than four dollars in additional tax revenue generated by college graduates.**

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funding for students who have excessive units. The efficacy of these efforts should be monitored on an ongoing basis. Of course, it is important to keep in mind that recent increases in tuition at public colleges in California are not driven by increases in the cost of providing instruction to students but are instead attributable to a decline in state funding. (Colleges have only partially made up for the loss in state funding by charging higher tuition.)<sup>32</sup> Online offerings have been suggested as another way to more effectively and efficiently provide higher education courses. Online course offerings have increased dramatically, especially at California's community colleges, but the efficacy and cost savings of online instruction still need to be determined.

The creation of a state higher education coordinating body (as proposed by California Competes, a group of independent business and civic leaders) would help policy-

makers plan for the future of higher education. Prioritizing and targeting public investments in higher education should be informed by rigorous analyses based on good information and data, which a higher education agency could and should provide.

Finally, the state's primary goal in establishing any new financing program should be to encourage more students to enroll in and complete college. To the extent that college costs are preventing students from doing so, finding ways to reduce those costs is essential for the state's future prosperity. In the past, California provided large subsidies to students attending the state's public colleges by providing general fund support to colleges for undergraduate instruction. Subsidies were so large that private contributions, through tuition and fees, made up only a very small share of the actual cost of a college education.

Today, students at UC and CSU pay a large share of the cost of their education. Privatizing the cost of college attendance might not necessarily be a bad policy, given the state's limited resources and the strong private returns to completing college. But it is important to remember that college graduates contribute enormously to the public good. One study estimates that for every dollar the state spends on its public colleges, it receives more than four dollars in additional tax revenue generated by college graduates (Stiles, Hout, and Brady 2012).

Over time, California has seen strong intergenerational economic progress, fueled largely by improvements in college enrollment and completion. It is perhaps no coincidence that at the same time the state has privatized more of the costs of attending UC and CSU, those generational gains have slowed and perhaps even ceased. California's future prosperity depends on substantial increases in college enrollment and completion. Achieving those increases will require new efforts by state policymakers and higher education officials to make college accessible and affordable. ●

Technical appendices to this report are available on the PPIC website:  
[www.ppic.org/content/pubs/other/613HJR\\_appendix.pdf](http://www.ppic.org/content/pubs/other/613HJR_appendix.pdf)



## Notes

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<sup>1</sup> Between 2001–02 and 2011–12, state general funds for UC, CSU, and the community colleges were cut by \$4 billion (in real terms).

<sup>2</sup> One-third of the fee increases have been used to provide grants to low- and middle-income students, thereby reducing the net revenue generated by the increases. Tuition and fees have increased at the state's private colleges and universities as well (see Technical Appendix A).

<sup>3</sup> In this report, we focus primarily on public colleges, private non-profit colleges, and private for-profit colleges. We categorize these institutions into two-year colleges and four-year colleges; two-year colleges typically offer associate degrees and vocational certificates, and four-year colleges offer bachelor's degrees (and often graduate degrees).

<sup>4</sup> The Delta Cost Project Database provides institutional longitudinal data on the vast majority of colleges and universities in the country. The data are assembled from IPEDS. Freshmen are identified based on the location of the college, not necessarily the student's state of residence. See Lenihan (2012) for details.

<sup>5</sup> Most student loans are federal or institutional loans. Nationwide, about 14 percent of undergraduates had private loans in 2007–08. Only 4 percent of students at public two-year colleges had private loans, compared with 42 percent of students at private for-profit colleges (TICAS 2011). Private student loans are included in the BPS data, but not loans to parents, such as home equity loans.

<sup>6</sup> Between 2000 and 2010, the number of full-time freshmen at for-profit colleges in California almost doubled (growing 89%, compared with 43% for all other colleges in the state). Private for-profit college reports typically show more students with loans than full-time freshmen. Those colleges typically have many part-time students and rolling enrollment, with students enrolling at many different dates. For them, we have used the reported percentage of students with loans (averaged across all institutions and weighted by each institution's reporting of the number of full-time freshmen).

<sup>7</sup> Authors' calculations based on IPEDS Delta Cost institutional data for first-time full-time freshmen. Sample restricted to two-year and four-year colleges.

<sup>8</sup> Moreover, several California community colleges do not participate in federal student loan programs.

<sup>9</sup> Students at CSU are less likely to receive grant aid than those at UC. In 2010, 64 percent of CSU full-time freshmen received either a federal, state, or institutional grant, compared with 72 percent at UC.

<sup>10</sup> Based on the authors' analyses using IPEDS data comparing public universities classified by Carnegie as having the highest level of research activity.

<sup>11</sup> Net tuition, taking into account institutional grants, is also higher at private colleges.

<sup>12</sup> Based on the authors' analyses using the BPS. See Technical Appendix C for details.

<sup>13</sup> Based on the authors' analyses using the BPS. See Technical Appendix C for details.

<sup>14</sup> We analyzed data from the BPS to develop these figures. See Technical Appendix B for a description of the data and methods.

<sup>15</sup> This finding holds true even if we consider only those who took out loans, a much less common practice at public colleges than at private colleges. See Technical Appendix C for details.

<sup>16</sup> For-profit private colleges account for 14 percent of freshman enrollment. This is higher than the overall share of enrollment for these institutions partly because of higher dropout rates.

<sup>17</sup> By high school graduates, we mean students who have completed high school but have not attended college. By college graduates, we mean those who have completed a bachelor's degree.

<sup>18</sup> Based on American Community Survey (ACS) data.

<sup>19</sup> American Community Survey 2011.

<sup>20</sup> Based on data from the Economic Roundtable, accessed at [www.economicrt.org/download/data\\_tools.html](http://www.economicrt.org/download/data_tools.html).

<sup>21</sup> Our analysis of wage premiums relies on standard human-capital earnings functions. Specifically, wage premiums are estimated using regressions of the log of annual wages on education categorical variables. These models are estimated separately by gender and year and control for potential experience and personal characteristics such as race, ethnicity, marital status, and citizenship status. However, given the potential for the unobservable characteristics that determine education choice to also be correlated with wage earnings, the estimated wage premiums reported in Figure 5 do not necessarily measure a purely causal effect of education. Estimation strategies that attempt to identify causal effects (controlling directly for unobserved ability, using

instrumental variables, relying on twins' studies, etc.) also find a high and rising college wage premium. A thorough survey of the literature concludes that the average (or average marginal) return to education is not much below the estimate that emerges from a standard human-capital earnings function fit by ordinary least squares (OLS). Evidence from the latest studies of identical twins suggests a small upward "ability" bias in the OLS estimates—on the order of 10 percent (Card 1999). In our analysis, we treat separately those with only a bachelor's degree and those with a graduate degree. Therefore, our estimates of the college wage premium could also be biased (downward) because of the selection effect of not going on to earn a graduate degree.

<sup>22</sup> See Technical Appendices B and D for details. These figures are adjusted based on wage regressions that control for potential experience and personal characteristics.

<sup>23</sup> One possible explanation for the great wage dispersion that exists among workers with comparable levels of education and experience is the complementarity between ability and education—if higher-ability persons earn more, this might explain the higher returns in the upper deciles of the wage distribution. Quantile regression techniques allow for heterogeneous returns and therefore are used to address the relation between education and wage inequality. Quantile regressions parsimoniously describe the entire conditional wage distribution.

<sup>24</sup> There are many possible reasons for the increasing wage inequality among college graduates. For example, it could be the result of a demand-driven increase in the return to skills linked to school quality, intrinsic ability, effort, motivation, perseverance, etc. Or it could be that the dispersion in unobserved skills may be growing over time. For example, if unobserved skills are more dispersed among older and more-educated workers, dispersion in unobserved skills could increase because of composition effects linked to the aging and increasing educational achievement of the workforce (Lemieux 2006a).

<sup>25</sup> We discount future earnings at an annual rate of 3 percent. Synthetic work-life earnings are estimated using one-point-in-time cross-sectional data, as opposed to following a single cohort from the start of the work life to the end. In other words, this methodology estimates the amounts that young workers will earn over the course of a hypothetical 40-year work life if they are paid in the same manner as older workers today. Therefore, these figures are only suggestive and not predictive of accumulated future earnings, as earnings differences observed today may not continue in the future. In addition, these estimates cannot account for an individual's past partial employment or unemployment, which may reduce current full-time earnings.

<sup>26</sup> Based on the authors' analyses of 2009–2011 ACS. See Technical Appendices B and D for more information.

<sup>27</sup> Forgone earnings are equal to the median salary earned by a full-time year-round worker with a high school diploma 20 to 24 years of age, multiplied by four. Many students take longer than four years to earn a degree, in which case, forgone earnings would increase.

<sup>28</sup> When people who work less than full time are included, the net payoff decreases for all but the engineering and computer science majors, varying from \$0.19 million to \$1.29 million.

<sup>29</sup> At the national level, the U.S. Department of Education has introduced a requirement that institutions receiving Title IV federal funding must adequately prepare graduates for gainful employment. State attorneys general and class-action plaintiffs have also filed and settled lawsuits against institutions accused of deceptive and unfair business practices. Accrediting agencies also play a role in determining institutional eligibility. (See Technical Appendix F for a discussion of the state and national policy environments.)

<sup>30</sup> As outlined in the state's Master Plan for Higher Education, the top eighth of high school graduates are eligible for admission to UC and the top third are eligible for CSU. Community colleges provide higher education access to all other high school graduates.

<sup>31</sup> See TICAS (2011), available at [http://ticas.org/files/pub/critical\\_choices.pdf](http://ticas.org/files/pub/critical_choices.pdf), for an excellent discussion of the issue and best practices.

<sup>32</sup> See Johnson (2012) for a discussion of budget cuts and expenditures at UC and CSU.

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## About the Authors

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**Hans Johnson** is co-director of research and a Bren fellow at the Public Policy Institute of California. His work focuses on the dynamics of population change in California and policy implications of the state's changing demography, with a focus on higher education. At PPIC, he has conducted research on education projections and workforce skills, population projections, international and domestic migration, and housing. Before joining PPIC as a research fellow, he was senior demographer at the California Research Bureau, where he conducted research on population issues for the state legislature and the governor's office. He has also worked as a demographer at the California Department of Finance, specializing in population projections. He holds a Ph.D. in demography from the University of California, Berkeley.

**Marisol Cuellar Mejia** is a research associate at the Public Policy Institute of California's Sacramento Center, where her work focuses on tracking economic and demographic trends that shape policy issues in the state. Her research interests include labor markets, housing, business climate, workforce skills, and higher education. Before joining PPIC, she worked at Colombia's National Association of Financial Institutions as an economic analyst, concentrating on issues related to the manufacturing sector and small business. She has also conducted agricultural and commodity market research for the Colombian National Federation of Coffee Growers and the National Federation of Palm Oil Growers of Colombia. She holds an M.S. in agricultural and resource economics from the University of California, Davis.

**David Ezekiel** is a research associate at the Public Policy Institute of California. In 2010, he worked as a summer intern with PPIC's survey team as part of a project sponsored by the California Endowment. Before joining PPIC, David worked as an intern at the City of Berkeley Public Health Division, where he worked on Latino health issues and the Heart 2 Heart community health survey. He holds a B.A. in public health from the University of California, Berkeley.

**Betsey Zeiger** is a Ph.D. student in school organization and education policy at the University of California, Davis. Her research primarily focuses on higher education policy, particularly at California community colleges. She also teaches in the Hospitality, Recreation and Leisure Department at California State University, East Bay. Betsey holds a B.A. in economics from the University of California, Berkeley, and an M.A. in education from California State University, East Bay.

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PUBLIC POLICY  
INSTITUTE OF CALIFORNIA

PUBLIC POLICY INSTITUTE OF CALIFORNIA  
500 Washington Street, Suite 600 • San Francisco, California 94111  
Telephone 415.291.4400 • Fax 415.291.4401

PPIC SACRAMENTO CENTER  
Senator Office Building • 1121 L Street, Suite 801 • Sacramento, California 95814  
Telephone 916.440.1120 • Fax 916.440.1121

