THE FUTURE OF ECONOMIC MOBILITY, WORKFORCE, AND INEQUALITY

A CALIFORNIA 100 REPORT ON POLICIES AND FUTURE SCENARIOS

CALIFORNIA 100
VISION & STRATEGY FOR THE NEXT CENTURY
ABOUT CALIFORNIA 100

The California 100 Initiative envisions a future that is innovative, sustainable, and equitable for all. Our mission is to strengthen California’s ability to collectively solve problems and shape our long-term future over the next 100 years.

California 100 is organized around 15 policy domains and driven by interrelated stages of work: research, policy innovation and engagement with Californians. California 100’s work is guided by an expert and intergenerational Commission. Through various projects and activities, California 100 seeks to move California towards an aspirational vision—changing policies and practices, attitudes and mindsets, to inspire a more vibrant future.

This California 100 Report on Policies and Future Scenarios was produced as part of California 100’s research stream of work, in partnership with 20 research institutions across the state. California 100 sponsored grants for data-driven and future-oriented research focused on understanding today and planning for tomorrow. This research, anchored in California 100’s 15 core policy domains, forms the foundation for the initiative’s subsequent work by considering how California has gotten to where it is and by exploring scenarios and policy alternatives for what California can become over the next 100 years.

The California 100 initiative is incubated through the University of California and Stanford.

CALIFORNIA 100 RESEARCH TEAM

Henry E. Brady, Ph.D., Director of Research
Lindsay Maple, M.P.P., Senior Research Analyst
Ava Calanog, M.P.P., Assistant Director of Research

THE CALIFORNIA 100 EXECUTIVE LEADERSHIP TEAM

Allison Berke, Ph.D., Director of Advanced Technology
Henry E. Brady, Ph.D., Director of Research
Amy Lerman, Ph.D., Director of Innovation
Jesse Melgar, M.P.P., Director of Engagement
Karthick Ramakrishnan, Ph.D., Executive Director

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For additional background information, read the related Facts-Origins-Trends report at California100.org. The Facts-Origins-Trends report contains all of the references and citations to support the content of this report.

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This Report is one of 15 reports that will be released in 2022 as part of the California 100 Initiative. We are proud to partner with the following research centers and institutes across California on our work:

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One of the grand challenges of our time is the reinvention of our economy and society to keep up with AI and the acceleration of technology. The mission of the Stanford Digital Economy Lab is to advance our collective understanding of the digital economy so that we can build a tech-driven economy that benefits everyone. The Lab is part of the Stanford Institute for Human-Centered Artificial Intelligence (HAI) and co-sponsored by the Stanford Institute for Economic Policy Research (SIEPR).

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The Stanford Institute for Economic Policy Research (SIEPR) is Stanford University’s home for understanding the economic challenges, opportunities, and policies affecting people in the United States and around the world. The Institute’s mission is to catalyze and promote evidence-based knowledge about pressing economic issues, leading to better-informed policy solutions for generations to come. SIEPR envisions a future where policies are underpinned by sound economic principles and generate measurable improvements in the lives of all people.
THE FUTURE OF ECONOMIC MOBILITY, WORKFORCE, AND INEQUALITY REPORT AUTHORS:

Erik Brynjolfsson  Director, Stanford Digital Economy Lab and The Jerry Yang and Akiko Yamazaki Professor, Stanford Institute for Human-Centered AI

Mark Duggan  The Trione Director, Stanford Institute for Economic Policy Research and The Wayne and Jodi Cooperman Professor of Economics, Stanford Department of Economics

Christie Ko  Executive Director, Stanford Digital Economy Lab

Dan Sholler  Project Scientist, Technology Management Program, University of California, Santa Barbara

Report development, revisions, and publication by California 100

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FOREWORD

“As California Goes, So Goes the Nation, Alas.” That was a headline from a *Los Angeles Times* opinion column on April 30, 1989, which noted that, even though “Californians have long considered their state the cutting edge of social and political change... [it] no longer seems the vanguard of political innovation. Other states rarely look to California for policy initiatives.”

Fast-forward to 2022, and few would proclaim that California lacks in policy innovation. Quite the contrary. The state has enacted a variety of policies ranging from expansions in immigrant rights and voting rights to health care and higher education, and from large-scale experiments in guaranteed income to ambitious moves towards net-zero emissions in a variety of sectors. And despite the periodic waves of “doom and gloom” reporting about the state, California's economic output over the last 25 years has grown faster than the national average, and on par with GDP growth for the state of Texas.

Even so, much remains to be done. The California Dream has always been marred by a high degree of racial exclusion, and it remains out of reach for millions in the state—whether measured by health outcomes, unaffordable housing, or massive disparities in income and wealth. California also recognizes that future progress depends on recognizing and correcting historical wrongs. Its Truth and Healing Council, for example, will provide recommendations aimed at prevention, restoration, and reparation involving California Native Americans and the State. If California’s racial diversity represents America’s demographic reality by 2100, our work is essential—not only for the long-term success of the state, but also for our country’s innovative and equitable future.

This future-focused work is especially pressing today. The COVID-19 pandemic has scrambled a state and nation already undergoing significant changes in economics, politics, and society. The harmful consequences of climate change are at our doorstep,
with forest fires and droughts that grow in frequency and intensity each year. The weakening of local media and the growth of disinformation threaten both our civic health and our public health. And staggering inequities in income and wealth, homeownership and health, threaten the state’s reputation as a haven for migrants, domestic and international alike.

In addition to immediate threats that affect our long-term future, we also see plenty of opportunity. Record increases in federal and state spending mean that billions of additional dollars are flowing to state, local, and tribal governments in California. Many jurisdictions are looking to invest in infrastructure that meets the long-term needs of their communities. Philanthropic institutions and individual donors are also looking to make transformative investments that have enduring impact. We have an opportunity to inform and enrich all of these plans and conversations.

Most institutions and organizations in California are focused on immediate challenges, and don’t have the luxury of time, dedicated talent, and resources to focus on long-term futures. California 100 is grateful for the opportunity to provide added value at this critical time, with actionable research, demonstration projects, and compelling scenarios that help Californians—government agencies, stakeholder groups, and residents alike—to envision, strategize, and act collectively to build a more innovative and equitable future.

Karthick Ramakrishnan, Ph.D.  Henry E. Brady, Ph.D.
Executive Director         Director of Research
Residents and policymakers in California often cite an intriguing fact when discussing the state’s economy: California, if ranked as a nation, has the fifth largest economy in the world, perhaps even larger when considering non-GDP metrics such as consumer surplus. What’s more, California’s culture of innovation and productivity places it in a position of economic leadership and influence in the United States. The state’s ethos of innovation and productivity has drawn top American and international talent to the state for hundreds of years,
California’s workers are the engines of the state’s economic power and the reason 10 percent of Fortune 1000 companies call California home.

creating a diverse workforce who facilitate robust cultural and economic production. Knowledge, art, and entertainment created in California can be found globally. Startups in the Bay Area and beyond design and deploy cutting-edge technologies that take hold all around the world. The state’s agricultural valleys feed the nation by producing over half of the country’s vegetables, fruits, and nuts, and 13 percent of the nation’s cash farm receipts. California’s deepwater ports provide gateways for international trade that have supported the United States’ growth on the global stage. Millions of tourists flock to coastal beaches, awe-inspiring mountain ranges and glacial valleys, and towering redwood forests each year.

The size and stability of these industries places California among the largest contributors to the U.S. economy, teaming with New York and Texas to contribute 40 percent of the nation’s total GDP. California’s workers are the engines of the state’s economic power and the reason 10 percent of Fortune 1000 companies call California home. The combination of a strong workforce, dynamic organizations, increasing foreign investments, and embrace of new technologies generates an economy that shows few signs of easing its dominance, with productivity
growing faster than all but three other states. The state’s resilience is evident even amidst the COVID-19 pandemic, with the state’s operating budget surplus growing to a record $75 billion, revenue per employee reaching a record $1.5 million, and state GDP increasing 30 percent more than the increases in Texas and New York during 2021. All outward signs point to a continued economic dominance both in the U.S. and internationally.

But underneath these signs of prosperity, California is struggling with a pressing problem: The state exceeds all but five others in income inequality. Well-publicized housing problems and strained social safety net programs provide evidence of this inequality’s consequences. In 2021, housing costs and overwrought social safety net programs left at least 160,000 Californians without a home in the same state where just 2 percent of the population holds 20 percent of the state’s $6.3 trillion in net worth. Among all workers, 35 percent earn less than $15 per hour despite living in metropolitan areas that rank among the nation’s highest in cost-of-living. Wages for the 90th percentile of earners—those with wages above $50 per hour—have increased 60 percent since 1980, while earners in the 10th percentile have largely seen wages decline in the same period. The wage scenario is compounded by the lack of quality of jobs available to median- and low-earners. Among all employed Californians, fewer than half report being in a “quality” job.
California’s Polarized Workforce

Any mention of jobs in California brings to mind Silicon Valley and the technology industry. A drive across the state’s major highways, however, gives a more complete picture of the state’s economy: farmland, factories and warehouses, universities, hospitals, state parks, and windmills dot the landscape. Aged school buses usher immigrant farm workers down grove-lined highways from field to field, towing portable toilets. Big rigs move trailers and shipping containers between ports, railroad depots, and distribution centers. Commuter cars ranging from Mercedes-Benz and Teslas to vintage classics and discontinued Geo Trackers and Kia Spectras carry workers to and from their jobs and their recreation. In short, the California economy and its workforce are diverse, complex, and ever-changing.

California’s economy once benefited from strong population growth, with immigration and domestic migration supplying a talented and diverse workforce. By 2000, however, California’s population growth rate had slowed to the national average of less than 1 percent and continued to decline: between 2015 and
2020, California’s population grew at just 0.2 percent, about half of the national average. Studies show that these declines resulted in part from a 55 percent reduction in international migration to the U.S. and a tripling of net domestic migration away from the state between 2015 and 2020. The reasons for slowing population growth are likely even more complex and intertwined, with tax increases, job opportunities in other states, and California’s high cost-of-living contributing to the trend.

An additional factor may also be contributing to California’s slowing growth rate: an observable increase in occupational, skill, and wage polarization that includes growing income inequality and other related phenomena. We focus on polarization as the key obstacle for California policymakers, organizations, and educational institutions to address when considering how to promote economic mobility, equality, and a thriving workforce.

Scholars of work and employment define “employment polarization” in a number of different ways. Some definitions are based on skills and occupations, highlighting a gap between the set of skills required for entry-level, low-paying jobs and the skills needed to perform in higher-paying, higher-quality jobs in upper levels of an organization. This body of research shows that polarization makes it difficult to climb the ladder of a given occupation without formal, resource-intensive education or training. In other words, workers struggle to achieve mobility between these two types of occupations because occupational ladders are often missing many rungs: workers cannot readily acquire necessary skills to move towards higher-paying, higher-quality jobs by doing entry-level work. The skills present in entry-level warehouse work, for example, do not translate well to a career in warehouse robotics; likewise, customer service skills do not align with the skills needed to change industries altogether and become a backend software engineer. Advancement out of entry-level jobs, then, is increasingly difficult as jobs polarize.
Despite robust job growth over the past half-century, the average Californian has not benefited from the state’s thriving economy. Since 1979, California has increased its total number of jobs by 174 percent. Growth in the quantity of jobs, however, does not tell the entire story of California’s economic and workforce health. The majority of job growth in recent decades occurred in what we define as low-quality and high-quality jobs. In other words, California has done a very good job of creating high-quality jobs, has performed less

**Figure 1** California Has Created Many High-Quality Jobs Since 1979, But Has Done Poorly in Creating Middle-of-the-Road Jobs

**SOURCE:** UC Berkeley Labor Center, Low-Wage Work in California Data Explorer

**NOTE:** The 10th percentile represents the bottom 10 percent of wages in California, while the 90th percentile represents the top 10 percent of wages.
well in preventing the growth of low-quality jobs, and has done poorly in creating middle-of-the-road jobs (see Figure 1). The core takeaway from all of these indicators is that incomes and wages in California are on a trajectory of increasing polarization—a high proportion of workers earning low- and high-wages, with little growth in the wage percentiles that represent middle-class occupations.

While startling, these job quality and income data are not without optimistic counterparts. Growth in high-quality jobs outpaced growth in low-quality jobs, so the proportion of high-quality jobs relative to the total number of jobs is increasing. Likewise, the state’s performance on per capita income has remained above the national average for decades: In 1958, California’s per capita personal income was around 125 percent of the national average; in 2020, it was about 118 percent of the national average. Good performance on per capita income comes, of course, with the caveat that the cost-of-living is higher in California than other states in the country. But signs of promise and progress should be considered alongside the signs of struggle.

California is also making progress on economic issues that intersect with social safety and health. Just 7.7 percent of Californians lack health insurance, for example, owing to a robust Medicaid and Medicare expansion at the federal and state levels. Furthermore, healthcare access expansion at the federal level did not have statistically-significant detrimental effects on the labor market, indicating that Americans continued working even as their healthcare decoupled from their employment. California’s labor force participation rate, as discussed later in this report, has shown signs of decline, but there is no indication that access to healthcare is a root cause. Widely-used measures of poverty also demonstrate some progress. California’s poverty rate, in part due to the expansion of social safety net programs, has declined from 12.7 percent in 2000 to 11.8 percent in 2019—a hopeful sign given that the national poverty rate increased over the same period.

Wage and income polarization has nonetheless persisted in California, even as the state has made incremental progress in health care expansion and strengthening the social safety net. More work is needed to continue positive trends, reverse the trend of polarization, and revitalize the state’s middle class. We begin the process of targeting polarization’s root causes by identifying some of the phenomena that signal the growing distance between California’s top and lowest earners.

**DECOUPLING WAGES AND PRODUCTIVITY**

Contextualizing the polarization of jobs and wages requires assessing whether these poles developed in response to productivity trends. Employers, in other words, may be keeping wages low for a substantial portion of the workforce to accommodate downward trends in their productivity. Recent analysis from Bloomberg, though, shows that the last two and a half decades have seen a steady increase in revenue per employee in the state, maintaining a rate above the national average in
the mid-2010s into the 2020s (see Figure 2). Likewise, Bureau of Labor Statistics data indicates that between 2007 and 2017, California’s labor productivity growth was fourth-best in the U.S. at 1.7 percent, while real hourly compensation grew by just 0.8 percent, good for 12th best in the country. It appears that wages in California, then, are decoupled from productivity, and/or that productivity gains are being reinvested into the top end of the workforce (e.g., by the creation of “superstar” firms). The latter explanation aligns with observations of high-quality, high-wage job growth outpacing middle and low-quality jobs.

**Figure 2**  
Productivity, U.S. and California, 1995-2021

![Productivity Chart](image-url)  
**Source:** Bloomberg, June 2021
Additional research on the general trend of wage-productivity decoupling identifies technological development and globalization as other possible causes. Technological innovation tends to be skill-biased, meaning that new production technologies increase the demand for educated, experienced labor over unskilled labor as cause and consequence of skilled workers’ technology-enabled productivity gains (and a greater share of work being done by technologies rather than low-skill labor). The globalization argument for wage-productivity decoupling suggests that the availability of low-wage labor and inputs at the global scale produces cost and productivity benefits that do not translate into higher wages locally. In reality, “The Great Decoupling” in California and the U.S. is likely the result of a combination of factors.

No matter the cause of decoupling, it is essential to understand the additional factors that contribute to increasing polarization in the Californian job market. Causal mechanisms are difficult to test because each industry has its own sets of determining factors (e.g., labor markets, average profit margins, and regulatory environments). We can, however, assess some of the factors that are correlated with low and high wages to identify the levers policymakers and other stakeholders have available for narrowing income inequality and promoting a less polarized workforce.

**CALIFORNIA’S EDUCATIONAL DISPARITIES LEAD TO WORKFORCE AND INCOME DISPARITIES**

The disparity between wages for college-educated workers and non-college-educated workers in California supports the above suggestion that productivity increases find their way to high-wage workers to the detriment of mid- and low-wage workers. College degree holders in California saw wages increase 30 percent since 1980 and non-degree holders saw a slight decrease, resulting in college degree holders earning $2.20 for every $1 that non-degree holders earn. Thus, education disparities provide further evidence of occupational polarization and lend insight into its causes.

The preference that employers have for paying college-educated workers more than workers without college degrees is evident in the composition of the most common high-earning jobs in California. Computer hardware engineers, compensation and benefit managers, professional medical workers (e.g., dentists, psychiatrists, and surgeons), financial managers, architectural and engineering managers, and information technology professionals rank among the highest-paid workers in the state. The lowest earners include frontline food service workers, merchandise handlers and shipping clerks (e.g., warehouse workers),
African American and Latino Students Have Lower Access to Classes That Grant Eligibility to the UC/CSU Systems

Figure 3

SOURCE: GreatSchools, May 2017

agricultural graders and sorters, farmworkers, and frontline hospitality workers (e.g., hosts and ushers)—jobs that require little to no education.

California’s K-12 system is also a source of polarization, both in the state’s general performance against other states and in its specific curricula to prepare students for jobs of the future. In the general sense, research and the lived experiences of California’s families suggest that the 1978 passage of Proposition 13 was a watershed moment in the state’s K-12 spending. The proposition had the effect of shifting the source of education funds from local property taxes—at the time making up about 60 percent of education budgets—to the overall state budget. Prior to its passage, California spent more per pupil than the national average. By 1983, however, spending per pupil had dipped below the national average as state officials made cuts to balance state budgets. Outperformance of other states in per-pupil spending never returned, with California now ranked 41st in the U.S.

California’s cuts in education spending occurred just as the state’s K-12 student population was rapidly diversifying. A 2017 study by nonprofit GreatSchools found that in California, “Only 2 percent of African American students and 6 percent of Hispanic students attend a high performing and high opportunity school for their student group, compared with 59 percent of white and 73 percent of Asian students.” Unequal access to high-quality K-12 education impacts under-resourced students’ ability to gain admission to the state’s and country’s premier higher education institutions (Figure 3); given that college education
is a strong predictor of high wages in California, these disparities thus have enduring impacts on the job prospects of California’s most disadvantaged students and communities.

The relative decline in general education spending undoubtedly placed students at a disadvantage that likely carried over into their earning potential as adults. The situation has been aggravated by a lack of success in educating California’s students toward in-demand skills, particularly in computer science. Take, for example, the state’s computer science offerings in public schools from a recent analysis by the Kapor Center; despite being a leader in technological innovation, California performs worse than the national average, with just 42 percent of high schools offering at least one computer science course compared to 47 percent nationally. The schools hardest hit by limited computer science offerings are those in low-income areas, those with high numbers of Black, Indigenous, Latino, and Pacific Islander populations and those in rural areas. According to research, “Students in low-income communities were over two times less likely to have access to computer science courses than their counterparts in high income communities.”

GEOGRAPHIC DISPARITIES IN JOBS AND WAGES

Collective action at the state level has perhaps been difficult to achieve because of a practical reality: California is the third largest state by total area in the nation. Accordingly, local economies drastically differ by region. This geographic diversity provides both data to substantiate the polarization of jobs and wages in the state and a target for identifying polarization’s root causes. Aligning with common refrains about the “coastal elite,” wage and income data suggest that high-wage jobs do tend to be concentrated in coastal metropolitan areas and low-wage jobs tend to be concentrated inland (see Figure 4).
Figure 4  Average Weekly Wage by County, Fourth Quarter 2020

SOURCE: Bureau of Labor Statistics, August 2021
The Bay Area, for example, has the lowest percentage of workers earning less than $15 per hour, due at least in part to the rapid growth of the technology industry. Workers in Fresno, just a few hours’ drive from the Bay Area, suffer from the highest percentage of workers with low wages—40 percent earn less than $15 an hour, likely due to the concentration of agriculture and e-commerce jobs that have characterized the economy in recent decades. We can find similar—and stark—gaps in wages between coastal Los Angeles and the Inland Empire and between San Diego and Imperial County. Finally, regions where agriculture, logging, mining, and other local sources of revenue have declined suffer even more from regional disparities in wages than regions that have managed to maintain these outputs or have successfully diversified their local economy.

Lower cost of living in the inland areas compared to coastal areas helps to make up some of the wage differences, but state-specific poverty tools like the California Poverty Measure suggest that some areas remain in a disadvantageous position even when cost of living is factored out. The unequal geographic distribution of wages is therefore a pressing issue in need of creative solutions. Geographic disparities are not only critical to address because of the wages themselves, but also because of the divergent characteristics in the mix of jobs in each area. The San Joaquin valley, for example, is home to oil fields, farms, prisons, and warehouses. Workers in entry-level positions in these industries may have less of an internal ladder to climb. Likewise, workers cannot readily transition to careers in industries with higher quantities of well-paying jobs, such
as technology or finance centers in the Bay Area and Los Angeles, without uprooting their families and other aspects of their lives (e.g., finding housing or transferring children’s schools). In other words, California’s geographic diversity of jobs reduces workers’ ability to easily transition into industries with higher-earning occupations, exacerbating polarization. As Figure 5 shows below, these disparities also impact the poverty rates of different demographic communities. Specifically, Latino and Black Californians experience substantially higher poverty rates than white Californians.

**Figure 5**  Latinos Have the Highest Poverty Rates in California

<table>
<thead>
<tr>
<th>Category</th>
<th>Poverty Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Latino</td>
<td>21.4%</td>
</tr>
<tr>
<td>Black</td>
<td>17.4%</td>
</tr>
<tr>
<td>All Californians</td>
<td>16.4%</td>
</tr>
<tr>
<td>Asian/Pacific Islander</td>
<td>14.5%</td>
</tr>
<tr>
<td>Multiracial and other</td>
<td>12.9%</td>
</tr>
<tr>
<td>White</td>
<td>12.1%</td>
</tr>
</tbody>
</table>

**SOURCE:** California Poverty Measure, 2019  
**NOTE:** Most categories show responses about race from the American Community Survey. People of any race who report Hispanic, Latino, or Spanish origin are defined as Latino and categorized by their responses to that question.
According to the California Future of Work Commission (2021), “nearly 45 percent of 7 million Californians living in poverty report-ed living in a family with at least one family member working full-time.” Working poverty is a difficult issue to address via traditional mechanisms because of the limitations on working people’s time and energy. Higher education, for example, is further out of reach for the working poor than those without jobs even when financial assistance is readily available. Californians working in poverty therefore rely upon large social safety net programs to meet basic needs. The Public Policy Institute of California (2020) estimated that without these programs, 6.6 percent more Californians would live in poverty.

Various social safety net programs have been effective in combating working poverty. The federal Earned Income Tax Credit and Child Tax Credit combined with state programs such as CalFresh, CalWORKs, California Earned Income Tax Credit (EITC), the Young Child Tax Credit, and General Assistance lowered poverty by over 5 percentage points. The effects of these programs are largest in the most impoverished regions of California, such as the inland regions and the Sierras. It stands to reason, then, that social safety net programs should be regionally targeted to reduce poverty.

Addressing working poverty and poverty in general will be central to the state’s efforts to create equal opportunities and outcomes for racial and ethnic demographic groups. Twenty-one percent of Latino Californians, 17.4 percent of African American/Black Californians, and 14.5 percent of Asian American/Pacific Islander Californians experience poverty compared to 12.1 percent of white Californians. And while California has long prided itself on welcoming immigrants, poverty rates among those moving here is much higher than average: 21.6 percent of immigrants are in poverty compared to 14.4 percent for non-immigrants, with the number jumping to 35.7 percent for undocumented Californians.
ECONOMIC SHIFTS IN CALIFORNIA’S REGIONS

Economic shifts in California are deeply tied to the state’s geographic and demographic diversity and history. We focus here on the period from 1979 to 2021 in California’s various regions.

SAN DIEGO: FROM DEFENSE TO BIOTECHNOLOGY

San Diego developed much of its economy around its deepwater port, initially supporting U.S. Navy installations. The economy gradually diversified post-Cold War, with the port becoming a center for international trade and tourism: Port trade eclipsed $7 billion by 2019 and cruise ships created a portion of the estimated 160,000 jobs—13 percent of all jobs in San Diego County—in tourism. Regional business-friendly policies created an environment in which companies that originated their business under defense contracts could commercialize their technologies and services (e.g., Qualcomm). These favorable conditions help San Diego attract small businesses and startups. The area’s biotechnology startup growth, for example, is facilitated by strong life sciences education programs, robust hospital systems, and proximity to major ports for imported components.

The diversity of San Diego’s industries has contributed, at least in part, to the area’s polarization of jobs and wages. As of 2018, 27.3 percent of San Diego residents were defined as being in economic hardship; between 2007 and 2018, the proportion of total income declined by 9.73 percent for the bottom fifth of earners and increased 3.64 percent for the top fifth. Low incomes among the top industries in San Diego are concentrated in retail trade and hospitality/food service, while the region’s science and technology and public administration earn the highest median incomes.

SOUTH COAST: FROM AEROSPACE TO AGGLOMERATION

The South Coast region (composed of the counties of Ventura, Los Angeles, and Orange) became a national leader in the aerospace industry during the 1970s and 1980s: over a quarter million residents in Los Angeles County alone worked in aerospace each year, including 1 in 3 manufacturing workers and a third of the nation’s aerospace engineers. Defense companies benefited from large federal defense contracts (e.g., $18 billion total in 1988) and provided well-paying manufacturing, production, and engineering jobs. Average pay in the aerospace industry stayed above 100 per-
percent of comparable jobs in other industries in all occupational groups. Growth in aerospace enabled expansion of the financial services industry and international trade via the Port of LA and Port of Long Beach.

However, as Figure 6 demonstrates, downturns in defense spending in the early 1990s cut the number of aerospace jobs in half from mid-1980s levels. A statewide recession exacerbated the problem, leaving workers with few opportunities to move to equal or better paying jobs. Many workers left the region, while immigrants moved in. L.A.’s Latino population increased from 18 percent of total residents to 47 percent between 1970 and 2000. But the well-paying manufacturing and production jobs never returned, contributing to the region and state’s current overrepresentation of Latino workers in low-wage jobs.

**Figure 6** Decline in Manufacturing Employment in Los Angeles Area

The Inland Empire consistently ranks among the fastest-growing metropolitan areas in the country. Citrus farming drove the area's nineteenth century economic development, while heavy manufacturing and military bases sustained the region's economy during the Cold War era. The warehousing industry absorbed land along Interstate 10 (the “San Bernardino Freeway” going from Los Angeles to San Bernardino) beginning in the 1970s and 1980s and accelerating around the time of the housing market downturn in 2008. The combination of major highway access, railways, cheap land, and proximity to the Los Angeles and Long Beach ports made the Inland Empire an ideal landing place for logistics firms who sought to capitalize on increased flows of goods from Asian and Latin American countries. Local governments eager to promote new jobs also offered various incentives to warehouse developers, in contrast to community opposition to higher-density warehouse construction in open-space areas of Los Angeles and Orange County. Warehouse construction then continued eastward throughout the 1990s and 2000s, partially due to labor availability in Black and Latino communities that were decimated by military base closures and declines in construction jobs following the housing foreclosure crisis. For reference, Amazon—which only began opening warehouses in California around 2012—now operates 14 facilities in the region and has become the area’s largest employer with at least 40,000 employees.

From 2010 to 2019, the logistics sector accounted for 26.2 percent of the region’s new jobs. BLS data indicate that these are largely entry level-jobs such as stockers, order fillers, and material movers. These figures do not include a substantial number of temporary laborers—many of whom bounce between warehouses, customer service positions, and the remaining agricultural jobs. Temporary workers accounted for about 60 percent of all warehouse workers in 2013, leading to the temporary staffing industry growing 575 percent between 1990 and 2007. Each of these sets of jobs pays somewhere around the minimum wage. The growth in temporary employment coincided with the rapid growth of the warehousing industry, indicating the industry’s dependence on on-demand staffing. Temporary labor arrangements exacerbate occupational polarization because job tasks are designed to be learned in a day or less (i.e., skill-building is unlikely to occur when working in a job designed to be temporary).
The Central Coast is perhaps best known for its natural beauty, attracting tourists from other California regions and the rest of the world who come to visit Big Sur or drive down the scenic stretches of Highway 1 and Route 101 where farmland and the ocean sit next to one another. The natural amenities have historically been drivers of the region’s economy via agriculture and fisheries. Salinas, for example, is home to under 160,000 residents but contributes an estimated $8 billion economic impact from the production of staple crops like lettuce, celery, broccoli, and strawberries. Agriculture in the Central Coast has been both a source of occupational polarization as well as a driver of efforts against polarization. Temporary labor agencies occupy at least five of the top 20 spots on the list of largest employers in Monterey County. These agencies provide cheap, temporary labor—often via workers on H-2A visas—to farms for crop management, harvesting, and packing.

The region is emerging as a site of development for at least two types of technology that are critical to California’s future: agricultural technology (AgTech) and aerospace. Both industries benefit from the region’s proximity to the Bay Area, yet the proximity has so far discouraged technology companies from locating in the Central Coast towns in which they deploy their products. The Central Coast is so critical to AgTech that Forbes holds its annual AgTech Summit in the region each year. Vandenberg Space Force Base is also a major driver of the Central Coast’s economy: The base provides roughly 16,000 jobs in Santa Barbara and San Luis Obispo Counties, a figure that research from the California Polytechnic Institute (2021) projects will grow by over 1,700 jobs per year in the coming decade as the base becomes a launchpad for private companies such as SpaceX.
The San Joaquin Valley (SJV) runs through the geographic center of California and is home to roughly 4.3 million people. 60 percent of the 8.4 million acres is farmland, with just 6 percent qualifying as urban centers. The area produces more than half of California's agricultural output and contributes $160 billion in GDP. The SJV's economy has also been partially dependent on oil production, with Kern County at its southern end producing 68 percent of California's oil. Land availability for farming and oil production, though, has decreased due to intense drought, suburban development, and environmental regulations. The passage of the Sustainable Groundwater Management Act is projected to reduce the amount of land used for farming and oil by at least 10 percent.

Recent economic development has been driven by private and public real estate development of cheap land. Prison development is of particular importance to the regional economy. The region is home to a total of 13 correctional facilities out of 35 in California and to 11 of the 22 prisons built in California since 1987, but it has only one (UC Merced) of the ten University of California campuses and only three (CSU Bakersfield, Fresno, and Stanislaus) of the 23 California State Universities. At least two California prisons, however, are closing as part of a broader budget directive to save the state $400 million per year. One of these (Deuel Vocational Facility) is in San Joaquin County. The other is in Lassen County in the northeastern part of California. The closures will undoubtedly impact the local economies. For example, the facility in Susanville in Lassen County employed 45 percent of the town's workforce with an average pay of $87,500 before it closed in 2021. Likewise, Lassen Community College's 1,500 students included 200 inmates during any given year; dairy farmers sold large quantities of milk and other goods to the prisons; and local laborers and contractors worked projects at the prison.

The impending declines of agriculture, oil, and prisons place the San Joaquin Valley in a precarious position. Every county in the region outpaces the state's poverty rate, with five counties exceeding 20 percent of residents living in poverty. High school and college graduation rates are lower than California's rate in all counties. These metrics demonstrate the difficulty of reinventing the SJV's economy with jobs of the future. Furthermore, the SJV is faced with a phenomenon experienced by the Inland Empire a decade or so ago: Warehousing organizations capitalizing on the combination of land availability, proximity to major trucking routes, and cheap labor to move into the area. If the Inland Empire's trajectory is any indication, such expansion may not lead to substantial growth in mid- and high-paying jobs. The SJV's residents therefore could experience an increase in job availability in low-wage sectors while having fewer opportunities to advance into high-quality careers.
The Bay Area is home to roughly 20 percent of the state’s population, 25 percent of the state’s $1.5 trillion in total adjusted gross income (AGI), and six of the ten highest median income counties in California. Since 2008, the Bay Area created nearly two-thirds of California’s 1.1 million additional jobs, resulting in nearly a quarter of all of California’s jobs being done in the region. Retail sales in the Bay Area also make up a quarter of the state’s total.

The Bay Area’s economic inequality is as staggering as its economic contributions to the state. According to the Bay Area Council Economic Institute (2020), “median household income increased by nearly $250,000 (or 87 percent) among households in the top decile in the region and by only $4,000 (or 36 percent) among households in the bottom decile between 2010 and 2019.” The technology industry has been a driver of inequality’s growth. Companies developing cutting-edge technologies moved into the region for proximity to one another and to top-tier universities such as the University of California, Berkeley and Stanford University. Venture capital soon followed: By 2016, around 40 percent of all capital ventured on startups went to Bay Area firms.

Bay Area technology firms moved away from computer manufacturing and into technology service provision (e.g., software and analytics) in the late 1990s, reducing the amount of low- and middle-skill occupations available to the region’s residents. The Information industry category grew from 2.9 percent of total Bay Area jobs in 1990 to 5 percent in 2017. Likewise, the Professional & Business Services industry grew from 13.6 percent to 19 percent. During the same period, the manufacturing category decreased from 15.5 percent to 9 percent. The share of jobs in the information technology industry is also indicative of the ongoing shift toward services: In 1995, nearly 75 percent of all jobs in IT were manufacturing; by 2006, the proportions had flipped, with over 60 percent of IT jobs in services and only 30 percent in manufacturing. The decline in manufacturing jobs corresponded with growth in Leisure & Hospitality as well as Education & Health Services, providing some insight into where manufacturing jobs went upon the industry’s contraction.
The Sacramento metropolitan area ranks fifth in California by population size. Its growth was, like San Diego, supported by being an early hub for transportation networks. The Port of Sacramento and robust railroad development enabled traded goods to be routed through Northern California. Agricultural producers in outlying counties benefitted from Sacramento’s hub status and continue to employ 33,000 people across the four counties.

The development of the Port of Stockton and the growing complexity of trade routes moved Sacramento away from its core industries in the 1990s. The state’s growth helped accommodate job growth in the region, particularly in government administration. Over 76,000 people work in state government, over 11,000 work for the county government, and another 5,700 work for the City of Sacramento. School systems, universities, and healthcare organizations make up the rest of the top 10 employers in Sacramento County.

Government jobs have helped keep inequality in check in the Sacramento region, but suburban sprawl and relocations from the Bay Area have had surprising effects on the region’s suburban population: The Arden Arcade community, for example, has the highest level of income inequality in the state. The bottom-fifth of Arden Arcade earners, as of 2016, held just 2.1 percent of the community’s income. The top fifth held 58.2 percent of income. Likewise, statewide racial inequalities are sharper in the Sacramento region than elsewhere in California, owing largely to the exclusion of Black residents from growing areas of the economy (e.g., the emerging technology industry).
The Sierras and Far North regions were critical to California’s early development: they were major sites of the Gold Rush and provided timber for the state’s mines, the Central Pacific Railroad, housing development, and the region’s farmers. The decline of these industries left the region with high levels of unemployment that persist today. Jobs data across the counties indicate that the economy has largely shifted towards accommodation and food services (based largely on tourism), trucking (among the highest-paid jobs in the region), health care and social assistance (owing to the large portion of residents using MediCal), and retail services.

Despite their economic struggles, the health of the regions is critical to California because the state depends on the region’s water: Rain and snow that fall in the region account for 60 percent of the state’s total precipitation and provide water for 23 million Californians. Natural resource protection is emerging as an economic development engine, with ten conservancies calling the Sierras home. The conservancies reside within the state’s Natural Resources Agency and provide grants for projects that help to manage forests and watersheds.

Some counties within these regions are commonly nicknamed “Jefferson” due to some of the area’s population desire to secede from California to become the “State of Jefferson”—a set of California and Oregon counties that, according to proponents, are underrepresented and misrepresented in the current system of government. Initiatives to secede have passed in local and county governments as late as 2016, but have not become law despite continuous lawsuits and other efforts. Nonetheless, the Jefferson movement illustrates many residents’ experiences of polarization in California.

The residents’ desire to be considered separate from the state is in no small part a direct result of state-level decisions that have deeply impacted county economies. California’s strict environmental regulations have all but shuttered the region’s logging industry. While there is growing consensus that environmental pro-
tection and mitigation of climate change are critical to California’s long-term economic health, the concerns of vocal Sierras and Far North residents are not to be swept under the rug. The gradual closure of timber mills as part of conservation efforts drove unemployment above the state average. Pre-pandemic unemployment ranged from 6 percent in Shasta County to 16.2 percent in Colusa County. The Sierras and Far North are also home to five of the 10 counties with the lowest average weekly wages in the state. As of 2014, 13 of the 18 counties in the Far North had a combined state income tax assessment of $1 billion, compared with $4 billion from San Francisco County alone. The region’s economic struggles are evident in the usage of social safety net programs. Among 18 Far North counties, for example, 31 percent of residents are insured by Medi-Cal. Medi-Cal participation and the region’s high median age—50.5 in Nevada County, 52.3 in Plumas County, 52.5 in Trinity County, and 54.8 in Sierra County, for example, compared to California’s 36.5—has driven demand for healthcare practitioners. The Employment Development Department projects fastest job growth for the region to occur in the following occupations: Physicians Assistants, Interpreters and Translators, Home Health Aides, and Nurse Practitioners.

STATE-LEVEL WAGE AND LABOR POLICIES AND REGULATIONS IN CALIFORNIA

These regional profiles demonstrate the vast diversity of California’s local economies as well as the challenges and opportunities such diversity offers. As with occupational and wage polarization, California’s local economies have unifying features in their histories. At the state level, California is known for its progressive labor regulations and workers’ rights campaigns, the history of which is evident in the evolution of the state’s Labor Code. Events preceding the time period of focus in this report shaped the trajectory of work and employment throughout the state: The 1913 Workmen’s Compensation, Insurance, and Safety Act, passed shortly after Wisconsin pioneered with its 1911 law; protections for industrial workers in the late 1930s into the mid-1940s; the California Occupational Safety and Health Act of 1973; and the Alatorre-Zenovich-Dunlap-Berman Agricultural Labor Relations Act of 1975, the first state law intended to protect farm labor rights. Much of the content of these early actions simply aimed to reduce death and serious injury on the job.
More recently, California’s work and labor policies have evolved to include regulations on wages, medical/sick day allowances, and paid family leave. The state’s annual adjustment of minimum wage, for example, is codified into law after initially being proposed as a potential ballot measure. Through state law passed in April 2016, California established a new incremental minimum wage phase-in approach requiring all employers to increase their wages annually in order to provide a $15 hourly minimum wage by January 1, 2023. Likewise, California's cities are among the first in the nation to enact local minimum wage ordinances to account for differences in cost-of-living between regions (commonly referred to as a “living wage”). Beyond these regulatory and legislative actions, the state routinely finds itself at the forefront of government, worker, and organization negotiations over the “gig economy” and contract worker rights.

During the pandemic, there has been renewed attention to the outdated underlying systems government agencies and programs used to meet the needs of California’s residents. Even for those who are able to navigate unemployment and other social safety net programs, outcomes can be varied and point to a need for reassessment of how the program is administered. California is among the richest and most productive states in the nation, yet unemployment payouts lag behind many other states. Analysis from Stanford’s Institute for Economic Policy Research found that California’s top weekly state unemployment pay hovers around the national average, outpaced by comparable states such as Texas and Washington. Moreover, laid-off Californians receive 50 percent of their most recent earnings, but the weekly payout is capped at $450 for a maximum of 26 weeks. Therefore, despite taxing employers for unemployment benefits equally regardless of their employees’ wages, California’s system still causes low-wage workers to receive significantly less support through unemployment insurance than high-wage workers are eligible to collect. Augmenting unemployment benefits and improving programs’ ease-of-use will be a crucial component of reducing inequality and promoting economic mobility.
TRENDS: SOCIAL AND TECHNOLOGICAL PRESSURES ON POLARIZATION IN CALIFORNIA

Various trends will determine whether California remains on its trajectory of increasing polarization and inequality or instead shift towards a more equitable economy.

STIGMATIZATION OF SOCIAL SAFETY NET PROGRAMS: ENROLLMENT AND OUTCOME CONSIDERATIONS

Working poverty is a pervasive issue facing Californians. The state’s social safety net programs are key mechanisms for addressing working poverty, yet the stigmatization of program usage persists and causes hesitancy among its potential beneficiaries. Unemployment programs raise questions about work ethic; food subsidies draw attention to beneficiaries’ spending habits; and work leave programs call into question the prioritization of work and family.

Recent research has begun to destigmatize program usage by analyzing program enrollees and their work outcomes. A 2015 analysis of Medicaid, the Children’s Health Insurance Program (CHIP), and Temporary Assistance for Needy Families (TANF) found that 50 percent of California’s expenditures on the programs went to working families. Researchers examined California’s first state-level paid family leave program to assess whether higher weekly benefit amounts (WBA) increased the duration of leave or led to unfavorable future participation in the labor market. The authors found that women who earned near the maximum benefit from the program did not take longer leaves nor did they reduce future participation in the labor force; to the contrary, women in the program had an increased likelihood of returning to their pre-leave job. Finally, ongoing analyses of piloted Universal Basic Income programs are showing promising results with regard to labor market participation and overall ability to find better work. In Stockton, for example, an analysis of a 2019 pilot program found that around 43 percent of participants in the program had a full or part-time job, and only 2 percent had suspended their search for a job.
AGING POPULATION: EDUCATION AND WORKFORCE CONSIDERATIONS

Transitional into dissimilar jobs may be a reasonable expectation for early-career workers. For others, such as older workers, these transitions become more difficult and less likely to succeed. Supplementation of the labor force, however, may become necessary in the near future due to the aging of California’s population. Previous research has documented that an aging population can drive polarization because states with aging populations tend to reduce their support for K-12 and higher education. Projections from the state’s Department of Finance suggest that the population aged 65 and up will increase from 6.41 million in 2020 to 9.72 million in 2040 and 11.66 million by 2060. In contrast, the corresponding projections for the number aged 0 to 19 are 10.23 million, 9.27 million, and 9.03 million. In other words, while today there are 60 percent more Californians aged 0 to 19 than 65 and up, by 2060 there will be 23 percent fewer. Labor force participation data illustrates the near-term impact of an aging demographic: California’s labor force participation rate began declining in the early 2000s and was at just 62 percent in 2020.
The aging population in California illustrates a, perhaps, more concerning trend—one that has been exacerbated during the COVID-19 pandemic. At least seven million Californians live in Health Professional Shortage Areas, wherein counties do not have adequate levels of primary, dental, or mental health care professionals. The California Future Health Workforce Commission—created in 2017—found that these shortages are most severe in some of California’s largest and fastest-growing regions, including the Inland Empire, Los Angeles, and San Joaquin Valley, as well as most rural areas. Attracting healthcare workers to these areas is just one component of the shortage. Moreover, these shortfalls predominantly affect Latino, African American, and Indigenous communities. As such, the commission identified the need for the state to fix the growing mismatch between its existing workforce and its increasingly diverse population. Specifically, although California’s population will be majority people of color by 2030, these communities remain severely underrepresented in the health workforce. This industry offers good career pathways, but has also exposed wide inequalities in wages and work-life balance for professionals in the field, particularly for home healthcare workers and nursing aides as compared to advanced degree holders in the healthcare field.
THE FUTURE OF ECONOMIC MOBILITY, WORKFORCE, AND INEQUALITY
Low-wage jobs are a frequent target for vendors of automation, largely due to the perceived simplicity and physically-taxing qualities of repetitive, manual work. Industrial robots are one contemporary example of this phenomenon. The industrial robotics market had surged into a nearly $50 billion industry by 2017, with 9.4 percent of U.S. plants already adopting robots and 28.3 percent of all manufacturing workers being exposed to robots by 2018. Ongoing research suggests that these robot uptake numbers will increase in California elsewhere, particularly as robot capability improves in industries like manufacturing, logistics and warehousing.

The Covid-19 pandemic introduced additional pressures on companies to automate low-wage jobs. At first glance, the impetus comes from the ongoing worker shortage: In July 2021, the U.S. Labor Department reported the highest number of job openings in the 20 years it has been collecting data. Whether or not the shortage is due to expanded emergency unemployment benefits—enabling would-be workers to remain home and search for better jobs—is a subject of debate, with some initial research suggesting that enhanced benefits are not the cause. No matter the reason, executives in low-wage labor-intensive industries reported renewed demand for robotic systems during the pandemic, specifically “plug-and-play” systems that are easier to integrate into existing processes than the most advanced systems available.

The future of manufacturing jobs is unclear. On the one hand, automation in manufacturing, in particular, is likely to increase in the years to come because of the growth of the industry paired with an aging demographic, population stagnation, and organizational interest in augmenting the workforce with new technologies. Nevertheless, California is number one in the nation for factory jobs and its GDP from manufacturing increased 13 percent over the past five years to $316 billion in 2020. This increase outpaces all other states, with Texas seeing 9 percent growth over the same period.
Recent research suggests that the impact of these cutting-edge technologies could exacerbate polarization and, by extension, inequality in California. Such conditions can further narrow skill requirements of the remaining jobs, thereby increasing the practical distance between entry-level and more advanced positions.

Specifically, entry-level “white collar” jobs (e.g., legal clerking, data cleaning) are a persistent target of machine learning implementations. Automating these jobs, though, could remove a viable pathway to higher-paying professions: In contrast to workers in deskillled blue-collar jobs, entry-level white-collar jobs can offer on-the-job learning that is applicable in jobs farther up the skill and wage ladder. Entry-level workers would instead handle small, rare exceptions in their work, a characteristic of both old and new forms of automation and that limits transferable skill-building. Without appropriate intervention, the rapid adoption and implementation of advanced technologies such as machine learning would solidify the link between technological change and deepening income inequality in California.

Some regions of California are more exposed to the deployment of machine learning based on the composition of jobs in the area. The Suitability for Machine Learning Rubric, developed by Brynjolfsson, Mitchell, and Rock (2017), could enable an early assessment of the likelihood of each region of California to be affected by machine learning at a large scale. While all regions fall in a moderate suitability range based on currently available data—between 3.0 and 3.1 on a scale of 5—the scores for individual occupations vary much more. Two of California’s most common jobs—cashiers and personal care aides—score at 3.4 and 2.795, respectively. Policymakers and stakeholders might consider using such tools to evaluate economic development and technology regulation policies in each California region.
Investments in education provide one route for reducing polarization. Another is designing transitional programs, in concert with employers, for adults to move from one occupation to another. Still another is developing a robust social safety net that can carry people through transitions. Whatever is done, there must be a concerted effort to think about how to make sure that California’s wealth is shared by all of those who produce it.

“THE FUTURE OF WORK IN CALIFORNIA” DATA DASHBOARD

In sum, the gradual erosion of jobs in the mid-range of pay and skill in California has deepened wage differences along occupational lines. Likewise, the increasing polarization of work and employment stands to reduce workers’ avenues for advancement out of low-wage jobs. In the absence of the slack resources to pursue higher education, enroll in social safety net programs, and build transferable skills, California workers rely on mid-range jobs with overlapping skill requirements as stepping stones into better work—a path that has been the target for tools to aid in identifying opportunities such as the Federal Reserve’s Occupational Mobility Tool. As the number of such jobs dwindles, an increasing portion of workers seeking to advance out of low-wage work must transition into jobs that are dissimilar to what they currently do.

To aid policymakers and other stakeholders in designing ways to help workers out of this bind, our research team is developing “The Future of Work in California” Data Dashboard. The dashboard will combine quantitative analysis of current occupations—job availability, growth, education and skill requirements, regional particularities, and employer characteristics—with qualitative, ethnographic interview data from the workers who currently make their living in California. Tools such as the Suitability for Machine Learning Rubric, which take an objective view of future occupational change, will be put in conversation with the lived experiences of California residents. Our hope is that the tool will provide both realistic assessments of what is possible under current conditions and creative solutions to some of the most perplexing barriers in the way of Californians’ economic mobility.
THE FUTURE OF ECONOMIC MOBILITY, WORKFORCE, AND INEQUALITY IN CALIFORNIA

FOUR ALTERNATIVE SCENARIOS
Foresight practitioners use scenarios to help make future possibilities more vivid and tangible. Scenarios immerse the reader in the details of a future world so that they can imagine what it would feel like to live there. Without scenarios, the signals, trends, and other research that underlie strategic foresight work can feel distant and abstract. Scenarios can be used to center a group conversation in a positive and concrete picture of a future. Stakeholders can then pursue a shared vision for how to reach a desired possibility, or they can mobilize to avoid an undesirable outcome.

To imagine plausible future scenarios for economic mobility in California, we chose to interrogate the potential impacts of emerging workplace technologies by examining two critical uncertainties of the next decade. First, will remote work continue to grow as a standard practice or decline from mid-pandemic peaks? Second, will technology contribute to rising or falling inequality in the workforce? At the intersections of these possibilities, we can immerse ourselves in speculative future scenarios to evaluate their plausibility and desirability. The future we actually arrive at will be greatly influenced by these new technological trends and the policies we enact to guide their development towards preferred futures.

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**Technology Promotes LESS INCOME INEQUALITY**

1. WE’RE ALL MILLIONAIRES WHO RIDE THE BUS

2. INVITING CALIFORNIA DREAMERS

3. CHAMPAGNE AND SHANTYTOWNS

4. A REAL CALIFORNIA EXODUS

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**Technology Promotes MORE INCOME INEQUALITY**

Remote Work Becomes LESS COMMON

Remote Work Becomes MORE COMMON
WE’RE ALL MILLIONAIRES WHO RIDE THE BUS

Remote work becomes less common, technology promotes less inequality

Companies in California realize the value of having workers in the office or workplace together—to learn from one another, to network, and to collaborate in real-time. Closer connections at work extend into relationships outside of the workplace, with workers of all wage levels living near their jobs. AI-enabled gains in productivity cycle directly back to companies’ workers. These gains prompt rapid growth of the middle class, which supports the agglomeration economies that emerge in well-balanced cities.

Long-standing race and ethnicity wage inequalities show rapid improvement, largely because AI and automation are furthest along in low-wage industries. California’s companies realize that in-person work reduces free time their employees have to pursue education or other career-enhancing opportunities. With less physical and economic distance between coworkers, companies implement robust on-the-job learning programs to upskill their workforces. An economy with a large middle class that works in offices and on campuses means more workers live close to their jobs. This scenario enables California to tackle some of its pressing climate issues: reduction of energy-intensive mega-commutes, return of land use to conservation and water treatment rather than suburban and exurban housing, and targeted prevention measures to protect populated areas from natural disasters.
The rapid development and deployment of both remote-working technologies and AI enable Californians to live and work wherever they want while the state’s productivity continues to improve. In turn, California businesses and policymakers develop ways to attract workers to California via monetary incentives, housing subsidies, and unlimited leisure/vacation time. California’s workers choose to locate based on their desired surroundings, housing size and price, and family units. Workers from all over the world come to California to enjoy its natural amenities and the booming leisure industry.

Technology is put to use to maximize productivity while empowering and benefiting workers from all walks of life and in all regions. As a result, the state has money and a public appetite for large investments into critical problems such as climate, transportation, and housing. A rise in remote work and equally-distributed economic growth from AI enables immigrants already residing in California to remain and contribute their expertise and skills while simultaneously enabling companies to find foreign workers to continue developing new technologies. Remote work and an increasingly equal economy prompt many workers to live in California for its natural beauty while working for companies in other states or countries. California policymakers must make tough decisions about payroll taxes and other critical sources of the state’s income.

**INVITING CALIFORNIA DREAMERS**

Remote work becomes more common, technology promotes less inequality

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**HISTORICAL PRECEDENTS**

1989-1990: Undocumented immigration to California reaches a peak of over 200,000 people in one year.

1990s: Several California cities begin implementing living wage ordinances.

2020: California’s population declines.

**FUTURE DRIVERS**

*Work Location Policy:* Taxes and wage adjustments based on worker location will shape population center trends.

*Public Will for Social Programs:* Stigmatization of programs such as unemployment and welfare could limit expansion feasibility.

*Climate:* Currently desirable locations could become uninhabitable.

**SIGNALS**

*Moonshots for homelessness*  
**WHAT:** Project Homekey tries to mitigate homelessness by connecting residents to unused hotels.  
**SO WHAT:** The public and private will to scale up new solutions to social issues will greatly impact California’s outcomes.

*Remote immigration*  
**WHAT:** Studies suggest California’s decline was exacerbated by rejected immigrant visas.  
**SO WHAT:** Increased remote work could help immigrants secure work for California companies before moving to the state.

*The costs of remote work*  
**WHAT:** Some companies adjusted wages for out-of-state remote workers during the pandemic, while others did not.  
**SO WHAT:** The move to large-scale remote work will force new thinking on cost-of-living calculus for employers and employees.
Champagne and Shantytowns
Remote work becomes less common, technology promotes more inequality

In a post-pandemic “return to normal,” businesses shun remote work in favor of in-person work, leading to a resurgence of agglomeration. This comes at a time when AI and robotics reach major milestones, performing many physical and cognitive tasks affordably. These technologies have been developed and integrated with a strong focus on automation, rather than augmentation, and have disproportionately affected lower-wage occupations. Education and training have not facilitated skill development for lower-wage workers. A large portion of occupations become deskilled, low-wage, and scarce.

Californians live in mega-cities to attend in-person jobs. Corporate real estate and luxury housing are in high demand, and NIMBY attitudes proliferate. This leads to novel land development projects to increase low-income housing and create permanent homeless encampments along the coasts near major cities. The demand for corporate real estate has led to a resurgence of corporate-owned and operated, mixed-use campuses in locations near major hubs. These towns offer subsidized housing to current and retired employees as a benefit, but lock workers into contracts that make mobility across firms almost impossible. Sensing the encroachment of AI and other advanced technologies into their occupations, technology workers gather and organize. They refuse to build new technology that puts their job or occupation at risk while collectively bargaining for better working conditions.

Historical Precedents

- **1969:** The Housing Element Law requires incorporation of adequate housing into development plans.
- **1978:** Proposition 13 reduces property tax revenue for municipalities.
- **2018:** California’s union membership rate hits an historic low of 14.7%.

Future Drivers

- **Zoning Laws:** Housing availability continues to challenge local governments to rethink zoning.
- **Labor Laws:** Employee classification decisions will impact unionization rates (e.g., in the gig economy).
- **Work Readiness:** Workers will face adaptation challenges in the wake of increasingly capable technology.

Signals

- **Floating cities?**
  - **WHAT:** In 2019, UN-Habitat began investigating the plausibility of floating cities to alleviate housing pressure.
  - **SO WHAT:** Homelessness has risen steadily since the 1980s, and poses a major threat to California’s future growth.
  - [unhabitat.org](http://unhabitat.org)

- **New company towns**
  - **WHAT:** Housing issues have driven a renewed interest in “company towns” driven by private enterprise.
  - **SO WHAT:** Critics warn that vulnerable communities will lose their voice if the government abdicates its role in housing policy.
  - [storymaps.arcgis.com](http://storymaps.arcgis.com)

- **White collar unions**
  - **WHAT:** White collar organizations have seen a rise in unionizing, while low-wage work continues to see declines.
  - **SO WHAT:** As high-paid workers organize more effectively, income inequality is likely to be exacerbated.
  - [calmatters.org](http://calmatters.org)
A REAL CALIFORNIA EXODUS

Remote work becomes more common, technology promotes more inequality

Driven by the rising cost of real estate and growing proof that productivity increases can continue in a remote-first world, companies make more than 70 percent of jobs remote, allowing workers to live anywhere in the state. Technology firms can also source labor to develop algorithms and hardware more inexpensively than they could in the pre-remote world. The result is that both lower-wage workers and tech workers who previously earned high wages see a decline in job availability and income, while executives and top managers see an increase in their pay.

Recognizing the move toward automation, workers with means take out loans to purchase robots they can operate from home and deploy their bots in various locations (“send your robot to work”). The increasing capabilities of AI and the size of the now-global workforce drive a new form of wage and income polarization in which executives become so wealthy that they can live anywhere on Earth and beyond. The growing population of elderly lower-wage workers lacks the means to support themselves. With nowhere to turn, they choose to commit crimes in order to be incarcerated, which provides a guarantee of food, shelter, medical care, and social activities. The ballooning prison system services primarily the elderly, and by 2050, becomes the largest provider of eldercare services in the state.

HISTORICAL PRECEDENTS

2000s: Private space companies open up shop, renewing interest in private space travel and colonization.

2018: Residents aged 65 or older make up 20 percent of the population in 20 counties for the first time in the state’s history.


FUTURE DRIVERS

AI and Robotics: Predictions of AI and robotics displacing workers en masse have not yet come to fruition, but technology capability is increasing.

Pandemic Control: Future pandemics could further accelerate trends in remote work.

Retirement Funding: An aging demographic with undersized retirement savings presents a policy challenge.

SIGNALS

Rising automation

WHAT: As of 2018, 14 percent of California’s industrial workers had been exposed to robots.

SO WHAT: Developing equitable ways to incorporate robots into the workforce will be critical to the success of Californians.

census.gov

The real exodus

WHAT: While California’s population shrank slightly in recent years, homelessness has increased in urban areas.

SO WHAT: If California doesn’t reverse trends, it will become mostly viable to super-rich residents who can afford the house prices.

calmatters.org

Aging populations

WHAT: While California’s aging population is growing, 54% of private sector workers have no retirement savings.

SO WHAT: Without intervention, California’s vulnerable population is likely to grow as low-wage workers age out of the workforce.

laborcenter.berkeley.edu
Choices among governmental policies depend partly upon which future scenarios seem most attractive to us, but they also depend upon our perspectives on the proper role of government, on the resources available to government, and on the likelihood that government will succeed in its endeavors. Doing nothing is sometimes the best policy option, but doing nothing often uncritically accepts the current mix of policies and the future they entail without considering the alternatives. Over the past seventy-five years in California, that meant accepting discriminatory racial housing covenants, restrictive zoning laws, few restrictions on air or water pollution, “separate but equal” schooling, the dismantling of transit systems, and many more things that are now thought to have been wrong or misguided. We have also seen aggressive policy measures in California that have had unintended consequences, from the impacts of Proposition 13 on local government budgets to the way the California Environmental Quality Act has affected housing supply and manufacturing.

Because we are thinking about the future and we do not want to be hemmed in by the status quo or a lack of imagination, we put forth an array of alternative policies, and we tie them to different scenarios. Readers can decide which ones (or combinations of them) they prefer, but, as a team and in interviews with stakeholders across the state, most prefer the California Dreaming future. Many of our policy suggestions will favor this scenario, and look critically at approaches that do not favor a future with less inequality. Readers should consider which scenario best captures the California they want to live in, and evaluate which policy recommendations they believe will get us there.

In this section, we discuss the future policies that might be deployed if we find ourselves in each of the four potential scenarios. Given the complexity of various policies that impact economic mobility and the workforce, these policies are necessarily broad in scope. The details are what matter for any policy or set of policies; for example, depending on how they are designed, tax incentives can improve worker pay and outcomes for communities of color, or they can provide perverse incentives for majority communities to use the system to their favor, excluding the very communities these incentives may seek to support. And because the details are what matter, the details are what we tend to fight about. Our goal is to highlight the principal barriers to realizing each scenario, focusing on general policy areas we believe deserve attention, with the understanding that the details will — and must — be hashed out in the political arena.
“CHAMPAGNE AND SHANTYTOWNS”

Remote Work Becomes Less Common, Technology Promotes Higher Inequality

A mass return to the office in the five to 10 years following the COVID-19 pandemic accompanies a wave of automation that threatens the jobs of low-wage workers. As a result, Californians compete for limited housing close to their jobs while companies expand their real estate footprint, pushing housing prices even higher. Workers cannot relocate because they must be close to their work site. State and local governments must make tough policy decisions about land use, housing, widening geographic economic disparities, and childcare issues, all alongside the need to upskill a rapidly-replaced workforce.

GOALS

1. Avoid techno-feudalism by mandating the development of affordable housing near job locations without work-here-to-live-here contracts.

2. Ameliorate the impact of automation job change and loss by incentivizing and enabling workers to find high-quality jobs in the wake of mass automation.

POLICIES

Restrict work-here-to-live-here contracts: Government agencies implement policies and laws that require businesses to subsidize housing development around their corporate and field locations. Ensure that these actions make housing available to anyone working in the area, not just a company’s employees, by encouraging multi-business housing development partnerships. Restrict businesses’ ability to require contracts for working and living on company campuses. Efforts to prevent work-here-to-live-here should be complemented with new policies to close loopholes currently open under contract laborer laws and regulations.
Proportional middle-wage jobs: Businesses and nonprofits work together to identify and develop middle-wage jobs in organizations with high concentrations of low- and high-wage jobs. Governments incentivize companies to provide a proportional number of middle-wage jobs by providing payroll tax cuts and/or subsidizing training programs to elevate low-wage employees to better positions.

Mandate business-funded local learning programs: In a scenario in which workers must work on-site and technology has a wage-depressing effect, governments and businesses must work together to find ways to upskill workers and close the state’s projected skills gap. Under business-as-usual in this scenario, workers cannot readily move to another area for new job or educational opportunities due to their on-site work schedules. The state government therefore mandates that organizations over a certain size contribute to local learning programs. Community colleges, for example, work with businesses to identify future in-demand jobs and create curricula to prepare workers to take on these roles, with businesses sharing the costs. Likewise, businesses receive tax credits for establishing robust on-the-job learning programs that demonstrably upskill workers prior to a job-threatening automation implementation. Tax credits increase when workers remain with the same company.

A REAL CALIFORNIA EXODUS

Remote Work Becomes More Common, Technology Promotes More Inequality

Recognizing the move toward automation, workers with means take out loans to purchase robots they can operate from home and deploy their bots in various locations (“send your robot to work”). The remote working poor operate leased robots out of places that look like massive call centers—buildings with high-speed internet that would be otherwise out of reach for the poor. The increasing capabilities of AI and the size of the now-global workforce drive a new form of wage and income polarization—“super polarization”—in which executives become so wealthy that they can live anywhere on Earth and beyond, such as Tuscany, Croatia, or a space station. They build luxury resorts that provide safe
The growing population of elderly lower-wage workers lacks the means to support themselves. With nowhere to turn, they choose to commit crimes in order to be incarcerated, which provides a guarantee of food, shelter, medical care, and social activities. The ballooning prison system services primarily the elderly, and by 2050, becomes the largest provider of eldercare services in the state.

Companies move away from in-person work because they are able to sustain productivity and innovation while reducing their real estate, energy, and office amenity costs. Under business-as-usual, these monetary gains would likely go directly to the highest-paid earners in the company (e.g., executives). The risk of worsening inequality is aggravated by the increasing capabilities of AI and robotics, which displaces workers from their jobs. Policies need to ensure that the benefits of remote work, productivity increases, and automation are shared with low-wage workers and prevent these workers from leaving the state in favor of working from cheaper houses elsewhere.

**GOALS**

1. **Avoid** the accrual of productivity and profit gains from a remote-first, AI-driven economy to the richest Californians.

2. **Ameliorate** the worsening of inequality by enabling workers to take in-demand jobs.

3. **Avoid** mass migration out of California.

**POLICIES**

**AI and Robotics Dividend:** Workers receive dividends from the successful deployment and use of AI-enabled technologies. The state conducts yearly, state-and-county level surveys to (a) query businesses about the uptake and financial impact of automation and (b) query workers about job availability, job
quality, career outlook, and income in their industry and region. The dividend is indexed to the results and, to avoid migration, only paid to workers living in California.

**“Hire Californian” Policy:** Incentivize businesses to prioritize hiring Californians—defined as individuals who have attended middle school, high school, community college, or four-year educational programs in the state—for mid- and high-wage jobs, even if cheaper or better talent is available elsewhere. Companies receive tax breaks for placing Californians in such jobs and guidance for how to source out-of-state labor for low-wage work.

**California Development Initiative:** Businesses and nonprofits work together to identify areas of California with little representation in high-wage occupations. These partners then develop pipelines to enable working adults from underrepresented locations to train for jobs in California’s fastest-growing industries, offering free educational programs at local schools and businesses. The initiative is supported by business contributions to an industry development fund (i.e., businesses share the cost of educating the workforce for their industry). Governments develop incentives to help offset the cost.

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**“WE’RE ALL MILLIONAIRES WHO RIDE THE BUS”**

**Remote Work Becomes Less Common, Technology Promotes Less Inequality**

The automation of “bad jobs” combined with the business community’s desire to leverage in-person work for collaboration, team-building, and innovation creates an empowering environment for workers. Policies should seek to use this scenario to lift Black, Indigenous, and other people of color (BIPOC) communities out of poverty while making strides toward other societal-level goals such as climate change mitigation, equitable education, and thriving arts and culture.
1. **Attain** equitable incomes for California’s BIPOC residents by monetarily rewarding jobs that must be done in-person.

2. **Attain** climate change mitigation and a thriving culture by supporting live-here-work-here models for cities and counties.

3. **Avoid** a decline in technological innovation that could result from the reduction of pressure on Californians to work low-quality jobs and the reduction in free time workers have due to working on-site.

### GOALS

**Essential Worker Tax Credit:** Implement an additional tax credit akin to the Earned Income Tax Credit and the Child Tax Credit for workers who hold essential jobs. Develop a state-level agency to define and update “essential,” beginning with cataloging and analyzing jobs that continued to operate in-person during the Covid-19 pandemic.

**Controlled Automation:** Implement policies that both control the rate of automation in industries where BIPOC are overrepresented and aggressively distribute automation-related financial gains to these communities. Agriculture and warehousing are the first two industries to target for these initiatives. The state works with local governments to provide arbitration between businesses who seek to automate jobs and the workers who will be affected, working with unions when possible and convening ad hoc collectives of workers when unions are not present in an industry.

**Prioritize Locales for Higher Education:** California’s state universities institute a prioritization system for admissions that accounts for (a) locale and (b) duration of time living in California. The state augments its existing process for holding admission slots to state universities based on place of residence, offering more slots to underrepresented areas. Residents who have spent more time living in California also receive higher priority.
“INVITING CALIFORNIA DREAMERS”

Remote Work Becomes More Common, Technology Promotes Less Inequality

Californians can now live and work wherever they want while the state’s businesses and workers share the benefits of continual productivity gains. The challenges for businesses and policymakers become centered around sustaining growth: The state needs to attract workers to move to and remain in California so that income and property taxes are sufficient to support education, social services, and healthcare. Policies should therefore promote the state’s natural amenities and booming leisure industry while investing in “less desirable” areas to make them more attractive to workers.

GOALS

1. **Attain** stability and growth of labor supply to support continued productivity and maintain the tax base.
2. **Avoid** overcrowding of the most desirable California locations.

POLICIES

*Statewide Unlimited, Partially-paid Vacation:* Similar to proposals that tie universal basic income or healthcare to labor force participation, companies must offer unlimited, partially-paid vacation to workers who reliably hit their productivity targets while on the job. Workers therefore have flexibility to travel the state and spend money in other regions while still maintaining a home base for working and raising children.
**Investment and Promotion of “Less Desirable” California Locations:** A work-from-anywhere model runs the risk of overcrowding beach towns, national and state park sites, and other desirable locations. The state establishes an extension of existing community development and tourism agencies to raise and distribute funds for expanding leisure options in small California towns. Hot, dry climate towns (e.g., in the San Joaquin Valley) develop amenities along the lines of Las Vegas, while seasonally-cyclical towns (e.g., in the Far North counties) focus on attracting off-season visitors.

**Reward Remaining in “Less Desirable” California Locations:** Additional measures make it even more attractive to live in relatively underpopulated California locations. Residents can choose between (a) a tuition benefit that accrue to children the longer parents live in a particular region or (b) a supplemental retirement savings match that slightly increases with each year spent in the same location.

**Tax Break for Staying in California:** To maintain the tax base provided by high earners, California lawmakers develop a bill that permits a slight reduction in income tax after every fifth year a resident remains in the state. This approach is complemented by other strategic uses of the tax code (e.g., for lower-income residents) to make remaining in California more attractive.