Advancing Health Equity and Inclusive Growth in Fresno County
Summary

Fresno County is an agricultural powerhouse, yet it struggles with slow economic growth, high unemployment, and an economy dominated by low-wage jobs and few pathways into the middle class. While communities of color account for 68 percent of the population – up from 38 percent in 1980 – the county's racial inequities persist across all indicators of community health and well-being. These inequities threaten Fresno’s future economic prosperity.

The region’s economy could have been $17 billion stronger in 2014 alone if racial gaps in income were eliminated. To build a stronger Fresno, leaders in the private, public, nonprofit, and philanthropic sectors must commit to putting all residents on the path to economic security through equity-focused strategies and policies to improve housing quality and affordability, expand transportation access, address environmental hazards, remove barriers, and expand opportunities for low-income communities of color that have historically been and continue to be left behind.
Indicators

**DEMOGRAPHICS**

**How racially/ethnically diverse is the county?**
- Race/Ethnicity and Nativity, 2014
- Latino, Asian or Pacific Islander, and Black Populations by Ancestry, 2014
- Percent People of Color by Census Block Group, 2014

**How is the area’s population changing over time?**
- Growth Rates of Major Racial/Ethnic Groups by Nativity, 2000 to 2014
- Net Change in Population by Geography, 2000 to 2014
- Racial/Ethnic Composition, 1980 to 2014
- Race/Ethnicity Dot Map by Census Block Group, 1990 and 2014
- Racial/Ethnic Composition, 1980 to 2050
- Racial Generation Gap: Percent People of Color (POC) by Age Group, 1980 to 2014
- Median Age by Race/Ethnicity, 2014
- Median Age for the Southeast Asian Population by Ancestry, 2014
- English-Speaking Ability Among Immigrants by Race/Ethnicity, 2000 and 2014
- English-Speaking Ability Among Southeast Asian Immigrants by Ancestry, 2014
- Linguistic Isolation by Census Tract, 2014

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**Is the county producing good jobs?**
- Average Annual Growth in Jobs and GDP, 1990 to 2007 and 2009 to 2014
- Growth in Jobs and Earnings by Industry Wage Level, 1990 to 2015

**Access to Good Jobs**

**How close is the county to reaching full employment?**
- Unemployment Rate, December 2016
- Unemployment Rate by Census Tract, 2014
- Unemployment Rate by Race/Ethnicity, 2014
- Unemployment Rate for the Southeast Asian Population by Ancestry, 2014
- Labor Force Participation Rate by Race/Ethnicity, 2014
- Unemployment Rate by Educational Attainment and Race/Ethnicity, 2014

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- Median Hourly Wage by Educational Attainment and Race/Ethnicity, 2014

**Inclusive Growth**

**Are incomes increasing for all workers?**
- Real Earned Income Growth for Full-Time Wage and Salary Workers, 1979 to 2014
Indicators

Is the middle class expanding?
Households by Income Level, 1979 and 2014

Is the middle class becoming more inclusive?
Racial Composition of Middle-Class Households and All Households, 1979 and 2014

Is inequality low and decreasing?
Income Inequality, 1979 to 2014

Economic Security

Is poverty low and decreasing?
Poverty Rate by Race/Ethnicity, 2000 and 2014
Child Poverty Rate by Race/Ethnicity, 2014
Percent Population Below the Poverty Level by Census Tract, 2014

Is the share of working poor low and decreasing?
Working Poor Rate by Race/Ethnicity, 2000 and 2014

Strong Industries and Occupations

Which industries are projected to grow?
Industry Employment Projections, 2012-2022

Which occupations are projected to grow?
Occupational Employment Projections, 2012-2022

What are the county’s strongest industries?
Strong Industries Analysis, 2015

What are the county’s high-opportunity occupations?
Strong Occupations Analysis, 2011

What occupations are high opportunity?
Occupation Opportunity Index: Occupations by Opportunity Level for Workers with a High School Diploma or Less
Occupation Opportunity Index: Occupations by Opportunity Level for Workers with More Than a High School Diploma but Less Than a BA Degree
Occupation Opportunity Index: Occupations by Opportunity Level for Workers with a BA Degree or Higher

Is race/ethnicity a barrier to economic success?
Opportunity Ranking of Occupations by Race/Ethnicity and Nativity, All Workers
Opportunity Ranking of Occupations by Race/Ethnicity and Nativity, Workers with Low Educational Attainment
Opportunity Ranking of Occupations by Race/Ethnicity and Nativity, Workers with Middle Educational Attainment
Opportunity Ranking of Occupations by Race/Ethnicity and Nativity, Workers with High Educational Attainment

READINESS

Skilled Workforce

Does the workforce have the skills for the jobs of the future?
Share of Working-Age Population with an Associate’s Degree or Higher by Race/Ethnicity and Nativity, 2014, and Projected Share of Jobs that Require an Associate's Degree or Higher, 2020
Indicators

Youth Preparedness

Do all children have access to opportunity?
- Composite Child Opportunity Index by Census Tract

Are youth ready to enter the workforce?
- Share of 16- to 24-Year-Olds Not Enrolled in School and without a High School Diploma by Race/Ethnicity and Nativity, 1990 to 2014
- Share of 16- to 24-Year-Olds Not Enrolled in School and without a High School Diploma by Race/Ethnicity and Gender, 2014
- Disconnected Youth: 16- to 24-Year-Olds Not in School or Work by Race/Ethnicity, 1980 to 2014
- Disconnected Youth: 16- to 24-Year-Olds Not in School or Work by Race/Ethnicity and Gender, 2000 to 2014
- Percent of Students by School Poverty Level, as Defined by the Share of Students Eligible for FRPL, 2014

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Can all residents access healthy food?
- Percent Living in Limited Supermarket Access (LSAs) Areas by Race/Ethnicity, 2014
- Percent Population by Federal Poverty Level (FPL) and Food Environment, 2014
- Percent People of Color by Census Block Group and Limited Supermarket Access (LSA) Block Groups, 2014

Do all residents live in areas with clean air?
- Air Pollution: Exposure Index by Race/Ethnicity, 2014
- Air Pollution: Exposure Index by Poverty Status, 2014

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- Adult Overweight and Obesity Rates by Geography, 2012
- Adult Overweight and Obesity Rates by Race/Ethnicity, 2012
- Adult Diabetes Rates by Geography, 2012
- Adult Diabetes Rates by Race/Ethnicity, 2012
- Adult Asthma Rates by Geography, 2012
- Adult Asthma Rates by Race/Ethnicity, 2012
- Share of Adults Who Have Had a Heart Attack by Geography, 2012
- Share of Adults Who Have Had a Heart Attack by Race/Ethnicity, 2012
- Share of Adults with Angina or Coronary Heart Disease by Geography, 2012
- Share of Adults with Angina or Coronary Heart Disease by Race/Ethnicity, 2012

Do residents have access to health insurance and health-care services?
- Health Insurance Rates by Geography, 2014
- Health Insurance Rates by Race/Ethnicity, 2014
Indicators

CONNECTEDNESS

Can all residents access affordable, quality housing?
- Share of Affordable Rental Housing Units, 2014
- Low-Wage Jobs, Affordable Rental Housing, and Jobs-Housing Ratio, 2014
- Renter Housing Burden and Homeowner Housing Burden by Race/Ethnicity, 2014
- Percent Rent-Burdened Households by Census Tract, 2014

Do residents have transportation choices?
- Percent Households without a Vehicle by Census Tract, 2014
- Means of Transportation to Work by Annual Earnings, 2014
- Percent Using Public Transit by Annual Earnings and Race/Ethnicity, 2014
- Average Travel Time to Work in Minutes by Census Tract, 2014

Do neighborhoods reflect the region's diversity?
- Residential Segregation, 1980 to 2014
- Residential Segregation, 1990 and 2014, Measured by the Dissimilarity Index
- Neighborhood Poverty, 2000 to 2014

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- Actual GDP and Estimated GDP without Racial Gaps in Income, 2014
- Percentage Gain in Income with Racial Equity, 2014
- Source of Income Gains, 2014
Advancing Health Equity and Inclusive Growth in Fresno County

Foreword

Fresno County, home to nearly one million residents, is ripe with endless opportunity for social, economic, environmental, and political change. Our communities and our families depend on our ability to work together to shift the historic trajectory from one that has led to poverty, exclusion, and disenfranchisement to one that elevates community voices and ensures equal access to opportunity regardless of income, race, place, and wealth. There’s too much at stake to do nothing.

As a community of advocates, we have come together to demand respect for the many people and communities in the region that for far too long have been subject to historic under-investment and inequality. We are growing our movement to ensure that all families have an opportunity for upward financial mobility, live in healthy and sustainable communities with safe water and basic infrastructure, have access to quality/dignified housing, live free from pollution and degraded environments and most importantly, live in a region that values full inclusion of its diverse residents and communities.

We are excited to leverage the opportunities and confront the challenges highlighted in this report to grow our movement with community leaders, organizational partners, and the public and private sectors to create a prosperous and equitable Fresno County.

Veronica Garibay-Gonzalez
Co-Director
Leadership Counsel for Justice and Accountability

Leadership Counsel
FOR
JUSTICE & ACCOUNTABILITY
Acknowledgments

PolicyLink and the Program for Environmental and Regional Equity (PERE) at the University of Southern California are grateful to the Robert Wood Johnson Foundation for their generous support of this project. This equity profile and the accompanying policy brief are part of a series of reports produced in partnership with local community coalitions in Fresno, Long Island, Buffalo, Cincinnati, and Sacramento. This profile features additional health indicators to build a data-backed case for equity while the brief lifts up policy solutions to advance health equity, inclusive growth, and a culture of health. These communities are also a part of the All-In Cities initiative at PolicyLink, which supports community leaders in advancing racial economic inclusion and equitable growth.

We also thank the Leadership Counsel for Justice and Accountability for their continued partnership. The analyses and recommendations in the report were informed by a local advisory committee convened by the Leadership Counsel, which included the Central California Asthma Collaborative, Central California Legal Services, the Central California Environmental Justice Network, and Fresno Building Healthy Communities, as well as interviews conducted with local leaders in the business, philanthropy, research, and advocacy sectors. We are grateful for the time and leadership of our local partners and all that they do to build a more just and equitable Fresno.

This profile was written by Ángel Ross at PolicyLink; the data, charts, and maps were prepared by Sheila Xiao, Pamela Stephens, and Justin Scoggins at PERE; and Rosamaria Carrillo of PolicyLink assisted with formatting, editing, and design. Rebecca Flournoy assisted with development of the framework presented in the profile.
Introduction
Overview

America’s cities and metropolitan regions are the nation’s engines of economic growth and innovation, and where a new economy that is equitable, resilient, and prosperous must be built.

Policy changes that advance health equity can guide leaders toward a new path of shared prosperity. Health equity means that everyone has a just and fair opportunity to be healthy. This requires removing obstacles to attaining and maintaining good health, such as poverty and discrimination, and addressing the social determinants of health: education, employment, income, family and social support, community safety, air and water quality, housing, and transit. Health equity promotes inclusive growth, since healthy people are better able to secure jobs, fully participate in society, and contribute to a vibrant local and regional economy.

This profile analyzes the state of health equity and inclusive growth in Fresno County, and the accompanying policy brief, Fresno at a Crossroads: Equity is the Path to Health and Prosperity, summarizes the data and presents recommendations to advance health equity and inclusive growth. They were created by PolicyLink and the Program for Environmental and Regional Equity (PERE) in partnership with the Leadership Counsel for Justice and Accountability, a community-based organization that works alongside the most impacted communities in the San Joaquin and East Coachella Valleys to advocate for policy that eradicates injustice and expands access to opportunity.

The data used in this profile were drawn from a regional equity indicators database that includes the largest 100 cities, the largest 150 metro areas, all 50 states, and the United States as a whole. The database incorporates hundreds of data points from public and private data sources including the U.S. Census Bureau, the U.S. Bureau of Labor Statistics, the Behavioral Risk Factor Surveillance System (BRFSS), and the Integrated Public Use Microdata Series (IPUMS). Note that while we disaggregate most indicators by major racial/ethnic groups, there is too little data on certain populations to report confidently. Given Fresno’s large Southeast Asian population, the advisory committee recommended adding data specific to this population throughout the profile. See the “Data and methods” section for a more detailed list of data sources.

We hope this information is used broadly by residents and community groups, elected officials, planners, business leaders, funders, and others working to build a stronger and more equitable Fresno.
Introduction
What is an equitable county?

Counties are equitable when all residents – regardless of race/ethnicity, nativity, family income, neighborhood of residence, or other characteristics – can fully participate in the county’s economic vitality, contribute to its readiness for the future, and connect to its assets and resources.

Strong, equitable counties:

- Possess **economic vitality**, providing high-quality jobs to their residents and producing new ideas, products, businesses, and economic activity so the county remains sustainable and competitive.

- Are **ready for the future**, with a skilled, ready workforce and a healthy population.

- Are **places of connection**, where residents can access the essential ingredients to live healthy and productive lives in their own neighborhoods, reach opportunities located throughout the county (and beyond) via transportation or technology, and participate in political processes.
Introduction

Why equity matters now

The face of America is changing. Our country’s population is rapidly diversifying. Already, more than half of all babies born in the United States are people of color. By 2030, the majority of young workers will be people of color. And by 2044, the United States will be a majority people-of-color nation.

Yet racial and income inequality is high and persistent.
Over the past several decades, long-standing inequities in income, wealth, health, and opportunity have reached unprecedented levels. Wages have stagnated for the majority of workers, inequality has skyrocketed, and many people of color face racial and geographic barriers to accessing economic opportunities.

Racial and economic equity is necessary for economic growth and prosperity.
Equity is an economic imperative as well as a moral one. Research shows that inclusion and diversity are win-win propositions for nations, regions, communities, and firms.

For example:
• More equitable regions experience stronger, more sustained growth. ¹
• Regions with less segregation (by race and income) and lower income inequality have more upward mobility. ²
• The elimination of health disparities would lead to significant economic benefits from reductions in health-care spending and increased productivity. ³
• Companies with a diverse workforce achieve a better bottom line. ⁴
• A diverse population more easily connects to global markets. ⁵
• Less economic inequality results in better health outcomes for everyone. ⁶

The way forward is with an equity-driven growth model.
To secure America’s health and prosperity, the nation must implement a new economic model based on equity, fairness, and opportunity. Leaders across all sectors must remove barriers to full participation, connect more people to opportunity, and invest in human potential.

Counties play a critical role in shifting to inclusive growth.
Local communities are where strategies are being incubated to foster equitable growth: growing good jobs and new businesses while ensuring that all – including low-income people and people of color – can fully participate as workers, consumers, entrepreneurs, innovators, and leaders.

Introduction

Equity indicators framework

The indicators in this profile are presented in five sections. The first section describes the county’s demographics. The next three sections present indicators of the county’s economic vitality, readiness, and connectedness. The final section explores the economic benefits of equity. Below are the questions answered within each of the five sections.

Demographics:
Who lives in the county, and how is this changing?
• Is the population growing?
• Which groups are driving growth?
• How diverse is the population?
• How does the racial/ethnic composition vary by age?

Economic vitality:
How is the county doing on measures of economic growth and well-being?
• Is the region producing good jobs?
• Can all residents access good jobs?
• Is growth widely shared?
• Do all residents have enough income to sustain their families?
• Are race/ethnicity and nativity barriers to economic success?
• What are the strongest industries and occupations?

Readiness:
How prepared are the city’s residents for the 21st century economy?
• Does the workforce have the skills for the jobs of the future?
• Are all youth ready to enter the workforce?
• Are residents healthy? Do they live in health-promoting environments?
• Are health disparities decreasing?
• Are racial gaps in education decreasing?

Connectedness:
Are the city’s residents and neighborhoods connected to one another and to the region’s assets and opportunities?
• Do residents have transportation choices?
• Can residents access jobs and opportunities located throughout the region?
• Can all residents access affordable, quality, convenient housing?
• Do neighborhoods reflect the city’s diversity? Is segregation decreasing?

Economic benefits:
What are the benefits of racial economic inclusion to the broader economy?
• What are the projected economic gains of racial equity?
• Do these gains come from closing racial wage or employment gaps?
Introduction
Policy change is the path to health equity and inclusive growth

Equity is just and fair inclusion into a society in which all can participate, prosper, and reach their full potential. Health equity, as defined by the Robert Wood Johnson Foundation, means that everyone has a just and fair opportunity to be healthy. This requires removing obstacles to health such as poverty, discrimination, and their consequences, which include powerlessness and lack of access to good jobs with fair pay, quality education and housing, safe environments, and health care.

Many of the conditions and policies that advance health equity also promote inclusive growth. Healthy people are better able to secure jobs and participate in their full capacity, creating a vibrant local economy. In a highly complementary way, equitable economic growth – where all residents have access to good jobs and entrepreneurial opportunities – supports the health of residents throughout the region. This happens through tackling structural barriers and ensuring greater economic security, which reduces stress and increases people’s access to health care and preventive services.1

Ensuring that policies and systems serve to increase inclusion and remove barriers is particularly important given the history of urban and metropolitan development in the United States. Regions and cities are highly segregated by race and income. Today’s cities are patchworks of concentrated advantage and disadvantage, with some neighborhoods home to good schools, bustling commercial districts, services, parks, and other crucial ingredients for economic success, while other neighborhoods provide few of those elements.

These patterns of exclusion were created and continue to be maintained by public policies at the federal, state, regional, and local levels. From redlining to voter ID laws to exclusionary zoning practices and more, government policies have fostered racial inequities in health, wealth, and opportunity. Reversing the trends and shifting to equitable growth requires dismantling barriers and enacting proactive policies that expand opportunity.

Health equity can be achieved through policy and systems changes that remove barriers, and build opportunity, and address the social determinants of health, or the factors outside of the health-care system that play a fundamental role in health outcomes. Social determinants of health include both structural drivers, like the inequitable distribution of power and opportunity, and the environments of everyday life – where people are born, live, learn, work, play, worship, and age.2 There are seven key social determinants of health: education, employment, income, family and social support, community safety, air and water quality, and housing and transit.3

Introduction
Health equity and inclusive growth are intertwined

The interconnection between health equity and inclusive growth can be seen across the four dimensions of our framework.

**Economic vitality**
In a region that cultivates inclusive growth and health equity, good jobs are accessible to all, including less-educated workers, and residents have enough income to sustain their families and save for the future. The region has growing industries, and race/ethnicity and nativity are not barriers to economic success. Economic growth is widely shared, and incomes among lower-paid workers are increasing. The population becomes healthier and more productive, since income is a documented determinant of good health, and reduced economic inequality has been linked to better health outcomes for everyone.

**Readiness**
In a region that cultivates inclusive growth and health equity, all residents have the skills needed for jobs of the future, and youth are ready to enter the workforce. High levels of good health are found throughout the population, and racial gaps in health are decreasing. Residents have health insurance and can readily access health-care services.

**Connectedness**
In a region that cultivates inclusive growth and health equity, residents have good transportation choices linking them to a wide range of services that support good health and economic and educational opportunities. Many residents choose to walk, bike, and take public transit – increasing exercise for these residents and reducing air pollution, which positively influence health. Local neighborhood and school environments support health and economic opportunity for all residents, allowing everyone to participate fully in the local economy. Neighborhoods are less segregated by race and income, and all residents wield political power to make their voices heard.

**Economic benefits**
The elimination of racial health disparities and improving health for all generates significant economic benefits from reductions in health-care spending and increased productivity. Research shows that economic growth is stronger and more sustainable in regions that are more equitable.
Introduction

Key drivers of health equity and inclusive growth

Economic vitality
- Good jobs available to less-educated workers
- Family-supporting incomes
- Rising wages and living standards for lower-income households
- Strong regional industries
- Economic growth widely shared
- Reduced economic inequality
- Shrinking racial wealth gap

Healthy, economically secure people

Readiness
- Skills for the jobs of the future
- Youth ready to enter the workforce and adapt to economic shifts
- Good population health and reduced health inequities
- Health insurance coverage and access to care

Strong, inclusive regional economies

Connectedness
- Transportation and mobility choices, including walking, biking, and public transit
- Inclusive, health-supporting neighborhood and school environments
- Access to quality, affordable housing
- Shared political power and voice

Policies and practices that undo structural racism and foster full inclusion
Introduction

Geography

This profile describes demographic, economic, and health conditions in Fresno County, portrayed in black on the map to the right. Fresno County is also the Fresno, California metropolitan statistical area. Fresno County is home to the city of Fresno, the largest city in the Central Valley, as well as dozens of other cities and unincorporated areas.

Unless otherwise noted, all data reflect the county geography, which is simply referred to as “Fresno.” Some exceptions due to lack of data availability are noted beneath the relevant figures. Information on data sources and methodology can be found in the “Data and methods” section beginning on page 106.
Demographics

**Highlights**

*Who lives in the county, and how is this changing?*

- Fresno County is majority Latino. Growth in communities of color outpaced overall population growth from 2000 to 2014.

- The county’s fastest-growing demographic groups are younger than Whites on average.

- The U.S.-born Latino population grew by over 110,000 people from 2000 to 2014 while the U.S.-born White population declined by over 17,000 people.

- A large racial generation gap (the difference in the share of seniors of color and youth of color) often corresponds with lower investments in educational systems and infrastructure to support youth.

Growth in U.S-born Asian or Pacific Islander population since 2000:

60%

The median age of Latinos in the county:

26

Racial generation gap in 2014 (in percentage points):

39
Demographics

How racially/ethnically diverse is the county?

Latinos make up a majority of Fresno’s population. White residents (including White immigrants) account for only 32 percent of the population, compared to 39 percent statewide. Asians or Pacific Islanders make up 10 percent of the county’s population.

Race/Ethnicity and Nativity, 2014

- White, U.S.-born: 36%
- White, immigrant: 2%
- Black, U.S.-born: 5%
- Black, immigrant: 0.1%
- Latino, U.S.-born: 15%
- Latino, immigrant: 5%
- Asian or Pacific Islander, U.S.-born: 5%
- Asian or Pacific Islander, immigrant: 5%
- Native American and Alaska Native: 2%
- Mixed/other: 2%

Source: Integrated Public Use Microdata Series.
Note: Data represent a 2010 through 2014 average. Figures may not sum to 100 percent due to rounding.
Demographics

How racially/ethnically diverse is the county?

Communities of color in the county are also diverse. People of Mexican ancestry make up the largest Latino subgroup, but those of Central American ancestry are more likely to be immigrants. The Hmong population makes up the largest Asian or Pacific Islander ancestry group while Indians are more likely to be immigrants.

<table>
<thead>
<tr>
<th>Latino</th>
<th>Population</th>
<th>% Immigrant</th>
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<tbody>
<tr>
<td>Mexican</td>
<td>384,987</td>
<td>31%</td>
</tr>
<tr>
<td>Central American (all)</td>
<td>11,387</td>
<td>62%</td>
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<tr>
<td>South American (all)</td>
<td>1,938</td>
<td>N/A</td>
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<tr>
<td>Caribbean (all)</td>
<td>3,551</td>
<td>6%</td>
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<tr>
<td>Other Latino</td>
<td>84,363</td>
<td>15%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>486,225</strong></td>
<td><strong>29%</strong></td>
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<table>
<thead>
<tr>
<th>Asian or Pacific Islander (API)</th>
<th>Population</th>
<th>% Immigrant</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hmong</td>
<td>26,718</td>
<td>38%</td>
</tr>
<tr>
<td>Indian</td>
<td>14,233</td>
<td>74%</td>
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<tr>
<td>Filipino</td>
<td>8,416</td>
<td>64%</td>
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<tr>
<td>Laotian</td>
<td>6,885</td>
<td>51%</td>
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<td>Chinese</td>
<td>5,621</td>
<td>53%</td>
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<tr>
<td>Cambodian</td>
<td>4,466</td>
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<tr>
<td>Japanese</td>
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<tr>
<td>Vietnamese</td>
<td>3,814</td>
<td>71%</td>
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<td>All other API</td>
<td>17,713</td>
<td>N/A</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>91,911</strong></td>
<td><strong>51%</strong></td>
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</table>

<table>
<thead>
<tr>
<th>Black</th>
<th>Population</th>
<th>% Immigrant</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nigerian</td>
<td>413</td>
<td>N/A</td>
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<tr>
<td>Ethiopian/Eritrean</td>
<td>217</td>
<td>N/A</td>
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<tr>
<td>German</td>
<td>164</td>
<td>N/A</td>
</tr>
<tr>
<td>French</td>
<td>148</td>
<td>N/A</td>
</tr>
<tr>
<td>Jamaican</td>
<td>120</td>
<td>N/A</td>
</tr>
<tr>
<td>Irish</td>
<td>96</td>
<td>N/A</td>
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<tr>
<td>All other Black</td>
<td>44,214</td>
<td>N/A</td>
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<tr>
<td><strong>Total</strong></td>
<td><strong>45,373</strong></td>
<td><strong>2%</strong></td>
</tr>
</tbody>
</table>

Source: Integrated Public Use Microdata Series.
Note: Data represent a 2010 through 2014 average. "N/A" indicates that data on the percent immigrant is not available.
Demographics

How racially/ethnically diverse is the county?

Communities of color are spread throughout Fresno, but are most concentrated on the west side of the county. The darker census block groups, representing areas where people of color make up at least 76 percent of the population, are also more concentrated in southwest areas of the city of Fresno.

Sources: U.S. Census Bureau; TomTom, ESRI, DeLorme, MaymyIndia, © OpenStreetMap contributors, and the GIS user community.

Note: Data represent a 2010 through 2014 average. Areas in white are missing data.
Demographics

How is the area’s population changing over time?

Communities of color are driving growth. The U.S.-born Asian or Pacific Islander population was the fastest growing over the last decade adding nearly 17,000 people, while the U.S.-born Latino population grew by 110,000 people. Still, immigrants accounted for nearly one-quarter of net population growth.

Growth Rates of Major Racial/Ethnic Groups by Nativity, 2000 to 2014

Source: Integrated Public Use Microdata Series.
Note: Data for 2014 represent a 2010 through 2014 average.
Demographics

How is the area’s population changing over time?

Growth in communities of color has outpaced overall population growth in Fresno. While the overall population increased by 19 percent from 2000 to 2014, the people-of-color population grew by 35 percent.

Net Change in Population by Geography, 2000 to 2014

- People-of-color Growth
- Total Population Growth

Fresno

Source: U.S. Census Bureau.
Note: Data for 2014 represent a 2010 through 2014 average.
Demographics

How is the area’s population changing over time?

The county turned majority people of color in the early 1990s.
Latinos and Asians or Pacific Islanders have driven growth: the Latino population grew from 29 percent in 1980 to a majority in 2014, and the Asian or Pacific Islander population more than tripled during the same time period. The White population share has declined significantly each decade.

Racial/Ethnic Composition, 1980 to 2014

- Mixed/other
- Native American
- Asian or Pacific Islander
- Latino
- Black
- White

Source: U.S. Census Bureau.
Note: Much of the increase in the Mixed/other population between 1990 and 2000 is due to a change in the survey question on race.
Demographics

How is the area’s population changing over time?

Fresno County is a largely Latino region with a few exceptions in the northeastern part of the county. The city of Clovis, for example, located just northeast of the city of Fresno, is 56 percent White. There has also been noticeable population growth in the southwest part of the county.

Race/Ethnicity Dot Map by Census Block Group, 1990 and 2014

Race/ethnicity
1 Dot = 25 people
- White
- Black
- Latino
- Asian or Pacific Islander
- Native American
- Mixed/other

Sources: U.S. Census Bureau, GeoLytics, Inc.; TomTom, ESRI, HERE, DeLorme, MaymyIndia, © OpenStreetMap contributors, and the GIS user community.
Note: Data for 2014 represent a 2010 through 2014 average.
There will continue to be a Latino plurality in Fresno County through 2050. From 2010 to 2050, the Latino population share is projected to grow from 50 to 58 percent. The Asian or Pacific Islander population share is projected to drop one percentage point over the same time period while the Black population share will grow by one percentage point.

Racial/Ethnic Composition, 1980 to 2050

- U.S. % White
- Mixed/other
- Native American
- Asian or Pacific Islander
- Latino
- Black
- White

Sources: U.S. Census Bureau; Woods & Poole Economics, Inc.
Note: Much of the increase in the Mixed/other population between 1990 and 2000 is due to a change in the survey question on race.
Demographics

How is the area’s population changing over time?

The racial generation gap was high in 1980, and continues to grow. By 2014, 81 percent of youth were people of color, compared with just 42 percent of seniors. A large racial generation gap often corresponds with lower investments in educational systems and infrastructure to support youth.

Racial Generation Gap: Percent People of Color (POC) by Age Group, 1980 to 2014

- Percent of seniors who are POC
- Percent of youth who are POC

Source: U.S. Census Bureau.
Note: Youth include persons under age 18 and seniors include those age 65 or older. Data for 2014 represent a 2010 through 2014 average.
Demographics

How is the area’s population changing over time?

The county’s fastest-growing demographic groups are also significantly younger than Whites. People of mixed/other races have the youngest median age at 25 years old. The median ages of all groups of color are much lower than the median age for Whites.

Median Age by Race/Ethnicity, 2014

Source: Integrated Public Use Microdata Series.
Note: Data represent a 2010 through 2014 average.
Demographics

How is the area’s population changing over time?

Southeast Asians, who account for 56 percent of the Asian or Pacific Islander population, have a lower median age than the Asian or Pacific Islander population as a whole. Within the Southeast Asian population, those of Hmong ancestry have the lowest median age at just 22 years old – younger than the other major race/ethnic groups.

Median Age for the Southeast Asian Population by Ancestry, 2014

- Asian or Pacific Islander (all): 29
- Southeast Asian (all): 26
- Vietnamese: 42
- Cambodian: 23
- Hmong: 22
- Laotian: 28
- Filipino: 37

Source: Integrated Public Use Microdata Series.
Note: Data represent a 2010 through 2014 average.
Demographics

How is the area’s population changing over time?

Latino immigrants are the largest immigrant group and are the most likely to speak little or no English. Language barriers are known to impact access to health and other vital services, and not all Latino immigrants speak Spanish.

English-Speaking Ability Among Immigrants by Race/Ethnicity, 2000 and 2014

Percent speaking English...
- Only
- Very well
- Well
- Not well
- Not at all

Source: Integrated Public Use Microdata Series. Universe includes all persons ages 5 or older.
Note: Data for some groups by race/ethnicity/nativity in some years are excluded due to small sample size. Data for 2014 represent a 2010 through 2014 average.
Demographics

How is the area’s population changing over time?

Among all Southeast Asian immigrants, 35 percent speak little or no English. Vietnamese, Hmong, and Laotian immigrants are significantly more likely than Filipino immigrants to speak little or no English.

English-Speaking Ability Among Southeast Asian Immigrants by Ancestry, 2014

Percent speaking English...
- Only
- Very well
- Well
- Not well
- Not at all

Source: Integrated Public Use Microdata Series. Universe includes all persons ages 5 or older.
Note: Data represents a 2010 through 2014 average.
Demographics

How is the area’s population changing over time?

There are pockets of linguistic isolation throughout the region, with higher concentrations on the west side of the county. Linguistically isolated households are defined as those in which no member age 14 or older speaks English at least “very well.”

Linguistic Isolation by Census Tract, 2014

- Less than 4%
- 4% to 8%
- 8% to 15%
- 15% to 27%
- 27% or more

Sources: U.S. Census Bureau; TomTom, ESRI, HERE, DeLorme, MaymyIndia, © OpenStreetMap contributors, and the GIS user community.

Note: Data represent a 2010 through 2014 average.
Economic vitality

Highlights

How is the county doing on measures of growth and well-being?

• Job growth has been similar to the national average since 1990 but unemployment remains stubbornly high.

• While middle-wage industries have grown the most in number of jobs since 1990, they have seen the least growth in real wages.

• Although education is a leveler, racial gaps persist in the labor market. Black workers have a consistently higher unemployment rate, and Latino workers earn much less than their White counterparts regardless of education.

• Economic insecurity and working poverty have grown over the last decade. Latinos are more than three times as likely as Whites to be working full-time with a family income less than 200 percent of poverty.

Decline in median wages for workers since 1979:

-13%

Share of Black children living in poverty:

53%

Wage gap between White and Latino workers:

$10/hr
Economic vitality

Is the county producing good jobs?

Fresno is still recovering from the Great Recession. Pre-downturn, the county’s economy performed on par with the nation in terms of job and gross domestic product (GDP) growth. Since 2009, it has experienced higher growth in jobs but lower growth in GDP.

Average Annual Growth in Jobs and GDP, 1990 to 2007 and 2009 to 2014

Source: U.S. Bureau of Economic Analysis.
Economic vitality
Is the county producing good jobs?

Low-wage jobs have grown considerably faster than high-wage jobs from 1990 to 2015. More importantly, middle-wage jobs have also grown. Earnings per worker have increased across the board with the highest increases among low- and high-wage jobs.

Growth in Jobs and Earnings by Industry Wage Level, 1990 to 2015

- Low wage
- Middle wage
- High wage

Sources: U.S. Bureau of Labor Statistics; Woods & Poole Economics, Inc. Universe includes all private sector jobs covered by the federal Unemployment Insurance (UI) program.
Access to good jobs
How close is the county to reaching full employment?

Unemployment has declined in the region but is still more than double the national rate. The unemployment rate in the country was 4.5 percent in December 2016, and it was 5.0 percent in California. In Fresno County, however, it was 9.5 percent, and in the city of Fresno it was still 10.3 percent.

Unemployment Rate, December 2016

- United States: 4.5%
- California: 5.0%
- Fresno County, CA: 9.5%
- Fresno city, CA: 10.3%

Source: U.S. Bureau of Labor Statistics. Universe includes the civilian noninstitutional labor force ages 16 and older. Note: Rates are not seasonally adjusted.
Access to good jobs

How close is the county to reaching full employment?

Unemployment is relatively high in Fresno, compared to the state, but it varies geographically. Unemployment rates were less than 2 percent in Coalinga and near San Joaquin and Helm, but greater than 20 percent in communities located along the I-5 freeway in the northern part of the county.

Unemployment Rate by Census Tract, 2014

- Less than 2%
- 2% to 12%
- 12% to 15%
- 15% to 20%
- 20% or more

Sources: U.S. Census Bureau; TomTom, ESRI, HERE, DeLorme, MaymyIndia, © OpenStreetMap contributors, and the GIS user community.

Note: Data represent a 2010 through 2014 average.
Access to good jobs
How close is the county to reaching full employment?

Unemployment is relatively high in the county overall, and racial inequities persist. Rates of unemployment in the county are highest for Black residents followed by those of mixed/other races and Latinos. Whites have the lowest unemployment rate.

Unemployment Rate by Race/Ethnicity, 2014

- All: 12.8%
- White: 9.6%
- Black: 19.3%
- Latino: 14.6%
- Asian or Pacific Islander: 11.6%
- Southeast Asian: 13.7%
- Mixed/other: 15.3%

Source: Integrated Public Use Microdata Series. Universe includes the civilian noninstitutional labor force ages 25 through 64. Note: Data represent a 2010 through 2014 average.
Access to good jobs
How close is the county to reaching full employment?

**People of Hmong ancestry have a higher unemployment rate than Asians or Pacific Islanders overall.** When looking within the Southeast Asian population, the overall unemployment rate is 13.7 percent, but it goes up to 15.8 percent for those of Hmong ancestry.

Unemployment Rate for the Southeast Asian Population by Ancestry, 2014

- **Asian or Pacific Islander (all):** 11.6%
- **Southeast Asian (all):** 13.7%
- **Hmong:** 15.8%
- **Filipino:** 13.7%

Source: Integrated Public Use Microdata Series. Universe includes the civilian noninstitutional labor force ages 25 through 64. Note: Data represent a 2010 through 2014 average.
Access to good jobs
How close is the county to reaching full employment?

**Labor force participation is relatively low in the county, and racial inequities persist.** Rates of labor force participation in the county are lowest for Black and Southeast Asian residents, while Whites and Latinos have higher rates.

![Labor Force Participation Rate by Race/Ethnicity, 2014](chart)

Source: Integrated Public Use Microdata Series. Universe includes the civilian noninstitutional population ages 25 through 64.

Note: Data represent a 2010 through 2014 average.
Access to good jobs
How close is the county to reaching full employment?

Unemployment declines as education levels increase, but racial gaps remain. African Americans tend to face the highest rates of unemployment regardless of education. Southeast Asians also have persistently high unemployment among the population with a least a high school diploma.

Source: Integrated Public Use Microdata Series. Universe includes the civilian noninstitutional labor force ages 25 through 64. Note: Data for some racial/ethnic groups are excluded due to small sample size. Data represent a 2010 through 2014 average.
Access to good jobs
Can all workers earn a living wage?

Racial wage gaps also persist regardless of education. Latino workers tend to have the lowest wages at all education levels, while White workers have the highest. Comparing all workers of color to White workers, the racial wage gap is largest among those with more than a high school diploma but less than a bachelor’s degree, at about $5/hour.

Median Hourly Wage by Educational Attainment and Race/Ethnicity, 2014

Source: Integrated Public Use Microdata Series. Universe includes civilian noninstitutional full-time wage and salary workers ages 25 through 64.
Note: Data for some racial/ethnic groups are excluded due to small sample size. Data represent a 2010 through 2014 average. Values are in 2014 dollars.
Inclusive growth
Are incomes increasing for all workers?

Since 1979, only workers in the 90th percentile have seen their wages grow. Workers at the bottom of the earnings distribution have experienced the most significant wage declines, and the declines have been greater in Fresno than in the nation overall.

Real Earned Income Growth for Full-Time Wage and Salary Workers, 1979 to 2014

Source: Integrated Public Use Microdata Series. Universe includes civilian noninstitutional full-time wage and salary workers ages 25 through 64.
Note: Data for 2014 represent a 2010 through 2014 average.
Inclusive growth
Are incomes increasing for all workers?

Racial gaps in wages have grown over the past decade. From 2000 to 2014, White workers saw their median hourly wage increase in real terms, while most groups of color experienced wage stagnation or decline.

Median Hourly Wage by Race/Ethnicity, 2000 and 2014

- **2000**
  - All: $19.10
  - White: $18.20
  - Black: $17.80
  - Latino: $14.60
  - Asian or Pacific Islander: $18.70
  - Mixed/other: $19.60
  - People of Color: $21.30

- **2014**
  - All: $22.80
  - White: $24.50
  - Black: $17.50
  - Latino: $17.50
  - Asian or Pacific Islander: $17.50
  - Mixed/other: $21.30
  - People of Color: $22.60

Source: Integrated Public Use Microdata Series. Universe includes civilian noninstitutional full-time wage and salary workers ages 25 through 64.
Note: Data for 2014 represent a 2010 through 2014 average. Values are in 2014 dollars.
Inclusive growth
Is the middle class expanding?

The county’s middle class has declined. Since 1979, the share of middle-income households has declined three percentage points, as has the share of upper-income households. Meanwhile, the share of lower-income households has increased by six percentage points.

Households by Income Level, 1979 and 2014

Source: Integrated Public Use Microdata Series. Universe includes all households (no group quarters). Note: Data for 2014 represent a 2010 through 2014 average. Dollar values are in 2014 dollars.
Inclusive growth

Is the middle class becoming more inclusive?

The middle class has become more diverse and representative of households overall. Latinos make up 42 percent of all households in Fresno and 45 percent of middle-class households. Whites make up 42 percent of all households and 41 percent of middle-class households.

Racial Composition of Middle-Class Households and All Households, 1979 and 2014

Source: Integrated Public Use Microdata Series. Universe includes all households (no group quarters).
Note: Data for 2014 represent a 2010 through 2014 average.
Inclusive growth

Is inequality low and decreasing?

Income inequality, as measured by the Gini coefficient, has increased in Fresno. A growing body of research suggests that living in a community with high levels of income inequality is associated with lower life expectancy.

Income Inequality, 1979 to 2014

Income inequality is measured here by the Gini coefficient for household income, which ranges from 0 (perfect equality) to 1 (perfect inequality: one household has all of the income).

Source: Integrated Public Use Microdata Series. Universe includes all households (no group quarters).

Note: Data for 2014 represent a 2010 through 2014 average.
Economic security
Is poverty low and decreasing?

Poverty is on the rise in the county, and the rates are higher for people of color. The overall poverty rate in 2014 was 27 percent but it was 40 percent for Blacks, 39 percent for Native Americans, and 35 percent for Latinos and Southeast Asians. The White poverty rate was much lower at 13 percent.

Poverty Rate by Race/Ethnicity, 2000 and 2014

Source: Integrated Public Use Microdata Series. Universe includes all persons not in group quarters.
Note: Data for 2014 represent a 2010 through 2014 average.
Economic security

Is poverty low and decreasing?

**Children of color also have much higher poverty rates than White children.** In 2014, 39 percent of all children in Fresno were in poverty. But Black children are three times as likely as White children to live in poverty. A wealth of research finds that children who grow up in poverty are more likely to have serious health problems.

Child Poverty Rate by Race/Ethnicity, 2014

Source: Integrated Public Use Microdata Series. Universe includes the population under age 18 not in group quarters.

Note: Data represent a 2010 through 2014 average.
Economic security
Is poverty low and decreasing?

Poverty rates are relatively high in Fresno across the board, though differences by neighborhood remain. The highest poverty rates are seen on the west side of the county.

Percent Population Below the Poverty Level by Census Tract, 2014

- Less than 9%
- 9% to 22%
- 22% to 32%
- 32% to 43%
- 43% or more

Sources: U.S. Census Bureau; TomTom, ESRI, HERE, DeLorme, MaymyIndia, © OpenStreetMap contributors, and the GIS user community. Universe includes all persons not in group quarters.
Note: Data represent a 2010 through 2014 average.
Economic security
Is the share of working poor low and decreasing?

Rates of working poverty have also increased in Fresno. The working poor rate – defined as working full time with family income below 200 percent of poverty – is highest among Native Americans, Southeast Asians, and Latinos.

Working Poor Rate by Race/Ethnicity, 2000 and 2014

Source: Integrated Public Use Microdata Series. Universe includes the civilian noninstitutional population ages 25 through 64 not in group quarters.
Note: Data for 2014 represent a 2010 through 2014 average.
## Strong industries and occupations

Which industries are projected to grow?

Fresno County is projected to add **57,600 jobs from 2012 to 2022**. More than 15,200 of these jobs will be in the health care and social assistance industry, and another 6,200 will be in the leisure and hospitality sector.

### Industry Employment Projections, 2012-2022

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<thead>
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</tr>
</thead>
<tbody>
<tr>
<td>Health Care and Social Assistance</td>
<td>45,900</td>
<td>61,100</td>
<td>15,200</td>
<td>3%</td>
<td>33%</td>
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<tr>
<td>Leisure and Hospitality</td>
<td>28,000</td>
<td>34,200</td>
<td>6,200</td>
<td>2%</td>
<td>22%</td>
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<tr>
<td>Total Farm</td>
<td>48,900</td>
<td>53,700</td>
<td>4,800</td>
<td>1%</td>
<td>10%</td>
</tr>
<tr>
<td>Administrative and Support and Waste Management</td>
<td>16,200</td>
<td>20,900</td>
<td>4,700</td>
<td>3%</td>
<td>29%</td>
</tr>
<tr>
<td>Construction</td>
<td>12,200</td>
<td>16,800</td>
<td>4,600</td>
<td>3.8%</td>
<td>38%</td>
</tr>
<tr>
<td>Retail Trade</td>
<td>33,800</td>
<td>38,300</td>
<td>4,500</td>
<td>1%</td>
<td>13%</td>
</tr>
<tr>
<td>Professional, Scientific and Technical Services</td>
<td>9,800</td>
<td>13,400</td>
<td>3,600</td>
<td>4%</td>
<td>37%</td>
</tr>
<tr>
<td>Government</td>
<td>64,100</td>
<td>67,600</td>
<td>3,500</td>
<td>1%</td>
<td>5%</td>
</tr>
<tr>
<td>Manufacturing</td>
<td>23,600</td>
<td>27,000</td>
<td>3,400</td>
<td>1%</td>
<td>14%</td>
</tr>
<tr>
<td>Finance and Insurance</td>
<td>8,800</td>
<td>10,600</td>
<td>1,800</td>
<td>2%</td>
<td>20%</td>
</tr>
<tr>
<td>Transportation, Warehousing, and Utilities</td>
<td>11,600</td>
<td>13,000</td>
<td>1,400</td>
<td>1%</td>
<td>12%</td>
</tr>
<tr>
<td>Educational Services (Private)</td>
<td>5,200</td>
<td>6,300</td>
<td>1,100</td>
<td>2%</td>
<td>21%</td>
</tr>
<tr>
<td>Self Employment (A)</td>
<td>25,200</td>
<td>26,000</td>
<td>800</td>
<td>0%</td>
<td>3%</td>
</tr>
<tr>
<td>Wholesale Trade</td>
<td>12,800</td>
<td>13,600</td>
<td>800</td>
<td>1%</td>
<td>6%</td>
</tr>
<tr>
<td>Other Services (excludes 814-Private Household Workers)</td>
<td>10,600</td>
<td>11,300</td>
<td>700</td>
<td>1%</td>
<td>7%</td>
</tr>
<tr>
<td>Real Estate and Rental and Leasing</td>
<td>4,000</td>
<td>4,700</td>
<td>700</td>
<td>2%</td>
<td>18%</td>
</tr>
<tr>
<td>Management of Companies and Enterprises</td>
<td>2,000</td>
<td>2,500</td>
<td>500</td>
<td>3%</td>
<td>25%</td>
</tr>
<tr>
<td>Unpaid Family Workers (B)</td>
<td>1,200</td>
<td>1,100</td>
<td>-100</td>
<td>-1%</td>
<td>-8%</td>
</tr>
<tr>
<td>Mining and Logging</td>
<td>300</td>
<td>200</td>
<td>-100</td>
<td>-3%</td>
<td>-33%</td>
</tr>
<tr>
<td>Information</td>
<td>3,800</td>
<td>3,500</td>
<td>-300</td>
<td>-1%</td>
<td>-8%</td>
</tr>
<tr>
<td>Private Household Workers (C)</td>
<td>1,400</td>
<td>1,100</td>
<td>-300</td>
<td>-2%</td>
<td>-21%</td>
</tr>
<tr>
<td><strong>Total Employment</strong></td>
<td><strong>369,300</strong></td>
<td><strong>426,900</strong></td>
<td><strong>57,600</strong></td>
<td><strong>2%</strong></td>
<td><strong>16%</strong></td>
</tr>
</tbody>
</table>

Source: State of California Employment Development Department.

Note: Figures may not add up to total due to rounding.
Of the 57,600 jobs to be added by 2022, office and administrative support occupations are expected to grow the most, adding more than 7,600 jobs. Another 6,500 jobs will be in personal care and service occupations and over 6,200 will be in food preparation and serving-related occupations.

### Occupational Employment Projections, 2012-2022

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</tr>
</thead>
<tbody>
<tr>
<td>Office and Administrative Support Occupations</td>
<td>52,490</td>
<td>60,140</td>
<td>7,650</td>
<td>1.4%</td>
<td>15%</td>
</tr>
<tr>
<td>Personal Care and Service Occupations</td>
<td>17,360</td>
<td>23,950</td>
<td>6,590</td>
<td>3%</td>
<td>38%</td>
</tr>
<tr>
<td>Food Preparation and Serving Related Occupinations</td>
<td>25,400</td>
<td>31,670</td>
<td>6,270</td>
<td>2%</td>
<td>25%</td>
</tr>
<tr>
<td>Other Personal Care and Service Workers</td>
<td>13,980</td>
<td>20,070</td>
<td>6,090</td>
<td>4%</td>
<td>44%</td>
</tr>
<tr>
<td>Personal Care Aides</td>
<td>9,890</td>
<td>15,670</td>
<td>5,780</td>
<td>5%</td>
<td>58%</td>
</tr>
<tr>
<td>Sales and Related Occupations</td>
<td>32,590</td>
<td>37,810</td>
<td>5,220</td>
<td>1%</td>
<td>16%</td>
</tr>
<tr>
<td>Farming, Fishing, and Forestry Occupations</td>
<td>40,870</td>
<td>44,840</td>
<td>3,970</td>
<td>1%</td>
<td>10%</td>
</tr>
<tr>
<td>Agricultural Workers</td>
<td>39,690</td>
<td>43,510</td>
<td>3,820</td>
<td>1%</td>
<td>10%</td>
</tr>
<tr>
<td>Construction and Extraction Occupations</td>
<td>11,500</td>
<td>15,200</td>
<td>3,700</td>
<td>3%</td>
<td>32%</td>
</tr>
<tr>
<td>Food and Beverage Serving Workers</td>
<td>12,900</td>
<td>16,350</td>
<td>3,450</td>
<td>2%</td>
<td>27%</td>
</tr>
<tr>
<td>Retail Sales Workers</td>
<td>19,910</td>
<td>23,330</td>
<td>3,420</td>
<td>2%</td>
<td>17%</td>
</tr>
<tr>
<td>Transportation and Material Moving Occupinations</td>
<td>26,350</td>
<td>29,670</td>
<td>3,320</td>
<td>1%</td>
<td>13%</td>
</tr>
<tr>
<td>Construction Trades Workers</td>
<td>9,740</td>
<td>12,870</td>
<td>3,130</td>
<td>3%</td>
<td>32%</td>
</tr>
<tr>
<td>Farmworkers and Laborers, Crop, Nursery, and Greenhouse</td>
<td>34,230</td>
<td>37,320</td>
<td>3,090</td>
<td>1%</td>
<td>9%</td>
</tr>
<tr>
<td>Business and Financial Operations Occupations</td>
<td>13,730</td>
<td>16,810</td>
<td>3,080</td>
<td>2%</td>
<td>22%</td>
</tr>
<tr>
<td>Education, Training, and Library Occupations</td>
<td>25,310</td>
<td>28,270</td>
<td>2,960</td>
<td>1%</td>
<td>12%</td>
</tr>
<tr>
<td>Healthcare Practitioners and Technical Occupinations</td>
<td>16,550</td>
<td>19,380</td>
<td>2,830</td>
<td>2%</td>
<td>17%</td>
</tr>
<tr>
<td>Production Occupations</td>
<td>17,360</td>
<td>19,740</td>
<td>2,380</td>
<td>1%</td>
<td>14%</td>
</tr>
<tr>
<td>Healthcare Support Occupations</td>
<td>8,320</td>
<td>10,480</td>
<td>2,160</td>
<td>2%</td>
<td>26%</td>
</tr>
<tr>
<td>Combined Food Preparation and Serving Workers, Including Fast Food</td>
<td>6,670</td>
<td>8,820</td>
<td>2,150</td>
<td>3%</td>
<td>32%</td>
</tr>
<tr>
<td>Management Occupations</td>
<td>26,170</td>
<td>28,300</td>
<td>2,130</td>
<td>1%</td>
<td>8%</td>
</tr>
<tr>
<td>Business Operations Specialists</td>
<td>8,040</td>
<td>10,150</td>
<td>2,110</td>
<td>2%</td>
<td>26%</td>
</tr>
<tr>
<td>Total, All Occupations</td>
<td>369,300</td>
<td>426,900</td>
<td>57,600</td>
<td>1%</td>
<td>16%</td>
</tr>
</tbody>
</table>

Source: State of California Employment Development Department.
Note: Figures may not add up to total due to rounding.
Strong industries and occupations
Identifying the county’s strong industries

Understanding which industries are strong and competitive in the region is critical for developing effective strategies to attract and grow businesses. To identify strong industries in the region, 19 industry sectors were categorized according to an “industry strength index” that measures four characteristics: size, concentration, job quality, and growth. Each characteristic was given an equal weight (25 percent each) in determining the index value. “Growth” was an average of three indicators of growth (change in the number of jobs, percent change in the number of jobs, and real wage growth). These characteristics were examined over the last decade to provide a current picture of how the region’s economy is changing.

Given that the regional economy has experienced uneven employment growth across industries, it is important to note that this index is only meant to provide general guidance on the strength of various industries. Its interpretation should be informed by examining all four metrics of size, concentration, job quality, and growth.

Industry strength index =

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</tr>
</thead>
<tbody>
<tr>
<td>Total Employment</td>
<td>Location Quotient</td>
<td>Average Annual Wage</td>
<td>Change in the number of jobs</td>
</tr>
</tbody>
</table>

Note: This industry strength index is only meant to provide general guidance on the strength of various industries in the region, and its interpretation should be informed by an examination of individual metrics used in its calculation, which are presented in the table on the next page. Each indicator was normalized as a cross-industry z-score before taking a weighted average to derive the index.
The strongest industries in the region include agriculture, forestry, fishing and hunting; health care and social assistance; and utilities. Health care and social assistance added over 22,000 jobs from 2005 and 2015, but real wages declined by 9 percent.

### Strong Industries Analysis, 2015

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</tr>
</thead>
<tbody>
<tr>
<td>Agriculture, Forestry, Fishing and Hunting</td>
<td>47,196</td>
<td>14.5</td>
<td>$27,676</td>
<td>980</td>
<td>2%</td>
<td>25%</td>
<td>134.7</td>
</tr>
<tr>
<td>Health Care and Social Assistance</td>
<td>55,074</td>
<td>1.1</td>
<td>$44,357</td>
<td>22,297</td>
<td>68%</td>
<td>-9%</td>
<td>82.8</td>
</tr>
<tr>
<td>Utilities</td>
<td>2,190</td>
<td>1.5</td>
<td>$116,514</td>
<td>740</td>
<td>51%</td>
<td>33%</td>
<td>68.2</td>
</tr>
<tr>
<td>Mining</td>
<td>290</td>
<td>0.1</td>
<td>$95,988</td>
<td>117</td>
<td>68%</td>
<td>41%</td>
<td>41.8</td>
</tr>
<tr>
<td>Information</td>
<td>3,906</td>
<td>0.5</td>
<td>$82,892</td>
<td>-562</td>
<td>-13%</td>
<td>35%</td>
<td>10.1</td>
</tr>
<tr>
<td>Wholesale Trade</td>
<td>13,624</td>
<td>0.9</td>
<td>$57,224</td>
<td>1,073</td>
<td>9%</td>
<td>10%</td>
<td>-3.6</td>
</tr>
<tr>
<td>Retail Trade</td>
<td>37,117</td>
<td>0.9</td>
<td>$28,963</td>
<td>2,046</td>
<td>6%</td>
<td>-5%</td>
<td>-5.3</td>
</tr>
<tr>
<td>Manufacturing</td>
<td>25,199</td>
<td>0.8</td>
<td>$44,442</td>
<td>-1,736</td>
<td>-6%</td>
<td>2%</td>
<td>-13.6</td>
</tr>
<tr>
<td>Finance and Insurance</td>
<td>8,387</td>
<td>0.6</td>
<td>$67,957</td>
<td>-1,998</td>
<td>-19%</td>
<td>14%</td>
<td>-13.7</td>
</tr>
<tr>
<td>Professional, Scientific, and Technical Services</td>
<td>10,316</td>
<td>0.5</td>
<td>$56,495</td>
<td>-339</td>
<td>-3%</td>
<td>14%</td>
<td>-16.1</td>
</tr>
<tr>
<td>Accommodation and Food Services</td>
<td>27,461</td>
<td>0.8</td>
<td>$16,504</td>
<td>4,922</td>
<td>22%</td>
<td>6%</td>
<td>-17.1</td>
</tr>
<tr>
<td>Transportation and Warehousing</td>
<td>9,640</td>
<td>0.8</td>
<td>$43,814</td>
<td>1,803</td>
<td>23%</td>
<td>3%</td>
<td>-22.1</td>
</tr>
<tr>
<td>Management of Companies and Enterprises</td>
<td>2,077</td>
<td>0.4</td>
<td>$69,439</td>
<td>-890</td>
<td>-30%</td>
<td>10%</td>
<td>-26.4</td>
</tr>
<tr>
<td>Administrative and Support and Waste Management and Remediation Services</td>
<td>18,810</td>
<td>0.8</td>
<td>$26,966</td>
<td>3,915</td>
<td>26%</td>
<td>-8%</td>
<td>-27.3</td>
</tr>
<tr>
<td>Construction</td>
<td>14,828</td>
<td>0.9</td>
<td>$50,577</td>
<td>-6,735</td>
<td>-31%</td>
<td>8%</td>
<td>-32.6</td>
</tr>
<tr>
<td>Other Services (except Public Administration)</td>
<td>10,591</td>
<td>0.9</td>
<td>$12,667</td>
<td>-6,533</td>
<td>-38%</td>
<td>36%</td>
<td>-41.9</td>
</tr>
<tr>
<td>Real Estate and Rental and Leasing</td>
<td>4,457</td>
<td>0.8</td>
<td>$39,033</td>
<td>142</td>
<td>3%</td>
<td>2%</td>
<td>-42.2</td>
</tr>
<tr>
<td>Education Services</td>
<td>3,306</td>
<td>0.5</td>
<td>$30,846</td>
<td>437</td>
<td>15%</td>
<td>7%</td>
<td>-48.3</td>
</tr>
<tr>
<td>Arts, Entertainment, and Recreation</td>
<td>3,454</td>
<td>0.6</td>
<td>$18,639</td>
<td>564</td>
<td>20%</td>
<td>-5%</td>
<td>-64.4</td>
</tr>
</tbody>
</table>

Sources: U.S. Bureau of Labor Statistics; Woods & Poole Economics, Inc. Universe includes all private sector jobs covered by the federal Unemployment Insurance (UI) program.

Note: Dollar values are in 2015 dollars.
Strong industries and occupations

Identifying high-opportunity occupations

Understanding which occupations are strong and competitive in the region can help leaders develop strategies to connect and prepare workers for good jobs. To identify “high-opportunity” occupations in the region, we developed an “occupation opportunity index” based on measures of job quality and growth, including median annual wage, real wage growth, job growth (in number and share), and median age of workers. A high median age of workers indicates that there will be replacement job openings as older workers retire.

**Occupation opportunity index =**

- **Job quality**
  - Median annual wage
  - Real wage growth
  - Change in the number of jobs
  - Percent change in the number of jobs
  - Median age of workers

- **Growth**
Strong industries and occupations

What are the county’s high-opportunity occupations?

The three strongest occupations in the region require education beyond a bachelor’s degree. School teachers have experienced negative wage growth even though they have grown considerably in number.

### Strong Occupations Analysis, 2011

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</tr>
</thead>
<tbody>
<tr>
<td>Lawyers, Judges, and Related Workers</td>
<td>1,040</td>
<td>$114,326</td>
<td>-11%</td>
<td>110</td>
<td>12%</td>
<td>48</td>
<td>2.02</td>
</tr>
<tr>
<td>Life Scientists</td>
<td>370</td>
<td>$78,315</td>
<td>59%</td>
<td>260</td>
<td>236%</td>
<td>40</td>
<td>1.88</td>
</tr>
<tr>
<td>Health Diagnosing and Treating Practitioners</td>
<td>8,860</td>
<td>$96,028</td>
<td>8%</td>
<td>1,240</td>
<td>16%</td>
<td>43</td>
<td>1.69</td>
</tr>
<tr>
<td>Top Executives</td>
<td>4,670</td>
<td>$93,990</td>
<td>-6%</td>
<td>370</td>
<td>9%</td>
<td>48</td>
<td>1.48</td>
</tr>
<tr>
<td>Social Scientists and Related Workers</td>
<td>760</td>
<td>$84,795</td>
<td>21%</td>
<td>100</td>
<td>15%</td>
<td>46</td>
<td>1.46</td>
</tr>
<tr>
<td>Postsecondary Teachers</td>
<td>4,070</td>
<td>$77,979</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>45</td>
<td>1.45</td>
</tr>
<tr>
<td>Engineers</td>
<td>1,690</td>
<td>$84,690</td>
<td>14%</td>
<td>100</td>
<td>6%</td>
<td>42</td>
<td>1.34</td>
</tr>
<tr>
<td>Other Management Occupations</td>
<td>4,120</td>
<td>$81,513</td>
<td>19%</td>
<td>-1,010</td>
<td>-20%</td>
<td>47</td>
<td>1.26</td>
</tr>
<tr>
<td>Advertising, Marketing, Promotions, Public Relations, and Sales Managers</td>
<td>1,190</td>
<td>$86,580</td>
<td>-8%</td>
<td>260</td>
<td>28%</td>
<td>42</td>
<td>1.20</td>
</tr>
<tr>
<td>Operations Specialties Managers</td>
<td>2,490</td>
<td>$84,571</td>
<td>-4%</td>
<td>370</td>
<td>17%</td>
<td>44</td>
<td>1.19</td>
</tr>
<tr>
<td>Physical Scientists</td>
<td>390</td>
<td>$66,282</td>
<td>20%</td>
<td>100</td>
<td>34%</td>
<td>41</td>
<td>0.87</td>
</tr>
<tr>
<td>Law Enforcement Workers</td>
<td>2,020</td>
<td>$71,600</td>
<td>-2%</td>
<td>150</td>
<td>8%</td>
<td>40</td>
<td>0.77</td>
</tr>
<tr>
<td>Supervisors of Construction and Extraction Workers</td>
<td>640</td>
<td>$64,900</td>
<td>6%</td>
<td>-890</td>
<td>-58%</td>
<td>45</td>
<td>0.57</td>
</tr>
<tr>
<td>Computer Occupations</td>
<td>2,460</td>
<td>$62,796</td>
<td>-2%</td>
<td>-330</td>
<td>-12%</td>
<td>36</td>
<td>0.42</td>
</tr>
<tr>
<td>Sales Representatives, Wholesale and Manufacturing</td>
<td>2,750</td>
<td>$56,351</td>
<td>8%</td>
<td>-100</td>
<td>-4%</td>
<td>43</td>
<td>0.41</td>
</tr>
<tr>
<td>Business Operations Specialists</td>
<td>7,600</td>
<td>$55,771</td>
<td>4%</td>
<td>50</td>
<td>1%</td>
<td>43</td>
<td>0.37</td>
</tr>
<tr>
<td>Preschool, Primary, Secondary, and Special Education School Teachers</td>
<td>11,610</td>
<td>$55,676</td>
<td>-4%</td>
<td>1,250</td>
<td>12%</td>
<td>42</td>
<td>0.34</td>
</tr>
<tr>
<td>Drafters, Engineering Technicians, and Mapping Technicians</td>
<td>1,210</td>
<td>$54,219</td>
<td>7%</td>
<td>-10</td>
<td>-1%</td>
<td>41</td>
<td>0.33</td>
</tr>
<tr>
<td>Plant and System Operators</td>
<td>640</td>
<td>$52,646</td>
<td>2%</td>
<td>120</td>
<td>23%</td>
<td>46</td>
<td>0.31</td>
</tr>
<tr>
<td>Supervisors of Installation, Maintenance, and Repair Workers</td>
<td>1,000</td>
<td>$56,170</td>
<td>-6%</td>
<td>60</td>
<td>6%</td>
<td>44</td>
<td>0.29</td>
</tr>
<tr>
<td>Financial Specialists</td>
<td>5,190</td>
<td>$53,438</td>
<td>-5%</td>
<td>710</td>
<td>16%</td>
<td>45</td>
<td>0.27</td>
</tr>
</tbody>
</table>

Note: Dollar values are in 2011 dollars.
Advancing Health Equity and Inclusive Growth in Fresno County

Strong industries and occupations

Identifying high-opportunity occupations

Once the occupation opportunity index score was calculated for each occupation, occupations were sorted into three categories (high-, middle-, and low-opportunity). The average index score is zero, so an occupation with a positive value has an above average score while a negative value represents a below average score.

Because education level plays such a large role in determining access to jobs, we present the occupational analysis for each of three educational attainment levels: workers with a high school diploma or less, workers with more than a high school diploma but less than a bachelor’s degree, and workers with a bachelor’s degree or higher.

<table>
<thead>
<tr>
<th>Classification</th>
<th>Occupations</th>
</tr>
</thead>
<tbody>
<tr>
<td>All jobs</td>
<td></td>
</tr>
<tr>
<td>High-opportunity (2011)</td>
<td></td>
</tr>
<tr>
<td>Middle-opportunity</td>
<td></td>
</tr>
<tr>
<td>Low-opportunity</td>
<td></td>
</tr>
</tbody>
</table>
Advancing Health Equity and Inclusive Growth in Fresno County

Strong industries and occupations

What occupations are high opportunity?

Supervisors of construction, extraction, transportation and material moving, and production workers and other installation, maintenance, and repair occupations are high-opportunity jobs for workers without postsecondary education.

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<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Supervisors of Construction and Extraction Workers</td>
<td>640</td>
<td>$64,900</td>
<td>5.8%</td>
<td>-890</td>
<td>-58.2%</td>
<td>45</td>
<td>0.57</td>
</tr>
<tr>
<td>Supervisors of Transportation and Material Moving Workers</td>
<td>980</td>
<td>$47,469</td>
<td>-0.1%</td>
<td>20</td>
<td>2.1%</td>
<td>43</td>
<td>0.08</td>
</tr>
<tr>
<td>Supervisors of Production Workers</td>
<td>1,080</td>
<td>$47,590</td>
<td>-2.1%</td>
<td>-200</td>
<td>-15.6%</td>
<td>42</td>
<td>0.02</td>
</tr>
<tr>
<td>Other Installation, Maintenance, and Repair Occupations</td>
<td>4,810</td>
<td>$38,997</td>
<td>10.0%</td>
<td>50</td>
<td>1.1%</td>
<td>40</td>
<td>-0.10</td>
</tr>
<tr>
<td>Vehicle and Mobile Equipment Mechanics, Installers, and Repairers</td>
<td>3,850</td>
<td>$39,905</td>
<td>-5.7%</td>
<td>500</td>
<td>14.9%</td>
<td>40</td>
<td>-0.20</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
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<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Supervisors of Building and Grounds Cleaning and Maintenance Workers</td>
<td>550</td>
<td>$36,363</td>
<td>-6.5%</td>
<td>-40</td>
<td>-6.8%</td>
<td>44</td>
<td>-0.32</td>
</tr>
<tr>
<td>Construction Trades Workers</td>
<td>7,180</td>
<td>$44,781</td>
<td>8.6%</td>
<td>-6,840</td>
<td>-48.8%</td>
<td>37</td>
<td>-0.36</td>
</tr>
<tr>
<td>Motor Vehicle Operators</td>
<td>8,980</td>
<td>$31,872</td>
<td>1.3%</td>
<td>-850</td>
<td>-8.6%</td>
<td>43</td>
<td>-0.43</td>
</tr>
<tr>
<td>Metal Workers and Plastic Workers</td>
<td>1,230</td>
<td>$32,907</td>
<td>-1.1%</td>
<td>-200</td>
<td>-15.6%</td>
<td>42</td>
<td>-0.44</td>
</tr>
<tr>
<td>Supervisors of Farming, Fishing, and Forestry Workers</td>
<td>530</td>
<td>$24,200</td>
<td>18.9%</td>
<td>-600</td>
<td>-49.5%</td>
<td>48</td>
<td>-0.45</td>
</tr>
<tr>
<td>Material Recording, Scheduling, Dispatching, and Distributing Workers</td>
<td>8,670</td>
<td>$30,626</td>
<td>-0.6%</td>
<td>960</td>
<td>12.5%</td>
<td>34</td>
<td>-0.46</td>
</tr>
<tr>
<td>Agricultural Workers</td>
<td>24,240</td>
<td>$18,726</td>
<td>1.6%</td>
<td>400</td>
<td>29.3%</td>
<td>36</td>
<td>-0.56</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
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<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Other Transportation Workers</td>
<td>370</td>
<td>$23,216</td>
<td>3.6%</td>
<td>-280</td>
<td>-43.1%</td>
<td>36</td>
<td>-0.58</td>
</tr>
<tr>
<td>Nursing, Psychiatric, and Home Health Aides</td>
<td>4,120</td>
<td>$23,216</td>
<td>2.7%</td>
<td>300</td>
<td>7.9%</td>
<td>40</td>
<td>-0.62</td>
</tr>
<tr>
<td>Food Processing Workers</td>
<td>4,600</td>
<td>$23,216</td>
<td>2.7%</td>
<td>300</td>
<td>7.9%</td>
<td>40</td>
<td>-0.62</td>
</tr>
<tr>
<td>Supervisors of Food Preparation and Serving Workers</td>
<td>2,070</td>
<td>$23,216</td>
<td>3.1%</td>
<td>300</td>
<td>7.9%</td>
<td>40</td>
<td>-0.62</td>
</tr>
<tr>
<td>Building Cleaning and Pest Control Workers</td>
<td>5,530</td>
<td>$23,216</td>
<td>1.1%</td>
<td>-150</td>
<td>-7.7%</td>
<td>39</td>
<td>-0.73</td>
</tr>
<tr>
<td>Other Protective Service Workers</td>
<td>3,860</td>
<td>$23,216</td>
<td>3.8%</td>
<td>300</td>
<td>7.9%</td>
<td>40</td>
<td>-0.62</td>
</tr>
<tr>
<td>Textile, Apparel, and Furnishings Workers</td>
<td>670</td>
<td>$23,216</td>
<td>3.8%</td>
<td>300</td>
<td>7.9%</td>
<td>40</td>
<td>-0.62</td>
</tr>
<tr>
<td>Material Moving Workers</td>
<td>11,950</td>
<td>$23,216</td>
<td>3.8%</td>
<td>300</td>
<td>7.9%</td>
<td>40</td>
<td>-0.62</td>
</tr>
<tr>
<td>Assemblers and Fabricators</td>
<td>1,500</td>
<td>$23,216</td>
<td>3.8%</td>
<td>300</td>
<td>7.9%</td>
<td>40</td>
<td>-0.62</td>
</tr>
<tr>
<td>Grounds Maintenance Workers</td>
<td>2,090</td>
<td>$23,216</td>
<td>3.8%</td>
<td>300</td>
<td>7.9%</td>
<td>40</td>
<td>-0.62</td>
</tr>
<tr>
<td>Other Production Occupations</td>
<td>5,370</td>
<td>$23,216</td>
<td>3.8%</td>
<td>300</td>
<td>7.9%</td>
<td>40</td>
<td>-0.62</td>
</tr>
<tr>
<td>Other Personal Care and Service Workers</td>
<td>3,380</td>
<td>$23,216</td>
<td>3.8%</td>
<td>300</td>
<td>7.9%</td>
<td>40</td>
<td>-0.62</td>
</tr>
<tr>
<td>Cooks and Food Preparation Workers</td>
<td>6,940</td>
<td>$23,216</td>
<td>3.8%</td>
<td>300</td>
<td>7.9%</td>
<td>40</td>
<td>-0.62</td>
</tr>
<tr>
<td>Food and Beverage Serving Workers</td>
<td>12,790</td>
<td>$23,216</td>
<td>3.8%</td>
<td>300</td>
<td>7.9%</td>
<td>40</td>
<td>-0.62</td>
</tr>
<tr>
<td>Retail Sales Workers</td>
<td>19,390</td>
<td>$23,216</td>
<td>3.8%</td>
<td>300</td>
<td>7.9%</td>
<td>40</td>
<td>-0.62</td>
</tr>
</tbody>
</table>

Sources: U.S. Bureau of Labor Statistics; Integrated Public Use Microdata Series. Universe includes all nonfarm wage and salary jobs for which the typical worker is estimated to have a high school diploma or less. Note: Dollar values are in 2011 dollars.
Strong industries and occupations

What occupations are high opportunity?

Law enforcement workers; drafters, engineering technicians, and mapping technicians; and plant and system operators are high-opportunity jobs for workers with more than a high school diploma but less than a bachelor’s degree.

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<tr>
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</thead>
<tbody>
<tr>
<td>High-Opportunity</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Law Enforcement Workers</td>
<td>2,020</td>
<td>$71,600</td>
<td>-1.6%</td>
<td>150</td>
<td>8.0%</td>
<td>40</td>
<td>0.77</td>
<td></td>
</tr>
<tr>
<td>Drafters, Engineering Technicians, and Mapping Technicians</td>
<td>1,210</td>
<td>$54,219</td>
<td>7.3%</td>
<td>-10</td>
<td>-0.8%</td>
<td>41</td>
<td>0.33</td>
<td></td>
</tr>
<tr>
<td>Plant and System Operators</td>
<td>640</td>
<td>$52,646</td>
<td>1.6%</td>
<td>120</td>
<td>23.1%</td>
<td>46</td>
<td>0.31</td>
<td></td>
</tr>
<tr>
<td>Supervisors of Installation, Maintenance, and Repair Workers</td>
<td>1,000</td>
<td>$56,170</td>
<td>-6.1%</td>
<td>60</td>
<td>6.4%</td>
<td>44</td>
<td>0.29</td>
<td></td>
</tr>
<tr>
<td>Legal Support Workers</td>
<td>570</td>
<td>$53,248</td>
<td>5.2%</td>
<td>-1,000</td>
<td>-63.7%</td>
<td>42</td>
<td>0.18</td>
<td></td>
</tr>
<tr>
<td>Supervisors of Office and Administrative Support Workers</td>
<td>3,660</td>
<td>$48,180</td>
<td>-2.6%</td>
<td>500</td>
<td>15.8%</td>
<td>44</td>
<td>0.12</td>
<td></td>
</tr>
<tr>
<td>Electrical and Electronic Equipment Mechanics, Installers, and Repairers</td>
<td>860</td>
<td>$50,211</td>
<td>-7.5%</td>
<td>130</td>
<td>17.8%</td>
<td>38</td>
<td>0.06</td>
<td></td>
</tr>
<tr>
<td>Health Technologists and Technicians</td>
<td>5,280</td>
<td>$46,476</td>
<td>-0.4%</td>
<td>850</td>
<td>19.2%</td>
<td>37</td>
<td>0.05</td>
<td></td>
</tr>
<tr>
<td>Supervisors of Personal Care and Service Workers</td>
<td>360</td>
<td>$38,410</td>
<td>13.2%</td>
<td>140</td>
<td>63.6%</td>
<td>41</td>
<td>0.00</td>
<td></td>
</tr>
<tr>
<td>Supervisors of Sales Workers</td>
<td>2,910</td>
<td>$41,245</td>
<td>2.3%</td>
<td>-130</td>
<td>-4.3%</td>
<td>41</td>
<td>-0.12</td>
<td></td>
</tr>
<tr>
<td>Middle-Opportunity</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Life, Physical, and Social Science Technicians</td>
<td>590</td>
<td>$32,573</td>
<td>4.0%</td>
<td>160</td>
<td>37.2%</td>
<td>35</td>
<td>-0.35</td>
<td></td>
</tr>
<tr>
<td>Other Education, Training, and Library Occupations</td>
<td>5,470</td>
<td>$33,072</td>
<td>7.0%</td>
<td>-800</td>
<td>-12.8%</td>
<td>39</td>
<td>-0.37</td>
<td></td>
</tr>
<tr>
<td>Financial Clerks</td>
<td>7,670</td>
<td>$33,562</td>
<td>1.3%</td>
<td>-760</td>
<td>-9.0%</td>
<td>43</td>
<td>-0.37</td>
<td></td>
</tr>
<tr>
<td>Information and Record Clerks</td>
<td>10,420</td>
<td>$31,303</td>
<td>7.0%</td>
<td>1,010</td>
<td>10.7%</td>
<td>32</td>
<td>-0.37</td>
<td></td>
</tr>
<tr>
<td>Secretaries and Administrative Assistants</td>
<td>7,060</td>
<td>$33,717</td>
<td>-11.1%</td>
<td>1,270</td>
<td>21.9%</td>
<td>41</td>
<td>-0.39</td>
<td></td>
</tr>
<tr>
<td>Other Office and Administrative Support Workers</td>
<td>12,000</td>
<td>$29,148</td>
<td>5.7%</td>
<td>-220</td>
<td>-1.8%</td>
<td>38</td>
<td>-0.47</td>
<td></td>
</tr>
<tr>
<td>Low-Opportunity</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other Healthcare Support Occupations</td>
<td>4,410</td>
<td>$27,897</td>
<td>-7.8%</td>
<td>390</td>
<td>9.7%</td>
<td>31</td>
<td>-0.67</td>
<td></td>
</tr>
<tr>
<td>Communications Equipment Operators</td>
<td>390</td>
<td>$22,400</td>
<td>-4.5%</td>
<td>-140</td>
<td>-26.4%</td>
<td>41</td>
<td>-0.78</td>
<td></td>
</tr>
<tr>
<td>Entertainment Attendants and Related Workers</td>
<td>810</td>
<td>$18,463</td>
<td>-5.8%</td>
<td>-180</td>
<td>-18.2%</td>
<td>24</td>
<td>-1.06</td>
<td></td>
</tr>
</tbody>
</table>

Sources: U.S. Bureau of Labor Statistics; Integrated Public Use Microdata Series. Universe includes all nonfarm wage and salary jobs for which the typical worker is estimated to have more than a high school diploma but less than a BA. Note: Dollar values are in 2011 dollars.
## Strong industries and occupations

### Which occupations are high opportunity?

Lawyers, judges, and related workers; life scientists; and health diagnosing and treating practitioners are high-opportunity occupations for workers with a bachelor’s degree or higher.

### Occupation Opportunity Index: Occupations by Opportunity Level for Workers with a BA Degree or Higher

<table>
<thead>
<tr>
<th>Occupation</th>
<th>Employment (2011)</th>
<th>Job Quality</th>
<th>Median annual wage (2011)</th>
<th>Real wage growth</th>
<th>Change in employment</th>
<th>% Change in employment</th>
<th>Median age</th>
<th>Occupation Opportunity Index</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>High-Opportunity</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lawyers, Judges, and Related Workers</td>
<td>1,040</td>
<td>$114,326</td>
<td>-11.3%</td>
<td>110</td>
<td>11.8%</td>
<td></td>
<td>48</td>
<td>2.02</td>
</tr>
<tr>
<td>Life Scientists</td>
<td>370</td>
<td>$78,815</td>
<td>58.7%</td>
<td>260</td>
<td>234.6%</td>
<td></td>
<td>40</td>
<td>1.88</td>
</tr>
<tr>
<td>Health Diagnosing and Treating Practitioners</td>
<td>8,860</td>
<td>$96,028</td>
<td>7.6%</td>
<td>1,240</td>
<td>16.3%</td>
<td></td>
<td>43</td>
<td>1.69</td>
</tr>
<tr>
<td>Top Executives</td>
<td>4,670</td>
<td>$93,990</td>
<td>-5.6%</td>
<td>370</td>
<td>8.6%</td>
<td></td>
<td>48</td>
<td>1.48</td>
</tr>
<tr>
<td>Social Scientists and Related Workers</td>
<td>760</td>
<td>$84,795</td>
<td>21.0%</td>
<td>100</td>
<td>15.2%</td>
<td></td>
<td>46</td>
<td>1.46</td>
</tr>
<tr>
<td>Postsecondary Teachers</td>
<td>4,070</td>
<td>$77,970</td>
<td></td>
<td>N/A</td>
<td></td>
<td></td>
<td>45</td>
<td>1.45</td>
</tr>
<tr>
<td>Engineers</td>
<td>1,690</td>
<td>$84,690</td>
<td>14.1%</td>
<td>100</td>
<td>6.3%</td>
<td></td>
<td>42</td>
<td>1.34</td>
</tr>
<tr>
<td>Other Management Occupations</td>
<td>4,120</td>
<td>$81,513</td>
<td>18.5%</td>
<td>-1,010</td>
<td>-19.7%</td>
<td></td>
<td>47</td>
<td>1.26</td>
</tr>
<tr>
<td>Advertising, Marketing, Promotions, Public Relations, and Sales Managers</td>
<td>1,190</td>
<td>$86,580</td>
<td>-7.6%</td>
<td>260</td>
<td>28.0%</td>
<td>42</td>
<td>1.20</td>
<td></td>
</tr>
<tr>
<td>Operations Specialities Managers</td>
<td>2,490</td>
<td>$84,571</td>
<td>-4.2%</td>
<td>370</td>
<td>17.5%</td>
<td></td>
<td>44</td>
<td>1.19</td>
</tr>
<tr>
<td>Physical Scientists</td>
<td>390</td>
<td>$66,282</td>
<td>19.8%</td>
<td>100</td>
<td>34.5%</td>
<td></td>
<td>41</td>
<td>0.87</td>
</tr>
<tr>
<td>Computer Occupations</td>
<td>2,460</td>
<td>$62,796</td>
<td>-1.8%</td>
<td>-330</td>
<td>-11.8%</td>
<td></td>
<td>36</td>
<td>0.42</td>
</tr>
<tr>
<td>Sales Representatives, Wholesale and Manufacturing</td>
<td>2,750</td>
<td>$56,351</td>
<td>7.8%</td>
<td>-100</td>
<td>-3.5%</td>
<td>43</td>
<td>0.41</td>
<td></td>
</tr>
<tr>
<td>Business Operations Specialists</td>
<td>7,600</td>
<td>$55,771</td>
<td>4.4%</td>
<td>50</td>
<td>0.7%</td>
<td></td>
<td>43</td>
<td>0.37</td>
</tr>
<tr>
<td>Preschool, Primary, Secondary, and Special Education School Teachers</td>
<td>11,610</td>
<td>$55,676</td>
<td>-4.4%</td>
<td>1,250</td>
<td>12.1%</td>
<td>43</td>
<td>0.34</td>
<td></td>
</tr>
<tr>
<td>Financial Specialists</td>
<td>5,190</td>
<td>$53,438</td>
<td>-4.8%</td>
<td>710</td>
<td>15.8%</td>
<td></td>
<td>45</td>
<td>0.27</td>
</tr>
<tr>
<td>Specialists</td>
<td>4,350</td>
<td>$47,452</td>
<td>10.3%</td>
<td>250</td>
<td>6.1%</td>
<td></td>
<td>36</td>
<td>0.14</td>
</tr>
<tr>
<td>Other Sales and Related Workers</td>
<td>1,620</td>
<td>$30,825</td>
<td>34.7%</td>
<td>300</td>
<td>22.7%</td>
<td></td>
<td>48</td>
<td>0.03</td>
</tr>
<tr>
<td>Media and Communication Workers</td>
<td>500</td>
<td>$46,227</td>
<td>9.6%</td>
<td>-510</td>
<td>-50.5%</td>
<td></td>
<td>37</td>
<td>0.00</td>
</tr>
<tr>
<td>Librarians, Curators, and Archivists</td>
<td>600</td>
<td>$42,039</td>
<td>-30.6%</td>
<td>440</td>
<td>275.0%</td>
<td></td>
<td>48</td>
<td>-0.04</td>
</tr>
<tr>
<td>Sales Representatives, Services</td>
<td>2,150</td>
<td>$47,788</td>
<td>-11.3%</td>
<td>-470</td>
<td>-17.9%</td>
<td></td>
<td>41</td>
<td>-0.10</td>
</tr>
<tr>
<td>Entertainers and Performers, Sports and Related Workers</td>
<td>550</td>
<td>$41,975</td>
<td>3.4%</td>
<td>-10</td>
<td>-1.8%</td>
<td>28</td>
<td>-0.19</td>
<td></td>
</tr>
<tr>
<td><strong>Middle-Opportunity</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Media and Communication Equipment Workers</td>
<td>380</td>
<td>$36,692</td>
<td>9.7%</td>
<td>-80</td>
<td>-17.4%</td>
<td></td>
<td>38</td>
<td>-0.21</td>
</tr>
<tr>
<td>Art and Design Workers</td>
<td>480</td>
<td>$34,518</td>
<td>-0.2%</td>
<td>-260</td>
<td>-35.1%</td>
<td></td>
<td>42</td>
<td>-0.37</td>
</tr>
<tr>
<td>Other Teachers and Instructors</td>
<td>3,530</td>
<td>$39,449</td>
<td>-16.4%</td>
<td>460</td>
<td>15.0%</td>
<td></td>
<td>28</td>
<td>-0.44</td>
</tr>
</tbody>
</table>

Sources: U.S. Bureau of Labor Statistics; Integrated Public Use Microdata Series. Universe includes all nonfarm wage and salary jobs for which the typical worker is estimated to have a BA degree or higher. Note: “N/A” indicates that data is not available. Dollar values are in 2011 dollars.
Strong industries and occupations

Is race/ethnicity a barrier to economic success?

When examining access to high-opportunity jobs by race/ethnicity and nativity, White and U.S.-born Asian or Pacific Islander workers are most likely to be employed in high-opportunity occupations. Latino immigrants are the least likely to be in these occupations and most likely to be in low-opportunity occupations.

Opportunity Ranking of Occupations by Race/Ethnicity and Nativity, All Workers

- High Opportunity
- Middle Opportunity
- Low Opportunity

Sources: U.S. Bureau of Labor Statistics; Integrated Public Use Microdata Series. Universe includes the employed civilian noninstitutional population ages 25 through 64. Note: Data for some racial/ethnic groups are excluded due to small sample size. Figures may not sum to 100 percent due to rounding.
Strong industries and occupations

Is race/ethnicity a barrier to economic success?

Among workers with a high school degree or less, Whites are most likely to be in the high-opportunity occupations. Latino immigrants are the most likely to be in middle-opportunity jobs while Black and Asian or Pacific Islander workers are the most likely to be in low-opportunity jobs.

Opportunity Ranking of Occupations by Race/Ethnicity and Nativity, Workers with Low Educational Attainment

Sources: U.S. Bureau of Labor Statistics; Integrated Public Use Microdata Series. Universe includes the employed civilian noninstitutional population ages 25 through 64 with a high school diploma or less. Note: Data for some racial/ethnic groups are excluded due to small sample size. Figures may not sum to 100 percent due to rounding.
Strong industries and occupations
Is race/ethnicity a barrier to economic success?

Differences in job opportunity are generally smaller for workers with middle education levels. More than half of U.S.-born White workers are in high-opportunity jobs. About one-third of Black and Latino immigrant workers are in low-opportunity jobs.

Opportunity Ranking of Occupations by Race/Ethnicity and Nativity, Workers with Middle Educational Attainment

Strong industries and occupations
Is race/ethnicity a barrier to economic success?

Differences in job opportunity are generally smaller for workers with middle education levels. More than half of U.S.-born White workers are in high-opportunity jobs. About one-third of Black and Latino immigrant workers are in low-opportunity jobs.

Opportunity Ranking of Occupations by Race/Ethnicity and Nativity, Workers with Middle Educational Attainment

Strong industries and occupations
Is race/ethnicity a barrier to economic success?

Differences in job opportunity are generally smaller for workers with middle education levels. More than half of U.S.-born White workers are in high-opportunity jobs. About one-third of Black and Latino immigrant workers are in low-opportunity jobs.

Opportunity Ranking of Occupations by Race/Ethnicity and Nativity, Workers with Middle Educational Attainment

Strong industries and occupations
Is race/ethnicity a barrier to economic success?

Differences in job opportunity are generally smaller for workers with middle education levels. More than half of U.S.-born White workers are in high-opportunity jobs. About one-third of Black and Latino immigrant workers are in low-opportunity jobs.

Opportunity Ranking of Occupations by Race/Ethnicity and Nativity, Workers with Middle Educational Attainment

Strong industries and occupations
Is race/ethnicity a barrier to economic success?

Differences in job opportunity are generally smaller for workers with middle education levels. More than half of U.S.-born White workers are in high-opportunity jobs. About one-third of Black and Latino immigrant workers are in low-opportunity jobs.

Opportunity Ranking of Occupations by Race/Ethnicity and Nativity, Workers with Middle Educational Attainment

Strong industries and occupations
Is race/ethnicity a barrier to economic success?

Differences in job opportunity are generally smaller for workers with middle education levels. More than half of U.S.-born White workers are in high-opportunity jobs. About one-third of Black and Latino immigrant workers are in low-opportunity jobs.

Opportunity Ranking of Occupations by Race/Ethnicity and Nativity, Workers with Middle Educational Attainment

Strong industries and occupations
Is race/ethnicity a barrier to economic success?

Differences in job opportunity are generally smaller for workers with middle education levels. More than half of U.S.-born White workers are in high-opportunity jobs. About one-third of Black and Latino immigrant workers are in low-opportunity jobs.

Opportunity Ranking of Occupations by Race/Ethnicity and Nativity, Workers with Middle Educational Attainment

Strong industries and occupations
Is race/ethnicity a barrier to economic success?

Differences in job opportunity are generally smaller for workers with middle education levels. More than half of U.S.-born White workers are in high-opportunity jobs. About one-third of Black and Latino immigrant workers are in low-opportunity jobs.

Opportunity Ranking of Occupations by Race/Ethnicity and Nativity, Workers with Middle Educational Attainment

Strong industries and occupations
Is race/ethnicity a barrier to economic success?
Strong industries and occupations
Is race/ethnicity a barrier to economic success?

Differences in access to high-opportunity occupations tend to decrease even more for workers with college degrees, though gaps across groups remain. Among the most educated workers, Latino immigrants are the least likely of the groups shown to be in high-opportunity jobs.

Opportunity Ranking of Occupations by Race/Ethnicity and Nativity, Workers with High Educational Attainment

Sources: U.S. Bureau of Labor Statistics; Integrated Public Use Microdata Series. Universe includes the employed civilian noninstitutional population ages 25 through 64 with a BA degree or higher. Note: Data for some racial/ethnic groups are excluded due to small sample size. Figures may not sum to 100 percent due to rounding.
Readiness

Highlights

How prepared are the county’s residents for the 21st century economy?

- There is a looming skills and education gap with rates of postsecondary education (having at least an associate’s degree) that are far lower than the share of future jobs that will require that level of education. The gaps are widest for Latinos and African Americans.

- Despite some progress since 2000, Black and Latino young people are at least three times as likely as White youth to be without a high school diploma and not in pursuit of one.

- The average Fresno resident has more exposure to air pollution than nearly 70 percent of census tracts nationwide.

- Adult asthma rates are higher in Fresno than both the state and nation overall.

Share of people of color with an AA degree or higher:

20%

Number of youth who are disconnected:

26,314

Share of adults with asthma:

12%
Skilled workforce
Does the workforce have the skills for the jobs of the future?

The education levels of the county’s population are not keeping up with employers’ educational demands. By 2020, an estimated 44 percent of jobs in California will require at least an associate's degree. Only 7 percent of Latino immigrants and 22 percent of U.S.-born Latinos have this level of education.

Share of Working-Age Population with an Associate’s Degree or Higher by Race/Ethnicity, 2014, and Projected Share of Jobs that Require an Associate’s Degree or Higher, 2020

Sources: Georgetown Center for Education and the Workforce; Integrated Public Use Microdata Series. Universe for education levels of workers includes all persons ages 25 through 64. Note: Data for 2014 by race/ethnicity and nativity represent a 2010 through 2014 average for Fresno County; data on jobs in 2020 represents a state-level projection for California.
Youth preparedness
Do all children have access to opportunity?

The highest levels of opportunities for children are concentrated in and around the city of Clovis. The areas ranked lowest on the child opportunity index include communities in and around Huron and Cantua Creek.

Composite Child Opportunity Index by Census Tract

Sources: The diversitydatakids.org and the Kirwan Institute for the Study of Race and Ethnicity; TomTom, ESRI, HERE, DeLorme, MapmyIndia, © OpenStreetMap contributors, and the GIS user community. Note: The Child Opportunity Index is a composite of indicators across three domains: educational opportunity, health and environmental opportunity, and social and economic opportunity. The vintage of the underlying indicator data varies, ranging from years 2007 through 2013. The map was created by ranking the census tract level Overall Child Opportunity Index Score into quintiles for the region.
Youth preparedness
Are youth ready to enter the workforce?

More of Fresno’s youth are getting high school diplomas, but racial gaps remain. Despite some progress since 2000, young Latino immigrants were eight times as likely as their White counterparts to be without a high school diploma and not in pursuit of one in 2014.

Share of 16- to 24-Year-Olds
Not Enrolled in School and without a High School Diploma by Race/Ethnicity and Nativity, 1990 to 2014

Source: Integrated Public Use Microdata Series.
Note: Data for 2014 represent a 2010 through 2014 average. Data for some racial/ethnic groups in some years are excluded due to small sample size.
Youth preparedness

Are youth ready to enter the workforce?

Young women are less likely than men to drop out of high school across all races/ethnicities. One in 10 young Black and Latina women ages 16 to 24 do not have a high school diploma and are not currently in pursuit of one, as are 16 percent of young Black men and 17 percent of young Latino men.

Share of 16- to 24-Year-Olds Not Enrolled in School and without a High School Diploma by Race/Ethnicity and Gender, 2014

Source: Integrated Public Use Microdata Series.
Note: Data represent a 2010 through 2014 average.
Youth preparedness
Are youth ready to enter the workforce?

The number of disconnected youth has increased in each decade since 1990, and youth of color are disproportionately disconnected. Of the over 26,300 disconnected youth in 2014, three in five were Latino. Youth of color make up 81 percent of disconnected youth but 77 percent of all youth.

Disconnected Youth: 16- to 24-Year-Olds Not in School or Work by Race/Ethnicity, 1980 to 2014

Source: Integrated Public Use Microdata Series.
Note: Data for 2014 represent a 2010 through 2014 average.
Youth preparedness
Are youth ready to enter the workforce?

There are slightly more disconnected Latina and Asian or Pacific Islander women than men. The opposite is true for young Black and White women. Young Latinos make up 58 percent of disconnected young men in Fresno while young Latinas make up 63 percent of disconnected young women.

Disconnected Youth: 16- to 24-Year-Olds Not in School or Work by Race/Ethnicity and Gender, 2000 to 2014

Source: Integrated Public Use Microdata Series.
Note: Data for 2014 represent a 2010 through 2014 average.
### Youth preparedness

**Are youth ready to enter the workforce?**

Latino, Black, and Asian or Pacific Islander youth in the county are most likely to attend schools where more than 75 percent of students are eligible for free or reduced price lunch (FRPL). While 71 percent of students of color attend high-poverty schools, only 27 percent of White students do.

<table>
<thead>
<tr>
<th>Percent of Students by School Poverty Level, as Defined by the Share of Students Eligible for FRPL, 2014</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>All</strong></td>
</tr>
<tr>
<td><strong>White</strong></td>
</tr>
<tr>
<td><strong>Black</strong></td>
</tr>
<tr>
<td><strong>Latino</strong></td>
</tr>
<tr>
<td><strong>Asian or Pacific Islander</strong></td>
</tr>
<tr>
<td><strong>Native American</strong></td>
</tr>
<tr>
<td><strong>Mixed/other</strong></td>
</tr>
<tr>
<td><strong>People of color</strong></td>
</tr>
</tbody>
</table>

Source: National Center for Education Statistics. Universe includes all public elementary and secondary schools and school districts in Fresno County.
Health-promoting environments

Can all residents access healthy food?

Black residents of Fresno are the most likely to live in areas without adequate access to supermarkets. White and Latino residents are the least likely to live in these areas. Healthy food is a critical component of a healthy, thriving community.

Percent Living in Limited Supermarket Access Areas (LSAs) by Race/Ethnicity, 2014

LSAs are defined as areas where residents must travel significantly farther to reach a supermarket than the “comparatively acceptable” distance traveled by residents in well-served areas with similar population densities and car ownership rates.

Sources: The Reinvestment Fund, 2014 LSA analysis; U.S. Census Bureau.
Note: Data on population by race/ethnicity reflects a 2010 through 2014 average.
Health-promoting environments
Can all residents access healthy food?

The population below poverty and close to poverty is also disproportionately located in LSAs. Those living below poverty make up 27 percent of the county but account for one in three residents of LSAs.

Percent Population by Federal Poverty Level (FPL) and Food Environment, 2014

- 200% poverty or above: 10%
- 150-199% poverty: 13%
- 100-149% poverty: 33%
- Below poverty: 44%

LSAs are defined as areas where residents must travel significantly farther to reach a supermarket than the “comparatively acceptable” distance traveled by residents in well-served areas with similar population densities and car ownership rates.

Sources: The Reinvestment Fund, 2014 LSA analysis; U.S. Census Bureau. Universe includes all persons not in groups quarters.
Note: Data on population by poverty status reflects a 2010 through 2014 average.
Health-promoting environments

Can all residents access healthy food?

The most visible LSAs are located on the eastern edge of the county and the southwestern part of the city of Fresno. Block groups are drawn, however, based on population not land area. The large block groups on the eastern edge likely have a comparable number of people as smaller block groups.

Percent People of Color by Census Block Group and Limited Supermarket Access (LSA) Block Groups, 2014

- Less than 37%
- 37% to 57%
- 57% to 74%
- 74% to 88%
- 88% or more
- Limited Supermarket Access

Sources: The Reinvestment Fund, 2014 LSA analysis; U.S. Census Bureau; TomTom, ESRI, HERE, DeLorme, MaymyIndia, © OpenStreetMap contributors, and the GIS user community.

Note: Data on population by race/ethnicity represent a 2010 through 2014 average. Areas in white are missing data.
Health-promoting environments

_Do all residents live in areas with clean air?_

The average Fresno resident has more exposure to air pollution than nearly 70 percent of census tracts in the United States. Black and Asian or Pacific Islander residents have the higher exposure than other groups.

### Air Pollution: Exposure Index by Race/Ethnicity, 2014

<table>
<thead>
<tr>
<th>Race/Ethnicity</th>
<th>Index Value</th>
</tr>
</thead>
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<td>All</td>
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<tr>
<td>White</td>
<td>67.2</td>
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<tr>
<td>Black</td>
<td>78.5</td>
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<tr>
<td>Latino</td>
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<tr>
<td>Asian or Pacific Islander</td>
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<tr>
<td>Native American</td>
<td>59.6</td>
</tr>
<tr>
<td>Mixed/other</td>
<td>70.1</td>
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</table>

Values range from 1 (lowest risk) to 100 (highest risk) on a national scale. The index value is based on percentile ranking each risk measure across all census tracts in the U.S. and taking the averaging ranking for each Atlas geography and demographic group.

Sources: U.S. EPA, 2011 National-Scale Air Toxics Assessment; U.S. Census Bureau.
Note: Data on population by race/ethnicity represent a 2010 through 2014 average.
Health-promoting environments
Do all residents live in areas with clean air?

Both race and class impact exposure to pollutants. In Fresno, White residents above poverty have the lowest rates of exposure to air pollution while residents below poverty have the highest exposure.

Air Pollution: Exposure Index by Poverty Status, 2014

Values range from 1 (lowest risk) to 100 (highest risk) on a national scale. The index value is based on percentile ranking each risk measure across all census tracts in the U.S. and taking the averaging ranking for each Atlas geography and demographic group.
Health of residents
Do all residents have the opportunity to live long and healthy lives?

Obesity rates are higher in Fresno County than in both California and the United States overall. Two in three Fresno residents are overweight or obese compared with 61 percent of adults statewide.

Adult Overweight and Obesity by Geography, 2012

- **United States**
  - Overweight: 36%
  - Obese: 27%

- **California**
  - Overweight: 36%
  - Obese: 25%

- **Fresno**
  - Overweight: 35%
  - Obese: 31%

Source: Centers for Disease Control and Prevention (BRFSS). Universe includes all persons age 18 or older.
Note: Data represent a 2008 through 2012 average.
Health of residents
Do all residents have the opportunity to live long and healthy lives?

Latinos face higher obesity rates than Whites. More than one-third of Latino adults are obese compared with roughly one in four White adults. While genetics matter, research shows there are other important social and environmental factors that influence obesity, including toxic stress, income, and education.

Adult Overweight and Obesity Rates by Race/Ethnicity, 2012

Source: Centers for Disease Control and Prevention (BRFSS). Universe includes all persons age 18 or older.
Note: Data represent a 2008 through 2012 average. Data for some racial/ethnic groups are excluded due to small sample size.
Health of residents

Do all residents have the opportunity to live long and healthy lives?

When compared to the state and nation overall, Fresno also has a slightly higher rate of adult diabetes. One in 10 adults in the county has diabetes, compared with 9 percent in the state and country overall.

Adult Diabetes Rates by Geography, 2012

- United States: 9%
- California: 9%
- Fresno: 10%

Source: Centers for Disease Control and Prevention (BRFSS). Universe includes all persons age 18 or older.
Note: Data represent a 2008 through 2012 average.
Health of residents
Do all residents have the opportunity to live long and healthy lives?

Even though the adult diabetes rate is slightly higher in Fresno, there are no apparent racial inequities in adult diabetes. The social determinants of health, where people live, work, and age are increasingly recognized as influencing growing rates of chronic diseases, including diabetes.

Adult Diabetes Rates by Race/Ethnicity, 2012

- **All**: 10.0%
- **White**: 10.2%
- **Latino**: 9.6%

Source: Centers for Disease Control and Prevention (BRFSS). Universe includes all persons age 18 or older.
Note: Data represent a 2008 through 2012 average for Fresno County, CA. Data for some racial/ethnic groups are excluded due to small sample size.
Health of residents
Do all residents have the opportunity to live long and healthy lives?

The share of adults living with asthma is lower in California than for the nation overall, but it is higher in Fresno. Twelve percent of adults in the county have asthma, compared with 8 percent of adults statewide.

Adult Asthma Rates by Geography, 2012

- United States: 9%
- California: 8%
- Fresno: 12%

Source: Centers for Disease Control and Prevention (BRFSS). Universe includes all persons age 18 or older. Note: Data represent a 2008 through 2012 average.
Health of residents
Do all residents have the opportunity to live long and healthy lives?

While the adult asthma rate is 12 percent overall, White adults are twice as likely as Latinos to have asthma in Fresno. Importantly, these numbers are based on diagnoses, so people without access to care are less likely to be both diagnosed and subsequently treated.

Adult Asthma Rates by Race/Ethnicity, 2012

Source: Centers for Disease Control and Prevention (BRFSS). Universe includes all persons age 18 or older.
Note: Data represent a 2008 through 2012 average for Fresno County, CA. Data for some racial/ethnic groups are excluded due to small sample size.
Health of residents
Do all residents have the opportunity to live long and healthy lives?

The share of adults who have had a heart attack is lower in Fresno than the nation overall. Roughly 3.5 percent of adults have had a heart attack in the county, compared to 4.3 of adults nationwide.

Share of Adults Who Have Had a Heart Attack by Geography, 2012

- United States: 4.3%
- California: 3.3%
- Fresno: 3.5%

Source: Centers for Disease Control and Prevention (BRFSS). Universe includes all persons age 18 or older.
Note: Data represent a 2008 through 2012 average.
Health of residents
Do all residents have the opportunity to live long and healthy lives?

White adults in the county are more likely than their Latino counterparts to have had a heart attack. About 4 percent of White adults have had a heart attack, compared with 2 percent of Latino adults.

Source: Centers for Disease Control and Prevention (BRFSS). Universe includes all persons age 18 or older.
Note: Data represent a 2008 through 2012 average. Data for some racial/ethnic groups are excluded due to small sample size.
Health of residents

Do all residents have the opportunity to live long and healthy lives?

Heart disease is the leading cause of death in the United States, and adults in Fresno County are slightly more likely than adults statewide to have angina or coronary heart disease (CHD). In the state overall, 3.4 percent of adults have CHD. In Fresno, 3.9 percent adults do.

Share of Adults with Angina or Coronary Heart Disease by Geography, 2012

- United States: 4.3%
- California: 3.4%
- Fresno: 3.9%

Source: Centers for Disease Control and Prevention (BRFSS). Universe includes all persons age 18 or older. Note: Data represent a 2008 through 2012 average.
Health of residents
Do all residents have the opportunity to live long and healthy lives?

White adults are also more likely than Latinos to have CHD.
About 5.6 percent of White adults have CHD compared with 2.3 percent of Latino adults. Because Latino adults are less likely to have health insurance than their White counterparts, it is possible that some Latinos go undiagnosed.
Health of residents

Do residents have access to health insurance and health-care services?

The adult health insurance rate is lower in Fresno than in the state and U.S. overall. People without health insurance have worse access to care than those who do. Without health insurance, many people go without needed medical treatment and are less likely to access preventative care.

Health Insurance Rates by Geography, 2014

Source: Centers for Disease Control and Prevention (BRFSS). Universe includes all persons age 18 or older.

Note: Data represent a 2010 through 2014 average. Data for some racial/ethnic groups are excluded due to small sample size.
Health of residents
Do residents have access to health insurance and health-care services?

Latino adults and those of mixed/other races in the city and the county of Fresno are the least likely to have health insurance. Just 63 percent of Latino adults and 62 percent of Native American adults have health insurance in the county.

Health Insurance Rates by Race/Ethnicity, 2014

- 18-64 years
- 0-17 years

Source: Centers for Disease Control and Prevention (BRFSS). Universe includes all persons age 18 or older.
Note: Data represent a 2010 through 2014 average. Data for some racial/ethnic groups are excluded due to small sample size.
Connectedness Highlights

Are the county’s residents and neighborhoods connected to one another and to the region’s assets and opportunities?

• To build a culture of health – where every person, no matter where they live, has an equal opportunity to live the healthiest life possible – we must improve people’s opportunities to be healthier in the places where they live, learn, work, and play.

• Low-income Black workers are the most likely to rely on public transit to get to work.

• Black and Latino renters and Southeast Asian and Latino homeowners are the most likely to be paying more than 30 percent of their incomes on housing costs.

Share of cost-burdened renter households: 58%

Share of very low-income Black workers who rely on public transit: 12%

Share of Latinos living in high-poverty neighborhoods: 34%
Connectedness
Can all residents access affordable, quality housing?

**Housing is more affordable in Fresno than for the state as a whole.** Across the region, 30 percent of jobs are low wage (paying $1,250 per month or less) and 33 percent of rental units are affordable (with rent less than $750 per month, which is about 30 percent of the combined income of two low-wage workers).

Share of Affordable Rental Housing Units, 2014
- Share of jobs that are low wage
- Share of rental housing units that are affordable

Source: Housing data from the U.S. Census Bureau and jobs data from the 2012 Longitudinal-Employer Household Dynamics.
Note: Data represent a 2010 through 2014 average.
Connectedness
Can all residents access affordable, quality housing?

But there are still more than twice as many low-wage jobs as affordable rental housing units in Fresno. A county with a high ratio of low-wage jobs to affordable rental housing units has lower availability of affordable rental housing for low-wage workers.

Source: Housing data from the U.S. Census Bureau and jobs data from the 2012 Longitudinal-Employer Household Dynamics. Note: Housing data represent a 2010 through 2014 average.
Connectedness
Can all residents access affordable, quality housing?

More than half of renter households are rent burdened and one-third of homeowner households are cost burdened (spending more than 30 percent of income on housing costs). Black households are the most likely to be cost burdened among renters while Southeast Asian and Latino households are most likely among homeowners.

Renter Housing Burden and Homeowner Housing Burden by Race/Ethnicity, 2014

Source: Integrated Public Use Microdata Series. Universe includes all renter-occupied households with cash rent.
Note: Data represent a 2010 through 2014 average.
Advancing Health Equity and Inclusive Growth in Fresno County

Connectedness
Can all residents access affordable, quality housing?

There are rent-burdened households throughout the county.
The darkest orange census tracts represent areas where more than two in three renter households are rent-burdened.

Percent Rent-Burdened Households by Census Tract, 2014

- Less than 35%
- 35% to 48%
- 48% to 58%
- 58% to 67%
- 67% or more

Sources: U.S. Census Bureau; TomTom, ESRI, HERE, DeLorme, MaymyIndia, © OpenStreetMap contributors, and the GIS user community. Universe includes all renter-occupied households with cash rent. Note: Data represent a 2010 through 2014 average.
Car access also varies across the region but is lowest in a few pockets in the city of Fresno and in the western part of the county. Given the limited public transportation options in the region, low car access is a serious barrier to employment and health-care services.
Advancing Health Equity and Inclusive Growth in Fresno County

Connectedness
Do residents have transportation choices?

Lower-income residents are less likely to drive alone to work.
While 77 percent of all residents drive alone to work, single-driver commuting varies by income with 63 percent of workers earning under $10,000 a year driving alone, compared to 86 percent of workers earning more than $75,000 a year.

Means of Transportation to Work by Annual Earnings, 2014

Source: U.S. Census Bureau. Universe includes workers ages 16 and older with earnings. Note: Data represent a 2010 through 2014 average. Dollar values are in 2014 dollars.
Connectedness
Do residents have transportation choices?

Low-income Black residents are the most likely to rely on the regional transit system to get to work. Very low-income African Americans are six times as likely as very low-income Latinos to use public transit.

Percent Using Public Transit by Annual Earnings and Race/Ethnicity, 2014

Source: Integrated Public Use Microdata Series. Universe includes workers ages 16 and older with earnings.
Note: Data represent a 2010 through 2014 average. Data for some racial/ethnic groups in some earnings categories are excluded due to small sample size. Dollar values are in 2014 dollars.
Connectedness

Do residents have transportation choices?

Neighborhoods with the highest commute times are scattered throughout the region. A cluster of eastside neighborhoods have commute times that are 25 minutes or longer.

Average Travel Time to Work in Minutes by Census Tract, 2014

- Less than 20 minutes
- 20 to 21 minutes
- 21 to 23 minutes
- 23 to 25 minutes
- 25 minutes or more

Sources: U.S. Census Bureau; TomTom, ESRI, HERE, DeLorme, MaymyIndia, © OpenStreetMap contributors, and the GIS user community. Universe includes all persons ages 16 or older who work outside of home. Note: Data represent a 2010 through 2014 average.
Connectedness
Do neighborhoods reflect the region’s diversity?

Segregation, as measured by the multi-group entropy index, is lower in Fresno than the nation overall. The entropy index ranges from 0, if all census tracts had the same racial/ethnic composition as the entire metro area (fully integrated), to 1, if all census tracts contained one group only (fully segregated).

Residential Segregation, 1980 to 2014

Source: U.S. Census Bureau.
Note: Data for 2014 represent a 2010 through 2014 average.
Connectedness
Do neighborhoods reflect the region’s diversity?

Segregation, as measured by the dissimilarity index, has decreased for all groups since 1990. Still, 55 percent of White residents would have to move to achieve Black-White integration, and 47 percent of White residents would have to move to achieve Latino-White integration.

Residential Segregation, 1990 and 2014, Measured by the Dissimilarity Index

<table>
<thead>
<tr>
<th></th>
<th>White</th>
<th>Black</th>
<th>Latino</th>
<th>API</th>
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<tr>
<td>1990</td>
<td></td>
<td></td>
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<tr>
<td>2014</td>
<td></td>
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</table>

Source: U.S. Census Bureau.
Note: Data for 2014 represent a 2010 through 2014 average.
Though segregation has decreased, neighborhood poverty has increased for nearly all race/ethnic groups since 2000. Black and Latino residents are the most likely to live in high-poverty neighborhoods – defined as census tracts with a poverty rate of 40 percent or higher.
Economic benefits
Highlights
What are the benefits of racial economic inclusion to the broader economy?

• The region’s economy could have been over $17 billion stronger in 2014 if its racial gaps in income had been closed.

• Latinos would see a 114 percent gain in average annual income with racial equity in the county and a 108 percent gain in the city of Fresno.

• For Latinos, the vast majority of these income gains would come from closing the racial wage gap with Whites.

Potential gain in GDP with racial equity:

$17B

Percentage gain in average Latino income with racial equity:

114%
Economic benefits
What are the economic benefits of inclusion?

Fresno’s GDP would have been $17.1 billion higher in 2014 if racial gaps in income were closed: a 46 percent increase. This equity dividend is more than six times the entire county budget for 2016-2017.

Actual GDP and Estimated GDP without Racial Gaps in Income, 2014
- GDP in 2014 (billions)
- GDP if racial gaps in income were eliminated (billions)

Equity Dividend: $17.1 billion

Economic benefits

What are the economic benefits of inclusion?

In the city and county, Latinos would experience the largest gain in average income with racial equity: a 108 percent increase in the city and a 114 percent increase in the county. Black residents of the city and county would also see average incomes rise by 81 percent and 85 percent, respectively.

Percentage Gain in Income with Racial Equity, 2014

Note: Data for some racial/ethnic groups are excluded due to small sample size.
Economic benefits

What are the economic benefits of inclusion?

For Latinos, the vast majority of these income gains would come from closing the racial wage gap with Whites. For Black residents, most of the gains would come from closing employment differences between Black and White workers.

Source of Income Gains, 2014

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Data and methods

Data source summary and geography

Selected terms and general notes
- Broad racial/ethnic origin
- Nativity
- Detailed racial/ethnic ancestry
- Other selected terms
- General notes on analyses

Summary measures from IPUMS microdata

Adjustments made to census summary data on race/ethnicity by age

Adjustments made to demographic projections
- National projections
- County and regional projections

Estimates and adjustments made to BEA data on GDP
- Adjustments at the state and national levels
- County and metropolitan area estimates

Middle-class analysis

Assembling a complete dataset on employment and wages by industry

Growth in jobs and earnings by industry wage level, 1990 to 2015

Analysis of occupations by opportunity level

Health data and analysis

Analysis of access to healthy food

Air pollution data and analysis

Analysis of school poverty

Measures of diversity and segregation

Estimates of GDP without racial gaps in income
Data and methods

Data source summary and geography

Unless otherwise noted, all of the data and analyses presented in this profile are the product of PolicyLink and USC Program for Environmental and Regional Equity (PERE), and reflect Fresno county. The specific data sources are listed in the table shown here.

While much of the data and analysis presented in this profile are fairly intuitive, in the following pages we describe some of the estimation techniques and adjustments made in creating the underlying database, and provide more detail on terms and methodology used. Finally, the reader should bear in mind that while only a single region is profiled here, many of the analytical choices in generating the underlying data and analyses were made with an eye toward replicating the analyses in other regions and the ability to update them over time. Thus, while more regionally specific data may be available for some indicators, the data in this profile draws from our regional equity indicators database that provides data that are comparable and replicable over time.
Data and methods

Selected terms and general notes

Broad racial/ethnic origin
In all of the analyses presented, all categorization of people by race/ethnicity and nativity is based on individual responses to various census surveys. All people included in our analysis were first assigned to one of six mutually exclusive racial/ethnic categories, depending on their response to two separate questions on race and Hispanic origin as follows:

• “White” and “non-Hispanic White” are used to refer to all people who identify as White alone and do not identify as being of Hispanic origin.
• “Black” and “African American” are used to refer to all people who identify as Black or African American alone and do not identify as being of Hispanic origin.
• “Latino” refers to all people who identify as being of Hispanic origin, regardless of racial identification.
• “Asian American and Pacific Islander,” “Asian or Pacific Islander,” “Asian,” and “API” are used to refer to all people who identify as Asian American or Pacific Islander alone and do not identify as being of Hispanic origin.
• “Native American” and “Native American and Alaska Native” are used to refer to all people who identify as Native American or Alaskan Native alone and do not identify as being of Hispanic origin.
• “Mixed/other” and “other or mixed race” are used to refer to all people who identify with a single racial category not included above, or identify with multiple racial categories, and do not identify as being of Hispanic origin.
• “People of color” or “POC” is used to refer to all people who do not identify as non-Hispanic White.

Nativity
The term “U.S.-born” refers to all people who identify as being born in the United States (including U.S. territories and outlying areas), or born abroad to American parents. The term “immigrant” refers to all people who identify as being born abroad, outside of the United States, to non-American parents.

Detailed racial/ethnic ancestry
Given the diversity of ethnic origin and large presence of immigrants among the Latino and Asian populations, we sometimes present data for more detailed racial/ethnic categories within these groups. In order to maintain consistency with the broad racial/ethnic categories, and to enable the examination of second-and-higher generation immigrants, these more detailed categories (referred to as “ancestry”) are drawn from the first response to the census question on ancestry, recorded in the IPUMS variable “ANCESTR1.” For example, while country-of-origin information could have been used to identify Filipinos among the Asian population or Salvadorans among the Latino population, it could only do so for immigrants, leaving only the broad “Asian” and “Latino” racial/ethnic categories for the U.S.-born population. While this methodological choice makes little difference in the numbers of immigrants by origin we report – i.e., the vast majority of immigrants from El Salvador mark “Salvadoran” for their ancestry – it is an important point of clarification.
Data and methods

Selected terms and general notes (continued)

Other selected terms
Below we provide some definitions and clarification around some of the terms used in the profile:
• The terms “region,” “metropolitan area,” “metro area,” and “metro” are used interchangeably to refer to the geographic areas defined as Metropolitan Statistical Areas under the OMB’s December 2003 definitions.
• The term “neighborhood” is used at various points throughout the profile. While in the introductory portion of the profile this term is meant to be interpreted in the colloquial sense, in relation to any data analysis it refers to census tracts.
• The term “communities of color” generally refers to distinct groups defined by race/ethnicity among people of color.
• The term “high school diploma” refers to both an actual high school diploma as well as high school equivalency or a General Educational Development (GED) certificate.
• The term “full-time” workers refers to all persons in the IPUMS microdata who reported working at least 45 or 50 weeks (depending on the year of the data) and usually worked at least 35 hours per week during the year prior to the survey. A change in the “weeks worked” question in the 2008 ACS, as compared with prior years of the ACS and the long form of the decennial census, caused a dramatic rise in the share of respondents indicating that they worked at least 50 weeks during the year prior to the survey. To make our data on full-time workers more comparable over time, we applied a slightly different definition in 2008 and later than in earlier years: in 2008 and later, the “weeks worked” cutoff is at least 50 weeks while in 2007 and earlier it is 45 weeks. The 45-week cutoff was found to produce a national trend in the incidence of full-time work over the 2005-2010 period that was most consistent with that found using data from the March Supplement of the Current Population Survey, which did not experience a change to the relevant survey questions. For more information, see: https://www.census.gov/content/dam/Census/library/working-papers/2012/demo/Gottschalck_2012FCSM_VII-B.pdf.

General notes on analyses
Below we provide some general notes about the analysis conducted:
• In regard to monetary measures (income, earnings, wages, etc.) the term “real” indicates the data has been adjusted for inflation. All inflation adjustments are based on the Consumer Price Index for all Urban Consumers (CPI-U) from the U.S. Bureau of Labor Statistics, available at: https://www.bls.gov/cpi/cpid1612.pdf (see table 24).
Data and methods

Summary measures from IPUMS microdata

Although a variety of data sources were used, much of our analysis is based on a unique dataset created using microdata samples (i.e., “individual-level” data) from the Integrated Public Use Microdata Series (IPUMS), for four points in time: 1980, 1990, 2000, and 2010 through 2014 pooled together. While the 1980 through 2000 files are based on the decennial census and cover about 5 percent of the U.S. population each, the 2010 through 2014 files are from the ACS and cover only about 1 percent of the U.S. population each. Five years of ACS data were pooled together to improve the statistical reliability and to achieve a sample size that is comparable to that available in previous years. Survey weights were adjusted as necessary to produce estimates that represent an average over the 2010 through 2014 period.

Compared with the more commonly used census “summary files,” which include a limited set of summary tabulations of population and housing characteristics, use of the microdata samples allows for the flexibility to create more illuminating metrics of equity and inclusion, and provides a more nuanced view of groups defined by age, race/ethnicity, and nativity in each region of the United States.

The IPUMS microdata allows for the tabulation of detailed population characteristics, but because such tabulations are based on samples, they are subject to a margin of error and should be regarded as estimates – particularly in smaller regions and for smaller demographic subgroups. In an effort to avoid reporting highly unreliable estimates, we do not report any estimates that are based on a universe of fewer than 100 individual survey respondents.

A key limitation of the IPUMS microdata is geographic detail: each year of the data has a particular “lowest-level” of geography associated with the individuals included, known as the Public Use Microdata Area (PUMA) or “county groups.” PUMAs are drawn to contain a population of about 100,000, and vary greatly in size from being fairly small in densely populated urban areas, to very large in rural areas, often with one or more counties contained in a single PUMA.

Because PUMAs do not always neatly align with the boundaries of cities, counties, and metropolitan areas, the geography of the IPUMS microdata can pose a challenge for the creation of regional summary measures. This was not the case for the Fresno region, however, as the geography of Fresno county could be assembled perfectly by combining entire 1980 County Groups and 1990, 2000, and 2010 PUMAs.
Data and methods

Adjustments made to census summary data on race/ethnicity by age

For the racial generation gap indicator, we generated consistent estimates of populations by race/ethnicity and age group (under 18, 18-64, and over 64 years of age) for the years 1980, 1990, 2000, and 2014 (which reflects a 2010 through 2014 average), at the county level, which was then aggregated to the regional level and higher. The racial/ethnic groups include non-Hispanic White, non-Hispanic Black, Hispanic/Latino, non-Hispanic Asian and Pacific Islander, non-Hispanic Native American/Alaskan Native, and non-Hispanic Other (including other single race alone and those identifying as multiracial). While for 2000, this information is readily available in SF1, for 1980 and 1990, estimates had to be made to ensure consistency over time, drawing on two different summary files for each year.

For 1980, while information on total population by race/ethnicity for all ages combined was available at the county level for all the requisite groups in STF1, for race/ethnicity by age group we had to look to STF2, where it was only available for non-Hispanic White, non-Hispanic Black, Hispanic, and the remainder of the population. To estimate the number of non-Hispanic Asian and Pacific Islanders, non-Hispanic Native Americans/Alaskan Natives, and non-Hispanic Others among the remainder for each age group, we applied the distribution of these three groups from the overall county population (of all ages) from STF1.

For 1990, population by race/ethnicity at the county level was taken from STF2A, while population by race/ethnicity was taken from the 1990 Modified Age Race Sex (MARS) file – special tabulation of people by age, race, sex, and Hispanic origin. However, to be consistent with the way race is categorized by the Office of Management and Budget’s (OMB) Directive 15, the MARS file allocates all persons identifying as “Other race” or multiracial to a specific race. After confirming that population totals by county were consistent between the MARS file and STF2A, we calculated the number of “Other race” or multiracial that had been added to each racial/ethnic group in each county (for all ages combined) by subtracting the number that is reported in STF2A for the corresponding group. We then derived the share of each racial/ethnic group in the MARS file that was made up of other or mixed race people and applied this share to estimate the number of people by race/ethnicity and age group exclusive of the other or mixed race category, and finally the number of the other or mixed race people by age group.

For 2014 (which, again, reflects a 2010 through 2014 average), population by race/ethnicity and age was taken from the 2014 ACS 5-year summary file, which provides counts by race/ethnicity and age for the non-Hispanic White, Hispanic/Latino, and total population combined. County by race/ethnicity and age for all people of color combined was derived by subtracting non-Hispanic Whites from the total population.
Data and methods

Adjustments made to demographic projections

National projections
National projections of the non-Hispanic White share of the population are based on the U.S. Census Bureau’s 2014 National Population Projections. However, because these projections follow the OMB 1997 guidelines on racial classification and essentially distribute the other single-race alone group across the other defined racial/ethnic categories, adjustments were made to be consistent with the six broad racial/ethnic groups used in our analysis.

Specifically, we compared the percentage of the total population composed of each racial/ethnic group from the Census Bureau’s Population Estimates program for 2015 (which follows the OMB 1997 guidelines) to the percentage reported in the 2015 ACS 1-year Summary File (which follows the 2000 Census classification). We subtracted the percentage derived using the 2015 Population Estimates program from the percentage derived using the 2015 ACS to obtain an adjustment factor for each group (all of which were negative except that for the mixed/other group) and carried this adjustment factor forward by adding it to the projected percentage for each group in each projection year. Finally, we applied the resulting adjusted projected population distribution by race/ethnicity to the total projected population from the 2014 National Population Projections to get the projected number of people by race/ethnicity in each projection year.

County and regional projections
Similar adjustments were made in generating county and regional projections of the population by race/ethnicity. Initial county-level projections were taken from Woods & Poole Economics, Inc. Like the 1990 MARS file described above, the Woods & Poole projections follow the OMB Directive 15-race categorization, assigning all persons identifying as other or multiracial to one of five mutually exclusive race categories: White, Black, Latino, Asian/Pacific Islander, or Native American. Thus, we first generated an adjusted version of the county-level Woods & Poole projections that removed the other or multiracial group from each of these five categories. This was done by comparing the Woods & Poole projections for 2010 to the actual results from SF1 of the 2010 Census, figuring out the share of each racial/ethnic group in the Woods & Poole data that was composed of other or mixed race persons in 2010, and applying it forward to later projection years. From these projections, we calculated the county-level distribution by race/ethnicity in each projection year for five groups (White, Black, Latino, Asian/Pacific Islander, and Native American), exclusive of other and mixed race people.

To estimate the county-level share of population for those classified as Other or mixed race in each projection year, we then generated a simple straight-line projection of this share using information from SF1 of the 2000 and 2010 Census. Keeping the projected other or mixed race share fixed, we allocated the remaining population share to each of the other five racial/ethnic groups by applying the racial/ethnic distribution implied
Data and methods

Adjustments made to demographic projections (continued)

by our adjusted Woods & Poole projections for each county and projection year. The result was a set of adjusted projections at the county level for the six broad racial/ethnic groups included in the profile, which were then applied to projections of the total population by county from the Woods & Poole data to get projections of the number of people for each of the six racial/ethnic groups.

Finally, an Iterative Proportional Fitting (IPF) procedure was applied to bring the county-level results into alignment with our adjusted national projections by race/ethnicity described above. The final adjusted county results were then aggregated to produce a final set of projections at the metro area and state levels.
Data and methods

Estimates and adjustments made to BEA data on GDP

The data on national gross domestic product (GDP) and its analogous regional measure, gross regional product (GRP) – both referred to as GDP in the text – are based on data from the U.S. Bureau of Economic Analysis (BEA). However, due to changes in the estimation procedure used for the national (and state-level) data in 1997, and a lack of metropolitan area estimates prior to 2001, a variety of adjustments and estimates were made to produce a consistent series at the national, state, metropolitan-area, and county levels from 1969 to 2014.

Adjustments at the state and national levels

While data on gross state product (GSP) are not reported directly in the profile, they were used in making estimates of gross product at the county level for all years and at the regional level prior to 2001, so we applied the same adjustments to the data that were applied to the national GDP data. Given a change in BEA’s estimation of gross product at the state and national levels from a standard industrial classification (SIC) basis to a North American Industry Classification System (NAICS) basis in 1997, data prior to 1997 were adjusted to avoid any erratic shifts in gross product in that year. While the change to a NAICS basis occurred in 1997, BEA also provides estimates under an SIC basis in that year. Our adjustment involved figuring the 1997 ratio of NAICS-based gross product to SIC-based gross product for each state and the nation, and multiplying it by the SIC-based gross product in all years prior to 1997 to get our final estimate of gross product at the state and national levels.

County and metropolitan area estimates

To generate county-level estimates for all years, and metropolitan-area estimates prior to 2001, a more complicated estimation procedure was followed. First, an initial set of county estimates for each year was generated by taking our final state-level estimates and allocating gross product to the counties in each state in proportion to total earnings of employees working in each county – a BEA variable that is available for all counties and years. Next, the initial county estimates were aggregated to metropolitan-area level, and were compared with BEA’s official metropolitan-area estimates for 2001 and later. They were found to be very close, with a correlation coefficient very close to one (0.9997). Despite the near-perfect correlation, we still used the official BEA estimates in our final data series for 2001 and later. However, to avoid any erratic shifts in gross product during the years up until 2001, we made the same sort of adjustment to our estimates of gross product at the metropolitan-area level that was made to the state and national data – we figured the 2001 ratio of the official BEA estimate to our initial estimate, and multiplied it by our initial estimates for 2000 and earlier to get our final estimate of gross product at the metropolitan-area level.

We then generated a second iteration of county-level estimates – just for counties included in metropolitan areas – by taking the final metropolitan-area-level estimates and allocating gross product to the counties in each metropolitan area in proportion to total earnings of employees working in each
Data and methods

Estimates and adjustments made to BEA data on GDP

(continued)

county. Next, we calculated the difference between our final estimate of gross product for each state and the sum of our second-iteration county-level gross product estimates for metropolitan counties contained in the state (that is, counties contained in metropolitan areas). This difference, total nonmetropolitan gross product by state, was then allocated to the nonmetropolitan counties in each state, once again using total earnings of employees working in each county as the basis for allocation. Finally, one last set of adjustments was made to the county-level estimates to ensure that the sum of gross product across the counties contained in each metropolitan area agreed with our final estimate of gross product by metropolitan area, and that the sum of gross product across the counties contained in state agreed with our final estimate of gross product by state. This was done using a simple IPF procedure.

We should note that BEA does not provide data for all counties in the United States, but rather groups some counties that have had boundary changes since 1969 into county groups to maintain consistency with historical data. Any such county groups were treated the same as other counties in the estimate techniques described above.
Data and methods

Middle-class analysis

To analyze middle-class decline over the past four decades, we began with the regional household income distribution in 1979 – the year for which income is reported in the 1980 Census (and the 1980 IPUMS microdata). The middle 40 percent of households were defined as “middle class,” and the upper and lower bounds in terms of household income (adjusted for inflation to be in 2010 dollars) that contained the middle 40 percent of households were identified. We then adjusted these bounds over time to increase (or decrease) at the same rate as real average household income growth, identifying the share of households falling above, below, and in between the adjusted bounds as the upper, lower, and middle class, respectively, for each year shown. Thus, the analysis of the size of the middle class examined the share of households enjoying the same relative standard of living in each year as the middle 40 percent of households did in 1979.
Data and methods

Assembling a complete dataset on employment and wages by industry

Analysis of jobs and wages by industry, reported on pages 34 and 54, is based on an industry-level dataset constructed using two-digit NAICS industries from the Bureau of Labor Statistics’ Quarterly Census of Employment and Wages (QCEW). Due to some missing (or nondisclosed) data at the county and regional levels, we supplemented our dataset using information from Woods & Poole Economics, Inc., which contains complete jobs and wages data for broad, two-digit NAICS industries at multiple geographic levels. (Proprietary issues barred us from using Woods & Poole data directly, so we instead used it to complete the QCEW dataset.) While we refer to counties in describing the process for “filling in” missing QCEW data below, the same process was used for the regional and state levels of geography.

Given differences in the methodology underlying the two data sources (in addition to the proprietary issue), it would not be appropriate to simply “plug in” corresponding Woods & Poole data directly to fill in the QCEW data for nondisclosed industries. Therefore, our approach was to first calculate the number of jobs and total wages from nondisclosed industries in each county, and then distribute those amounts across the nondisclosed industries in proportion to their reported numbers in the Woods & Poole data.

To make for a more accurate application of the Woods & Poole data, we made some adjustments to it to better align it with the QCEW. One of the challenges of using Woods & Poole data as a “filler dataset” is that it includes all workers, while QCEW includes only wage and salary workers. To normalize the Woods & Poole data universe, we applied both a national and regional wage and salary adjustment factor; given the strong regional variation in the share of workers who are wage and salary, both adjustments were necessary. Second, while the QCEW data are available on an annual basis, the Woods & Poole data are available on a decadal basis until 1995, at which point they become available on an annual basis. For the 1990-1995 period, we estimated the Woods & Poole annual jobs and wages figures using a straight-line approach. Finally, we standardized the Woods & Poole industry codes to match the NAICS codes used in the QCEW.

It is important to note that not all counties and regions were missing data at the two-digit NAICS level in the QCEW, and the majority of larger counties and regions with missing data were only missing data for a small number of industries and only in certain years. Moreover, when data are missing it is often for smaller industries. Thus, the estimation procedure described is not likely to greatly affect our analysis of industries, particularly for larger counties and regions.
Data and methods

Growth in jobs and earnings by industry wage level, 1990 to 2015

The analysis on page 34 uses our filled-in QCEW dataset (see the previous page) and seeks to track shifts in regional job composition and wage growth by industry wage level.

Using 1990 as the base year, we classified broad industries (at the two-digit NAICS level) into three wage categories: low, middle, and high wage. An industry’s wage category was based on its average annual wage, and each of the three categories contained approximately one-third of all private industries in the region.

We applied the 1990 industry wage category classification across all the years in the dataset, so that the industries within each category remained the same over time. This way, we could track the broad trajectory of jobs and wages in low-, middle-, and high-wage industries.

This approach was adapted from a method used in a Brookings Institution report, Building From Strength: Creating Opportunity in Greater Baltimore’s Next Economy. For more information, see: https://www.brookings.edu/wp-content/uploads/2016/06/0426_baltimore_economy_vey.pdf.

While we initially sought to conduct the analysis at a more detailed NAICS level, the large amount of missing data at the three- to six-digit NAICS levels (which could not be resolved with the method that was applied to generate our filled-in two-digit QCEW dataset) prevented us from doing so.
Data and methods
Analysis of occupations by opportunity level

The analysis of strong occupations on page 56 and jobs by opportunity level on pages 58-60 are related and based on an analysis that seeks to classify occupations in the region by opportunity level. Industries and occupations with high concentrations in the region, strong growth potential, and decent and growing wages are considered strong.

To identify “high-opportunity” occupations, we developed an “occupation opportunity index” based on measures of job quality and growth, including median annual wage, wage growth, job growth (in number and share), and median age of workers (which represents potential job openings due to retirements).

Once the “occupation opportunity index” score was calculated for each occupation, they were sorted into three categories (high, middle, and low opportunity). Occupations were evenly distributed into the categories based on employment. The strong occupations shown on page 56 are those found in the top, or high category (though not all occupations may be listed due to limited space). There are some aspects of this analysis that warrant further clarification. First, the “occupation opportunity index” that is constructed is based on a measure of job quality and set of growth measures, with the job-quality measure weighted twice as much as all of the growth measures combined. This weighting scheme was applied both because we believe pay is a more direct measure of “opportunity” than the other available measures, and because it is more stable than most of the other growth measures, which are calculated over a relatively short period (2005-2011). For example, an increase from $6 per hour to $12 per hour is fantastic wage growth (100 percent), but most would not consider a $12-per-hour job as a “high-opportunity” occupation.

Second, all measures used to calculate the “occupation opportunity index” are based on data for metropolitan statistical areas from the Occupational Employment Statistics (OES) program of the U.S. Bureau of Labor Statistics (BLS), with one exception: median age by occupation. This measure, included among the growth metrics because it indicates the potential for job openings due to replacements as older workers retire, is estimated for each occupation from the 2010 5-year IPUMS ACS microdata file (for the employed civilian noninstitutional population ages 16 and older). It is calculated at the metropolitan statistical area level (to be consistent with the geography of the OES data), except in cases for which there were fewer than 30 individual survey respondents in an occupation; in these cases, the median age estimate is based on national data.

Third, the level of occupational detail at which the analysis was conducted, and at which the lists of occupations are reported, is the three-digit standard occupational classification (SOC) level. While considerably more detailed data is available in the OES, it was necessary to aggregate to the three-digit SOC level in order to align closely with the occupation codes reported for workers in the ACS microdata, making the analysis reported on page 56 possible.
Data and methods

Analysis of occupations by opportunity level

Fourth, while most of the data used in the analysis are regionally specific, information on the education level of “typical workers” in each occupation, which is used to divide occupations in the region into the three groups by education level (as presented on pages 58-60), was estimated using national 2010 IPUMS ACS microdata (for the employed civilian noninstitutional population ages 16 and older). Although regionally specific data would seem to be the better choice, given the level of occupational detail at which the analysis is conducted, the sample sizes for many occupations would be too small for statistical reliability. And, while using pooled 2006-2010 data would increase the sample size, it would still not be sufficient for many regions, so national 2010 data were chosen given the balance of currency and sample size for each occupation. The implicit assumption in using national data is that the occupations examined are of sufficient detail that there is not great variation in the typical educational level of workers in any given occupation from region to region. While this may not hold true in reality, we would note that a similar approach was used by Jonathan Rothwell and Alan Berube of the Brookings Institution in Education, Demand, and Unemployment in Metropolitan America (Washington D.C.: Brookings Institution, September 2011).

We should also note that the BLS does publish national information on typical education needed for entry by occupation. However, in comparing these data with the typical education levels of actual workers by occupation that were estimated using ACS data, there were important differences, with the BLS levels notably lower (as expected). The levels estimated from the ACS were determined to be the appropriate choice for our analysis as they provide a more realistic measure of the level of educational attainment necessary to be a viable job candidate – even if the typical requirement for entry is lower.

Fifth, it is worthwhile to clarify an important distinction between the lists of occupations by typical education of workers and opportunity level, presented on pages 58-60, and the charts depicting the opportunity level associated with jobs held by workers with different education levels and backgrounds by race/ethnicity/nativity, presented on pages 62-64. While the former are based on the national estimates of typical education levels by occupation, with each occupation assigned to one of the three broad education levels described, the latter are based on actual education levels of workers in the region (as estimated using 2014 5-year IPUMS ACS microdata), who may be employed in any occupation, regardless of its associated “typical” education level.

Lastly, it should be noted that for all of the occupational analysis, it was an intentional decision to keep the categorizations by education and opportunity level fairly broad, with three categories applied to each. For the categorization of occupations, this was done so that each occupation could be more justifiably assigned to a single typical education level; even with the three broad categories some occupations had a fairly even
Data and methods

Analysis of occupations by opportunity level

(continued)

distribution of workers across them nationally, but, for the most part, a large majority fell in one of the three categories. In regard to the three broad categories of opportunity level, and education levels of workers shown on pages 62-64, this was kept broad to ensure reasonably large sample sizes in the 2014 5-year IPUMS ACS microdata that was used for the analysis.
Data and methods
Health data and analysis

Health data presented are from the Behavioral Risk Factor Surveillance System (BRFSS) database, housed in the Centers for Disease Control and Prevention. The BRFSS database is created from randomized telephone surveys conducted by states, which then incorporate their results into the database on a monthly basis.

The results of this survey are self-reported and the population includes all related adults, unrelated adults, roomers, and domestic workers who live at the residence. The survey does not include adult family members who are currently living elsewhere, such as at college, a military base, a nursing home, or a correctional facility.

The most detailed level of geography associated with individuals in the BRFSS data is the county. Using the county-level data as building blocks, we created additional estimates for the region, state, and United States.

While the data allow for the tabulation of personal health characteristics, it is important to keep in mind that because such tabulations are based on samples, they are subject to a margin of error and should be regarded as estimates – particularly in smaller regions and for smaller demographic subgroups.

To increase statistical reliability, we combined five years of survey data, for the years 2008 through 2012. As an additional effort to avoid reporting potentially misleading estimates, we do not report any estimates that are based on a universe of fewer than 100 individual survey respondents. This is similar to, but more stringent than, a rule indicated in the documentation for the 2012 BRFSS data of not reporting (or interpreting) percentages based on a denominator of fewer than 50 respondents (see: https://www.cdc.gov/brfss/annual_data/2012/pdf/Compare_2012.pdf). Even with this sample size restriction, regional estimates for smaller demographic subgroups should be regarded with particular care.

For more information and access to the BRFSS database, see: http://www.cdc.gov/brfss/index.html.
Analysis of access to healthy food access is based on the 2014 Analysis of Limited Supermarket Access (LSA) from the The Reinvestment Fund (TRF). LSA areas are defined as one or more contiguous census block groups (with a collective population of at least 5,000) where residents must travel significantly farther to reach a supermarket than the “comparatively acceptable” distance traveled by residents in well-served areas with similar population densities and car ownership rates.

The methodology’s key assumption is that block groups with a median household income greater than 120 percent of their respective metropolitan area’s median (or non-metro state median for non-metropolitan areas) are adequately served by supermarkets and thus travel an appropriate distance to access food. Thus, higher-income block groups establish the benchmark to which all block groups are compared controlling for population density and car ownership rates.

A LSA score is calculated as the percentage by which the distance to the nearest supermarket would have to be reduced to make a block group’s access equal to the access observed for adequately served areas. Block groups with a LSA score greater than 45 were subjected to a spatial connectivity analysis, with 45 chosen as the minimum threshold because it was roughly equal to the average LSA score for all LSA block groups in the 2011 TRF analysis.

Block groups with contiguous spatial connectivity of high LSA scores are referred to as LSA areas. They represent areas with the strongest need for increased access to supermarkets. Our analysis of the percent of people living in LSA areas by race/ethnicity and poverty level was done by merging data from the 2014 5-year ACS summary file with LSA areas at the block group level and aggregating up to the city, county, and higher levels of geography.

Data and methods

Air pollution data and analysis

The air pollution exposure index is derived from the 2011 National-Scale Air Toxics Assessment (NATA) developed by the U.S. Environmental Protection Agency. The NATA uses general information about emissions sources to develop risk estimates and does not incorporate more refined information about emissions sources, which suggests that the impacts of risks may be overestimated. Note, however, that because that analysis presented using this data is relative to the U.S. overall in the case of exposure index, the fact that the underlying risk estimates themselves may be overstated is far less problematic.

The NATA data include estimates of cancer risk and respiratory hazards (non-cancer risk) at the census tract level based on exposure to outdoor sources. It is important to note that while diesel particulate matter (PM) exposure is included in the NATA non-cancer risk estimates, it is not included in the cancer risk estimates (even though PM is a known carcinogen).

The index of exposure to air pollution presented is based on a combination of separate indices for cancer risk and respiratory hazard at the census tract level, using the 2011 NATA. We followed the approach used by the U.S. Department of Housing and Urban Development (HUD) in developing its Environmental Health Index. The cancer risk and respiratory hazard estimates were combined by calculating tract-level z-scores for each and adding them together as indicated in the formula below:

$$COMBINED_i = \left( \frac{c_i - \mu_c}{\sigma_c} \right) + \left( \frac{r_i - \mu_r}{\sigma_r} \right)$$

Where $c$ indicates cancer risk, $r$ indicates respiratory risk, $i$ indexes census tracts, and $\mu$ and $\sigma$ represent the means and standard deviations, respectively, of the risk estimates across all census tracts in the United States.

The combined tract level index, $COMBINED_i$, was then ranked in ascending order across all tracts in the United States, from 1 to 100. Finally, the tract-level rankings were summarized to the city, county, and higher levels of geography for various demographic groups (i.e., by race/ethnicity and poverty status) by taking a population-weighted average using the group population as weight, with group population data drawn from the 2014 5-year ACS summary file.

For more information on the NATA data, see [http://www.epa.gov/national-air-toxics-assessment](http://www.epa.gov/national-air-toxics-assessment).
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Data and methods

Analysis of school poverty

The school poverty data are derived from the National Center for Education Statistics (NCES) Common Core of Data (CCD) Public Elementary/Secondary School Universe Survey. Survey responses are submitted annually to NCES by state education agencies in the 50 states, the District of Columbia, and other U.S. territories and outlying areas. The data is then cleaned and standardized by CCD survey staff and made available to the public. All public elementary and secondary schools from pre-kindergarten through 12th grade with a positive total student count (based on the NCES variable MEMBER) in each year were included in our analysis of school poverty. This includes both regular schools as well as special education, vocational education, alternative, charter, magnet, and Title 1-eligible schools.

The share of students eligible for free or reduced price lunch (FRPL) was calculated at the school level by dividing the count of students eligible for FRPL (NCES variable TOTFRL) by the total student count (NCES variable MEMBER). Schools were then classified into four groups – school poverty level categories – based on this share (low, mid-low, mid-high, and high), and the number and shares of students by school poverty level category were aggregated to the city, county, and higher levels of geography for each racial/ethnic group.

For the vast majority of schools, the total student count is consistent with the sum of the counts by race/ethnicity. For a small number of schools, however, it is slightly higher given that the latter excludes any students belonging to an unknown or non-CCD race category. For this reason, data for all racial/ethnic groups combined (the "All" category) is based on the sum of student counts by race/ethnicity.

It is important to note that the measure of school poverty used, the share of students eligible for FRPL, is not always reported and is subject to some degree of error at the school level. The reasons for this include the fact that the count of students deemed FRPL-eligible may be taken at a different time than the total student count, and in some states, a single school may administer the free lunch program for a group of schools (in which case its count and share of FRPL-eligible students would be overstated). However, it is likely that any bias caused by these inconsistencies in reporting at the school level are largely mitigated once the data is aggregated across many schools in a given geography.

It is also important to note that the Healthy, Hunger-Free Kids Act of 2010 changed eligibility requirements and this can impact the consistency of data collection and thus the estimates of the share of students eligible for FRPL.
Data and methods

Measures of diversity and segregation

In the profile we refer to several measures of residential segregation by race/ethnicity (the “multi-group entropy index” on page 99 and the “dissimilarity index” on page 100). While the common interpretation of these measures is included in the text of the profile, the data used to calculate them, and the sources of the specific formulas that were applied, are described below.

All of these measures are based on census-tract-level data for 1980, 1990, and 2000 from Geolytics, and for 2014 (which reflects a 2010 through 2014 average) from the 2014 5-year ACS. While the data for 1980, 1990, and 2000 originate from the decennial censuses of each year, an advantage of the Geolytics data we use is that it has been “re-shaped” to be expressed in 2010 census tract boundaries, and so the underlying geography for our calculations is consistent over time; the census tract boundaries of the original decennial census data change with each release, which could potentially cause a change in the value of residential segregation indices even if no actual change in residential segregation occurred. In addition, while most all the racial/ethnic categories for which indices are calculated are consistent with all other analyses presented in this profile, there is one exception. Given limitations of the tract-level data released in the 1980 Census, Native Americans are combined with Asians and Pacific Islanders in that year. For this reason, we set 1990 as the base year (rather than 1980) in the chart on page 100, but keep the 1980 data in other analyses of residential segregation as this minor inconsistency in the data is not likely to affect the analyses.

The formulas for the multi-group entropy index were drawn from a 2004 report by John Iceland of the University of Maryland, *The Multigroup Entropy Index (Also Known as Theil’s H or the Information Theory Index)* available at: https://www.census.gov/topics/housing/housing-patterns/about/multi-group-entropy-index.html. In that report, the formula used to calculate the multigroup entropy index (referred to as the “entropy index” in the report) appear on page 8.

The formula for the other measure of residential segregation, the dissimilarity index, is well established, and is made available by the U.S. Census Bureau at: https://www.census.gov/library/publications/2002/dec/censr-3.html.
Data and methods

Estimates of GDP without racial gaps in income

Estimates of the gains in average annual income and GDP under a hypothetical scenario in which there is no income inequality by race/ethnicity are based on the 2014 5-Year IPUMS ACS microdata. We applied a methodology similar to that used by Robert Lynch and Patrick Oakford in chapter two of All-In Nation: An America that Works for All, with some modification to include income gains from increased employment (rather than only those from increased wages). As in the Lynch and Oakford analysis, once the percentage increase in overall average annual income was estimated, 2014 GDP was assumed to rise by the same percentage.

We first organized individuals aged 16 or older in the IPUMS ACS into six mutually exclusive racial/ethnic groups: non-Hispanic White, non-Hispanic Black, Latino, non-Hispanic Asian/Pacific Islander, non-Hispanic Native American, and non-Hispanic Other or multiracial. Following the approach of Lynch and Oakford in All-In Nation, we excluded from the non-Hispanic Asian/Pacific Islander category subgroups whose average incomes were higher than the average for non-Hispanic Whites. Also, to avoid excluding subgroups based on unreliable average income estimates due to small sample sizes, we added the restriction that a subgroup had to have at least 100 individual survey respondents in order to be included.

We then assumed that all racial/ethnic groups had the same average annual income and hours of work, by income percentile and age group, as non-Hispanic Whites, and took those values as the new “projected” income and hours of work for each individual. For example, a 54-year-old non-Hispanic Black person falling between the 85th and 86th percentiles of the non-Hispanic Black income distribution was assigned the average annual income and hours of work values found for non-Hispanic White persons in the corresponding age bracket (51 to 55 years old) and “slice” of the non-Hispanic White income distribution (between the 85th and 86th percentiles), regardless of whether that individual was working or not. The projected individual annual incomes and work hours were then averaged for each racial/ethnic group (other than non-Hispanic Whites) to get projected average incomes and work hours for each group as a whole, and for all groups combined.

One difference between our approach and that of Lynch and Oakford is that we include all individuals ages 16 years and older, rather than just those with positive income. Those with income values of zero are largely non-working, and were included so that income gains attributable to increased average annual hours of work would reflect both expanded work hours for those currently working and an increased share of workers – an important factor to consider given sizeable differences in employment rates by race/ethnicity. One result of this choice is that the average annual income values we estimate are analogous to measures of per capita income for the age 16 and older population and are notably lower than those reported in Lynch and Oakford; another is that our estimated income gains are relatively larger as they presume increased employment rates.
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