Economic Update
LMID Advisory Group Meeting
October 3, 2019

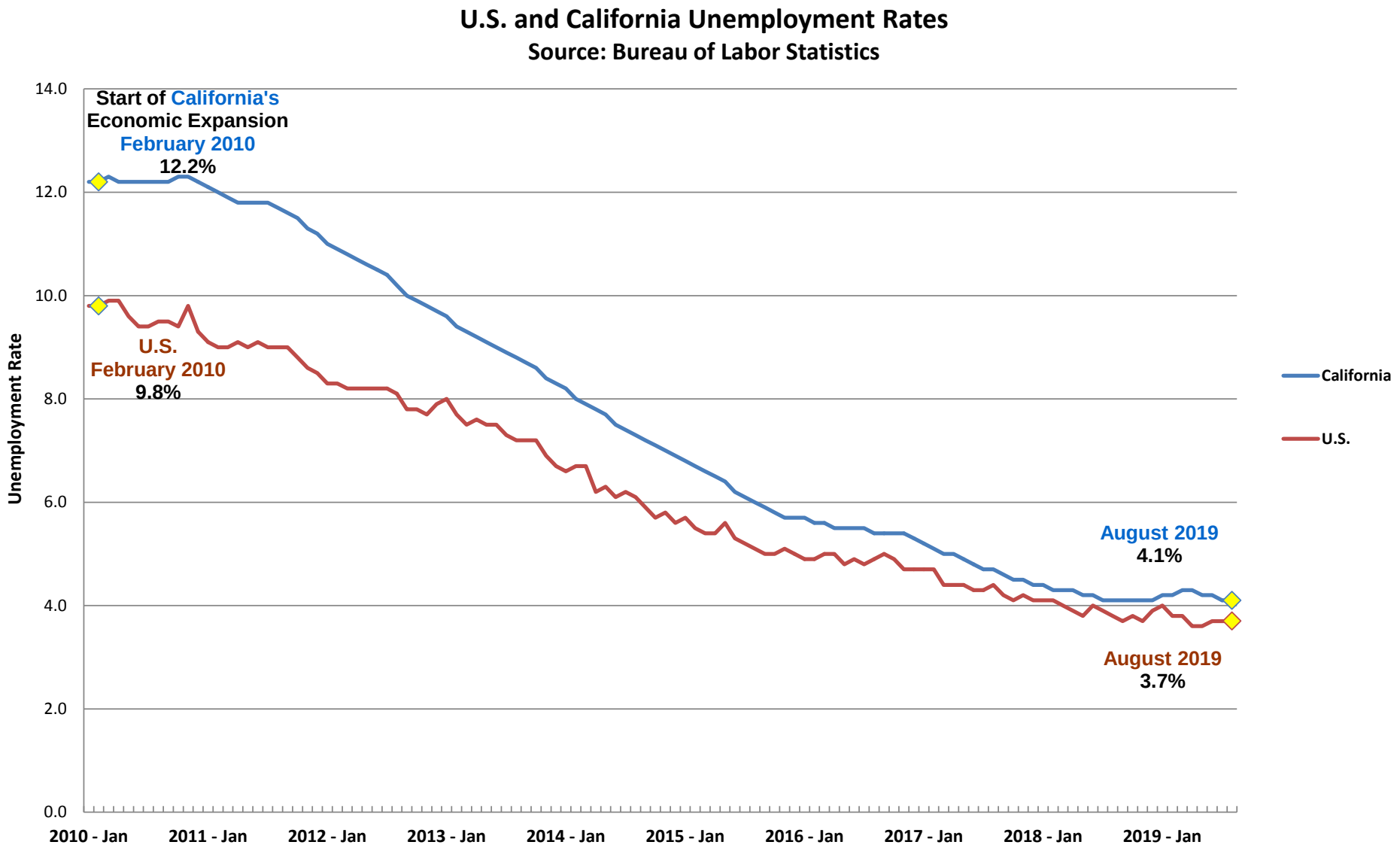
Brandon T. Hooker

Employment Development Department

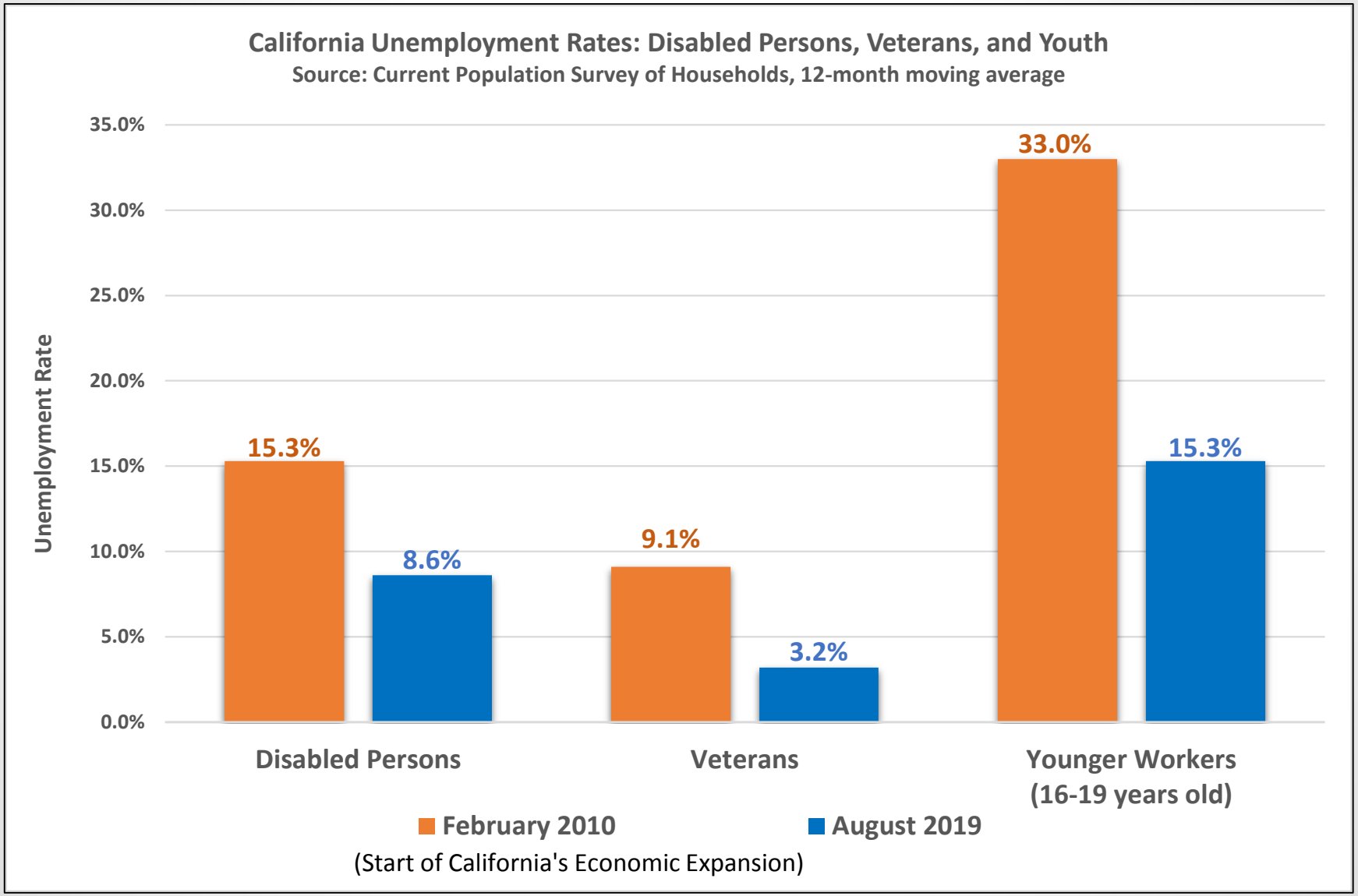
Labor Market Information Division

Employment Development Department
State of California

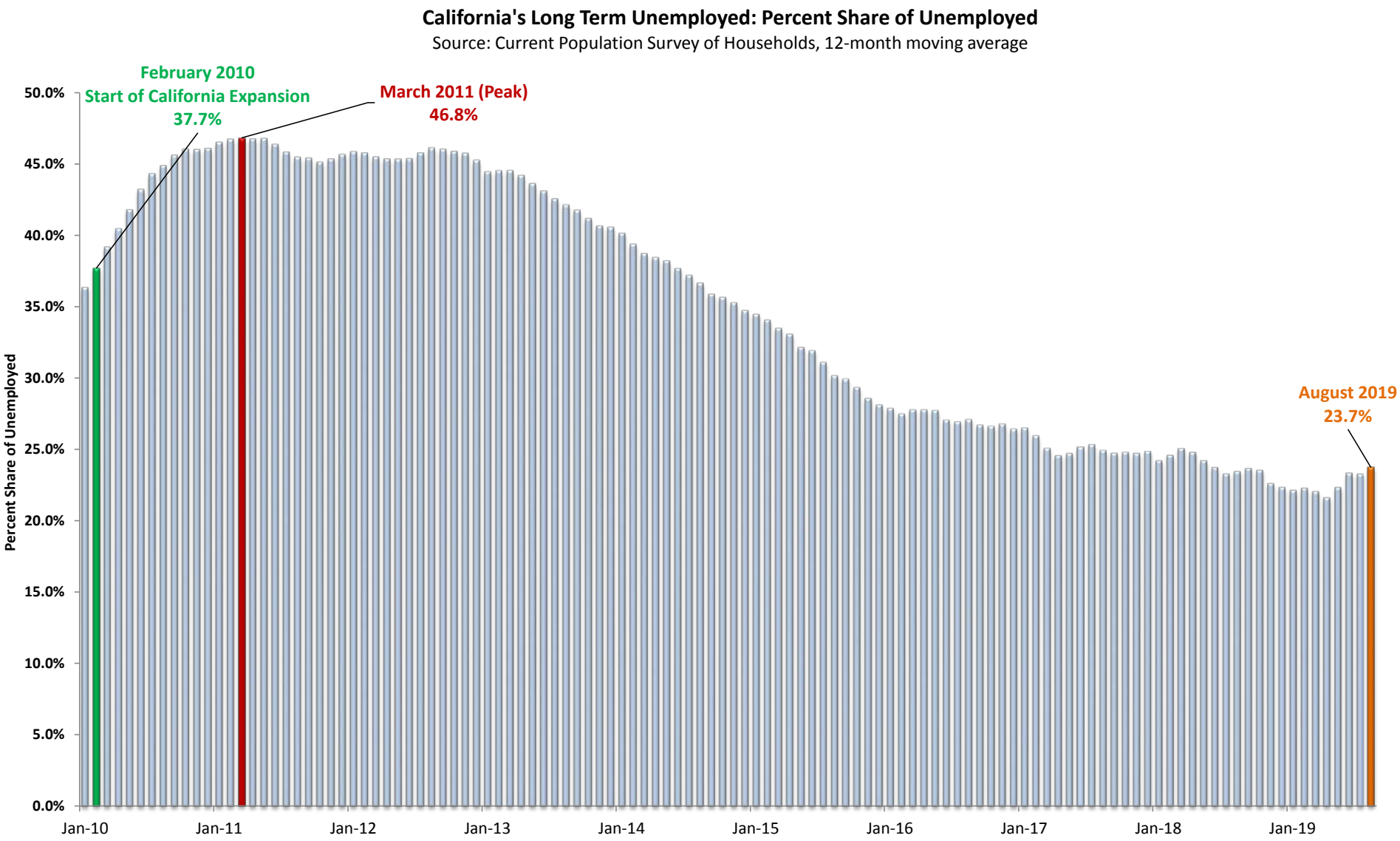
Unemployment Rates: U.S. and California



California Unemployment Rates
Disabled Persons, Veterans, and Younger Workers

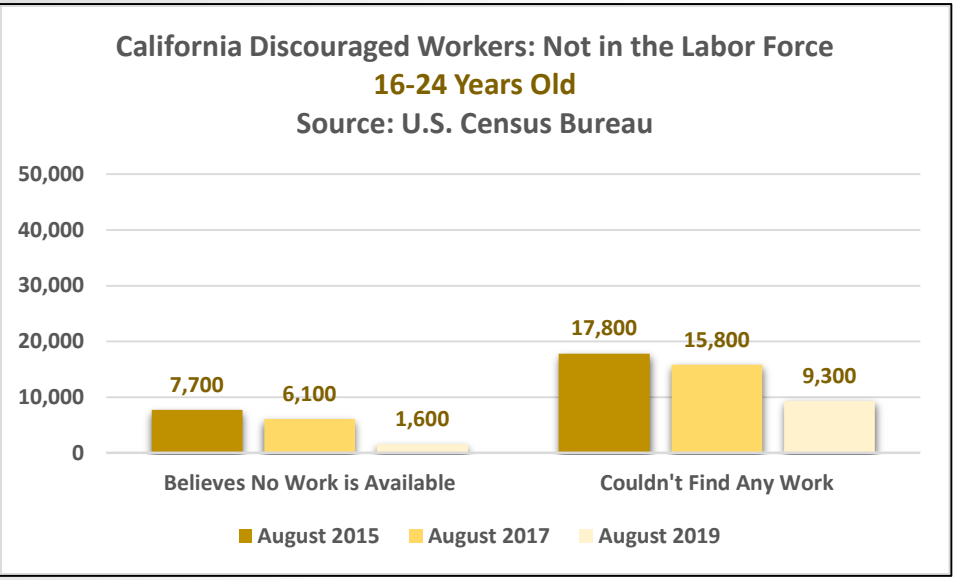


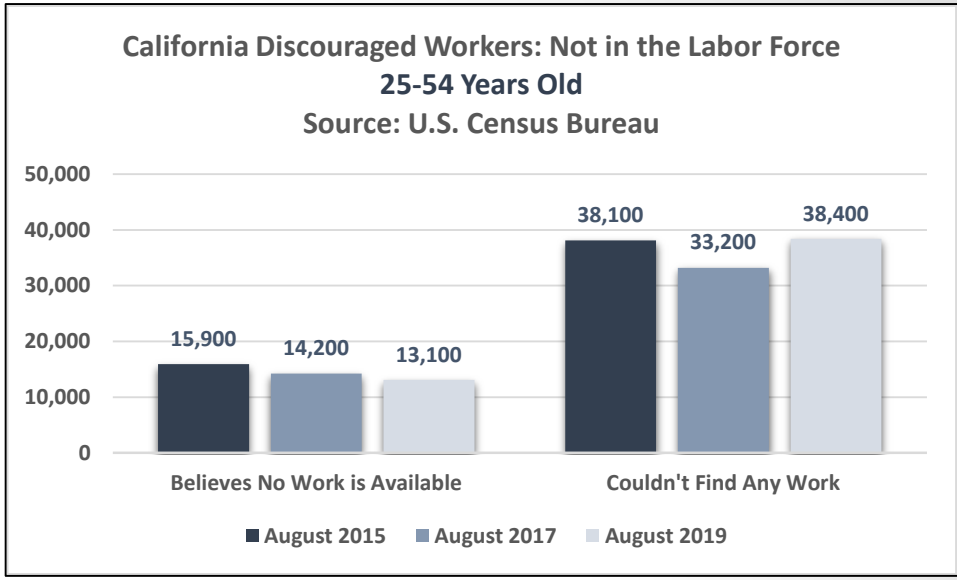
California: Long-Term Unemployed

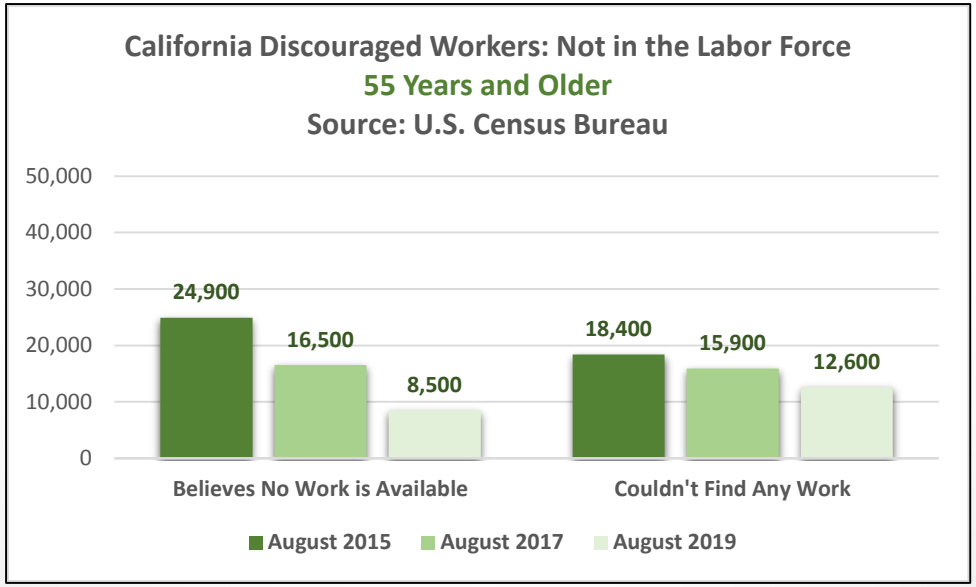


Long-Term Unemployed: refers to individuals who have been looking for work for 27 weeks or more. (Bureau of Labor Statistics)

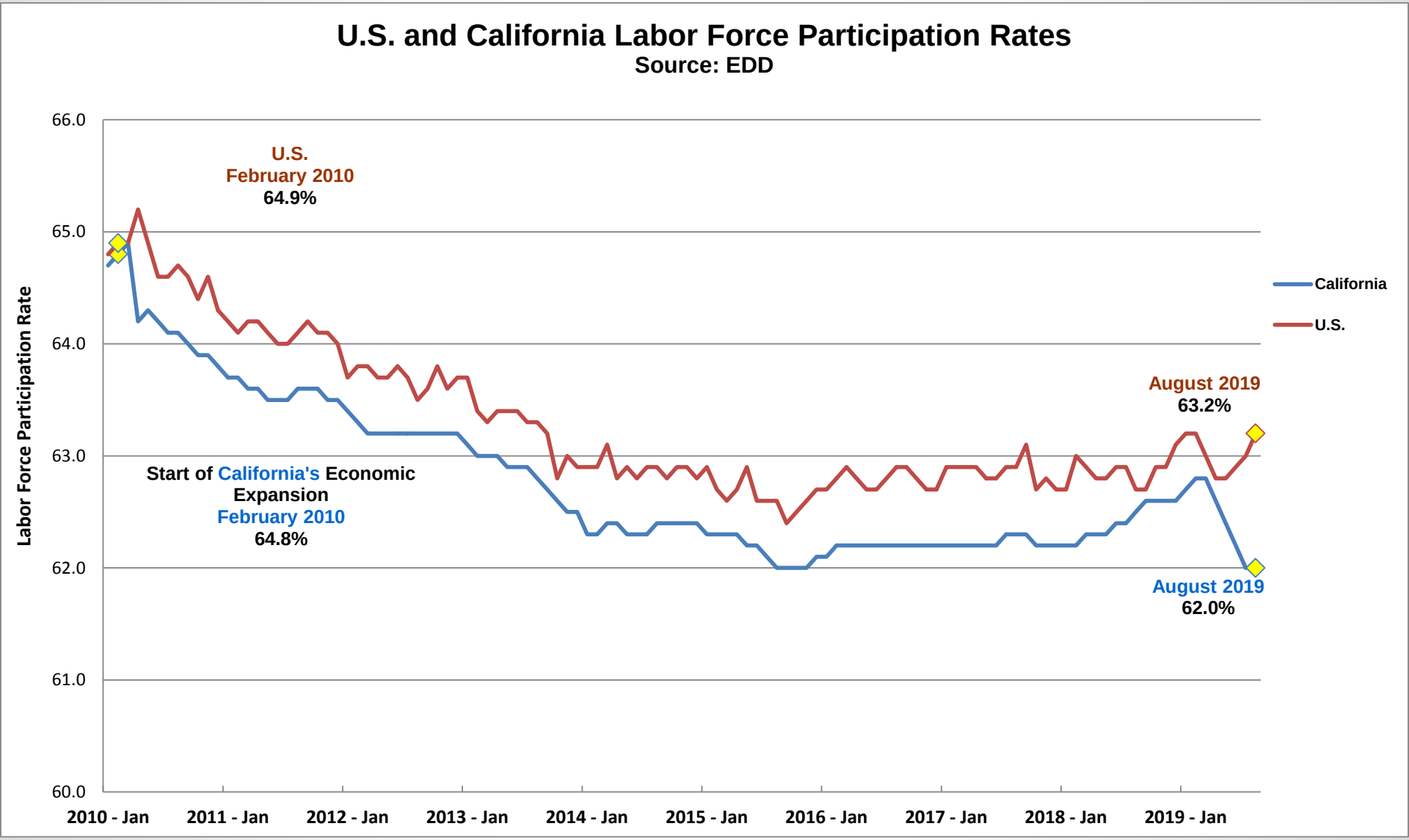
California: Discouraged Worker Trends



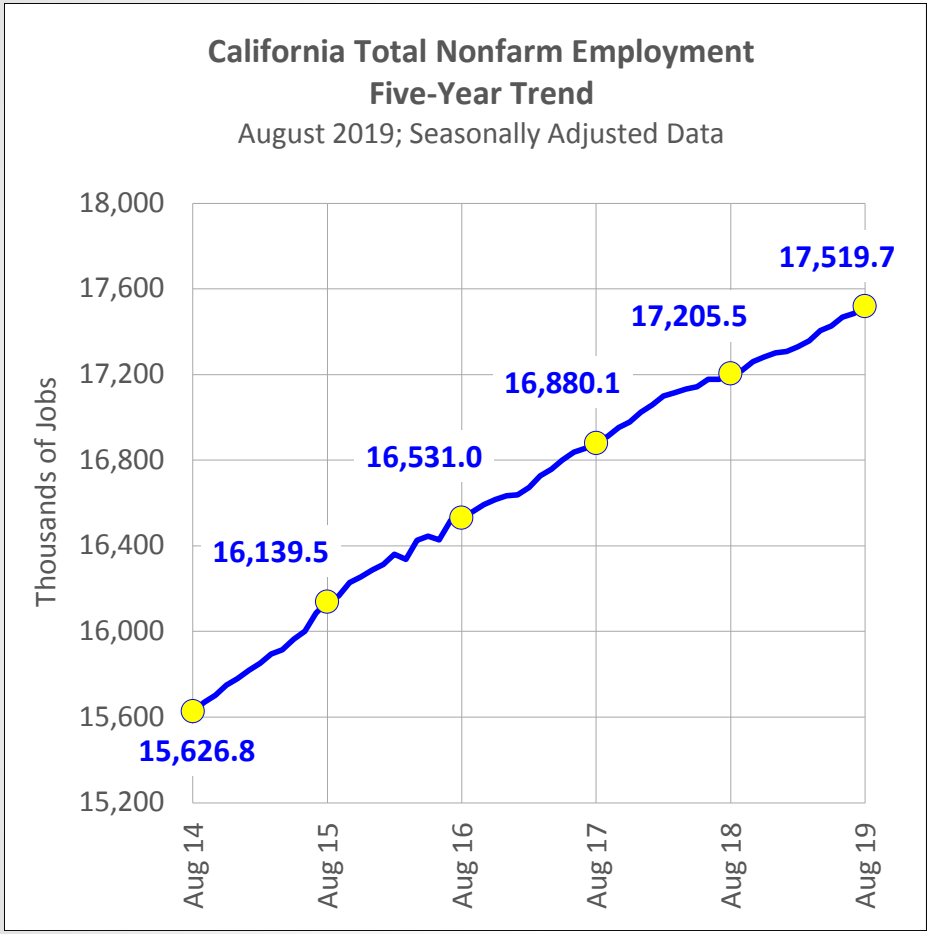


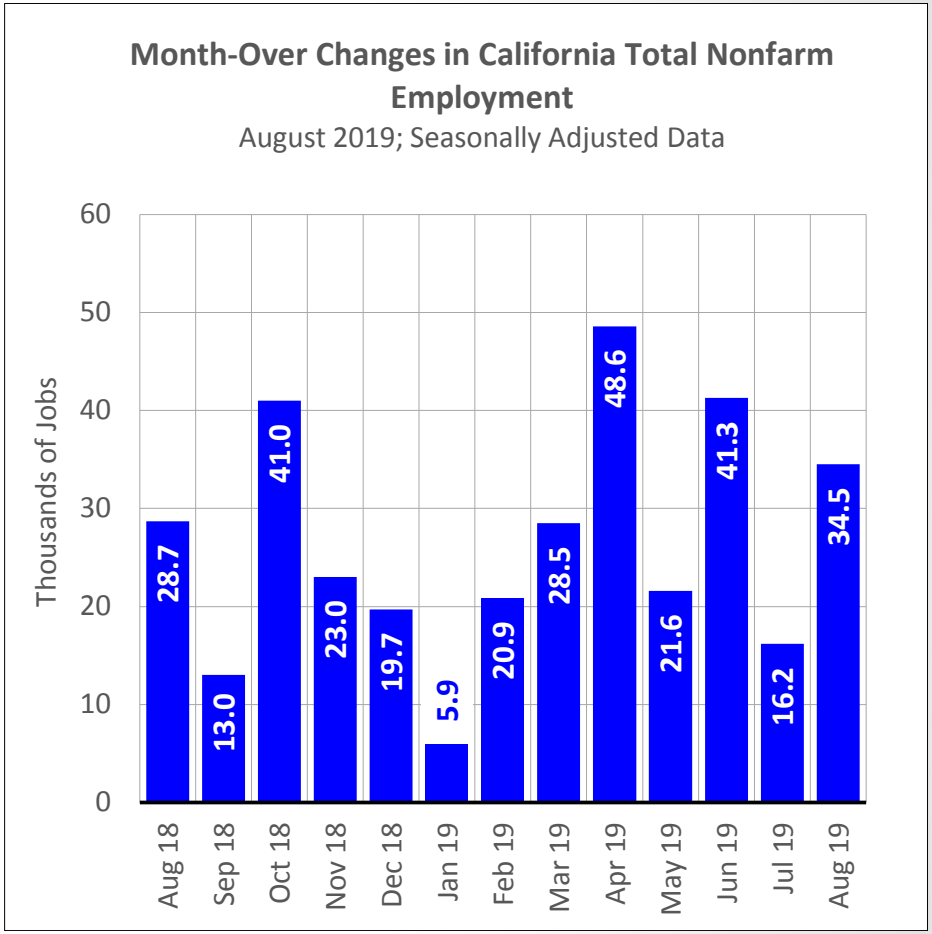


Labor Force Participation Rates: U.S. and California

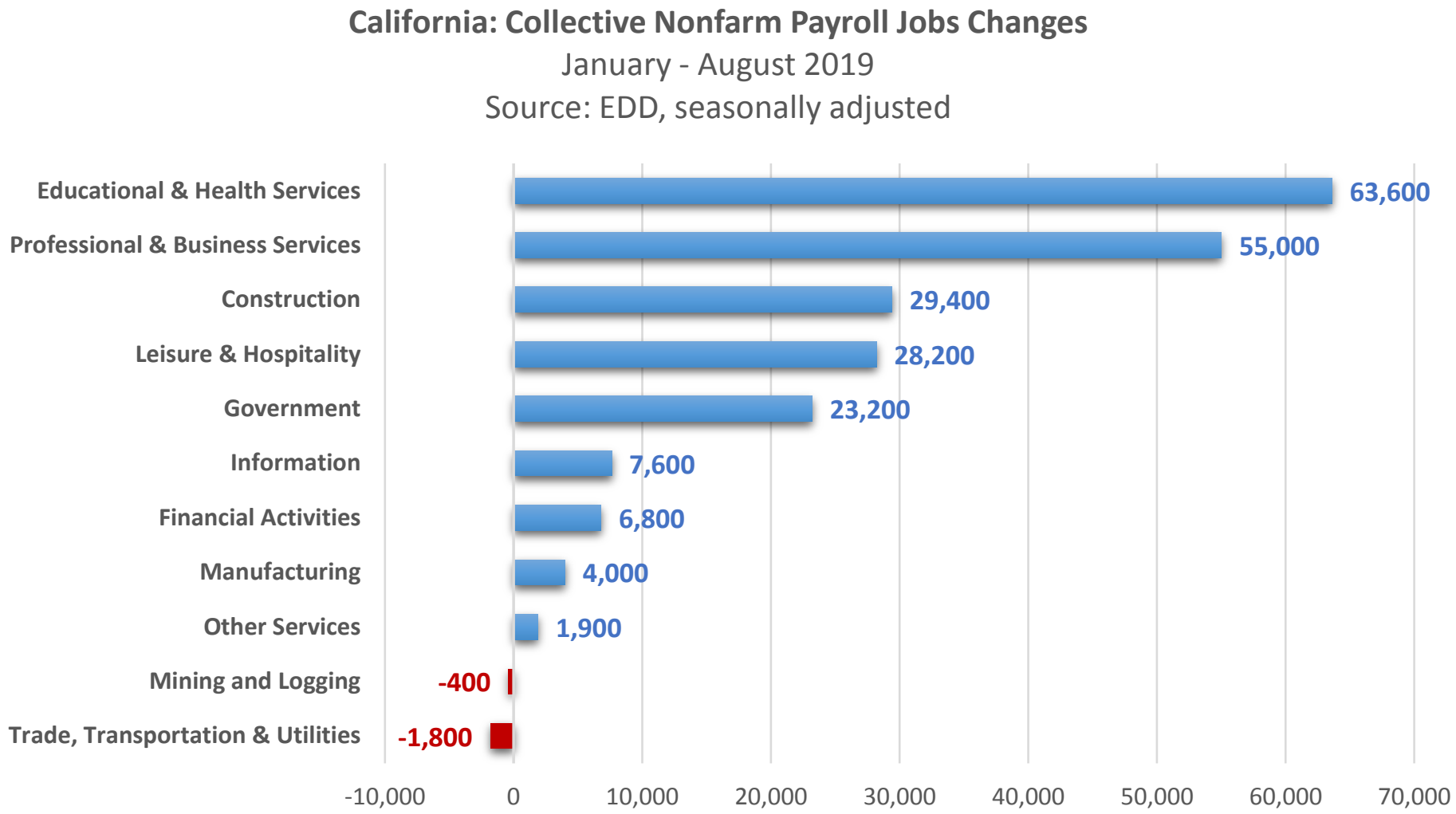


California: Nonfarm Employment Trends





California: Industry Sector Trends



Nationwide Comparison
Job Gains Over the Course of the U.S. Expansion

States with a Civilian Labor Force of 9 million or more		
State	**Civilian Labor Force**	**Net Job Gain (Expansion Gain - Recession Loss) Dec. 2007- June 2009**
California	**19,370,800**	**2,154,000**
Texas	**13,930,600**	**2,358,800**
Florida	10,256,300	1,128,600
New York	9,526,200	984,000
Source: Bureau of Labor Statistics, CES, seasonally adjusted		

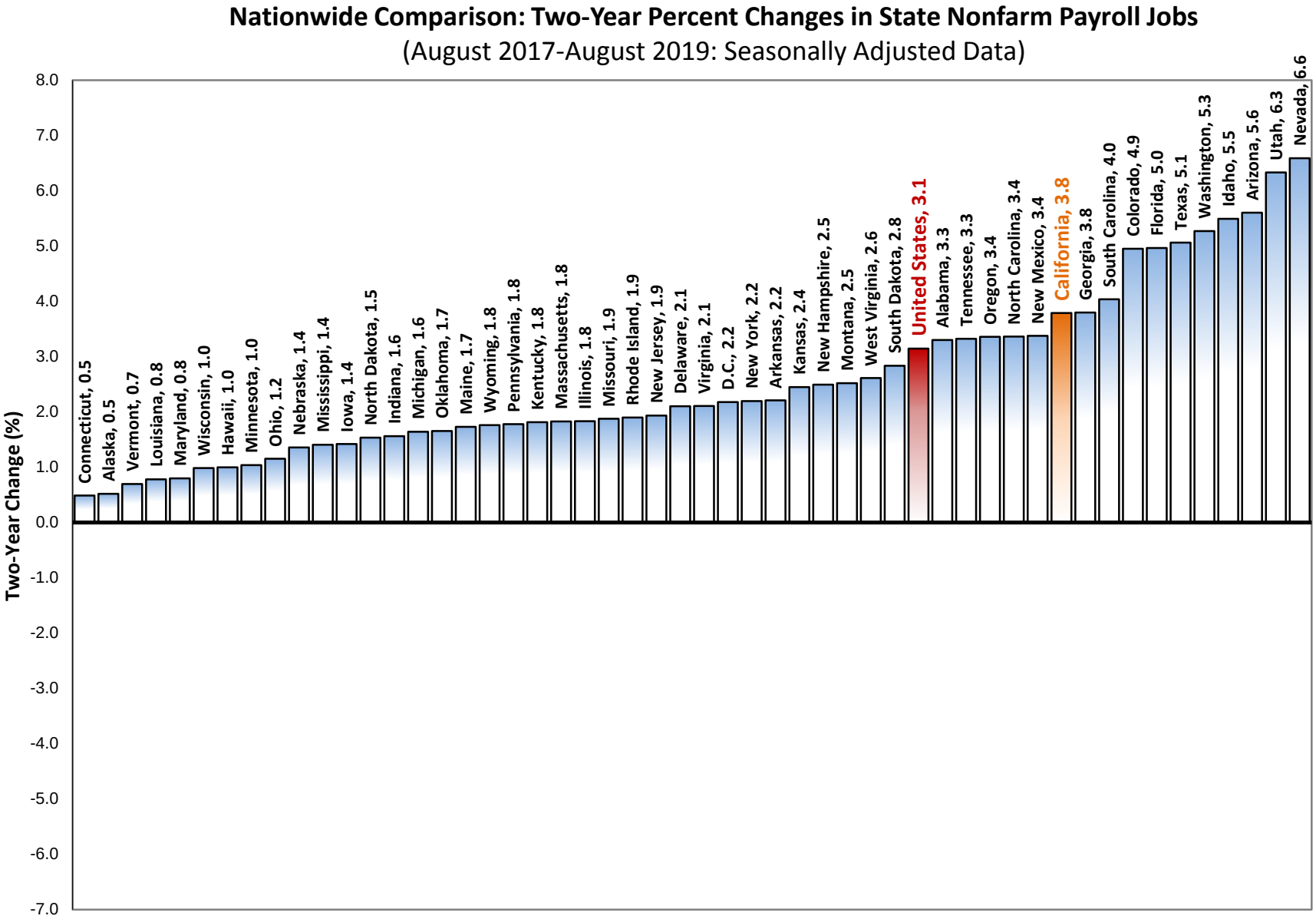
Job Gains Over the Course of the U.S. Expansion

States with a Civilian Labor Force between 3 and 7 million persons		
State	**Civilian Labor Force**	**Net Job Gain (Expansion Gain - Recession Loss) Dec. 2007- June 2009**
Pennsylvania	6,476,000	256,900
Illinois	6,467,300	218,700
Ohio	5,818,500	184,600
North Carolina	**5,045,900**	**418,400**
Georgia	**5,024,700**	**487,300**
Michigan	4,935,700	211,100
New Jersey	4,471,100	127,300
Virginia	4,375,200	281,300
Washington	**3,892,000**	**519,200**
Massachusetts	3,827,200	376,500
Arizona	3,505,000	270,100
Indiana	3,375,700	182,600
Tennessee	3,329,000	311,000
Maryland	3,257,600	144,500
Colorado	**3,116,400**	**456,900**
Minnesota	3,092,800	194,900
Wisconsin	3,077,400	112,100
Missouri	3,049,600	127,900
Source: Bureau of Labor Statistics, CES, seasonally adjusted		

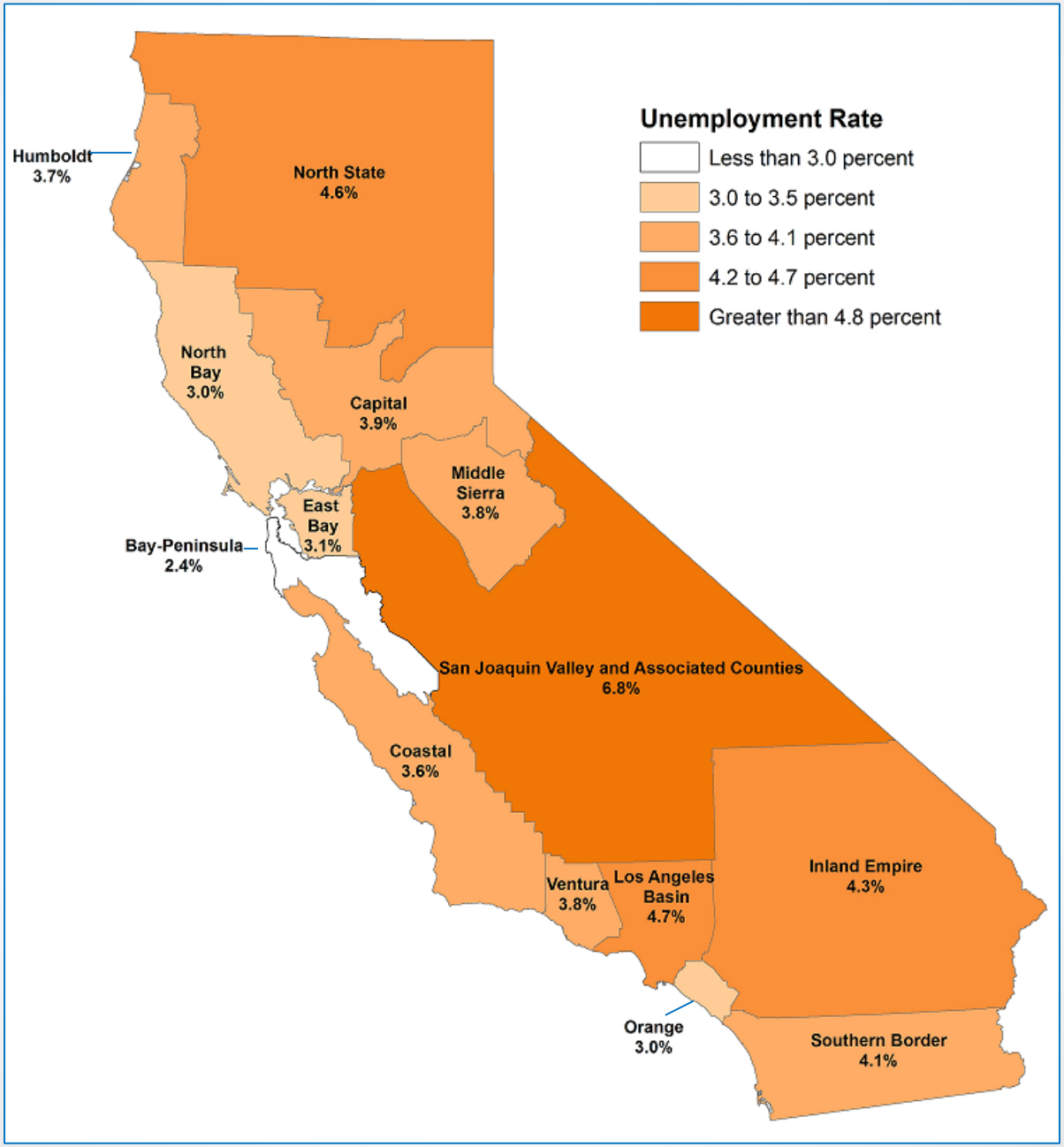
Job Gains Over the Course of the U.S. Expansion

States with a Civilian Labor Force between 1 and 2.5 million persons		
State	**Civilian Labor Force**	**Net Job Gain (Expansion Gain - Recession Loss) Dec. 2007- June 2009**
South Carolina	**2,396,200**	**236,200**
Alabama	2,254,300	76,100
Oregon	**2,105,600**	**208,100**
Louisiana	2,083,600	54,400
Kentucky	2,035,700	93,200
Connecticut	1,913,000	1,900
Oklahoma	1,829,900	90,600
Iowa	1,731,400	76,000
Utah	**1,573,000**	**307,300**
Nevada	**1,538,400**	**148,700**
Kansas	1,478,200	57,800
Arkansas	1,354,300	69,900
Mississippi	1,256,300	9,800
Nebraska	1,044,100	63,400
Source: Bureau of Labor Statistics, CES, seasonally adjusted		

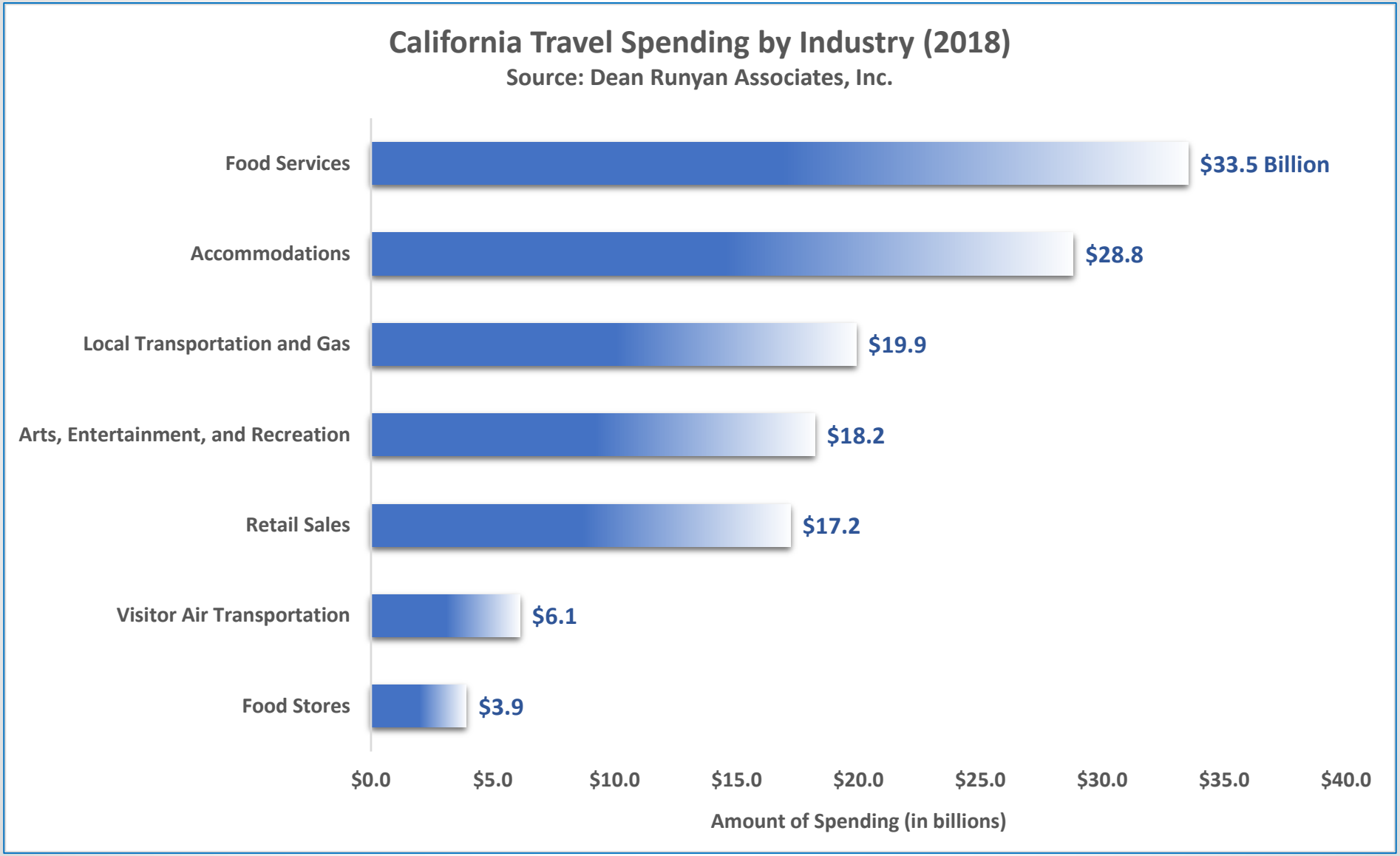
Nationwide Analysis: Nonfarm Jobs



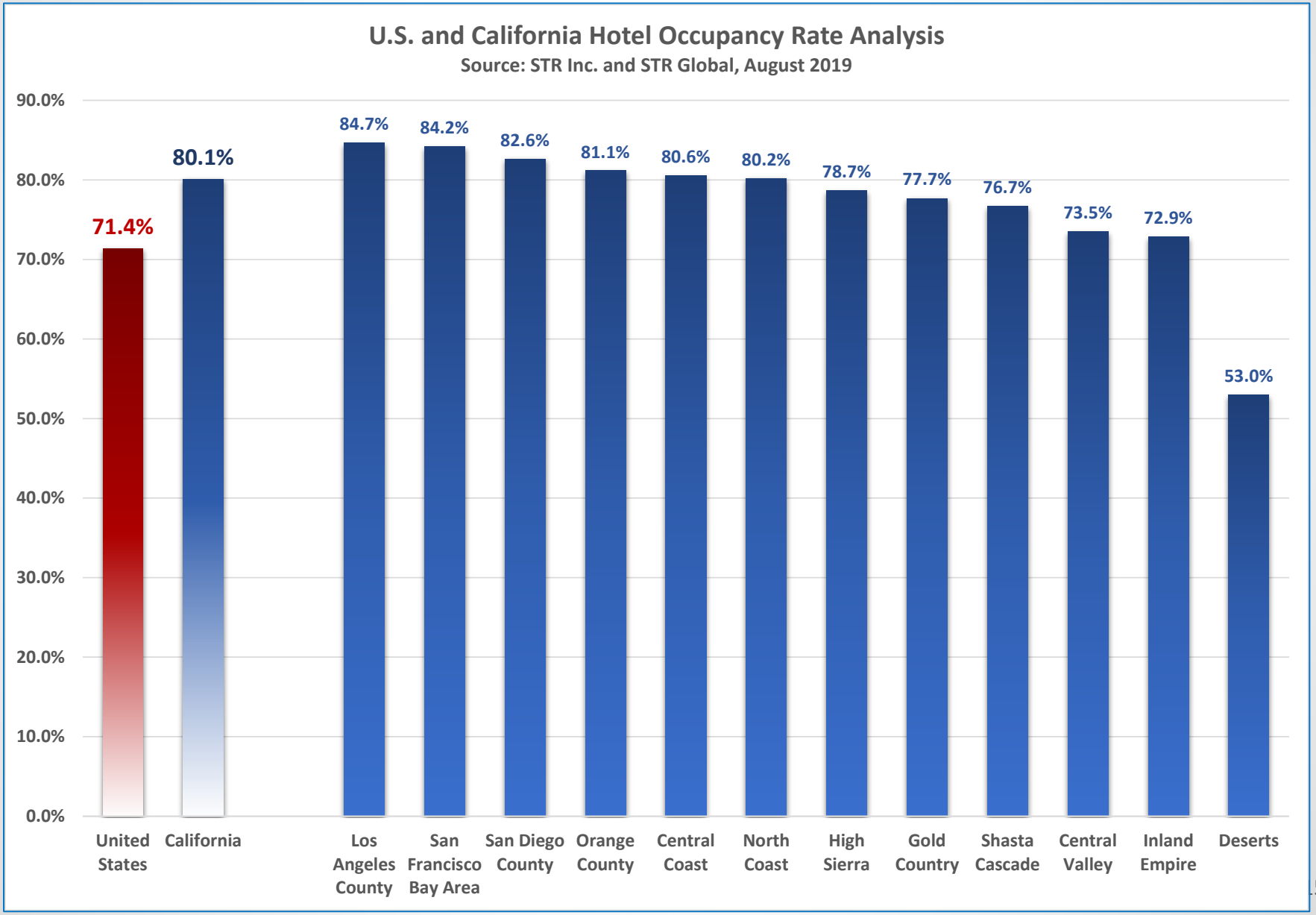
California Regional Trends: Unemployment Rates



California Tourism



California Tourism



The Impact of Artificial Intelligence

- The Future of Employment: How Susceptible Are Jobs to Computerisation?

  by Carl Frey and Michael Osborne

- Estimated Probability of Computerisation of Occupation

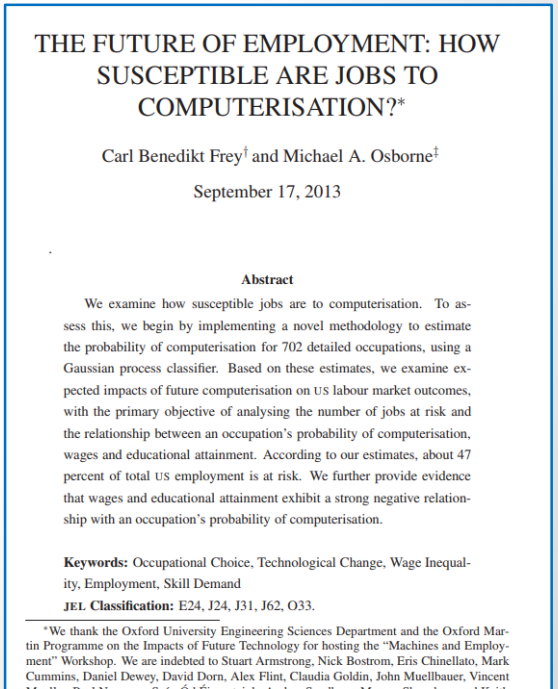
- Machine Learning and Mobile Robotics changing the workplace landscape

- Highest Probability of Computerisation:

- Telemarketers
- Insurance Underwriters
- Cashiers
- Paralegals
- Tax Preparers
- Tellers

- Lowest Probability of Computerisation:

- Physicians
- Dentists
- Preschool Teachers
- Registered Nurses
- Chief Executives
- Compliance Officers



THE FUTURE OF EMPLOYMENT: HOW SUSCEPTIBLE ARE JOBS TO COMPUTERISATION?*

Carl Benedikt Frey† and Michael A. Osborne‡

September 17, 2013

Abstract

We examine how susceptible jobs are to computerisation. To assess this, we begin by implementing a novel methodology to estimate the probability of computerisation for 702 detailed occupations, using a Gaussian process classifier. Based on these estimates, we examine expected impacts of future computerisation on US labour market outcomes, with the primary objective of analysing the number of jobs at risk and the relationship between an occupation's probability of computerisation, wages and educational attainment. According to our estimates, about 47 percent of total US employment is at risk. We further provide evidence that wages and educational attainment exhibit a strong negative relationship with an occupation's probability of computerisation.

Keywords: Occupational Choice, Technological Change, Wage Inequality, Employment, Skill Demand

JEL Classification: E24, J24, J31, J62, O33.

*We thank the Oxford University Engineering Sciences Department and the Oxford Martin Programme on the Impacts of Future Technology for hosting the "Machines and Employment" Workshop. We are indebted to Stuart Armstrong, Nick Bostrom, Eris Chinellato, Mark Cummins, Daniel Dewey, David Dorn, Alex Flint, Claudia Goldin, John Muellbauer, Vincent

Human Qualities Lacking in AI

- Empathy and Communication
- Critical Thinking
- Creativity
- Strategy
- Technology Management, Installation, and Upkeep
- Physical Skills
- Imagination and Vision

Source: Forbes Media LLC

California's Artificial Intelligence Firms
Products and Services

- Health Care: Cancer Screenings for Early Detection
- Transportation: Build Computer Software and Hardware for Autonomous Vehicles
- Problem Solving: Learning and Memory Technologies for Adaptation
- Agriculture: Farm Technologies for Crop Treatment and Harvesting
- Communication: Language Processing and Speech Recognition Software for Robots
- Fraud Management: Detect patterns of fraud among E-Commerce purchases

California's Artificial Intelligence Firms
AI Industries and AI Occupations

AI INDUSTRIES

- **Software Publishers:** Establishments engaged in designing, providing documentation, assisting in installation and providing technical support for their products and services.
- **Other Telecommunications:** Establishments engaged in purchasing network capacity, providing specialized telecommunications services, or providing client-supplied telecommunications connection.

Source of Information: Infogroup (2019: Quarter 2), Builtin.Com (August 2019), and the North American Industry Classification System (NAICS)

AI OCCUPATIONS

- **Computer and Information Systems Manager:** $197,208 annually
- **Software Developers, Systems Software:** $144,889 annually
- **Software Developers, Applications:** $125,161 annually
- **Web Developers:** $102,310 annually
- **Database Administrators:** $94,639 annually

Source of Information: EDD-Labor Market Information Division, Occupational Employment Statistics (2019:Quarter 1)