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California's Labor Market: Eight Years Post-Great-Recession

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# California's Labor Market: Eight Years Post-Great-Recession

By Sylvia A. Allegretto

with research assistance from Saika Belal

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**Center on Wage and Employment Dynamics**

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## Introduction

In December 2007 the economy was on the precipice of the Great Recession. Just how far in the rear view mirror is the deep downturn? It likely depends on your vantage point. Many families have yet to recover from foreclosed homes, lost jobs, and long bouts of unemployment. On Main Street, where most workers rely on their jobs and paychecks to make ends meet, many continue to struggle as wages have barely budged. On the other hand, since the recovery began in June 2009, Wall Street has been booming, corporate profits have rebounded, and the wealthy are doing well.

The good news is that the economy has generated a net gain in jobs for over five years. Even so, gains have been fairly modest on a month to month basis. In total, the U.S. economy lost 8.7 million jobs over the downturn—losing and then regaining that number of jobs took well over six years. Today there is a net positive of 5.1 million (or 3.7%) more jobs in the U.S. economy compared to December 2007—just prior to the crash.

Many pundits and economists have recently been reporting that the economy, as measured by the unemployment rate, is at near full-employment. The Federal Reserve Board's Open Market Committee (FOMC) decided not to raise interest rates at its April 2016 meeting. However, the FOMC made it clear that a rate hike will be considered at its next meeting in June 2016. But, one should proceed with caution as many economic indices have yet to regain their pre-recession levels even as improvement continues in the job market—which suggests some cyclical slack remains. Also, economic output (GDP), which has been lagging since 2008, is yet to catch up to its potential.

In this brief we analyze labor market trends since the Great Recession in the U.S. and in California. We contextualize many indicators as we enter the ninth year since the onset of the Great Recession and approach the seventh year of official recovery (June 2016).

## Highlights of This Brief

- From the beginning of the Great Recession through its trough, job losses in the U.S. totaled about 8.7 million or 6.3% of all jobs; 15% of those were in California (-1.3 million or -8.3%). This shedding of U.S. jobs was historical given that a total of 3.1% of all jobs were lost in the severe early-1980s double-dip recessions. As of February 2016, total job growth was up 3.7% (5.1 million) in the U.S. and 5.4% (838,000) in California compared to December 2007—the last business cycle peak.
- The bursting of the housing bubble was central to the recession and greatly affected the construction industry. At its worst point in California, construction jobs were down 37%. As of February 2016 that figure improved but still remains 10.8% below its pre-recession level—the U.S. shortfall is 11.5%.
- The level of government jobs in California recently surpassed that of the peak attained *two* cycles ago (2003) and has yet to surpass the peak level reached in 2008. After accounting for population growth there is a nearly 233,000 gap in the expected government workforce.

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- The unemployment rate in California was in double-digits for an unprecedented forty-three consecutive months (February 2009 to August 2012)—attesting to the severity of the crash and the impact of the housing bust in California. These rates have declined significantly to 4.9% and 5.5% in February 2016 for the U.S. and California, respectively.
  - Between 2007 and 2011, California’s employment rate (EPOPs) dropped by 6.0 percentage-points which is an enormous decline. If the employment rate in 2015 was at its 2007 rate, California would have an additional 1.2 million workers.
  - The average hourly wage (inflation adjusted) for workers in the bottom-third and middle-third are up only slightly since 2000—3% and 1%, respectively—both below previous peaks. Those in the top 10% had average wage increases of 28%. Wages depict the continuation of a trend four decades in the making—stagnant wages for most workers with gains only accruing to those at the top of the wage distribution.
  - Owing to the Great Recession, incomes from 2006 to 2011 declined for typical households in California—a slide of 13.5% from \$64,956 to \$56,177 (2014\$). The setback regressed incomes back to mid-1990s levels. In 2014, the income for typical households in California was \$60,487—still 6.9% below the 2006 level.

## The Jobs Recovery

The severity and swiftness of job losses associated with the Great Recession were extraordinary compared to recent recessions. As shown in Chart 1, the decline in jobs was rapid and deep, particularly in California, while the climb out for both the U.S. (dotted red line) and California (red line) took much longer. In total it took well over six years to regain the pre-recession level of jobs. U.S. job losses totaled about 8.7 million or 6.3%, and 15% of those were in California for a statewide loss of 1.3 million or 8.3%. This shedding of U.S. jobs was historical given that a total of 3.1% of all jobs were lost in the severe early-1980s double-dip recessions (not shown).

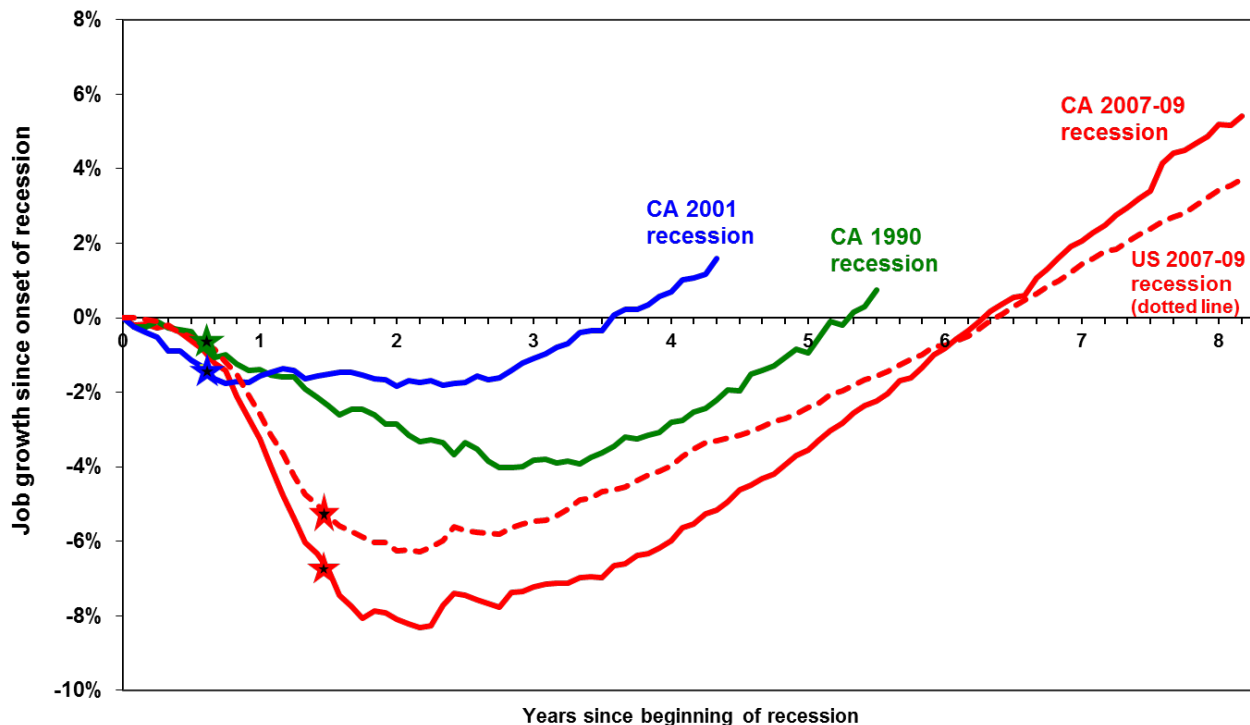
Beginning in October 2010, the U.S. experienced 65 consecutive months of job gains with a monthly average of 203,000. Consistent positive gains in California started in July 2011 and continued until a blip in January 2016 when a loss of 4,000 was logged—monthly gains have averaged just fewer than 35,000. As Chart 1 indicates, job growth in California, on a percentage basis, has outpaced gains for the U.S. over the past few years.

As of February 2016, total job growth was up 3.7% (5.1 million) in the U.S. and 5.4% (838,000) in California compared to December 2007—the last business cycle peak. Consistently positive job numbers is good news, however it should be noted that the 3.7% and 5.4% job growth figures for the U.S. and California, respectively, have happened over an eight-year period—which is weak in the context of a growing labor force.

Chart 1 presents the average rate of job growth in California, but as Chart 2 shows, job growth has not been uniform across metro areas. In fact, the range of job growth in California extends from -2.1% to 14.7% over the December 2007 to February 2016 timeframe. The area with the highest job growth is the

San Jose-Sunnyvale-Santa Clara metro region (14.7%) –no doubt owing much to Silicon Valley. Other metros with strong growth around the Bay Area are Napa, and the San Francisco-Oakland-Hayward area. Two places away from the major metro areas, Redding and Yuba City, have yet to recover jobs lost over the downturn.

**Chart 1. Steep loss of jobs took over six years to recover (Stars denote official end of recessions)**



Note: The horizontal axis represents years since the onset of recession.  
 Source: Author's analysis of Current Employment Statistics. The most recent recessions job numbers are through February 2016.

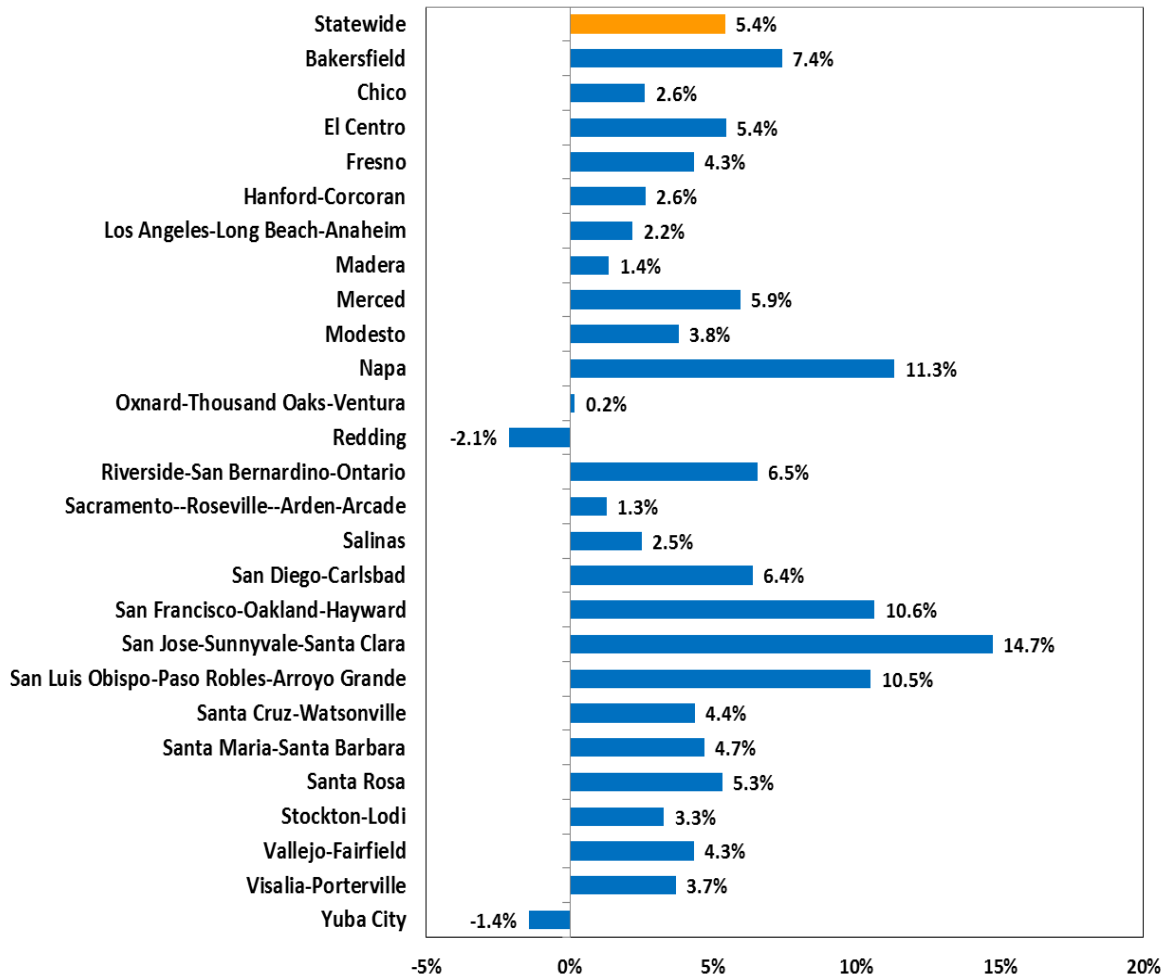
Job growth has also not been uniform across industries, and as shown in Chart 3, some industries have yet to recover their prior peak levels. Total private sector jobs are outpacing overall job growth in the U.S. and California—while the government sectors are still below their pre-recession peaks. In California, total government jobs are down by 1.2%. And even as state jobs are up 5.3% the larger sector of local jobs is 3.1% below December 2007 levels (sector size of total employment in parentheses).

The bursting of the housing bubble was central to the recession and greatly affected the construction industry. At its worst point in California, construction jobs were down 37%. As of February 2016, that figure has improved but is still 10.8% below its pre-recession level. At the national level, construction job numbers are still down by 11.5%. Like the Construction sector, the financial and banking sectors were also tied to the housing and financial bust. Consequently, the Financial Activities sector currently remains well below (-8.2%) its pre-recession peak in California and just below its previous peak in the U.S. (-0.8%).

The continued shift from a manufacturing economy to a service-based economy is evident in Chart 3. The slow return of manufacturing jobs since the Great Recession combined with the longer-term

structural shift away from them are both at play in today's economy. Manufacturing jobs are down 10.4% and 11.4% in the U.S. and the Golden State, respectively. The fastest job growth at both the state and national levels has been in the service sectors. In California the three sectors with the fastest growth are Education (29.2%), Health (25.4%) and Leisure and Hospitality (19.8%)—all service industries and all far outpacing U.S. growth. As it follows, jobs shed over the recession and the new jobs coming on board are not necessarily the same.

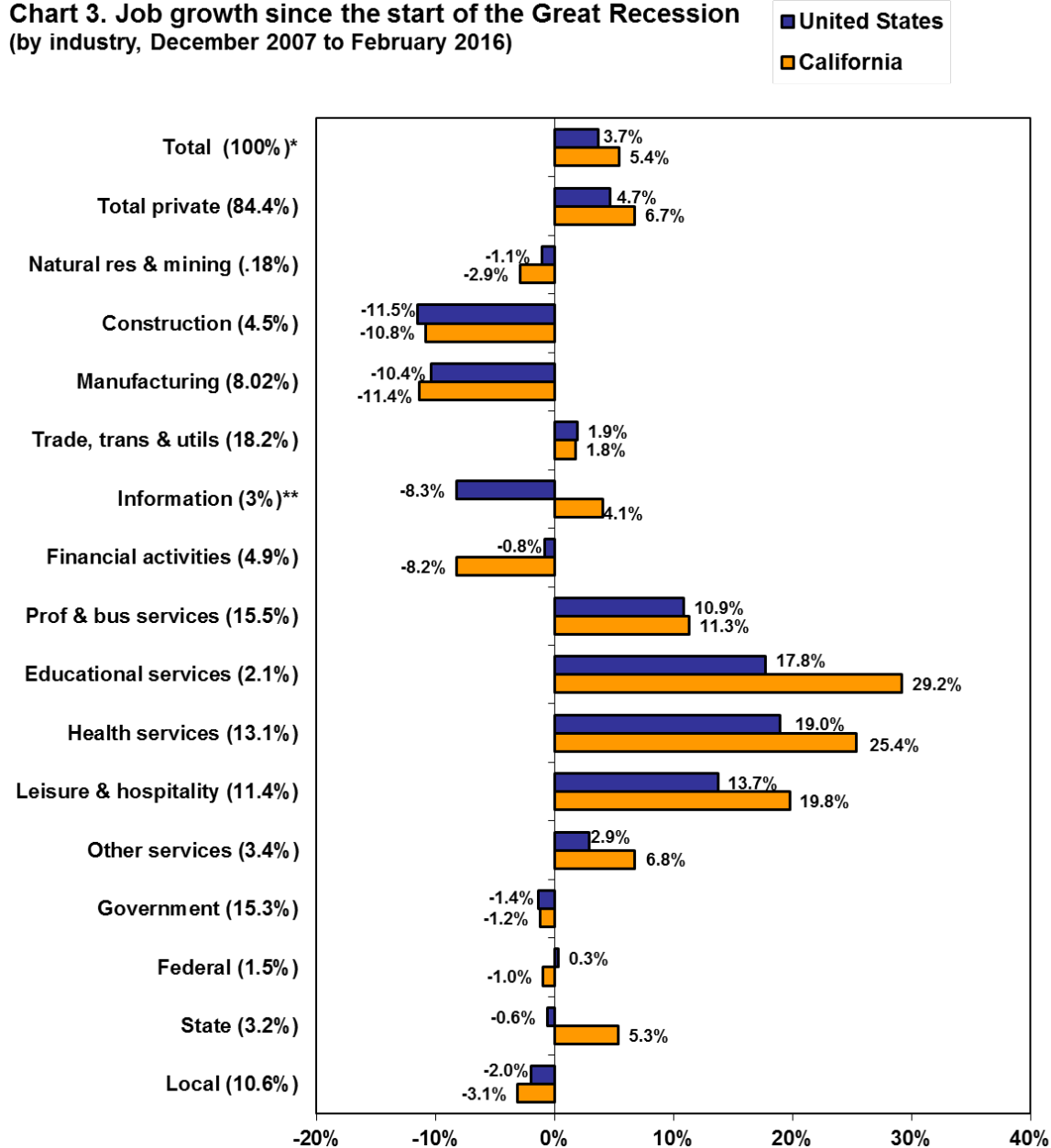
**Chart 2. Considerable variation in job growth in California's metro areas (December 2007 to February 2015)**



Source: Author's analysis of CES seasonally adjusted monthly data. Growth in total nonfarm jobs at the MSA-level.

Robert Scott of the Economic Policy Institute reported that the lagging recovery of manufacturing and construction jobs in the U.S. as compared to job growth in other industries is one reason why wage growth has been lacking.<sup>1</sup> Scott reported that construction jobs on average pay \$28.01 per hour with benefits that add another \$8.86 (those figures for manufacturing jobs are \$28.71 and \$8.53, respectively). On the other hand, for all industries that have had job gains the respective figures are \$23.80 and \$5.48. Thus, the jobs that are being created are not the same as those that were lost in terms of wages and total compensation.

**Chart 3. Job growth since the start of the Great Recession (by industry, December 2007 to February 2016)**

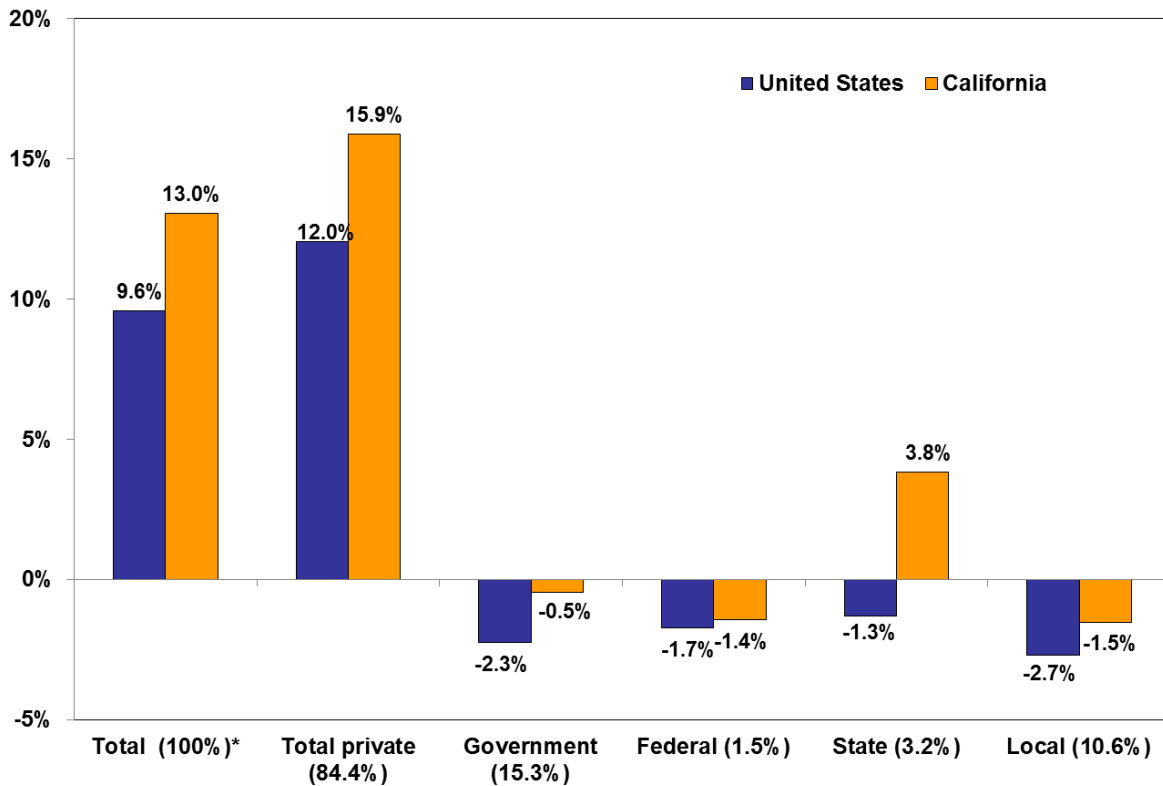


Notes: \*Industry sector share of total employment for California in 2015 are in parentheses.  
 \*\*Non-seasonally adjusted data.  
 Source: Author's analysis of CES data.

Job growth since the recovery took hold, which was officially declared in June 2009, is reported in Chart 4.<sup>2</sup> Over the recovery period job growth in California has outperformed that in the U.S. for total jobs and for those in the private sector. When analyzing the trends in government jobs over the recovery, those in the Golden State (-0.5%) are not down by as much as in the rest of the country (-2.3%) and it is only jobs at the state level in California that are in positive territory—up 3.8%—although this is a small sector. The largest government sector is that of local government and over the recovery period it remains down 2.7% and 1.5% in the U.S. and California, respectively.

Note that it was over the recovery that much of the state’s austerity measures were implemented to balance California’s budget. These measures effectively had an anti-stimulus effect even as relief from Washington—in the form of the \$831 billion American Recovery and Reinvestment Act of 2009—helped to soften the blow. Public education was hit hard. In 2010 and 2011, 41.5% of all local government sector jobs that were cut were education-related. The cuts included teachers, school staff, and administrators. California’s school districts rely heavily on the state’s General Fund for school financing, and austerity measures cut this fund by 16.2% between the 2008 and 2010 fiscal years.<sup>3</sup>

**Chart 4. Job growth since the start of the recovery  
(June 2009 to February 2016)**



Note: \*Sector share of total employment for California in 2015 are in parentheses.  
Source: Author’s analysis of Current Employment Statistics.

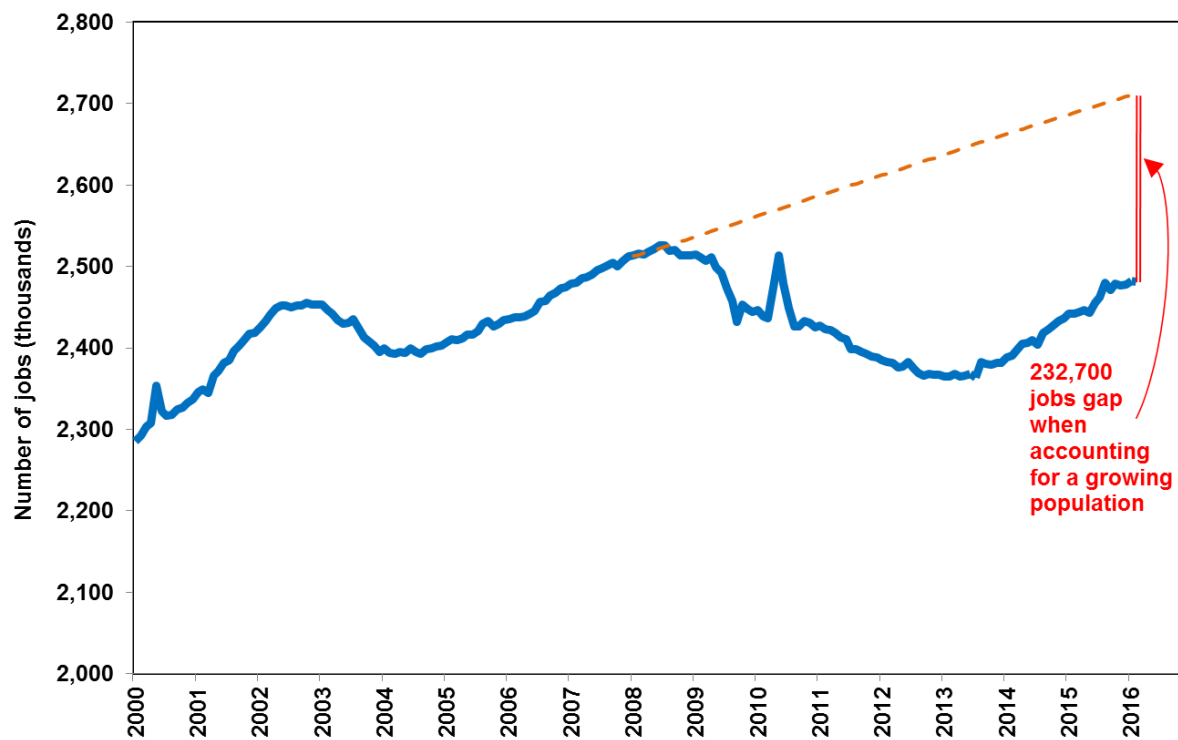
As we fast approach seven full years of recovery (June 2009 to June 2016) government jobs in California have yet to recover to their previous peak—the shortfall is illustrated in Chart 5. The level of government jobs in California recently surpassed that of the peak attained *two* cycles ago and has yet to surpass the peak level reached in 2008. After accounting for population growth (orange dotted line) there is a nearly 233,000 gap in the expected government workforce. This shortfall merits consideration to the extent that government workers such as educators, librarians, police, social workers, maintenance, construction and park workers, etc. help support our communities, enhance our lives and help to keep us safe.

Interestingly, the large spike in government jobs in 2010 represents, in quick succession, the hiring and dismissal of short-term census takers. This uptick also registers in Chart 1 in overall jobs. This is interesting given the debate at the time about fiscal policy to stimulate the economy and whether



government can or should be the employer of last resort during recessions. At the time the census jobs were very much needed and helped many workers find employment even if temporarily.

**Chart 5. California's public sector jobs have yet to recover: far short if population growth is considered (January 2000 to February 2016)**



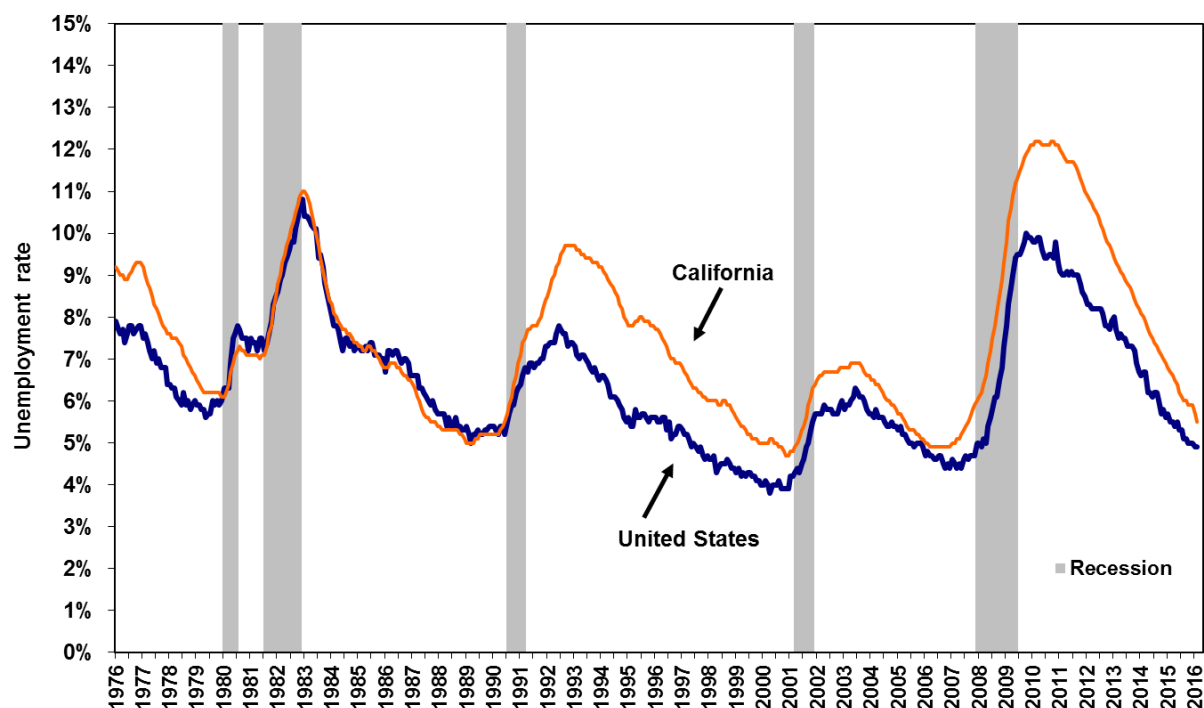
Source: Public sector jobs from the Current Employment Statistics, seasonally adjusted. California population data are from the U.S. Census, taken from FRED (Federal Reserve Economic Data).

## Unemployment and Labor Utilization

The long stretch of job growth documented in the first chart has been aligned with improvements in other labor market indicators. In this section we look into a set of economic indicators to better assess labor demand and utilization. We start with unemployment rates—the most known and widely cited labor market measure. Unemployment rates in the U.S. and California, depicted in Chart 6, have showed marked improvement.

Unemployment over the Great Recession, particularly in California, stands out in historical terms. The unemployment rate in the state was in double-digit territory for an unprecedented forty-three consecutive months (February 2009 to August 2012)—attesting to the severity of the crash and the enormity of the housing bust in California. The rates have declined significantly in the U.S. and California and were 4.9% and 5.5% in February 2016, respectively. Since the early 1990s the rate of unemployment in California has been above the national average. Notably, the gap widens immediately following official recessions, but the margin lessens over time—which also applies to recent trends.

**Chart 6. Monthly unemployment rates for the United States and California (January 1976 to February 2016)**

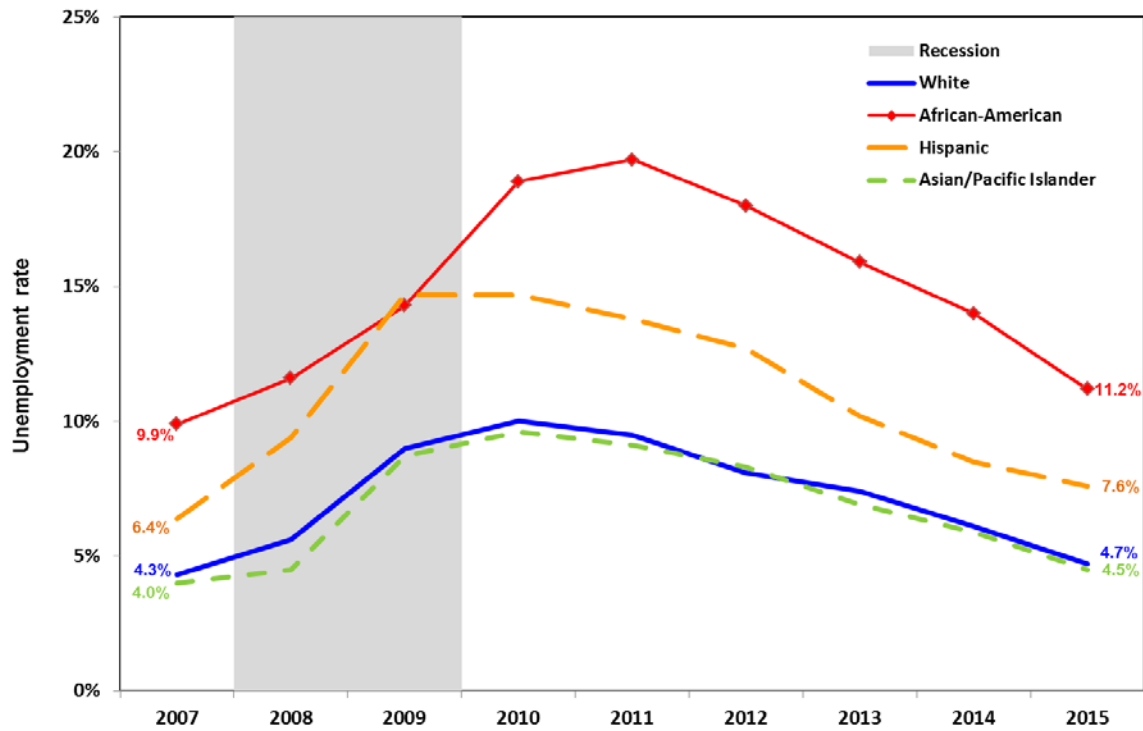


Source: Author's analysis of BLS data, seasonally adjusted monthly unemployment rates.

Significant disparities in unemployment rates by race/ethnicity always exist and they worsen in tough labor markets (Chart 7). In 2007, prior to the onset of recession, annual unemployment in California was lowest for Asians (4.0%) followed closely by Whites (4.3%), then Latinos (6.4%), and the rate for African-Americans was highest and near double-digits (9.9%). The rates peaked in different years during the recession and its aftermath: 14.7% in 2009 for Latinos; 10.0% and 9.6% in 2010 for Whites and Asians, respectively; and 19.7% in 2011 for African-Americans. There have been marked declines in unemployment rates for all race/ethnicity groups as the job market improved, but rates for Blacks still remain high.

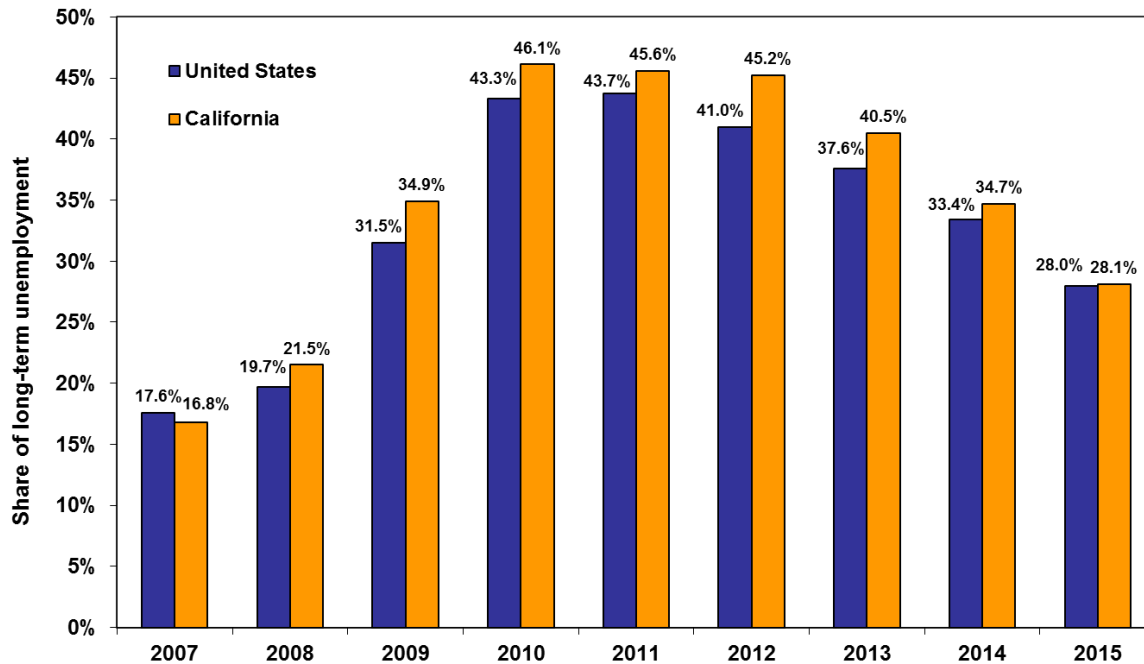
Another measure of labor market utilization is how long it takes the unemployed to find work as measured by long-term unemployment. Long-term unemployment (LTU) is defined as those who have been unemployed for at least 27 weeks as a share of total unemployment. The three year period from 2010 through 2012 saw historically elevated LTU rates—exceeding 45% in California—which is a stark comparison to peak LTU shares of around 25% over the previous three downturns (not shown). The annual LTU shares were much improved by 2015, and the U.S.-California differential vanished. The comparatively rapid pace of job growth in California over the last three years has certainly helped the state, and rates continue to decline into 2016.

**Chart 7. Unemployment rates continue to decline**



Source: Author's analysis of the Economic Policy Institute's calculations from annual Current Population Survey

**Chart 8. Record breaking long-term unemployment subsidies  
(As a share of total unemployed)**

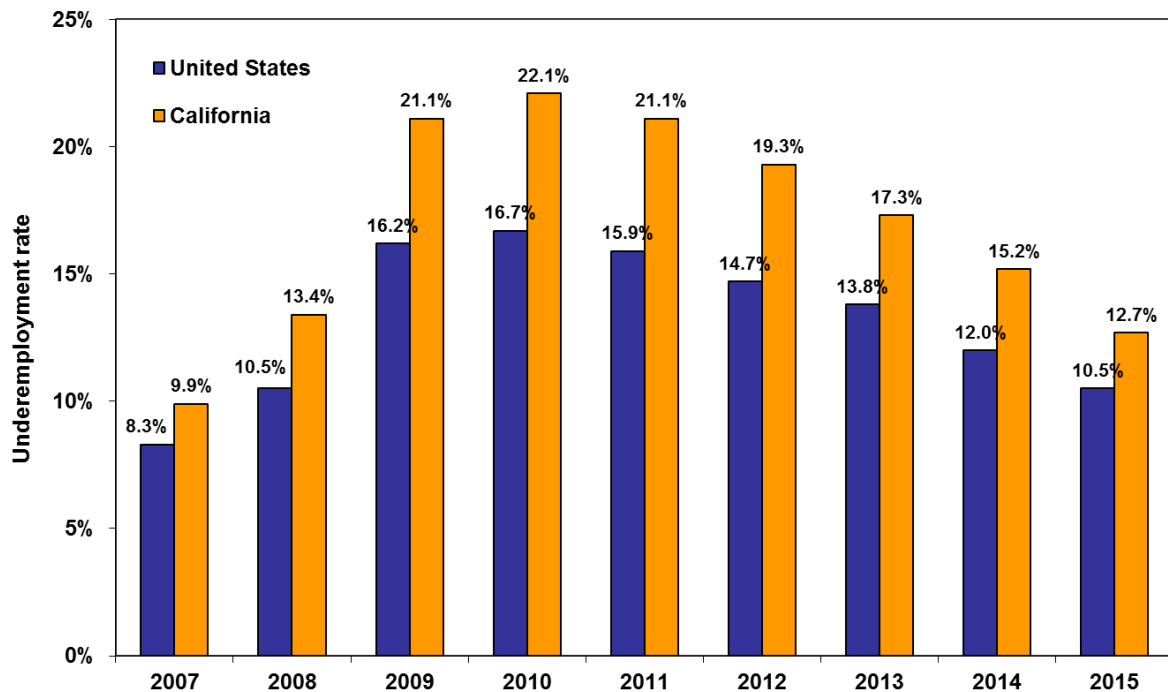


Note: The long-term unemployed are those who have been unemployed for at least 27 weeks as a share of total unemployment.  
Source: Author's analysis of Current Population Survey annual LTU data provided by the Economic Policy Institute.

A third measure to assess labor market conditions is underemployment. The traditional unemployment rate only considers those actively searching for work in the four weeks prior to being surveyed. If a worker has been searching longer, or if they dropped out due to discouragement, they are not counted in the official unemployment statistics. Hence, unemployment may decrease by dint of workers who stop searching for work. The broader measure of underemployment (The BLS calls this the U6 measure) includes discouraged and marginally attached workers, part-timers who want full-time work, and those who gave up searching for work altogether.

Chart 9 presents annual underemployment rates. California’s rate has been consistently above the national average from 2007 through 2015—and the differential was widest from 2009 to 2011. Since then both the state and national rates have decreased substantially and the gap between them also has narrowed. Of workers and potential workers, one in eight was either unemployed or underemployed in California in 2015 which is a significant improvement compared to the more than one in five figures in 2010.

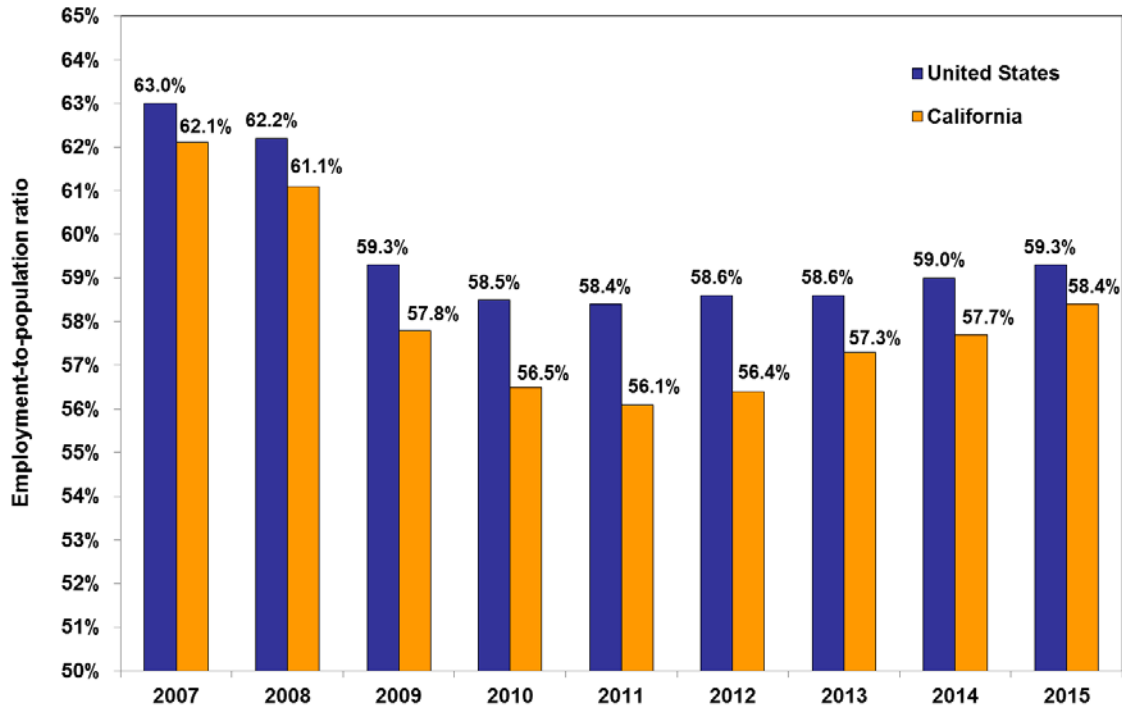
**Chart 9. Underemployment rates: A better measure of labor utilization**



Note: Underemployment is defined as the BLS U6 measure. It includes discouraged and marginally attached workers, and part-time workers who want full-time employment.  
 Source: Author’s analysis of Current Population Survey annual U6 rates provided by the Economic Policy Institute.

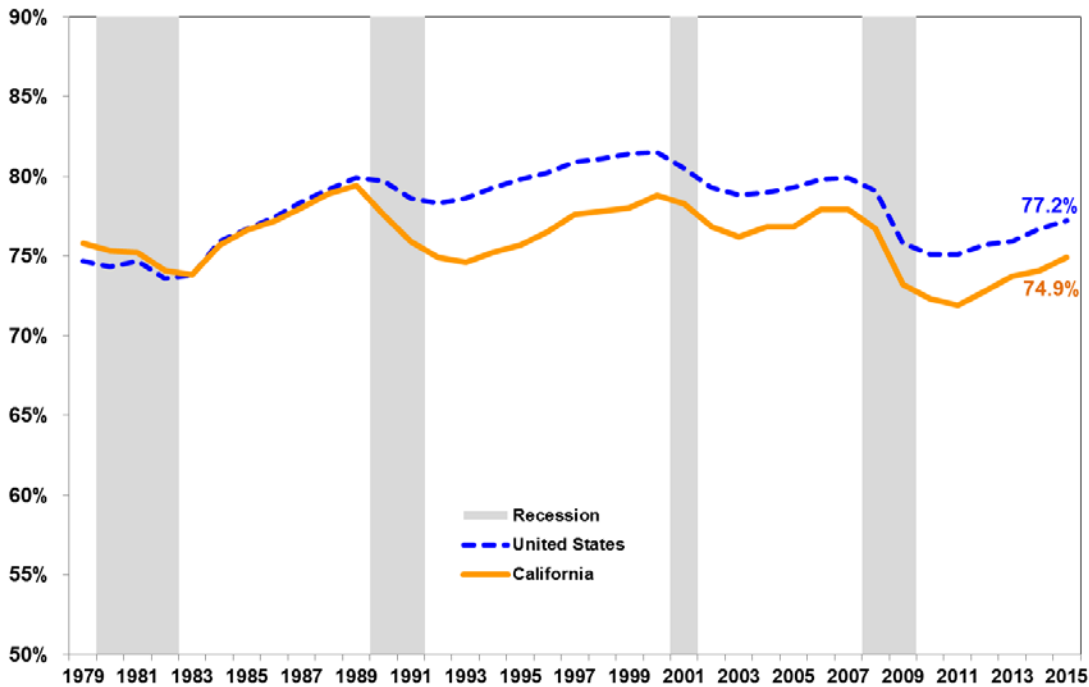
A fourth measure to evaluate the health of the labor market is the employment rate or EPOPs—the share of the working age population (16+) that is employed (Chart 10). Along with California’s deteriorating job market and persistently high unemployment over the downturn, the employment rate also took a tumble. Between 2007 and 2011, California’s employment rate dropped by 6.0 percentage-points which is an enormous decline. In 2011, only 56.1% of Californians were employed, compared to 62.1% before the start of the recession. And remarkably, if the 2015 employment rate was the same as it was in 2007 California would have an additional 1.2 million workers.<sup>4</sup>

**Chart 10. Employment rates are slowly improving**



Note: The employment rate is the share of the total population aged 16 and above that is employed.  
 Source: Author's analysis of BLS Current Population Survey data provided by the Economic Policy Institute.

**Chart 11. Employment rates of prime aged (25-54) adults are recovering**



Source: Author's analysis of BLS Current Population Survey annual employment data 1979 to 2015 provided by the Economic Policy Institute.

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The EPOPs in Chart 10 reflect rates for those 16 years old and above which may be greatly affected by younger and/or older workers. EPOP trends for prime-age workers (25-54) are depicted in Chart 11. Since the late 1980s the rates in California have been below those of the U.S. As evident in the chart, these rates are cyclical—increasing during expansions and decreasing during contractions. In the U.S. the highest prime-age EPOP was reached at 81.5% in 2000. The 2007 cycle-peak rate was 79.9%. This indicator has slowly improved over the 2011 to 2015 period but remains below the peak rates for the last two expansions.

In California the highest prime-age EPOP was reached in 1989 at 79.4% with consecutively lower peaks over the next two expansions—78.8% and 77.9% in 2000 and 2007, respectively. Since its plunge to 71.9% in 2011 the rate has improved to 74.9% in 2015.

That EPOPs, along with the previously discussed measures of labor utilization, remain significantly below pre-recession rates indicates that the labor market has not fully recovered. The labor market indicators presented here have all responded positively to consistent job growth—suggestive that the economy is likely not at full-employment. The good news, however, is that all of these measures have shown significant improvement as job growth has been consistently positive for well over five years.

## Wage and Income Trends

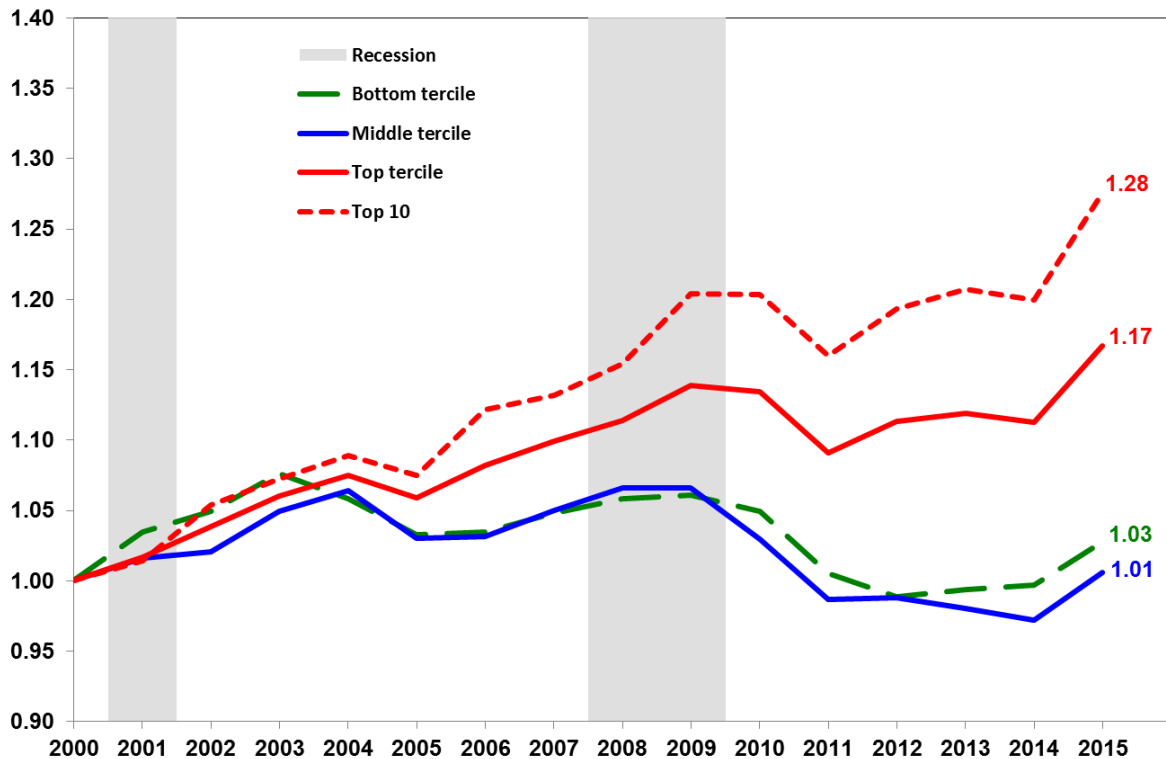
It is clear that the recovery was slow to materialize and the shortfalls that still exist are in large part due to the long-reach of the Great Recession. Thus, even with nearly seven years of official recovery, wages and incomes for most workers have yet to fully recover, let alone surpass, pre-recession peaks. Keep in mind that the economy has been growing for years and the nation is much wealthier as a result. This means that even with all the recent attention paid to inequality, it has worsened on this side of the Great Recession. A recent update of Thomas Piketty and Emmanuel Saez's work on inequality (using tax return data) reports that over the recovery period from 2009 to 2014 (latest year available) the top 1% captured 58% of all income growth. And, the real growth rate of income for the top 1% was 27.1% compared to 4.3% for the bottom 99%.<sup>5</sup>

The growth of hourly wages for low, middle, and high wage workers in California indexed to the year 2000 is depicted in Chart 12. The average wage (inflation adjusted) for workers in the bottom and middle are up only slightly since 2000—3% and 1%, respectively—both are below previous peaks. This is the continuation of a trend beginning four decades ago of stagnant wages for most workers with gains only accruing to those at the top of the wage distribution in the U.S. and for the Golden State.<sup>6</sup>

The ever increasing wedge of wage inequality is clear in the figures as the gap has widened over time between most workers and those closer to the top. Wages for workers in the top-third and the top 10% of the wage distribution remain well above their 2000 levels—both are above their previous peaks. On average, workers in the top one-third had their wages increase by 17% since 2000, and the subset of those in the top 10% saw wage increases of 28%. If it were possible to break these data down further it would no doubt show that those in, say, the top 1% have garnered the lion's share of wage gains.

Not surprisingly, inflation adjusted median household income fell dramatically due to the recession (Chart 13). Prior to the recession incomes peaked in 2006 in California and 2007 nationally. In the U.S. the decline from \$57,357 to \$52,605 (2014\$) from 2007 to 2012 represented an 8.3% setback. Incomes for typical households in California went from \$64,956 to \$56,177 (2014\$) from 2006 to 2011—a loss of 13.5% which regressed incomes back to mid-1990s levels. The incomes of typical households in the U.S. and in California have yet to regain their pre-recession peaks.

**Chart 12. Wages stagnant for most workers in California as inequality grows**



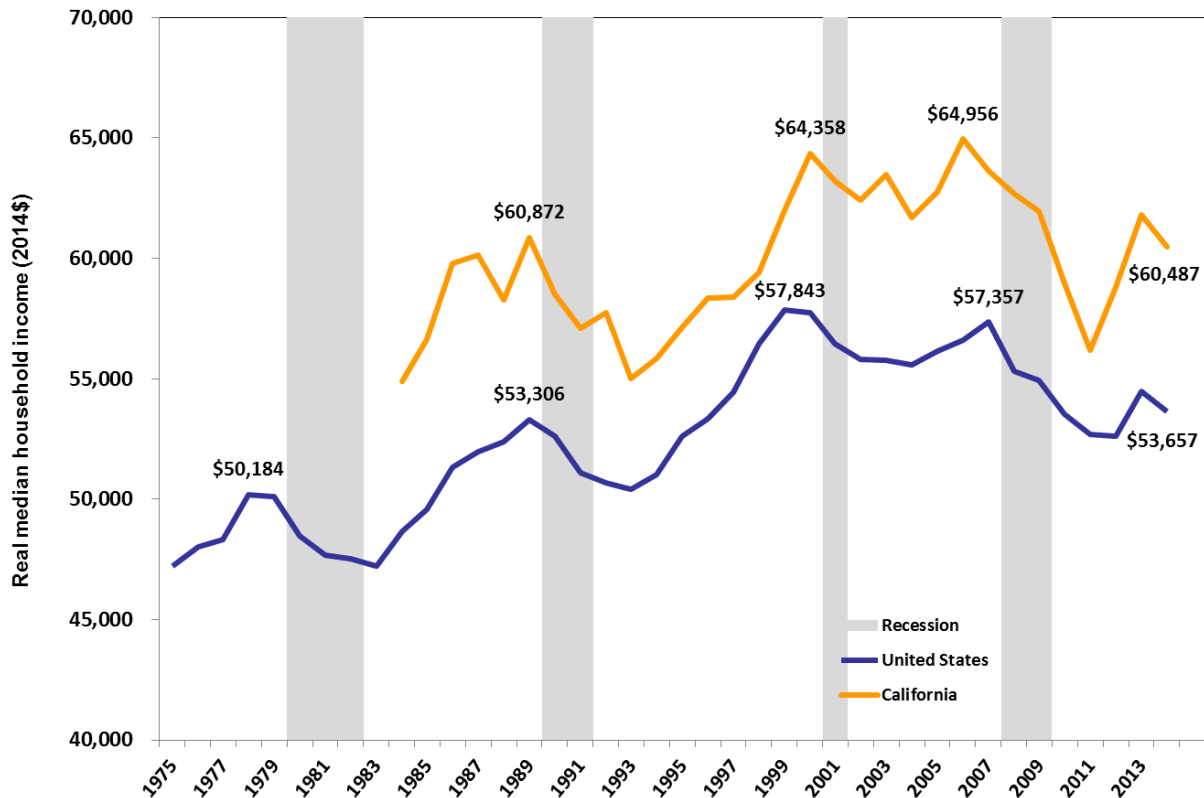
Note: Each series represents annual average real wage growth (adjusted using the CPI-W) per income group from 2000 to 2015.  
 Source: Author's analysis of Current Population Survey data. Includes wage and salary workers ages 18 to 64.

Importantly, it isn't just that the incomes for middle-income households have declined in tough times, rather, and perhaps more disturbing, is what happened during the good times. Household income has always been susceptible to economic fluctuations and this is unmistakable in Chart 13. In general, incomes peak near the end of economic expansions—in other words, just prior to recessions (gray bars)—and they fall during recessions. Thus, when economic expansion is strong incomes start to rise once again.

However, in recent expansions which have all been accompanied by a period of a jobless recovery—defined as an expanding economy with continued job losses (evidenced in Chart 1)—post-recession income gains have taken longer to materialize. The salient point here is that in the past the long term trend in income growth has always been upward—meaning median income at the peak of each successive expansion has always been higher than the previous one—that is, until the last economic cycle.

As the figure shows, over the last two economic peaks that were in 2000 and 2007, typical household incomes showed no gain in the U.S. and only small increase in California. As a result, even after nearly seven full years of official recovery, incomes have yet to regain the losses from the Great Recession. Given the small setback in 2014, it will not be anytime soon that previous peaks will be met, let alone surpassed. It may well be that a new trend is forming, one in which incomes of typical households do not trend upwards over time but vacillate around economic cycles without real gains—again alluding to increasing inequality in household incomes.

**Chart 13. Incomes of typical households are below the prior two peaks**



Source: Author's analysis of U.S. Census data 1975 to 2014 for the U.S and 1984 to 2014 for California.

The Census Bureau will release 2015 income figures in the fall of this year. It is likely that the 2015 data will show some modest improvement but there is little expectation that the report will show any major gains.

## Looking Forward

The economic data presented in this report points to two general conclusions. First, the Great Recession was a historically deep downturn in terms of public and private sector job losses, labor demand, output, unemployment, and earnings. Second, marked improvements over the last several years in all indices suggest that much of the damage in the wake of the Great Recession—which continues to be debated—was indeed cyclical. This of course does not mean that structural shifts have not also occurred. It does



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suggest that the government responses, specifically the American Recovery and Reinvestment Act of 2009 along with financial stabilization (TARP), were germane and helpful in stabilizing the economy.<sup>7</sup> Still, I contend that a much larger Keynesian spending package—more appropriate to the size and scope of the downturn—would have moved us closer to recovery in the labor market more expeditiously.

In a 2015 analysis, Jesse Rothstein looked into the role of structural change in the wake of the Great Recession.<sup>8</sup> Rothstein concluded that “labor demand shortfalls continued to be an important feature of the labor market and the primary determinant of labor market performance, at least through the end of 2014. While there is some sign of wage growth in 2015, it remains modest and has only begun to make up the shortfalls from previous years” (p. 24) Rothstein’s conclusions are in line with what has been presented in this paper. The continued slow recovery is not primarily a story of worker shortages due to changing labor supply behavior, as this would have been accompanied by sharper wage growths than what we have seen; nor is it due in any large part to a skills-mismatch between employers and employees. The strong correlation between job growth and the improvement in many labor market indicators is suggestive of the positive impact of increasing labor demand, and is thereby a continuation of the cyclical story.

The economy is growing but at a tepid pace of late—the 2016 first quarter estimate of GDP growth was just 0.5% following a 1.5% reading for the last quarter of 2015. The Congressional Budget Office estimated that actual-GDP, which has tracked below potential-GDP for eight years, will continue to do so into the near future even as the gap is closing (see endnote #5). As the Center on Budget and Policy Priorities reported in April 2016, GDP in the first quarter of 2016 was roughly \$421 billion (or about 2.3%) less than what the economy was capable of producing (potential GDP). The GDP gap means that the economy will have an excess of unemployed or underemployed workers. Meanwhile, the possibility of wage growth is diminished as idle productive capacity among businesses translates into wasted output.

Congressional Budget Office projections show the gap closing over the next few years as actual GDP grows somewhat faster than potential GDP. Therefore, it is expected that the economy and the labor market will continue to improve throughout 2016. However, economic expansions rarely last a decade or more and are often far shorter. In June this expansion will enter its eighth year—so it is not whether but when the next downturn will materialize. In the meantime, the labor market continues to be mired in the aftermath of the Great Recession and its legacy will be felt for years to come even as the economy improves.

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## Endnotes

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<sup>1</sup> Scott, Robert E. “Lagging Recovery of Construction and Manufacturing Sectors Is One More Reason Wage Growth Is Suffering For Most Workers.” February 25, 2016. <http://bit.ly/26dIfzh>

<sup>2</sup> NBER U.S. Business Cycle Expansions and Contractions: <http://www.nber.org/cycles.html>

<sup>3</sup> The proposed budget and the actual expenditure from the General Fund for K-12 can be found in Schedule 9 of the Governor's Budget Summary on the California Budget Page: <http://www.ebudget.ca.gov/>

<sup>4</sup> California population data from the U.S. Census: <https://research.stlouisfed.org/fred2/series/CAPOP>

<sup>5</sup> Piketty and Saez, "Income Inequality in the United States, 1913-1998", *Quarterly Journal of Economics*, 118(1), 2003, 1-39 (Longer updated version published in A.B. Atkinson and T. Piketty eds., Oxford University Press, 2007). Update through 2014 tables and figures located here: <http://eml.berkeley.edu/~saez/TabFig2014prel.xls>

<sup>6</sup> To explore U.S. wage trends see the Economic Policy Institute's State of Working America page: <http://stateofworkingamerica.org/subjects/wages/>

<sup>7</sup> For further information on ARRA and GDP see the Center on Budget and Policy Priorities report “Chart Book: The Legacy of the Great Recession’ April 2016.

<sup>8</sup> Rothstein, Jesse. 2015. “The Great Recession and its Aftermath: What Role for Structural Changes?” University of California, Berkeley and NBER working paper. [http://eml.berkeley.edu/~jrothst/workingpapers/rothstein\\_rsf\\_sept2015.pdf](http://eml.berkeley.edu/~jrothst/workingpapers/rothstein_rsf_sept2015.pdf)

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