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Higher Unemployment Reduces Gasoline Consumption

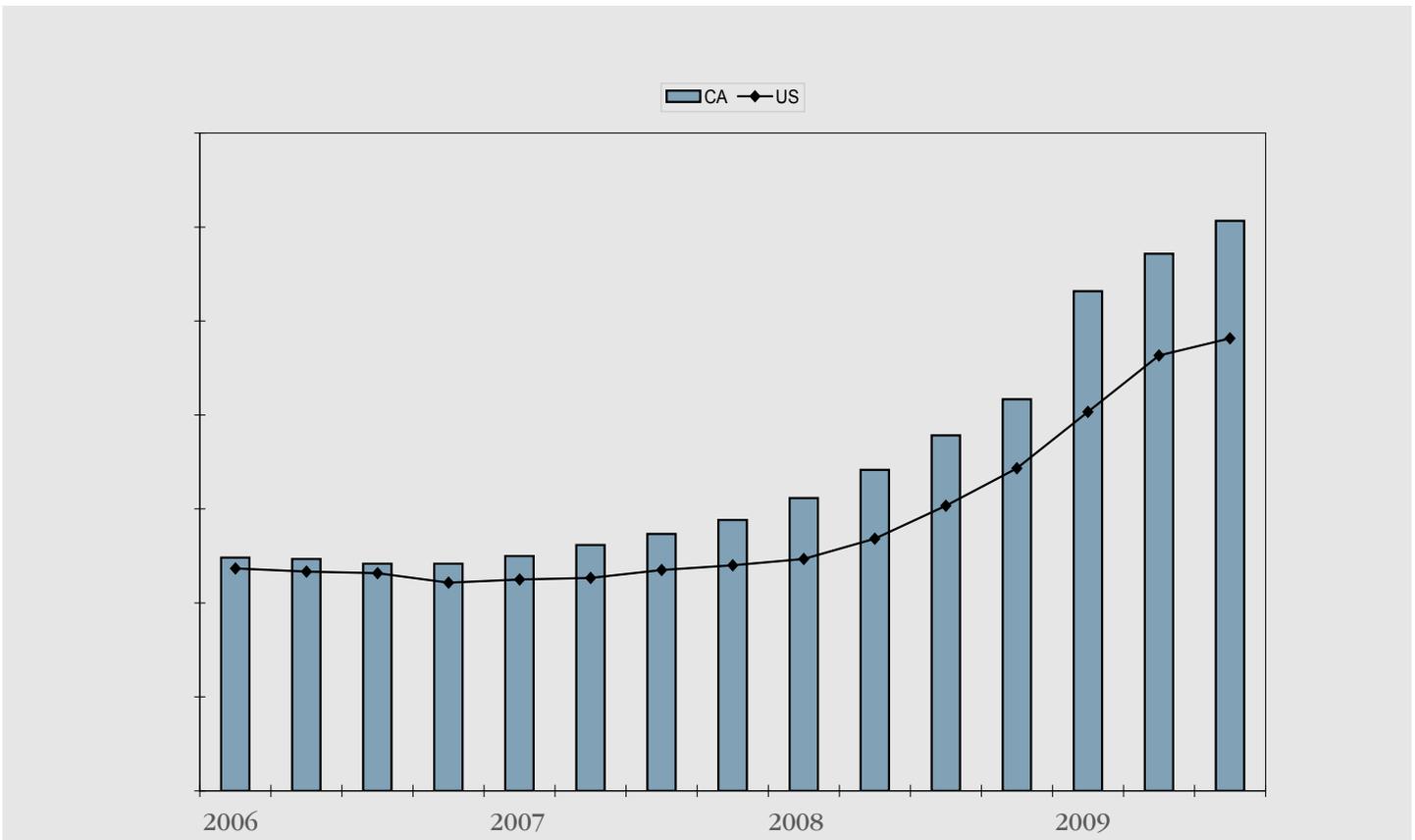
Recession Increases Unemployment Rate

While the “Great Recession” of 2008 and 2009 appears to be over, it has left a legacy of a much higher unemployment rate in its wake. This is particularly true for California, as the state has

analyzes recent changes in unemployment and their likely impacts on related activities of commuting and gasoline usage in California.

California Unemployment Rate Among the Highest for States

Entering late 2009, California had one of the highest unemployment rates of any state in the nation. As



suffered more from the impacts of the residential real estate bubble than the nation as a whole. As shown in Chart 1, while the national unemployment rate averaged close to ten percent in the third quarter of 2009, the California unemployment rate was around 12 percent. Both national and state unemployment rates have more than doubled since 2006. This issue

shown in Chart 2, in September 2009 only Michigan, Nevada, and Rhode Island had higher unemployment rates than California. Oregon was also among the ten states with the highest unemployment rates in September, so western states are heavily represented among states with the highest unemployment rates.

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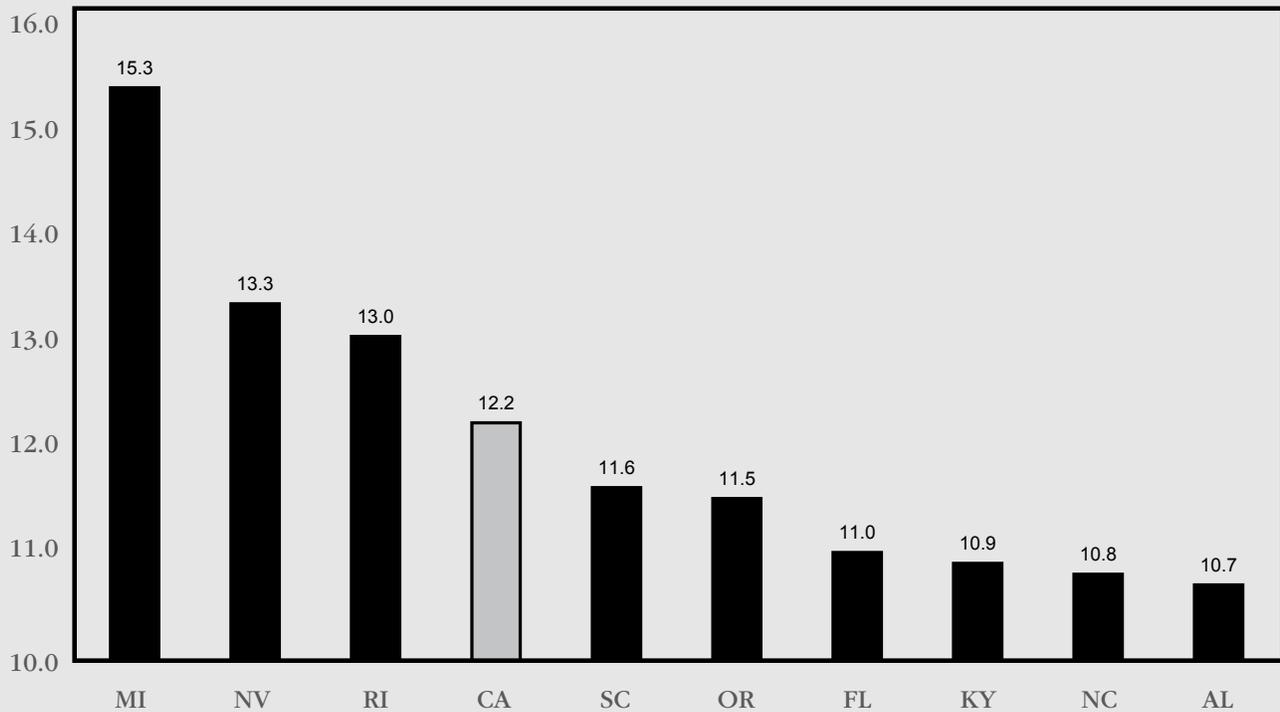
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Chart 2
September 2009 Unemployment Rates—Ten Highest States
(Seasonally Adjusted)



More Than One Million People Become Unemployed in 2008 and 2009

Another way to view unemployment data is in terms of the numbers of people unemployed. As shown in Chart 3, before the recession started (fourth quarter of 2007) there were about one million unemployed Californians. By the third quarter of 2009 this number more than doubled to about 2.2 million. Furthermore, as the recession has continued, people have been unemployed for longer periods of time on average. As shown in Chart 4, in September of 2009, about 31 percent of the unemployed were unemployed for more than 27 weeks. This is up from 18 percent in September 2008.

Full-Time Employment Down

An obvious implication of higher unemployment is that fewer people are commuting to work. Commuting is also down for other reasons related to the recession. Full-time employment is defined by the U.S. Bureau of Labor Statistics (BLS) as working 35 hours or more per week. In September 2009 about 80 percent of employed Californians reported that they usually work full-time. This is down about 865,000 workers from September 2008.

Related to numbers of people working full-time are people who are working part-time when they would

prefer to work full-time. The BLS defines these workers as employed “part-time for economic reasons.” The number of California workers working part-time for economic reasons has increased by 434,000 since September 2008. Many of these are probably included in the 865,000 fewer full-time workers compared to September 2008.

Reductions in Hours Decrease Gas Use

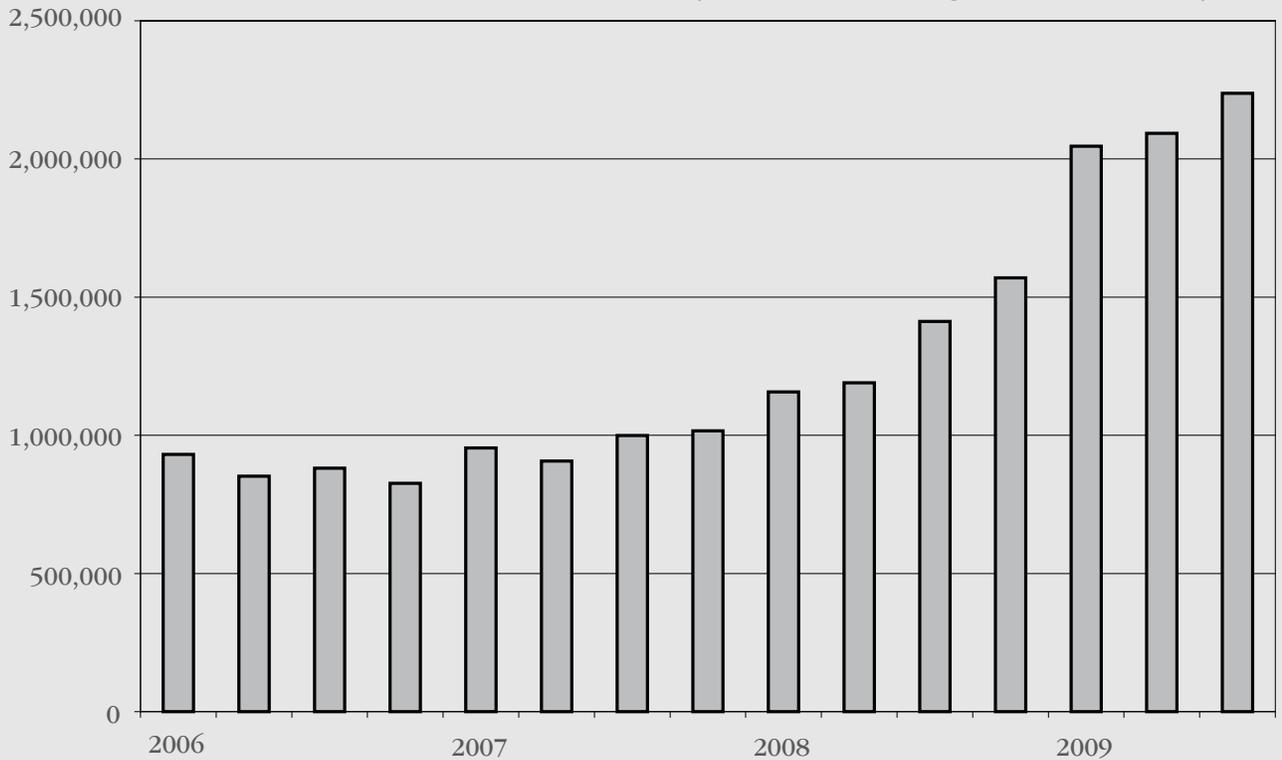
Other workers may still be working full time, but have reductions in hours. Furloughs are one example of such reductions in hours. According to a USA Today/Gallup poll in early 2009, 12 percent of workers have had their hours cut back.¹ Such cutbacks in hours are generally not included in the unemployment statistics reported by the BLS. Depending on the numbers of hours furloughed, most furloughed workers would probably still be counted as working full-time even if they are working fewer hours.

Less Employment, Less Commuting, Less Gas

Either unemployment or workers facing cuts in hours imply less commuting and less gasoline use compared to a year ago, unless other factors have changed. The Board of Equalization administers

¹ “Fear of Layoffs Less Common Than Believed,” *Adweek.com*, February 17, 2009.

Chart 3
California Unemployment Persons (Quarterly, 2006 Through Third Quarter 2009)



the gasoline tax and is able to monitor gallons sold through tax receipts paid by fuel distributors. A question related to fuel consumption is: How much gasoline is accounted for by commuting and how much less is being consumed since fewer workers are commuting because of the recession?

Commuting Gas Estimates Made

Data needed to answer this question are not straightforward or readily available. However, estimates of gas consumption related to commuting can be made. We made some estimates using the data sources and methodology described below.

Average Commute Miles, Drivers, and MPG

According to data from the U.S. Department of Transportation, the national average roundtrip commute distance is 24 miles.² A U.S. Census Bureau study indicates that 80 percent of commuters drive to work alone.³ A California Department of Transportation study indicates that cars and light trucks combined average about 20 miles per gallon.⁴

Unemployment-Based Estimates

As a simplifying assumption, we will only consider numbers of workers unemployed explicitly in the calculations. We do not know the extent of cutbacks in hours, nor do we know their implications on days

of commuting. For purposes of estimation, we will assume that all workers are employed full-time and commute five days per week. While we know that only 80 percent of workers work full-time, significant numbers of employees have had their hours cut. If we assume that 12 percent of workers are furloughed one day per month, this approximately matches the gasoline use of the part-time workers (20 percent of all workers) working four days per week instead of five.

Commuting Gas Estimates

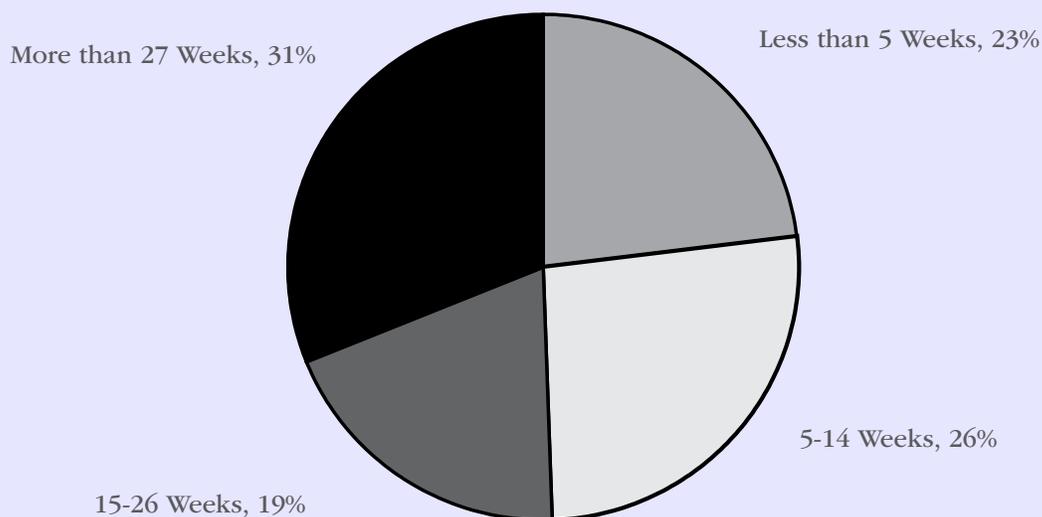
Taking the data and using it to calculate gallons, we estimate that full-time workers consume an average of about five gallons of gas per week. Multiplying this figure by the numbers of employed workers in 2008 and comparing the result to total gas consumption implies that about 28 percent of all gas consumed is related to commuting.

² U.S. Department of Transportation, Research and Innovation Technology Administration (RITA), Bureau of Transportation Statistics (BTS), "Average Trip Distance by Purposes: 2001."

³ U.S. Census Bureau press release, "Most of Us Still Drive to Work -- Alone," June 13, 2007.

⁴ California Department of Transportation, *2008 California Motor Vehicle Stock, Travel and Fuel Forecast*, June 2009.

Chart 4
September 2009 California Unemployment by Duration Category (Weeks Unemployed)



The unemployment numbers for 2009 imply that an average of about 18 million fewer gallons of gas per month has been consumed so far in 2009 because of fewer people employed. For the first half of 2009 gas consumption has declined by about 196 million gallons compared to the first half of 2008. According to our estimates, over half of this decline is related to less commuting caused by increased unemployment.

Contact Us

Please contact us if you would like to be added to our mailing list, need additional copies, or have questions or comments.

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To contact your Board Member, see
www.boe.ca.gov/members/board.htm

Online Resources

For more information about topics covered in this issue, please visit any of the websites listed below.

California Department of Finance
www.dof.ca.gov

California Employment Development Department (EDD), *Labor Market Conditions in California*
www.labormarketinfo.edd.ca.gov

Federal Reserve Bank of Philadelphia, *Survey of Professional Forecasters*
www.phil.frb.org/econ/spf/index.html

National Association for Business Economists
www.nabe.com

U.S. Bureau of Economic Analysis
www.bea.gov

U.S. Bureau of Labor Statistics
www.bls.gov/cpi/

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