A New Monthly Indicator of the California Economy

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Introduction

As predicted, the California economy is slowing down. The State is, quite simply, running out of people to be employed. The unemployment rate from Marin County to Santa Clara County is below 2.5%, from Sonoma through the East Bay below 3%, and in Southern California, with the exception of Los Angeles, at or below the U.S. rate of 3.6%. To be sure, the inland regions are not doing as well by this measure, and the impact of the trade war with China is beginning to be felt. Nevertheless, economic prosperity has clearly become the norm in California today.

These contemporaneous measures of the health of the California economy are primarily based upon employment statistics, available a short time after the end of the month. However, employment is only part of the picture. The slow growing and contracting sectors such as non-durable goods manufacturing and retail and rapid growing sectors such as information and scientific and technical services has spurred economic growth faster than employment growth. In this California report we exploit those sectoral differences and present a contemporaneous measure of California output, a monthly GDP metric, which will be published on the UCLA Anderson Forecast website each month. The article proceeds with a review of current employment and housing conditions, followed by a detailed description of the new measure of GDP, and the latest quarterly forecast through 2021.
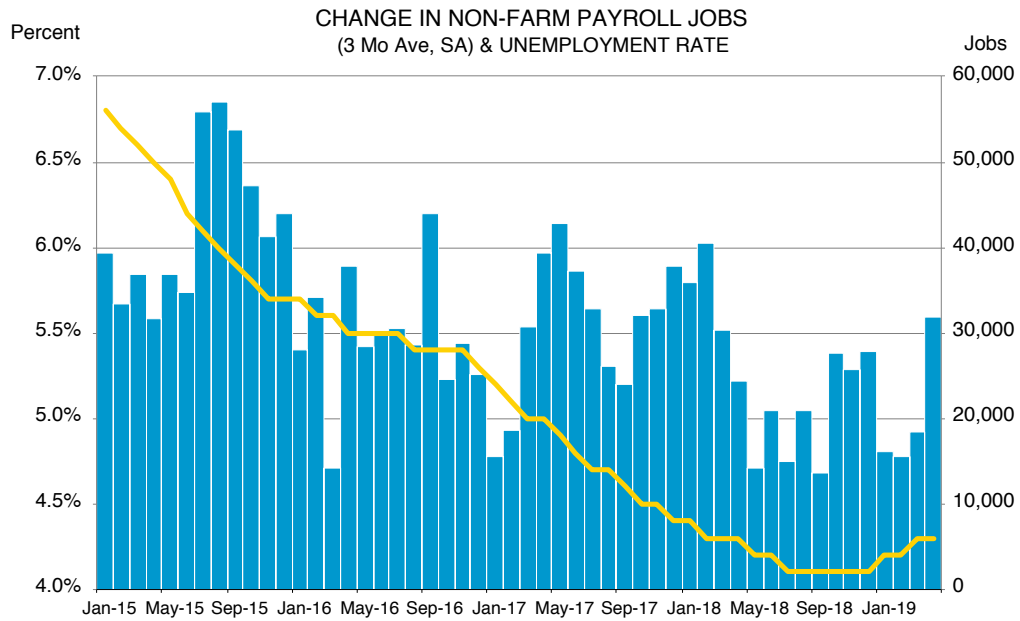
Employment Retrospective

Though the unemployment rate increased by one-tenth of a percent to 4.3% the past quarter, employment growth has continued to be strong. After a slowing last year to a monthly average of 23,000 non-farm payroll jobs, it increased to an average of 25,000 jobs per month through the first four months of this year (Chart 1). This more rapid run-rate of 300,000 net new payroll jobs per year in the State presents the same puzzle as with the national survey of payroll jobs.

The household survey which measures the number of people employed in the State is at record levels, but the labor force and the number of people employed has not, according to the survey data, grown significantly over the past 12 months. The number employed now stands at 18.7 million, 17.0% higher than the trough of the recession and 10.2% higher than the previous peak employment, about the same as in April of 2018 (Chart 2). Thus, the establishment survey and the household survey are not increasing in tandem as they normally would.

The explanation for this data-disconnect is likely multi-faceted. These two surveys are benchmarked each year as better data, available only a few times per year, is incorporated into them. That may resolve the puzzle. It may also be the case that some of the growth in payroll jobs is due to the self-employed, who are not payroll employees but reported
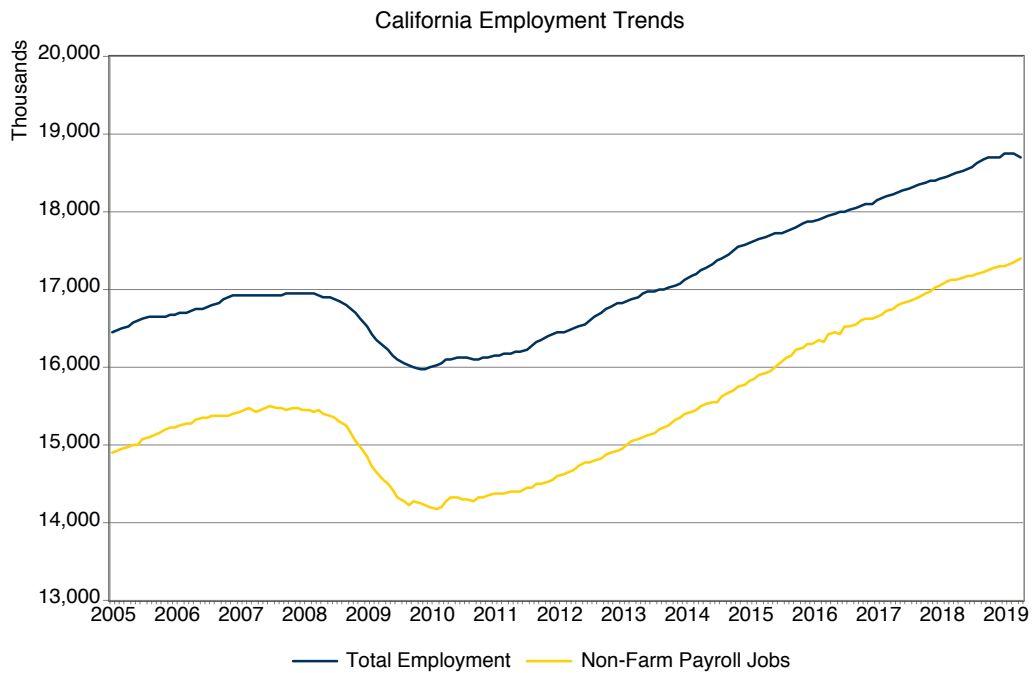
Chart 1

CHANGE IN NON-FARM PAYROLL JOBS
(3 Mo Ave, SA) & UNEMPLOYMENT RATE

Source: EDD.ca.gov

Chart 2

California Employment Trends

Source: EDD.ca.gov

Chart 3

PERCENTAGE JOB GROWTH BY SECTOR
(April 2018 to April 2019)
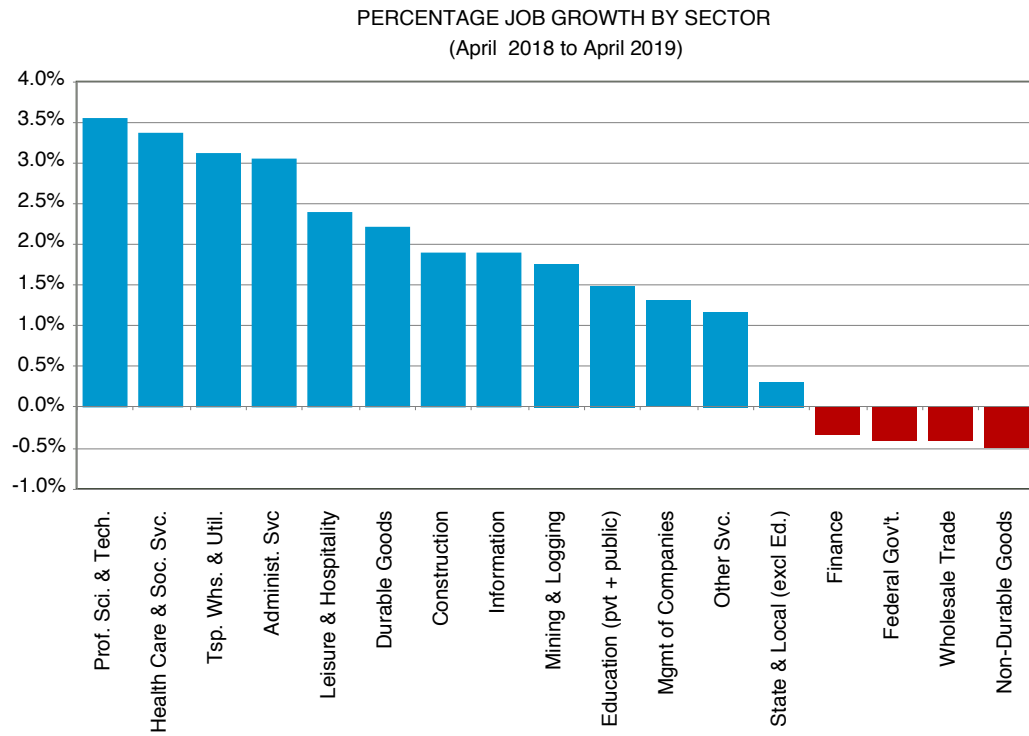
Source: EDD.ca.gov, UCLA Anderson Forecast

Chart 4

California Regional Job Gain
(April 2018 to April 2019, SA)
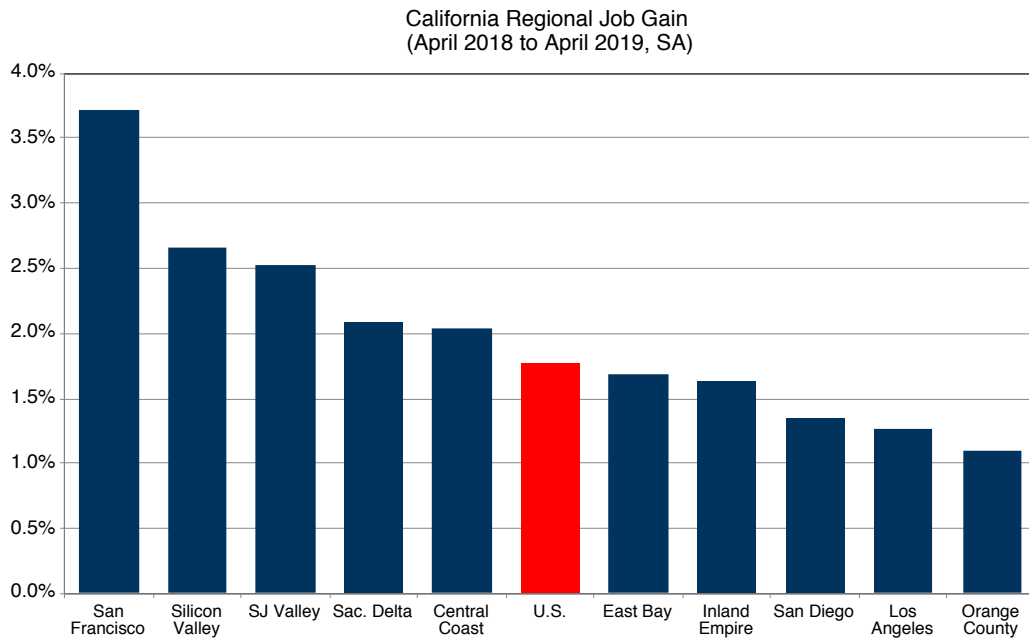
Source: EDD.ca.gov, UCLA Anderson Forecast

in the household survey as employed, finding payroll jobs. Thus, they would just now show up in the establishment survey. It may also be that tight labor markets allow those who wish to work part-time to piece together several jobs to fit their schedule. If so, they would be reported once for each job in the establishment survey, even though in the household survey they would only count once. Though the statistical answer is not known, the evidence points to California continuing to grow apace, at the same rate or faster than the U.S.

Job growth in the State has been across most sectors. Of the seven sectors that are growing at a rate faster than 1.5% over the last twelve months, three have an average wage that is lower than the median and four higher. The low-wage sectors are health care and social services, leisure and hospitality and administrative services. The high-wage sectors are professional, scientific and technical services, construction, durable goods manufacturing, and trade, transportation and warehousing. In the next section, these differences will be exploited in the construction of monthly GDP growth rates.

Healthy labor markets in California is also geographically widespread (Chart 4). In the second half of 2018, the inland parts of the State—Sacramento and the Delta, and the San Joaquin Valley, continued to score impressive gains, as did each of the four Bay Area Regions. Although some counties were lagging behind in growth rates, notably the Inland

Empire, San Diego, Los Angeles and Orange County, with the exception of Los Angeles, their unemployment rates were at or below the U.S. rate. Los Angles continues to be a special case, both because of its size, and because of the historical legacy of a large non-durable goods manufacturing sector; a sector that has been contracting throughout the current expansion.

Housing Market Retrospective

In the last California report, we presented an analysis of California's soft housing market and attributed the softness to expectations of slower price appreciation and possible interest rate cuts. The last two months have seen an increase in home sales in every part of California except for the Bay Area. Nevertheless, in April 2019 single-family home sales were 4.8% below the same month in 2018, and condo sales were 3.8% below the same month of 2018.

Home prices, as measured by the Case-Shiller Index of three California MSA's (San Francisco, Los Angeles and San Diego) firmed in February, the latest month available, but are still lower than the previous December. Median home prices as measured by the California Association of Realtors have, with the exception of the Bay Area, reversed their decline. With the aforementioned outstanding job growth in the Bay Area, the softness in that region must be directly related to expectations of future price cuts in an overheated market.

Chart 5

Monthly California New Residential Permits
(3 Mo. Moving Average, No. of Units)
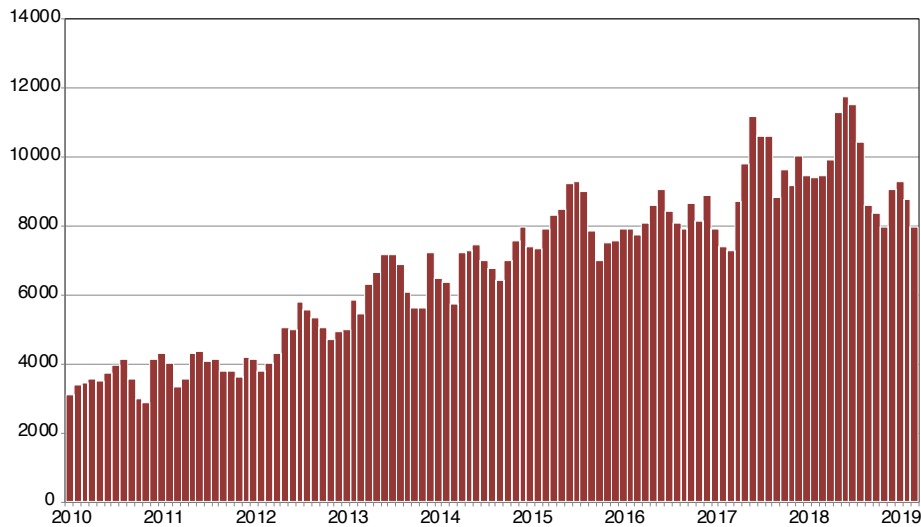
Source: US Department of Census

As a consequence of the signals the market is sending, home contractors are being more cautious in developing homes on speculation. The number of permits issued during the three months ending April 2019 were 20.5% below that of a year earlier. The annual rate of building over these three months was less than 95,000 units. When one considers the fact that some of these permits were for rebuilding homes lost in natural disasters, the State is clearly falling behind in home production relative to population growth and future needs.

Monthly California GDP

Among the metrics measuring the contemporaneous performance of the California economy, employment, trade at the ports, state tax receipts, and new building permits for example, is the glaring absence of GDP. The measure of state GDP produced by the U.S. Bureau of Economic Analysis (BEA) is released quarterly with a significant lag. It is often more than six months behind. For example, on May 1, 2019, the last published GDP was for the 3rd Quarter of 2018; seven months previous. Much can happen in that span of time. So, while the quarterly GDP data are useful as a historical fact and as an input to statistical analysis, they have not been useful as a contemporaneous measure to inform the public as to where the CA economy is at present, and by inference, where it might evolve to in the future.

To fill this gap in the economic statistics for the State, we have constructed a California State GDP measure that will be as current as the most current relevant economic data; the national and state employment figures. Updates and associated commentary will be published each month on the UCLA Anderson Forecast website and elsewhere.

The key to obtaining up-to-date estimates of California GDP is the observation that even though robots have replaced many workers, we have not evolved into the Matrix. So, to state the obvious, the amount of labor in any given economic activity, and the amount of goods and/or services produced by that activity are related. If one can only take the number of workers and multiply by the average amount of goods and services produced per worker, one obtains output or GDP. As it turns out, this is possible, and can be done in a very timely fashion.

Payroll employment for the State of California broken down by industrial sector classification (NAICS) is published a few weeks after the end of each month. However, payroll employment is only a measure of the number of jobs and not a measure of how much time each employee spends working at that job. Through time, the number of hours each employee works changes and this is not known in a timely way for the State. Fortunately, the National average of weekly hours worked by payroll employees by NAICS sector is published each month. Though hours may vary across states, it is likely that they do not vary much.

The construction of the GDP series begins with the historical quarterly State GDP numbers, seasonally adjusted in constant 2012 dollars. Monthly State employment and monthly National average weekly hours are each summed to create a quarterly series for each by sector. Then quarterly output per hour per sector may be calculated. This quarterly productivity result is used to translate monthly employment and hours into monthly GDP. This process works surprisingly well as evidenced in Chart 6.

To obtain an up-to-date monthly GDP figure, an estimate of productivity for the missing quarters of State GDP is needed. This can be forecast in several different ways; an average of the last two or three quarters, an extrapolation of trends, or a correlation of the quarterly with another time series that is both monthly and quarterly. As it turns out, productivity does not change very much month to month. Thus, it does not seem to matter which methodology is used. For simplicity, we chose to use an extrapolation of the trend in productivity growth over the most recent six quarters.

Though it is only one data point. The series shown here was constructed prior to the release of the fourth quarter of 2018 state GDP. The estimate from the methodology employed here was for the quarter to exhibit 2.3% growth, and the published number from BEA was 2.2%. Although these are not far from each other, the difference points out an important fact. If within a sector, the percentage of the total due to each sub-sector changes, it will affect the accuracy of the estimate. In this case, within the information sector there was more growth in the production of films for the internet than elsewhere. This is a lower value-added activity, and that is the 0.1 percent difference between the average of our monthly estimates for the fourth quarter and the BEA quarterly estimate.

At the time of this writing, there is data on employment for each of the first four months of 2019. The latest quarterly GDP figures are for the fourth quarter of 2018. Since that time California's economy as measured by real GDP grew by 3.1% in the first quarter. This is right consistent with the

Chart 6

Monthly vs Quarterly GDP
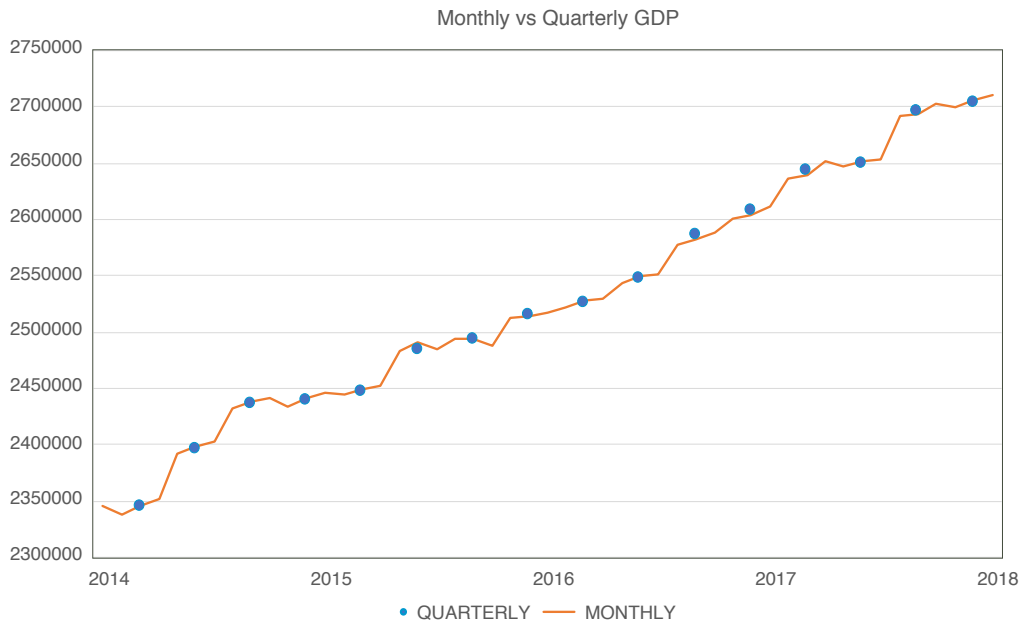
Source: EDD.CA.gov, BLS.gov, BEA.gov, UCLA Anderson Forecast

U.S. growth rate. On a monthly basis the growth has been 5.2%, 0.9%, 2.9%, and 7.5% for January through April, respectively. The apparent volatility is due to the fact that the numbers are based on several surveys and are subject to benchmark revisions. On a three-month moving average basis, the growth rates are 2.0%, 2.5%, 3.1% and 3.1%. These estimates embody a back-cast of the change in productivity for each of these months. Were each sector to be over/under estimated by one standard deviation the range would be + or − 0.45%. As it is unlikely that all of the sectors would have a one standard deviation drop in productivity in the same month, these are conservative bounds on the estimate.

Although employment data, both at an aggregate and disaggregated level, are already available on a monthly basis; the growth in GDP, the production of goods and services, is not. When sectors do not grow at the same rate, and productivity differs across sectors, a GDP measure for the State is informative. It is indeed the case that sectors have been growing at very different rates. Over the twelve months ending March 2019, professional, scientific, and technical services sectoral employment grew at a 3.3% rate while leisure and hospitality sectoral employment grew at 1.7%. Productivity in the former is, by our measure, more than double that of the latter. We have developed a straightforward methodology here to construct such a measure and will be using this additional information in our analysis henceforth.

The Forecast (with William Yu)

The U.S. forecast update in June represents very modest changes to the outlook since the previous update last March. Weakness in housing as well as the slowing U.S. economy is reflected in a very modest growth rate in the U.S. in late 2020. As a consequence, we expect California's average unemployment rate to rise slightly to an average of 4.6% in the first quarter of 2021. For the entire years, 2020 and 2021, we expect average unemployment rates of 4.3% and 4.4%, respectively.

Our forecast for 2019, 2020 and 2021 is for total employment growth rates to be 1.7%, 0.8% and 0.4%, approximately the same as our March 2019 outlook. Payroll jobs are expected to grow at a 1.4%, 0.8% and 0.6% rate, respectively. Real personal income growth is forecast to be 2.9%, 1.9% and 2.1% 2019, 2020 and 2021, respectively. The continued growth in real personal income in 2020 is reflective of the changing mix of employment in California and tight labor markets in high-wage occupations. Homebuilding will be lower by about 9,000 units this year than previously forecast, but grow to about 146,000 units run-rate by the end of the forecast horizon 2021. This will be a response to easing zoning and regulatory requirements for developers and an expected reduction in interest rates by 2021.