



Volume 21, Issue 3

CSU Bakersfield

# Kern Economic Journal

Winner of the Award for Merit from California Association  
for Local Economic Development

2019 Third Quarter



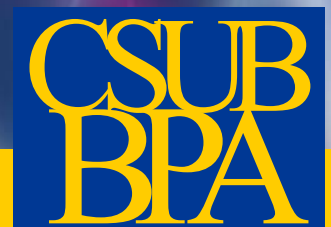
## Featured Article:

32,60	0,00	▼	132,10	1
83,70	82,80	▼	83,62	8
36,30	35,63	▲	36,15	3
87,90	86,35	▲	87,73	8
39,39	38,86	▲	39,28	9
91,75	91,19	▼	91,45	1
87,90	86,35	▲	87,73	7
39,39	38,86	▲	39,28	9

An Overview of the  
Asset Pricing Models



Economic and Fiscal  
Impact Analysis of Hospital  
Spending



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*KERN ECONOMIC JOURNAL* is a quarterly publication (February, May, August, November) of California State University, Bakersfield. Its purpose is to track local trends and analyze regional, national, and global issues that affect the economic well-being of Kern County. The journal provides useful information and data that can help the community make informed economic decisions. Sources of funding for this journal include university contributions and sponsorship and subscription fees.

Editorial and analytical articles on important local, regional, national, and international issues and trends are invited for consideration of publication in the journal. Articles (not exceeding 800 words in length) must be submitted to the Managing Editor in electronic copy. Individual authors are responsible for the views and research results.

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# Kern Economic Journal



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# Economy at a Glance!

2019 SECOND QUARTER  
BY DR. RICHARD S. GEARHART III &  
DR. NYAKUNDI MICHIEKA

## National Economy<sup>1</sup>

The U.S. economy grew at an annual rate of 2.1 percent in the third quarter of 2019, compared to 2.0 percent (revised) in the second quarter of 2019. The Bureau of Economic Analysis (BEA) reported that the increase in GDP reflected positive contributions from personal consumption expenditures, federal government spending, residential investment, exports, and state and local government. GDP was decreased by negative contributions from nonresidential fixed investment, private inventory investment, and imports. This now puts the Trump Administration real GDP growth at 2.4-percent during his time as President, indistinguishable from the second term of the Obama Administration. This highlights that the economic impacts of the tax cuts in 2016 are far from certain. Current-dollar GDP increased by \$241.4 billion or 3.8 percent to \$21.54 trillion.

Current dollar personal income increased \$162.5 billion in the third quarter of 2019 compared with an increase of \$244.2 billion in the second quarter of 2019, a continued slowdown. Real disposable personal income, which is adjusted for inflation and taxes, increased by 2.9 percent in the third quarter, compared with an increase of 1.5 percent in the second quarter. Personal saving was \$1.31 trillion in the third quarter compared to \$1.30 trillion in the second quarter. The BEA derives the personal saving rate by calculating personal saving as a percentage of disposable personal income. The personal saving rate in the third quarter was 7.9 percent, up from 7.8 percent in the second quarter.

The Conference Board's Index of Leading Economic Indicators – a measure of future economic activity – decreased 0.2 percent in September to 110.8 This highlights a continued stagnation in this indicator over the past few years.

The University of Michigan's Consumer Sentiment Index decreased from 98.4 in the second quarter of 2019 to 93.8 in the third quarter of 2019. The index actually climbed from a value not found in several years in August: 89.8.

<sup>1</sup> U.S. economic numbers were obtained from the Bureau of Economic Analysis "U.S. Economy at a Glance". This is found at <http://www.bea.gov/newsreleases/glance.htm>. The information for the Index of Leading Economic Indicators is found at <https://www.conference-board.org/data/bcicountry.cfm?cid=1>. The University of Michigan Consumer Sentiment Index is found at <http://www.sca.isr.umich.edu/tables.html>.

## State Economy<sup>2</sup>

In California, the unemployment rate dropped to 4.0 percent in September, compared to 4.2 percent in June 2019. Among counties, San Mateo (1.7 percent), San Francisco (1.8 percent), Santa Clara (2.1 percent), Orange (2.4 percent), San Luis Obispo (2.4 percent), Sonoma (2.2 percent), San Diego (2.7 percent), and Sacramento (3.1 percent) had unemployment rates below the state average. In contrast, Los Angeles (4.5 percent), San Joaquin (4.7 percent), Fresno (5.3 percent), Kings (5.7 percent), and Kern (6.0 percent) had unemployment rates above the state average.

The state's civilian labor force lost 86,833 members, where 51,400 fewer employees had paying jobs (employed) and 35,500 fewer were left jobless (unemployed). While nonfarm industries hired 81,167 more workers, farming enterprises employed 5,333 fewer workers. The mining and logging sector hired 100 fewer workers while construction and manufacturing sectors hired 11,733 and 1,000 more workers, respectively, while the service sector added 68,533 workers. Other sectors adding jobs include professional and business services (28,533), and educational and health services (25,967). Retail trade saw 1,833 fewer workers.

## Local Economy

The local economy saw an increase in the labor force, from 388,033 in the second quarter of 2019 to 392,167 in the third quarter of 2019. A large part of the increase in the labor force appears to be farm workers (8,367 more workers), as non-farm workers (driven by decreases in public employment) fell by 2,000 workers. This appears to be a seasonal change. Importantly, the private sector added 1,767 more workers, and has 5.2-percent more workers than four quarters ago. Salaries and wages in Kern County fell from 4,012,794 (thousand dollars) in the fourth quarter of 2018 to 3,870,664 (thousand dollars) in the first quarter of 2019, a 3.54-percent decrease. Compared to four quarters ago, salaries were higher 208,132 (thousand dollars), or 5.68 percent.

The unemployment rate varied between 3.23 percent in Ridgecrest to 19.10 percent in Delano. All cities in Kern County showed a decrease in the unemployment

<sup>2</sup> The California economic numbers were obtained from the Bureau of Labor Statistics "Local Area Unemployment Statistics Map". This is found at <https://data.bls.gov/map/Map-ToolServlet?survey=la&map=county&seasonal=u>.





rate except for Bakersfield City (0.7 percent increase) and Ridgecrest (0.73 percent increase). The largest decrease in unemployment was found in Delano, falling by 7.4 percent. Kern County's unemployment rate dropped from 7.87 percent to 7.23 percent.

In the third quarter of 2019, the median home price in Bakersfield was \$249,000 compared to \$236,833 in the second quarter. This increase in price comes even amid a decrease in the demand for housing, suggesting supply-side constraints exist in Kern County. In Kern County, the lowest median price was found in Taft City (\$151,667), while the highest price was found in Tehachapi (\$271,667).

The weighted price index for the five publicly traded companies doing business in Kern County (Sierra Bancorp, Tejon Ranch Company, Chevron Corporation U.S., Granite Construction, and Wells Fargo Company) fell by 8.1 percentage points from 111.7 to 102.7. The

index is 12.0 percentage points lower than what it was four quarters ago. All companies gained/lost as follows: Chevron (decreased 4.7-percent quarter-over-quarter), Tejon Ranch (increased 2.3-percent quarter-over-quarter), Granite Construction (decreased 33.3-percent quarter-over-quarter), Wells Fargo (increased 6.6-percent quarter-over-quarter) and Sierra Bancorp (decreased 2.1-percent quarter-over-quarter).

The average retail price of gasoline decreased by \$0.20 to \$3.69. Gas prices are 1.4 percent higher than they were four quarters ago, in part due to the tax increase voted into law. The unit price of California's Class III milk rose from the second quarter of 2019, increasing from \$16.20 to \$17.82. The Index of Farm Price Parity fell to 81 percent from 83 percent in the second quarter.

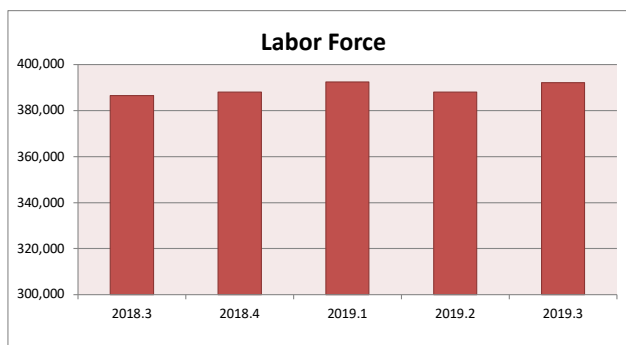
# Tracking Kern's Economy<sup>1</sup>

DR. RICHARD S. GEARHART III &  
DR. NYAKUNDI MICHIEKA

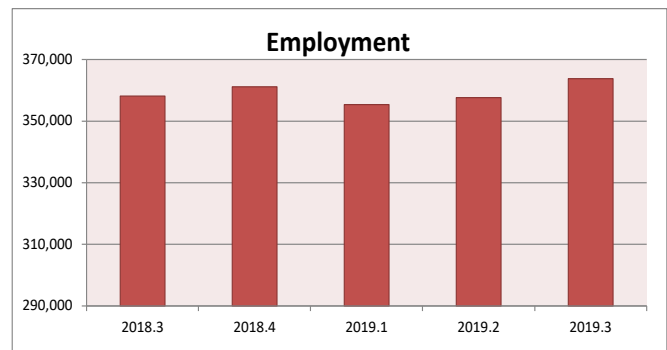
## Labor Market

We adjust published data in three ways. First, we average monthly data to calculate quarterly data. Second, we recalculate quarterly data to take into account workers employed in the “informal” market (i.e., self-employed labor and those who work outside their county of residence). Finally, we adjust quarterly data for the effects of seasonal variations.

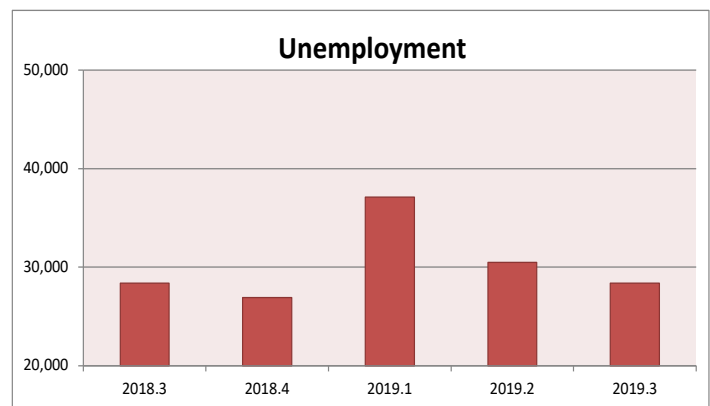
**Labor Force** - The civilian labor force increased by 4,133 members from 388,033 in the second quarter of 2019 to 392,167 in the third quarter of 2019. The increase in labor force is the largest third quarter labor force since 2016. The labor force estimates are even higher compared to those of the third quarter of 2018. Though part of the labor force increase may be a ramping up of workers for end-of-year harvesting and in anticipation of the holiday season, it implies that businesses expect a better economic outlook than the past few years.



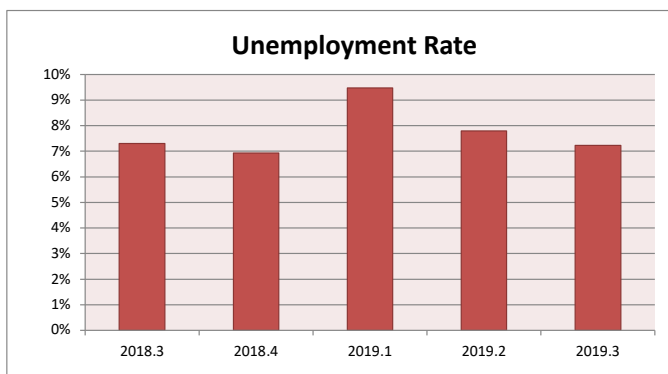
**Employment** - In the third quarter of 2019, Kern County hired 6,233 more workers as total employment increased from 357,567 in the second quarter of 2019 to 363,800 in the third quarter. This is a 1.57 percent increase in employment compared to the third quarter of 2018. This means that employment is at the highest level that it's been in Kern County ever, suggesting that the booming national economy is providing dividends around the country, even with potential halts in the oil field due to increased regulatory action.



**Unemployment** - In the meantime, 2,133 fewer workers were unemployed, as the number of jobless workers decreased from 30,500 to 28,367. The number of unemployed workers is identical to that of four quarters ago. This suggests that though certain industries are having to lay off workers, the labor market slack in Kern County means that those who become unemployed find jobs in alternative industries that also value their skillsets.

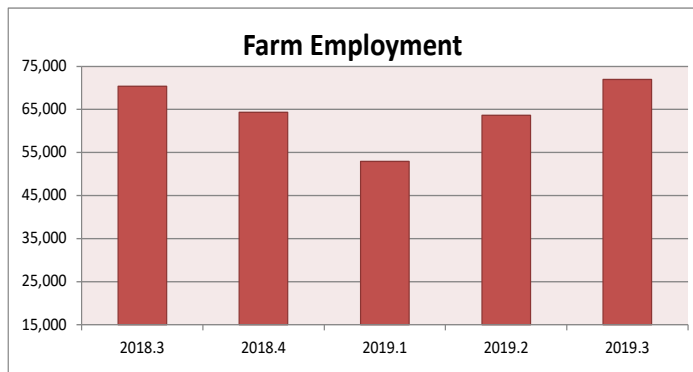


**Unemployment Rate** - Kern County's year-to-year unemployment rate dropped by 0.07 percentage points from 7.30 percent in the third quarter of 2018 to 7.23 percent in the third quarter of 2019. The unemployment rate in the third quarter of 2019 was 0.57 percentage points lower than that in the second quarter of 2019 (7.80 percent in the second quarter of 2019 and 7.23 percent in the third quarter of 2019). The unemployment rate continues to stay below ten percent. Kern County's unemployment rate is almost twice that of California (4.1 percent), while the nation's unemployment rate is 3.6 percent.



The rate of unemployment varied considerably across cities, ranging from 3.23 percent in Ridgecrest to 19.10 percent in Delano. All cities in Kern County showed a decrease in the unemployment rate except for Bakersfield City (an increase of 0.70 percent) and Ridgecrest (an increase of 0.73 percent). The biggest decrease in unemployment occurred in Delano, going from 26.50 percent to 19.10 percent. In Bakersfield, the rate of unemployment was 5.57 percent in the third quarter of 2019 compared to 4.87 percent in the second quarter.

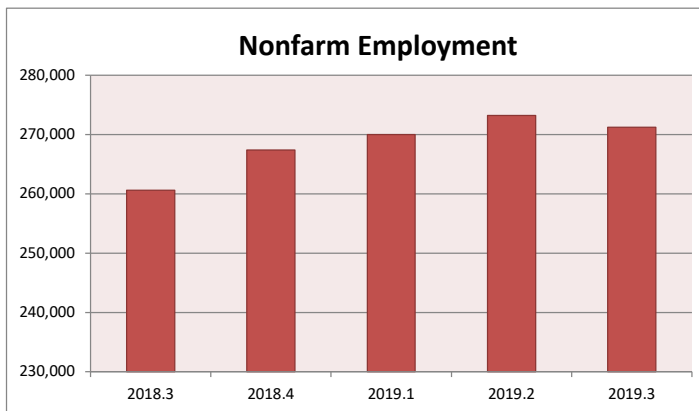
as Kern County has traditionally seen an increase in farmworkers between the second and third quarters.



**Nonfarm Employment** – Local nonfarm industries employed 2,000 fewer workers in the third quarter of 2019. The number of nonfarm workers decreased from 273,233 to 271,233. Nonfarm industries hired 10,600 more workers compared to four quarters ago. The change in nonfarm workers that occurred between 2019.2 and 2019.3 is also traditional. This does signify that some of the employment losses in certain sectors (namely oil and gas) have workers that escape to other sectors (such as agriculture), but that these employment gains may only be temporary.

Unemployment Rate of Cities			
Location	Unemployment Rate (%)	Location	Unemployment Rate (%)
<b>KERN COUNTY</b>	7.23%	McFarland	9.53%
Arvin	7.00%	Mojave	13.87%
Bakersfield	5.57%	Oildale	10.60%
California City	15.90%	Ridgecrest	3.23%
Delano	19.10%	Rosamond	8.80%
Edwards	6.80%	Shafter	8.47%
Frazier Park	7.97%	Taft	3.27%
Lake Isabella	8.80%	Tehachapi	4.37%
Lamont	5.70%	Wasco	12.00%

Note: City-level data are not adjusted for seasonality and “informal” market workers.

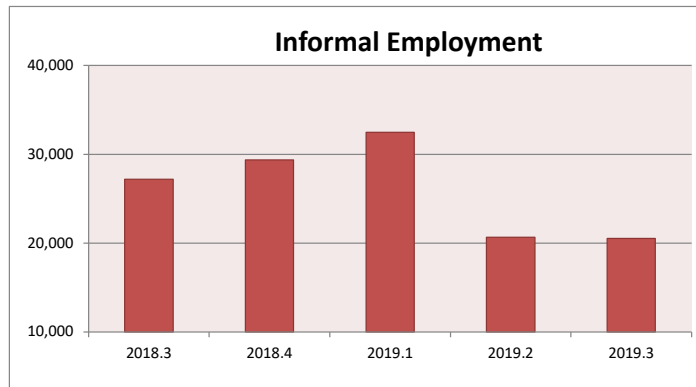


**Farm Employment** – In the third quarter of 2019, Kern County hired 8,367 more farm workers. As a result, farm employment increased from 63,667 in the second quarter of 2019 to 72,033 in the third quarter of 2019. Even more impressive, the year-over-year number of farm workers hired in the farm sector increased, compared to last year. This represents the traditional “seasonal” increase in farm employment,

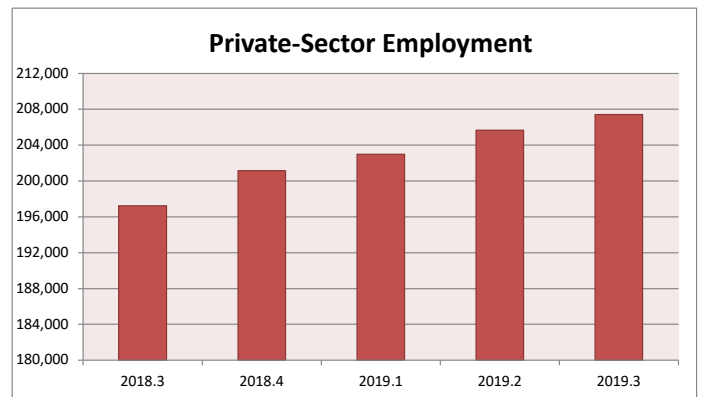
In Bakersfield, much of the decrease in nonfarm employment came from a few sectors: mining and logging (167 workers lost); construction (622 workers lost); trade, transportation, and utilities (333 workers lost); professional and business services (500 workers lost); healthcare and social assistance (478 workers lost); and leisure and hospitality (433 workers lost). These were partially offset by gains in manufacturing

employment (added 100 workers), gains in financial activities (added 200 workers), gains in retail trade (added 633 workers), and gains in finance and insurance (added 256 workers).

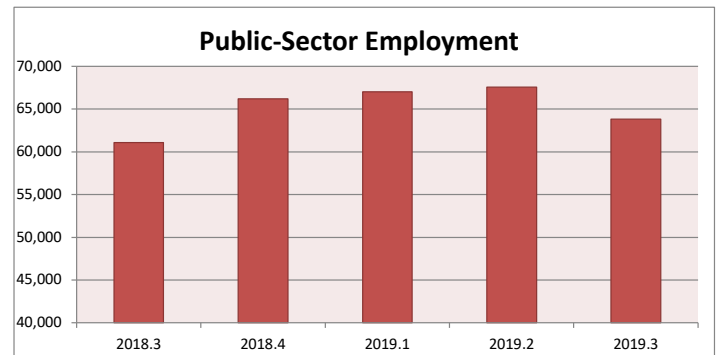
**Informal Employment** - Informal employment is the difference between total employment and industry employment. It accounts for self-employed workers and workers employed outside their county of residence. In the third quarter of 2019, the number of informal workers decreased by 133 workers compared to the second quarter. Compared to the third quarter of 2018, there are 6,633 fewer informal workers. The number of residents who have sought to create their own jobs continues to slow down. There are currently 20,533 informal workers in Kern County (lowest number in 10 years).



**Private-Sector Employment** - Nonfarm employment is comprised of private-sector employment and public-sector employment. In the second quarter of 2019, private companies hired 205,667 workers while the third quarter numbers increased to 207,433 workers. The private sector hired 10,200 more workers this quarter than four quarters ago. This suggests that the net loss in nonfarm employment is concentrated in public sector, rather than private sector, workers, which is indicative of favorable economic growth in the near term.

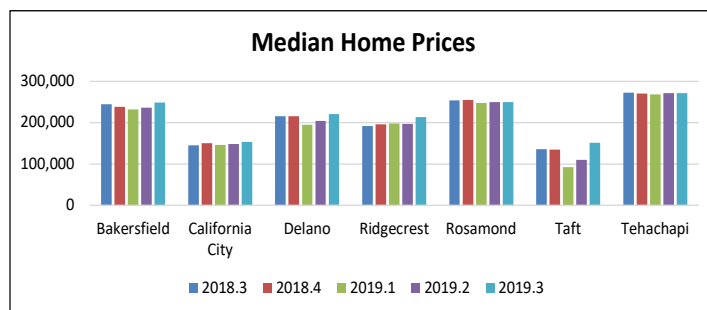
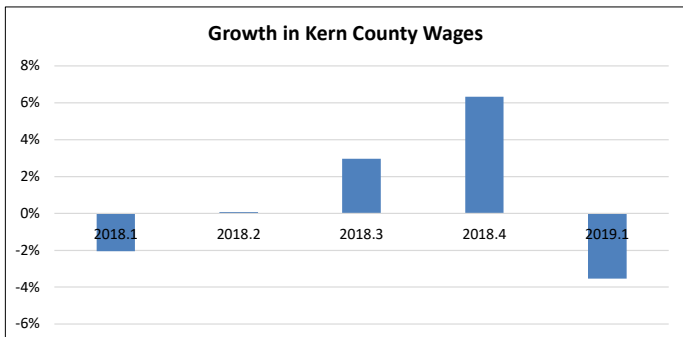


**Public-Sector Employment** - The public sector consists of federal, state, and local government agencies. The local government labor market includes county and city agencies and public education. In the third quarter of 2019, government agencies hired 3,767 fewer workers as their employment decreased from 67,567 to 63,800– a 5.6 percent decrease. The year to year increase in employment was 4.5 percent, suggesting that the decrease is also a seasonal response.



**Growth in Salaries and Wages** - Salaries and wages in Kern County decreased from 4,012,794 (thousand) in the fourth quarter of 2018 to 3,870,664 (or 3.54 percent lower) in the first quarter of 2019. Compared to four quarters ago, salaries were higher 208,132 (thousand) dollars or 5.68 percent. The decrease in wage and salary growth quarter-to-quarter is lower than the average salary decrease, suggesting that Kern County is experiencing positive economic growth in the near future that belies what has historically occurred. Traditional first quarter growth rates have seen wages fall by 4.40-percent, suggesting that the first quarter traditionally sees the shedding of jobs related to the holiday season.

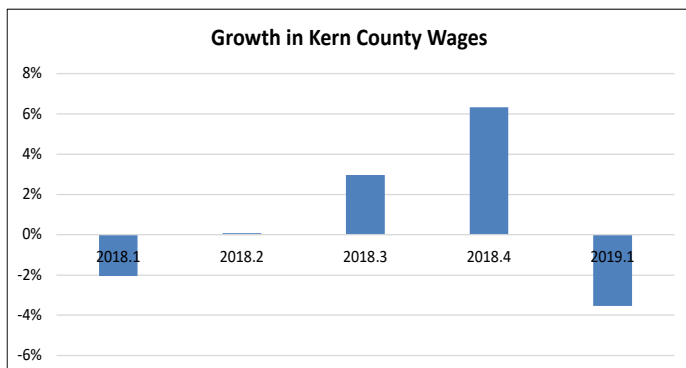




## Housing Market

**Housing Price** - In the third quarter of 2019, Bakersfield’s housing prices increased by \$12,167 (5.1 percent) compared to the second quarter of 2019. The median home price averaged \$249,000 in the third quarter compared to \$236,833 in the second quarter. This rise in home prices (2nd to 3rd quarter) is one of the highest housing price increases, quarter-to-quarter, seen in Bakersfield in years.

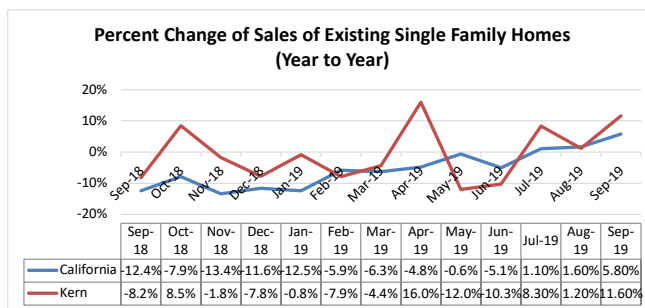
Housing prices varied across Kern County. Within the previous four quarters (2018.3 to 2019.3), the median sales price increased in Bakersfield, California City, Delano, Ridgecrest, and Taft while Rosamond and Tehachapi saw prices fall. Taft recorded the largest single digit increases in prices of 11.66 percent. The average change in home prices in the region year-on-year was 4.30 percent.



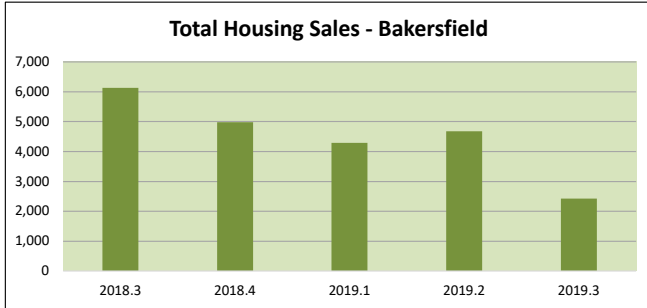
Location	Median Price	Median Price	Price Change (\$)	% Price Change
	2018.3	2019.3	2018.3 - 2019.3	2018.3 - 2019.3
Bakersfield	245,000	249,000	4,000	1.63%
California City	145,500	153,000	7,500	5.15%
Delano	215,333	220,667	5,333	2.48%
Ridgecrest	192,000	213,667	21,667	11.28%
Rosamond	254,500	250,333	-4,167	-1.64%
Taft	135,833	151,667	15,833	11.66%
Tehachapi	273,000	271,667	-1,333	-0.49%

**Regional Housing Prices** - The changes in housing demand felt in Bakersfield are likely to spillover to the surrounding towns as individuals who are on the margin of buying or selling are likely not located in the Bakersfield MSA directly. There was no second-to-third quarter decrease in home prices. Prices increases occurred in California City (3.32%), Delano (7.82%), Ridgecrest (8.28%), Rosamond (0.27%), Taft (38.09%) and Tehachapi (0.15%).

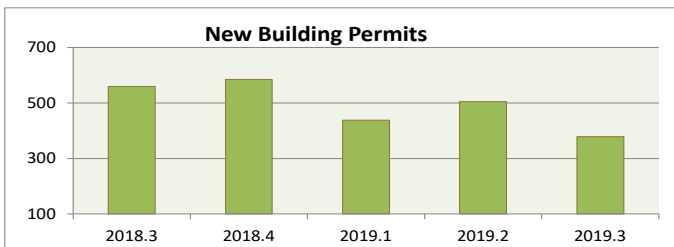
**Growth in Housing Sales** – We compare growth in sales of existing single family homes in Kern County with growth of sales in California. Positive values indicate that more homes were purchased this year compared to last year. In September 2019, sales of single family homes in Kern County were 5.5 percent less than they were in the previous year, while sales were 0.6 percent lower in California. Overall, growth in sales in Kern County averaged 5.0 percentage points lower than California.



**Housing Sales** – In Bakersfield, quarter to quarter sales of residential units decreased by 2,253 units, from 4,683 in the second quarter of 2019 to 2,430 in the Third quarter of 2019. An average of 3,703 less homes were sold in the third quarter of 2019 compared to the third quarter of 2018. This drop in housing demand mirrors national trends. To lead to a price increase, this has to mean that there are significant shortages in the quantity supplied of houses.

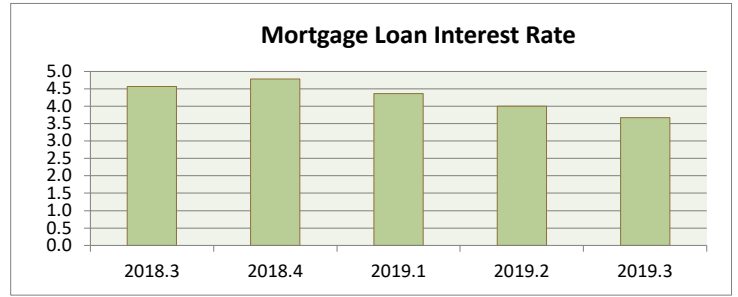


**New Building Permits** –In the third quarter of 2019, Kern County issued 127 fewer permits for construction of new privately-owned dwelling units compared to the second quarter of 2019. A total of 378 permits were issued this quarter compared to 505 in the second quarter of 2019. This decrease in permitting indicates a slowdown of building activity that traditionally occurs in the third quarter in Kern County. The 5-year average of permits issued in the second quarter is 501, indicating that this slowdown is significant.

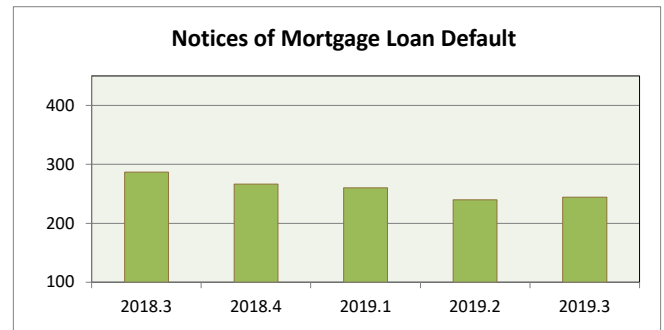


**Mortgage Interest Rate** – In the third quarter of 2019, the interest rate on thirty-year conventional mortgage loans decreased to 3.67 percent from 4.0 percent. This is the lowest mortgage interest rate since 2016; the five year average mortgage loan interest rate (in the third quarter) is also 3.91 percent. This suggests that the economic boom found in the stock market may not be mirrored by typical consumers, and that banks have to

further incentivize large purchases by reduced interest rates.

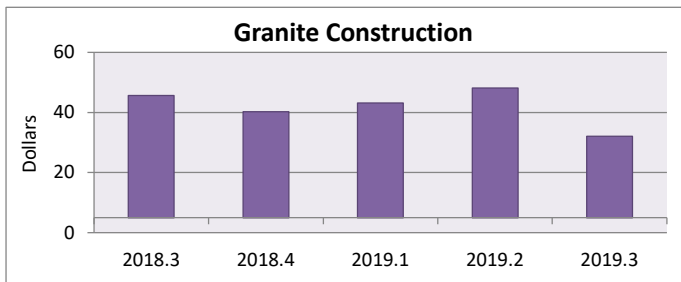
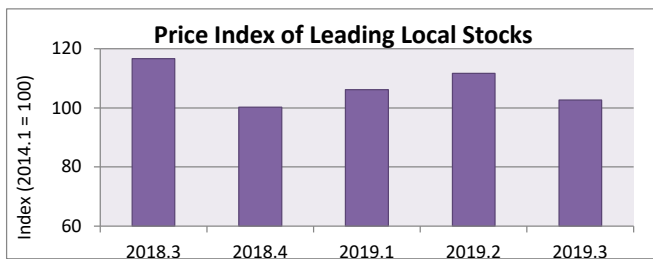


**Housing Foreclosure Activity** –There was a slight uptick in foreclosure activity, opposite to recent trends, as the number of new foreclosures increased by 4 foreclosures from 240 in the second quarter of 2019 to 244 in the third quarter of 2019. This number is also 43 units lower than four quarters ago. Though slightly higher than the lows we have seen, these are the lowest foreclosure rates in decades.



## Stock Market

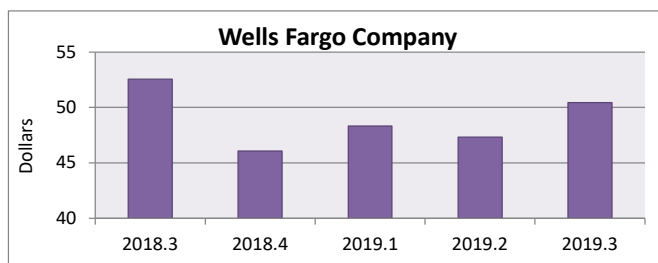
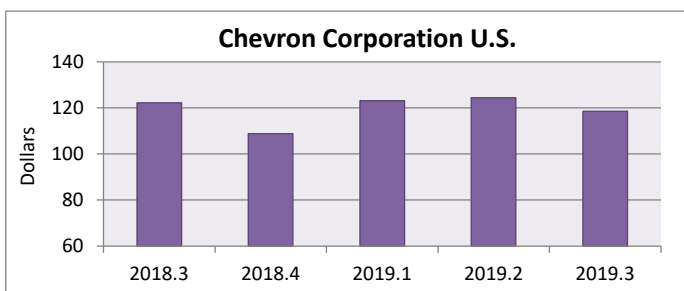
In the third quarter of 2019, the composite price index (2014.1=100) of the five publicly traded companies doing business in Kern County decreased by 8.1 percentage points from 111.7 to 102.7. The index is 12.0 percentage points lower than what it was four quarters ago. Average “close” prices were measured for five local market-movers: Chevron Corporation U.S., Tejon Ranch Company, Granite Construction, Wells Fargo Company, and Sierra Bancorp.



**Chevron Corporation U.S.:** Compared to the last quarter, CVX lost \$5.84 (or 4.7 percent) per share as its price increased from \$124.44 to \$118.60. Relative to the third quarter of 2019, CVX was down \$3.68 (or 3.0 percent).

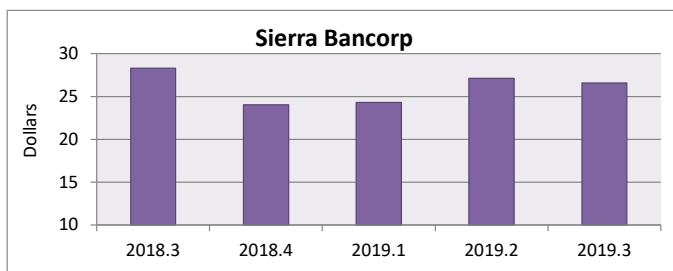
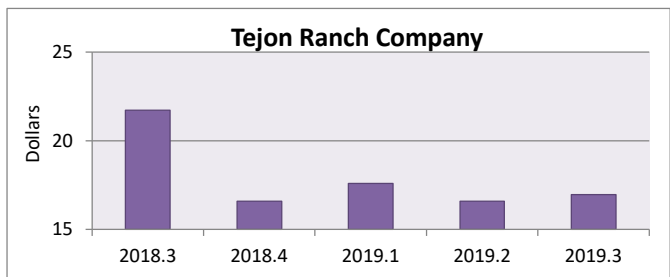
**Wells Fargo Company:**

WFC gained \$3.12 (or 6.6 percent) per share as its stock price increased from \$47.32 to \$50.44 between the second quarter of 2019 and the third quarter of 2019. Relative to one year ago, WFC is down \$2.12 (or 4.0 percent).



**Tejon Ranch Company:** TRC gained \$0.38 (or 2.3 percent) per share as its stock price increased from \$16.59 to \$16.97 between the second quarter and third quarter of 2019. Compared to last year, the TRC stock price is down \$4.74 (or 21.8 percent).

**Sierra Bancorp:** BSRR lost \$0.56 (or 2.1 percent) per share as its price decreased from \$27.12 to \$26.56. Similar to the other companies, BSRR lost \$1.73 (or 6.1 percent) since the third quarter of 2018.

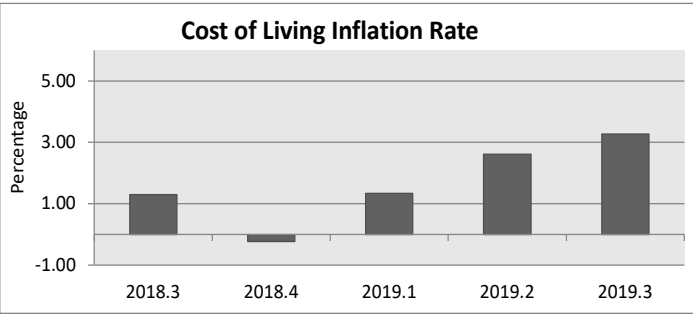


**Granite Construction:** GVA lost \$16.05 (or 33.3 percent) per share as its stock price decreased from \$48.18 to \$32.13 between the second quarter of 2019 and the third quarter of 2019. Conversely, GVA lost \$13.57 (or 29.7 percent) over the last four quarters.

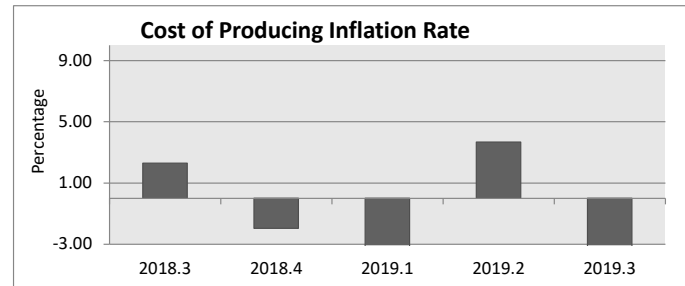
**Inflation**

**Cost of Living** – In the third quarter of 2019, the Consumer Price Index for all urban areas (1982-84 = 100) increased considerably. Inflation for the cost of living increased by 3.27 percent. These are numbers similar to those of the second quarter of 2018. Given

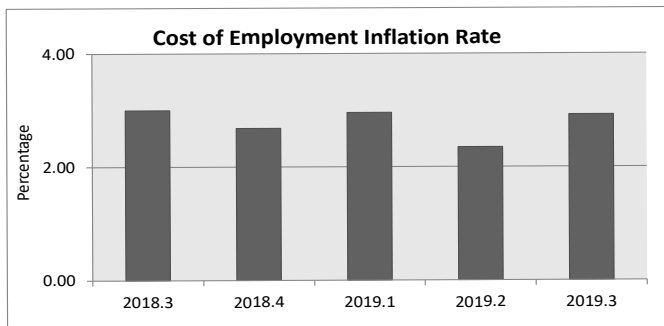
the decrease in the mortgage interest rate, this suggests quite heavily stimulus by the Federal Reserve that creates some worrying signs for the stability of the recent economic growth.



**Cost of Production** – The Producer Price Index for all commodities (1982 = 100) fell between the second and third quarter of 2019. The cost of production decreased at an annual rate of 3.58 percent. The cost of production inflation rate was 3.68 percent last quarter and 2.30 percent four quarters ago.

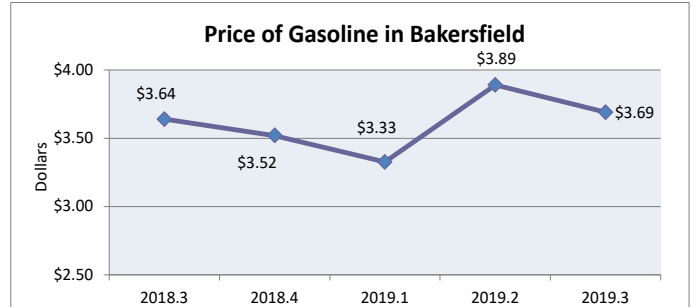


**Cost of Employment** - The Employment Cost Index (December 2005 = 100) for all civilian workers increased from 137 to 138. The cost of employment grew at an annual rate of 2.92 percent. The cost of employment inflation rate grew 2.35 percent last quarter and 3.00 percent four quarters ago.

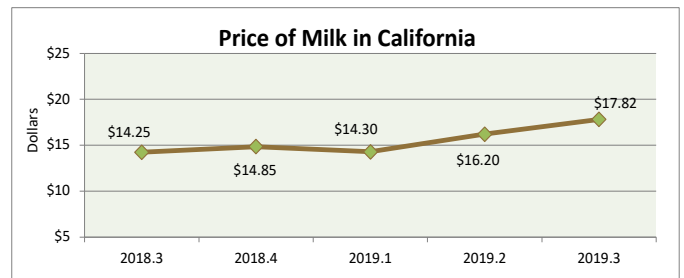


## Commodity Prices

**Price of Gasoline** – In the Bakersfield Metropolitan Statistical Area, the average retail price of gasoline decreased by \$0.20 to \$3.69. Gasoline prices in the region decreased due to moving away from summer blends. The average prices are 1.4% higher than they were four quarters ago, in part due to higher gasoline taxes voted into law.

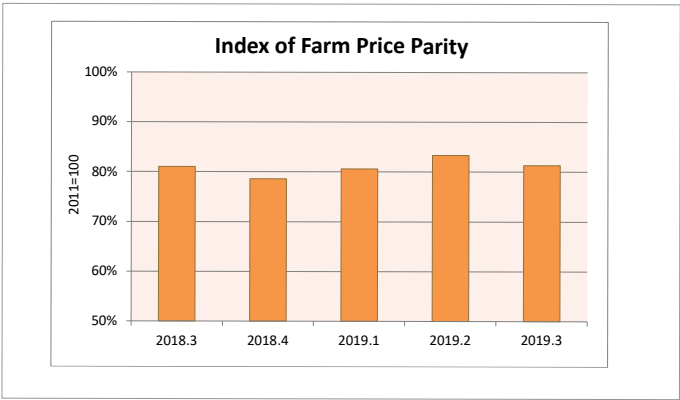
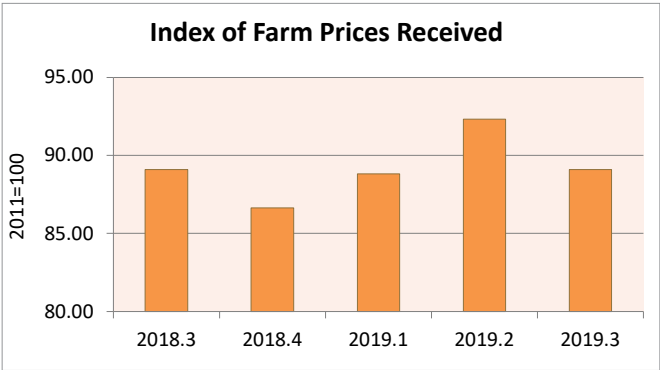


**Price of Milk** – The unit price of California’s Class III milk rose from the second quarter of 2019, from \$16.30 to \$17.82. This suggests that the depressed milk prices that were seen post-2014 may be returning to the highs found in the early part of the 2010 decade. The price is 25.1 percent or \$3.57 higher than it was four quarters ago (\$14.25).



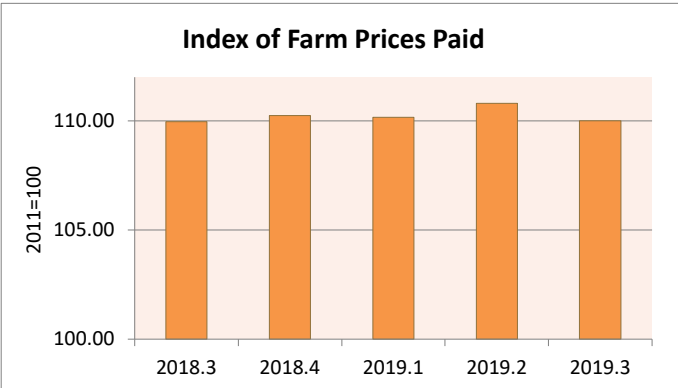
**Farm Prices** – – In the third quarter of 2019, the National Index of Prices Received by Farmers for all farm products (2011 = 100) fell by 3.2 points, to 89.10 compared to 92.33 recorded in the second quarter of 2019. This identical to the values from the third quarter of 2018.





Meanwhile, the National Index of Prices Paid by farmers for commodities, services, interest, taxes, wages, and rents decreased by 0.8 percent (compared to last quarter), falling to 110.0, meaning that farmers are slightly better off this quarter compared to last, in terms of fiscal outlays. The index was 109.97 four quarters ago.

<sup>1</sup> Source - Online databases: <http://www.labormarketinfo.edd.ca.gov>; [www.usda.com](http://www.usda.com); [www.bakersfieldgasprices.com](http://www.bakersfieldgasprices.com); [www.bea.gov](http://www.bea.gov); [www.car.org](http://www.car.org); [www.trulia.com](http://www.trulia.com); [www.census.gov](http://www.census.gov); [www.freddiemac.com](http://www.freddiemac.com); <https://www.cafmmo.com>; [www.bls.gov](http://www.bls.gov)



We measure the Index of Farm Price Parity as the ratio Index of Prices Received to the Index of Prices Paid. In the third quarter of 2019, the gap between prices paid and prices received fell slightly, as the Index of Farm Price Parity declined to 81 percent. These parity levels are similar to those witnessed in the third quarter of 2018. Four quarters ago, the price ratio was 81 percent.

# An Overview of the Asset Pricing Models

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What are the risk factors that impact asset returns, a question that was asked for more than sixty years ago? Many efforts were exerted to find answers for this question. Early research in asset pricing has been dominated by a single factor Capital Asset Pricing Model (CAPM). Sharp (1964), Lintner (1965), Black, Jensen, and Scholes (1972), and Fama and McBeth (1973), who utilize CAPM consider market index to be the only relevant factor that can be used to measure an asset's systematic risk. However, many empirical studies based on CAPM fail to provide evidence for the relationship between the stock return and market beta.

Fama and Fench (1992), the founders of the three-factor model try to identify factors other than the market that financial theory and the economic

intuition suggest may affect stock returns. They found evidence of significant effects on asset returns due to a set of microeconomic, company specific factors such as size and book to market ratio in addition to the market portfolio. These results support the argument that market portfolio is no longer acceptable as the only factor that can be used to measure an asset's systematic risk.

The Arbitrage Pricing Theory (APT) was first introduced by Roll (1977) and Roll and Ross (1980) to offer an alternative solution to CAPM. APT hypothesizes that asset returns are sensitive to several types of risk factors. A major drawback of APT is that it cannot identify the relevant factor structure that explains the variations in stock returns. Macroeconomic factors are likely to be risk factors

because it is believed that macroeconomic factors can influence a firm's cash flow and available investment opportunity structure. Chen, Roll, and Ross (1986) are considered the first to explore a set of macroeconomic factors as proxies for undefined state variables in APT and also to study their influence on stock returns. Many studies in this area of research suggest different sets of macroeconomic factors that are thought to affect asset returns. Different findings are obtained in each study, which provides a motivation for more empirical studies in different stock markets with different time span in order to better understand this relationship.

Most of the work on this topic has been carried out to investigate the effect of different sets of local and global risk factors on the returns of either individual or portfolios of stocks regardless of industry type. For instance, Fama (1980), Pearce and Roley (1985), Chen, Roll, and Ross (1986), Hardouvelis (1987), Hamao (1988), Wasserfallen (1989), Poon, and Taylor (1991), Ferson and Harvey (1994), Flannery and Protopapadakis (2002), and Altay (2003) employ different analytical methods such as the factor analysis technique or utilize regression processes in order to test the significance of different sets of local and global factors and their betas on portfolio stock returns.

Researchers have recently increased their focus toward an industry-oriented approach. Living in a new era of globalization and internationalization, companies are able to operate across national borders and to engage in alliances in different industries. Investors as well as researchers are required now more than before to investigate risk factors that influence returns of companies in different industries in international markets.

As a result, cross- country investors and practitioners can be benefited by improving their understanding of how local and global risk factors influence investment returns of different industries across countries. Such an understanding should enable investors and practitioners to make more informed decisions with regard to allocating, timing, and diversifying their international investment portfolios.





# Economic and Fiscal Impact Analysis of Hospital Spending Kern County, California

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The Hospital Council of Northern and Central California has commissioned an economic and fiscal impact analysis of twelve major hospitals operating in Kern County,

- Adventist Health, Bakersfield
- Adventist Health, Tehachapi
- Bakersfield Behavioral Healthcare Hospital
- Bakersfield Heart Hospital
- Bakersfield Memorial Hospital
- Delano Regional Medical Center
- Encompass Health Rehabilitation Hospital of Bakersfield
- Good Samaritan Hospital
- Kern Medical Center
- Kern Valley Healthcare District
- Mercy Hospitals of Bakersfield
- Ridgecrest Regional Hospital

To begin, we collected the most recent financial data from the State of California Office of Statewide Health Planning and Development depository. Then, we inputted financial data into the IMPLAN Pro software uploaded with Kern County Input-Output Multipliers to calculate economic and fiscal impacts of hospital spending. In addition, we estimated the amount of tax revenues generated by hospital spending and the impact of hospital spending on supporting industries.

Altogether, these hospitals spent \$7.0 billion in 2017, which consisted of \$5.1 billion in deductions from revenue, \$1.9 billion in operating expenses, \$19.0 million in non-operating expenses, and \$72.5 million in construction outlays. Major deductions from revenue included \$1.9 billion in Medicare, \$1.9 billion in Medi-Cal, \$78.7 million in provision for bad-debts and charity, and \$1.2 billion in all other deductions. Costly operating expenses were \$612.3 million in salaries and wages, \$283.9 million in employee benefits, \$547.1 million in supplies and services, \$160.0 million in professional fees, and \$249.9 million in all other expenses.

The study results show that these hospitals make sizable contributions to the economy of Kern County. Total hospital spending of \$7.0 billion accounts for 18.4 percent of Kern County's \$38.1 billion economy. This ample spending grows to an output impact of \$10.9 billion and fiscal impact of \$1.4 billion.

**Output Impact** - The output impact measures increased business sales revenue in a region as a result of increased spending. Hospital spending of \$7.0 billion creates a total output effect of \$10.9 billion. The additional \$3.9 billion consist of \$1.6 billion of indirect effect and \$2.3 billion of induced effect.

**Employment Impact** – The employment impact measures the number of jobs created in a region by additional spending. Hospital spending \$7.0 billion supports 40,536 full- and part-time jobs. In addition, it creates 28,940 new jobs of which 13,012 are indirect and 15,928 are induced. Altogether, the total employment effect of hospital spending is 69,476.





Economic Impact Analysis - All Hospitals				
Impact Type	Employment	Labor-Income	Value-Added	Output
Direct Effect	40,536	\$3,415,962,665	\$3,924,321,481	\$7,013,272,061
Indirect Effect	13,012	\$634,334,393	\$931,764,516	\$1,609,932,435
Induced Effect	15,928	\$707,390,925	\$1,346,965,949	\$2,260,935,179
<b>Total Effect</b>	<b>69,476</b>	<b>\$4,757,687,986</b>	<b>\$6,203,051,949</b>	<b>\$10,920,139,676</b>

**Labor-Income Impact** – The labor-income impact measures increased wages and salaries in a region as a result of increased spending. Hospital spending of \$7.0 billion creates additional \$4.8 billion in wages and salaries for the local workforce. The total effect of labor-income is comprised of \$3.4 billion of direct effect, \$634.3 million of indirect effect, and \$707.4 million of induced effect. Dividing total labor-income effect by total employment effect results in an average annual pay of \$68,500.

**Value-Added Impact** – The value-added impact measures an increase in the county's Gross Regional Product as a result of increased spending. It is calculated as the sum of employee wages and salaries and business profits. Hospital spending of \$7.0 billion creates \$6.2 billion of value-added impact. Of total value-added effect, \$3.9 billion are direct effect, \$931.7 million are indirect effect, and \$1.3 billion are induced effect.

**Fiscal Impact** - Hospital spending of \$7.0 billion generates \$1.4 billion in tax revenues. The share of state and local governments is \$471.4 million, and the share of the federal government is \$973.1 million. The largest revenue items of the federal government are employee compensation (social security taxes) and households (personal income taxes). Meanwhile, the largest revenue items of local and state governments are production and imports (sales taxes, property taxes, and motor vehicle license taxes) and households (personal income taxes, property taxes, motor vehicles license taxes plus fines and fees).

Fiscal Impact Analysis						
Description	Employee Compensation	Sole Proprietorship	Production and Imports	Households	Corporations	Total
Federal Taxes	\$487,168,702	\$12,485,122	\$30,493,822	\$391,263,060	\$51,670,152	\$973,080,858
State & Local Taxes	\$24,004,089	-	\$268,763,291	\$164,923,143	\$13,757,453	\$471,447,976
<b>Total</b>	<b>\$511,172,791</b>	<b>\$12,485,122</b>	<b>\$299,257,113</b>	<b>\$556,186,203</b>	<b>\$65,427,605</b>	<b>\$1,444,528,834</b>

**Industry Impact** - Top 10 industries benefiting from hospital spending account for 10,991 employment impact, \$1.1 billion of output impact, \$399.4 million of labor-income impact, and \$689.5 million of value-added impact. The major beneficiaries of hospital spending are employment services, real estate, and restaurants. Two medical sectors (offices of physicians and other ambulatory healthcare services) benefit from a combined employment impact of 1,522, output impact of 166.0 million, labor-income impact of \$91.6 million, and value-add impact of \$97.2 million.

Industry Impact Analysis – Beneficiaries				
Industry	Employment	Labor-Income	Value-Added	Output
Top 10	10,991	\$399,352,796	\$689,501,902	\$1,053,149,848
Top 2 Medical	1,522	\$91,648,750	\$97,156,420	\$166,048,376

Adventist Health Bakersfield, Bakersfield Memorial Hospital, Mercy Hospitals of Bakersfield, and Kern Medical Center account for about 82 percent of hospitals spending and economic and fiscal impacts. Meanwhile, Bakersfield Heart Hospital, Ridgecrest Regional Hospital, and Delano Regional Medical Center contribute 13 percent to spending impacts. Altogether, Adventist Health, Tehachapi, Kern Valley Healthcare District, Good Samaritan Hospital, Encompass Health Rehabilitation Hospital of Bakersfield, and Bakersfield Behavioral Healthcare Hospital account for the remaining 5 percent.





# CSU Bakersfield

School of Business and Public Administration

KERN ECONOMIC JOURNAL is a quarterly publication of California State University, Bakersfield. Its purpose is to track local trends and analyze regional, national, and global issues that affect the well-being of Kern County. The journal provides useful information and data that can help the community make informed economic decisions. Please visit <http://www.csub.edu/kej> for more information.