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CSU Bakersfield

Kern Economic Journal

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

2017 Second Quarter

Featured Articles:

Commercial and Retail Development in Bakersfield

Analyzing Oil Prices, Employment and Wages in U.S.'s Top Oil Producing Regions

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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!

2017 Second Quarter
by Dr. Richard S. Gearhart III and
Dr. Nyakundi M. Michieka

National Economy [1]

The world's largest economy of nearly $17 trillion, the United States, grew by a substantial 3.0 percent in the second quarter of 2017, nearly triple the growth of 1.2 percent in the first quarter of 2017. The increase in real GDP reflected increases in consumer spending on goods and services, as well as increases in business investments, exports, and federal government spending. Unfortunately, there were declines in housing investments, hinting that we may be at the peak of the newest housing market, as well as declines in state and local government spending.

Real disposable personal income, which is adjusted for inflation and taxes, increased by a very small 0.2-percent in the second quarter of 2017. All of the increase was in May, with no increase in April or in June. Real consumer spending increased by 0.7-percent in the second quarter of 2017, highlighting that spending outpaced income growth, meaning that savings will be drawn down or that credit instruments are being used. This is confirmed by continued decreases in the personal savings rate, which decreased from 5.9-percent in March of 2017 to 3.6-percent in June of 2017.

The Conference Board's Index of Leading Economic Indicators – a measure of future economic activity – increased each month of the second quarter of 2017, rising to 127.8 in June (rising by 0.2 percent in both April and May, and 0.6 percent in June). Contrary to the GDP numbers for the second quarter of 2017, this growth in the LEI index was due to contributions from housing permits, highlighting the differences between current building numbers (which depressed GDP numbers) and future anticipatory actions (which may highlight continued economic growth).

On the other hand, the University of Michigan's Consumer Sentiment Index decreased from 96.9 in March of 2017 to 95.1 in June of 2017, with all of the fall in consumer sentiment occurring in June of 2017. The quarterly value for the second quarter of 2017 was 96.4, compared to 97.2 in the first quarter of 2017. These hint that although businesses may be anticipating increased growth from lowered regulations and more favorable tax regimes, consumers may be wary about the direction that Washington is taking, as well as the uncertainty being created by the partisan process.

State Economy [2]

In California, the unemployment rate fell slightly in the second quarter of 2017 to 4.7 percent, down from 5.0 percent in the first quarter of 2017. Among counties, San Francisco (3.2 percent), Santa Clara (3.5 percent), San Luis Obispo (3.7 percent), Orange (3.8 percent), San Diego (4.3 percent), and Los Angeles (4.6 percent) had unemployment rates below the state average. In contrast, Sacramento (5.0 percent), Riverside (5.7 percent), San Joaquin (7.3), Fresno (8.3 percent), Kings (9.1 percent), and Kern (9.5 percent) had unemployment rates above the state average.

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.

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/MapToolServlet?survey=la&map=county&seasonal=u.

The state's civilian labor force lost 4,900 members, where 52,400 more employees had paying jobs (employed) and 57,267 fewer were left jobless (unemployed). While nonfarm industries hired 21,400 more workers, farming enterprises employed 933 more workers, meaning that farmworkers in Kern County gained, while other counties saw a significant decrease in farming employment. This is coupled with the recent reports that crop values in Kern County may soon be highest in the state. A wide range of industries added jobs, including construction, healthcare, leisure and hospitality, and state and local governments. However, jobs were lost in manufacturing, information, financial activities, and educational services.

Local Economy

The local economy saw a small decrease in its labor force, falling from 384,467 in the first quarter of 2017 to 382,800 in the second quarter of 2017. This is a continued decrease in the labor force mirrored by the transition from the fourth quarter of 2016 to the first quarter of 2017, hinting that these adjustments may not be seasonal, and that individuals who are long-term unemployed may be leaving Kern County to find opportunities elsewhere. The decrease in the civilian labor force was coupled with a 6,233 person increase in the number of employed and a 7,867 person decrease in the number of unemployed, hinting that the labor force decline is exactly out-migration. Luckily, few non-farm industries lost jobs, as food manufacturing, department stores, and general merchandise stores were the few sectors to see employment decreases. Jobs were gained in construction, retail trade, and food service and drinking places. Even with the perceived increase in disposable incomes that should be found by food and drinking establishments hiring more workers (in anticipation of an increase in demand), personal incomes again fell, decreasing by 8.6-percent in the second quarter of 2017, largely from profit incomes falling by nearly half a billion dollars. Labor income fell by a small $50 million, a decrease (on average) of less than $100 for each resident in Kern County.

The rate of unemployment ranged from 0 percent in Inyokern to 18.97 percent in California City. No city in Kern County experienced an increase in the unemployment rate. In Bakersfield, 8.2 percent of persons in the labor force are unemployed. In fact, there were sizable decreases in the unemployment rate in many rural communities in Kern County, hinting that labor conditions may be artificially improving as individuals leave the area for alternative opportunities, reducing the supply of workers and creating less competition for available jobs for those who stay.

The median housing price in Kern County increased to $223,000, a substantial increase from its fall in the first quarter of 2017. This price increase was coupled with a mild sales decrease, as 65 fewer houses were sold in Kern County this quarter compared to last quarter. Coupled with the fact that new building permits increased by 81 units this quarter, this highlights that though current conditions may not be conducive to growing the housing market, homebuilders are anticipating relatively large increases in the demand for housing in Kern County, indicating that we may see personal income growth coupled with unemployment decreases. The likely expectation is that wages may begin to rise for the middle class again.

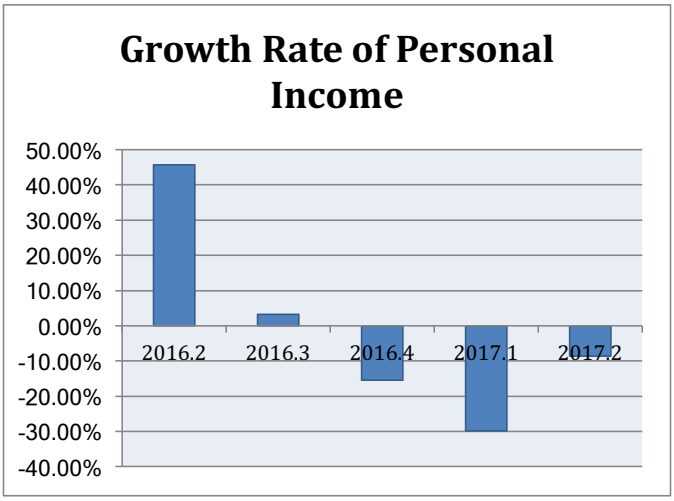
The weighted price index for the five publicly traded companies doing business in Kern County (Sierra Bancorp, Tejon Ranch Company, Chevron Corporation U.S., Granite Construction, and Wells Fargo Company) decreased for the second consecutive quarter, falling 5.9 percentage points in the second quarter of 2017. All 5 of the major market movers lost stock value from the previous quarter, with Wells Fargo seeing the smallest decrease (0.4 percent) and Sierra Bancorp seeing the largest decrease (10.1 percent). These are likely the market corrections from the "highs" seen after a Presidential election, and not related to any structural mechanisms for the companies themselves.

With the continued stagnation in oil prices, gas prices increased slightly, up $0.09 per gallon since the last quarter, averaging $2.99 a gallon. The unit price of California's Class III milk decreased slightly, from $14.99 in the first quarter of 2017 to $14.86 in the second quarter of 2017. Farmers in Kern County continued to benefit, as the index of prices received for the products that they sell rose by 6.87 percentage points, while prices paid for their inputs rose by over 0.7 percentage points, meaning that net revenues for farmers increased by over 6-percentage points.

Tracking Kern's Economy[1]

by Dr. Richard S. Gearhart III and
Dr. Nyakundi M. Michieka

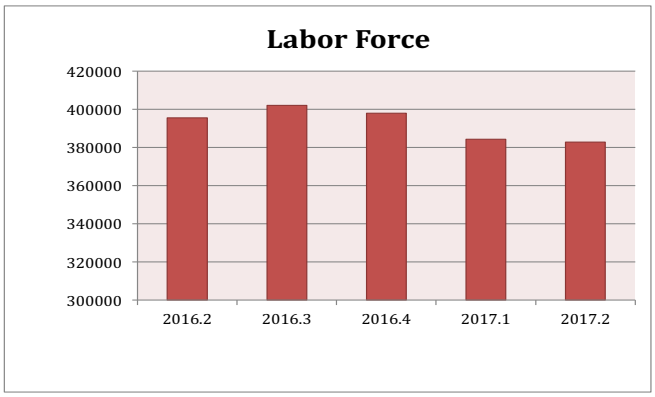
Growth of Personal Income – As we enter the start of summer, even oil prices stabilizing have not been able to prevent a third consecutive quarter decline in personal income, likely due to the anticipation of a very hot summer that may limit agricultural production. Since the first quarter of 2017, personal incomes have fallen by over half a billion dollars. Even though property incomes have increased by $12 million since the first quarter of 2017 (largely due to the increase in median home prices), labor incomes fell by over $50 million, and profit incomes fell by over half a billion, indicating that businesses are perhaps starting to see some struggles with an uncertain tax and healthcare situation. On an annual basis, in the second quarter of 2017, personal incomes fell by 8.6-percent, compared to the first quarter of 2017.



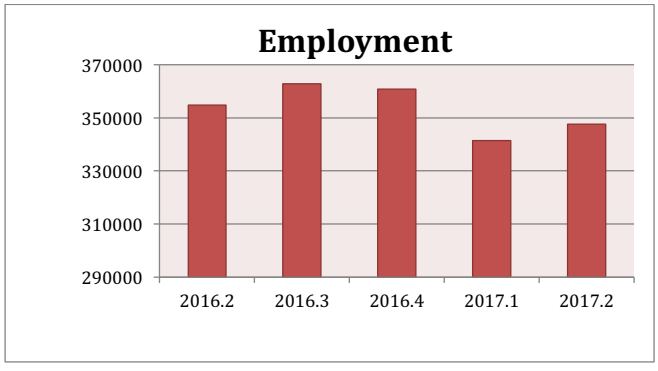
Labor Market

We adjust published data in three ways. Firstly, we averaged monthly data to calculate quarterly data. Secondly, we recalculated 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 adjusted quarterly data for the effects of seasonal variations.

Labor Force - The civilian labor force decreased by 1,667 members from 384,467 in the first quarter of 2016 to 382,800 in the second quarter of 2017. This is a sizable fall in the labor force, to a level not seen since 2014. There are also 12,833 fewer individuals in the labor market this quarter, compared to the second quarter of 2016. Even though some of this decrease may seasonal, this is an adjustment not seen for several years. This likely hints that some of the long-term unemployed have started to leave the area for other opportunities.

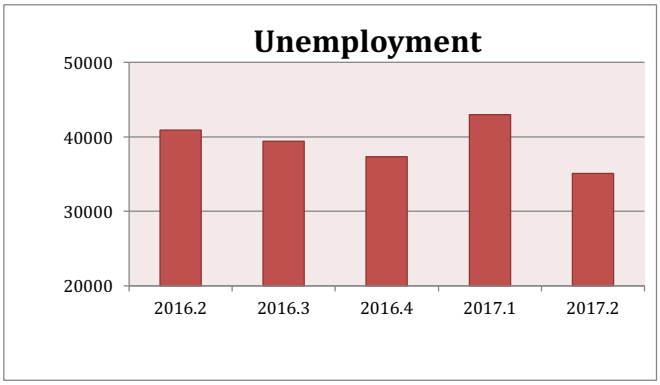


Employment –In the second quarter of 2017, Kern County hired 6,233 more workers as total employment increased from 341,433 in the first quarter of 2017 to 347,667 in the second quarter of 2017. This, coupled with the fall in the civilian labor force, hints at a dual labor market: for those who are willing to find other opportunities after becoming unemployed, certain sectors are hiring the so-called "discouraged" workers. However, this likely means that individuals are having to move to alternative industries, meaning that those who do not want to do this have to move to other geographic areas.

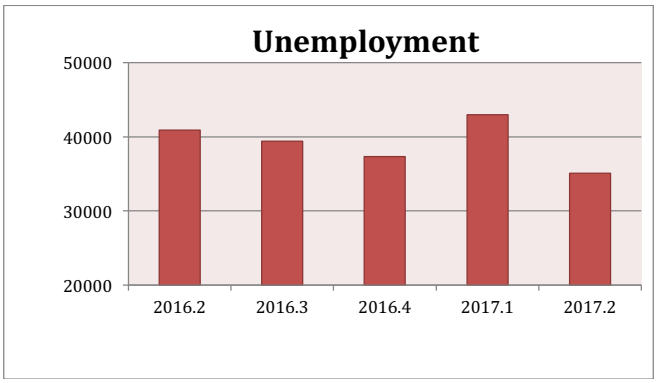


[1] Source - Online databases: labormarketinfo.edd.ca.gov, bakersfieldgasprices.com, dqnews.com, economagic.com, bea.gov, bls.com, gpoaccess.gov, dairy.nu, msn.com, census.gov, kerndata.com, and bry.com

Unemployment – In the meantime, 7,867 fewer workers were unemployed, as the number of jobless workers decreased from 42,967 to 35,100. Coupled with the decrease in the civilian labor force, this highlights that many of the unemployed are actually leaving the labor market, either turning into discouraged workers or finding employment in another geographical location. Compared to four quarters ago, there are 5,800 fewer unemployed workers in Kern County.



Unemployment Rate – Encouragingly, Kern County's unemployment rate fell to its lowest level since 2008. Part of this is artificial, as unemployment will decrease if individuals leave the labor force. Part of this, however, is also due to the increase in employment this quarter compared to last. In particular, the unemployment rate in Kern County fall by 2 percentage points compared to the first quarter of 2017.



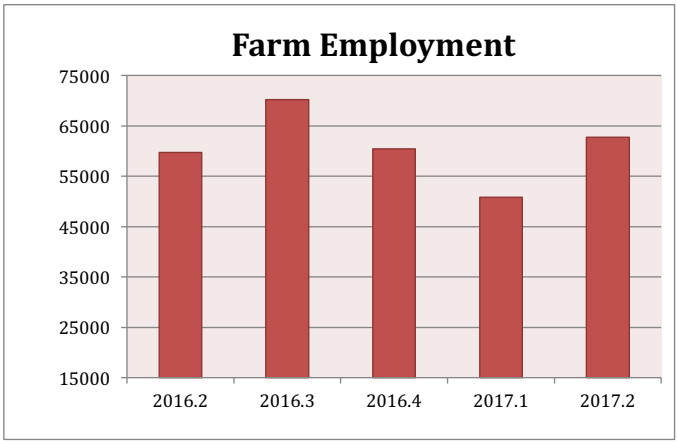
The rate of unemployment varied considerably across cities. Among cities shown below, the unemployment rate varied between 0 percent in Inyokern to 18.97 percent in California City. Except for Inyokern (where there was no change in unemployment), all cities in Kern County showed a decrease in the unemployment rate, with the biggest decreases occurring in Mojave and California City, highlighting potential impacts that marijuana cultivation may have in East Kern. In Bakersfield, the rate of unemployment was 8.2 percent, a decrease of 1.8-percentage points from the first quarter of 2017.

Unemployment Rate of Cities

Location	Unemployment Rate (%)	Location	Unemployment Rate (%)
Inyokern	0	Edwards	9.43
Taft	5.97	Rosamond	10.13
Ridgecrest	6.17	Oildale	10.5
Tehachapi	6.93	Arvin	10.7
Lamont	7.63	Delano	11.0
Frazier Park	7.8	Wasco	12.17
Shafter	7.8	McFarland	14.3
Bakersfield	8.2	Mojave	15.27
Lake Isabella	8.3	California City	18.97

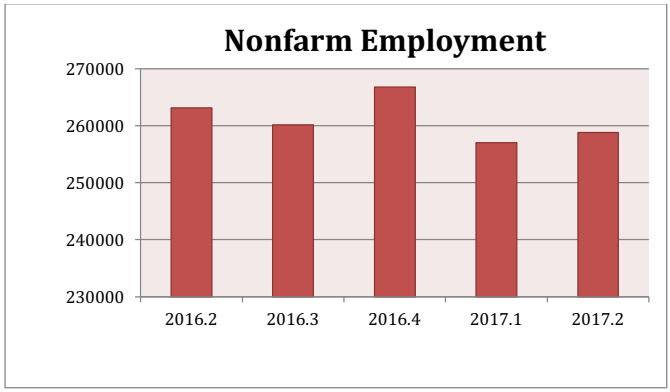
Note: City-level data are not adjusted for seasonality and "informal" market workers.

Farm Employment –In the second quarter of 2017, Kern County hired 11,933 more farm workers. As a result, farm employment increased from 50,833 to 62,767. Though this is the cyclical nature of farm employment, this accounts for about nearly all of the increase in employment in the second quarter of 2017. This may be heartening as to the expectations for water allowances and crop production in the Central Valley this year.



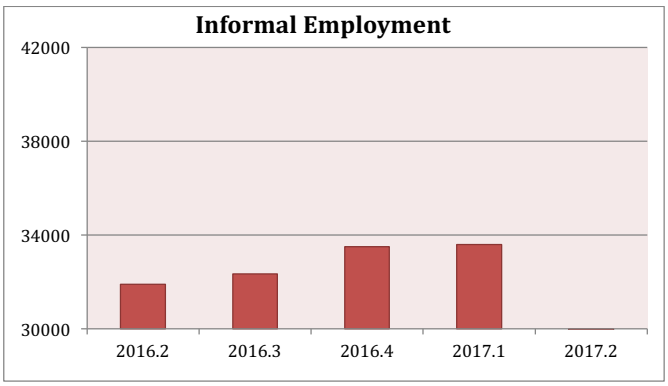
Nonfarm Employment –Local nonfarm industries employed only 1,767 more workers this quarter. Hence, the number of nonfarm workers increased from 257,000 to 258,767. Conversely, nonfarm industries hired 4,333 fewer workers than four

quarters ago. This may highlight a slowing down of Kern County's economy. It also highlights that much of the growth in employment was in the farm sector, highlighting the potential for weak future growth in Kern County, perhaps as we start to reach our natural rate of unemployment.

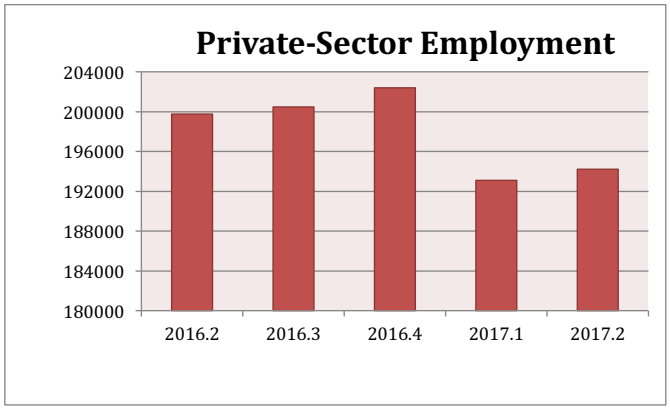


In Bakersfield, few nonfarm industries lost jobs, though the ones that gained employment were small in magnitude: the biggest losses were felt in food manufacturing (133 jobs), department stores (233 workers), and general merchandise stores (167 workers). Jobs were increased in mining, logging, and construction (233 workers), service providing jobs (1,433 workers), retail trade (367 workers), and food services and drinking places (633 workers). This hints that the national trend of reducing the size of department stores has begun in Kern County, but small business that provide leisure (and which highlight the ability of consumers to purchase them) are booming.

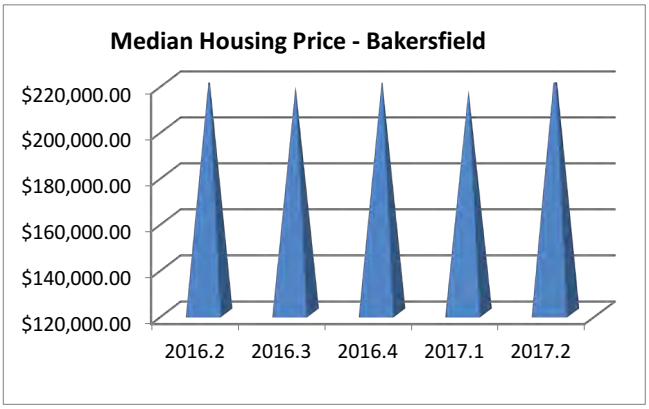
Informal Employment - Informal employment is the difference between total employment and industry employment. It accounts for self-employed workers and workers employed outside their county of residence. In the second quarter of 2017, the number of informal workers decreased by 7,467 from 33,600 to 26,133, the lowest level since 2000. Correspondingly, there are 5,767 fewer informal workers compared to the second quarter of 2016. This likely hints that individuals are becoming wary about immigration laws and the probability of them becoming detained, as well as uncertainty about regulations for reporting actual time worked.



Private-Sector Employment - Nonfarm employment is comprised of private-sector employment and public-sector employment. In the second quarter of 2017, private companies hired 1,100 more workers as their employment increased from 193,100 to 194,200. Conversely, the private sector employed 5,567 fewer workers this quarter than four quarters ago. This hints at a tremendous slowdown in growth in Kern County, likely indicating that that long-term job prospects may becoming bleak for new college graduates and the long-term unemployed. This is the lowest level of private-sector employment since 2014.

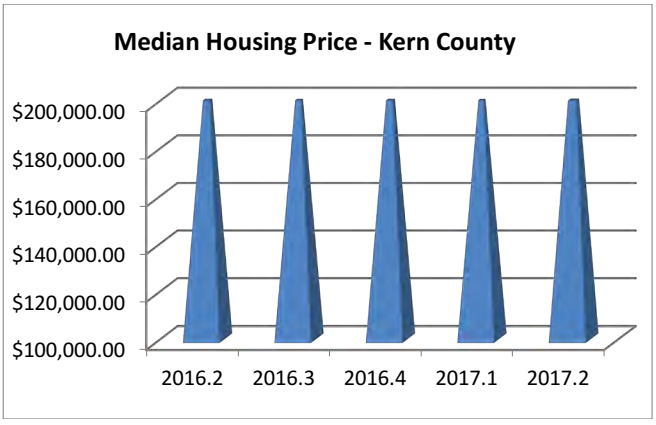


Public-Sector Employment – The public sector consists of federal, state, and local government agencies. The local government labor market includes county and city agencies and public education. In the second quarter of 2017, government agencies hired 667 more workers as their employment increased from 63,900 to 64,567. This is intriguing, as this is the highest level of public-sector employment ever found in Kern County. This may hint that California, as a state, is increasing public hires to counter what it may foresee as a decrease in the near future at the federal level.



Housing Market

Housing Price - In the second quarter of 2017, Kern County's housing prices increased tremendously, by over $15,000, hinting that even though the labor market is tightening, workers who have jobs are accumulating more labor income with which to drive up housing demand. The median sales price for all residential units increased from $207,600 in the first quarter of 2017 to $223,000 in the second quarter of 2017. Prices are $13,000 higher than they were four quarters ago. In fact, this is the highest that the median housing price has been in Kern County since 2008.



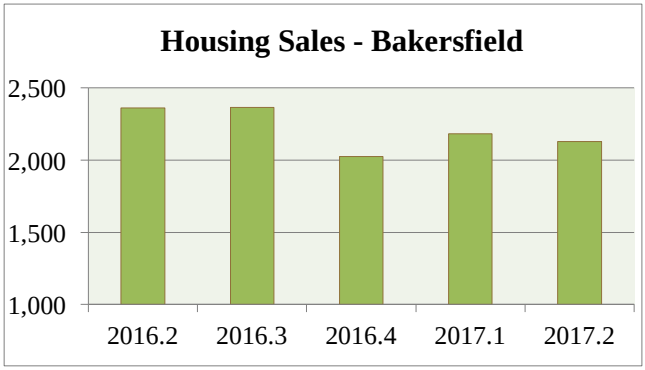
In Bakersfield, the median housing price increased in price by $11,333 (or 5.2 percent) from the first quarter of 2017, which again hints that even though the civilian labor force is falling, it is made up by increases in labor income for many workers and increases in the number of individuals employed.

The city's median sales price has appreciated $4,875 (or 2.2 percent) since the second quarter of 2016.

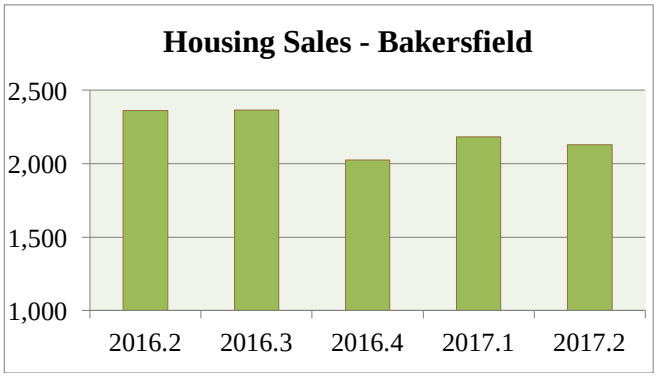
Housing prices varied across the county. Within the previous four quarters (2016 second quarter to 2017 second quarter), the median sales price increased in all the major cities of Kern County. In dollar value, Rosamond had the largest price increase of $61,875. This hints that Rosamond and other East Kern cities near California City may expect to see quite large price increases as individuals move to these areas to take advantage of marijuana cultivation.

Location	Median Price 2017.2	Median Price 2016.2	Price Change 2016.2 to 2017.2	% Price Change 2016.2 to 2017.2
Kern County	223,000	210,000	13,000	6.2%
Bakersfield	228,000	223,125	4,875	2.2%
California City	150,000	101,500	48,500	47.8%
Delano	197,500	165,000	32,500	19.7%
Ridgecrest	189,000	174,625	14,375	8.2%
Rosamond	261,500	199,625	61,875	31.0%
Taft	108,000	107,250	750	0.7%
Tehachapi	267,500	242,500	25,000	10.3%

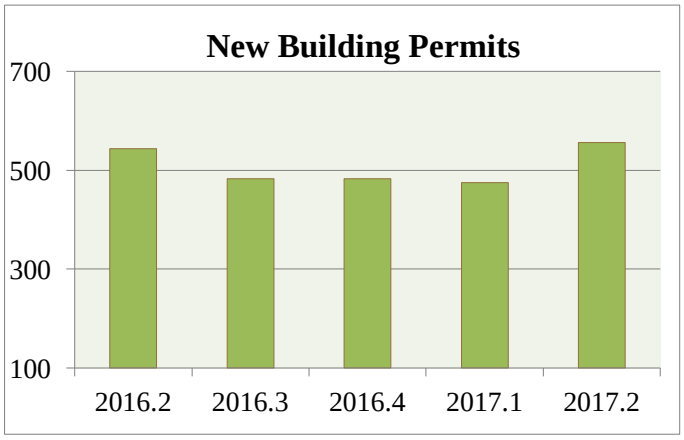
Housing Sales – In the second quarter of 2017, prices increasing from the prior quarter was accompanied by a mild decrease in sales, perhaps hinting that if houses are becoming more scarce, then individuals may choose to pay a higher price. In Kern County, 65 fewer homes were sold as total sales decreased from 3,254 to 3,189. Compared to four quarters ago, there are 234 fewer units being sold. This hints that long-term unemployed oil and gas extraction workers may be seeking alternatives elsewhere.



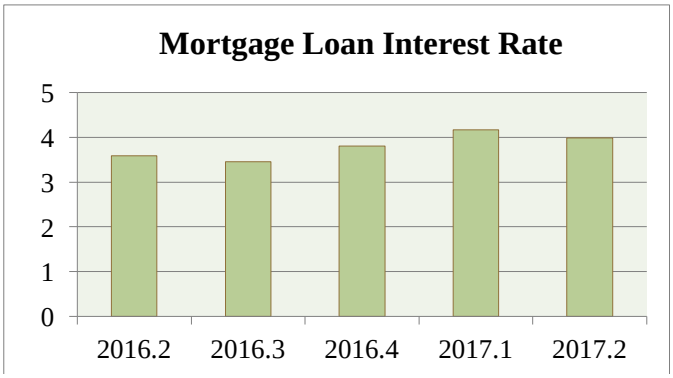
In Bakersfield, sales of residential units decreased by 52 units, from 2,182 in the first quarter of 2017 to 2,130 in the second quarter of 2017. This means that a majority of the decrease in housing sales in Kern County was located in Bakersfield. While this hints at quite sizable churn in the market as many long-time unemployed leave, this may hint that the housing market may be saturated with existing homes for sale.



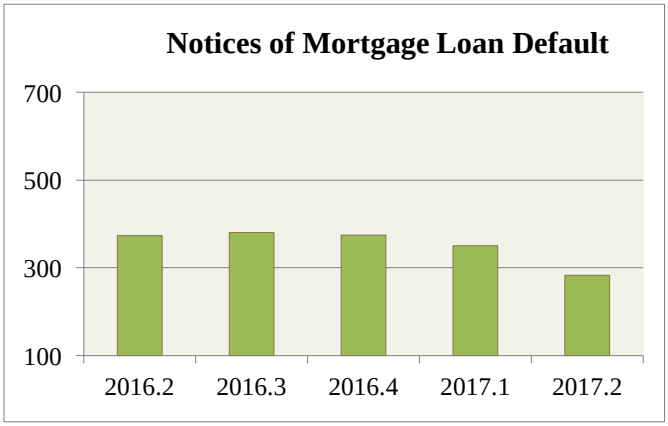
New Building Permits – In the second quarter of 2017, Kern County issued 81 more permits for construction of new privately-owned dwelling units compared to the first quarter of 2017, issuing 556 total permits (where there were 475 permits issued in the first quarter of 2017). The county issued 543 four quarters ago, showing that expectations for future housing growth is high, and that current housing on the market may not be sufficient.



Mortgage Interest Rate – In the second quarter of 2017, the interest rate on thirty-year conventional mortgage loans decreased from 4.17 percent to 3.99 percent, which means that the slowdown in home purchases in Kern County may be tied to expectations that the mortgage interest rate will rise in the near future.

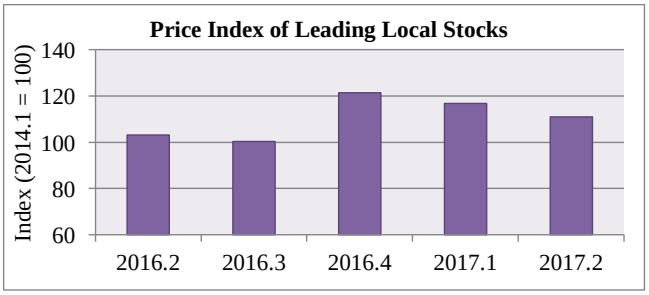


Housing Foreclosure Activity – Kern County has reached a new low in foreclosure activity, as the number of new foreclosures decreased significantly from the first quarter of 2016, to 283 new foreclosures in the second quarter of 2017. The number of default notices is 90 units lower than what it was four quarters ago. This hints that households have enough liquidity, and have paid down enough revolving debt, to insure against temporary income losses.

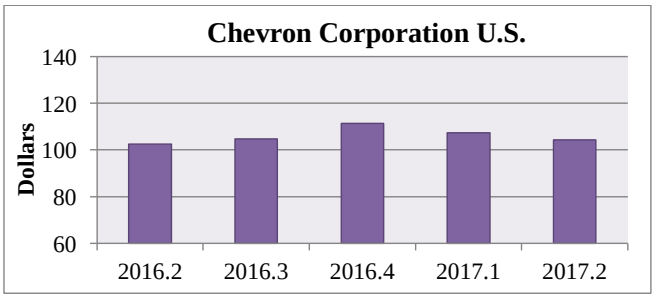


Stock Market

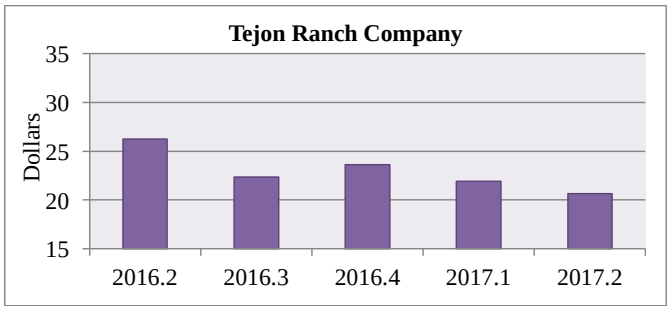
In the second quarter of 2017, the composite price index (2014.1=100) of the five publically traded companies doing business in Kern County has decreased for the second consecutive quarter, falling by 5.9 percentage points from the previous quarter, from 116.8 to 110.9. The index is still 7.8 percentage points higher than that of 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.



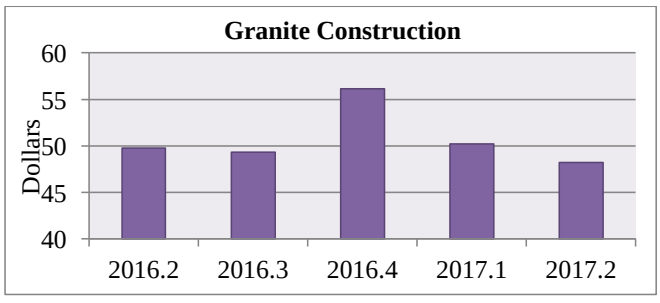
Chevron Corporation U.S.: CVX lost $3.04 (or 2.8 percent) per share as its price decreased from $107.37 to $104.33. Relative to the second quarter of 2016, CVX was up $1.86 (or 1.8 percent).



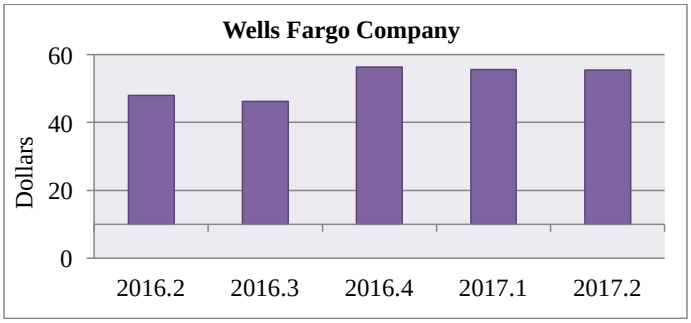
Tejon Ranch Company: TRC lost $1.25 (or 5.7 percent) per share as its stock price decreased from $21.89 to $20.64. Similarly, TRC was down $5.59 (or 21.3 percent) relative to the second quarter of 2016.



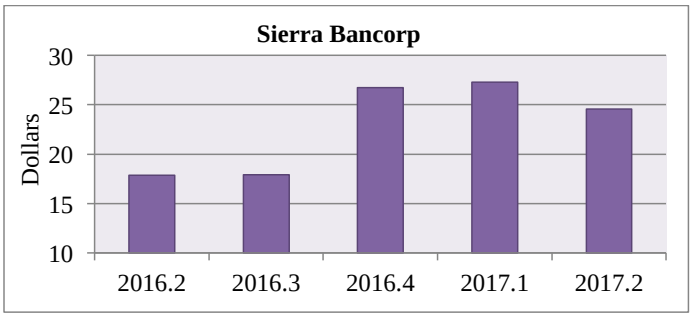
Granite Construction: GVA lost $1.95 (or 3.9 percent) per share as its stock price decreased from $50.19 to $48.24. Similarly, GVA has decreased $1.54 (or 3.1 percent) since the second quarter of 2016.



Wells Fargo Company: WFC lost $0.25 (or 0.4 percent) per share as its stock price decreased from $55.66 to $55.41. Relative to one year ago, WFC is up $7.45 (or 15.5 percent).

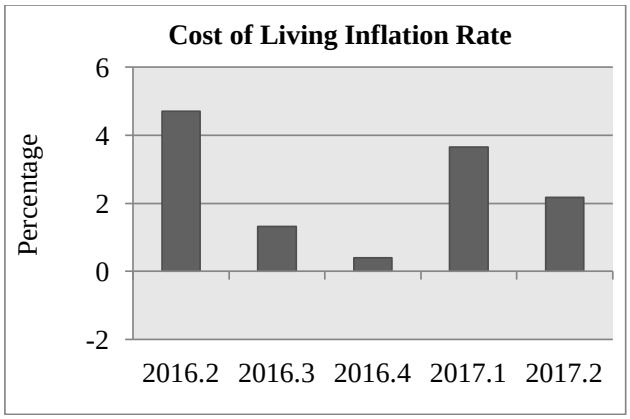


Sierra Bancorp: BSRR lost $2.76 (or 10.1 percent) per share as its price decreased from $27.31 to $24.55. Conversely, BSRR has gained $6.67 (or 37.3 percent) since the second quarter of 2016.

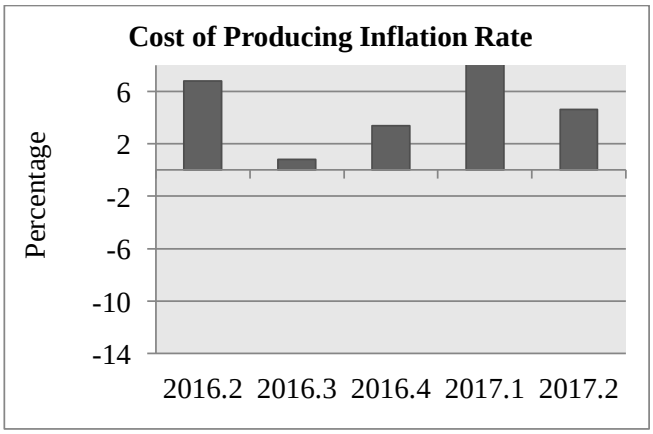


Inflation

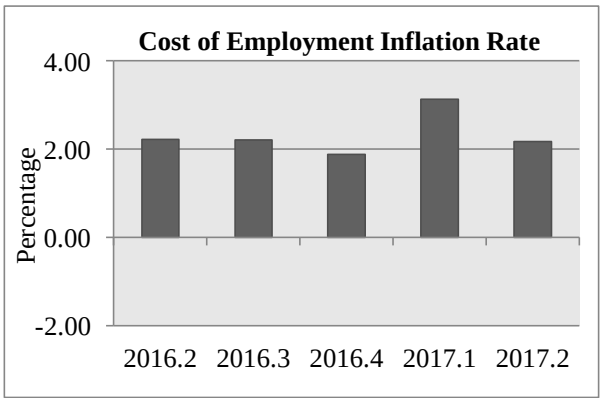
Cost of Living –In the first quarter of 2017, the Consumer Price Index for all urban areas (1982-84 = 100) increased slightly from 241.21 to 243.41. As a result, inflation for the cost of living increased at an annual rate of 3.65 percent. The cost of living inflation rate was 0.40 percent last quarter and 0.24 percent a year ago.



Cost of Production – The Producer Price Index for all commodities (1982 =100) increased from 191.00 to 193.2. As a result, the cost of production increased at an annual rate of 4.61 percent. The cost of production inflation rate was 8.19 percent last quarter and 6.80 percent four quarters ago.

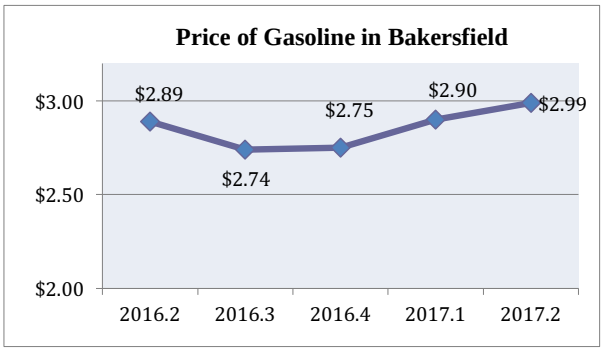


Cost of Employment - The Employment Cost Index (December 2005 = 100) for all civilian workers increased from 129.00 to 129.7. As a result, the cost of employment grew at an annual rate of 2.17 percent. The cost of employment inflation rate was 3.13 percent last quarter and 2.22 percent four quarters ago.



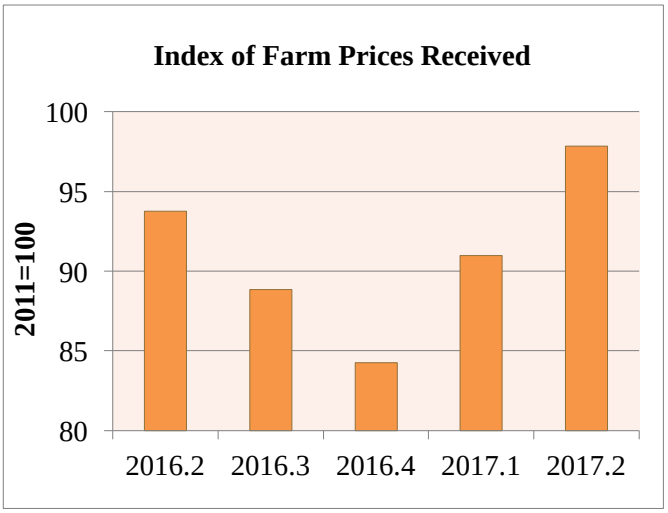
Commodity Prices

Price of Gasoline - In the Bakersfield metropolitan area, the average retail price of regular gasoline increased $0.09 per gallon from $2.90 to $2.99. Compared with the second quarter of last year, the average gasoline price is up $0.10.

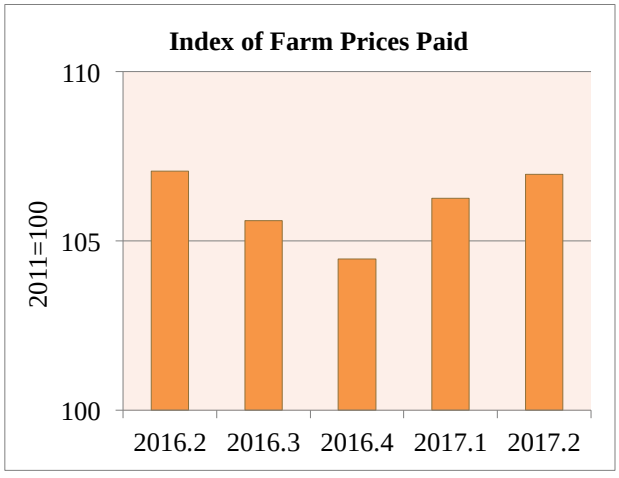


Price of Milk – The unit price of California's Class III milk fell slightly, falling $0.13 (or 0.9 percent) from $14.99 to $14.86. Noticeably, the price decreased only in June, falling from $15.06 in April and May to $14.46 in June. Even more noticeably, the price is still up since the second quarter of last year, increasing by $1.74 (or 13.3 percent).

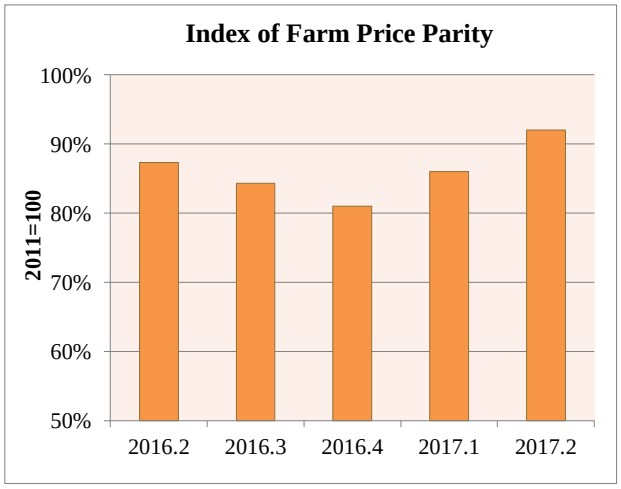
Farm Prices – In the second quarter of 2017, the national Index of Prices Received by Farmers for all farm products (2011 = 100) increased substantially, rising by 6.87 points from 90.97 to 97.83. The index was 93.8 four quarters ago.



Meanwhile, the national Index of Prices Paid by Farmers for commodities, services, interest, taxes, wages, and rents rose slightly by 0.7 points to reach 106.97, rising slower than the increase in revenues for farmers. The index was 107.1 four quarters ago.



We measure the Index of Farm Price Parity as the ratio Index of Prices Received to the Index of Prices Paid. In the second quarter of 2017, the gap between prices paid and prices received fell substantially, as the Index of Farm Price Parity increased to 92.0 percent. This hints that revenues for farmers have been growing faster than the increased costs, likely highlighting that some of the water costs may be lower than expected, and that farmers may have priced in wage increases in previous quarters. Four quarters ago, the price ratio was 87.3 percent, meaning that conditions for farmers are still slightly better than they have been in the past few quarters.



Commercial and Retail Development in Bakersfield

Dr. Richard Gearhart
Assistant Professor of Economics
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By every appearance, retail and commercial trade in Bakersfield is thriving. Drive past areas in the Southwest and Northwest of the city on your daily commute, and you see new retail shopping centers opening, new office spaces being advertised, and a variety of economic development occurring. But do these observations match the data and what is actually occurring?

Retail Employment:

One of the best ways to measure the growth in the retail sector is to look at employment. Employment measures current and future economic conditions. Growth in employment in the retail sector would hint that, even though labor incomes have fallen in Kern County by about $62 per resident, current economic activity has not been depressed. It is also the hope that the large growth in GDP for the U.S. in the second quarter of 2017 will be matched by growth in real personal incomes at the local level.

The data matches our observations. Between the first quarter of 2017 and the second quarter of 2017, there were 367 more retail trade employees hired. In the second quarter of 2017, 32,933 workers were employed in retail trade (33,300 in July of 2017, hinting that growth will continue). In fact, 8.6-percent of the civilian labor force is employed in retail trade, which is one of the highest values ever found in the city of Bakersfield since January of 2000. What speaks to the growth of the retail sector is the fraction of jobs available for retail trade. At the height of economic growth, in 2006, 9.1-percent of all jobs in Bakersfield were in retail trade. After the tremendous collapse in oil prices (and thus the subsequent declines in a significant portion of both business and labor revenues tied to the oil extraction market), 9.5-percent of all jobs in July of 2017 are now tied to retail trade. This indicates that even though oil and gas drives Kern County and Bakersfield, we are diversifying away from these fundamentals. It also hints that entrepreneurs and businesses anticipate that demand for their retail goods will remain high in the future.

This is important; we are facing a time when labor incomes, in the second quarter of 2017, have fallen for the second consecutive month, and shown general stagnation or decreases. If businesses are anticipating that, regardless of these trends, economic growth in the economy as a whole will outweigh the local impacts of low oil prices,

Retail and Commercial Rents

Since the beginning of 2014, the asking prices for office sales has been increasing in the City of Bakersfield. In 2014, the average office space sold for $120 per square foot; by the middle of 2016, the average asking price was $131.77, a year-on-year increase of 0.5-percent. Though this does not seem like a lot, with commercial and retail development occurring in the city at a rapid pace, this means that the increases in demand for this pace is far outstripping the increases in supply. During the same time, the asking rent for office property has been increasing. In the beginning of January 2014, it was slightly under $18 per square foot per year in rent. By the middle of 2016, it was $18.33 per square foot per year, a year-on-year increase of 3.6-percent.

These differential price increases in rent and purchasing habits hint at the expectations for the use of these spaces. They hint that individuals are more willing to purchase buildings than to rent them, implying that they anticipate being in business over a very long period of time. Purchasing office space comes with a tremendous long-run commitment, so that these indicators play a vital role in telling us what will happen.

Final Story

Overall, the observations made on a daily basis, as well as the data, tell us that retail and commercial spaces are thriving in Bakersfield. This is in contrast with national trends where large-scale shopping centers and big-box stores are reducing their footprints in response to online traffic and reduced shopping patterns by consumers. In an era where consumers are averse to using large scale credit devices after the most recent recession, and where personal savings rates have been higher than average recently, these trends present important implications for the future of retail and commercial in Kern County. Specifically, the employment and rent trends that we are seeing highlight the fact that even though we are seeing reductions in personal incomes, the growth in employment, reductions in the unemployment rate, and increases in personal spending trends locally are creating an environment that is amenable for future growth.

Analyzing Oil Prices, Employment and Wages in U.S.'s Top Oil Producing Regions

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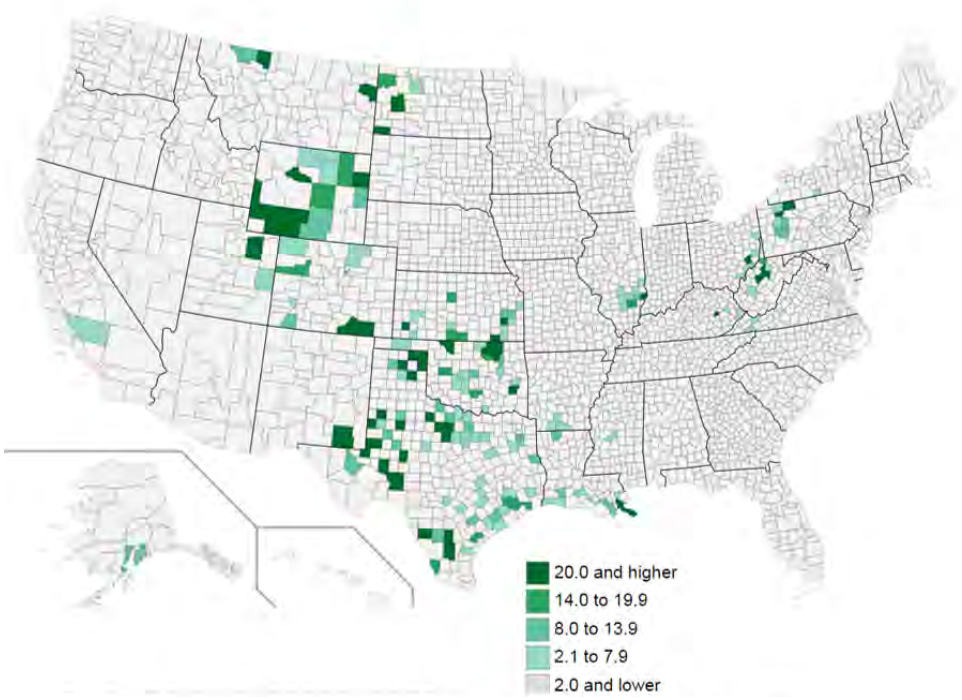
1. Introduction

Between 2014 and 2017, oil prices plunged from $93.17 to $48.63 a barrel (U.S. Energy Information Administration). There are many possible explanations for this drop, but one of the factors keeping prices down is the boom in shale oil which has dominated the U.S. market. So how do lower oil prices affect employment and wages in oil producing regions in the U.S? Some say that lower oil prices which reduce employment in the oil and gas sector reduce the cost of doing business in other sectors, causing a gain in employment in industries such as transportation, farming and service. Others argue that the oil industry supports upstream, midstream and downstream operations involved in oil production, meaning that a slowdown in oil production could see a reduction in exploration, production, storage, marketing, transportation, refining, and distribution which are aligned to oil (Marine Oil and Gas Academy 2017). A growing body of literature has sought to study the adverse effects of oil price changes on wages. In this article, I study trends, growth rates and the correlation between oil prices, employment and wages in the U.S's top oil producing regions between 2011 and 2015. I focus on these regions because they have largest concentration of workers in oil and gas shown in Figure 1. The regions include: Kern County in California; Weld County in Colorado; Eddy County in New Mexico; Williams County in North Dakota and Karnes County in Texas.

Figure 1: Counties with highest relative concentration of employment (location quotient) in the oil and gas extraction industry, June 2014 This analysis is conducted using regional oil prices which have a greater influence



Source: Bureau of Labor Statistics (2015)

on decisions made at local levels. In the first section, I examine trends total employment in natural resources and mining sector while the second assesses trends in wages over the five year period between 2011 and 2015. Then, the strength and direction of correlation between the variables will be examined in the fourth section.

2. Trends in Employment in Natural Resources and Mining

A comparison of trends in employment and wages in natural resources and mining in five top oil producing counties is presented in Table 1. Between 2011 and 2015, Kern County had the largest employees working the Natural Resources and Mining sector while Karnes had the least. During this period, one in every three employees in Williams County was employed in natural resources and mining, while in Eddy County it was one in every four. The number of employees in natural resource and mining in Karnes County increased from 246 in 2011 to 897 in 2015 indicating growth by 264.6%.

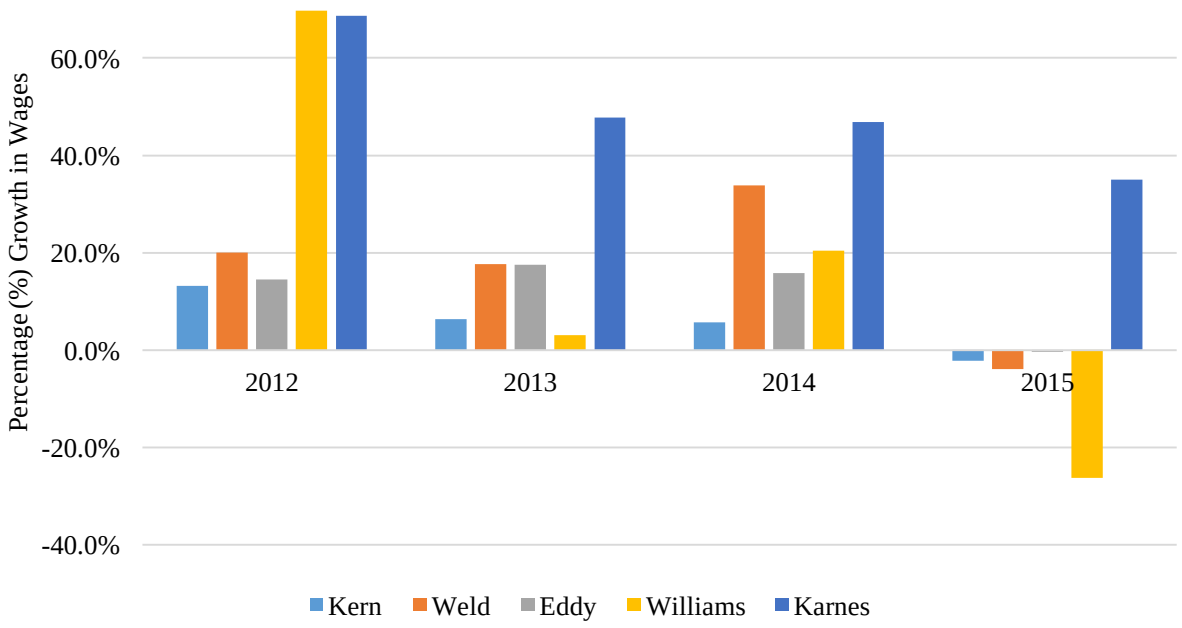
Table 1. Trends in Natural Resources and Mining employment and Wages in top oil producing counties in the U.S.

Total Employment in Natural Resources and Mining					
	Kern (CA)	**Weld (CO)**	**Eddy (NM)**	**Williams (ND)**	**Karnes (TX)**
2011	60,228	7,564	5,268	8,123	246
2012	66,735	8,524	5,964	12,741	388
2013	71,617	9,576	7,005	13,054	566
2014	72,377	12,101	7,675	14,876	740
2015	69,964	11,485	7,440	11,247	897
Percentage Employees in Natural Resources and Mining (% of Total Employment)					
2011	21.58%	9.21%	21.27%	34.17%	6.51%
2012	22.67%	9.98%	23.68%	37.17%	9.29%
2013	23.52%	10.59%	26.51%	34.87%	11.87%
2014	23.20%	12.28%	27.58%	35.78%	13.11%
2015	22.42%	11.32%	26.24%	31.17%	15.36%
Average (%)	22.68%	10.68%	25.06%	34.63%	11.23%
Growth in Wages in Natural Resource and Mining					
2012	13.2%	20.0%	14.5%	69.7%	68.7%
2013	6.3%	17.7%	17.5%	3.1%	47.8%
2014	5.7%	33.8%	15.8%	20.5%	46.9%
2015	-2.1%	-3.9%	-0.4%	-26.2%	35.0%
Average Growth (%)	5.8%	16.9%	11.9%	16.8%	49.6%

Source: Bureau of Labor Statistics (2017)

3. Trends in Wages in Natural Resources and Mining Employees

Figure 2 illustrates that between 2011 and 2014, average wages in natural resource and mining employment increased in all regions. The 2014 to 2015 period was different, where a decline in wages occurred in all regions except Karnes. In fact, average growth in Karnes' wages grew by 50% every year between 2011 and 2015. During this period, Kern County wages grew at a declining rate of 5.8%.



Source: US Bureau of Labor Statistics (2017)

4. Correlation Between Employment, Wages and Oil Prices

The correlation coefficient, r measures the strength and direction of the linear relationship between two variables. The range of r is from +1 to -1 and the closer the absolute value is to 1, the stronger the correlation. The signs +/- indicate the direction (positive/negative) of correlation. Results indicate that total employment and oil prices are positively correlated in Kern, Weld, Eddy and Williams Counties. This infers that total employment increases when oil prices rise in all counties except Karnes County where the effect is negligible. The strength of correlation between employment and oil prices is moderate. Results presented in Table 2 indicate weaker correlation between oil prices and employment in the natural resource and mining sector. The greatest impact on employment in natural resources and mining in our sample is observed in Karnes County, which, over the years has seen an increase in employment as oil prices have reduced. This may have been caused by an increase in fracking operations that have taken place over the last decade. A report from the Center for Community and Business Research at the University of Texas at San Antonio (2017) indicates that fracing has contributed to the increase in employment over the last few years. In summary, counties are positively correlated to oil prices with the strength of correlation highest in Kern County and weakest in Karnes.

Table 2. Correlation Coefficients (*r*) Between Employment, Wages and Oil Prices

Total Employment and Oil Prices				
Kern	Weld	Eddy	Williams	Karnes
0.583	0.314	0.538	0.514	-0.023
Natural Resources and Mining Employment and Oil Prices				
0.091	-0.158	-0.072	0.248	-0.458
Total Wages and Oil Prices				
0.646	0.379	0.546	0.525	0.154

Source: US Bureau of Labor Statistics (2017) and the US Energy Information Administration (2017)

5. Conclusion

Between 2011 and 2015, Kern County had the largest employees working the Natural Resources and Mining sector while Karnes had the least. At the same time, Karnes' natural resource and mining employment grew by 264.63 percent during that period. In Kern County, one in every five workers was employed in the natural resource and mining sector. Wages for employees working in the natural resource and mining sector grew between 2011 and 2014 but the 2014 to 2015 period saw a decline. Only in Karnes County did we see consistent growth in wages. We also find that total employment is positively related to oil prices in Kern, Weld, Eddy and Williams Counties, implying that an oil price increase is accompanied by an increase in total employment. This relationship is negligible in Karnes County. Finally, the relationship between oil prices and employment in natural resource and mining employment is weak in four out of five counties. One should interpret these results with caution. Employment in natural resource and mining encompasses workers in oil and gas extraction, along with mining, quarrying, agriculture, forestry, fishing and hunting.

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KERN ECONOMIC JOURNAL is a quarterly publication of California State University, Bakersfield. It's 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.