Volume 23, Issue 1

CSU Bakersfield

Kern Economic Journal

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

2021 First Quarter

Featured Article:

Developing Better Employees

Barriers in adoption of oilfield produced water (OPW) for agricultural irrigation: What can be done to overcome these barriers?

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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

Inside this Issue:

Economy at a Glance!

2021 FIRST QUARTER
BY DR. NYAKUNDI MICHIEKA
& DR. RICHARD S. GEARHART III

National Economy[1]

U.S. GDP increased at an annual rate of 6.4 percent in the first quarter of 2021. In the fourth quarter of 2020, real GDP increased by 4.3 percent. The increase in first quarter GDP reflected the continued economic recovery driven by efforts to reopen businesses and continued government response related to the COVID-19 pandemic. The government assistance payments such as direct economic impact payments, expanded unemployment benefits, and Paycheck Protection Program loans were distributed to households and businesses through the Coronavirus Response and Relief Supplemental Appropriations Act and the American Rescue Plan Act.

The uptick in the real GDP reflected increases in nonresidential fixed investment, personal consumption expenditures (PCE), federal government spending, residential fixed investment, and state and local government spending that were partly offset by decreases in private inventory investment and exports. Imports also increased in the fourth quarter.

Current-dollar GDP increased by 10.7 percent, or $554.2 billion, in the first quarter to a level of $22.05 trillion. In the fourth quarter, GDP increased by 6.3 percent or $324.5 billion.

Current-dollar personal income increased by $2.40 trillion (59 percent) in the first quarter compared with a decrease of $351.4 billion in the fourth quarter. The increase reflected government social benefits related to pandemic relief programs.

Real disposable personal income, which is adjusted for inflation and taxes, increased by 61.3 percent compared with a 10.1 percent decrease.

Personal saving was $4.12 trillion in the first quarter compared with $2.25 trillion in the fourth quarter. The BEA derives the personal saving rate by calculating personal saving as a percentage of disposable personal income. Personal saving rate was 21 percent in the first quarter, compared with 13 percent in the fourth quarter.

The Conference Board's Index of Leading Economic Indicators – a measure of future economic activity – increased by 1.6 percent in April to 113.3 following a 1.3 percent increase in March and a 0.1 percent drop in February.

The University of Michigan's Consumer Sentiment Index increased from 79.8 in the fourth quarter of 2020 to 80.2 in the first quarter of 2021. The value for the index in the first quarter of 2020 was 96.4 and 94.5 in the first quarter of 2019.

State Economy[2]

In California, the unemployment rate dropped to 8.6 percent in the first quarter of 2021 compared to 8.7 percent in the fourth quarter of 2020. At the county level, only Colusa (15.9), Fresno (10), Imperial (16.1), Kern (10.9), Kings (10.7), Los Angeles (11.5), Madera (9.7), Merced (11.5), Modoc (9.3), Monterey (11), Plumas (12.1), San Joaquin (9.6), Siskiyou (9.7), Stanislaus (9.1), Sutter (10.3), Tulare (11.6) and Yuba (9.9) had unemployment rates above the state average (of 8.6). The other counties' unemployment rates were below the state average.

Counties with the lowest unemployment rates include Marin (5.1), Placer (5.72), San Francisco (5.8), San Mateo (5.3) and Santa Clara (5.4).

California's labor force decreased by 183,833 in the first quarter of 2021 after increasing by 301,800 in the third to fourth quarter of 2020. During the same period, civilian employment decreased by 145,467 from 17.4 million to 17.2 million. Nonfarming enterprises hired 156,600 less workers while farm employment increased by 64,100 workers. The mining and logging sector hired 2,300 less workers while the construction and manufacturing sectors hired 8,100 and 23,100 more workers, respectively. Service sector employment decreased from 14 million to 13.9 million between the fourth quarter of 2020 and the first quarter of 2021. The federal and local government lost 5,100 and 19,533 workers, respectively.

[1]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.

[2] 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.

Local Economy

The local economy witnessed an increase in the labor force, from 375,500 in the fourth quarter of 2020 to 376,100 in the first quarter of 2021. Civilian employment decreased by 1,900, from 336,900 in the fourth quarter of 2020 to 335,000 in the first quarter of 2021. Nonfarm employment increased by 633 while farm employment reduced by 200.

In Bakersfield, nonfarm employment changed in the following manner: mining and logging lost (167 workers), construction lost (1,867 workers), manufacturing added (300 workers) and service added (1,100 workers). Within the service sector, trade, transportation and utilities added (2,633 workers), financial activities lost (500 workers), professional and business services lost (2,267 workers), education and health services added (3,333 workers) while leisure and hospitality added (133 workers). Within the government, the federal government lost (200 workers), state government lost (33 workers) and local government lost (2,033 workers).

Total salaries and wages in Kern County decreased from $307,633 in the fourth quarter of 2020 to $306,800 (0.3 percent drop) in the first quarter of 2021. Compared to four quarters ago, salaries were lower by $23,167 or 7 percent.

The rate of unemployment varied considerably across cities, ranging from 4.47 percent in Ridgecrest to 26.93 percent in Delano. Most cities in Kern County showed a mild increase in the unemployment rate compared to last quarter. The biggest quarter to quarter rise in the unemployment rate occurred in Delano, where it rose from 15.97 percent to 26.93 percent. In Bakersfield, the unemployment rate was 8.43 percent in the first quarter of 2021 compared to 9.47 percent in the fourth quarter of 2020. In Kern County, unemployment was 10.93 percent in the first quarter of 2021 compared to 10.3 percent in the fourth quarter of 2020.

In the first quarter of 2021, the median home price in Bakersfield was $294,827 compared to $288,667 in the fourth quarter of 2020. Home prices are $41,827 higher than they were four quarters ago. Within the region, median home prices in Taft were the lowest at $165,833 compared to $355,833 in Tehachapi.

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) increased by 24.6 percentage points from $80.4 to $100.1. The index is 58.5 percentage points higher than what it was four quarters ago. All companies gained/lost as follows: Chevron (increased 24.1 percent quarter-over-quarter), Tejon Ranch (increased 15.8 percent quarter-over-quarter), Granite Construction (increased 50.7 percent quarter-over-quarter), Wells Fargo (increased 29.5 percent quarter-over-quarter) and Sierra Bancorp (increased 12 percent quarter-over-quarter).

The average retail price of gasoline increased by $0.50 to $3.49. Gas prices were 16.7 percent higher than they were four quarters ago when they averaged $3.24 a gallon. The unit price of California's Class III milk was $15.62 in the first quarter of 2021 compared to $20.22 in the fourth quarter of 2020. The Index of Farm Price Parity in the first quarter of 2021 (0.85) was higher than that of the fourth quarter of 2020 (0.80).

Tracking Kern's Economy[1]

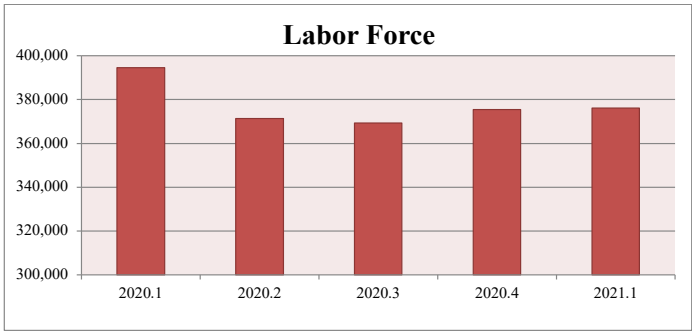
DR. NYAKUNDI MICHIEKA &
DR. RICHARD S. GEARHART III

Labor Market

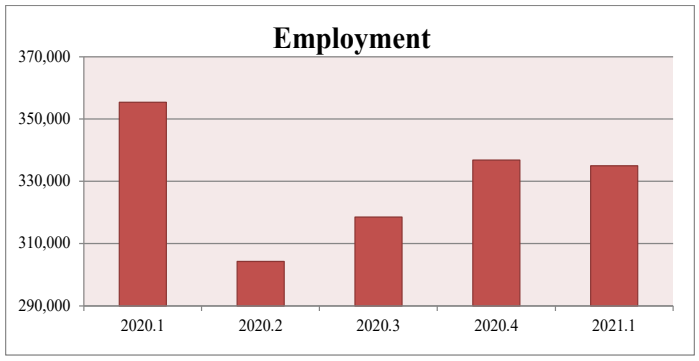
We adjust published data in three ways. First, we average monthly data to calculate quarterly data. Second, we recalculate quarterly data to take into account workers employed in the "informal" market (i.e., self-employed labor and those who work outside their county of residence). Finally, we adjust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

Labor Force - The civilian labor force increased by 667 members, from 375,500 in the fourth quarter of 2020 to 376,167 in the first quarter of 2021. The labor force estimates are similar to those recorded in the first quarter of 2014 (375,130) and have been steadily increasing over the last three quarters. The Bureau of Labor Statistics defines the labor force participation rate as the proportion of the working-age population that is either working or actively looking for work. Recessions tend to push labor force participation down.

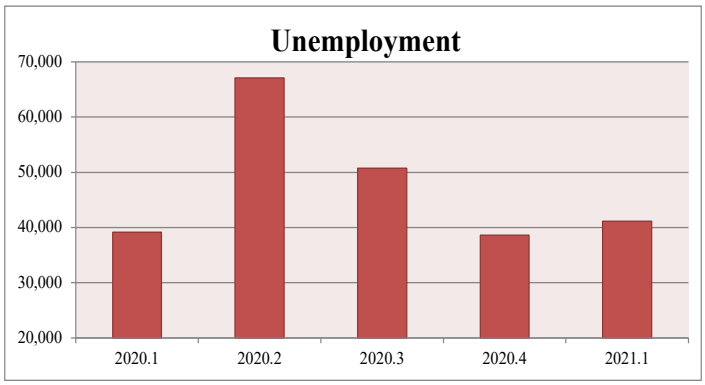
down.



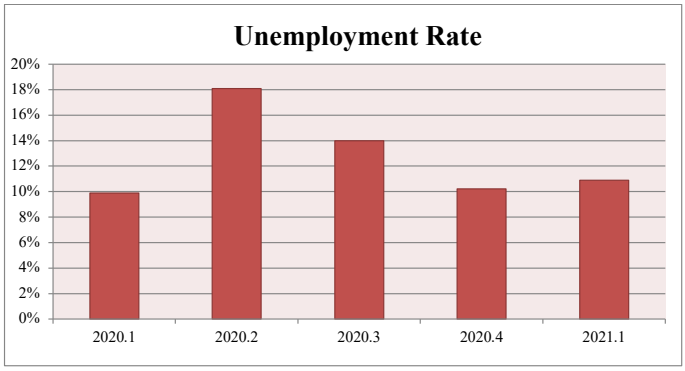
Employment – In the first quarter of 2021, Kern County hired 1,900 less workers as total employment decreased from 336,900 to 335,000. This is a 5.8 percent decrease in employment compared to the first quarter of 2020 when 355,433 persons were employed. Nonetheless, it is a modest drop in fourth to first quarter employment change compared to that which took place in 2020, when 13,367 less persons were employed (between the fourth quarter of 2019 and first quarter of 2020).



Unemployment – In the meantime, quarter to quarter unemployment increased by 2,567 as the number of jobless workers rose from 38,600 to 41,167. The number of unemployed workers is 5.2 percent higher than it were four quarters ago. In the first quarter of 2020, there were 39,133 unemployed workers compared to 41,167 this quarter.



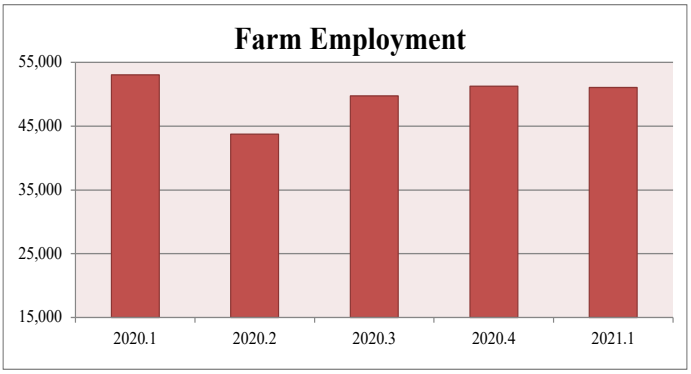
Unemployment Rate – Kern County's year-to-year unemployment rate rose by 1 percentage point from 9.9 percent in the first quarter of 2020 to 10.9 percent in the first quarter of 2021. The unemployment rate in the first quarter of 2021 was 0.7 percent lower than that of the fourth quarter of 2020. More specifically, Kern County's unemployment rate was 10.2 percent in the fourth quarter of 2020 and 10.9 percent in the first quarter of 2021. Kern County's unemployment rate is higher than that of California which is 8.6 percent.



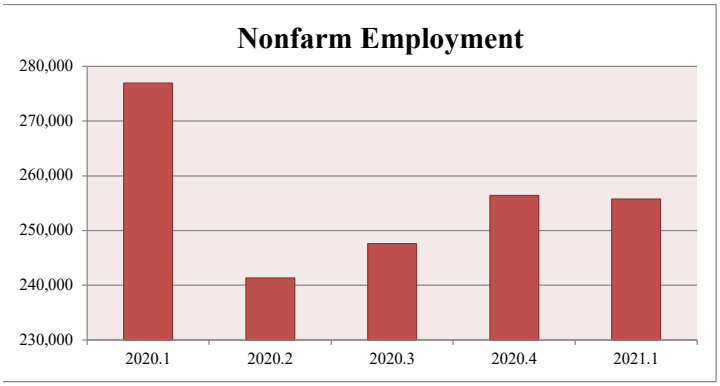
The unemployment rate varied considerably across cities, ranging from 4.47 percent in Ridgecrest to 26.93 percent in Delano. Most cities in Kern County showed a mild increase in the unemployment rate compared to last quarter. The biggest quarter to quarter rise in the unemployment rate occurred in Delano, where it rose from 15.97 percent to 26.93 percent. In Bakersfield, the unemployment rate was 8.43 percent in the first quarter of 2021 compared to 9.47 percent in the fourth quarter of 2020.

Unemployment Rate of Cities			
Location	Unemployment Rate (%)	Location	Unemployment Rate (%)
KERN COUNTY	10.93%	McFarland	14.60%
Arvin	10.63%	Mojave	20.17%
Bakersfield	8.43%	Oildale	16.30%
California City	21.63%	Ridgecrest	4.47%
Delano	26.93%	Rosamond	12.03%
Edwards	9.87%	Shafter	11.00%
Frazier Park	12.97%	Taft	5.40%
Lake Isabella	16.40%	Tehachapi	7.70%
Lamont	9.53%	Wasco	14.73%
Note: City-level data are not adjusted for seasonality and "informal" market workers.			

Farm Employment –In the first quarter of 2021, Kern County hired 200 less farm workers. As a result, farm employment decreased from 51,233 in the fourth quarter of 2020 to 51,033 in the first quarter of 2021. The year-over-year number of farm workers decreased by 2,000 to 51,033 (compared to 53,033 last year).



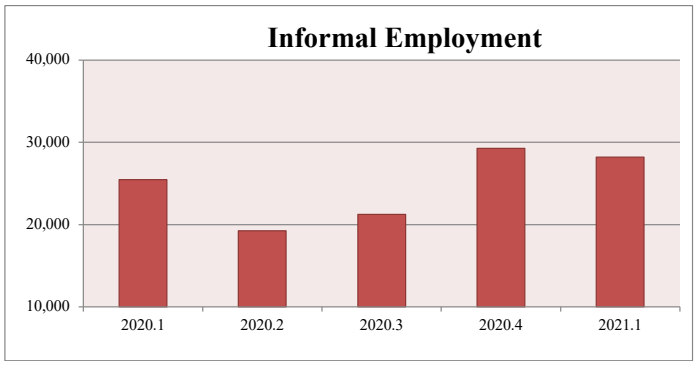
Nonfarm Employment – Local nonfarm industries employed 633 less workers in the first quarter of 2021 as the number decreased from 256,400 to 255,767. The industries hired 21,167 less workers compared to four quarters ago (7.6 percent less). The first quarter estimates of the number of nonfarm workers are similar to the 2017 first quarter numbers.



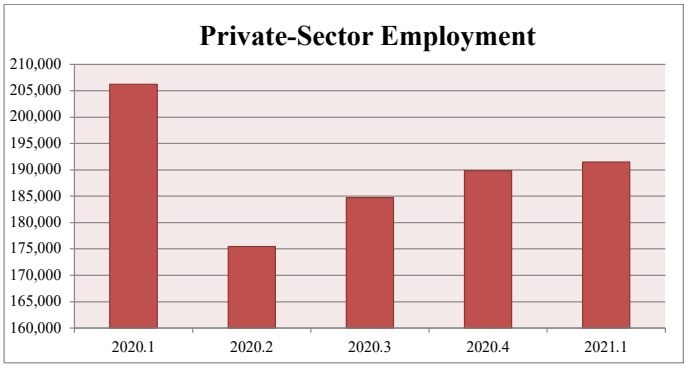
In Bakersfield, nonfarm employment changed in the following manner: mining and logging lost 167 workers; construction lost 1,867 workers; manufacturing added 300 workers and the service sector added 1,100 workers. Within the service sector, trade, transportation and utilities added 2,633 workers; financial activities lost 500 workers; professional and business services lost 2,267 workers; education and health services added 3,333 workers while leisure and hospitality added 133 workers. The federal government lost 200 workers while the state government lost 33 workers, and local government lost 2,033 workers.

Informal Employment - Informal employment is the

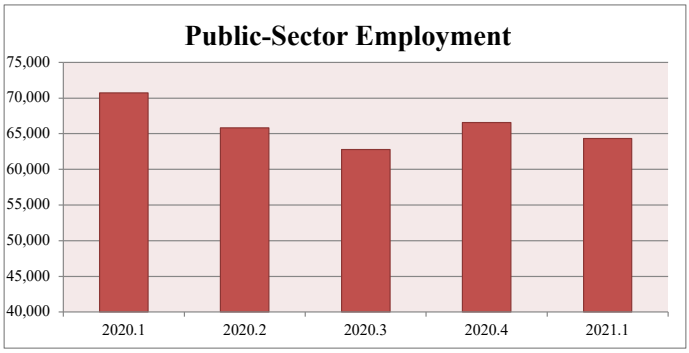
difference between total employment and industry employment. It accounts for self-employed workers and persons employed outside their county of residence. In the first quarter of 2021, the number of informal workers decreased by 1,067 workers compared to the fourth quarter of 2020. There were also 2,733 more informal workers in the first quarter of 2021 compared to the first quarter of 2020. The number of residents who have sought to create their own jobs continues to grow, and there are currently 28,200 informal workers in Kern County.



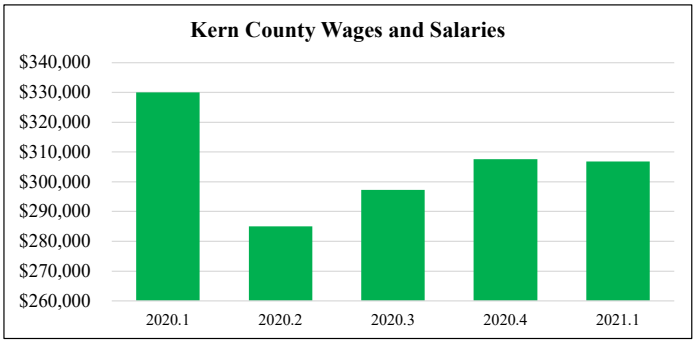
Private-Sector Employment - Nonfarm employment is comprised of private- and public-sector employment. In the first quarter of 2021, private companies hired an additional 1,633 workers compared to the fourth quarter of 2020. It also hired 7.2 percent less workers this quarter than it did four quarters ago. This quarter's estimates are similar to those recorded in the fourth quarter of 2012. Today, the private sector employs 191,467 individuals.



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 first quarter of 2021, government agencies hired 2,267 less workers as employment decreased from 66,567 to 64,300 – a 3.41 percent decrease. Compared to last year, 9.1 percent less workers were hired in the public sector.

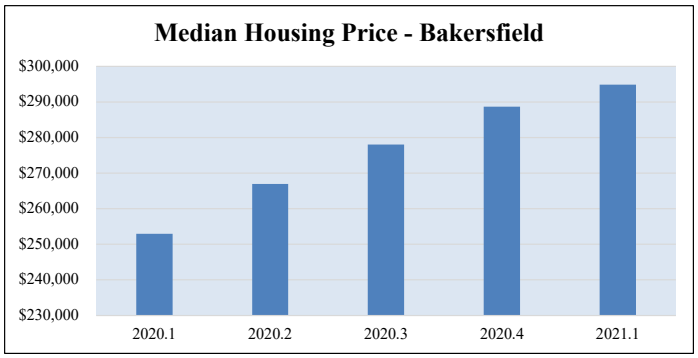


Salaries and Wages - Total salaries and wages in Kern County decreased from $307,633 in the fourth quarter of 2020 to $306,800 in the first quarter of 2021 (a 0.3 percent decrease). Compared to four quarters ago, salaries were $23,167 (or 7 percent) lower.

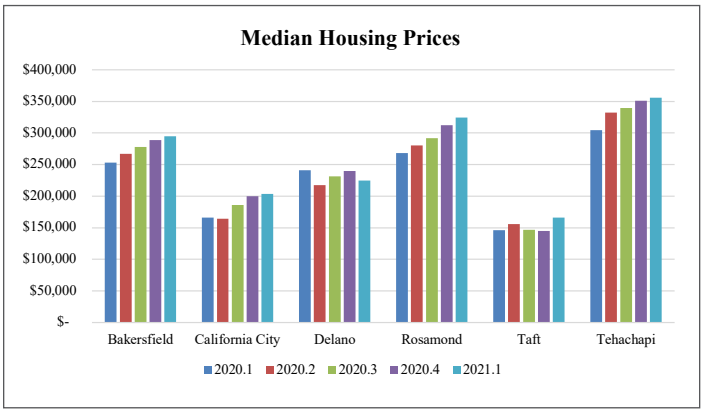


Housing Market

Housing Price - In the first quarter of 2020, Bakersfield's housing prices were up by $6,160 (2.1 percent) compared to the fourth quarter of 2020. The median home price averaged $294,827 in the first quarter compared to $288,667 in the fourth quarter. Prices are $41,827 higher than they were four quarters ago. This rise in home prices has been fueled by record low interest rates and increased demand.



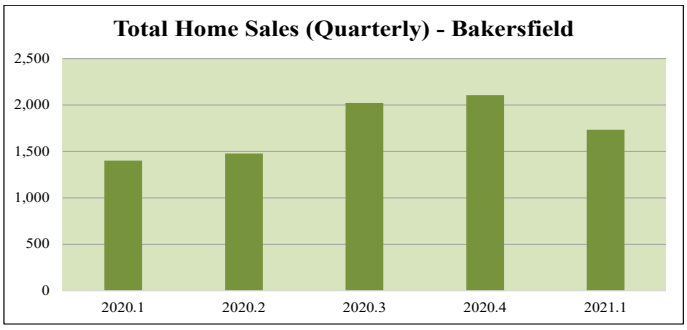
Regional Housing Prices – The changes in housing demand felt in Bakersfield are likely to spillover to the surrounding cities as individuals who are on the margin of buying or selling are likely not located in the Bakersfield MSA directly. An assessment of fourth (2020) to first quarter (2021) changes in median sales price indicates that home prices surged in all Kern County cities except for Delano. Taft recorded the highest uptick in prices (14.6 percent) while California City recorded the lowest rise in prices (1.6 percent). The average price increase was 3 percent across all regions. The median home price averaged $229,875 in the first quarter of 2020 compared to $261,418 in the first quarter of 2021.



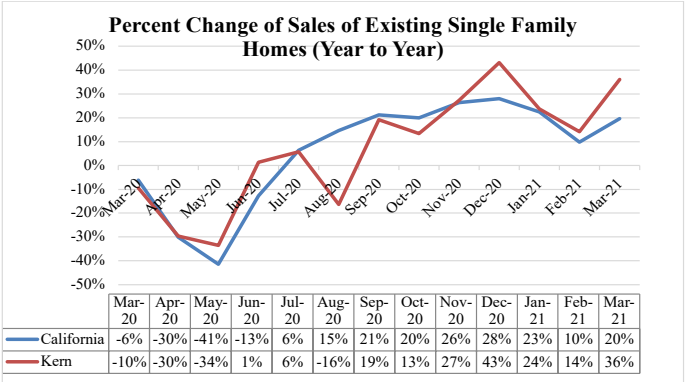
The year-to-year home prices increased in all cities in Kern County, except Delano as follows: Bakersfield (16.53 percent), California City (22.43 percent), Delano (-6.82 percent), Rosamond (20.81 percent), Taft (13.39 percent) and Tehachapi (16.79 percent).

Location	Median Price 2020.1	Median Price 2021.1	Price Change ($) 2020.1 to 2021.1	% Price Change 2020.1 to 2021.1
Bakersfield	253,000	294,827	41,827	16.53%
California City	166,167	203,432	37,265	22.43%
Delano	240,833	224,417	-16,417	-6.82%
Rosamond	268,333	324,167	55,833	20.81%
Taft	146,250	165,833	19,583	13.39%
Tehachapi	304,667	355,833	51,167	16.79%
Averages	197,324	224,361	31,543	13.86%

Housing Sales –– In Bakersfield, quarter to quarter sales of residential units decreased by 372 units, from 2,105 in the fourth quarter of 2020 to 1,733 in the first quarter of 2021. An average of 332 more homes were sold in the first quarter (of 2021) compared to the first quarter last year (2020).

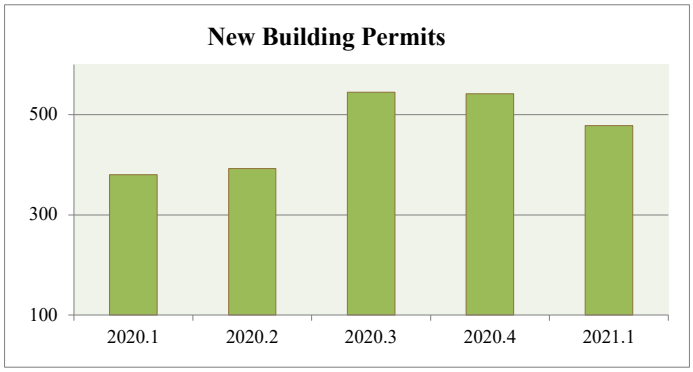


Growth in Housing Sales – We compare growth in sales of existing single-family homes in Kern County with growth in sales in California. Positive values indicate that more homes were purchased this year compared to last year. In March 2021, sales of single-family homes in Kern County were 36 percent higher than they were in March 2020, while sales in California were higher by 20 percent. Average growth in home sales in California between March 2020 and March 2021 were 6 percent while the number was 7.3 percent in Kern County.

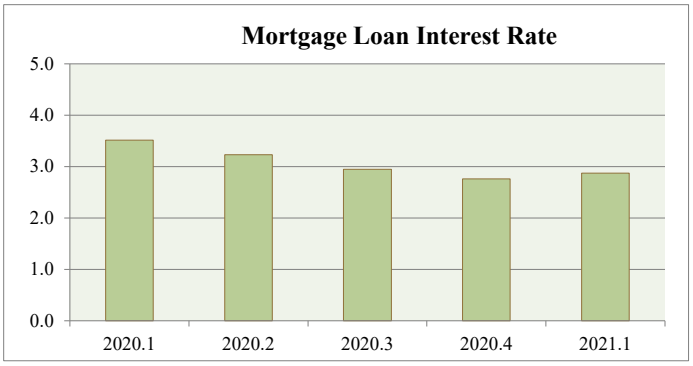


	Mar-20	Apr-20	May-20	Jun-20	Jul-20	Aug-20	Sep-20	Oct-20	Nov-20	Dec-20	Jan-21	Feb-21	Mar-21
California	-6%	-30%	-41%	-13%	6%	15%	21%	20%	26%	28%	23%	10%	20%
Kern	-10%	-30%	-34%	1%	6%	-16%	19%	13%	27%	43%	24%	14%	36%

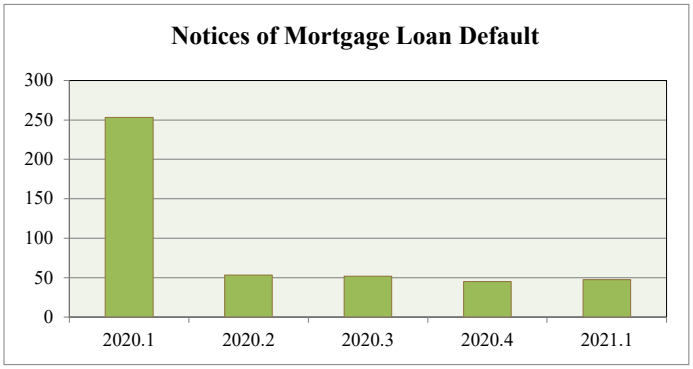
New Building Permits –In the first quarter of 2021, Kern County issued 64 less permits for construction of new privately-owned dwelling units compared to the fourth quarter of 2020. A total of 478 permits were issued this quarter compared to 380 in the first quarter of 2020. This increase indicates a rise in construction plans in Kern County. Over the last five years, and average number of permits issued in the first quarter of every year is 458.



Mortgage Interest Rate –In the first quarter of 2021, the interest rate on thirty-year conventional mortgage loans increased to 2.88 percent from 2.76 percent in the fourth quarter of 2020. The current thirty-year mortgage interest rates are the lowest in modern history. The interest rate in the first quarter of 2020 was 3.51 percent.

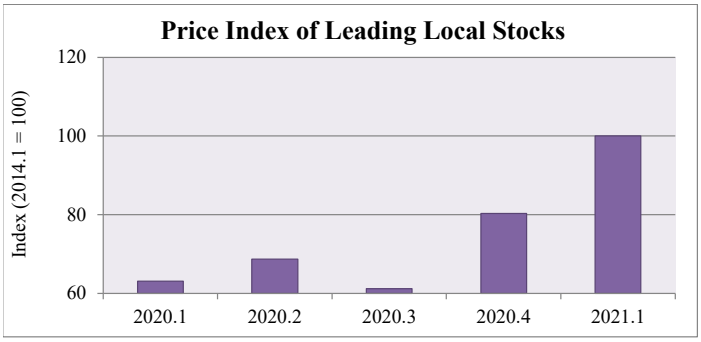


Housing Foreclosure Activity –Foreclosure activity is still slow, though the number of new foreclosures increased by 2, from 45 in the fourth quarter of 2020 to 47 in the first quarter of 2021. Foreclosure filings are 206 lower than they were four quarters ago. A total of 253 fillings were recorded in the first quarter of 2020 compared to 47 in this quarter. These figures are the lowest recorded in ten years.

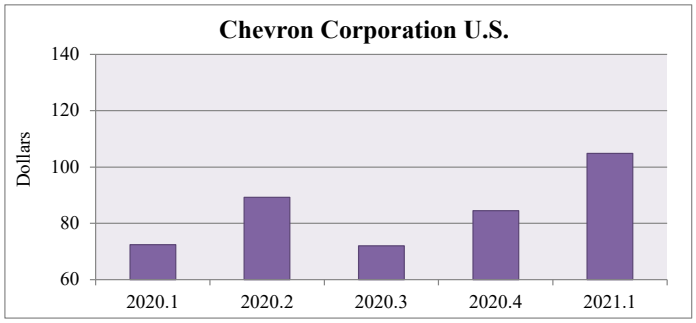


Stock Market

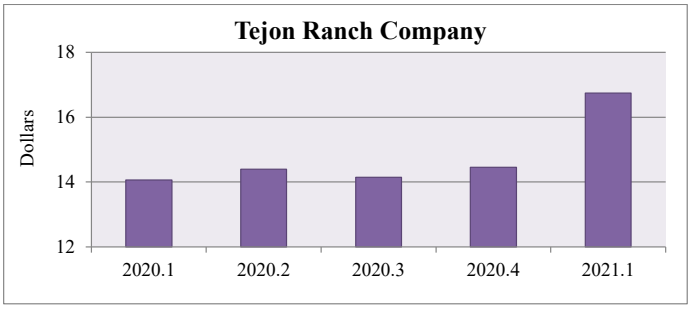
In the first quarter of 2021, the composite price index (2014.1=100) of the five publicly traded companies doing business in Kern County increased by 24.6 percentage points from 80.4 to 100.1 (quarter to quarter change). The index is 58.5 percentage points higher than it was four quarters ago. Average "close" prices were measured for five local market-movers: Chevron Corporation U.S., Tejon Ranch Company, Granite Construction, Wells Fargo Company, and Sierra Bancorp.



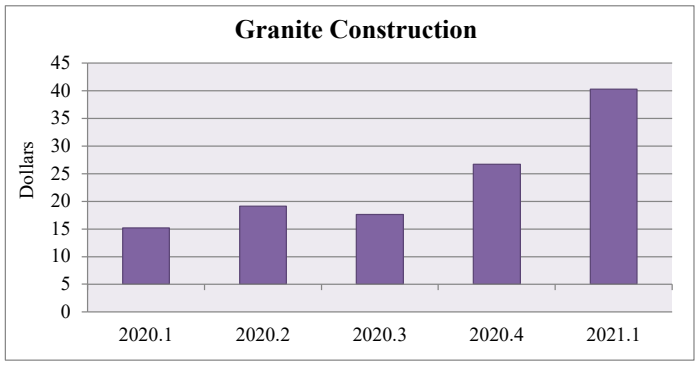
Chevron Corporation U.S.: Compared to last quarter, CVX gained $20.34 (or 24.1 percent) per share as its price increased from $84.45 to $104.79. Relative to the first quarter of 2020, CVX was up $32.33 (or 44.6 percent).



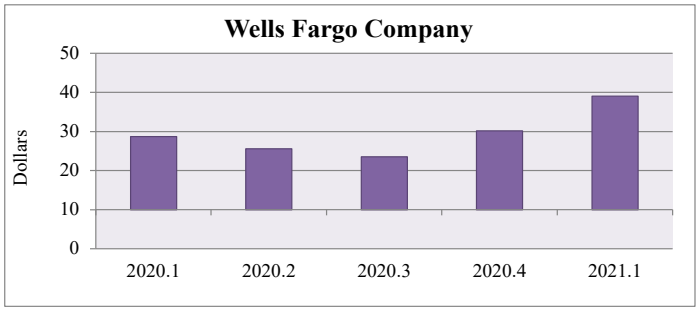
Tejon Ranch Company: TRC gained $2.29 (or 15.8 percent) per share as its stock price increased from $14.45 to $16.74 between the fourth quarter of 2020 and the first quarter of 2021. Compared to last year, the TRC stock price was up $2.68 (or 19.1 percent).



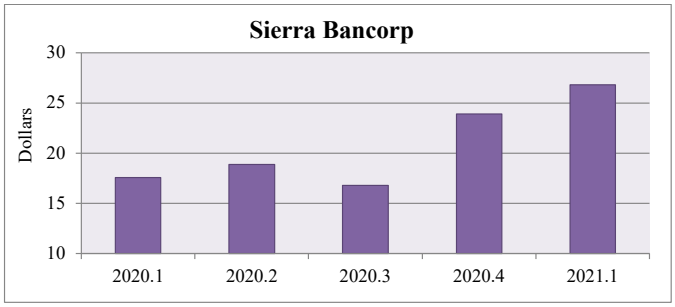
Granite Construction: GVA gained $13.54 (or 50.7 percent) per share as its stock price increased from $26.71 to $40.25 between the fourth quarter of 2020 and the first quarter of 2021. GVA gained $25.07 (or 165.2 percent) over the last four quarters.



Wells Fargo Company:
WFC gained $8.89 (or 29.5 percent) per share as its stock price increased from $30.18 to $39.07 between the fourth quarter of 2020 and first quarter of 2021. Relative to one year ago, WFC was up $10.37 (or 36.1 percent).

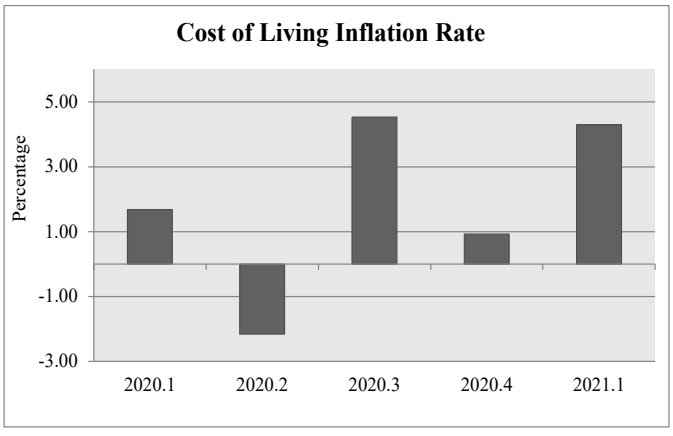


Sierra Bancorp: BSRR gained $2.88 (or 12 percent) per share as its price increased from $23.92 to $26.80. Similar to the other companies, BSRR gained $9.22 (or 52.4 percent) this quarter compared to the first quarter of 2020.



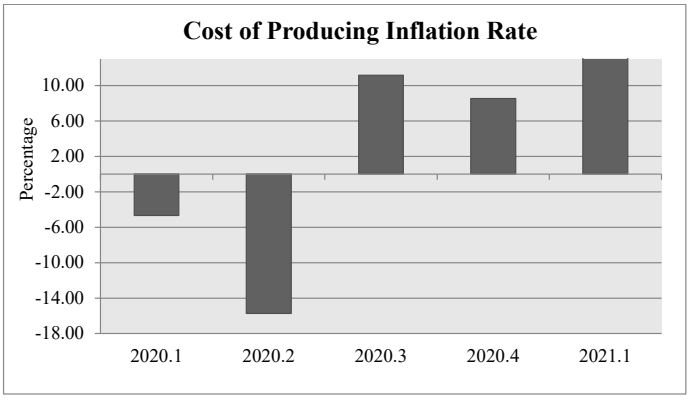
Inflation

Cost of Living – In the first quarter of 2021, the Consumer Price Index for all urban areas (1982-84 = 100) increased from 0.92 to 4.29. The index was 1.68 in the first quarter of 2020.

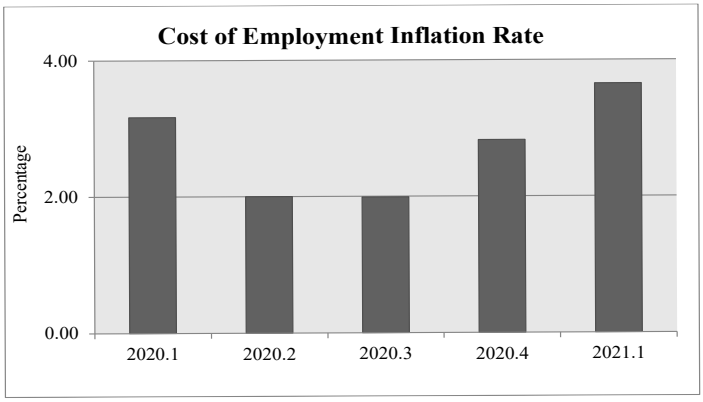


Cost of Production – The Producer Price Index for all commodities (1982 = 100) increased between the fourth quarter of 2020 and the first quarter of 2021

from 8.52 to 23.14 percent. The cost of production inflation rate was -4.69 percent four quarters ago.

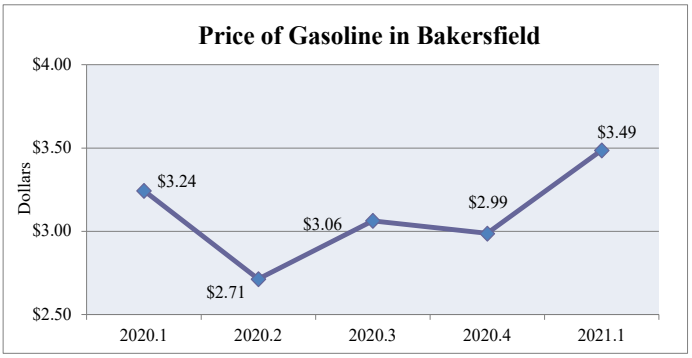


Cost of Employment - The Employment Cost Index (December 2005 = 100) for all civilian workers increased from 142.4 in the fourth quarter of 2020 to 143.7 in the first quarter of 2021, a growth rate of 3.65 percent.

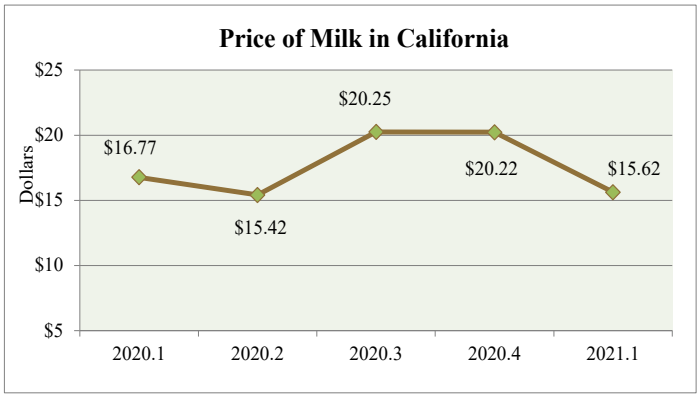


Commodity Prices

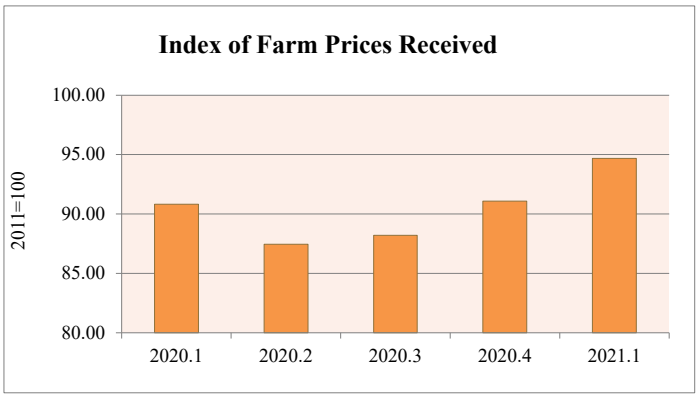
Price of Gasoline – In the Bakersfield Metropolitan Statistical Area, the average retail price of gasoline increased by $0.50 to $3.49 from $2.99, between the fourth quarter of 2020 and the first quarter of 2021. Average prices were 16.7 percent higher than they were a year ago.



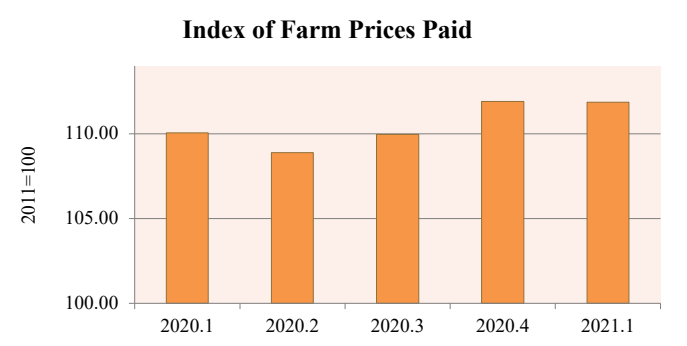
Price of Milk – The unit price of California's Class III milk decreased in the first quarter of 2021 by $4.60, to $15.62 from $20.22. Noticeably, milk prices are back within the ~$15 price range, dropping from $20 price mark recorded in the third and fourth quarters of 2020. Prices are 6.8 percent or $1.15 lower than they were four quarters ago when they were $16.77.

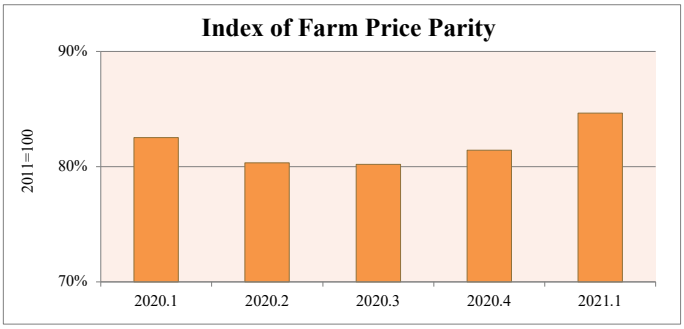


Farm Prices – In the first quarter of 2021, the National Index of Prices Received by Farmers for all farm products (2011 = 100) increased by 3.60 points to 94.7 compared to the 91.1 in the fourth quarter of 2020. This is a 3.87 increase from the 90.83 points recorded in the first quarter of 2020.



Meanwhile, the National Index of Prices Paid by farmers for commodities, services, interest, taxes, wages, and rents did not change compared to last quarter. This means that farmers are not worse or better off this quarter compared to last.





We measure the Index of Farm Price Parity as the ratio Index of Prices Received to the Index of Prices Paid. In the fourth quarter of 2020, the Index of Farm Price Parity was 81 percent compared to 85 percent this quarter. Four quarters ago, the price ratio was 83 percent.

[1] Source – Online databases: http://www.labormarketinfo.edd.ca.gov; www.usda.com; www.bakersfieldgasprices.com; www.bea.gov; www.car.org; www.trulia.com; www.census.gov; https://www.redfin.com; https://www.cafmmo.com; www.bls.gov

Developing Better Employees

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Retaining high quality, future oriented and committed employees is an important goal of any organization aspiring for long term success. The employer, employee and client base all achieve needed and desired outcomes when the employer purposely creates a plan that focuses on ways that long term employee - employer growth, development and commitment are the end results. What can the employer do to position their organization as the 'employer of choice' in their area of expertise? One approach that has proven successful is the employee professional development growth plan. This is a purposeful exercise lead by the employer but fully involving the employee - searching for ways that the employee can identify, plan and achieve desired and needed professional expertise as they mutually look to the future.

The professional development growth plan has the following foundational characteristics:

1. the employer is committed to helping their high quality employees think about, plan and support ways that the employee can be a better skilled and committed employee
2. the employee is committed to searching for ways that they can grow and enhance their skill set for the betterment of their organization and their own professional future
3. both the employer and employee are mutually committed to reasonable plans of action that can enhance the quality of both parties seeking for a common win
4. the employer sets the initial framework and boundaries but allows the employee the freedom to have an open view of all kinds of growth possibilities
5. both parties commit to what may be a long term enterprise with needed check-in points along the growth plan's time frame

There are four essential steps that help to focus the employee on how they can gain the insights needed to build their growth plan. The following are the sequence building blocks:

STEP ONE: *Identifying employee professional goals and motivations*

The employee spends time thinking about and answering these types of questions: What motivates me at work? What generates my work energy? What kinds of opportunities do I see in my work future? What opportunities exist in my current role that helps me develop and grow? Where do my motivations and the needs of my organization connect and align? What do I want to learn? How do I want to grow professionally?

The employee self inventories who they feel they are concerning their professional goals and their work motivations. It is not that each question is answered and shared with their employer but more of the employee creating a general statement of their goals and motivations. For example, one employee might focus on how their current work assignment is limited in growth potential but they prefer that work climate. They might also stress that they are happy in their current role and prefers the consistency of knowing exactly what is expected of them. New

challenges are a stressor. A different employee might highlight how new and more difficult work assignments challenge their thinking and energy and they are seeking for that type of growth. They desire to learn more about their specific work assignment but also look forward to both cross and up training. They like change and look forward to new work adventures. They want to feel a sense of professional and personal growth.

STEP TWO: *Determining employee strengths and development opportunities*

The employee spends time thinking about and responding to these types of questions: What are my professional work strengths? What are my passions? What do I love to do? What do I bring to my employer that is special about me? What are areas that I could improve? Am I interested in training opportunities? What are things that I would like to learn? Does my work speak to who I am as a worker and as a person?

Again, this is a step in the employee self inventory area focused on the employee's view of their work and personal strengths and helpful changes. The employee asks themselves about their passions, activities that bring satisfaction and enjoyment. In addition, the employee thinks about what they would like to learn, what areas they think improvement would be helpful or perhaps needed. As an example one employee might feel that they are at full capacity in their work and their skill set and current work assignment are appropriately matched. They find satisfaction just as things are. Another employee might be looking for growth opportunities and their personal and professional tone is one that is always looking to the future and ways they can improve and grow. They might even have specific professional or personal areas that they would like to advance.

STEP THREE: *Planning employee work objectives and action steps*

The employee thinks about and creates a draft plan of action with new work objectives considering what they have discovered through steps one and two. They respond to the following types of questions: Looking at my current career situation and my future aspirations, where should I focus my development energies and priorities? Does my work environment allow for these types of growth options? Do these objectives match the needs of my employer? What specific capabilities are at the center of my development plans? What actions can I offer to my employer to move forward with these goals?

This section of the professional development growth plan is employee centered but does search for employer connections. The goal here is for the employee to create an action plan of professional and personal growth that is of interest to them and meaningful to the organization. The employee may offer some general goals or some very specific objectives such as the following: [specific] I would like to train to move from an administrative assistant position 1 to that of a 2 and then on to a 3. [more general] I would like to develop skills in internal auditing or in project management. [very general] I would like to enhance my computer skills looking for programs dealing with my work area. The employee then meets with their employer seeking confirmation of the value of the plan and assistance with the action elements.

STEP FOUR: *Meeting with your employer to discuss the details of the action plan*

The employee and employer meet to discuss the employee professional development growth plan searching for common and valued points of connection. Both parties approach this meeting with the highest of positive expectations. The purpose of this meeting is to [1] share the employee draft action plan [2] to seek employer confirmation that the actions are helpful, needed and positive to the organization [3] to refine the plan as needed without losing the passion of the new opportunities [4] negotiate details of the plan such as time and cost impacts and check in points [5] settle on the details of the now approved plan.

It should be remembered that the employer has created the idea for the employee professional growth plan and should be committed within reason to help the employee carry this new adventure out. It is possible that the employee has little interest in their professional growth or that the employer has a sense that the employee plan asks too much of the employer. Some employees are very happy and successful in their work and forcing a change is not always what is needed. The employer must be sensitive to this situation. There are other times when the employer feels as if the employee is trying to exploit this opportunity to learn new skills with the very intent of leaving the organization. Careful and reasonable balance is needed.

The professional development growth plan is one tool, and experience teaches that it is a powerful way to encourage and move forward the creation of an environment that leads to better employees. Modifications to the details of this plan may be necessary to better capture the essence of the specific work enterprise.

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Barriers in adoption of oilfield produced water (OPW) for agricultural irrigation: What can be done to overcome these barriers?

The purpose of this study is to identify factors influencing decisions to use oilfield produced water to augment limited water resources for irrigation in Kern County. Oilfield produced water (OPW) is a byproduct of oil and gas extraction. Semi-structured interviews were conducted with five major stakeholder groups within the OPW ecosystem - oil and gas managers/ business owners, ag industry experts/farmers, entrepreneurs, water district managers and water board personnel, environmentalist/academic. The findings highlighted three macro categories - water shortages, costs of treating/distributing/using produced water Vs. the expected benefits, and public perceptions vs. scientific studies.

Findings

4.1 Existing and future technologies (and business models) to commercialize produced water in Kern County: Currently three water districts in Kern County support produced water programs. In the current model, the O&G companies (the larger established ones) treat the produced water generated at site and sell it to their respective water district. The district facility blends the produced water with fresh water and puts the blend into the canal from where the farmers tap their requirements. The usage of produced water depends on drought conditions. For e.g., in a wet year like 2017, there was little requirement for farmers to use produced water blend as fresh water was readily and cheaply available. For a drought year like 2021, alternate water streams are urgently required.

The ecosystem of OPW reuse in irrigation exists only on East Kern County where the produced water is sweet (less salinity) such that its treatment at the oil site is not prohibitive. In contrast, the produced water quality on the West side of Kern is high in salinity, the removal of which incurs high treatment costs. Capital-intensive infrastructure (treatment plants, pipelines, storage etc.) would be required to treat especially desalinate produced water, distribute it, and subsequently handle the brine and wastes generated. In addition, the insights revealed concerns regarding high variations in produced water quality that demands differing technologies to be reasonably cost-effective.

4.2 Barriers to widespread adoption of OPW for agricultural irrigation:
Psychological barriers: These refer to fear, disgust, safety concerns, and trust about the use of produced water that is directly or indirectly consumed. The interviews revealed that among the famers and regulators, psychological barriers about reuse of produced water are non-existent. Their main concern is the availability of suitably treated produced water that they could buy at a reasonable cost. In contrast, the general public harbors an overall mistrust of the O&G companies. People increasingly see these companies as pursuing profits at the cost of social and environmental well-being. The general public wants greater trust and transparency such that the well-being of consumers, agricultural field workers, communities living in close proximity to oil production facilities, and the environment are all taken into consideration.

4.3 How could these barriers be overcome?
Psychological barriers: The main question that arises is how much do the general public need to know about the water sources used to grow their foods? The main users of OPW, namely, food producers are adequately informed

about the subject and can dictate the exact water requirements and specifications to their respective water districts. Research and scientific studies conducted by the water districts, oil companies, and independent assessors in the last several years show no red flags when it comes to the safety risk of consuming food products grown using suitably treated produced water. For instance, the Cawelo water district has been providing blended water to ~150 farmers since 1995. The monitoring and testing standards are stringent to ensure that water meets the quality requirements for irrigating the specific crops. Despite all of these, the media, environmentalists, and the general public are not convinced about the safe use of OPW.

The need is to prevent sensationalism by media by creating a unified voice about produced water usage. Given the long-standing nature of Kern's existing produced water programs, there needs to be tighter integration and collaboration among the water districts and other ecosystem players: O&G producers, farmers, local community representatives, environmental group representatives, public health experts, and academics. This is already initiated by bringing together all stakeholders under the auspices of a food and safety risk panel, such as the one organized by the Central Valley Regional Water Quality Control Board. The findings revealed that the various stakeholders in this panel are both recipients and co-creators of value in a joint value creation process that supports a business model for sustainability.

Shared Value: Companies in both the two major industries involved - O&G industry and agriculture need to revisit their 'shared value' mission that speaks to solving societal problems in order to create economic value. The interviews and media reports revealed that the oil companies have lost their trust with the general public. The diminished trust in business might lead to policies that are unfavorable to the business's profitability and competitiveness, thereby, resulting in a vicious circle (Porter & Kramer, 2019). Few glaring examples are depletion of natural resources, water shortages, customers well-being, and so forth. The business has to act in way that can take societal issues to a strategic level to create economic value, which underlies the concept of shared value popularized by Michael Porter, a world-renowned business strategist. Many oil companies are already implementing it and might require leaders and managers to acquire new skills and knowledge to engage in these activities in collaboration with profit/non-profit boundaries and a unified message to the general public, media, and environmentalists.

Costs versus benefits:

Value or Economic barrier: The amount of produced water generated versus the farm irrigation requirement is small (~5%). In the near future, moratorium against oil drilling in Kern County looms large such as to render produced water insignificant as an alternative water source. In addition, West Kern would require massive capital investments and public-private partnerships if regular treatment and distribution of produced water is to see the light of the day.

Solution: An immediate solution to counter the drought, the "sweet" oilfield produced water on East Kern County could be to set up modular plants (versus a massive centralized facility) to serve few areas to begin with. The technology under development could be commercialized and sold to the "owners" of these modules (who could be water companies and maybe O&G companies).

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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 **https://bpa.csub.edu/menus/kern-economic-journal.html** for more information.