EMERGING TRENDS IN CENTRAL CALIFORNIA'S ECONOMY

Central California BUSINESS REVIEW

FEBRUARY 2019

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- Consumer Sentiment Survey
- Real Estate Sentiment Index
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FEBRUARY 2019

Central California
BUSINESS REVIEW

MISSION
To report on the economic and financial health of Central California.

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Messages from the Dean and Chief Economist

The Craig School of Business is pleased to share the second edition of the *Central California Business Review*. In 2018, we published our inaugural edition under the leadership of Robert M. Harper, now Interim Provost at Fresno State. Dr. Harper's vision and efforts resulted in a successful launch and earned wide praise.

The second issue updates topics from the first edition in re-examining business sentiment, labor markets, consumer sentiment, banking and finance, and real estate market conditions in the Central San Joaquin Valley of California. The remaining three articles address different facets of our local economy: the manufacturing and processing of food and beverages, small business entrepreneurship, and the status and economic impact of dwindling water supplies. I know you will find all the articles interesting, informative, and useful.

I am thankful for the support that made this second issue possible. First, I am especially grateful for the services of Craig School Lecturer Barbara Morgan, who assumed the lead role in coordinating this issue from concept to printing. Craig School Associate Dean Antonio Avalos and Development Director Cara Peracchi Douglas were key members of the management team. The authors willingly contributed their time and expertise. Our participating partners provided much appreciated financial support. In particular, I would like to give special thanks to the continued generous support from Wells Fargo, our Founding Sponsor; to Educational Employees Credit Union for again supporting the cost of the Consumer Sentiment Survey; and to the San Joaquin Valley Manufacturing Alliance for sponsoring the breakfast and the manufacturing research.

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Congratulations to Fresno State and its team led by Don Stengel and Barbara Morgan from the Craig School of Business on its second volume of the *Central California Business Review*. This is exemplary evidence of thought leadership resulting from Academia meeting Main Street that educates communities and promotes the economic vibrancy and success of Central California. Wells Fargo is proud to be the founding sponsor of this objective and comprehensive economic commentary and intellectual analysis that provides guidance on future business conditions. As former Dean of Sacramento State's College of Business, I am pleased to be part of this tremendous public service to the region, and extremely proud of this effort.

Sanjay Varshney

Sanjay Varshney, PhD, CFA
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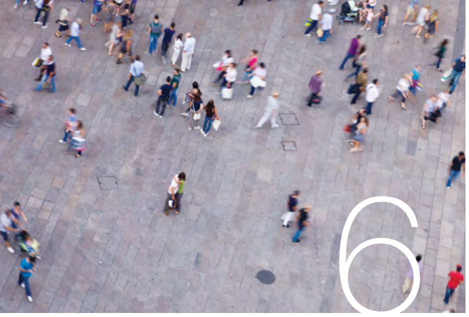

FEATURES

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EECU Smarter banking

SAN JOAQUIN VALLEY MANUFACTURING ALLIANCE

WELLS FARGO The Private Bank

WELLS FARGO

Survey of Business Conditions

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KEY POINTS

- A leading economic indicator, the Purchasing Managers' Index, fell in October 2018, but remains above growth neutral for the 26th straight month and points to positive growth for the first half of 2019.
- The four counties studied reflect strong job growth for 2017 and 2018.
- Business confidence remains strong.
- On average, San Joaquin Valley businesses expect a 4.4% increase in the prices they will pay for inputs and supplies over the next year.
- Almost one-fourth of businesses report tariffs and trade skirmishes have made it more difficult to purchase from other countries.

Purchasing Managers' Index

The Purchasing Managers' Index (PMI) for Fresno, Kings, Madera, and Tulare counties is a strong indicator of the San Joaquin Valley's overall business conditions. This index is produced using the methodology of the National Institute for Supply Management and measures five components: new orders, production or factory output, inventory levels,

October 2018 marks the 26th straight month the overall index has remained above growth neutral.

THE PERCENTAGE INCREASE IN EMPLOYMENT for the region has been greater than that of the U.S. for the past 2 years.

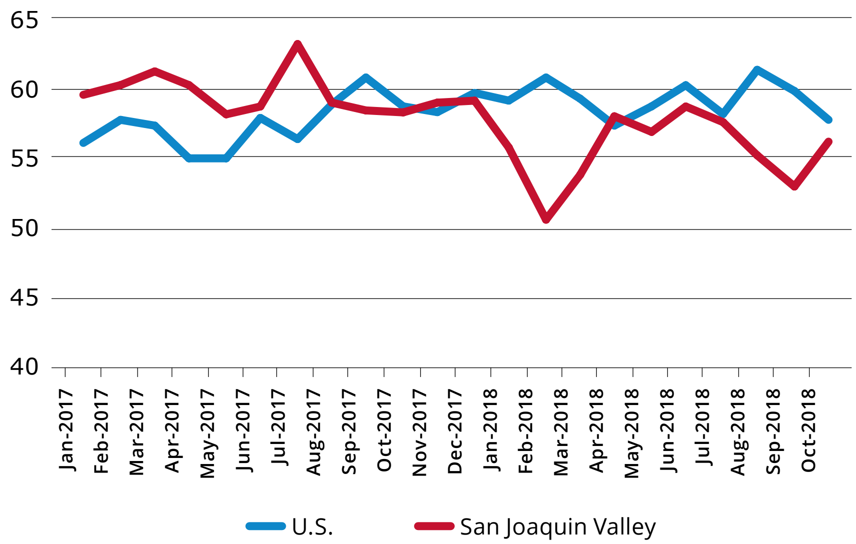
speed of supplier deliveries, and employment. Those surveyed, individuals from the four counties who make their company's purchasing decisions, indicate whether they believe conditions for each component are stable, deteriorating, or improving. An aggregate index is then calculated. Indices greater than 50 indicate an expansionary economy over the course of the next three to six months.

As Figure 1 indicates, for all of 2017 and 2018, the PMI has remained above growth neutral, 50.0, and continues to point to positive growth for the first half of 2019. October 2018 marks the 26th straight month the overall index has remained above growth neutral. From September's weaker 52.9, the region's Index advanced to a solid 56.1 for October. Survey results for the last two months, and one year ago, are listed in Table 1 on the following page.

PMI Components

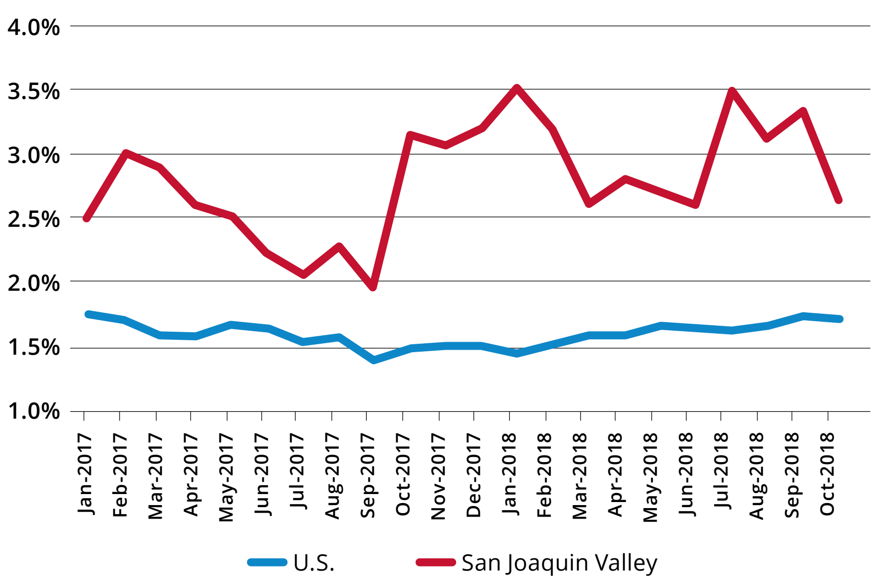
Employment: Figure 2 compares job growth in the four counties of the San Joaquin Valley with the U.S. as a whole. The year-to-year percentage changes for each month for the U.S. and the San Joaquin Valley reflect the four-counties' strong job growth

Figure 1
Purchasing Managers' Indices for the U.S. and Four-County Region



Data Sources: Craig School of Business and Institute for Supply Management

Figure 2
Year-over-Year Percent Change in Employment by Month for the U.S. and Four-County Region



Data Sources: Craig School of Business and Institute for Supply Management

BUSINESS CONDITIONS

Survey of Business Conditions

The region is expected to continue to add jobs, but at a somewhat slower pace for the first half of 2019.

for 2017 and 2018. Since October of 2017, the change for the San Joaquin Valley for each month is above 2.5%, well above the nation's 1.4% to 1.7% expansion over the same period. The employment component moved higher to 56.9 in October from 52.5 in September.

The number of unemployed workers in the region has declined by 41,000 over the past seven years; but despite rapid job growth, the region's unemployment rate is approximately two percentage points above the national jobless rate. The region is expected to continue to add jobs, but at a somewhat slower pace for the first half of 2019.

Inventory Levels: The inventory component rose for October 2018. The index, which reflects the growth or decline in supplies of raw materials and other inputs, increased to 56.5 from 50.6 in September.

Table 1
PMI Aggregate and Component Indices and Other Indices
(above 50.0 indicates expansion)

	Four-County Region of the San Joaquin Valley		
	October 2017	September 2018	October 2018
Aggregate PMI Index	58.2	52.9	56.1
PMI Index Components:			
New Orders	59.0	52.0	53.5
Production or Sales	66.3	53.2	59.1
Employment	53.8	52.5	56.9
Inventories	59.5	50.6	56.5
Delivery Lead Time	52.3	56.2	54.4
Wholesale Prices	73.1	68.5	64.3
Trade:			
Imports	52.2	40.6	45.3
Export Orders	51.0	43.1	46.6
Business Confidence	66.5	62.8	62.1

Other PMI Components: New orders at 53.5 for October 2018 are up from 52.0 in September; production or sales at 59.1 is up from September's 53.2. Both durable and non-durable goods manufacturing reported solid gains for the month, and delivery lead time at 54.4, is down from the previous month's 56.2.

Though business confidence declined slightly since 2017, IT REMAINS STRONG.

Other Economic Indicators

Other indicators of economic conditions include wholesale prices, trade, and business confidence. Like the PMI components, these indicators are based on the four counties of Fresno, Kings, Madera, and Tulare.

Wholesale Prices: The prices-paid index, which tracks the cost of purchased raw materials and supplies, fell to 64.3 in October from September's 68.5, indicating modest inflationary pressures at the wholesale level. Both the San Joaquin Valley's wholesale inflation index and the U.S.'s inflation gauge are elevated.

On average, San Joaquin Valley businesses in the four counties expect to experience a 4.4% increase in the prices they pay for inputs and supplies over the next year. Rising tariffs and trade restrictions will continue to boost wholesale and consumer inflation growth above the Federal Reserve's target. This trend has already begun to push consumer inflation higher. It is estimated by the author that the Federal Reserve's interest-rate setting committee will raise short-term rates by another one-quarter of one percentage point (25 basis points) in 2019. Almost half, or 46.0%, of those surveyed for the prices-paid index expect additional rate hikes to negatively impact their firm's profitability in 2019.

Trade: The new export orders index climbed to a weak 46.6 from September's 43.1, while the imports index increased to 45.3 from 40.6 in September. Almost one-fourth, or 24.0%, of businesses report that tariffs and trade skirmishes have made it more difficult to purchase from other countries.

Business Confidence: Looking ahead six months, economic optimism, as captured by the business confidence index, slipped to a strong 62.1 from September's 62.8. Healthy profit growth, still-attractive interest rates, and lower taxes continue to support business confidence.

One-fourth of businesses report TARIFFS ARE IMPACTING PURCHASING.

Recent survey results point to continuing positive, but slowing, growth for 2019.

Summary

Over the past two years, the San Joaquin Valley economy, as tracked by the monthly survey of businesses in the four-county region, has expanded at a very healthy pace. The monthly survey and related government data indicate that the regional economy has advanced at a very solid pace.

Recent survey results point to continuing positive, but slowing, growth for 2019. The aggregate PMI and its components (with the exception of employment) were lower in October 2018 than October 2017; however, all remained above growth neutral. Rising interest rates and tariffs, a slowing global economy, and shortages of qualified workers for regional job openings will restrain 2019 growth below levels achieved in 2018. Aided by the relatively larger pool of unemployed workers to draw from, economic growth in the region will continue to outpace that of the national economy for the first half of 2019.

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National Institute for Supply Management

Bureau of Labor Statistics

Consumer *Sentiment Survey*

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KEY POINTS

- Consumer sentiment in the region comprising the counties of Fresno, Tulare, Merced, Madera, and Kings is generally positive; 48% of survey respondents indicate their family is better off financially today than five years ago.
- Over half (54%) of respondents expect their income will increase more than prices over the next year or two, or will increase about the same as prices.
- Just over 80% of respondents believe economic conditions are the same or better than last year, and that same percentage expect regional business conditions will improve or stay the same over the next year.
- Compared to national data, regional respondents are less positive about their current personal finances and their current economic conditions compared to the past year.
- Compared to national data, respondents are more positive in their expectations about regional economic conditions one year from now.

NEARLY HALF OF RESPONDENTS REPORTED they are currently experiencing a better financial situation when compared to 5 years ago.

The *Central California Business Review* recently conducted a survey of consumer sentiment in the counties of Fresno, Tulare, Merced, Madera, and Kings. This survey measures respondents' sentiments about regional economic conditions, as well as their personal financial situation, purchasing intentions, and credit utilization. The survey methodology was adapted from the University of Michigan Consumer Sentiment Survey.

Personal Economic Sentiment

Respondents generally perceive their current personal economic situations to be better today than in the past. Compared to five years ago, 48% of respondents reported that they are currently experiencing a better financial situation. (See Figure 1.) When compared to one year ago, 33% reported being financially better off now, and 40% reported being about the same. The percentage of respondents who indicated they are worse off than one year ago is lower (22%) than the percentage who indicated they are worse off than five years ago (28%).

RESPONDENTS WERE POSITIVE about their personal finances for the next five years.

When asked about expectations regarding their future personal financial situation, respondents were positive about the upcoming year and the next five years. Approximately 45% expect to be better off financially in one year. Looking ahead five years, about 51% of respondents have positive expectations. Only 9% expect to be worse off financially both one year and five years from now. (See Figure 1.)

Survey results indicate that the median anticipated change in household income is 3%. Forty-two percent of respondents expect their household income to increase over the coming year. Another 48% expect household income to remain the same. Only 8% expect a decrease. Sixty-eight percent of respondents anticipate prices will rise during the next year, while 21% anticipate prices will remain the same.

When asked to compare anticipated price increases (i.e., inflation) to anticipated increases in household income, 22% of respondents expect their income to rise more than prices over the next year or two, and 32% expect a similar increase in their income and prices. Thirty-three percent of respondents expect prices will increase more than their income. (See Figure 2.)

Figure 1
Personal Economic Conditions

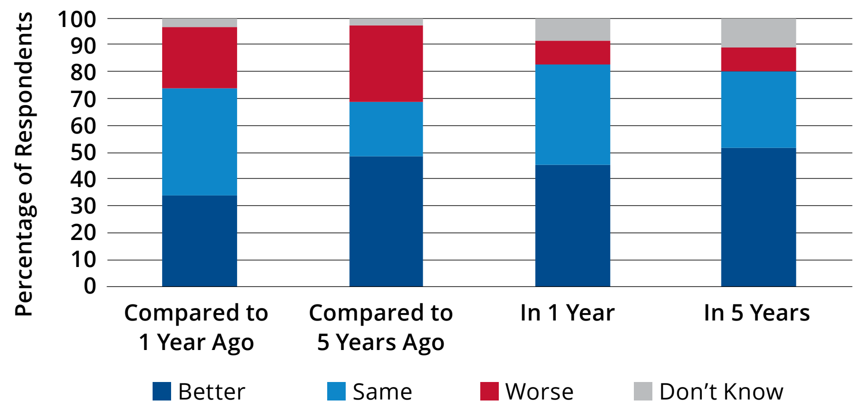


Figure 2
Expected Income Increase/Decrease Relative to Prices

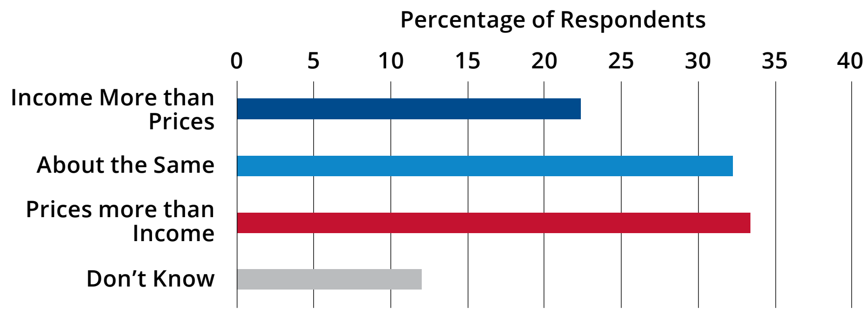
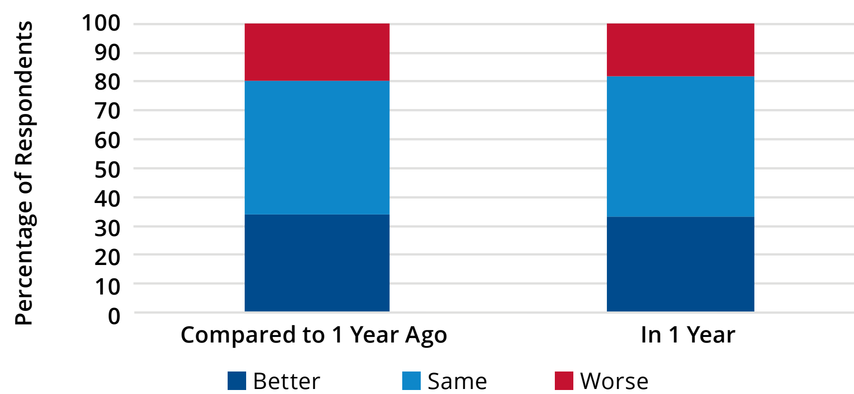


Figure 3
Regional Economic Conditions



Sentiment about the Region

Respondents were asked to reflect on the region's overall economy compared to a year ago. Nearly 80% indicate economic conditions have improved (33%) or stayed the same (45%). When asked about how conditions will be in one year, about the same percentage indicate the economy will improve (33%) or stay the same (48%) over the next year. (See Figure 3.)

When asked about general business conditions, 32% of respondents expect good times, 52% expect a mix of good and bad times, and only 11% expect bad times.

Consumer *Sentiment Survey*

Regional vs. National Sentiment

To compare regional sentiment with national sentiment, questions adapted from the University of Michigan Consumer Sentiment©[1] Survey were included in the regional survey. Following the University of Michigan's method, relative scores were calculated. Scores above 100 indicate more respondents have favorable expectations than unfavorable. Scores below 100 suggest more respondents have unfavorable expectations than favorable. Relative scores for the five-county region were compared to national relative scores.

At the regional level, a smaller portion of respondents are positive about the state of their current financial situation compared to a year ago and five years ago than respondents at the national level. A slightly larger portion of respondents in Central California have positive expectations about their personal financial situation over the next year than at the national level.

Data from the two surveys indicate consumers have favorable expectations regarding both price increases and income increases for the coming year. Respondents in both groups anticipate the increase in prices will surpass the increase in income, with relative scores of 89 and 86.

Perceptions about regional business conditions among the five counties were compared to perceptions about national business conditions. Both samples indicate business conditions have improved during the past year, with national respondents' relative score being 19 points higher than regional respondents. Both groups expect positive improvements in the coming year, though a significantly larger portion of regional respondents are optimistic about the upcoming year with a relative score of 115 than national respondents with a score of 103.

Table 1
Regional Vs. National Consumer Sentiment[1]

Category	Regional Relative Score	National Relative Score	Comparison
Personal Economic Conditions			
Current Financial Situation Compared to 5 Years Ago	120	144	↓
Current Financial Situation Compared to 1 Year Ago	111	130	↓
Expected Change in Financial Situation in 1 Year	136	131	↑
Expected Change in Financial Situation in 5 Years	142.5	144	→
Personal Income Expectations			
Expected Household Income Change Over the Next Year	134	148	↓
Expected Change in Prices Over the Next Year	164	188	↓
Expected Change in Household Income Relative to Prices	89	86	↑
Economic Conditions			
Current Business/Economic Conditions Compared to 1 Year Ago	114	133	↓
Expected Change in Business/Economic Conditions in 1 Year	115	103	↑

Purchasing and Credit

Respondents also completed questions about major purchases. Approximately 42% reported making a major household purchase during the past six months (e.g., furniture, television, major appliances, etc.). Approximately 49% of respondents reported that now is a good time to make major household purchases, and about 48% of respondents anticipate making one during the next six months.

As for credit utilization, respondents indicated the types of credit they currently hold. About 32% of respondents hold a mortgage, 35% hold an auto loan, 50% have a credit card carrying a balance, and 20% hold a student loan. (See Figure 4.)

When comparing survey results regarding credit use, all forms of credit held were higher this year than last, with the exception of student loans. This year, the percent of respondents who indicated having mortgages, auto loans and balance-carrying credit cards was about five points higher than last year.

Respondents also reported on their plans to acquire different types of credit in the next year. They indicate plans to seek mortgages (12%), auto loans (15%), student loans (6%), and credit cards (18%) within the next 12 months. (See Figure 5.)

When comparing survey results regarding credit planned with last year's results, slightly more respondents this year indicated that they planned to use each type of credit. Student loans were the exception, with a slightly lower percentage of respondents this year indicating they plan to use this form of credit.

Survey Methodology

The Central California Consumer Sentiment Survey was adapted from the University of Michigan Consumer Sentiment Survey. The sample is composed of 1,774 respondents from five counties in Central California, recruited via a marketing research firm to complete the survey. Respondents represented the counties of: Fresno (53.6%), Tulare (19.6%), Merced (13.4%), Madera (6.7%), and Kings (6.7%).

Endnote

1 National data from the University of Michigan Consumer Sentiment Survey 2018 Data. Available at: https://data.sca.isr.umich.edu/
Relative score values calculated as % of favorable responses minus % of unfavorable responses plus 100. Positive or negative comparison indications are provided for regional vs. national score differences exceeding 2 points.

Figure 4
Types of Credit Held

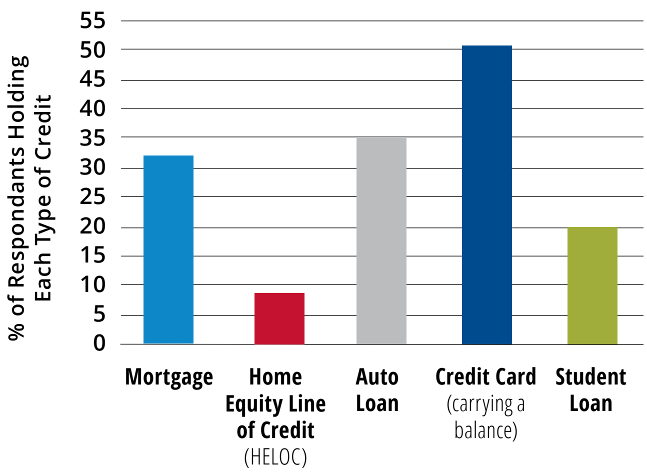
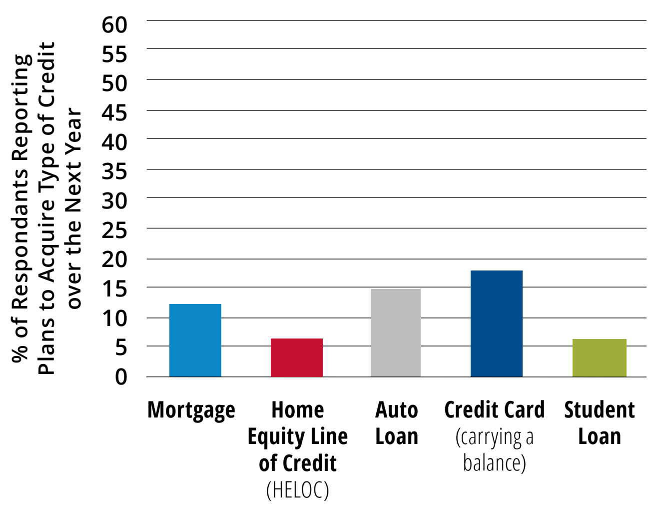


Figure 5
Types of Credit Planned Over the Next Year



Real Estate *Sentiment Index*

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KEY POINTS

- The overall Real Estate Sentiment Index continues its positive trend from recent years, but shows a slight deterioration in current and future expectations.
- Most real estate sectors follow similar declining expectations, including the agricultural sector. This may reflect growing concerns over the national and state economies, and over potential tariffs affecting lumber and, subsequently, construction prices.
- The industrial sector has been a hot topic in the last couple of years with news of big deals taking place locally, yet current and future expectations may be showing a downturn.

The overall current index in fall 2017 reflects a positive sentiment, while the six-month projected index indicates a slightly lower sentiment.

The Real Estate Sentiment Index published by the Gazarian Real Estate Center is in its sixth consecutive year. A survey is sent to 2,000 real estate professionals to capture their sentiment regarding current and future local real estate market conditions. Starting in 2017, a fall survey was added to provide additional data points to better identify trends and fluctuating conditions. Responses form a weighted index for various real estate sectors ranging from 0 to 5 in sentiment as below:

Negative	0 to 1
Mildly negative	>1 to 2
Neutral	>2 to 3
Mildly positive	>3 to 4
Positive	>4 to 5

Overall Sentiment

The overall index in fall 2017 reflects a positive sentiment, while the six-month projected index indicates a slightly lower sentiment. Compared to results from spring 2017, respondents are slightly more optimistic about present and future market conditions. Relative to fall 2017, spring 2018 results indicate a 6% drop in the overall present sentiment to a mild positive, yet future expectations are marginally more optimistic. This is a turn in results from 2017, when future expectations were lower than present expectations. It is well known that the overall state of the economy and labor markets have a significant impact on sentiments about real estate markets. The slight overall sentiment deterioration at the beginning of 2018 may be attributed to concerns over the continuation of robust economic growth. (See Figure 1.)

Submarkets

While the current and six-month single-family indices reflect a positive sentiment, the year-over-year change reflects a 7% drop in the current sentiment and a 4% decline in future expectations. Rising home prices and a considerable supply shortage may be damping expectations. (See Figure 2.) We observe similar results in the multi-family sector. (See Figure 3.)

The agriculture indices in fall 2017 and spring 2018 reflect a mild positive sentiment for both the present and six-months indices. The spring 2017 to spring 2018 change does not reflect any increase in present expectations, but there is a considerable increase in how respondents expect agricultural markets to perform in six months. The fall 2017 to spring 2018 change results in a 10% drop in current expectations, yet no change in future expectations. The land index, on the other hand, reflects a slight deterioration in current and future expectations. The agricultural sector has been performing considerably well in the last few years, particularly from increased value in nuts production, yet concerns over water supply may be translating into uneasy expectations. (See Figures 4 & 5 on the following page.)

Figure 1
Overall Sentiment Index

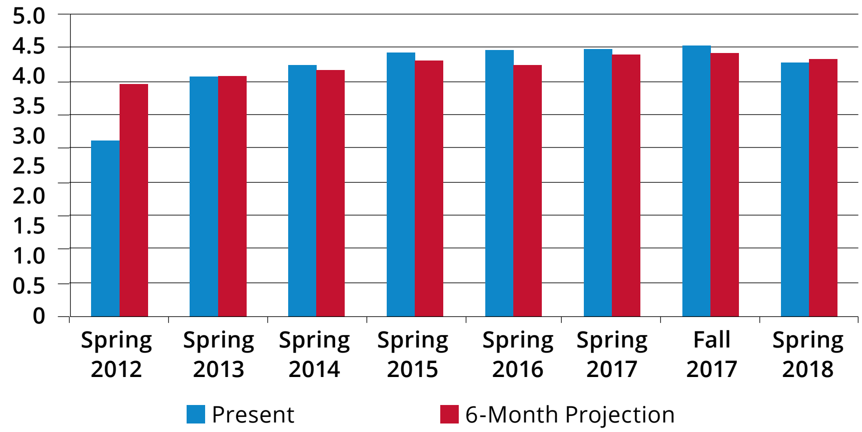


Figure 2
Single-Family Residential Sentiment Index

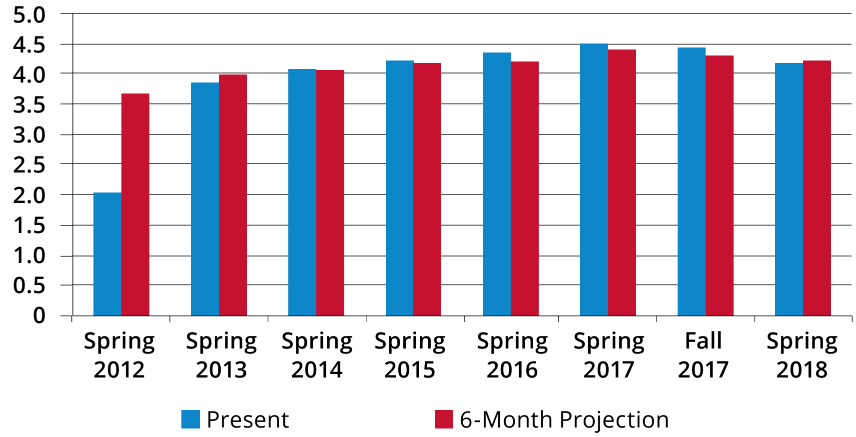
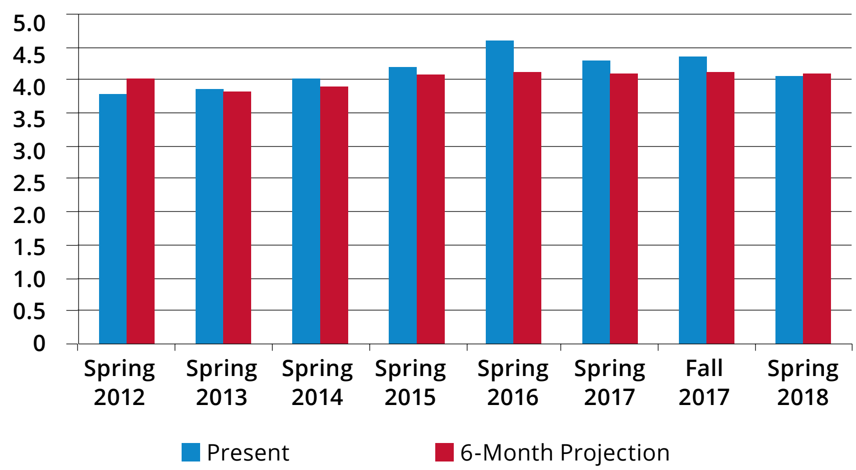


Figure 3
Multi-Family Sentiment Index

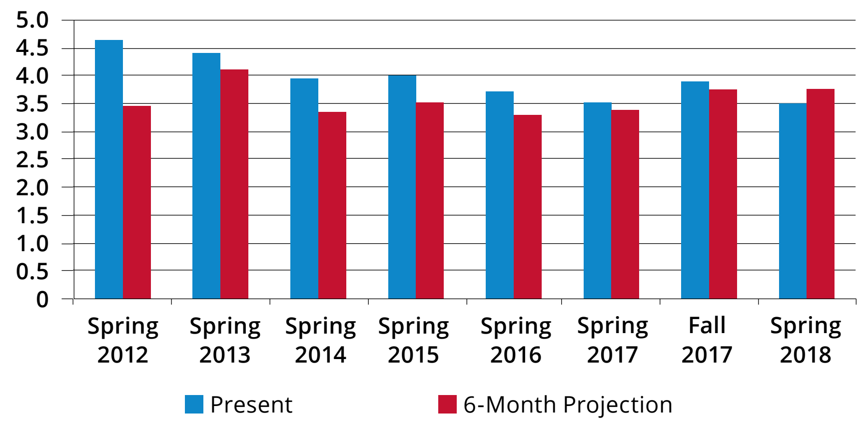


REAL ESTATE

Real Estate *Sentiment Index*

The office and retail indices in fall 2017 and spring 2018 reflect a mild positive sentiment for both the present and six-month expected sentiments. The office sector shows a 4% decline in current and future expectations from spring 2017 levels, while the retail sector reflects a 6% decline in present expectations and a 4% decline in future expectations. These sentiments are contrary to local reports, a condition that may reflect a relatively poor representation of these sectors in our survey. (See Figures 6 & 7.)

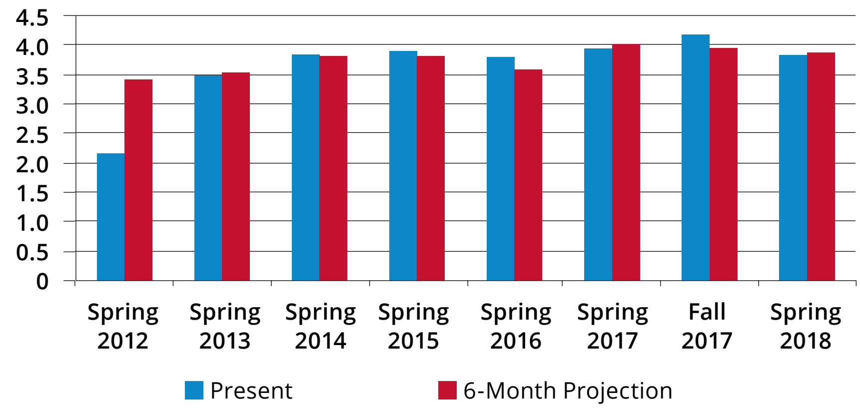
Figure 4
Agriculture Sentiment Index



Industrial

This section gives special attention to the industrial sentiment index. In spring 2018, the Gazarian Real Estate Center hosted an Industrial Real Estate Symposium at the Craig School. The event gathered experts from this booming sector. The keynote speaker was Dr. Randy Anderson, from Griffin Capital, and included presentations from Jason Quintel at Seefried Industrial Properties, Jim Terry at Ware Malcomb, and local expert Ethan Smith from Newmark Grubb Pearson. Presenters gave details about the current industrial sector, emphasizing some of the benefits to come from the Amazon and Ulta distribution center developments in Fresno County; these expectations have brought a new spark to this sector.

Figure 5
Land Sentiment Index



The industrial index in spring 2018 reflects a positive sentiment, though it comes at a 2% decline from spring 2017 levels. The six-month expectation is also positive,

Figure 6
Office Sentiment Index

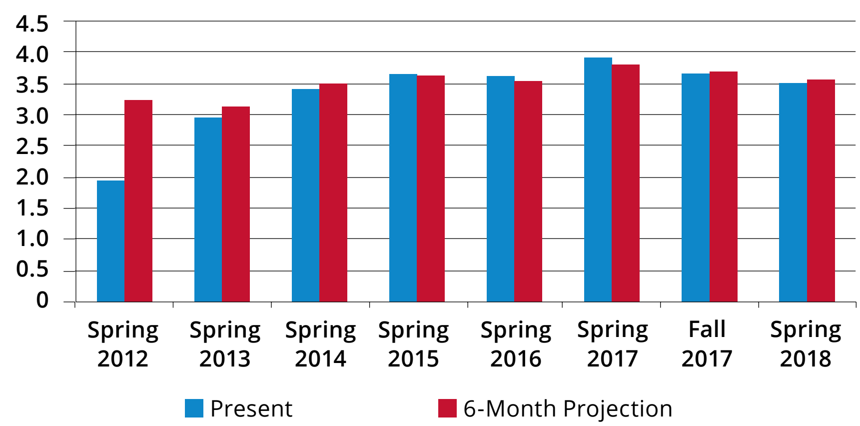


Figure 7
Retail Sentiment Index

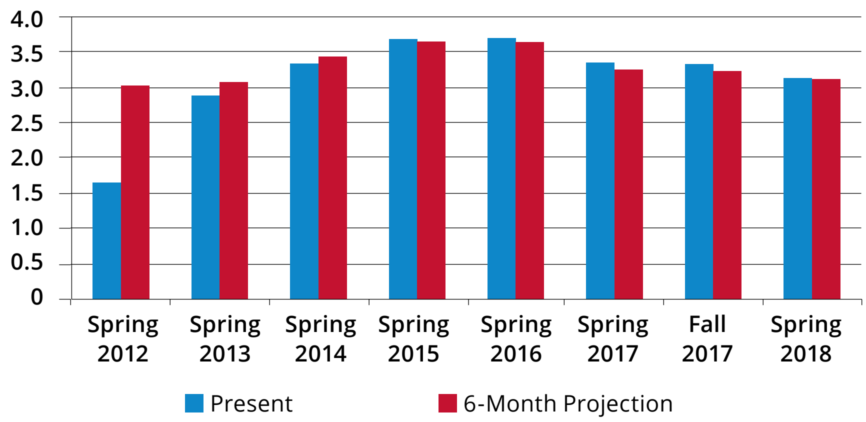
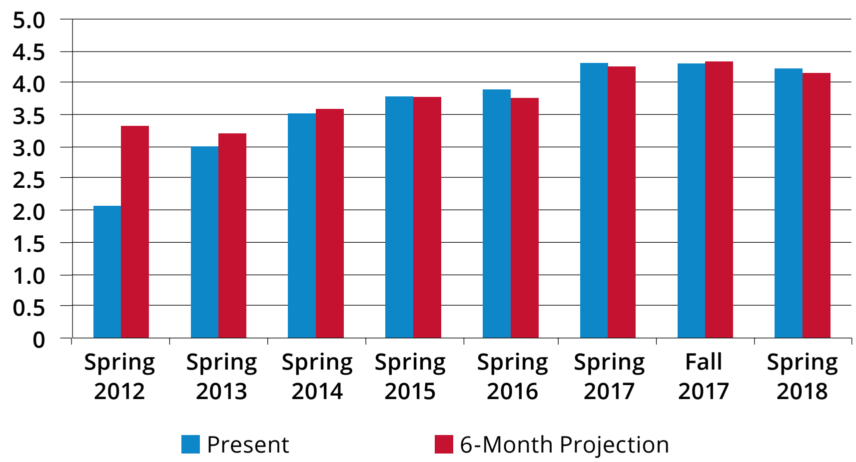


Figure 8
Industrial Sentiment Index



yet again reflects a slight deterioration. This is the first time in six years that current and future expectations show a decline. Other local industrial market indicators reflect an increase in average asking prices and rents per square foot, a considerable decrease in vacancy rates, and a flat availability of total inventory with concerns over the supply of quality space. Some local areas, though, are showing slight increases in inventory. Overall, the industrial real estate sector is showing signs of a slight slowdown from 2017 levels, most likely from an uncertain expectation regarding how the local economy will respond to the anticipated slowdown in economic growth as well as the full impact of the Amazon and Ulta deals. Companies wanting to do business with Ulta and Amazon will likely locate in the areas surrounding their buildings, creating demand for new or existing industrial space. (See Figure 8.)

FUTURE EXPECTATIONS in most real estate sectors are MARGINALLY LOWER RELATIVE TO PREVIOUS YEARS.

Conclusions

This year we find that current and future expectations in most real estate sectors are marginally lower relative to previous years. This year it is observed that the potential slowdown in economic growth in the years to come is translating into uncertainty in local real estate market conditions. This is consistent with expectations across the nation, where signs of mild deterioration and gloomy growth expectations are affecting major markets.

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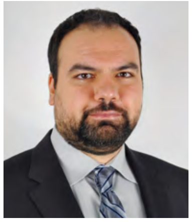
Central California's Labor Markets

AUTHORS



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KEY POINTS

- Since 2013, labor force growth in Fresno County has recovered from a period of declining growth. The county's growth was similar to California's labor force growth from 2013 to 2016, and for the recent period reflects a slight downward trend.
- The unemployment rate in the Central Valley began declining in 2012 with some counties' rates reaching historically low records in 2018.
- While the region boasts significantly higher shares of employment in the natural resources and mining sector (which includes agriculture), the region is well behind the state and nation in the professional and business services sector.
- For the six counties studied, poverty rates are higher than both the state and national averages, and all six have lower shares of college graduates.

From August 2017 to August 2018, unemployment fell by one percentage point or more in all six counties.

Labor Force Participation, Employment, and Unemployment

Employment data for 2017 for six of the Central Valley's counties are shown in Table 1. County population figures are included for perspective. The counties of Fresno, Kern, and Tulare make up 80% of the six-county region, with Fresno County representing just over one-third of the total population. The total number employed in the six-county region in 2017 was 1.2 million, with those unemployed reaching 116,000.

After experiencing negative growth from August 2011 to August 2013, labor force growth in Fresno County recovered and turned positive in August 2014. (See Figure 1.) Fresno County's growth closely followed California's labor force growth from 2013 to 2016, and growth rates for both Fresno County and the State turned slightly negative in the recent period, August 2017-August 2018.

Labor Force Growth

Figure 2 presents labor force growth rates for the six counties, California, and the U.S. Labor force growth rates in Tulare and Merced counties were higher than both the state and national averages. Fresno County, with lower growth than the U.S., slightly outpaced California's labor force growth for the period. Three counties – Madera, Kern, and Kings – were below both state and national growth rates.

Table 1
Labor Force Participation, Employment, and Unemployment by County for 2017 (in Thousands)

County	Labor Force	Employed	Unemployed	County Population	Percentage of Six-County Total Population
Fresno	450	412	38	989	34%
Kern	385	350	35	893	31%
Tulare	205	184	21	464	16%
Merced	116	105	11	273	9%
Madera	61	56	5	157	5%
Kings	58	53	5	150	5%
Total	1,275	1,160	115	2,926	100%

Data Source: Bureau of Labor Statistics, U.S. Census

Figure 1
Labor Force Annual Percent Change

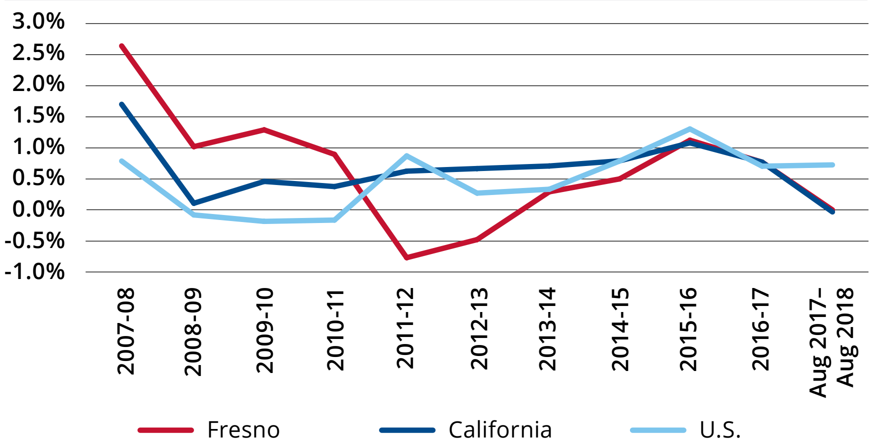
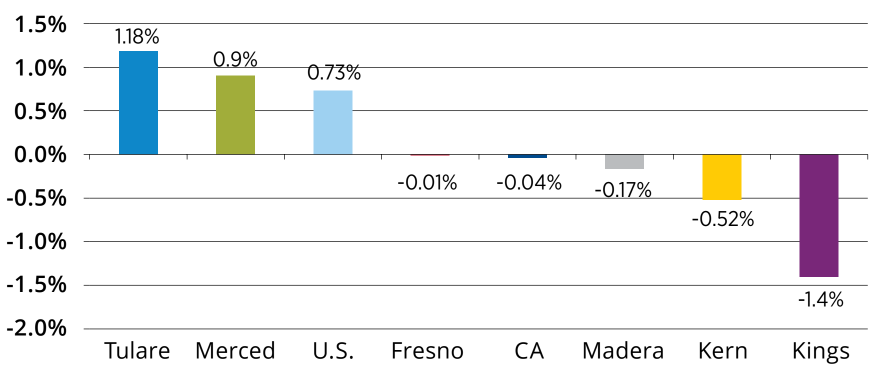


Figure 2
Labor Force Growth by County • August 2017-August 2018



Figures 1 & 2 • Data Source: Bureau of Labor Statistics

LABOR MARKETS

Labor Markets

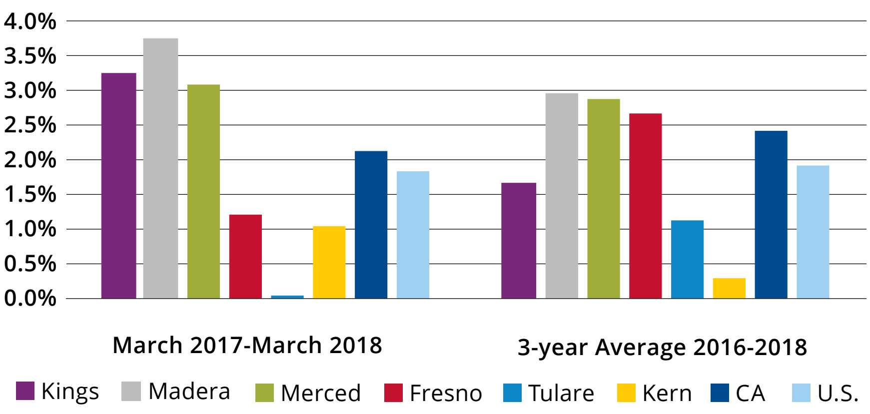
Employment Growth

Figure 3 provides a picture of growth in employment for both the recent period and the three-year period. Employment in Central California grew, with Fresno, Merced, and Madera outpacing the U.S. and California growth rates from March 2016 to March 2018. For the recent year, March 2017-March 2018, Merced, Madera and Kings counties achieved impressive employment growth, a good bit above both the U.S. and California.

Two counties stand out in terms of employment growth over both the three-year period and the one-year period – Merced and Madera counties. Enrollment and employment at the University of California, Merced, have increased continuously since the university's inception in 2005. UC Merced was recognized by the *Chronicle of Higher Education* as the fastest-growing university in the nation in 2017,[1] and for the last academic year, granted 1,418 degrees, over three times the number granted in 2010-11. The University generates a monthly payroll of $16.5 million (salary and benefits), and is one of the county's largest non-agricultural related employers.[2]

Valley Children's Healthcare contributes to employment growth in Madera County and is one of the county's largest employers, with more than 650 physicians and 3,400 staff delivering health care to over 1.3 million children.[3] The inflow of skilled labor working in this sector could stimulate higher demand in non-traded industries such as local service sectors, possibly generating multiplier effects in additional employment growth.

Figure 3
Employment Growth Percent Change



Data Source: Bureau of Labor Statistics

Table 2
Unemployment by County

County	August 2017	August 2018	Change
Fresno	7.7%	6.6%	-1.1%
Kern	8.6%	7.3%	-1.3%
Tulare	10.0%	8.7%	-1.3%
Merced	8.2%	7.0%	-1.2%
Madera	7.3%	6.2%	-1.1%
Kings	7.7%	6.7%	-1.0%
California	4.6%	4.2%	-0.4%
U.S.	4.2%	3.7%	-0.5%

Data Source: Bureau of Labor Statistics

Unemployment

Table 2 provides unemployment data for the six counties. From August 2017 to August 2018, the reduction in unemployment rates in all six counties outpaced the national and state levels. Since 2013, unemployment rates have been declining in the Central Valley. In September 2018, Fresno achieved a record low unemployment rate, and in other counties – except for Tulare – unemployment rates also reached historic lows. That said, unemployment rates in the six counties are still well above national and state levels, with unemployment in Tulare and Kern counties running at more than twice the national unemployment rate.

Employment by Sector

Table 3 shows shares of employment for the six counties as well as for the state and the nation. Agriculture is an important part of the Central Valley's economy and is included in the natural resources and mining sector. As the data indicate, the six-county region has significantly higher shares of employment than either the state or nation in this sector. The Central Valley is home to large food and beverage processing companies such as E & J Gallo Winery in Merced County, Central Valley Meat Company in Kings County, and Land O'Lakes and Ruiz Foods in Tulare County.

The greatest negative gap between the state and nation and the six counties is in the share of employment in the professional and business services sector. The six-county average is 9%, representing only about half that of the state and nation.

The shares of employment for both the information and financial sectors are lower than the state and nation. The presence of technology centers in the Bay Area skews the state's share higher than the nation and the six-county area.

The greatest negative gap between the state and nation and the six counties is in the share of employment in the professional and business services sector.

A sector with some counties' employment shares notably above state and national levels is education and health care, though the average of the six counties and the state and nation are equal. Fresno County's medical centers and Valley Children's Hospital in Madera are among those contributing to higher shares for their counties.

With respect to construction, manufacturing, and trade, the six-county average is very similar to the state and the nation.

Table 3
Distribution of Employment Across Industrial Sectors • March 2018

County or Region	Natural Resources, & Mining (Including Agriculture)	Construc-tion	Manufac-turing	Trade, Transpor-tation & Utilities	Information	Financial Activities	Professional & Business Services	Education & Health Services	Leisure & Hospitality	Other Services
Fresno	12%	6%	8%	21%	1%	5%	10%	22%	11%	4%
Kern	21%	6%	6%	22%	1%	3%	11%	15%	11%	3%
Tulare	24%	5%	11%	22%	1%	3%	9%	12%	9%	3%
Merced	20%	4%	15%	22%	0%	3%	7%	16%	9%	2%
Madera	30%	5%	8%	15%	1%	2%	6%	22%	9%	2%
Kings	20%	3%	14%	21%	1%	3%	4%	21%	11%	2%
Six-County Average	19%	6%	9%	21%	1%	4%	9%	18%	10%	3%
CA	2%	6%	9%	20%	4%	6%	18%	18%	13%	5%
U.S.	1%	6%	10%	22%	2%	7%	17%	18%	13%	4%

Data Source: Bureau of Labor Statistics

Labor Markets

Employment Growth by Sector – Previous Three Years

Table 4 provides data regarding employment growth in different sectors over the three-year period from 2016 to 2018. With the exception of the information sector, growth in the six counties is similar to the state and nation.

Employment in the natural resources and mining sector, which includes agriculture, contracted in three of the counties at a slightly faster pace than the state or nation. Fresno County's decline in employment share was the greatest, at 4%. Madera and Merced counties increased employment in this sector, with Madera County experiencing 6% growth in the sector vs. -2% growth for the six-county average, the state and the nation.

The largest difference in growth among the six counties and the state and nation is in the information sector, with the state's employment growing by 3% and the six counties' shrinking by 4%. In addition to having a smaller share of employment in the information sector itself (Table 3), the six counties are also experiencing a significantly negative growth pattern in employment. These data indicate California's success in the technology sector has not reached the Central Valley, and that the gap in sector employment between the valley and the state is becoming greater.

The largest difference in growth among the six counties and the state and nation is in the information sector.

Table 4
Employment Growth by Sector by County • March 2016-March 2018

County or Region	Natural Resources, & Mining (Including Agriculture)	Construc-tion	Manufac-turing	Trade, Transpor-tation & Utilities	Information	Financial Activities	Professional & Business Services	Education & Health Services	Leisure & Hospitality	Other Services
Fresno	-4%	8%	1%	2%	-3%	3%	0%	5%	3%	1%
Kern	-2%	-3%	-2%	2%	-6%	-4%	1%	4%	2%	-1%
Tulare	-3%	9%	3%	1%	-3%	0%	5%	5%	1%	1%
Merced	1%	9%	1%	4%	-3%	6%	6%	3%	2%	0%
Madera	6%	11%	-3%	3%	-6%	-4%	-6%	4%	5%	-4%
Kings	-3%	2%	2%	6%	-7%	-1%	-4%	2%	3%	3%
Six-County Average	-2%	5%	0%	2%	-4%	0%	1%	4%	2%	0%
CA	-2%	6%	1%	1%	3%	2%	2%	4%	3%	1%
U.S.	-2%	5%	1%	1%	1%	2%	2%	3%	3%	1%

Data Source: Bureau of Labor Statistics

Poverty, Income, and Education

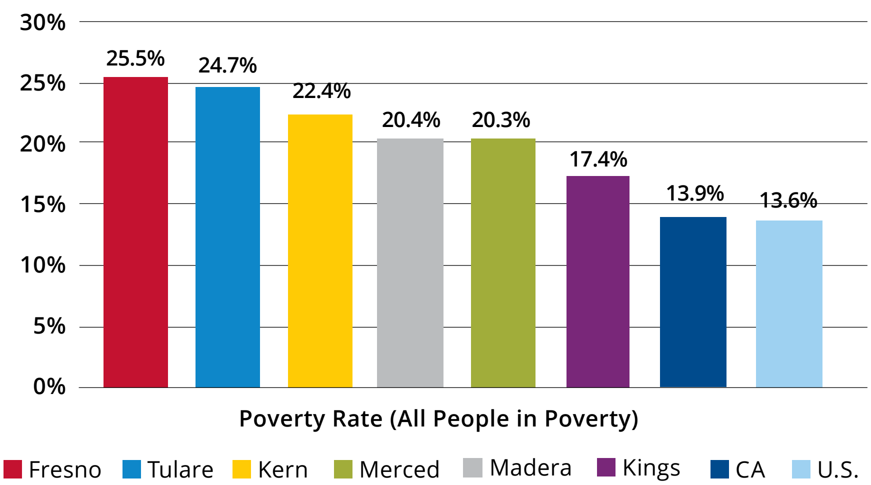
California's Central Valley suffers from high rates of poverty, with the highest rates in Fresno, Tulare, and Kern counties. Poverty rates in the region are dramatically higher than those of California and the U.S.; in the case of Fresno County, the poverty rate is 10 percentage points greater. (See Figure 4.)

Figure 5 shows the distribution of households by income brackets for the six-county area (a weighted average), California, and the U.S.

As the data indicate, poverty manifests itself in the share of households earning less than $50K (about 50% of all households in the six-county area), compared to the nation (42%) and the state (36%). The rate of poverty may be partially explained by the lack of high paying jobs and by underemployment in the region.

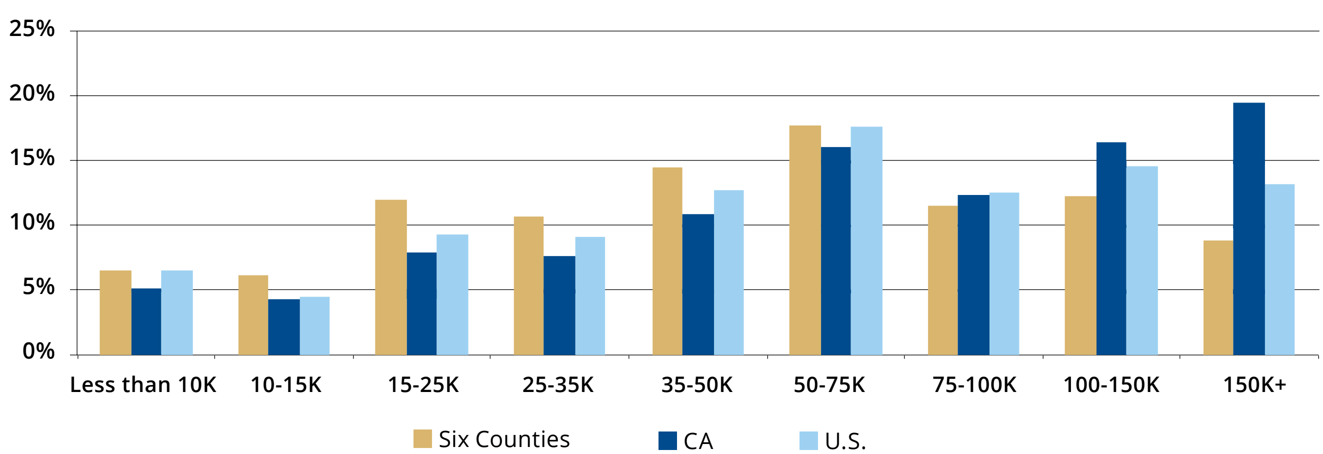
ABOUT HALF OF HOUSEHOLDS in the six counties EARN LESS THAN $50K, WHILE JUST OVER 1/3 OF CALIFORNIA HOUSEHOLDS EARN LESS THAN THAT AMOUNT.

Figure 4
Poverty Rate by County • 2016



Data Source: U.S. Department of Agriculture

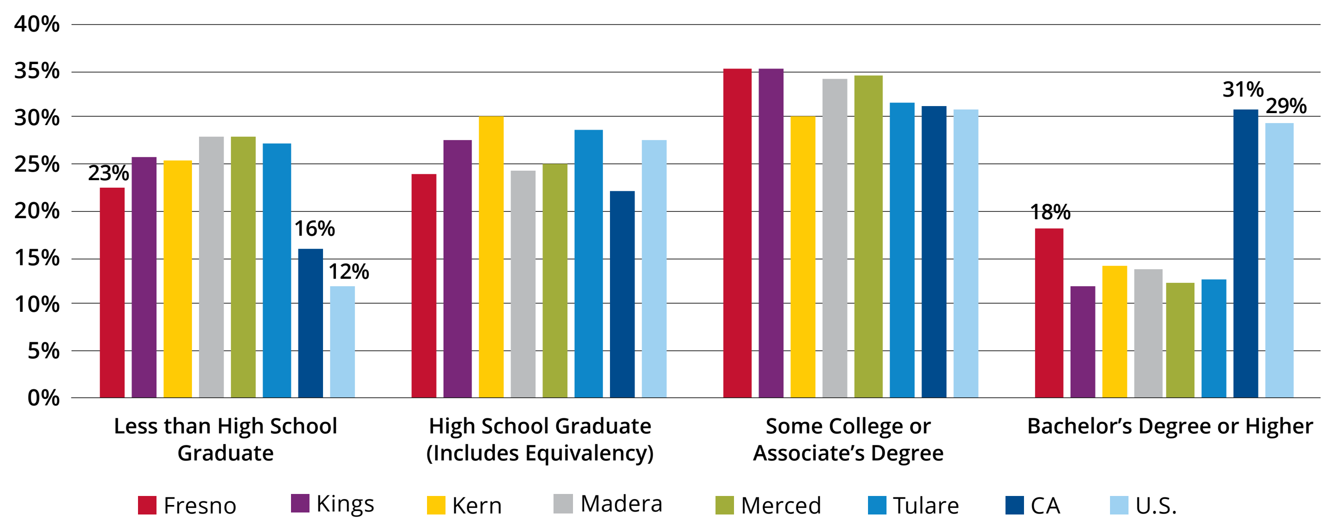
Figure 5
Household Income Distribution in 2017 • Percent of Households by Income Group



Data Source: U.S. Census

Labor Markets

Figure 6
Educational Attainment by County • 2017



Data Source: U.S. Census

> **All counties in the six-county region have SIGNIFICANTLY LOW SHARES OF COLLEGE GRADUATES compared to state and national levels.**

Relative to educational attainment, all counties in the six-county region have significantly low shares of college graduates compared to state and national levels. As Figure 6 shows, the share of those without a high school diploma is well above the national and state levels. Data for the six counties reflect the well-established correlations between education and earnings and between education and employment.

Enhancing education and occupational training services could potentially address the challenges of high poverty and unemployment in the Central Valley by attracting labor-intensive jobs and businesses to the region. In addition, improving the quality of living and job opportunities, especially in high value-added sectors, could attract and retain skilled workers and thus boost income growth and employment. Growth in major sectors could further generate additional employment growth in local services, thus multiplying the employment in the region. Potential opportunities for spatial, network, and economic integration with other metropolitan areas in Northern and Southern California could also boost employment growth, bringing higher-value jobs to the area.

Endnotes

1 https://www.ucmerced.edu/fast-facts

2 https://news.ucmerced.edu/news/2017/record-breaking-class-pushes-uc-merced-enrollment-near-8000

3 https://www.valleychildrens.org/about-us/about-us

The San Joaquin Valley Manufacturing Alliance (SJVMA) is an organization of the Valley's manufacturing leaders advancing their industry and creating a world-class workforce at the local level.

Launched by the Fresno Business Council, SJVMA aims to strengthen regional manufacturing, an industry **that employs more than 105,000 people and growing** and **is responsible for nearly $15 billion of the Valley's annual Gross Domestic Product (GDP).**

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Food & Beverage Manufacturing *in Central California*

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KEY POINTS

- Food and beverage manufacturing contributes over $123 billion to California's economy.
- In the Central Valley, food and beverage manufacturing generates $21 billion in economic activity, employs over 30,000 people, and represents more than half of all jobs in manufacturing.
- Each value-added dollar created by food and beverage manufacturing creates a total economic activity of $1.83, and each additional job created by food and beverage manufacturing results in 1.77 jobs in total.

Overview

California is the nation's leading producer of agricultural products, with farmers and ranchers growing over a third of the country's vegetables and two-thirds of the country's fruits and nuts. (California Department of Food and Agriculture.) The top five agricultural commodities in the state by value of production are: milk ($6.1 billion), grapes ($5.6 billion), almonds ($5.2 billion), cattle and calves ($2.5 billion), and lettuce ($2.0 billion).

The majority of farm products are processed before reaching the final consumer. For products such as eggs or fresh oranges, this process is relatively simple (e.g., cleaning, sizing/grading, packaging, and shipping). For other products, such as string cheese or canned soups, a great deal of processing is needed to convert the farm product to a final consumer product. These activities are included in a sector of the economy known as "food processing" or "food manufacturing."

This article explores the food-and-beverage manufacturing sector within the five counties of Fresno, Madera, Merced, Kings, and Tulare and includes data on production, employment, and issues facing the sector.

The sector contributed $123 billion to California's GDP in 2017, and accounted for just over 5% of the state's total GDP.

Dairy, fruit/vegetable, and animal processing of the five-county area REPRESENTS OVER ONE-THIRD of the state's total sector GDP.

Food and Beverage Manufacturing Output

The contribution of the food and beverage sector to the economy is significant. The sector contributed $123 billion to California's GDP in 2017, and accounted for just over 5% of the state's total GDP. This sector is also an important economic driver in the Central Valley. The total GDP value for the area comprising the five counties of Fresno, Madera, Merced, Kings, and Tulare is $21 billion or 17% of California's total food-manufacturing output.

Table 1 provides details regarding the contribution to GDP made by different counties relative to their food manufacturing activities. The table indicates that for some sectors (dairy, fruit/vegetable, and animal processing), the five-county area represents over one-third of the state's total sector GDP.

Table 1
Food & Beverage Manufacturing Sectors in 2016 GDP Dollars (Millions)

Manufacturing Sector	California	Fresno	Madera	Merced	Kings	Tulare	Five-County Area	Percent of California GDP from the Five-County Area
Animal Processing	10,542	2,895	17	817	426	84	4,239	40.2%
Dairy	15,821	211	89	1,292	1,481	2,378	5,451	34.5%
Fruit/Vegetable	14,062	1,919	12	1,214	530	1,083	4,758	33.8%
Animal Food	5,903	89	199	199	100	907	1,493	25.3%
Grain/Oil Seed	6,574	285	177	15	879	16	1,372	20.9%
Other Food	25,074	432	142	188	460	427	1,650	6.6%
Soft Drink/Ice	11,219	538	4	20	18	18	598	5.3%
Bakery/Tortilla	12,231	385	24	43	27	101	581	4.8%
Wineries/Distilleries	15,666	470	82	100	0	59	712	4.5%
Breweries	6,479	84	3	32	0	0	119	1.8%
Total Food & Beverage	**123,571**	**7,308**	**749**	**3,920**	**3,921**	**5,073**	**20,973**	**17.0%**

Source: IMPLAN Model 7 - 2016 Dataset

Food & Beverage Manufacturing
in Central California

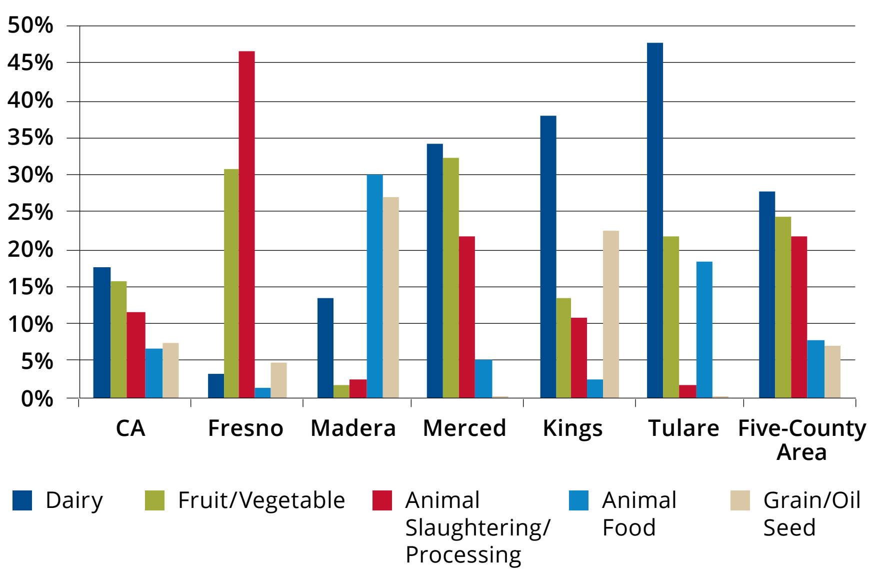
Figure 1 displays the dominant sectors of food manufacturing for each county. The color bars indicate the percent of a county's total food manufacturing production each category represents. Sectors vary in importance across counties. While animal processing is the largest sector in Fresno County for example, dairy is the largest for Tulare County.

Dairy Product Manufacturing

The five-county region accounts for about 35% of total dairy product manufacturing in California. Dairy food manufacturing has a particularly strong foothold in Tulare, Merced, and Kings counties. In Tulare County, dairy food manufacturing contributes almost half of the county's total food manufacturing GDP; and the county is home to some of the largest dairy plants in the United States, operated by companies such as Land O'Lakes Inc., Saputo, Kraft Foods, and California Dairies Inc.

Over the years, the utilization of milk produced in California has been shifting toward Class 4b products (cheese and whey products) and away from Class 1 products (fluid milk). This is expected to continue in the future and may enhance the sector's impact on food and beverage manufacturing as more attention and resources are focused on more processed dairy products like cheese as opposed to fluid milk. Another factor that may impact the dairy processing sector is the recent adoption of the California Federal Milk Marketing Order, which is expected to create changes in the prices for different categories of milk (Sumner, 2018). (Some categories like milk destined for cheese may garner a higher price; other categories may remain the same.) The new United States-Mexico-Canada Agreement (USMCA) is supposed to provide more opportunities for U.S. dairy products in the Canadian market, which will be beneficial to Central California.

Figure 1
Sector Proportion of Total County Food Manufacturing



Data Source: IMPLAN Model 7 - 2016 Dataset

FRUIT AND VEGETABLE MANUFACTURING in the five-county area accounts for over one-third of California's total production.

Fruits and Vegetable Preserving and Specialty Industry

Fruit and vegetable manufacturing in the five-county area accounts for over one-third of California's total production, not surprising considering the prevalence of crops like grapes.

The volume of processing for packaging in dried, canned, or frozen forms fluctuates significantly due to the seasonal nature of agricultural production. This fluctuation results in varying levels of energy usage and employment, creating variations in production costs. This fluctuation

also impacts employment. Because many workers would prefer steady employment versus seasonal work, quantity of workers and quality of work can vary dramatically.

While the total number of fruit and vegetable processing firms in Central California has decreased somewhat, the number of people employed by those firms has increased by more than 50%. This increase reflects higher consumer demand for fresh processed fruits and vegetables. Increasing awareness about healthy lifestyles and improving the nutrition of an aging population are projected to create significant growth opportunities for the fruit and vegetable processing sector in Central California.

Animal Slaughtering and Processing

A significant amount of processing and manufacturing is needed to create edible animal products, processing that generates significant value-added activity. Animal slaughtering and processing represents over 20% of food manufacturing GDP in the five-county region. This sector is also important in terms of employment and represents over 25% of all manufacturing jobs in Fresno and Merced counties. These two counties are home to some of the largest meat processing plants west of the Rocky Mountains, including Cargill Beef, Harris Ranch Beef, Central Valley Meat Company, Foster Farms, and Zacky Farms. (Although Zacky Farms recently announced it will close in January 2019.)

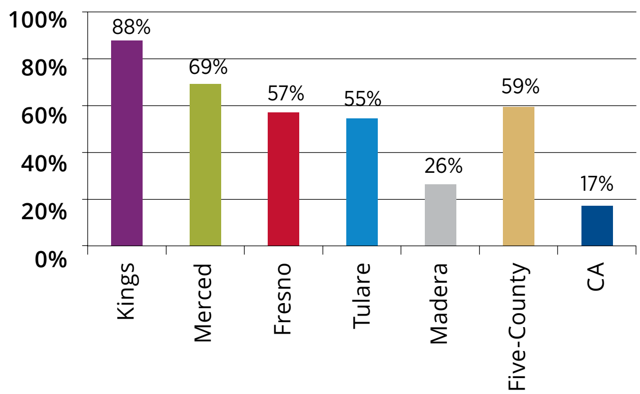
The sector is facing a number of challenges including increased food safety, perceived health risk of eating meat, attracting and retaining talented personnel, and the rising costs of raw materials. The sector is expected to grow due to strong consumer demand for protein-rich food. This optimistic scenario will help Central California expand the animal slaughtering and processing industry.

With the exception of Madera County, food and beverage manufacturing represents well over 50% of all manufacturing in the five counties and in Kings County is nearly 90% of all manufacturing jobs.

Food and Beverage Manufacturing Employment

The manufacturing sector as a whole represents a relatively small portion of employment in the five-county region (roughly 8% to 16% of total employment). Of overall manufacturing employment, however, food and beverage manufacturing dominates. With the exception of Madera County, food and beverage manufacturing represents well over 50% of all manufacturing in the five counties and in Kings County is nearly 90% of all manufacturing jobs.

Figure 2
Food and Beverage Manufacturing as a Percentage of All Manufacturing Employment



Data Source: U.S. Bureau of Labor Statistics. Accessed October 10, 2018
https://data.bls.gov/PDQWeb/en

FOOD & BEVERAGE

Food & Beverage Manufacturing
in Central California

Table 2
Food and Beverage Employment for the Period 2010-2017

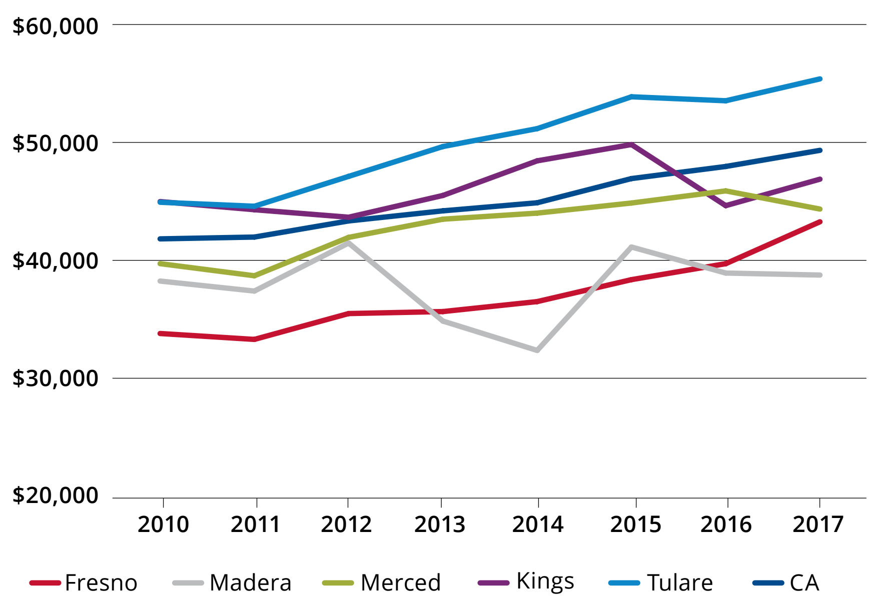
Year	Fresno	Kings	Madera	Merced	Tulare	Five-County Area	California	Five-County Area Percent of California Manufacturing Jobs
2010	13,453	3,511	576	5,766	5,787	29,093	187,787	15.5%
2011	13,190	3,743	602	5,795	6,328	29,658	190,846	15.5%
2012	13,021	3,841	797	5,934	6,391	29,984	193,597	15.5%
2013	12,549	3,898	1,374	5,760	6,466	30,047	196,611	15.3%
2014	12,704	4,030	1,658	6,716	6,567	31,675	202,021	15.7%
2015	14,349	4,233	859	6,858	6,617	32,916	208,278	15.8%
2016	14,329	4,169	918	6,555	7,155	33,126	214,782	15.4%
2017	14,520	4,242	896	6,587	6,939	33,184	222,246	14.9%
Gain in Jobs over the Period	**1,067**	**731**	**320**	**821**	**1,152**	**4,091**	**34,459**	
Percent Growth over the Period	**8%**	**21%**	**56%**	**14%**	**20%**	**14%**	**18%**	

Data Source: U.S. Bureau of Labor Statistics. Accessed October 10, 2018 • https://data.bls.gov/PDQWeb/en

Table 2 provides data for food and beverage manufacturing jobs from 2010 to 2017. During this seven-year period, California gained over 34,000 jobs in food and beverage manufacturing, while the five-county region gained over 4,000, an increase in employment for the state of 18% and an increase of 14% for the five counties. While job numbers vary significantly among counties, the five-county region averaged about 15.5% of California's total food and beverage manufacturing jobs for the period.

Wages in food and beverage manufacturing have risen in all five counties since 2010. (See Figure 3.) Average annual pay across the five counties is currently $45,672, with

Figure 3
Annual Pay in Food & Beverage Manufacturing



Data Source: U.S. Bureau of Labor Statistics. Accessed October 10, 2018
https://data.bls.gov/PDQWeb/en

The overall economic (direct and secondary) impact of the food and beverage manufacturing sector to the Central Valley may be over $38 billion.

Tulare County having the highest pay at $55,274 and Madera County the lowest at $38,869. Some counties have experienced double-digit increases since 2010 (Fresno 27.1%, Tulare 22.6%, and Merced 11.2%), while others have experienced more modest increases (Kings 3.8% and Madera 1.2%). Variability in annual earnings is dependent on economic conditions unique to each county.

Multiplier Effects

To understand the true impact of food and beverage manufacturing on an economy, it is necessary to account for the secondary impacts resulting from the industry's activities. The Impact Analysis for Planning model can be utilized to estimate these multiplier-effect impacts. The multipliers vary depending on whether output is measured as value of products produced or value added. The latter approach accounts for the cost of inputs used in production and is commonly used for manufacturing sectors. According to a study for the California League of Food Processors, on average, across all food and beverage processing sectors in the five counties, it is estimated that each dollar of value added in food and beverage processing generates a total economic activity of $1.83, and each additional job in food and beverage processing generates 1.77 jobs in total, once multiplier impacts are included.

There are also impacts on tax revenues from the output created through multiplier effects. The report authors noted the multipliers are not expected to change significantly unless underlying fundamentals change. Hence, the overall economic (direct and secondary) impact of the food and beverage manufacturing sector to the Central Valley may be over $38 billion ($21 billion in direct food/beverage manufacturing impact times the 1.83 economic multiplier), and it may be responsible for over 58,000 jobs (33,184 times the 1.77 jobs multiplier).

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Water & Agriculture in the San Joaquin Valley

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KEY POINTS

While the state's economic conditions and agricultural production statistics appear favorable, the same cannot be said for the state's water resource conditions:

- The state is three years removed from the worst drought on record.
- California's agriculture anticipates the potential need to fallow or retire from 500,000 to 2 million acres of productive farmland to accommodate state-mandated water reductions.
- Urban water agencies will be assigned mandatory water budgets to reduce indoor and outdoor water consumption for residential, commercial, industrial, and institutional users.
- The State Water Resources Control Board estimates that there are 200,000 to 300,000 Californians, most living in the San Joaquin Valley, who do not have access to clean, reliable, and affordable water for cooking, drinking, and basic hygiene.
- Several native species of Delta fish are on a trajectory toward extinction.
- Climate change and sea-level rise are upon us, and will require changes in water resources management.

California is the nation's largest agricultural producer and largest crop exporter, and in 2016-17 generated $46 billion in revenue (California Department of Agriculture). Of the $46 billion, $33 billion was grown in the eight-county San Joaquin Valley.

For the foreseeable future, the San Joaquin Valley will remain a global leader in crop production. A strong, resilient, and healthy agricultural economy will require a strong, resilient, and healthy water system that can support the demands of agriculture, urban areas, disadvantaged communities, and environmental interests. A key water resource management challenge for all water stakeholders in the valley will be compliance with the Sustainable Groundwater Management Act.

Sustainable Groundwater Management Act

On September 14, 2014, Gov. Jerry Brown signed into law three bills collectively referred to as the Sustainable Groundwater

Management Act (SGMA). SGMA was designed to address excessive groundwater extractions, which have resulted in groundwater overdraft, failed wells, deteriorated water quality, and irreversible land subsidence – none of which are sustainable, and all of which require corrective action.

SGMA's objective is to stop declining groundwater levels in the San Joaquin Valley and throughout California by reducing the amount of water extracted from aquifers to match the aquifer's "sustainable yield." SGMA defines "sustainable yield" as the maximum quantity of groundwater that can be withdrawn annually without causing an "undesirable result." Undesirable results include: (a) chronic lowering of groundwater levels, (b) significant and unreasonable reduction of groundwater storage, (c) significant and unreasonable land subsidence, and (d) significant and unreasonable degraded water quality, including the migration of contaminant plumes that adversely impact drinking water supplies.

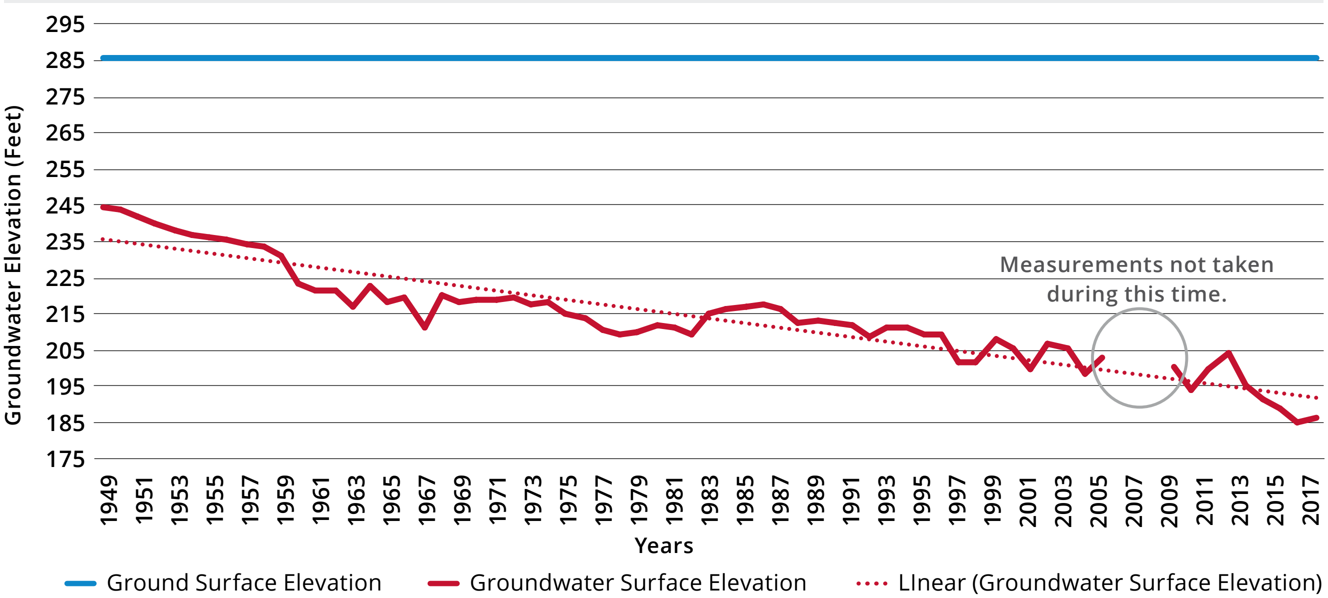
Groundwater Overdraft

For valley farmers, the water available for crop irrigation can be groundwater, surface water, or both. The use of groundwater requires that groundwater surface elevations remain above the depth of a farmer's pump; when groundwater levels fall below pump level, a dry well condition occurs. Figure 1 presents the historical groundwater elevation changes observed in Fresno County.

Figure 1 uses the standard format of regulatory agencies to illustrate the changing depth of groundwater over time. The blue line, ground surface elevation, is the elevation of the ground itself above sea level. The red line, groundwater surface elevation, is the elevation at which groundwater may be found (also measured above sea level). In 1949, the depth of groundwater was 245 feet above sea level and 40 feet below ground level. By 2015, the depth of groundwater was 185 feet above sea level and 100 feet below the ground, a decline of 60 feet over a 66-year period, averaging just under 1 foot per year.

This decline is typical for the San Joaquin Valley and is referred to as groundwater overdraft. Overdraft occurs when groundwater extractions exceed nature's ability to replace the water extracted from the underlying aquifer. In 2014, the United States Geological Survey reported that within the eight-county San Joaquin Valley, average groundwater overdraft conditions were approximately 1.5 million acre feet per year.

Figure 1
Typical Example of Groundwater Elevation Changes Over Time



Data Source: California Department of Water Resources, The Water Data Library

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The depth of GROUNDWATER HAS DECLINED AN AVERAGE OF 1 FOOT PER YEAR for the past six decades.

During drought conditions, groundwater levels decline at an accelerated rate in response to increased groundwater extractions; and as more water is extracted, more dry well conditions are reported. Figure 2 presents the number of permit requests recorded from 1960 to 2016. As expected, requests for permits increase during drought conditions.

In reviewing well completion reports maintained by the state, it was observed that over time new wells are also being drilled at deeper elevations, as illustrated in Figure 3.

Figure 2
Total Annual Well Permits Issued in the San Joaquin Valley (8 counties)

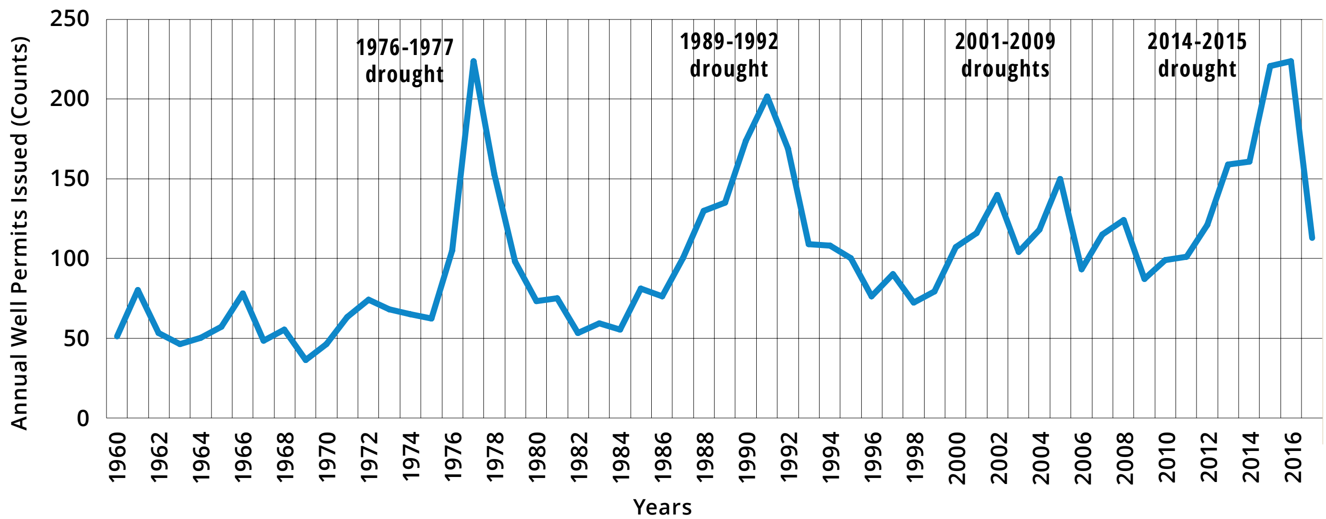
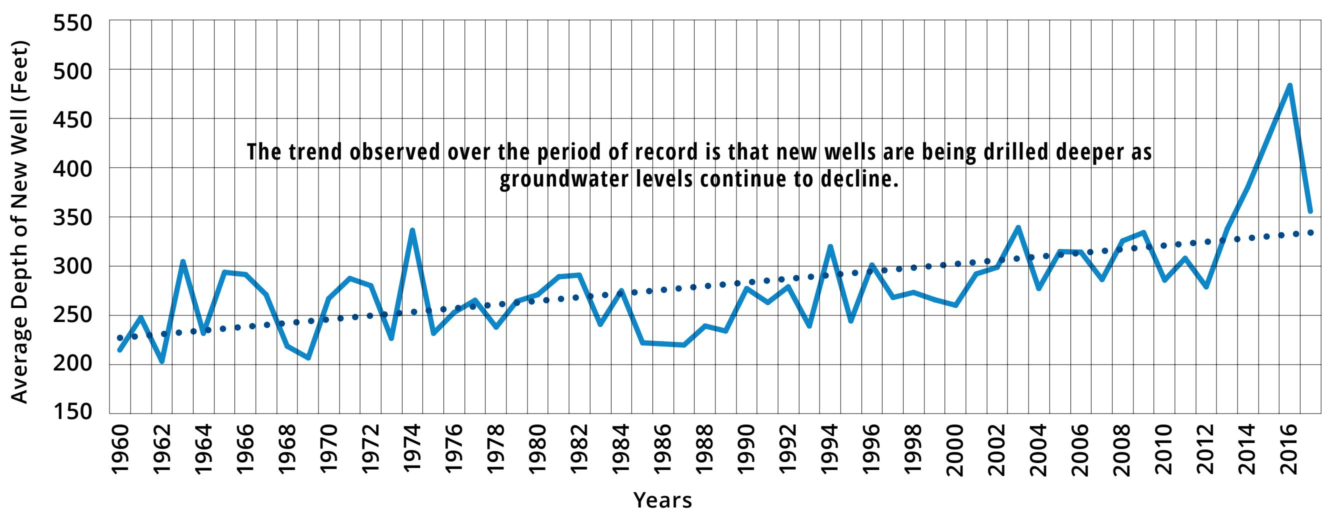


Figure 3
Average Depth of New Wells Drilled in the San Joaquin Valley (8 counties)



Figures 2 & 3 Data Source: California Department of Water Resources, Well Completion Reports

Land Subsidence

Subsidence occurs when groundwater pumping draws groundwater levels below certain types of soil materials present in the aquifers of the San Joaquin Valley. When groundwater levels decline below certain types of soil materials, they drain and the layers of soil compact and compress. The overlying soil subsides locally and at the ground surface. While the impacts of subsidence are irreversible, further subsidence can be arrested if groundwater pumping can be reduced to the point at which soil materials are not drained.

Some areas of the valley have observed subsidence of 9 inches per year. The most observable impact of subsidence is the Friant-Kern Canal, which has lost about 45 percent of its capacity to convey water along the east side of the valley due to structural issues caused by subsidence. In some locations, the water surface elevation encroaches on the canal's bridge crossings, requiring the water flow rate to be reduced to prevent water from flooding bridges.

Structural repairs to correct land subsidence conditions of the canal are estimated at $350 million to $500 million. Without corrective action, the reduced hydraulic capacity of the canal will adversely impact the ability of growers and water agencies on the east side of the southern San Joaquin Valley to address overdraft conditions that cause land subsidence.

> *For San Joaquin, Merced and Stanislaus counties, the combined economic impact of agricultural water reductions has been estimated at $3.2 billion and for Kern County, $4.2 billion.*

Economic Impact Considerations

While the agricultural industry in the San Joaquin Valley has experienced periods of crop disruption from frost, drought, pest infestation, and other such temporary events, SGMA compliance requirements have the potential to create permanent crop disruptions resulting from permanent water supply reductions. As a result, it is anticipated that agricultural land may have to be removed from production. Current estimates of the productive land that may be fallowed range from 500,000 to 2 million acres. Based on the U.S. Department of Agriculture farm survey data of 2012, this reduction could result in annual farm receipt losses of $2.8 billion to $11.2 billion in the San Joaquin Valley. Given farm receipts for the eight-county region are $33 billion, the lower limit of losses is about 8%, while the upper limit represents a devastating 34% loss.

Because reductions in farm receipts will result in reductions in economic activity, tax revenues, employment, and thus portend a reduced standard of living for residents throughout the San Joaquin Valley, several counties have conducted economic analyses to define the impact of water supply reductions. For San Joaquin, Merced, and Stanislaus counties, the combined economic impact of agricultural water reductions has been estimated at $3.2 billion and 13,200 jobs; and in Kern County, the impact has been estimated at $4.2 billion and 24,300 jobs per year.

Opportunities for Innovative Water Resource Management Solutions

Given the San Joaquin Valley's long-standing position as a global food production region, the regional agricultural community has been moving rapidly to adopt and implement advanced technology solutions for water use efficiency that are currently used in other industries. At this time, San Joaquin Valley growers are working with Fresno State's Water Energy and Technology (WET) Center to foster innovators and entrepreneurs from all over the world to research, develop, and commercialize innovative technologies and management approaches that allow farmers to grow more food per unit input of water.

Water & Agriculture
in the San Joaquin Valley

The current model for water resources management is EXHIBITING SIGNS OF STRESS across all economic, social, and environmental sectors

Enhanced Agricultural Water Use Efficiency

On May 31, 2018, the state Legislature and the governor adopted Assembly Bill 1668 (Water Management Planning), which will require the California Department of Water Resources and State Water Resources Control Board to conduct investigations regarding the current state of agricultural water use efficiency.

To support implementation of this legislation, Fresno State's Center for Irrigation Technology and the WET Center will be working with growers, innovators and entrepreneurs from all over the world to research, develop, and commercialize smart-farming technology that optimizes irrigation scheduling and application efficiency. These two centers are working with innovators and entrepreneurs to advance the use of devices to monitor plant irrigation demands using advanced satellite imagery, drone imagery, soil moisture sensors, and directly embedded plant moisture sensors. For irrigation delivery system efficiency, the centers will rely on researchers from the Lyles College of Engineering and the Jordan College of Agricultural Sciences and Technology to develop irrigation efficiency diagnostics and metrics.

Water Commodity Market (Water Transfers and Exchanges)

To address the potential impacts associated with reduced water supplies for agricultural uses, growers, irrigation districts, and groundwater sustainability agencies are evaluating the creation of water exchange markets for surface water and groundwater entitlements assigned to individual properties in the valley. Conceptually, these markets would allow property owners within a defined geographic boundary to transfer and exchange surface water and groundwater with each other to ensure that all available water supply sources are beneficially used to the maximum extent practicable on an annual basis. There are several critically important issues that must be considered prior determining how such exchange markets could facilitate water supply management.

Development of New Water Supply Sources

Given the water resource management challenges, there is a growing desire to identify alternative water supply sources that could meet urban and agricultural water demands in the San Joaquin Valley. One option currently being utilized is recycled wastewater, treated to sufficiently high levels to allow for irrigation of food crops. Within the past 18 months, the City of Fresno and the City of Modesto have implemented recycled wastewater programs that will provide irrigation water for growers in the San Joaquin Valley.

Another option gaining favor in coastal communities, which could be adapted to the San Joaquin Valley, is the development of desalination facilities. A possible future scenario is to construct large-scale seawater desalination facilities along the Pacific Coast or San Francisco Bay, with the desalinated seawater discharged to the California Aqueduct or Delta-Mendota Canal for delivery to San Joaquin Valley urban users, agriculture users, and disadvantaged communities. The distance from San Pablo Bay to the south delta pumping facilities in Tracy is about 50 miles, and from Monterey Bay to San Luis Reservoir is about 50 miles, reasonable distances for desalination facilities and water supply transmission mains.

Conclusion

The evidence is clear that water resource management in California is difficult, complex, and controversial; and the current model for water resources management is exhibiting signs of stress across all economic, social, and environmental sectors. Opportunities to reduce the adverse economic impacts include improved water use efficiency, innovations in agricultural technology, enhanced water trading and sharing through water exchange markets, and development of new water supply sources.

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Banking

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KEY POINTS

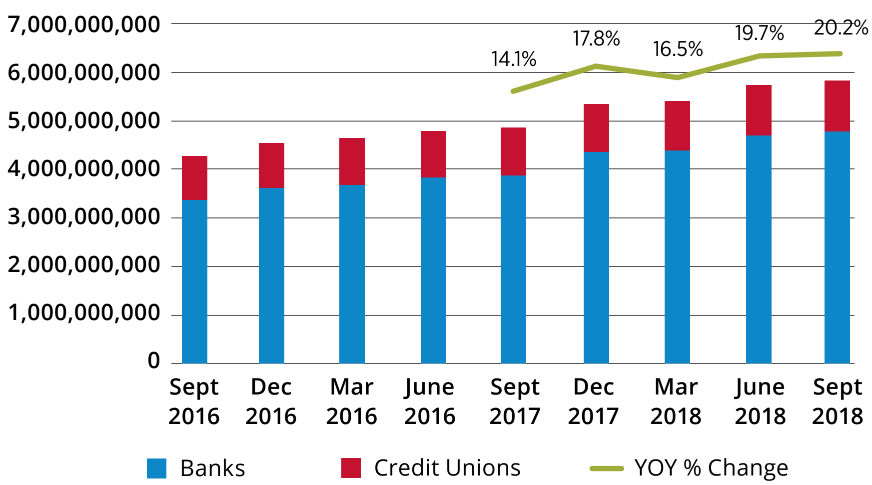
- Central California banks and credit unions improved on last year's impressive 14.1% loan growth, accelerating growth up to 20.2% for the year ending September 30, 2018.
- Central California banks continue to lead the way with 22.8% loan growth. This is in sharp contrast to their peers in the San Francisco FDIC region and nationwide, who experienced negative growth in loan activity.
- Commercial real estate continued as the largest segment for Central California banks at 40.5% of all loans, and increased 27.0% for the year ending September 30, 2018. Loan growth was strong in every segment, with the slowest category (residential) growing at 13.6%, and the strongest category (multi-family residential) growing at 39.9%.
- Central California credit unions reported lower, but still respectable, loan growth at 7.8% for the year ending September 30, 2018, vs. 12.1% for September 30, 2017. Slowing vehicle sales, which represent 55% of all Central California credit union loans, continue to be a headwind.
- Rising interest rates and an expected 2019 reduction in economic growth are likely to make it more challenging for Central California banks and credit unions to continue their impressive growth rates.

Banking Trends Sizzle

Central California banks and credit unions continue to show impressive strength, especially when considering data revealing negative loan growth among their regional and national peers.

Loan growth for Central California banks and credit unions moved up from last year's 14.1% to a sizzling 20.2% on a year-over-year (YoY) basis as of September 2018. (See Figure 1.)

Figure 1
Central California Loans



Data Sources: FDIC & NCUA

Table 1
Growth in Loans for Regional and National Banks (Year over Year)

	3Q-2017	4Q-2017	1Q-2018	2Q-2018	3Q-2018
Central California Banks	14.5%	19.8%	18.4%	22.3%	22.8%
San Francisco FDIC Region Banks*	2.2%	-3.1%	-6.7%	-5.5%	-11.7%
National Banks*	-0.1%	0.0%	-1.9%	-1.8%	-1.1%

*Regional and national banks between $100 million and $10 billion in assets.

Data Source: FDIC

Table 2
Growth in Selected Balance Sheet Items (Year over Year)

	3Q-2017	4Q-2017	1Q-2018	2Q-2018	3Q-2018
Central California Banks					
Total Assets	13.7%	16.3%	12.0%	12.3%	15.5%
Total Equity Capital	14.9%	19.6%	12.9%	11.0%	20.9%
Central California Credit Unions					
Total Assets	3.8%	4.1%	3.8%	3.4%	2.5%
Total Equity Capital	3.4%	6.3%	4.4%	3.7%	3.1%

Data Sources: FDIC & NCUA

Central California banks have experienced tremendous loan growth when compared to institutions with between $100 million and $10 billion in assets in the San Francisco FDIC region and nationwide. As Table 1 indicates, loan growth for the San Francisco region and national banks has been negative since the beginning of 2018, while Central California banks have experienced double-digit growth rates.

Relative to assets, Central California banks again led the way, turning loan portfolio increases into strong growth in assets (15.5%) and equity capital (20.9%). (See Table 2.) As was the case last year, most of the growth for banks was from new deposits, while credit unions redeployed cash and investments to new loans for a significant portion of the increase. This translated to less growth in assets (2.5%) and equity capital (3.1%) for credit unions versus banks.

Both Central California banks and credits unions have seen meaningful growth in pre-tax net income with YoY increases of 27.3% and 13.3% respectively for the period 3Q2017 to 3Q2018. (See Table 3.) The table also presents annual changes in income for each quarter. The quarterly figures in Table 3 represent a change from the previous quarter in rolling 12 months of income. The dip in Q2 net income for credit unions seems entirely due to a one-time increase in compensation and benefits, while the Q3 bounce was a combination of a drop in

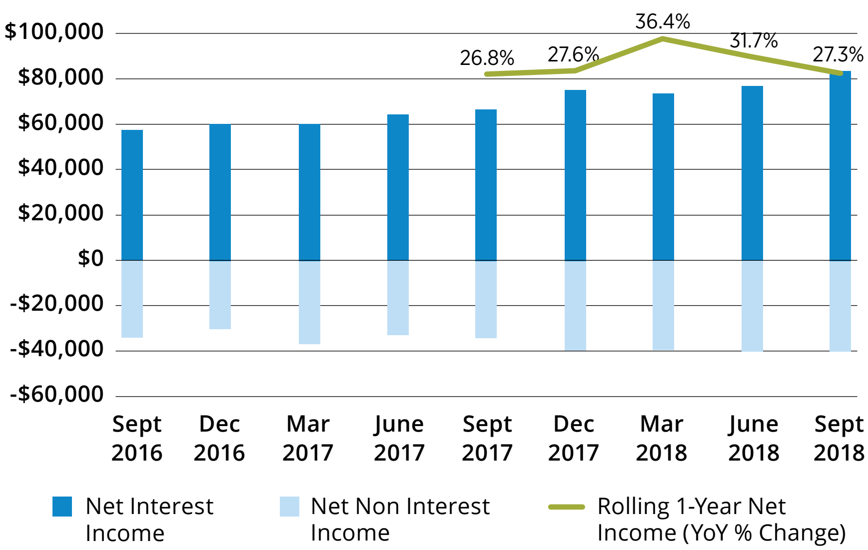
Table 3
Growth in Net Income

	4Q-2017	1Q-2018	2Q-2018	3Q-2018	YoY (3Q-2017 to 3Q-2018)
Central California Banks	6.6%	8.3%	5.3%	4.7%	27.3%
Central California Credit Unions	0.8%	3.6%	-6.5%	16.2%	13.3%

Central California Banks' net income is the pre-tax net income.
Quarterly growth based on rolling 1-year net income.

Data Sources: FDIC & NCUA

Figure 2
California Central Banks
Quarterly Net Interest Income and Net Non-Interest Income (in '000s)



Data Source: FDIC

Table 4
Central California Credit Union Loan Growth (YoY)

	3Q-2017	4Q-2017	1Q-2018	2Q-2018	3Q-2018
Unsecured Loans	3.7%	4.8%	3.6%	4.5%	7.2%
Vehicle Loans	16.9%	11.1%	9.8%	6.2%	5.6%
Secured Non-RE Loans	1.0%	4.3%	3.8%	4.3%	6.0%
Real Estate Loans	7.9%	6.0%	5.4%	11.4%	11.9%
TOTAL	**12.1%**	**8.6%**	**7.6%**	**7.6%**	**7.8%**

Data Source: NCUA

compensation and benefits expense back toward the trend line and a sharp increase in loan and other income.

The growth in pre-tax net income for Central California banks is especially impressive with year-over-year growth of at least 26% each quarter since September 2017. (See Figure 2.)

Slowing Vehicle Sales Impact Credit Unions

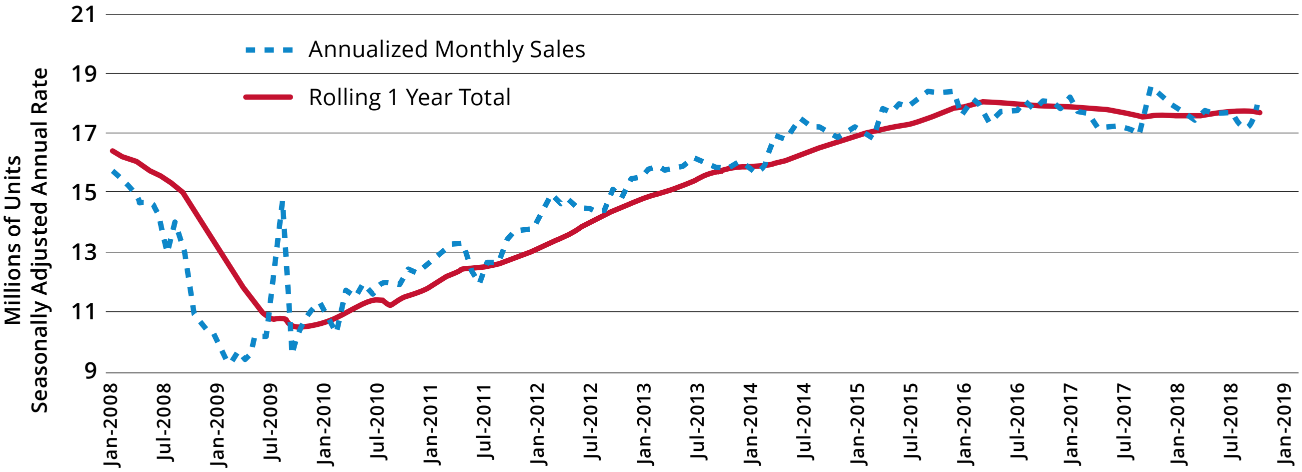
Similar to last year, vehicle loans still make up the largest segment of credit union loans, representing 55% of all loans. Real estate loans make up the other major segment at 33.6%.

After slowing from last year's sizzling 16.9% growth, auto loans cooled to a still respectable 5.6% growth rate. (See Table 4.) Helping to offset that reduction was an improvement in all other segments. As the second-largest segment, real estate loans, which saw an increase from 7.9% growth to 11.9% as of September 30, 2018, made the biggest difference.

As we had forecasted in last year's report, slowing auto sales were a powerful trend that made it difficult for credit unions to sustain their growth in vehicle loans. With the outlook for car sales on a national basis stagnant at best, this will remain a challenge going forward. (See Figure 3.)

The Center for Automotive Research 2018 Management Briefing: *Forecasting the North American Sales and Production Footprint in Uncertain Times* indicates that, for U.S. light vehicle sales, "Forecasts vary – yet all reflect declining sales."

Figure 3
Total U.S. Vehicle Sales



Data Source: U.S. Bureau of Economic Analysis

The announcement by General Motors in November that it is stopping production of some car lines and closing plants is an indicator of the sluggish nature of vehicle sales.[1]

While the U.S. is benefiting from positive economic news and a healthy economy, headwinds from higher interest rates as well as trade and tariff uncertainties are resulting in a continued trend of lower expected auto demand. This will remain the largest challenge for Central California credit unions.

Banks Experienced Record Growth

Commercial real estate retained its position as the largest segment with 40.5% of all bank loans (See Table 5.) and as one of the top performing segments with 27% growth over the year ending September 30, 2018. (See Table 6 on the following page.)

Commercial real estate retained its position as the largest segment with 40.5% of all bank loans.

Table 5
Loan Portfolio Allocations as of 9/30/18

Segment	Central California Banks	SF Region 100m-10b Banks	National 100m-10b Banks
Commercial RE	40.5%	32.3%	29.6%
Residential	12.0%	22.5%	27.9%
Commercial & Industrial	14.0%	13.7%	14.2%
Multi-Family Residential	3.8%	10.2%	6.6%
Construction Loans	9.8%	5.9%	7.1%
Farm & Farmland Loans	11.1%	3.9%	6.5%
Loans to Individuals	3.6%	9.4%	5.0%
Other	5.2%	2.1%	3.0%
TOTAL	**100%**	**100%**	**100%**

Data Source: FDIC

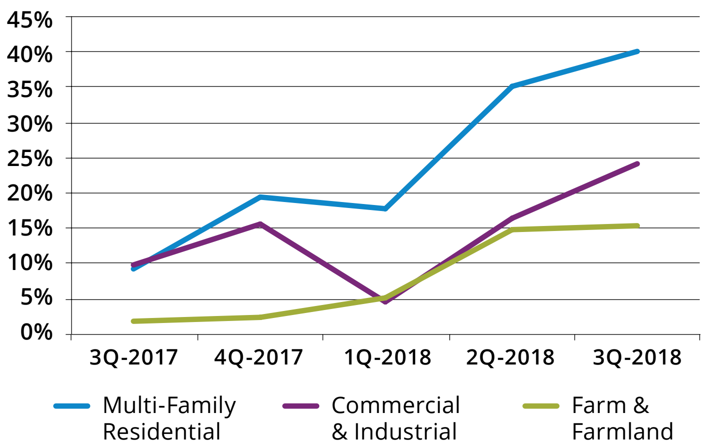
Table 6
Central California Loan Growth by Category (YoY)

Segment	4Q-2015	1Q-2016	2Q-2016	3Q-2016	4Q-2016	1Q-2017	2Q-2017	3Q-2017	4Q-2017	1Q-2018	2Q-2018	3Q-2018
Commercial RE	8.0%	6.1%	2.7%	8.8%	18.4%	29.7%	30.6%	23.7%	26.2%	20.2%	25.3%	27.0%
Residential	10.8%	4.6%	10.6%	7.1%	12.7%	9.7%	4.7%	10.0%	19.4%	19.9%	19.4%	13.6%
Commercial & Industrial	5.6%	-1.7%	2.0%	-3.0%	5.9%	16.4%	7.0%	9.9%	15.5%	4.6%	16.4%	24.1%
Multi-Family Residential	43.4%	45.3%	35.9%	48.3%	38.3%	38.7%	26.1%	9.3%	19.5%	17.9%	35.2%	39.9%
Construction Loans	16.0%	15.8%	9.1%	10.6%	31.0%	18.1%	26.1%	34.4%	24.1%	33.5%	29.8%	27.2%
Farm & Farmland Loans	16.7%	20.0%	20.4%	20.2%	4.7%	5.2%	4.4%	1.9%	2.6%	5.1%	14.8%	15.2%
Loans to Individuals	14.9%	24.3%	33.5%	28.2%	27.7%	24.6%	22.6%	20.4%	21.4%	20.3%	16.5%	15.5%
Other	60.6%	-14.5%	13.7%	28.6%	-2.9%	-21.8%	-15.5%	-13.0%	19.3%	49.6%	23.2%	15.4%
TOTAL	**13.5%**	**6.7%**	**8.8%**	**11.0%**	**14.1%**	**17.3%**	**15.5%**	**14.5%**	**19.8%**	**18.4%**	**22.3%**	**22.8%**

The tightening of credit standards for commercial real estate loans reported by the Federal Senior Loan Officer Survey[2] in 2015 and 2016 was somewhat loosened in 2017 and has for the most part remained unchanged over the past year, likely helping to contribute to the continued growth to date in this segment.

Notably, the most dramatic increases when compared to the same time last year came from farm and farmland, commercial and industrial, and multi-family residential loans. These categories increased from single-digit YoY growth in Q3 2017 to double-digit YoY growth in Q3 2018 as shown in Figure 4.

Figure 4
Fastest Growing Loan Categories • YoY Change



According to the Federal Senior Loan Officer Survey[2], over the third quarter of 2018, banks eased terms on commercial and industrial loans to help combat a weaker demand and increased competition. As the standards decreased on average nationally, the Central California banks have seen a large surge in growth in the commercial and industrial category.

While residential real estate continued to grow over this time last year, it did experience a dip in the third quarter of 2018 and the smallest YoY growth at 13.6% of all loan segments. Banks reported weaker demand across all residential real estate loan categories and began easing standards on this category over the third quarter of 2018. Specifically, for Q3 2018, the San Francisco region banks experienced -10.82% and national banks experienced -1.53% YoY growth in this category. The 2017-2018 year saw a YoY percentage increase in average prices of houses sold in the U.S. followed by increasing mortgage rates. This combination of a national trend in decreased residential real estate demand, increased prices, and increasing mortgage rates may have contributed to the dip in Q3 residential real estate growth, which may indicate an overall growth slowdown in this category.

Interestingly, while residential was the slowest-growing category, the category that experienced the strongest growth, at 39.9% over last year, was multi-family residential. This may indicate that demand is shifting from individuals purchasing homes to moving to rental properties instead. The national housing affordability index (HAI)[3] decreased 8.2% and the California HAI[4] was down 6.07% from Q3 2017 to Q3 2018, indicating a decline in the ability to afford housing.

In terms of Central California, other than Madera County (10.33% increase in affordability) and Fresno County (0.39%), the other counties (Kings, Merced, and Tulare) all saw a decrease in affordability, following the state and national trend.[4] While the economy overall has experienced growth, it is important to note that the income gap between high- and low-income households has continued to increase. The mean household income compound annual growth rate from 2000-2017 was -8.56% for the lowest and 9.24% for the highest quintiles of income.[5] This combined with an increase in housing prices may, in part, be driving the growth in the multi-family residential segment.

One category that has been experiencing declining growth is the loans to individuals with YoY growth of 28.2% in 2016, 20.4% in 2017, and 15.5% in 2018. The "other" category, which has typically been the worst-performing category, has gone from negative YoY growth at the same time last year to 15.4% growth this year.

Overall, Central California's economy has experienced significant growth over the past year.[6] There are some factors, including potential increases in interest rates by the Federal Reserve, trade tariffs, a slowing housing market, and possible contractions in growth following last year's boon from tax cuts that may indicate a reduction in economic growth. However, the strong economic growth specific to Central California, which includes solid job growth and much lower unemployment rates than in the past, may help to balance out some of those risk factors.[6]

Macro Forces Provide Challenge

The primary challenges for Central Valley banks and credit unions are likely to be an economy whose growth is likely to slow down from last year and rising interest rates. While the Fed may be considering slowing the pace of its interest rate hikes, it appears at this time that it is not a matter of if rates will go up, but only of how many times. And with the impact of tax cuts felt primarily in the 2018 economic numbers, it will be difficult to maintain the same pace of growth in 2019.

On December 5, 2018, the three-year and five-year rates inverted and the spread between the 10-year and one-year rates decreased and looks poised to invert in the near future. A sustained 10-year and one-year inversion has preceded almost every recession since the 1970s and is an indicator that we may be facing an economic downturn within the next few years. (See Figure 6.) In terms of bank lending, an inversion in the yield curve will likely lead to tightened lending standards across all categories of loans.[2]

Notes

- Central California is defined as the following counties: Fresno, Kings, Madera, Merced, and Tulare.
- Banks headquartered in the Central California are: Central Valley Community Bank, Premier Valley Bank, United Security Bank, Fresno First Bank, Murphy Bank, Bank of the Sierra, and Suncrest Bank.
- Credit Unions headquartered in Central California are: First California, Greater Valley Credit Union, United Local, Fresno Fire Department, San Joaquin Power Employees, Fresno Grangers, Kinds, Families and Schools Together, Tulare County, Merced Municipal Employees, and Merced School Employees.

BANKING

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Small Business

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KEY POINTS

- Over the last five years, the six-county area studied has experienced a 25% increase in the number of small and medium-sized enterprises (known as SMEs).
- SMEs employ about 80% of the workforce in the six counties, similar to statewide employment by SMEs of 79%.
- Smaller SMEs (with 4 or fewer employees) are most prevalent and account for 66% of all SMEs.
- A recent study by LendingTree[1] identified Fresno as the second-best location in California for small businesses to succeed.
- Certified Development Financial Institutions (CDFIs) are a viable source of start-up capital for new ventures as well as operating loans and lines of credit for established SMEs. The Valley Small Business Development Corporation in Fresno is certified as a CDFI.

The U.S. Small Business Administration (SBA) defines a small business as a firm employing fewer than 500 employees[2] and refers to such firms as small and medium-sized enterprises (SMEs). The role small businesses play in the Central Valley is significant. This article discusses the state of SMEs in the six-county area of Fresno, Kern, Kings, Madera, Merced, and Tulare. This article also describes the role CDFIs play in the consistently challenging aspect of obtaining financing for SMEs.

Smaller SMEs (four or fewer employees) ACCOUNT FOR 66% OF ALL OF SMEs.

The six-county area ADDED A NET OF 16,000 ENTERPRISES from 2012 to 2017, while the STATE ADDED OVER 200,000.

Table 1
Number of SMEs in the Six-County Area and California

Year	Number of Small Businesses	Percentage Change from Previous Year	Number of Small Businesses	Percentage Change from Previous Year
2012	63,309	(12%)	1,313,104	(5%)
2013	68,622	8%	1,338,658	2%
2014	70,130	2%	1,372,227	3%
2015	72,846	4%	1,421,565	4%
2016	75,783	4%	1,479,121	4%
2017	79,275	5%	1,524,414	3%
Net Increase for the 5-Year Period	15,966	25%	211,310	16%

Data Source: California Employment Development Department

Table 2
Number of Individuals Employed by SMEs in the Six-County Area

Year	Number of Workers Employed by Small Businesses	Percentage Change from Previous Year
2012	760,346	2%
2013	773,106	2%
2014	798,800	3%
2015	812,162	2%
2016	765,969	(6%)
2017	837,950	9%
Net Increase for the 5-Year Period	77,604	10%

Data Source: California Employment Development Department

Table 3
SMEs by Number of Employees by County for 2017

Counties	Total SMEs	≤ 4	5-9	10-19	20-49	50-99	100-249	250-499
Fresno	35,325	25,272	3,603	2,787	2,363	800	389	111
Kern	18,816	11,126	2,585	2,234	1,747	668	358	98
Kings	3,918	2,674	459	354	267	92	58	14
Madera	4,247	2,947	480	342	304	106	56	12
Merced	6,633	4,499	797	621	460	151	84	21
Tulare	10,336	6,160	1,505	1,173	973	299	174	52
Total	**79,275**	**52,678**	**9,429**	**7,511**	**6,114**	**2,116**	**1,119**	**308**

Data Source: California Employment Development Department

Table 1 compares growth in small businesses from 2012 through 2017 for the six-county area and for California. According to data from the California Employment Development Department,[3] the six-county area added a net of 16,000 enterprises from 2012 to 2017, while the state added over 200,000. The one-year increase from 2016 to 2017 in the six-county area (5%) was slightly higher than the one-year increase statewide (3%). However, the six-county area experienced a 25% increase in SMEs over the five-year period while growth for the State of California was lower at 16%.

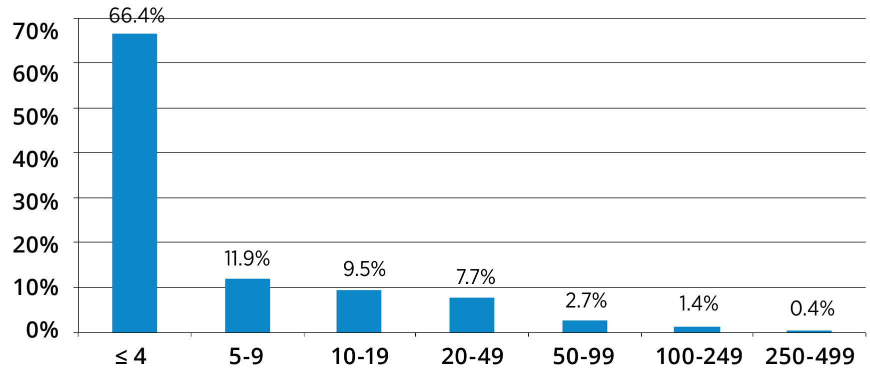
Small Business Employment

As seen in Table 2, SMEs in the Central Valley employed 837,950 people in 2017, an addition of over 77,000 jobs since 2012. Total employment in SMEs represents 80% of all employees in the workforce for the six counties and is similar to the state's at 79%.

The EDD classifies SMEs based on number of employees using data from unemployment insurance contribution filings. Table 3 and Figure 1 categorize small businesses in this manner for the six counties for 2017. The smaller SMEs (≤ 4 employees) are most prevalent, with 66% of the total. Overall, SMEs employing 50 or more individuals represent less than 5% of all SMEs in the six-county area.

Small Business

Figure 1
Percent of SME's by Number of Employees for 2017



Data Source: California Employment Development Department

Table 4
Percentage of Employment by Sector for SMEs for 2017

Industry	Fresno	Kern	Kings	Madera	Merced	Tulare
Services	71.7%	60.3%	67.8%	63.5%	63.5%	54.9%
Ag, Forestry, Fishing, Hunting	4.6%	4.5%	9.8%	10.9%	12.1%	12.4%
Retail Trade	7.1%	10.9%	7.4%	7.4%	8.5%	10.6%
Construction and Mining	4.6%	7.8%	3.4%	5.7%	4.6%	6.1%
Other	12.0%	16.5%	11.6%	12.5%	11.3%	16.0%

Data Source: California Employment Development Department

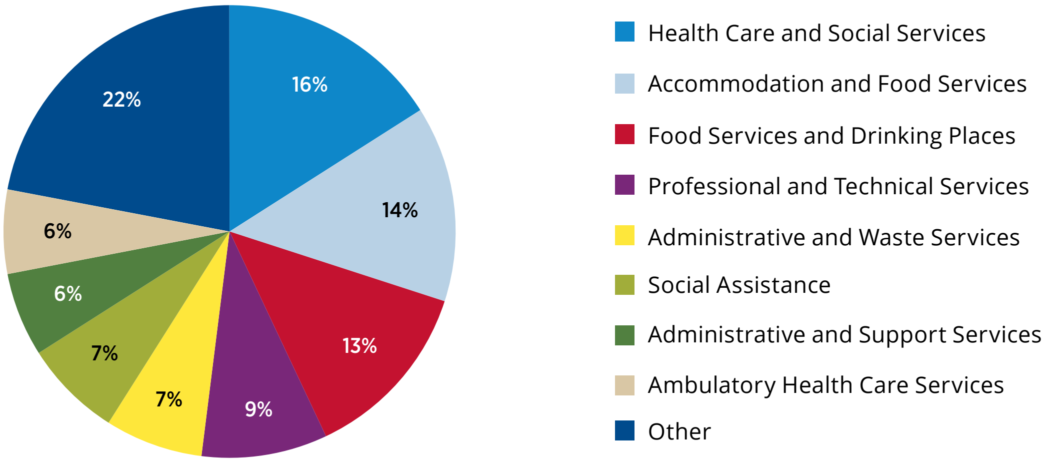
As Table 4 shows, the services sector represents well over half of employment in SMEs in all six counties. The top four sectors shown in Table 4 account for over 80% of all SME employment.

Services are classified statewide by the California Employment Development Department. The percent share of employment in each of the classifications is presented in Figure 2, which identifies the top three services as health care and social services, accommodation and food services, and food services and drinking places. Together these three categories account for about 43% of services.

The Small Business Environment

A recent study by LendingTree[4] identified Fresno as the second-best location in California for small businesses to succeed. The LendingTree study used data from more than 80,000 loan requests

Figure 2
Share of employment in the Services Sector by Category for California for 2017



Data Source: California Employment Development Department submitted by small business owners seeking loan offers through LendingTree's small business loan marketplace between January 1, 2016 and January 23, 2018. The study used annual revenue and profitability of these small businesses to determine how well they were doing relative to their peers in other locations. The analysis included firms with annual revenues less than $7,500,000, and firms that had been in business for at least six months but not longer than 60 months. The self-reported data was then limited to the 50 most populous metropolitan statistical areas, as defined by the U.S. Census Bureau.

Through this research, LendingTree was able to identify how small start-ups are performing relative to their peers in other places. The results show that three California cities – Sacramento, Los Angeles and Fresno – ranked among the top 10 best places for small business in the nation. The findings from the LendingTree study indicate small business start-ups thrive best in Sacramento, where the average annual revenue of SMEs was $315,661, and 84.3 percent of small businesses applicants were profitable. For Fresno, businesses averaged $292,599 in annual revenue and 81.5 percent of applicants reported that their small business was profitable.

Small Business Financing

A healthy small business environment, such as those described in the LendingTree study, provides small businesses with access to credit resources. Small business are generally unable to access public institutional debt or equity capital markets; thus, bank loans have historically been an important source of credit. The recession and credit crisis of 2008-2011 significantly impacted small businesses' ability to access credit through traditional banks.[5] According to Mills and McCarthy, during the financial crisis, small businesses were less able to secure bank credit because of a "perfect storm" of falling sales, weakened collateral and risk aversion among lenders.

A recent study by LendingTree identifed Fresno as the second-best location in California for small businesses to succeed.

This more restrictive lending environment has continued. According to the National Small Business Association's 2015 Year-End Economic Report, lack of access to capital and cash flow difficulties play a large role in small business failures. The report indicates that 27% of small business owners reported not being able to access enough capital to operate their business in 2015.[6]

While the recession and post-recession restricted traditional types of credit, the period also allowed for the growth of an alternative credit resource – the Certified Development Financial Institution (CDFI). Since the recession, CDFIs have become a viable source of start-up capital as well as operating loans and lines of credit for established SMEs. While funding a small business can be challenging, small business owners and start-ups have access to additional financing options through CDFIs.

Certified Development Financial Institutions

CDFIs are approved, either federally or by a state, to operate in the community-banking arena as niche lenders. CDFIs were established by the Riegle Community Development and Regulatory Improvement Act of 1994, and many have a mission-based lending model targeting a specific population and/or specific loan type such as SBA microloans or Rural Micro-Entrepreneur Assistance Program loans. Some CDFIs have access to the Bank Enterprise Award Program, which provides FDIC-insured depository institutions awards for investing in CDFIs or in their own bank lending, investing, or service-related activities in distressed communities.

Other CDFIs are the delivery mechanism for government guaranteed loans, such as the SBA Community Advantage Program. The common theme is that CDFIs have the ability to meet the needs of underserved SMEs and supply funding to small businesses, which in turn stimulates the growth of the local economy.

Small Business

In the Central Valley, the Valley Small Business Development Corporation (VSBDC) is certified as a CDFI. VSBDC was created in 1981 as a non-profit, for public benefit corporation to act as an intermediary Financial Development Corporation on behalf of the State of California to administer the State Loan Guarantee Program. Among other activities, VSBDC makes direct loans in a nine-county area in the San Joaquin Valley and provides loan guarantees to bank lenders statewide.

In 2011, the loan guarantee program was expanded with funding under the Federal Small Jobs Initiative and enabled VSBDC and other CDFIs to provide up to 80% loan guarantees for up to $2.5 million to commercial banks making loans to small businesses. With a guarantee of 80%, the traditional bank lender assumes only a 20% risk on the loan. While the borrower's operation must project the ability to repay the loan request, there are no minimum liquidity requirements and/or collateral ratios to be met. This program is available to commercial lenders and credit unions in the Central Valley. Prospective small business borrowers can often find financing with VSBDC directly, depending upon the size of the loan request and the availability of funding. As a CDFI, VSBDC is uniquely suited to fund start-up businesses and entrepreneurs may initiate their requests directly with VSBDC.

A loan from VSBDC (or any other CDFI) will carry a slightly higher interest rate than those charged by commercial banks. However, an advantage for borrowers is that they can also receive technical assistance to guide them through the start-up process – either from the CDFI directly or from their network of technical assistance providers such as SCORE or the Small Business Development Centers.

VSBDC and other CDFIs cannot exist unless they make prudent decisions about the repayment capabilities of their borrowers. They also cannot be profitable if they do not make solid loans that generate earnings and attract other funders that will earmark lendable funding dollars for the CDFIs to distribute. Even though VSBCD funds loans with greater risk levels than commercial banks, the overall default rate on their direct loans is 3.18% and on loan guarantees is less than .01%. During the economic recession in 2009-11, the overall loss rate on the loan guarantee program locally was .0288%. Considering that these loans include some that may have been denied by conventional lenders, that loss rate is admirable by any lending standard.

CDFIs CAN PROVIDE LOAN GUARANTEES OF UP TO 80% for commercial banks making loans to small businesses.

In summary, the healthy small business environment in the area is enhanced not only by conventional sources of financing, but non-conventional sources like CDFIs. The small business borrower or entrepreneur who has been denied credit by a commercial bank has other options available and may consider financing with a CDFI lender, such as the Valley Small Business Development Corporation. Access to multiple sources of financing appears to be a key element in the area's growth and small business success.

Endnotes

1 LendingTree study (https://www.lendingtree.com/business/small/lendingtree-ranks-best-worst-cities-new-small-businesses/)

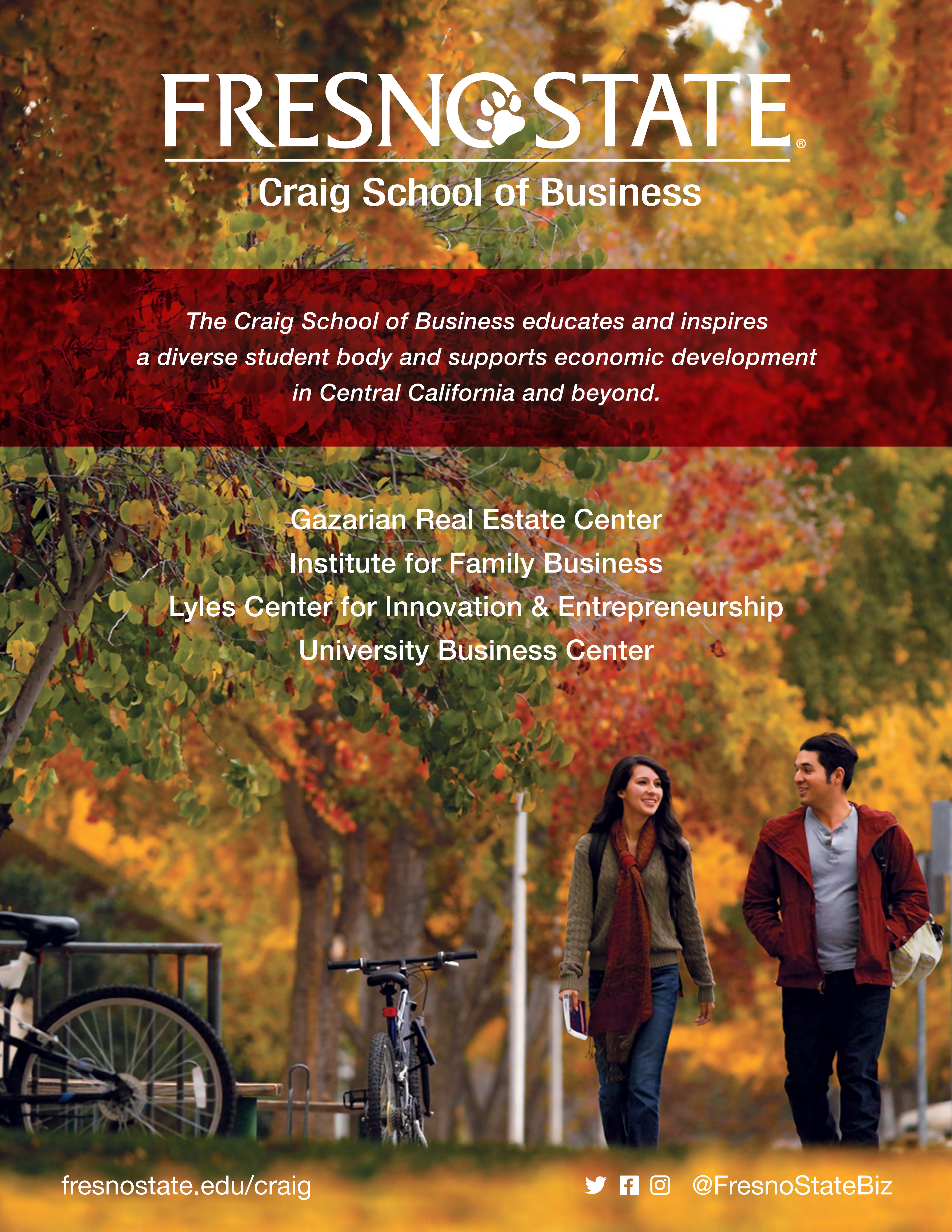
2 U.S. Small Business Administration (https://www.sba.gov/)

3 The Employment Development Department (EDD) – State of California (https://www.labormarketinfo.edd.ca.gov/LMID/Size_of_Business_Data.html)

4 LendingTree study (https://www.lendingtree.com/business/small/lendingtree-ranks-best-worst-cities-new-small-businesses/)

5 Karen Gordon Mills and Brayden McCarthy *The State of Small Business Lending: Credit Access During the Recovery and How Technology May Change the Game* Working Paper 15-004, Harvard Business School, July 2014

6 Small Business Administration. Retrieved from https://www.sba.gov/sites/default/files/advocacy/Frequently-Asked-Questions-Small-Business-2018.pdf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