MARCH 2015

An Economic Road Map for KERN COUNTY

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MILKEN INSTITUTE

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A report by the

CALIFORNIA CENTER and the

CENTER FOR JOBS AND HUMAN CAPITAL

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ACKNOWLEDGMENTS

We gratefully acknowledge the Kern Economic Development Foundation, which provided financial support for this study. The authors would also like to thank Richard Chapman and his team at the Kern Economic Development Corp., our partners at the Kern County Board of Trade, Chevron, and the many other stakeholders in Kern County who were generous with their time and insight. For help with background research and the shaping of this report, we are also indebted to Jason Barrett, Armen Bedroussian, Christopher Connell, Ross DeVol, Matt Horton, Kevin Klowden, Elaine (I-Ling) Shen, and Erin Tanenbaum.

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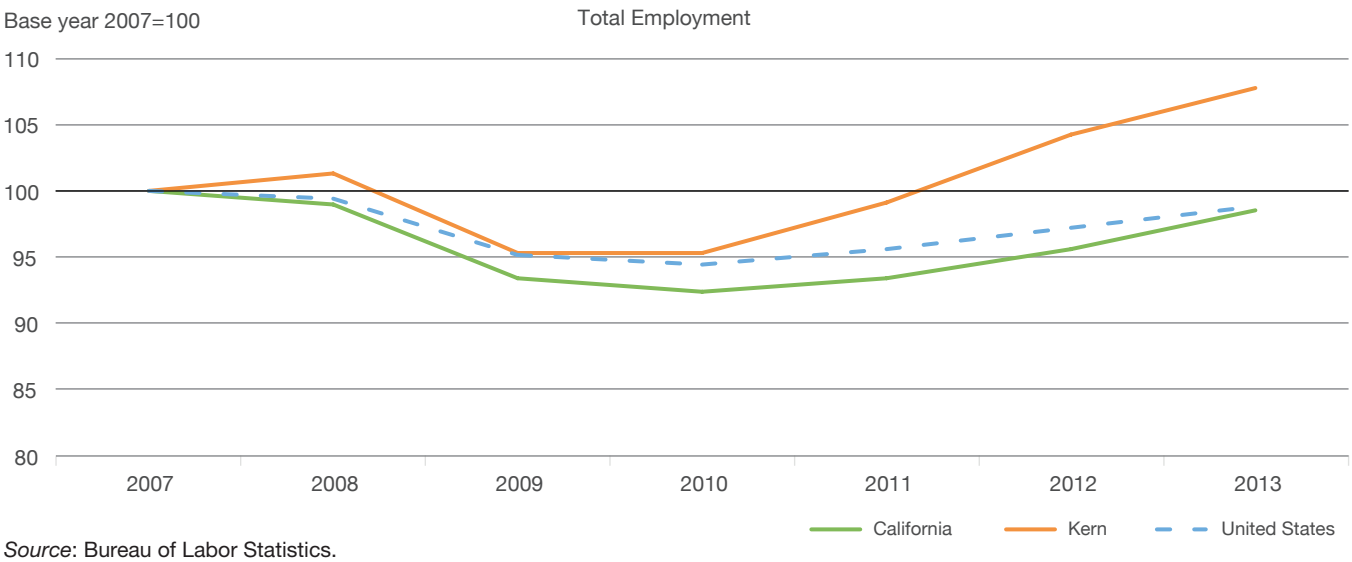
EXECUTIVE SUMMARY

California boasts one of the biggest economies in the world yet consistently ranks as one of the worst states in the nation for doing business. Bureaucratic red tape coupled with high business and living costs are among the most cited reasons for California's unfriendly business climate. Kern County, however, has proven the exception.

With its streamlined permitting process, abundance of open space, and low living costs, Kern fosters a climate attractive to businesses in California and beyond. As a result of this climate and a unique industry mix, Kern has displayed economic strength at a time when both California and the nation have been emerging sluggishly from the Great Recession.

FIGURE 1: JOB GROWTH IN KERN OUTSHINES CALIFORNIA AND THE NATION



Source: Bureau of Labor Statistics.

Kern County's wealth of energy resources and fertile soil create unique economic opportunities in California. Kern is the largest oil producer of any county in the lower 48 states, home to the largest wind farm in America, and will soon house the largest solar power plant in the world. Kern leads the nation in the production of pistachios and carrots and, overall, is the second-largest U.S. food producer. Much of Kern's economic dynamism can be attributed to this industry mix, but also to the county's interconnectedness with the Los Angeles economy. Located within the Greater Los Angeles economic area,[1] Kern likely will see continued demand from Los Angeles for the energy and agricultural goods it produces.

Kern's geographical location makes logistics a good sector to target for further expansion as the county continues to widen its sector mix. Warehouses in Kern have access to major ports in Los Angeles/Long Beach and Oakland and excellent connections to the population centers in California and into neighboring states to the east. This market access coupled with lower living costs and business-friendly policies provide an attractive environment for national and international companies looking to tap into the California market.

Relying on its two powerful, resource-based sectors and the promotion of other commercial and industrial developments, the Kern County economy has gathered strong momentum in the last decade. As Kern strengthens

its efforts to link its economy to that of the metropolitan area to the south, the question of whether it is primarily a Central Valley- or Los Angeles-based economy will become less relevant than the unique position it occupies. The openness to practical and innovative problem solving that Kern has demonstrated while creating an open-for-business climate despite the California regulatory environment will be vital to successfully addressing the remaining challenges to sustained growth, and can help propel the Kern economy toward a prosperous future for its residents and companies.

Building on Kern's recent growth, this report aims to provide a roadmap for future economic development in the county. By diversifying its industry base and continuing to develop a skilled workforce, Kern can create widespread prosperity and generate jobs that can sustain high-quality urban development. Our recommendations highlight the strengths Kern can build upon and identify opportunities to help the county achieve its full potential. Whether Kern can capture these opportunities rests on its ability to:

Maintain the cohesive and streamlined planning approach that makes doing business in Kern easier than in competing areas.

Kern County's business climate sets it apart from the rest of California, especially in the areas of planning and permitting. County officials believe that regulations need not be onerous when managed sensibly. For example, efforts to streamline the California Environmental Quality Act (CEQA) review process have already facilitated business development appropriate for Kern and should be kept in place. Maintaining the determination to foster an open business climate and manage regulatory processes efficiently will help Kern maintain a competitive edge.

Utilize Kern's proximity to Los Angeles, developable space, and welcoming business and permitting climates to attract companies from near and far.

Kern County's assets distinguish it from neighboring counties. Our analysis found little overlap between Los Angeles' and Kern County's economic strengths. Ample opportunities exist in Kern for companies looking to expand from the Los Angeles area and elsewhere in California. Kern should continue working to attract a diverse set of industries and companies that can benefit from the county's developable space and welcoming business climate. Kern is also well positioned to draw in foreign investors seeking a California manufacturing base close to the Los Angeles market.

Provide more financing for small businesses by partnering with regional Community Development Financial Institutions (CDFIs) to create a multibank.

Nearly 90 percent of establishments in Kern employ 100 or fewer people. These small businesses offer job opportunities to a diverse set of workers. However, they have declined in number since the Great Recession began and lenders tightened credit. Lending has been slow to rebound and small businesses are still feeling the pinch. Strengthening relationships with local financial institutions, especially CDFIs in Fresno and Los Angeles, is the first step to ensure small businesses have adequate access to capital.

Multibanks are strong levers for community development because they centralize local banking expertise and delegate tasks among members to more effectively target investments. They can also leverage additional funding on the ground from local government, community, and philanthropic sources to fund financial literacy programs to increase future loan volumes. Kern County possesses the financial capital and institutions needed to support a multibank, and the community is home to several key organizations with a deep understanding of local entrepreneurial needs as well as established relationships with local banks.

Building from the core agriculture and energy industries, expand related industries and facilitate the growth of innovation-rich activities.

Kern's two primary industries—agriculture and energy—are solid pillars upon which Kern can build its future economic base. Kern can help insulate its economy against shocks by developing non-water-intensive industries such as logistics that benefit from Kern's proximity to the Greater Los Angeles economic area and lower real estate costs. Promoting programs that train workers for higher-paying, higher-skilled jobs, especially in science, technology, engineering, and mathematics (STEM), will increase prosperity for a larger share of the Kern population.

Strengthen linked learning programs to grow associate degree-level STEM workforce.

Unemployment is highest for high school dropouts in Kern, and job prospects for these workers can be extremely volatile. To address structural unemployment, educational institutions and businesses in Kern County must work together to ensure that students stay in school and gain the skills needed to fill better-paying jobs. Linked learning programs pair academics with real-world technical skills that students gain through internships or apprenticeships.

Expand a co-op-for-credit program at CSU Bakersfield to meet industries' growing demand for a bachelor-level STEM workforce.

With industries finding it even harder to fill STEM jobs that require a bachelor's degree, expanding the co-op-for-credit program at California State University (CSU), Bakersfield to develop a skilled, job-ready workforce would boost the entire Kern economy. CSU Bakersfield should leverage existing relationships with local companies to place students in STEM positions where they can earn both wages and college credits.

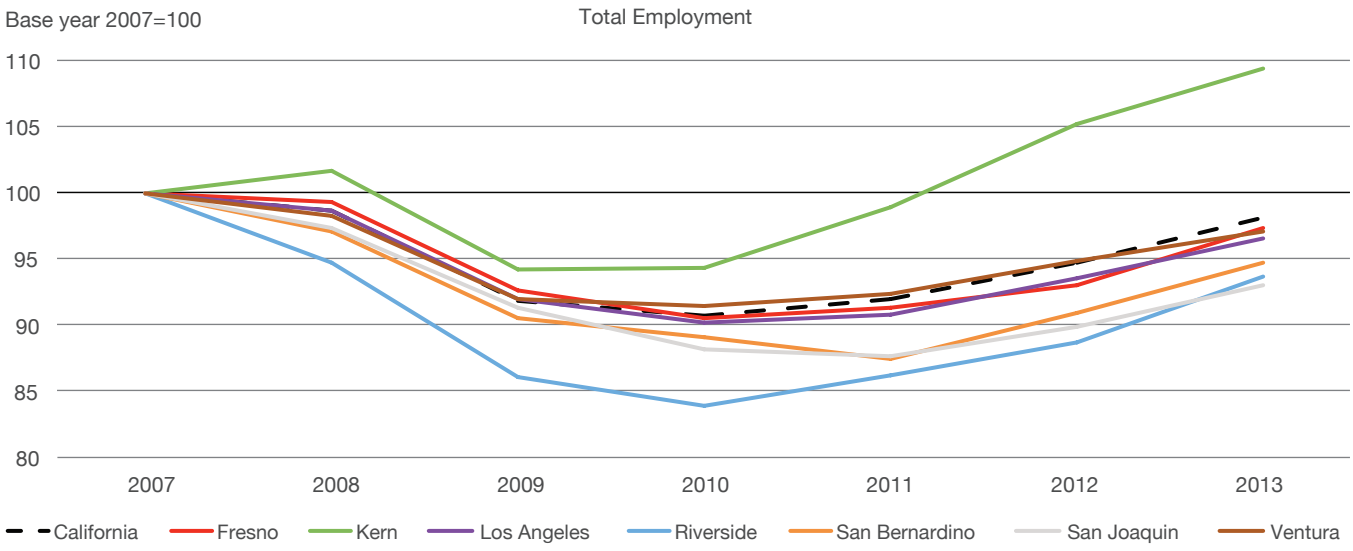
Foster and build communities with varied amenities and infrastructure to attract and retain a wide cross-section of workers and residents.

Kern County is already investing resources to encourage communities to make quality of life enhancements as they plan industrial and commercial development, both in unincorporated areas and older, urban centers. A prime example is the RENEWBIZ (Renewable Energy Neighborhood Enhancement Wind Business Investment Zone) grant program funded by property taxes from wind farms in East Kern. It provides small matching grants to private businesses and nonprofits in unincorporated communities to improve facades, landscaping, public spaces, infrastructure, and other amenities to make them more attractive places to live and work.

1. INTRODUCTION

Kern County plays a vital role in the economy of California and the country. It is the biggest oil producer in the continental United States and one of its most fertile places as well, producing a bounty of fruits and vegetables that helps feed the nation. It boasts some of the largest wind farms and solar power arrays in the world. It helped usher in the jet age and now is home to the first commercial spaceport. The third-largest California county by area and No. 11 by population, it is No. 1 in the state in job growth and ranks among the fastest-growing metropolitan areas in the country. While much of Kern County's impressive employment and population growth can be attributed to these valuable oil and agricultural products, Kern is also broadening its industry base and has attracted extensive investments in cutting-edge renewable energy. But it still faces significant educational and workforce challenges. This report provides a roadmap for future economic development in the county to create wider prosperity and jobs that can sustain high-quality urban development. The roadmap highlights strengths to build on and identifies opportunities to help Kern achieve its potential.

FIGURE 2: A STORY OF GROWTH



Source: California EDD.

Measurement and benchmarking. To understand Kern's assets and challenges, we sketch a portrait by drawing on state and national data sources. To show how its economy compares to its neighbors, we benchmark Kern's performance on a range of measures against counties drawn from Greater Los Angeles (Los Angeles, Ventura), the Inland Empire (Riverside, San Bernardino), and the Central Valley (Fresno, San Joaquin). This allows us to distinguish where Kern's experience is driven primarily by broader economic trends and where its experience is distinct and presents a unique challenge or opportunity.

TABLE 1: BENCHMARK COMPARISON

Location	Total Population	Share of Population	Land Area in Square Miles	Growth Rate Since 2010
California	38,332,521	100%	155,779	2.89%
Los Angeles	10,017,068	26.13%	4,058	1.94%
Riverside	2,292,507	5.98%	7,206	4.09%
San Bernardino	2,088,371	5.45%	20,057	2.29%
Fresno	955,272	2.49%	5,958	2.42%
Kern	864,124	2.25%	8,132	2.65%
Ventura	839,620	2.19%	1,843	1.73%
San Joaquin	704,379	1.84%	1,391	2.46%

Source: Census, American Community Survey, 2013.

It is important to keep in mind some basic differences between Kern and the comparison counties. Kern's population is similar to those of Fresno, Ventura and San Joaquin, but in area Kern aligns with the Inland Empire, larger than Riverside and smaller than San Bernardino. Kern is the second-fastest growing county in this group, behind Riverside, which experienced massive growth in 2010-2011 but has slowed from 2012-2013, while Kern's growth rate has steadily increased since 2010. Kern borders three of the benchmark counties—Ventura, Los Angeles, and San Bernardino.

Finding balance. Many communities in Kern County are crafting their own plans for their future, in addition to (and in concert with) Kern County's general plan. These visions for cohesive and welcoming downtowns, strategic growth, and safer streets will require resources, stakeholder engagement and continued economic vitality to become a reality. Balancing the varied space and location needs of core sectors—including agriculture, energy extraction and generation, aerospace and logistics—with the desires of different types of communities requires thoughtful planning and foresight. As the population in Kern County grows, denser development and lively city centers will be needed to attract and house new residents and workers. Managed well, the various clusters and needs can bolster one another rather than compete for resources.

Managing risk. Kern has enjoyed strong economic performance at a time when the national economy has dragged. The Bakersfield metropolitan area, which includes all of Kern County, ranked 19th on the Milken Institute's Best-Performing Cities Index in 2012 and 2013. The resilience of the Kern economy is explained by a number of factors explored in detail in this report, but two key contributors were the high commodity prices bolstering Kern's primary industries, oil and agriculture. Their strength buffered Kern from some of the prevailing economic winds in the Great Recession. However, that narrow base also presents a risk that Kern's economy could fall behind the nation as a whole if Kern does not continue to broaden its economic base and if commodity prices in these industries fall at the same time.

"While Kern County is interested in development, it is not just open for everything—we are looking for quality projects that produce jobs and that will invest in the community."

Lorelei Oviatt
Director,
Kern County Planning Department

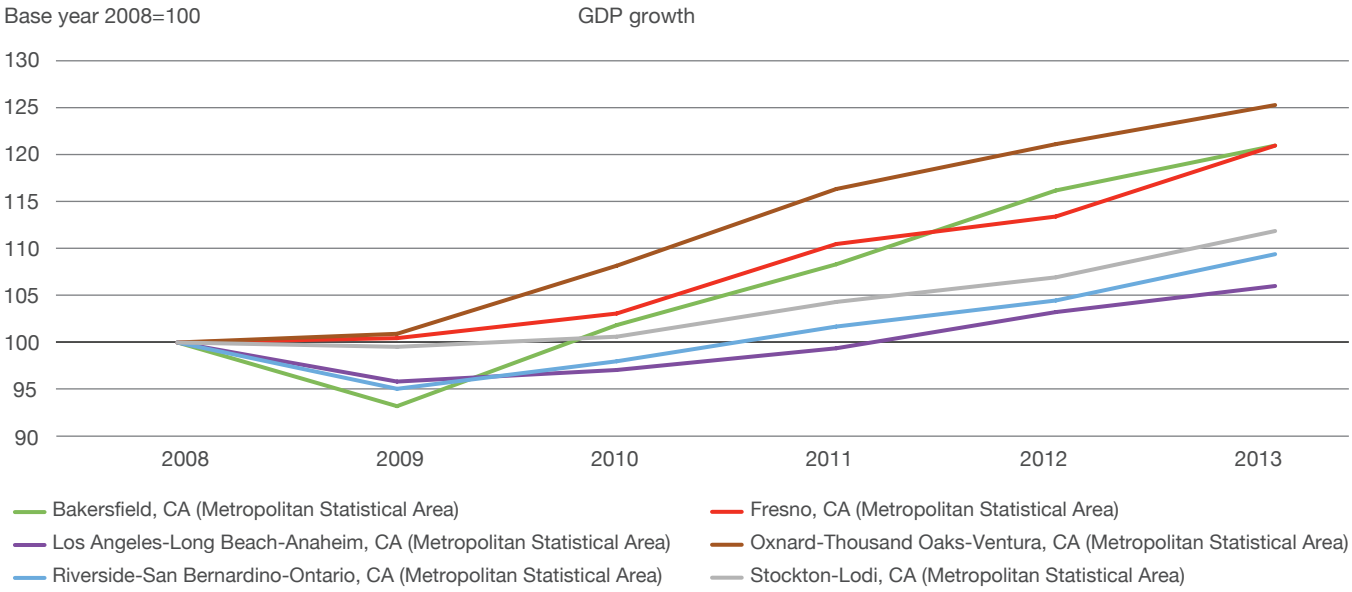
Stakeholder engagement. The Milken Institute research team met with stakeholders from around Kern County to hear their views on important issues for the future and to learn more about their economic perspectives and concerns. The Institute is grateful for the generosity stakeholders showed in sharing their helpful insights. Kern County's deeply engaged public, private, and civic communities suggest that the recommendations in this report can be implemented effectively.

2. KERN COUNTY'S RESILIENCE: A TALE OF TWO RESOURCES

Kern County's wealth of energy resources and fertile soil create economic opportunities found nowhere else in California. Oil and gas reserves critical to the Golden State's economy are located primarily in Kern. About 78 percent of all active California wells are in Kern County, accounting for more than 70 percent of oil production and more than 60 percent of natural gas production in the state.[2] Kern County is also an important supplier outside California, producing about 5 percent of U.S. oil[3] and 1 percent of the world's supply.[4]

Despite the profitability of its oil and gas industry, Kern has diversified its energy portfolio by courting and establishing new relationships with wind and solar power companies. With a 1,500-megawatt capacity, the Alta Wind Energy Center in East Kern—the largest wind farm in America—has the ability to supply electricity to 450,000 homes. Google Inc. recently invested $145 million in the Regulus solar project outside Bakersfield.[5] Also, MidAmerican Energy Holding Co.'s Solar Star Project (579 MW) straddling the border of Kern and Los Angeles County will be the largest solar facility in the world.[6] These investments are a testament to Kern's commitment to increase energy production through alternative and green methods.

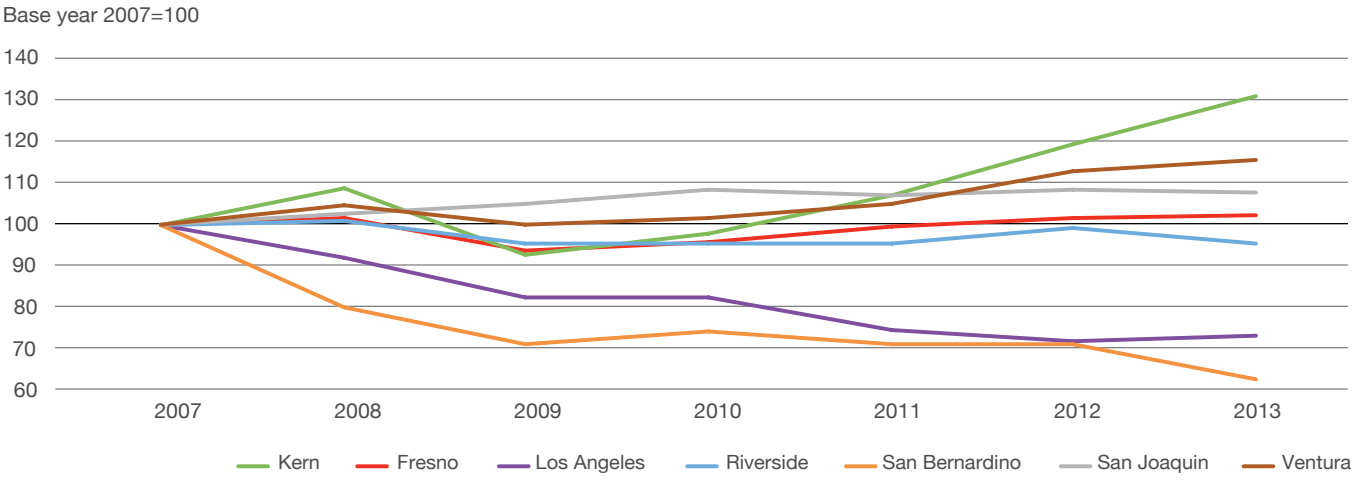
FIGURE 3: KERN'S ECONOMIC RECOVERY FUELED BY NATURAL RESOURCES



Source: Bureau of Economic Analysis.

Rising oil and agricultural commodity prices coupled with increased demand for alternative energy proved a boon for Kern's economy. As a result, Kern bounced back within two years of the recession's start in 2007 and enjoyed average GDP growth of 6.7 percent from 2009 through 2013. Output rose to nearly $40 billion in 2013.[7] Energy-rich Kern County is also an agricultural powerhouse, with nearly $7 billion in 2013 sales making it the No. 2 food producer in the nation.[8] Almost all of the nation's pistachios are produced in California, and Kern County is the state's top producer.[9] Kern also leads the United States in carrot production and grows almonds, grapes, potatoes, lettuce, garlic, onions, tomatoes, bell peppers, and watermelons in abundance.[10] Demand at home and abroad for Kern-grown products has led to a surge in farm employment since the recession.

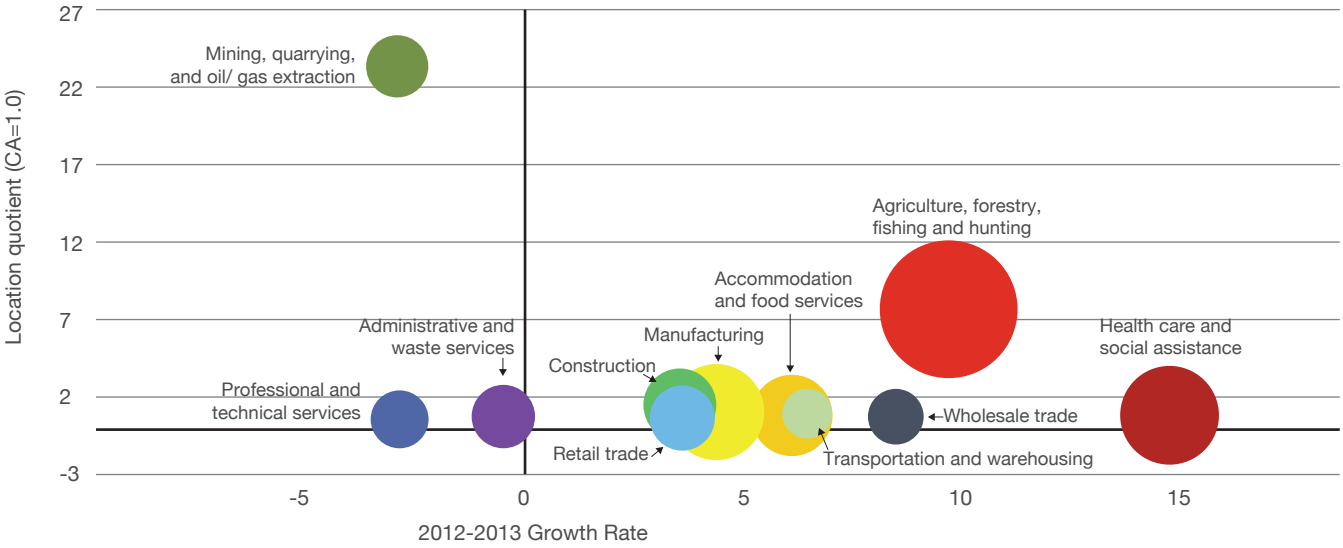
FIGURE 4: RAPID GROWTH IN KERN FARM EMPLOYMENT



Source: California EDD.

Kern has several industries with high location quotients (plotted on the y-axis in the graph below) and[11] employment size (indicated by circle size), which points to the county's uniqueness.[12] With its wealth of natural resources, Kern County's economy does not move with the rest of the nation but follows its own cycle. This creates both opportunities and challenges for companies moving into Kern. To understand this unique environment, an in-depth look at its key industries is warranted.

FIGURE 5: MAJOR INDUSTRIES IN KERN COUNTY



Sources: Bureau of Labor Statistics, Location Quotient Calculator, Milken Institute.

2.1 Industry strengths: An overview

This section examines the scale and prospects of key industries in Kern County. Industries were chosen based on a combination of their importance to the Kern economy (output and employment share), level of specialization, and growth prospects, as well as input from stakeholders. Based on these criteria, we examined:

- Energy and Natural Resources
- Agriculture and Value-Added Agriculture
- Distribution and Logistics
- Health Care Services
- Tourism, Recreation, and Entertainment
- Aerospace and Defense

Each highlighted industry offers a different perspective into Kern County's strengths and future opportunities. Energy and natural resources are the largest assets, driving Kern's economy and the welfare of its citizens. These sectors offer high-paying jobs and bring wealth into the county, with average annual wages topping $91,000. Agriculture employs almost a quarter of Kern's workforce, but many jobs are low-paid and seasonal, averaging under $24,200. In meeting residents' health-care needs, Kern faces the same challenges many other places do throughout the United States: finding a sufficient number of medical professionals and mustering enough resources to serve the population. Distribution and logistics and tourism are rapidly growing industries that the county hopes will become additional pillars of its economy. These industries benefit from Kern's proximity to the 10 million people in Los Angeles County and offer off-season employment alternatives for those who work in agriculture. Kern draws 10 million visitors a year who spend $1.3 billion, according to the Kern County Board of Trade.

TABLE 2: INDUSTRY STRENGTHS OF KERN COUNTY

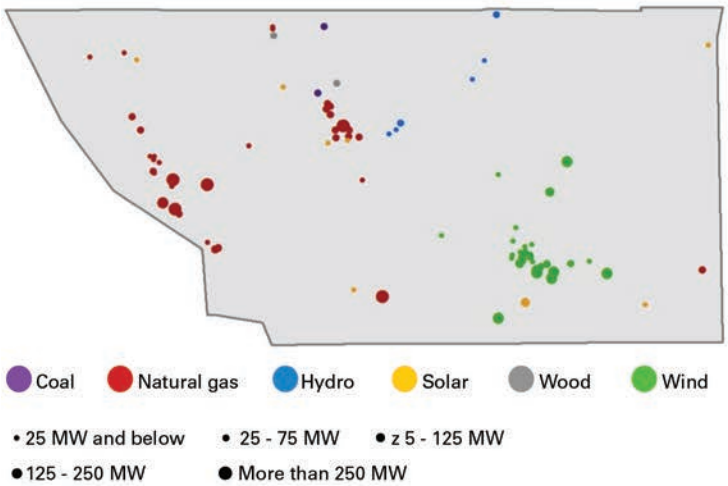
Industry	Components NAICS Codes	Employment LQ's 2013	Employment 2013	Employment Share 2013	Average Wages
Energy and Natural Resources	21	23.23	12,317	4.95%	$91,060
Agriculture	11	7.58	59,273	23.80%	$24,172
Distribution/Logistics	18-49	0.94	7,620	3.06%	$50,585
Health-care Services	621	0.91	22,933	9.21%	$49,627*
Tourism, Recreation and Entertainment	712-713,721	0.48	3,715	1.49%	$19,115*

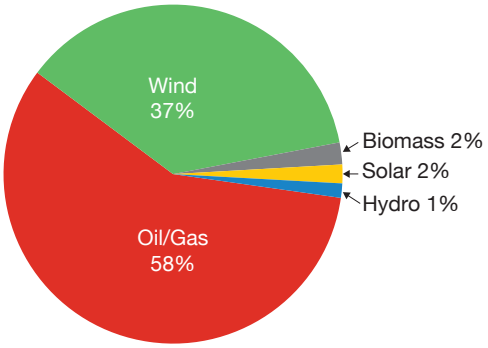
Sources: Bureau of Labor Statistics, Milken Institute.
*Weighted average of annual wages and employment.
Note: Aerospace and defense employment is spread throughout various NAICS codes making it impossible to accurately display the industry in Kern in this chart format.

2.2 Key industries: Energy and natural resources

The energy and natural resources industries have driven growth across the United States in recent years, providing high-paying jobs. Kern County has two distinct energy clusters—renewable energy generation in East Kern and oil and gas extraction in West Kern (see Figure 6).[13] These resources, along with the transmission infrastructure associated with moving oil, gas, and electricity to market, are long-term, non-movable assets for the county, and energy companies generate a large share of Kern's property tax revenue.[14] As of August 2013, Kern ranked second among California counties for installed electric generation capacity, with oil, gas, and wind facilities accounting for 95 percent of the total. With Kern County so close to the Los Angeles market, demand for electricity generated there is likely to remain robust. Companies also mine a diverse set of resources in Kern, including borax in Boron, limestone in Lebec,[15] and even gold in mines being reopened in Mojave.[16] Rio Tinto Minerals in Boron is among Kern's largest employers.

FIGURE 6: KERN COUNTY ELECTRIC GENERATION CAPACITY BY PRIMARY FUEL (AUGUST 2013)[17]





Source: Energy Information Administration, Annual Electric Generator Report 2013.

Source: California Energy Commission.

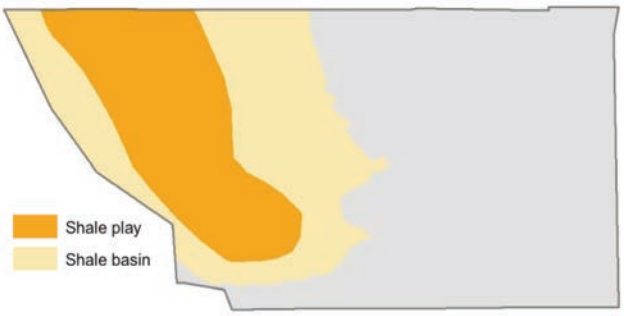
Renewable energy investments in Kern have been significant in recent years, producing far more new generation capacity than traditional sources. With the gusty Sierra Nevada mountains to the east, Kern already generates more wind energy than any other California county, and new investment has poured in. Two-thirds of Kern's current wind generation capacity of 3,000 MW has been installed since 2010.

Google recently announced an investment of $145 million in the 82 MW SunEdison Regulus solar project in Lamont[18] and MidAmerican Solar will have its 579 MW facilities up and running in Kern and northern Los Angeles County by the end of 2015.[19] Southern California Edison is building transmission lines to connect these resources to the grid and serve the Los Angeles market.[20] It also opened a 32 MW energy battery storage demonstration project in Tehachapi in 2014.[21]

Oil and gas extraction alone generates 14 percent of Kern County's private-sector economic output, with the industry share of the county's GDP doubling since 2001. Higher oil prices have driven much of that growth. Kern produced more oil than any county in the lower 48 states in 2013.[22] The GDP growth rate from oil and gas extraction and support activities topped 10 percent a year between 2001 and 2011.

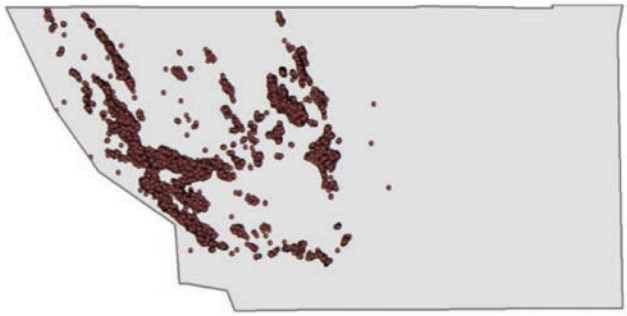
Investment in renewable power keeps growing. The oil and gas industry has two sources of potential growth in Kern. One is the conventional fields already in production, including the Kern River Oil Field, where the first wells were dug by hand in 1899. The other is unconventional shale resources found in the Monterey Shale.

FIGURE 7: THE MONTEREY SHALE ALSO LIES BENEATH WESTERN KERN COUNTY.



Source: California Energy Commission.

FIGURE 8: ACTIVE OIL WELLS IN KERN COUNTY ARE CONCENTRATED IN THE WEST.



Source: California Department of Oil, Gas and Geothermal Resources.

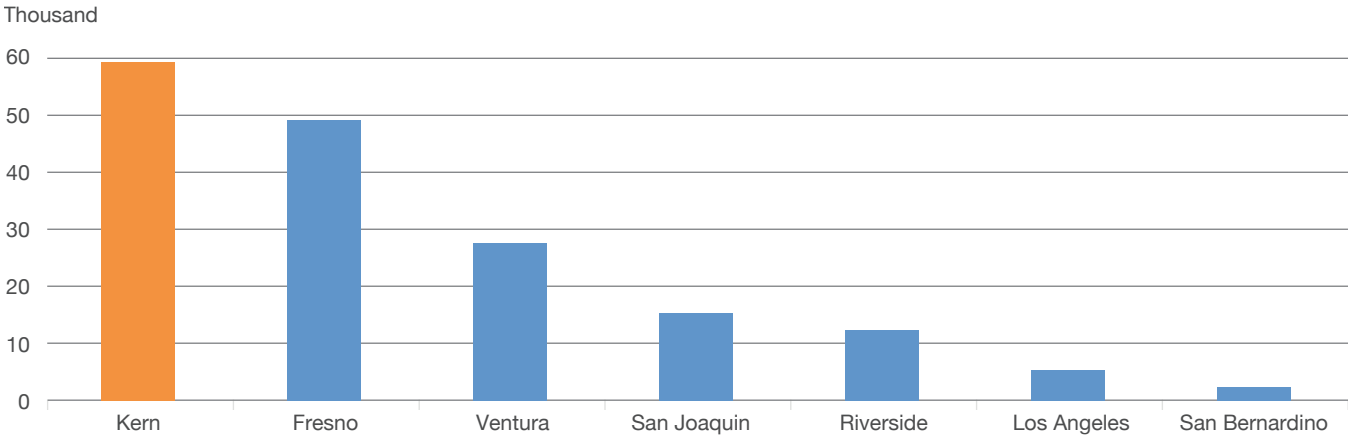
Opportunities exist for higher conventional production from current fields, and proposed changes to the permitting procedure for new wells would facilitate growth (see Section 3.1). But new California regulations (especially regarding water) could inhibit development. Most current oil production comes from the conventional resources. Chevron, California Resources Corp. Inc., and Aera Energy LLC are major employers in the Kern oil and gas industry.

Some experts expect the Monterey Shale, which lies below western parts of Kern County,[23] to contain significant unconventional oil and gas reserves that could fuel an energy boom similar to those seen in North Dakota and states above the Marcellus Shale if large-scale extraction were permitted. Estimates of the recoverable reserves in the Monterey Shale vary, and disappointing results from recent exploratory wells have led the U.S. Energy Information Administration to revise its estimates downward.[24] Still, technical innovations may boost estimates and enable the extraction of significant quantities of oil and gas.

2.3 Key industries: Agriculture and value-added agriculture

Kern helps feed America. During the peak season, the industry employs 25 percent of the Kern workforce.[25] Kern County ranks second in the nation in agricultural production, topped only by Tulare County, its San Joaquin Valley neighbor. Its farms employ 60,000 workers, more than any of the benchmark counties (see Figure 9). Agricultural products account for nearly 20 percent of Kern's exports, second to petroleum and coal.[26] Key commodities include grapes, almonds, carrots, dairy, and pistachios, with many processed and packaged in the county, further bolstering the local economy.

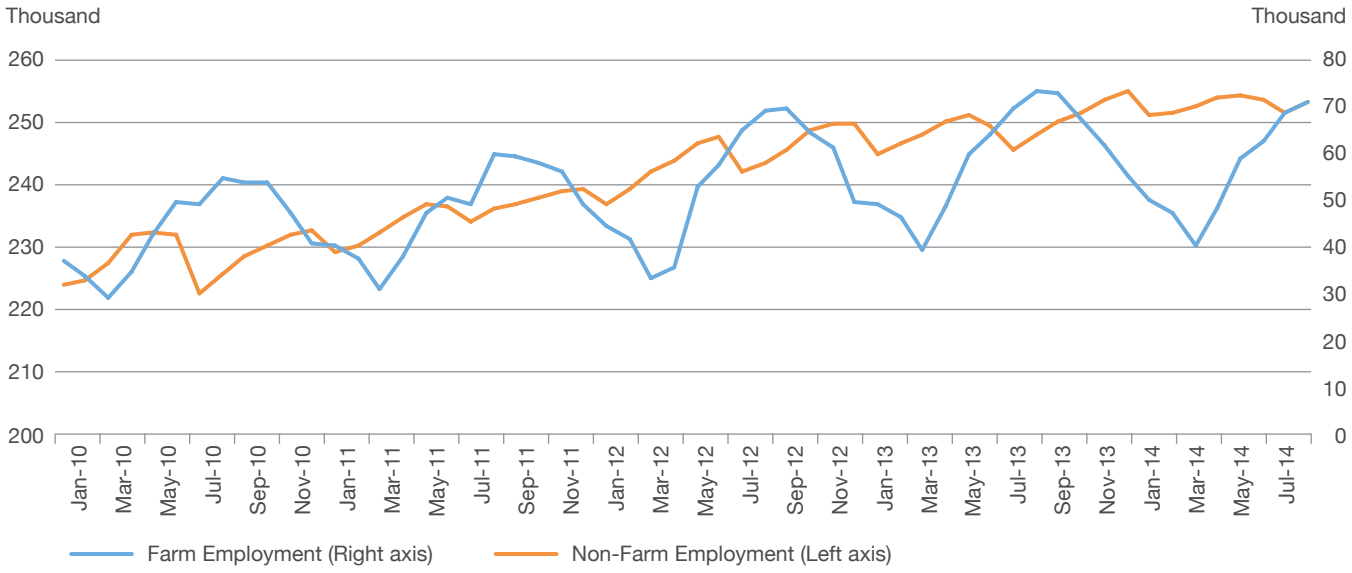
FIGURE 9: TOTAL FARM EMPLOYMENT IN KERN AND BENCHMARK COUNTIES (2013)



Source: California Employment Development Department.

A challenge for Kern, as for any economy with large agricultural employment, is that many jobs in the sector are necessary only for the harvest or other parts of the year. These fluctuations can trigger seasonal unemployment and undermine the broader economy. Kern's economy is hit especially hard in January and February, when agricultural employment is low and the retail sector, which also employs low-skilled labor, slows after the holiday season. In winter, the county's unemployment rate is almost double that of the summer.

FIGURE 10: SEASONAL VARIATIONS IN FARM EMPLOYMENT AND NON-FARM EMPLOYMENT IN KERN COUNTY



Source: California Employment Development Department.

Kern has the lowest high school graduation rate of all the benchmark counties, almost 10 percentage points below the California average. From 2005 to 2009, only 71 percent of the students in Kern high schools graduated.[27] While the agricultural sector still provides opportunities for low-skilled workers, the value-added activities in Kern such as food processing and manufacturing increasingly require technical knowledge and skills, and the bar is being raised further as companies invest in new technology. But as opportunities for dropouts diminish, this market reality could induce more students to stay in school and earn diplomas, eventually creating a better-educated, more adaptable, and higher-paid workforce. Currently, agriculture is the largest employer in Kern County but also the lowest-paying major industry.

TABLE 3: AGRICULTURE WAGES

Occupation Title	Employment Estimates*	Mean Hourly Wage*	Mean Annual Wage*
All Farming, Fishing, and Forestry Occupations	39,620	$9.26	$19,257
Farmworkers and Laborers, Crop, Nursery, and Greenhouse	36,590	$8.98	$18,680
Graders and Sorters, Agricultural Products	1,470	$8.86	$18,437
First-Line Supervisors of Farming, Fishing, and Forestry Workers	760	$19.68	$40,943
Agricultural Equipment Operator	610	$11.26	$23,416
Agricultural Inspectors	100	$19.14	$39,799
Agricultural Workers, All Other	80	—	—
Farmworkers for Farm, Ranch, and Aquacultural Animals	—	$11.11	$23,113
*2014 Q1 Estimates not available.			

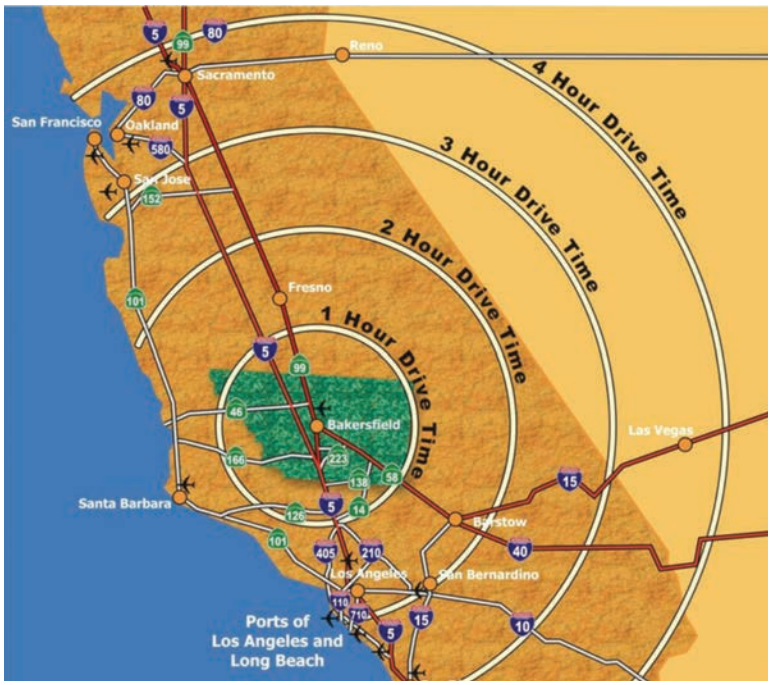
Source: California Employment Development Department.

The top agricultural employers in the county are Paramount Farms, the pistachio, almond, and pomegranate grower; Grimmway Farms, the world's largest grower, producer, and shipper of carrots and grower of many other organic fruits and vegetables; and Campbell Soup Co.'s Bolthouse Farms, another major carrot grower and producer of smoothies, juices, and dressings. Some of these companies are working to improve the welfare of their employees through year-round employment and personal development programs. All have distribution facilities that take advantage of Kern's proximity to Southern California ports and freeways.

2.4 Key industries: Distribution and logistics

The distribution and logistics industry allows Kern to leverage its natural resources, local production, and developable space by capitalizing on its location and workforce. From Kern, warehouses have access to major ports in Los Angeles, Long Beach, and Oakland and good connections to the population centers in California and neighboring states to the east. Kern's proximity to Los Angeles makes logistics a prime target for expansion. Farther north in the Central Valley, San Joaquin has built on similar advantages to develop a strong logistics industry serving the Bay Area.

FIGURE 11: KERN COUNTY'S MARKET ACCESS



Source: Kern Economic Development Corp.

The logistics sector offers numerous full-time, middle-class jobs that require training but not high levels of education. Through America's Job Center, located in Bakersfield, Kern employers are able to recruit from a strong applicant pool, with openings for a variety of skill levels. Jobs in truck transportation, for example, offer year-round employment and opportunities for entrepreneurship through truck ownership. Bakersfield has two schools that provide the necessary training and both have relationships with potential employers for those who become certified. Warehousing jobs also do not require the same level of qualifications. Ikea and Caterpillar are among several multinational companies with expansive warehouses in Kern, creating local jobs and serving Western states.

> **"Kern County is one of the few locations in California where companies can find ample land to expand, certainty and speed during the permitting process, and access to the large Los Angeles market just 50 miles away. It's obvious why many of the nation's largest companies are choosing to locate their logistics operations in Kern."**
>
> **John Guinn**
> *Vice President of Forward Planning, Roll Real Estate Development*

Employment in Kern's logistics industry is growing, but lagged other benchmark counties such as Fresno, Riverside, San Bernardino, and San Joaquin through 2013.[28] However, a number of recently opened and still expanding projects are expected to boost 2014 employment data for Kern's logistics industry.

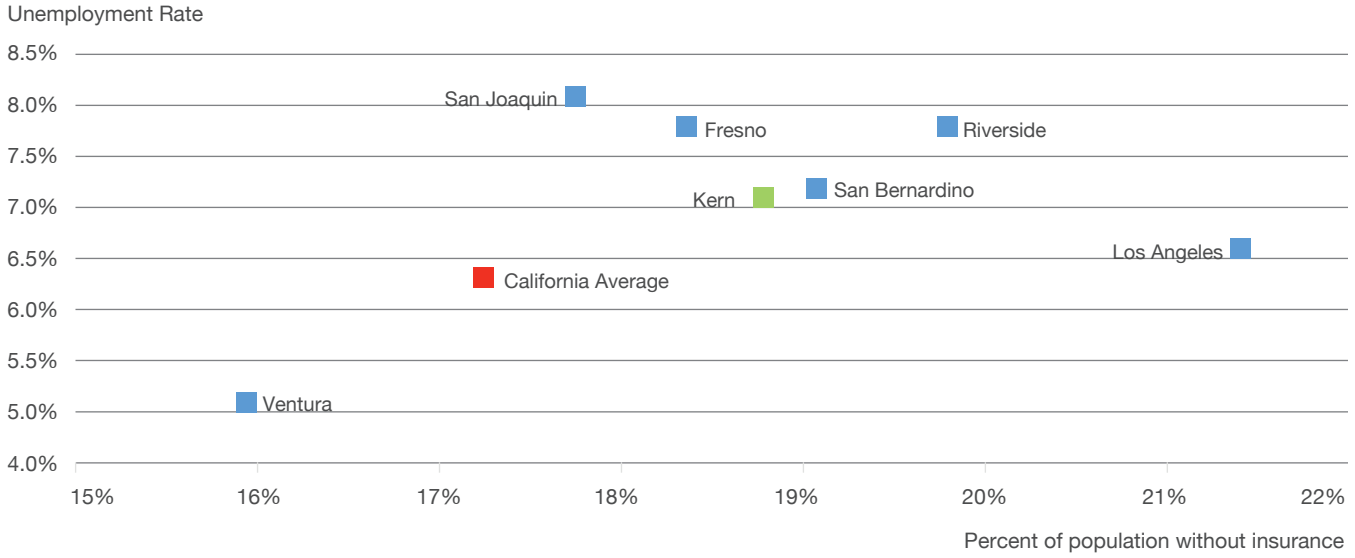
Roll Real Estate Development, associated with Paramount Farms, is one example of a private-sector firm making considerable investments in Kern's logistics future. Roll is currently developing three commercial parks in the county. The largest is the 1,625-acre Paramount Logistics Park in Shafter, a Western hub located on the Burlington Northern Santa Fe Railway (BNSF) main line that boasts access to 65 million people within 18 hours. The park is master-planned and parceled to best attract companies that bring products in by rail from the ports of Los Angeles and Long Beach and ship to markets across the West. Paramount Logistics Park has already attracted a Target distribution center, American Tire Distributors, Ross Dress for Less, and other large warehouse operations. Roll Real Estate is also developing large commercial centers in Bakersfield, the 124-acre North Meadows Business Park, and the 80-acre CrossRoads Business Park.[29] Roll is but one investor that sees economic potential in Kern and is taking advantage of the county's easy permitting process. The 270,000-acre Tejon Ranch, the largest expanse of private land in California, is also a leading investor in Kern County logistics with a 1,450-acre commerce center of its own.

2.5 Key industries: Health-care services

Kern has a location quotient of 1 for health care, indicating about the same share of health-care employment as the state overall. However, the state is suffering from a shortage of health-care workers, and significant parts of Kern County are designated Medically Underserved Areas by the federal government.[30] Despite the need for more physicians and health professionals, the health-care industry continues to be a major employer in Kern. By 2020, the field is projected to add 6,400 jobs[31] to the 30,400 caregivers and staff currently employed.[32]

Access to health care is essential to the welfare and vitality of Kern residents, yet the county remains underserved amid great need. Among benchmarks, Kern has the second-highest rate of uninsured people at 19 percent. As shown in Figure 12, Fresno and San Joaquin do a better job helping their residents secure health insurance despite the Central Valley's high unemployment rates. Their higher rates of coverage point to the success of social assistance programs that help low-income residents gain access to care.[33]

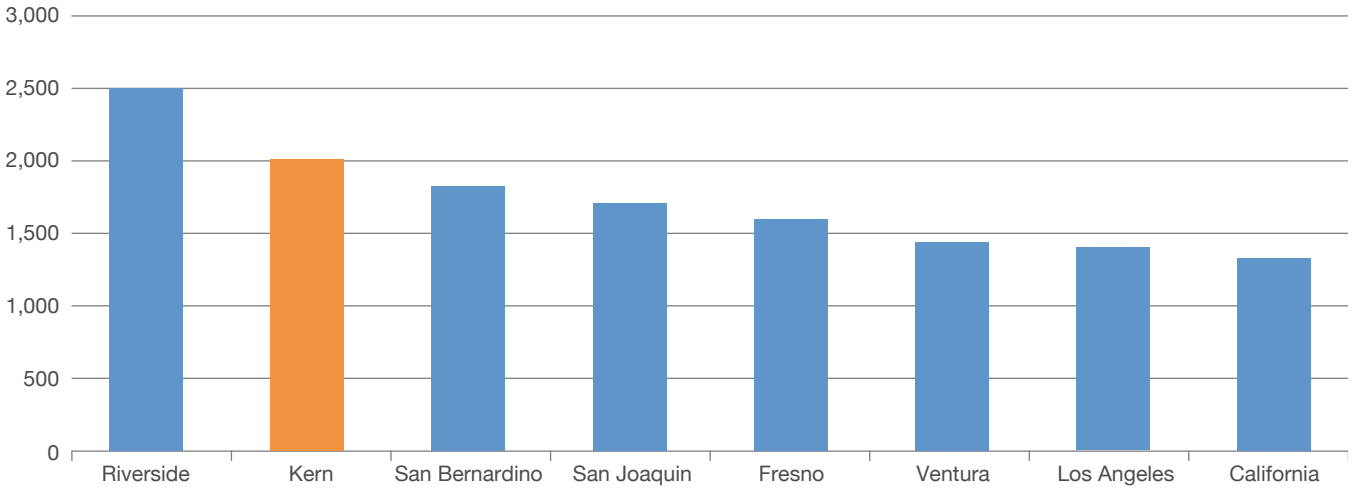
FIGURE 12: THE UNEMPLOYED AND THE UNINSURED



Sources: U.S. Census American Community Survey 1-year estimates (2013).

Even for those who are insured, demand for services outstrips the supply of medical professionals. Primary-care physicians within the county are overburdened. Among benchmark counties, Kern ranks second in terms of need. For every primary care physician, roughly 2,000 people need medical care. The shortages go beyond general practitioners. Specialists such as oncologists also are in short supply in the county,[34] which means longer wait times for appointments and sometimes having to travel long distances to get medical care. However, while some residents go outside the county to see physicians and receive treatments, others travel into Kern from neighboring locales for the same reasons.

FIGURE 13: NUMBER OF PEOPLE PER PRIMARY CARE PHYSICIAN (2014)



Source: Robert Wood Johnson Foundation.

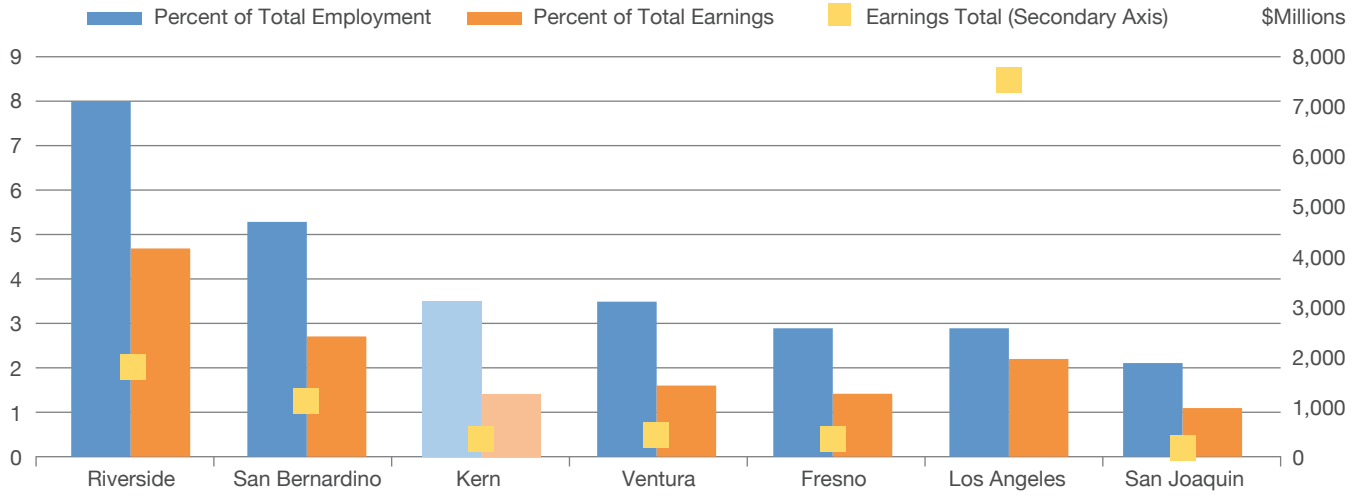
Many health-care jobs require some training but not an advanced degree. The fastest-growing medical occupation will be registered nurses, with almost 900 jobs likely to be created by 2020.[35] The mean annual wage for RNs is $80,000,[36] and it is possible to become one with an associate's degree. The health-care industry can act as a bridge to help some Kern residents leave seasonal employment and train for long-term careers. With the shortage of health workers across the United States, Kern needs homegrown talent to fill positions such as nursing so it can focus its recruiting resources on highly specialized careers such as surgeons, neurologists, cardiologists, and oncologists.[37]

2.6 Key industries: Tourism, recreation, and entertainment

With open spaces, natural beauty, and a wide variety of recreational and cultural assets, Kern's tourism industry ranks 16th among the 58 counties in the state, based on revenue generated. The tourism industry in Kern was affected by the recession but recovered lost ground by 2011 and continues to grow, although it represents a small share of Kern's overall economy. While this makes the county less vulnerable to fluctuations in consumer spending than some other places, tourism is vital to such Kern localities as scenic Kernville in the southern Sierra Nevada, a former gold-mining town that draws visitors to raft 21 miles of whitewater rapids on the Kern River. Easy access to such recreational amenities improves the quality of life for all Kern residents. Communities in Kern continue to invest in new attractions such as vineyards and alpaca farms, which will help sustain the sector.

> **"Kern County is an adventure tourism market. We have a diverse array of outdoor activities including hiking, biking, off-highway vehicle uses, skydiving, fishing, boating, water skiing, kayaking, rafting, paddle boarding, windsurfing, bird watching and more that draw people here from throughout the world."**
>
> **Teresa Hitchcock**
> *Assistant County Administrative Officer, Kern County*

FIGURE 14: TOURISM SHARE OF EMPLOYMENT, EARNINGS, AND REVENUE IN KERN AND BENCHMARK COUNTIES (2012)



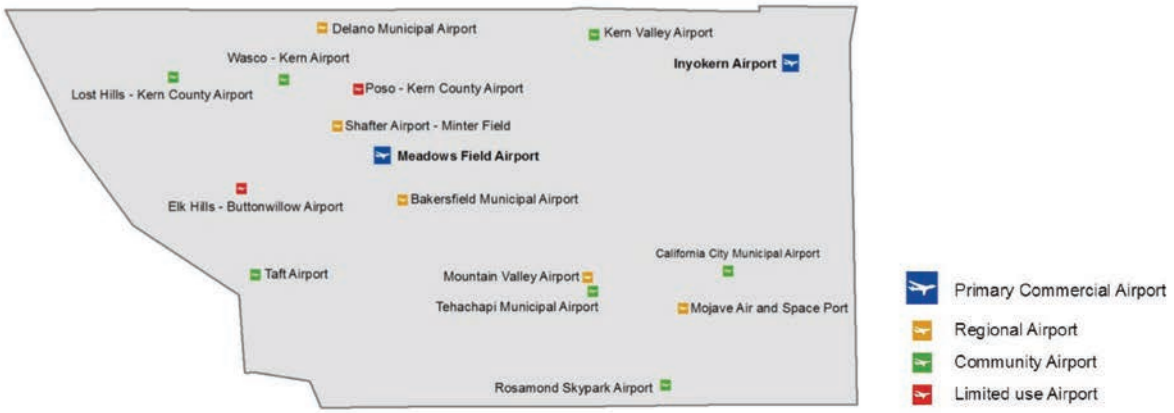
Source: California Travel and Tourism Commission, California Travel Impacts by County 1992-2012, May 2014.

2.7 Key industries: Aerospace and defense

Kern County is home to two military installations, the Naval Air Warfare Center Weapons Station China Lake — where the Navy conducts research, development, and testing of new systems — and Edwards Air Force Base — home to the Air Force Flight Test Center, where Capt. Charles "Chuck" Yeager broke the sound barrier in 1947[38] and space shuttles have landed 54 times.[39] If budget discussions in Washington, D.C., lead to lower defense spending, both bases may be at risk for future funding cuts that limit their ability to develop and test innovative technologies on site.

Kern is home to two primary commercial airports, Meadows Field Airport outside Bakersfield and Inyokern Airport in the Mojave Desert in the country's northeast corner. County-owned Meadows Field handled more than 143,000 passenger departures in 2013[40] and plays an important role in economic development. The 124-acre North Meadows Business Park builds on its proximity to the airport to attract tenants such as oil and gas services firms. Kern also has a number of regional and community airports. While most of these airports are used for agricultural and recreational flights (see Figure 15 Kern County airports) and to facilitate tourism and farming, the Mojave Air and Space Port in East Kern, home to more than 60 companies,[41] is a hub for aerospace-related development. Mojave hosts major engineering and aviation firms, including commercial space flight company Virgin Galactic, Masten Space Systems Inc., and Scaled Composites LLC, which built SpaceShipOne and SpaceShipTwo.

FIGURE 15: KERN COUNTY AIRPORTS



Sources: California Department of Transportation (2014), Milken Institute.

For the aerospace cluster to be sustained and expand further into the broader aerospace supply chain, companies will need to recruit and retain highly skilled workers from outside the county until Kern's schools start producing more competitive graduates. Beyond workforce needs, anticipating future demands and balancing the needs of different growing industries will also remain important to Kern County. For example, while East Kern is home to one of the world's largest wind farms, the installation of additional towering turbines must not obstruct the approach to the Mojave Air and Space Port. County planning staff has thought strategically about airspace for both the base and possible spaceflights, and has a map marking development restrictions around the facility.

2.8 Recommendation: Keep diversifying the industry base

1. Building from the core agriculture and energy industries, expand related fields and facilitate the growth of innovation-rich activities.

Industrial diversity cushions the regional economy from potential shocks resulting from price and demand changes in a specific industry. But Kern County's industrial diversity is by far the lowest among its benchmarks as measured by the Hachman index.[42] In the last recession, that low diversity actually insulated Kern's economy when energy and agriculture were spared. But Kern's score reveals how vulnerable it is to fluctuations in those industries, with employment subject to the risks of severe drought or sliding oil prices.

TABLE 4: HACHMAN INDEX FOR KERN AND BENCHMARK COUNTIES (CLOSER TO 1=DIVERSE, CLOSER TO 0=SPECIALIZED)

Year	Los Angeles	Riverside	San Bernardino	San Joaquin	Ventura	Fresno	Kern
2013	0.874	0.801	0.715	0.653	0.67	0.525	0.242

Sources: Bureau of Labor Statistics, Location Quotient Calculator 2013, Milken Institute.

One way a county can protect itself from deep, industry-driven recessions is to build up complementary industries. Kern's two primary industries–agriculture and energy–are solid pillars upon which Kern can continue to build its future economic base. Already, the county has diversified the energy industry beyond oil and gas extraction to renewable energy from large-scale wind and solar installations. Further expansion of the food processing industry could help Kern realize more added value from the abundant crops it harvests.

Other industry concentrations, like those in aerospace and defense, offer the opportunity to expand innovative, high-skill employment and attract new residents. Developing non-water-intensive industries such as logistics that benefit from Kern's proximity to Los Angeles and Kern's lower real estate costs will help buffer its economy and, as in health care, enable workers to acquire marketable skills and move up to higher-paying jobs. Programs that help train truck drivers and health-care workers and initiatives that develop talent in engineering and other STEM fields will help bring prosperity to a larger portion of the Kern population.

Facilitating the growth of core industries will require planning that considers future uses of regional assets and opportunities for collaborative growth that benefit more than one industry. For example, Chevron is extracting large quantities of water as well as oil from the ground in Kern and sells millions of gallons of this recycled water to farmers, which is helping to counteract California's dire drought.[43]

2.9 Recommendation: Ensure capital access for small businesses

1. Strengthen relationships with regional Community Development Financial Institutions (CDFI) in Fresno and Los Angeles.

From the mom and pop ice cream parlor to a new enterprise developing a drone irrigation system, small businesses are vital to Kern's economy. Among benchmarks, only San Joaquin County has fewer business establishments than Kern. Even Ventura County, with a smaller population, has 62 percent more than Kern.

TABLE 5: TOTAL ESTABLISHMENTS FOR ALL SECTORS

Total Establishments	Los Angeles	Riverside	San Bernardino	Ventura	Fresno	Kern	San Joaquin
2012	249,625	34,420	32,156	19,887	15,794	12,266	10,727

Sources: County Business Patterns (2012), Milken Institute.

TABLE 6: TOTAL ESTABLISHMENTS BY EMPLOYMENT SIZE, KERN COUNTY

Employment Size	2006	2012
1-4	6,071	6,179
5-9	2,376	2,365
10-19	1,791	1,857
20-49	1,350	1,233
50-99	388	345
100-249	208	208
250-499	42	52
500-999	16	13
1,000 or more	6	14

Sources: County Business Patterns (2012), Milken Institute.

Nearly 90 percent of establishments in Kern employ 100 people or fewer. They offer job opportunities to a diverse set of workers, but their share of employment is declining. Employment in Kern has increased largely because the number of establishments with at least 1,000 employees has more than doubled since 2006.[44]

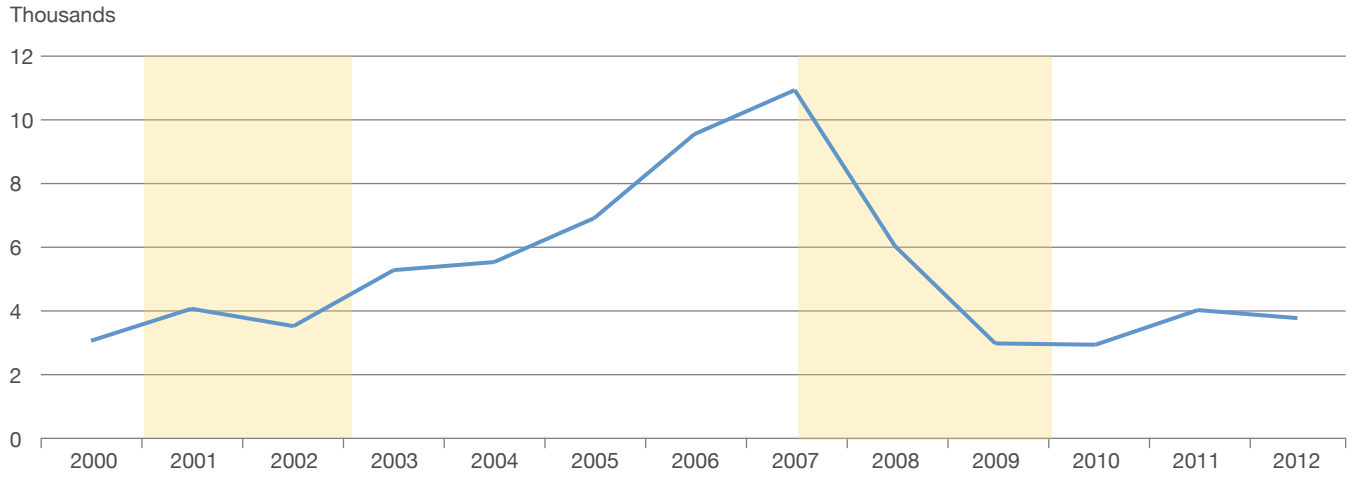
While these larger corporations employ more people, they often rely on small businesses to provide support services. Small businesses create more jobs, spur innovation, and are critical to key industries. The two top industries in Kern largely comprise small businesses. During the Great Recession, lenders tightened credit and it has been slow to rebound. Small businesses especially have felt the pinch. Strengthening relationships with regional financial institutions, especially CDFIs in Fresno and Los Angeles, is the first step toward ensuring that small businesses have adequate access to capital.

TABLE 7: KERN'S TOP INDUSTRIES RELY ON SMALL FIRMS

Industry	Number of firms with <100 employees	Small firms' share, 2012
Agriculture	50	83%
Oil/Gas/Mining	210	91%

Sources: County Business Patterns, Milken Institute.

FIGURE 16: SMALL BUSINESS LENDING IN KERN COUNTY SLOW TO REBOUND*



Sources: Federal Deposit Insurance Corp., Federal Financial Institutions Examinations Council, Milken Institute.
*Businesses with gross annual revenue below or equal to $1 million.

Serving 12 counties in the Central Valley, including Kern, the Fresno CDFI's mission is to provide small business loans in underserved communities. It offers loans up to $10,000 for entrepreneurs to start a business and establish a credit history or loans up to $250,000 for micro-enterprises that cannot obtain a bank loan or other conventional forms of financing.[45] Fresno CDFI has lent $9 million in the Central Valley since 2009 but made only six loans totaling $342,000 in Kern County.[46]

> **"Proximity to a CDFI makes a big difference when an entrepreneur is trying to find a loan."**
>
> **Jeremy Hofer**
> *Business Development Manager, Fresno CDFI*

It is hard to fully understand a community's needs from more than 100 miles away since CDFIs rely on word-of-mouth and referrals from local partners to get small businesses in the door. Despite this, the Fresno CDFI has recently made strides in supporting Kern's entrepreneurs. By collaborating with partnering organizations in Bakersfield, Fresno CDFI loan officers now hold weekly or bi-weekly office hours in Bakersfield to meet and advise applicants.[47]

Kern's growth potential has also attracted CDFI funding from the Valley Economic Development Corp. (VEDC) in Los Angeles. With $2 million in support from Rabobank, VEDC will open a new office in Bakersfield to support small businesses with loans ranging from $1,000 to $50,000.[48] By making $2 million in loans to at least 50 businesses, VEDC estimates that the Bakersfield branch will create 100 new jobs in the county.[49]

Kern could more efficiently leverage the resources offered by CDFIs in Fresno and Los Angeles by forming a local committee to serve as part of the referral and approval process. Local banks could partner together, building on their intimate knowledge of the community and market to recommend entrepreneurs to these CDFIs for loans the banks themselves cannot finance. Not only would this help local small businesses receive the funding they need, it could also become a steppingstone toward establishing Kern's own CDFI. Creating a local committee to work with the Fresno and Los Angeles CDFIs would lay the foundation for establishing a multibank in Kern that could qualify for CDFI status on its own after three years of operation.

2. Establish a multibank with small business lenders and community organizations.

Multibanks are effective community development tools because they centralize local banking expertise and delegate tasks among members to better target investments. A multibank is formed when banks create a loan pool for investing in the community, spreading the risk among members. This results in a well-diversified portfolio that can benefit underserved communities while providing an opportunity for banks to earn federal Community Reinvestment Act (CRA) credit.[50] Multibanks can also increase their loan volume by leveraging additional funding from local government, community, and philanthropic sources that support financial literacy programs and other initiatives to help businesses and lift people out of poverty.[51]

On the banking side, Kern County already has the resources on the ground to make a multibank happen, but it is a matter of coordination. Three of the top five small business lenders in the nation have a presence in Kern County.[52] In 2012, 13 institutions made 1,441 loans totaling $63 million to local small businesses. The average loan across institutions ranged from $5,000 to $282,000.

TABLE 8: INSTITUTIONS RANKED BY SMALL BUSINESS LENDING VOLUME (2012*)

Institution	Number of branches in Kern	SB loans	SB loan amount, $US thousands	Average SB loan, $US thousands
Wells Fargo Bank, National Association	13	660	22,356	34
Citizens Business Bank	5	49	10,818	221
Bank of the Sierra	7	38	7,349	193
Bank of America, National Association	15	22	6,211	282
JP Morgan Chase Bank, National Association	16	44	2,754	63
Union Bank, National Association	8	63	2,747	44
Citibank, National Association	2	488	2,549	5
Westamerica Bank	4	10	2,216	222
Rabobank, National Association	5	24	1,986	83
Tri Counties Bank	3	16	1,798	112
U.S. Bank National Association	1	10	1,199	120
Bank of the West	2	11	957	87
Compass Bank	1	6	210	35

Sources: Federal Deposit Insurance Corp., Federal Financial Institutions Examination Council, U.S. Small Business Administration, Milken Institute.
*Small constitutes businesses with gross annual revenue of $1 million or less. Highlighted rows indicate three of the top five small business lenders in the nation.

From the community side, Kern County is home to two established organizations with a deep understanding of local entrepreneurial needs and strong relationships with local banks. The Small Business Development Center (SBDC) at CSU Bakersfield provides consulting to small businesses and entrepreneurs through workshops, webinars and free one-on-one advising.[53] SBDCs like this are a great way for commercial banks to invest in the local community.[54] The Mid State Development Corp. (MSDC), also located in Bakersfield, has provided SBA loans to small and mid-size businesses in Kern since 1980 and has strong partnerships with many banks in the region.

While the CSU Bakersfield SBDC and the MSDC are excellent places to start, Kern needs to identify and enlist other community organizations to contribute their expertise to creating a successful multibank. An excellent model is the Arizona Multibank Community Development Corp., a long-established, nonprofit partnership of 18 investing banks and Arizona community groups that got its start as an initiative of the Arizona Bankers Association. It works with the state-wide housing authority and nonprofits to better target investments in affordable housing. It has issued more than $10 million in capital debt securities and lent more than $54 million since 1992.[55]

3. BUSINESS CLIMATE STRENGTHS

3.1 Planning and permitting

The state of California's position as a leader in environmental protection means that every county has regulations in place that a company would not face in other states. This is a consideration when companies are choosing where to locate and expand, and the Milken Institute (through its California Center research) has heard many stakeholders express serious concerns about California's business climate.[56] Kern County believes these regulations need not be unduly onerous if managed sensibly. However, because businesses' site selection processes may filter out locations based on state-level metrics, Kern needs to continue to raise its profile and set itself apart as a business-friendly area.

> **"We're the other California. Our government agencies are willing to work with business—not against it."**
>
> **Hugh McMahon**
> *Senior Vice President, Commercial and Industrial Real Estate, Tejon Ranch*

CEQA streamlining

One example of this approach is the Kern County Planning Department's California Environmental Quality Act (CEQA) streamlining, which encourages developers to pursue more expansive environmental permits and prepare more detailed environmental impact reports upfront rather than in stages as tenants are found. This encourages well-planned developments from the outset, allows the public to comment on an overall plan, and lets developers address major concerns or legal challenges early in the process. Once these are resolved and CEQA approval has been secured, it allows the Planning Department to make quick decisions on the project. By reducing the delay and uncertainty associated with environmental permitting in California, this approach removes one of the perceived obstacles to locating in the state, and can be marketed as a benefit of locating in Kern. Kern County's proactive approach to CEQA permitting is evidenced by comparing the number of Environmental Impact Reports it filed (43 since 2010) to its benchmarks (see Table 9 below). Only Los Angeles County came anywhere close (28). Most filed only a handful.

TABLE 9: ENVIRONMENTAL IMPACT REPORTS SUBMITTED TO THE STATE FOR REVIEW IN WHICH THE COUNTY WAS THE LEAD AGENCY

Lead Agency	2010	2011	2012	2013	2014
Los Angeles	14	4	4	2	4
Kern	11	9	8	10	5
Ventura	1	0	3	0	0
Fresno	1	2	0	0	1
San Bernardino	4	1	1	0	0
Riverside	5	6	1	4	4
San Joaquin	1	3	3	0	0

Source: The Governor's Office of Planning and Research CEQAnet Database.

Transparent and timely permitting has become even more important since the 2012 dissolution of the redevelopment agencies in California, which stripped local and county governments of the ability to use tax increment financing to fund redevelopment efforts. Other options, such as accessing the bond market or organizing public-private partnerships to fund infrastructure investments, could make Kern's target areas for development more attractive to businesses. Collaboration among government, civic organizations, and the private sector has proved vital when applying for grants.

Oil and gas permitting

Kern County is preparing an Environmental Impact Report (EIR) on a proposed amendment to the Kern County Zoning Ordinance for Oil and Gas Local Permitting.[57] This EIR will assess the effects of oil and gas development in all unincorporated parts of western Kern County with the aim of updating development standards and creating a new permit procedure that ensures new wells meet the updated environmental standards. Once in place, this means a speedier and more predictable approval process. If approved at the state level, these changes will make western Kern County even more attractive for oil and gas development.

3.2 Recommendation: Leverage business-friendly climate to develop broader economic ties

1. Use Kern's welcoming business and permitting climate, developable space, lower cost of living, and proximity to Los Angeles to attract companies to the area.

Kern County's assets distinguish it from neighboring counties and offer unique opportunities.[58] The business climate and developable space are strong lures for companies seeking to expand beyond Los Angeles County or establish a hub on the West Coast. A close examination of data on employment, wages, number of establishments, size of establishments and contributions to the economic output for 93 industries showed little overlap between the Los Angeles and Kern economic mix, which is good news for Kern. The two counties specialize in very different things. As a result, Kern can leverage its positive contrasts with Los Angeles such as ease of permitting, lower cost of living, and inexpensive land for its future growth, while benefitting from proximity to Los Angeles' large population and access to the ports in Los Angeles and Long Beach, first and third largest in the country, respectively.[59]

The cost of living and doing business is much lower in Kern County. In both rental and homeowner markets, Kern outperforms its neighbor. A higher percentage of rental properties is available in Kern than in Los Angeles County,[60] and the median rent is half.[61] Kern has a higher homeownership rate and house prices are markedly lower ($204,450 in Kern and $429,100 in Los Angeles in the first quarter of 2014.)[62] As shown in the table below, the cost of living in Bakersfield is much lower than other benchmark cities in California, which means the cost of doing businesses is lower as well.

TABLE 10: COST OF LIVING IN BAKERSFIELD AND COMPARISON CITIES (INDEX, 100 = NATIONAL AVERAGE)

Metropolitan Area	100% Composite Index	13% Grocery Items	26% Housing	10% Utilities	13% Trans-portation	5% Health Care	33% Mis-cellaneous Goods and Services
San Francisco	163.9	126	300.1	102.3	109.5	117.2	118.2
San Diego	131.6	105	203.3	108.3	111.9	108	103.9
Los Angeles-Long Beach	131.4	103.3	200.8	114.2	108	111.2	105.2
Riverside/San Bernardino	113.2	114.2	128	114.8	111.8	103.4	102.5
Sacramento	110.7	116.1	117.8	106.2	108.7	1110	105.2
Fresno	105.8	106.3	101.5	134.2	107.3	102.1	100.4
Bakersfield	105.2	109.3	105.8	112.3	111.8	109.3	97.7

Sources: Kern EDC, ACCRA Reports, COLI.
Note: The census did not calculate the cost of living index for every location or benchmark in California.

In courting and selecting potential investors, Kern also should look outside the Greater Los Angeles area and the Central Valley. Kern's business climate, space, and openness can provide an attractive California base for foreign investors looking to locate manufacturing near the Los Angeles market, for example. Initiatives such as the California-China Office of Trade and Investment, a public-private partnership that helps California companies expand abroad and helps Chinese companies invest in California, can raise Kern's international profile.

In industries with high R&D intensity and complex production processes, the benefits from co-locating manufacturing and research and development activities may outweigh the savings produced by manufacturing in countries with lower costs.[63] Kern is located near a major global market, with excellent transportation links, available space, a business-friendly climate, and a history of serving as a launch pad for new technologies. However, it lacks the concentration of highly qualified talent needed for enterprises to conduct research on a large scale. Methods to develop such a workforce are explored in Section 4.

2. Maintain the cohesive and streamlined planning approach that makes doing business in Kern easier and more attractive than competing areas.

Kern County's attractive business climate should be maintained by ensuring that current planning processes stay in place and are extended to other departments and partners where possible. Transferring this approach of facilitating targeted business development to the next generation of county management leadership and staff is also crucial to continued long-term growth.

The story of the newly developed Tejon Ranch Commerce Center provides convincing evidence of Kern's ability to make doing business easier. The Commerce Center is a 1,450-acre commercial and industrial complex at the intersection of busy Interstate 5 and Highway 99.[64] Kern successfully recruited Caterpillar Inc.—the world's leading manufacturer of mining and construction equipment—to build a $50-million, 400,000-square-foot parts distribution center at Tejon Ranch.[65] The Kern County Planning Department worked closely with the Illinois-based company to ensure the facility opened on time by taking such steps as providing courtesy inspections at every step of the process. As a result, Caterpillar was up and running eight months after breaking ground, a rare timetable for California.[66] Not only does the success of Tejon Ranch illustrate the efficiency and coordination of Kern's planning department, it testifies to Kern's ability to recruit companies from outside the state.

4. WORKFORCE DEVELOPMENT OPPORTUNITIES

Understanding industry mix as a driver of educational attainment

Like any region where growth is driven by such natural resources as agriculture and energy, Kern County faces many challenges in developing a skilled workforce. Workforce needs in these industries are driven by volatile factors such as commodity prices and weather patterns, and there is sometimes an overabundance of low-skill labor available to fulfill short-term needs.[67] Among benchmark counties, Kern ranks last in educational attainment. Still, although the average worker has less than a high school education, the county ranks third-highest in economic output at almost $40,000 per worker.

FIGURE 17: METRO RANKINGS BY AVERAGE YEARS OF SCHOOLING

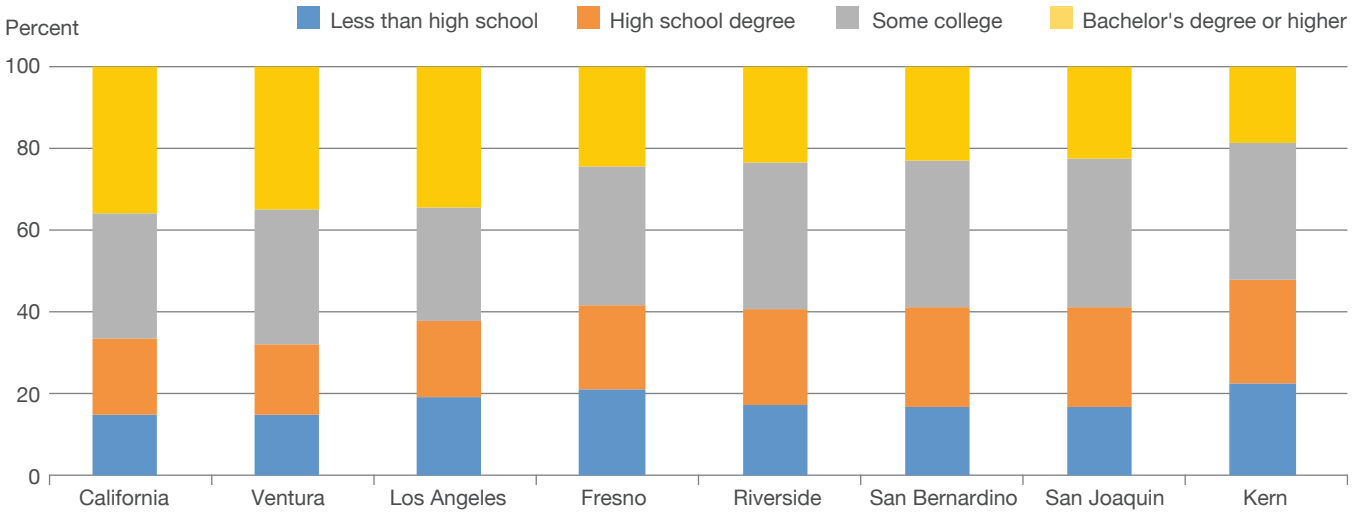
Workers aged 25 and older, (2012-2013)

Rank	Metro	Average years of schooling	Real GDP per capita (2009 US$)
1	Oxnard-Thousand Oaks-Ventura	13.15	49,709
2	Los Angeles-Long Beach-Santa Ana	12.82	59,092
3	Riverside-San Bernardino-Ontario	12.51	27,094
4	Stockton	12.21	29,250
5	Fresno	11.91	34,718
6	Bakersfield-Delano	11.84	38,661

Sources: U.S. Census American Community Survey 5-year estimates (2008-2012), U.S. Bureau of Economic Analysis 2013, Milken Institute.

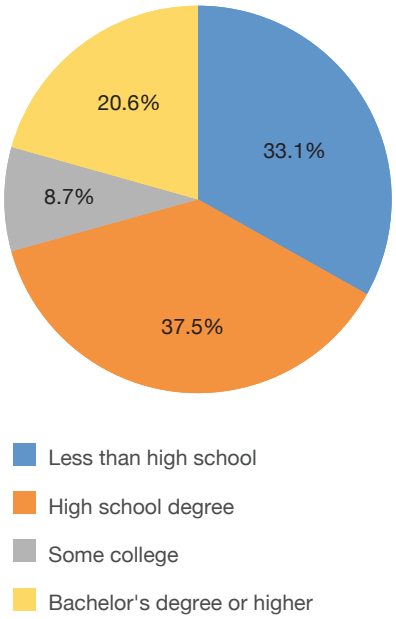
Higher output per worker illustrates the wealth that Kern County's abundant resources provide for the local economy, while lower levels of education underscore how this industry mix relies on low-skill labor and perpetuates the skills gap. From oil field workers to farm laborers, almost half of Kern workers are employed in occupations that require a high school diploma or less. This employment dynamic will likely persist. The forecast is that 68 percent of the jobs created from 2010 through 2020 will require that limited level of education. Such work pays far more in the oil fields than the farm fields. The largest category is expected to be farmworkers and laborers earning roughly $9 per hour—now the state minimum wage—but eight of the 50 fastest-growing job categories will be in oil and gas production where median wages range between $14 and $33 per hour.[68]

FIGURE 18: EMPLOYED CIVILIANS AGED 25 TO 64 BY EDUCATIONAL ATTAINMENT (2013)



Sources: California Employment Development Department, Milken Institute.

FIGURE 19: AVERAGE ANNUAL JOB OPENINGS BY ENTRY-LEVEL EDUCATION (2010-2020)



Yet long-term economic growth hinges on a skilled labor pool to pull up the average wage for all workers. Research has shown that a region's GDP per capita and real wage per worker jumps more than 17 percent for each additional year of post-secondary education.[69] Currently, only 19 percent of Kern's workforce has a bachelor's degree or higher, far below the state average of 36 percent. These college-educated workers mostly fill positions in Kern's energy sector and aerospace industry. From 2010 through 2020, 21 percent of new jobs created in Kern will require at least a bachelor's. Low levels of educational attainment mean that Kern will have trouble filling higher-wage positions as industries grow. Companies already rely on outside talent to fill many skilled jobs. Nearly 20 percent of those holding engineering, computer, and mathematical jobs in the county live outside Kern.[70]

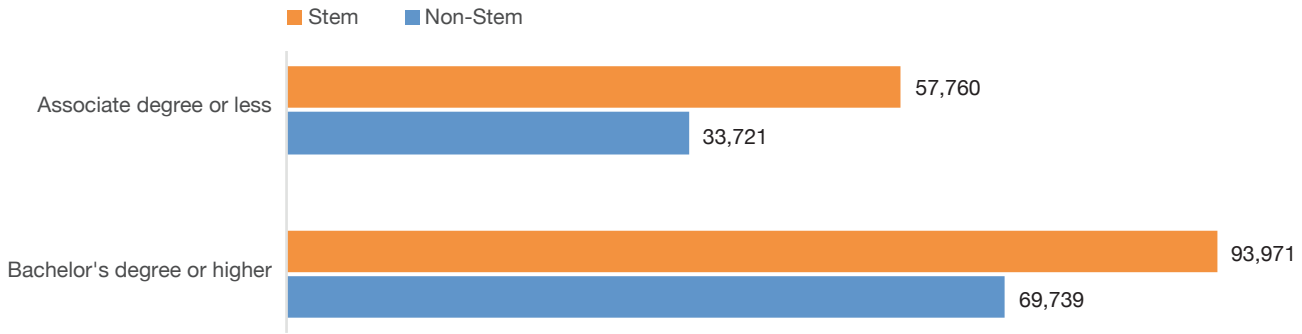
Kern County can and must leverage its strengths in key science, technology, engineering, and mathematics industries and its network of postsecondary institutions to ensure that the region's STEM needs are supported at every education level.

Sources: California Employment Development Department, Milken Institute.

4.1 Linking STEM industry strengths with local institutions to bolster educational attainment

For Kern to grow sustainably, a locally trained, skilled workforce is needed. Kern has a distinct advantage in being home to three significant STEM industry clusters: agriculture, energy, and aerospace. STEM jobs pay much better than non-STEM positions—$42,000 a year higher on average[71]—and are an important driver of regional economic development. Yet, the potential of STEM is not limited to bachelor-degree holders. Half of all STEM jobs are available to workers without a four-year degree.[72] In Kern, those in this professional sector command higher wages than their non-STEM counterparts at every education level.[73]

FIGURE 20: WAGE DIFFERENTIALS IN KERN COUNTY AMONG STEM AND NON-STEM OCCUPATIONS IN DOLLARS (2012)



Sources: California Economic Development Department, O*Net OnLine, Brookings Institution, Milken Institute.

Kern continues to develop a full range of educational resources, from vocational training to bachelor and associate degrees, to support the expansion of a STEM workforce. Aera Energy recently donated $500,000 to Bakersfield College, a public two-year college with 15,000 students, to build a STEM center that will provide counseling and tutoring for students pursing scientific and technical careers.[74] At CSU Bakersfield, Chevron has partnered with Fab Foundation, a nonprofit spawned by an MIT-sponsored innovation project, to create a Fab Lab that provides project-based learning for students to acquire problem-solving skills in STEM fields.[75] CSU Bakersfield, which enrolls 7,900 students, also recently created the California Energy Research Center, a collaboration between the university and private industry to address economic and policy issues affecting the energy sector in Kern County and throughout California.[76]

TABLE 11: RESOURCES FOR HIGHER EDUCATION IN KERN COUNTY

College/University	City	STEM degree program	Vocational training program
Bakersfield College	Bakersfield	Associate and B.S.	Multiple
California State University, Bakersfield	Bakersfield	B.S. and M.S.	None
Taft College	Taft	Associate	Multiple
Fresno Pacific University, Bakersfield Center	Bakersfield	None	None
San Joaquin Valley College	Bakersfield	Associate	Business, Health, Technology
National University	Bakersfield	Associate, B.A., and M.S.	None
Cerro Coso Community College	Ridgecrest	Associate	Multiple
Santa Barbara Business College	Bakersfield	Associate, B.A., and M.S.	Health

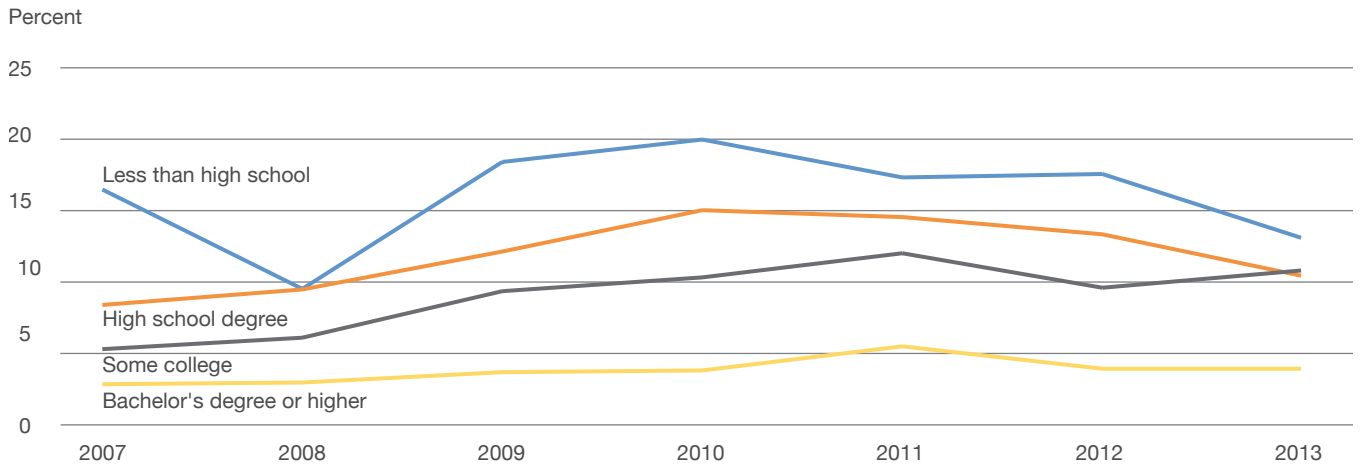
Sources: College and university websites.

4.2 Recommendation: Cultivate and retain skilled workers through practical work experience

1. Expand linked learning programs to grow associate-level STEM workforce.

Unemployment in Kern is highest for individuals without a high school diploma or GED. Their jobless rate has improved since peaking at 20 percent during the Great Recession, but job prospects for these workers remain extremely volatile. To address structural unemployment, educational institutions and businesses must work together to ensure that teens and young adults stay in school and gain the abilities needed to fill skilled jobs that often remain vacant.

FIGURE 21: UNEMPLOYMENT RATE BY EDUCATION IN KERN COUNTY (2007-2013)



Sources: American Community Survey (ACS, 1-year estimates), Milken Institute.

One way to tackle low high school graduation rates while meeting market demand for associate-level skilled labor is through linked learning programs that pair academics with real-world technical skills that students learn and apply on the job through internships or apprenticeships.[77] Local schools, community colleges, and industry should work together to establish these programs.

Kern is off to a fast start thanks to the financial support it has already secured to move forward with ambitious linked learning programs. In FY2014-2015, Kern received two grants from the California Career Pathways Trust, a $250 million competitive grant pool, to develop career pathway programs at K-12 schools and community colleges.[78] Paramount Farms, the world's largest grower of almonds and pistachios, was awarded $10 million to establish a Paramount Agriculture Career Academy that will link schools, community colleges, and agricultural companies to create an integrated path of study in agricultural sciences and business.[79] A second grant of more than $500,000 went to Tehachapi United School District in East Kern.

2. Expand co-op for credit program at CSU Bakersfield to grow and retain bachelor-level STEM workforce.

Given the absence of a locally grown STEM workforce, expanding the co-op for credit program in CSU Bakersfield's Department of Physics and Engineering could benefit Kern greatly. STEM jobs are much harder to fill than non-STEM jobs. In Bakersfield it takes 58 days on average to fill a STEM job requiring a bachelor degree or higher and almost as long (50 days) to fill a STEM job requiring some college study.[80] CSU Bakersfield should leverage existing relationships with local companies to fill STEM positions that afford students the opportunity to earn wages and course credits at the same time. One model for such a program is the co-op program at Georgia Tech in Atlanta, the largest in the United States.

Founded in 1912, Georgia Tech's Undergraduate Co-op program differs from traditional co-op/internship programs like the one offered at CSU Bakersfield. Georgia Tech's co-op is a five-year academic program in which students alternate semesters between campus study and full-time work at a company.[81] Open to engineering majors as well as those from other colleges, it allows students to gain on-the-job experience and tuition-free credit for the 12-hour co-op course. These students typically command higher starting salaries than peers when they graduate. A similar program could provide a pipeline for employers who need to fill STEM positions in Kern. Additionally, this model would attract students from outside Kern to study at CSU Bakersfield.

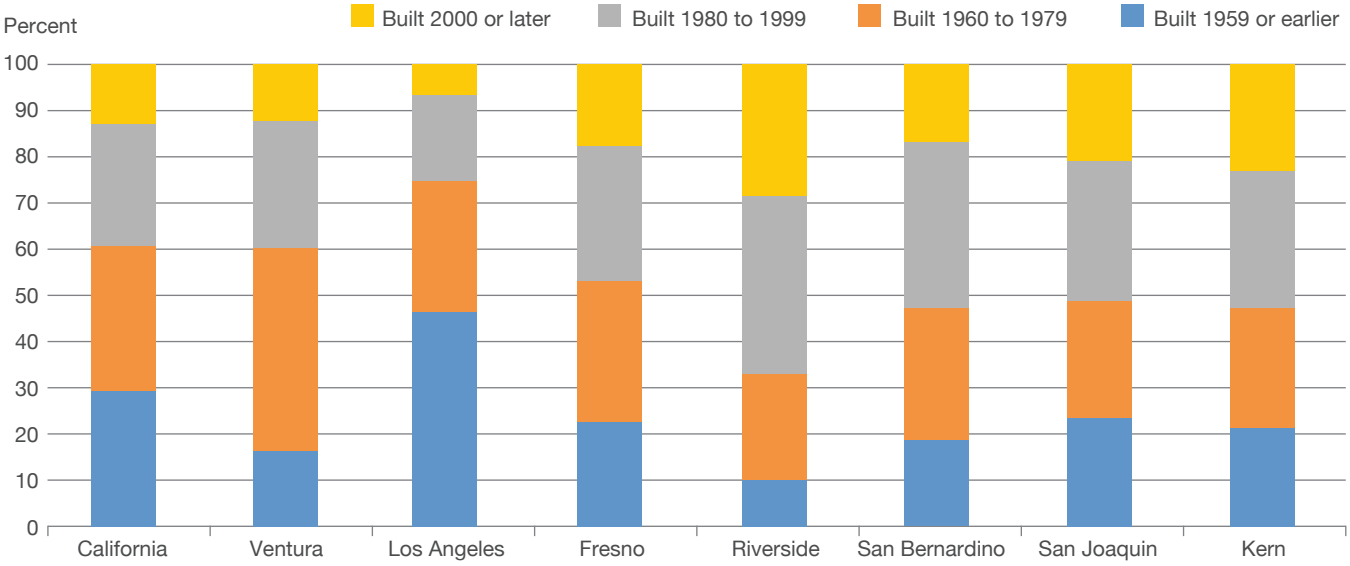
5. WORKFORCE RECRUITMENT OPPORTUNITIES: COMMUNITY PLANNING AND ENHANCEMENT

Kern County enjoys a lower cost of living than any of the benchmarks and other big cities in California such as San Francisco and Sacramento. Kern's affordability and proximity to Los Angeles, the second-largest U.S. city, create opportunities to recruit new companies and residents. As Kern keeps growing, it must think strategically about the types of communities it wants to develop to attract and retain a cross-section of workers who meet employers' needs and can help their hometowns thrive.

Prior to the Great Recession, significant residential development was underway in Kern County. Housing construction stalled during the downturn and has yet to return to prerecession levels. The need for more development persists. Kern County's population, which more than doubled between 2000 and 2010, is projected to grow almost 60 percent between 2010 and 2030,[82] and these new residents will need places to live. To retain Kern's energy and agricultural assets, this development must be done thoughtfully and focus on matching supply with housing needs created by jobs as well as changing preferences. Diversifying the types of housing available, keeping new housing as affordable as it is now, and promoting infill development will help Kern attract residents and maintain balance among types of land use.

> **"Living in Kern County allows residents to enjoy a low cost of living, great wages, and economic variety, while still being within a short drive of all the amenities that California has to offer."**
>
> **Greg Garrett**
> *City Manager, Tehachapi*

FIGURE 22: HOUSING STOCK ACROSS BENCHMARK COUNTIES



Source: Census, American Community Survey 1-Year Estimates (2013).

Cities in Kern offer a wide range of lifestyles—from mountainous Tehachapi to higher-density Bakersfield to desert living in Mojave—and residents value the choices available. Investments in downtown centers, parks, bicycle paths, traffic lights, and other safety features add to the quality of life. Such amenities can help companies recruit and retain talent and in turn spur housing construction that attracts new residents.

5.1 Recommendation: Use quality of place to draw people to Kern

1. Foster quality communities with amenities that attract and retain a cross-section of workers and residents, continuing to cater to a wide set of preferences.

Kern County is using its resources to encourage communities to plan for the future and should continue to facilitate forward-looking development in unincorporated areas and encourage the same in its cities.

In East Kern, the RENEWBIZ (Renewable Energy Neighborhood Enhancement Wind Business Investment Zone) county grant program is being funded by incremental revenue from the property taxes paid by wind farms. The RENEWBIZ program, disbursing up to $200,000 annually, can make grants to unincorporated communities in East Kern that have formulated a vision for upgrading their infrastructure, public spaces, and streetscape amenities.[83] In 2013, Mojave and Rosamond accessed these funds. Developed in partnership with the Kern County Planning and Community Development Department and the locally elected county supervisor, both the Mojave and the Rosamond community vision plans recognize the importance of providing gathering places and other social amenities, including safety initiatives and infrastructure to improve bicycle and pedestrian safety and access. The plans also include elements that require only administrative action from the county, not additional funding.

RENEWBIZ grants for individual projects are modest: $5,000 or less in one category and up to $10,000 in the other. The total amount awarded to any organization is capped at $100,000 a year. Recipients must provide a 10 percent match, with in-kind contributions allowed. A quarter of the funds can be awarded to nonprofit organizations, but the lion's share goes to East Kern businesses.

6. APPENDIX I: A PORTRAIT OF KERN COUNTY

Located at the southern end of California's Central Valley and to the north of Los Angeles, Kern County is home to more than 860,000 people and covers 8,130 square miles. It is shaped like Montana and is nearly as large as New Jersey. The county has enjoyed significant economic and population growth in recent years, but its communities are varied in character and have experienced this growth in different ways.

FIGURE 23: POPULATION OF CITIES IN KERN COUNTY

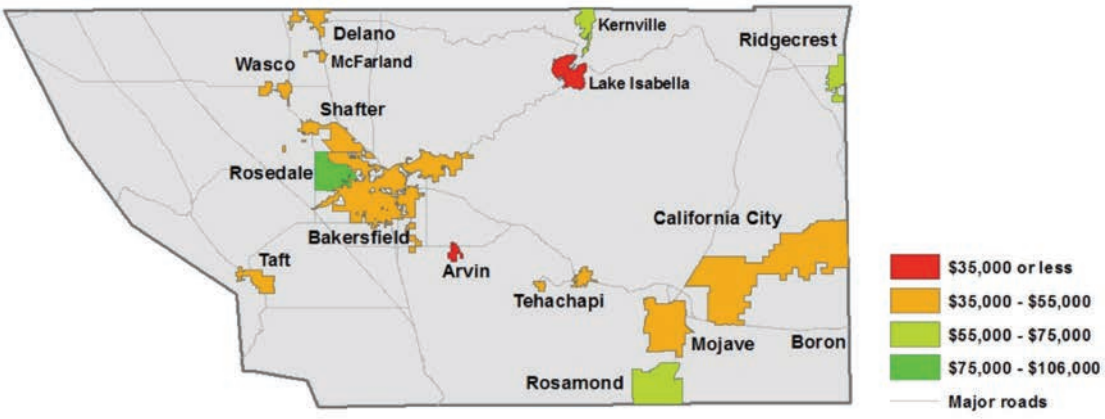
Sources: Census, American Community Survey 5-Year Estimates (2007-2012), Milken Institute.

Only Bakersfield and Delano have more than 50,000 residents. Kern's size and diversity pose a unique challenge to the effort to develop the county as a whole. Its size is not the only key geographic factor—the Sierra Nevada mountain range naturally divides Kern into east and west, creating different sub-economies and media markets. East Kern focuses more on aerospace and defense, mining, and alternative energy, while West Kern focuses on oil and gas extraction, agriculture, and logistics. It is home to the county seat in Bakersfield, which is the nation's 52nd-largest city, with a population of 363,000.[84] Forty percent of county residents call Bakersfield home.

6.1 Income and cost of living

The median household income in many cities in Kern falls below the California average of $61,400. Agriculture, Kern's largest industry by employment, has historically relied on low-skilled, manual labor. Agriculture offers many jobs that do not require a high school degree and pay low or seasonal wages. Natural resources, government bases, diverse geography, size, educational attainment, and recent growth have exacerbated the income disparity across Kern. The cities with the highest median household incomes, as shown in Figure 24, benefit most from military employment or natural resources. Both Ridgecrest and Rosamond have a median household income higher than the California average, thanks to the defense installations in those communities. Rosamond is close to Edwards Air Force Base and Ridgecrest is near Naval Air Weapons Station China Lake. The wealth around the bases, however, pales in comparison to Rosedale, a Bakersfield suburb with an average household income of $105,505, which is well beyond the reach of most county residents. The median household income in Kern is $47,727,[85] and some communities have a median income below $35,000 per year. As Kern grows, it will be important to build industries that pay living wages and have spillover effects throughout the county.

FIGURE 24: MEDIAN HOUSEHOLD INCOME IN KERN CITIES (2012)



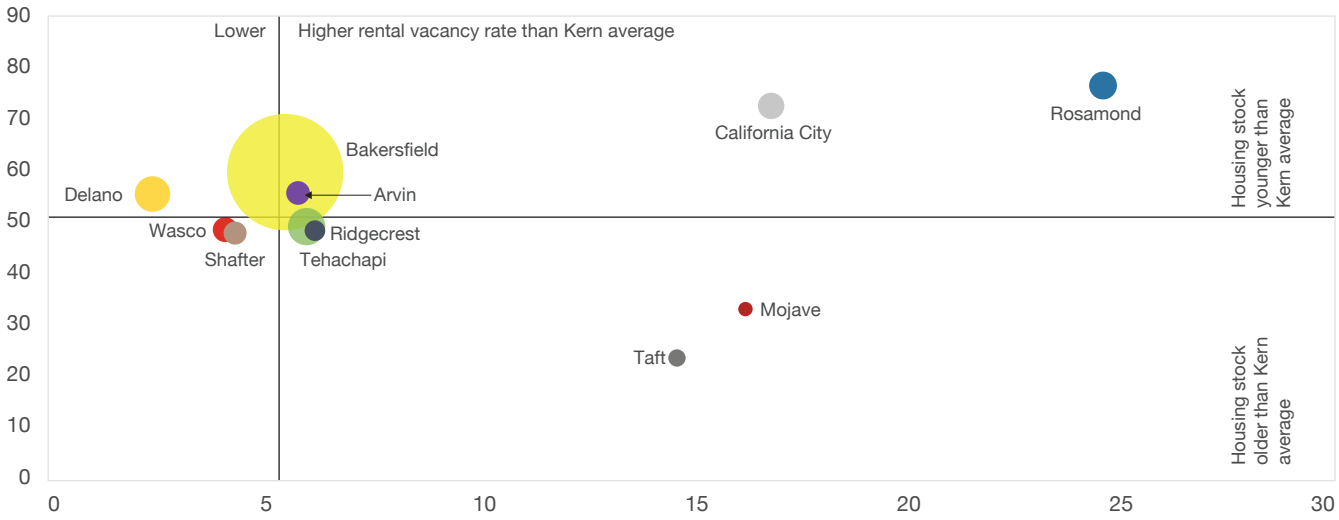
Sources: Census, American Community Survey 5-Year Estimates (2007-2012), Milken Institute.

Since Kern enjoys a lower cost of living than many other places in California, the lower median household income does not necessarily indicate a reduced quality of life. Kern's low cost allows residents to live at a higher standard even with reduced incomes. The average owner-occupied home costs $171,200, less than half the state average of $383,900.[86] Housing costs in Kern are only slightly higher than those of Fresno and less than any of the other benchmarks. The dramatic cost-of-living disparity with neighboring Los Angeles County creates opportunities to recruit new companies and draw residents to Kern. This comparative advantage has already attracted large companies such as State Farm insurance and Men's Warehouse.

6.2 Housing

Kern has a younger housing stock than average for California, similar to counties in the Central Valley and the Inland Empire. All benchmark counties except Los Angeles saw significant new residential building before the recession. Focusing solely on the county average masks the significant local variations and different housing challenges faced by communities across Kern.

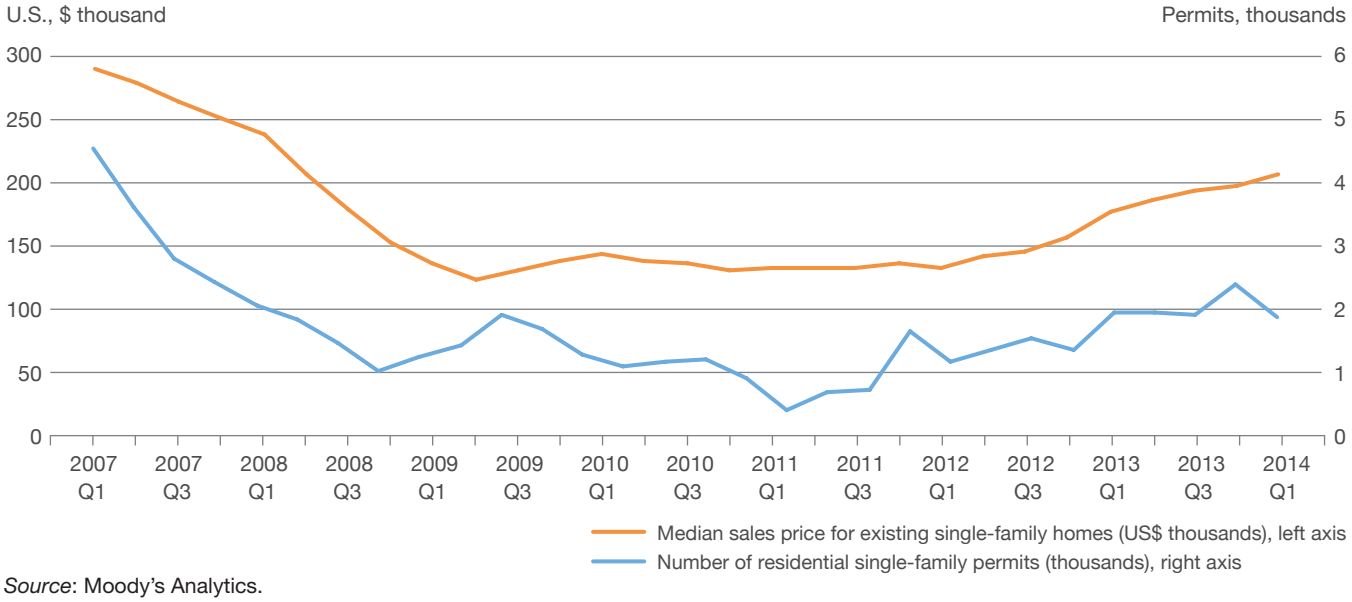
FIGURE 25: COMPARING THE AGE AND SIZE OF HOUSING STOCK IN CITIES WITH HIGH RENTAL VACANCY RATES TO BAKERSFIELD AND THE COUNTY



Source: Census, American Community Survey 5-Year Estimates (2007-2012).

Given that Bakersfield houses a large share of the county population, its rental vacancy rate and the age of its housing stock are close to the county average. California City and Rosamond have relatively new housing stock (see Figure 25) but higher vacancy rates. Other cities such as Boron, Mojave, Taft, and Lake Isabella have older housing stock combined with high rental vacancy rates. These rates in cities that also have growing industries indicate a possible lack of quality or mismatch between what renters are seeking and what is available. Maintenance on older rental properties can be a challenge, but high vacancy rates may also complicate the effort to secure financing for housing construction. Sales prices for existing homes[87] and permits for new single-family dwellings in Kern[88] rebounded after the recession, as can be seen in Figure 26, but they have yet to return to 2007 levels.

FIGURE 26: SINGLE-FAMILY HOMES: MEDIAN SALES PRICE OF EXISTING HOUSES AND NUMBER OF PERMITS FOR NEW UNITS IN KERN COUNTY (SEASONALLY ADJUSTED)



Source: Moody's Analytics.

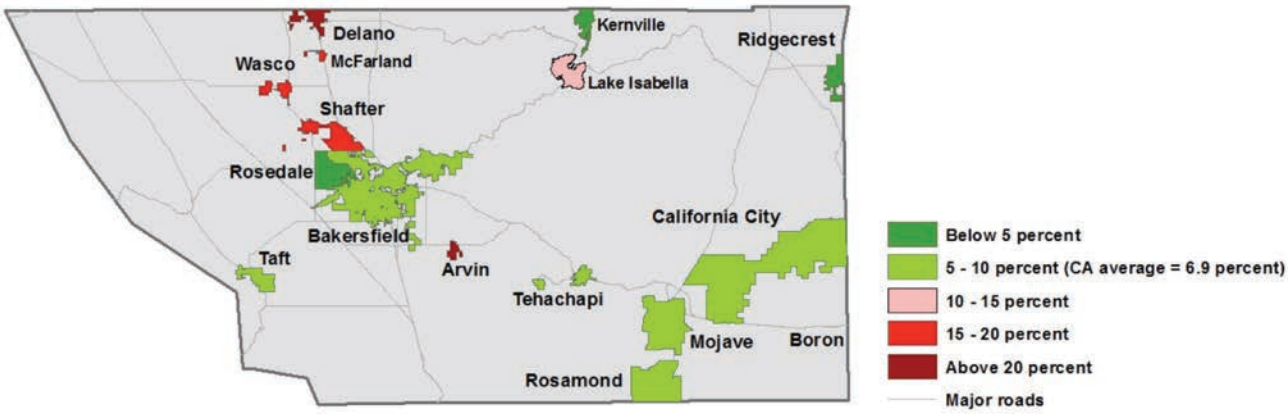
6.3 Unemployment

Kern County's 9 percent unemployment rate is higher than the state average of 7 percent,[89] but below its Central Valley counterparts Fresno County (10.2 percent) and San Joaquin County (9.9 percent). Kern's rate is comparable to those of the Inland Empire counties – although higher than Riverside (8.4 percent) and more than a point higher than San Bernardino (7.7 percent). Like other economies that depend on agriculture, seasonal unemployment is a significant challenge in Kern. There are also signs of a shift into structural unemployment; jobs are available but job-seekers' skills and educational attainment often do not match employers' needs. During times of structural unemployment, it is important that the county and companies work together to train people for new jobs and transform the pool of unemployed people into a ready supply of talent for growing industries.

Unemployment tops 10 percent in numerous Kern County cities but was just above 6 percent in Bakersfield. With the exception of the cities around military bases, almost the entire county has unemployment rates above the California average. Median household income also varies widely among Kern's cities.[90]

The combination of seasonal fluctuations in demand for workers in agriculture and related sectors and long-term, structural unemployment will require better educational outcomes and sustained economic growth before jobless rates decline substantially. It is vitally important for Kern's future to provide opportunities and pathways for residents to build new skills and find long-term careers.

FIGURE 27: UNEMPLOYMENT RATE BY CITY

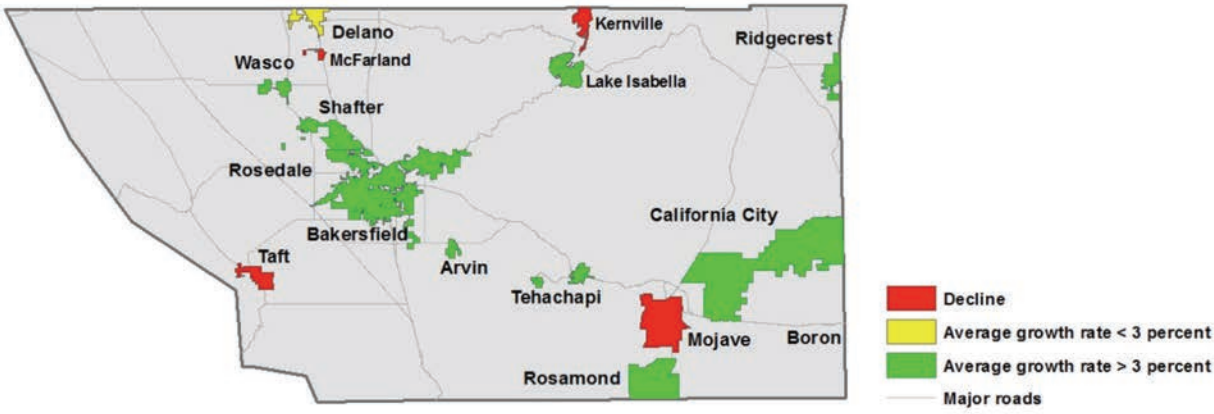


Sources: California EDD, Milken Institute.

6.4 Employment growth

Kern's employment and economy grew faster between 2009 and 2013 than any of the benchmarks. Jobs have grown slowly but steadily across the county. This consistent growth sets it apart from the rest of California. Business-friendly Kern has found ways to work within California's restrictions to give new businesses the opportunity to expand without battling regulatory red tape. This is a principal reason the county keeps drawing jobs and industry.

FIGURE 28: FIVE-YEAR AVERAGE EMPLOYMENT GROWTH RATE (2007-2012)



Sources: National Establishment Time-Series (NETS) Database, Milken Institute.

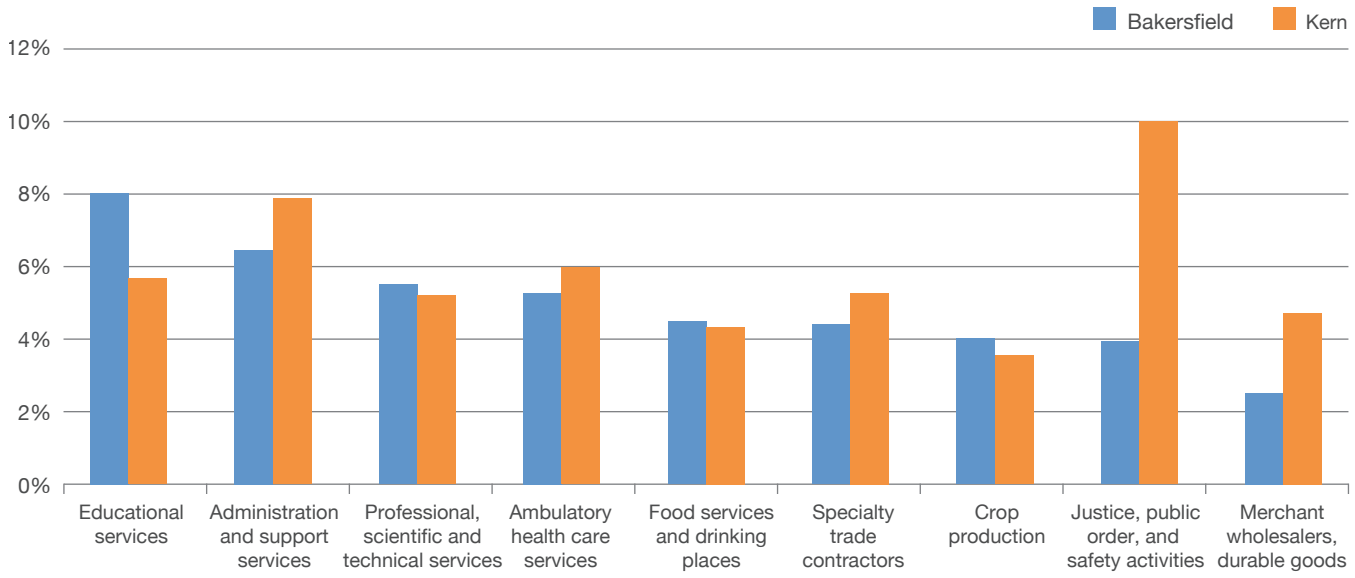
The map above draws on the National Establishment Time-Series (NETS) database to provide a new perspective on Kern County.[91] The NETS database gathers data on every business, including location, employment, sales, start-up year, industry information, and more.[92] The NETS database has looser city borders than the U.S. Census and assigns surrounding area establishment data to the closest city.

The average growth rates for cities gleaned from the NETS data show this consistent growth across Kern County. An outlier is McFarland, which experienced a large decline from 2007 to 2012 but has seen job growth since then. To maintain slow, steady, and sustainable growth countywide, special attention should be paid to communities such as Mojave and Taft that have slumped for more than five years. Given Kern's many small communities, it is important to remember that even trivial shifts in employment numbers can undermine local economies.

BAKERSFIELD

Bakersfield, home to 363,000 people, is the urban center and county seat. It is the country's 52nd-largest city[93] and sits at the heart of the 62nd-largest metropolitan area.[94] It added 100,000 residents in the first decade of this century.[95] With a population still growing robustly, Bakersfield is a magnet for high-skill jobs in education, professional, scientific, and technical services. In addition to county government-related jobs, Bakersfield attracts businesses supporting the agriculture, food manufacturing and energy industries, along with hospitals and retail establishments that serve the city and surrounding areas. With a healthy stock of newer housing (more than 32,000 units built between 2000 and 2009), Bakersfield offers a variety of residential neighborhoods, including high-end Rosedale. Bakersfield's amenities such as international cuisine and easy access to outdoor recreation in the nearby southern Sierra Nevada Mountains make it an attractive base for those wishing to balance the benefits of city living with access to nature and outdoor activities.

FIGURE 29: SHARE OF TOTAL EMPLOYMENT BY INDUSTRY, BAKERSFIELD VS. KERN COUNTY (2012)



Sources: National Establishment Time-Series (NETS) Database, Milken Institute.

Recommendations

1. **Leverage value-added agriculture and energy extraction conducted in the rest of the county to attract regional headquarters for national and multinational companies.**

   Companies with a presence in the oil fields around Kern or in the Central Valley can use Kern as a regional headquarters location, balancing proximity to production with a location within the Greater Los Angeles economic area. Bakersfield offers access to a larger workforce and concentration of amenities and employment opportunities than any other part of Kern County and can be an attractive relocation destination for skilled workers. If technical and environmental innovations unlock the potential of the Monterey Shale and extraction of those resources moves forward, that will present Bakersfield with an excellent opportunity to woo companies in the oil and gas services industry.

2. **Cultivate and train a prepared workforce by connecting students to employers through practical work experience.**

   Growing a workforce with a strong connection to Bakersfield and Kern County will help provide the reliable labor pool needed to attract and retain businesses. Working in partnership with CSU Bakersfield, Bakersfield College, and other educational institutions, the city could benefit greatly from programs that improve the connection between the classroom and the workplace through linked learning and co-op programs.

3. **Close the gap on small business financing.**

   Building on the expertise of advisers and officers at local banks, the Small Business Development Center at CSU Bakersfield, and the Mid State Development Corp. in Bakersfield can improve small business financing by organizing a local committee to work with regional CDFIs. In addition to providing leads and connections between the CDFIs and candidate small businesses, a local committee would also lay the foundation for establishing a multibank, which could qualify for CDFI status on its own after three years.

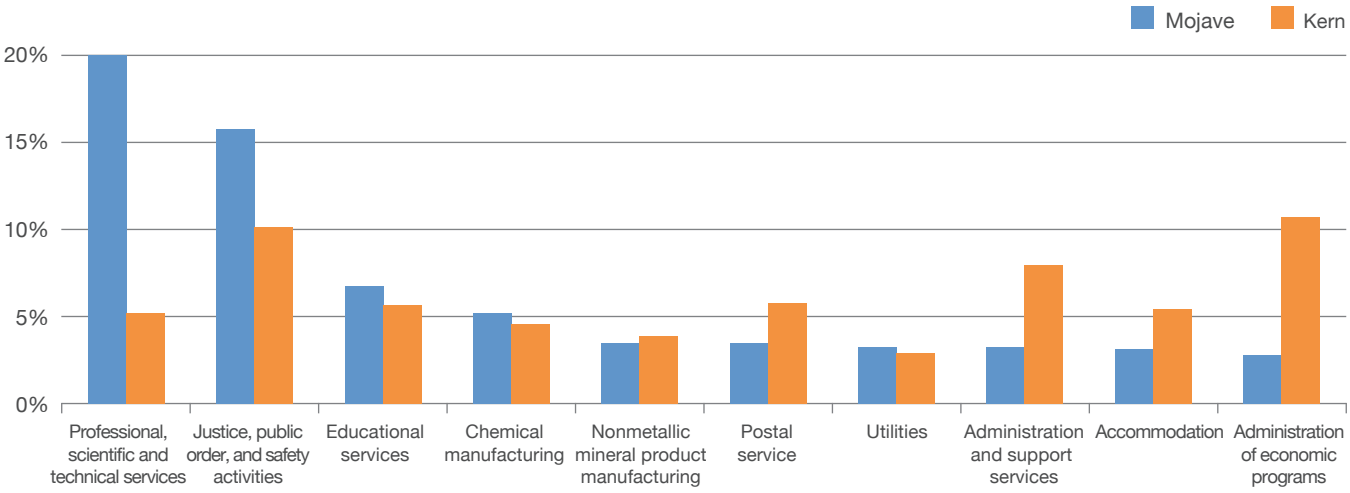
4. **Continue to invest in amenities that are attractive to talent.**

   Bakersfield's downtown offers cultural amenities from cherished community assets like Dewar's ice cream parlor and candy shop to the newly refurbished Padre Hotel, a landmark. The city is developing a bicycle transportation plan that will make cycling safer and the Downtown Bakersfield Business Association has a Framework plan to make the city more welcoming and easier to navigate. Initiatives like these, if successful, have the potential to create a concentration of assets and quality-of-life amenities that attract tomorrow's workforce.

MOJAVE

With a premier asset in the 3,300-acre Mojave Air and Space Port and industrial park, home to more than 70 transportation companies, Mojave is a major hub for aerospace-related economic development. Mojave, with a population of 4,200, hosts major engineering firms, heavy rail industrial manufacturing, and a commercial space flight company, and it facilitates the testing of new technology. With excellent wind resources, renewable electricity generation is also an important contributor to the Mojave economy. While high-skill jobs are attracting professionals to the area, there is still a high rental vacancy rate in Mojave, indicating that the city's older housing stock either does not contain the types of units that new residents desire or that they are seeking higher-amenity communities or more temperate climes elsewhere. Mojave's Vision Plan, in combination with funds from the RENEWBIZ program, aims to improve the atmosphere and attributes of the city in ways that make it an even more attractive and safe place to live.

FIGURE 30: SHARE OF TOTAL EMPLOYMENT BY INDUSTRY, MOJAVE VS. KERN COUNTY (2012)



Sources: National Establishment Time-Series (NETS) Database, Milken Institute.

Recommendations

1. **Partner with Kern educational institutions to cultivate and train a ready workforce by connecting students to employers through practical work experience.**

   Aerospace companies now must look outside the county to find the skilled workers they need. For the aerospace cluster to be sustained and expand further into the aerospace supply chain, Kern's schools and colleges need to produce more graduates capable of competing for these jobs. Improving the connections among companies located in Mojave and tertiary education providers through co-op and internship programs would help develop this talent and provide a pool of potential hires with the appropriate skills and existing ties to the county, thus making it easier for companies in Kern to staff and grow their operations.

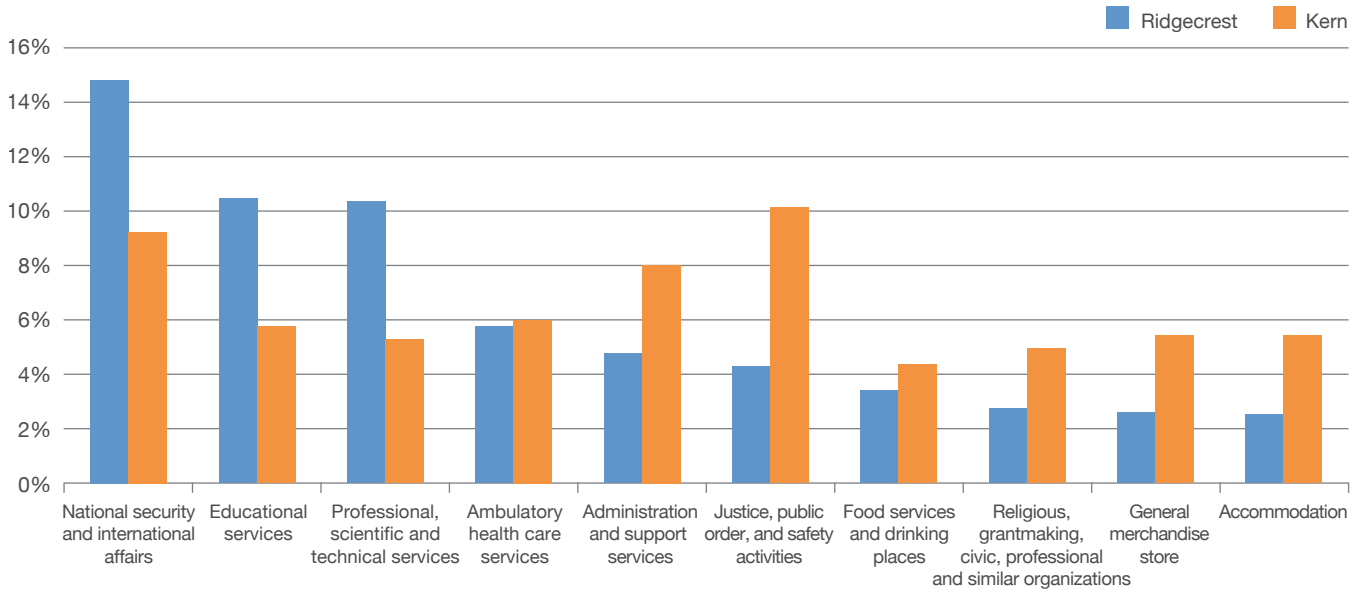
2. **Continue to anticipate future uses and balance the varied needs of growing industries.**

   While the wind resources in East Kern have led to the proliferation of utility-scale wind farms around Mojave, this development must be made with an eye on obstructions in the approach to the Mojave Air and Space Port. Kern County planners have thought ahead and prepared a map marking the restrictions around the airport. As commercial space flight and testing scale up, the advantage of having an air and space port that can accommodate such flights so close to a major market will grow, and early planning for this nascent use could bear significant dividends. Similar considerations must be taken into account when looking at new multifamily housing units that would allow engineers working at the air and space port to live close to their place of employment. Airport and residential developments can have negative effects on each other; smart planning can prevent such problems.

RIDGECREST

Located in the high desert, Ridgecrest (population 27,600) supports the Naval Air Weapons Station China Lake. Federal employees and contractors from the China Lake station live, shop, and access services in Ridgecrest. With new weapons systems being developed and tested at China Lake, Ridgecrest benefits from the concentration of research and development activity in its immediate environs. The federal government has programs encouraging contracting with small businesses, which provides an added incentive for entrepreneurs to start businesses in Ridgecrest.

FIGURE 31: SHARE OF TOTAL EMPLOYMENT BY INDUSTRY, RIDGECREST VS. KERN COUNTY (2012)



Sources: National Establishment Time-Series (NETS) Database, Milken Institute.

Recommendations

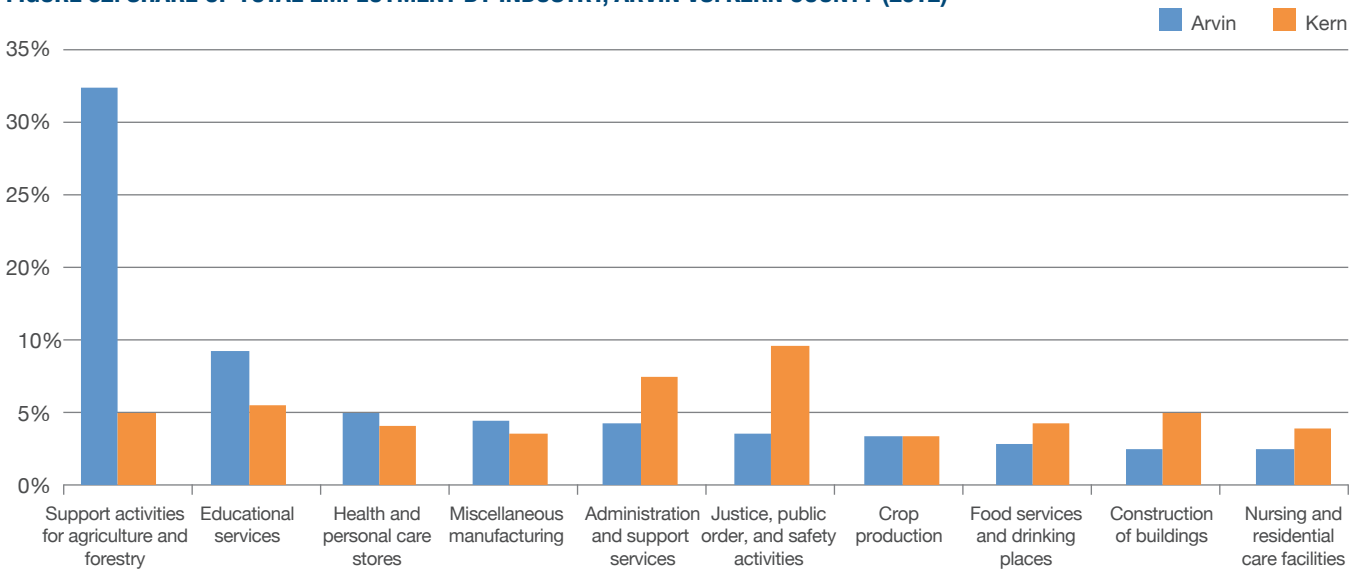
1. **Leverage concentration of research and development activity at China Lake and the educated workforce that it attracts to foster innovation and technology transfer.**

   Ridgecrest, with its open spaces and proximity to China Lake and the high-skilled workforce based there, has the opportunity to create and house the technologies and systems that represent the next generation of innovations in the renewable energy and agriculture sectors.

ARVIN

Arvin is a city of 16,000 people southeast of Bakersfield.[96] It appeals to those looking for a small town atmosphere with great schools, parks, and civic pride.[97] Agriculture drives the economy of Arvin, which calls itself "the garden in the sun." Nestled against Bear Mountain, the city is surrounded by fertile farmland abounding with grain, carrots, potatoes, almonds, oranges, grapes, and cotton as well as livestock and dairies.[98]

FIGURE 32: SHARE OF TOTAL EMPLOYMENT BY INDUSTRY, ARVIN VS. KERN COUNTY (2012)



Sources: National Establishment Time-Series (NETS) Database, Milken Institute.

Arvin is actively pursuing funds from different sources to drive development and improve the city. Arvin was chosen for the Statewide Park Development and Community Revitalization Program and received more than $3 million to revitalize a community park.[99] Arvin was also selected in 2009 as a California Enterprise Zone offering companies tax deductions and hiring incentives to relocate or expand there. Companies will be receiving those benefits until 2024, but the state of California has chosen to discontinue Enterprise Zones, so it is important for Arvin to find other ways to attract new companies and industries. Companies in Arvin should take advantage of statewide incentives such as AB 93, which replaced the Enterprise Zone credits with alternatives.[100]

Recommendation

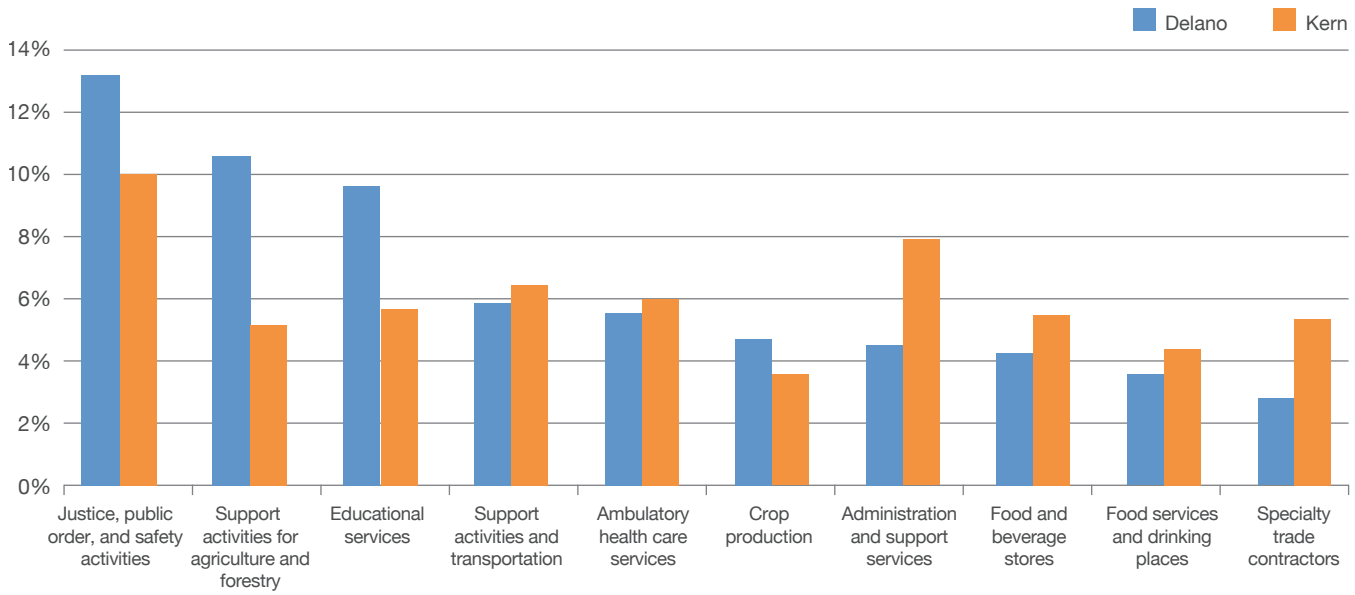
1. Identify opportunities to diversify industry mix and implement linked learning programs.

Arvin's dominant industry is agriculture. As agriculture shifts toward more skilled and technologically advanced work, a trained workforce will be crucial for the industry's growth and the city's future. Arvin must press ahead with efforts to develop that skilled workforce. Additionally, Google's $145 million investment in a solar plant in nearby Lamont presents an opportunity to train workers for careers in alternative energy. The city should develop linked learning programs with local schools and community colleges to provide students with hands-on skills that can be readily applied in agriculture and alternative energy.

DELANO

Delano is a growing city of almost 55,000 people, counting the more than 10,000 prison inmates. Agriculture, particularly table grapes, is Delano's major industry.[101] The government and residents are working hard to create opportunities in the city.

FIGURE 33: SHARE OF TOTAL EMPLOYMENT BY INDUSTRY, DELANO VS. KERN (2012)



Sources: National Establishment Time-Series (NETS) Database, Milken Institute.

Delano has embarked on many projects to grow and make the city a more desirable location. Delano offers a state-supported Career Services Center, which provides training and workforce development and assists in screening and hiring applicants at no cost to employers.[102] Six priority commercial, residential, and industrial projects are in development: Delano Marketplace, Block H, Westside Industrial Park, Madison Square Plaza, Park Meadows Village, and Millennium Row. Current zoning maps show designated areas for a new elementary school, high school, and community college.[103] There is also more residential zoning as well as an industrial park on the city zoning map.[104]

Recommendation

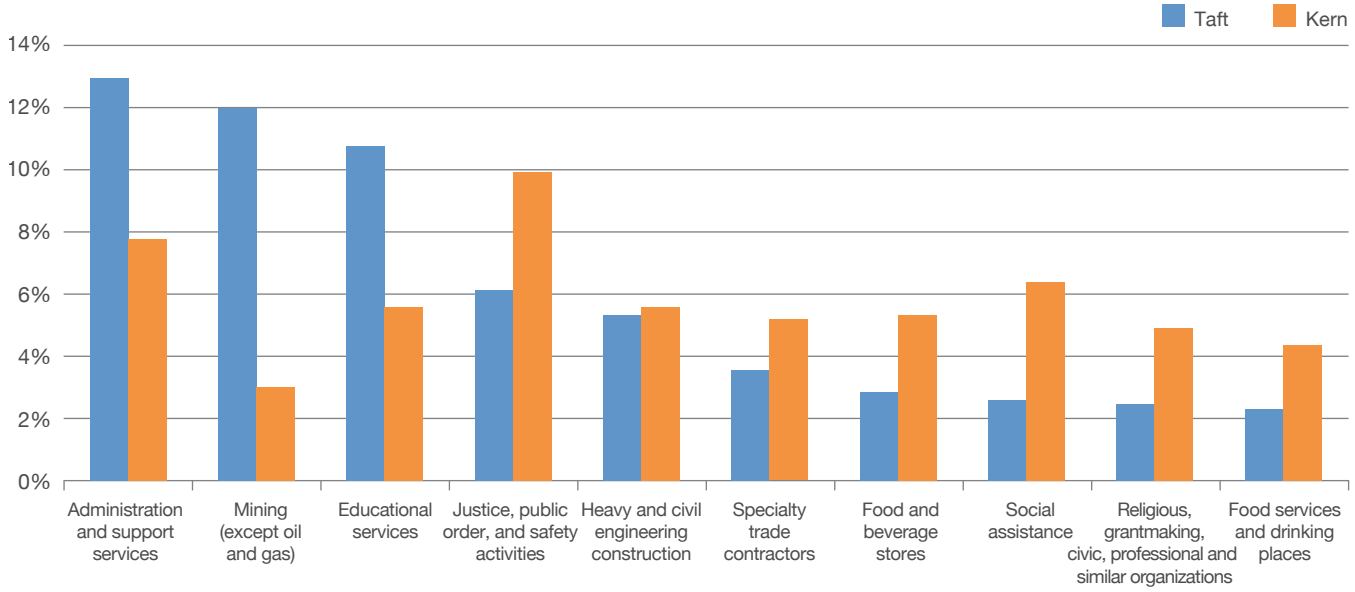
1. **Continue to develop a skilled workforce and identify opportunities to implement linked learning programs.**

   Given that Delano's top industry is agriculture, the city needs to step up efforts to develop a skilled workforce. As agriculture shifts toward more skilled and technologically advanced work, a trained workforce will be crucial for the industry to keep growing. The city should identify opportunities to develop linked learning programs with local schools and community colleges to provide students with practical, hands-on skills that can be readily applied in the workforce.

TAFT

Taft, a community with fewer than 10,000 people, is a major petroleum and natural gas producer. There is also a privately contracted Federal Bureau of Prisons facility with 2,300 offenders on the south side of town.[106] Taft is looking to expand and create new industries outside government and oil and gas. Taft College, a public community college with nearly 12,000 students,[107] has a strong focus on STEM and technical education for careers, especially energy technology. The Taft College STEM Program partners with school districts, educators, and corporations across West Kern to interest K-12 students in STEM subjects through field trips, clubs, summer classes, and other activities.[108] The college also is home to the Transition to Independent Living program, which equips adults with developmental or intellectual difficulties with the skills they need to support themselves economically.[109]

FIGURE 34: SHARE OF TOTAL EMPLOYMENT BY INDUSTRY, TAFT VS. KERN COUNTY (2012)



Sources: National Establishment Time-Series (NETS) Database, Milken Institute.

Taft is working to make the city more hospitable. It offers information and assistance for residents to enter the Home Energy Renovation Opportunity (HERO) program, which identifies affordable ways to make energy-efficient, water-efficient, and renewable energy changes to residences.[110]

Recommendation

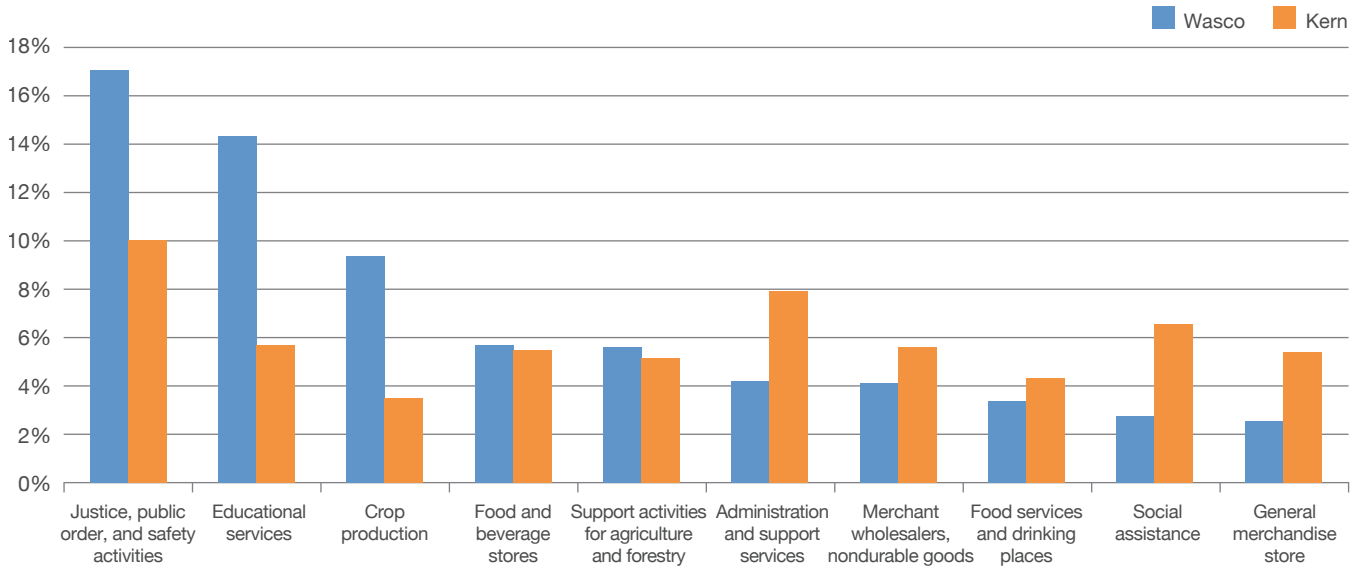
1. Keep diversifying industry mix and attract new companies.

The city created a blueprint in 2009 to guide its growth and spur new opportunities.[111] Taft, like many cities in Kern, was designated an Enterprise Zone in 2011 to encourage that growth, but it must create new incentives for companies now that the Enterprise Zones are winding down.[112] It might be difficult for Taft to receive AB 93 funding with stiff competition throughout the state, but it is important that Taft offer incentives for companies to come to and grow in the city. Just two hours from Los Angeles, Taft has ample land available for development.

WASCO

Wasco's population, now 25,000, has more than doubled since 1990. Wasco is the site of a 400-bed state transitional facility for low-security prisoners[113] and is on the main BNSF Railway line, one of the largest U.S. freight railroads.[114] A Foreign Trade Zone located nine miles south to the south presents an opportunity for companies in Wasco to benefit from reduced tariffs and no re-export costs.[115]

FIGURE 35: SHARE OF TOTAL EMPLOYMENT BY INDUSTRY, WASCO VS. KERN (2012)



Sources: National Establishment Time-Series (NETS) Database, Milken Institute.

Its location makes Wasco a great place for companies that rely on petroleum or agricultural products.[116] Wasco has benefited from Kern's quick permitting times and affordable living costs by bringing in Walmart, Primex, and SunnyGem, the almond supplier.[117]

Recommendation

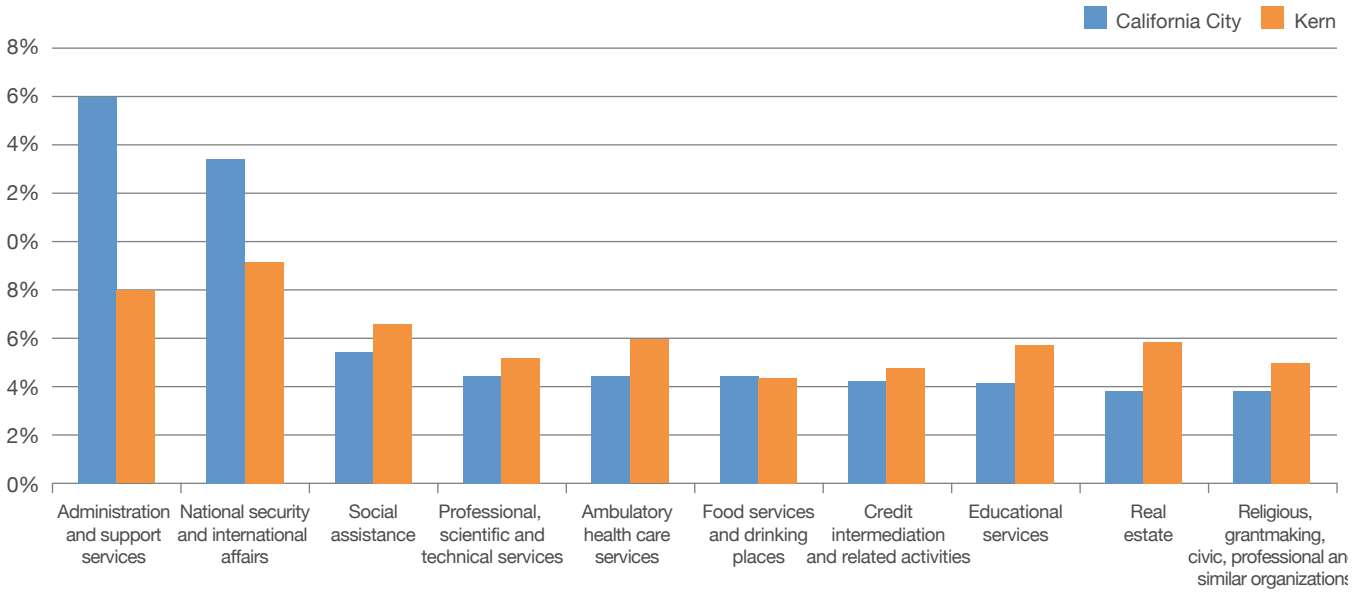
1. Keep diversifying the industry mix and attract new companies.

Wasco recently received a $2,500 grant from Pacific Gas and Electric Co. to market the city's industrial park and other commercial properties. The city is working to diversify its agriculture-based economy by bringing in new business and increasing employment opportunities.

CALIFORNIA CITY

California City, with more than 13,000 residents, is the third-largest city by land mass in the state, extending over 200 square miles. This master-planned community was incorporated in 1965.[118] Its unemployment rate of 7 percent is well below the Kern average.[119] Many residents are employed by Edwards Air Force Base, four miles southeast of town. Within California City, major employers, including the Corrections Corp. of America (CCA) and the Hyundai/Kia Automotive Test Facility, have grown and upgraded their operations. As part of California's realignment program to reduce prison overcrowding, the CCA will house more than 2,000 inmates, collect nearly $30 million in rent over the next three years, and bring more than 700 jobs to the area.[120] The Hyundai/Kia testing track received a $1.9 million upgrade in 2013.[121]

FIGURE 36: SHARE OF TOTAL EMPLOYMENT BY INDUSTRY, CALIFORNIA CITY VS. KERN (2012)



Sources: National Establishment Time-Series (NETS) Database, Milken Institute.

Recommendation

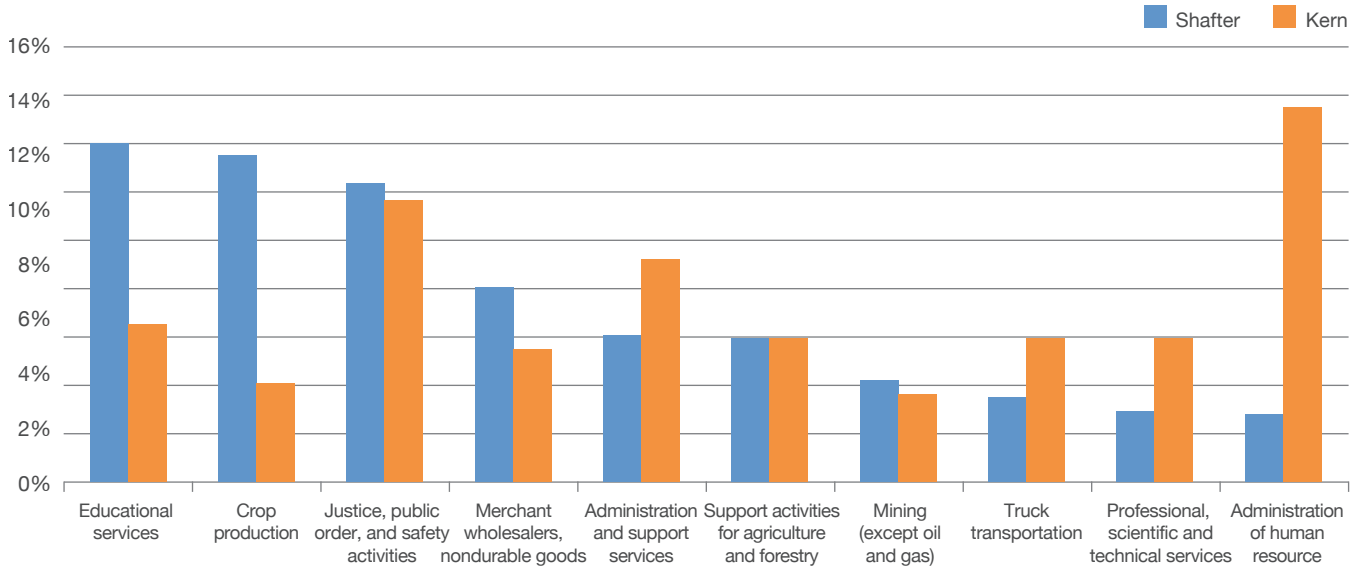
1. **Keep pursuing funding to develop amenities that will attract and retain a cross-section of workers and residents.**

   California City has an active and engaged community that has succeeded in securing public funding to improve infrastructure and develop new amenities. In 2013, public projects totaling $1.4 million were completed, including the City Arts & Community Center.[122] The community revived its classic, annual Off Road Grand Prix that year and secured more than $400,000 to develop and oversee its off-road park in the desert. Given that California City is an affordable place to live and unemployment is relatively low, infrastructure improvements and these new amenities are likely to further attract businesses and residents to the area.

SHAFTER

Shafter is a city of 17,000 outside Bakersfield that depends largely on agriculture and related industries. Local crops include cotton, almonds, pistachios, and alfalfa as well as carrots, potatoes, and other vegetables. It was once the center of California's cotton industry and its prized early spring potatoes, the Shafter Long White, were sold throughout the country.[123] Shafter now is home to the 1,625-acre Paramount Logistics Park, with direct rail service to the ports of Los Angeles and Long Beach.[124] Major corporations that have located large facilities there include Target Distribution, Ross Dress for Less, and American Tire. The Target facility alone occupies 1.7 million square feet on 700 acres.[125]

FIGURE 37: SHARE OF TOTAL EMPLOYMENT BY INDUSTRY, SHAFTER VS. KERN (2012)



Sources: National Establishment Time-Series (NETS) Database, Milken Institute.

Apart from agriculture and logistics, Shafter has attracted a diverse group of industries. Elk Corp. Roofing Co. maintains a manufacturing plant in Shafter and California Paper Products recently opened a facility in which felt paper used in roof construction will be created from 100 percent recycled consumer waste.[126]

Recommendation

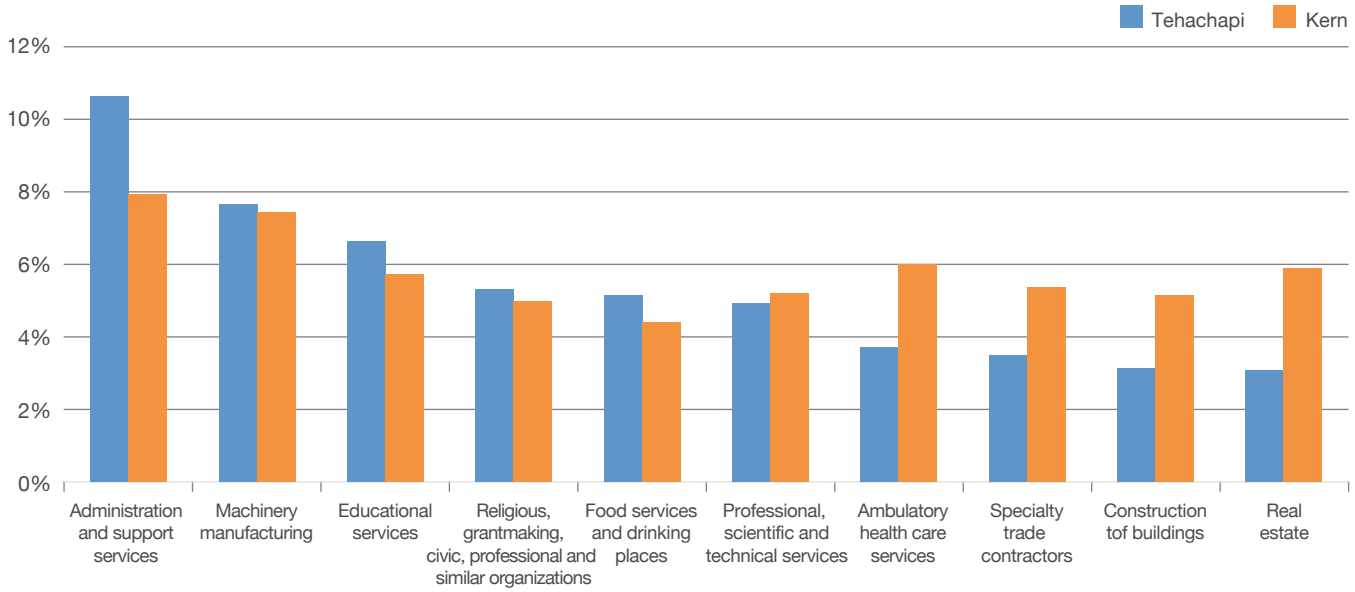
1. **Leverage advantage as logistics hub and connection to ports of Los Angeles and Long Beach to attract multinational companies.**

   Shafter's Paramount Logistics Park can accommodate up to 26 million square feet of industrial and commercial development.[127] With access to the nearby ports of Los Angeles and Long Beach and situated within easy reach of markets across the West, the logistics center serves as a transportation hub for goods entering and leaving California. Shafter should court companies with a presence outside the state. Shafter's one-day shipping turnaround between the Bay Area and Southern California as well as its low costs can provide a powerful lure for multinational corporations seeking an ideal entry point to the California market.[128]

TEHACHAPI

With its low cost of living, cultural amenities, and proximity to high-tech industries located in eastern Kern, Tehachapi is home to many skilled workers in Kern County. The city of Tehachapi, with a population of 13,000, is located 4,000 feet above sea level—a prime location for much of the county's wind power industry. The Tehachapi Wind Resources Area has garnered investments surpassing $5 billion in recent years.[129] Such innovative companies as Terra-Gen Power, EDP Renewables, Airstreams Renewables, World Wind Services, and Fastenal have large enterprises there.[130]

FIGURE 38: SHARE OF TOTAL EMPLOYMENT BY INDUSTRY, TEHACHAPI VS. KERN (2012)



Sources: National Establishment Time-Series (NETS) Database, Milken Institute.

Recommendation

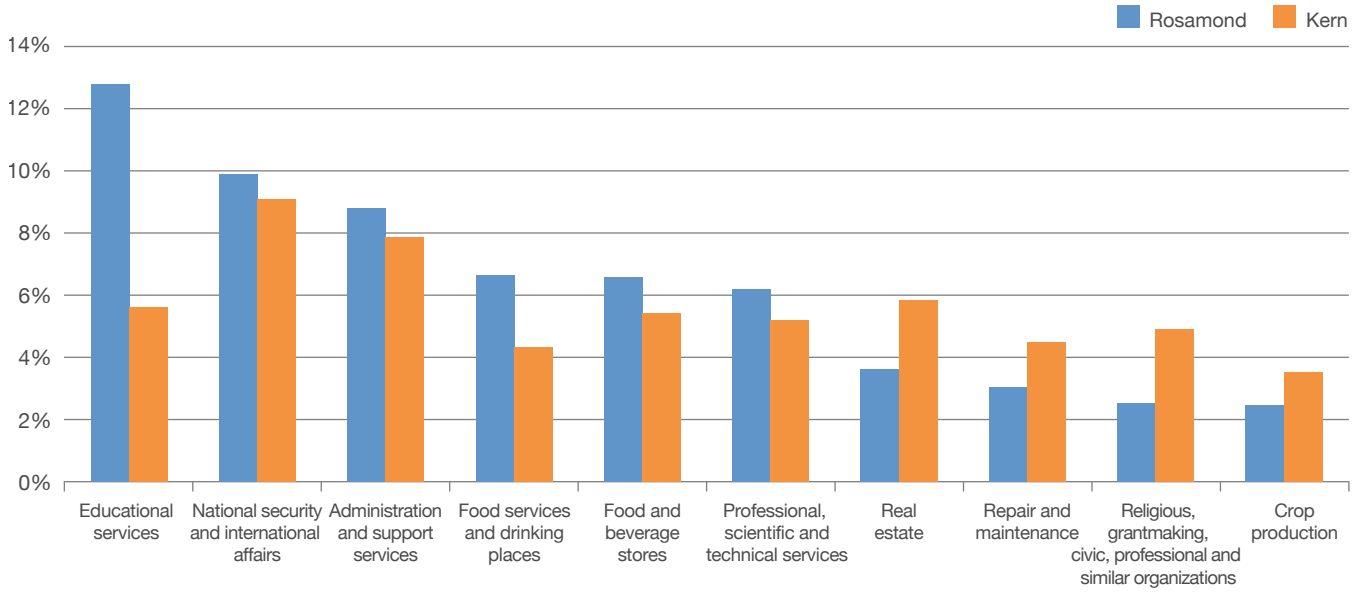
1. **Identify opportunities for innovative companies located in Tehachapi to partner with Kern's community colleges and state university to provide linked learning opportunities.**

   Tehachapi's concentration of industries focusing on renewable energy are an important asset as Kern seeks to diversify its energy portfolio. Additionally, renewable energy companies can help build a skilled STEM workforce in Kern. Companies can coordinate with local community colleges, CSU Bakersfield, and other institutions to create work-study, internship, and co-op programs that give students valuable experience and often an income as well while they pursue degrees.

ROSAMOND

Rosamond, population 18,150, has a colorful past and a bright future. Established in 1877 as a railroad town—it was named after the daughter of a Southern Pacific executive—it later attracted gold miners. A new chapter opened during the aviation age, when Edwards Air Force Base—originally Muroc Army Air Field—began operations nearby. Hundreds of aviation firsts have been recorded at Edwards, including the Oct. 14, 1947, flight in which Air Force Capt. Charles "Chuck" Yeager broke the sound barrier in the Bell X-1.[131] Rosamond is often called the gateway to Edwards and today is a bedroom community for those who work at the base as well as Mid-American Solar. It attracts others who value the proximity to Los Angeles. Families also choose Rosamond for its schools, which themselves are a major employer.[132]

FIGURE 39: SHARE OF TOTAL EMPLOYMENT BY INDUSTRY, ROSAMOND VS. KERN (2012)



Sources: National Establishment Time-Series (NETS) Database, Milken Institute.

Some of Kern County's wealth is being lost from Rosamond. The city is very close to the Los Angeles County border and residents of Rosamond often travel south to Lancaster and Palmdale for shopping. Kern County is unable to collect taxes from Edwards AFB and is also losing sales taxes from most people who live around the base.

Recommendation

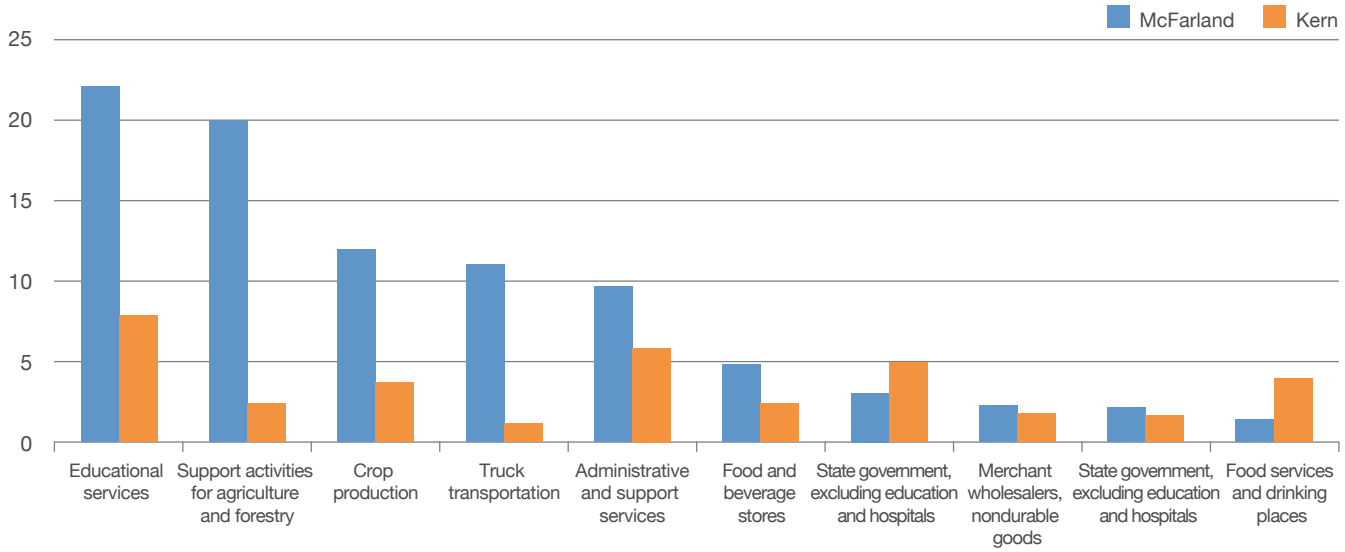
1. **Attract new investment in Rosamond's retail trade to keep more shoppers in town and generate revenue for the county.**

   Rosamond should aggressively seek investors to build a shopping complex in the city that complements rather than duplicates what is available in Palmdale and Lancaster. Done properly, this could even attract shoppers from Palmdale and Lancaster for products they can't buy there. If Rosamond attempts to compete directly with Palmdale and Lancaster, that might be a hard sell to investors. But offering new shopping options could benefit both areas.

MCFARLAND

McFarland has been the county's fastest-growing city for the past two years. It has recently invested in housing options, city beautification, and lowering utility prices to attract new residents and purchased a new fleet for its police force. The city is increasing its footprint by annexing 550 acres, most of which will be available for business development. In late 2013, the state selected McFarland as a location for a lower-security prison operated by the Geo Group, a private contractor.

FIGURE 40: SHARE OF TOTAL EMPLOYMENT BY INDUSTRY, MCFARLAND VS. KERN (2012)



Sources: National Establishment Time-Series (NETS) Database, Milken Institute.

Recommendation

1. **Continue to develop a skilled workforce and identify opportunities to implement linked learning programs.**

   McFarland should continue its efforts to develop a skilled workforce. As agriculture shifts toward more skilled and technologically advanced work, a trained workforce will be necessary for that industry to grow. The city should continue to identify opportunities to develop linked learning programs with local schools and community colleges to provide students with practical, hands-on skills that can be readily applied in the workforce.

7. APPENDIX II: TECHNICAL MATERIALS

7.1 Kern's unique industry makeup offers exceptional opportunities

TABLE 12: TOP 10 INDUSTRIES BY LOCATION QUOTIENT IN KERN AND BENCHMARK COUNTIES (2013)

Industry	Kern	Industry	Fresno	Industry	Los Angeles	Industry	San Bernardino	Industry	San Joaquin	Industry	Riverside	Industry	Ventura
Base industry: total, all industries	1	Base industry: total, all industries	1	Base industry: total, all industries	1	Base industry: total, all industries	1	Base industry: total, all industries	1	Base industry: total, all industries	1	Base industry: total, all industries	1
NAICS 213 Support activities for mining	33.27	NAICS 115 Agriculture and forestry support activities	6.9	NAICS 512 Motion picture and sound recording industries	3.11	NAICS 493 Warehousing and storage	5.22	NAICS 493 Warehousing and storage	4.96	NAICS 493 Warehousing and storage	4.17	NAICS 111 Crop production	5.55
NAICS 211 Oil and gas extraction	17.66	NAICS 111 Crop production	4.22	NAICS 315 Apparel manufacturing	3	NAICS 331 Primary metal manufacturing	4.27	NAICS 484 Truck transportation	4.1	NAICS 321 Wood product manufacturing	2.6	NAICS 325 Chemical manufacturing	5.15
NAICS 115 Agriculture and forestry support activities	10.29	NAICS 112 Animal production and aquaculture	3.51	NAICS 313 Textile mills	2.92	NAICS 484 Truck transportation	4.07	NAICS 327 Nonmetallic mineral product manufacturing	3.68	NAICS 326 Plastics and rubber products manufacturing	2.26	NAICS 211 Oil and gas extraction	2.57
NAICS 212 Mining, except oil and gas	9.41	NAICS 311 Food manufacturing	3.49	NAICS 483 Water transportation	2.35	NAICS 326 Plastics and rubber products manufacturing	2.84	NAICS 112 Animal production and aquaculture	3.67	NAICS 327 Nonmetallic mineral product manufacturing	2.05	NAICS 322 Paper manufacturing	2.19
NAICS 111 Crop production	5.16	NAICS 113 Forestry and logging	1.82	NAICS 316 Leather and allied product manufacturing	2.33	NAICS 337 Furniture and related product manufacturing	2.56	NAICS 111 Crop production	3.06	NAICS 238 Specialty trade contractors	2.04	NAICS 335 Electrical equipment and appliance mfg.	2.03
NAICS 486 Pipeline transportation	5.04	NAICS 322 Paper manufacturing	1.78	NAICS 314 Textile product mills	1.95	NAICS 492 Couriers and messengers	2.54	NAICS 311 Food manufacturing	3	NAICS 237 Heavy and civil engineering construction	1.84	NAICS 333 Machinery manufacturing	2.02
NAICS 237 Heavy and civil engineering construction	4.6	NAICS 484 Truck transportation	1.72	NAICS 488 Support activities for transportation	1.86	NAICS 327 Nonmetallic mineral product manufacturing	2.5	NAICS 321 Wood product manufacturing	2.94	NAICS 339 Miscellaneous manufacturing	1.68	NAICS 213 Support activities for mining	1.97
NAICS 491 Postal service	4.06	NAICS 221 Utilities	1.62	NAICS 711 Performing arts and spectator sports	1.77	NAICS 321 Wood product manufacturing	1.92	NAICS 115 Agriculture and forestry support activities	2.68	NAICS 441 Motor vehicle and parts dealers	1.67	NAICS 327 Nonmetallic mineral product manufacturing	1.91
NAICS 324 Petroleum and coal products manufacturing	3.64	NAICS 515 Broadcasting, except internet	1.45	NAICS 336 Transportation equipment manufacturing	1.69	NAICS 447 Gasoline stations	1.76	NAICS 312 Beverage and tobacco product manufacturing	2.54	NAICS 452 General merchandise stores	1.67	NAICS 522 Credit intermediation and related activities	1.82
NAICS 112 Animal production and aquaculture	3.48	NAICS 333 Machinery manufacturing	1.38	NAICS 515 Broadcasting, except Internet	1.67	NAICS 221 Utilities	1.73	NAICS 326 Plastics and rubber products manufacturing	2.13	NAICS 444 Building material and garden supply stores	1.56	NAICS 525 Funds, trusts, and other financial vehicles	1.76

Source: Bureau of Labor Statistics, Location Quotient Calculator, 2013.

LOCATION QUOTIENTS

A location quotient is an analytical statistic that measures a region's industrial specialization relative to a larger geographic unit. In this case the region is the county and the larger geographic unit is California. For example, a location quotient of 1.0 in agriculture means the county and the state are equally concentrated in agriculture, while a location quotient of 1.8 indicates that the county has a higher concentration in agriculture than the state.

$$LQ_i = \frac{\frac{e_i}{e}}{\frac{E_i}{E}}$$

LQ_i = *location quotient for sector i in Kern economy*

e_i = *employment in sector i in Kern*

e = *total employment in Kern*

E_i = *employment in sector i in California*

E = *employment in California*

Table 12 shows the top 10 industries by location quotient for Kern County and the benchmarks. Location quotients can be used to measure comparative advantage because they look at Kern's share of employment in an industry compared to California's share of employment normalized for total employment differences.

Source: Bureau of Labor Statistics, Location Quotient Calculator, 2013.

7.2 Diversity: Hachman Index

The Hachman Index measures how closely the employment distribution of a county resembles that of the state.[133] A California county that has a score of 1 is equally as diverse as the state, and the more concentrated a county's employment is in a few industries, the closer the index gets to 0.

TABLE 13: HACHMAN INDEX FOR KERN AND BENCHMARK COUNTIES

Year	Kern	Fresno	Los Angeles	San Bernardino	San Joaquin	Riverside	Ventura
2013	0.242	0.525	0.874	0.715	0.653	0.801	0.670
2012	0.248	0.522	0.871	0.754	0.672	0.836	0.676

Sources: Authors' calculations based on BLS data.

Diversity in a region helps cushion the economy from potential shocks resulting from price and demand changes in a specific industry. Another way for a county to protect itself from deep, industry-driven recessions is to build up complementary industries. The expansion into alternative energy by Kern, one of the nation's largest oil and gas producers, is a prime example.

$$Hl_t = \frac{1}{\Sigma_j \text{ (location quotient of industry in county) x (share of that industry in the county)}}$$

t = *year*, j = *industry*

Kern County has the lowest diversity among its benchmarks as measured by the Hachman Index. In the last recession, this low diversity actually insulated Kern's economy since its core industries were spared. Normally, low diversity exposes economies to recession risk. Kern's score reveals that it is highly vulnerable to fluctuations in its strongest industries—energy, mining, and agriculture. These core industries also generate weak local spillover effects. Kern was partially insulated from the Great Recession, but it could be hit harder by a farming recession, drought, or weakness in the oil market.

Indeed, another reason the low Hachman score could signal risk for Kern is that many of the county's top industries rely heavily on water. The severe drought in the state will have serious repercussions for the Kern economy if it persists. Virtually every industry in Kern needs to look for additional, innovative ways to reduce water consumption.

ENDNOTES

1. U.S. Bureau of Economic Analysis definition.
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11. Location quotients measure Kern County's industry specification compared to California. Any number greater than 1 indicates that Kern has a greater concentration in that industry than the state as a whole.
12. For a comparison of key industries among benchmarks, see Industry section in the Appendix.
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29. Roll Real Estate Development, "Our Projects," http://rollrealestate.com/our-projects/ (accessed September 10, 2014).

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