

An Eye Toward Opportunity

Building a More Economically Competitive Kansas

A Kansas Competitiveness Analysis and Strategic Action Agenda



October 2022

An Eye Toward Opportunity: Building a More Economically Competitive Kansas



The official state motto of Kansas is **Ad Astra Per Aspera**; “To the Stars Through Difficulty.” Like other times in our history, Kansas today faces critical challenges and choices. As our state recovers from the pandemic and responds to the subsequent global recession, we face surging inflation, stagnant labor force growth, geopolitical unrest, and rapid industry transformation.

Leadership, public policy, and strategic investment decisions will help determine whether Kansas, in the coming years, will thrive economically or not. The state could be growing with improved opportunity, better quality of life and a higher standard of living for its citizens. As the motto says, “to the stars”; but that brighter future is far from certain. Without a focus on improved economic competitiveness, Kansas could be a state with a shrinking workforce, deteriorating infrastructure, a worsening business climate, and declining innovation.

Today’s reality is that every day, every state competes against other states and countries across the world for jobs, investments, and people. To successfully compete, Kansas’s leaders – private and public – will need to prioritize continuous improvement in the state’s competitive environment.

- **Business Climate:** We must have a consistent, fair, and predictable regulatory and legal environment, with taxes that position Kansas as a desirable state in which to live and do business.
- **Workforce:** We must ensure that there are enough workers with the right skills for business to grow.
- **Infrastructure:** We must have roads, bridges, railroad, waterways, air service, broadband, water and sewer, housing, childcare, and buildings and sites that support and enable the workforce and businesses.
- **Innovation:** We must support new ideas and new and existing companies through commercialization of research, attraction of global investment, the availability of risk capital, high quality entrepreneurial ecosystems, attraction of supply chains, and continuous improvement in labor productivity.

Our strategy development begins with an assessment of the state’s economic reality and identifies future trends that will impact Kansas in the coming years. Next, we determine what we believe are the most pressing issues and what we want for our state in the future. The final step is to identify and then

implement specific actions to move Kansas from where it is to where we want to be. Successful strategic action agendas are future-focused, realistic, actionable, appropriately resourced, and are regularly updated.

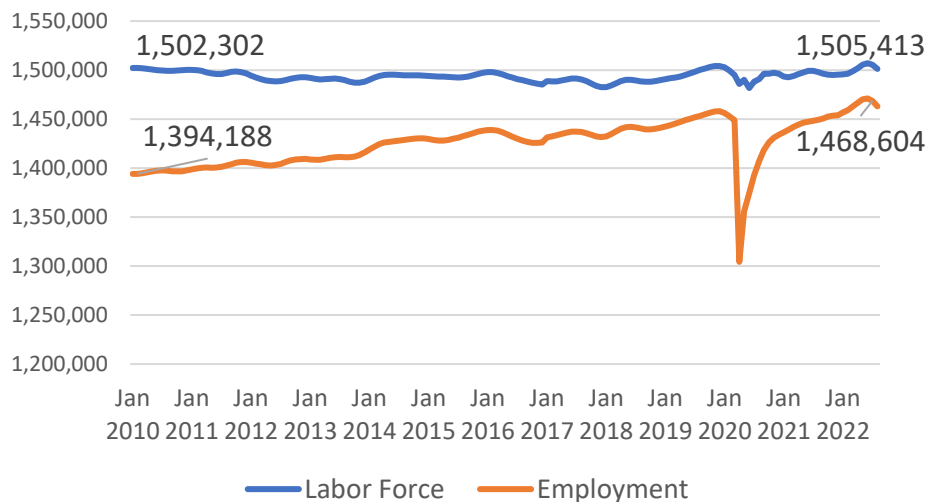


Current Conditions in the Kansas Economy

Job openings in Kansas have been steadily rising during the past two years. For every state in America, today's challenge is to have enough workers with the right skills for available jobs.

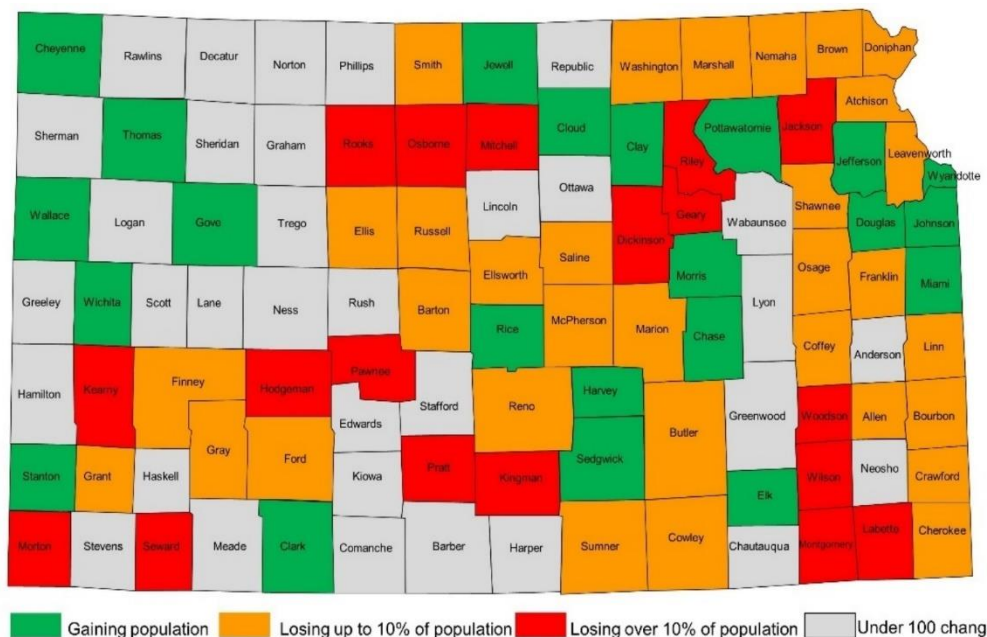
We have many strengths. The Kansas labor force is more highly educated than the national average, and the state enjoys a relatively high labor force participation rate of nearly 67 percent. The higher education pipeline is a strength with 54,245 graduates in 2020, growing by 2.4 percent since 2016. The state's unemployment rate is a low 2.8 percent (June 2022).

Kansas Employment & Labor Force Growth 2010-2022



With a state population of just under 3,000,000 and a growth rate during the past five years of about one-half of one percent, Kansas faces a competitive challenge to supply the workers needed for growth. Since 2010 the total net growth in the state's labor force has been a little more than 3,000. This lack of labor force growth is projected to remain a primary business concern. As the county map shows, most Kansas counties expect their prime age labor force to remain near the current level or decline during the next decade (2022-2032).

Kansas Projected Population Growth 2022-2032 Working Age 25 - 64



A complete analysis of the employment situation including an in-demand occupational breakdown, automation index, age analysis, examination of working from home and entrepreneurial rates is provided in Appendix 2.

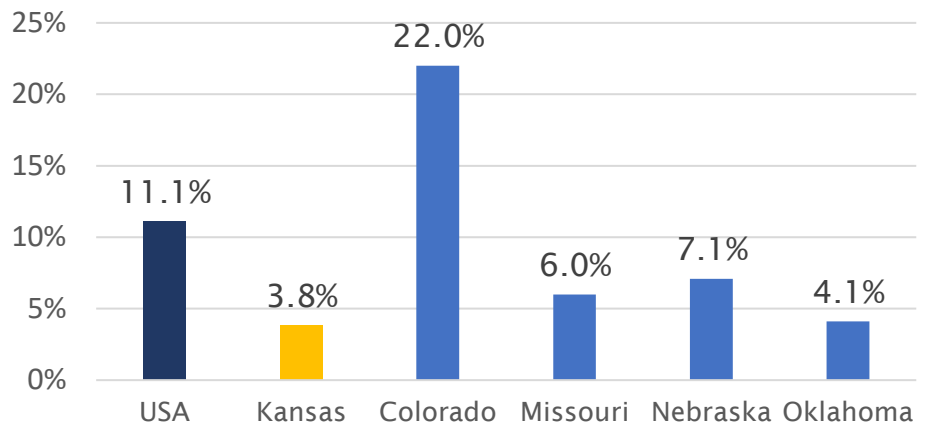
Kansas's economy is very diverse. Data comparing industry groupings and their concentration across all 50 states in America reveals that Kansas ranked 12th in the nation for economic diversity. Economic diversity typically helps insulate a state in periods of economic stress. According to Wichita State University's Center for Economic Development and Business Research, the state's GDP is now in excess of \$200 billion, led by the manufacturing sector.

Despite the state's strengths, both overall job growth and manufacturing job growth have lagged neighboring states in recent years.

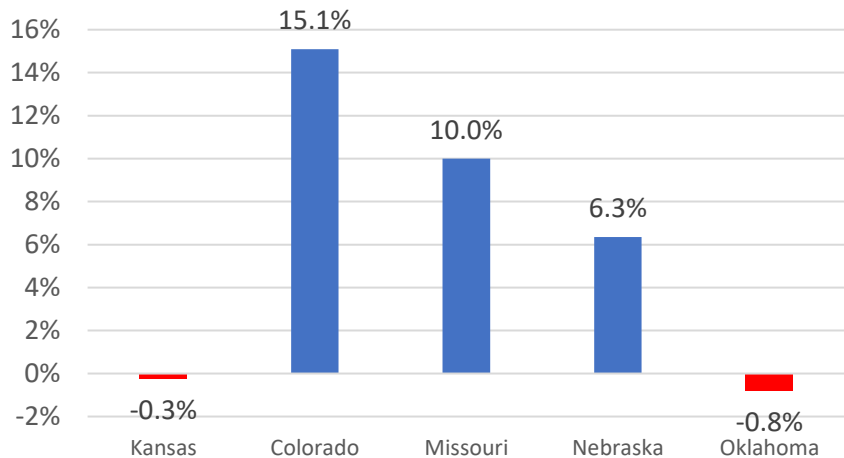
One way to further evaluate the state's economy is to analyze its **traded clusters**. Traded clusters are groupings of industries that serve markets outside of a state (domestically and/or internationally), bringing money into the state by exporting goods and services. A detailed Cluster Analysis is included as Appendix 1.

Kansas has several clusters with concentrations higher than the national average. Aerospace vehicles and defense and livestock processing are both represented at more than four times the national average. Production technology also is one of the top concentrated clusters in the state with more than 5,000 workers employed in the farm machinery and equipment manufacturing industry. Transportation and

Job Growth 2011-2021



Manufacturing Job Growth 2011-2021



logistics is another high-employing cluster, dominated by long-distance freight trucking and rail transport.

Clusters that are currently strong and growing include Communications Equipment and Services, Food Products, Agricultural Inputs and Services, and Biopharmaceuticals. Distribution and E-Commerce has the most employees (more than 60,000) and also added the most jobs during the past five years, almost 5,000. Other clusters adding the most net new employees since 2016 include

Communications Equipment, Food Products and Livestock Processing. Federal Government Services - which employs more than 60,000 - has been stable during the past five years, adding about 700 new jobs. COVID-19 impacts resulted in losses in the Aerospace and Business Services clusters. Both are important to the state and although some of the jobs



have been added back, full recovery to pre-pandemic job totals should be a priority.

Current estimates for the next five years project good job growth in Education, Communications equipment, and Tech.

Kansas's Competitive Position

There are many different ways to measure a state's competitive position. Outside, third-party rankings can be an important measure. Although no single ranking can provide a complete picture, when taken together they illustrate how the state might be viewed by companies considering investment.

Ranking Organization	2022	2012
CNBC	21	15
Tax Foundation	24	25
Chief Executive	24	23
ALEC (Outlook)	26	26

For many of the multifactor 50-state rankings, Kansas falls in the middle with little change during the past 10 years. In the past three years, the state's rankings have averaged between 20th and 30th while actual economic performance in job, wage and GDP growth has been closer to 30th.

According to 2022 research by the Tax Foundation, the state's Business Tax Climate is ranked 24th while the State and Local Tax Burden rank is 33rd.

The U.S. Chamber’s Institute for Legal Reform ranks Kansas 32nd for the perception of the state’s legal liability system. Neighboring Nebraska (8th best), Oklahoma (14th best), and Colorado (21st) score better, while Missouri (44th) is among the worst states for this ranking.

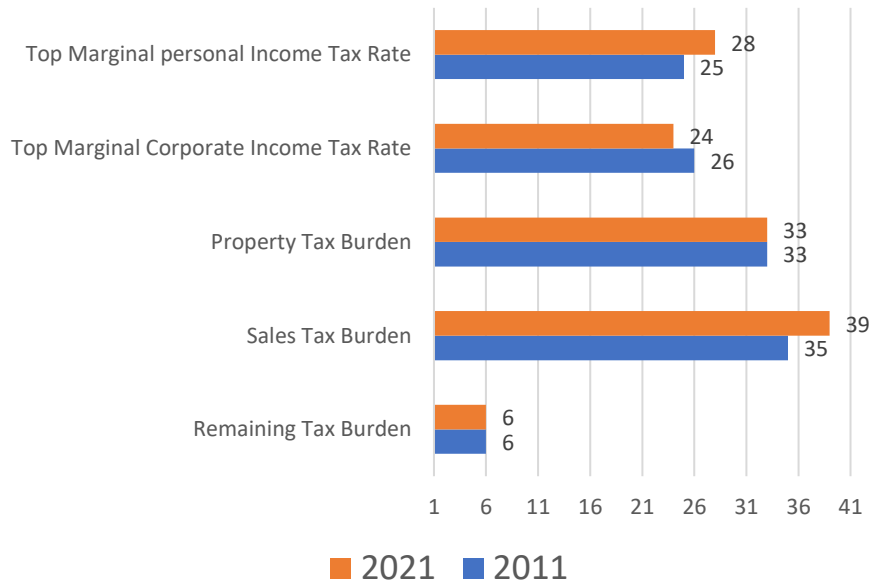
Rankings in 2022 from the American Legislative Exchange Council (ALEC) for state liability systems also has Kansas 32nd, a precipitous decline from 2012’s ranking of 14th. ALEC’s tax analysis shows that although the state’s 2022 ranking has improved slightly for the Corporate Income Tax Rate, there has been some competitive decline in Personal Income Tax and Sales Tax.

While there is considerable room for improvement in the Kansas business climate rankings, and improvement is needed to spur additional growth, the state’s infrastructure rankings are a clear competitive advantage.

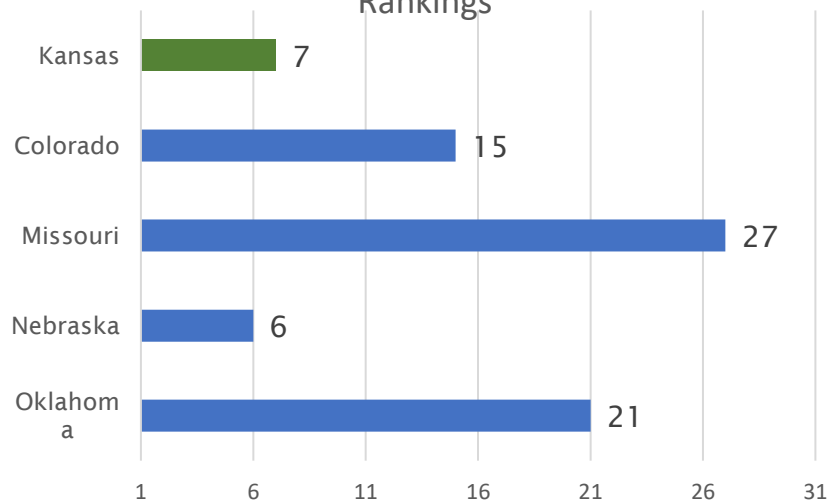
According to the *US News 2022 Infrastructure Report*, Kansas’s infrastructure rates among the top 10 states. Specific subcategories rank Kansas 5th for transportation, 9th for internet and 13th for energy.

Smart Asset’s latest infrastructure rankings also have Kansas among the 10 best states. As it reports, “Kansas rounds out our list of the top 10 states with the best infrastructure, ranking particularly well for its low average commute time (about 20 minutes) and high percentage of bridges in good or fair condition (97.2%). Additionally, Kansas has the 12th-highest percentage of roads in good or fair condition (88.4%).”

ALEC Rich State Poor State Tax Rankings 2022



US News 2022 State Infrastructure Rankings



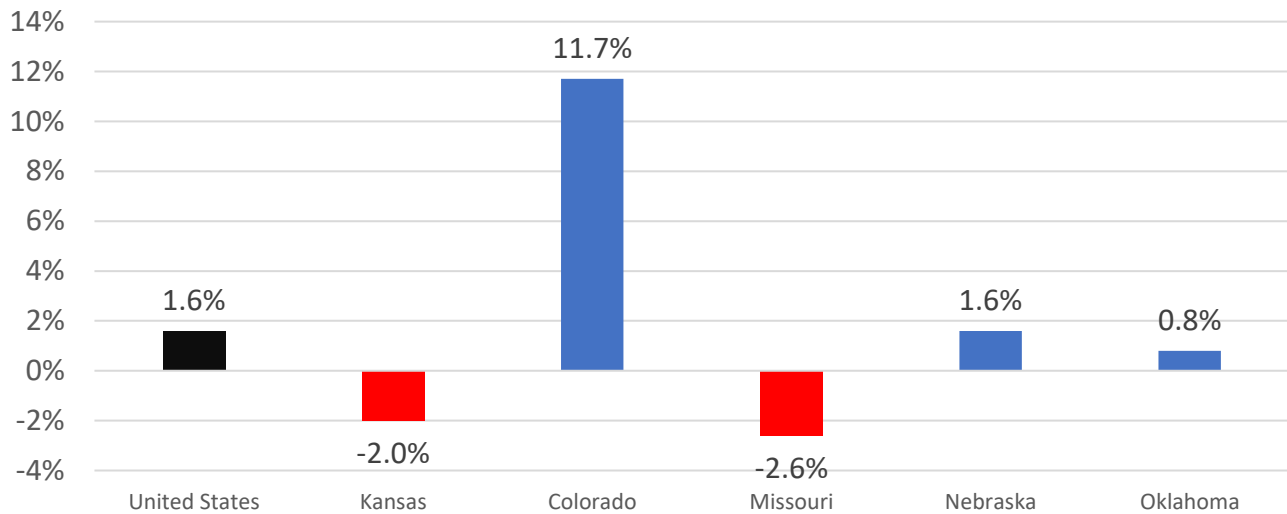
Its location in the geographic center of the nation makes transportation central to just about everything Kansas does. So it should come as no surprise that the state’s roads and bridges are the best in the country according to our study — well maintained, with a breezy average commute of less than 20 minutes. And only a handful of states carry more freight than Kansas’s bustling railroads.

Source: CNBC 2022

CNBC places Kansas as tied for 6th best infrastructure with among the best roads and bridges in the country. The same report finds that Kansas also is among the best states for cost of doing business (#6) and cost of living (#2).

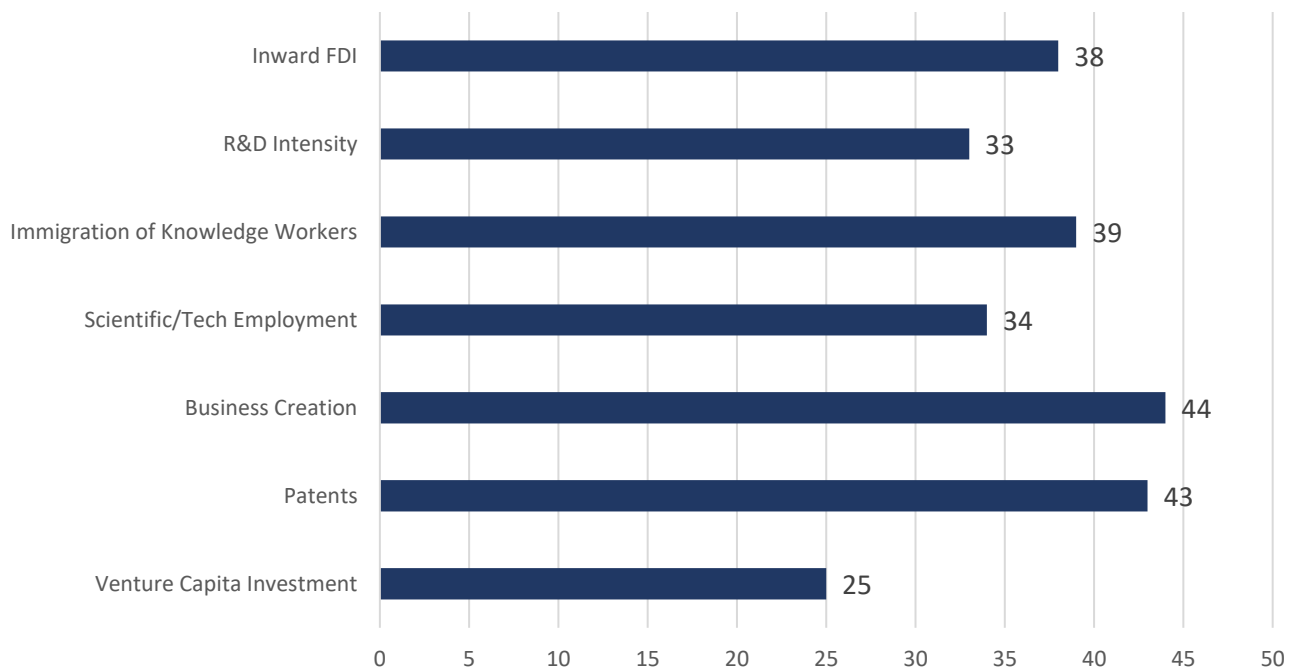
In the same CNBC study, the Kansas workforce is ranked 35th. The key labor concern is the projected two percent decline in working age population.

Projected Working Age Population Growth Through 2031



U.S. News ranks Kansas 38th for Innovation and Tech. Wallet Hub ranks the state 31st for innovation potential. In a comprehensive report by the Information Technology & Innovation Foundation, Kansas ranked 33rd overall. Rankings in various subcategories ranged from 25th in venture capital to 44th in business creation.

Kansas ITIF Innovation Rankings 2022



Overall, the data suggests that infrastructure, the cost of living, and the cost of doing business are competitive strengths. Economic diversity also is good. The business climate, workforce growth and innovation capacity are areas needing improvement.

Input from stakeholder surveys and focus groups reinforced the workforce concerns. The need for more workers (and especially workers with specific skills) was among the greatest concerns. A Kansas Chamber December 2021 survey of business owners and executives identified the quality of the workforce and taxes as the most important issues. In one sector, the percentage of businesses dissatisfied with the available workforce was 75 percent. Soft skills were the biggest concern for every industry and in every part of the state. Respondents felt strongly that creating more work-based learning opportunities, promoting middle skill certifications, improving academic standards, and increasing participation in STEM fields were important.

In contrast to some of the data rankings, 78 percent of the businesses surveyed felt that Kansas was a good place to start a business. Despite data suggesting that Kansas is a low-cost place to do business, tax cuts also were favored by many respondents. About one-third of respondents felt that Kansas has the best business climate in America.

Focus group participants offered the following suggestions to make the state more competitive.

- Expand internships and apprenticeships
- Add to talent attraction and retention efforts
- Improve childcare options and affordability
- Focus on current strengths such as aerospace, military, and agriculture.

The mission of the Kansas Chamber is to continually strive to improve the economic climate for the benefit of every business and citizen and to safeguard our system of free, competitive enterprise. In the development of the Vision 2025 strategic plan, the Chamber held forums and gathered ideas from across the state. Common topics from that effort included:



Grow Talent Supply:

- Create more mentorship, internship and apprenticeship programs;
- Target students earlier about college and career opportunities and their paths to success;
- Businesses to better partner with Kansas K-12 educators as well as universities, community colleges and technical schools to identify future workforce needs;
- K-12 and higher education to teach soft skills and offer STEM focused curricula;
- Need to understand the underemployment challenge some communities face.

Advance Competitiveness:

- Reduce the cost of doing business in Kansas;
- Provide a stable and fair regulatory environment;
- Look at other states who are doing better than Kansas and learn what they are doing;
- Do a better job of marketing our state's many assets, i.e. its citizens' work ethic, cost of living, quality of life.

Expand Innovation & Entrepreneurship:

- Target tax breaks and incentives to support innovation/entrepreneurs;
- Universities and community colleges to target entrepreneurial thinking;
- Identify more venture capital funding;
- Establish business incubators throughout the state.

Improve Business Infrastructure:

- Identify targeted four-lane highway projects that project the best return on investment for the state;
- Expand broadband availability, especially in rural areas;
- Strengthen short-line rail transportation;
- Improve commercial air service capabilities;
- Build affordable and quality housing.

Now, as we look further into the future, many of our challenges remain, but at the same time the competitive landscape has changed. What we have known to be most important remains so. We need to grow the workforce. We need to increase our pace and level of innovation. Critically, as other states make enhancements to their business climates through reduced and simplified taxes, comprehensive regulatory reviews, and tort reforms, we must match these improvements or fall further behind. Resetting the agenda and reconfirming our commitment must be done even as we struggle to fully understand recent changes and new opportunities.



Post-Pandemic Ripples Impacting Kansas

The events of the past few years have accelerated trends that had already begun and ignited national and personal reflections that are increasingly altering our future. Long-expected demographic impacts from reduced fertility rates, mass Baby Boomer retirements, and declining labor force participation rates have created a national workforce crisis and accelerated automation. COVID-19 impacts such as the painful global supply chain crisis have been intensified by political uncertainty and conflict. Globalization is entering a new era.



As America and Kansas look forward, new economic realities are creating new opportunities. The future of the state will be shaped, in part, by the following seven trends.

1) Reshoring is real

Driven by rising costs and global risks, reshoring is becoming a major growth opportunity in many states. According to a recent survey by Thomas, 2022 was the year that reshoring began in earnest.

- 61% of manufacturers are “likely to extremely likely” to reshore some operations. This figure was only 21% in March 2020.
- 66% plan to increase domestic manufacturing capacity. The industries most likely to add domestic capacity: transportation (73%), aerospace & defense (69%), logistics & shipping (67%), manufacturing (67%).
- 68% plan to hire more employees.
- 58% plan to add new suppliers.
- 35% plan to introduce new technologies.
- For supplies of good and services, availability (90%) is prioritized more than price (53%).

2) Supply chains are being altered, creating new logistics patterns and supplier opportunity

The global supply chain crisis of the past few years exposed the vulnerability of the current logistics dependence and the bottlenecks inherent in U.S. infrastructure. Parts of the United States, including middle-American locations like Kansas, are likely to benefit from corporate adjustments and diversification in logistics.

The U.S. industrial real estate market hit an all-time low vacancy of 3.3% in the first quarter of 2022, according to Cushman & Wakefield. Demand outstripped supply for the 6th quarter

in a row. Year-over-year rent growth was more than 15%. The pipeline of new construction hit 660 million square feet in the first quarter, the first time it has ever topped 600 million sq ft.

3) **Technology decentralization expands opportunity to more places**

A new report from Brookings examines the concentration of tech jobs before and during the first part of the pandemic. Key findings:

- U.S. tech employment growth was robust in the decade before and throughout the pandemic. Leading subsectors have been software publishing and other information services.
- Tech job growth has been concentrated in a few cities. Eight metros – San Francisco, San Jose, Seattle, Los Angeles, Boston, New York, Washington, and Austin – accounted for nearly half of tech job growth from 2015 through 2019.
- But tech employment growth has been more decentralized during the past three years. Brookings has named “Rising Star” cities as Atlanta, Dallas, Denver, Miami, Orlando, San Diego, Salt Lake City, St. Louis, and Kansas City.

According to Brookings, “the data... shows that employment growth slowed in some of the biggest tech “superstars” and increased in numerous other midsized and smaller markets, including smaller quality-of-life meccas and college towns.”

4) **New infrastructure funding will help level competitiveness**

In the first 18 months of the COVID-19 pandemic, governments across the world announced \$3.2 trillion in infrastructure funding as stimulus, a 45 percent increase compared to 2019 levels. The U.S. Infrastructure Investment and Jobs Act provided almost a billion dollars of new funding for priority projects. The Kansas Infrastructure Hub will help coordinate funding opportunities for critical needs that can address infrastructure concerns, especially resources to level the field in broadband capacity for communities across the state.

According to the 2022 State of Site Selection Report from the Site Selectors Guild and DCI, unlike office projects where labor availability is the top concern, for industrial projects the right infrastructure and available buildings and sites determine success.

5) **Geopolitical strategic competition escalates**

Expectations of the World Trade Organization creating a level playing field and international movements toward increased democracy have been altered dramatically during the past decade. Rising tensions with China (including the issue of Taiwan sovereignty) and economic decoupling have altered global threat assessments. Russia’s invasion into Ukraine has galvanized the European Union-U.S. response, but has created chaos in energy and food markets.



Relationships with many countries are strained and a new examination of how our country exercises its soft and hard power will likely bring new investment in our military. Kansas's military bases and its very strong aerospace defense sector likely will see new investment.

6) Affordability emerges as a locational advantage

Business climate, an available workforce, and sufficient infrastructure remain important to companies considering where to place new investment, but affordability is now a priority. The cost of doing business and the cost of living for employees is a competitive advantage for Kansas that has risen in importance during the last few years.

Lower-costs metros have benefitted from migration from the country's highest-cost coastal cities, and some rural parts of the country have experienced new growth. The recent Lightcast report *Rural's Rise* notes that rural America has seen growth in many high-tech skills resulting in better wages. Many of the U.S. counties with the highest increase in tech job postings have been rural. The *Power Up & Go* report from the Kansas Office of Rural Prosperity and the Sampler Foundation recognized emerging opportunities and emphasized that the "success of business is critical to keeping the community thriving."

7) The Talent Wars Intensify

Even as the Federal Reserve is aggressively slowing the economy to combat inflation, almost all businesses struggle to find enough workers with the skills needed. According to the U.S. Chamber of Commerce, unprecedented job growth, (3.8 million in 2021), a decline in labor force participation, early retirements (3 million adults), and a surge in entrepreneurship (4 million new businesses in 2020 alone) combined to create the current challenge.

Whether we are experiencing the Great Resignation, Great Reflection, or Great Reshuffle, workers also have migrated from their old jobs into different opportunities, creating critical shortages in many occupations. Moving forward, having enough teachers, nurses, EMS workers, soldiers, engineers, pilots, machinists, truck drivers, and other occupations important to daily life will be a challenge. States that can train, retrain, retain, and attract talent will have a great advantage.

The Kansas Chamber's *Vision 2025* plan and its 2020 Workforce Strategy *The Challenge to Compete* both recognized the imperative to grow the talent supply and improve in-demand skills. The 2020 report recommended 20 specific actions to expand work experience and work-based learning for students, prioritize talent retention and attraction, increase registered apprenticeships, increase work-ready skills in adults, and make KANSASWORKS a best-in-class statewide program.

Recommendations 2022-2027

Some of the post-pandemic trends described above present important, exciting opportunities for Kansas and its business community. But will Kansas be in a competitive position to take advantage of these opportunities?

The reshoring of manufacturing supply chains and the potential for increased military spending could boost already-strong sectors of the Kansas economy – but not if workforce supply and skill levels are inadequate. The decentralization of knowledge and tech-based businesses, with increased hybrid and remote working, provides an opening for smaller cities and rural areas to capture young talent – but only if enabled by broadband internet access.

The ten recommendations below focus on the three areas most critical for Kansas to improve its competitive position during the next five years. These focus areas are in Workforce, in Business Climate, and in Innovation. Efforts to increase apprenticeships and expand broadband have already begun. Vigilance is needed to see those efforts through. Previous reports on taxation and workforce have provided additional recommendations to improve the state’s ability to compete.

Each of these ten recommendations is accompanied by best practices from states across America that are meeting similar challenges with innovative solutions. We believe that all ten recommendations can be implemented in the next few years.



A. Workforce

Increase levels of student work experience to boost work readiness and skill levels as well as to improve talent retention among young Kansans (1)

Work experience among both high school and college students – including internships, pre-apprenticeships, and apprenticeships – is crucial for developing the employability skills of young people. Successful state-level models include Kentucky’s TRACK pre-apprenticeship program, and Apprenticeship Carolina managed by South Carolina’s technical college system. Apprenticeship Carolina has a team of seven consultants to assist businesses with custom-designing an apprenticeship program – particularly helpful for smaller firms that lack the resources to do this on their own.

Local work experience for students also can contribute to the retention of young people within Kansas. Since 2000, central Massachusetts has studied retention of the approximately 7,500 annual graduates of Worcester-area colleges. One study showed that only 18% of graduates planned to stay in Worcester and 33% in the broader central Massachusetts region after graduation. But 47% of those who had worked off-campus during college planned to remain in

the area. Job prospects was the most important location factor for graduating students, with 77% citing job prospects as “extremely important.”

Very recently the Kansas Office of Registered Apprenticeship was established to “prioritize fostering a workforce that meets the needs of Kansas businesses and of essential industries like education and healthcare.” The success of the effort is critical to addressing the workforce skills gap.

The goal is to increase work experience opportunities for high school students and expand adult apprenticeships.

Develop additional tools to improve attraction and retention of young talent (2)

A targeted talent attraction marketing campaign should reach young Kansas natives and graduates of Kansas colleges and universities living in nearby metro areas in the Midwest. Messaging should focus on key decision factors such as career opportunities, cost of living, and quality of life. The effort should engage partners to amplify the message.

Specific financial tools also can help to anchor young people in the state. Since 2009, Ohio has offered the Grants for Grants down payment home purchase program for those who have graduated from college within the prior 48 months. Down payment assistance is fully forgiven if the recipient remains in Ohio for at least five years.

The goal is to increase the working age population in the state.

Ramp up short-term training for upskilling and reskilling (3)

The upheaval in many industry sectors during the COVID-19 economic shutdown heightened the need for adult workers to access flexible, short-term training to enable them to move into a new sector or obtain a better job in the same sector. Well-funded programs such as Virginia’s New Economy Workforce Credential Grants are aimed at quickly preparing adults for occupations in a specific list of high-demand fields. In fiscal year 2021, 96% of participants completed a training course and 72% obtained an appropriate credential. Among those who earned a credential, median annual earnings increased by \$7,000. The average age of participants is 35.

The goal is to engage more employers and educational institutions to provide retraining for adults.

Increase career awareness among young people, especially for skilled technical positions (4)

It can be difficult to reach students and parents with information about lucrative career opportunities within their own state and region, but effective models exist. The well-regarded Be Pro Be Proud initiative brings information about careers in the skilled professions to students in a hands-on manner and right at their schools. Be Pro Be Proud started in Arkansas in 2016 and is now active in five states. Using mobile workshops housed in custom-built tractor trailers, the Arkansas initiative has reached about 180,000 young people thus far.

The goal is to reach more parents, students, and educators with information about specific opportunities in Kansas.

B. Business Climate

Implement a robust, regular review of the state's regulatory burden (5)

As they pile up over the years, the combined weight of state-level regulations can burden anyone trying to do business there. States such as Arizona are working to reduce that burden. Arizona requires all state agencies to review all of their rules every five years, to uncover any that should be repealed or changed. This has helped Arizona maintain one of the least-complex regulatory codes in America. Its code has fewer than 64,000 restrictive words (like "must," "may not," or "prohibited"). California, the nation's most-regulated state, has nearly 400,000 restrictive words. Arizona also created an online portal for those who live and work under its regulations to make recommendations. In a two-year period, the state removed 1,100 regulations, saving businesses an estimated \$79 million.

In 2018, Virginia started a three-year pilot program to reduce government red tape. The pilot program targeted two state agencies. These agencies were mandated to review all existing regulations and reduce the number of restrictions. Despite COVID-related delays, one agency amended 27% of its regulations and the other agency altered 14% of its total.

The goal is to have Kansas recognized as top third state for regulation.

Increase Kansas's competitiveness in business taxation (6)

Kansas ranks in the middle of the pack nationally for total tax burden, according to research by the Tax Foundation. But nearby states have been more aggressive to improve in this aspect of business competitiveness. During an 11-year period, Indiana moved its top marginal corporate income tax rate from 8.5% to 6.5% and finally to 4.9%. Missouri and Oklahoma's top corporate rates are now both at 4.0%, while Colorado's is 4.55%. The top marginal corporate rate in Kansas is 7.0%.

In 2019, the Kansas Chamber published a comprehensive report, *Kansas Tax Modernization: A Framework for Stable, Fair, and Pro-Growth Reform*. That report provided detailed building blocks with which Kansas can construct an enhanced, simplified, and modernized tax code.

The goal is to have Kansas recognized as top third state for taxation.

Reform occupational licensing (7)

Each state's web of occupational regulations and licensing requirements can hinder the ability of many professionals to earn a living in their chosen profession. According to a recent national study, the percentage of the U.S. workforce affected by state licensing requirements grew from five percent to nearly 25% during the past 60 years.

One hurdle occurs when people move across state lines. To make it quicker and easier for new residents to start working there, Arizona became the first state to accept out-of-state occupational licenses, rather than making individuals start over. At least seven other states have since followed suit. In the last few years, many other states have removed or reduced

licensing requirements for a wide range of occupations, affecting everyone from interior designers to boxing referees.

The goal is to have Kansas recognize out-of-state occupational licenses.

C. Spurring Innovation

Continue to invest in broadband internet (8)

In 2022, broadband internet access is a prerequisite for innovation by businesses and entrepreneurs, regardless of location. The federal government has made significant funds available for broadband internet expansion through such acronym-rich programs as ARPA, BEAD, and DEA. The Kansas Office of Broadband Development (KOBD) has initiated several broadband programs investing tens of million dollars during the past two years to connect Kansans in unserved and underserved areas in the state. Completion of the goals of these programs will amplify Kansas as a national leader in infrastructure.

The extent to which states leverage these funds and support internet expansion efforts can make a great difference in the pace of progress toward statewide broadband access that will benefit businesses, education, and individual quality of life. States can support these goals through:

Funding – the North Carolina legislature invested \$25 million in the first two years of its GREAT program to push broadband access into unserved areas of distressed counties. Since 2016, West Virginia has allocated some of its Community Development Block Grant (CDBG) money, traditionally focused on water and sewer projects, for broadband investments.

Establishing goals – Minnesota set a statewide goal of universal high-speed access (with specific upload and download speeds) by 2026, and Washington by 2028. Others focus on not just universal access but specific adoption rates, such as Michigan’s goal of 95% household adoption by 2024.

Technical assistance – North Carolina’s Broadband Infrastructure Office has a Technical Assistance Team to help communities craft broadband expansion projects, which often require a unique solution in each community.

Promoting public-private partnerships – states such as Wyoming and Hawaii recognize that partnering with the private sector can be the best way to spur broadband deployment, to serve rural areas, and to connect critical institutions.

The goal is to be among the top 10 states for high-speed internet accessibility.

Invest to grow in-state companies (9)

A number of states have made long-term commitments to invest in locally based (especially smaller) firms through equity investment funds and other programs. Funds may come from specific revenues streams, issuing bonds, or from general legislative allocations.

Since it was established in 2002, the Ohio Third Frontier initiative has placed more than two billion dollars in early-stage investment capital to support technology innovation in the state. During its first 10 years, Third Frontier leveraged five billion dollars in private investment and

was credited with the development of 60,000 jobs in Ohio. Funding comes from voter-approved bond issues.

New Mexico operates three investment funds: 1) the Private Equity Investment Program which was first authorized in 1993 and uses a dedicated tax revenue stream; 2) the Catalyst Fund, created in 2016 with the goal of investing \$20 million in venture capital over a five-year period; and 3) a Small Business Investment Fund.

The State of New York's In-State Private Equity Investment Program has \$1.6 billion invested in 537 firms. These companies employ about 42,000 people across New York State. Funding comes from the Common Retirement Fund, the state's pension fund.

The goal is to create a means to invest in Kansas firms with the opportunity to grow.

Incentivize innovation (10)

Tax credits and other incentives can spur the private sector to make investments in new technologies and other innovative practices. In the 2019 legislative session, North Dakota passed two measures to promote private sector innovation. The 21st Century Manufacturing Tax Credit applies to companies using new technology or equipment to automate a primary sector manufacturing process. Another measure allocated \$15 million for an Innovation Loan Fund, providing no-interest loans for the research and commercialization of innovative technologies.

The goal is to create a means to support new investment in new technologies and equipment by Kansas companies.

Conclusion

Together, these strategic actions can set Kansas on a path of increased competitiveness and help the state to take advantage of trends in the post-pandemic economic reality that can boost prosperity for Kansas's business community, workforce, and all of its residents.

Complacency is never good in times of accelerating change and intense competition. We love our state, and it has many strengths, but unless we do more to make Kansas more competitive, economic stagnation is possible. Changing times offer new opportunities and we can imagine aerospace, defense, and agriculture companies and their suppliers growing in our state. We can see new ideas and new companies taking root and adding to our state's quality of life. We can welcome more young people and families drawn to our state for great education, infrastructure, and affordability.

Yes, these are difficult times, but these also are opportunist times for states willing to take on the challenges.



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data.census.gov

Appendix 1: Kansas 2022 Cluster Analysis

One way to evaluate the Kansas's economy is to analyze its **traded clusters**. Traded clusters, the drivers of all economies, are groupings of industries that serve markets outside of a state (domestically and/or internationally), bringing money into the state by exporting goods and services. That money is then spent across the state on **local cluster** activities such as restaurants, home building, entertainment, and personal services. Clustering typically occurs at the regional level but examining the statewide business data can frame the current economy and reveal opportunities for Kansas.

Strong clusters typically contain specialized support such as suppliers, infrastructure, and education and training. Targeting clusters as an economic development strategy can narrow marketing efforts to those industries which are most likely to thrive in the state and to focus public policy to support existing businesses. Nationally, traded clusters account for only 36 percent of employment (the other 64% are local cluster jobs); however, they are responsible for 50 percent of income and over 90 percent of innovation.

Location quotients help reveal clusters that are unique to the state of Kansas. Kansas has several clusters with concentrations higher than the national average. This indicates a diversified economy that is not overly reliant on one or a few clusters. Aerospace vehicles and defense and livestock processing are both represented at more than four times the national average. Production technology is also one of the top concentrated clusters in the state. Over 5,000 of the workers in this cluster are employed in the farm machinery and equipment manufacturing industry. Transportation and logistics is another high employing cluster. This cluster is dominated by long-distance freight trucking and rail transport.

Traded Clusters serve markets outside the region, concentrate in places that provide a competitive advantage, and include jobs in manufacturing, tourism, and agriculture.

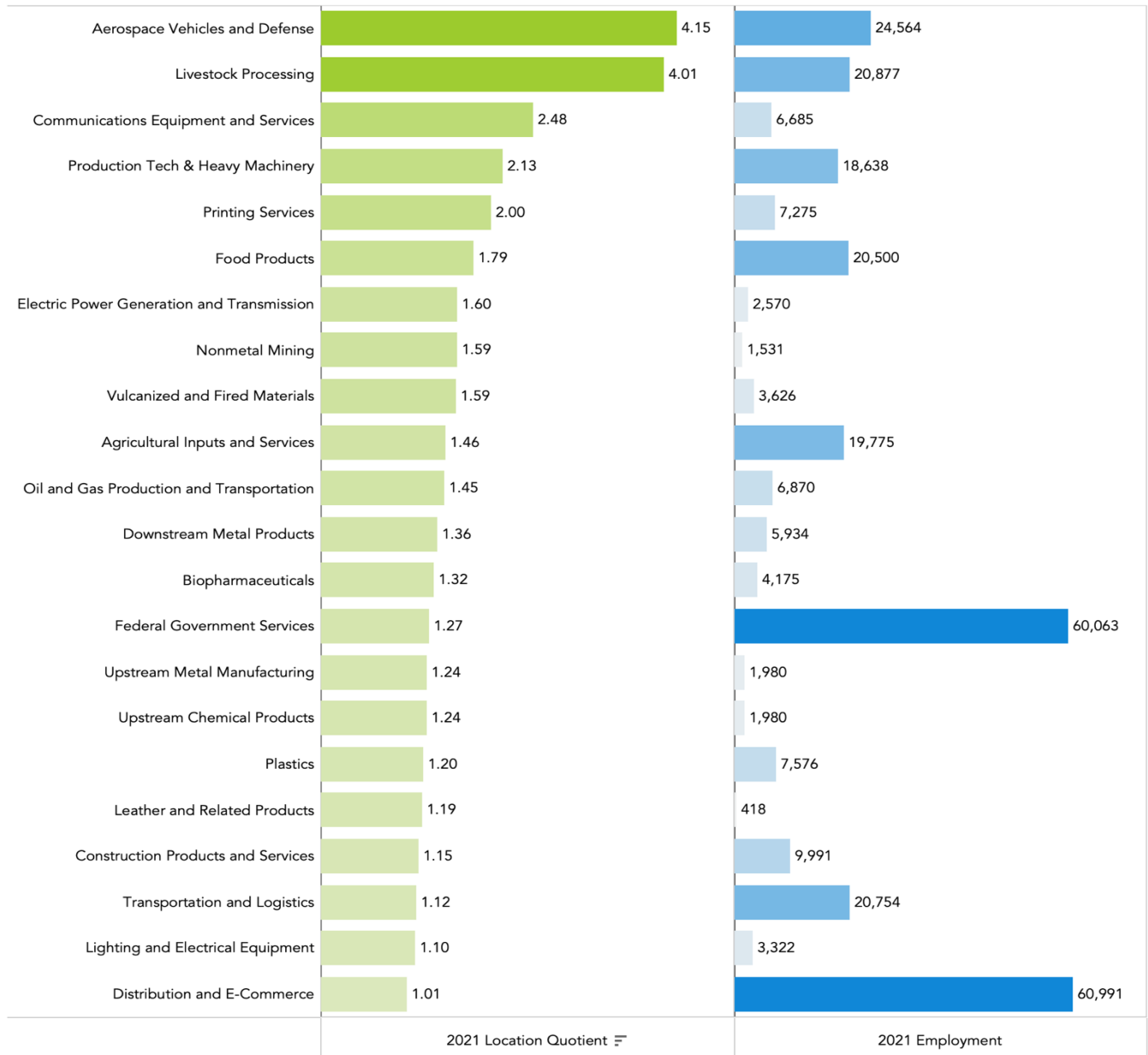
Local Clusters sell products and services primarily for the local market and are found in every city and county in Kansas.

Higher education or health care can be a traded or local cluster depending on local circumstances. A university or hospital that draws students or patients from outside Kansas is a traded asset.

To determine the current state of traded clusters in Kansas, employment and wage data for over 680 six-digit NAICS code industries was analyzed. These industries were then grouped into 53 traded clusters. The cluster groupings are very closely related to those provided by US Cluster Mapping; a project produced by the Harvard Business School. Those cluster groupings have not been updated to reflect the most recent iteration of NAICS codes. Therefore, Economic Leadership used EMSI's conversion of the Harvard clusters to 2017 NAICS codes. These clusters were then evaluated on recent growth, location quotients, wages, and total employment.

Location quotients (LQs) help demonstrate the clusters that have high concentrations in a state. LQs are the concentration of a cluster's employment in the state compared to national employment levels. A location quotient of 1.00 or greater demonstrates a higher concentration than what would be expected based on national average levels. This can reveal which clusters are strongest in Kansas and generating money from outside the state through exporting of goods or services. LQs when mapped alongside employment growth can show which clusters are thriving or declining.

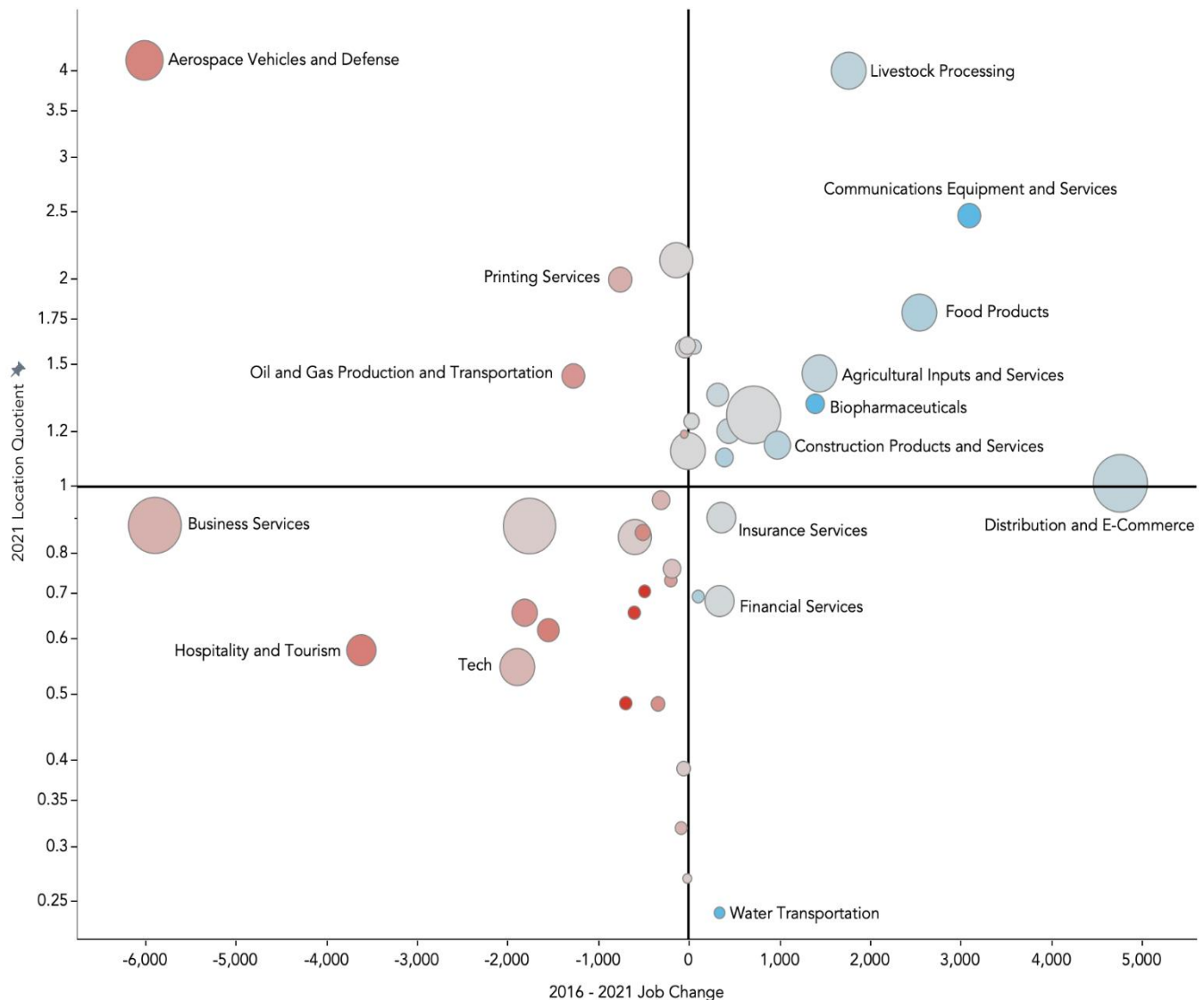
Clusters with the Highest Concentration in Kansas



Source: EMSI 2022.2

The chart below shows where Kansas clusters fall on the map that measures concentration (strength) and growth

Kansas Cluster Map



Source: EMSI 2022.2

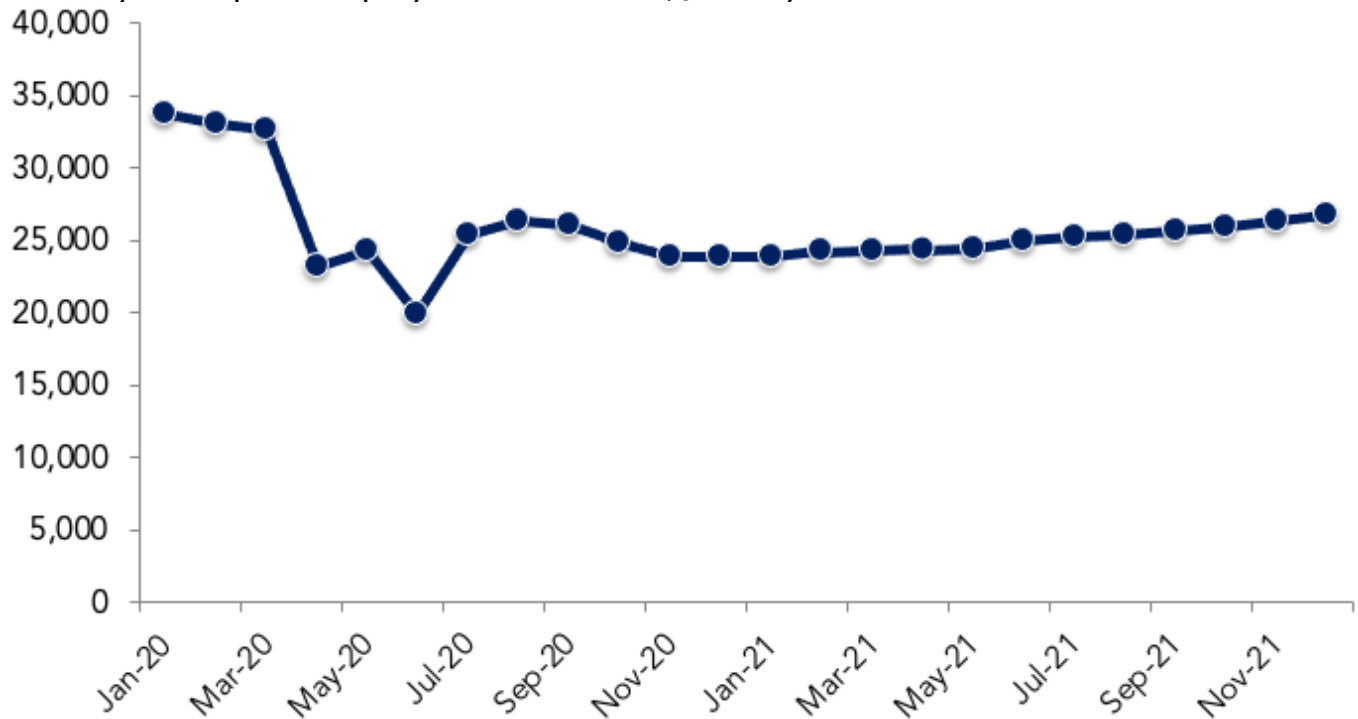
Note: The size of each cluster bubble is determined by the size of 2021 employment levels. The color of each cluster is determined by the employment percent growth rate from 2016 to 2021. Clusters with fewer than 250 employees were left off the chart.

Based on the cluster map, Kansas has several asset clusters (strong LQ over 1.0 and growing) and a few emerging (LQ below 1.0 but growing) clusters. Livestock processing and aerospace vehicles and defense are the two most concentrated clusters in the state. Livestock processing has added jobs in the last five years while aerospace has seen significant decline.

The aerospace cluster in Kansas is dominated by the aircraft manufacturing industry with also a presence of aircraft parts and engine manufacturing. The cluster appears to have experienced most of the job losses in 2020, which are likely pandemic related. A McKinsey report on the global aviation value chain found that aircraft manufacturers suffered \$12 billion in losses in 2020. Airlines suffered from low demand and orders for aircraft dropped about 55 percent. In 2021, the cluster in Kansas has still not recovered to pre-pandemic employment levels. McKinsey reports that global aircraft orders improved in 2021 but were still 10 percent

below 2019 levels. Until the airline industry recovers and can afford new purchases, this cluster will remain stunted.

Monthly Aerospace Employment in Kansas, January 2020 – December 2021



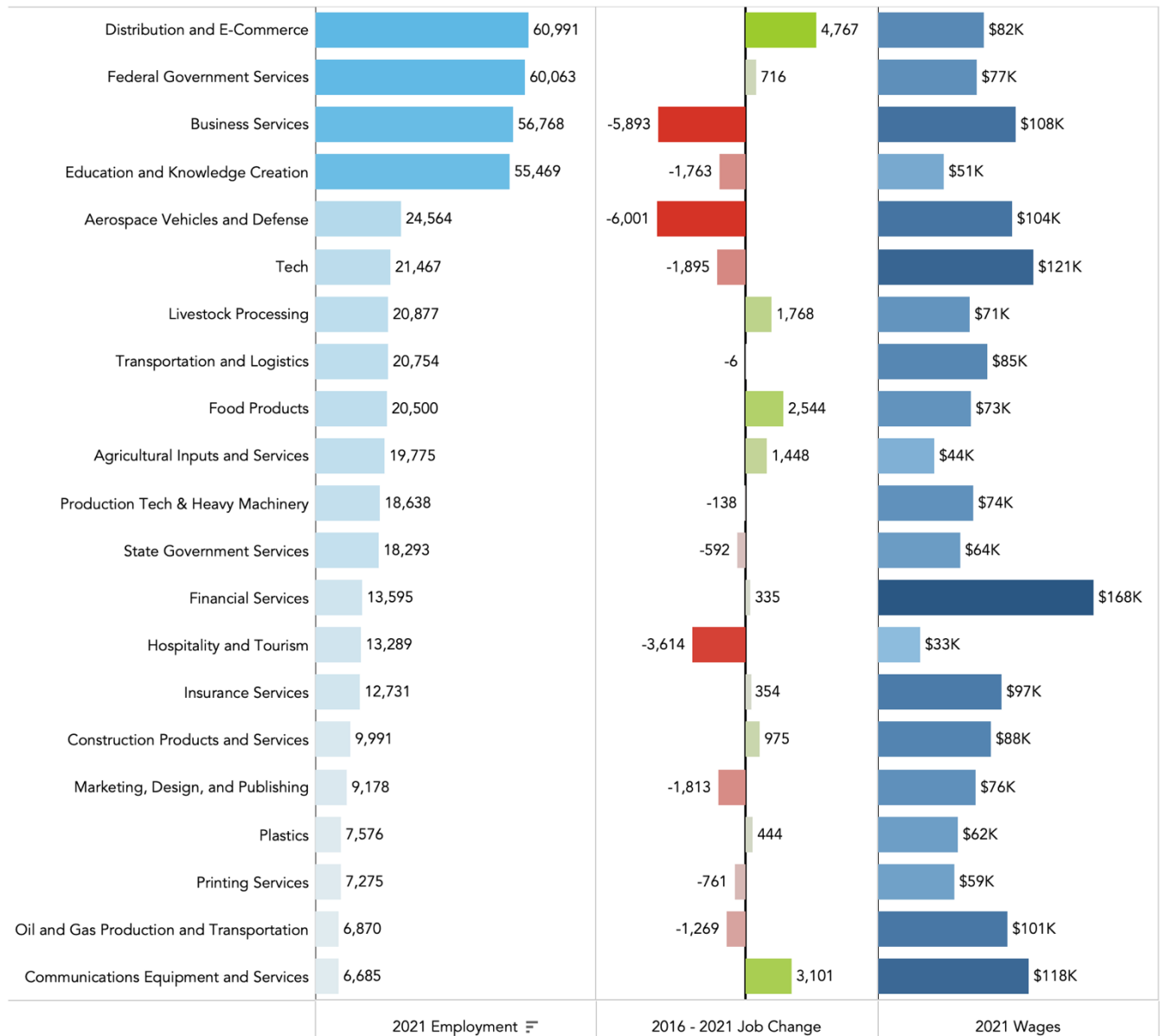
Source: EMSI 2022.3

The existing aerospace presence continues to be a strength for the state. In May 2022, Bombardier named Wichita, KS as the location for its US headquarters. Despite the announcement, corporate office employment overall in the state lost over 3,000 jobs in the last five years. This industry is a key component of the business services cluster. Many areas across the country lost jobs in this cluster as a result of the pandemic. Hospitality and tourism was another cluster hit hard across the nation. Interestingly, in many areas the tech cluster was able to grow jobs during this turbulent time. However, in Kansas, tech has lost almost 2,000 net jobs in the last five years.

On the positive side, many asset clusters exist in the state. The diverse group of clusters that are growing jobs and highly concentrated includes communications equipment and services, biopharmaceuticals, food products, construction products, and agriculture. High wage clusters such as insurance and financial services are emerging in the state.

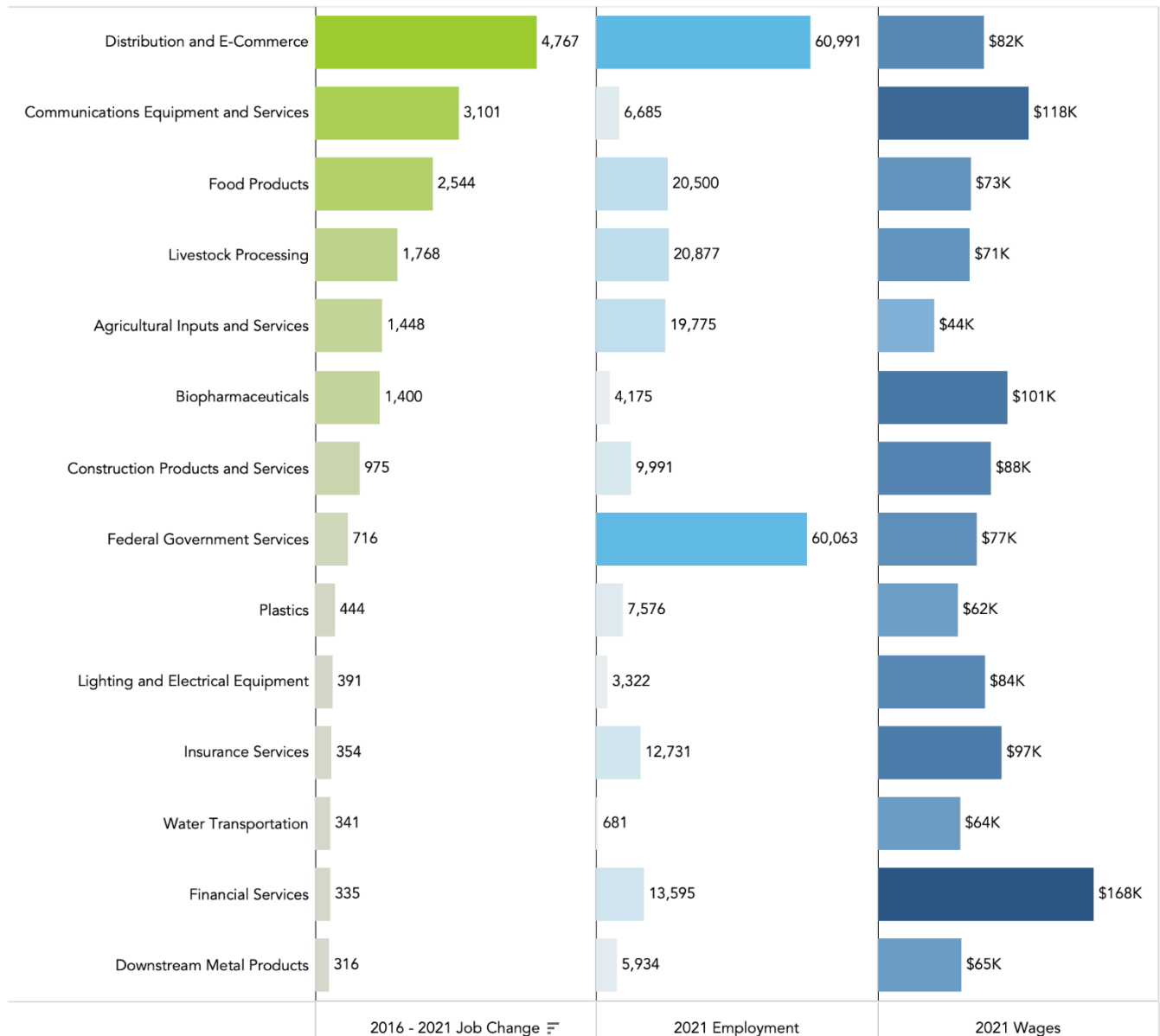
Distribution and e-commerce is the largest employing cluster. The cluster employs over 60,000 people in the state and almost 5,000 of those jobs were added in the last five years. Federal government services is the next top employing cluster. About half of the jobs in this cluster are military jobs based at the three military bases in the state. Business services and education and knowledge creation round out the top four clusters in terms of employment. In the education and knowledge creation cluster, employment at public universities has declined in recent years but is increasing in the research and development space. R&D in physical, engineering, and life sciences added over 800 jobs in the last five years. Among the top clusters about half are growing and the other half are losing jobs.

Top Traded Clusters by Employment in Kansas



Source: EMSI 2022.2

Fastest Growing Clusters in Kansas



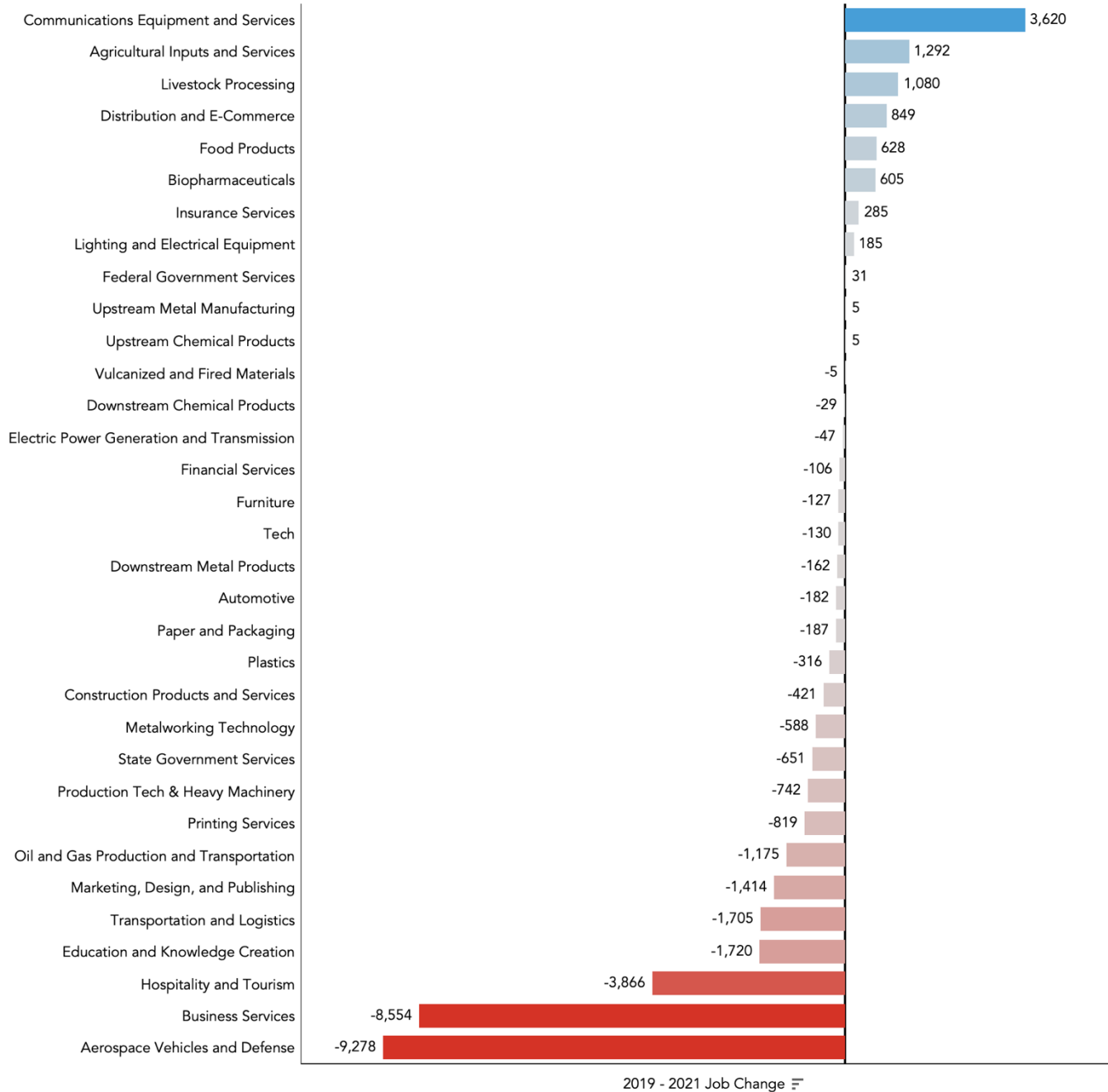
Source: EMSI 2022.2

Fourteen clusters in the state added more than 300 net jobs in the last five years. While communications equipment and services is not a large employing cluster, it has added half of its total jobs in the last five years. This growth has been spurred by the radio and television broadcasting and wireless communications equipment manufacturing industry. The wages in this cluster are also among the highest across clusters in the state.

Food products, livestock processing, and agricultural inputs and services were in the top five growing clusters. The growth in the food products cluster has been driven by job increases in the dog and cat food manufacturing and flour milling industries. Strong growth in the biopharmaceuticals, communications equipment and services, and financial services clusters is encouraging as these clusters offer employees average annual earnings over \$100,000.

Given the unique disruption of COVID-19 on the economy in 2020, it was important to determine if some of the job changes were occurring because of the pandemic. When comparing 2019 to 2021 job levels, there were some modest gains in a couple industries and a large gain in the communications equipment and services cluster. Biopharmaceuticals may have experienced a pandemic bump due to increased research for vaccines and treatments. The major declines during this time were in education and knowledge creation, business services, aerospace, and hospitality and tourism. In education, many campuses had to release staff that supported on-campus services while classes moved online. In hospitality, it was losses in the hotel industry and casinos that drove most of the decline in employment.

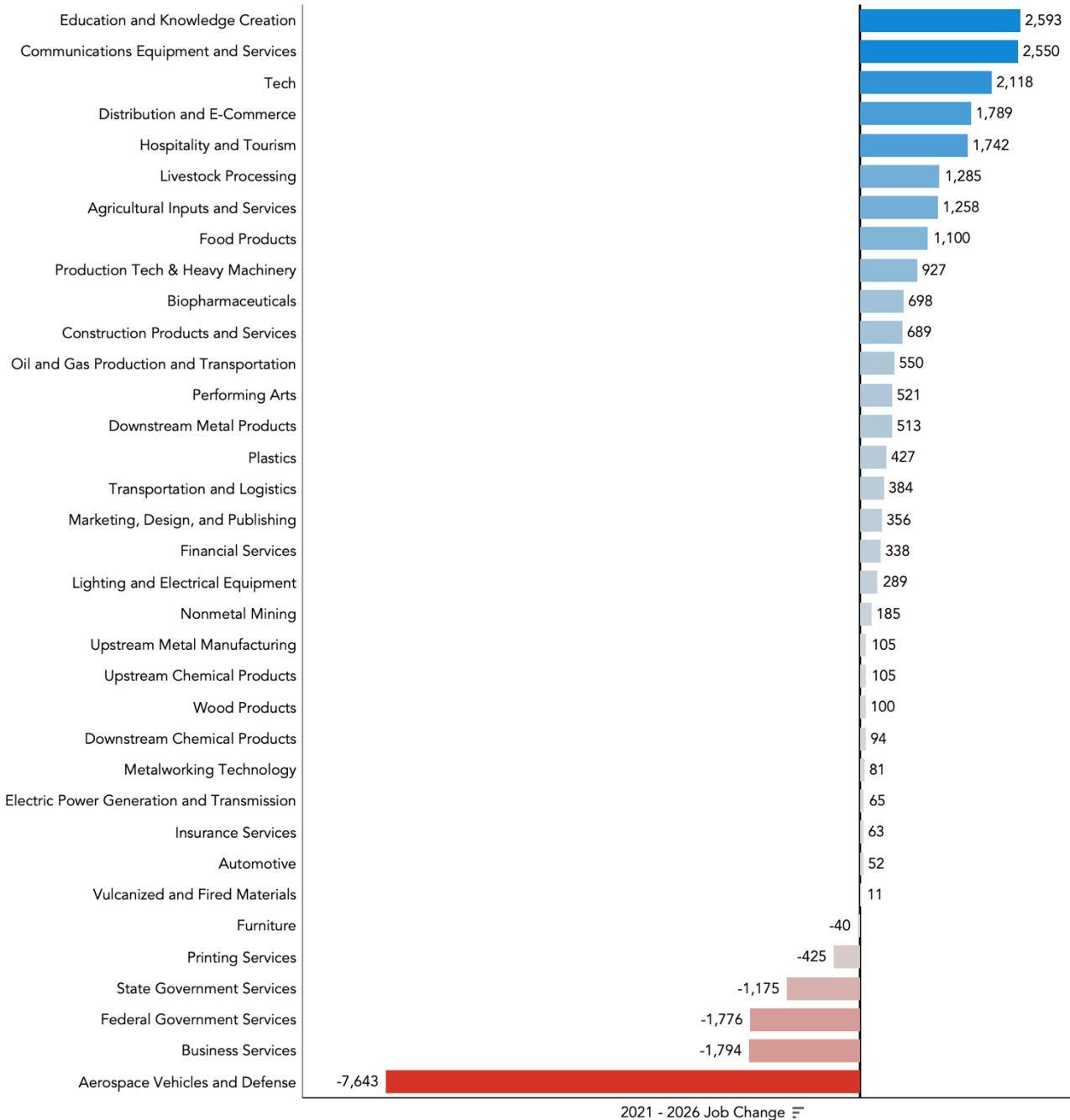
Pandemic Employment Impacts in Kansas



Source: EMSI 2022.2

Predictive models generated by EMSI review the 5-, 10-, and 15-year historical job trends to make estimations on future growth. Based on these models, most of the state's clusters will experience job growth in the next five years. Education and knowledge creation is predicted to add the most jobs in the next five years and recover to above its pre-pandemic levels. Tech, communications equipment, biopharmaceuticals, production tech, and financial services are all high wage clusters that are expected to continue to grow. Government jobs are expected to decline in the next five years. Aerospace is not expected to regain all the jobs that were lost during the pandemic.

Predicted Employment Change in Kansas



Source: EMSI 2022.2

Where Does Opportunity Lie?

Kansas has many opportunities for growth, both within industries that already have a strong presence in the state and with new clusters that are demonstrating emerging strengths.

Important Clusters for the Next Decade

- Aerospace Vehicles and Defense
- Livestock Processing
- Communication Equipment and Services
- Production Tech & Heavy Machinery
- Food Products
- Agriculture Inputs and Services
- Biopharmaceuticals
- Food Processing and Manufacturing
- Insurance Services

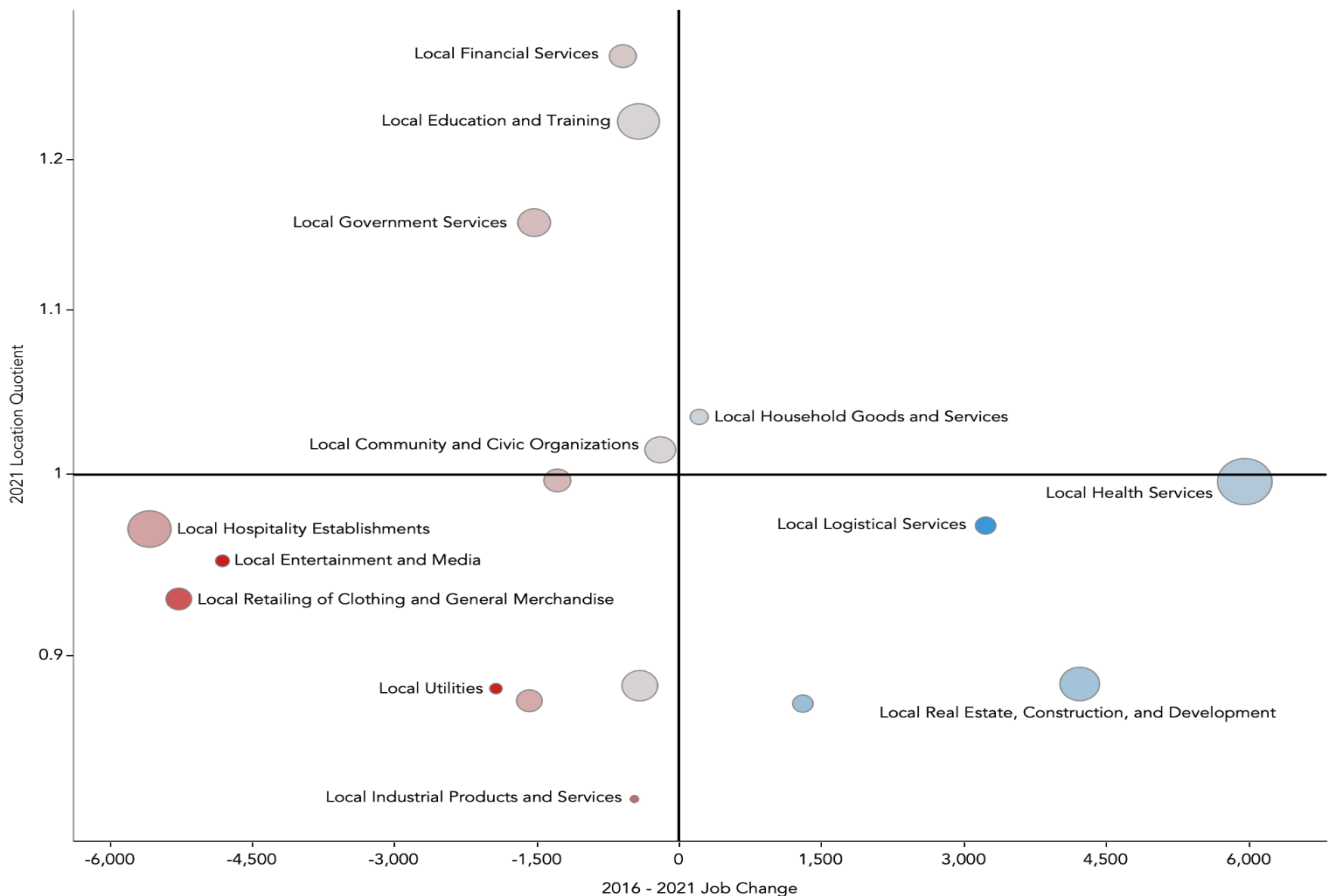
Emerging Cluster Where Nurturing Could Result in Increased Growth

- Downstream Metal Products
- Plastics
- Construction Products and Services
- Distribution and E-Commerce
- Lighting and Electrical Equipment
- Insurance Services
- Financial Services

Local Clusters

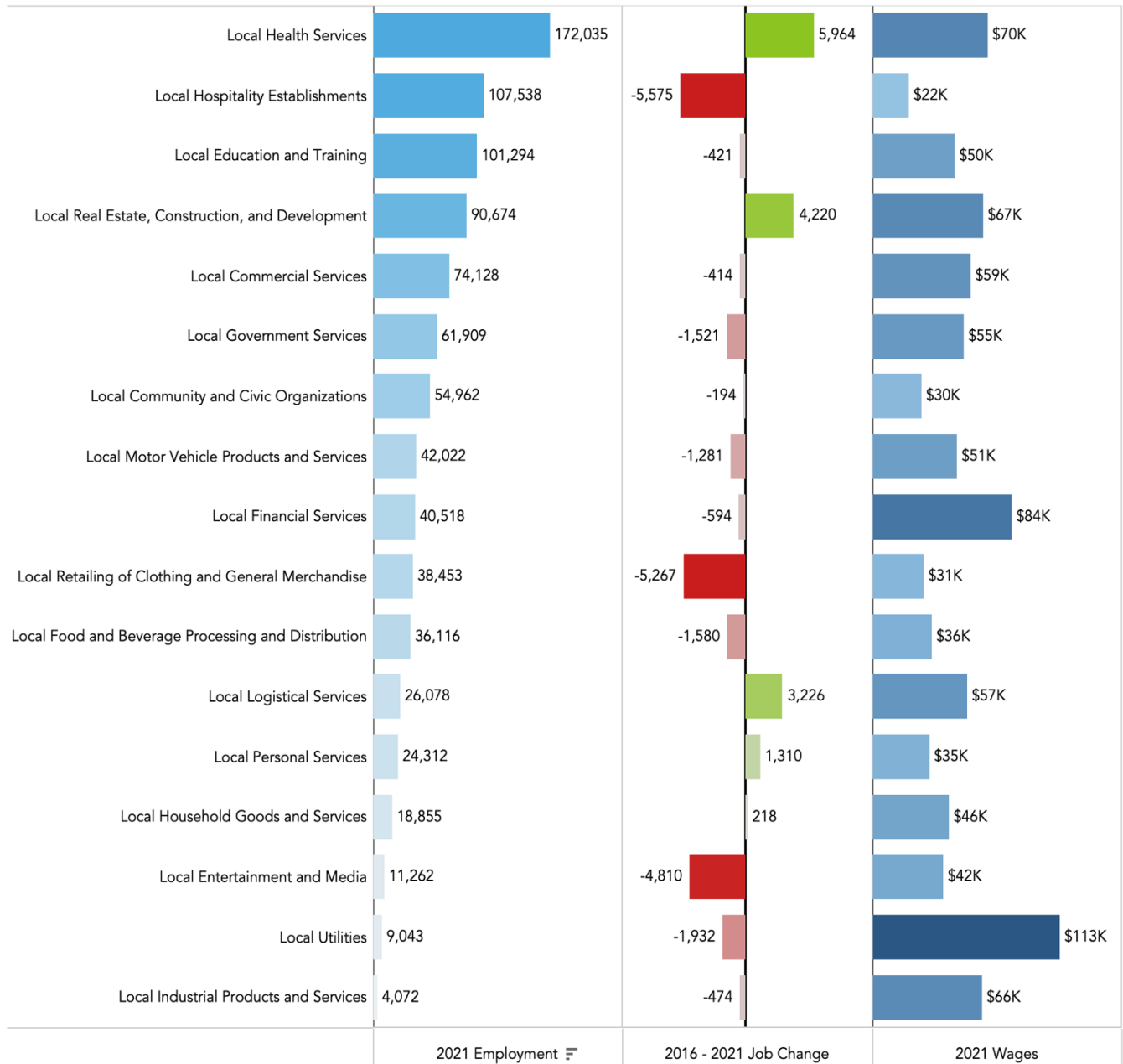
Kansas Local Cluster Map

Local clusters account for a large portion of the workforce and are also experiencing workforce challenges. Often without well-functioning local clusters it can be difficult to recruit traded clusters to a region. Local clusters were in general more impacted by the pandemic lockdowns. While consumers still spent money on goods that kept traded clusters operating, local event venues and restaurants and other non-essential operations suffered. A few local clusters managed to add jobs in the last five years. Local health services add the most with almost 6,000 net new jobs. Local real estate, construction, and development also fared well adding over 4,200 jobs. Many of the local clusters have lower wages than most of the traded clusters in Kansas.



Source: EMSI 2022.2

Kansas Local Clusters



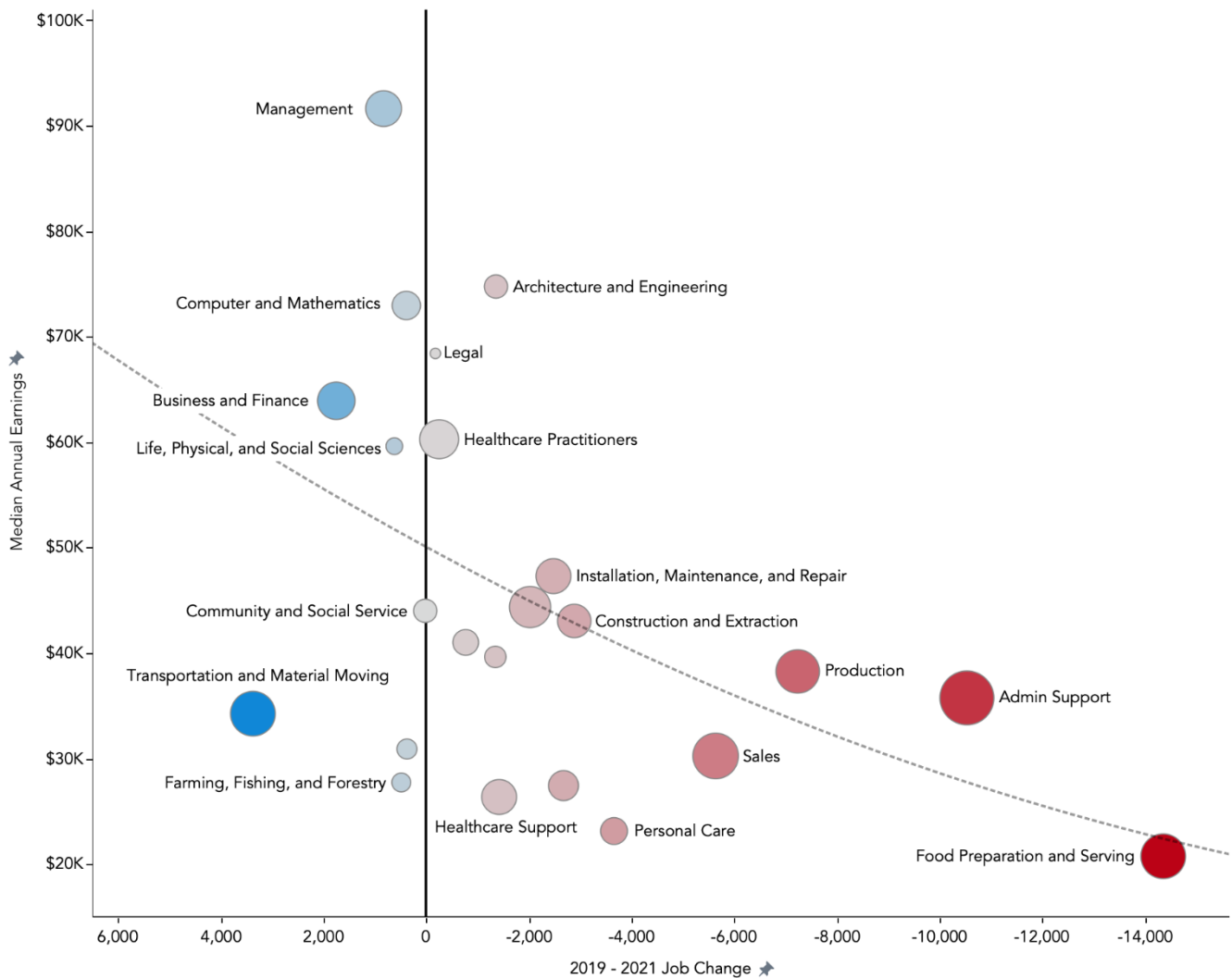
Source: EMSI 2022.2

Appendix 2: Kansas Occupation Trends

The 2021 update to the Kansas Chamber Workforce Strategy, *The Challenge to Compete*, provided extensive information on the Kansas workforce. In this section, provides a deeper look at data trends in occupations to help understand where the greatest demands for workers will be in the coming years.

No discussion of the current workforce is complete without considering the major disruptions that occurred because of the COVID-19 pandemic. When we look at the changes in net jobs over the last two years, we see several occupation groups that have still not recovered to pre-pandemic levels in Kansas. The nature of what industries were shut down resulted in the occupation groups with the highest losses also being those that earn the lowest in wages. Meanwhile, high-wage and professional service jobs have almost recovered or even added jobs through the pandemic. One lower wage occupation group performed very strongly during the pandemic and that was transportation and material moving because of the increase in shipping demands from online shopping.

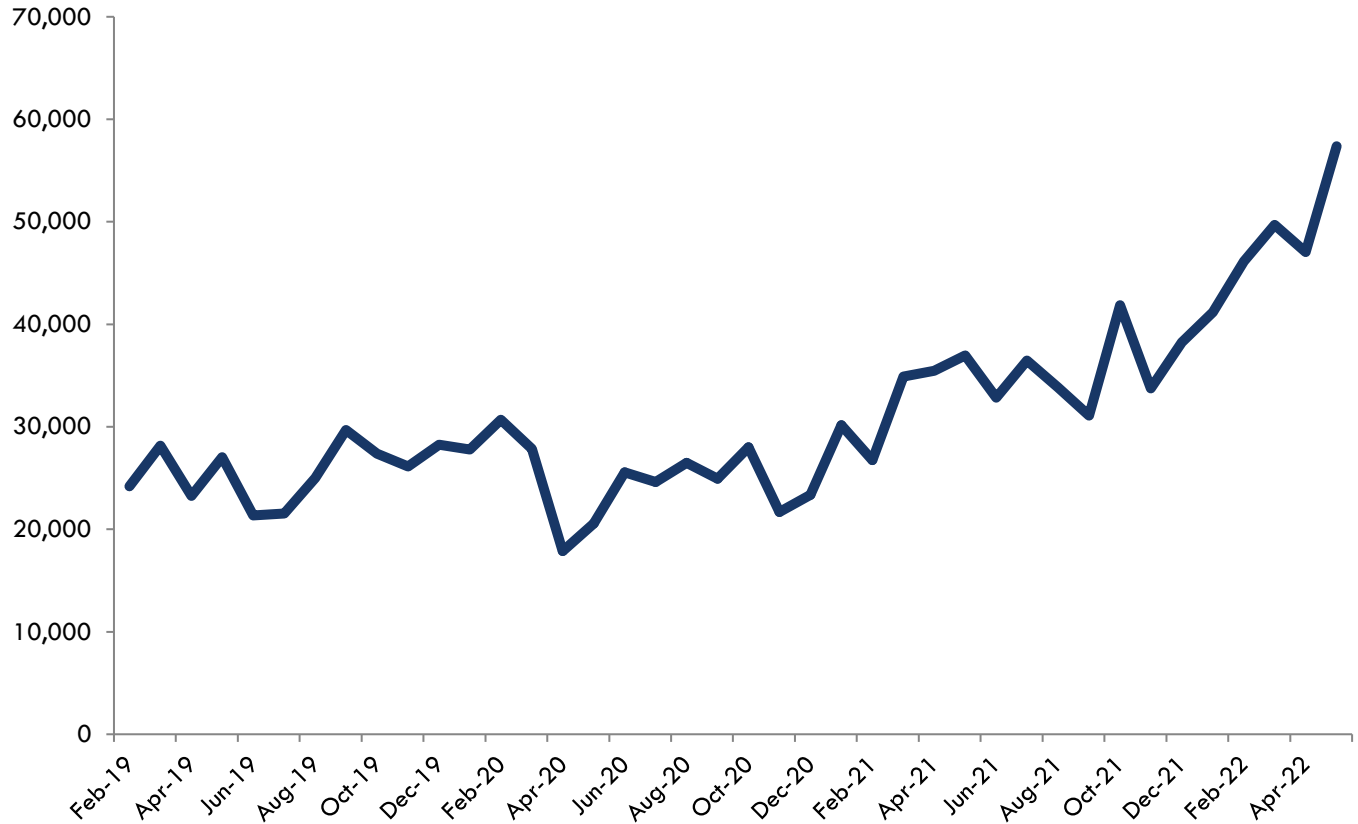
Kansas Pandemic Job Change by Occupation



Source: EMSI 2022.2

Whether it's building back jobs that were lost or companies that are growing, there is currently demand across the Kansas economy for workers. We can see that companies are working hard to fill their gaps by evaluating online job postings. Unique job postings in Kansas are up higher (almost double) than even pre-pandemic levels.

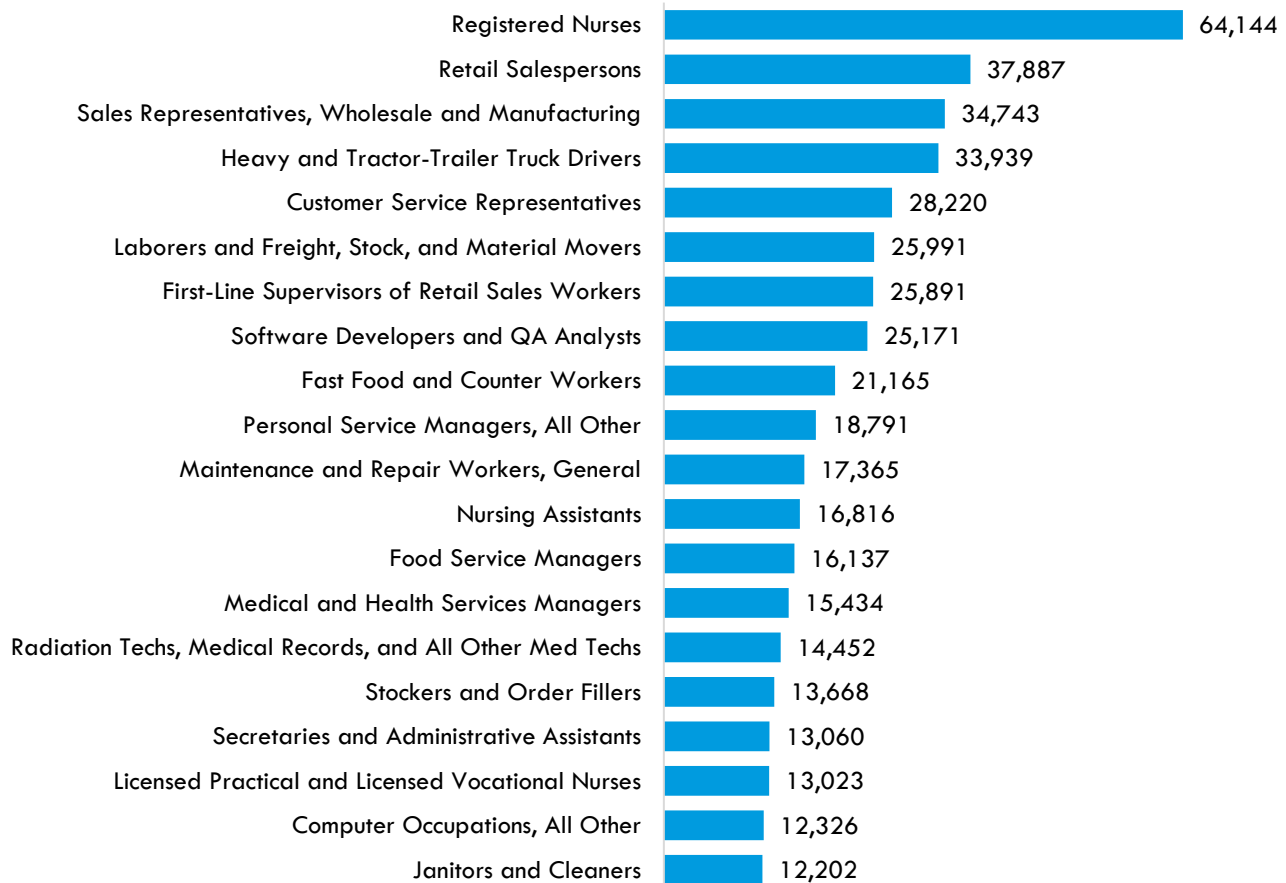
Kansas Unique Job Postings by Month



Source: EMSI 2022.2

Looking at the top job postings by occupation we see that demand is strong in healthcare (particularly nursing), tech, food service, and retail. However, the results show a shortage across occupations, industries, and skills level.

Kansas Top Unique Job Postings by Occupation, Feb 2019- May 2022

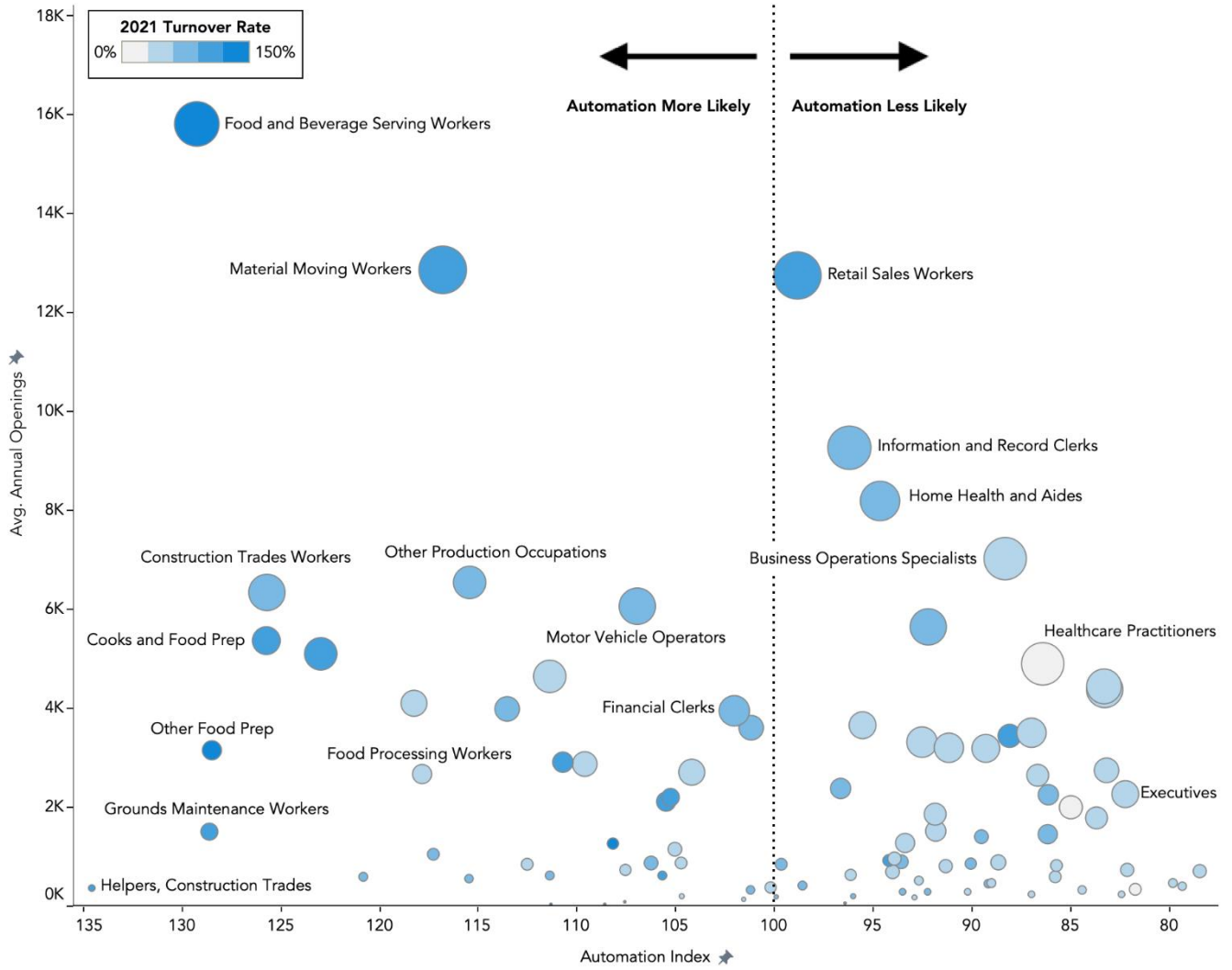


Source: EMSI 2022.2

Other data that can help understand demand is the average number of annual openings. This is a calculation of the jobs needed to be added each year to replace retiring workers and keep pace with growth. When we also combined this data with the automation index (an occupation is more likely to be automated if the value is higher than 100), we see that many of the jobs that have the most needs are those most likely to be automated.

For workforce efforts the goal is to train and provide job openings that provide long-range opportunities. Therefore, the jobs that have high annual openings but have a lower automation index offer the best long-range opportunities. In Kansas, this includes healthcare practitioners and assistants and business operations specialists. This data can also be used to determine the jobs most at risk of automation and where workers currently in these fields might need to be upskilled for the jobs of the future.

Kansas Top Occupations by Openings and Automation Index



Source: EMSI 2022.2

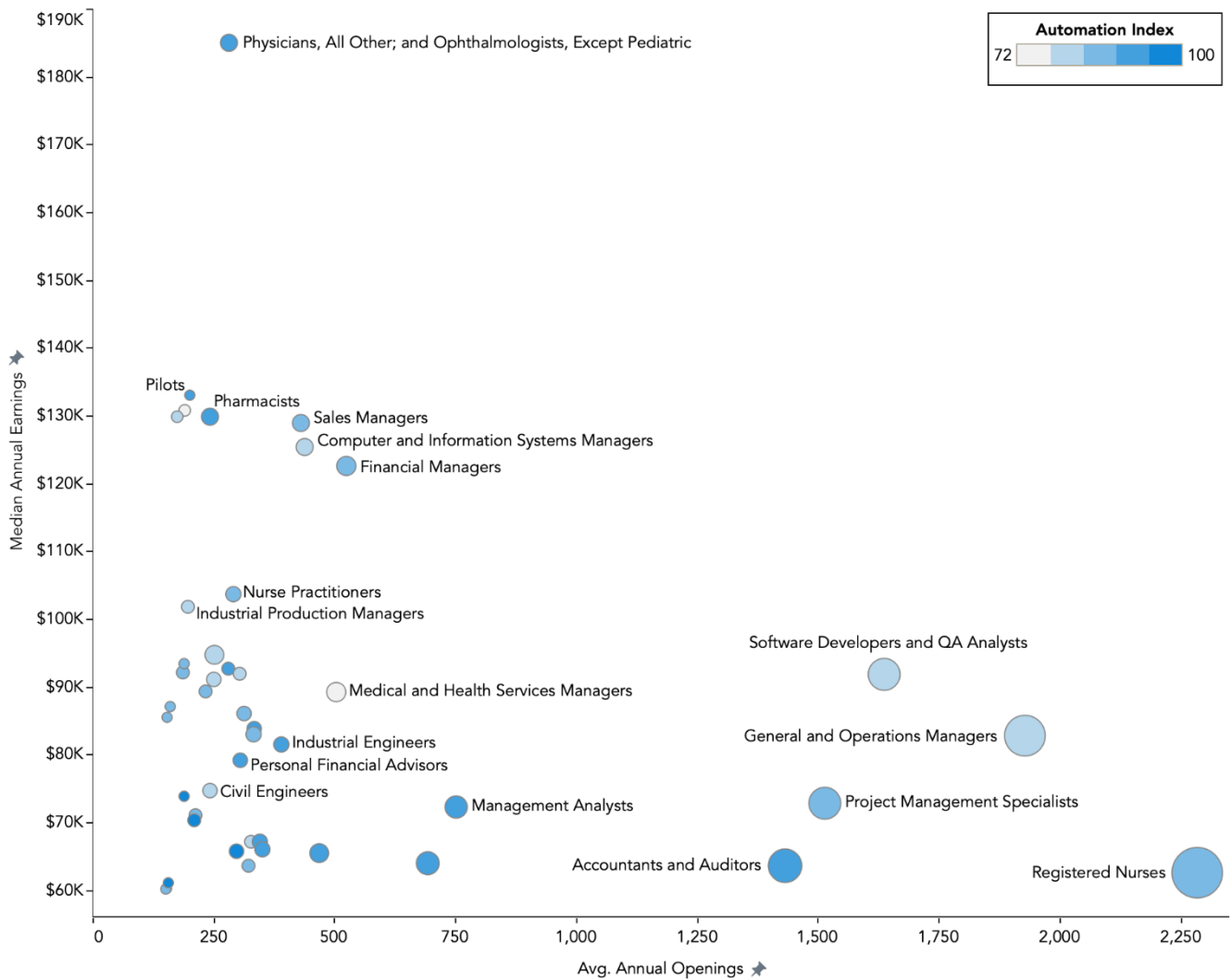
Kansas Top Occupations by Openings and Annual Earnings



Source: EMSI 2022.2

Most of the job openings are more prevalent in lower wage occupations. Since it can be hard to find the top needs that also pay higher wages and are not at a great threat of being automated, we filtered for jobs that pay more than \$60k per year, have an automation index below 100, and added jobs from 2016 to 2021. This group would be some of the best options for upskilling and recruiting workers. We also expanded the occupation list from the 3-digit SOC codes to the 5-digit to get a more granular understanding.

Kansas High Wage, Low Automation, and Growing Occupations

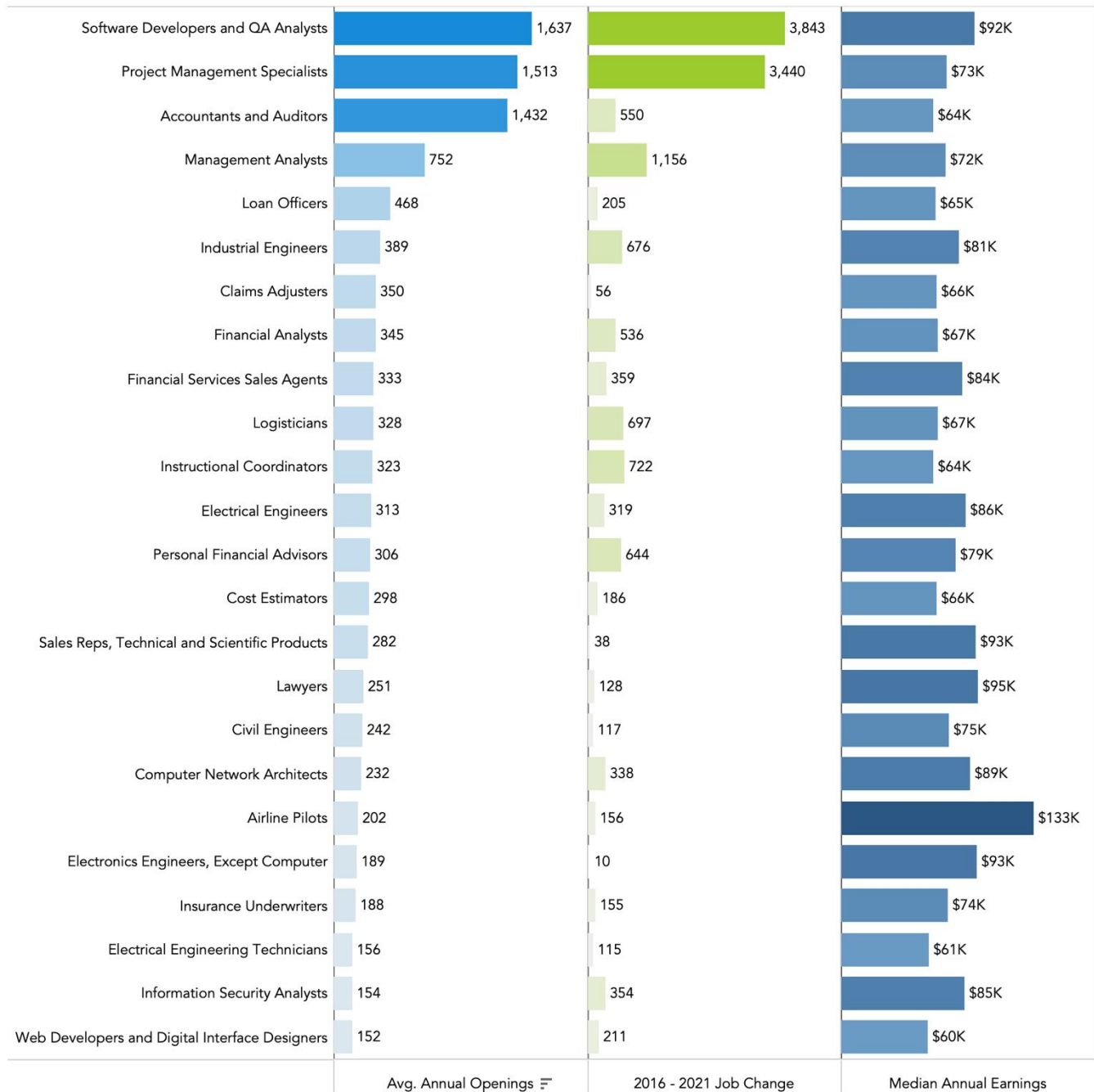


Source: EMSI 2022.2

Several of the top jobs in this search group are in healthcare. Healthcare can be a great track to a higher wage career and the local healthcare service cluster in Kansas has been growing rapidly. However, most of these higher paying healthcare jobs require an advanced degree. In order, to find the best opportunities and highest demand beyond healthcare, we removed healthcare jobs. In this group, we find several business support service jobs (accounting, software, web design, project management, cybersecurity, sales, logistics, and analytics).

Engineers and engineer technicians also account for many of these top non-healthcare jobs. Two types of sales occupations scored in the top demand group, for financial and scientific products. Only one occupation group, lawyers, requires an advanced degree to garner an entry-level position. In this list are several opportunities to earn above \$60,000 a year in Kansas that don't require an advanced degree.

Top Non-Healthcare Occupations by Demand, Growth and Wage in Kansas



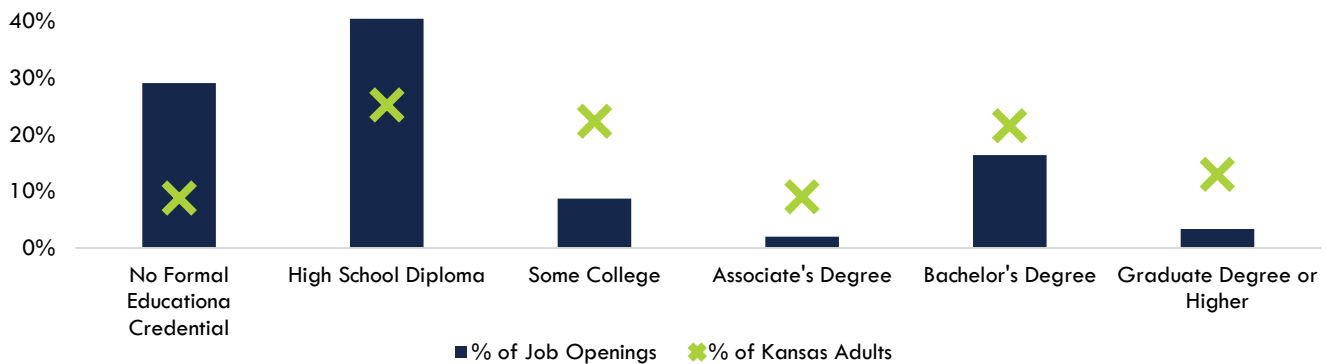
Source: EMSI 2022.2

Note: Manager positions scored well but were removed from the chart to focus more on entry to mid-level positions.

Many of these top demand occupations do usually require a bachelor's degree. This is changing as HR teams begin to shift away from focus on education to skills, but this is happening slowly. Only 6 of the top demand occupations don't usually require a bachelor's degree for an entry-level position. In Kansas, adults with a bachelor's or advanced degree make up a higher percentage of the population than the percentage of job openings that require these degrees. From a workforce perspective, it's important to understand the best job opportunities that exist below this education level. We created another top demand list of jobs that did not require a bachelor's degree or more education. To keep the list expansive, we

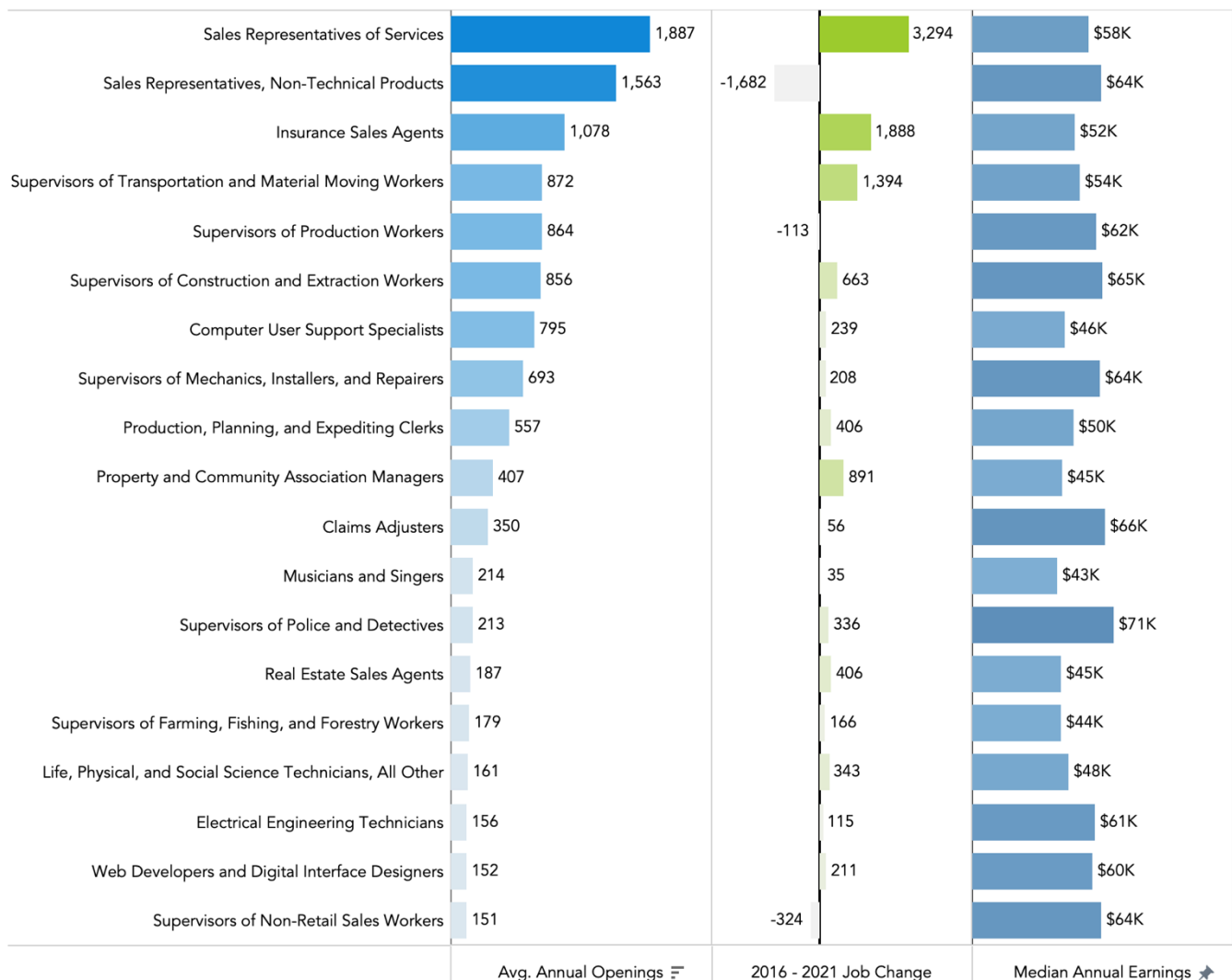
moved the median wage requirement to \$42,000 or jobs in the occupation could have declined in the last five years.

Kansas Average Annual Job Openings Vs Educational Attainment, 2021



Source: EMSI 2022.2

Kansas Top Occupations by Demand, Growth and Wage Requiring Less than a Bachelor's Degree



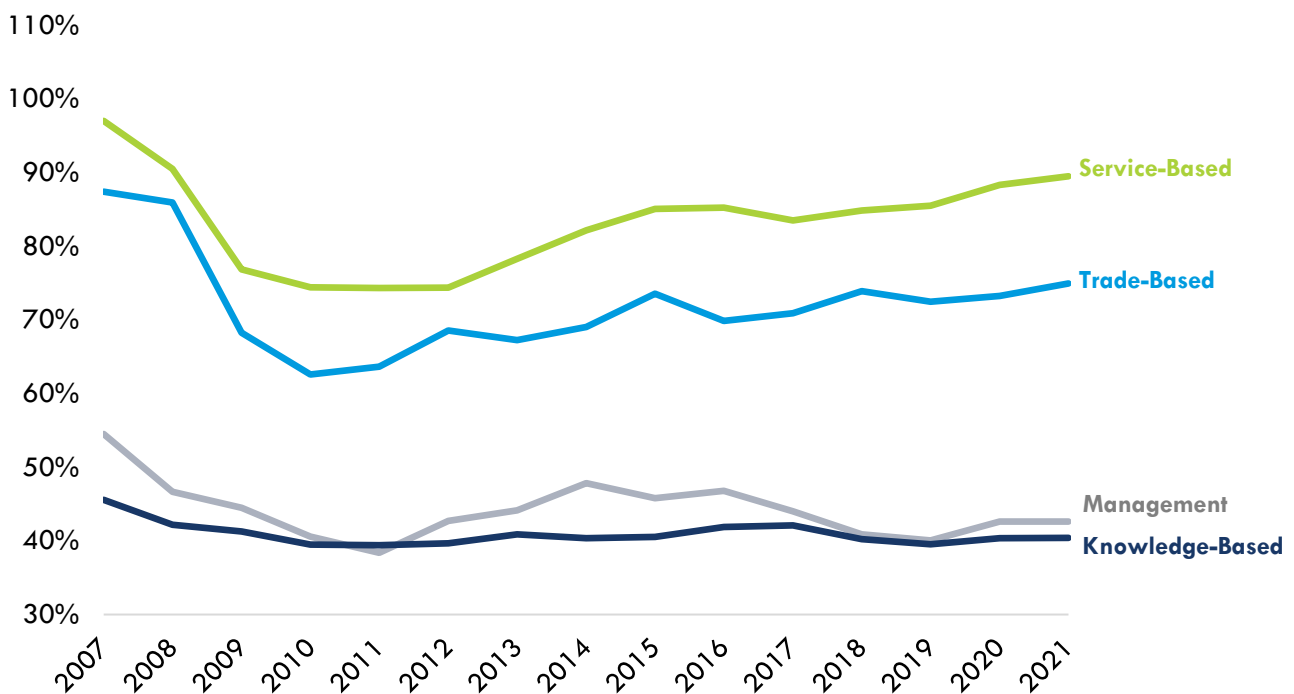
Source: EMSI 2022.2

Sales jobs in services, non-technical products, and insurance make up for the top three occupations that are in high demand that do not require higher levels of education. We also see that supervisors of transportation, construction and extraction, production, protective services, agriculture, and mechanics make the cut of being in high-demand and offering a solid median wage. This type of data may be helpful in showing students and parents the opportunities in the trades. If students enter the trades and move up into management, they could be earning as much as an accountant or a financial analyst.

Workforce Trends

In this section, we provide data to give a regional context to larger workforce trends happening across the nation. First, we looked at overall turnover rate. This is a metric of the number of separations divided by the total number of jobs. Separations are counted when a social security number is removed from a company’s payroll.

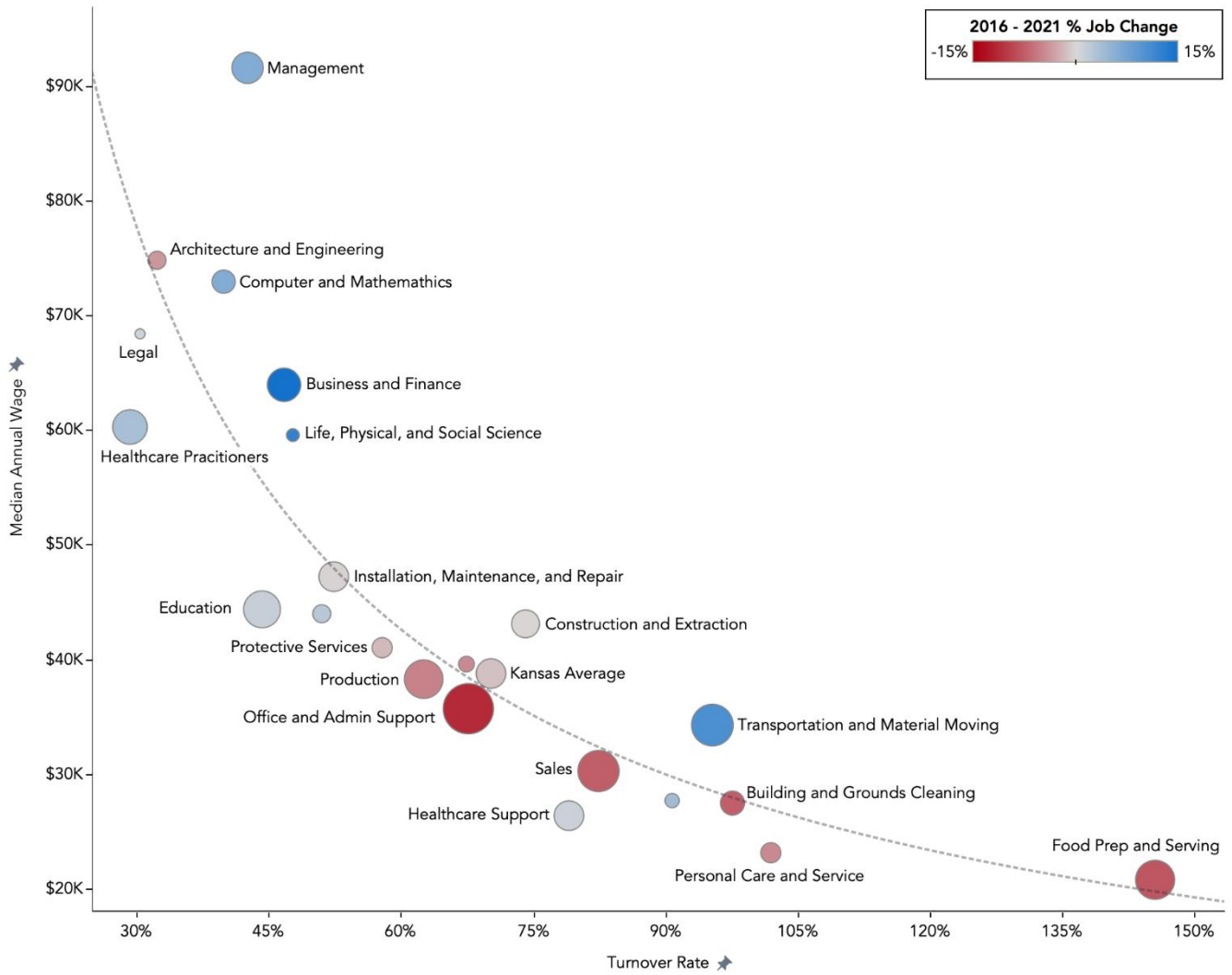
Kansas Turnover Rate by Job Type, 2007-2021



Source: EMSI 2022.2

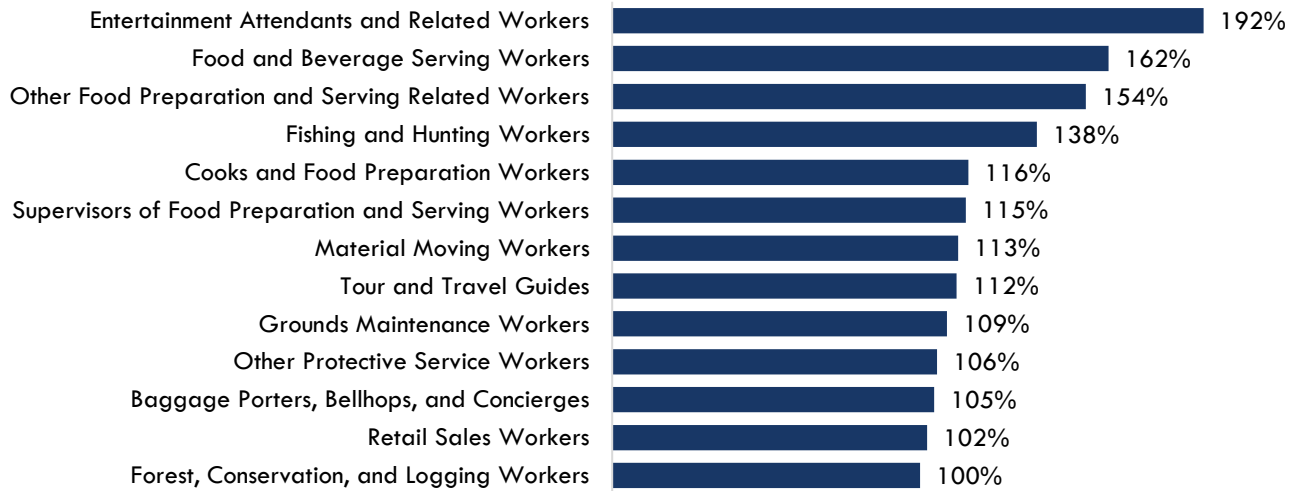
In Kansas, turnover decreased significantly in the aftermath of the Great Recession as workers who had jobs held on to them. Then there was an increase in turnover as the recovery continued. Since the pandemic there has been a slight uptick in turnover in the state but overall, the turnover rate is not as high as it was in 2007. Turnover rates are the highest in service-based occupations. Trades like mechanics, production work, and welders have a lower turnover than service jobs. Knowledge based jobs like engineers and software developers have the lowest rate of turnover in Kansas, even lower than management positions. Turnover rates in Kansas are highly correlated with the median annual wage of an occupation.

Kansas 2-Digit Occupations by Turnover Rates and Median Wages, 2021



Source: EMSI 2022.2

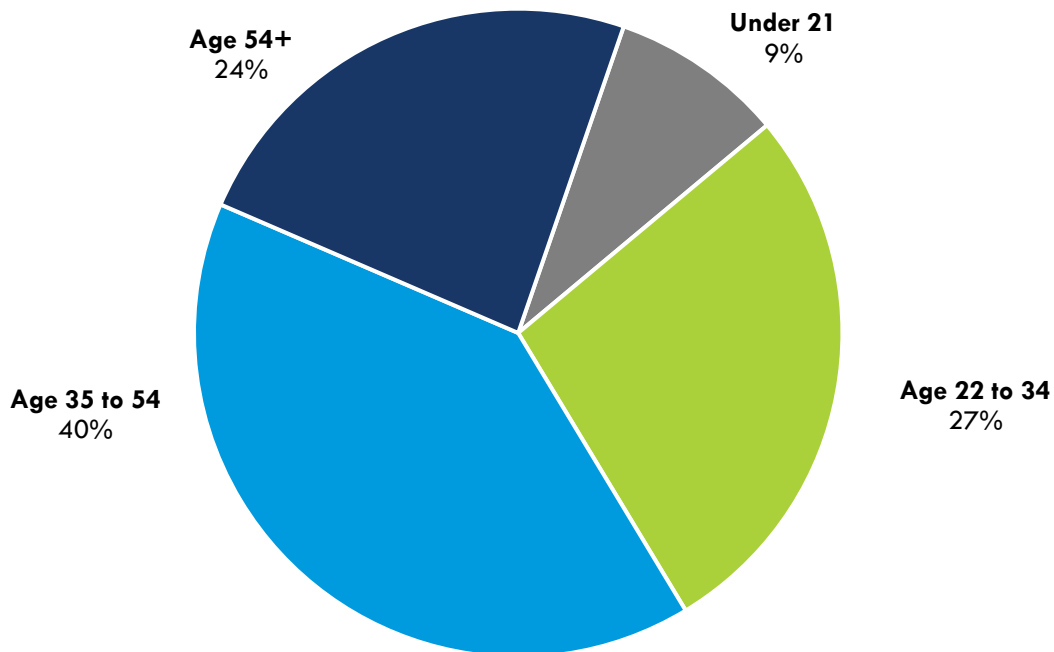
Kansas 3-Digit Occupations with Highest Turnover Rates, 2021



Source: EMSI 2022.2

One of the post-pandemic trends in workforce has been the high rates of retirement in Baby Boomers. The large scale of retiring workers has created greater voids in the workforce than there are younger workers to replace. These exiting workers also have an abundance of institutional knowledge at a company or in an industry that is difficult to recreate. A workforce with a large percentage of workers over the age of 55 is at a higher risk of workers retiring and companies struggling to replace them. In Kansas, about 24 percent of the workforce is over the age of 55.

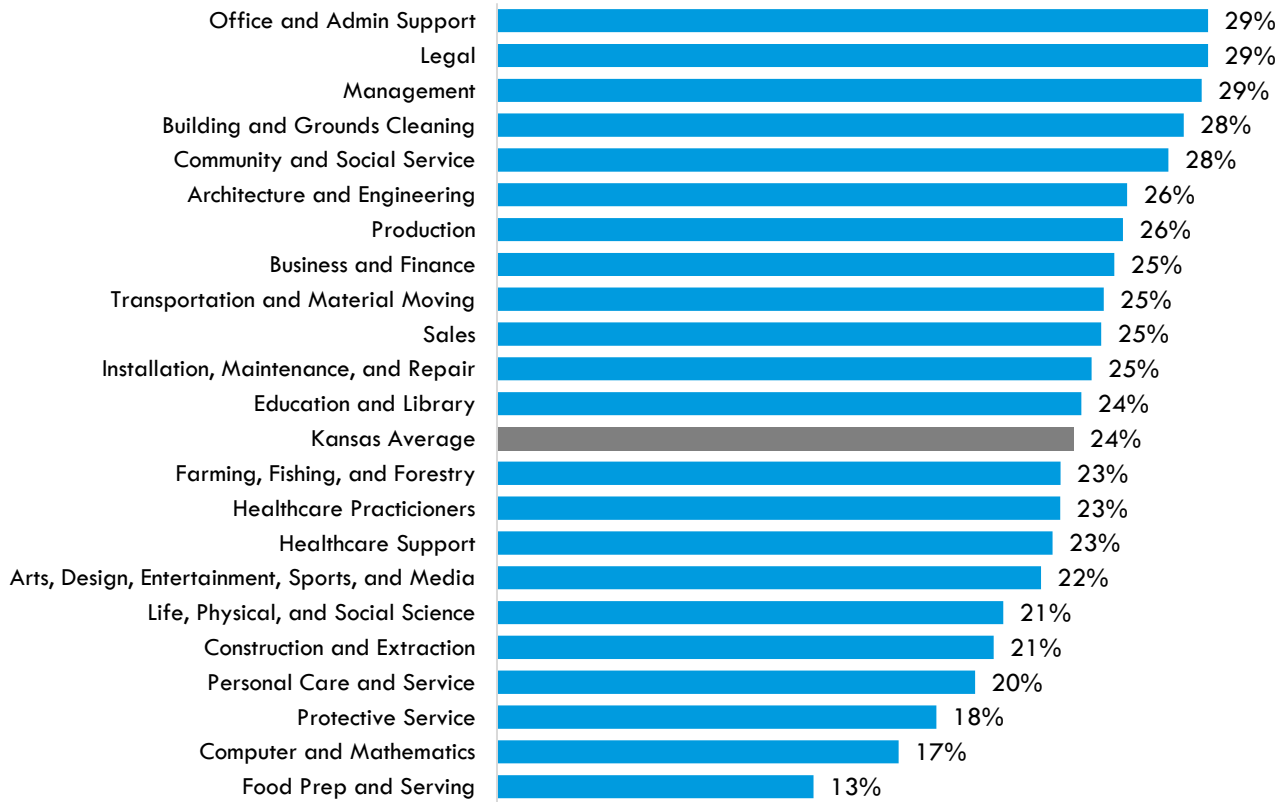
Kansas Workforce by Age, 2021



Source: EMSI 2022.2

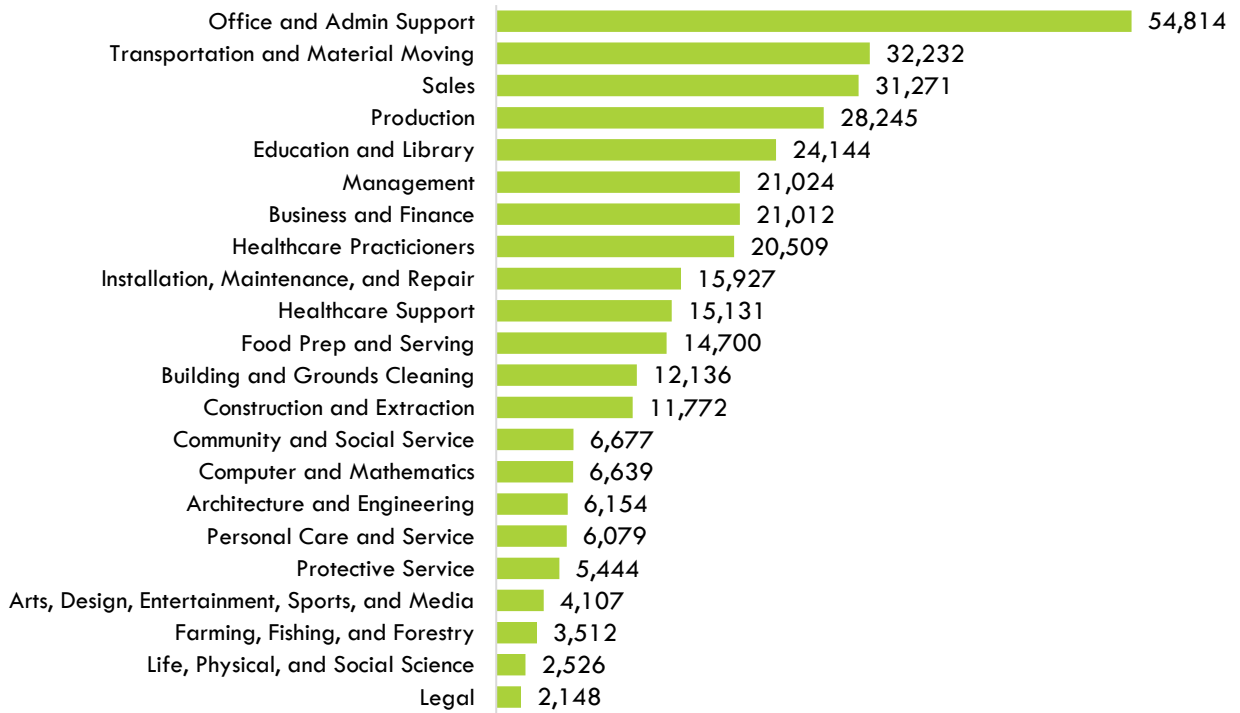
Some occupations have even greater levels of workers over the age of 55 and are at even higher retirement risk. Architecture and engineering, production, business and finance, and installation and repair jobs have higher percentages of workers over age 55 than the state average. In terms of raw numbers, administrative support, transportation, and sales jobs in Kansas have the most workers nearing retirement. Many of these jobs already face workforce challenges that will be exacerbated by retiring workers. It is important that workforce development professionals are working to fill these upcoming gaps.

Kansas Occupations by Percentage of Workers Age 55+, 2021



Source: EMSI 2022.2

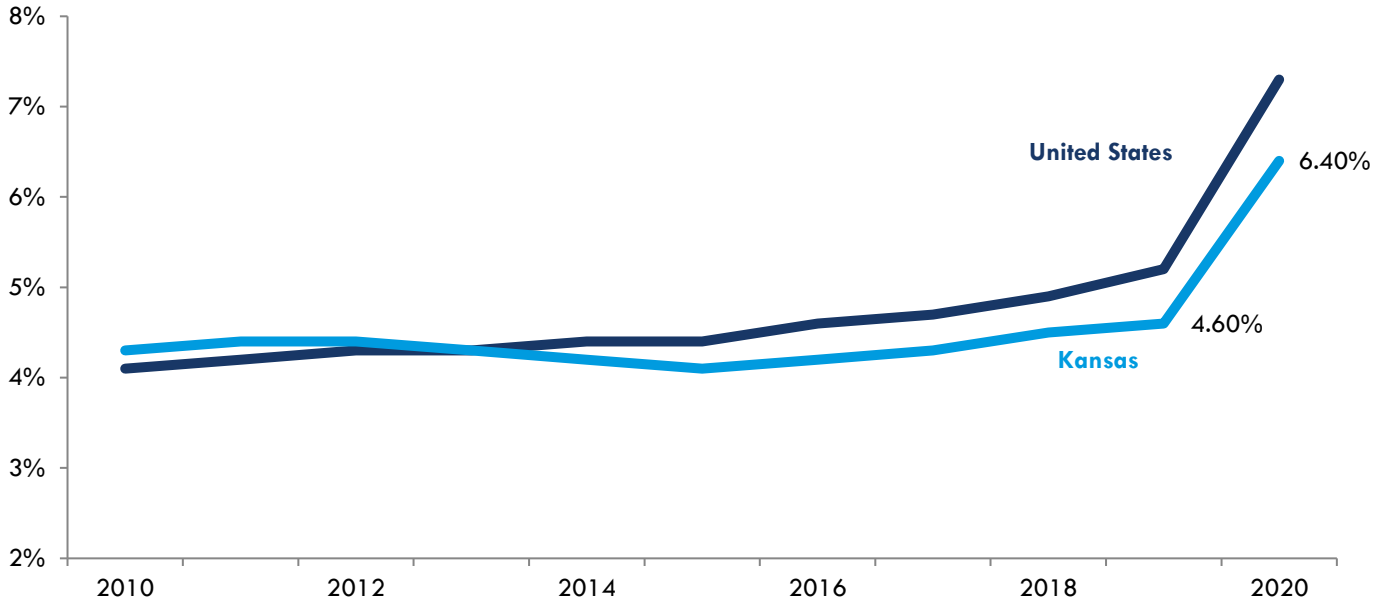
Kansas Occupations by Number of Workers Age 55+, 2021



Source: EMSI 2022.2

Another workforce trend is workers who work entirely from home has increased. This flexibility has given some workers the chance to relocate to lower cost markets or be closer to family. Research shows some mid-sized metros gained some new residents from the pandemic and remote work. Using 5-year average data from the American Community Survey at the US Census Bureau, we can see that people working from home was on a slow upward trajectory that skyrocketed during the pandemic. In Kansas, the number of people working from home increased almost two percentage points. The pandemic showed how feasible working from home can be for certain jobs. This combined with a tight job market means workers are using their leverage to continue working from home. With these trends, businesses might not be building large corporate headquarters and could limit the economic development market.

Percentage of Workforce Working from Home, 2010-2020

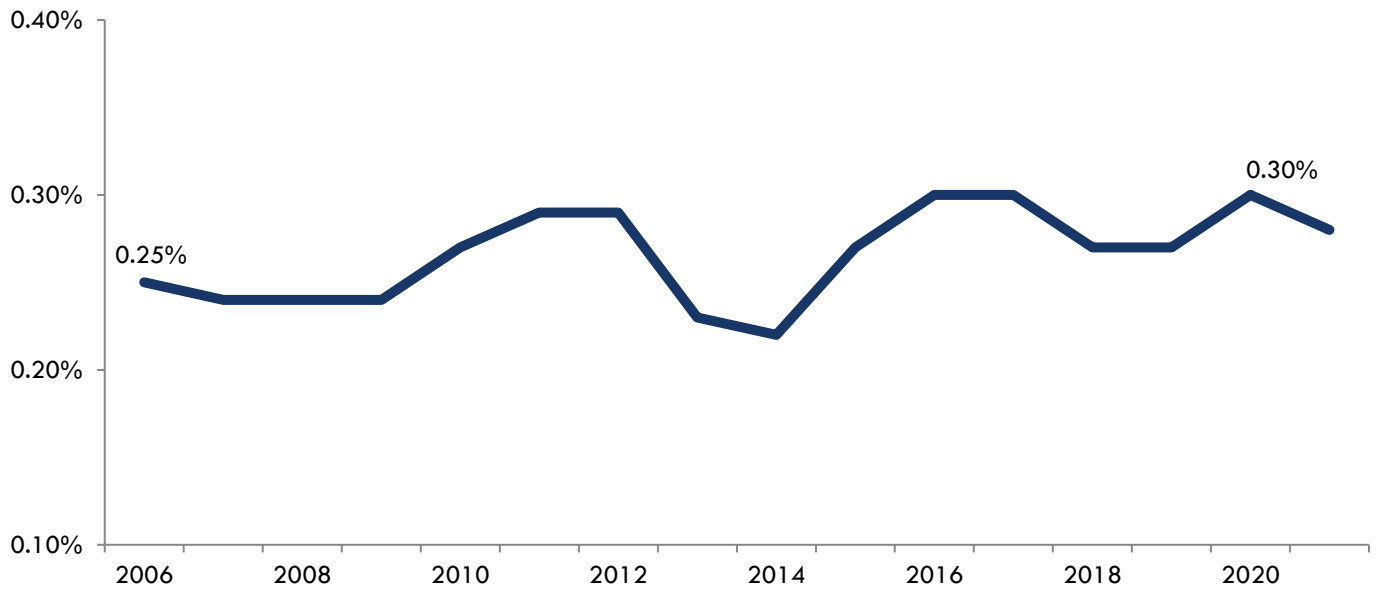


Source: US Census Bureau

Gig work and entrepreneurship have also pulled some workers out of the traditional economy. Data on new entrepreneurship shows that more people in Kansas are choosing to start their own business. In 2020, the rate of entrepreneurship in Kansas was at its highest level. In 2021, the rate dropped slightly but remained high.

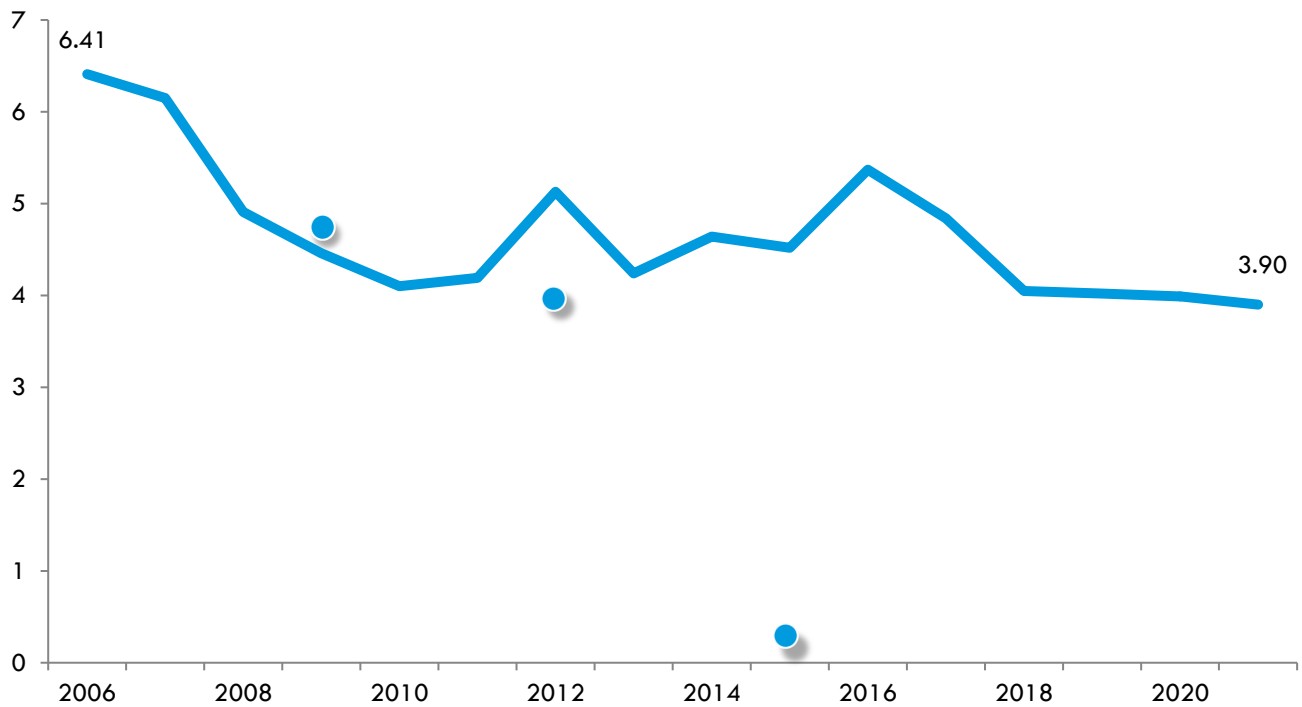
When looking at the startup job creation rate, the average number of jobs created by startups in their first year, we see that the number of employees per startup is trending down. Researchers believe this is likely due to the increase in gig work, solo-preneurship, and contract work. This can be concerning because new businesses are often the companies that create net new jobs in an economy. If startups are increasing but hiring fewer workers, there may be less churn and innovation in an economy.

Kansas Rate of New Entrepreneurs, 2006-2021



Source: Kauffman Foundation (2022)

Kansas Startup Early Job Creation Rate, 2006-2021



Source: Kauffman Foundation (2022)

Appendix 3: Traded Cluster Industry Groupings

Industry	Traded Cluster Grouping
Search, Detection, Navigation, Guidance, Aeronautical, and Nautical System and Instrument Manufacturing	Aerospace Vehicles and Defense
Aircraft Manufacturing	Aerospace Vehicles and Defense
Aircraft Engine and Engine Parts Manufacturing	Aerospace Vehicles and Defense

Other Aircraft Parts and Auxiliary Equipment Manufacturing	Aerospace Vehicles and Defense
Guided Missile and Space Vehicle Manufacturing	Aerospace Vehicles and Defense
Guided Missile and Space Vehicle Propulsion Unit and Propulsion Unit Parts Manufacturing	Aerospace Vehicles and Defense
Other Guided Missile and Space Vehicle Parts and Auxiliary Equipment Manufacturing	Aerospace Vehicles and Defense
Crop Production	Agricultural Inputs and Services
Animal Production	Agricultural Inputs and Services
Cotton Ginning	Agricultural Inputs and Services
Soil Preparation, Planting, and Cultivating	Agricultural Inputs and Services
Crop Harvesting, Primarily by Machine	Agricultural Inputs and Services
Postharvest Crop Activities (except Cotton Ginning)	Agricultural Inputs and Services
Farm Labor Contractors and Crew Leaders	Agricultural Inputs and Services
Farm Management Services	Agricultural Inputs and Services
Support Activities for Animal Production	Agricultural Inputs and Services
Nitrogenous Fertilizer Manufacturing	Agricultural Inputs and Services
Fertilizer (Mixing Only) Manufacturing	Agricultural Inputs and Services
All Other Miscellaneous Textile Product Mills	Apparel
Cut and Sew Apparel Contractors	Apparel
Men's and Boys' Cut and Sew Apparel Manufacturing	Apparel
Women's, Girls', and Infants' Cut and Sew Apparel Manufacturing	Apparel
Other Cut and Sew Apparel Manufacturing	Apparel
Apparel Accessories and Other Apparel Manufacturing	Apparel
Iron Foundries	Automotive
Steel Investment Foundries	Automotive
Steel Foundries (except Investment)	Automotive
Nonferrous Metal Die-Casting Foundries	Automotive
Aluminum Foundries (except Die-Casting)	Automotive
Other Nonferrous Metal Foundries (except Die-Casting)	Automotive
Custom Roll Forming	Automotive
Automobile Manufacturing	Automotive
Light Truck and Utility Vehicle Manufacturing	Automotive
Heavy Duty Truck Manufacturing	Automotive
Motor Vehicle Body Manufacturing	Automotive

Motor Vehicle Gasoline Engine and Engine Parts Manufacturing	Automotive
Motor Vehicle Electrical and Electronic Equipment Manufacturing	Automotive
Motor Vehicle Steering and Suspension Components (except Spring) Manufacturing	Automotive
Motor Vehicle Brake System Manufacturing	Automotive
Motor Vehicle Transmission and Power Train Parts Manufacturing	Automotive
Motor Vehicle Seating and Interior Trim Manufacturing	Automotive
Motor Vehicle Metal Stamping	Automotive
Other Motor Vehicle Parts Manufacturing	Automotive
Military Armored Vehicle, Tank, and Tank Component Manufacturing	Automotive
All Other Transportation Equipment Manufacturing	Automotive
Medicinal and Botanical Manufacturing	Biopharmaceuticals
Pharmaceutical Preparation Manufacturing	Biopharmaceuticals
In-Vitro Diagnostic Substance Manufacturing	Biopharmaceuticals
Biological Product (except Diagnostic) Manufacturing	Biopharmaceuticals
Taxi Service	Business Services
Limousine Service	Business Services
All Other Transit and Ground Passenger Transportation	Business Services
Data Processing, Hosting, and Related Services	Information Technology and Analytical Instruments
Passenger Car Leasing	Business Services
Lessors of Nonfinancial Intangible Assets (except Copyrighted Works)	Business Services
All Other Legal Services	Business Services
Payroll Services	Business Services
Architectural Services	Business Services
Landscape Architectural Services	Business Services
Engineering Services	Business Services
Drafting Services	Business Services
Custom Computer Programming Services	Information Technology and Analytical Instruments
Computer Systems Design Services	Information Technology and Analytical Instruments
Computer Facilities Management Services	Information Technology and Analytical Instruments
Other Computer Related Services	Information Technology and Analytical Instruments
Administrative Management and General Management Consulting Services	Business Services
Human Resources Consulting Services	Business Services
Process, Physical Distribution, and Logistics Consulting Services	Business Services
Other Management Consulting Services	Business Services

Other Scientific and Technical Consulting Services	Business Services
Translation and Interpretation Services	Business Services
All Other Professional, Scientific, and Technical Services	Business Services
Offices of Bank Holding Companies	Business Services
Offices of Other Holding Companies	Business Services
Corporate, Subsidiary, and Regional Managing Offices	Business Services
Facilities Support Services	Business Services
Employment Placement Agencies	Business Services
Executive Search Services	Business Services
Professional Employer Organizations	Business Services
Telephone Answering Services	Business Services
Telemarketing Bureaus and Other Contact Centers	Business Services
Convention and Trade Show Organizers	Business Services
Bituminous Coal and Lignite Surface Mining	Coal Mining
Bituminous Coal Underground Mining	Coal Mining
Anthracite Mining	Coal Mining
Support Activities for Coal Mining	Coal Mining
Telephone Apparatus Manufacturing	Communications Equipment and Services
Radio and Television Broadcasting and Wireless Communications Equipment Manufacturing	Communications Equipment and Services
Other Communications Equipment Manufacturing	Communications Equipment and Services
Primary Battery Manufacturing	Communications Equipment and Services
Cable and Other Subscription Programming	Communications Equipment and Services
Wireless Telecommunications Carriers (except Satellite)	Communications Equipment and Services
Satellite Telecommunications	Communications Equipment and Services
All Other Telecommunications	Communications Equipment and Services
Water Supply and Irrigation Systems	Construction Products and Services
Steam and Air-Conditioning Supply	Construction Products and Services
Industrial Building Construction	Construction Products and Services
Oil and Gas Pipeline and Related Structures Construction	Construction Products and Services
Power and Communication Line and Related Structures Construction	Construction Products and Services
Other Heavy and Civil Engineering Construction	Construction Products and Services
Asphalt Paving Mixture and Block Manufacturing	Construction Products and Services

Asphalt Shingle and Coating Materials Manufacturing	Construction Products and Services
Cement Manufacturing	Construction Products and Services
Concrete Block and Brick Manufacturing	Construction Products and Services
Concrete Pipe Manufacturing	Construction Products and Services
Lime Manufacturing	Construction Products and Services
Gypsum Product Manufacturing	Construction Products and Services
Cut Stone and Stone Product Manufacturing	Construction Products and Services
Mineral Wool Manufacturing	Construction Products and Services
All Other Miscellaneous Nonmetallic Mineral Product Manufacturing	Construction Products and Services
Power Boiler and Heat Exchanger Manufacturing	Construction Products and Services
Metal Tank (Heavy Gauge) Manufacturing	Construction Products and Services
Plumbing Fixture Fitting and Trim Manufacturing	Construction Products and Services
Fabricated Pipe and Pipe Fitting Manufacturing	Construction Products and Services
Furniture Merchant Wholesalers	Distribution and Electronic Commerce
Home Furnishing Merchant Wholesalers	Distribution and Electronic Commerce
Photographic Equipment and Supplies Merchant Wholesalers	Distribution and Electronic Commerce
Office Equipment Merchant Wholesalers	Distribution and Electronic Commerce
Computer and Computer Peripheral Equipment and Software Merchant Wholesalers	Distribution and Electronic Commerce
Other Commercial Equipment Merchant Wholesalers	Distribution and Electronic Commerce
Medical, Dental, and Hospital Equipment and Supplies Merchant Wholesalers	Distribution and Electronic Commerce
Ophthalmic Goods Merchant Wholesalers	Distribution and Electronic Commerce
Other Professional Equipment and Supplies Merchant Wholesalers	Distribution and Electronic Commerce
Metal Service Centers and Other Metal Merchant Wholesalers	Distribution and Electronic Commerce
Coal and Other Mineral and Ore Merchant Wholesalers	Distribution and Electronic Commerce
Electrical Apparatus and Equipment, Wiring Supplies, and Related Equipment Merchant Wholesalers	Distribution and Electronic Commerce
Household Appliances, Electric Housewares, and Consumer Electronics Merchant Wholesalers	Distribution and Electronic Commerce
Other Electronic Parts and Equipment Merchant Wholesalers	Distribution and Electronic Commerce
Construction and Mining (except Oil Well) Machinery and Equipment Merchant Wholesalers	Distribution and Electronic Commerce

Farm and Garden Machinery and Equipment Merchant Wholesalers	Distribution and Electronic Commerce
Industrial Machinery and Equipment Merchant Wholesalers	Distribution and Electronic Commerce
Industrial Supplies Merchant Wholesalers	Distribution and Electronic Commerce
Service Establishment Equipment and Supplies Merchant Wholesalers	Distribution and Electronic Commerce
Transportation Equipment and Supplies (except Motor Vehicle) Merchant Wholesalers	Distribution and Electronic Commerce
Sporting and Recreational Goods and Supplies Merchant Wholesalers	Distribution and Electronic Commerce
Toy and Hobby Goods and Supplies Merchant Wholesalers	Distribution and Electronic Commerce
Jewelry, Watch, Precious Stone, and Precious Metal Merchant Wholesalers	Distribution and Electronic Commerce
Printing and Writing Paper Merchant Wholesalers	Distribution and Electronic Commerce
Stationery and Office Supplies Merchant Wholesalers	Distribution and Electronic Commerce
Industrial and Personal Service Paper Merchant Wholesalers	Distribution and Electronic Commerce
Drugs and Druggists' Sundries Merchant Wholesalers	Distribution and Electronic Commerce
Piece Goods, Notions, and Other Dry Goods Merchant Wholesalers	Distribution and Electronic Commerce
Men's and Boys' Clothing and Furnishings Merchant Wholesalers	Distribution and Electronic Commerce
Women's, Children's, and Infants' Clothing and Accessories Merchant Wholesalers	Distribution and Electronic Commerce
Footwear Merchant Wholesalers	Distribution and Electronic Commerce
Poultry and Poultry Product Merchant Wholesalers	Distribution and Electronic Commerce
Fish and Seafood Merchant Wholesalers	Distribution and Electronic Commerce
Meat and Meat Product Merchant Wholesalers	Distribution and Electronic Commerce
Fresh Fruit and Vegetable Merchant Wholesalers	Distribution and Electronic Commerce
Other Farm Product Raw Material Merchant Wholesalers	Distribution and Electronic Commerce
Plastics Materials and Basic Forms and Shapes Merchant Wholesalers	Distribution and Electronic Commerce
Other Chemical and Allied Products Merchant Wholesalers	Distribution and Electronic Commerce
Petroleum Bulk Stations and Terminals	Distribution and Electronic Commerce
Petroleum and Petroleum Products Merchant Wholesalers (except Bulk Stations and Terminals)	Distribution and Electronic Commerce
Wine and Distilled Alcoholic Beverage Merchant Wholesalers	Distribution and Electronic Commerce
Farm Supplies Merchant Wholesalers	Distribution and Electronic Commerce
Book, Periodical, and Newspaper Merchant Wholesalers	Distribution and Electronic Commerce

Flower, Nursery Stock, and Florists' Supplies Merchant Wholesalers	Distribution and Electronic Commerce
Tobacco and Tobacco Product Merchant Wholesalers	Distribution and Electronic Commerce
Paint, Varnish, and Supplies Merchant Wholesalers	Distribution and Electronic Commerce
Other Miscellaneous Nondurable Goods Merchant Wholesalers	Distribution and Electronic Commerce
Business to Business Electronic Markets	Distribution and Electronic Commerce
Wholesale Trade Agents and Brokers	Distribution and Electronic Commerce
Electronic Shopping and Mail-Order Houses	Distribution and Electronic Commerce
General Warehousing and Storage	Distribution and Electronic Commerce
Refrigerated Warehousing and Storage	Distribution and Electronic Commerce
Farm Product Warehousing and Storage	Distribution and Electronic Commerce
Other Warehousing and Storage	Distribution and Electronic Commerce
Commercial Air, Rail, and Water Transportation Equipment Rental and Leasing	Distribution and Electronic Commerce
Construction, Mining, and Forestry Machinery and Equipment Rental and Leasing	Distribution and Electronic Commerce
Office Machinery and Equipment Rental and Leasing	Distribution and Electronic Commerce
Other Commercial and Industrial Machinery and Equipment Rental and Leasing	Distribution and Electronic Commerce
All Other Business Support Services	Distribution and Electronic Commerce
Packaging and Labeling Services	Distribution and Electronic Commerce
Petroleum Lubricating Oil and Grease Manufacturing	Downstream Chemical Products
Synthetic Dye and Pigment Manufacturing	Downstream Chemical Products
Paint and Coating Manufacturing	Downstream Chemical Products
Adhesive Manufacturing	Downstream Chemical Products
Soap and Other Detergent Manufacturing	Downstream Chemical Products
Polish and Other Sanitation Good Manufacturing	Downstream Chemical Products
Surface Active Agent Manufacturing	Downstream Chemical Products
Toilet Preparation Manufacturing	Downstream Chemical Products
Explosives Manufacturing	Downstream Chemical Products
Custom Compounding of Purchased Resins	Downstream Chemical Products
Photographic Film, Paper, Plate, and Chemical Manufacturing	Downstream Chemical Products

All Other Miscellaneous Chemical Product and Preparation Manufacturing	Downstream Chemical Products
Metal Kitchen Cookware, Utensil, Cutlery, and Flatware (except Precious) Manufacturing	Downstream Metal Products
Saw Blade and Handtool Manufacturing	Downstream Metal Products
Prefabricated Metal Building and Component Manufacturing	Downstream Metal Products
Fabricated Structural Metal Manufacturing	Downstream Metal Products
Metal Window and Door Manufacturing	Downstream Metal Products
Sheet Metal Work Manufacturing	Downstream Metal Products
Ornamental and Architectural Metal Work Manufacturing	Downstream Metal Products
Metal Can Manufacturing	Downstream Metal Products
Other Metal Container Manufacturing	Downstream Metal Products
Hardware Manufacturing	Downstream Metal Products
Small Arms Ammunition Manufacturing	Downstream Metal Products
Ammunition (except Small Arms) Manufacturing	Downstream Metal Products
Small Arms, Ordnance, and Ordnance Accessories Manufacturing	Downstream Metal Products
All Other Miscellaneous Fabricated Metal Product Manufacturing	Downstream Metal Products
Research and Development in Nanotechnology	Education and Knowledge Creation
Research and Development in Biotechnology (except Nanobiotechnology)	Education and Knowledge Creation
Research and Development in the Physical, Engineering, and Life Sciences (except Nanotechnology and Biotechnology)	Education and Knowledge Creation
Research and Development in the Social Sciences and Humanities	Education and Knowledge Creation
Junior Colleges	Education and Knowledge Creation
Colleges, Universities, and Professional Schools	Education and Knowledge Creation
Business and Secretarial Schools	Education and Knowledge Creation
Computer Training	Education and Knowledge Creation
Professional and Management Development Training	Education and Knowledge Creation
Flight Training	Education and Knowledge Creation
Apprenticeship Training	Education and Knowledge Creation
Language Schools	Education and Knowledge Creation
Exam Preparation and Tutoring	Education and Knowledge Creation
All Other Miscellaneous Schools and Instruction	Education and Knowledge Creation
Educational Support Services	Education and Knowledge Creation
Professional Organizations	Education and Knowledge Creation

Colleges, Universities, and Professional Schools (State Government)	Education and Knowledge Creation
All Other Schools and Educational Support Services (State Government)	Education and Knowledge Creation
Colleges, Universities, and Professional Schools (Local Government)	Education and Knowledge Creation
All Other Schools and Educational Support Services (Local Government)	Education and Knowledge Creation
Hydroelectric Power Generation	Electric Power Generation and Transmission
Fossil Fuel Electric Power Generation	Electric Power Generation and Transmission
Nuclear Electric Power Generation	Electric Power Generation and Transmission
Solar Electric Power Generation	Electric Power Generation and Transmission
Wind Electric Power Generation	Electric Power Generation and Transmission
Geothermal Electric Power Generation	Electric Power Generation and Transmission
Biomass Electric Power Generation	Electric Power Generation and Transmission
Other Electric Power Generation	Electric Power Generation and Transmission
Electric Bulk Power Transmission and Control	Electric Power Generation and Transmission
Hazardous Waste Collection	Environmental Services
Other Waste Collection	Environmental Services
Hazardous Waste Treatment and Disposal	Environmental Services
Solid Waste Combustors and Incinerators	Environmental Services
Other Nonhazardous Waste Treatment and Disposal	Environmental Services
Materials Recovery Facilities	Environmental Services
All Other Miscellaneous Waste Management Services	Environmental Services
US Postal Service	Federal Government Services
Federal Government, Civilian, Excluding Postal Service	Federal Government Services
Federal Government, Military	Federal Government Services
Monetary Authorities-Central Bank	Financial Services
Savings Institutions	Financial Services
Other Depository Credit Intermediation	Financial Services
Credit Card Issuing	Financial Services
Sales Financing	Financial Services
Consumer Lending	Financial Services
Real Estate Credit	Financial Services
International Trade Financing	Financial Services
Secondary Market Financing	Financial Services
All Other Nondepository Credit Intermediation	Financial Services

Mortgage and Nonmortgage Loan Brokers	Financial Services
Financial Transactions Processing, Reserve, and Clearinghouse Activities	Financial Services
Other Activities Related to Credit Intermediation	Financial Services
Investment Banking and Securities Dealing	Financial Services
Securities Brokerage	Financial Services
Commodity Contracts Dealing	Financial Services
Commodity Contracts Brokerage	Financial Services
Securities and Commodity Exchanges	Financial Services
Miscellaneous Intermediation	Financial Services
Portfolio Management	Financial Services
Investment Advice	Financial Services
Trust, Fiduciary, and Custody Activities	Financial Services
Miscellaneous Financial Investment Activities	Financial Services
Open-End Investment Funds	Financial Services
Other Financial Vehicles	Financial Services
Credit Bureaus	Financial Services
Finfish Fishing	Fishing and Fishing Products
Shellfish Fishing	Fishing and Fishing Products
Other Marine Fishing	Fishing and Fishing Products
Seafood Product Preparation and Packaging	Fishing and Fishing Products
Dog and Cat Food Manufacturing	Food Processing and Manufacturing
Other Animal Food Manufacturing	Food Processing and Manufacturing
Flour Milling	Food Processing and Manufacturing
Rice Milling	Food Processing and Manufacturing
Malt Manufacturing	Food Processing and Manufacturing
Wet Corn Milling	Food Processing and Manufacturing
Soybean and Other Oilseed Processing	Food Processing and Manufacturing
Fats and Oils Refining and Blending	Food Processing and Manufacturing
Breakfast Cereal Manufacturing	Food Processing and Manufacturing
Beet Sugar Manufacturing	Food Processing and Manufacturing
Cane Sugar Manufacturing	Food Processing and Manufacturing
Nonchocolate Confectionery Manufacturing	Food Processing and Manufacturing
Chocolate and Confectionery Manufacturing from Cacao Beans	Food Processing and Manufacturing

Confectionery Manufacturing from Purchased Chocolate	Food Processing and Manufacturing
Frozen Fruit, Juice, and Vegetable Manufacturing	Food Processing and Manufacturing
Frozen Specialty Food Manufacturing	Food Processing and Manufacturing
Fruit and Vegetable Canning	Food Processing and Manufacturing
Specialty Canning	Food Processing and Manufacturing
Dried and Dehydrated Food Manufacturing	Food Processing and Manufacturing
Fluid Milk Manufacturing	Food Processing and Manufacturing
Creamery Butter Manufacturing	Food Processing and Manufacturing
Cheese Manufacturing	Food Processing and Manufacturing
Dry, Condensed, and Evaporated Dairy Product Manufacturing	Food Processing and Manufacturing
Ice Cream and Frozen Dessert Manufacturing	Food Processing and Manufacturing
Frozen Cakes, Pies, and Other Pastries Manufacturing	Food Processing and Manufacturing
Cookie and Cracker Manufacturing	Food Processing and Manufacturing
Dry Pasta, Dough, and Flour Mixes Manufacturing from Purchased Flour	Food Processing and Manufacturing
Tortilla Manufacturing	Food Processing and Manufacturing
Roasted Nuts and Peanut Butter Manufacturing	Food Processing and Manufacturing
Other Snack Food Manufacturing	Food Processing and Manufacturing
Coffee and Tea Manufacturing	Food Processing and Manufacturing
Flavoring Syrup and Concentrate Manufacturing	Food Processing and Manufacturing
Mayonnaise, Dressing, and Other Prepared Sauce Manufacturing	Food Processing and Manufacturing
Spice and Extract Manufacturing	Food Processing and Manufacturing
Perishable Prepared Food Manufacturing	Food Processing and Manufacturing
All Other Miscellaneous Food Manufacturing	Food Processing and Manufacturing
Soft Drink Manufacturing	Food Processing and Manufacturing
Bottled Water Manufacturing	Food Processing and Manufacturing
Ice Manufacturing	Food Processing and Manufacturing
Breweries	Food Processing and Manufacturing
Wineries	Food Processing and Manufacturing

Distilleries	Food Processing and Manufacturing
Glass Container Manufacturing	Food Processing and Manufacturing
Grain and Field Bean Merchant Wholesalers	Food Processing and Manufacturing
Leather and Hide Tanning and Finishing	Footwear
Footwear Manufacturing	Footwear
Timber Tract Operations	Forestry
Forest Nurseries and Gathering of Forest Products	Forestry
Logging	Forestry
Support Activities for Forestry	Forestry
Manufactured Home (Mobile Home) Manufacturing	Furniture
Wood Kitchen Cabinet and Countertop Manufacturing	Furniture
Upholstered Household Furniture Manufacturing	Furniture
Nonupholstered Wood Household Furniture Manufacturing	Furniture
Metal Household Furniture Manufacturing	Furniture
Household Furniture (except Wood and Metal) Manufacturing	Furniture
Institutional Furniture Manufacturing	Furniture
Wood Office Furniture Manufacturing	Furniture
Office Furniture (except Wood) Manufacturing	Furniture
Showcase, Partition, Shelving, and Locker Manufacturing	Furniture
Mattress Manufacturing	Furniture
Hunting and Trapping	Hospitality and Tourism
Art Dealers	Hospitality and Tourism
Scenic and Sightseeing Transportation, Land	Hospitality and Tourism
Scenic and Sightseeing Transportation, Water	Hospitality and Tourism
Scenic and Sightseeing Transportation, Other	Hospitality and Tourism
Recreational Goods Rental	Hospitality and Tourism
Travel Agencies	Hospitality and Tourism
Tour Operators	Hospitality and Tourism
Convention and Visitors Bureaus	Hospitality and Tourism
All Other Travel Arrangement and Reservation Services	Hospitality and Tourism
Sports Teams and Clubs	Hospitality and Tourism
Racetracks	Hospitality and Tourism
Other Spectator Sports	Hospitality and Tourism
Museums	Hospitality and Tourism
Historical Sites	Hospitality and Tourism
Zoos and Botanical Gardens	Hospitality and Tourism

Nature Parks and Other Similar Institutions	Hospitality and Tourism
Amusement and Theme Parks	Hospitality and Tourism
Amusement Arcades	Hospitality and Tourism
Casinos (except Casino Hotels)	Hospitality and Tourism
Other Gambling Industries	Hospitality and Tourism
Skiing Facilities	Hospitality and Tourism
Marinas	Hospitality and Tourism
All Other Amusement and Recreation Industries	Hospitality and Tourism
Hotels (except Casino Hotels) and Motels	Hospitality and Tourism
Casino Hotels	Hospitality and Tourism
Bed-and-Breakfast Inns	Hospitality and Tourism
All Other Traveler Accommodation	Hospitality and Tourism
RV (Recreational Vehicle) Parks and Campgrounds	Hospitality and Tourism
Recreational and Vacation Camps (except Campgrounds)	Hospitality and Tourism
Rooming and Boarding Houses, Dormitories, and Workers' Camps	Hospitality and Tourism
Semiconductor Machinery Manufacturing	Information Technology and Analytical Instruments
Photographic and Photocopying Equipment Manufacturing	Information Technology and Analytical Instruments
Electronic Computer Manufacturing	Information Technology and Analytical Instruments
Computer Storage Device Manufacturing	Information Technology and Analytical Instruments
Computer Terminal and Other Computer Peripheral Equipment Manufacturing	Information Technology and Analytical Instruments
Audio and Video Equipment Manufacturing	Information Technology and Analytical Instruments
Bare Printed Circuit Board Manufacturing	Information Technology and Analytical Instruments
Semiconductor and Related Device Manufacturing	Information Technology and Analytical Instruments
Capacitor, Resistor, Coil, Transformer, and Other Inductor Manufacturing	Information Technology and Analytical Instruments
Electronic Connector Manufacturing	Information Technology and Analytical Instruments
Printed Circuit Assembly (Electronic Assembly) Manufacturing	Information Technology and Analytical Instruments
Other Electronic Component Manufacturing	Information Technology and Analytical Instruments
Electromedical and Electrotherapeutic Apparatus Manufacturing	Information Technology and Analytical Instruments
Automatic Environmental Control Manufacturing for Residential, Commercial, and Appliance Use	Information Technology and Analytical Instruments
Instruments and Related Products Manufacturing for Measuring, Displaying, and Controlling Industrial Process Variables	Information Technology and Analytical Instruments
Totalizing Fluid Meter and Counting Device Manufacturing	Information Technology and Analytical Instruments
Instrument Manufacturing for Measuring and Testing Electricity and Electrical Signals	Information Technology and Analytical Instruments

Analytical Laboratory Instrument Manufacturing	Information Technology and Analytical Instruments
Irradiation Apparatus Manufacturing	Information Technology and Analytical Instruments
Other Measuring and Controlling Device Manufacturing	Information Technology and Analytical Instruments
Blank Magnetic and Optical Recording Media Manufacturing	Information Technology and Analytical Instruments
Software and Other Prerecorded Compact Disc, Tape, and Record Reproducing	Information Technology and Analytical Instruments
Software Publishers	Information Technology and Analytical Instruments
Direct Life Insurance Carriers	Insurance Services
Direct Health and Medical Insurance Carriers	Insurance Services
Direct Property and Casualty Insurance Carriers	Insurance Services
Direct Title Insurance Carriers	Insurance Services
Other Direct Insurance (except Life, Health, and Medical) Carriers	Insurance Services
Reinsurance Carriers	Insurance Services
Claims Adjusting	Insurance Services
All Other Insurance Related Activities	Insurance Services
Pension Funds	Insurance Services
Health and Welfare Funds	Insurance Services
Other Insurance Funds	Insurance Services
Trusts, Estates, and Agency Accounts	Insurance Services
Jewelry and Silverware Manufacturing	Jewelry and Precious Metals
Textile Bag and Canvas Mills	Leather and Related Products
Women's Handbag and Purse Manufacturing	Leather and Related Products
All Other Leather Good and Allied Product Manufacturing	Leather and Related Products
Electric Lamp Bulb and Part Manufacturing	Lighting and Electrical Equipment
Residential Electric Lighting Fixture Manufacturing	Lighting and Electrical Equipment
Commercial, Industrial, and Institutional Electric Lighting Fixture Manufacturing	Lighting and Electrical Equipment
Other Lighting Equipment Manufacturing	Lighting and Electrical Equipment
Power, Distribution, and Specialty Transformer Manufacturing	Lighting and Electrical Equipment
Motor and Generator Manufacturing	Lighting and Electrical Equipment
Switchgear and Switchboard Apparatus Manufacturing	Lighting and Electrical Equipment
Relay and Industrial Control Manufacturing	Lighting and Electrical Equipment
Storage Battery Manufacturing	Lighting and Electrical Equipment

Fiber Optic Cable Manufacturing	Lighting and Electrical Equipment
Other Communication and Energy Wire Manufacturing	Lighting and Electrical Equipment
Current-Carrying Wiring Device Manufacturing	Lighting and Electrical Equipment
Noncurrent-Carrying Wiring Device Manufacturing	Lighting and Electrical Equipment
Carbon and Graphite Product Manufacturing	Lighting and Electrical Equipment
All Other Miscellaneous Electrical Equipment and Component Manufacturing	Lighting and Electrical Equipment
Animal (except Poultry) Slaughtering	Livestock Processing
Meat Processed from Carcasses	Livestock Processing
Rendering and Meat Byproduct Processing	Livestock Processing
Poultry Processing	Livestock Processing
Livestock Merchant Wholesalers	Livestock Processing
Periodical Publishers	Marketing, Design, and Publishing
Book Publishers	Marketing, Design, and Publishing
Directory and Mailing List Publishers	Marketing, Design, and Publishing
All Other Publishers	Marketing, Design, and Publishing
News Syndicates	Marketing, Design, and Publishing
Libraries and Archives	Marketing, Design, and Publishing
Internet Publishing and Broadcasting and Web Search Portals	Marketing, Design, and Publishing
All Other Information Services	Marketing, Design, and Publishing
Interior Design Services	Marketing, Design, and Publishing
Industrial Design Services	Marketing, Design, and Publishing
Graphic Design Services	Marketing, Design, and Publishing
Other Specialized Design Services	Marketing, Design, and Publishing
Marketing Consulting Services	Marketing, Design, and Publishing
Advertising Agencies	Marketing, Design, and Publishing
Public Relations Agencies	Marketing, Design, and Publishing
Media Buying Agencies	Marketing, Design, and Publishing
Media Representatives	Marketing, Design, and Publishing
Outdoor Advertising	Marketing, Design, and Publishing

Direct Mail Advertising	Marketing, Design, and Publishing
Advertising Material Distribution Services	Marketing, Design, and Publishing
Other Services Related to Advertising	Marketing, Design, and Publishing
Marketing Research and Public Opinion Polling	Marketing, Design, and Publishing
Optical Instrument and Lens Manufacturing	Medical Devices
Surgical and Medical Instrument Manufacturing	Medical Devices
Surgical Appliance and Supplies Manufacturing	Medical Devices
Dental Equipment and Supplies Manufacturing	Medical Devices
Ophthalmic Goods Manufacturing	Medical Devices
Iron Ore Mining	Metal Mining
Gold Ore Mining	Metal Mining
Silver Ore Mining	Metal Mining
Copper, Nickel, Lead, and Zinc Mining	Metal Mining
Uranium-Radium-Vanadium Ore Mining	Metal Mining
All Other Metal Ore Mining	Metal Mining
Support Activities for Metal Mining	Metal Mining
Abrasive Product Manufacturing	Metalworking Technology
Plate Work Manufacturing	Metalworking Technology
Precision Turned Product Manufacturing	Metalworking Technology
Bolt, Nut, Screw, Rivet, and Washer Manufacturing	Metalworking Technology
Metal Heat Treating	Metalworking Technology
Metal Coating, Engraving (except Jewelry and Silverware), and Allied Services to Manufacturers	Metalworking Technology
Electroplating, Plating, Polishing, Anodizing, and Coloring	Metalworking Technology
Industrial Mold Manufacturing	Metalworking Technology
Special Die and Tool, Die Set, Jig, and Fixture Manufacturing	Metalworking Technology
Cutting Tool and Machine Tool Accessory Manufacturing	Metalworking Technology
Machine Tool Manufacturing	Metalworking Technology
Rolling Mill and Other Metalworking Machinery Manufacturing	Metalworking Technology
Power-Driven Handtool Manufacturing	Metalworking Technology
Welding and Soldering Equipment Manufacturing	Metalworking Technology
Music Publishers	Music and Sound Recording
Sound Recording Studios	Music and Sound Recording
Record Production and Distribution	Music and Sound Recording
Other Sound Recording Industries	Music and Sound Recording
Dimension Stone Mining and Quarrying	Nonmetal Mining

Crushed and Broken Limestone Mining and Quarrying	Nonmetal Mining
Crushed and Broken Granite Mining and Quarrying	Nonmetal Mining
Other Crushed and Broken Stone Mining and Quarrying	Nonmetal Mining
Construction Sand and Gravel Mining	Nonmetal Mining
Industrial Sand Mining	Nonmetal Mining
Kaolin and Ball Clay Mining	Nonmetal Mining
Clay and Ceramic and Refractory Minerals Mining	Nonmetal Mining
Potash, Soda, and Borate Mineral Mining	Nonmetal Mining
Phosphate Rock Mining	Nonmetal Mining
Other Chemical and Fertilizer Mineral Mining	Nonmetal Mining
All Other Nonmetallic Mineral Mining	Nonmetal Mining
Support Activities for Nonmetallic Minerals (except Fuels) Mining	Nonmetal Mining
Crude Petroleum Extraction	Oil and Gas Production and Transportation
Natural Gas Extraction	Oil and Gas Production and Transportation
Drilling Oil and Gas Wells	Oil and Gas Production and Transportation
Support Activities for Oil and Gas Operations	Oil and Gas Production and Transportation
Petroleum Refineries	Oil and Gas Production and Transportation
All Other Petroleum and Coal Products Manufacturing	Oil and Gas Production and Transportation
Oil and Gas Field Machinery and Equipment Manufacturing	Oil and Gas Production and Transportation
Pipeline Transportation of Crude Oil	Oil and Gas Production and Transportation
Pipeline Transportation of Natural Gas	Oil and Gas Production and Transportation
Pipeline Transportation of Refined Petroleum Products	Oil and Gas Production and Transportation
All Other Pipeline Transportation	Oil and Gas Production and Transportation
Geophysical Surveying and Mapping Services	Oil and Gas Production and Transportation
Pulp Mills	Paper and Packaging
Paper (except Newsprint) Mills	Paper and Packaging
Newsprint Mills	Paper and Packaging
Paperboard Mills	Paper and Packaging
Corrugated and Solid Fiber Box Manufacturing	Paper and Packaging
Folding Paperboard Box Manufacturing	Paper and Packaging
Other Paperboard Container Manufacturing	Paper and Packaging
Paper Bag and Coated and Treated Paper Manufacturing	Paper and Packaging
Stationery Product Manufacturing	Paper and Packaging

Sanitary Paper Product Manufacturing	Paper and Packaging
All Other Converted Paper Product Manufacturing	Paper and Packaging
Theater Companies and Dinner Theaters	Performing Arts
Dance Companies	Performing Arts
Musical Groups and Artists	Performing Arts
Other Performing Arts Companies	Performing Arts
Promoters of Performing Arts, Sports, and Similar Events with Facilities	Performing Arts
Promoters of Performing Arts, Sports, and Similar Events without Facilities	Performing Arts
Agents and Managers for Artists, Athletes, Entertainers, and Other Public Figures	Performing Arts
Independent Artists, Writers, and Performers	Performing Arts
Plastics Material and Resin Manufacturing	Plastics
Plastics Bag and Pouch Manufacturing	Plastics
Plastics Packaging Film and Sheet (including Laminated) Manufacturing	Plastics
Unlaminated Plastics Film and Sheet (except Packaging) Manufacturing	Plastics
Unlaminated Plastics Profile Shape Manufacturing	Plastics
Plastics Pipe and Pipe Fitting Manufacturing	Plastics
Laminated Plastics Plate, Sheet (except Packaging), and Shape Manufacturing	Plastics
Polystyrene Foam Product Manufacturing	Plastics
Urethane and Other Foam Product (except Polystyrene) Manufacturing	Plastics
Plastics Bottle Manufacturing	Plastics
Plastics Plumbing Fixture Manufacturing	Plastics
All Other Plastics Product Manufacturing	Plastics
Broom, Brush, and Mop Manufacturing	Plastics
Commercial Printing (except Screen and Books)	Printing Services
Commercial Screen Printing	Printing Services
Books Printing	Printing Services
Support Activities for Printing	Printing Services
Printing Ink Manufacturing	Printing Services
Greeting Card Publishers	Printing Services
Industrial Valve Manufacturing	Production Technology and Heavy Machinery
Fluid Power Valve and Hose Fitting Manufacturing	Production Technology and Heavy Machinery
Other Metal Valve and Pipe Fitting Manufacturing	Production Technology and Heavy Machinery
Ball and Roller Bearing Manufacturing	Production Technology and Heavy Machinery

Farm Machinery and Equipment Manufacturing	Production Technology and Heavy Machinery
Lawn and Garden Tractor and Home Lawn and Garden Equipment Manufacturing	Production Technology and Heavy Machinery
Construction Machinery Manufacturing	Production Technology and Heavy Machinery
Mining Machinery and Equipment Manufacturing	Production Technology and Heavy Machinery
Food Product Machinery Manufacturing	Production Technology and Heavy Machinery
Sawmill, Woodworking, and Paper Machinery Manufacturing	Production Technology and Heavy Machinery
Printing Machinery and Equipment Manufacturing	Production Technology and Heavy Machinery
Other Industrial Machinery Manufacturing	Production Technology and Heavy Machinery
Other Commercial and Service Industry Machinery Manufacturing	Production Technology and Heavy Machinery
Industrial and Commercial Fan and Blower and Air Purification Equipment Manufacturing	Production Technology and Heavy Machinery
Heating Equipment (except Warm Air Furnaces) Manufacturing	Production Technology and Heavy Machinery
Air-Conditioning and Warm Air Heating Equipment and Commercial and Industrial Refrigeration Equipment Manufacturing	Production Technology and Heavy Machinery
Turbine and Turbine Generator Set Units Manufacturing	Production Technology and Heavy Machinery
Speed Changer, Industrial High-Speed Drive, and Gear Manufacturing	Production Technology and Heavy Machinery
Mechanical Power Transmission Equipment Manufacturing	Production Technology and Heavy Machinery
Other Engine Equipment Manufacturing	Production Technology and Heavy Machinery
Air and Gas Compressor Manufacturing	Production Technology and Heavy Machinery
Measuring, Dispensing, and Other Pumping Equipment Manufacturing	Production Technology and Heavy Machinery
Elevator and Moving Stairway Manufacturing	Production Technology and Heavy Machinery
Conveyor and Conveying Equipment Manufacturing	Production Technology and Heavy Machinery
Overhead Traveling Crane, Hoist, and Monorail System Manufacturing	Production Technology and Heavy Machinery
Industrial Truck, Tractor, Trailer, and Stacker Machinery Manufacturing	Production Technology and Heavy Machinery
Packaging Machinery Manufacturing	Production Technology and Heavy Machinery
Industrial Process Furnace and Oven Manufacturing	Production Technology and Heavy Machinery
Fluid Power Cylinder and Actuator Manufacturing	Production Technology and Heavy Machinery
Fluid Power Pump and Motor Manufacturing	Production Technology and Heavy Machinery
Scale and Balance Manufacturing	Production Technology and Heavy Machinery
All Other Miscellaneous General Purpose Machinery Manufacturing	Production Technology and Heavy Machinery

Railroad Rolling Stock Manufacturing	Production Technology and Heavy Machinery
Gasket, Packing, and Sealing Device Manufacturing	Production Technology and Heavy Machinery
Small Electrical Appliance Manufacturing	Recreational and Small Electric Goods
Motorcycle, Bicycle, and Parts Manufacturing	Recreational and Small Electric Goods
Blind and Shade Manufacturing	Recreational and Small Electric Goods
Sporting and Athletic Goods Manufacturing	Recreational and Small Electric Goods
Doll, Toy, and Game Manufacturing	Recreational and Small Electric Goods
Office Supplies (except Paper) Manufacturing	Recreational and Small Electric Goods
Musical Instrument Manufacturing	Recreational and Small Electric Goods
Fastener, Button, Needle, and Pin Manufacturing	Recreational and Small Electric Goods
All Other Miscellaneous Manufacturing	Recreational and Small Electric Goods
State Government, Excluding Education and Hospitals	State Government Services
Fiber, Yarn, and Thread Mills	Textile Manufacturing
Broadwoven Fabric Mills	Textile Manufacturing
Narrow Fabric Mills and Schiffli Machine Embroidery	Textile Manufacturing
Nonwoven Fabric Mills	Textile Manufacturing
Knit Fabric Mills	Textile Manufacturing
Textile and Fabric Finishing Mills	Textile Manufacturing
Fabric Coating Mills	Textile Manufacturing
Carpet and Rug Mills	Textile Manufacturing
Curtain and Linen Mills	Textile Manufacturing
Rope, Cordage, Twine, Tire Cord, and Tire Fabric Mills	Textile Manufacturing
Hosiery and Sock Mills	Textile Manufacturing
Other Apparel Knitting Mills	Textile Manufacturing
Artificial and Synthetic Fibers and Filaments Manufacturing	Textile Manufacturing
Tobacco Manufacturing	Tobacco
Major Household Appliance Manufacturing	Trailers, Motor Homes, and Appliances
Truck Trailer Manufacturing	Trailers, Motor Homes, and Appliances
Motor Home Manufacturing	Trailers, Motor Homes, and Appliances
Travel Trailer and Camper Manufacturing	Trailers, Motor Homes, and Appliances
Burial Casket Manufacturing	Trailers, Motor Homes, and Appliances
Scheduled Passenger Air Transportation	Transportation and Logistics

Scheduled Freight Air Transportation	Transportation and Logistics
Nonscheduled Chartered Passenger Air Transportation	Transportation and Logistics
Nonscheduled Chartered Freight Air Transportation	Transportation and Logistics
Other Nonscheduled Air Transportation	Transportation and Logistics
Rail transportation	Transportation and Logistics
General Freight Trucking, Long-Distance, Truckload	Transportation and Logistics
General Freight Trucking, Long-Distance, Less Than Truckload	Transportation and Logistics
Specialized Freight (except Used Goods) Trucking, Long-Distance	Transportation and Logistics
Interurban and Rural Bus Transportation	Transportation and Logistics
Charter Bus Industry	Transportation and Logistics
Air Traffic Control	Transportation and Logistics
Other Airport Operations	Transportation and Logistics
Other Support Activities for Air Transportation	Transportation and Logistics
Support Activities for Rail Transportation	Transportation and Logistics
Other Support Activities for Road Transportation	Transportation and Logistics
Freight Transportation Arrangement	Transportation and Logistics
Packing and Crating	Transportation and Logistics
All Other Support Activities for Transportation	Transportation and Logistics
Postal Service	Transportation and Logistics
Petrochemical Manufacturing	Upstream Chemical Products
Industrial Gas Manufacturing	Upstream Chemical Products
Other Basic Inorganic Chemical Manufacturing	Upstream Chemical Products
Ethyl Alcohol Manufacturing	Upstream Chemical Products
Cyclic Crude, Intermediate, and Gum and Wood Chemical Manufacturing	Upstream Chemical Products
All Other Basic Organic Chemical Manufacturing	Upstream Chemical Products
Synthetic Rubber Manufacturing	Upstream Chemical Products
Phosphatic Fertilizer Manufacturing	Upstream Chemical Products
Pesticide and Other Agricultural Chemical Manufacturing	Upstream Chemical Products
Iron and Steel Mills and Ferroalloy Manufacturing	Upstream Metal Manufacturing
Iron and Steel Pipe and Tube Manufacturing from Purchased Steel	Upstream Metal Manufacturing
Rolled Steel Shape Manufacturing	Upstream Metal Manufacturing
Steel Wire Drawing	Upstream Metal Manufacturing
Alumina Refining and Primary Aluminum Production	Upstream Metal Manufacturing
Secondary Smelting and Alloying of Aluminum	Upstream Metal Manufacturing

Aluminum Sheet, Plate, and Foil Manufacturing	Upstream Metal Manufacturing
Other Aluminum Rolling, Drawing, and Extruding	Upstream Metal Manufacturing
Nonferrous Metal (except Aluminum) Smelting and Refining	Upstream Metal Manufacturing
Copper Rolling, Drawing, Extruding, and Alloying	Upstream Metal Manufacturing
Nonferrous Metal (except Copper and Aluminum) Rolling, Drawing, and Extruding	Upstream Metal Manufacturing
Secondary Smelting, Refining, and Alloying of Nonferrous Metal (except Copper and Aluminum)	Upstream Metal Manufacturing
Iron and Steel Forging	Upstream Metal Manufacturing
Nonferrous Forging	Upstream Metal Manufacturing
Powder Metallurgy Part Manufacturing	Upstream Metal Manufacturing
Metal Crown, Closure, and Other Metal Stamping (except Automotive)	Upstream Metal Manufacturing
Spring Manufacturing	Upstream Metal Manufacturing
Other Fabricated Wire Product Manufacturing	Upstream Metal Manufacturing
Motion Picture and Video Production	Video Production and Distribution
Motion Picture and Video Distribution	Video Production and Distribution
Drive-In Motion Picture Theaters	Video Production and Distribution
Teleproduction and Other Postproduction Services	Video Production and Distribution
Other Motion Picture and Video Industries	Video Production and Distribution
Tire Manufacturing (except Retreading)	Vulcanized and Fired Materials
Tire Retreading	Vulcanized and Fired Materials
Rubber and Plastics Hoses and Belting Manufacturing	Vulcanized and Fired Materials
Rubber Product Manufacturing for Mechanical Use	Vulcanized and Fired Materials
All Other Rubber Product Manufacturing	Vulcanized and Fired Materials
Pottery, Ceramics, and Plumbing Fixture Manufacturing	Vulcanized and Fired Materials
Clay Building Material and Refractories Manufacturing	Vulcanized and Fired Materials
Flat Glass Manufacturing	Vulcanized and Fired Materials
Other Pressed and Blown Glass and Glassware Manufacturing	Vulcanized and Fired Materials
Glass Product Manufacturing Made of Purchased Glass	Vulcanized and Fired Materials
Ground or Treated Mineral and Earth Manufacturing	Vulcanized and Fired Materials

Ship Building and Repairing	Water Transportation
Boat Building	Water Transportation
Deep Sea Freight Transportation	Water Transportation
Deep Sea Passenger Transportation	Water Transportation
Coastal and Great Lakes Freight Transportation	Water Transportation
Coastal and Great Lakes Passenger Transportation	Water Transportation
Inland Water Freight Transportation	Water Transportation
Inland Water Passenger Transportation	Water Transportation
Port and Harbor Operations	Water Transportation
Marine Cargo Handling	Water Transportation
Navigational Services to Shipping	Water Transportation
Other Support Activities for Water Transportation	Water Transportation
Sawmills	Wood Products
Wood Preservation	Wood Products
Hardwood Veneer and Plywood Manufacturing	Wood Products
Softwood Veneer and Plywood Manufacturing	Wood Products
Engineered Wood Member (except Truss) Manufacturing	Wood Products
Truss Manufacturing	Wood Products
Reconstituted Wood Product Manufacturing	Wood Products
Wood Window and Door Manufacturing	Wood Products
Cut Stock, Resawing Lumber, and Planing	Wood Products
Other Millwork (including Flooring)	Wood Products
Wood Container and Pallet Manufacturing	Wood Products
Prefabricated Wood Building Manufacturing	Wood Products
All Other Miscellaneous Wood Product Manufacturing	Wood Products

This report was researched and prepared by Ted Abernathy, Skylar Elliott Casey, and Greg Payne of Economic Leadership in 2022.