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THE TENTH DISTRICT'S DEFINING INDUSTRIES: CHANGES AND OPPORTUNITIES FOR RURAL COMMUNITIES

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The industrial structure of the Tenth Federal Reserve District continues to evolve. While the region has become more like the nation in recent years, a variety of industries still make it unique, especially in some states. The industries that define a region often dictate its overall growth and economic strength. Understanding them and how they are changing is crucial for business leaders and policymakers, especially in rural communities seeking new engines of growth to replace the flagging pull of production agriculture.

Some defining industries have been important to the region for some time, including oil and gas, agriculture, and aircraft manufacturing, among others. Recently, however, several high-growth industries have emerged across the region and could play a vital role in the region's future economic growth. Importantly, many of these new defining industries do not have specific location requirements and thus may provide new opportunities for growth in some rural communities.

WHAT ARE DEFINING INDUSTRIES AND WHY ARE THEY IMPORTANT?

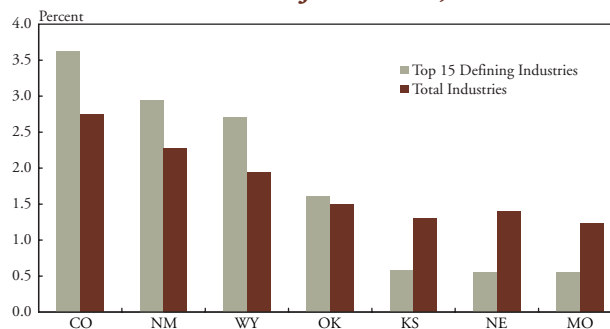
For an industry to qualify as "defining," it must be more concentrated in a region than in the nation. The common measure of this is location quotient—or the

ratio of an industry's share of employment in a region compared to that in the nation. The higher the location quotient, the more defining an industry is to its region.

The growth of small groups of defining industries generally tracks quite closely with overall economic growth in a region. In other words, as defining industries change, so might a state's overall potential for economic growth. For example, the Tenth District states with the highest growth in defining industries from 1990 to 2005 were Colorado, New Mexico, and Wyoming (Chart 1).¹ These states also had the largest overall growth rate. Similarly, states whose defining industries struggled saw more sluggish growth.²

CHART 1

AVERAGE ANNUAL STATE JOB GROWTH, 1990-2005



Sources: Bureau of Labor Statistics, Bureau of Economic Analysis, Railroad Retirement Board

LONG-STANDING DEFINING INDUSTRIES

The top defining industries in the Tenth District have not changed significantly over time (Table 1). Indeed, the five most defining industries in the region are still the same as in 1990. Growth in these industries has generally been sluggish at best, and their outlooks suggest only modest growth for most of them heading forward.³

TABLE 1
THE TENTH DISTRICT'S FIVE MOST DEFINING INDUSTRIES

Rank	Industry Name	Location Quotient, 2005	Location Quotient, 1990	Average Annual Job Growth, 1990-2005 (%)	Primary States
1	Oil and gas extraction*	3.1	2.8	0.6	WY, OK, NM
2	Farm proprietors	2.2	2.2	-0.1	OK, NE, KS
3	Animal slaughtering and processing	2.0	1.9	2.0	NE, KS, OK
4	Rail transportation	1.9	1.9	-1.2	WY, NE, KS
5	Aerospace product and parts manufacturing	1.9	1.6**	-1.1**	KS, MO, CO

* Includes "Support activities for mining"

** Does not include Colorado or Missouri, where information was not disclosed in 1990

Sources: U.S. Bureau of Labor Statistics, Bureau of Economic Analysis, Railroad Retirement Board

The district remains most heavily concentrated in the *oil and gas extraction* industry. Employment in the industry grew moderately from 1990 to 2005 but since then has been much stronger. Job growth in 2006 and 2007 was in the double digits in percentage terms. Analysts attribute the sluggish growth in past decades to low energy prices and lack of drilling prospects. Although growth was lackluster until 2006, the industry still paid above-average wages. Oklahoma, New Mexico, and Wyoming are the primary states driving the heavy concentration of the industry in the region, though energy is also important in Colorado and Kansas. While this industry tends to be somewhat volatile, its outlook has improved recently due to high energy futures prices and possibilities for new domestic exploration.

Farming also remains vitally important across the district. The industry has generally experienced weak employment growth in recent years, due largely to changes in technology that allow fewer workers to produce higher amounts of output. The outlook for farming is largely stable, but few new growth opportunities are forecast. One exception is ethanol, which has raised farmland values and incomes in many areas in the last year, particularly in corn states such as

Nebraska—but there are some risks, including price volatility, transportation issues, and possible future public policy changes.⁴

The *rail transportation* industry in the region has changed considerably in recent decades due to a greater use of computers in tracking, dispatching, and monitoring trains. These changes have led to decreases in employment. Still, the industry remains heavily concentrated in the region, especially in Nebraska, Kansas, and Wyoming, due in part to the shipment of coal and other minerals out of the region. The outlook for rail transportation is generally stable, although employment may suffer somewhat from further gains in technology.

The region's important *aircraft manufacturing* industry has been seriously hurt by recent cutbacks in defense spending and struggling private airlines. Employment in the industry declined considerably from 1990 to 2005. But the industry is still heavily centered in Wichita, Kan., as well as in several other district cities. The outlook has improved due to projected increases in defense aerospace production and rising demand for civilian aircraft. In addition, the airline industry seems to be recovering slowly from the aftermath of 9/11. As real incomes rise, the demand for personal air travel in general is likely to rise relative to other forms of transportation, benefiting aircraft producers and suppliers in the region.

In contrast to the other four industries that have historically defined the district, *animal slaughtering and processing* has seen generally positive growth recently. This strength stems mainly from rising demand for meat products, particularly beef. Slaughtering and processing plants are scattered throughout the district, particularly in the rural areas of Nebraska and Kansas, and increasingly in Oklahoma. The industry has become more concentrated in the region due mainly to the consolidation of many plants, which tends to create larger plants in fewer locations.⁵

EMERGING DEFINING INDUSTRIES

Unlike most of the historically defining industries in the Tenth District, several important industries in individual states enjoyed rapid employment growth

from 1990 to 2005 and, in turn, became increasingly concentrated in the region (Table 2). These emerging industries may offer new growth opportunities for both urban and rural areas heading forward.

The highest-growth defining industry in the district in recent years is *gambling*, centered largely in Oklahoma, New Mexico, and Missouri. With double-digit rates of employment growth, and even further growth projected, casinos have dramatically expanded their presence in the region, including in rural areas. For example, the rural county of Bryan, Okla., now has five casinos. Most of the growth in the industry is due to the passage of new legislation, the increasing presence of casinos on American Indian reservations, and the introduction of slot machines at racetracks.

But gambling has its economic drawbacks. To boost economic growth at the state and local levels, gambling money must come from outside the area—that is, from tourists. This transfer of money can be good for the state or local area where gambling takes place, but perhaps not for the areas whose residents travel to spend money at casinos. Recent studies have also shown that there can be sizable social and economic costs, ranging from increased crime to higher personal bankruptcy rates.⁶

Another fast-growing defining industry, especially in Oklahoma, is *business support services*, which are largely call centers. The district has long been concentrated in this activity to some degree, but its presence continues to grow rapidly. One attractive aspect of this industry for rural areas is its ability to locate in a variety of settings. There are many rural call center locations in Oklahoma, Nebraska, and New Mexico, in particular.

Like call centers, *electronic shopping and mail-order houses* have become increasingly concentrated in Nebraska. This industry also has the potential for success in remote locations, a prime example being the Cabela's operation in Sidney, Neb., which employs approximately 2,000 people. Although pay levels in these industries are slightly below average, they can bring some

TABLE 2

SELECTED EMERGING INDUSTRIES IN TENTH DISTRICT STATES

	Location quotient, 2005	Location quotient, 1990	Average annual job growth 1990-2005 (%)	Average annual pay 2005
COLORADO				
Software publishers	3.1	1.6	11.3	\$91,973
Computer systems design	1.7	1.6	7.4	\$80,491
KANSAS				
Office administrative services	2.4	1.7	7.4	\$48,123
Medical and diagnostic laboratories	2.0	0.6	10.3	\$47,822
MISSOURI				
Data processing and related services	2.1	1.0	5.2	\$59,772
Gambling industries	2.0	N/A	N/A	\$27,829
NEBRASKA				
General freight trucking	3.3	1.8	5.1	\$35,496
Electronic shopping and mail-order houses	2.4	1.8	4.3	\$24,270
New Mexico				
Gambling industries	4.4	0.6	31.9	\$25,601
Medical and diagnostic laboratories	1.9	1.3	6.2	\$45,975
Oklahoma				
Gambling industries	3.4	1.0	24.4	\$21,335
Business support services	2.0	0.8	10.8	\$25,838
WYOMING				
Machinery and equipment rental	3.8	1.7	7.1	\$54,392
Administration of economic programs	2.8	1.1	6.8	\$38,565

Source: U.S. Bureau of Labor Statistics

added benefits to rural areas. For example, a recent study found that call centers and related establishments can produce numerous positive aspects for remote communities, including increased employment opportunities, new forms of economic activity, the introduction of new skills and competencies, and capital investments.⁷

One promising emerging industry is *data processing and related services*, or back-office high-tech operations. These operations generally house computer specialists and analysts. This industry is both high-growth and high-paying, with an average salary in the region of approximately \$60,000 per year. Growth in the data processing industry is projected to be solid, likely the result of the continued conversion of paper records to electronic and such activities as reformatting outdated archive formats. In the Tenth District, the majority of this industry is centered in cities in Missouri, Nebraska, and Kansas. However, the industry holds opportunities for more remote areas as well. For example, in 2007 Google announced a new data center would soon open in Pryor, Okla., a small town approximately 50 miles from Tulsa.

An industry similar to data processing is *office administrative services*, which is a defining industry for Kansas and includes relatively high-tech back-office logistics, payroll, and other types of management support and consulting services. As with data processing, the office services industry pays well, and further technology advances may lead to this type of work being performed in more remote areas of Kansas and other states. Due to the high skill and desirable pay levels, both industries present attractive opportunities for midsize cities and rural areas. And innovations in rural technology are allowing more remote areas to attract providers of high-tech professional and business services.⁸

In Kansas and New Mexico, the *medical and diagnostic laboratories*, or biosciences, industry has been growing rapidly, particularly among areas with university and research campuses. As with many health-care-related industries, this sector is projected to be among the 10 fastest-growing industries in the nation over the next 10 years, both in terms of wages and employment. The average pay level in biosciences in the region is more than \$48,000, well above the district average of \$35,500. As medical technology continues to improve the survival rate of critically and terminally ill patients—and makes it possible to treat and identify new conditions—the need for laboratories will increase. This activity is likely to continue to center in and around college towns and areas with large research institutions. But the economic wealth created could benefit many rural communities throughout the region. One example is the Central Plains Laboratory near Fort Hays State University in Hays, Kan.

The *software publishing* and *computer design* industries have experienced a sizable expansion in Colorado. Growth has been rapid, with the video games market emerging as a key component of the software industry. This upsurge is expected to continue as demand grows for applications and systems software that can maximize returns on investment in equipment and hardware. More and more businesses are demanding products for their supply networks, business transactions, and online marketplaces. All of this increased activity has pushed the software industry into

the projected top 10 growth list among U.S. industries for future years. And average pay levels are quite high, at almost \$85,000 annually. The industry is currently concentrated in urban and college settings that are thick in highly skilled workers but may hold opportunities for rural areas able to attract such workers.

The *freight trucking* industry is important to the district as a whole, but especially so in Nebraska. The high concentration of this activity in the state is likely due to its wide-open geography and central location in the United States. Growth in the industry generally parallels movements in the national economy. As the national economy grows and the production and sale of goods increase, the demand for transportation services to move goods also tends to increase. The pay in this industry is above average, and job growth should provide opportunities for various types of workers throughout the region in both urban and rural settings.

One increasingly important industry in Wyoming is *machinery and equipment rentals*. With booming energy activity in the state—for both coal as well as oil and gas—the industry has recently experienced both high growth and relatively high levels of pay, providing new opportunities for rural areas. Employment growth is expected to be healthy heading forward as well, resulting from solid industry growth and slow gains in productivity.

In Wyoming, there has also been an increased focus on economic development, as evidenced by the growth in the *administration of economic programs* industry. One main benefit of this emerging sector is the potential increase in the development of new business and possible establishment of new sources of economic growth. The prospect of new expansion is encouraging, as the state has long been concentrated in the natural resources industries, which can be quite volatile at times.

CONCLUSION

The Tenth Federal Reserve District remains heavily concentrated in numerous long-standing industries such as energy, agriculture, and aircraft manufacturing. The outlook for these industries is mixed, but growth

in coming years is generally projected to be modest at best. However, several emerging industries could have favorable implications for the region, including rural areas. These industries include call centers, data processing and back-office operations, and office administrative services, among others. Two other industries—software design and medical and diagnostic

laboratories—are among the projected 10 fastest-growing industries nationwide in the coming years. This collection of high-growth industries may offer opportunities to rural communities aiming to boost their economic prospects in the years ahead, taking advantage of their low costs of business, available construction sites, and existing business concentrations.

ENDNOTES

¹The Tenth Federal Reserve District includes the entire states of Colorado, Kansas, Nebraska, Oklahoma, and Wyoming, plus the northern half of New Mexico and the western third of Missouri.

²For more on whether industrial concentration helps or hurts a region, as well as further details on the methodology of defining industries, see Wilkerson and Williams.

³Industry outlooks in the next two sections draw heavily upon those made in the latest BLS Career Guide to Industries (2007).

⁴For more on the impact of ethanol on the economy, see Novack and Henderson.

⁵For further information on the concentration of the meat-packing industry, see Drabenstott, Henry, and Mitchell.

⁶For more on the impact of casinos in the community, see Grinols, as well as Goss and Morse. For information on the correlation between casinos and bankruptcy, see Edmiston.

⁷For detailed information on call centers and their migration to rural communities, see Gillespie and Richardson.

⁸For more on technology in rural America, see Henderson.

REFERENCES

Bureau of Labor Statistics. 2007. *Career Guide to Industries (CGI)*, 2006-07 Edition.

Drabenstott, Mark, Mark Henry, and Kristin Mitchell. 1999. "Where Have All the Packing Plants Gone? The New Meat Geography in Rural America," Federal Reserve Bank of Kansas City *Economic Review*, Third Quarter.

Edmiston, Kelly D. 2006. "A New Perspective on Rising Nonbusiness Bankruptcy Filing Rates: Analyzing the Regional Factors," Federal Reserve Bank of Kansas City *Economic Review*, Second Quarter.

Gillespie, Andrew, and Randal Richardson. 2003. "The Call of the Wild: Call Centers and Economic Development in Rural Areas," *Growth and Change*, vol. 34, no. 1, pp. 87-108.

Goss, Ernie, and Edward Morse. 2005. *The Impact of Casino Gambling on Bankruptcy Rates: A County Level Analysis*, University of Creighton Working Paper.

Grinols, Earl L. 2004. *Gambling in America: Costs and Benefits*. Cambridge: Cambridge University Press.

Henderson, Jason. 2007. "The Power of Technological Innovation in Rural America," Federal Reserve Bank of Kansas City *Main Street Economist*, Issue IV.

Novack, Nancy, and Jason Henderson. 2007. "Can Ethanol Power the Rural Economy?" Federal Reserve Bank of Kansas City *Main Street Economist*, Issue I.

Wilkerson, Chad R., and Megan D. Williams. 2007. "The Tenth District's Defining Industries: How Are They Changing?" Federal Reserve Bank of Kansas City *Economic Review*, Third Quarter.