



The EDACENTER

at the University of Minnesota Crookston

Economic Composition of the South Central Region of Minnesota: Indus- tries and Performance

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(With Assistance from Adeel Ahmed, Neil Linscheid, Bruce Schwar-
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Our mission is to engage university faculty, staff and students with local, county tribal and regional economic development agencies in support of our Minnesota economy. Our focus is to utilize the capacity of the University of Minnesota Crookston in partnership with the broader U of M system and economic development agencies to support job creation, capital investment, business recruitment, and job retention.

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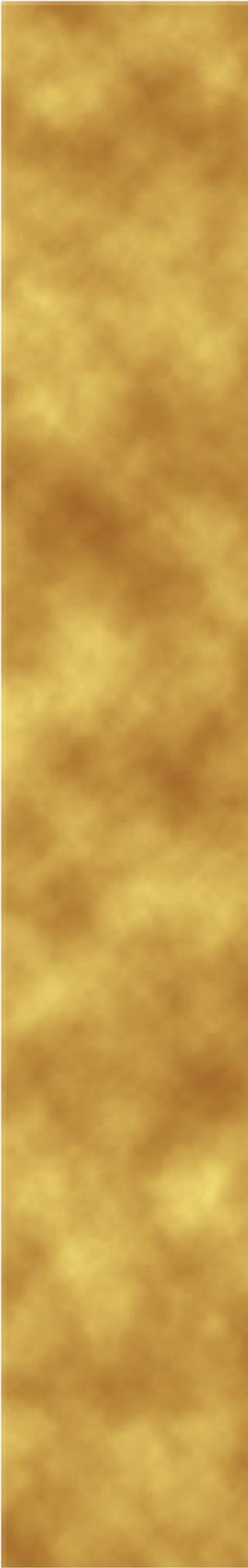
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ECONOMIC COMPOSITION OF THE SOUTH CENTRAL REGION OF MINNESOTA: KEY FINDINGS

To analyze the economic composition of the South Central region of Minnesota, University of Minnesota Extension conducted an analysis of industry outputs, employment and wages, and interdependencies. Following is a report of key findings. This report is presented in partnership with the EDA Center at the University of Minnesota Crookston.

Manufacturing and professional and business services are the top two drivers of the South Central regional economy, both in terms of output and employment. Manufacturers create 35 percent of all output and 13 percent of all jobs in the region. Professional and business services create almost 20 percent of output and 16 percent of employment. Health and social services and trade are other industries with a significant share of jobs in the region. A closer analysis revealed the following strengths and concerns.

REGIONAL STRENGTHS:

- **Manufacturing.** Despite a loss of 2,006 jobs between 2003 and 2013, manufacturing is a strength in the region. Analysis shows that given industry and national trends, manufacturing should have shed even more jobs, making the region competitive in manufacturing. Wages were relatively strong in the industry, posting a 9.5 percent increase between 2000 and 2013 after adjusting for inflation. Further, the manufacturing base in the region is fairly diverse and is dispersed across counties in the region.
- **Management of companies and enterprises.** The South Central region added 402 new jobs in the management of companies and enterprises sector, exceeding gains expected given trends in the industry. Wages were extremely strong increasing by 43% percent between 2000 and 2013, after adjusting for inflation. Wages in the industry are nearly twice that of the average wage across all industries in the region. Corporate headquarter jobs are classified in this sector.
- **Health care and social services.** The health care and social services industry was the fastest growing industry in the region between 2003 to 2013. However, it could have added more jobs than it did. Wages in the industry grew by an inflation-adjusted 15 percent between 2000 and 2013.

REGIONAL CONCERNS:

The analysis also revealed areas of potential concern for the region from an economic standpoint. These industries are not as competitive in the region and may warrant additional attention and exploration.

- **Information.** The information sector shed 1,310 jobs between 2003 and 2013. While the industry itself was hit by the Great Recession of 2008-

2009, these job losses exceeded what would have been expected. The majority of the job losses were in the publishing industry.

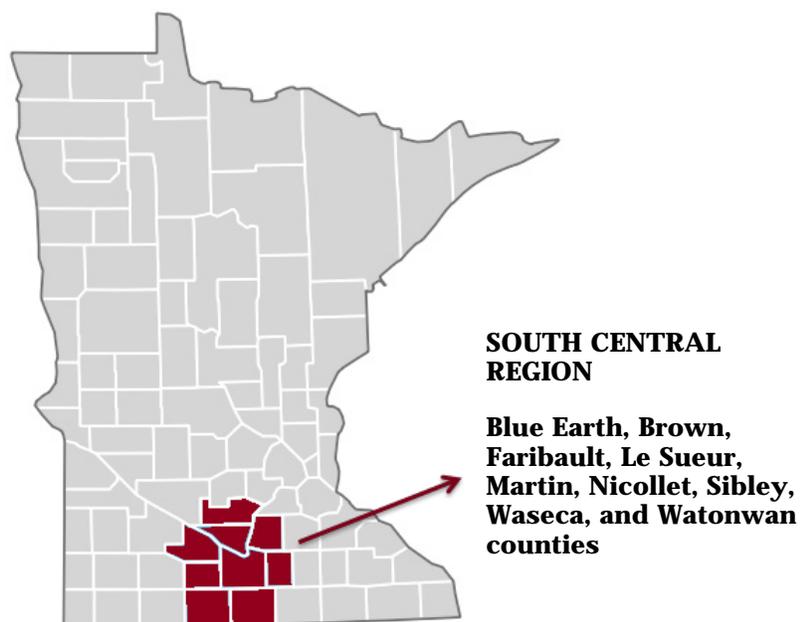
- **Construction.** The construction industry also suffered setbacks in the South Central region. Between 2003 and 2013, 720 construction jobs were lost, a 19 percent decrease. In comparison, the number of construction jobs in Minnesota fell by 15 percent in the same period. The jobs losses were across several different types of construction sectors.

STUDY BACKGROUND AND OVERVIEW OF SOUTH CENTRAL REGION

Minnesota's regions differ in size, social and economic characteristics, history, and geography. These differences influence the economy of the regions, as well as economic development decisions and discussions. Therefore, conversations about Minnesota's economy and its economic future must include discussions of the diverse drivers of economic activity in the state's regions. University of Minnesota Extension, in response to a broader conversation about the role of Greater Minnesota in the state's economy, is producing economic profile reports on 12 Minnesota non-metro regions, as defined by the boundaries of the Regional Development Organizations. This report is provided in partnership with the EDA Center at the University of Minnesota Crookston.

Located to the south and to the center of Minnesota, the South Central region is represented by the Region Nine Regional Development Commission. It is comprised of nine counties, including Blue Earth, Brown, Faribault, Le Sueur, Martin, Nicollet, Sibley, Waseca, and Watonwan. Mankato, located in Blue Earth County, is a regional economic hub. There are several sub-regional economic hubs in the area.

Map 1: Map of South Central Region in Minnesota



The goals of this report are to 1) identify the region's strengths – both industries that are the current core of the economy and emerging industries – and 2) identify concerns for the region. Regional concerns focus on industries that may be underperforming or declining.

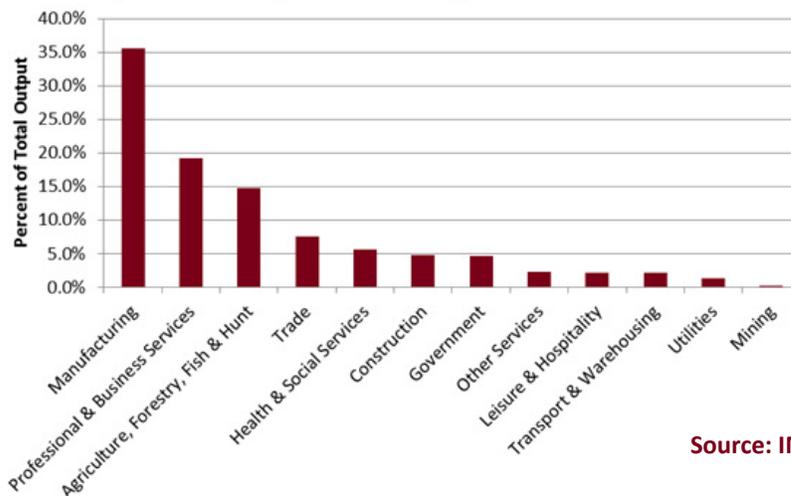
To ascertain which industries are regional strengths and which are potential regional concerns, this report draws from output, employment, and wage data. The first section looks at industry outputs. Output measures the value of sales by industry. Studying output by industry provides a perspective on which industries are driving the highest sales in the region. The second section details employment. Studying employment by industry identifies industries that employ the highest number of people in the region. The employment section of this report also discusses wages. The third section of this report looks at economic interdependencies. Examining how sectors interact and connect with each other can provide powerful insights into an economy.

INDUSTRY OUTPUT

Output is an important factor to consider when assessing the economic composition of a specific geography. Output provides information about the economic activity of a region and also is directly tied to employment.

In 2012, businesses and industries in the South Central region produced \$24.7 billion in goods and services, according to estimates from the IMPLAN economic database. Output in the South Central region accounted for approximately 4 percent of Minnesota's \$567.8 billion economy and 11 percent of Greater Minnesota's \$218.8 billion economy. In 2012, according to the IMPLAN model, manufacturing created over 35 percent of total output in the South Central region of Minnesota. Professional and business services created nearly 20 percent. Agriculture, forestry, fishing, and hunting accounted for 15 percent of output.

Chart 1: Industry Share of Total Output: South Central Region



Source: IMPLAN

Chart 1 shows output by major industry category, helping to frame discussions about output in the region. However, examining output by sector can be valuable as well. Sectors are a more refined level of analysis.

Individual sectors form industries. For example, crop production and animal production are sectors within the industry of agriculture.

Beyond the major industry categories, the top ten sectors in the South Central region produce an estimated \$8.9 billion of output (table 1). Grain farming produced the highest level of output in the region, with \$1.5 billion of sales in 2012. The definition of grain farming primarily includes corn farming. The housing market sector produced \$1.0 billion in output. The housing market sector exists in the IMPLAN database used for this analysis, because IMPLAN is an input-output model which traces the flow of goods and services in an economy. Households are actors in the local economy and housing is one of a household's largest expenses. Therefore, there needs to be a system for accounting for those expenditures. The housing market sector here measures the value of household expenditures for owner-occupied dwellings.¹ It is not a measure of the value of housing stock. Household expenditures for rental units are included in another sector. Hog production was the third largest sector in the South Central region.

In most other regions of the state, government is one of the top generators of output. Interestingly, there are no government sectors in the top ten producers of output. In this model, government output is tied to employment and is primarily measured as wages, since government does not make sales in the traditional sense.

TABLE 1: TOP TEN SECTORS IN SOUTH CENTRAL REGION, SORTED BY OUTPUT

Sector	Total Output (millions)	Output per Worker
Grain farming	\$1,545.0	\$272,931
Housing market	\$1,027.8	NA
Hog production	\$1,023.4	\$189,015
Wholesale trade businesses	\$984.8	\$211,460
Cheese manufacturing	\$878.7	\$981,255
Monetary authorities and depository credit intermediation activities (banks)	\$839.2	\$414,496
Soybean and other oilseed processing	\$731.6	\$2,056,498
Telecommunications	\$668.5	\$541,436
Motor and generator manufacturing	\$603.7	\$406,882
Oilseed farming	\$596.4	\$432,007
TOP TEN TOTAL	\$8,899.1 (36%)	
TOTAL OUTPUT IN REGION	\$24,714.6	
*Source: IMPLAN		

For the majority of the sectors in table 1, high output is driven by high productivity (output per worker). Each grain farmer produces an estimated \$273,000 in output annually. Output per worker is often lower for service or labor intensive industries, as it takes more workers to produce output.

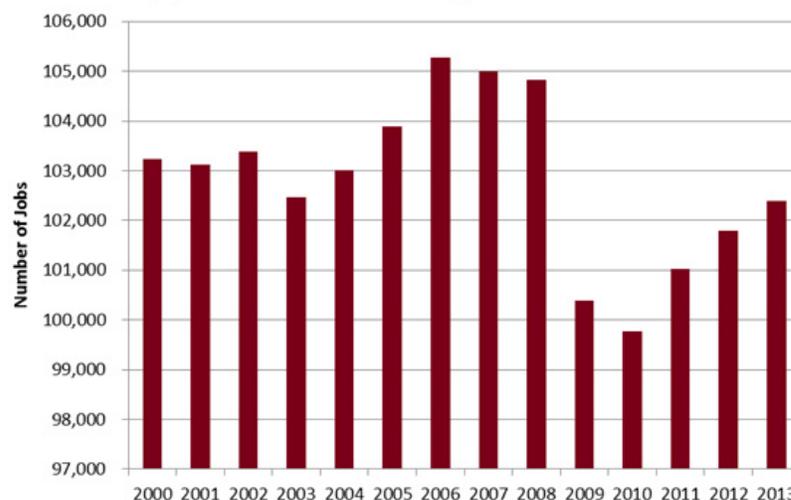
1 For most households, this would be the value of mortgage payments. However, IMPLAN also makes estimates for households that own their house outright.

The industries with the lowest output per worker in the region include private household services (households providing services to other households, such as cleaning) and agriculture and forestry support services (including custom planting, harvesting, and fertilizer application). Since the model measures one job as one job, these two industries, which have relatively high seasonal and part-time employment, likely have lower output per worker because a significant share of the workers are working less than year-round and full-time.

EMPLOYMENT AND WAGES

The number of jobs in the region rose and fell between 2000 and 2013 (see chart 2). The number of jobs in the South Central region was fairly steady in the early 2000s with a decline in 2003. The region added jobs between 2004 and 2006. The number of jobs decreased consistent with the 2008-2009 Great Recession. The number of jobs in the region has been increasing since 2010. The number of jobs in the South Central region has been growing but has not, as of 2013 data, recovered to pre-recession levels.

Chart 2: Total Employment 2000-2013 South Central Region



Source: QCEW

The highest employment growth industries in the South Central region between 2003 and 2013 were health care and social assistance; crop and animal production; and management of companies and enterprises.² The industries suffering the most job losses during the period in the South Central region include manufacturing; information; and construction. These are examined in table 2.

Shift-share analysis provides an examination of the drivers of growth and decline for a specific industry in a specific region by comparing to industry and national trends. The analysis provides an interesting interpretation of the changes in each industry (table 2). In this analysis, the primary focus is on the competitive effect. A strongly positive competitive effect indicates particular characteristics of the local economy are driving growth in the region. A strongly negative competitive effect can be interpreted as a warning that the local economy may not be faring as well as it should. For more on shift-share analysis and how to interpret the results, see page 15.

² EMSI, Int. www.economicmodeling.com

TABLE 2: SHIFT-SHARE ANALYSIS FOR GROWTH AND DECLINE INDUSTRIES³

Industry	Change 2003-2013	Industry Mix Effect	National Growth Effect	Competitive Effect
Top 3 Job Adding Industries				
Health Care & Social Assistance	2,879	646	3,110	(876)
Crop and Animal Production	541	107	(3)	438
Management of Companies and Enterprises	402	30	131	240
Top 3 Job Loss Industries				
Manufacturing	(2,006)	1,009	(4,574)	1,559
Information	(1,310)	164	(677)	(798)
Construction	(720)	229	(837)	(112)
*Source: EMSI				

The health care and social assistance industry added the most jobs in the region between 2003 and 2013 (2,879 jobs). If the health care and social assistance industry in the South Central region had grown at the same overall rate as the national economy in all industries, it would have added 646 jobs (national growth effect). The health care and social assistance industry at the national level also added jobs during the time period. If the South Central region's health care and social assistance industry had grown at the same rate as the national health care and social assistance industry, then it would have added 3,110 jobs (industry mix effect).

Since fewer jobs were added in the region, the health care and social assistance industry in the South Central region posted a negative competitive share effect. In other words, the health care and social assistance industry in the South Central region did not grow as fast as it should have given national and industry trends. Within the health care and social assistance industry, sectors with the most positive competitive share include general medical and surgical hospitals (added 1,029 jobs, and 840 were estimated due to competitive effect) and vocational rehabilitation services (added 599 jobs, and 498 were estimated due to competitive effect). These gains were offset by competitive share losses in the individual and family services sector (added 548 jobs, but should have added 847 additional jobs), home health care services (lost 74 jobs, but should have retained those and gained an additional 320), and medical and diagnostic labs (lost 249 jobs, but should have retained those and gained an additional 100).

In addition to the health care and social assistance industry, the crop and animal production industry gained 541 jobs and posted a positive competitive effect. Within the industry, job increases were recorded in the sectors of animal production (448 new jobs) and crop production (added 69 jobs).

The management of companies and enterprises industry gained 402 jobs. This exceeds the gain in the number of jobs that would be expected given industry and national trends. Job growth was primarily driven by increases in the number of jobs in the corporate, subsidiary, and regional managing

3 For an explanation of shift-share analysis, please see the methodology section. Note, the competitive effect totals may not sum due to rounding.

offices sector.

The manufacturing industry in the South Central region shed 2,006 jobs during the time period; however, the competitive share is positive. Manufacturing at a national level suffered from the effects of the Great Recession. The South Central region did not lose as many jobs as would have been expected given the steep declines in manufacturing employment at the national level.

The South Central region had significant manufacturing job losses between 2003 and 2013 in computer and electronic product manufacturing (-880 jobs); printing and related support activities (-547 jobs); and food manufacturing (-481 jobs). The competitive effect for the printing and related support activities industry was a positive 808 jobs, indicating that the industry, although losing jobs, performed better than expected given changes in the industry at the national level.

Offsetting these losses, to some extent, were gains in nonmetallic mineral product manufacturing (605 new jobs); electrical equipment, appliance, and component manufacturing (202 jobs); and chemical manufacturing (179 jobs). The manufacturing sectors that added jobs also all had positive competitive shares, indicating the region may have advantages on which to build these sectors.

The other industries with job losses in the South Central region (information and construction) had negative competitive shares. In the information industry, the region lost 1,111 jobs in the publishing industries sector. It also lost 158 telecommunications jobs. In the construction industry, the largest job losses were building equipment contractors (-285 jobs); highway, street, and bridge construction (-223 jobs); and residential building construction (-193).

Key things for economic developers to consider from this employment data:

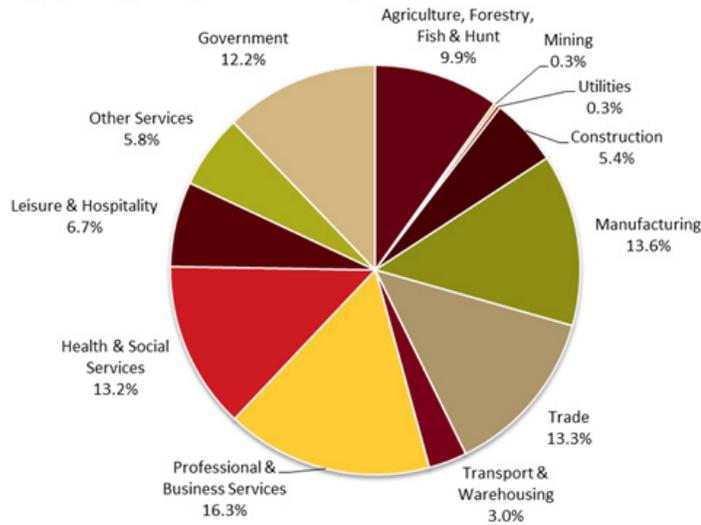
- Find ways to support competitive industries. This will likely mean engaging industry leaders to discuss the key drivers of economic advantage in this region, such as manufacturing. What factors are giving the South Central region a competitive advantage in this industry? What components of the manufacturing industry are growing? What can be done to support this growth?
- For some non-competitive industries, it's important to learn more about the key factors. Information, overall, had a negative competitive share and lost jobs. One sector, publishing industries, was particularly affected. Is this a one-time occurrence or does this indicate a trend?
- Certain industries can post job growth, but further analysis indicates the industry could have grown faster, such as health care. Are there strategies to support additional growth?

Employment and Wages by Industry

Employment by industry in the South Central region is depicted in chart 3. The professional and business services industry employs 16.3 percent of all workers in the South Central region. Manufacturing (13.6 percent); trade

(13.3 percent), and health and social services (13.2 percent) each employ 13 percent of workers in the region.

Chart 3: Employment by Industry: South Central Region



Professional and Business Services

Within the professional and business services industry the largest sectors, measured by employment, include finance and insurance (2,962 jobs); administrative and support and waste management and remediation services (2,741 jobs); professional, scientific, and technical services (2,389 jobs); and information (2,095 jobs).

While the professional and business services sector is currently the largest industry in the South Central region, the industry as a whole shed over 900 jobs between 2003 and 2013. The largest jobs losses were in the information sector, as noted earlier. The largest growth was in the management of companies and enterprises.

The addition of 400 jobs in the sector of management of companies and enterprises represents an increase of 64 percent between 2003 and 2013. Interestingly, according to the EMSI database, the growth in the number of jobs in this sector has been spread across several counties in the region. Le Sueur County added the most new jobs in this sector, increasing employment by 127 jobs. Blue Earth County added 107 new jobs, Sibley County 79 new jobs, Brown County 58 new jobs, Martin County 32 new jobs, and Nicollet County 7 new jobs. Blue Earth County has the most jobs in the sector, followed by Nicollet County, Le Sueur County, Brown County, and Sibley County.

The 2013 average weekly wage in the management of companies and enterprises sector was \$1,336. This is nearly twice the average weekly wage across all industries in the region (\$712). It also represents a 43 percent increase (adjusted for inflation) over the wage in 2000. The average weekly wage for this sector is highest in Blue Earth County at \$1,522.

Manufacturing

The manufacturing industry, while shedding jobs, performed better than expected given national and industry trends. Given the effects of the

Great Recession, the South Central region was expected to lose over 4,500 manufacturing jobs, when in fact it only lost 2,006 jobs. The location quotient (LQ) for the manufacturing industry in the South Central region is 2.06, indicating that the region has twice as many jobs in the industry as compared to the nation. The LQ is highest in printing and related support activities (10.40); electrical equipment, appliance, and component manufacturing (6.66); and nonmetallic mineral product manufacturing (4.60). For more on location quotients, see page 14.)

The largest manufacturing sectors in the region include food manufacturing (5,033 jobs) and printing and related support activities (3,594 jobs). Other sectors with more than 1,000 jobs in the South Central region include electrical equipment, appliance, and component manufacturing; fabricated metal product manufacturing; nonmetallic mineral product manufacturing; machinery manufacturing; and computer and electronic product manufacturing.

Employment in manufacturing is fairly dispersed across the region. There are 3,912 jobs in Blue Earth County, 3,892 jobs in Nicollet County, 2,872 jobs in Brown County, 2,410 jobs in Le Sueur County, and 2,082 jobs in Waseca County.

In the South Central region, the 2013 average weekly wage in manufacturing was \$863, approximately \$150 higher than the average weekly wage across all industries. The average weekly wage in the industry increased 9.5 percent between 2000 and 2013, after adjusting for inflation. Manufacturing's 2013 average weekly wage was highest in Waseca County at \$1,008. The lowest 2013 average weekly wage was in Watonwan County at \$640.

Trade

Within the trade industry in the South Central region, 76 percent of the jobs are in the retail trade sector. The other 24 percent is in the wholesale trade sector. Overall, between 2003 and 2013, the retail trade sector grew by 2 percent, adding 198 jobs. The wholesale trade sector, meanwhile declined by 15 percent, shedding 668 jobs.

Within retail trade, the sectors with the highest number of jobs in the South Central region include food and beverage stores (2,889 jobs); general merchandise stores (2,465 jobs); and motor vehicle and parts dealers (1,514). Between 2003 and 2013, the most jobs were added in nonstore retailers; motor vehicles and parts dealers; and food and beverage stores. All three of these sectors also had positive growth in the competitive share. The most job losses were recorded in miscellaneous store retailers; health and personal care stores; and electronics and appliance stores. All three of these sectors also had a negative competitive share.

The 2013 average weekly wage in the retail trade sector in the South Central region was \$403. This represents an inflation-adjusted one percent increase from 2000. The average weekly wage in the retail trade sector was over \$300 lower than the average weekly wage in all industries in the region. The 2013 average weekly wage was highest in Nicollet County (\$441) and Blue Earth County (\$418). The lowest average weekly wage was in Sibley County (\$251).

Of all the retail trade jobs in the region, 46 percent are located in Blue Earth County, which is home to the regional hub of Mankato. Nicollet County, part of the Mankato – North Mankato Metropolitan Statistical Area (MSA), hosts 8 percent of the retail jobs. Brown County has 14 percent and Martin County has 10 percent of retail jobs. Martin County and Nicollet County added jobs between 2003 and 2013, while Blue Earth County and Brown County lost jobs.

Within wholesale trade, the sectors with the highest number of jobs in the South Central region are in the sectors of miscellaneous nondurable goods merchant wholesalers (794 jobs); farm product raw material merchant wholesalers (748 jobs); and machinery, equipment, and supplies wholesalers (616 jobs).

Health and Social Services

As discussed, the health and social services industry was a growth industry in the South Central region between 2003 and 2013, adding 2,879 jobs. However, the industry would have been expected to add another 876 jobs, given growth trends in the industry and the nation. The location quotient for the health and social services industry is 1.22, indicating the region has slightly more jobs in the industry than expected.

In 2013, the South Central region posted 5,294 jobs in nursing and residential care facilities; 4,229 jobs in social assistance; 3,531 jobs in ambulatory health care services; and 3,206 jobs at hospitals. Growth occurred between 2003 and 2013 in all sectors of the health care and social services industry, with the biggest job gains in social assistance (1,196 new jobs) and hospitals (1,092 new jobs). The majority of jobs gains in social assistance were in vocational rehabilitation services and individual and family services.

The 2013 average weekly wage in the health and social services industry in the South Central region was \$724 which is about equal with the average weekly wage across all industries. The 2013 wage is 15 percent higher than the wage in 2000, after adjusting for inflation. Weekly wages are highest in ambulatory health care services (\$1,213), followed by hospitals (\$1,133). Nursing and residential care (\$386) and social assistance (\$331) have the lowest weekly wages in the region.

The majority of the health care and social assistance jobs (49 percent) are located in Blue Earth County. Nicollet County is home to 14 percent of the industry jobs.

LOCAL INTERDEPENDENCIES

Beyond studying basic structure, examining how sectors interact with each other can provide powerful insights into an economy. Input-output models have been developed to estimate how sectors connect within a region. This section of the report will examine two significant industries in the South Central regional economy – manufacturing and professional and business services – and their connections to other industries. Specifically, the analysis will focus on 1) cheese manufacturing and 2) banks. These are two large sectors within their respective industries as measured by output.

Multipliers include both indirect and induced effects. The discussion here focuses on indirect effects. Indirect effects are generated when a firm

purchases inputs (goods and services) from other business establishments, which in turn purchase the goods and services that those supplier businesses need to produce their output. These are often referred to as supply chain effects. Induced effects are generated through the spending when employees of a local industry spend their wages in the region.

Multipliers are driven by the amount of purchases a sector makes from other sectors. Understanding what inputs are necessary for the production of a good or service, and the extent to which those inputs are produced locally, can provide insights into the potential for economic development from the sector.

Manufacturing – Cheese Manufacturing

Output multipliers for the food manufacturing sectors in the South Central region are estimated to range from 1.3 to 2.0. In other words, for every dollar of output generated by the sector (cheese manufacturing, for example), \$0.30 to \$1 are generated in other regional sectors that supply that sector.

Table 3 highlights expenditures by cheese manufacturers. For every dollar spent on inputs, cheese manufacturers are estimated to spend 32.0 percent on cheese products⁴, 26.5 percent on dairy cattle and milk products, and 6.2 percent on wholesale trade. Since the cheese manufacturing industry produces \$878.7 million of output in the region, this translates into cheese manufacturers buying \$214.2 million of product from dairy farmers.

Of additional interest is the local availability of inputs. The IMPLAN database can estimate the percent of local demand for a good or service that can be satisfied by local supply. For cheese manufacturers in the South Central region, local supply can satisfy at least 50 percent of their demand for wholesale trade, fluid milk and butter, truck transportation, dry condensed and evaporated milk, and electricity.

Several of the top inputs purchased by cheese manufacturers are not available in full supply from local sources, such as dairy cattle and milk products, plastics packaging, and paperboard containers. This may indicate opportunities to increase local supply of these goods and services.

Pursuing economic development based on possible opportunities for supply chain development is one economic development approach. However, before moving forward, decision-makers should 1) take a scan of the industry, as it could be that the suppliers are located just outside the region as defined for this study and therefore considered local, and 2) explore the reasons for the current industry location, as location decisions are based on a broad variety of factors including proximity to supplies and transportation routes.

⁴ The cheese manufacturing sector includes a broad array of manufacturing activities related to cheese production. Purchases within the industry may reflect the purchases of specialized products made by one manufacturer and used in the production process of other cheese manufacturers.

TABLE 3: TOP PURCHASES BY CHEESE MANUFACTURING FACILITIES IN THE SOUTH CENTRAL MINNESOTA REGION, PERCENT OF TOTAL EXPENDITURES, AND LOCAL AVAILABILITY

Input	Percent of Input Expenditures	More than 50% of Demand Available from Suppliers within the Northeast Region
Cheese manufacturing	32.0%	Yes
Dairy cattle and milk products	26.5%	No
Wholesale trade	6.2%	Yes
Fluid milk and butter	3.8%	Yes
Truck transportation	3.0%	Yes
Dry condensed and evaporated milk products	2.8%	Yes
Management of companies and enterprises	2.0%	No
Plastics packaging	1.2%	No
Electricity and distribution services	1.1%	Yes
Paperboard containers	1.0%	No
Source: IMPLAN		

Professional and Business Services -- Finance

Multipliers for financial sectors in the South Central region are estimated to range from 1.3 to 1.8. Table 4 shows the top inputs purchased locally by banks (monetary authorities and depository credit), the percent of total input expenditures spent on the item, and the local availability of the item. For every dollar spent on inputs by banks, 8.6 percent is spent on securities, commodity contracts, investments and related services; 5.1 percent on services from other banks; and 0.9 percent on advertising and related services.

Banks are important sources of local demand for securities, commodity contracts, investments, and related services; other banks; and advertising and related services.⁵ These sectors with strong connections to banks capture the 30 to 80 cents of additional economic activity that flows from every dollar of banking output mentioned above. Second, there may be opportunities for increased local production of professional, scientific, and technical services, because banks are purchasing these outputs from outside the region.

⁵ Local here is the South Central region.

TABLE 4: TOP PURCHASES BY BANKS (MONETARY AUTHORITIES AND DEPOSITORY CREDIT) IN THE SOUTH CENTRAL MINNESOTA REGION, PERCENT OF TOTAL EXPENDITURES, AND LOCAL AVAILABILITY

Input	Percent of Input Expenditures	More than 50% of Demand Available from Suppliers within the Northwest Region
Securities, commodity contracts, investments, and related services	8.6%	Yes
Monetary authorities and depository credit (banks)	5.1%	Yes
Advertising and related services	0.9%	Yes
Nondepository credit intermediation and related	0.9%	Yes
Maintained and repaired nonresidential buildings	0.8%	Yes
Eating and drinking places	0.7%	Yes
Services to building and dwellings	0.4%	Yes
Telecommunications	0.4%	Yes
Professional, scientific, and technical services	0.3%	No
Accounting, tax preparation, bookkeeping, and payroll services	0.3%	Yes
Source: IMPLAN		

These two examples (food manufacturing and finance) demonstrate the importance of economic interdependencies and interactions in the region. In general, industries that purchase from local suppliers tend to have higher economic impacts in the region. These two examples are also interesting in another way. Cheese manufacturing purchases a significant share of their inputs (more than 50 percent) from two single sectors (cheese production and dairy cattle and milk products). However, dairy cattle and milk products are not locally available in full supply. Banks, on the other hand, purchase a much more diverse set of inputs, yet the majority of their key supplies are available locally.

METHODOLOGY, DATA, AND SOURCES

This report presents the economic characteristics of the region and an analysis of industries, income, employment, and local interdependencies. Three data sources were accessed in the preparation of the report. One data source is the IMPLAN database. IMPLAN is an input-output model developed by MIG, Inc. The database compiles a variety of sources to provide data on output, employment, and labor income by county for 440 economic sectors. A second data source is the Quarterly Census of Employment and Wages (QCEW) data provided by the Minnesota Department of Employment and Economic Development. This data is used, when necessary, to compliment or clarify the IMPLAN data. Finally, data from Economic Modeling Specialists International (EMSI) is presented in this report. The EMSI data in this report is derived from QCEW data; however, EMSI provides simple tools for performing calculations, such as shift-share analysis, on the data.

The boundaries of service of the Regional Development Commission were used for this study's definition of the South Central region of Minnesota. The North American Industry Classification System (NAICS) code was used in the study. The NAICS code is the standard used by federal statistical agencies in classifying business establishments for the purpose of collecting, analyzing, and publishing statistical data related to the U.S. business economy. This was used to enable uniformity and also for easy data accessibility.

Finally, data was analyzed with input from Extension Educators in the region and findings were compiled into the report.

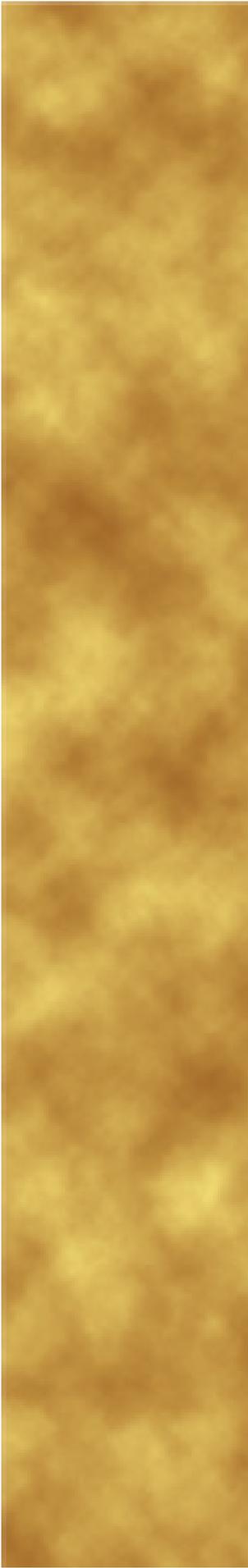
Shift-Share Analysis

The results of shift-share analysis are presented in this report. Shift-share analysis is a powerful tool for understanding the drivers of economic change in an industry. Shift-share analysis parses economic change (here employment changes) into three components: national growth, industrial mix, and competitive share.

- **National Growth:** National growth indicates how many jobs a local economy would have gained (or lost) as a result of the growth (or decline) of employment at the national level. For example, consider a local economy with 100,000 jobs at the beginning of the time period. If during the period under consideration, the number of jobs in the United States grew by a rate of 2 percent, then at the end of the time period under consideration, the local economy would be expected to have 102,000 jobs.
- **Industrial Mix:** Industrial mix indicates how many jobs a particular industry within the local economy would have gained (or lost) if the local industry grew (or declined) at a rate similar to the industry as a whole in the United States. For example, if 1,000 people were employed in the finance industry in the local economy at the beginning of the period, and the finance industry as a whole in the U.S. grew at a rate of 10 percent, then at the end of the time period under consideration, the local finance industry would be expected to have 1,100 jobs.
- **Competitive Share:** Competitive share is the remainder of change in employment for the region examined. From our example, region's employment should have grown by 2,100 jobs, looking at overall national growth and then growth in the finance industry itself. If the local economy actually grew by 3,100 jobs in the finance industry, then 1,000 jobs were added because the local economy grew faster than expected, given national and industry trends. Conversely, if the local economy grew by only 1,000 jobs, then the economy was not as competitive as it should have been, given national and industry trends.
- **Percent Competitive Share:** This is the percent of total jobs that are sourced from competitive share. A competitive share of 80 percent would indicate that 80 percent of the jobs during the time period were derived from the competitive share, rather than from national and industry trends.

Location Quotients

This analysis reports the location quotient for certain industries. Location quotients are used in determining the concentration of a particular industry



or sector in a region compared to a larger study area. In this analysis, the location quotient for the region versus the state is reported. If, say, 30 percent of employment in a region is in health care, while at the state only 15% of employment is in health care, then the location quotient would be 2, indicating that the region has twice as much employment in health care than the state as a whole.

OTHER DATA RESOURCES

Source	Link	Description
Harvard Business School and the U.S. Economic Development Administration	http://www.clustermapping.us/	Open data on regional industry clusters and economies, with analysis available for states, economic areas, metropolitan and micropolitan areas, counties, and customized regions based on counties. Data offers insights into performance, business environment and demographics.
Wilder Foundation	www.mncompass.org	Comprehensive data source for Minnesota counties and cities. In collaboration with the Initiative Foundations and others, Minnesota Compass has added data about smaller cities.
MN Demographers Office	http://mn.gov/admin/demography/data-by-topic/population-data/our-estimates/index.jsp	Go here for population estimates by EDR, County, and City/Townships. 2013 Estimates are available.
MN Land Economics	http://www.landeconomics.umn.edu/	Go here for information about land sales, land values, property taxes, soil type, etc. The database can be used to get information at the local, county, and state levels.
Headwaters Economics	http://headwaterseconomics.org/tools/eps-hdt	Generate your own socioeconomic profiles from federal data sources, by using the EPS-HDT Tool. The attached guidebook presents the data and provides a step by step walk-through on how to think about it.
DEED Data Tools	http://mn.gov/deed/data/data-tools/index.jsp	DEED provides access to several data tools such as labor market data, unemployment data, and many others. Most labor market data can be accessed through the labor market portal: https://apps.deed.state.mn.us/lmi/rws/
University of Wisconsin Extension	http://fyi.uwex.edu/downtown-market-analysis/understanding-the-market/demographics-and-lifestyle-analysis/	Learn more about demographic and lifestyle analysis
University of Wisconsin Extension	http://cced.ces.uwex.edu/files/2013/02/Resource-Document-Total-12.pdf	Discover useful links to sources of information for economic developers
OnTheMap	http://onthemap.ces.census.gov/	Mapping tool from the census. Use this understand where people live vs work
University of Wisconsin-Madison, Michigan Tech University, University of New Hampshire	http://www.netmigration.wisc.edu/	Use this to learn about - and visualize - migration patterns for U.S. counties.



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