The EDA CENTER

at the University of Minnesota Crookston

Economic Composition of Upper Minnesota Valley: Industries and Performance

Brigid Tuck

(With Assistance from Neil Linscheid and Ryan Pesch)

UNIVERSITY OF MINNESOTA | EXTENSION

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About The EDA Center

The EDA Center at the University of Minnesota Crookston is one of more than 40 university centers nationwide, supported by the Economic Development Administration, U.S. Department of Commerce. The EDA Center conducts applied research, provides direct technical assistance and delivers educational programs to economic development agencies that support the economy of economically-distressed communities throughout Minnesota.

Our Mission:

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.

To learn more about The EDA Center go to: www.edacenter.org.

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ECONOMIC COMPOSITION OF UPPER MINNESOTA VALLEY: KEY FINDINGS

To analyze the economic composition of the Upper Minnesota Valley region, 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.

Agriculture is a primary driver of the Upper Minnesota Valley region's economy. Trade, manufacturing, and government are other important components of the economy. Agriculture has been a strong industry in recent years, putting the Upper Minnesota Valley in a competitive position. A caution - as of the time of this publication, predictions were for relatively low grain prices for the 2014 harvest. This could significantly impact the strength of the agricultural industry.

REGIONAL STRENGTHS:

- **Agriculture.** Agriculture is the largest industry in the region – measured by both employment and output. Corn, soybeans, and hogs contribute the highest shares of output. The agriculture industry has added jobs over the past 10 years and at rates faster than expected given national and industry trends. Manufacturing in the region is closely tied to agriculture; the largest manufacturing sectors include poultry processing, cheese manufacturing, and oilseed processing.

- **Construction.** As an individual sector, construction is the third largest source of output. Construction jobs in the region have been on the rise and at a competitive rate. Construction companies in the Upper Minnesota Valley region added jobs despite the Great Recession. Job gains were recorded in the construction sectors of industrial building; commercial and institutional building; and heavy and civil engineering construction. Wages in the industry are strong.

- **Wholesale trade.** Wholesale trade added jobs in the region at a pace faster than national and industry trends. Wages are relatively strong and have grown faster than wages in other industries. Wholesale trade activity is distributed across the region.

REGIONAL CONCERNS:

The analysis also revealed areas of potential concern for the region from an economic standpoint. Areas of regional concern may warrant additional attention and understanding.

- **Employment.** The total number of jobs in the Upper Minnesota Valley region peaked in 2008 at 18,871 jobs. Since then, the number of jobs in the region has declined. While most of Minnesota experienced job losses due

to the Great Recession, most regions have recovered and are adding jobs. The Upper Minnesota Valley region is not following this trend.

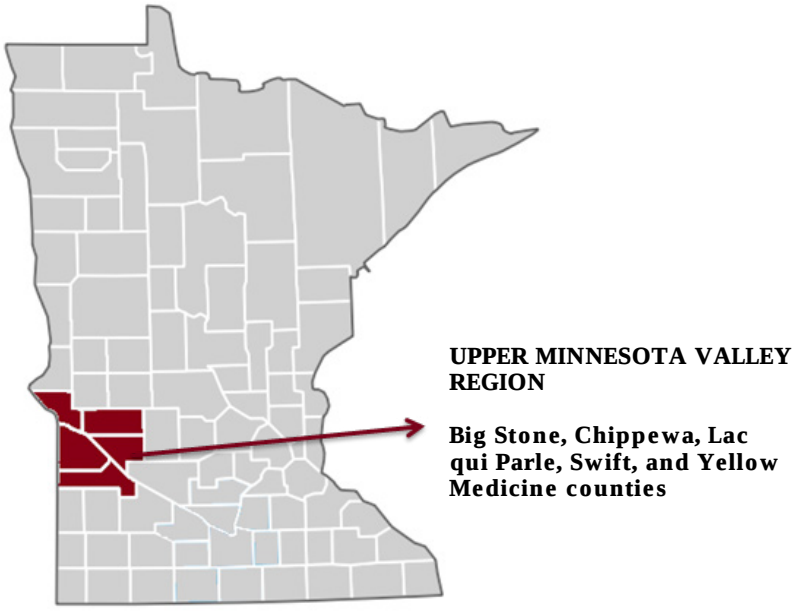
- **Health care.** While the health care and social assistance industry posted 175 new jobs in the region, national and industry trends indicate it should have added 436 jobs.

STUDY BACKGROUND AND OVERVIEW OF THE UPPER MINNESOTA VALLEY 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 responding to a broader conversation of the role of Greater Minnesota in the state's economy, is producing economic profile reports on Minnesota's 12 non-metro regions. This report is provided in partnership with the EDA Center at the University of Minnesota Crookston.

Located on the western side of Minnesota, the region represented by the Upper Minnesota Valley Regional Development Commission is comprised of five counties: Big Stone, Chippewa, Lac qui Parle, Swift, and Yellow Medicine counties. Unlike many other regions in Minnesota, this region doesn't contain a dominant regional center. There are several sub-regional centers such as Benson, Montevideo, Granite Falls, and Ortonville. Just outside the region are the larger regional centers of Willmar, Watertown, South Dakota, and Marshall. Those larger regional centers have both negative and positive impacts on the economic composition and performance of this region.

Map 1: Map of Upper Minnesota Valley Region in Minnesota



The goals of the 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.

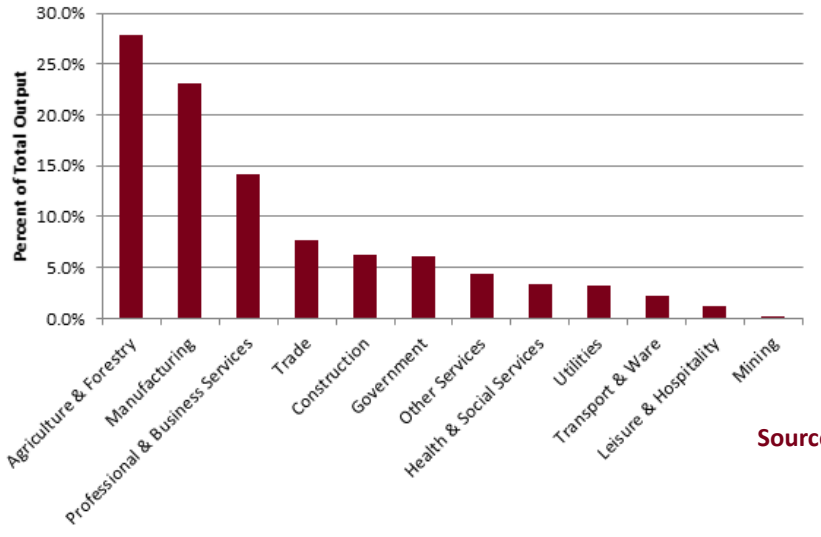
To ascertain which industries are regional strengths and which are potential regional concerns, this report draws from industry outputs, employment, and wage data. The first section looks at output. Output measures the value of sales by industry. Studying output by industry provides perspective on which industries are driving the highest sales in the region. The second section details employment. Studying employment by industry identifies the 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 Upper Minnesota Valley region produced $5.1 billion in goods and services, according to estimates from the IMPLAN economic model. Output in the Upper Minnesota Valley region accounts for less than 1 percent of Minnesota's $567.8 billion economy and 2 percent of Greater Minnesota's $218.8 billion economy. The agriculture, forestry, fishing, and hunting industry produced 28 percent of output in the region. Manufacturing generated 23 percent of output and professional and business services generated 14 percent of output.

Chart 1: Industry Share of Total Output Upper Minnesota Valley



Source: IMPLAN

Chart 1 shows output by major industry category which helps frame discussions about output in the region. However, examining output by sector can be valuable too. Sectors are a more refined level of analysis because

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 Upper Minnesota Valley region produce an estimated $3.6 billion of output (table 1). The crop farming, food product manufacturing, and construction sectors are the top generators of output. Within the crop farming sector, grain farming produces $703.0 million of output and oilseed farming produces $329.7 million in output. Within food product manufacturing, poultry processing produces $121.5 million of output; cheese manufacturing produces $109.6 million of output; and soybean and oilseed processing $95.6 million. In the construction sector, construction of other new non-residential structures produces $107.2 million of output.

Output is measured in dollars. Therefore, the price of the good or service sold affects total output. Agricultural prices, particularly grain and oilseed prices, have been strong in recent years. As of the writing of this publication, grain prices for the 2014 grain harvest are predicted to be low -- perhaps even below cost of production. Low grain prices and potential farm losses could significantly impact the agricultural sector and the region.

For the majority of the sectors in table 1, high output is driven by high productivity (output per worker). Each food product manufacturing employee produces an estimated $712,000 in output annually. The clear exception in the table is government and government-owned enterprises. Government output is linked primarily to the number of employees. Output is not a very adequate measure for the government sector, as government does not make sales in the traditional sense of other industries. Output per worker is often lower for service or labor intensive industries, as it takes more workers to produce output.

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

Sector	Total Output (millions)	Output per Worker
Crop farming	$1,134.1	$257,800
Food product manufacturing	$429.3	$712,150
Construction	$322.4	$151,000
Government and government-owned enterprises	$313.6	$58,000
Livestock	$285.3	$294,350
Machinery manufacturing	$278.0	$471,100
Real estate	$263.7	$750,400
Wholesale trade	$259.7	$185,400
Monetary authorities	$190.0	$407,300
Utilities	$166.8	$668,400
TOP TEN TOTAL	**$3,642.9 (71%)**	
TOTAL OUTPUT IN REGION	**$5,124.4**	

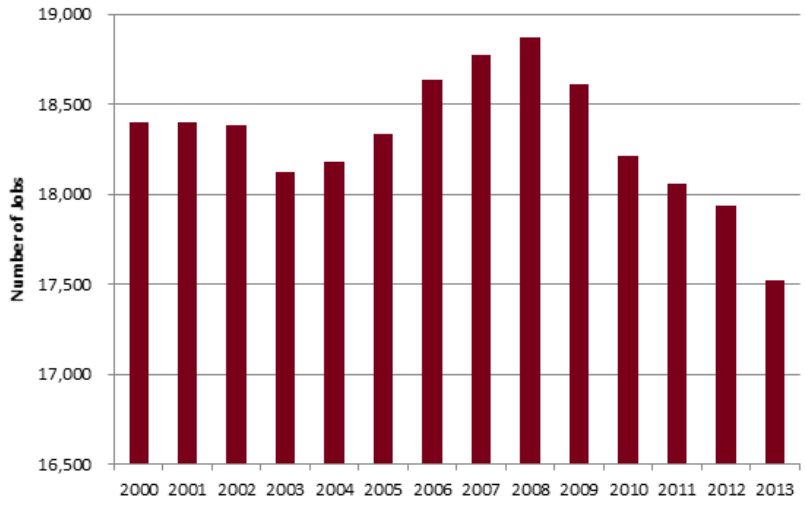
*Source: IMPLAN

The industries with the lowest output per worker in the region include private households (households providing services to other households, such as cleaning) and civic, social, professional, and similar organizations. Since the model measures one job as one job, these two industries, which have relatively high part-time employment, likely have lower output per worker because a significant share of the workers are working less than full-time.

EMPLOYMENT AND WAGES

The number of jobs in the Upper Minnesota Valley region is depicted in chart 2. Jobs growth was essentially flat in the region from 2000 to 2002. Employment dropped in 2003 but began an upward trend in 2004, growing by nearly 750 between 2003 and the peak in 2008. The number of jobs in the region has been dropping since 2008. By 2013, employment was at 17,500, nearly 1,400 jobs (or 7 percent) below 2008. The 2008-2009 Great Recession hit all regions of Minnesota and most regions experienced a decline in employment between 2008 and 2010. However, most regions have since shown signs of recovery and have added jobs. Employment in the Upper Minnesota Valley region has not followed this trend.

Chart 2: Total Employment 2000-2013, Upper Minnesota Valley



Source: QCEW

The industries adding the most jobs between 2003 and 2012 were wholesale trade (216 jobs); health care and social assistance (175 jobs); and agriculture, forestry, fishing, and hunting (157 jobs).[1] See table 2. The industries suffering the most jobs losses during the period include administrative and support and waste management and remediation services (350 jobs lost); retail trade (268 jobs lost); and transportation and warehousing (110 jobs lost).

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 a particular characteristic of the local economy is driving growth in the region.

1 Data from the Quarterly Census of Employment and Wages which is based on employers reporting employment. The self-employed, as many farmers are, are not required to report under this program, therefore, these figures likely underrepresent the growth in agriculture.

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 fully interpret the results, see page 14.

The wholesale trade industry added the most jobs between 2000 and 2013 (216 jobs). If the wholesale trade industry in the Upper Minnesota Valley region had grown at the same overall rate as the national economy based on job growth or decline combined in all industries, it should have added 30 jobs (national growth effect). The wholesale trade industry at the national level, however, shed jobs during the time period. If the Upper Minnesota Valley region's wholesale trade industry would have contracted at the same rate as the wholesale trade industry nationally, then it would have been predicted to lose 18 jobs (industry mix effect). Since jobs were added, the wholesale trade industry in the Upper Minnesota Valley region is considered "competitive." In other words, the wholesale trade industry in the region outperformed national and industry trends.

TABLE 2: SHIFT-SHARE ANALYSIS FOR GROWTH AND DECLINE INDUSTRIES[2]

Industry	Change 2003-2013	Industry Mix Effect	National Growth Effect	Competitive Effect
Top 3 Job Adding Industries				
Wholesale trade	216	(18)	30	204
Health care and social assistance	175	377	59	(261)
Agriculture, forestry, fishing, and hunting	157	0	8	149
Top 3 Job Loss Industries				
Administrative and support and waste management and remediation services	(350)	12	17	(379)
Retail trade	(268)	(72)	63	(259)
Transportation and warehousing	(110)	12	15	(137)
*Source: EMSI				

The health care and social services sector added 175 jobs between 2003 and 2013 in the Upper Minnesota Valley region. However, given the rapid growth in the health care and social assistance industry at the national level, the region should have added 377 jobs (industry mix effect). Given the general employment growth across all industries nationally, the health care and social services industry in the Upper Minnesota Valley region should have added 59 jobs (national growth effect). Therefore, the health care and social services industry in the Upper Minnesota Valley region is not adding jobs as quickly as it national and industry trends would predict. This is a trend that is of note for the region and bears further exploration.

The industry called administrative and support and waste management and remediation services lost 350 jobs between 2003 and 2013. All of these lost jobs were due to the competitive effect. Specifically, all these lost jobs are in the sector of facilities support services. The definition of the sector includes

2 For an explanation of shift-share analysis, please see the methodology section.

establishments providing private jail services or operating correctional facilities (i.e., jails) on a contract or fee basis. In 2010, a private correctional facility closed in Appleton. The lost jobs here, then, can be attributed to a one-time event and do not necessarily indicate a trend of concern.

The retail trade industry lost 268 jobs in the Upper Minnesota Valley region during the period. While the retail trade industry at the national level contracted during the period, the job losses in the region exceed what would have been expected given those national trends, and therefore, the jobs losses can be considered a result of the Upper Minnesota Valley region being less competitive in the retail trade industry. The majority of the job losses (208) stemmed from gasoline stations. Employment in the retail trade sector of general merchandise stores increased by 27 workers in the time period.

One way to measure the strength of an industry in a region is to consider the location quotient. The location quotient for gasoline stations in the region was 3.2 in 2003, indicating the sector had 3 times as many employees in the region than would be expected given state averages. The loss of 200 jobs reduced the location quotient to 2.4. In comparison, retail trade as a whole, has a location quotient of 0.94 in the Upper Minnesota Valley region, so perhaps the job losses were a correction towards the norm. For more on location quotients and how to interpret them, see page 15.

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

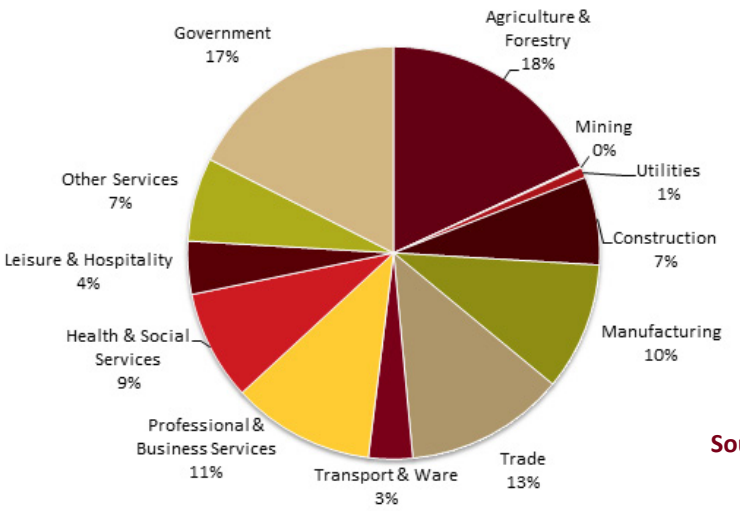
- Find ways to support competitive industries. This will likely mean engaging industry leaders to discuss the key drivers of economic advantage in this region.
- For some non-competitive industries, it's important to learn more about the key drivers. Understanding the drivers will assist in determining the best method for addressing the issue. Further discussion may also reveal the trend is due to a one-time change in the region or a natural correction in the economy.
- There are potential opportunities for the Upper Minnesota Valley region to grow in areas that may have not traditionally been the region's strongest industries.

Employment and Wages by Industry

Employment by industry in the Upper Minnesota Valley region is depicted in chart 3. The highest percentages of employment are in the industry categories of agriculture and forestry, government and government-owned enterprises, trade, and professional and business services.[3]

3 Note, chart 3 is based on IMPLAN data, which categorizes certain sectors into different industries as compared to the QCEW data. Government is a prime example, where all government-owned enterprises are categorized in government, while QCEW categorizes sectors by their primary service. Public hospitals in IMPLAN are in the government industry, in the QCEW data they are in the health care industry.

Chart 3: Employment by Industry: Upper Minnesota Valley



Source: IMPLAN

Agriculture

At the more detailed, sector level within the agriculture and forestry industry, grain farming is the largest farming activity in the region, employing approximately 54 percent of farmers in the region. Oilseed production is the second largest contributor to the agricultural industry in the region, accounting for 15 percent of the sector's total employment. Hog production accounts for another 15 percent of agriculture's employment. Sugar beet production employs an additional 10 percent of farmers. Both crop production and animal production are strengths for the region. Shift-share analysis shows positive gains for competitive share in both industries from 2003-2013.

Location quotients are 3.6 for crop production and 2.5 for animal production. A location quotient over 1.0 indicates the industry has a higher level of employment, or a concentration, as compared to the state. The higher the location quotient is the higher the concentration of employment.

Government and Government-Owned Industries

The second largest employment industry is government and government-owned enterprises. In the IMPLAN model used for this descriptive analysis, all publicly-owned institutions are categorized as government employment, unlike other sources which categorize government employment by the type of activity. Education is a good example here. In the IMPLAN model, all K-12 public education is included in the government industry, while other data sources would categorize it in the education industry. Health care is another good example, publicly-owned hospitals would also be in the government industry. Government and government-owned enterprises also includes tribal government; government-owned enterprises that are run as independent businesses (such as municipal liquor stores); and public higher education institutions.

In the Upper Minnesota Valley region, the sector called "state and local government – education" employs 52 percent of all government workers. The sector called "state and local government – non-education" employs 35 percent of all government workers. During the 2003 to 2013 time period, state

and federal government decreased the number of employees in the region. Local government employment increased slightly.

Trade

The third largest employment sector in the Upper Minnesota Valley region is trade. Trade is comprised of two main sectors – wholesale trade and retail trade. As discussed above, wholesale trade has been a strong sector in the regional economy. Wholesale trade employment grew during the time period and at a competitive rate. Wholesale trade accounts for 40 percent of all trade jobs in the region. Wages in the wholesale trade industry in the region have grown steadily since 2000, except for a small dip in 2010. Overall, between 2000 and 2013 wages rose by 20 percent - from an inflation-adjusted $780 per week in 2000 to $939 in 2013. The average weekly wage across all industries in the region is $636 and rose by 11 percent (adjusted for inflation) during the same period. Thus, the wholesale trade industry has an average weekly wage in the Upper Minnesota Valley region of more than $300 above the average, and wage growth has been strong.

Wholesale trade employment is fairly evenly distributed across the five counties in the Upper Minnesota Valley region. Swift County's wholesale trade industry employs approximately 30 percent of the workers and represents the largest share of employment. Big Stone County's wholesale trade industry employs approximately 10 percent of all the workers and represents the smallest share of employment. In 2013, average weekly wages in the wholesale trade industry were highest in Big Stone County ($1,234) and lowest in Lac qui Parle County ($764).

Retail trade accounts for 60 percent of all trade jobs in the region. Swift County has the highest number of jobs in retail trade (678), while Big Stone County has the least number of jobs (181). The average weekly wage in the retail trade sector in the region is $367. Wages in the region were relatively stagnant, growing only by an inflation-adjusted four percent between 2000 and 2013. The highest average weekly wage is $424 in Lac qui Parle County and the lowest wage was $305 in Swift County.

As discussed above, employment in the retail trade sector declined over the time period by 268 jobs. All five counties in the Upper Minnesota Valley region lost retail trade jobs between 2000 and 2013. Swift County lost 137 jobs representing a 44 percent decline in retail jobs. Lac qui Parle County lost 85 jobs, a 38 percent decline.

Construction

Construction constitutes seven percent of all jobs in the region and creates just over six percent of total output. It is worth flagging construction though because 1) as an individual sector, construction is the third largest source of output and 2) construction jobs in the region have been on the rise and at a competitive rate. The construction industry on the national level suffered during the Great Recession and shed jobs. Construction companies in the Upper Minnesota Valley region, however, added jobs during the time period. Specifically, job gains were recorded in the construction sectors of industrial building, commercial and institutional buildings, and heavy and

civil engineering construction. High prices (and profits) for grain and oilseed producers in recent years has fueled on-farm construction projects.

In 2013, the average weekly wage in the construction industry in the region was $884. This is more than $200 per week higher than the average weekly wage across all industries in the region. Wages in the construction industry in 2013 were 3 percent higher than in 2000 (after adjusting for inflation). However, average weekly wages did hit a high of $1,127 (in 2013 dollars) in 2007.

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 the two main drivers of the Upper Minnesota Valley economy (agriculture and manufacturing) and their connections with other sectors. Specifically, the analysis will focus on 1) grain farming and 2) poultry processing, which are the two largest sectors within their respective industries as measured by output.

Multipliers include both indirect and induced 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 needed for their output. These are often referred to as supply chain effects. Induced effects are generated when employees of an industry spend their wages. The discussion here focuses on indirect effects.

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.

Agriculture

Output multipliers for the agricultural sectors in the Upper Minnesota Valley region are estimated to range from 1.2 to 1.5. In other words, for every dollar of output generated by the sector (corn farming, for example), $0.20 to $0.50 cents are generated in other regional sectors that supply that sector.

TABLE 3: TOP PURCHASES BY GRAIN FARMING IN THE UPPER MINNESOTA VALLEY 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**
Real estate	11%	Yes
Fertilizer	10%	No
Agricultural support services	10%	No
Petroleum products	8%	No
Banks	8%	Yes
Grains	8%	Yes
Pesticides and other chemicals	7%	No
Wholesale trade	3%	Yes
Maintenance and repair of buildings	1%	Yes
Truck transportation	1%	Yes
Source: IMPLAN		

Table 3 highlights expenditures by grain farm operations. For every dollar spent on inputs, grain farm operations are estimated to spend 11 percent on real estate (land), 10 percent on fertilizer, and 10 percent on agricultural support services. Land is a fixed commodity, so all demand is satisfied locally. However, the region does not produce fertilizer or agricultural support services in high enough quantities to satisfy the local demand.[4] Therefore, grain farm operations are importing those items from elsewhere.

Table 3 helps illustrate two points. First, grain farm operations are important sources of local demand for real estate (land), banking institutions, other grain operators (seed suppliers), and wholesale trade operations.[5] These industries and sectors with strong connections to grain farming are the top industries capturing the 20 to 50 cents of additional economic activity that flows from every dollar of agricultural output mentioned above. Second, there may be opportunities for increased local production of fertilizer, agricultural support services, and pesticides, because grain farmers are purchasing significant levels of these outputs from outside the region. 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.

Manufacturing

Multipliers for food product manufacturing sectors are estimated to range from 1.2 to 1.7. Manufacturing multipliers are often higher than agriculture, particularly if they use an agricultural product in their manufacturing process. Table 4 shows the top inputs purchased locally by poultry Local

4 Agricultural support services includes activities such as custom planting or harvesting, fertilizer application, and animal breeding services.

5 Local here is the Upper Minnesota Valley region.

here is the Upper Minnesota Valley region. Local here is the Upper Minnesota Valley region. processing facilities, the percent of total input expenditures spent on the item, and the local availability of the item.

TABLE 4: TOP PURCHASES BY POULTRY PROCESSSING FACILITIES IN THE UPPER MINNESOTA VALLEY 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**
Poultry and egg products	30%	Yes
Processed poultry meat products	17%	Yes
Management of companies and enterprises	8%	No
Wholesale trade	3%	Yes
Truck transportation	3%	Yes
Processed animal meat and rendering	2%	Yes
Paperboard containers	2%	No
Banks	2%	Yes
Electricity and distribution services	2%	Yes
All other paper bag and coated and treated paper bags	1%	No
Source: IMPLAN		

Poultry processing facilities are important sources of local demand for poultry and egg producers, wholesale trade, and truck transportation.[6] These industries and sectors with strong connections to poultry processing are the top industries capturing the 20 to 70 cents of additional economic activity that flows from every dollar of food manufacturing mentioned above. Second, there may be opportunities for increased local production of paperboard and coated paper bags, because poultry processors are purchasing significant amounts of these outputs from outside the region.

These two examples (grain farming and poultry processing) 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.

METHODOLOGY, DATA, AND SOURCES

This report presents the economic characteristics of the region and an analysis of industries, income and employment. 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

6 Local here is the Upper Minnesota Valley region.

data; however, EMSI provides simple tools for performing calculations, such as shift-share analysis, on the data.

The Regional Development Commission boundaries were used for this study's definition of Upper Minnesota Valley. The North American Industry Classification System (NAICS) code was used in the study. The NAICS 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.