5-1-2008

Northwest Ohio Manufacturing Brief

Jill S. Taylor

May 2008

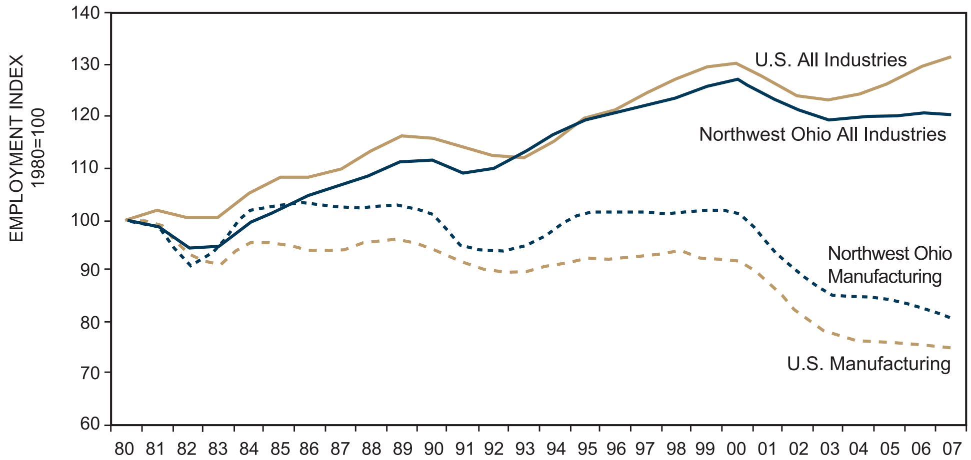
Manufacturing BRIEF

Trends in manufacturing industries in Northwest Ohio

Employment Trends

Throughout most of the 1980s, total employment in both Northwest Ohio and the U.S. gradually increased. In the early 1990s there was a small decline but this was followed by steady growth in the latter part of the decade. There was another decline in the early 2000s from which the U.S. quickly recovered, but job growth in Northwest Ohio has remained relatively flat since that time (**Figure 1**).

Figure 1: Employment, 1980 to 2007



2007 values are estimated. Source: Moody's Economy.com

The employment trend for the manufacturing sector is considerably different. Following a decline in the early 1980s, both Northwest Ohio and the U.S. experienced small fluctuations in the mid-to-late 1980s, a dip in the early 1990s (particularly in Northwest Ohio), and fairly stable manufacturing employment in the mid-to-late 1990s. Between 2000 and 2003, the region and the nation suffered substantial job losses. The rate of manufacturing decline slowed after 2003, however, the downward trend remained. Across the entire time period (1980 to 2007), Northwest Ohio lost manufacturing jobs at a slower rate than the nation but both experienced significant declines (-19.1% in Northwest Ohio versus -24.9% in the U.S.).

Although the manufacturing sector experienced substantial job losses over the long-term, it still plays a dominant role in the Northwest Ohio economy. It employs more than 120,000 people, 21 percent of all workers in the region. In comparison, manufacturing industries employ 14.9 percent of Ohio workers and 10.4 percent of U.S. workers. Manufacturing is by far the largest sector in Northwest Ohio (Health Care is second with 15.2% of total employment).

This brief provides a concise overview of trends in employment, output, and wages for major manufacturing industries in Northwest Ohio. It offers a long-term analysis of employment and output for the manufacturing sector as a whole, and provides a short-term analysis of the specific industries that constitute the sector. Trends in Northwest Ohio are compared to trends in Ohio and the U.S.

Northwest Ohio is defined as a 17-county area that includes the Toledo MSA (Fulton, Lucas, Ottawa, and Wood Counties), Sandusky MSA (Erie County), Lima MSA (Allen County) and 11 non-metropolitan counties (Auglaize, Defiance, Hancock, Hardin, Henry, Mercer, Paulding, Putnam, Sandusky, Van Wert, and Williams).

This brief is sponsored by the Manufacturing Advocacy and Growth Network (MAGNET) and the U.S. Economic Development Administration.

It is produced by the Center for Economic Development at Cleveland State University's Maxine Goodman Levin College of Urban Affairs. To contact the Center for Economic Development call (216) 687-6947.

MAGNET supports and champions manufacturing in the northern half of Ohio and is the voice for the region's manufacturers. Since 1984, MAGNET has assisted over 2,000 manufacturers through its business consulting, product development, and business incubation programs. MAGNET initiatives have generated over $2 billion in economic impact for the region through increased sales, enhanced productivity, and jobs created or retained.

Cleveland State University
Maxine Goodman Levin College of Urban Affairs

U.S. Economic Development Administration

MAGNET
Manufacturing Advocacy & Growth Network

Over the most recent two-year period (2005 to 2007), manufacturing employment in Northwest Ohio fell 4.4 percent, versus a 4.1 percent decline in Ohio and a 1.9 percent decline in the U.S. (**Table 1**). Total employment in Northwest Ohio was nearly stable (-0.2%); job gains in other sectors offset much of the job loss in manufacturing.

Most of the manufacturing job losses in Northwest Ohio were concentrated in two industries—*Transportation Equipment* and *Plastics and Rubber Products*. Combined, they accounted for a loss of nearly 3,600 jobs (both industries declined nationally but at a lower rate). Despite the job losses, these industries remain among the largest manufacturing industries in Northwest Ohio. *Transportation Equipment* is the largest by far with nearly 30,000 employees (accounting for almost one-fourth of all manufacturing jobs). The other large industries in the region, *Fabricated Metal Products, Plastics and Rubber Products*, and *Machinery* each have between 12,000 and 14,400 employees. *Fabricated Metal Products* declined between 2005 and 2007 (-3.7% versus a gain of 3.2% in the U.S.) and the employment level in *Machinery* was essentially flat (0.4% versus a 2.6% increase in the U.S.).

Solid job gains were found in a few manufacturing industries (*Petroleum and Coal Products* grew 6.3% versus 2.4% in the U.S; and *Chemicals* grew 4.4% despite a 1.8% decline nationally) but the largest increase was in *Computer and Electronic Products* (43.7%). It is still a small industry (it had approximately 1,000 employees in 2007) but added the most jobs (325) in the two-year period while employment declined nationally (-1.4%). All of the industries that performed significantly better in Northwest Ohio than in the U.S. are relatively small; *Chemicals* is the largest with approximately 4,700 employees.

Table 1: Employment Change by Industry, 2005:Q1 to 2007:Q1

Industry	Northwest Ohio Manufacturing Employment 2007	Northwest Ohio Change 2005-2007	Northwest Ohio Percent Change 2005-2007	Ohio Percent Change 2005-2007	U.S. Percent Change 2005-2007
Transportation Equipment	29,648	-2,082	-6.6%	-8.2%	-2.4%
Fabricated Metal Products	14,437	-549	-3.7%	0.5%	3.2%
Plastics and Rubber Products	13,784	-1,491	-9.8%	-7.6%	-5.5%
Machinery	12,011	44	0.4%	0.1%	2.6%
Food	10,451	32	0.3%	-1.8%	-0.4%
Nonmetallic Mineral Products	7,856	-149	-1.9%	-2.7%	1.3%
Electrical Equipment, Appliances, Components	7,231	-71	-1.0%	-4.4%	-2.0%
Primary Metals	5,403	-779	-12.6%	-4.6%	-1.6%
Chemicals	4,731	197	4.4%	-1.4%	-1.8%
Furniture and Related Products	3,590	-455	-11.3%	-9.1%	-4.8%
Printing and Related Support Activities	3,402	-97	-2.8%	-5.3%	-3.2%
Miscellaneous Manufacturing	2,336	-227	-8.9%	-5.5%	-1.1%
Paper	2,117	-38	-1.8%	-7.1%	-5.5%
Petroleum and Coal Products	1,874	111	6.3%	-0.9%	2.4%
Wood Products	1,145	-159	-12.2%	-9.3%	-5.3%
Computer and Electronic Products	1,069	325	43.7%	-4.0%	-1.4%
Textile Product Mills	204	-13	-6.1%	4.0%	-6.6%
Apparel	62	-3	-4.1%	-9.0%	-16.9%
Total Manufacturing	**122,064**	**-5,615**	**-4.4%**	**-4.1%**	**-1.9%**
Total All Industries	**581,857**	**-1,387**	**-0.2%**	**0.3%**	**3.5%**

The manufacturing total does not equal the summation of individual industries. Data for some industries have been suppressed to maintain confidentiality. Source: Quarterly Census of Employment and Wages (ES202)

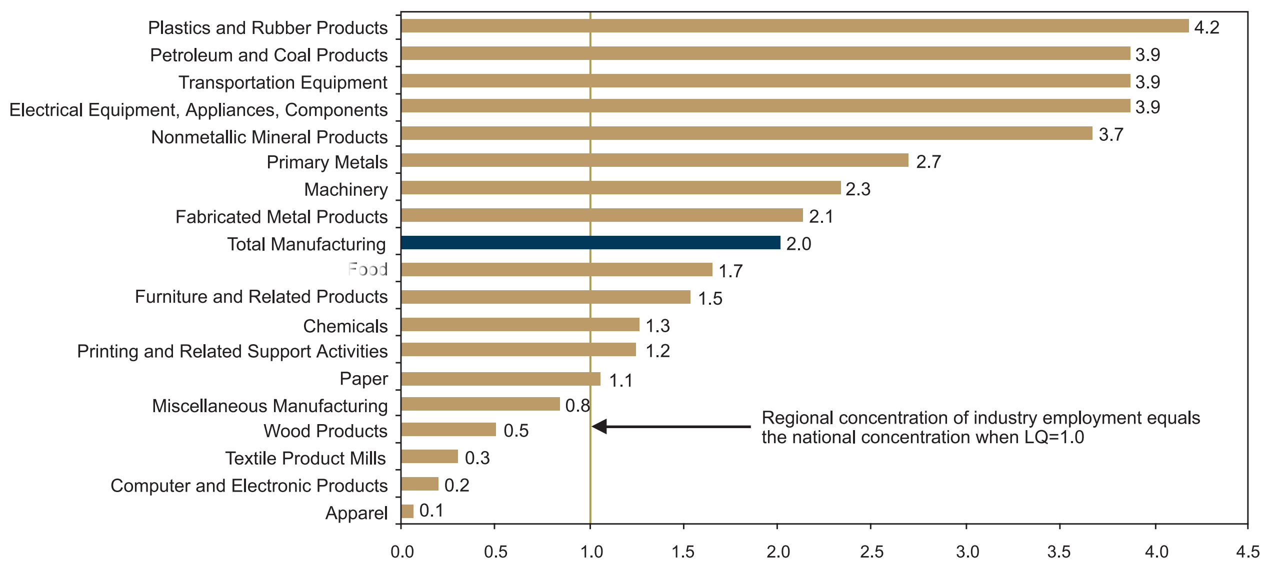
Most of the manufacturing job losses in Northwest Ohio were concentrated in *Transportation Equipment* and *Plastics and Rubber Products*.

The importance of manufacturing to the Northwest Ohio economy is also evident from the location quotients depicted in **Figure 2**. Location Quotients (LQs) measure the concentration of an industry in a region relative to the concentration of the same industry within the national economy. If an industry has a significantly higher concentration in the regional economy, it indicates that the industry is part of the regional economic base, producing some goods for export outside the region, thereby generating wealth for the region.

Five manufacturing industries in Northwest Ohio have an LQ greater than 3.0 and four have an LQ between 2.0 and 2.9. In total, 14 have an LQ greater than 1.0 (the manufacturing sector as a whole has an LQ of 2.0). This data demonstrates that the region's solid manufacturing base is not due to dominance in just one or two industries but results from strength in many industries.

Plastics and Rubber Products (LQ=4.2) is one of the largest industries in Ohio and companies are located throughout the state, including Northwest Ohio. The *Petroleum and Coal Products* industry (LQ=3.9) includes a number of petroleum refining companies with operations in the region. The concentration of auto parts manufacturing facilities in Northwest Ohio (part of the cluster that includes Southern Michigan and Northern Indiana) leads to the high LQ in *Transportation Equipment* (LQ=3.9). The *Electrical Equipment, Appliances, and Components* industry (LQ=3.9) includes a large number of companies with a wide range of products including lighting and household appliances. The *Nonmetallic Mineral Products* industry (LQ=3.7) also includes a large number of companies with a range of products, although there is some concentration in glass and fiberglass products.

Figure 2. Northwest Ohio Location Quotients
(Based on 2007:Q1 Employment)



Source: Quarterly Census of Employment and Wages (ES202)

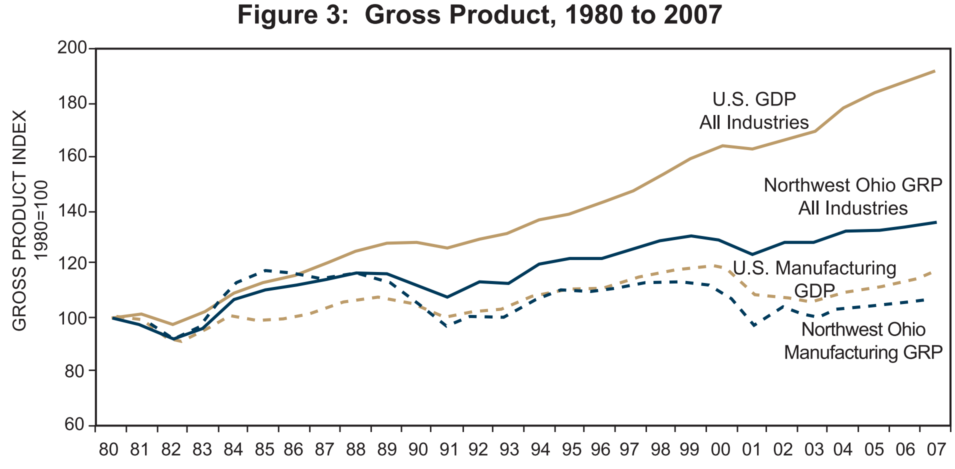
Gross Regional Product

Although manufacturing employment has declined over the long-term, gross product (value added output) has increased (Figure 3). Between 1980 and 2007, manufacturing output in Northwest Ohio grew 6.8 percent (after adjusting for inflation) in light of a 19.1 percent drop in employment. However, on a national level, manufacturing output grew much faster (16.9% over the same time period), despite a higher rate of job loss (-24.9%)

Other sectors of the economy experienced more rapid growth in output, particularly at the national level. Total output in Northwest Ohio increased 35.3 percent between 1980 and 2007; in the U.S. total output nearly doubled, with a growth rate of 92.2 percent.

Gross Regional Product has increased despite declining manufacturing employment.

Figure 3: Gross Product, 1980 to 2007



2007 values are estimated. Source: Moody's Economy.com

Short-term trends also show a large difference in regional versus national growth in manufacturing output (**Table 2**). Between 2005 and 2007, manufacturing output in Northwest Ohio increased 2.3 percent compared to 4.6 percent across the U.S.

In 2007, ten industries generated more than $500 million in output in Northwest Ohio. Only one of these industries (*Chemicals*) increased output at a faster rate than the same industry nationally. Three industries (*Plastics and Rubber Products, Petroleum and Coal Products,* and *Primary Metals*) had declining output despite an increase in output at the national level. Both *Plastics and Rubber Products* and *Primary Metals* suffered substantial job losses during this period.

Although growth rates have lagged in Northwest Ohio, the manufacturing sector accounted for 30 percent of the gross regional product in 2007, significantly higher than its share of employment (21%). Three industries generated nearly half of the manufacturing output in Northwest Ohio. *Transportation Equipment* was responsible for 23.5 percent, *Fabricated Metal Products*, 11.2 percent, and *Plastics and Rubber Products*, 10.1 percent.

Table 2. Change in Gross Regional Product by Industry, 2005:Q1 to 2007:Q1

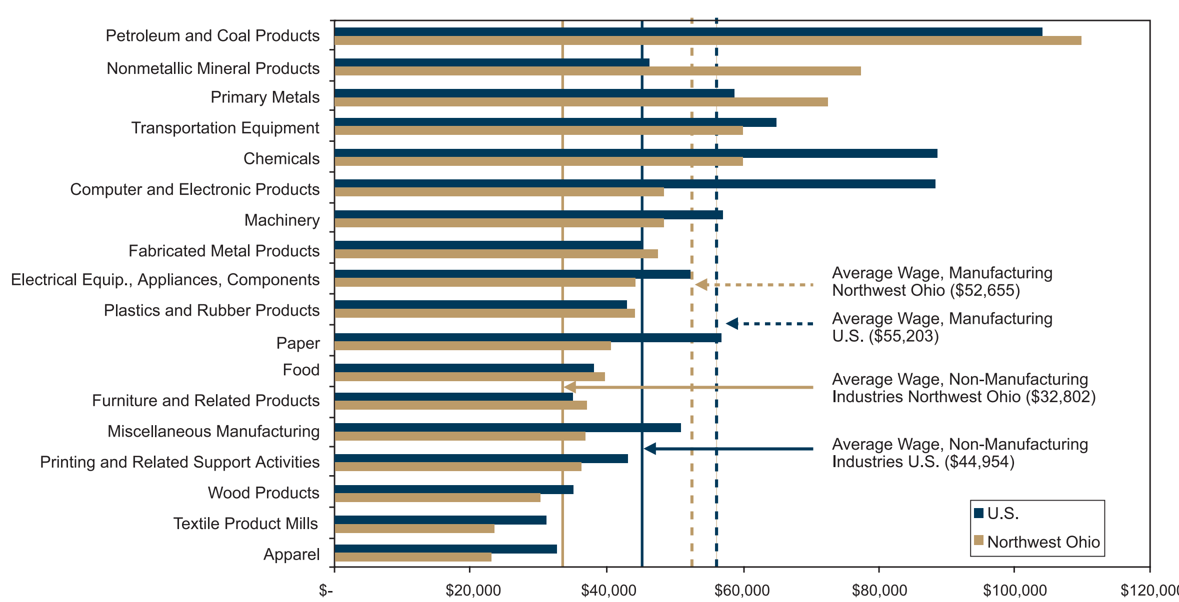
Industry	Northwest Ohio: 2007 Gross Product (in millions $)	Northwest Ohio: Change 2005-2007* (in millions $)	Northwest Ohio: Percent Change 2005-2007*	Ohio: Percent Change 2005-2007*	U.S.: Percent Change 2005-2007*
Transportation Equipment	3,394.0	87.9	2.7%	1.9%	3.1%
Fabricated Metal Products	1,622.4	99.8	6.6%	6.3%	8.9%
Plastics and Rubber Products	1,468.1	-27.6	-1.8%	-3.2%	2.9%
Food	1,248.8	44.9	3.7%	3.9%	4.5%
Nonmetallic Mineral Products	1,129.7	38.5	3.5%	2.9%	5.1%
Machinery	1,050.0	70.9	7.2%	6.4%	9.8%
Chemicals	954.5	53.2	5.9%	5.4%	4.0%
Petroleum and Coal Products	808.8	-17.6	-2.1%	-4.7%	11.4%
Primary Metals	638.2	-37.3	-5.5%	-1.4%	1.6%
Electrical Equipment, Appliances, Components	588.7	-0.1	0.0%	-2.7%	6.5%
Furniture and Related Products	389.9	-4.6	-1.2%	3.6%	-1.5%
Computer and Electronic Products	293.9	-10.9	-3.6%	-2.1%	4.8%
Printing and Related Support Activities	262.6	2.9	1.1%	-0.8%	2.0%
Miscellaneous Manufacturing	164.3	10.4	6.7%	4.1%	6.6%
Paper	152.2	2.1	1.4%	1.0%	1.2%
Wood Products	127.0	15.2	13.6%	9.8%	1.0%
Apparel	35.9	-8.8	-19.7%	-14.2%	-6.8%
Textile Product Mills	25.2	3.6	16.5%	6.0%	-1.4%
Total Manufacturing	**14,470.9**	**327.4**	**2.3%**	**2.4%**	**4.6%**
Total All Industries	**48,805.7**	**934.6**	**2.0%**	**1.8%**	**4.7%**

* 2005 values adjusted for inflation (2007$). The manufacturing total does not equal the summation of individual industries. 2007 values are estimated. Source: Moody's Economy.com

Average Wages

On average, the manufacturing sector pays much higher wages than other sectors of the economy (**Figure 4**). In 2007, the average wage of Northwest Ohio's manufacturing sector was $52,655, which is approximately 60 percent higher than the average wage for all other industries ($32,802). Across the U.S., manufacturing wages are also considerably higher but the differential is not as great ($55,203 in manufacturing versus $44,954 in all other industries).

Figure 4. 2007 Average Wage



Source: Quarterly Census of Employment and Wages (ES202)
Data for some industries have been suppressed to maintain confidentiality.

In the manufacturing sector, the U.S. average wage is only slightly higher than the average wage in Northwest Ohio, however, the wage gap is significant for all other industries. The lower cost of living in Northwest Ohio may partially explain the differences in pay but the wage gap has increased in recent years. The average manufacturing wage in Northwest Ohio increased 3.8 percent between 2005 and 2007 versus 6.2 percent nationally. Likewise, the average wage for all other industries increased 4.6 percent in Northwest Ohio versus 7.9 percent nationally (after adjusting for inflation).

The highest paying manufacturing industry in both Northwest Ohio and the U.S. is *Petroleum and Coal Products* ($110,029 and $104,005, respectively; this is a relatively small industry in Northwest Ohio). *Nonmetallic Mineral Products* ($77,278), *Primary Metals* ($72,443), *Transportation Equipment* ($60,054), *Chemicals* ($59,805), and *Computer and Electronic Products* ($48,398) are the other top-paying industries in the region. With the exception of *Nonmetallic Mineral Products*, these industries are also among those with the highest wages nationally. *Transportation Equipment* is a very large industry in the region; the others are mid-sized industries.

Northwest Ohio pays significantly higher wages in *Nonmetallic Mineral Products*. U.S. average wages are significantly higher in *Chemicals* and *Computer and Electronic Products*. Based on the size of the wage gap, it cannot be attributed solely to the cost-of-living differential.

Sub-Regional Manufacturing Employment

In 2007, the four counties that constitute the Toledo MSA accounted for 40 percent of the manufacturing employment in Northwest Ohio (**Table 3**). Between 2005 and 2007, the metro area experienced a 4.9 percent decline in manufacturing jobs. Fulton, Lucas, and Ottawa Counties each lost jobs, while Wood County had a very small gain.

The Lima MSA (Allen County) was home to 7.6 percent of Northwest Ohio's manufacturing jobs in 2007. Between 2005 and 2007, the metro area lost 16.5 percent of its manufacturing employment (a loss of 1,526 jobs). Manufacturing in the Sandusky MSA (Erie County) declined at a similar rate; it lost approximately 1,000 jobs (-16%) between 2005 and 2007. The Sandusky MSA, holds 5.1 percent of the region's manufacturing employment.

The manufacturing sector pays much higher wages than other sectors of the economy.

Table 3. Manufacturing Employment by County, 2005:Q1 to 2007:Q1

	Manufacturing Employment			
	2007	Change 2005-2007	% Change 2005-2007	2007 Share of Total Employment
Ohio	776,407	-33,454	-4.3%	14.9%
Northwest Ohio	122,064	-5,615	-4.6%	21.0%
Lima MSA	9,265	-1,526	-16.5%	17.3%
Allen	9,265	-1,526	-16.5%	17.3%
Sandusky MSA	6,236	-996	-16.0%	17.8%
Erie	6,236	-996	-16.0%	17.8%
Toledo MSA	48,668	-2,405	-4.9%	15.8%
Fulton	8,523	-503	-5.9%	41.6%
Lucas	24,572	-1,980	-8.1%	11.3%
Ottawa	2,405	-72	-3.0%	19.2%
Wood	13,168	150	1.1%	22.7%
Non-Metro Counties	57,894	-687	-1.2%	31.4%
Auglaize	6,828	-121	-1.8%	34.9%
Defiance	4,781	-693	-14.5%	28.6%
Hancock	11,484	-185	-1.6%	27.3%
Hardin	2,238	-32	-1.4%	27.1%
Henry	3,428	-424	-12.4%	30.8%
Mercer	4,983	401	8.0%	29.6%
Paulding	1,787	285	16.0%	33.9%
Putnam	3,094	315	10.2%	28.4%
Sandusky	8,690	-201	-2.3%	33.6%
Van Wert	3,726	28	0.7%	32.6%
Williams	6,855	-60	-0.9%	41.8%

Source: Quarterly Census of Employment and Wages (ES202)

Cleveland State University
Maxine Goodman Levin
College of Urban Affairs
The Center for Economic Development

Trends in manufacturing industries in Northwest Ohio
Manufacturing BRIEF

In 2007, almost half (47.4%) of Northwest Ohio's manufacturing jobs were located in the region's 11 non-metropolitan counties. Combined, they experienced a small decline in jobs (-1.2%) but there were substantial differences among counties. Seven counties lost jobs while four counties gained. Defiance suffered the greatest loss in terms of both the absolute number and percentage (693 jobs, -14.5%) and Henry County also experienced a significant downturn (424 jobs, -12.4%). Mercer County added the most jobs (401, 8.0%) and Paulding experienced the highest rate of growth (285, 16%). Putnam County also did well, adding 315 jobs (10.2%).

Williams and Fulton are the Northwest Ohio counties most dependent on manufacturing, as this sector provides more than 40 percent of their total employment (41.8% and 41.6%, respectively). There are several other counties in the region that are also heavily dependent on manufacturing. Auglaize, Paulding, Sandusky, and Van Wert counties each have about one-third of their employment base in manufacturing. In every county in Northwest Ohio, manufacturing accounts for a larger share of total employment than the U.S. average (10.4% of U.S. jobs are in the manufacturing sector).

Manufacturing Sector Struggles but Remains the Backbone of the Northwest Ohio Economy

Like most regions in the Midwest, Northwest Ohio has suffered a tremendous loss of manufacturing jobs over the last few decades and employment is still declining, although at a slower rate. Despite this, manufacturing continues to support the regional economy. It remains by far the largest sector in Northwest Ohio in terms of employment and output and it pays higher than average wages.

Over the long-term, Northwest Ohio has actually retained a larger share of its manufacturing jobs than the nation. However, in recent years, the region has lost jobs at a faster rate, output has grown at a much lower rate, and the wage gap between the region and the U.S. is increasing. Furthermore, the future of the U.S. auto industry will have important implications for Northwest Ohio since *Transportation Equipment* (auto parts) is by far the largest manufacturing industry. The region's manufacturing base is strong but there are reasons to be concerned about the direction of manufacturing in Northwest Ohio. ■

Cleveland State University
Maxine Goodman Levin
College of Urban Affairs

U.S. Economic Development
Administration

MAGNET
Manufacturing Advocacy & Growth Network
www.magnetwork.org

Please share your comments with **Dr. Ziona Austrian: z.austrian@csuohio.edu**.
An electronic version of this brief (in PDF format) is available on the Center for Economic Development website **http://urban.csuohio.edu/economicdevelopment.**