

# Manufacturing BRIEF



## Trends in manufacturing industries in Northeast Ohio

Over the past few decades, total employment has increased in Northeast Ohio (NEO) and the U.S. However, between 1980 and 2006, the rate of growth was four times higher in the U.S. (46%) compared to NEO (11%). In contrast, manufacturing employment declined in both NEO and the U.S., however, NEO lost manufacturing jobs at a higher rate because the region was more severely affected during the recessionary years.

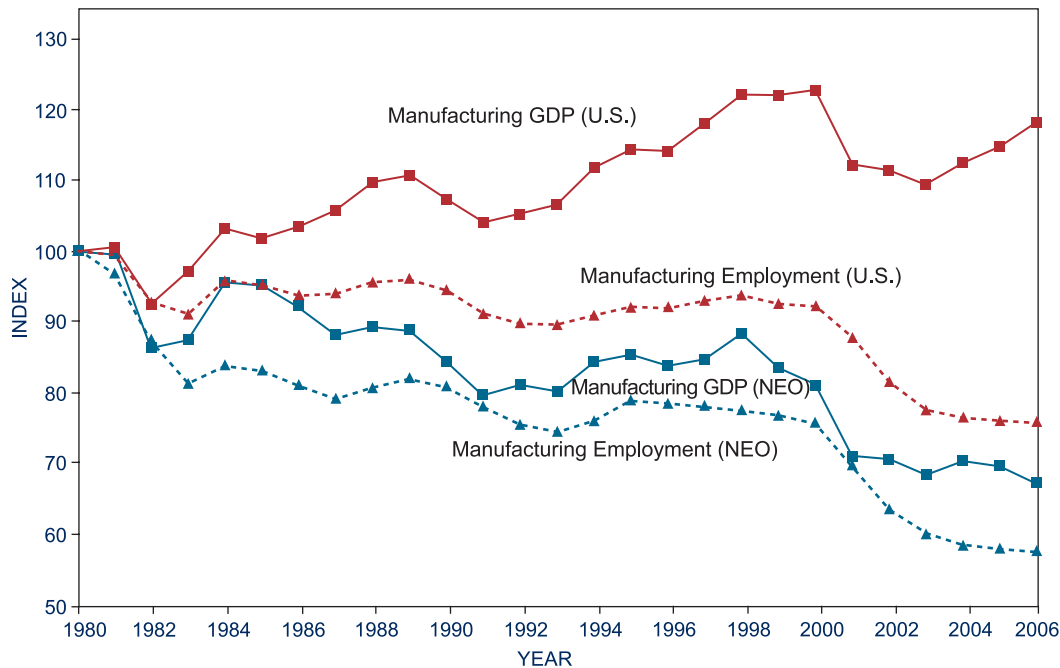
**Figure 1** shows how employment and output in the manufacturing sector have changed in NEO and the U.S. Between 1980 and 2006, NEO's manufacturing employment fell by 42.4 percent compared to a decline of 24.2 percent nationally. Within the same time period, gross regional product (value-added output) in NEO declined by 32.7 percent while the national gross product grew by 18.1 percent, after adjusting for inflation.

This brief continues a series of publications on trends in Northeast Ohio (NEO) manufacturing industries. It aims to provide a quick, current, and informative report on trends in employment, wages, and output for major manufacturing industries. The analysis begins with long-term trends from 1980 to 2006 and follows with short-term trends from 2004 to 2006 and 2005 to 2006. This brief updates two previous editions with data from the first quarter of 2006 and also provides more detailed sub-regional analysis than previous publications.

NEO is defined as a 16-county area that includes four metropolitan areas—Akron, Canton, Cleveland, and Youngstown—and five rural counties (Ashland, Ashtabula, Columbiana, Richland, and Wayne).

The previous manufacturing brief released in October 2006 provided detailed analysis on the leading manufacturing industries between 2000 and 2005. The next brief will update the analysis on trends, using 2006 and 2007 data, and on selected manufacturing industries.

Figure 1: Manufacturing Employment and Gross Regional Product Index, 1980=100



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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, formerly known as CAMP Inc., 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.

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The relationship between regional employment and gross product is an important economic indicator. An increase in output accompanied by a decrease in employment implies increased productivity. Although manufacturing employment and gross product decreased in both NEO and the U.S. between 2000 and 2006, employment declined at a faster rate than gross product, resulting in productivity growth both regionally and nationally. In addition, while employment decreased in both regions from 2003 to 2005, gross product grew, indicating increased productivity in both NEO and the U.S. during this time. Conversely, productivity declined in NEO from 2004 to 2006 and from 2005 to 2006, however, it increased in the nation.

In 2006, the largest manufacturing industry in NEO was Fabricated Metal Products with over 61,000 employees, followed by Transportation Equipment (over 41,300) and Machinery (over 32,500), as shown in **Table 1**. The five largest manufacturing industries employed close to two-thirds (63%) of the total manufacturing employment.

All 21 major manufacturing industries in NEO, Ohio, and the U.S. lost employment between 2000 and 2006, except for Furniture and Related Products which grew by 4.9 percent in NEO but declined by 17.3 percent in Ohio and 18.3 percent nationally. In addition, the five largest industries lost jobs from 2000 to 2006.

However, between 2004 and 2006, six manufacturing industries gained employment in NEO compared to five in Ohio and six in the U.S. (**Table 1**). Fabricated Metal Products and Machinery increased employment in all three regions, with NEO increasing at a higher rate than Ohio but lower than the nation. NEO performed better than Ohio and the U.S. in four other industries: Primary Metals, Furniture, Wood Products, and Petroleum and Coal Products. Although all three regions lost jobs in nine industries, NEO's job loss occurred at a lower rate than Ohio and the nation in three industries and at a faster rate in six industries. Three of the largest four industries increased employment by more than two percent each: Fabricated Metal Products (3.8%), Machinery (2.5%), and Primary Metals (2.1%). Electrical Equipment, with more than 11,000 employees in 2006, lost 12.9 percent of jobs from 2004 to 2006. Overall, NEO lost 1.4 percent of its manufacturing jobs from 2004 to 2006, a rate lower than Ohio (-2.0%) but higher than the nation (-0.5%).

**Table 1: Change in Manufacturing Employment, 2004-2006**

MAJOR MANUFACTURING INDUSTRIES (NAICS)	NEO		Ohio	U.S.
	# of Manufacturing Employees, 2006	Percent Change, 2004-2006		
Fabricated Metal Products	61,020	3.8	1.6	4.3
Transportation Equipment	41,313	-5.0	-1.2	0.9
Machinery	32,513	2.5	1.7	3.8
Primary Metals	29,247	2.1	-5.1	0.6
Plastics and Rubber Products	26,814	-8.0	-4.4	-0.2
Chemicals	19,866	-1.8	0.4	-2.8
Food	14,419	-3.9	-1.6	-1.4
Miscellaneous	11,736	-2.9	-2.0	-0.6
Electrical Equipment, Appliances, and Components	11,367	-12.9	-8.8	-2.6
Printing and Related Support Activities	10,588	-2.4	-3.0	-4.1
Computer and Electronic Products	9,487	-4.7	-7.1	-0.8
Paper	8,982	-2.2	-3.0	-4.1
Nonmetallic Mineral Products	8,295	-3.1	-2.1	3.7
Furniture and Related Products	8,181	7.6	-4.5	-1.2
Wood Products	3,967	13.7	-8.1	5.5
Textile Product Mills	1,647	-10.7	-1.4	-7.9
Beverage and Tobacco Products	1,282	-4.9	-0.6	-0.8
Petroleum and Coal Products	1,039	5.5	3.0	-0.1
Apparel	889	-3.4	-2.5	-16.5
Textile Mills	597	-9.9	-12.7	-15.7
Leather and Allied Products	56	-15.1	12.5	-12.0
<b>Total Manufacturing</b>	<b>303,306</b>	<b>-1.4</b>	<b>-2.0</b>	<b>-0.5</b>

Source: Quarterly Census of Employment and Wages (ES202)

*NEO performed better than Ohio and the U.S. in four industries: Primary Metals, Furniture, Wood Products, and Petroleum and Coal Products.*

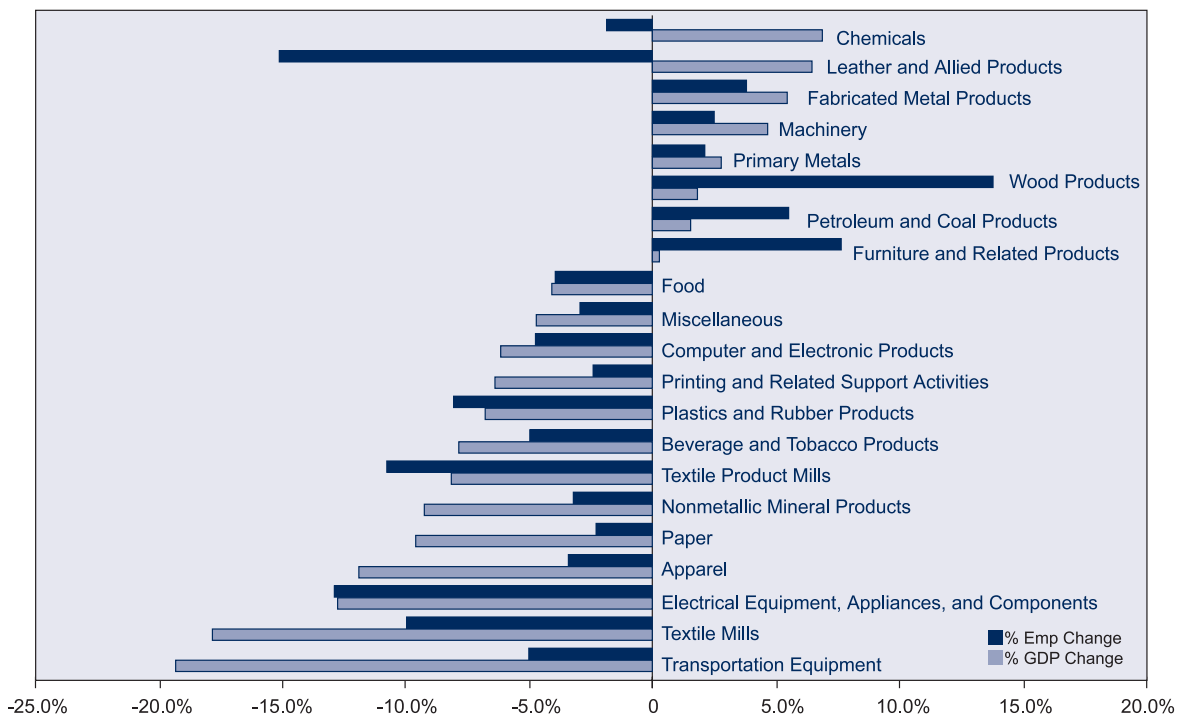
From 2005 to 2006, five manufacturing industries increased employment in NEO, including three large industries: Fabricated Metal Products (1.2%), Machinery (0.5%), and Primary Metals (1.0%). Fabricated Metal Products and Machinery accelerated employment growth in all three regions with NEO growing faster than Ohio but slower than the U.S. Moreover, NEO gained employment in Primary Metals and Petroleum and Coal Products, while the state and nation lost jobs in the two industries. Wood Product manufacturing increased employment in NEO (13.1%) and the U.S. (2.6%) but lost jobs in Ohio (-4.5%). This short-term analysis shows that several manufacturing industries may be rebounding from the job losses that occurred over the past few years.

*The six industries that increased both employment and gross product employed almost 45 percent of total manufacturing employment in NEO.*

The changes that occurred in NEO's employment and gross product from 2004 to 2006 are presented in **Figure 2**. Both employment and gross product increased in six industries. In contrast, 13 industries experienced setbacks in both measures of economic growth. In two manufacturing industries, Chemicals and Leather and Allied Products, while employment decreased by 1.8 percent and 15.1 percent, respectively, gross product increased by 6.8 percent and 6.4 percent. Five industries, employing at least 10,000, each experienced growth in productivity between 2004 and 2006. The six industries that increased both employment and gross product employed almost 45 percent (135,900 workers) of total manufacturing employment in NEO. These figures show that although the manufacturing sector as a whole has faced declining employment and gross product over the years, selected manufacturing industries tell a different story. For instance, the bleak overall performance of the sector masks the fact that three of the largest five manufacturing industries increased both employment and gross product from 2004 to 2006. Some manufacturing industries are still growing in NEO, in spite of the general decline in the manufacturing sector.

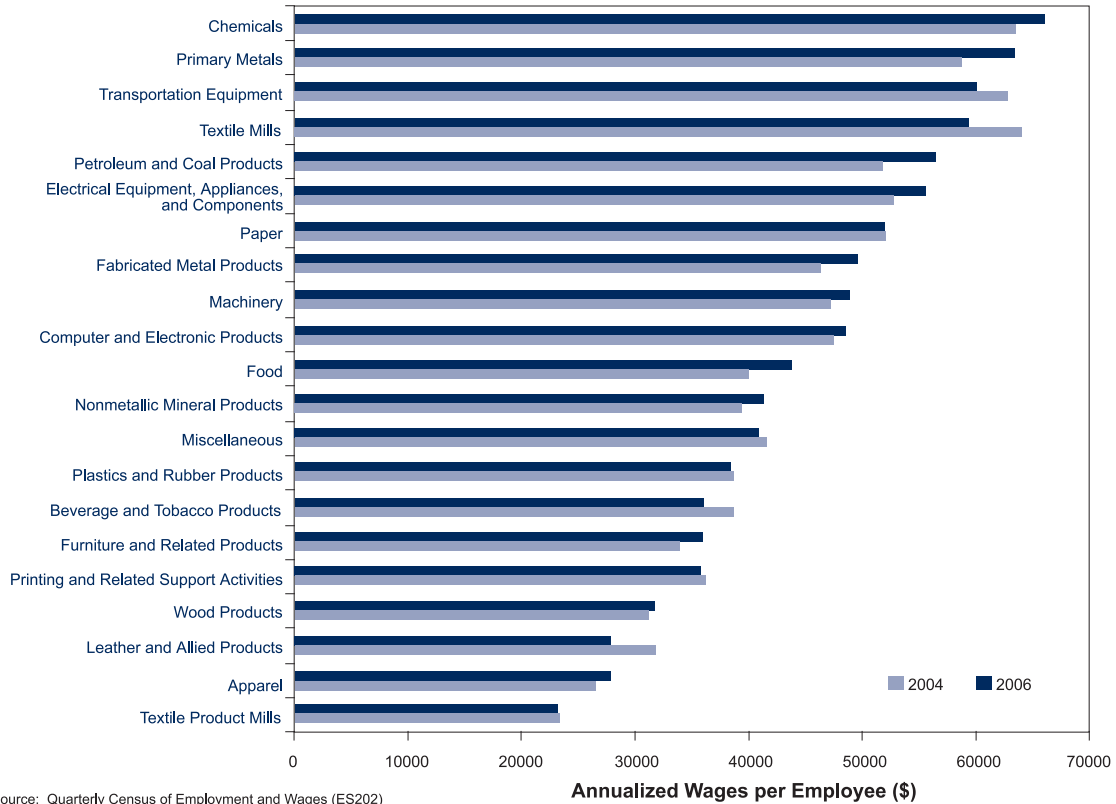
Between 2005 and 2006, three industries in NEO increased both their gross product and employment: Machinery, Fabricated Metal Products, and Wood Products. Two other industries each increased only employment or gross product.

Figure 2: Percentage Change in NEO's Manufacturing Employment and Gross Regional Product, 2004-2006



Source: Moody's Economy.com and Quarterly Census of Employment and Wages (ES202)

Figure 3: Average Annual Wages in NEO Manufacturing Industries, 2004 and 2006



NEO’s manufacturing sector has relatively high average annual wages (\$50,400) compared to that for all industries in NEO (\$38,800). This sector also employs over 303,000 employees and produces 19.5 percent of NEO’s total gross product. In 2006, more than half of the 21 three-digit manufacturing industries each had average annual wages of more than \$40,000 (Figure 3). Chemical manufacturing paid the highest average wage (\$65,900) followed by Primary Metals (\$63,300) and Transportation Equipment (\$59,900). Together, the three highest paying industries employed over 90,000 workers and accounted for approximately 30 percent of NEO’s total manufacturing employment. The four largest manufacturing industries with employment of at least 29,000 had annual average wages of more than \$48,000 each. The three industries with the lowest wages (less than \$30,000) were small industries that jointly employed only 0.9 percent of the manufacturing workers in NEO.

*In 2006, the manufacturing sector in NEO accounted for over 16 percent of NEO’s total employment, produced 19.5 percent (\$32.8 billion) of the region’s total gross product, and paid relatively high average annual wages of over \$50,000.*

From 2004 to 2006, average wages increased in 12 manufacturing industries, with four increasing by more than \$3,000, after adjusting for inflation. Food increased at the highest rate (9.7%) while Leather and Allied Products decreased by the highest percentage (-12.4%). Four of the six largest industries increased wages. All six industries that increased employment from 2004 to 2006 also increased wages.

Between 2005 and 2006, wages increased in 16 manufacturing industries, after adjusting for inflation. The three highest-paying industries in 2006, however, experienced declines in average wages. Food manufacturing, with 14,400 workers, increased average wages by nearly \$6,000 (15.9% growth). Four of the five industries in NEO that added jobs from 2005 to 2006 also increased average annual wages. Average wages rose by more than \$2,000 in six industries while wages declined by more than \$2,000 in three other industries.

NEO consists of several sub regions. Analysis at the metro level shows that manufacturing employment declined across the board, however, analysis at the county level shows some strength. Between 2004 and 2006, manufacturing employment declined at the highest rate in the Youngstown metro area (-2.9%) and at the lowest rate in the Cleveland metro area (-0.5%) as shown in **Table 2**. County-level analysis shows that there were job gains ranging from 6.6 percent in Geauga County to small gains (0.3%) in Ashtabula and Wayne Counties. In the Cleveland metro area, for instance, all counties added jobs except Cuyahoga County, which lost 2.7 percent of its jobs. Carroll County in the Canton metro area added a few jobs while Summit County in the Akron metro area and all counties in the Youngstown metro area lost manufacturing jobs. The non-metropolitan counties fared poorly with three out of five losing manufacturing employment. Ashland, Richland, and Columbiana Counties lost jobs at the highest rates (-6.4%, -5.7%, and -3.4%, respectively) among NEO's counties. On the other hand, Geauga County added jobs at the highest rate (6.6%) followed by Medina County (5.8%).

Between 2005 and 2006, NEO lost a total of 1,840 manufacturing jobs with 12 counties losing less than 250 jobs each. During this time period, all metro areas in NEO continued to experience declines in manufacturing jobs except for the Cleveland metro area, which showed a slight gain (0.2%). Examining individual counties in the Cleveland metro area during this one-year period shows that all counties increased manufacturing employment with the exception of Cuyahoga County, which saw a 0.6 percent decline.

**Table 2: NEO Total Manufacturing Employment by Region and County, Q1 2004 - Q1 2006**

NEO	Manufacturing Employment			
	2004	2006	Change	% Change
<b>Akron MSA</b>	<b>49,490</b>	<b>48,638</b>	<b>-852</b>	<b>-1.7</b>
Portage	12,082	12,076	-6	0.0
Summit	37,408	36,562	-846	-2.3
<b>Canton-Massillon MSA</b>	<b>31,416</b>	<b>31,228</b>	<b>-188</b>	<b>-0.6</b>
Carroll	1,210	1,240	30	2.5
Stark	30,206	29,988	-218	-0.7
<b>Cleveland-Elyria-Mentor MSA</b>	<b>150,479</b>	<b>149,693</b>	<b>-786</b>	<b>-0.5</b>
Cuyahoga	88,527	86,119	-2,408	-2.7
Gauga	9,327	9,943	616	6.6
Lake	21,484	21,698	214	1.0
Lorain	21,396	21,621	225	1.1
Medina	9,745	10,312	567	5.8
<b>Youngstown-Warren MSA</b>	<b>32,219</b>	<b>31,286</b>	<b>-933</b>	<b>-2.9</b>
Mahoning	10,446	10,165	-281	-2.7
Trumbull	21,773	21,121	-652	-3.0
<b>Non-Metropolitan Counties</b>	<b>47,231</b>	<b>46,009</b>	<b>-1,222</b>	<b>-2.6</b>
Ashland	4,328	4,050	-278	-6.4
Ashtabula	8,621	8,648	27	0.3
Columbiana	6,700	6,475	-225	-3.4
Richland	13,826	13,039	-787	-5.7
Wayne	13,756	13,797	41	0.3

Source: Moody's Economy.com

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*Four counties in  
NEO—Geauga,  
Lake, Lorain, and  
Medina—each  
added between  
200 and 600  
manufacturing  
jobs from 2004  
to 2006.*

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All counties in the Akron and Youngstown metro areas and the non-metropolitan counties continued to lose some manufacturing employment from 2005 to 2006. Carroll County, in the Canton metro area, showed little change (0.1%). Medina County's manufacturing employment growth of 2.3 percent was the highest in NEO while the largest decline (-4.2%) occurred in Richland County.

Although the manufacturing sector as a whole has been plagued by job losses and declining output, it remains an important sector in NEO. In 2006, the manufacturing sector in NEO still accounted for over 16 percent of NEO's total employment and produced 19.5 percent of the total gross product in the region (\$32.8 billion). This sector also paid a relatively high average annual wage of over \$50,000.

The general loss of manufacturing jobs in the region masks the fact that certain industries experienced gains in some economic measures. While some industries increased employment, others experienced gains in output, productivity, or wages. For instance, short-term analysis from 2004 to 2006 showed that three large industries and three small ones each increased the number of jobs, wages, and gross product. The three large industries in NEO that increased in all three measures were Fabricated Metal Products, Machinery, and Primary Metals. In addition, other industries, such as Chemical Manufacturing, increased productivity. Similarly, the recent loss of manufacturing jobs affected the sub region differently. An in-depth look at the county level revealed that four counties each added several hundred jobs from 2004 to 2006.