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## Manufacturing Brief: Trends in Manufacturing Industries in Northeast Ohio

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# Manufacturing BRIEF



## Trends in manufacturing industries in Northeast Ohio

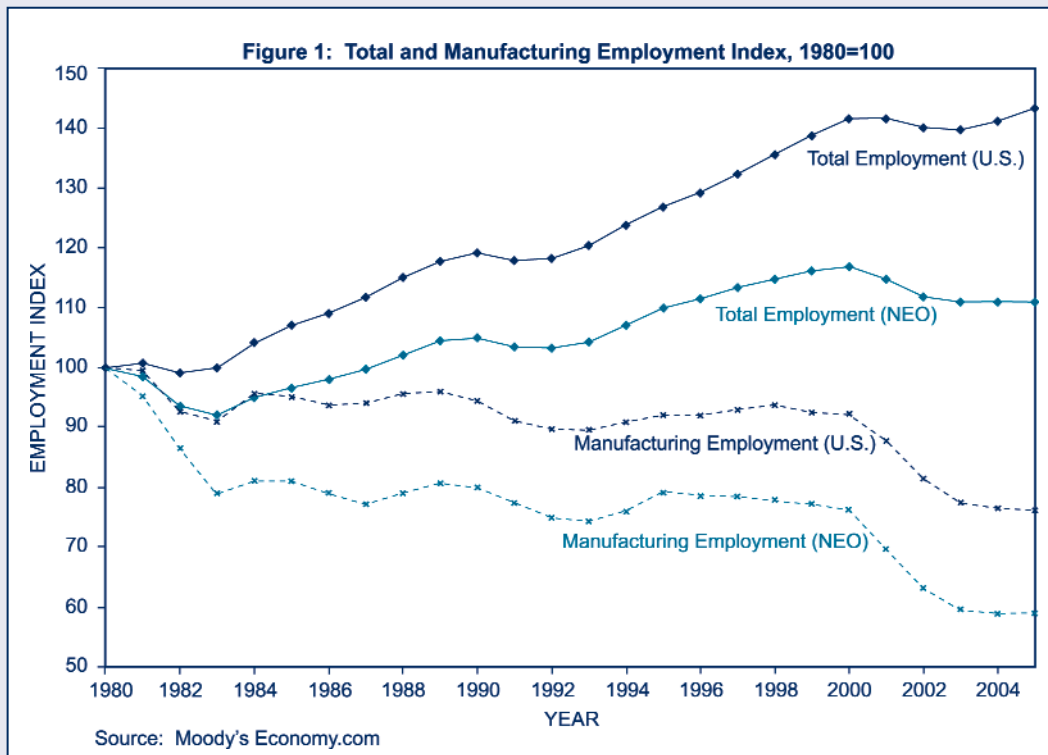
Over the past several decades, manufacturing employment decreased both regionally and nationally. As a region, NEO has a high concentration of manufacturing industries and suffered a larger rate of decline than the U.S. For example, between 1980 and 2005, the U.S. lost almost a quarter (24%) of its manufacturing employment base, while NEO lost 41 percent. Figure 1 reveals that Northeast Ohio followed overall national employment trends, but the region's job losses during the recessionary periods of the early 1980s and early 2000s were far more severe. Between 1980 and 1983, the rate of NEO's manufacturing employment loss was more than twice the rate of the national loss; U.S. manufacturing lost nine percent of its jobs, while NEO manufacturing employment declined by 21.1 percent. Between 2000 and 2003, NEO's manufacturing losses were only somewhat higher than in the U.S.; NEO lost 22 percent of its manufacturing jobs, while the nation as a whole lost 16 percent. As evidenced in Figure 1, NEO's total employment grew at a much slower rate than in the U.S. Nationwide, the number of manufacturing and non-manufacturing jobs grew by 43 percent between 1980 and 2005, four times faster than the rate of growth in NEO (11%). This difference is due to the more severe losses in manufacturing as well as a slower rate of growth in non-manufacturing sectors.

*NEO employment grew at a slower rate than the U.S. due to more severe manufacturing losses and slower growth in non-manufacturing industries.*

This brief is the first in our new series of publications on trends in manufacturing industries in Northeast Ohio (NEO). It describes trends in employment, wages, and gross regional product (GRP) for major manufacturing industries.

The second brief in this series will focus on industries in which NEO specializes and performs better than the U.S. The third brief will focus its analysis at the county and metro area levels. The objective of this series is to provide a quick, current, and informative report on the status of the region's manufacturing sector.

NEO is defined as a 15-county area that includes four metropolitan areas—Cleveland, Akron, Canton, and Youngstown—and four rural counties (Ashland, Ashtabula, Columbiana, and Wayne). The analysis begins with a review of long-term trends from 1980 followed by a description of short-term trends from the first quarter of 2000 through the first quarter of 2005.



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

This brief 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.



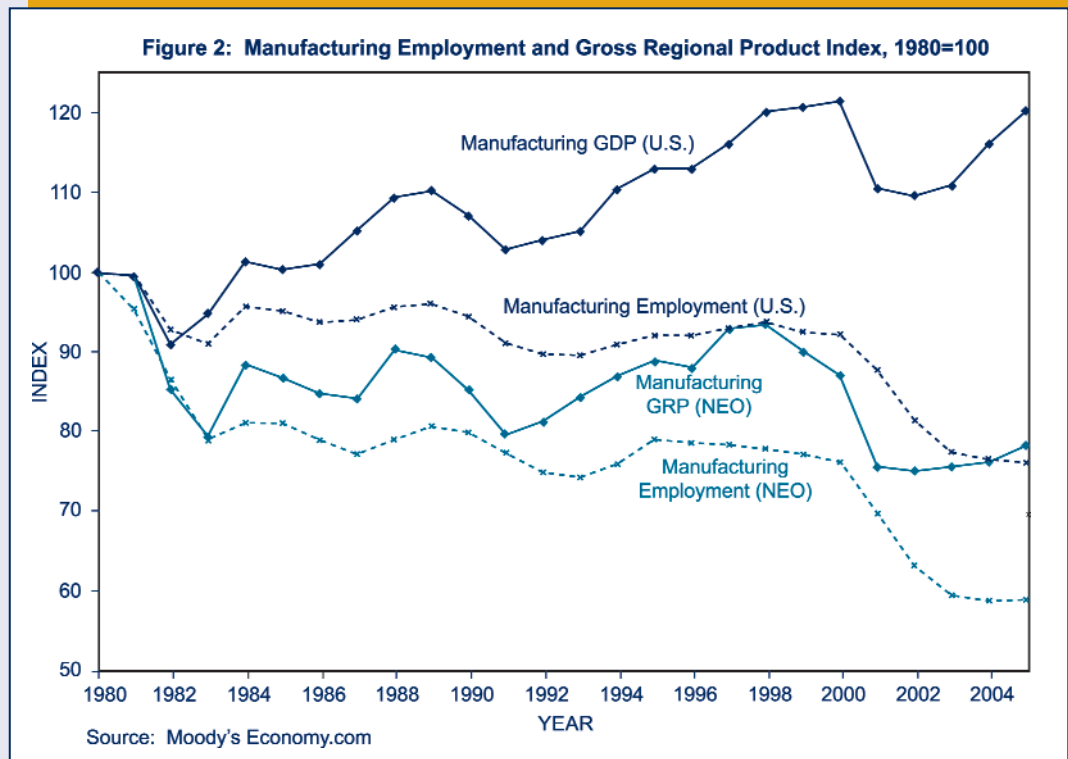
U.S. Economic Development Administration



**MAGNET**  
Manufacturing Advocacy & Growth Network

How do manufacturing employment trends differ from changes in gross product? (Gross product measures the value added by each economic entity, hereafter referred to as output.) Changes in both NEO and the U.S. are depicted in Figure 2. Between 1980 and 2005, manufacturing output in the U.S. rose by 20 percent while declining by almost 22 percent in NEO. This large gap is a result of the different experiences during the recessions and expansions of the last four business cycles. During the two recessions of the early 1980s and the recession in the early 1990s, employment and output declined in Northeast Ohio and the nation as a whole, however, NEO's decline was more significant. Moreover, during the expansion phase of the business cycle, the growth rate for manufacturing output in the U.S. was higher than for NEO. For example, during the

expansion phase between 1991 and 2000, manufacturing output in the U.S. increased by 18.2 percent, twice as fast as NEO's rate of growth. The gap is even more pronounced in the latest expansion, where NEO manufacturing output grew by only 3.6 percent between 2001 and 2005 while increasing by 8.8 percent in the U.S. It should be noted that while manufacturing output rose during the last several years, manufacturing employment continued to decline in both NEO and the U.S.; most NEO job losses occurred between 2000 and 2003 with much smaller declines between 2003 and 2005.



Analysis of short-term changes in NEO, Ohio, and the U.S. shows that following years of decline, NEO's manufacturing employment totaled 294,000 jobs by the first quarter of 2005. Table 1 ranks major manufacturing industries by employment size and compares trends across the three geographies. Although NEO lost more than 21 percent of its manufacturing jobs between 2000 and 2005, this rate of decline was similar to the rates in Ohio and the nation as a whole. The largest industry, Fabricated Metal Products, employed close to 60,000 people, while the second and third largest industries—Transportation Equipment and Machinery—employed close to 38,000 and 31,000 persons, respectively. The largest six industries combined accounted for almost 70 percent of all NEO's manufacturing jobs.

Table 1: Change in Manufacturing Employment, 2000-2005

Major Economic Sector (NAICS)	NEO		Ohio	U.S.
	# of Manufacturing Employees, 2005	Percent Change, 2000-2005		
Fabricated Metal Product Manufacturing	58,615	-16.2	-17.0	-15.5
Transportation Equipment Manufacturing	37,912	-25.8	-19.5	-14.4
Machinery Manufacturing	30,741	-27.7	-23.3	-21.2
Plastics and Rubber Products Manufacturing	28,152	-19.4	-16.9	-16.7
Primary Metal Manufacturing	27,860	-38.2	-34.8	-25.6
Chemical Manufacturing	19,871	-16.9	-13.2	-11.2
Food Manufacturing	14,274	-13.0	-4.0	-4.8
Miscellaneous Manufacturing	12,102	-9.6	-14.6	-12.7
Electrical Equipment, Appliance, and Component Manufacturing	11,462	-37.3	-24.3	-25.6
Printing and Related Support Activities	10,300	-22.7	-21.7	-20.4
Paper Manufacturing	8,973	-16.8	-21.3	-19.9
Computer and Electronic Product Manufacturing	8,468	-39.5	-42.2	-26.0
Furniture and Related Product Manufacturing	8,165	5.9	-14.3	-17.7
Nonmetallic Mineral Product Manufacturing	8,092	-20.3	-25.7	-10.9
Wood Product Manufacturing	3,385	-23.0	-20.0	-10.9
Textile Product Mills	1,729	-16.9	-12.4	-21.1
Beverage and Tobacco Product Manufacturing	1,198	-25.8	-8.8	-8.0
Petroleum and Coal Products Manufacturing	1,105	-32.7	-17.3	-10.6
Apparel Manufacturing	901	-8.3	-16.0	-49.2
Textile Mills	668	5.4	-19.7	-40.7
Leather and Allied Product Manufacturing	77	-52.5	-45.6	-43.6
<b>Total Manufacturing</b>	<b>294,051</b>	<b>-21.5</b>	<b>-20.6</b>	<b>-20.3</b>

Source: Quarterly Census of Employment and Wages (ES202)

Despite large job losses, the manufacturing sector still employs nearly 300,000 people in NEO.

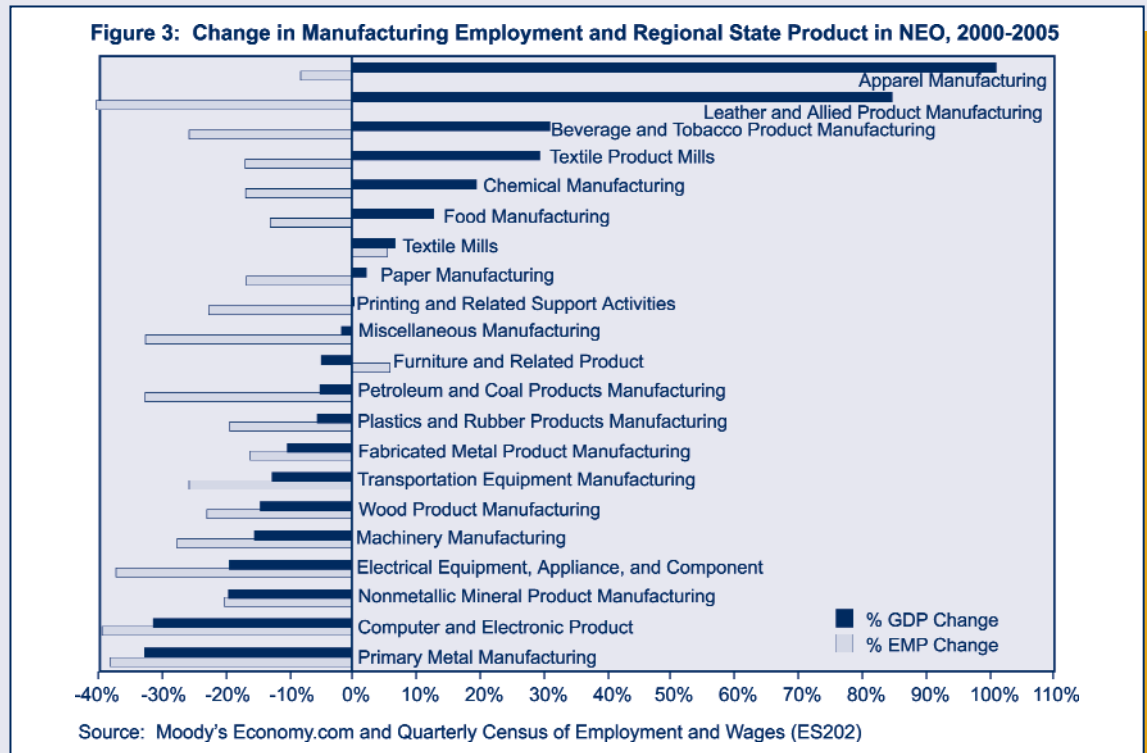
In Ohio and the U.S., all manufacturing industries lost jobs between 2000 and 2005. However, Table 1 reveals that two smaller industries added jobs in NEO—Furniture and Related Products and Textile Mills. Among the industries that experienced employment declines, NEO lost jobs at a slower rate than the nation in four industries—Textile Product Mills, Apparel, Paper, and Miscellaneous Manufacturing. NEO's largest manufacturing industry—Fabricated Metal Products—lost employment (-16.2%) at a similar rate to that in Ohio and the U.S., while Transportation Equipment, the second-largest NEO manufacturing industry, lost jobs at nearly twice the national rate (-25.8% versus -14.4%). In the past five years, these two industries experienced job losses in NEO of 11,000 and 13,000, respectively.

*Between 2000 and 2005, eight manufacturing industries increased output despite losing employment.*

Between 2003 and 2005, four NEO industries added jobs. In contrast to a national decline, Fabricated Metals grew in NEO, gaining about 920 jobs after a severe decline of 12,200 jobs between 2000 and 2003. Also in contrast to a decline in the U.S., NEO's Furniture and Related Products industry added 950 jobs following a loss of 500 jobs in the previous three years. Wood Product and Textile Mills, two smaller industries in NEO, also gained some employment in the last two years.

To gauge the performance of manufacturing industries, it is prudent not only to analyze employment trends but also investigate changes in gross regional product (GRP). The output of NEO's manufacturing industries totaled \$31 billion in 2005. In NEO, the five largest manufacturing industries in terms of employment lost both jobs and output. Nine other manufacturing industries experienced growth in output between 2000 and 2005; of these, only one industry added jobs (Figure 3, output data is adjusted for inflation).

Among the eight industries experiencing increased output and declining employment, two are of significant size—Chemical Manufacturing, the third largest in terms of output (\$3.3 billion) and the sixth largest in number of jobs (almost 20,000), and Food Manufacturing, the seventh largest in terms of both output and employment (\$2 billion and 14,300 jobs). The Paper Manufacturing industry also experienced growth in output; it is a medium-sized industry in terms of jobs (9,000) and small in output (\$0.8 billion). The other industries that added output are much smaller. Increased output and declining employment suggest increased productivity.



Another important indicator is average wages paid by manufacturing industries. In Northeast Ohio, the manufacturing sector is large and pays high average wages (\$48,700 in 2005). An analysis of the major manufacturing industries shows that the highest-paying industries include Chemicals (\$64,500), Primary Metals (\$64,000), and Transportation Equipment (\$62,000) (Figure 4). These industries combined account for almost three out of 10 manufacturing jobs in NEO. Wages in Chemicals and Primary Metals increased over the last five years, after adjusting for inflation, while wages in the Transportation Equipment industry declined. Moreover, 12 of the 21 manufacturing industries experienced growth in average wages between 2000 and 2005. The two industries that experienced the fastest rate of wage growth and the highest increase in wages are Textile Mills and Leather and Allied Products; these are the two smallest manufacturing industries. The three industries that experienced the largest declines in average wages and the highest rates of loss are Petroleum and Coal Products, Beverage and Tobacco Products, and Transportation Equipment. The large wage losses in Petroleum and Coal Products are primarily due to the merger of BP and Amoco and the accompanying loss of high-paying jobs to the Chicago region.

# Manufacturing BRIEF

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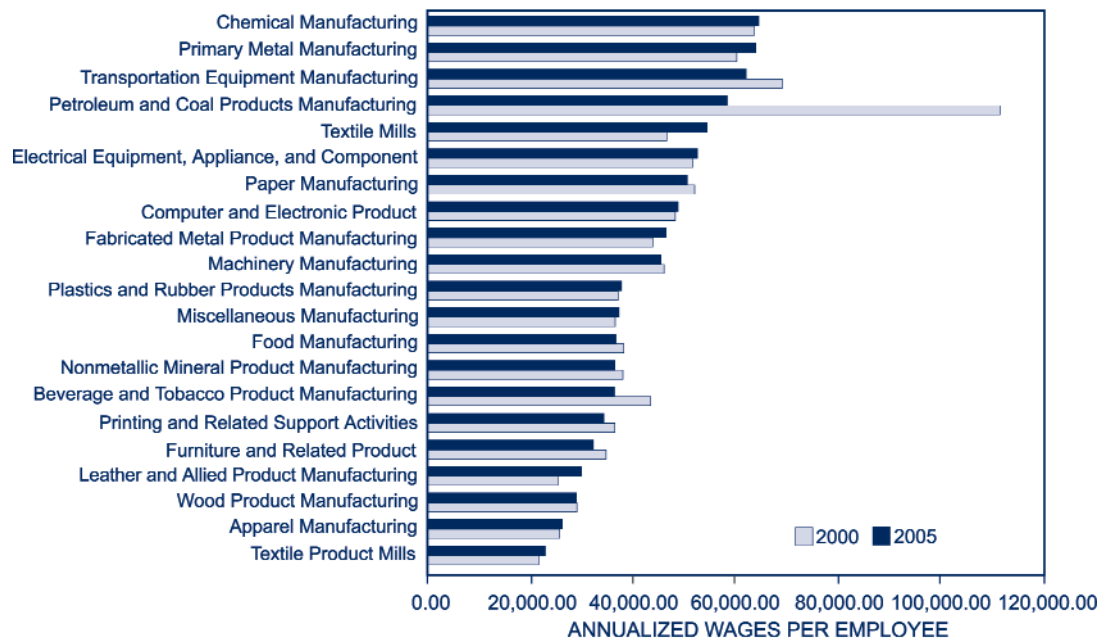
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While many refer to manufacturing as one large sector facing one future, it is obvious that manufacturing industries vary significantly in terms of employment, output, and average wages. In 2005, industry employment varied from less than 100 employees to more than 58,000. Output ranged from \$8 million to \$5.7 billion. Average wages ranged from a low of \$23,000 to a high of \$64,600. Industries also vary in their performance. Several industries experienced employment gains, increased output, and many provide high average wages.

Although some industries show strength, this brief confirms that over the past 25 years, NEO's manufacturing sector underperformed U.S. manufacturing. NEO suffered a greater rate of decline than the U.S. average. Moreover, while manufacturing output increased in the nation, it declined in NEO. Since 2000, NEO's manufacturing employment declined at a similar rate as in the U.S. Since 2002,

however, manufacturing output has rebounded in NEO, but at a much slower rate than in the U.S. Fewer than half of NEO's manufacturing industries increased output between 2000 and 2005, suggesting that job loss is not only a result of more efficient production processes but may signal decline. This is clearly a concern for some industries, although others appear to have recovered from the recent recession.

**Figure 4: Average Annual Wages in NEO Manufacturing Industries, 2000 and 2005**



Source: Quarterly Census of Employment and Wages (ES202)