

12-2013

Manufacturing Brief 2013

Candi Clouse

Cleveland State University, c.clouse@csuohio.edu

Ziona Austrian

Cleveland State University, z.austrian@csuohio.edu

Christopher Lohr

How does access to this work benefit you? Let us know!

Follow this and additional works at: https://engagedscholarship.csuohio.edu/urban_facpub

 Part of the [Urban Studies and Planning Commons](#)

Repository Citation

Clouse, Candi; Austrian, Ziona; and Lohr, Christopher, "Manufacturing Brief 2013" (2013). *Urban Publications*. 01231145.
https://engagedscholarship.csuohio.edu/urban_facpub/1145

This Report is brought to you for free and open access by the Maxine Goodman Levin College of Urban Affairs at EngagedScholarship@CSU. It has been accepted for inclusion in Urban Publications by an authorized administrator of EngagedScholarship@CSU. For more information, please contact library.es@csuohio.edu.

CONTENTS

1 INTRODUCTION

- 1 Manufacturing Exports
- 2 Manufacturing Opportunities from the Development of Utica Shale
 - Manufacturing is a Part of the Supply Chain
 - Cheaper Energy

3 MANUFACTURING AS A CRITICAL SECTOR IN NORTHEAST OHIO

- 3 Employment
- 3 Sub-Regional Manufacturing Employment
- 3 Figure 1: Manufacturing Contribution to Net Job Growth in Northeast Ohio, 2010-2012
- 4 Table 1: Manufacturing Employment by County and Metro Area, 2010-2012
- 5 Gross Domestic Product
- 5 Figure 2: Manufacturing Contribution to Net GRP Growth in Northeast Ohio, 2010-2012
- 6 Average Wage
- 6 Figure 3: Growth in Average Wage in Northeast Ohio, 2010-2012

6 SEVERAL MANUFACTURING INDUSTRIES ARE CRITICAL TO THE REGIONAL ECONOMY

- 6 Employment
- 7 Table 2: Manufacturing Employment in NEO, Remainder of Ohio, and the U.S., 2010-2012
- 8 Gross Regional Product
- 8 Figure 4: Northeast Ohio Manufacturing Location Quotients (Based on 2012 Employment)
- 9 Average Wage
- 9 Manufacturing Establishment by Size
- 9 Figure 5: Average Wage by Detailed Manufacturing Industry, 2012
- 10 Table 3: NEO Manufacturing Employment by Establishment Size, 2012

11 APPENDIX TABLES

- 12 Table A1: Manufacturing Employment in NEO, Remainder of Ohio, and the U.S. by Major Sector, 2010-2012
- 13 Table A2: Manufacturing GRP in NEO, Remainder of Ohio, and the U.S. by Major Sector, 2010-2012
- 14 Table A3: Manufacturing Average Wage in NEO, Remainder of Ohio, and the U.S. by Major Sector, 2010-2012
- 15 Table A4: Manufacturing Employment in NEO, Remainder of Ohio, and the U.S. by Detailed Industry, 2010-2012
- 16 Table A5: Manufacturing GRP in NEO, Remainder of Ohio, and the U.S. by Detailed Industry, 2010-2012
- 17 Table A6: Manufacturing Average Wage in NEO, Remainder of Ohio, and the U.S. by Detailed Industry, 2010-2012
- 18 Table A7: Manufacturing Total Wages in NEO, Remainder of Ohio, and the U.S. by Major Sector, 2010-2012
- 19 Table A8: Manufacturing Total Wages in NEO, Remainder of Ohio, and the U.S. by Detailed Industry, 2010-2012

Introduction

This brief continues a series of publications that tell the story of manufacturing in Northeast Ohio (NEO) and provide an overview of the trends in employment, gross regional product, average wages, establishments, and exports for major manufacturing industries. This year's focus will be on short term trends (2010 to 2012) that describe the growth of the manufacturing sector, with a detailed analysis for specific industries that constitute the sector. Northeast Ohio's trends are then compared to trends in the United States and the remainder of the state of Ohio.¹



In the post-recession years of 2010 to 2012, the manufacturing sector experienced a rebound, contributing the most to NEO's regional growth. The overall health of the national manufacturing sector, as indicated by the Purchasing Managers' Index (PMI), reached a two-year high of 55.7% in August of 2013, mirroring the most recent Northeast Ohio regional report from the Purchasing Manager's Association of Cleveland (PMAC), which indicated continued expansion in the manufacturing sector.² Two factors suggest sustained growth of the manufacturing sector in Northeast Ohio: continued national growth in exports and the development of the Utica Shale. In addition, several manufacturing industry groups were identified as industries that drive NEO's regional competitiveness. These industries, selected by the leaders of the Regional Economic Competitiveness Strategy (RECS) as priorities to grow and strengthen, include automotive, chemicals and polymers, machinery and metal working, metals, and miscellaneous manufacturing.

Manufacturing Exports

Manufacturing in NEO has the potential to continue its growth based, in part, on continued national growth in exports. U.S. exports have been growing more than seven times faster than gross domestic product (GDP) since 2005, and non-food and beverage exports now account for 10% of U.S. GDP, the largest share in 50 years.³ The outlook for export growth through 2020 is also strong as lower domestic labor costs, high labor market flexibility, and low energy costs drive a manufacturing shift from developed manufacturing economies in Western Europe and Japan towards the United States.⁴ In addition, the United States is predicted to become more attractive for re-shoring production of goods for the U.S. market because of China's rising costs for labor, land, and energy.

¹ Northeast Ohio comprises of 18 counties including the Akron MSA (Portage and Summit Counties), half of the Canton-Massillon MSA (Stark County), the Cleveland-Elyria-Mentor MSA (Cuyahoga, Geauga, Lake, Lorain, and Medina Counties), the Mansfield MSA (Richland County), the Sandusky MSA (Erie County), the Youngstown-Warren MSA (Mahoning and Trumbull Counties), and six nonmetropolitan counties (Ashland, Ashtabula, Columbiana, Huron, Tuscarawas, and Wayne).

² PMI, PMAC 2013

³ Boston Consulting Group, 2013

⁴ Boston Consulting Group, 2013

Manufacturing exports grew in NEO between 2010 and 2012 from \$21.5 billion to \$25.0 billion, a growth rate of 16.6%, but nonetheless slower than the 17.5% growth rate for the remainder of Ohio. NEO manufacturing was responsible for an increasing share of NEO's exports over the post-recession period. In 2012, manufacturing represented 80.6% of NEO exports, compared to a lower manufacturing share of exports in the remainder of the state (75.3%). The largest industrial sectors for exports are *Chemicals* (\$4.4 billion), *Transportation Equipment* (\$4.3 billion), *Primary Metal* (\$3.5 billion), *Machinery* (\$3.1 billion), and *Fabricated Metal Products* (\$2.4 billion); combined they accounted for 70.3% of total manufacturing exports.

Manufacturing Opportunities from the Development of Utica Shale

The development of Utica Shale has been a major focus for manufacturers in the state. Ohio manufacturers can benefit from the Utica Shale development in two ways: (1) by becoming a part of the supply chain for downstream and midstream industries and (2) by receiving cheap energy for their operations.

Manufacturing is a Part of the Supply Chain

The *Raw Steel and Fabricated Metal Product Manufacturing* industry is already actively participating in the development of Utica Shale's supply chain. Ohio's steel industry is responding to increased demand for tubular steel and fittings for shale development. V&M Star (Youngstown) and US Steel (Lorain) have begun producing the tubular steel for shale development.

After Indiana, Ohio is the second-largest raw steel producing state in the U.S., with a 12.2% share (in thousands of net tons). Ohio is ranked third after Indiana and Pennsylvania in terms of 2010 GDP. The steel producing industry grew 25.3% between 2010 and 2011, and Ohio experienced the largest growth of all states. In fact, six Ohio steel producers are on *Worldsteel's* list of 2010 top world producers.

Another beneficiary is the plastic manufacturing industry, which uses cheaper feedstock of ethane, a key component in natural gas liquids. The ethane will be processed by the M3 and MarkWest plants in eastern Ohio. Also, Appalachian Resins is looking to build an ethylene/polyethylene production facility in Ohio.⁵



Cheaper Energy

Energy costs account for about 20% of the cost of producing one ton of steel. However, cheap natural gas has helped lower the cost of production. Thanks to the low cost of natural gas, companies like Nucor Steel (Marion) are now looking to use natural gas instead of coal to make direct-reduced iron (DRI). Also, Bluescope Steel, Ltd. and Cargill, Inc. formed a new joint venture and are planning to build a new natural gas DRI plant in Ohio.

Ohio is home to 10 *high* energy intensive manufacturing industries that spend 2%-6% of their total expenditures on electricity and to 17 *moderate* energy intensive manufacturing industries which spend 1%-2% on electricity annually. Of these 27 industries, 12 are driver industries that are part of Ohio's economic base. Moreover, many of these industries are heavily concentrated in Northeast Ohio. A recent study by the Center found that a decrease in the industrial electricity price by one cent per kilowatt-hour (16.3%) is likely to increase average manufacturing productivity, on average, by \$2,527 (2.2%). ♦

⁵ Shawn Bennett. *Steel and chemical industries eye Ohio thanks to shale*. Energy in Depth (EID), Ohio. Retrieved from: <http://energyindepth.org/ohio/steel-and-chemical-industries-eying-ohio-thanks-to-shale/>

Manufacturing as a Critical Sector in Northeast Ohio

Employment

Between 2010 and 2012, manufacturing in Northeast Ohio experienced a rebound that made it a leader in regional employment growth. In 2012, manufacturing represented 14.4% of all employment in Northeast Ohio, compared with 12.4% for the remainder of Ohio and 9.1% nationally. Manufacturing also represented the second largest industry in terms of employment in the region with 263,516 jobs, trailing the regional leader, *Health Care and Social Assistance*, by nearly 62,000 jobs (Appendix Table A1). NEO accounted for 40.7% of manufacturing employment in Ohio and 2.2% of the national manufacturing employment.

NEO manufacturing employment grew by 8.2% between 2010 and 2012, more than doubling the national growth rate (3.7%) and outpacing the growth in the remainder of Ohio (5.1%). Among major sectors in NEO, manufacturing grew at the fourth highest rate, with *Administrative and Support and Waste Management and Remediation Services* posting the highest growth rate (12.6%) in the region.

Of the three sectors in NEO that had growth rates exceeding both state and national averages, manufacturing outperformed the state and national industry averages by the largest margin. Growth in manufacturing employment between 2010 and 2012 was essential in buoying an overall regional employment growth of 2.7%, a figure that was below both the remainder of Ohio (3.4%) and U.S. (3.0%) employment growth rates. When manufacturing is excluded, the employment growth rate for the region shrinks to 1.8%, a statistic that emphasizes the importance of manufacturing to the regional labor market during this timeframe.

The significance of the manufacturing industry is further demonstrated by the fact that it accounted for the largest industry share of employment growth in the region, with a gain of 20,059 jobs, which is slightly less than the next three ranked industries combined. This growth accounted for four out of every ten new jobs (42.1%) between 2010 and 2012 (Figure 1). The sector

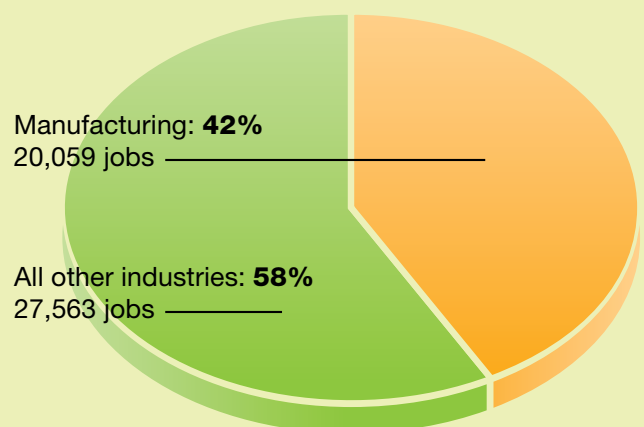
represented 50.4% of net employment growth for the period between 2010 and 2011 and 36.0% of the net job growth between 2011 and 2012.

Sub-Regional Manufacturing Employment

Northeast Ohio is comprised of metropolitan areas and counties, each with its own rate of growth in the manufacturing sector. All MSAs and counties, except for Geauga, saw an increase in their manufacturing employment and total share of manufacturing employment between 2010 and 2012 (Table 1).


The Cleveland-Elyria-Mentor MSA represented 46% of the total manufacturing employment in Northeast Ohio and 19% of the manufacturing employment in Ohio in 2012. Overall, the MSA saw an increase of 6.3% in terms of employment between 2010 and 2012. Cuyahoga County added over 3,300 jobs, the most of any NEO county, and Lake and Lorain Counties each added over 1,500 jobs between 2010 and 2012. With the exception of Geauga County, each of the other four counties in the MSA gained over 5% in employment in the study period.

Figure 1: Manufacturing Contribution to Net Job Growth in Northeast Ohio, 2010-2012



Source: Quarterly Census of Employment and Wages (QCEW)

Table 1: Manufacturing Employment by County and Metro Area, 2010-2012

		2012	Change 2010-2012	% Change 2010-2012	2012 Manufacturing Share of Total Employment
Ohio		647,348	38,634	6.3%	13.1%
Northeast Ohio		263,516	20,059	8.2%	14.4%
Akron MSA		39,444	2,421	6.5%	13.0%
	Portage	9,991	800	8.7%	19.8%
	Summit	29,452	1,621	5.8%	11.6%
Canton-Massillon MSA		24,824	2,233	9.9%	16.5%
	Stark	24,824	2,233	9.9%	16.5%
Cleveland-Elyria-Mentor MSA		121,767	7,184	6.3%	12.8%
	Cuyahoga	69,818	3,322	5.0%	10.2%
	Geauga	6,702	(152)	-2.2%	21.7%
	Lake	20,081	1,825	10.0%	22.0%
	Lorain	16,538	1,575	10.5%	17.7%
	Medina	8,628	614	7.7%	15.4%
Mansfield MSA		9,067	506	5.9%	17.9%
	Richland	9,067	506	5.9%	17.9%
Sandusky MSA		5,850	783	15.5%	17.7%
	Erie	5,850	783	15.5%	17.7%
Youngstown-Warren-Boardman MSA		22,874	3,865	20.3%	13.9%
	Mahoning	8,911	944	11.8%	9.4%
	Trumbull	13,963	2,922	26.5%	20.0%
Non-Metro Counties		39,690	3,065	8.4%	23.2%
	Ashland	3,229	286	9.7%	18.9%
	Ashtabula	6,516	356	5.8%	22.1%
	Columbiana	5,616	453	8.8%	19.1%
	Huron	5,853	374	6.8%	30.3%
	Tuscarawas	7,111	634	9.8%	21.1%
	Wayne	11,365	962	9.2%	26.8%

Source: Quarterly Census of Employment and Wages (QCEW)

The second largest MSA in Northeast Ohio is Akron, which had 15% of the manufacturing jobs in Northeast Ohio and 6% of the manufacturing jobs in the state. The Akron MSA gained 2,421 manufacturing jobs between 2010 and 2012 (6.5%) and manufacturing represented 13% of the share of the total employment in the MSA. Both Portage and Summit Counties increased their manufacturing employment, each by over 5%.

The Canton-Massillon MSA represents 9% of the total manufacturing employment in Northeast Ohio. The lone county in this MSA, Stark, gained 2,233 manufacturing jobs between 2010 and 2012 (9.9%). The Youngstown-Warren-Boardman MSA contains just shy of 9% of the total manufacturing employment in the region. This MSA saw an increase of 3,865 manufacturing jobs between 2010 and 2012 (20.3%), which is the largest increase among the MSAs. Trumbull County showed the largest increase in terms of percentage change in employment between 2010 and 2012 at 26.5%, just trailing Cuyahoga County for the largest increase in terms of jobs. The Mansfield MSA has only 3% of the total manufacturing employment in Northeast Ohio. Richland County, the only in this MSA, gained 506 manufacturing jobs between 2010 and 2012 (5.9%). The Sandusky MSA represents just over 2% of the total manufacturing employment in Northeast Ohio and saw an increase of 783 manufacturing jobs between 2010 and 2012 (15.5%). Finally, the six non-metropolitan counties represent 15% of the total manufacturing jobs in NEO. These counties gained 3,065 manufacturing jobs between 2010 and 2012 for an increase of 23.2%.

Gross Domestic Product

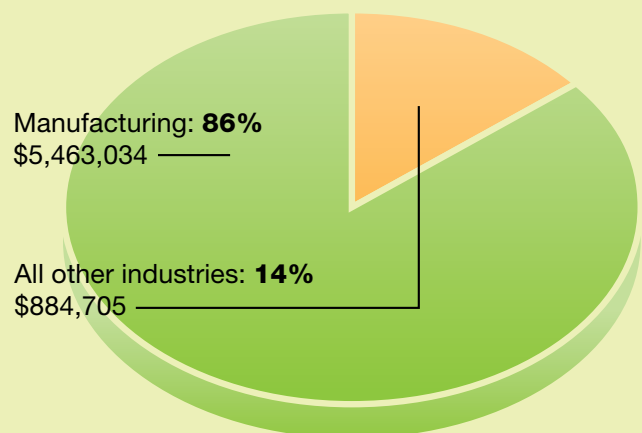
The importance of manufacturing to the NEO economy is perhaps clearest when viewed through the lens of gross domestic product (GDP).⁶ In 2012, manufacturing in NEO accounted for 18.8% of gross regional product (GRP), significantly higher than the remainder of Ohio (16.1%) and nationally (12.0%). Manufacturing was the largest regional contributor to GRP with \$35.5 billion, more than \$14.2 billion higher than the second largest contributor, *Real Estate and Rental and Leasing* (Appendix Table A2).⁷ As with employment, NEO represented the largest portion of state manufacturing gross state product (GSP), accounting for 40.8% of the statewide total of \$87.2 billion. NEO also accounted for 1.9% of national manufacturing GDP.

NEO manufacturing posted a growth rate of 18.2% between 2010 and 2012, surpassing the remainder of Ohio (15.4%) and national (8.7%) manufacturing GDP growth rates. Manufacturing has the second highest growth rate among the major sectors in NEO, trailing only *Management of Companies and Enterprises's* growth rate of 30.2%.

Growth in the GRP for manufacturing was crucial in maintaining a regional growth rate of 3.5%, which was lower than the remainder of Ohio (4.1%) rate but exceeded the national (2.7%) rate. When manufacturing is excluded, the rate for all other sectors in NEO shrank to 0.6%, showing how vital manufacturing was during this timeframe for GRP growth.

Manufacturing accounted, by far, for the largest share of GRP growth in the region, with \$5.5 billion added between 2010 and 2012, or more than \$1.7 billion more than all other net positive contributors combined. From 2010 to 2012, the growth in manufacturing accounted for 86.1% of net GRP growth (Figure 2). Annual analysis shows that between 2010 and 2011, manufacturing GRP growth represented 97.1% of the net NEO GRP growth and between 2011 and 2012, manufacturing GRP growth accounted for 67.7% of the net NEO GRP growth. The second largest contributor to GRP growth was *Management of Companies and Enterprises* at just under \$1.6 billion. In comparison, NEO manufacturing represented 44.3% of the Ohio's manufacturing GSP growth and 3.7% of national manufacturing GDP growth.

Figure 2: Manufacturing Contribution to Net GRP Growth in Northeast Ohio, 2010-2012



Source: Moody's Economy.com

⁶ In this report, GDP is comparable on the state level with Gross State Product (GSP) and on the regional level with Gross Regional Product (GRP).

⁷ All dollars reported are inflated or deflated to 2012 using the Bureau of Labor Statistics Consumer Price Index found at <http://www.bls.gov/cpi/tables.htm>.

Average Wage

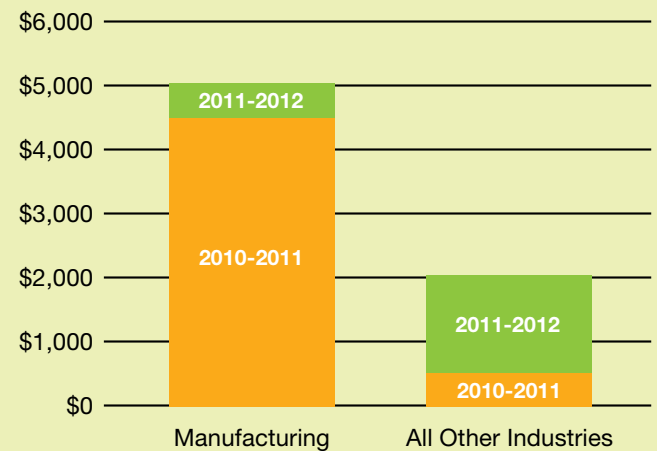
The average manufacturing wage in NEO in 2012 was \$58,168, ranking only seventh among all sectors, with *Management of Companies and Enterprises* posting the highest average wage of \$121,566 (Appendix Table A3).⁸ Manufacturing holds a \$13,801, or 31.1%, wage premium when compared to the average wage (\$44,367) for all sectors in the region. The lower wage in manufacturing in NEO could be due to the lower cost of living and the concentration of less high-tech intensive jobs in the region. The 2012 average manufacturing wage in NEO is slightly higher than the averages for the remainder of Ohio (\$58,096), but is nearly \$6,000 less than the national manufacturing average (\$63,988).

Industry sectors in NEO experienced widespread wage growth between 2010 and 2012, with 14 sectors growing faster than national averages. Manufacturing average wages grew by 9.5%, faster than the remainder of Ohio (6.6%) and the national (8.1%) manufacturing average growth rates. Among all sectors in NEO, manufacturing had the fourth highest average wage growth rate, with *Management of Companies and Enterprises* posting the highest rate of 17.2%. Manufacturing average wage increased by \$5,056 between 2010 and 2012 (Figure 3).

⁸ Information on total wages for Northeast Ohio, Ohio, and the U.S. can be found in Appendix Table 7.

Growth in manufacturing wages helped to push total regional wage growth to 6.2%, slightly above the remainder of Ohio (5.8%) and significantly higher than the national (5.2%) wage growth rate. With manufacturing excluded, the NEO wage growth rate drops to 5.1%, well below the state and national averages. ♦

Figure 3: Growth in Average Wage in Northeast Ohio, 2010-2012



Source: Quarterly Census of Employment and Wages (QCEW)

Several Manufacturing Industries Are Critical to the Regional Economy

Employment

The largest manufacturing industries in 2012 by employment are *Fabricated Metal Products*, *Machinery*, *Transportation Equipment*, *Plastics and Rubber Products*, and *Primary Metals* (Table 2). Each of these industries employs more than 21,000 employees, and together these account for 60.6% of all regional manufacturing employment (Appendix Table A4).

The fastest growing industries among industries with at least 1,000 employees are *Transportation Equipment* (20.8%), *Primary Metals* (15.1%), *Machinery* (12.4%), *Fabricated Metal Products* (11.7%), and *Nonmetallic Mineral Products* (11.4%). Four of these fastest growing

industries are also among the largest five industries, affirming that they added the majority of jobs from 2010-2012. The largest industry contributors to employment growth are *Fabricated Metal Products* (+5,826 jobs), *Transportation Equipment* (+4,929 jobs), *Machinery* (+3,488 jobs), and *Primary Metals* (+2,818 jobs). Together these sectors account for 85.1% of net job growth in NEO manufacturing during this two-year period.

Many manufacturing industries are traded industries with high concentration in Northeast Ohio. Location quotients measure the concentration of a given industry in an area relative to the concentration of that industry in the national economy. Industries with high location quotients (LQ>1.2) are considered to be traded industries

Table 2: Manufacturing Employment in NEO, Remainder of Ohio, and the U.S., 2010-2012

	NEO Employment		% Change 2010-2012		
	2010	2012	NEO	Remainder of Ohio	United States
Industry					
Fabricated Metal Products	49,799	55,625	11.7%	10.9%	10.8%
Machinery	28,142	31,630	12.4%	13.7%	11.6%
Transportation Equipment	23,661	28,590	20.8%	7.5%	8.9%
Plastics and Rubber Products	21,248	22,541	6.1%	1.3%	3.8%
Primary Metals	18,616	21,434	15.1%	9.4%	13.1%
Chemicals	18,261	18,744	2.6%	2.2%	-0.7%
Food	17,076	17,870	4.6%	2.6%	1.1%
Miscellaneous Manufacturing	10,718	11,350	5.9%	3.9%	1.9%
Electrical Equipment, Appliances, Components	9,624	10,166	5.6%	7.8%	4.6%
Computer and Electronic Products	9,109	9,493	4.2%	-1.2%	0.4%
Printing and Related Support Activities	9,372	8,621	-8.0%	-5.4%	-5.4%
Nonmetallic Mineral Products	6,380	7,110	11.4%	5.6%	-0.6%
Paper	7,299	7,039	-3.6%	-4.7%	-3.3%
Furniture and Related Products	5,734	4,728	-17.6%	-8.4%	-2.6%
Wood Products	3,344	3,462	3.5%	-0.2%	-0.5%
Textile Product Mills	1,353	1,406	3.9%	-1.6%	-2.4%
Petroleum and Coal Products	1,212	1,309	7.9%	5.1%	-0.2%
Beverage and Tobacco Products	1,051	1,054	0.3%	-1.3%	2.3%
Textile Mills	688	730	6.1%	14.2%	-0.2%
Apparel	723	545	-24.7%	-18.0%	-5.4%
Leather and Allied Products	45	69	52.2%	1.1%	8.2%
Total Manufacturing	243,457	263,516	8.2%	5.1%	3.7%

Source: Quarterly Census of Employment and Wages (QCEW)

and part of the region’s economic base (also known as basic industries) that export outside of the region to produce wealth within it. Industries with an LQ<1 are considered non-basic or population serving industries.

NEO manufacturing, overall, is a basic, traded industry with a location quotient of 1.58 (Figure 4). The most basic sectors include *Primary Metals* (LQ=3.81), *Fabricated Metal Products* (2.84), *Plastics and Rubber Products* (2.51), and *Machinery* (2.06). In all, 11 out of 21 manufacturing industries in NEO can be considered basic.

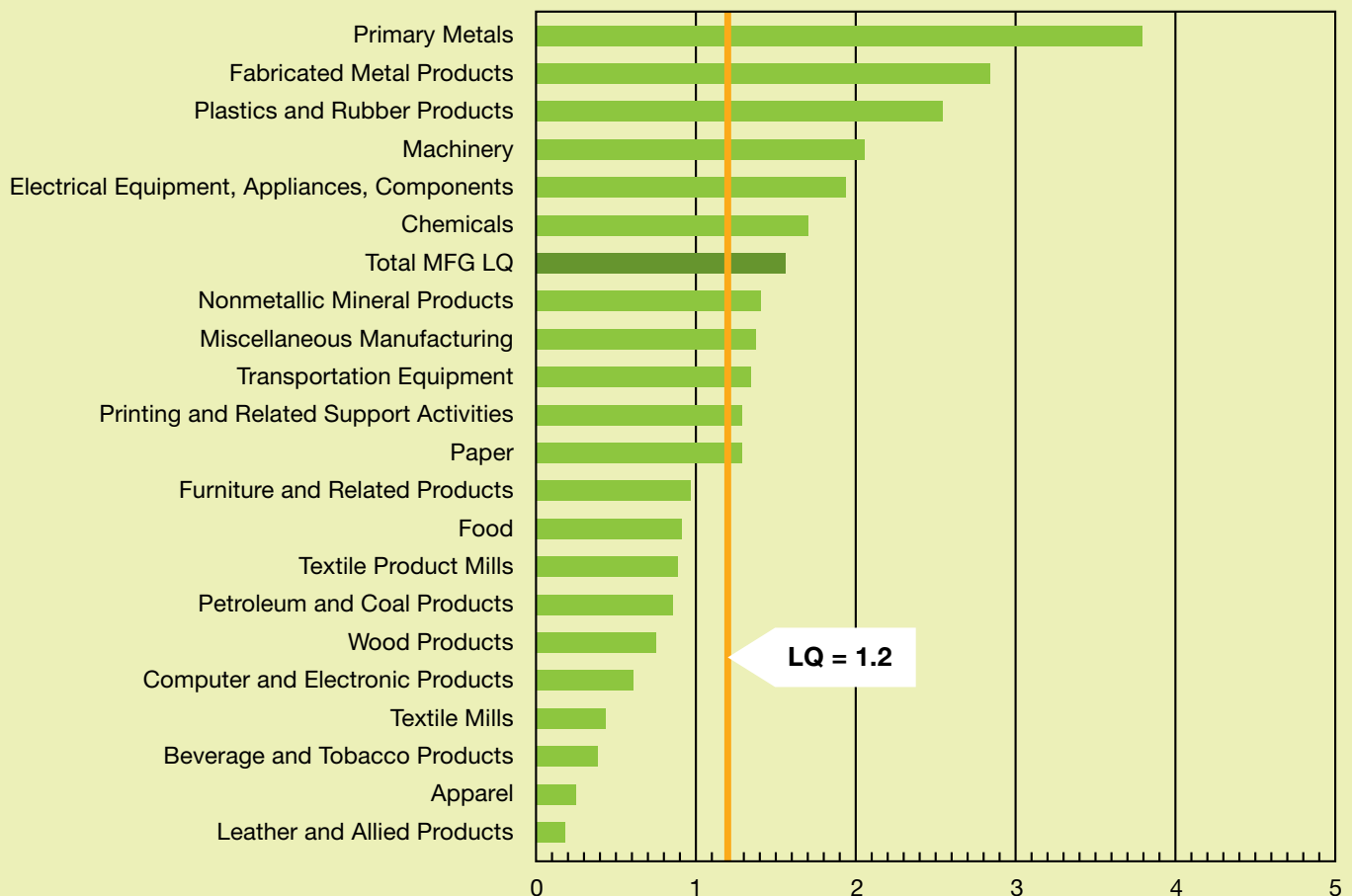
Although the majority, or 16 sectors, showed an increase in location quotient between 2010 and 2012, long-term trends for most industries indicate decreasing location quotients. From 2000 to 2012, only seven sectors showed an increase in the location quotient. All but one of these seven sectors is a small industry regionally with GRP below \$325 million. The exception is *Food* which has a GRP of \$2.7 billion.

Gross Regional Product

The largest sectors in 2012 in terms of GRP in NEO are *Fabricated Metal Products* (\$6.3 billion), *Chemicals* (\$5.9 billion), *Transportation Equipment* (\$3.3 billion), and *Machinery* (\$3.0 billion) (Appendix Table A5). Each of these industries has a GRP of more than \$3 billion, and, combined, they account for 52.0% of total manufacturing GRP in NEO.

The fastest growing sectors between 2010 and 2012 are *Petroleum and Coal Products* (80.3%), *Transportation Equipment* (34.5%), *Chemicals* (33.4%), and *Primary Metals* (20.0%). The largest sector contributors to GRP growth in NEO manufacturing between 2010 and 2012 are *Chemicals* (\$1.5 billion), *Petroleum and Coal Products* (\$1.2 billion), *Transportation Equipment* (\$840 million), and *Fabricated Metal Products* (\$740 million). Together, these accounted for 77.2% of net GRP manufacturing growth.

Figure 4: Northeast Ohio Manufacturing Location Quotients (Based on 2012 Employment)



Source: Quarterly Census of Employment and Wages (QCEW)

Average Wage

Figure 5 shows the average wages for all detailed manufacturing industries in NEO and the U.S. as they compare to the average wage for all manufacturing jobs. Nine industries in NEO had higher wages than the average manufacturing wage, while six industries in the nation had higher wages than the national average manufacturing wage (Appendix Table A6).

The two manufacturing industries with the highest average wage in NEO were *Chemicals* (\$87,331) and *Petroleum and Coal Products* (\$86,188). The lowest wage sector was *Textile Product Mills* (\$25,451). Overall, wages are lower in NEO than nationally in 16 of 21 industries.⁹

Manufacturing Establishment by Size

In NEO, the manufacturing industry overall has a higher percentage of establishments that are large or medium sized when compared with the averages in the region across all industries. Only 82.8% of manufacturing establishments are considered small (49 or fewer employees), compared to 92.4% for all industries in the region (Table 3). This is due in large part to the presence of

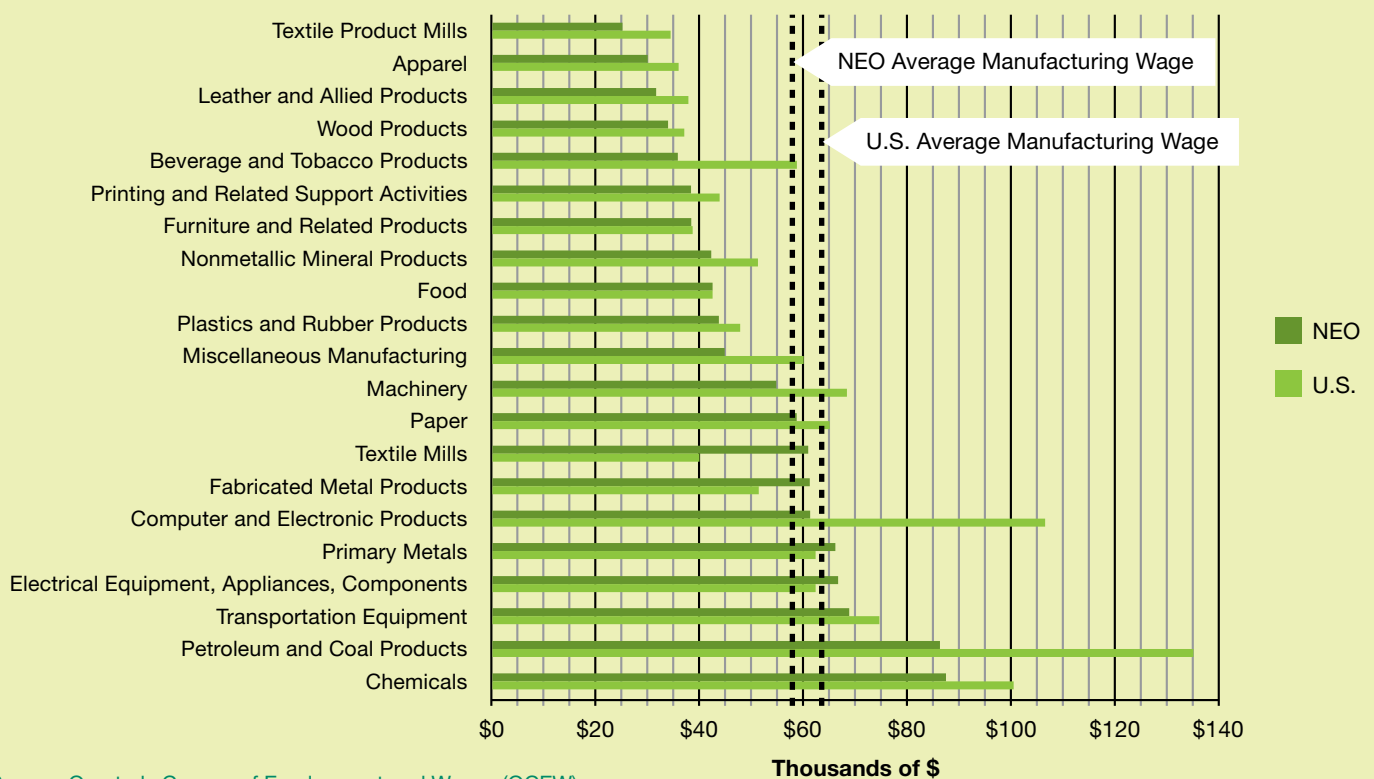
large- and medium-sized establishments in the *Paper, Transportation Equipment, Primary Metal, and Plastics and Rubber Products* industries, each of which has fewer than 70% of its establishments classified as small.

Most of the employment in NEO manufacturing (40.1%) occurs in medium-sized establishments containing between 50 - 249 employees. In contrast, for all industries in the region, most of the employment (40.2%) is in small establishments. Additionally, large-sized manufacturing establishments represent a higher share of total manufacturing employment (33.9%) than the regional average for all industries (24.5%).

Ultimately, job growth between 2010 and 2012 was strongest at large establishments (15.2%). Small establishments saw only a 0.4% growth, while medium establishments experienced 8.2% growth for the same time period. Likewise, large establishments accounted for 58.7% (11,778) of job growth in the manufacturing sector (20,059). The largest portion of this growth came from the *Transportation Equipment* (5,601). In short, large establishments in the *Transportation Equipment* sector accounted for 27.9% of all net manufacturing employment growth in the region. ♦


⁹ Information on total wages by detailed manufacturing industry for Northeast Ohio, Ohio, and the U.S. can be found in Appendix Table 8.

Figure 5: Average Wage by Detailed Manufacturing Industry, 2012



Source: Quarterly Census of Employment and Wages (QCEW)

Table 3: NEO Manufacturing Employment by Establishment Size, 2012

	0-49	50-249	250+	Share (%)	Share (%)	Share (%)
	Small	Medium	Large	Small	Medium	Large
Industry						
Food	3,285	4,119	10,466	18.4%	23.0%	58.6%
Beverage and Tobacco Products	403	651	0	38.3%	61.7%	0.0%
Textile Mills	S	364	S	S	49.8%	S
Textile Product Mills	474	S	S	33.7%	S	S
Apparel	181	364	0	33.3%	66.7%	0.0%
Leather and Allied Products	69	0	0	100.0%	0.0%	0.0%
Wood Products	2,025	1,437	0	58.5%	41.5%	0.0%
Paper	S	4,471	S	S	63.5%	S
Printing and Related Support Activities	3,811	2,918	1,893	44.2%	33.8%	22.0%
Petroleum and Coal Products	592	716	0	45.3%	54.7%	0.0%
Chemicals	4,199	7,219	7,326	22.4%	38.5%	39.1%
Plastics and Rubber Products	5,064	13,133	4,344	22.5%	58.3%	19.3%
Nonmetallic Mineral Products	3,059	2,758	1,293	43.0%	38.8%	18.2%
Primary Metals	2,556	8,401	10,478	11.9%	39.2%	48.9%
Fabricated Metal Products	20,295	21,168	14,162	36.5%	38.1%	25.5%
Machinery	9,576	14,363	7,690	30.3%	45.4%	24.3%
Computer and Electronic Products	2,055	5,328	2,110	21.6%	56.1%	22.2%
Electrical Equipment, Appliances, Components	2,064	4,808	3,294	20.3%	47.3%	32.4%
Transportation Equipment	2,270	7,442	18,878	7.9%	26.0%	66.0%
Furniture and Related Products	1,639	1,120	1,969	34.7%	23.7%	41.7%
Miscellaneous Manufacturing	3,366	4,590	3,394	29.7%	40.4%	29.9%
Total Manufacturing	68,458	105,651	89,407	26.0%	40.1%	33.9%
All Industries	735,656	644,025	448,319	40.2%	35.2%	24.5%

Source: Quarterly Census of Employment and Wages (QCEW)

S signifies that the data has been suppressed.

Appendix Tables

TABLE A1: Manufacturing Employment in NEO, Remainder of Ohio, and the U.S. by Major Sector, 2010-2012

Industry	NEO Employment			% Change 2010-2011			% Change 2011-2012			% Change 2010-2012		
	2010	2011	2012	NEO	Rem OH	US	NEO	Rem OH	US	NEO	Rem OH	US
Agriculture, Forestry, Fishing and Hunting	3,696	3,724	4,025	0.7%	6.3%	1.9%	8.1%	4.3%	3.5%	8.9%	10.9%	5.4%
Mining	2,739	2,554	2,518	-6.8%	7.3%	11.4%	-1.4%	11.3%	14.2%	-8.1%	19.4%	27.3%
Utilities	10,374	10,223	10,268	-1.5%	-5.3%	-0.6%	0.4%	-0.4%	0.0%	-1.0%	-5.7%	-0.6%
Construction	56,043	56,868	60,800	1.5%	3.7%	-1.4%	6.9%	8.0%	2.7%	8.5%	12.0%	1.3%
Manufacturing	243,457	253,623	263,516	4.2%	2.1%	1.7%	3.9%	2.9%	1.9%	8.2%	5.1%	3.7%
Wholesale Trade	77,512	78,805	80,723	1.7%	0.2%	1.1%	2.4%	4.5%	2.2%	4.1%	4.7%	3.4%
Retail Trade	202,620	203,352	205,969	0.4%	0.6%	1.1%	1.3%	1.5%	1.6%	1.7%	2.1%	2.7%
Transportation and Warehousing	60,866	60,425	61,535	-0.7%	1.9%	1.5%	1.8%	2.0%	1.8%	1.1%	4.0%	3.3%
Information	32,475	30,955	30,500	-4.7%	-2.0%	-1.4%	-1.5%	-0.9%	-0.2%	-6.1%	-2.9%	-1.7%
Finance and Insurance	70,010	68,762	68,115	-1.8%	0.5%	0.0%	-0.9%	0.8%	0.6%	-2.7%	1.3%	0.6%
Real Estate and Rental and Leasing	22,473	22,075	22,462	-1.8%	-2.4%	-1.0%	1.8%	1.0%	1.2%	0.0%	-1.5%	0.1%
Professional, Scientific, and Technical Services	79,208	80,181	81,883	1.2%	2.6%	2.5%	2.1%	2.7%	2.7%	3.4%	5.4%	5.2%
Management of Companies and Enterprises	44,982	44,628	45,345	-0.8%	-0.8%	2.7%	1.6%	4.4%	4.7%	0.8%	3.5%	7.5%
Administrative and Support and Waste Management and Remediation Services	93,028	102,030	104,739	9.7%	6.6%	5.7%	2.7%	4.6%	3.6%	12.6%	11.5%	9.5%
Educational Services	165,161	162,955	160,022	-1.3%	0.1%	-0.2%	-1.8%	-1.4%	-0.4%	-3.1%	-1.3%	-0.6%
Health Care and Social Assistance	320,359	322,451	325,259	0.7%	1.7%	1.6%	0.9%	1.3%	1.6%	1.5%	3.0%	3.3%
Arts, Entertainment, and Recreation	22,537	22,644	23,594	0.5%	0.3%	0.9%	4.2%	2.7%	2.2%	4.7%	2.9%	3.1%
Accommodation and Food Services	143,762	145,323	148,617	1.1%	1.6%	2.3%	2.3%	3.6%	3.3%	3.4%	5.2%	5.7%
Other Services (except Public Administration)	55,917	56,371	57,153	0.8%	0.7%	1.0%	1.4%	1.7%	1.2%	2.2%	2.4%	2.1%
Public Administration	72,928	72,256	70,232	-0.9%	0.3%	-1.3%	-2.8%	-3.3%	-1.3%	-3.7%	-3.1%	-2.6%
All Industries	1,780,378	1,800,555	1,828,000	1.1%	1.4%	1.2%	1.5%	2.0%	1.7%	2.7%	3.4%	3.0%

Note: The total does not add up to the summation of sectors because of some non-classified companies. Source: Quarterly Census of Employment and Wages (QCEW)

TABLE A2: Manufacturing GRP in NEO, Remainder of Ohio, and the U.S. by Major Sector, 2010-2012

Industry	NEO GRP (\$1,000's)			% Change 2010-2011			% Change 2011-2012			% Change 2010-2012		
	2010	2011	2012	NEO	Rem OH	US	NEO	Rem OH	US	NEO	Rem OH	US
Agriculture, Forestry, Fishing and Hunting	\$1,364,502	\$1,671,825	\$1,545,985	22.5%	21.7%	6.7%	-7.5%	-6.4%	-4.8%	13.3%	13.9%	1.6%
Mining	\$575,195	\$578,575	\$467,247	0.6%	11.1%	11.6%	-19.2%	-17.7%	-3.7%	-18.8%	-8.5%	7.5%
Utilities	\$3,376,357	\$3,511,177	\$3,433,950	4.0%	-1.8%	1.5%	-2.2%	-1.4%	0.0%	1.7%	-3.2%	1.5%
Construction	\$5,743,656	\$5,857,822	\$6,048,834	2.0%	2.6%	-1.9%	3.3%	4.0%	3.4%	5.3%	6.8%	1.4%
Manufacturing	\$30,083,222	\$33,932,176	\$35,546,256	12.8%	9.8%	2.9%	4.8%	5.1%	5.6%	18.2%	15.4%	8.7%
Wholesale Trade	\$12,297,667	\$12,296,757	\$12,767,245	0.0%	3.1%	2.5%	3.8%	4.6%	4.1%	3.8%	7.9%	6.7%
Retail Trade	\$11,854,159	\$11,900,782	\$12,083,412	0.4%	0.5%	0.2%	1.5%	2.7%	2.6%	1.9%	3.2%	2.9%
Transportation and Warehousing	\$4,984,081	\$4,951,091	\$4,991,676	-0.7%	3.2%	2.7%	0.8%	1.9%	2.6%	0.2%	5.2%	5.4%
Information	\$4,506,020	\$4,441,830	\$4,499,564	-1.4%	1.2%	2.4%	1.3%	3.1%	4.6%	-0.1%	4.3%	7.1%
Finance and Insurance	\$13,641,699	\$12,942,505	\$13,274,280	-5.1%	-1.2%	-2.9%	2.6%	3.8%	5.0%	-2.7%	2.6%	1.9%
Real Estate and Rental and Leasing	\$22,615,658	\$22,502,672	\$21,326,423	-0.5%	-1.0%	-1.3%	-5.2%	-4.7%	-0.6%	-5.7%	-5.7%	-1.9%
Professional, Scientific, and Technical Services	\$9,814,528	\$10,043,588	\$9,726,031	2.3%	3.9%	3.0%	-3.2%	-1.8%	1.4%	-0.9%	2.1%	4.4%
Management of Companies and Enterprises	\$5,149,068	\$5,623,541	\$6,704,536	9.2%	2.7%	4.7%	19.2%	20.3%	2.1%	30.2%	23.6%	6.9%
Administrative and Support and Waste Management and Remediation Services	\$5,818,856	\$6,139,063	\$6,236,523	5.5%	2.7%	2.9%	1.6%	2.6%	1.4%	7.2%	5.4%	4.3%
Educational Services	\$2,050,854	\$2,035,711	\$1,995,552	-0.7%	2.4%	1.5%	-2.0%	-2.1%	1.1%	-2.7%	0.2%	2.6%
Health Care and Social Assistance	\$18,193,046	\$18,155,607	\$18,337,642	-0.2%	-1.3%	-0.1%	1.0%	1.7%	0.4%	0.8%	0.3%	0.3%
Arts, Entertainment, and Recreation	\$1,687,630	\$1,608,791	\$1,720,970	-4.7%	5.9%	2.9%	7.0%	7.9%	1.5%	2.0%	14.3%	4.4%
Accommodation and Food Services	\$4,512,581	\$4,611,154	\$4,798,608	2.2%	3.0%	2.6%	4.1%	5.2%	4.2%	6.3%	8.4%	7.0%
Other Services (except Public Administration)	\$4,212,396	\$4,284,373	\$4,257,727	1.7%	-1.3%	0.4%	-0.6%	0.3%	-0.4%	1.1%	-1.0%	0.0%
Public Administration	\$19,553,945	\$18,946,190	\$18,717,199	-3.1%	-2.1%	-2.1%	-1.2%	-0.3%	-0.3%	-4.3%	-2.5%	-2.4%
All Industries	\$183,152,360	\$187,114,999	\$189,500,099	2.2%	2.0%	0.8%	1.3%	2.1%	1.9%	3.5%	4.1%	2.7%

Note: The total does not add up to the summation of sectors because of private household and military employment. All dollar amounts are in 2012 dollars. Source: Moody's Economy.com

TABLE A3: Manufacturing Average Wage in NEO, Remainder of Ohio, and the U.S. by Major Sector, 2010-2012

Industry	NEO Average Wage			% Change 2010-2011			% Change 2011-2012			% Change 2010-2012		
	2010	2011	2012	NEO	Rem OH	US	NEO	Rem OH	US	NEO	Rem OH	US
Agriculture, Forestry, Fishing and Hunting	\$24,659	\$24,819	\$26,233	0.6%	-0.7%	1.1%	5.7%	4.1%	4.4%	6.4%	3.4%	5.5%
Mining	\$55,856	\$66,883	\$62,244	19.7%	10.8%	4.0%	-6.9%	3.1%	1.0%	11.4%	14.3%	5.0%
Utilities	\$71,272	\$75,437	\$79,491	5.8%	8.0%	2.7%	5.4%	3.3%	4.0%	11.5%	11.6%	6.8%
Construction	\$47,561	\$45,697	\$47,185	-3.9%	-0.6%	-0.5%	3.3%	3.2%	3.6%	-0.8%	2.6%	3.1%
Manufacturing	\$53,112	\$57,634	\$58,168	8.5%	2.6%	4.5%	0.9%	3.9%	3.5%	9.5%	6.6%	8.1%
Wholesale Trade	\$54,931	\$57,316	\$60,824	4.3%	2.4%	3.2%	6.1%	5.2%	4.1%	10.7%	7.7%	7.4%
Retail Trade	\$23,206	\$23,572	\$24,890	1.6%	2.7%	0.9%	5.6%	4.4%	4.1%	7.3%	7.3%	5.0%
Transportation and Warehousing	\$42,805	\$43,375	\$46,665	1.3%	0.8%	2.1%	7.6%	4.2%	5.5%	9.0%	5.0%	7.6%
Information	\$49,855	\$52,341	\$51,318	5.0%	3.4%	6.1%	-2.0%	3.9%	4.6%	2.9%	7.4%	10.9%
Finance and Insurance	\$68,907	\$69,827	\$73,868	1.3%	2.4%	7.0%	5.8%	1.8%	-2.0%	7.2%	4.3%	4.9%
Real Estate and Rental and Leasing	\$37,580	\$38,233	\$40,885	1.7%	3.0%	3.8%	6.9%	6.3%	6.6%	8.8%	9.5%	10.6%
Professional, Scientific, and Technical Services	\$58,090	\$58,667	\$60,398	1.0%	1.5%	1.9%	2.9%	4.0%	4.7%	4.0%	5.6%	6.7%
Management of Companies and Enterprises	\$103,723	\$112,284	\$121,566	8.3%	3.4%	7.5%	8.3%	15.8%	2.8%	17.2%	19.8%	10.5%
Administrative and Support and Waste Management and Remediation Services	\$30,195	\$32,189	\$31,853	6.6%	-1.7%	-0.3%	-1.0%	4.6%	4.5%	5.5%	2.8%	4.2%
Educational Services	\$40,719	\$39,552	\$41,035	-2.9%	-2.5%	-1.9%	3.7%	7.7%	1.8%	0.8%	5.0%	-0.1%
Health Care and Social Assistance	\$38,759	\$39,611	\$40,821	2.2%	-0.3%	0.0%	3.1%	5.0%	4.5%	5.3%	4.7%	4.5%
Arts, Entertainment, and Recreation	\$33,266	\$28,891	\$27,662	-13.2%	-7.6%	-1.4%	-4.3%	11.5%	3.9%	-16.8%	3.0%	2.5%
Accommodation and Food Services	\$13,226	\$13,231	\$13,815	0.0%	-0.6%	0.0%	4.4%	3.9%	3.7%	4.5%	3.3%	3.7%
Other Services (except Public Administration)	\$24,501	\$24,637	\$25,772	0.6%	-0.7%	-1.0%	4.6%	5.6%	3.1%	5.2%	4.9%	2.1%
Public Administration	\$50,908	\$49,762	\$50,861	-2.3%	-1.2%	-0.7%	2.2%	-0.2%	2.7%	-0.1%	-1.4%	2.0%
All Industries	\$41,782	\$42,894	\$44,367	2.7%	0.8%	1.9%	3.4%	5.0%	3.2%	6.2%	5.8%	5.2%

Note: The total does not add up to the summation of sectors because of some non-classified companies and public administration. All dollar amounts are in 2012 dollars.

Source: Quarterly Census of Employment and Wages (QCEW)

TABLE A4: Manufacturing Employment in NEO, Remainder of Ohio, and the U.S. by Detailed Industry, 2010-2012

Manufacturing Industry	NEO Employment			% Change 2010-2011			% Change 2011-2012			% Change 2010-2012		
	2010	2011	2012	NEO	Rem OH	US	NEO	Rem OH	US	NEO	Rem OH	US
Food	17,076	17,260	17,870	1.1%	0.5%	1.1%	3.5%	2.1%	0.1%	4.6%	2.6%	1.1%
Beverage and Tobacco Products	1,051	1,030	1,054	-2.0%	0.9%	-1.0%	2.3%	-2.2%	3.3%	0.3%	-1.3%	2.3%
Textile Mills	688	738	730	7.3%	7.1%	1.4%	-1.1%	6.6%	-1.5%	6.1%	14.2%	-0.2%
Textile Product Mills	1,353	1,388	1,406	2.6%	-5.3%	-0.7%	1.3%	4.0%	-1.7%	3.9%	-1.6%	-2.4%
Apparel	723	514	545	-28.9%	-13.9%	-4.0%	6.0%	-4.8%	-1.4%	-24.6%	-18.0%	-5.4%
Leather and Allied Products	45	47	69	4.4%	4.1%	5.2%	46.8%	-2.9%	2.8%	53.3%	1.1%	8.2%
Wood Products	3,344	3,546	3,462	6.0%	-2.2%	0.1%	-2.4%	2.0%	-0.6%	3.5%	-0.2%	-0.5%
Paper	7,299	7,228	7,039	-1.0%	0.6%	-1.3%	-2.6%	-5.3%	-2.0%	-3.6%	-4.7%	-3.3%
Printing and Related Support Activities	9,372	8,952	8,621	-4.5%	-2.8%	-2.9%	-3.7%	-2.7%	-2.6%	-8.0%	-5.4%	-5.4%
Petroleum and Coal Products	1,212	1,264	1,309	4.3%	0.8%	-1.5%	3.6%	4.2%	1.4%	8.0%	5.1%	-0.2%
Chemicals	18,261	18,454	18,744	1.1%	-0.6%	-0.8%	1.6%	2.8%	0.1%	2.6%	2.2%	-0.7%
Plastics and Rubber Products	21,248	21,969	22,541	3.4%	2.0%	2.8%	2.6%	-0.7%	1.0%	6.1%	1.3%	3.8%
Nonmetallic Mineral Products	6,380	6,575	7,110	3.1%	1.9%	-1.5%	8.1%	3.6%	0.9%	11.4%	5.6%	-0.6%
Primary Metals	18,616	19,577	21,434	5.2%	5.5%	7.3%	9.5%	3.7%	5.4%	15.1%	9.4%	13.1%
Fabricated Metal Products	49,799	52,896	55,625	6.2%	5.4%	5.2%	5.2%	5.2%	5.4%	11.7%	10.9%	10.8%
Machinery	28,142	29,815	31,630	5.9%	6.8%	5.7%	6.1%	6.5%	5.6%	12.4%	13.7%	11.6%
Computer and Electronic Products	9,109	9,361	9,493	2.8%	0.1%	0.5%	1.4%	-1.3%	-0.1%	4.2%	-1.2%	0.4%
Electrical Equipment, Appliances, Components	9,624	9,819	10,166	2.0%	5.9%	2.2%	3.5%	1.7%	2.3%	5.6%	7.8%	4.6%
Transportation Equipment	23,661	27,611	28,590	16.7%	1.6%	3.3%	3.5%	5.8%	5.4%	20.8%	7.5%	8.9%
Furniture and Related Products	5,734	4,842	4,728	-15.6%	-5.8%	-2.0%	-2.4%	-2.8%	-0.5%	-17.5%	-8.4%	-2.6%
Miscellaneous Manufacturing	10,718	10,736	11,350	0.2%	2.3%	1.0%	5.7%	1.5%	0.9%	5.9%	3.9%	1.9%
Total Manufacturing	243,457	253,623	263,516	4.2%	2.1%	1.7%	3.9%	2.9%	1.9%	8.2%	5.1%	3.7%

Note: The totals may not add up to the summation of sub-sectors due to rounding. Source: Quarterly Census of Employment and Wages (QCEW)

TABLE A5: Manufacturing GRP in NEO, Remainder of Ohio, and the U.S. by Detailed Industry, 2010-2012

Manufacturing Industry	NEO GRP (\$1,000's)			% Change 2010-2011			% Change 2011-2012			% Change 2010-2012		
	2010	2011	2012	NEO	Rem OH	US	NEO	Rem OH	US	NEO	Rem OH	US
Food	\$2,683,058	\$2,550,864	\$2,669,364	-4.9%	-4.6%	-4.5%	4.6%	5.5%	4.6%	-0.5%	0.7%	-0.2%
Beverage and Tobacco Products	\$184,091	\$178,132	\$180,276	-3.2%	-4.7%	-6.7%	1.2%	1.5%	7.0%	-2.1%	-3.2%	-0.1%
Textile Mills	\$76,670	\$75,499	\$82,123	-1.5%	-1.1%	-7.8%	8.8%	10.3%	1.5%	7.1%	9.0%	-6.4%
Textile Product Mills	\$93,751	\$79,543	\$82,877	-15.2%	-2.4%	-6.6%	4.2%	5.0%	1.3%	-11.6%	2.4%	-5.3%
Apparel	\$37,369	\$22,260	\$22,308	-40.4%	1.5%	-4.5%	0.2%	-1.1%	0.0%	-40.3%	0.4%	-4.5%
Leather and Allied Products	\$3,979	\$4,387	\$4,766	10.3%	-13.1%	5.1%	8.6%	1.9%	6.2%	19.8%	-11.5%	11.6%
Wood Products	\$251,495	\$271,819	\$287,252	8.1%	4.4%	0.2%	5.7%	6.0%	6.3%	14.2%	10.7%	6.6%
Paper	\$857,128	\$808,371	\$789,896	-5.7%	-6.2%	-4.3%	-2.3%	-1.2%	2.1%	-7.8%	-7.3%	-2.3%
Printing and Related Support Activities	\$570,760	\$558,266	\$560,108	-2.2%	-1.8%	-0.5%	0.3%	0.6%	1.7%	-1.9%	-1.2%	1.2%
Petroleum and Coal Products	\$1,451,776	\$2,510,247	\$2,617,414	72.9%	60.0%	29.7%	4.3%	4.9%	5.6%	80.3%	67.8%	36.9%
Chemicals	\$4,414,501	\$5,606,979	\$5,886,847	27.0%	10.8%	4.1%	5.0%	5.0%	4.7%	33.4%	16.3%	9.0%
Plastics and Rubber Products	\$2,044,676	\$2,170,110	\$2,301,409	6.1%	2.5%	0.1%	6.1%	6.6%	5.8%	12.6%	9.3%	5.9%
Nonmetallic Mineral Products	\$511,861	\$558,804	\$581,462	9.2%	7.0%	-0.1%	4.1%	4.4%	4.4%	13.6%	11.7%	4.3%
Primary Metals	\$2,396,063	\$2,733,578	\$2,875,818	14.1%	4.4%	13.4%	5.2%	5.1%	8.2%	20.0%	9.7%	22.7%
Fabricated Metal Products	\$5,541,630	\$5,927,078	\$6,279,575	7.0%	3.4%	3.0%	5.9%	6.6%	8.9%	13.3%	10.2%	12.1%
Machinery	\$2,650,802	\$2,919,997	\$3,033,656	10.2%	9.8%	8.7%	3.9%	4.9%	6.5%	14.4%	15.2%	15.7%
Computer and Electronic Products	\$955,168	\$850,801	\$858,274	-10.9%	-11.5%	-6.7%	0.9%	2.2%	4.8%	-10.1%	-9.6%	-2.2%
Electrical Equipment, Appliances, Components	\$1,493,815	\$1,634,687	\$1,746,082	9.4%	8.0%	7.2%	6.8%	6.6%	6.4%	16.9%	15.2%	14.1%
Transportation Equipment	\$2,446,287	\$3,133,754	\$3,290,505	28.1%	18.5%	8.7%	5.0%	5.5%	6.9%	34.5%	25.0%	16.3%
Furniture and Related Products	\$282,508	\$305,334	\$320,944	8.1%	13.9%	2.9%	5.1%	6.8%	5.9%	13.6%	21.7%	8.9%
Miscellaneous Manufacturing	\$1,135,834	\$1,031,667	\$1,075,301	-9.2%	-3.6%	-6.2%	4.2%	5.8%	6.7%	-5.3%	2.0%	0.1%
Total Manufacturing	\$30,083,222	\$33,932,176	\$35,546,256	12.8%	9.8%	2.9%	4.8%	5.1%	5.6%	18.2%	15.4%	8.7%

Note: The totals may not add up to the summation of sub-sectors due to rounding. All dollar amounts are in 2012 dollars. Source: Moody's Economy.com

TABLE A6: Manufacturing Average Wage in NEO, Remainder of Ohio, and the U.S. by Detailed Industry, 2010-2012

Manufacturing Industry	NEO Average Wage			NEO Wage Premium over U.S.	% Change 2010-2011			% Change 2011-2012			% Change 2010-2012		
	2010	2011	2012		NEO	Rem OH	US	NEO	Rem OH	US	NEO	Rem OH	US
Food	\$40,891	\$42,075	\$42,734	\$27	2.9%	1.0%	0.3%	1.6%	4.9%	4.8%	4.5%	5.9%	5.1%
Beverage and Tobacco Products	\$37,804	\$35,691	\$35,909	-\$23,205	-5.6%	-0.2%	-0.3%	0.6%	-1.8%	0.4%	-5.0%	-2.0%	0.1%
Textile Mills	\$46,062	\$57,094	\$61,029	\$21,072	24.0%	-14.8%	2.5%	6.9%	9.8%	2.7%	32.5%	-6.5%	5.3%
Textile Product Mills	\$22,933	\$22,102	\$25,451	-\$9,102	-3.6%	10.7%	3.9%	15.2%	0.7%	2.1%	11.0%	11.4%	6.1%
Apparel	\$31,362	\$31,333	\$30,324	-\$5,818	-0.1%	7.1%	1.1%	-3.2%	3.3%	0.3%	-3.3%	10.6%	1.4%
Leather and Allied Products	\$33,996	\$32,997	\$31,662	-\$6,170	-2.9%	-7.0%	0.3%	-4.0%	14.7%	4.8%	-6.9%	6.7%	5.1%
Wood Products	\$34,087	\$32,520	\$34,320	-\$2,956	-4.6%	0.3%	0.9%	5.5%	4.7%	6.2%	0.7%	5.1%	7.2%
Paper	\$61,060	\$64,071	\$58,782	-\$6,508	4.9%	-0.6%	1.3%	-8.3%	2.6%	3.3%	-3.7%	2.0%	4.7%
Printing and Related Support Activities	\$37,433	\$37,710	\$38,579	-\$5,740	0.7%	-0.1%	1.4%	2.3%	-0.3%	1.1%	3.1%	-0.3%	2.5%
Petroleum and Coal Products	\$83,905	\$83,167	\$86,188	-\$49,218	-0.9%	2.4%	12.6%	3.6%	6.0%	5.2%	2.7%	8.6%	18.4%
Chemicals	\$82,625	\$87,269	\$87,331	-\$13,223	5.6%	5.3%	0.4%	0.1%	0.9%	2.4%	5.7%	6.3%	2.8%
Plastics and Rubber Products	\$41,722	\$42,108	\$44,054	-\$3,849	0.9%	1.0%	1.1%	4.6%	-2.4%	3.1%	5.6%	-1.5%	4.3%
Nonmetallic Mineral Products	\$42,648	\$42,887	\$42,389	-\$8,913	0.6%	0.7%	1.7%	-1.2%	4.0%	5.3%	-0.6%	4.8%	7.0%
Primary Metals	\$59,664	\$66,593	\$66,089	\$2,804	11.6%	-6.0%	3.9%	-0.8%	4.5%	4.3%	10.8%	-1.8%	8.4%
Fabricated Metal Products	\$53,385	\$60,177	\$61,383	\$9,912	12.7%	5.0%	2.8%	2.0%	4.7%	4.0%	15.0%	9.9%	6.9%
Machinery	\$50,372	\$54,215	\$55,658	-\$12,924	7.6%	6.6%	10.2%	2.7%	5.8%	3.1%	10.5%	12.8%	13.6%
Computer and Electronic Products	\$57,880	\$59,321	\$61,488	-\$44,898	2.5%	9.4%	8.5%	3.7%	-4.3%	3.9%	6.2%	4.7%	12.7%
Electrical Equipment, Appliances, Components	\$62,152	\$68,968	\$66,719	\$4,054	11.0%	0.8%	7.8%	-3.3%	9.8%	2.5%	7.3%	10.7%	10.5%
Transportation Equipment	\$60,429	\$69,904	\$69,017	-\$5,676	15.7%	3.0%	8.3%	-1.3%	5.6%	1.8%	14.2%	8.8%	10.2%
Furniture and Related Products	\$38,383	\$38,548	\$38,774	-\$279	0.4%	4.7%	0.4%	0.6%	5.5%	4.8%	1.0%	10.5%	5.2%
Miscellaneous Manufacturing	\$43,283	\$44,023	\$44,790	-\$15,495	1.7%	0.2%	0.7%	1.7%	0.4%	5.7%	3.5%	0.6%	6.4%
Total Manufacturing	\$53,112	\$57,634	\$58,168	-\$5,820	8.5%	2.6%	4.5%	0.9%	3.9%	3.5%	9.5%	6.6%	8.1%

Note: All dollar amounts are in 2012 dollars. Source: Quarterly Census of Employment and Wages (QCEW)

TABLE A7: Manufacturing Total Wages in NEO, Remainder of Ohio, and the U.S. by Major Sector, 2010-2012

Industry	NEO Payroll			% Change 2010-2011			% Change 2011-2012			% Change 2010-2012		
	2010	2011	2012	NEO	Rem OH	US	NEO	Rem OH	US	NEO	Rem OH	US
Agriculture, Forestry, Fishing and Hunting	\$91,138,552	\$92,417,051	\$105,588,176	1.4%	5.5%	3.0%	14.3%	8.6%	8.0%	15.9%	14.6%	11.2%
Mining	\$152,972,019	\$170,795,830	\$156,730,652	11.7%	18.9%	15.8%	-8.2%	14.7%	15.4%	2.5%	36.5%	33.7%
Utilities	\$739,354,470	\$771,165,988	\$816,188,044	4.3%	2.3%	2.0%	5.8%	2.9%	4.0%	10.4%	5.3%	6.1%
Construction	\$2,665,494,748	\$2,598,680,364	\$2,868,828,072	-2.5%	3.1%	-1.9%	10.4%	11.5%	6.5%	7.6%	14.9%	4.4%
Manufacturing	\$12,930,607,133	\$14,617,234,556	\$15,328,213,556	13.0%	4.8%	6.3%	4.9%	6.9%	5.5%	18.5%	12.1%	12.1%
Wholesale Trade	\$4,257,823,512	\$4,516,762,155	\$4,909,858,552	6.1%	2.6%	4.4%	8.7%	9.9%	6.4%	15.3%	12.8%	11.0%
Retail Trade	\$4,701,913,205	\$4,793,418,109	\$5,126,625,668	1.9%	3.4%	1.9%	7.0%	6.0%	5.8%	9.0%	9.6%	7.8%
Transportation and Warehousing	\$2,605,406,576	\$2,620,955,190	\$2,871,539,232	0.6%	2.7%	3.6%	9.6%	6.3%	7.4%	10.2%	9.2%	11.2%
Information	\$1,619,033,671	\$1,620,210,158	\$1,565,196,068	0.1%	1.3%	4.5%	-3.4%	2.9%	4.3%	-3.3%	4.2%	9.1%
Finance and Insurance	\$4,824,156,793	\$4,801,457,124	\$5,031,555,892	-0.5%	2.9%	7.0%	4.8%	2.7%	-1.4%	4.3%	5.7%	5.5%
Real Estate and Rental and Leasing	\$844,542,849	\$844,003,125	\$918,368,852	-0.1%	0.5%	2.7%	8.8%	7.4%	7.8%	8.7%	7.9%	10.8%
Professional, Scientific, and Technical Services	\$4,601,197,844	\$4,703,985,924	\$4,945,519,240	2.2%	4.1%	4.4%	5.1%	6.9%	7.5%	7.5%	11.3%	12.3%
Management of Companies and Enterprises	\$4,665,615,426	\$5,011,057,032	\$5,512,387,756	7.4%	2.6%	10.3%	10.0%	20.9%	7.6%	18.1%	24.0%	18.7%
Administrative and Support and Waste Management and Remediation Services	\$2,808,999,743	\$3,284,184,365	\$3,336,263,257	16.9%	4.7%	5.4%	1.6%	9.4%	8.2%	18.8%	14.6%	14.1%
Educational Services	\$6,725,147,601	\$6,445,240,043	\$6,566,576,654	-4.2%	-2.4%	-2.2%	1.9%	6.2%	1.4%	-2.4%	3.6%	-0.7%
Health Care and Social Assistance	\$12,416,830,746	\$12,772,455,096	\$13,277,339,772	2.9%	1.4%	1.6%	4.0%	6.4%	6.2%	6.9%	7.8%	7.9%
Arts, Entertainment, and Recreation	\$749,705,439	\$654,205,900	\$652,660,656	-12.7%	-7.3%	-0.5%	-0.2%	14.4%	6.1%	-12.9%	6.0%	5.6%
Accommodation and Food Services	\$1,901,448,828	\$1,922,794,061	\$2,053,221,696	1.1%	0.9%	2.3%	6.8%	7.6%	7.2%	8.0%	8.6%	9.6%
Other Services (except Public Administration)	\$1,370,007,108	\$1,388,840,333	\$1,472,918,172	1.4%	0.0%	-0.1%	6.1%	7.4%	4.3%	7.5%	7.4%	4.2%
Public Administration	\$3,712,625,689	\$3,595,625,469	\$3,572,089,416	-3.2%	-1.0%	-2.0%	-0.7%	-3.5%	1.4%	-3.8%	-4.4%	-0.6%
All Industries	\$74,388,558,590	\$77,233,529,634	\$81,103,475,403	3.8%	2.3%	3.2%	5.0%	7.0%	5.0%	9.0%	9.5%	8.3%

Note: The total does not add up to the summation of sectors because of some non-classified companies. All dollar amounts are in 2012 dollars.

Source: Quarterly Census of Employment and Wages (QCEW)

TABLE A8: Manufacturing Total Wages in NEO, Remainder of Ohio, and the U.S. by Detailed Industry, 2010-2012

Manufacturing Industry	NEO Payroll			% Change 2010-2011			% Change 2011-2012			% Change 2010-2012		
	2010	2011	2012	NEO	Rem OH	US	NEO	Rem OH	US	NEO	Rem OH	US
Food	\$698,272,853	\$726,221,213	\$763,664,508	4.0%	1.5%	1.4%	5.2%	7.1%	4.9%	9.4%	8.7%	6.3%
Beverage and Tobacco Products	\$39,731,996	\$36,762,014	\$37,860,560	-7.5%	0.7%	-1.3%	3.0%	-4.0%	3.7%	-4.7%	-3.3%	2.3%
Textile Mills	\$31,706,277	\$42,154,433	\$44,551,384	33.0%	-8.8%	3.9%	5.7%	17.0%	1.2%	40.5%	6.8%	5.1%
Textile Product Mills	\$31,035,889	\$30,677,073	\$35,775,288	-1.2%	4.8%	3.2%	16.6%	4.7%	0.4%	15.3%	9.7%	3.6%
Apparel	\$22,685,344	\$16,105,417	\$16,526,776	-29.0%	-7.8%	-3.0%	2.6%	-1.7%	-1.1%	-27.1%	-9.3%	-4.1%
Leather and Allied Products	\$1,541,156	\$1,550,847	\$2,184,700	0.6%	-3.2%	5.5%	40.9%	11.3%	7.8%	41.8%	7.8%	13.7%
Wood Products	\$113,987,232	\$115,325,545	\$118,826,172	1.2%	-1.9%	1.0%	3.0%	6.8%	5.5%	4.2%	4.8%	6.6%
Paper	\$445,658,114	\$463,104,177	\$413,745,628	3.9%	0.0%	0.0%	-10.7%	-2.8%	1.2%	-7.2%	-2.7%	1.2%
Printing and Related Support Activities	\$350,824,133	\$337,571,573	\$332,603,204	-3.8%	-2.9%	-1.6%	-1.5%	-3.0%	-1.5%	-5.2%	-5.7%	-3.1%
Petroleum and Coal Products	\$101,720,386	\$105,095,543	\$112,791,376	3.3%	3.2%	10.8%	7.3%	10.5%	6.6%	10.9%	14.1%	18.2%
Chemicals	\$1,508,817,249	\$1,610,499,023	\$1,636,957,676	6.7%	4.7%	-0.4%	1.6%	3.8%	2.5%	8.5%	8.7%	2.1%
Plastics and Rubber Products	\$886,529,846	\$925,082,208	\$993,025,216	4.3%	3.1%	3.9%	7.3%	-3.1%	4.1%	12.0%	-0.2%	8.2%
Nonmetallic Mineral Products	\$272,080,549	\$281,966,019	\$301,372,104	3.6%	2.7%	0.1%	6.9%	7.8%	6.2%	10.8%	10.7%	6.4%
Primary Metals	\$1,110,731,398	\$1,303,688,986	\$1,416,574,284	17.4%	-0.9%	11.5%	8.7%	8.4%	10.0%	27.5%	7.4%	22.7%
Fabricated Metal Products	\$2,658,523,046	\$3,183,147,623	\$3,414,417,376	19.7%	10.6%	8.2%	7.3%	10.2%	9.5%	28.4%	21.9%	18.5%
Machinery	\$1,417,572,597	\$1,616,406,254	\$1,760,456,708	14.0%	13.8%	16.4%	8.9%	12.7%	8.9%	24.2%	28.3%	26.7%
Computer and Electronic Products	\$527,252,030	\$555,322,074	\$583,707,548	5.3%	9.5%	9.0%	5.1%	-5.5%	3.8%	10.7%	3.5%	13.1%
Electrical Equipment, Appliances, Components	\$598,131,937	\$677,173,910	\$678,262,944	13.2%	6.8%	10.2%	0.2%	11.7%	4.9%	13.4%	19.3%	15.5%
Transportation Equipment	\$1,429,819,412	\$1,930,084,214	\$1,973,218,268	35.0%	4.6%	11.9%	2.2%	11.8%	7.3%	38.0%	16.9%	20.0%
Furniture and Related Products	\$220,089,635	\$186,651,059	\$183,311,696	-15.2%	-1.4%	-1.6%	-1.8%	2.6%	4.2%	-16.7%	1.2%	2.5%
Miscellaneous Manufacturing	\$463,896,056	\$472,645,348	\$508,380,140	1.9%	2.5%	1.6%	7.6%	1.9%	6.7%	9.6%	4.5%	8.4%
Total Manufacturing	\$12,930,607,133	\$14,617,234,556	\$15,328,213,556	13.0%	4.8%	6.3%	4.9%	6.9%	5.5%	18.5%	12.1%	12.1%

Note: The totals may not add up to the summation of sub-sectors due to rounding. All dollar amounts are in 2012 dollars. Source: Quarterly Census of Employment and Wages (QCEW)

For this report, Northeast Ohio is defined as the 18-county region that includes the Akron MSA (Portage and Summit Counties), half of the Canton-Massillon MSA (Stark County), the Cleveland-Elyria-Mentor MSA (Cuyahoga, Geauga, Lake, Lorain and Medina counties), the Mansfield MSA (Richland County), the Sandusky MSA (Erie County), the Youngstown-Warren MSA (Mahoning and Trumbull Counties) and six non-metropolitan counties (Ashland, Ashtabula, Columbiana, Huron, Tuscarawas and Wayne).

This manufacturing brief is sponsored by the Manufacturing Advocacy & Growth Network (MAGNET) with additional financial support from the U.S. Economic Development Administration. MAGNET supports, educates and champions manufacturing in Northeast Ohio. For more information on MAGNET, visit: www.manufacturingsuccess.org

The 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 or Economic Development, call 216.687.3984 or email ced@csuohio.edu