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Youngstown MSA: Growing Regional Industry Drivers (GRIDs)

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YOUNGSTOWN MSA

GROWING REGIONAL INDUSTRY DRIVERS (GRIDs)

CLEVELAND STATE UNIVERSITY
CENTER FOR ECONOMIC DEVELOPMENT

March 5, 2019 | Cleveland, Ohio

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INTRODUCTION

- The economic trends in Northeast Ohio (NEO) over the last 20 years are typical of the Midwest region, with a positive increase in output outpaced by the state of Ohio, and the United States

- The double recessions of 2001 and 2007-2009 show a deeper output decline in NEO than in comparable Midwest regions and the United States

- Traditionally, industries with high regional specialization that have a competitive advantage and drive regional economies are called *economic base industries*

- *Groups of Regional Industry Drivers* (GRIDs) are part of the economic base of a region

EMPLOYMENT AND OUTPUT TRENDS IN NEO

NORTHEAST OHIO MSAs

- The 18-county Northeast Ohio labor market is composed of four metropolitan areas (MSAs) and eight non-MSA counties
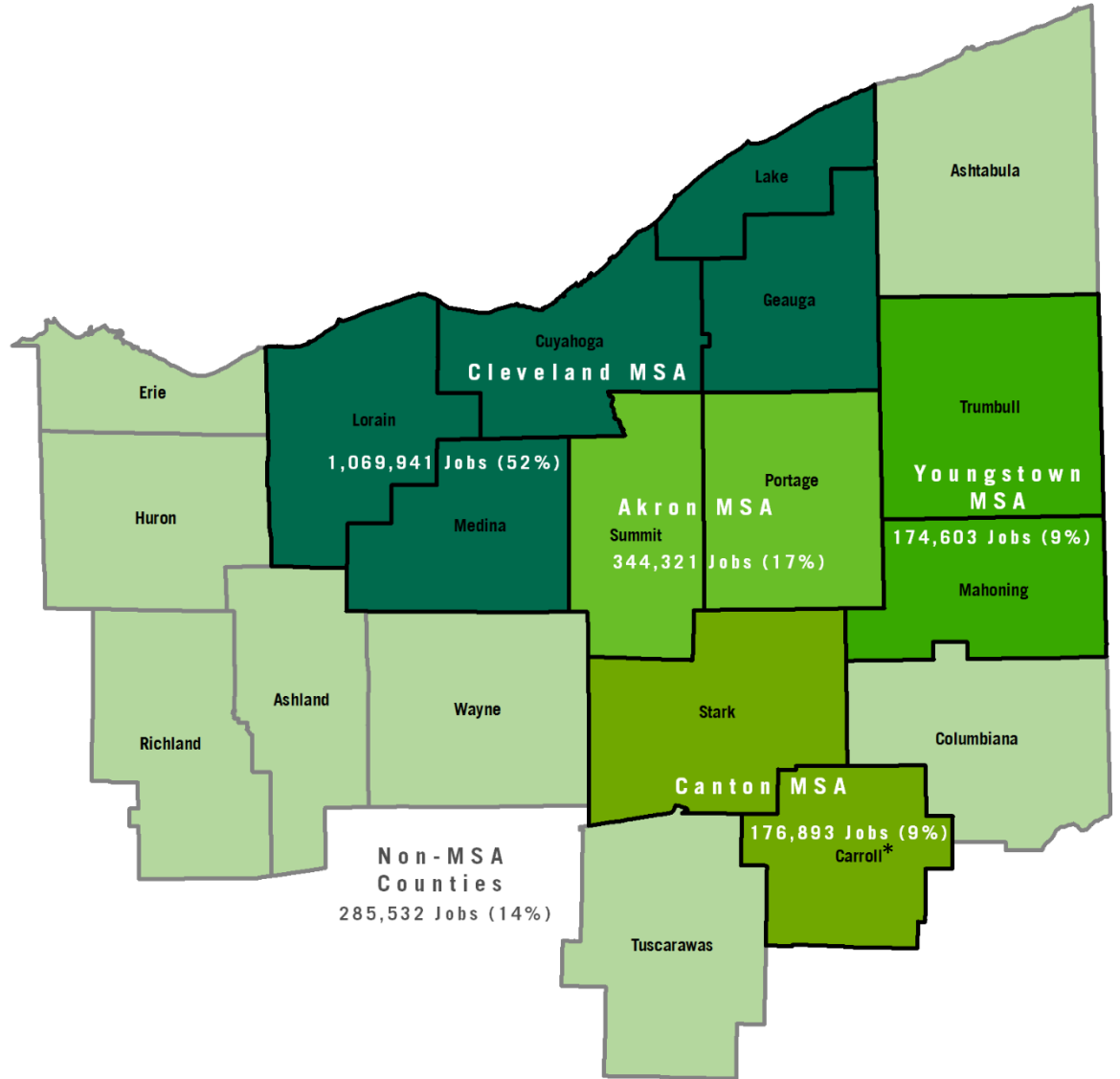
	2017 Employment		2017 Output	
	Jobs	% of NEO	Output	% of NEO
Cleveland MSA	1,069,941	52%	$136.9B	59%
Akron MSA	344,321	17%	$36.7B	16%
Non-MSA Counties	285,532	14%	$27.3B	12%
Canton MSA	176,893	9%	$16.4B	7%
Youngstown MSA	174,603	9%	$16.4B	7%
NEO 18-Counties*	**2,051,290**	**100%**	**$233.7B**	**100%**

Source: Moody's Analytics

*Note: Carroll County is not included in JobsOhio's 18-county NEO definition, but is included in the Canton-Massillon MSA, and therefore used in Canton-Massillon MSA's calculations in this study.

NEO MSAs EMPLOYMENT TRENDS

- Employment trends for all four NEO MSAs show a picture of deep employment losses stemming from the last two recessions (2001 and 2007-2009)

- These recessions brought structural changes to the manufacturing sector, which is a significant employer in all MSAs, by slashing jobs while keeping output high increased the sector's productivity

- During the last two decades, the Youngstown MSA lost half of its employment in the manufacturing sector which can be seen in a steady decline of its overall employment
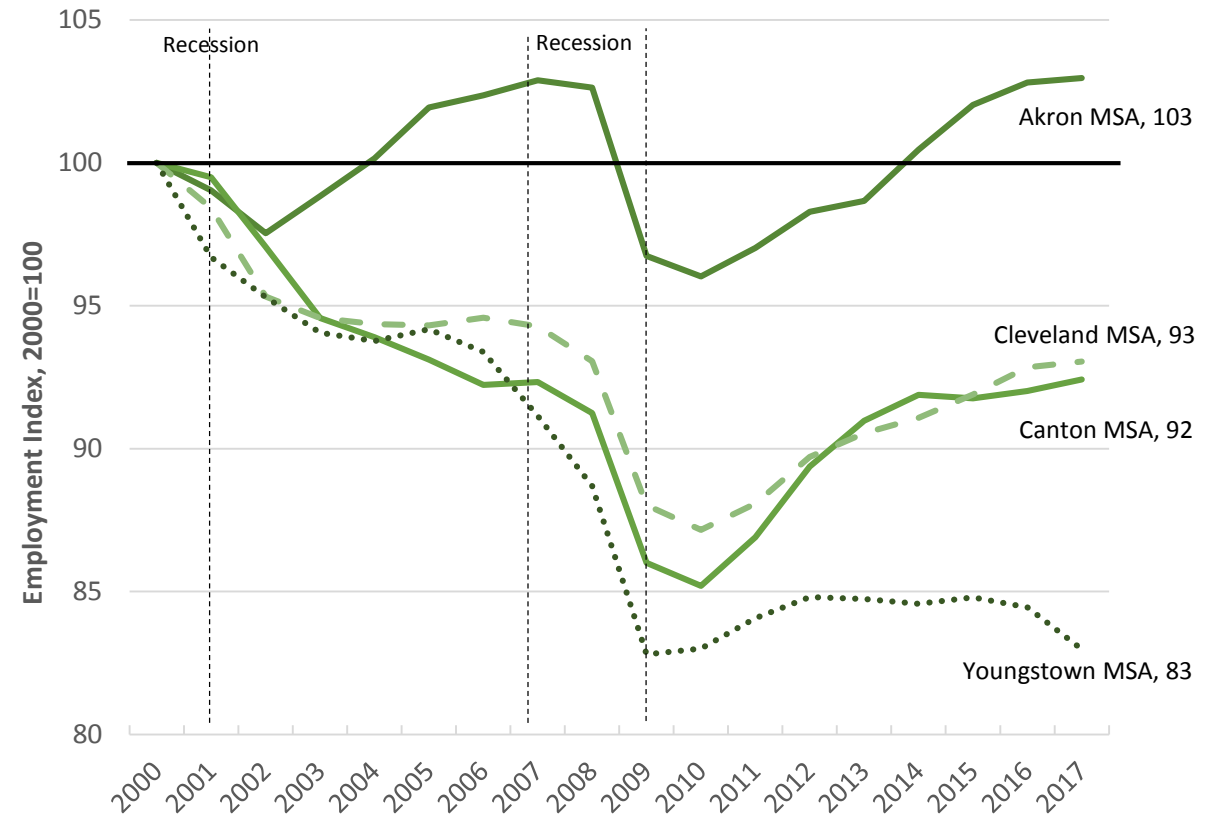
Source: Moody's Analytics

NEO MSAs OUTPUT TRENDS

- Despite considerable job losses, real output of NEO MSAs have shown an upward trend since 2000

- Output dove in 2008 due to the Great Recession but recovered relatively quickly within two years of the Recession's onset

- Although output growth in the Youngstown MSA was positive, it remained significantly behind other metropolitan areas in NEO
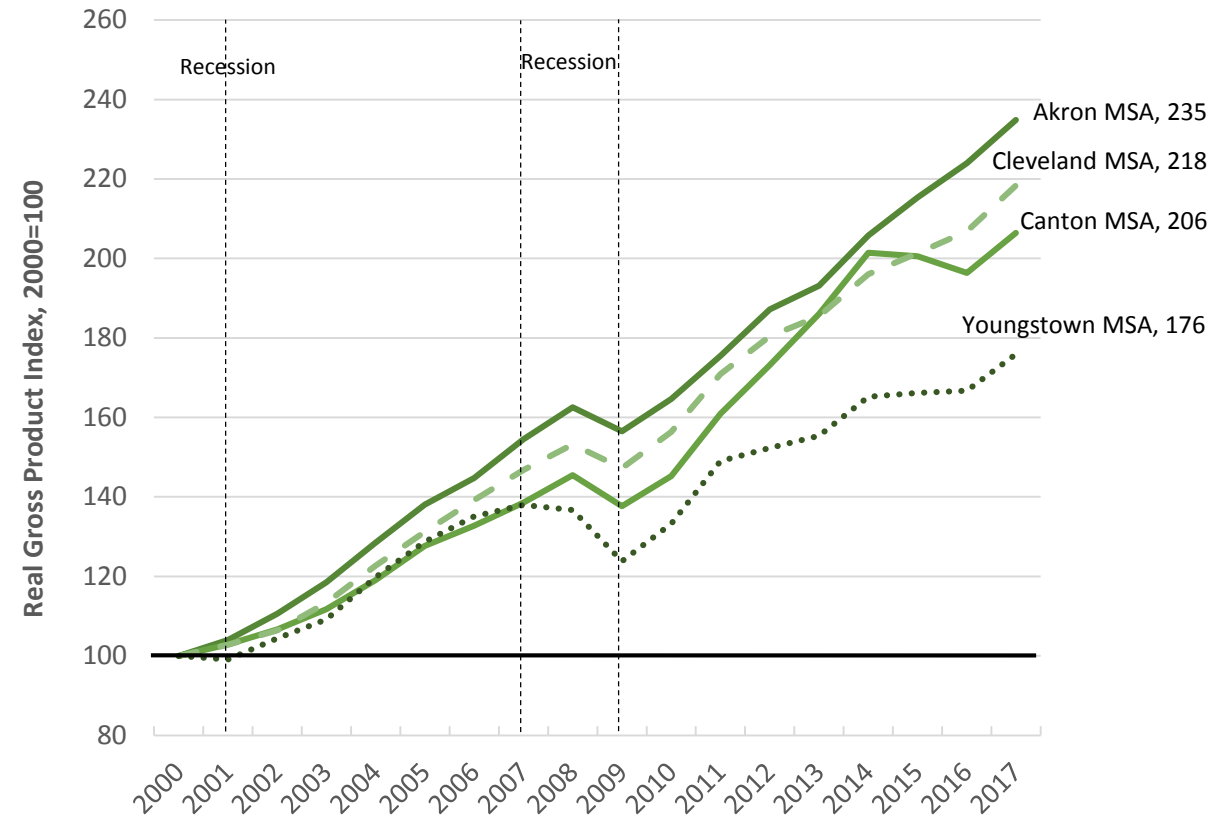
Source: Moody's Analytics

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GROWING REGIONAL INDUSTRY DRIVERS (GRIDs)

DATA AND METHODOLOGY

- Using the wealth-creation variables of industries, we conducted statistical analyses to form, identify, and analyze the characteristics of industry groups to discern GRIDs

- Variables used in the model examined:
  - competitiveness of industries (**change in wages, output, and productivity**)
  - importance to the regional economy (**share and concentration of output, wages, and employment in the regional economy**)
  - comparison to the national economy (**local competitiveness component of a shift-share analysis using output and employment**)

- Variables are measured by the levels in 2017 or changes over the five-year period (2013 to 2017)

GROWING REGIONAL INDUSTRY DRIVERS (GRIDs)

- *Groups of Regional Industry Drivers* (GRIDs) are groups of industries with strong or increasing regional specialization and competitiveness, and growing output and productivity

- Some GRIDs are capital intensive and do not employ many people

- However, these industries contribute to the regional economy by paying high wages and creating jobs in companies of their supply chain

- The capital-intensive industries fuel service industries due to people having higher disposable income

- Region of study – the Youngstown-Warren-Boardman Metropolitan Statistical Area (MSA), also known as Mahoning Valley – includes Mahoning and Trumbull Counties in OH; does not include Mercer County, PA

GRIDs IN THE YOUNGSTOWN MSA

- Two GRIDs in the Youngstown MSA represented 7 industries
  - GRIDs produced $2.7 billion of output and employed 5,360 people
  - The Oil and Gas GRID produced $2 billion of output and employed 1,260 people
  - The Growing Legacy Manufacturing GRID produced $790 million of output and employed 4,100 people

- Declining Economic Base, composed of 19 industries, accounted for 24% ($3.9 billion) of output and 18% (31,930) of total employment

YOUNGSTOWN MSA GRIDs

- The Youngstown Metropolitan Area (MSA) accounts for nearly 10% of NEO's economy

- Seven industries are classified into two different GRIDS: Oil and Gas, and Growing Legacy Manufacturing

- Oil and Gas GRID was the largest GRID providing nearly $2 billion in output

- Growing Legacy Manufacturing GRID represented three industries producing $790 million of output

- In 2017, these GRIDs employed 5,360 workers, <u>3% of the total workforce </u>in the Youngstown MSA

- In this report, the Youngstown MSA is a 2-county area that includes Mahoning and Trumbull counties in Ohio

OIL AND GAS GRID

- Consists of 4 industries associated with an increase in regional output, productivity, and wages

- Real estate activities also describe this GRID because land leases and right-of-way agreements must be obtained to extract shale natural gas and build pipelines

- The Oil and Gas Extraction (2111) industry in the Youngstown MSA had exceptionally high growth in output (275%) and productivity (361%) from 2013 to 2017

- Output specialization saw triple-digit growth from 2013 to 2017 (564%)

- Can be categorized as an emerging base industry from its growth in output specialization

- Total output of the GRID in 2017 was $2 billion

- Industries in this GRID are <u>small employers</u>, with total employment of 1,260 in 2017
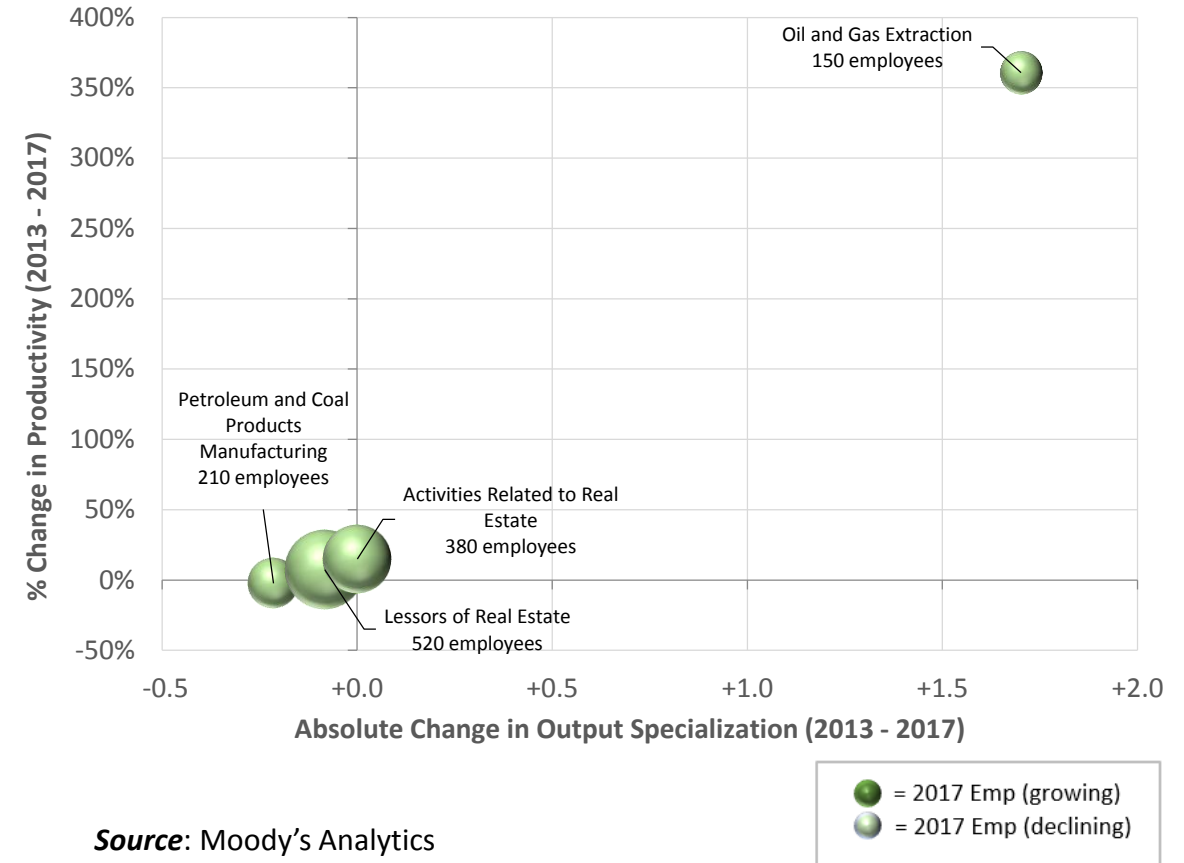
Source: Moody's Analytics

Legend:
- = 2017 Emp (growing)
- = 2017 Emp (declining)

NAICS code	Industry Name
2111	Oil and Gas Extraction
3241	Petroleum and Coal Products Manufacturing
5311	Lessors of Real Estate
5313	Activities Related to Real Estate

GROWING LEGACY MANUFACTURING GRID

- Consists of 3 industries associated with an increase in regional output, productivity, and wages

- These are legacy steel and aluminum manufacturing industries in the Youngstown MSA that have recovered from the recession and are doing well

- Industries in the Growing Legacy Manufacturing GRID have high and growing output specialization

- The total output of the three industries in the GRID was $790 million

- The Growing Legacy Manufacturing GRID employed a total of 4,100 people in 2017

Steel Product Manufacturing from Purchased Steel
1,150 employees

Nonferrous Metal (except Aluminum) Production and Processing
1,600 employees

Alumina and Aluminum Production and Processing
1,350 employees

% Change in Productivity (2013 - 2017)

Absolute Change in Output Specialization (2013 - 2017)

= 2017 Emp (growing)
= 2017 Emp (declining)

Source: Moody's Analytics

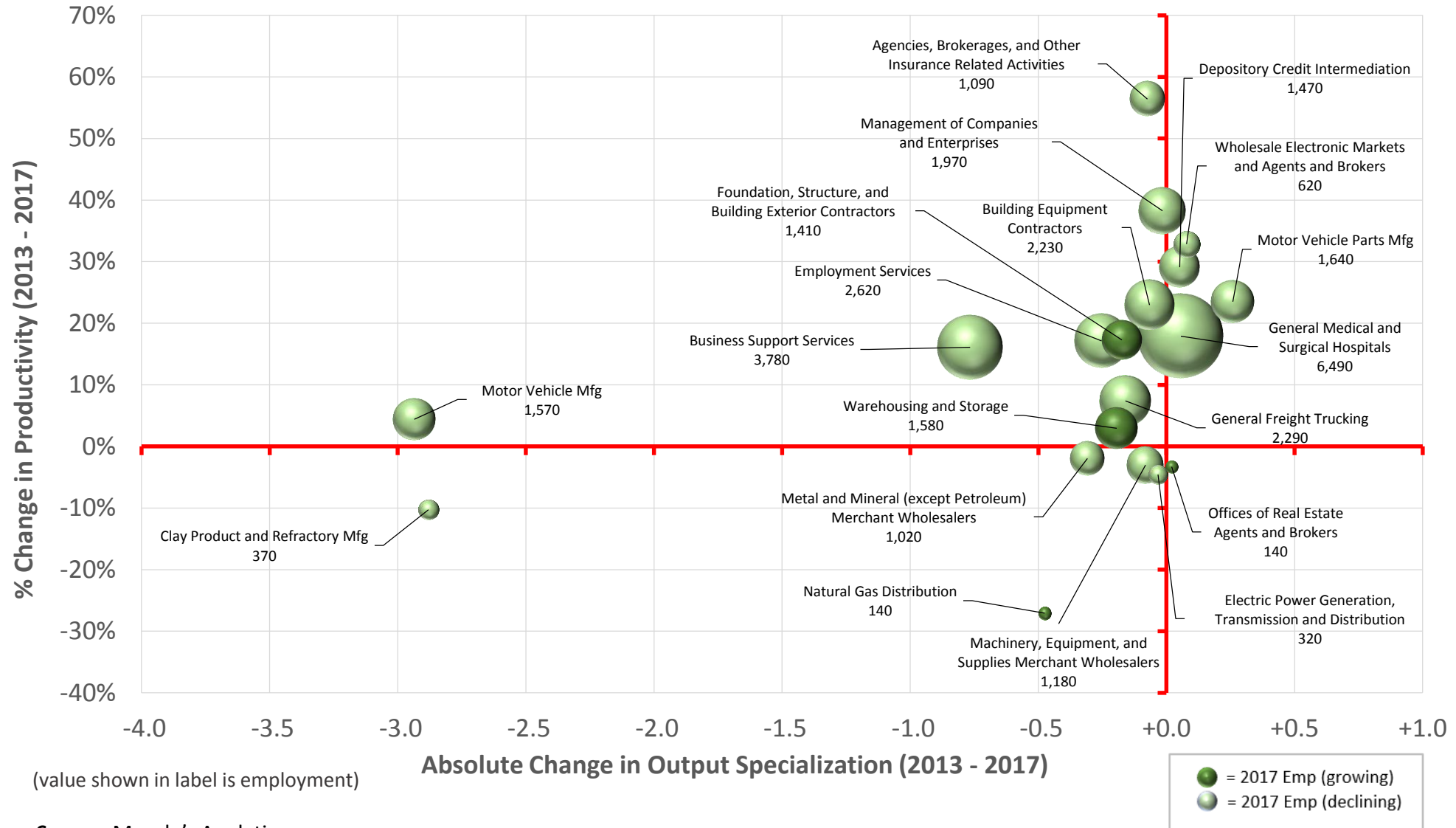| NAICS code	Industry name
3312	Steel Product Manufacturing from Purchased Steel
3313	Alumina and Aluminum Production and Processing
3314	Nonferrous Metal (except Aluminum) Production and Processing

DECLINING ECONOMIC BASE

- Forms the core economic base of the Youngstown MSA and are regionally important industries

- Defined by regional output

- Industries in this group include manufacturing and related activities, medical, and service industries

- These industries are still in the process of restructuring after the recession

- Change in GDP and GDP LQ is mostly negative across industries

- Local shift-share components of GDP and employment are also predominantly negative

- Employment change between 2013 and 2017 is mixed, with decreasing employment in some industries and increasing employment in other industries

- Accounted for 24% ($3.9 billion) of the Youngstown's output and <u>18%</u> (31,930) of the total employment in 2017

NAICS code	Industry name
2211	Electric Power Generation, Transmission and Distribution
2212	Natural Gas Distribution
2381	Foundation, Structure, and Building Exterior Contractors
2382	Building Equipment Contractors
3271	Clay Product and Refractory Manufacturing
3361	**Motor Vehicle Manufacturing**
3363	**Motor Vehicle Parts Manufacturing**
4235	Metal and Mineral (except Petroleum) Merchant Wholesalers
4238	Machinery, Equipment, and Supplies Merchant Wholesalers
4251	Wholesale Electronic Markets and Agents and Brokers
4841	General Freight Trucking
4931	Warehousing and Storage
5221	Depository Credit Intermediation
5242	Agencies, Brokerages, and Other Insurance Related Activities
5312	Offices of Real Estate Agents and Brokers
5511	Management of Companies and Enterprises
5613	Employment Services
5614	Business Support Services
6221	General Medical and Surgical Hospitals

Source: Moody's Analytics

DECLINING ECONOMIC BASE

70%

60%

50%

40%

30%

20%

10%

0%

-10%

-20%

-30%

-40%

% Change in Productivity (2013 - 2017)

Agencies, Brokerages, and Other
Insurance Related Activities
1,090

Depository Credit Intermediation
1,470

Management of Companies
and Enterprises
1,970

Wholesale Electronic Markets
and Agents and Brokers
620

Foundation, Structure, and
Building Exterior Contractors
1,410

Building Equipment
Contractors
2,230

Motor Vehicle Parts Mfg
1,640

Employment Services
2,620

Business Support Services
3,780

General Medical and
Surgical Hospitals
6,490

Motor Vehicle Mfg
1,570

Warehousing and Storage
1,580

General Freight Trucking
2,290

Clay Product and Refractory Mfg
370

Metal and Mineral (except Petroleum)
Merchant Wholesalers
1,020

Offices of Real Estate
Agents and Brokers
140

Natural Gas Distribution
140

Electric Power Generation,
Transmission and Distribution
320

Machinery, Equipment, and
Supplies Merchant Wholesalers
1,180

-4.0   -3.5   -3.0   -2.5   -2.0   -1.5   -1.0   -0.5   +0.0   +0.5   +1.0

Absolute Change in Output Specialization (2013 - 2017)

(value shown in label is employment)

= 2017 Emp (growing)
= 2017 Emp (declining)

*Source*: Moody's Analytics

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NEO GRIDs

Takeaways

- NEO is re-balancing its economic structure to be less concentrated in manufacturing, which can better protect it from recessionary pressures in the manufacturing sector

  - In 2017, manufacturing was only 13% (down from 1/3 in 1970)

  - NEO still had 4% more manufacturing than the U.S.: 13% vs. 9%

  - U.S. had 12% higher productivity in manufacturing than NEO

  - The gap is three times smaller if measured without *Computer and Electronic Product Manufacturing* sectors

The Largest Employment-Based GRID: Professional services

| NAICS	Industry Name
4251	Wholesale Electronic Markets and Agents and Brokers
5211	Monetary Authority – Central Bank
5221	Depository Credit Intermediation
5241	Insurance Carries
5242	Agencies, Brokerages, and Other Insurance Related Activities
5311	Lessors of Real Estate
5312	Offices of Real Estate Agents and Brokers
5313	Activities Related to Real Estate
5511	Management of Companies and Enterprises
6221	General Medical and Surgical Hospitals

- More than 12% (251,030) of the total employment and over 26% ($61 billion) of the regional output
- In 2013-2017, added 9,670 jobs (4%) and $18.6 billion in GRP (15%)
- Contributed 71% of GRIDs output
  - Insurance increased their productivity almost 50%

Source: Moody's Analytics

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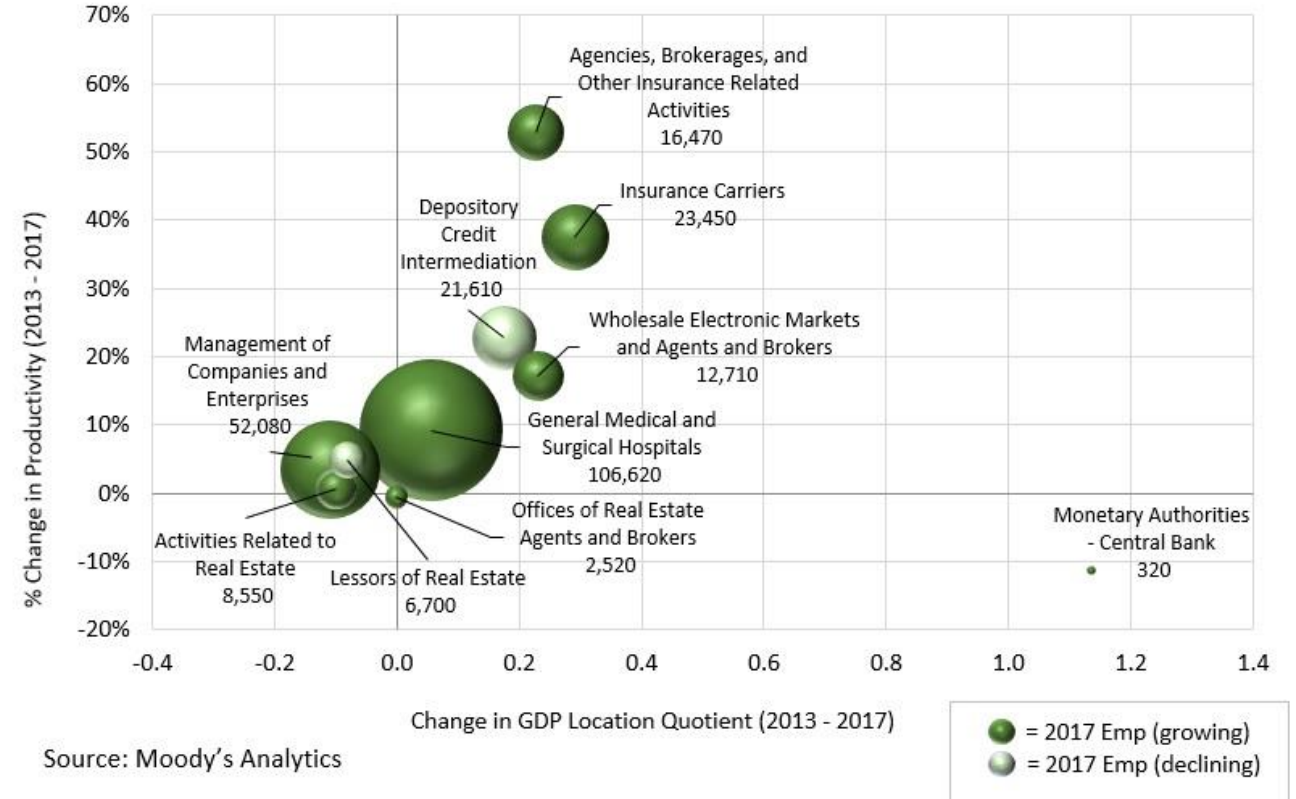
Growing Legacy Manufacturing

NAICS	Industry Name
3251	Basic Chemic Manufacturing
3252	Resin, Synthetic Rubber, and Artificial Synthetic Fibers and Filaments Mfg
3255	Paint, Coating, and Adhesive Manufacturing*
3256	Soap, Cleaning Compound, and Toilet Preparation Manufacturing
3259	Other Chemical Product and Preparation Manufacturing
3271	Clay Product and Refractory Manufacturing
3311	Iron and Steel Mills and Ferroalloy Manufacturing
3312	Steel Product Manufacturing from Purchased Steel*
3313	Alumina and Aluminum Production and Processing
3314	Nonferrous Metal (except Aluminum) Production and Processing*
3315	Foundries*
3321	Forging and Stamping
3322	Cutlery and Handtool Manufacturing
3324	Boiler, Tank, and Shipping Container Manufacturing
3327	Machine Shops; Turned Product; and Screw Nut and Bolt Mfg
3328	Coating, Engraving, Heat Treating, and Allied Activities,
3329	Other Fabricated Metal Product Manufacturing
3335	Metalworking Machinery Manufacturing
3339	Other General-Purpose Machinery Manufacturing
4235	Metal and Mineral (except Petroleum) Merchant Wholesalers

Source: Moody's Analytics
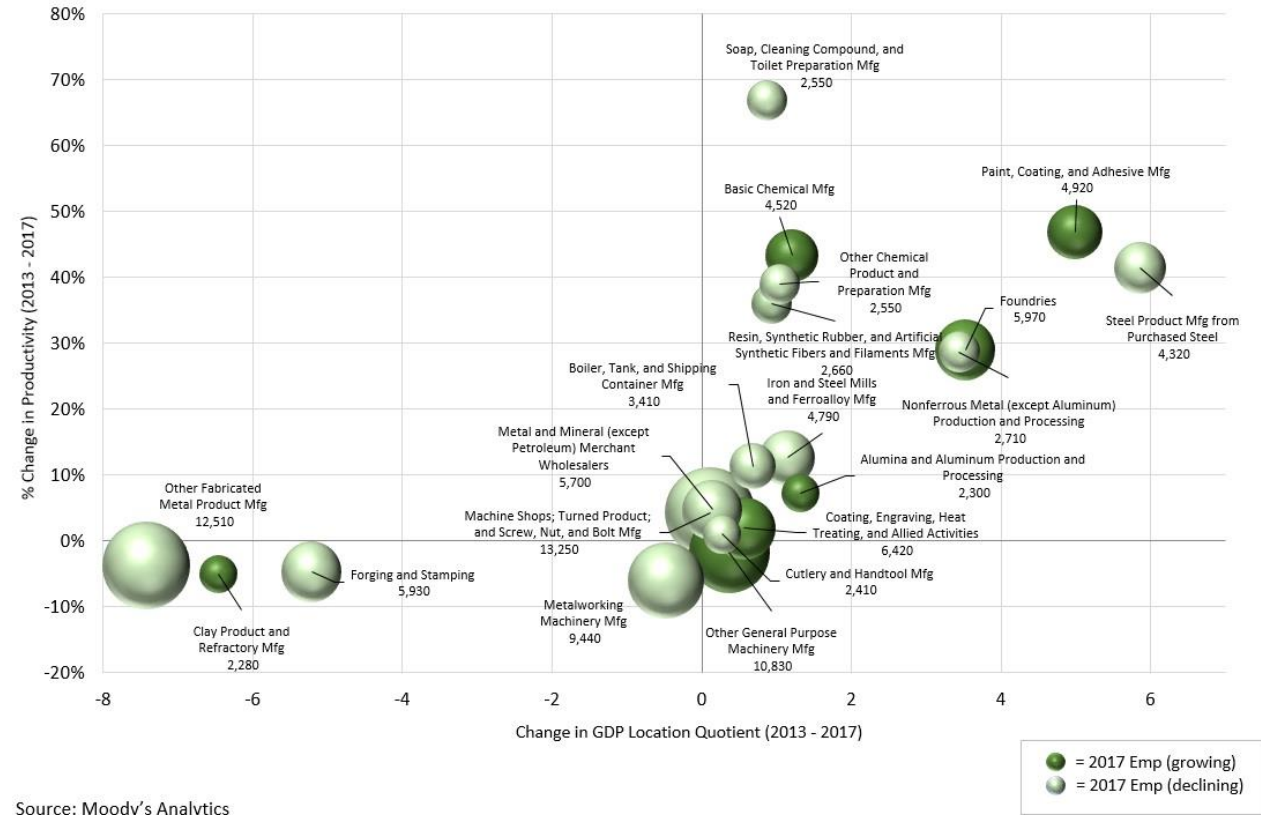
- 109,470 jobs, representing 5% of NEO; $19 billion in output – 8% of all industries & 22% of GRIDs
- In 2013-2017, this GRID lost 5,010 (-5%) jobs, added $1 billion GRP (8%)
- All capital-intensive industries – generate another 88,199 jobs in their supply chain
- Fueling another 98,038 induced jobs – totaling to 295,707 total affected jobs
- All industries paying higher than the NEO living wage ($49,663 for a family of 3)

Another Half of Manufacturing is Still Struggling
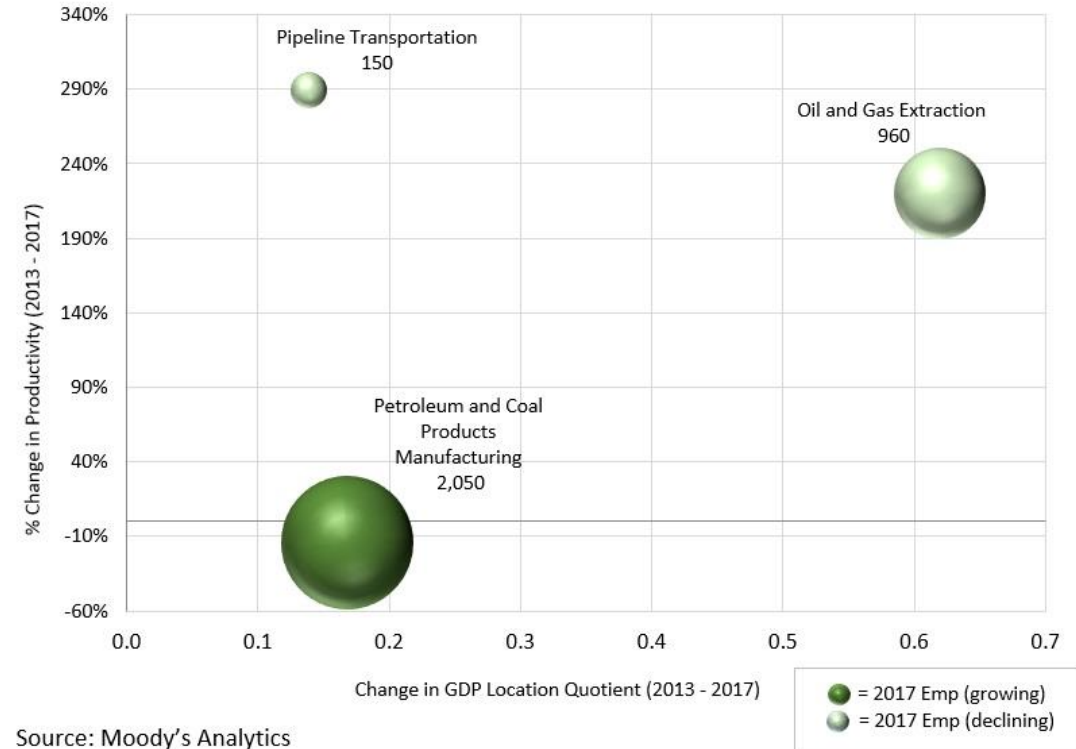
NAICS code	Industry Name	NAICS code	Industry Name
3219	Other Wood Product Mfg	3333	Commercial and Service Industry Machinery Mfg
3221	Pulp, Paper, and Paperboard Mills	3334	Ventilation, Heating, Air-Conditioning, and Commercial Refrigeration Equipment Mfg
3222	Converted Paper Product Mfg	3351	Electric Lighting Equipment Mfg
3231	Printing and Related Support Activities	3352	Household Appliance Mfg
3261	Plastics Product Mfg	3353	Electrical Equipment Mfg
3262	Rubber Product Mfg	3359	Other Electrical Equipment and Component Mfg
3272	Glass and Glass Product Mfg	3361	Motor Vehicle Mfg
3279	Other Nonmetallic Mineral Product Mfg	3362	Motor Vehicle Body and Trailer Mfg
3323	Architectural and Structural Metals Mfg	3363	Motor Vehicle Parts Mfg
3325	Hardware Mfg	3371	Household and Institutional Furniture and Kitchen Cabinet Mfg
3326	Spring and Wire Product Mfg	3391	Medical Equipment and Supplies Mfg
3331	Agriculture, Construction, and Mining Machinery Mfg	3399	Other Miscellaneous Mfg
3332	Industrial Machinery Mfg		

Oil and Gas GRID

- <1% of total NEO employment but 3% of output & 7% of GRIDs output ($6 billion)

- **Fast-growing, emerging economic base:** Double-digit growth in output & growing specialization

- Needs to increase in size and scale to impact overall regional performance

- One of the highest employment multipliers – supply chain; high wages in the supply chain companies – chemical and steel

- 3,160 direct jobs, additional 18,945 workers in indirect and 14,208 induced jobs

- In 2013-2017, added 270 jobs (9%) and $2.1 billion in GRP (52%)

Source: Moody's Analytics

NAICS code	Industry Name
2111	Oil and Gas Extraction
3241	Petroleum and Coal Products Manufacturing
4860	Pipeline Transportation

Average Wages of All GRIDs

NAICS code	Industry Name	Average Wage 2017	Higher or Lower Than the NEO Living Wage
4860	Pipeline Transportation	$199,707	H
5211	Monetary Authorities - Central Bank	$131,743	H
3251	Basic Chemical Mnf	$120,261	H
4251	Wholesale Electronic Markets and Agents and Brokers	$112,958	H
5511	Management of Companies and Enterprises	$103,924	H
3314	Nonferrous Metal (except Aluminum) Production and Processing	$100,936	H
3252	Resin, Synthetic Rubber, and Artificial Synthetic Fibers and Filaments Mnf	$99,236	H
3311	Iron and Steel Mills and Ferroalloy Mnf	$84,678	H
3255	Paint, Coating, and Adhesive Manufacturing	$83,139	H
3256	Soap, Cleaning Compound, and Toilet Preparation Mnf	$81,526	H
3312	Steel Product Mnf from Purchased Steel	$76,563	H
3241	Petroleum and Coal Products Mnf	$76,475	H
5242	Agencies, Brokerages, and Other Insurance Related Activities	$74,609	H
3324	Boiler, Tank, and Shipping Container Mnf	$73,772	H
5241	Insurance Carriers	$72,858	H
3259	Other Chemical Product and Preparation Mnf	$69,870	H
3339	Other General Purpose Machinery Mnf	$69,013	H
3315	Foundries	$66,458	H
3329	Other Fabricated Metal Product Mnf	$64,386	H
3313	Alumina and Aluminum Production and Processing	$63,986	H
5221	Depository Credit Intermediation	$61,860	H
6221	General Medical and Surgical Hospitals	$61,576	H
4235	Metal and Mineral (except Petroleum) Merchant Wholesalers	$60,702	H
3321	Forging and Stamping	$59,413	H
5312	Offices of Real Estate Agents and Brokers	$58,358	H
3322	Cutlery and Handtool Mnf	$56,410	H
3327	Machine Shops; Turned Product; and Screw, Nut, and Bolt Mnf	$55,954	H
3335	Metalworking Machinery Mnf	$51,855	H
3328	Coating, Engraving, Heat Treating, and Allied Activities	$50,551	H
3271	Clay Product and Refractory Mnf	$50,277	H
5313	Activities Related to Real Estate	$49,817	H
5311	Lessors of Real Estate	$44,155	L
2111	Oil and Gas Extraction	$42,950	L

Median Wage $50,797

Living wage $49,663

What Industries are Adding Jobs in NEO?

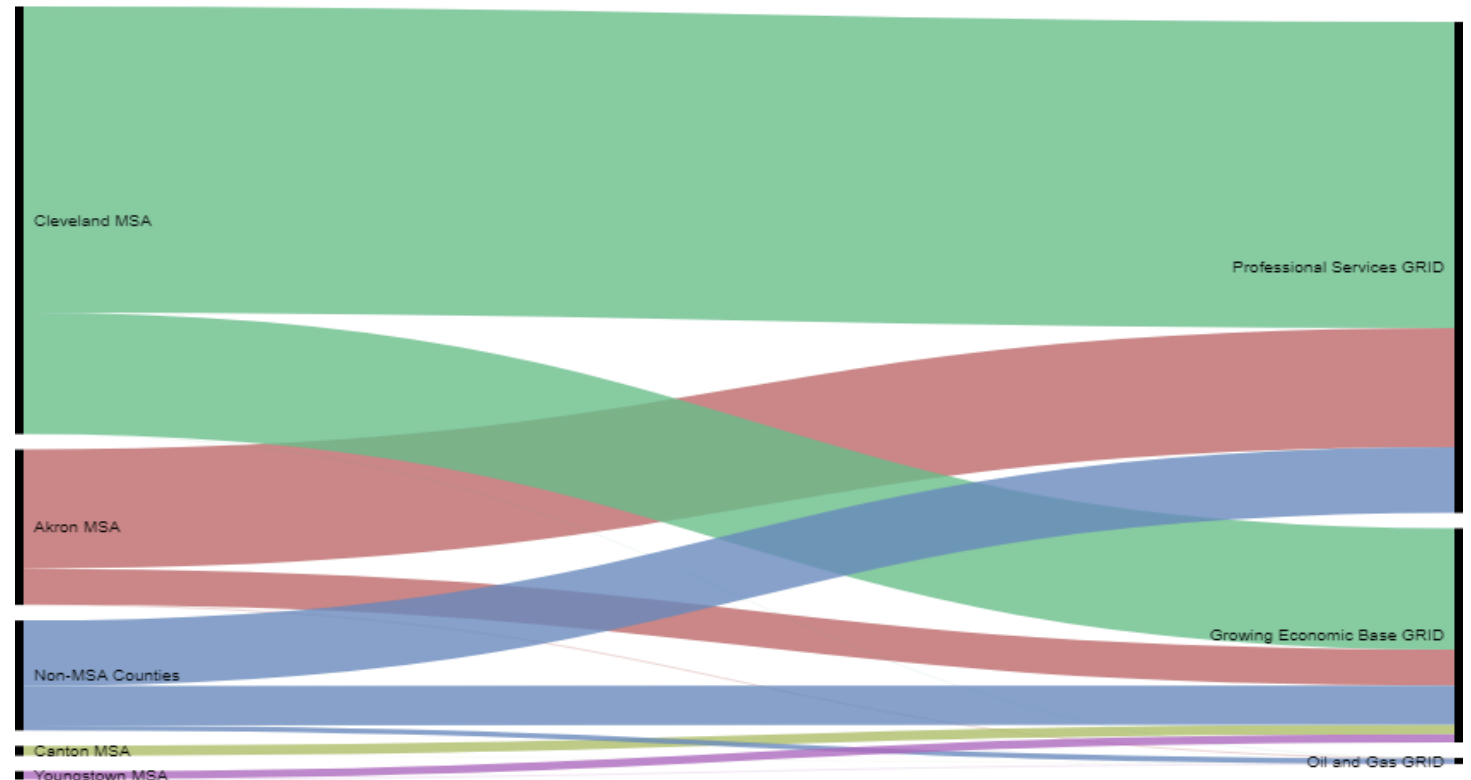| Group	NAICS code	Industry Name	Emp Diff (2013-2017)	Emp 2017	Average Wage 2017	Higher or Lower Living Wage
WIG	7225	Restaurants and Other Eating Places	11,030	146,890	$17,103	L
WIG	6241	Individual and Family Services	3,900	23,270	$24,048	L
GRID	6221	General Medical and Surgical Hospitals	3,680	106,620	$61,576	H
GRID	5242	Agencies, Brokerages, and Other Insurance Related Activities	3,000	16,470	$74,609	H
WIG	2382	Building Equipment Contractors	2,260	24,180	$64,559	H
WIG	7211	Traveler Accommodation	2,090	14,870	$24,043	L
WIG	2373	Highway, Street, and Bridge Construction	1,990	4,950	$69,091	H
WIG	6111	Elementary and Secondary Schools	1,890	21,710	$17,903	L
WIG	6113	Colleges, Universities, and Professional Schools	1,770	19,750	$45,877	L
WIG	5415	Computer Systems Design and Related Services	1,760	17,310	$94,054	H
WIG	4411	Automobile Dealers	1,670	19,580	$50,287	H
WIG	4529	Other General Merchandise Stores	1,650	24,330	$22,685	L
WIG	5613	Employment Services	1,570	47,320	$31,241	L
WIG	5416	Management, Scientific, and Technical Consulting Services	1,490	11,830	$76,621	H
GRID	4251	Wholesale Electronic Markets and Agents and Brokers	1,430	12,710	$112,958	H
WIG	6213	Offices of Other Health Practitioners	1,310	12,690	$40,998	L
WIG	2361	Residential Building Construction	1,290	8,010	$50,427	H
WIG	4841	General Freight Trucking	1,270	17,790	$51,045	H
WIG	6233	Community Care Facilities for the Elderly	1,190	15,220	$24,552	L
WIG	3363	Motor Vehicle Parts Manufacturing	1,170	17,010	$72,838	H

- Between 2013 and 2017, 160 industries added total of 90,770 jobs, 107 lost 42,510 jobs; the net gain was **48,260** jobs

- Top 20 growing industries added ~ 53% of that or 47,410 jobs

- Only three of the top growing industries are in GRIDs (total empl 119,330), they added **8,110** jobs:
  - Hospitals
  - Insurance agencies
  - B2B electronic wholesale

- Of the other 17 WIG industries, 8 paid wages above NEO's living wage, 6 paid wages above the NEO median

NEO Geographies

	2017 Employment		2017 Output	
	Jobs	% of NEO	Output	% of NEO
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NEO 18-Counties	**2,051,290**	**100%**	**$233.7B**	**100%**

Source: 2017 Moody's Analytics

- Cleveland MSA drives a majority of NEO GRIDs – however it is 1/2 the employment and almost 2/3 of its output

- Oil & Gas GRIDs appears in ALL NEO MSAs

- Many legacy manufacturing industries in most MSAs have restructured
  - Steel & Aluminum
  - Plastics

RECENT DEVELOPMENTS

DOMESTIC AND INTERNATIONAL TRADE POLICY

- Summer 2018 saw growing rhetoric from U.S. government officials about increasing tariffs on many foreign-produced products

- Based on this threat, retaliatory tariffs from China, the European Union, and Canada were announced which may significantly impact manufacturing industries in NEO

- While global and national policies are outside of local control, it is essential for regional economic development strategies to be responsive to global influences and risks

LORDSTOWN GM PLANT CLOSURE

- In December 2018, General Motors announced plans to discontinue production of the Chevy Cruze, idling the GM Lordstown Plant while cutting 1,607 jobs

- This was on top of already deep workforce cuts when the plant eliminated second shift workers in July 2018 (1,500 jobs) and the third shift in February 2017 (1,245 jobs) [1]

- It is estimated that the total economic impact of these cuts is upwards of $8.2 billion[2]

- The *Motor Vehicle Manufacturing* (NAICS 3361) industry in NEO is among the legacy manufacturing industries currently losing their competitive advantage[3]
  - In 2017, it contributed $747 million to NEO output
  - Over the 2013-2017 period, its effective output in the region declined 22%, compared to 19% growth national-wide

[1] Ohio Department of Jobs and Family Services Worker Adjustment and Retraining (WARN) Notices filed by Lordstown GM, 2018; Youngstown Vindicator, 2016
[2] IMPLAN
[3] Moody's Analytics

NEXT STEPS

- What kind of information could be most useful for further steps?
- What type of research assistance we can contribute?
- What are the next steps?

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