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Northeast Ohio Front Runners: Groups of Regional Industry Drivers (GRIDs)

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NORTHEAST OHIO FRONT RUNNERS: Groups of Regional Industry Drivers (GRIDs)

Economic Inclusion Roundtable

CLEVELAND STATE UNIVERSITY
CENTER FOR ECONOMIC DEVELOPMENT

April 4, 2019 | Cleveland, Ohio



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The Maxine Goodman Levin
College of Urban Affairs

Dr. Iryna V. Lendel

THE GEORGE GUND FOUNDATION

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

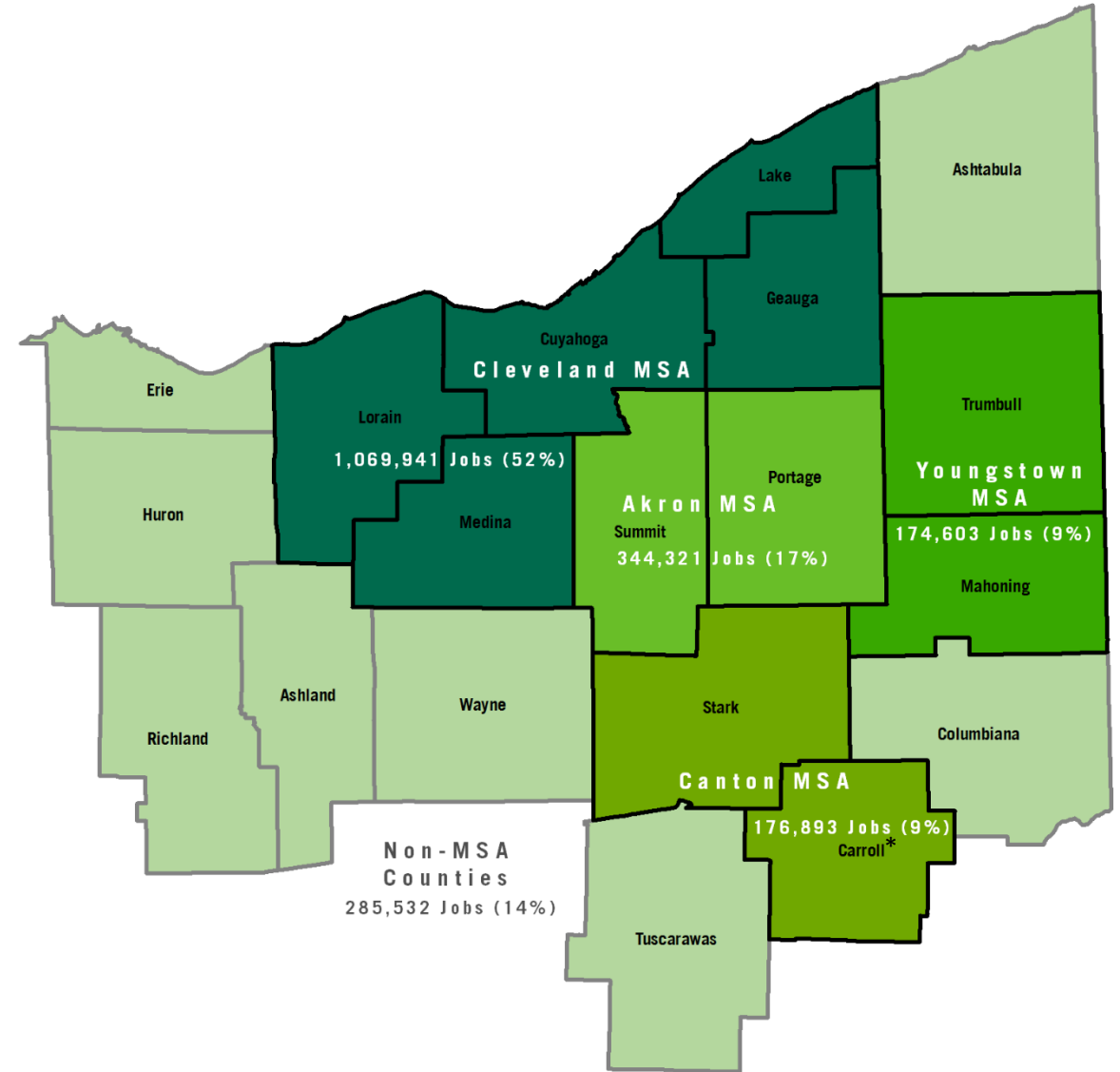


NORTHEAST OHIO MSAs

- 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

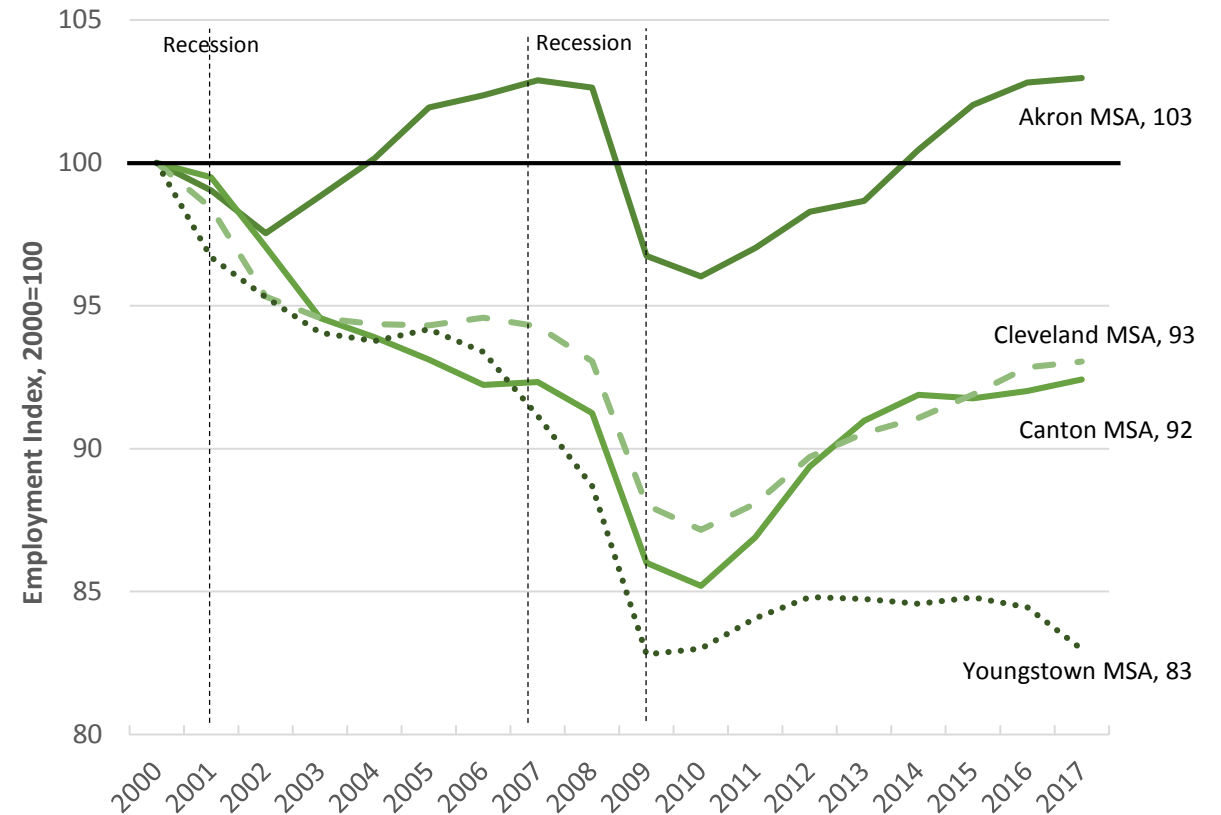


*Note: Carroll County is not included in JobsOhio's 18-county NEO definition, but is included in the Canton-Massillon MSA, and therefore used in Canton-Massillon MSA's calculations in this study.



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

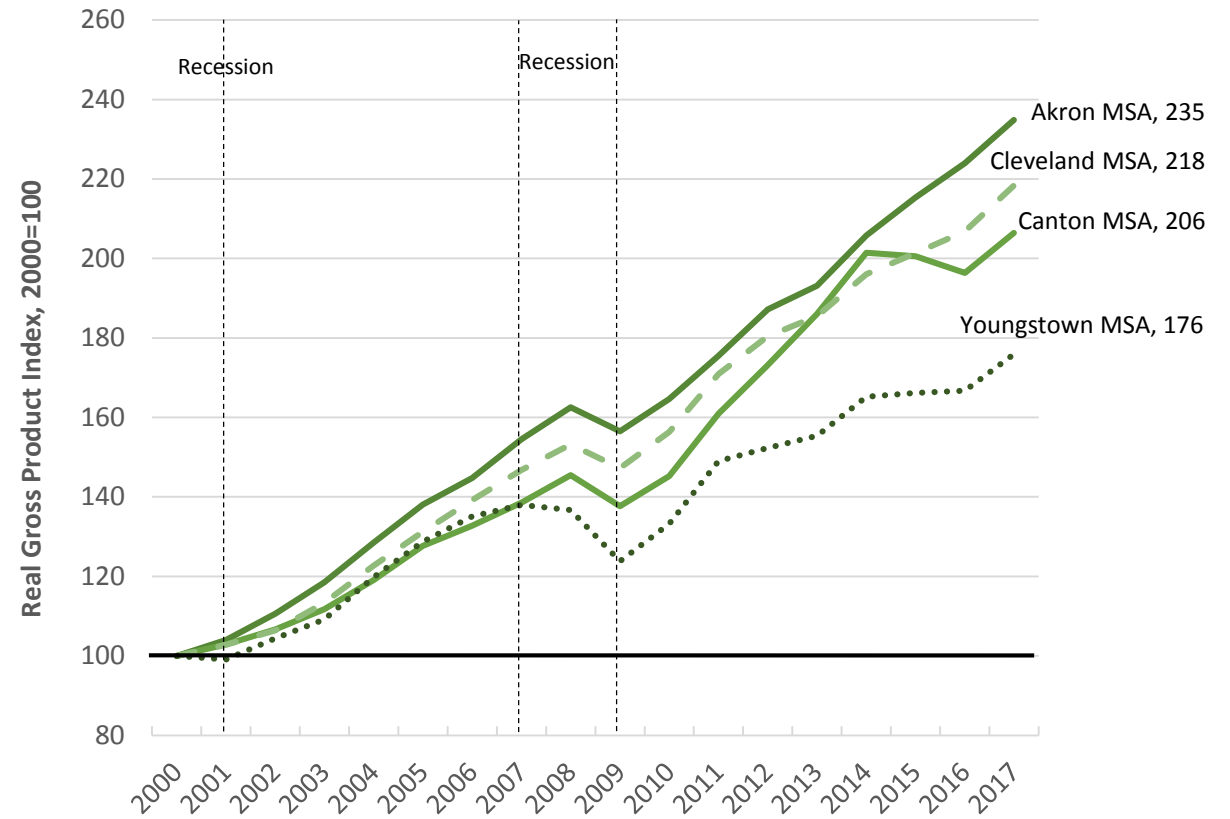


Source: Moody's Analytics



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



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)
 - **regional competitive advantage** (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 combine labor intensive service industries and some 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 population-serving industries due to people having higher disposable income
- Region of study – 18-County Northeast Ohio region



NEO GRIDs: Groups of Regional Industrial Drivers

- 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
- Services GRID is led by finance, insurance and medical industries; it does not include R&D and has lower than the national productivity

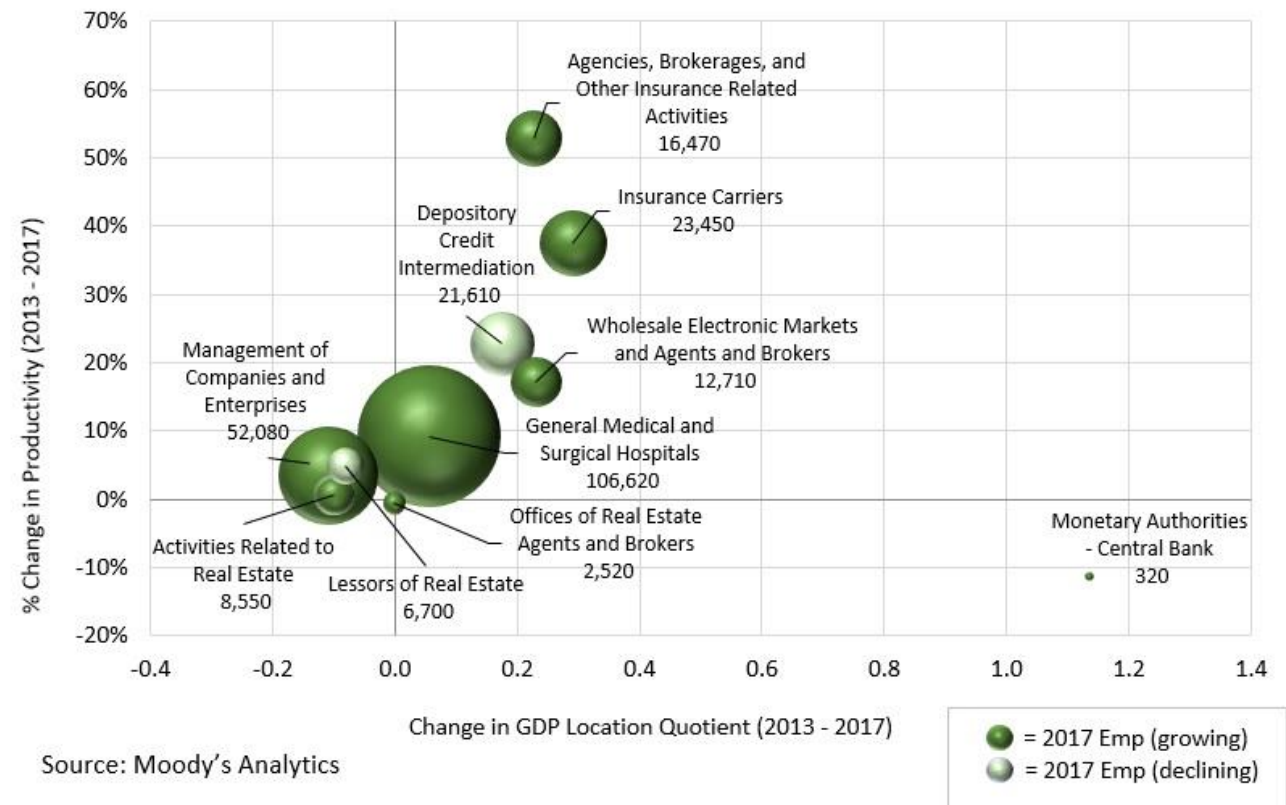
| Sector | Employment Share | | Share of GDP | | Productivity (GDP/Employee) | |
|---------------|------------------|-----|--------------|------|-----------------------------|-----------|
| | U.S. | NEO | U.S. | NEO | U.S. | NEO |
| Manufacturing | 9% | 13% | 13% | 19% | \$183,104 | \$161,375 |
| Service | 89% | 86% | 87% | 81% | \$121,539 | \$105,947 |
| Agriculture | 2% | 1% | 1% | 0.3% | \$47,746 | \$25,098 |



The Largest Employment-Based GRID: Professional Services

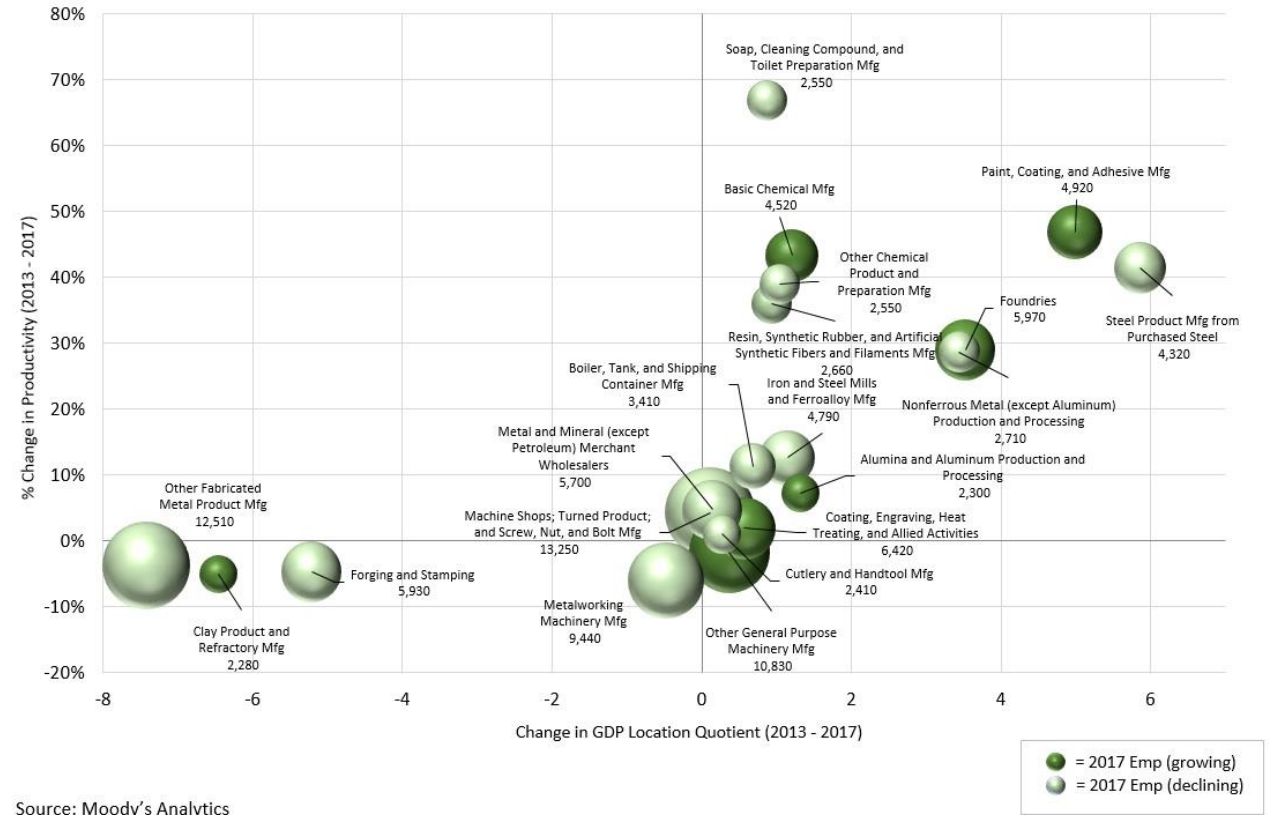
| NAICS | Industry Name |
|-------|--|
| 4251 | Wholesale Electronic Markets and Agents and Brokers |
| 5211 | Monetary Authority – Central Bank |
| 5221 | Depository Credit Intermediation |
| 5241 | Insurance Carriers |
| 5242 | Agencies, Brokerages, and Other Insurance Related Activities |
| 5311 | 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%



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 |



- 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 88,199 jobs in their supply chain, fueling another 98,038 induced jobs (295,707 total)
- All industries paying higher than the NEO living wage (\$49,663 for a family of 3)



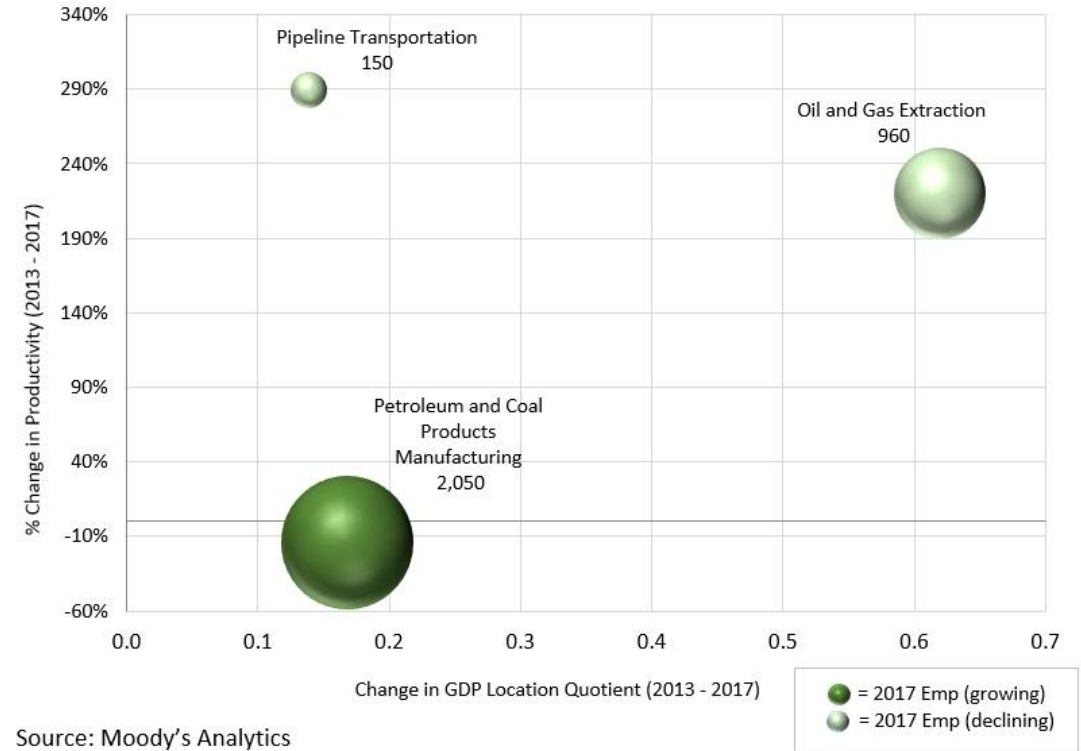
Another Half of Manufacturing is Still Struggling

| NAICS Industry Name code | | NAICS Industry Name code | |
|-----------------------------|---|-----------------------------|--|
| 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%)



| 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

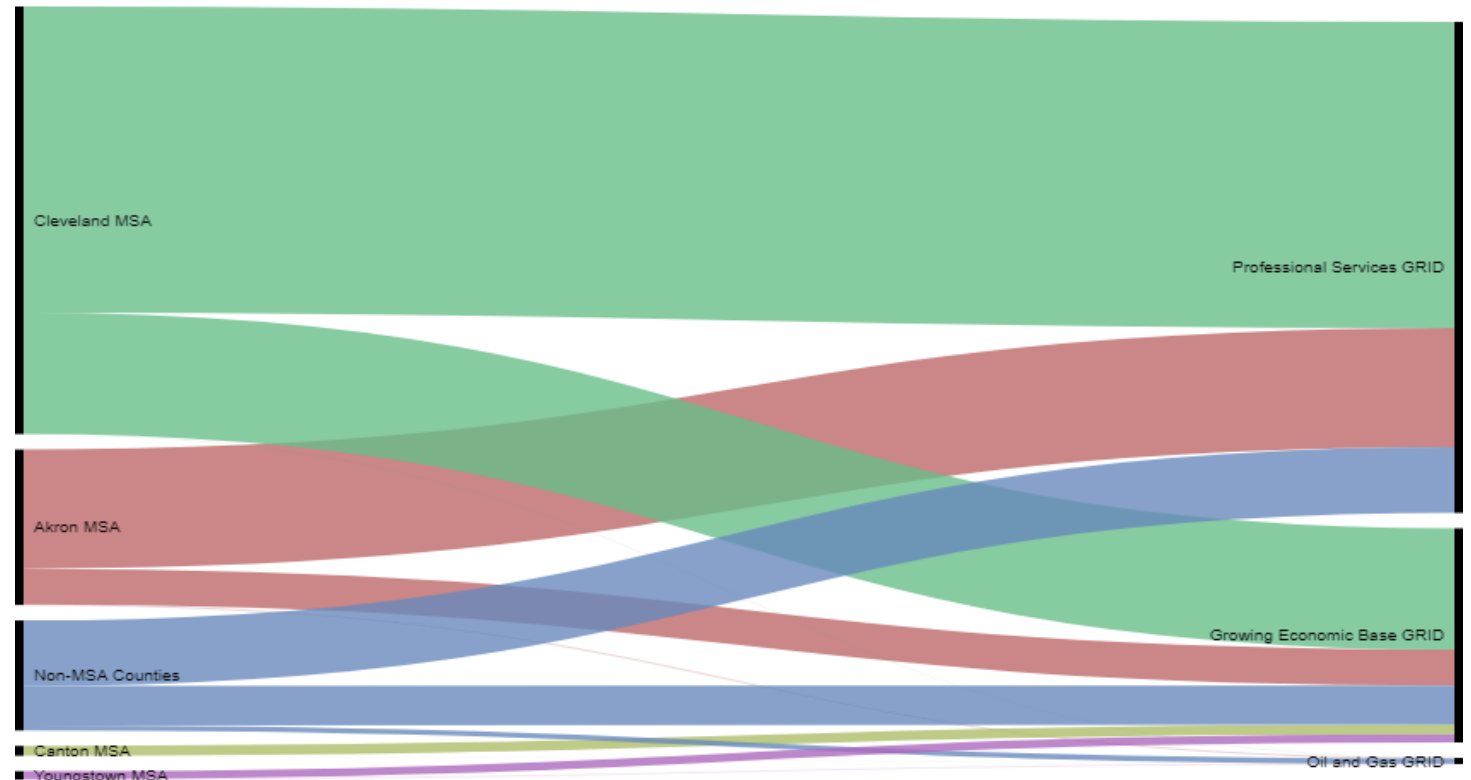


NEO Geographies

- 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

| | 2017 Employment | | 2017 Output | |
|------------------------|------------------|-------------|-----------------|-------------|
| | Jobs | % of NEO | Output | % of NEO |
| Akron MSA | 344,321 | 17% | \$36.7B | 16% |
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Source: 2017 Moody's Analytics



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 employment 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
- Services GRID is led by finance, insurance and medical industries; it does not include R&D and has lower than the national productivity



RECENT DEVELOPMENTS



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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

