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Oil and Gas as a Driver of the Regional Economy: Updates

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**OIL and GAS as a DRIVER of the REGIONAL
ECONOMY:
Updates on Steel, Petrochemical and Beyond**

Utica Summit VII

CLEVELAND STATE UNIVERSITY
CENTER FOR ECONOMIC DEVELOPMENT

October 10, 2019 | Canton, Ohio

Dr. Iryna V. Lendel



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College of Urban Affairs

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

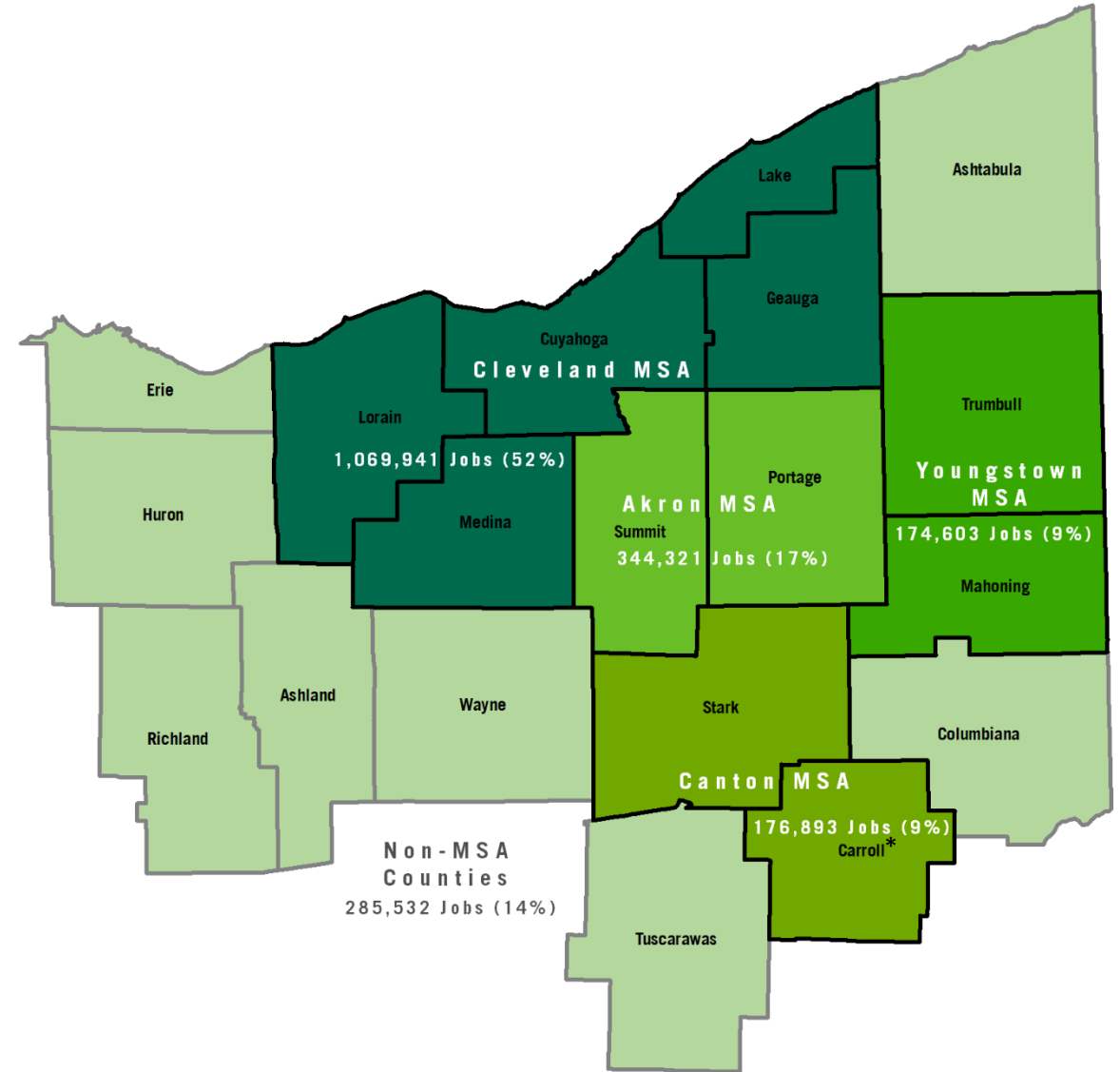


NORTHEAST OHIO MSAs

- 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

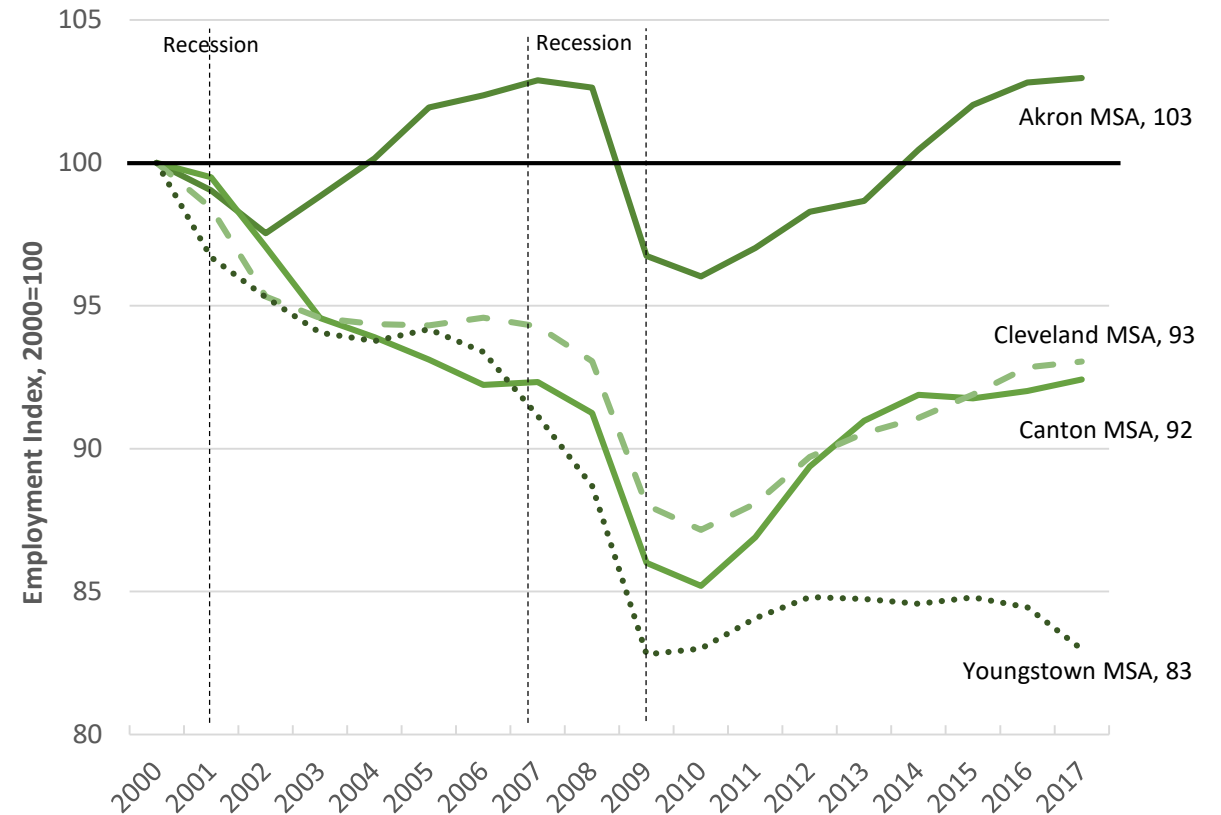


*Note: Carroll County is not included in JobsOhio's 18-county NEO definition, but is included in the Canton-Massillon MSA, and therefore used in Canton-Massillon MSA's calculations in this study.



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

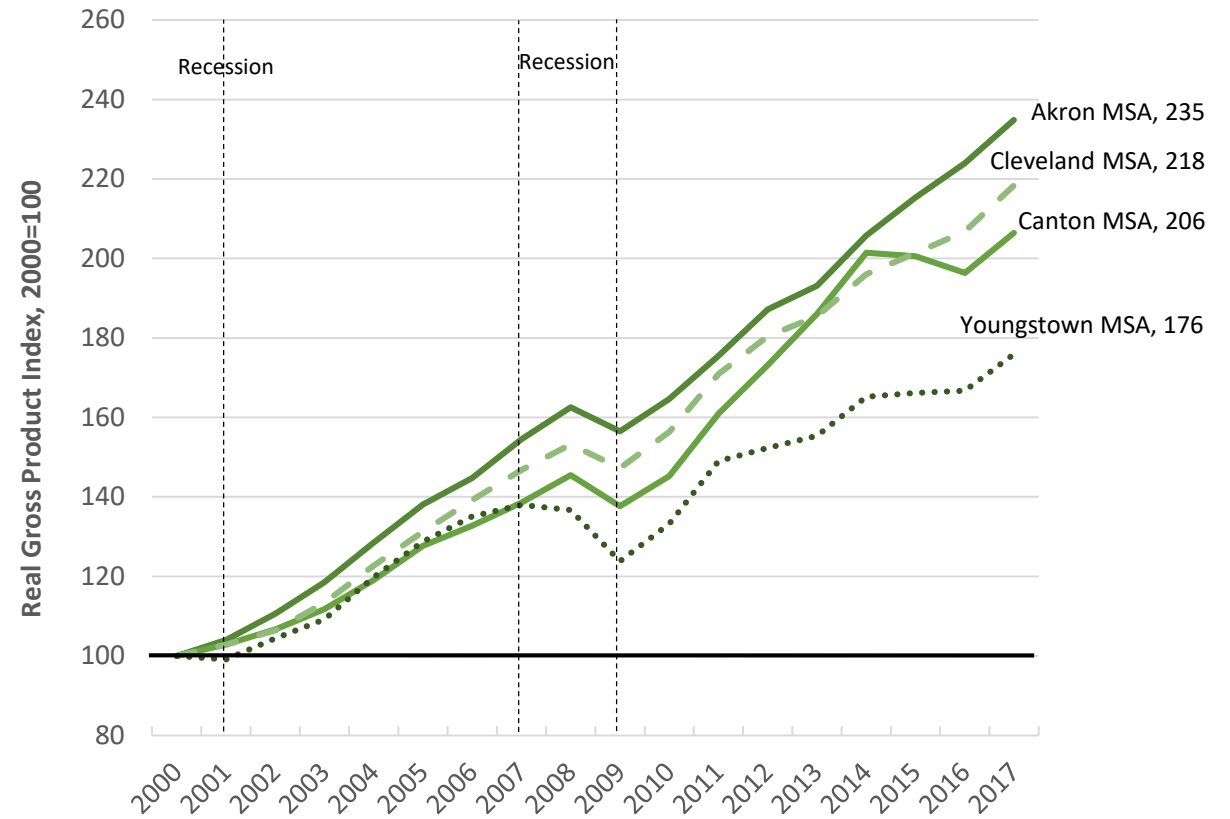


Source: Moody's Analytics



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

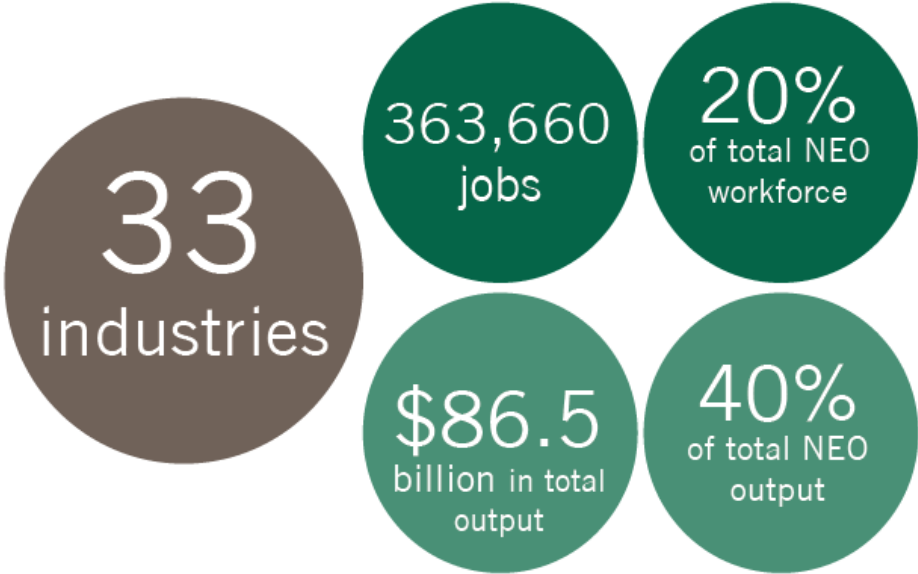
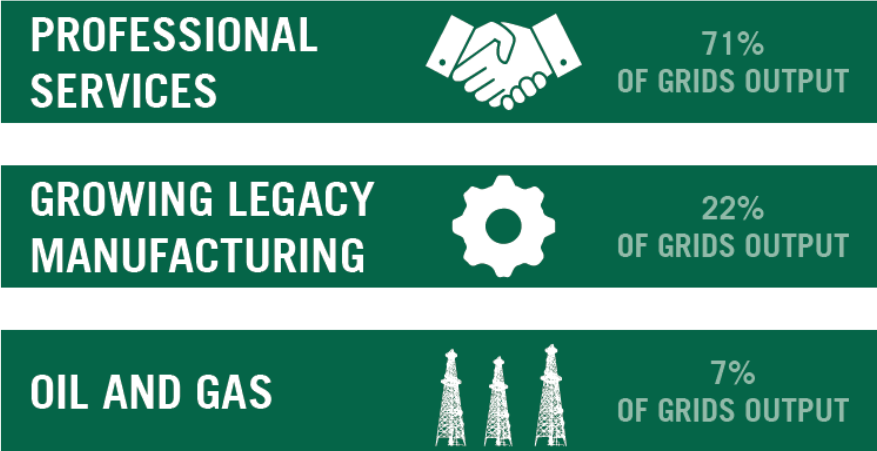
Sector	Employment Share		Share of GDP		Productivity (GDP/Employee)	
	U.S.	NEO	U.S.	NEO	U.S.	NEO
Manufacturing	9%	13%	13%	19%	\$183,104	\$161,375
Service	89%	86%	87%	81%	\$121,539	\$105,947
Agriculture	2%	1%	1%	0.3%	\$47,746	\$25,098



NORTHEAST OHIO FRONT RUNNERS: GROUPS OF REGIONAL INDUSTRY DRIVERS (GRIDS)

Regional benchmarking initiative to identify growing and competitive industry groups in Northeast Ohio 18-Counties

NEO GROUPS OF REGIONAL INDUSTRY DRIVERS (GRIDS)



Full Report - https://engagedscholarship.csuohio.edu/urban_facpub/1585/

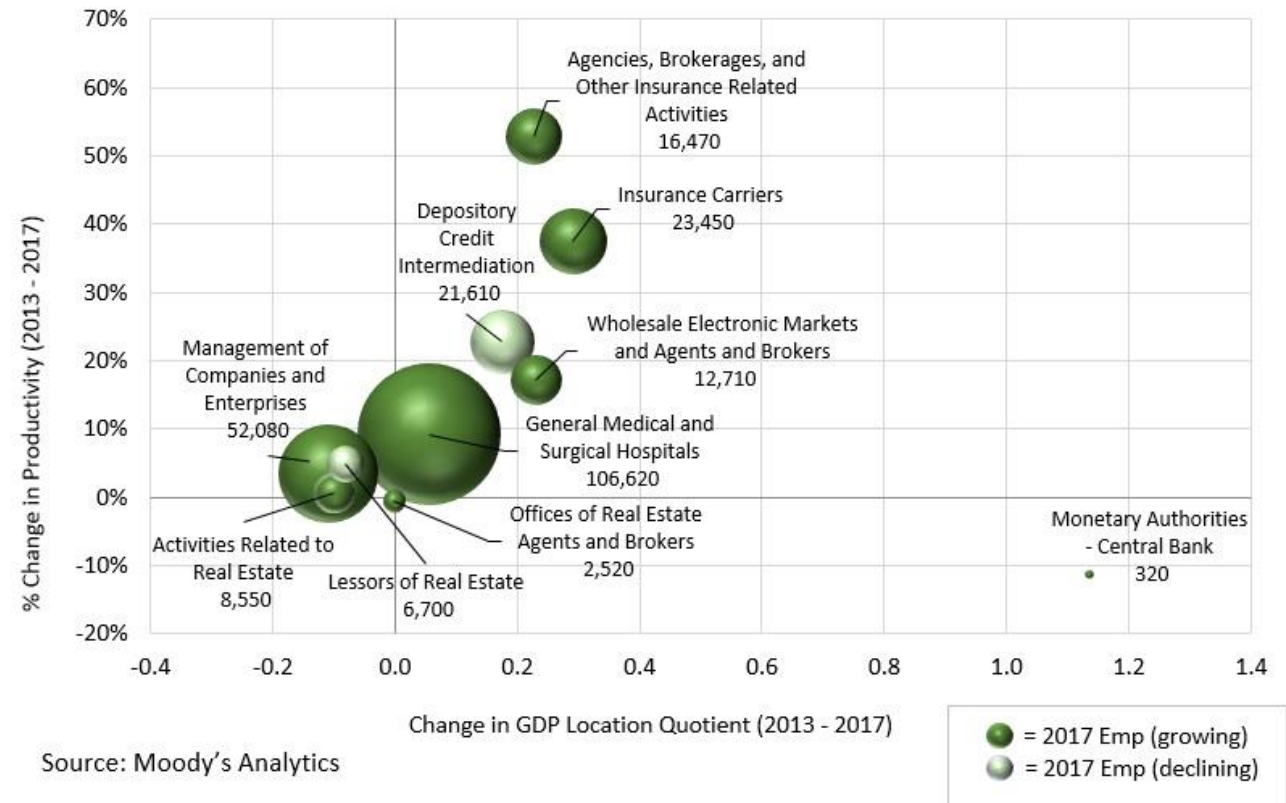
Research Brief- https://engagedscholarship.csuohio.edu/urban_facpub/1594/



The Largest Employment-Based GRID: Professional Services

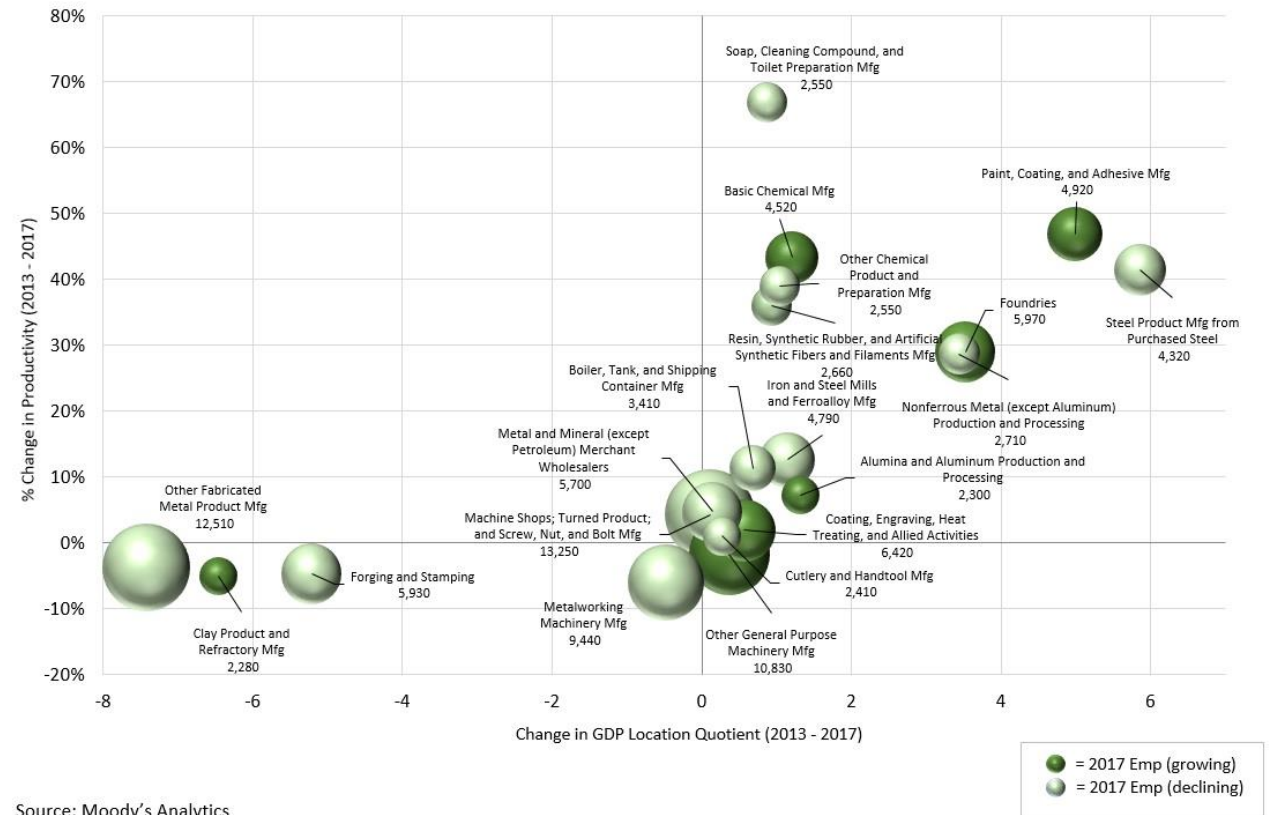
NAICS	Industry Name
4251	Wholesale Electronic Markets and Agents and Brokers
5211	Monetary Authority – Central Bank
5221	Depository Credit Intermediation
5241	Insurance Carriers
5242	Agencies, Brokerages, and Other Insurance Related Activities
5311	Lessors of Real Estate
5312	Offices of Real Estate Agents 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

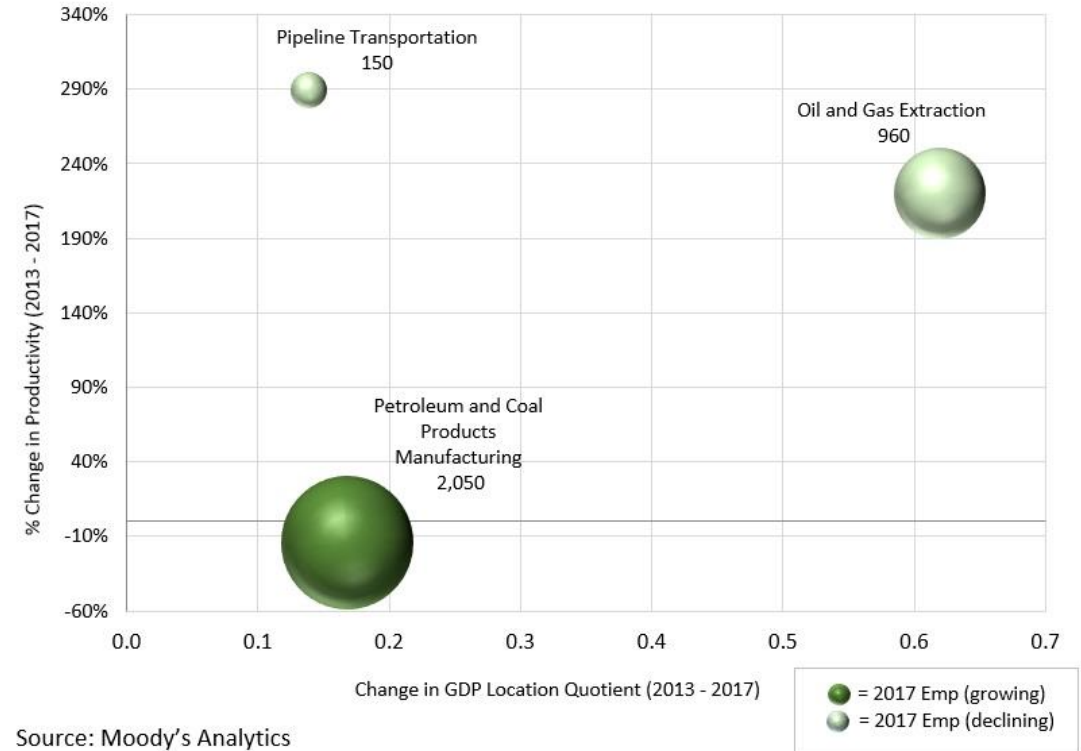


- 109,470 jobs, representing 5% of NEO; \$19 billion in output – 8% of all industries & 22% of GRIDs
- In 2013-2017, this GRID lost 5,010 (-5%) jobs, added \$1 billion GRP (8%)
- All capital-intensive industries – generate 88,199 jobs in their supply chain, fueling another 98,038 induced jobs (295,707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



NEO: 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%)



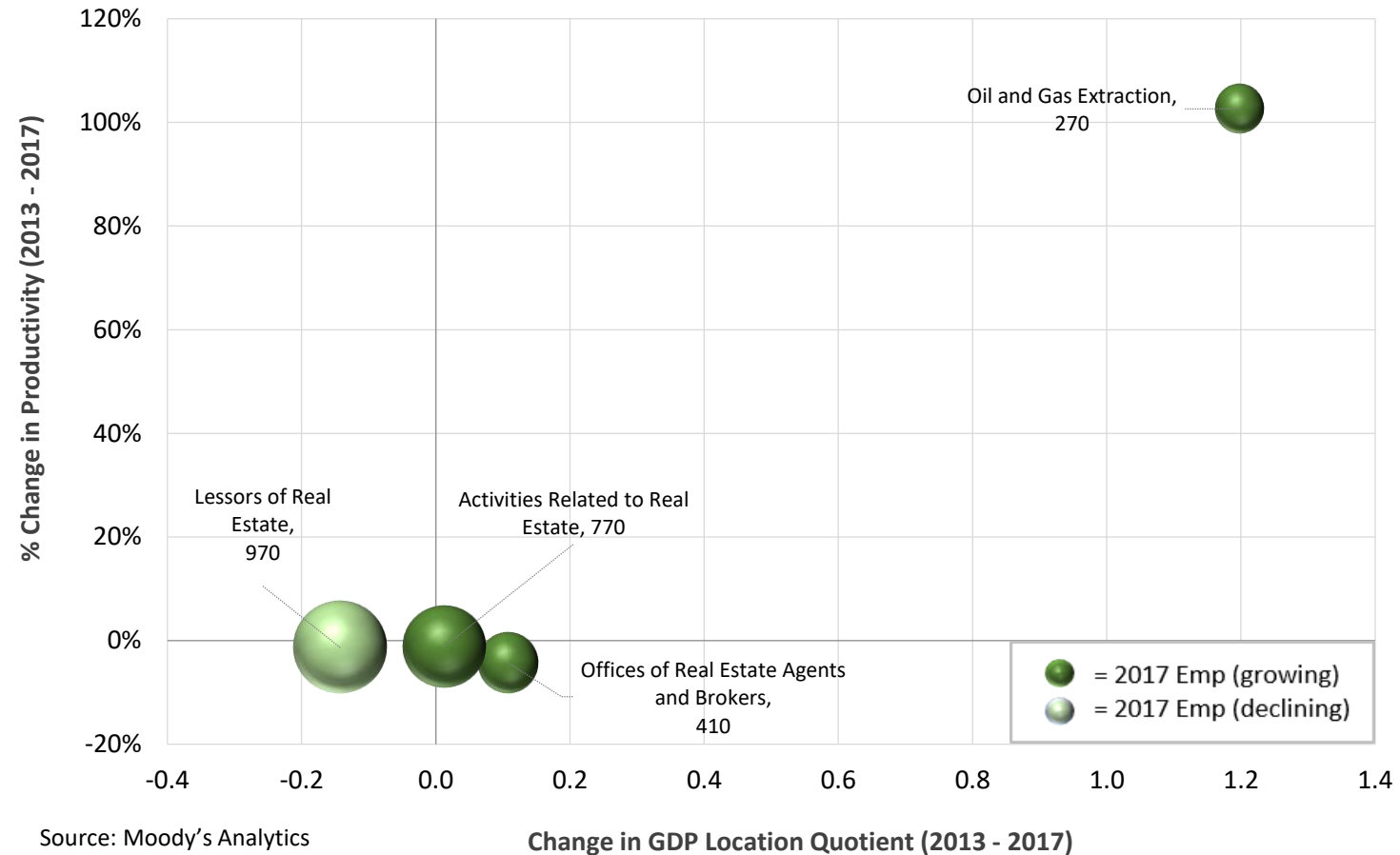
NAICS code	Industry Name
2111	Oil and Gas Extraction
3241	Petroleum and Coal Products Manufacturing
4860	Pipeline Transportation

Akron: OIL & GAS GRID

- **Fast-growing, emerging economic base:** Double-digit growth in output (26% from 2013 to 2017) & 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

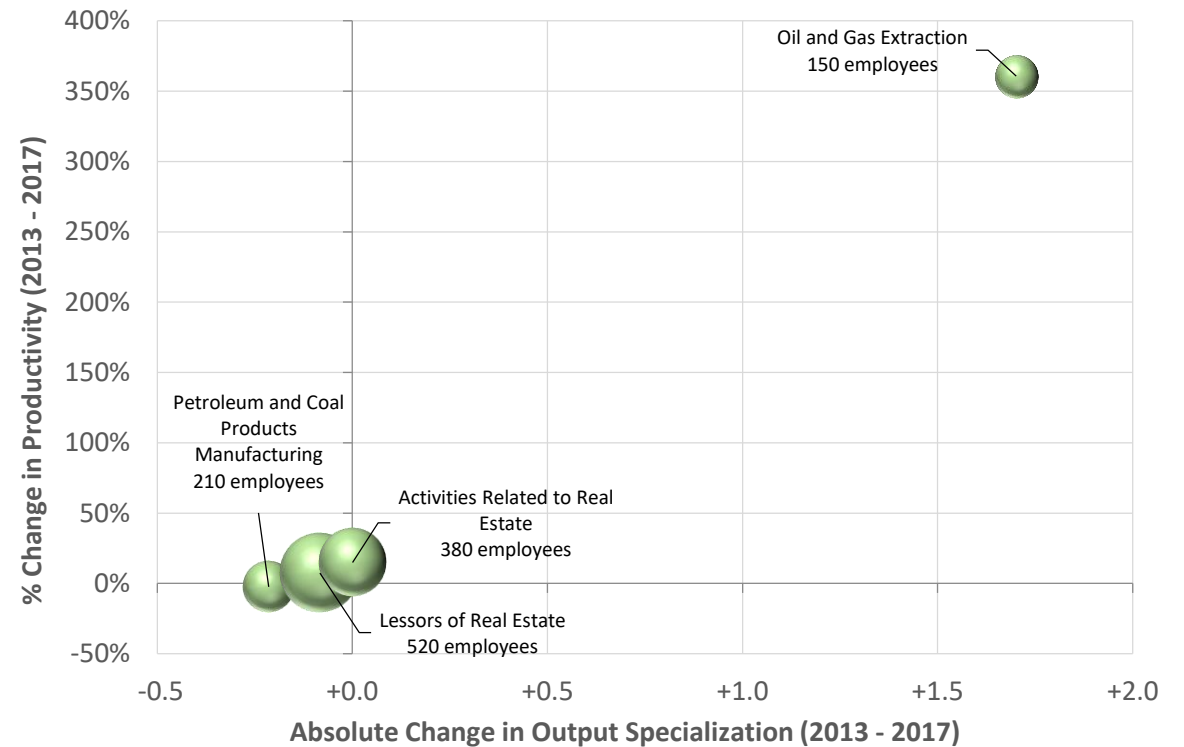
Industries in the Akron MSA Oil & Gas GRID

NAICS	Industry	2017 Output	2017 Emp
2111	Oil and Gas Extraction	\$557 M	270
5311	Lessors of Real Estate	\$1,231 M	970
5312	Offices of Real Estate Agents & Brokers	\$703 M	410
5313	Activities Related to Real Estate	\$1,081 M	770
TOTAL		\$3,572 M	2,420



Youngstown: 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 small employers, with total employment of 1,260 in 2017



Source: Moody's Analytics

● = 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

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

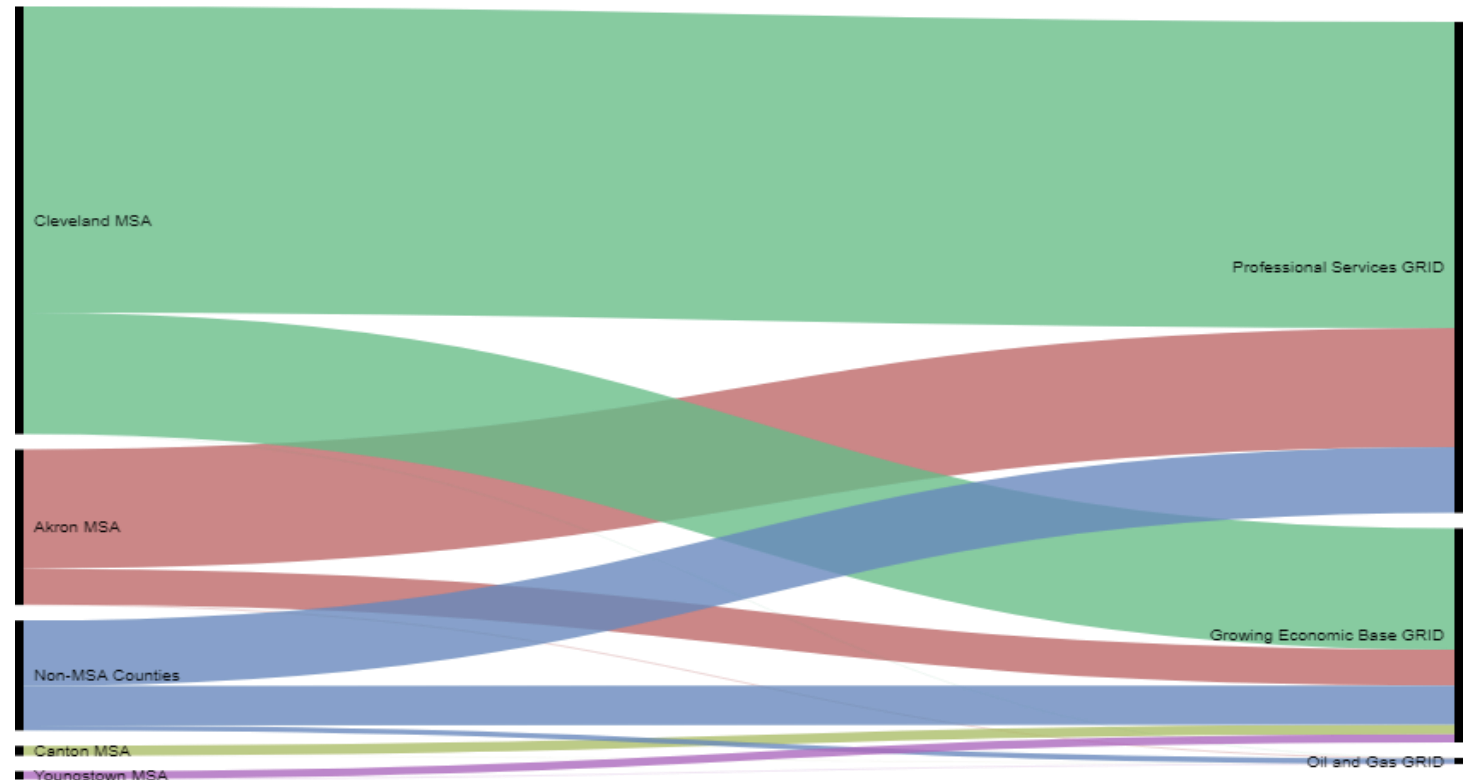


NEO Geographies

- 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
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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
- Services GRID is led by finance, insurance and medical industries; it does not include R&D and has lower than the national productivity
- Oil and Gas GRID illustrates double-digit growth in output & growing specialization. In 2013-2017, it added 270 jobs (9%) and \$2.1 billion in GRP (52%)
- Legacy Manufacturing GRID has 109,470 jobs, representing 5% of NEO; \$19 billion in output – 8% of all industries & 22% of GRIDs



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* (lifted) 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



MONITORING REGIONAL GROWTH PORTFOLIO STRATEGIES

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

- Full Report - https://engagedscholarship.csuohio.edu/urban_facpub/1585/
- Research Brief- https://engagedscholarship.csuohio.edu/urban_facpub/1594/

Local Front Runners: Local Front Runners: GRIDs in the 4 Northeast Ohio Metropolitan Areas

- Full Report - https://engagedscholarship.csuohio.edu/urban_facpub/1609/

Good Jobs: Employment and Wages in GRIDs

- Coming Soon

Other Publications:

https://engagedscholarship.csuohio.edu/urban_cecde/



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