

Measuring & Improving West Virginia Manufacturing Competitiveness



ECONOMIC
LEADERSHIP

Place Comparisons
Data Analytics



Trendspotting



Best Practices



Collaborative (Group) Leadership

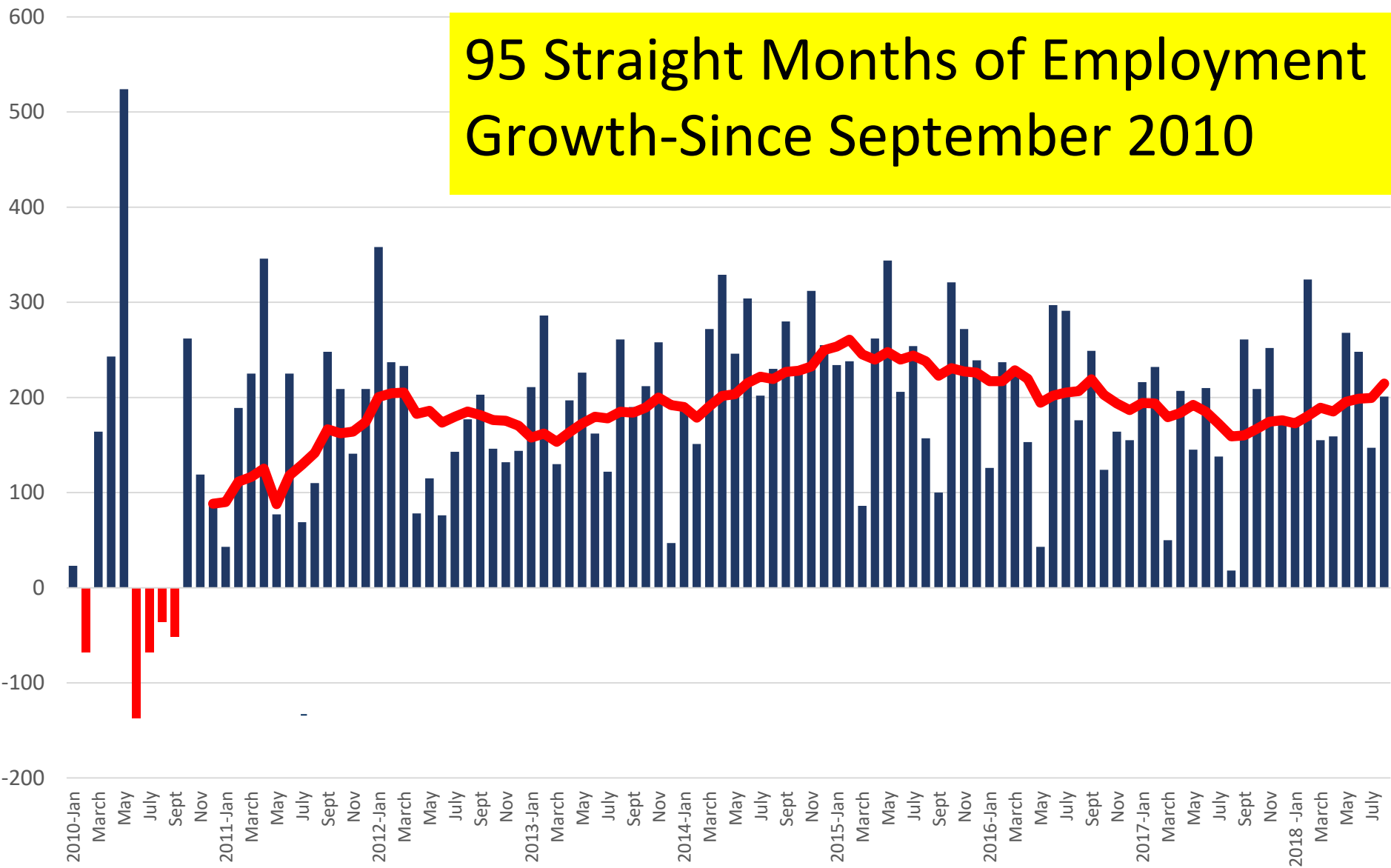


- ✓ Intentional
- ✓ Specific
- ✓ Measurable
Actions

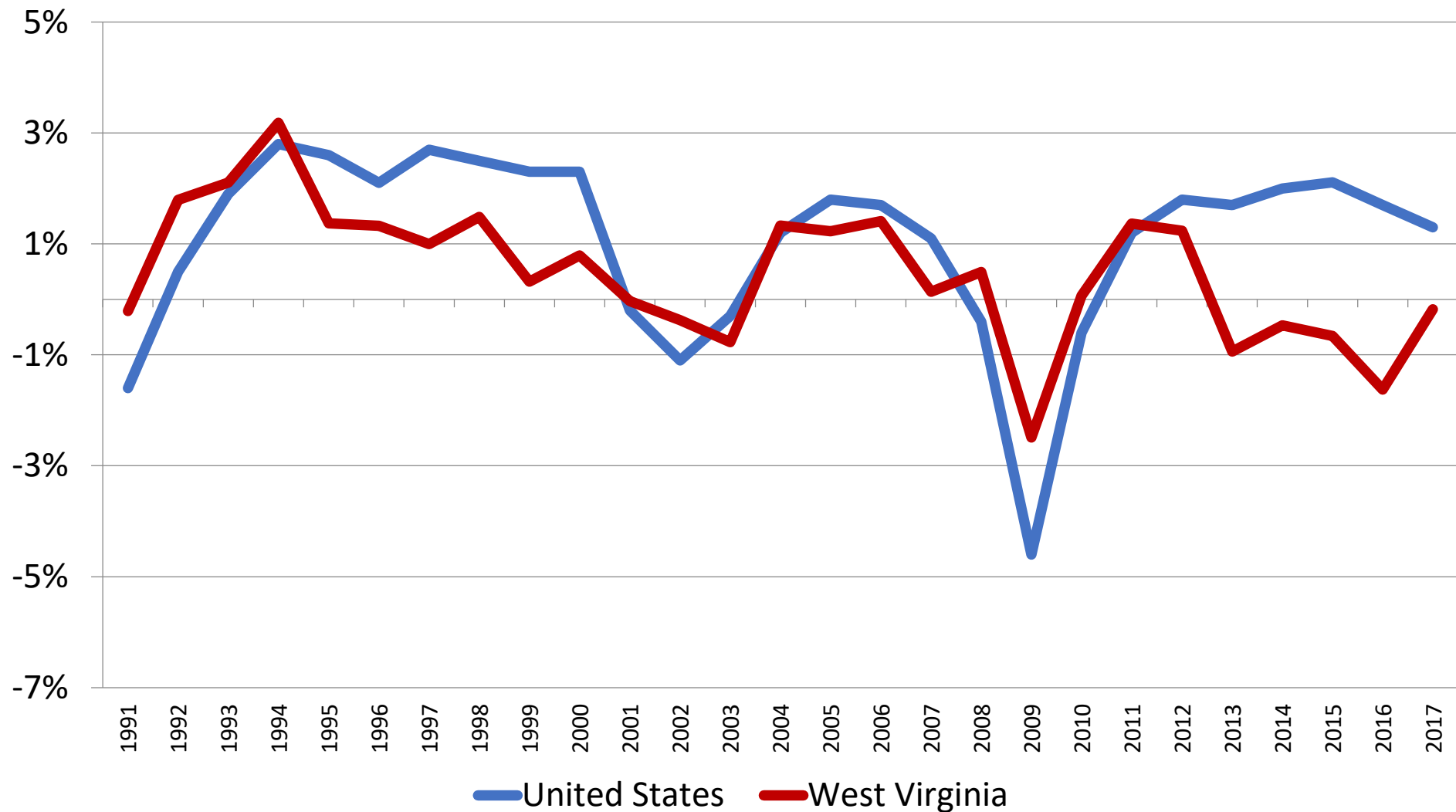
Competitive Improvement

USA Nonfarm Payroll Employment

95 Straight Months of Employment Growth-Since September 2010

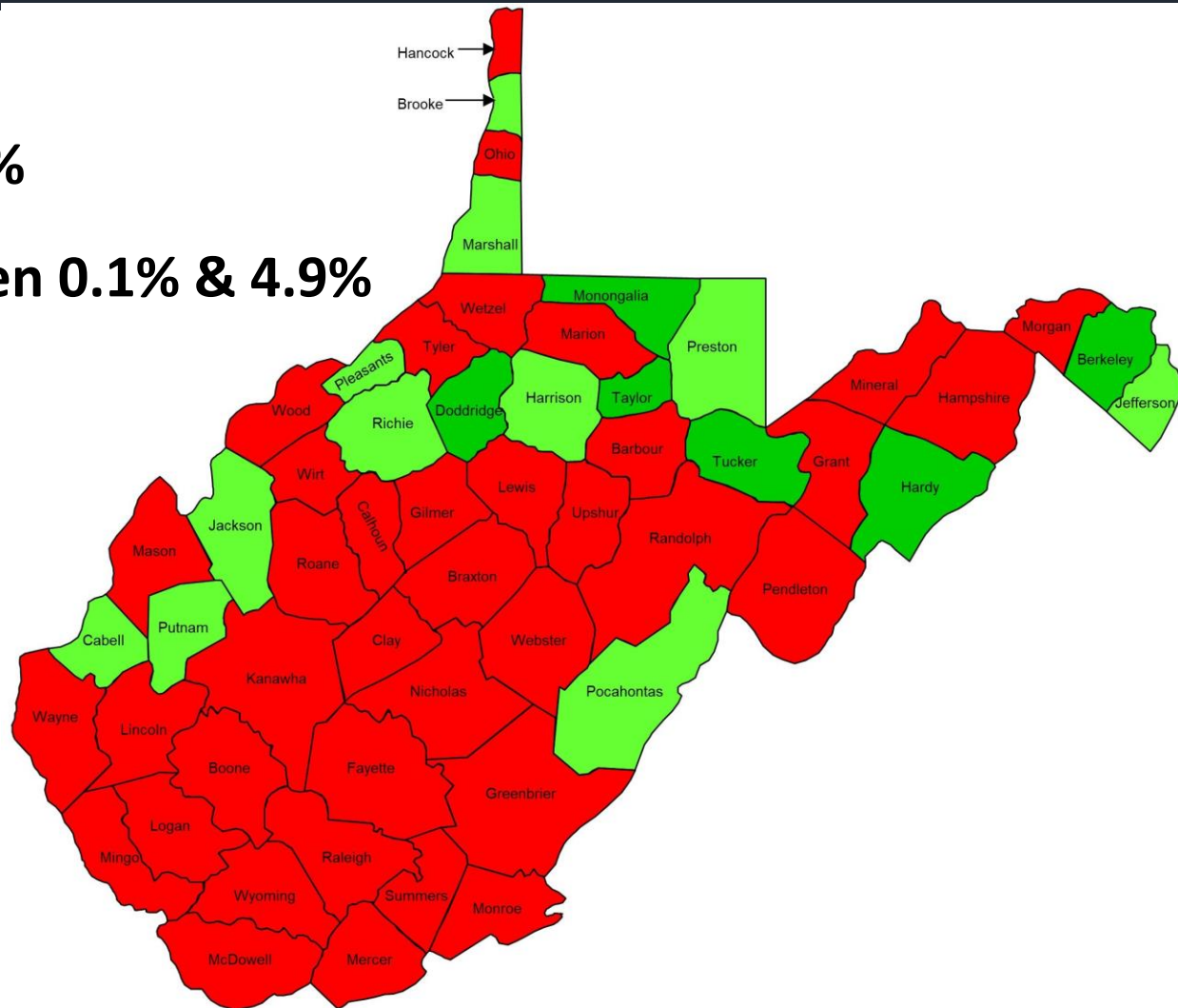
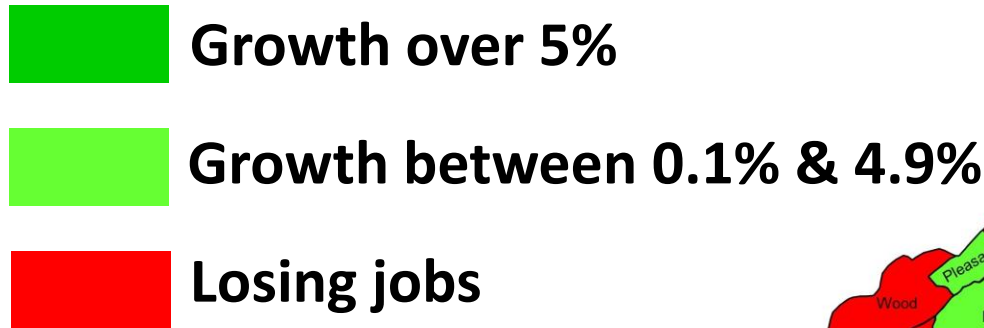


Percentage Annual Job Change 1990-2017





5 Year Job Growth 2012-2017

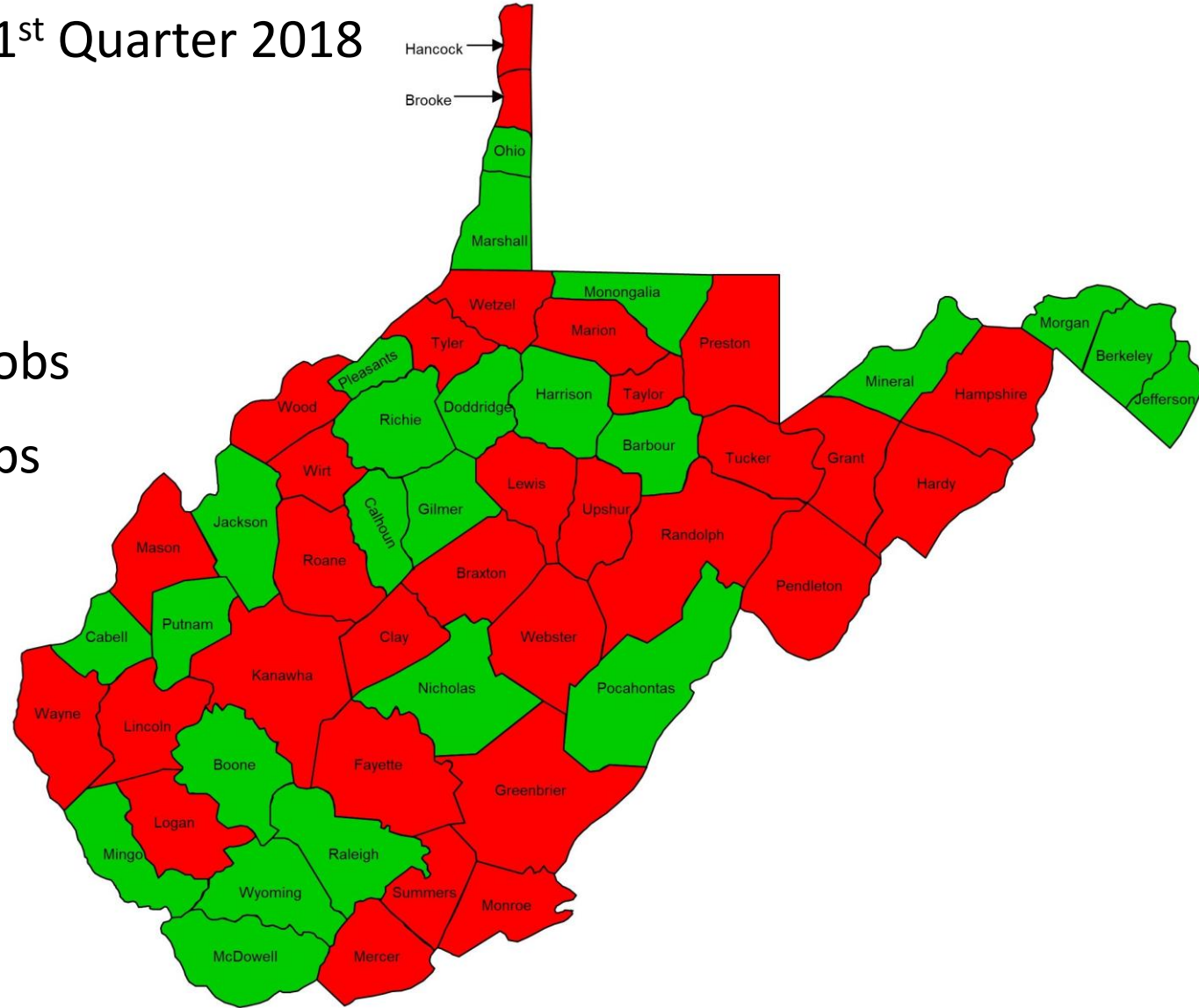
West Virginia Average -3.8%



Total Job Growth Last 12 months

1st Quarter 2017 – 1st Quarter 2018

-  Gaining Jobs
-  Losing Jobs



Natural Resources & Mining Job Growth

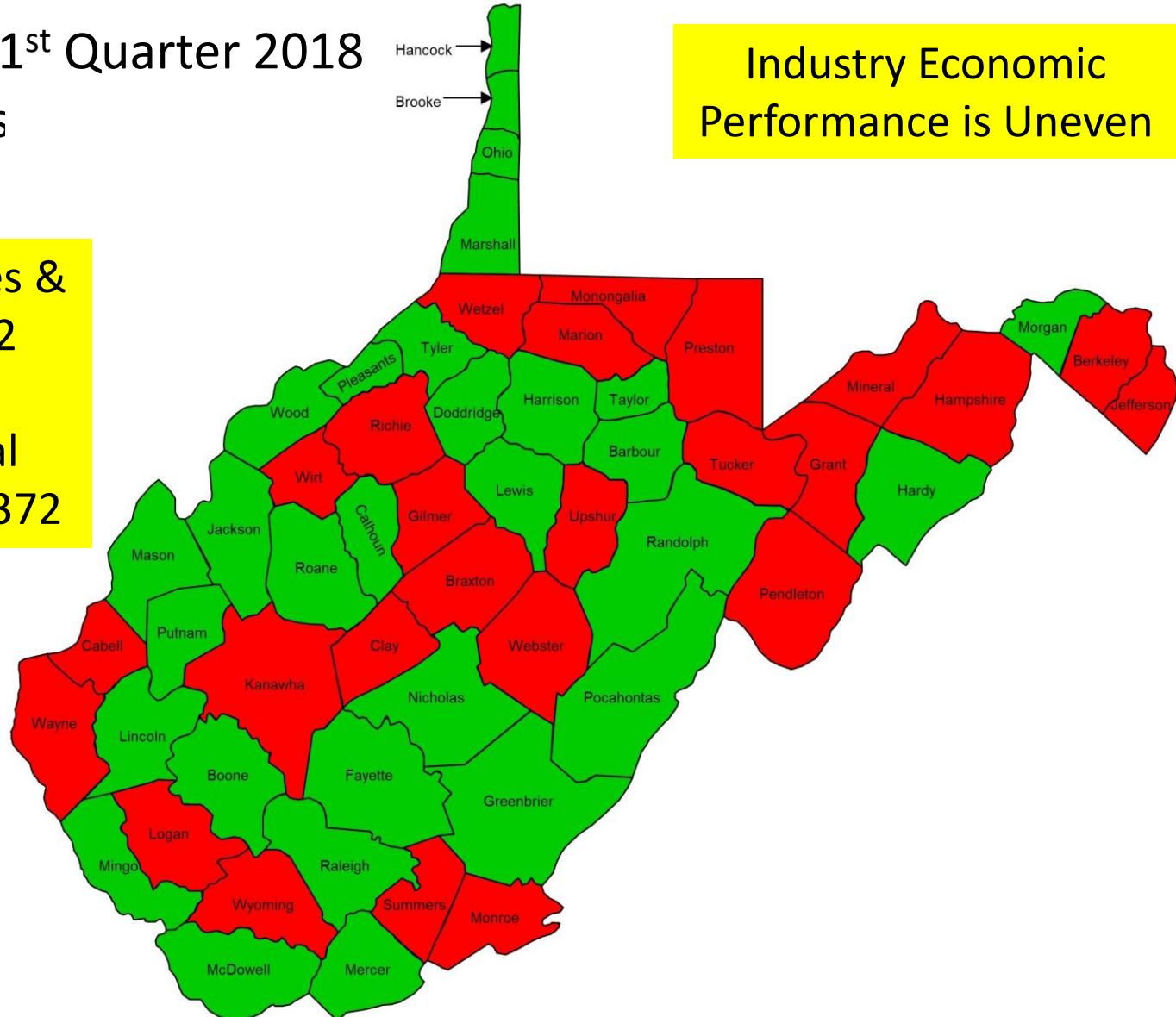
1st Quarter 2017 – 1st Quarter 2018

- Gaining Jobs
- Losing Jobs

Industry Economic
Performance is Uneven

WV Natural Resources &
Mining Jobs -- 22,832

Net Change in Natural
Resources Jobs – +1,372



Construction Job Growth

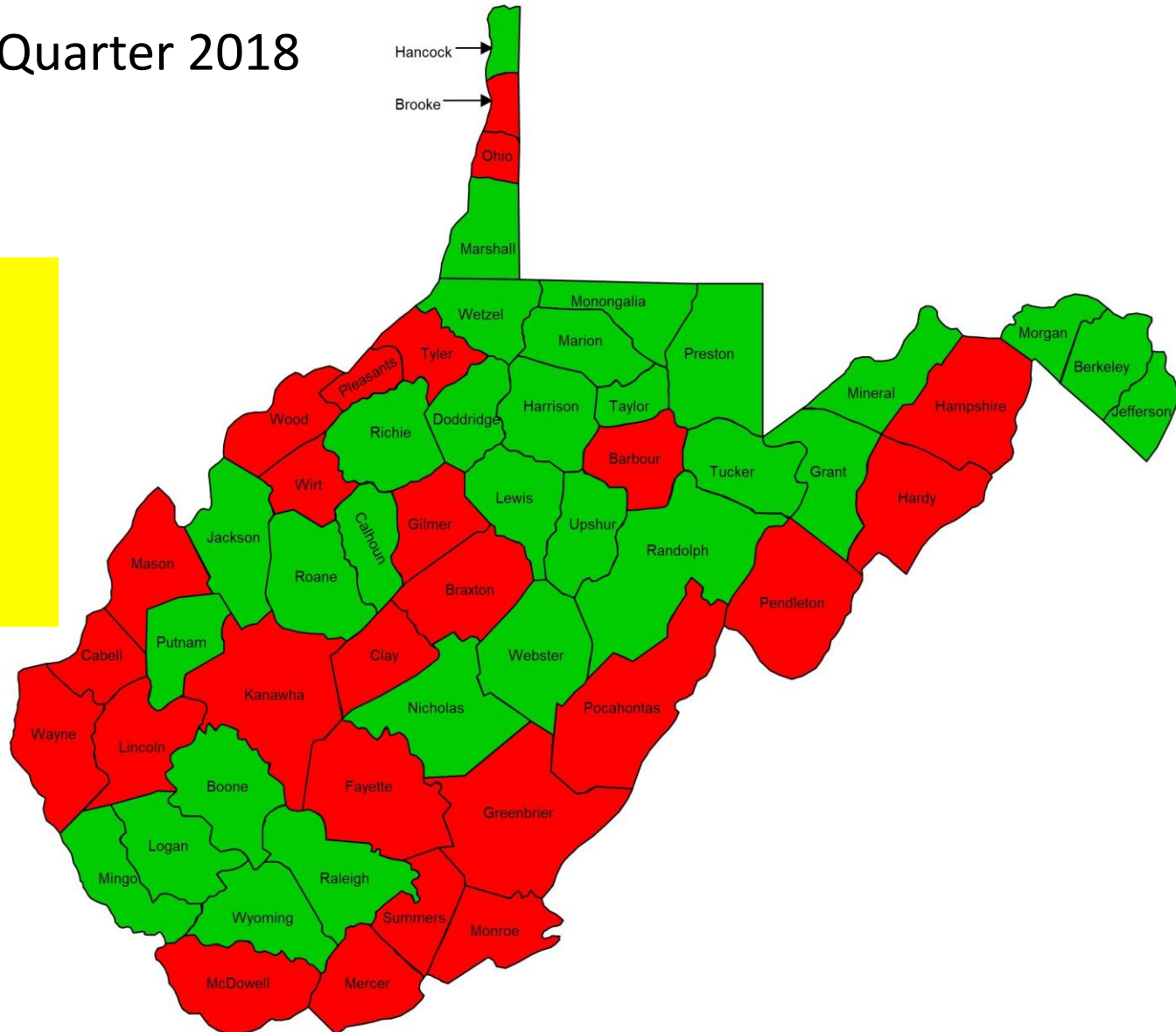
1st Quarter 2017 – 1st Quarter 2018

 Gaining Jobs

 Losing Jobs

WV Construction Jobs --
30,420

Net Change in
Construction Jobs –
+3,883



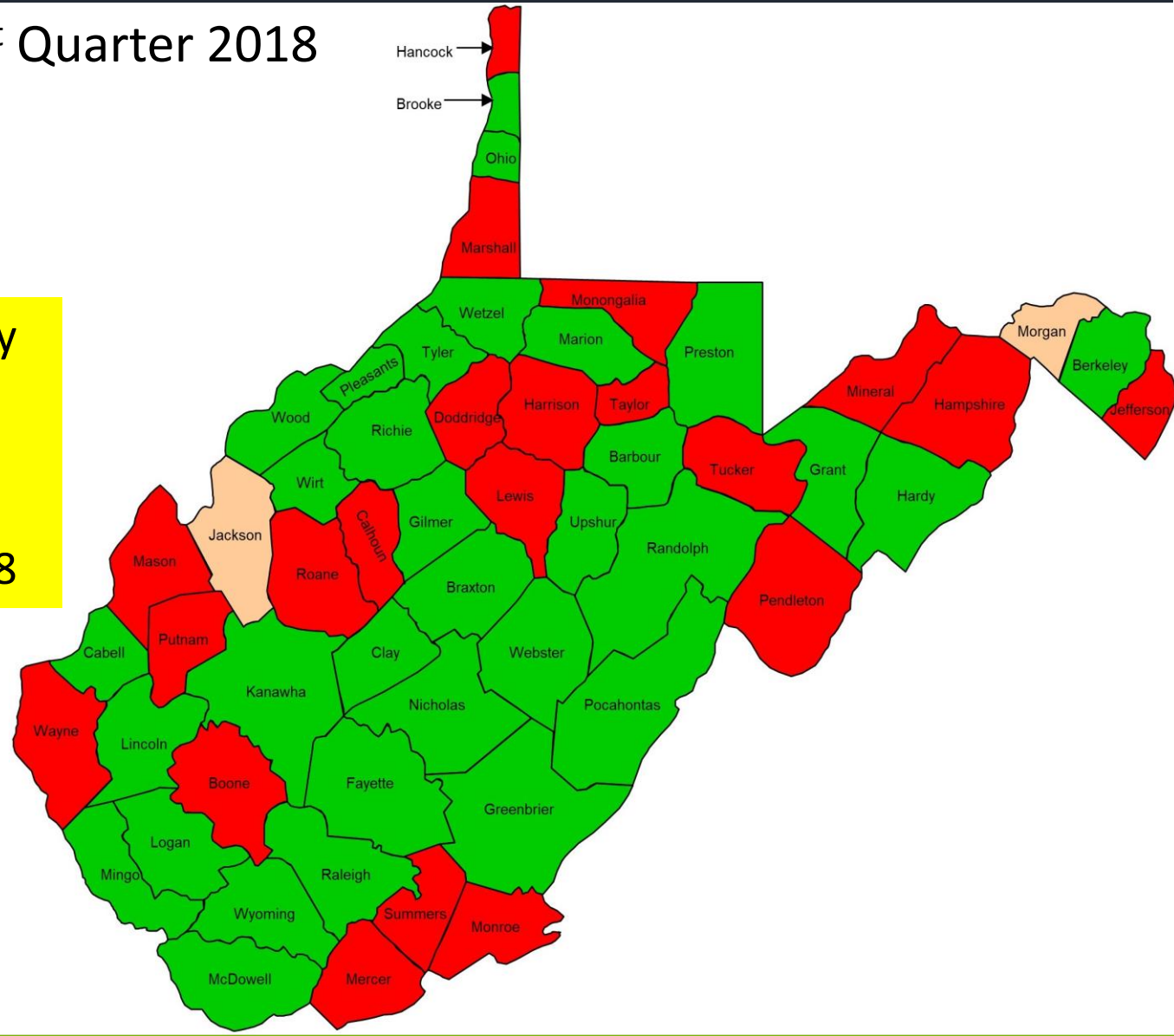
Leisure & Hospitality Job Growth

1st Quarter 2017 – 1st Quarter 2018

- Gaining Jobs
- No Change
- Losing Jobs



WV Leisure & Hospitality Jobs -- 71,840

Net Change in Leisure & Hospitality Jobs – +1,238



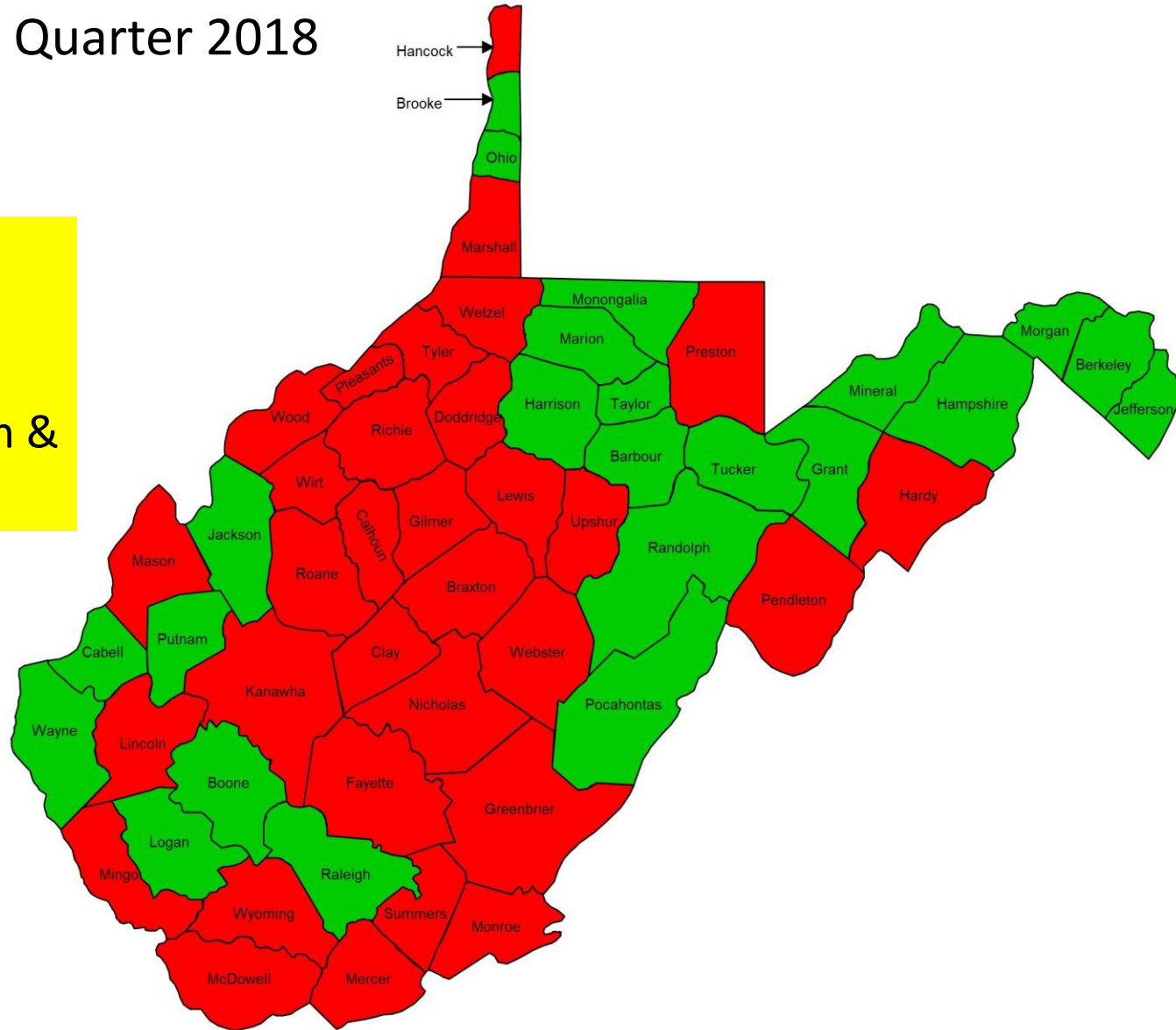
Education & Health Job Growth

1st Quarter 2017 – 1st Quarter 2018

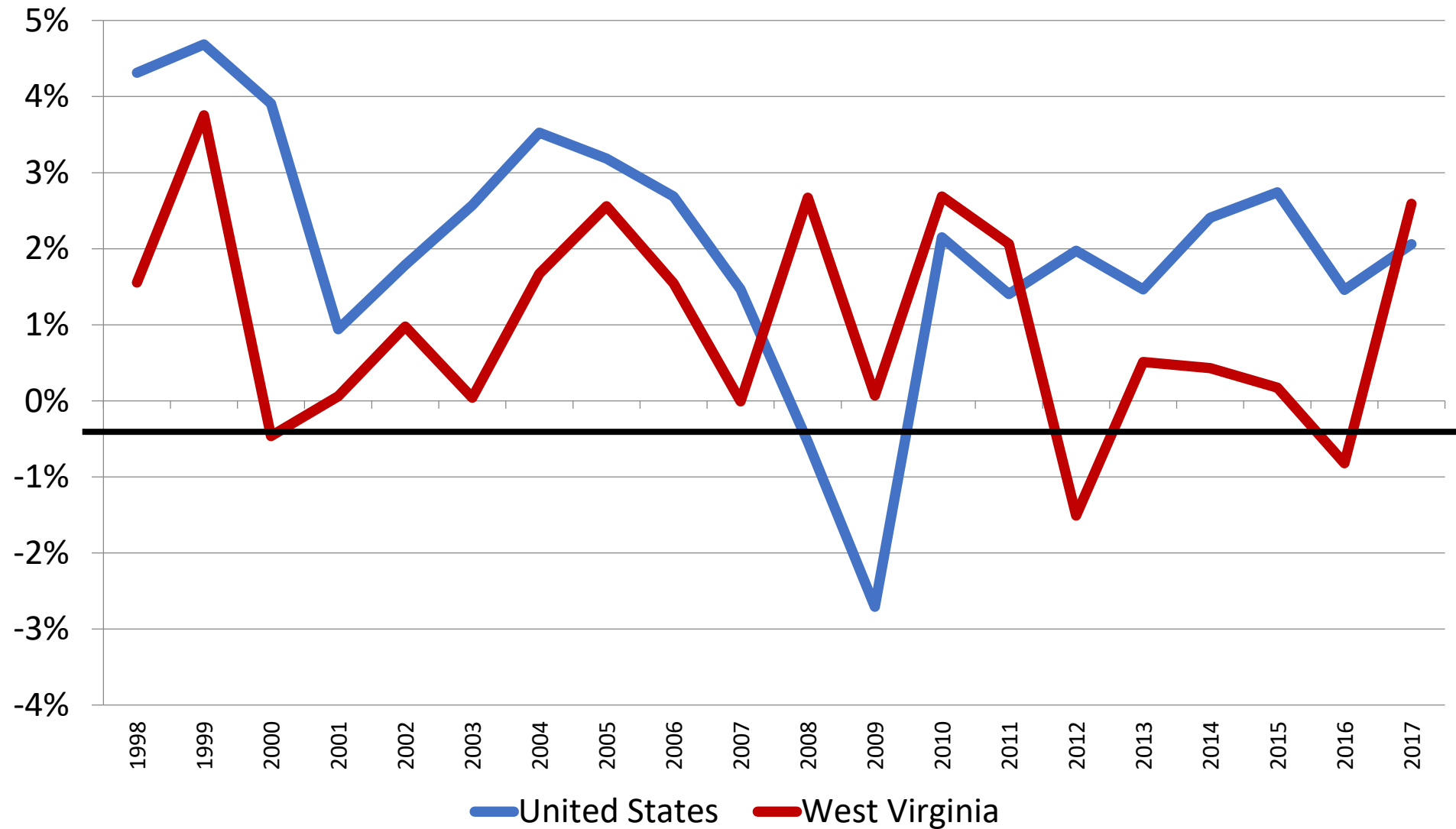
 Gaining Jobs
 Losing Jobs

WV Education & Health
Jobs -- 123,963

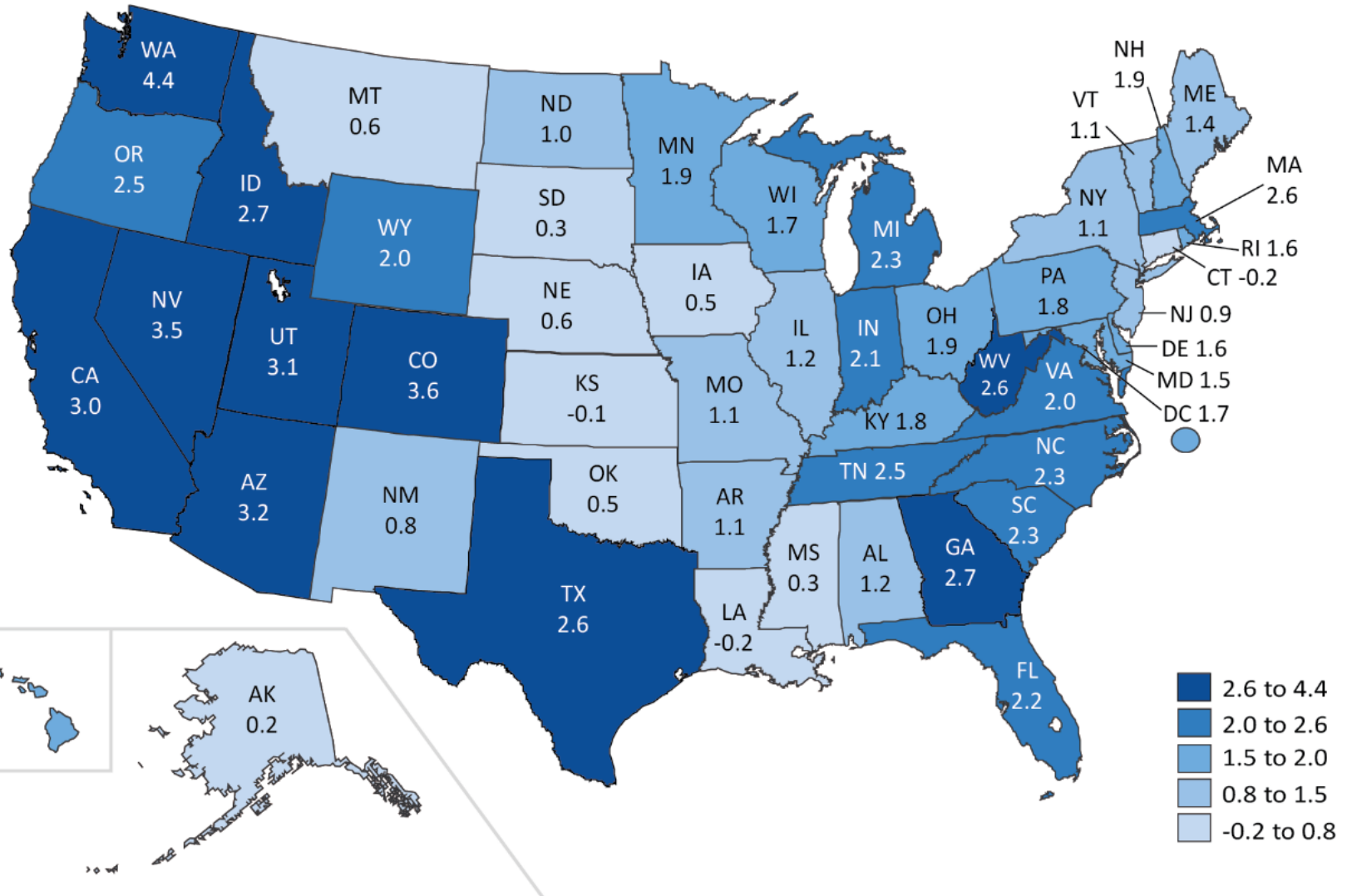
Net Change in Education &
Health Jobs – +2,492



Percentage Annual GDP Change 1997-2017



Percent Change in Real GDP by State, 2016–2017



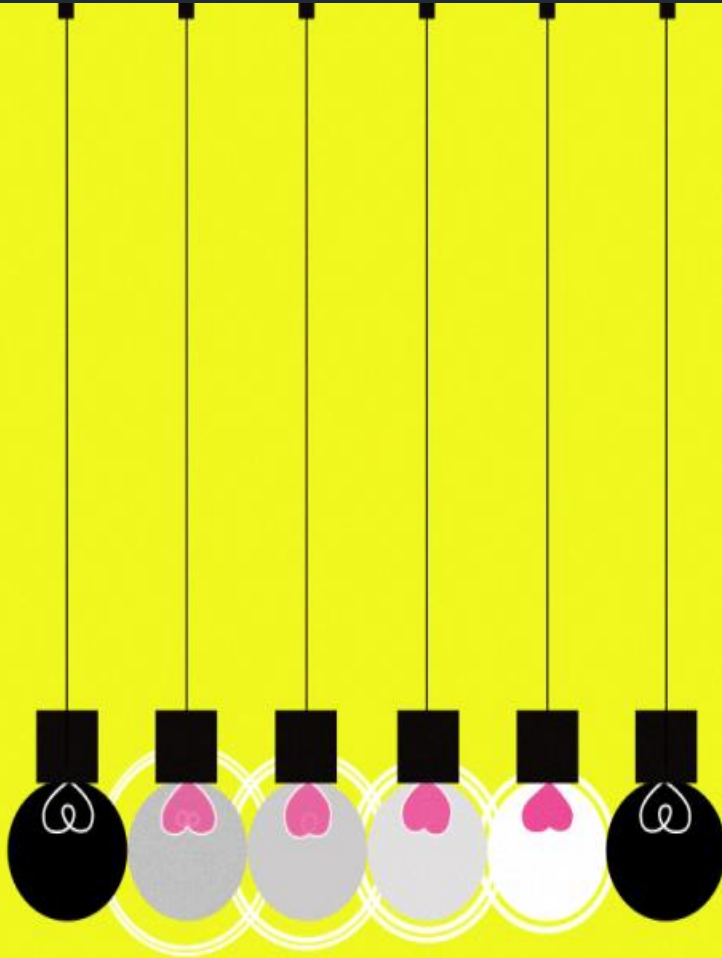
U.S. Bureau of Economic Analysis

West Virginia Ranked Compared to All States

	<u>Job Growth</u>	<u>Wage Growth</u>	<u>GDP Growth</u>
1 Year 2016 – 2017	48	4	10
5 Year 2012 – 2017	51	43	45
10 Year 2007 - 2017	51	9	31

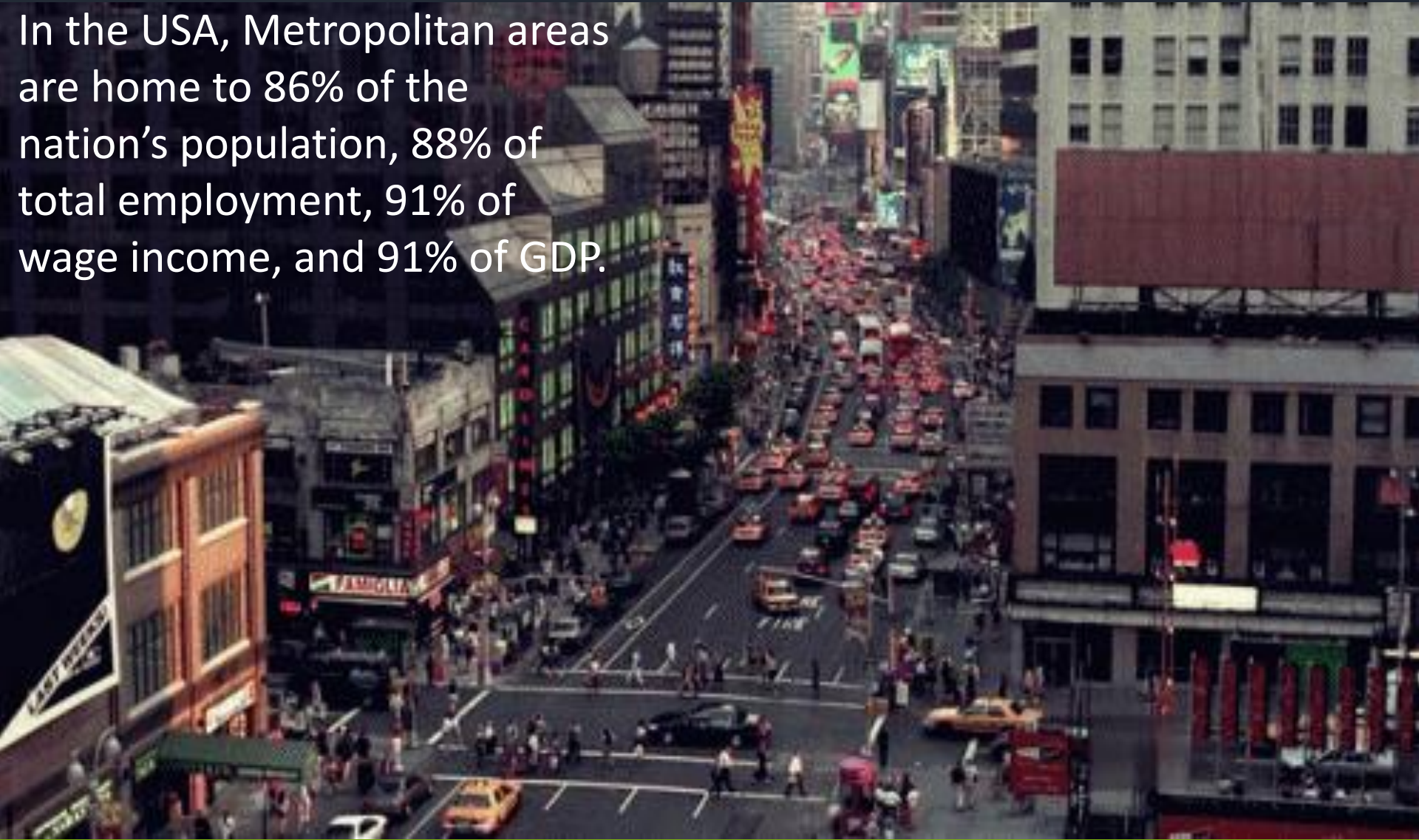
DC is included so that all rankings are of 51 “states”

Change is Reshaping Competitiveness

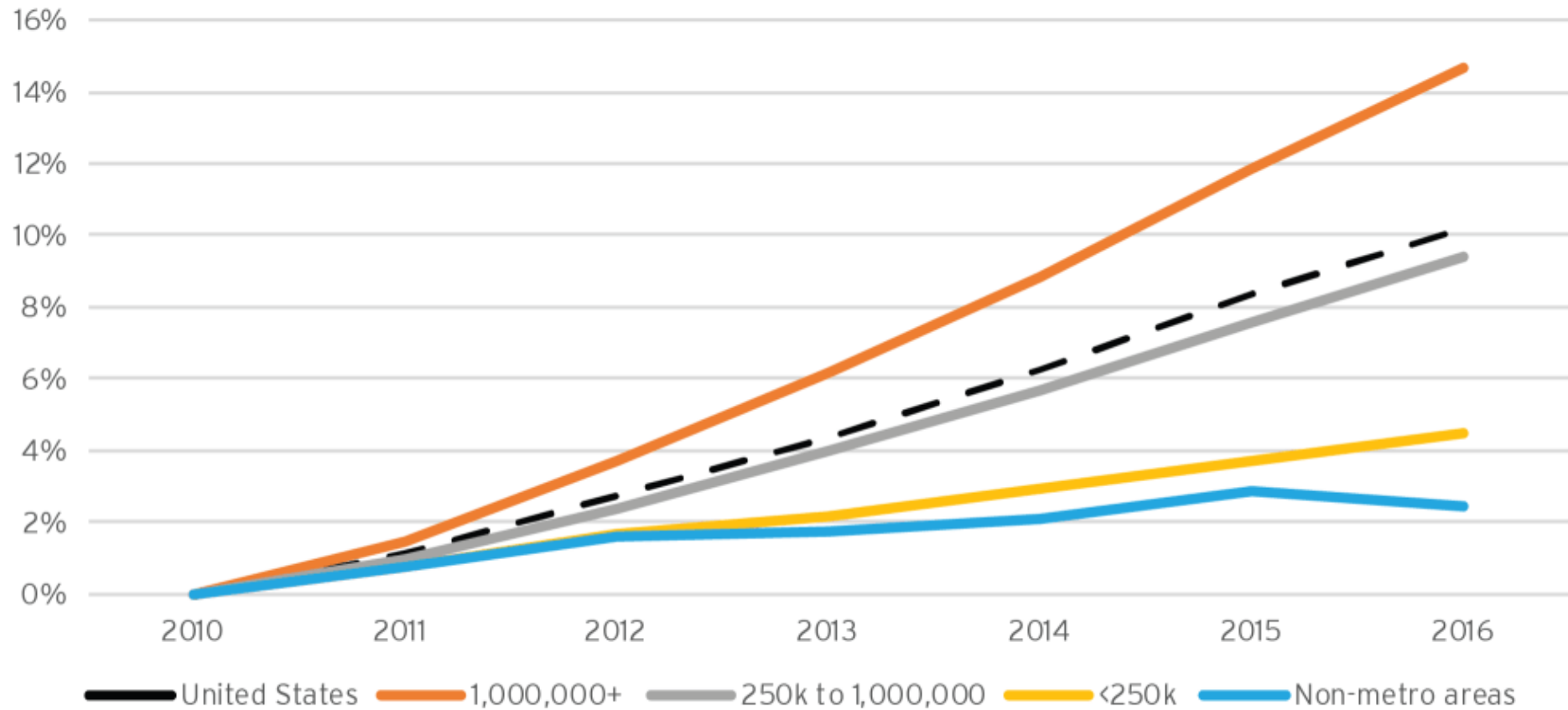


The Urban Advantage is Growing

In the USA, Metropolitan areas are home to 86% of the nation's population, 88% of total employment, 91% of wage income, and 91% of GDP.



Percentage Employment Growth Since 2010



Source: Brookings analysis of Moody's Analytics data

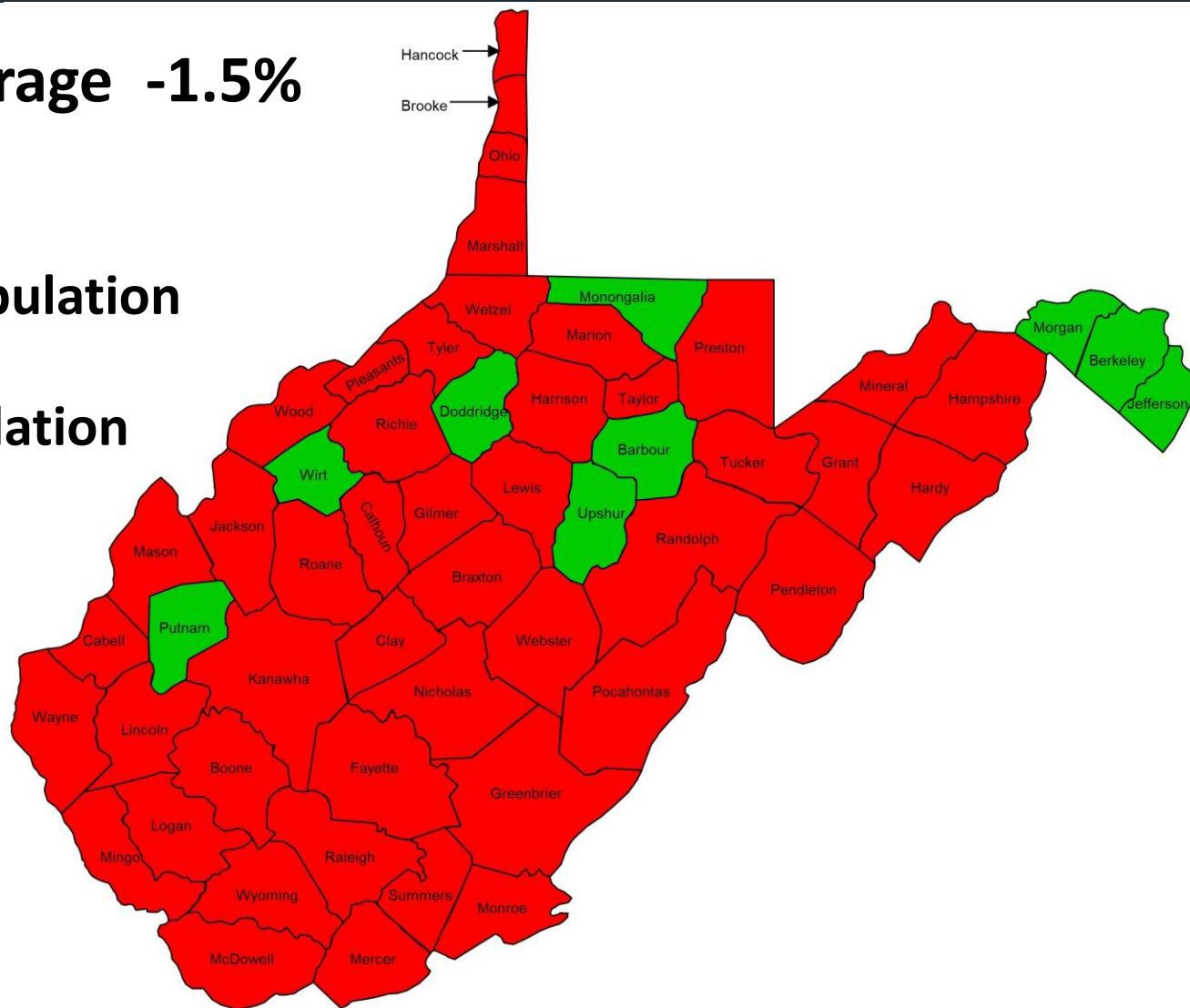
B | Metropolitan Policy Program
at BROOKINGS

West Virginia Change in Population 2012 - 2017

West Virginia Average -1.5%

 **Growing population**

 **Losing population**



PROJECTED CHANGE IN LABOR FORCE AGE POPULATION

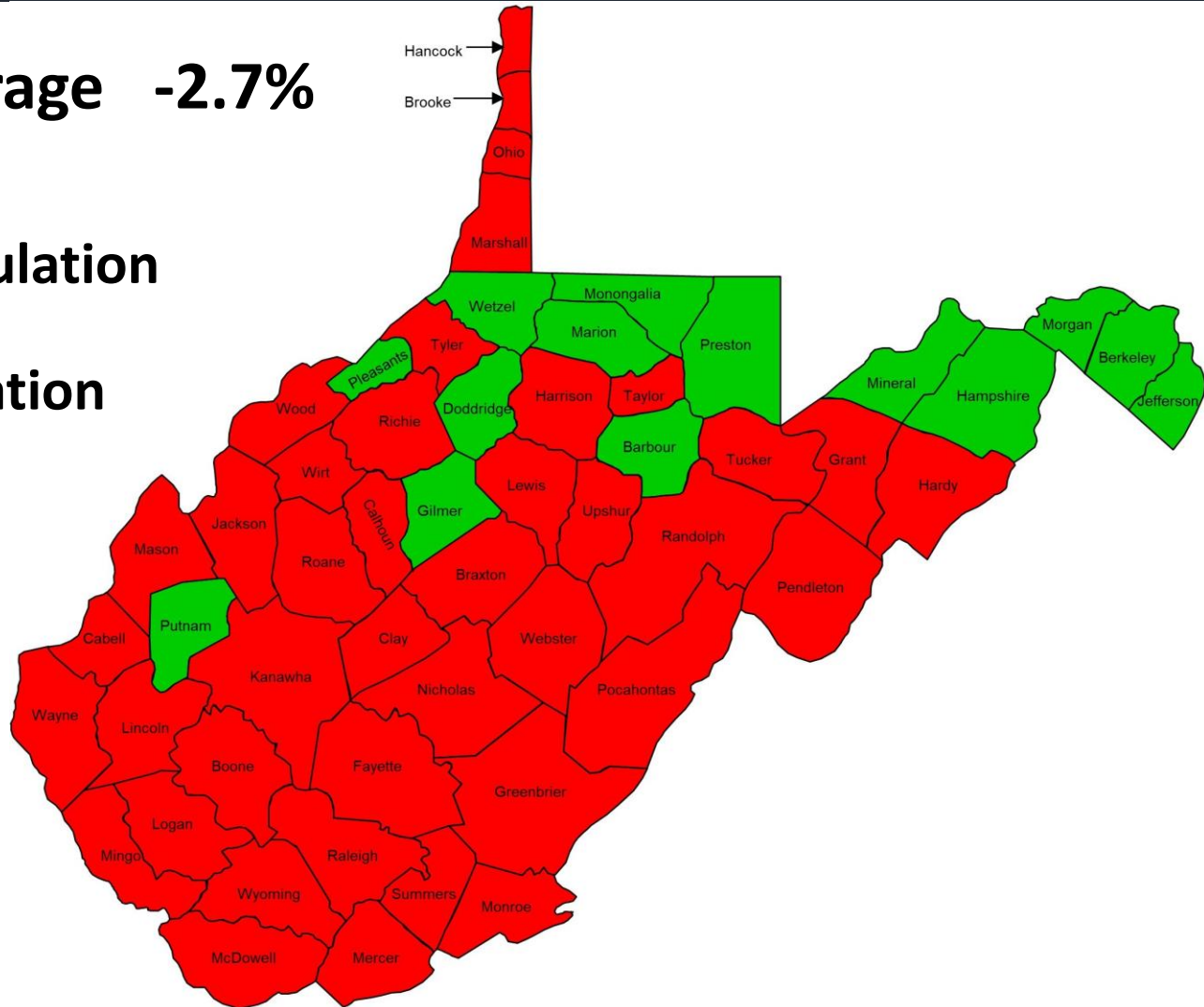
Ages 25 – 44

2017 - 2027

West Virginia Average -2.7%




 **Growing population**

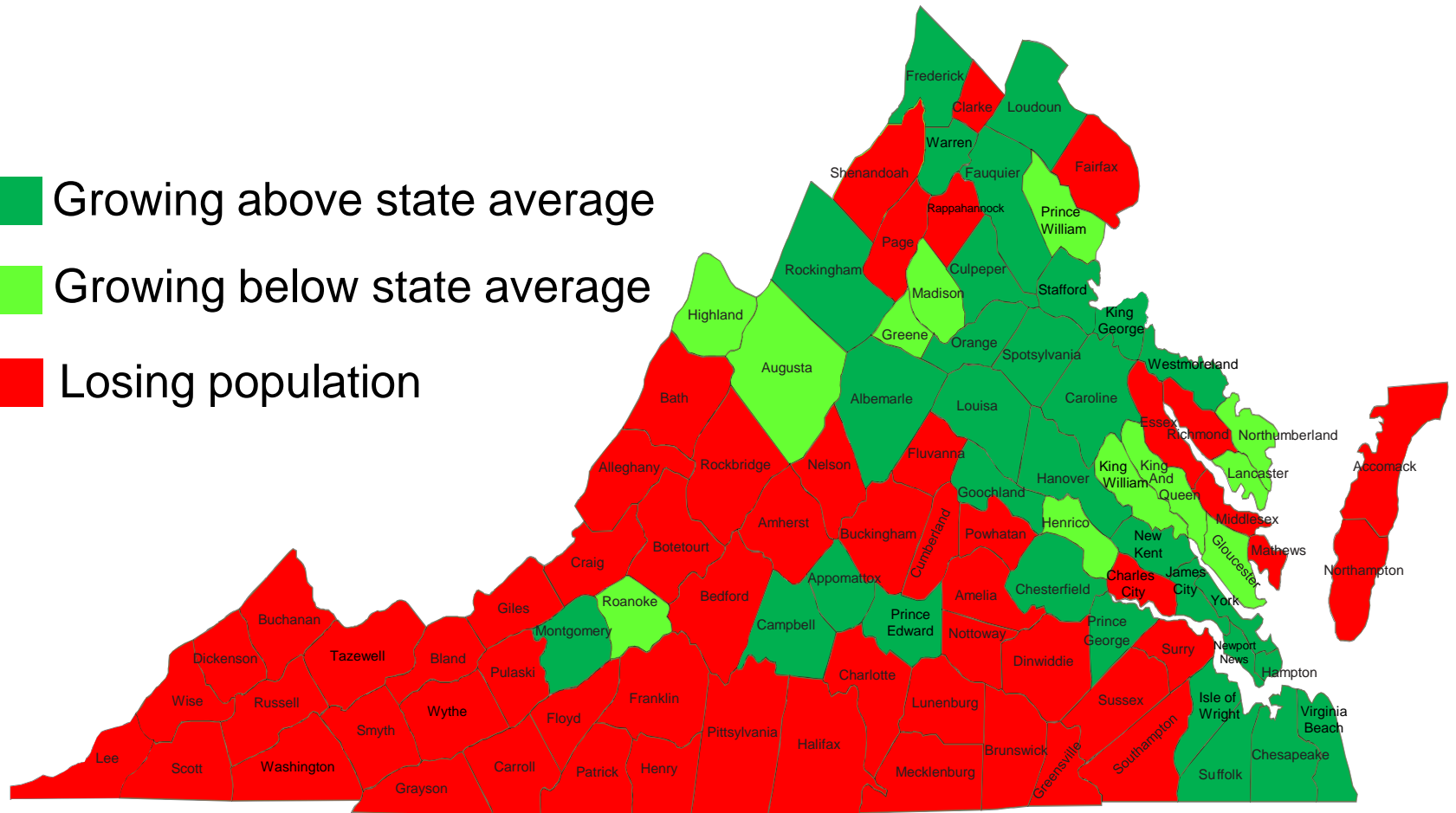
 **Losing population**



Population Change 2012 to 2017

Ages 25-44 Virginia average 1.9%

-  Growing above state average
-  Growing below state average
-  Losing population





PROJECTED CHANGE IN LABOR FORCE AGE POPULATION

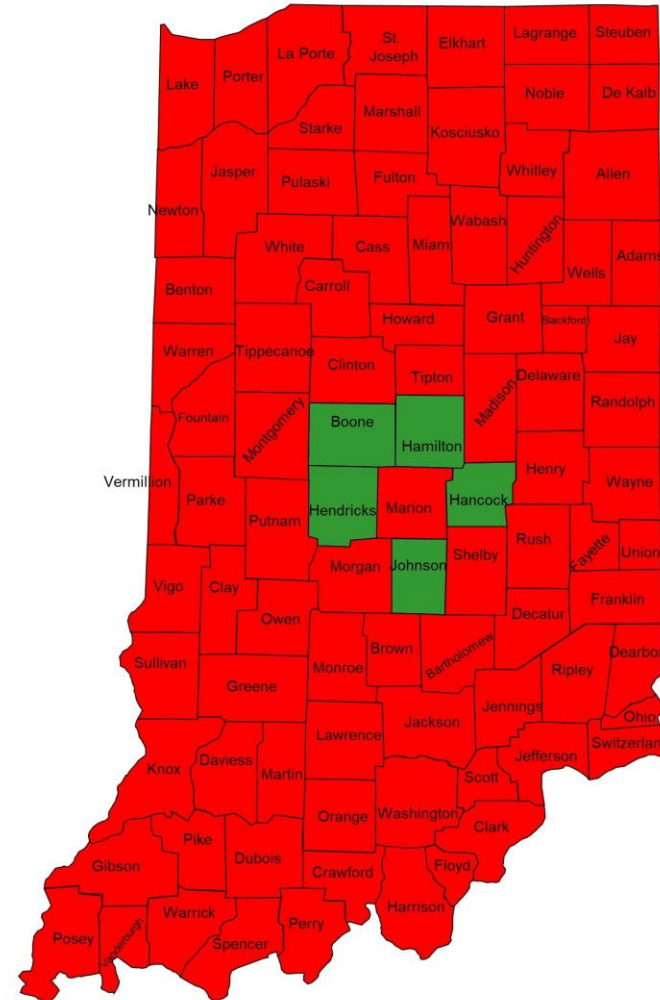
Ages 25 – 44

2016 - 2026

INDIANA (-4.3%)

U.S. (-2.0%)

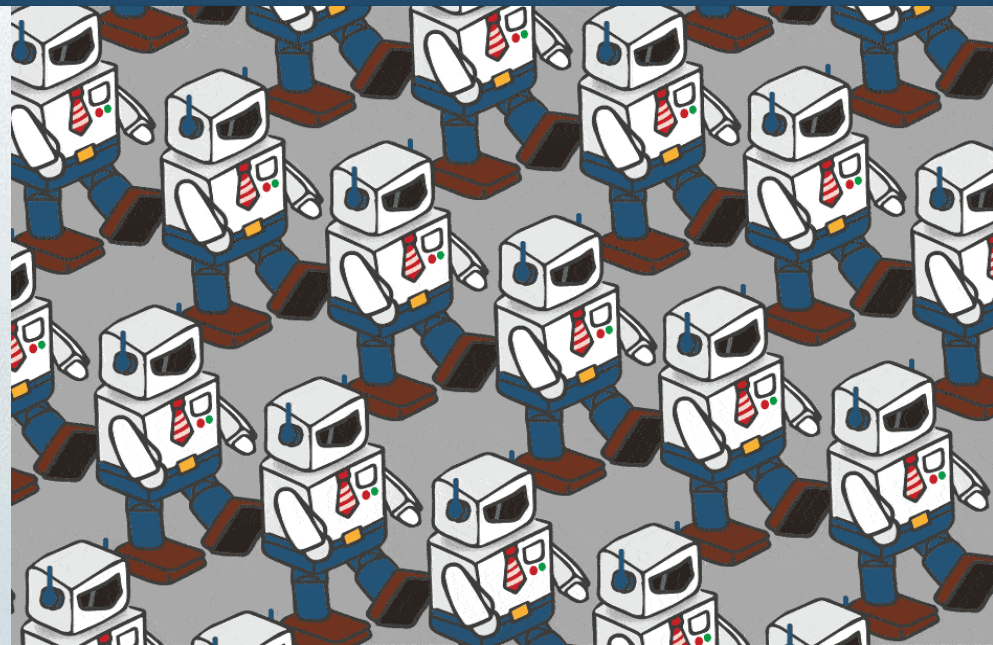
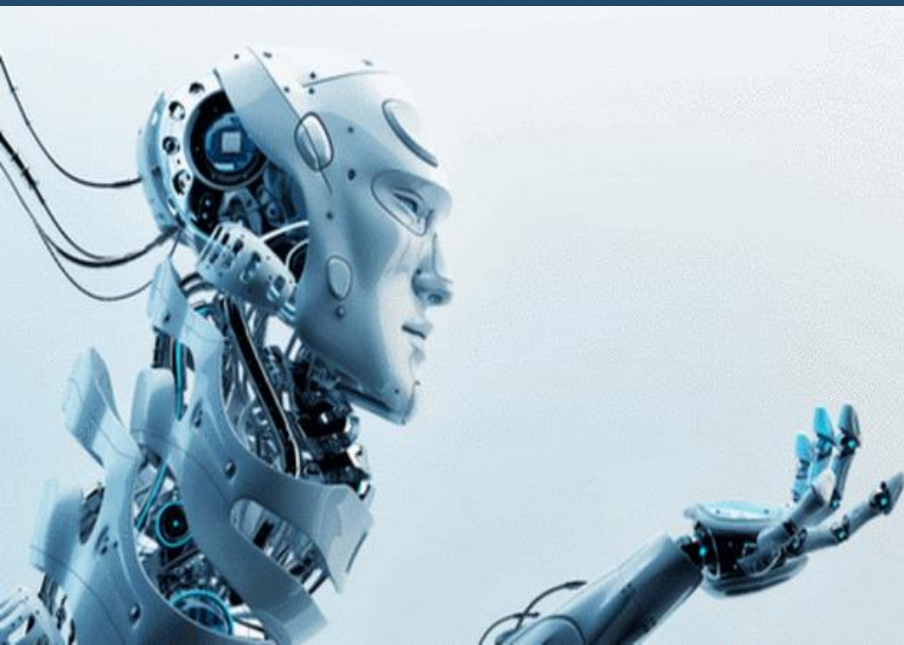
-  population growth
-  population decrease



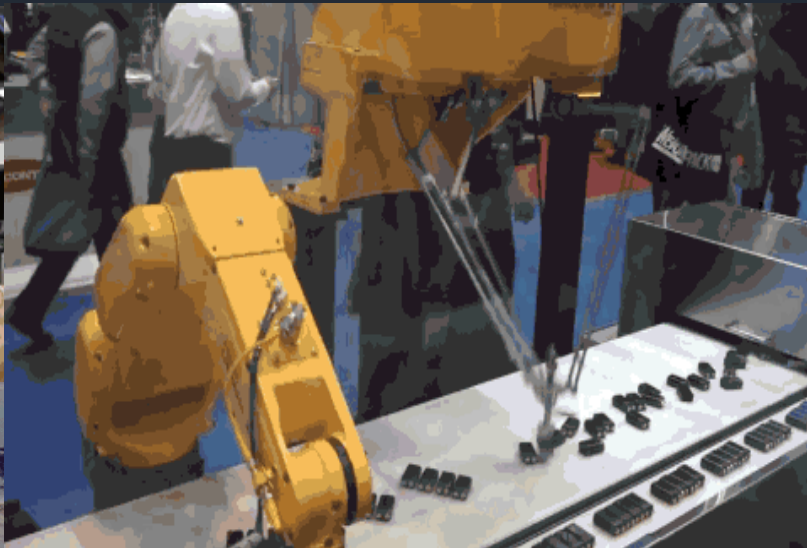
Technological Disruption

DISRUPTIVE INNOVATION

How Prepared Are Professionals For Technology Displacement



The Next Big Things-Technological



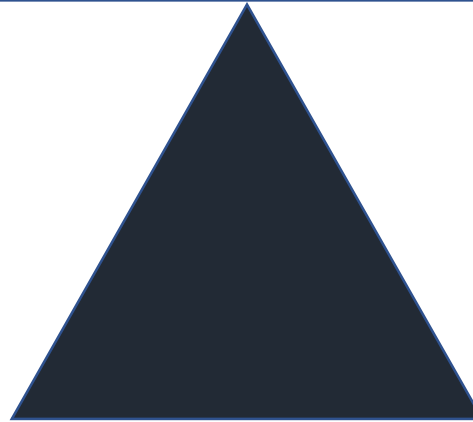
Quantitative and Qualitative Challenges



The Workforce Supply-Demand Balance

Automation, robotics and the possible loss of jobs and need for labor

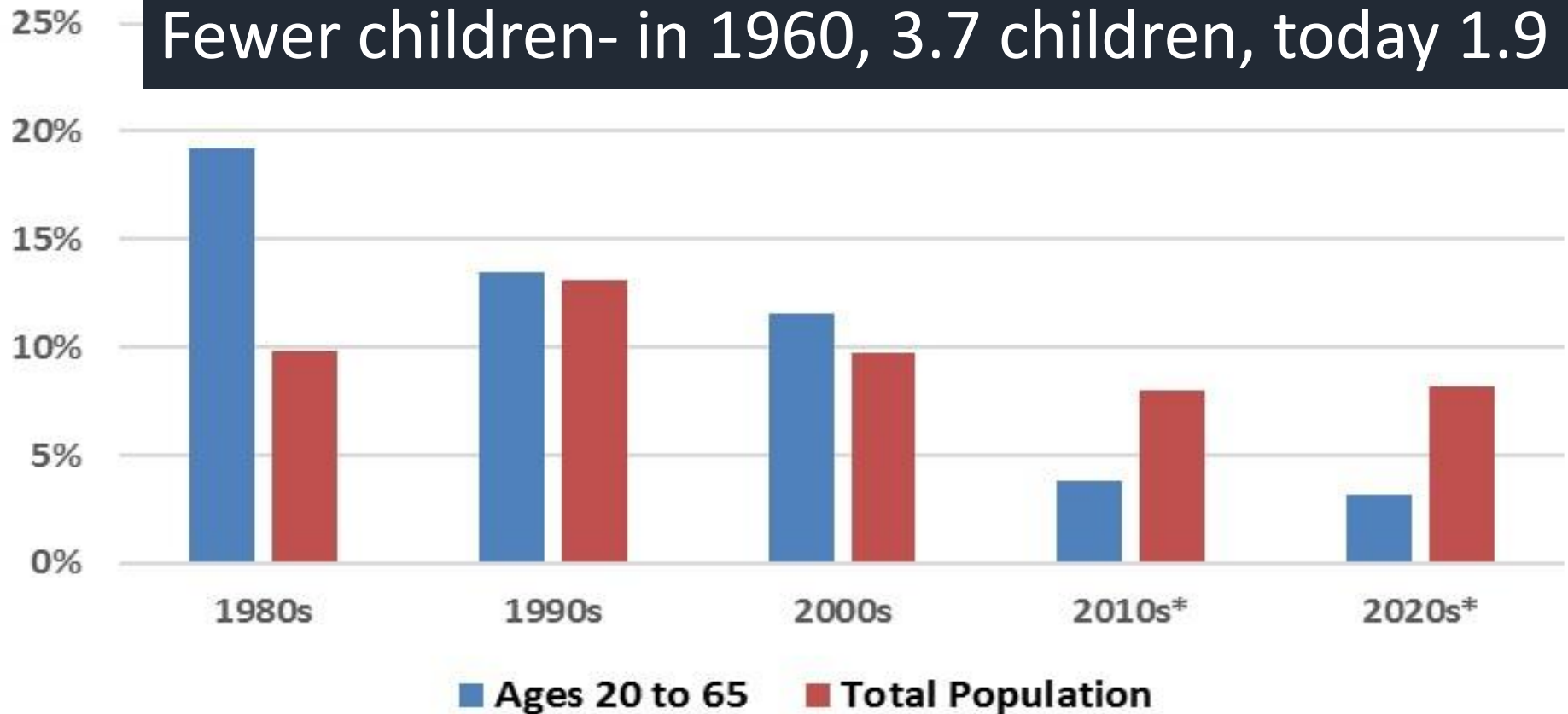
Slowing birthrates, aging baby boomers, declining participation rates, immigration debates



USA Workforce Growth Slows

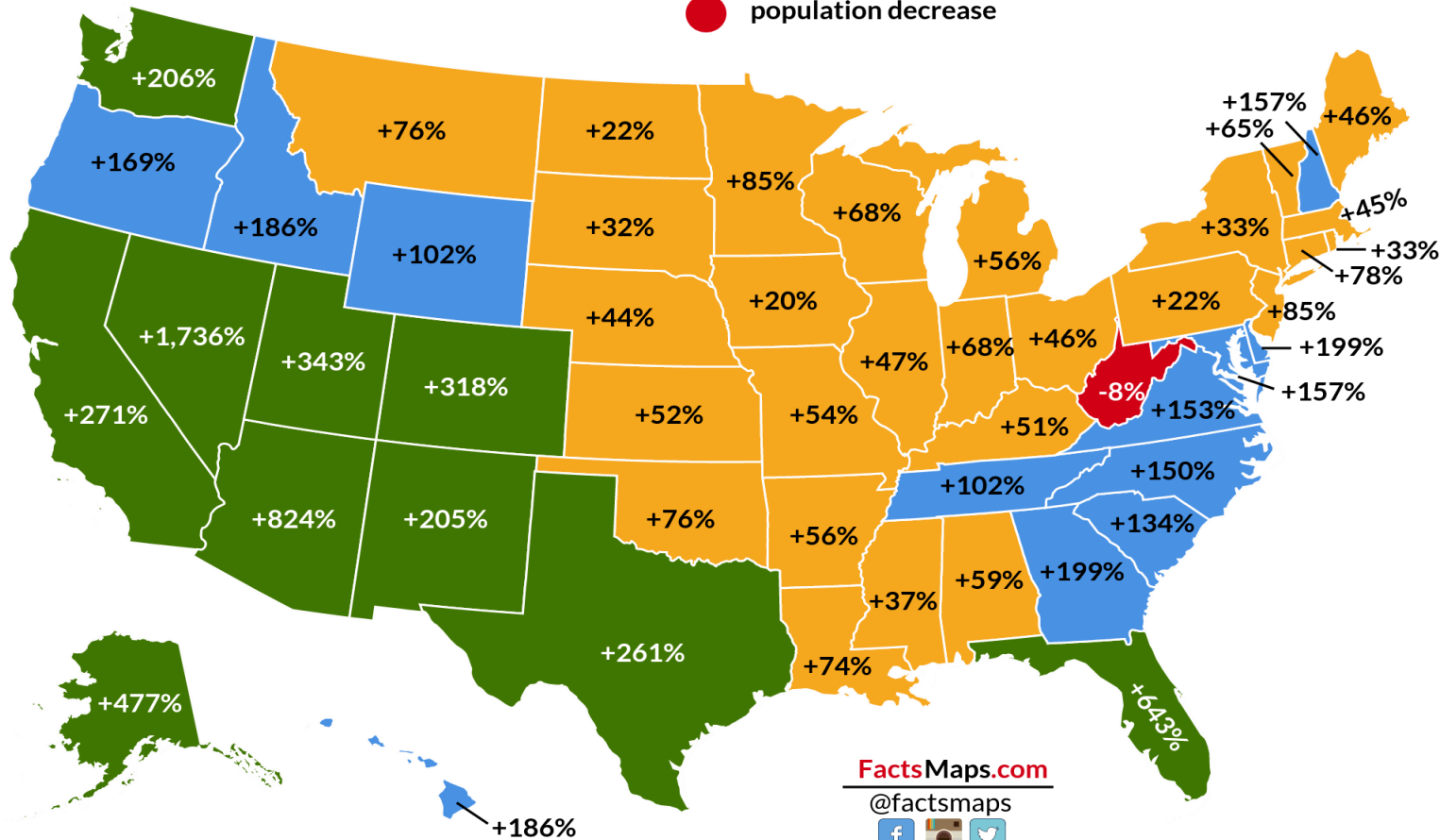
Percentage Change in U.S. Population

Fewer children- in 1960, 3.7 children, today 1.9



U.S. states by population growth rate 1950-2016

- population growth above 200%
- population growth between 100% and 199%
- population growth between 1% and 99%
- population decrease



- Nevada +1,736%
- Arizona +824%
- Florida +643%
- Alaska +477%
- Utah +343%
- Colorado +318%
- California +271%
- Texas +261%
- Washington +206%
- New Mexico +205%
- Delaware +199%
- Georgia +199%
- Hawaii +186%
- Idaho +186%
- Oregon +169%
- Maryland +157%
- Virginia +153%
- New Hampshire +150%
- North Carolina +150%
- South Carolina +134%
- Tennessee +102%
- Wyoming +102%
- Minnesota +85%
- New Jersey +85%
- Connecticut +78%
- Montana +76%
- Oklahoma +76%
- Louisiana +74%
- Indiana +68%
- Wisconsin +68%
- Vermont +65%
- Alabama +59%
- Arkansas +56%
- Michigan +56%
- Missouri +54%
- Kansas +52%
- Kentucky +51%
- Illinois +47%
- Maine +46%
- Ohio +46%
- Massachusetts +45%
- Nebraska +44%
- Mississippi +37%
- New York +33%
- Rhode Island +33%
- South Dakota +32%
- North Dakota +22%
- Pennsylvania +22%
- Iowa +20%
- West Virginia -8%

FactsMaps.com

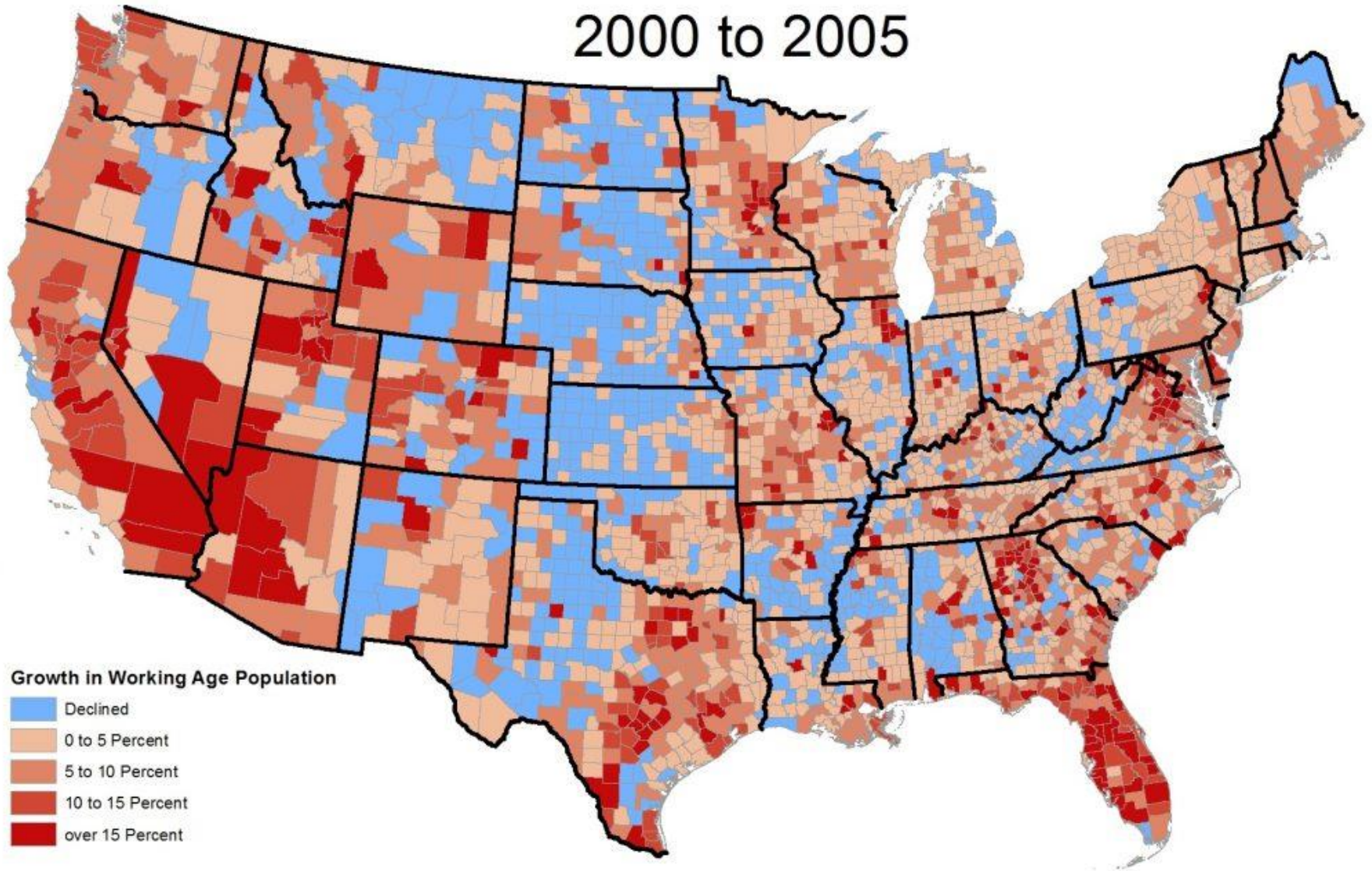
@factsmaps



Source: United States Census Bureau

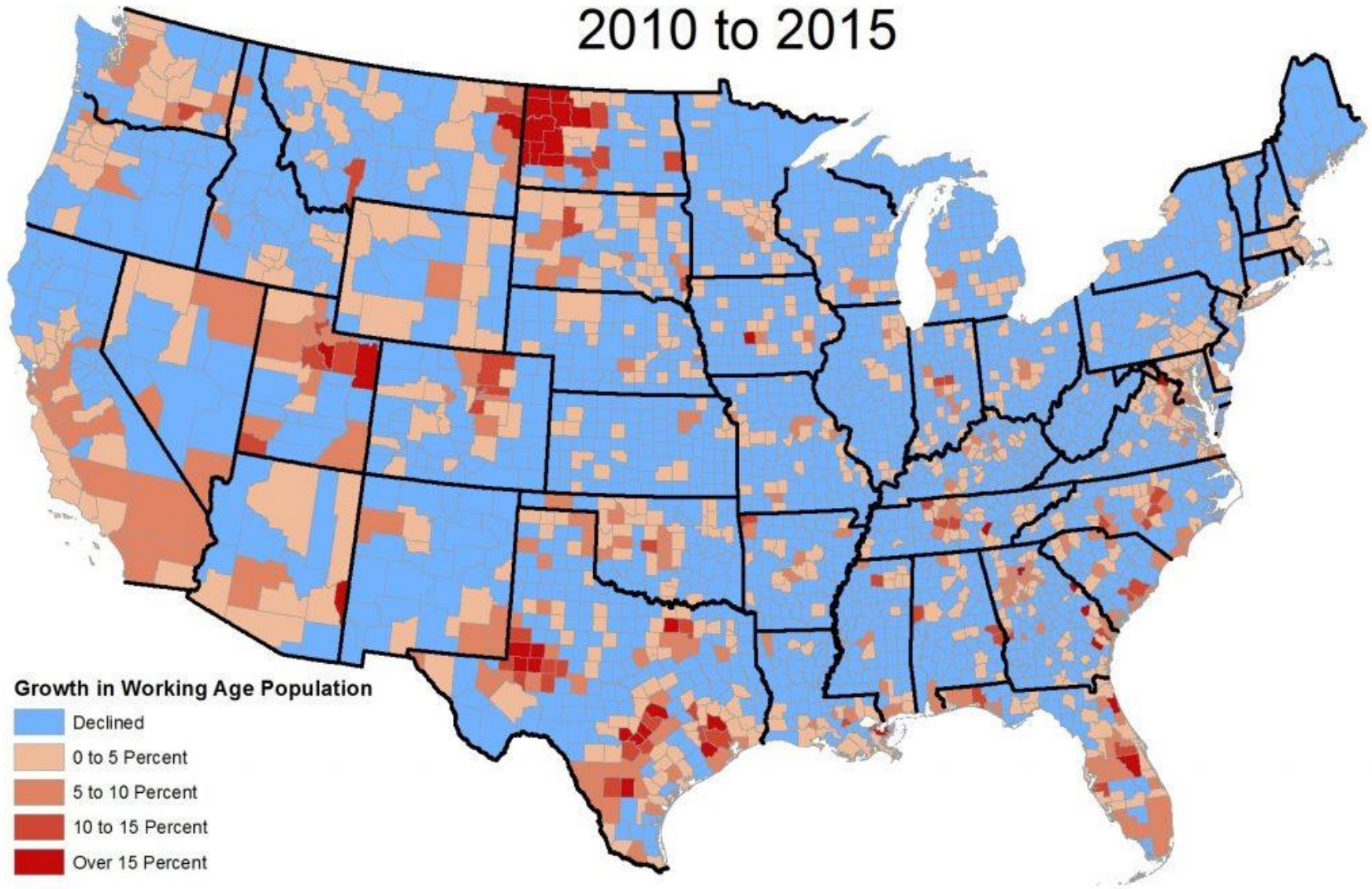
Strong Workforce Growth Across the Country

2000 to 2005



Workforce Growth Concentrates

2010 to 2015



Growth in Working Age Population



Where Have All The Men Gone?

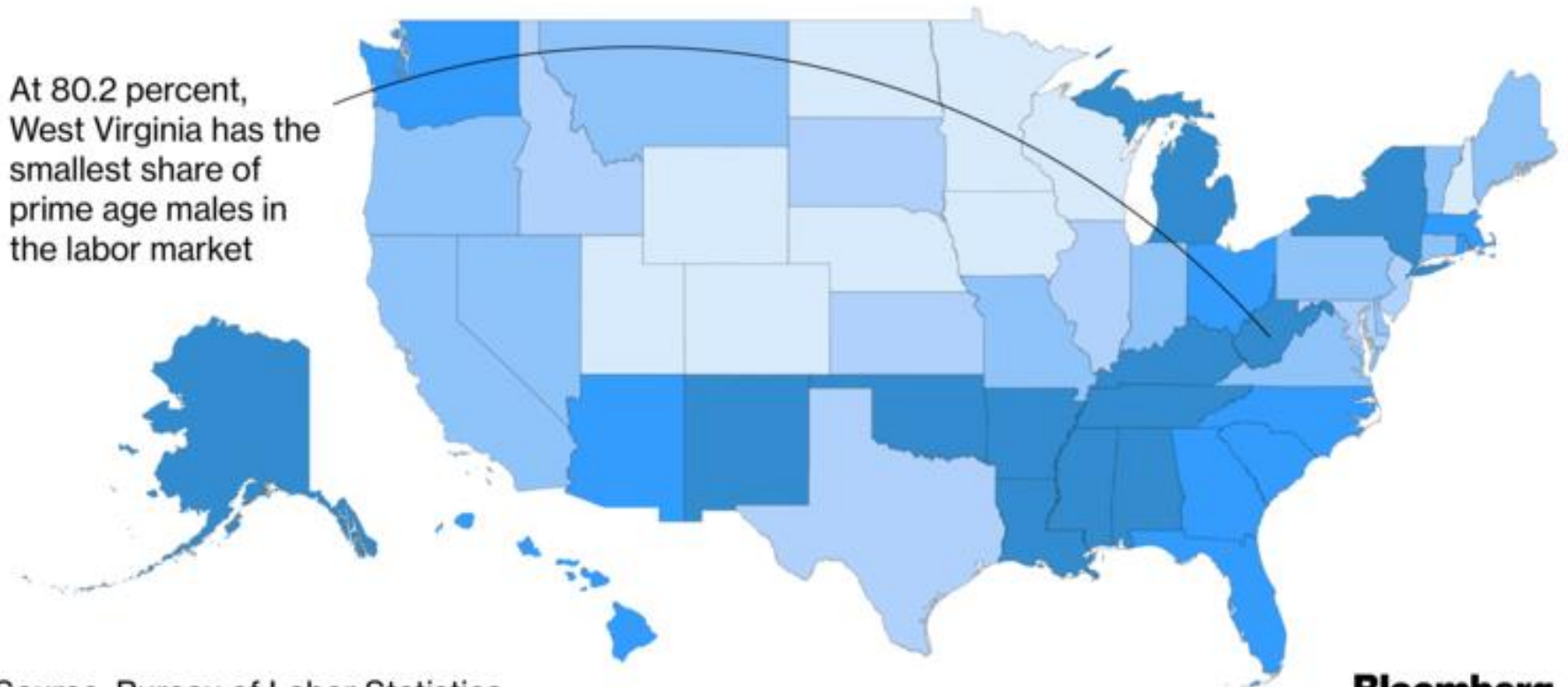
Prime-age male labor-force participation is lower in poorer, more rural states

80.2% 86.9% 88.5% 90.3% 91.8% or higher



2016 participation rate, males 25-54 years old

At 80.2 percent, West Virginia has the smallest share of prime age males in the labor market



Source: Bureau of Labor Statistics

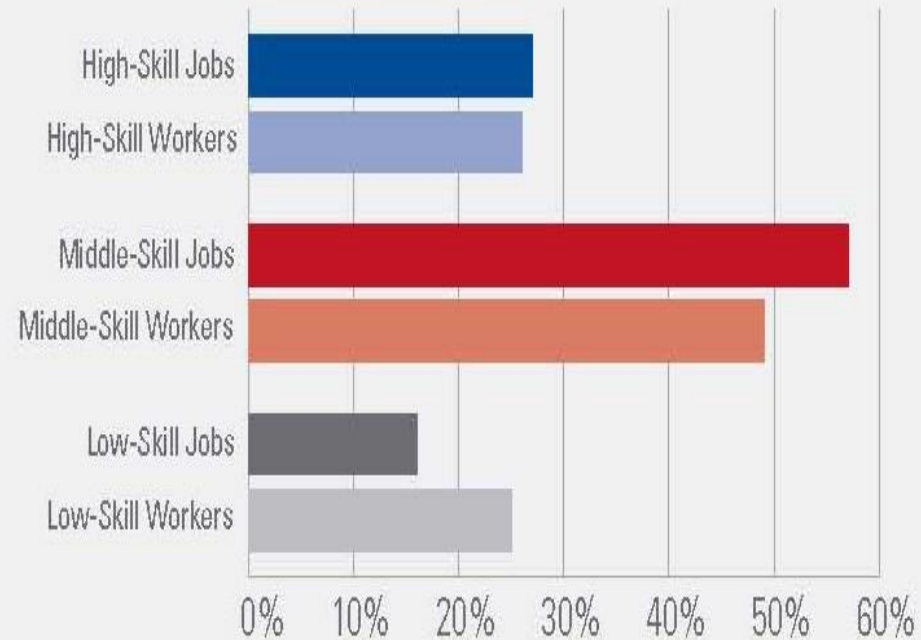
Bloomberg

Demand for middle-skills (57% of jobs) is strong

A Middle-Skill Gap

Middle-skill jobs account for 57 percent of West Virginia's labor market, but only 49 percent of the state's workers are trained to the middle-skill level.

Jobs and Workers by Skill Level, West Virginia, 2015



Source: NSC analysis of Bureau of Labor Statistics Occupational Employment Statistics by State, May 2015 and American Community Survey data, 2015.



A Workforce assessment with recommendations in December

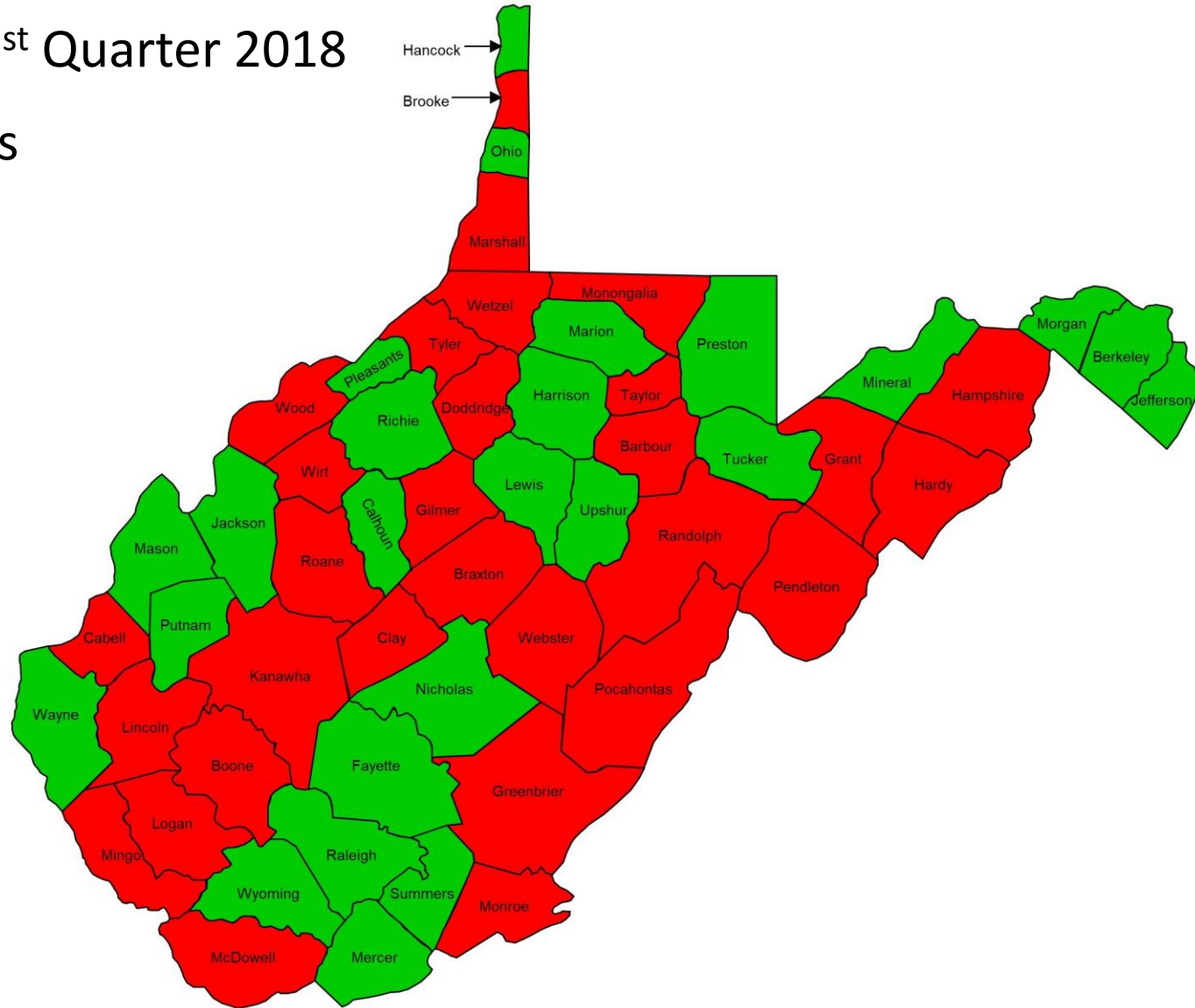
Manufacturing



Manufacturing Job Growth

1st Quarter 2017 – 1st Quarter 2018

-  Gaining Jobs
-  Losing Jobs



Measuring Competitiveness





Top Factors for Companies Considering New Investment

The cruel, cruel client filtering funnel- **and big data**

Biggest Moves 2017

Quality of Life from
10th to 4th

Proximity to Suppliers from
20th to 12th



West Virginia Rankings

Tax Foundation 2018

- Overall Rank #19
- Corporate Tax Rank #17
- Individual Income Tax Rank #25
- Sales Tax Rank #15
- Unemployment Insurance Rank #28
- Property Tax Rank #17

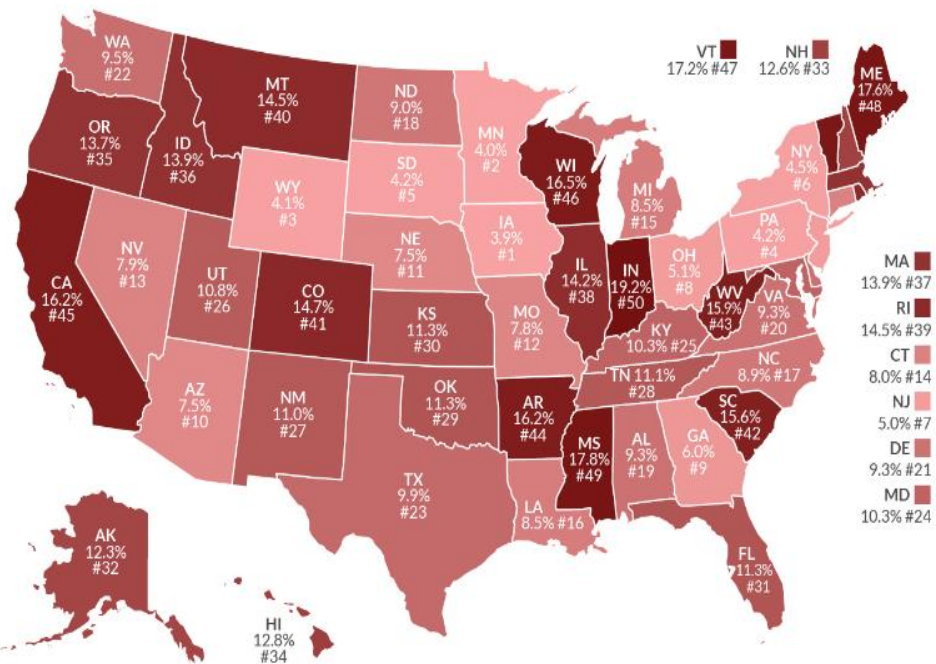
Cato Institute – Freedom in the 50 States 2018 rankings

- Fiscal Policy #31
- Regulatory Policy #42
- Personal Freedom #22

Manufacturing State Tax Rankings- #43 & #47

Location Matters: The State Tax Costs for Capital-Intensive Manufacturing Facilities

Total Effective State and Local Tax Rate on a Mature Capital-Intensive Manufacturing Facility, 2014



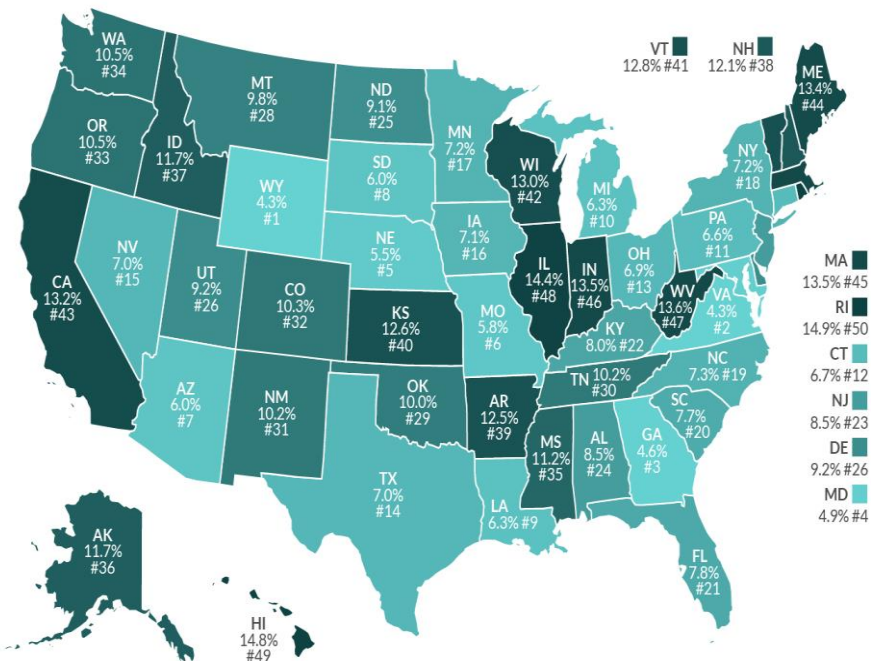
Map shows effective combined state and local tax rate for a hypothetical mature capital-intensive manufacturer located in a mid-sized city in each state. The model firm, which is at least ten years old, is assumed to have 200 positions, including management, administrative, installation and maintenance, production, transportation, and materials employees. We assume it has a capital investment of \$300 million, including a 250,000 square foot suburban industrial building owned by the firm. Revenue is assumed to be approximately \$200 million with a gross profit ratio of 25 percent, earnings before tax of 10 percent, and an equity ratio of 50 percent. We also assume that all property and payroll is located within the state, while sales are assumed to be distributed among all 50 states in proportion to the relative population of each state.

Source: Tax Foundation, *Location Matters* (August 2015)



Location Matters: The State Tax Costs for Labor-Intensive Manufacturing Facilities

Total Effective State and Local Tax Rate on a Mature Labor-Intensive Manufacturing Facility, 2014



Notes: Map shows effective combined state and local tax rate for a hypothetical mature labor-intensive manufacturer located in a mid-sized city in each state. The model firm, which is at least ten years old, is assumed to employ 300 people, chiefly in management, installation, maintenance, production, and assembly. We assume a capital investment of \$65 million, including a 250,000 square foot suburban industrial building owned by the business. Revenue is approximately \$174 million with a gross profit ratio of 20 percent and earnings before tax of 7 percent. The equity ratio is assumed to be 30 percent. We also assume that all property and payroll is located within the state, while sales are assumed to be distributed among all 50 states in proportion to the relative population of each state.

Source: Tax Foundation, *Location Matters* (August 2015)



Multifactor Competitive Index

5 Indexes

- Business Climate
 - Workforce
 - Infrastructure
 - Innovation
 - Economic Strength
- (52 metrics)

Workforce Index Metrics

- High School Graduation Rate for all students 2015-16
- Percentage of Population with Adult Obesity 2016 (this metric has not been updated as new data is not available)
- Persons age 18 to 24 not attending school, not working, and no degree beyond high school 2016
- Labor Force Participation Rate 2017
- Manufacturing Output Per Manufacturing Employee 2017
- Change in Manufacturing Output Per Manufacturing Employee 2010-2017
- Age 25-44 Population Growth 2012-2017
- Completed Tech & STEM Education Programs Per 1,000 Enrolled Students 2016
- Percent Change in Tech & STEM Education Program Completions 2010-2016
- Average 8th Grade Reading Score 2017
- Average 8th Grade Math Score 2017
- Veteran Unemployment Rate 2016
- Veteran % share of total population 2016
- Total number of sub-baccalaureate occupational credentials in manufacturing 2013
- Sub-baccalaureate occupational credentials in manufacturing as % of total credentials 2013

MANUFACTURING COMPETITIVENESS INDEX

BUSINESS CLIMATE	Manufacturing Industry Health Scorecard (Conexus Indiana) 2018	top marginal corporate tax rate 2018	Legal Climate Rankings (2017)	Air Quality - PM2.5 (2016)	Workers Comp insurance premium per \$100/payroll (2016)	State and Local Tax Costs for Capital-Intensive Manufacturing (2014)	State and Local Tax Costs for Labor-Intensive Manufacturing (2014)	Value of \$100 (2018)	Greenhouse Gas Emissions Per Capita (Metric Tons of CO2) 2014	AVERAGE RANKING	STATE RANK
South Dakota	19	1	1	3	19	4	7	6	26	9.6	1
Ohio	8	1	26	45	11	8	13	8	31	16.8	2
Wyoming	37	1	8	1	28	3	2	26	50	17.3	3
Michigan	1	16	22	36	17	15	9	22	25	18.1	4
Virginia	39	16	10	20	5	19	1	39	15	18.2	5
Arizona	19	10	25	46	13	10	7	25	19	19.3	6
Idaho	8	32	3	6	23	36	36	21	10	19.4	7
North Carolina	16	7	33	25	29	17	19	17	13	19.6	8
Nebraska	32	34	7	15	19	10	5	15	42	19.9	9
Iowa	1	50	13	25	27	1	16	10	39	20.2	10
North Dakota	44	8	17	2	1	18	25	18	49	20.2	10
Minnesota	14	48	4	20	29	2	17	30	24	20.9	12
Oregon	8	33	21	13	7	35	33	36	3	21.0	13
Utah	19	11	12	30	6	26	26	28	34	21.3	14
South Carolina	1	11	34	25	33	42	20	12	22	22.2	15
Kansas	6	30	18	18	10	29	40	15	35	22.3	16
Nevada	46	1	37	43	9	13	14	29	14	22.9	17
Kentucky	1	16	42	38	15	24	22	5	44	23.0	18
Tennessee	8	24	30	32	21	28	30	11	23	23.0	19
Georgia	37	16	40	41	24	9	3	19	20	23.2	20
Texas	19	1	39	39	11	23	14	27	36	23.2	20
Arkansas	16	24	36	16	3	44	39	3	32	23.7	22
Missouri	19	21	49	33	31	12	6	9	33	23.7	22
Washington	19	1	28	25	36	22	33	42	9	23.9	24
Massachusetts	19	36	14	10	8	36	45	44	4	24.0	25
New Hampshire	14	38	5	6	34	33	38	43	11	24.7	26
Alabama	8	24	43	39	26	19	23	2	40	24.9	27
Mississippi	6	11	44	20	22	49	35	1	36	24.9	27
Florida	39	14	46	13	18	29	21	35	11	25.1	29
Colorado	19	9	35	12	16	41	32	40	27	25.7	30
Maryland	39	39	19	41	13	24	4	46	6	25.7	30
Connecticut	19	39	16	35	46	14	12	45	7	25.9	32
Vermont	19	41	2	3	37	47	41	38	5	25.9	32
Indiana	1	21	15	46	2	50	45	12	43	26.1	34
New York	46	24	29	16	48	6	17	49	1	26.2	35
New Mexico	46	15	32	5	31	27	30	23	38	27.4	36
Louisiana	19	36	50	25	41	15	9	14	46	28.3	37
Oklahoma	32	16	31	30	43	29	29	7	41	28.7	38
West Virginia	19	24	45	24	4	43	47	4	48	28.7	38
Wisconsin	8	35	20	19	39	46	42	20	29	28.7	38
Pennsylvania	32	49	38	48	24	4	11	31	30	29.7	41
Maine	32	44	9	11	37	48	44	31	17	30.3	42
Delaware	39	42	11	43	45	19	26	37	21	31.4	43
Hawaii	46	23	23	6	34	34	49	50	18	31.4	43
Montana	44	29	27	9	40	39	28	24	45	31.7	45
Rhode Island	39	30	24	20	42	39	50	34	8	31.8	46
New Jersey	32	45	41	34	49	7	23	47	16	32.7	47
Alaska	46	46	6	36	46	32	36	41	47	37.3	48
California	19	43	47	50	50	44	43	48	2	38.4	49
Illinois	16	47	48	49	43	38	48	33	28	38.9	50

MANUFACTURING COMPETITIVENESS INDEX

INFRASTRUCTURE	Total State Spending on Transportation Per Capita (FY2017)	Average Retail Electricity Price for Industrial Customers, Cents Per KWh (May 2018)	percent of structurally deficient bridges (2017)	% growth in Freight Shipments tons (thousands) (2007-2013)	% growth in Freight Shipments \$\$ (millions) (2007-2013)	Miles of Interstate highways per 10,000 people (2016)	Average Retail Natural Gas Price for Industrial Customers, \$ per thousand cubic feet (May 2018)	State Transportation Expenditures as % of Total Expenditures (FY2017)	Percentage of Population Without 25 Mbps/3 Mbps Broadband Access - All Areas (2016)	AVERAGE RANKING	STATE RANK
North Dakota	2	40	42	1	1	5	1	4	22	13.1	
Nevada	33	6	1	5	16	20	28	16	10	15.0	
Texas	35	8	1	12	9	38	2	16	19	15.6	
Utah	28	17	5	32	12	9	23	13	9	16.4	
Idaho	15	26	27	16	10	8	16	5	32	17.2	
Minnesota	8	38	11	13	19	31	6	11	20	17.4	
South Dakota	12	35	47	2	4	4	18	2	33	17.4	
Vermont	6	43	10	9	39	6	12	13	37	19.4	
Oregon	22	16	12	3	11	24	21	44	24	19.7	
Iowa	20	12	49	8	16	14	15	27	27	20.9	1
Kansas	32	37	25	9	7	11	13	25	30	21.0	1
Washington	36	1	9	19	6	40	41	36	3	21.2	1
Montana	16	2	31	41	12	3	27	15	48	21.7	1
New Mexico	37	9	20	29	3	7	4	49	44	22.4	1
Virginia	10	24	16	39	28	35	22	6	25	22.8	1
Nebraska	28	32	45	6	15	14	10	27	31	23.1	1
Maryland	7	39	13	23	30	44	44	7	7	23.8	1
Connecticut	3	44	23	13	45	41	40	9	1	24.3	1
Illinois	26	19	26	20	43	28	24	18	15	24.3	1
Kentucky	21	9	23	47	14	23	11	34	38	24.4	2
Arizona	31	25	4	6	27	29	36	27	39	24.9	2
Oklahoma	39	3	42	4	5	17	33	37	49	25.4	2
Pennsylvania	13	21	46	27	21	33	45	12	13	25.7	2
Florida	25	34	3	27	48	45	38	3	11	26.0	2
North Carolina	24	13	34	34	36	37	31	8	18	26.1	2
New Jersey	9	42	29	32	31	48	34	10	2	26.3	2
Wyoming	30	26	32	48	2	1	7	46	46	26.4	2
Maine	18	41	41	17	23	12	39	19	29	26.6	2
Louisiana	47	4	44	23	8	21	5	49	40	26.8	2
South Carolina	34	14	32	31	37	27	14	22	33	27.1	3
West Virginia	14	22	48	50	25	10	2	33	43	27.4	3
Colorado	43	30	13	39	20	26	25	41	13	27.8	3
Tennessee	50	11	7	35	37	25	20	42	23	27.8	3
Indiana	45	28	21	11	21	22	35	32	35	28.1	3
Mississippi	19	15	39	38	29	13	19	31	50	28.1	3
Delaware	4	29	6	46	44	49	48	23	8	28.6	3
Alaska	1	49	35	49	50	2	26	1	45	28.7	3
Georgia	44	7	7	42	46	39	17	31	25	28.7	3
Alabama	48	18	21	30	33	19	8	42	42	29.0	3
Arkansas	41	5	16	25	32	16	36	48	47	29.6	4
Michigan	38	31	35	15	24	36	32	27	28	29.6	4
Wisconsin	27	36	27	22	40	32	9	40	36	29.9	4
New York	23	20	35	25	41	42	43	37	5	30.1	4
California	42	45	19	18	18	47	29	45	15	30.9	4
Massachusetts	10	47	30	36	42	43	46	24	6	31.6	4
Hawaii	5	50	15	45	49	50	50	20	12	32.9	4
Missouri	46	33	40	43	26	18	30	25	41	33.6	4
New Hampshire	40	46	38	20	46	29	47	21	17	33.8	4
Ohio	49	23	18	36	35	34	42	47	21	33.9	4
Rhode Island	17	48	50	44	33	46	49	39	4	36.7	5

MANUFACTURING COMPETITIVENESS INDEX

INNOVATION	Technology Licenses and Options Executed from Universities (2016)	Patents Issued (2010-2017)	Total Technology Industry Employment Growth (2012-2017)	Total R&D % of GDP (2015)	Business Performed R&D - % of Private Industry Output (2015)	Venture Capital Funding Per \$1 Million of GDP (2016)	Start-Up Firms per 1,000 Firms (2016)	AVERAGE RANKING	STATE RANK
	California	1	1	14	4	2	1	6	4.1
Washington	6	5	2	5	4	5	12	5.6	2
Massachusetts	4	4	10	2	1	2	28	7.3	3
Oregon	10	17	9	10	7	17	14	12.0	4
New York	2	3	12	29	26	4	10	12.3	5
Utah	32	23	3	12	11	3	4	12.6	6
North Carolina	8	13	4	17	16	15	18	13.0	7
Michigan	11	7	7	6	5	28	33	13.9	8
Florida	3	10	5	34	32	20	2	15.1	9
Arizona	17	15	15	17	14	21	8	15.3	10
Colorado	22	14	20	20	21	6	7	15.7	11
Minnesota	9	6	23	15	12	12	34	15.9	12
Missouri	19	24	15	15	12	26	2	16.1	13
Texas	7	2	31	30	26	16	5	16.7	14
Georgia	14	16	8	31	28	14	11	17.4	15
Maryland	12	22	27	3	21	11	26	17.4	15
Illinois	18	8	25	20	17	10	25	17.6	17
New Hampshire	16	30	6	11	8	7	48	18.0	18
New Jersey	25	9	35	12	9	19	17	18.0	18
Pennsylvania	5	11	29	20	19	13	42	19.9	20
Idaho	34	26	13	9	10	35	13	20.0	21
Connecticut	40	18	34	8	6	8	45	22.7	22
Virginia	20	20	36	20	28	22	19	23.6	23
Indiana	13	21	26	19	14	34	41	24.0	24
Delaware	44	37	42	6	3	24	14	24.3	25
Ohio	14	12	23	25	19	29	48	24.3	25
Tennessee	23	25	18	31	35	23	24	25.6	27
Wisconsin	26	19	21	25	17	32	44	26.3	28
New Mexico	29	36	38	1	35	30	30	28.4	29
Nevada	46	31	1	50	44	31	1	29.1	30
South Carolina	36	29	11	34	34	41	20	29.3	31
Kansas	27	28	41	28	21	33	31	29.9	32
Iowa	21	27	30	27	21	42	49	31.0	33
Rhode Island	43	39	37	14	25	18	43	31.3	34
Alabama	28	35	32	20	30	45	36	32.3	35
Maine	not reported	41	17	39	35	25	37	32.3	35
Montana	35	44	33	36	35	27	27	33.9	37
Vermont	46	34	40	33	30	9	47	34.1	38
Kentucky	36	32	45	36	32	43	16	34.3	39
Nebraska	33	40	22	36	35	36	40	34.6	40
North Dakota	24	46	47	41	40	47	9	36.3	41
Oklahoma	38	33	44	44	40	46	21	38.0	42
Arkansas	31	43	43	48	44	39	29	39.6	43
Hawaii	41	45	28	42	47	38	38	39.9	44
South Dakota	42	48	19	47	43	44	39	40.3	45
Wyoming	not reported	49	50	45	40	40	22	41.0	46
Mississippi	39	42	39	39	47	49	35	41.4	47
Louisiana	30	38	46	49	47	50	31	41.6	48
Alaska	48	50	48	46	50	37	23	43.1	49
West Virginia	45	47	49	43	44	48	50	46.6	50

OVERALL STATE RANKINGS

		BUSINESS CLIMATE	WORKFORCE	INFRA-STRUCTURE	INNOVATION	ECONOMIC STRENGTH
1	Minnesota	12	8	6	12	10
2	Texas	20T	10	3	14	7
3	Utah	14	11	4	6	21T
4	Washington	24	4	12	2	20
5	Iowa	10T	14	10	33	8T
6	North Carolina	8	23	25	7	14
7	Oregon	13	36	9	4	23
8	Idaho	7	37	5	21	26
9	Virginia	5	9	15	23	46
10	North Dakota	10T	5	1	41	42
11	Michigan	4	47	40T	8	2
12	Kansas	16	22	11	32	21T
13T	Arizona	6	31T	21	10	35T
13T	Colorado	30T	3	32T	11	27
15	Massachusetts	25	7	45	3	25
16	South Dakota	1	16	6	45	38
17T	Nebraska	9	13	16	40	29
17T	Pennsylvania	41	15	23	20	8T
19T	Maryland	30T	6	17	15T	41
19T	Ohio	2	28T	49	25T	5
21	Indiana	34	20	34T	24	1
22	Tennessee	19	34	32T	27	4
23	Kentucky	18	27	20	39	15
24	Florida	29	40	24	9	18
25T	Georgia	20T	38	37T	15T	11
25T	New Hampshire	26	12	48	18T	17
27	Wyoming	3	1	27	46	45
28	South Carolina	15	42	30	31	6
29	Illinois	50	24	18T	17	16
30	Nevada	17	45	17	30	32
31	Montana	45	2	13	37	30
32	California	49	33	44	1	3
33	Connecticut	32T	18	18T	22	47
34	Missouri	22T	19	47	13	40
35T	New Jersey	47	25	26	18T	28
35T	Wisconsin	38T	17	42	28	19
37T	Alabama	27T	44	39	35T	12
37T	New York	35	43	43	5	31
39	Vermont	32T	31T	8	38	49
40	Arkansas	22T	46	40T	43	13
41	Oklahoma	38T	21	22	42	43
42	Delaware	43T	39	36	25T	33
43	New Mexico	36	48	14	29	50
44	Louisiana	37	41	29	48	24
45	Maine	42	30	28	35T	48
46	Mississippi	27T	50	34T	47	35T
47	Rhode Island	46	28T	50	34	37
48T	Alaska	48	35	37T	49	34
48T	Hawaii	43T	26	46	44	44
50	West Virginia	38T	49	31	50	39

top 15

bottom 15

Multifactor Competitive Index

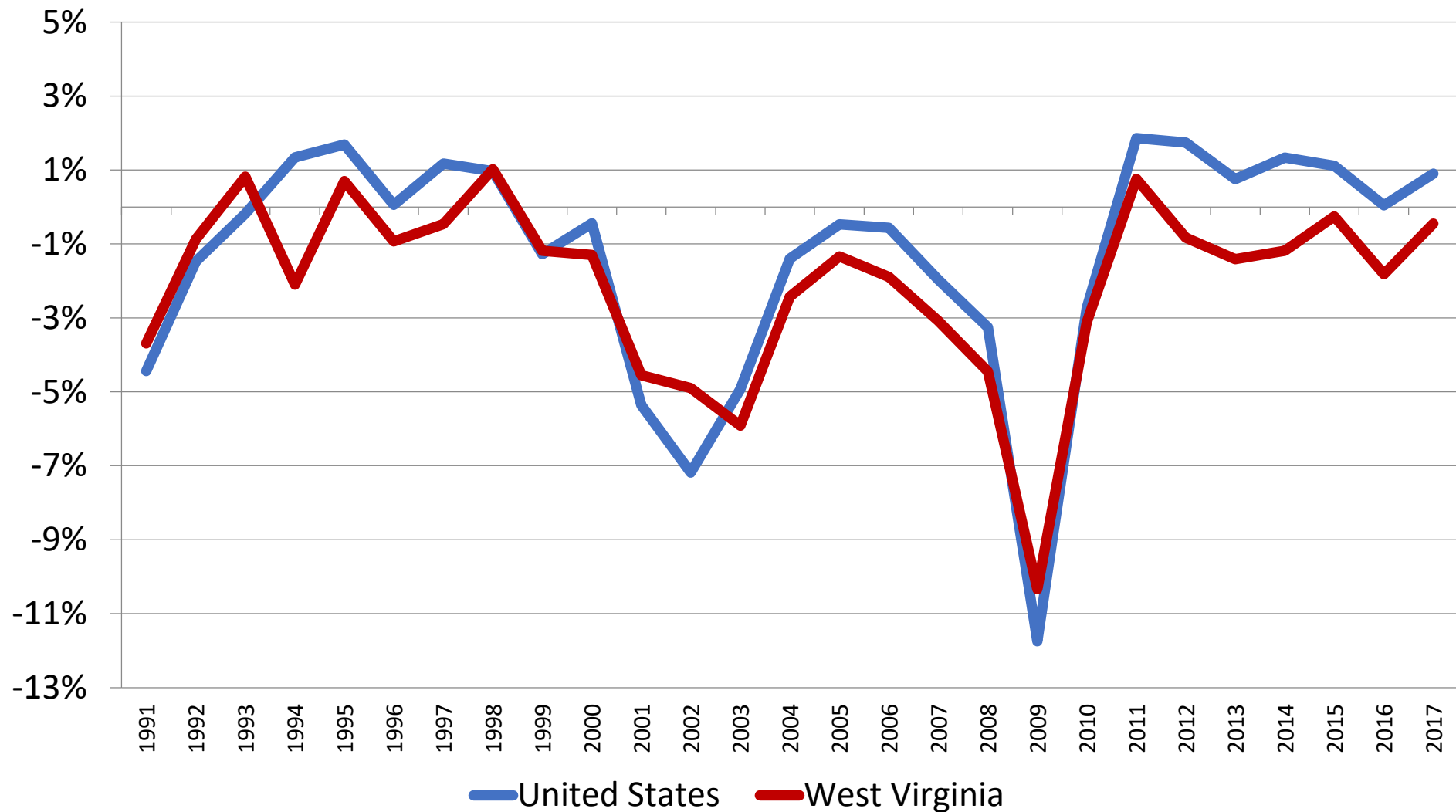
5 Indexes

- ❑ Business Climate
- ❑ Workforce
- ❑ Infrastructure
- ❑ Innovation
- ❑ Economic Strength
(52 metrics)

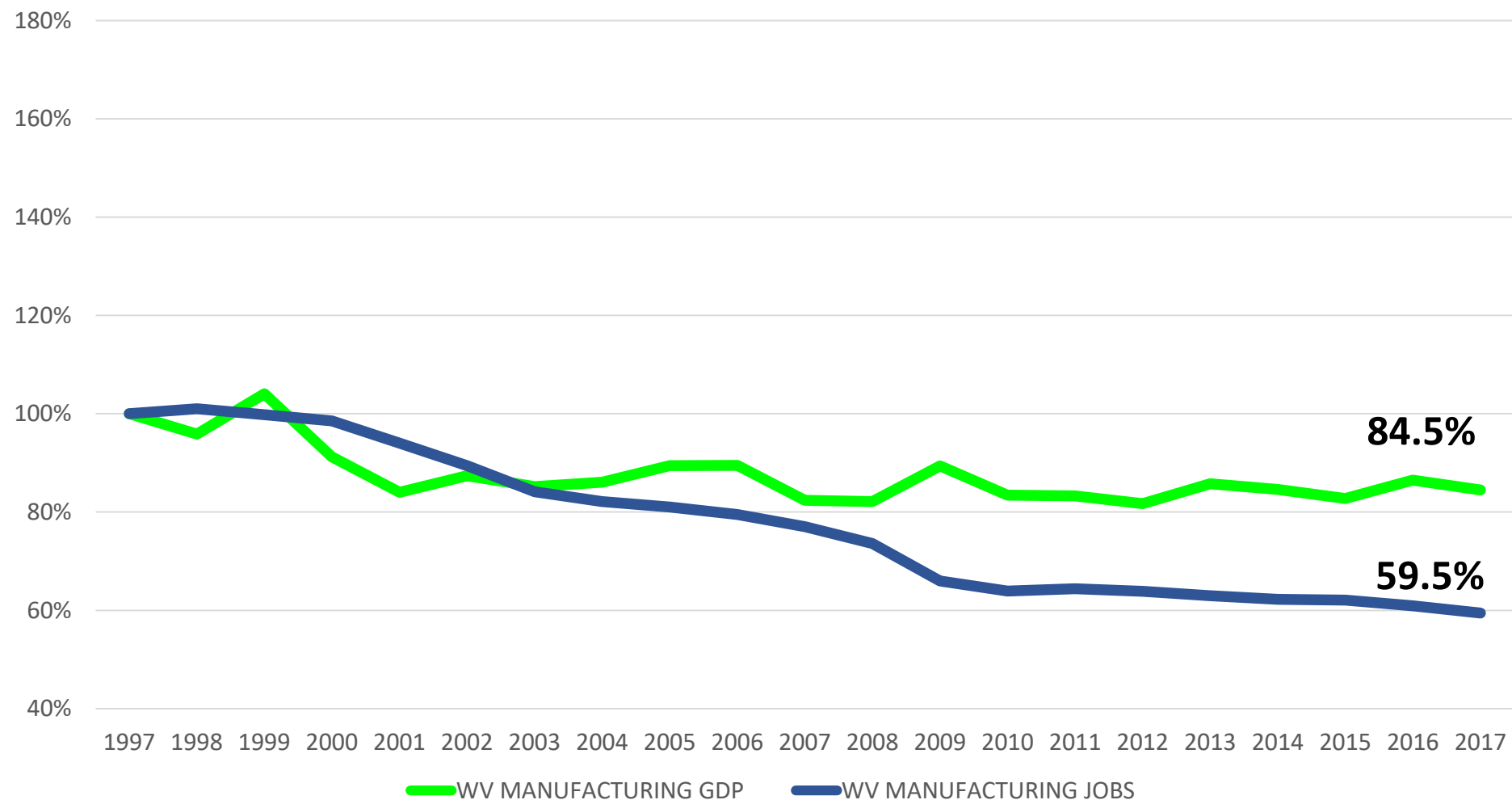
Results	2018	2017
Business Climate	38 th ↑	46 th
Workforce	49 th ↔	49 th
Infrastructure	31 st ↑	36 th
Innovation	50 th ↔	50 th
Econ Strength	39 th ↑	40 th
Overall Rank	50 th ↔	50 th

Improvements in top marginal corporate tax rate, high school graduation rates, veteran's share of population, freight shipment value, GDP growth, income per capita, exports per capita.

Percentage Annual Manufacturing Job Change 1990-2017



West Virginia Manufacturing Jobs and Manufacturing GDP Growth 1997 – 2017 (normalized as percent of levels in 1997)



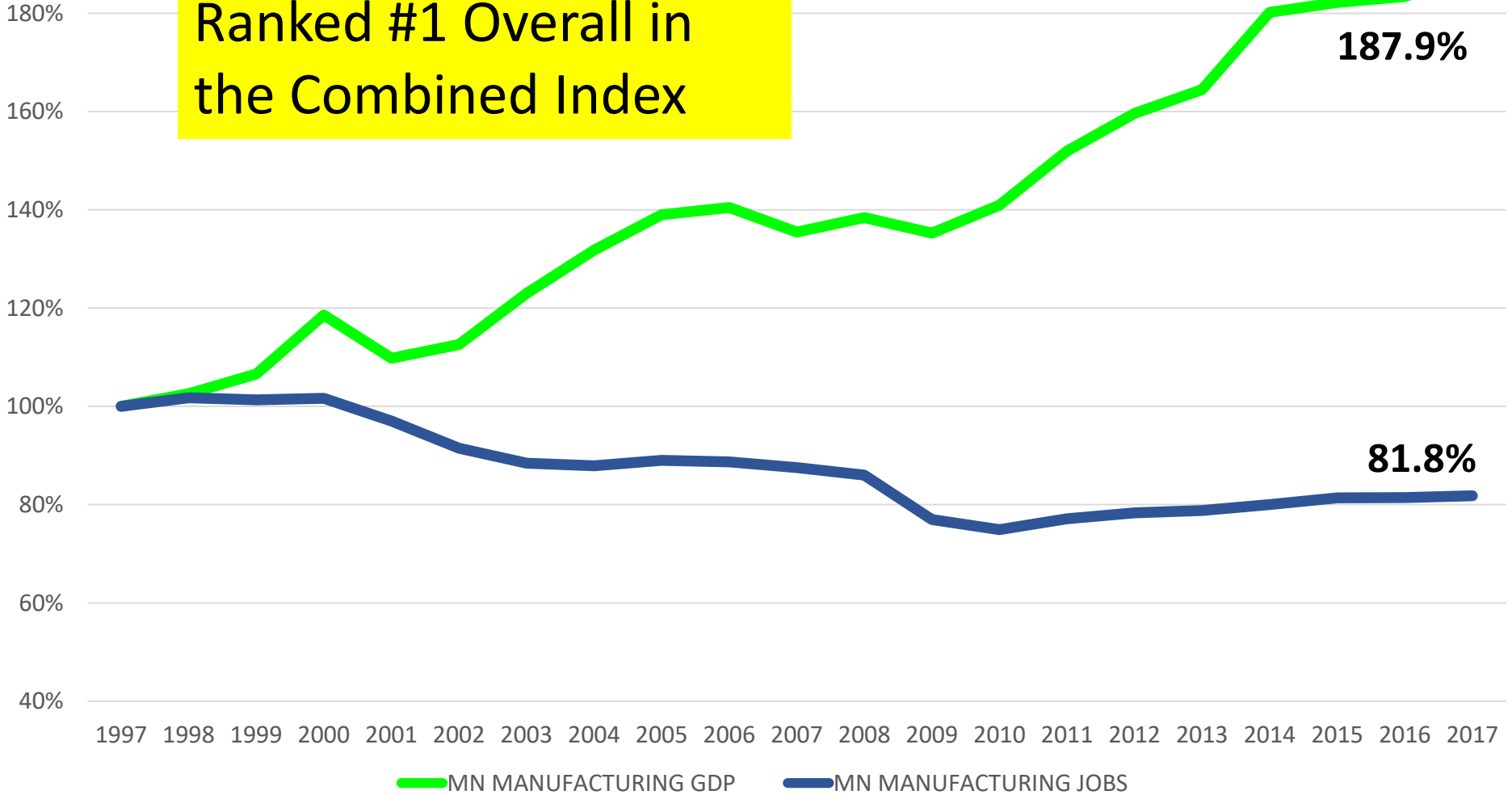
Minnesota Manufacturing Jobs and Manufacturing GDP Growth

1997 – 2017 (normalized as percent of levels in 1997)

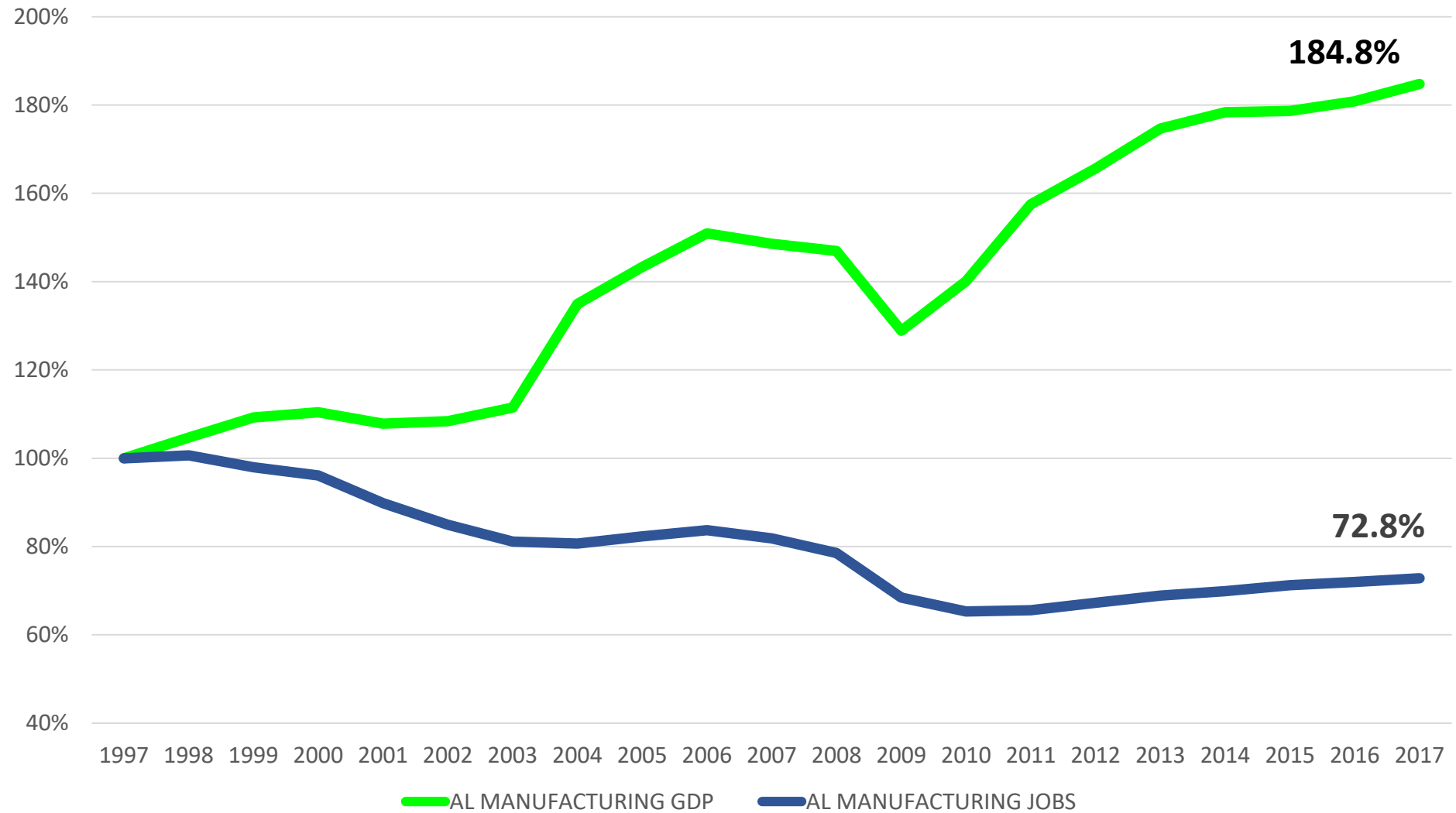
Ranked #1 Overall in
the Combined Index

187.9%

81.8%



Alabama Manufacturing Jobs and Manufacturing GDP Growth 1997 – 2017 (normalized as percent of levels in 1997)



DEEP DIVE

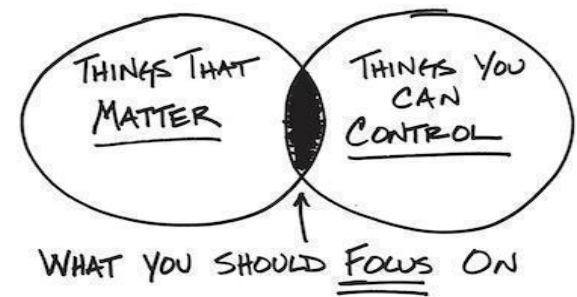
Embrace the complexity

WV Advanced Industry Job Growth 2007 - 2017

ADVANCED INDUSTRY	2007 Jobs	2017 Jobs	2007 - 2017 Change	2007 - 2017 % Change
Architectural, Engineering, and Related Services	5,089	4,306	(783)	(15.4%)
Computer Systems Design and Related Services	2,546	4,096	1,550	60.9%
Electric Power Generation, Transmission & Distribution	4,751	3,963	(788)	(16.6%)
Management, Scientific & Technical Consulting Services	2,342	3,249	907	38.7%
Pharmaceutical and Medicine Manufacturing	2,077	3,233	1,156	55.7%
Motor Vehicle Parts Manufacturing	1,758	3,210	1,452	82.6%
Wired and Wireless Telecommunications Carriers	3,800	2,784	(1,016)	(26.7%)
Resin, Synthetic Rubber, and Artificial and Synthetic Fibers and Filaments Manufacturing	2,719	2,473	(246)	(9.0%)
Basic Chemical Manufacturing	3,875	2,424	(1,451)	(37.4%)
Oil and Gas Extraction	2,442	2,343	(99)	(4.1%)
Aerospace Product and Parts Manufacturing	2,694	2,093	(601)	(22.3%)
Iron and Steel Mills and Ferroalloy Manufacturing	2,317	1,859	(458)	(19.8%)
Alumina and Aluminum Production and Processing	2,272	1,435	(837)	(36.8%)
Scientific Research and Development Services	1,385	1,282	(103)	(7.4%)
Clay Product and Refractory Manufacturing	1,174	1,026	(148)	(12.6%)
Medical Equipment and Supplies Manufacturing	937	913	(24)	(2.6%)
Data Processing, Hosting, and Related Services	847	858	11	1.3%
Agriculture, Construction, & Mining Machinery Mfg	960	796	(164)	(17.1%)
Navigational, Measuring, Electromedical, & Control Instruments Manufacturing	1,004	783	(221)	(22.0%)
Medical and Diagnostic Laboratories	683	769	86	12.6%

Recommendations from 2017 Call to Action

- **Develop a 5-year strategy to improve WV manufacturing competitiveness.**
- **Expand cluster strategies-including supply chain analysis for automotive, aerospace and chemical manufacturing**
- **Improvements to the state's manufacturing business climate be a top priority**
- **A more demand-driven approach to education and workforce development**
- **Research the state's technology sector and create innovation recommendations**
- **Prioritize high-speed broadband**
- **Developing a public dashboard to measure progress.**



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*" Leadership and learning are indispensable to each other."
John F. Kennedy*

