

# Building the Future

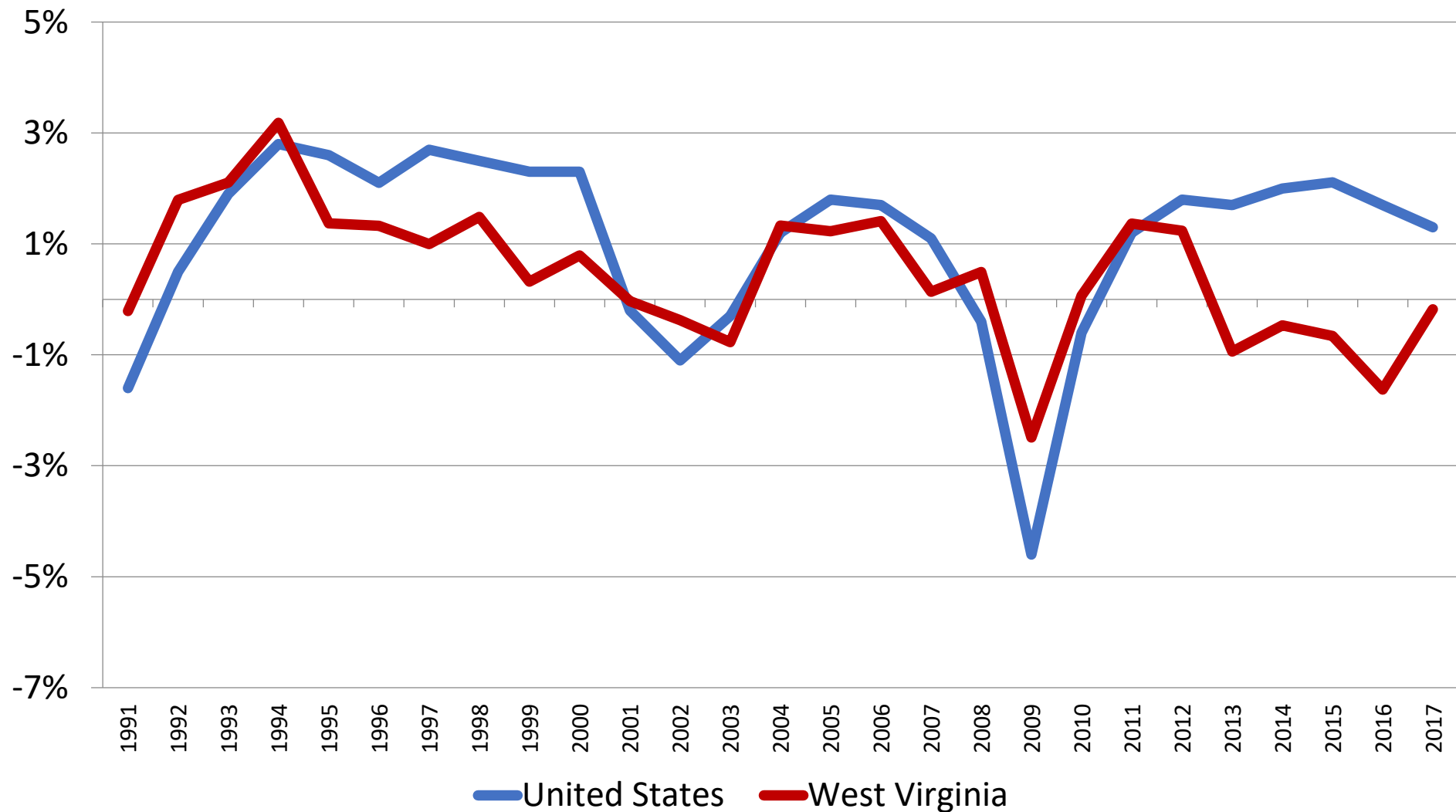
## Developing A Strong Workforce Pipeline



### TO DO LIST

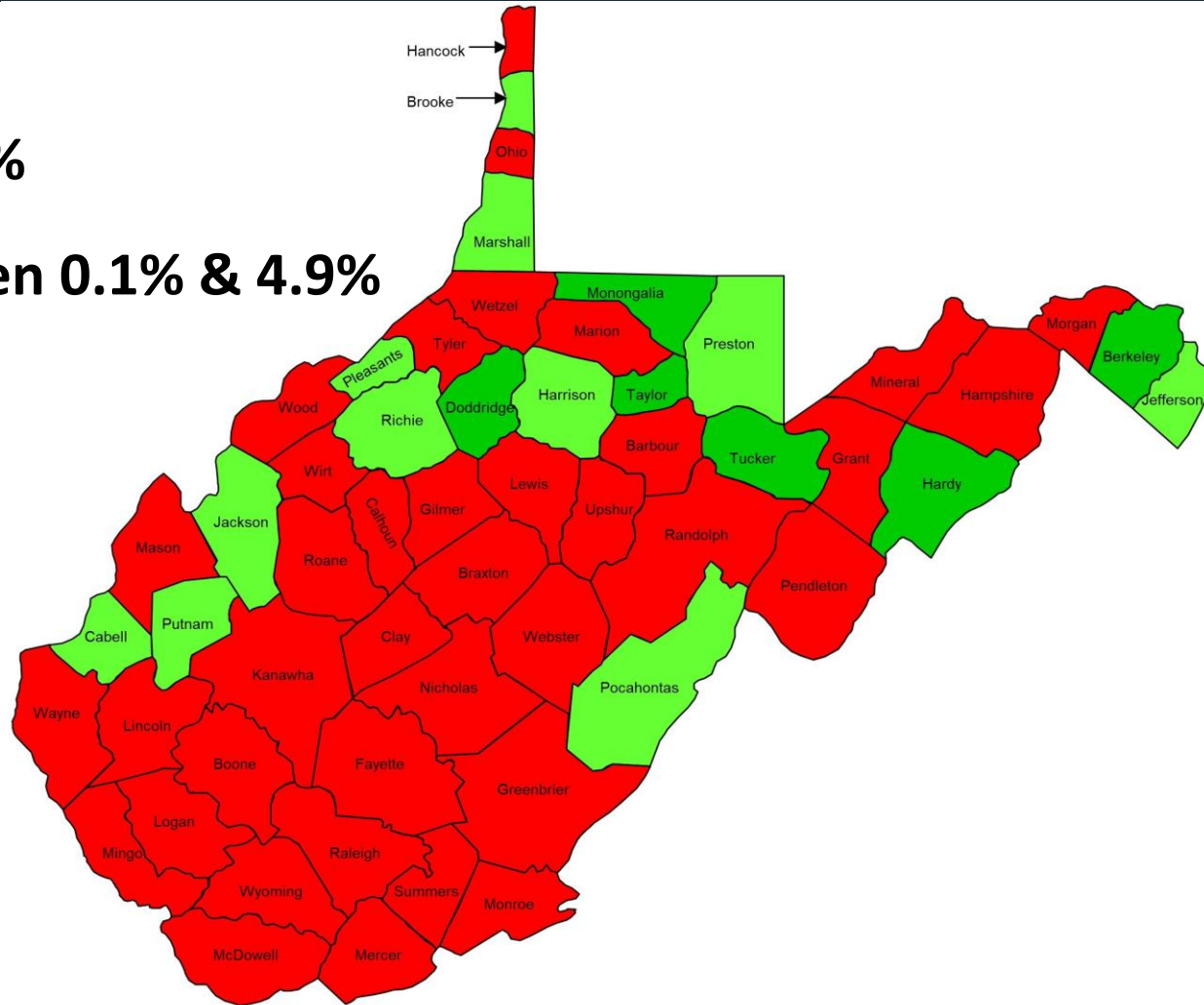
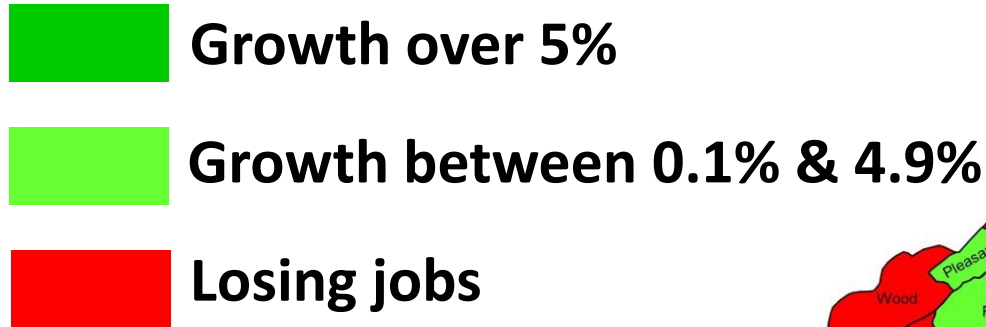
PRIORITY	DUE DATE	WHAT	WHO	IN PROGRESS	DONE
✓		Engage the disconnected			
✓		Increase workforce participation			
✓		Expand work-based learning			
✓		Attract workers to West Virginia			
✓		Increase apprenticeships			
✓		Reskill existing adult workers			
✓		Raise career awareness			
✓		Strengthen sector strategies			
✓		Better use data			
✓		Align stakeholders			
✓		Measure progress			
✓		Lead			

# Percentage Annual Job Change 1990-2017

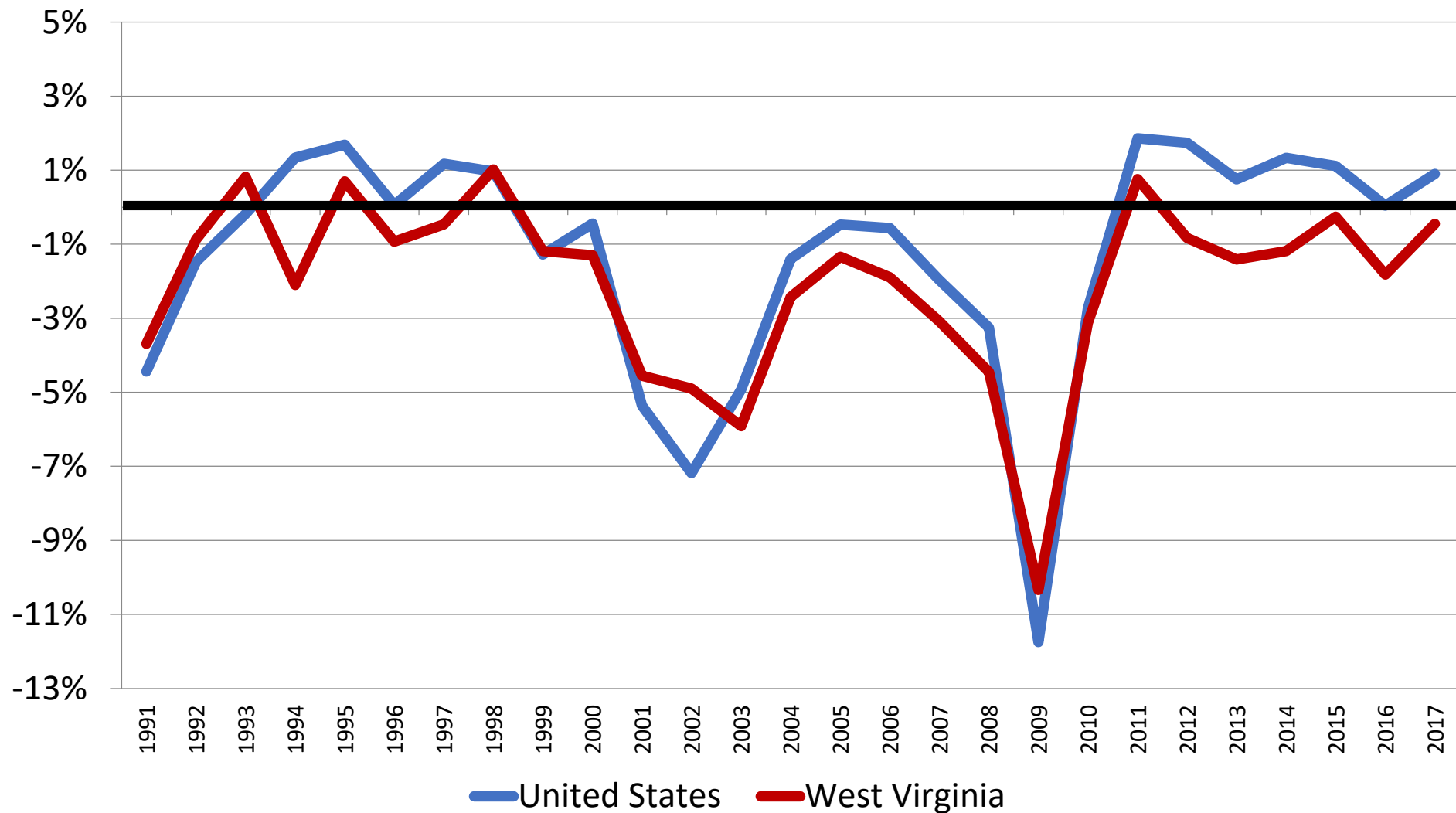


# 5 Year Job Growth 2012-2017

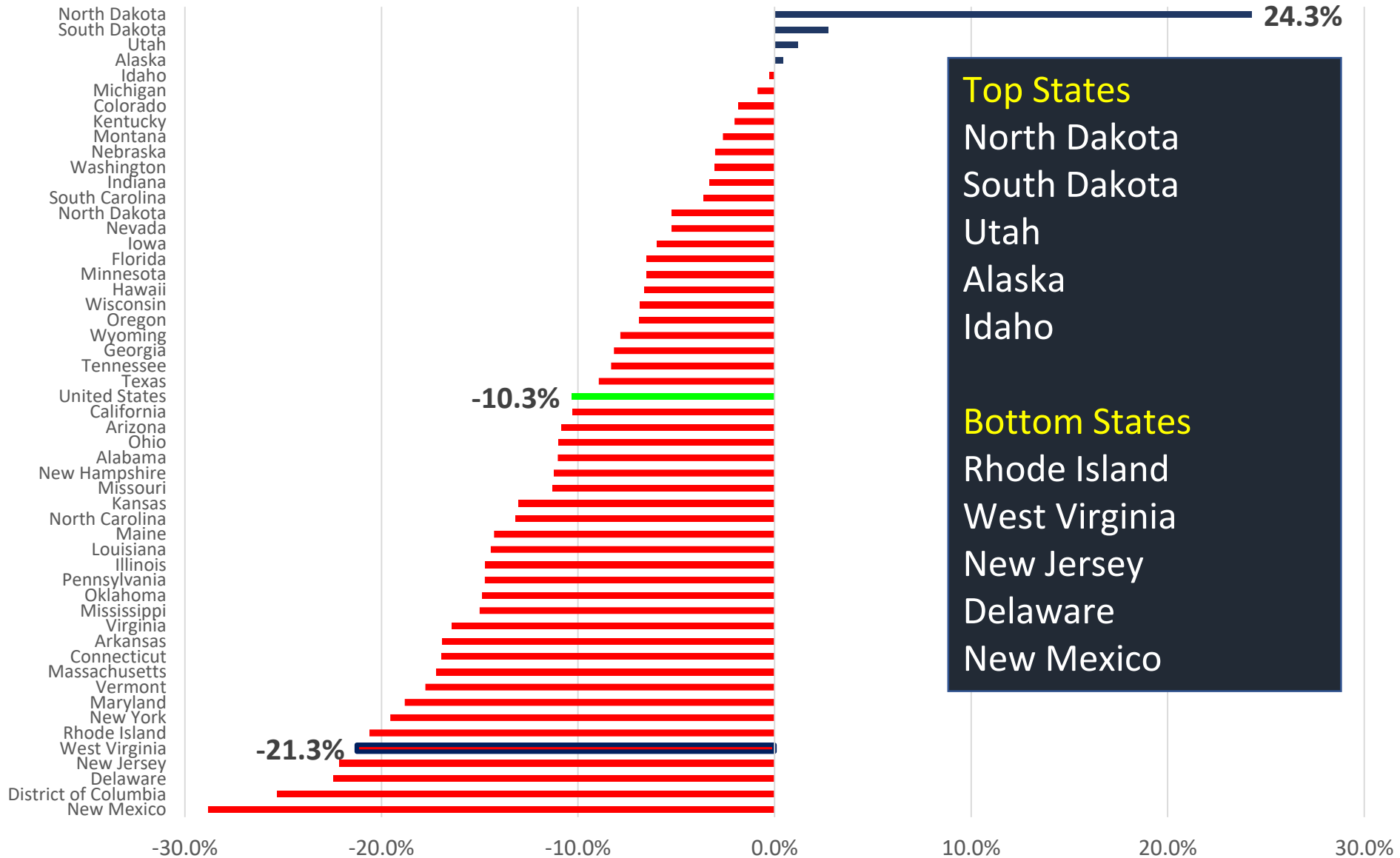
## West Virginia Average -3.8%



# Percentage Annual Manufacturing Job Change 1990-2017



# % Change in Manufacturing Jobs 2007 – 2017 By State



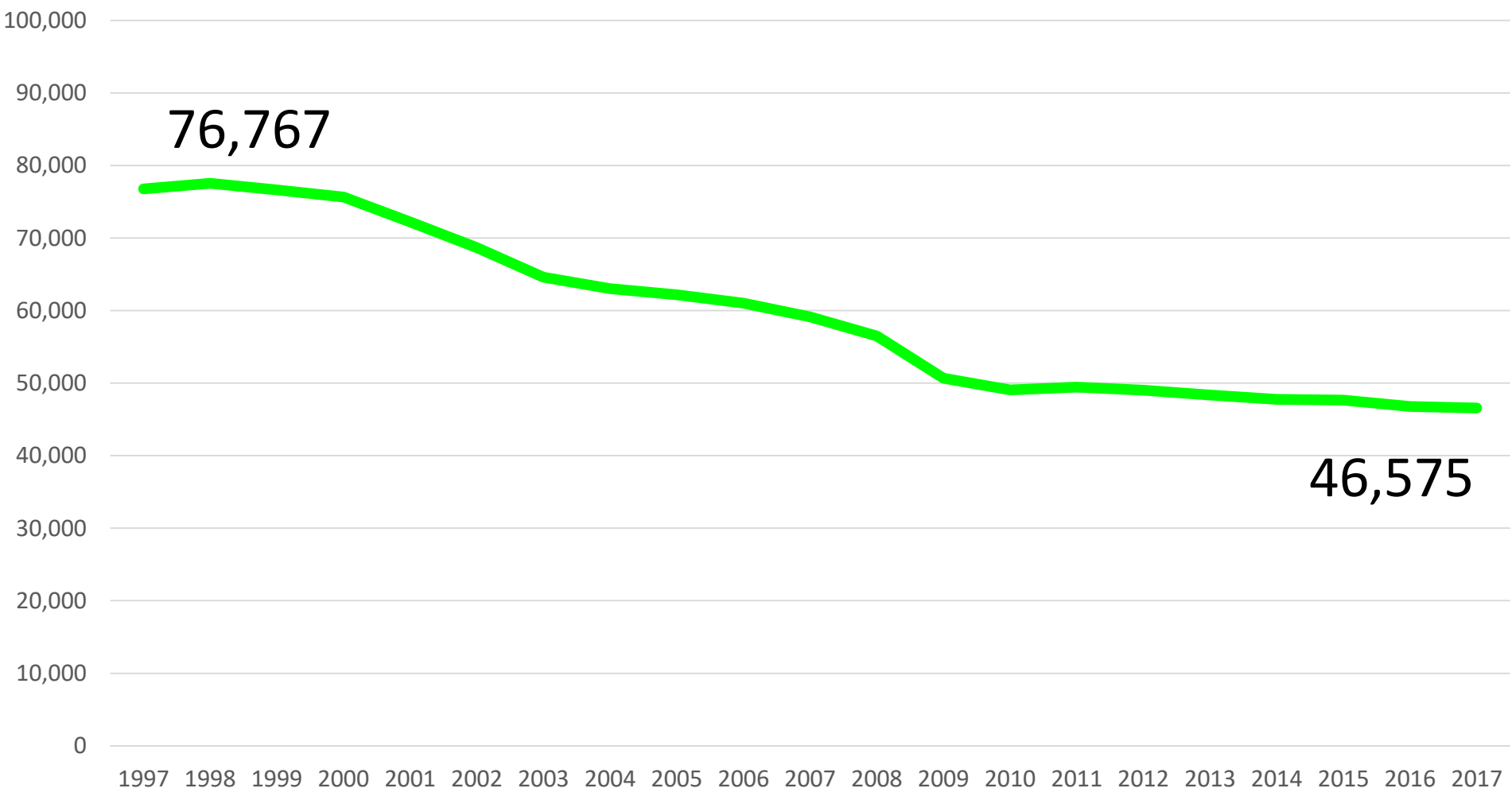
**Top States**

- North Dakota
- South Dakota
- Utah
- Alaska
- Idaho

**Bottom States**

- Rhode Island
- West Virginia
- New Jersey
- Delaware
- New Mexico

# West Virginia Manufacturing Jobs 1997 – 2017



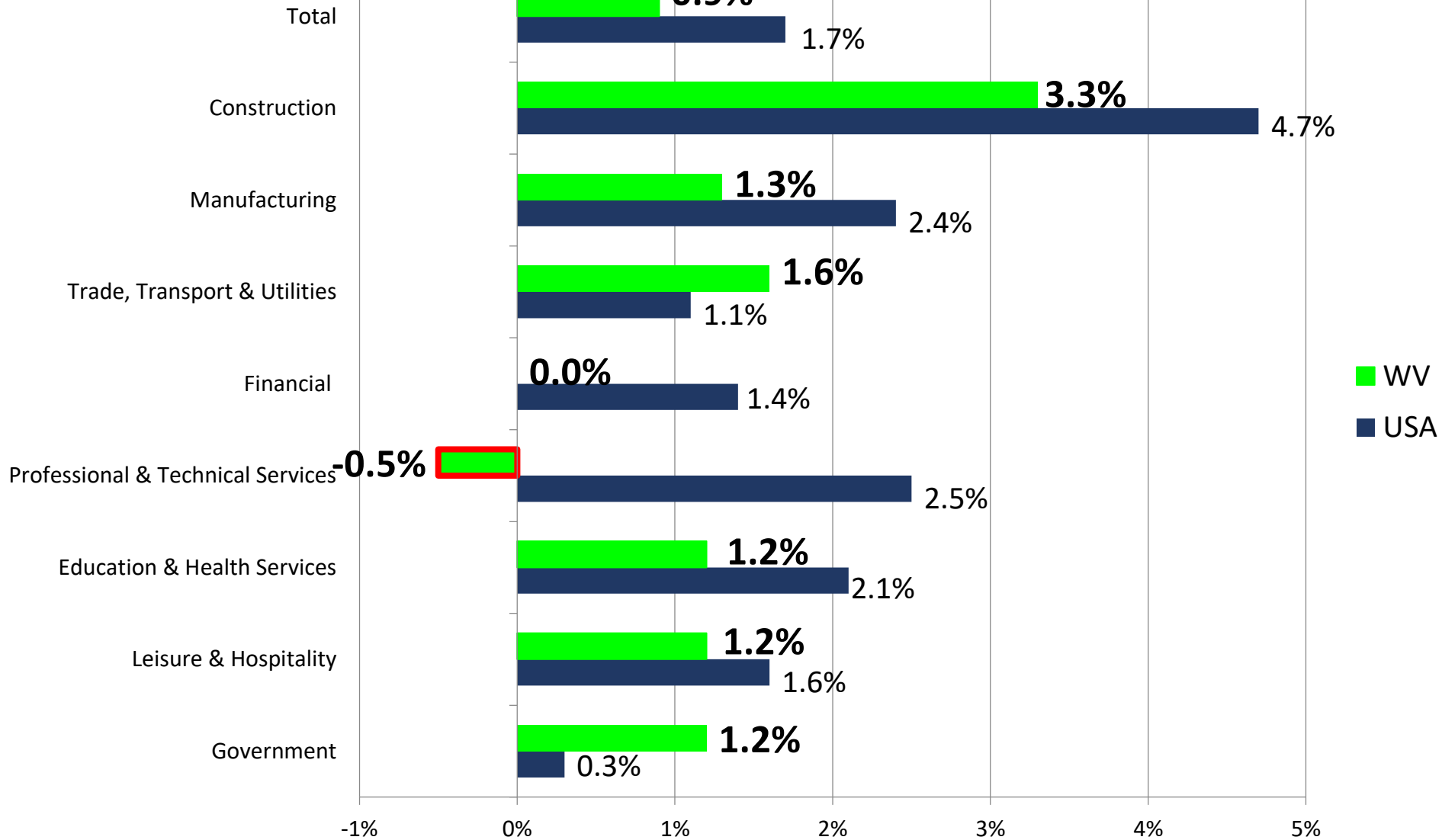
# West Virginia Ranked Compared to All States

	<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”

# Employment Gains By Sector for the United States and WV

October 2017-2018

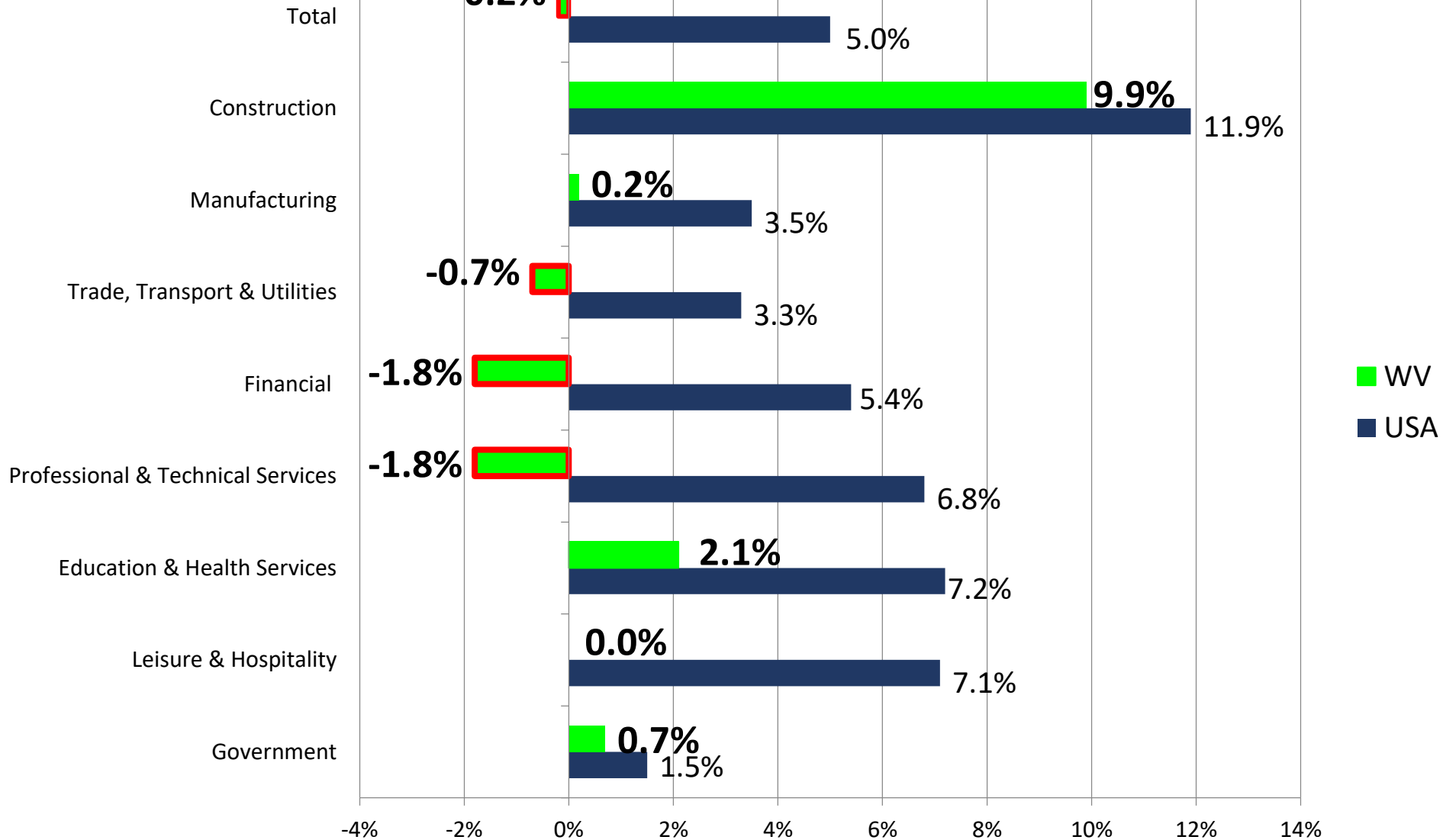




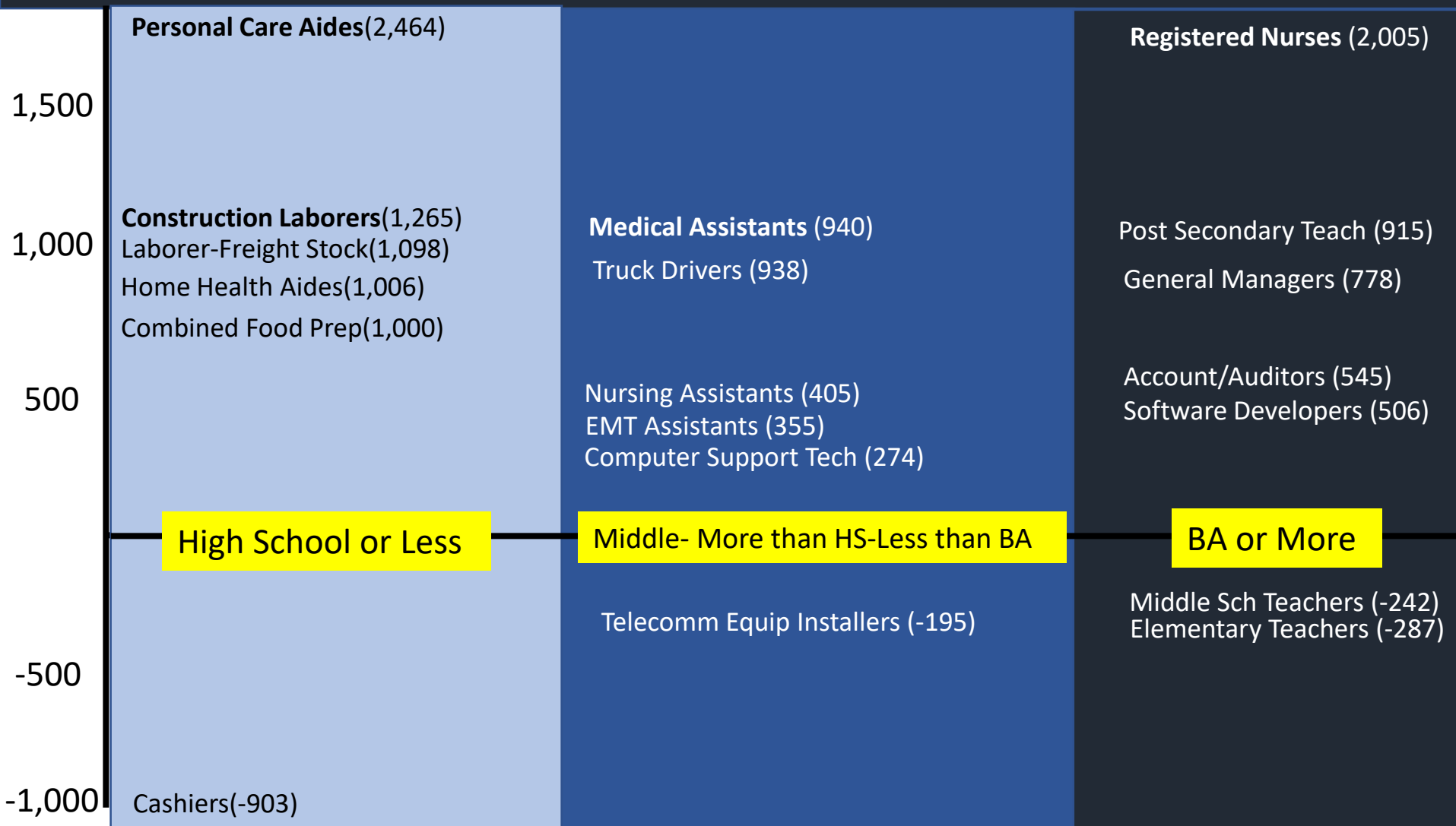
# Employment Gains By Sector for the United States and WV

October 2015-2018

Total



# WV Occupational Change 2018-2028



# 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

# Multifactor Competitive Index

## 5 Indexes

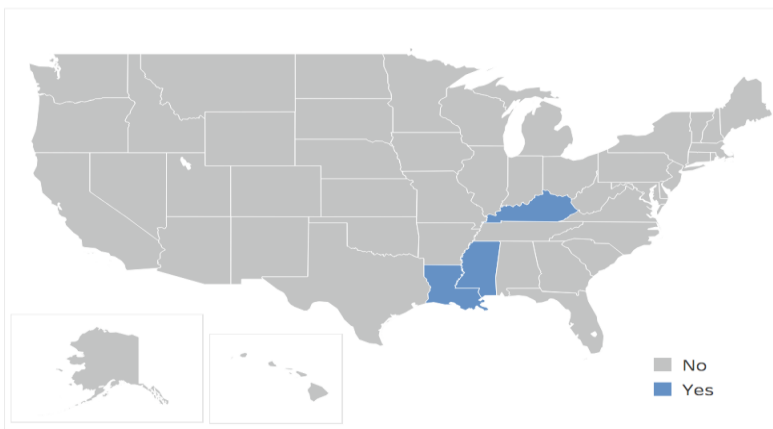
- ❑ Business Climate
  - ❑ Workforce
  - ❑ Infrastructure
  - ❑ Innovation
  - ❑ Economic Strength
- (52 metrics)

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

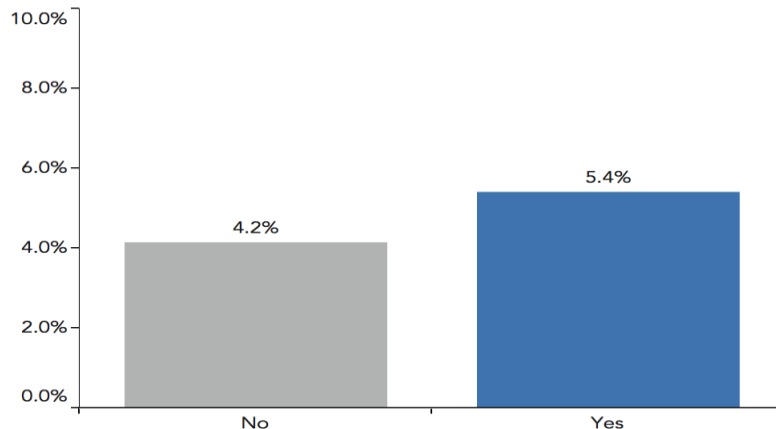
Improvements in top marginal corporate tax rate, high school graduation rates, veteran's share of population, freight shipment value, GDP growth, income per capita, exports per capita.

# Manufacturing Performance for States that Levy Property Taxes on Business Machinery & Inventory Plus Sales Tax on Manufacturing Machinery

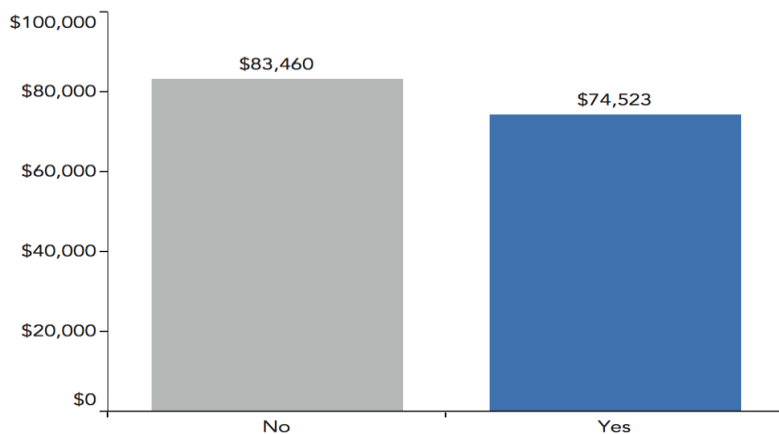
TPP on Machinery & Inventory + Sales Tax on Mfg Machinery



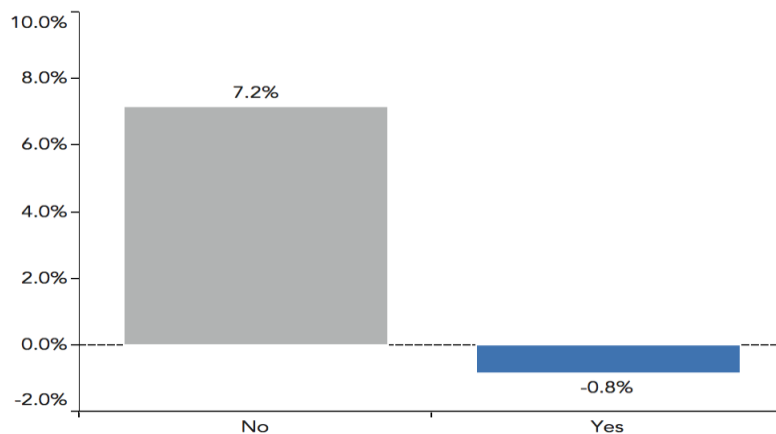
Change in Manufacturing Employment



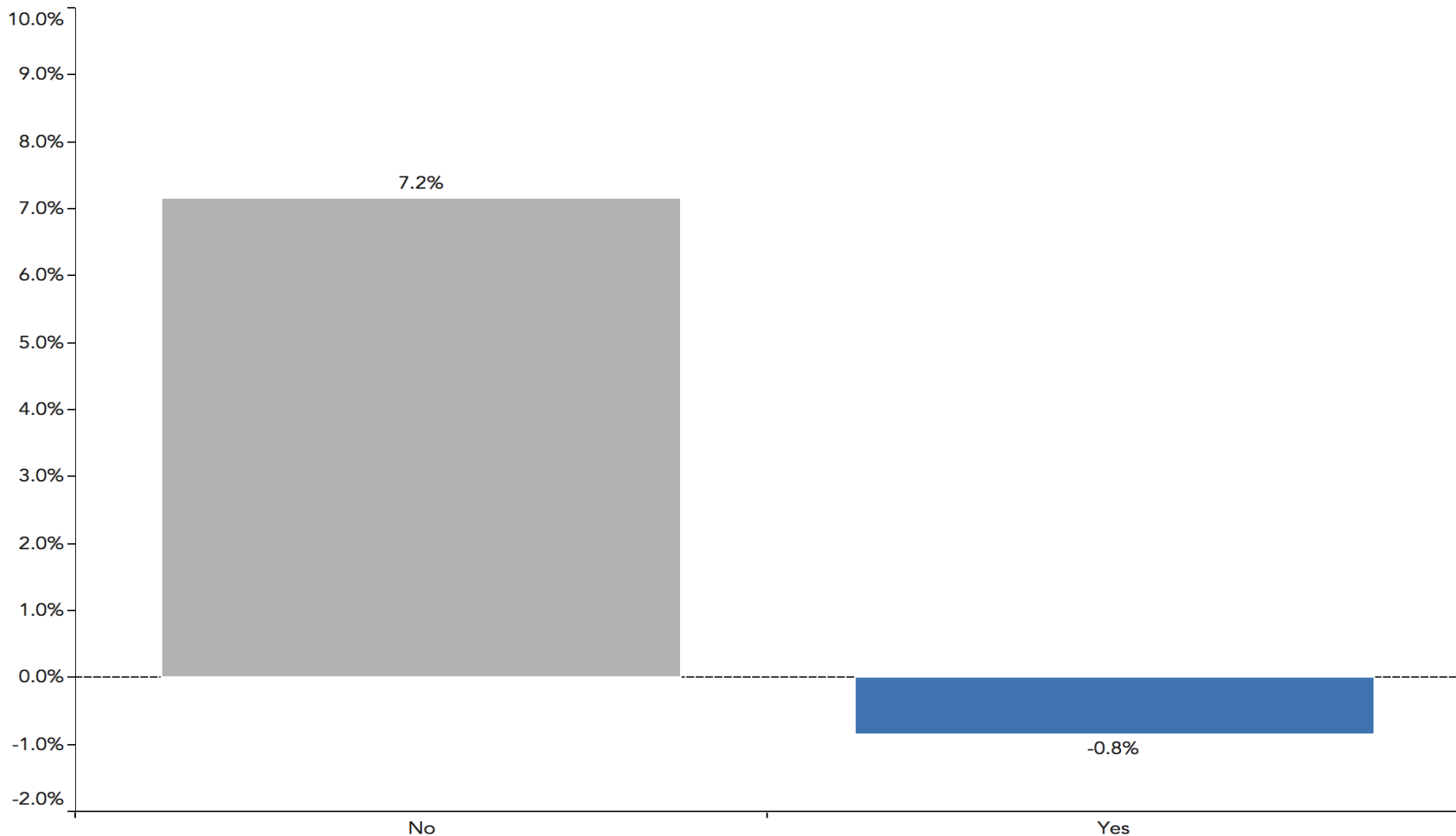
Average Annual Earnings Per Manufacturing Employee



Change in Real Manufacturing Output



# Manufacturing Output for States that Levy Property Taxes on Business Machinery & Inventory Plus Sales Tax on Manufacturing Machinery



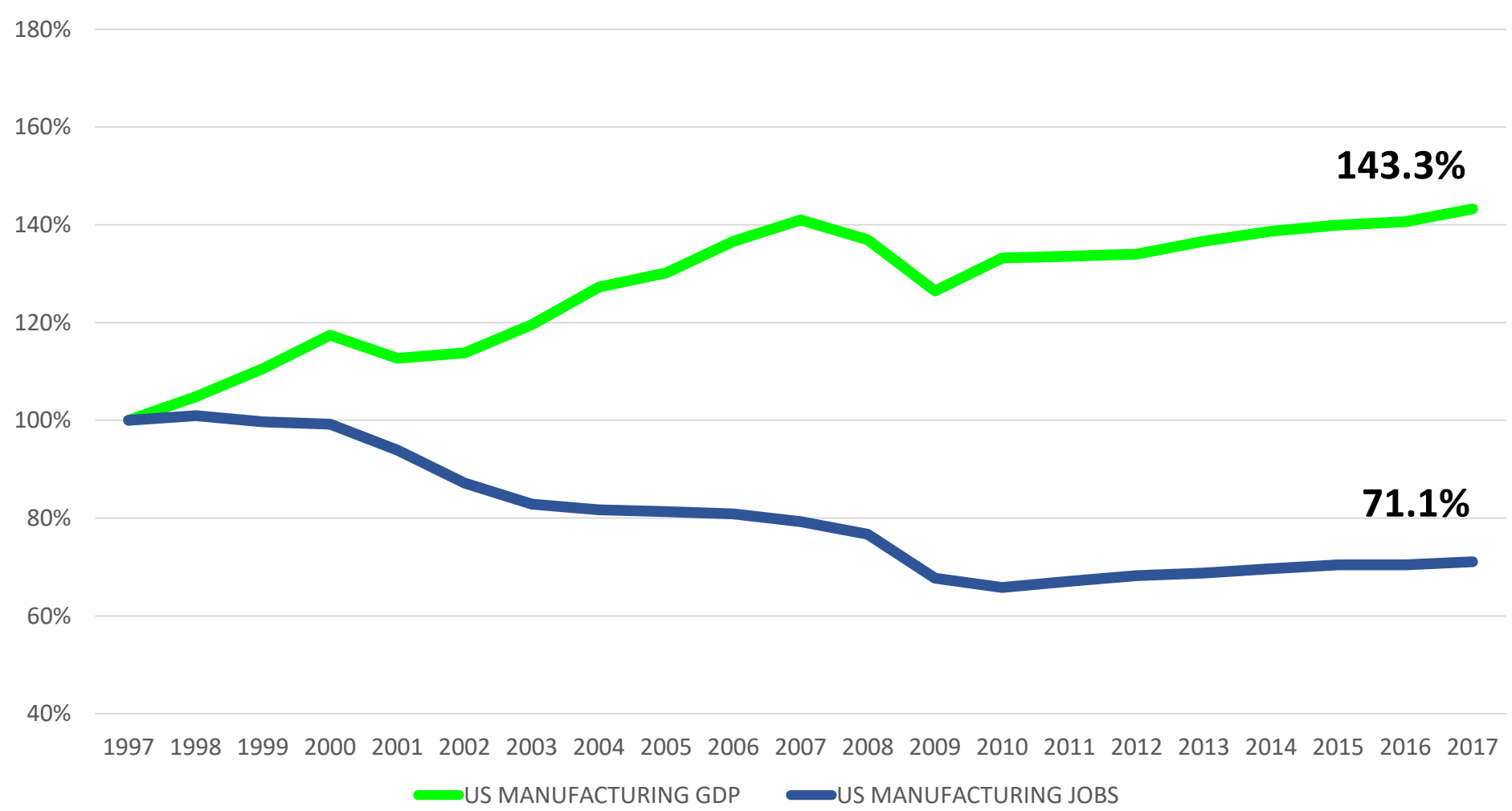
OVERALL STATE RANKINGS

		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

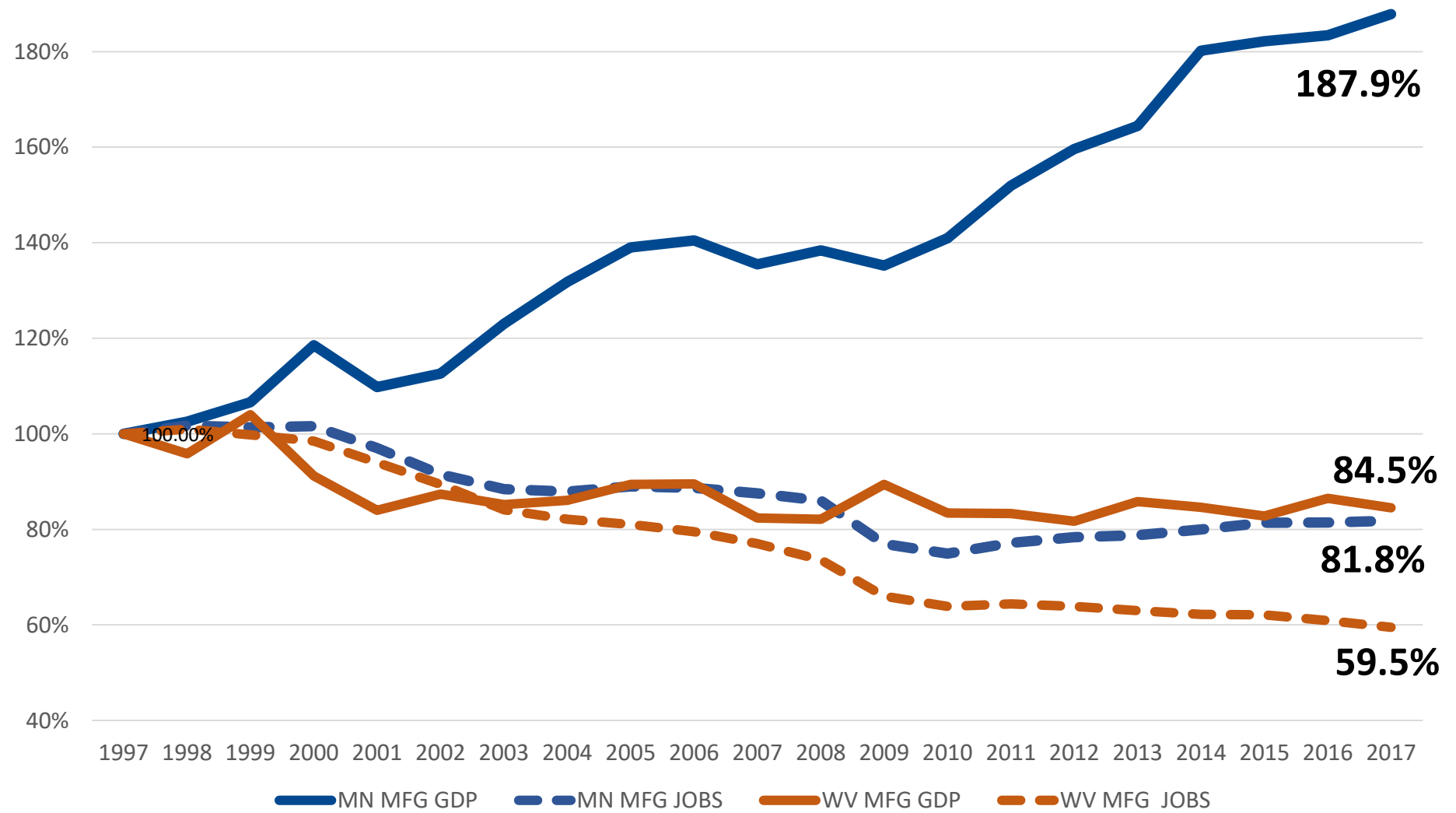
# U.S. Manufacturing Jobs and Manufacturing GDP Growth 1997 – 2017 (normalized as percent of levels in 1997)





# MN-WV Manufacturing Jobs and Manufacturing GDP Growth

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



# Workforce Analysis & Recommendations

The West Virginia Chamber of Commerce asked Economic Leadership, LLC to evaluate the competitiveness of the state's workforce and workforce development system, and recommend strategies that offer the best opportunities for strengthening both.

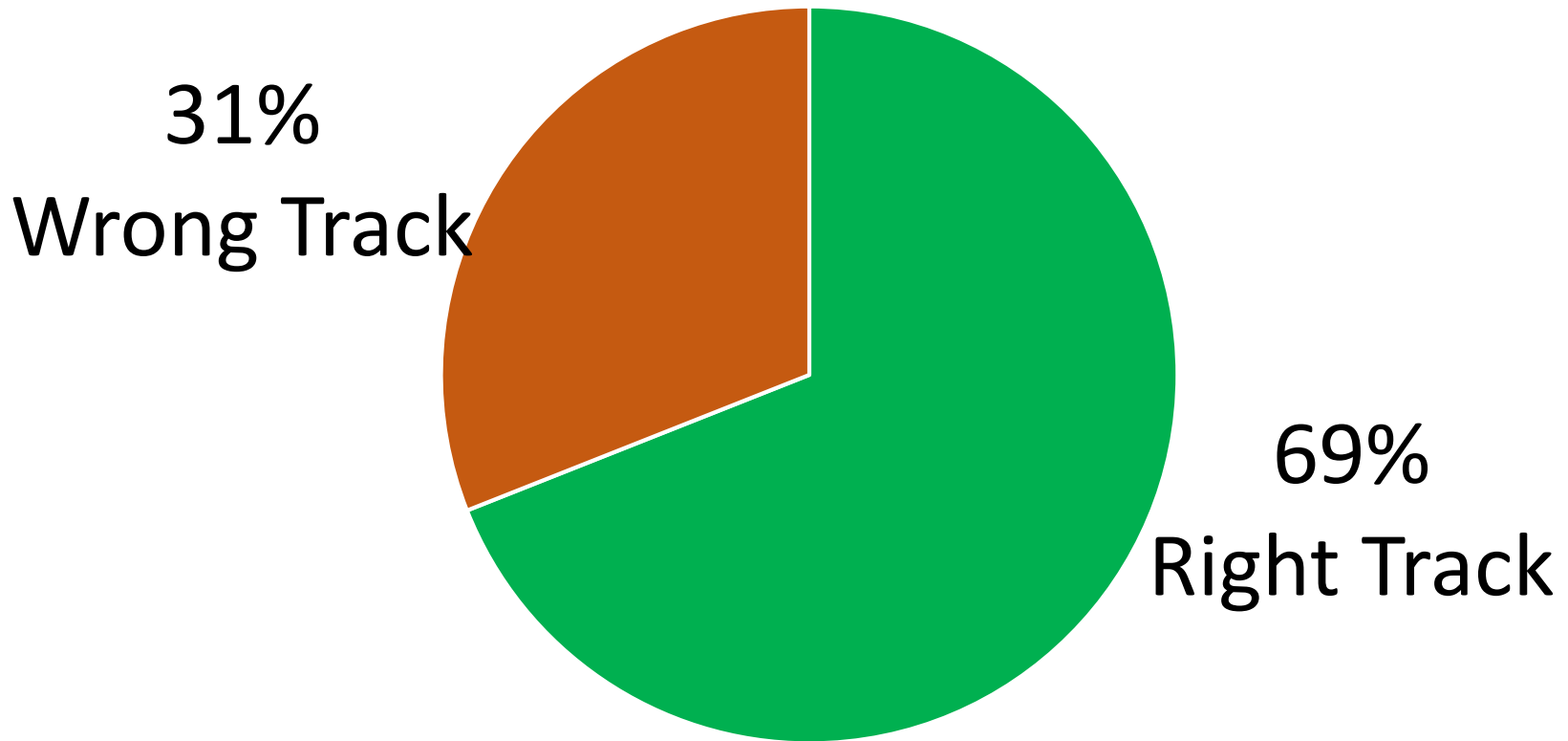
## Significant Workforce Challenge

- 1) the state's lack of population growth;
- 2) an aging workforce;
- 3) poor education attainment; and
- 4) the nation's lowest labor force participation rate.



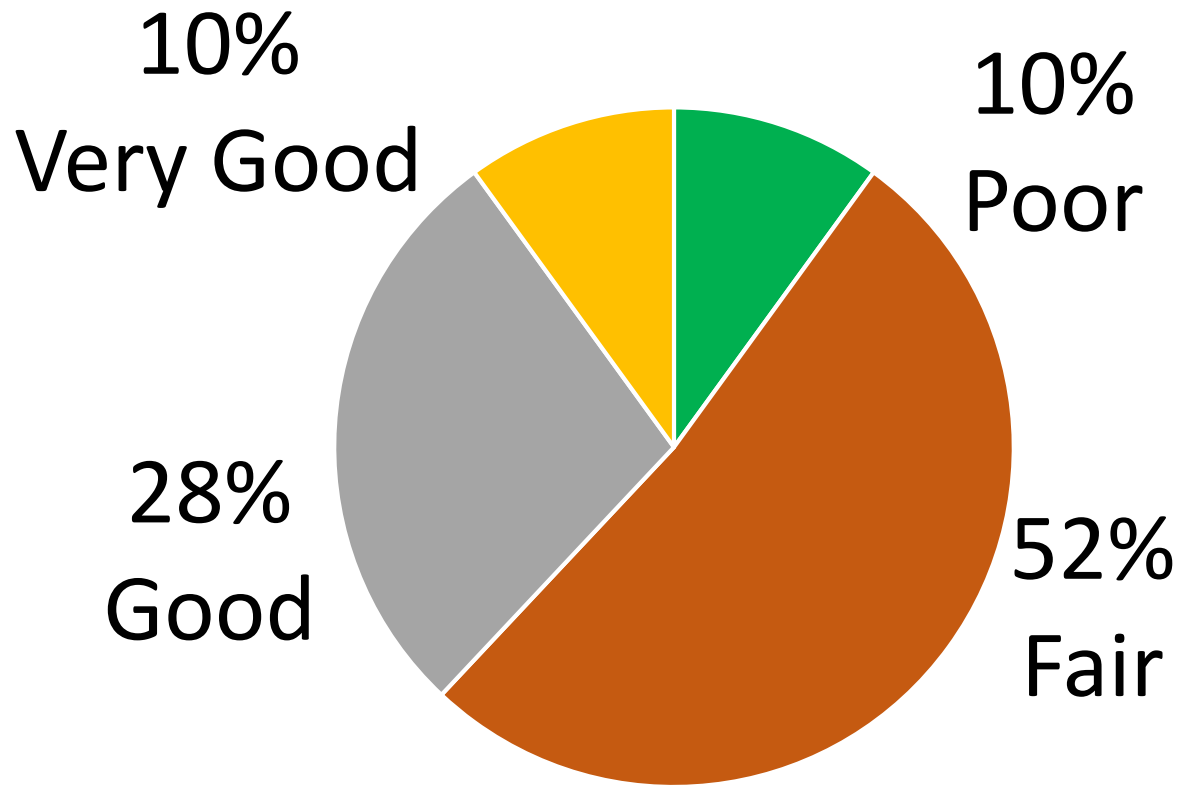
# West Virginia Employer Survey

Do You Believe the State of WV is on the?



# West Virginia Employer Survey

The Current West Virginia Economic Conditions?



# West Virginia Employer Survey

## How Satisfied Are You with...?

### Most Satisfied

- Availability of affordable, reliable energy
- Access to business financing
- Public higher education
- QOL in your community

### Least Satisfied

- Availability of appropriately skilled workers
- Quality & cost of health care
- Road transportation infrastructure

# Workforce Analysis & Recommendations

## Workforce System Strengths and Weaknesses

### Strengths

- Improved interaction between businesses, career and technical colleges (CTCs), and K-12 schools
- Work ethic, loyalty, and stability of the workforce

### Weaknesses

- Negative image of WV makes it difficult to recruit professionals
- Lack of qualified workers in technical & skilled positions
- Impact of opioid crisis
- Soft skill & tech skill deficiencies
- Lack of career awareness, options other than 4-year college

# Quantitative and Qualitative Challenges



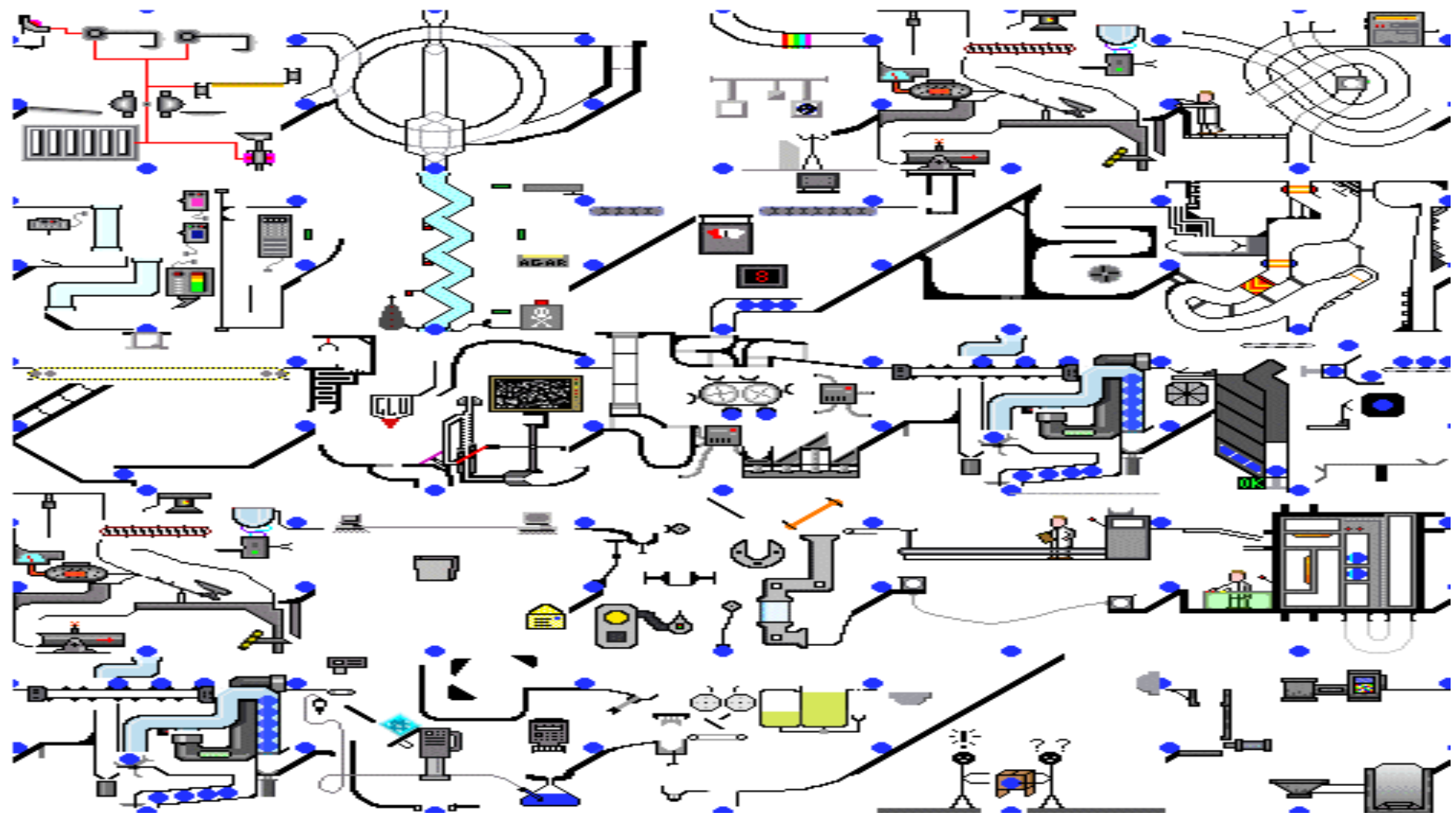
**SUPPLY**

**DEMAND**

**Workforce**

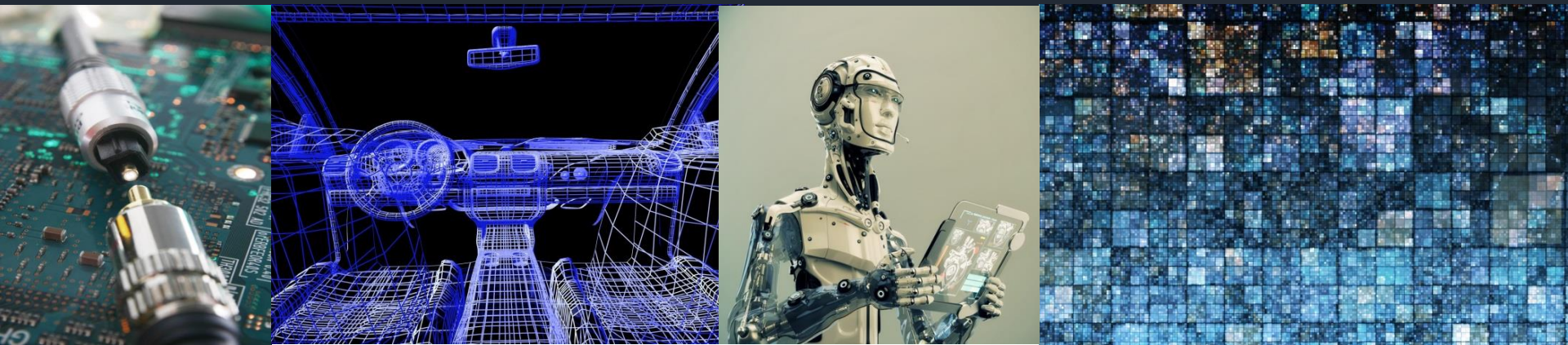


# Navigating Workforce



“Only the best-educated humans will compete with machines. And education systems in the U.S. and much of the rest of the world are still sitting students in rows and columns, teaching them to keep quiet and memorize what is told to them, preparing them for life in a 20th century factory.”

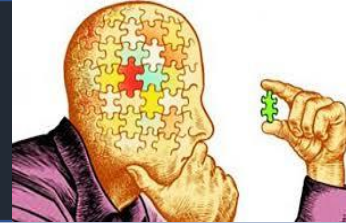
— Howard Rheingold, tech writer and analyst



# The Future of Education



# The Future of Education



- Imagine a national school
- With a business accredited and quantified curriculum
- A combination of a home school and collaborative working space (tutors and discussion leaders)
- World class subject matter teaching experts
- Integrated AI and machine learning to monitor student subject mastery and adjust curriculum in real time
- Third party extra- curriculum (Sports/Arts/Entrepreneurial)
- Self paced and on-line and... 24/7/365

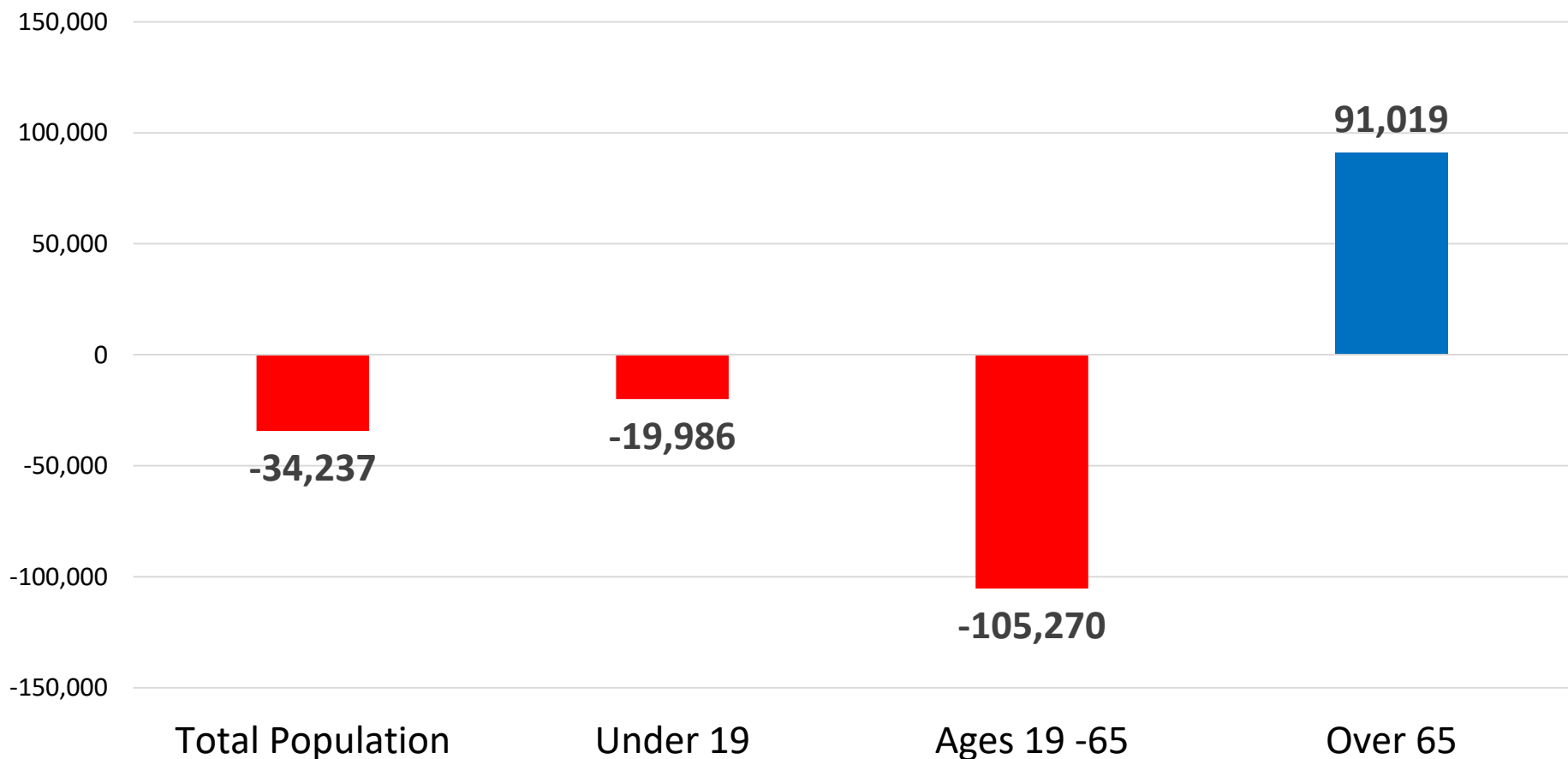
# The Workforce Supply-Demand Balance

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

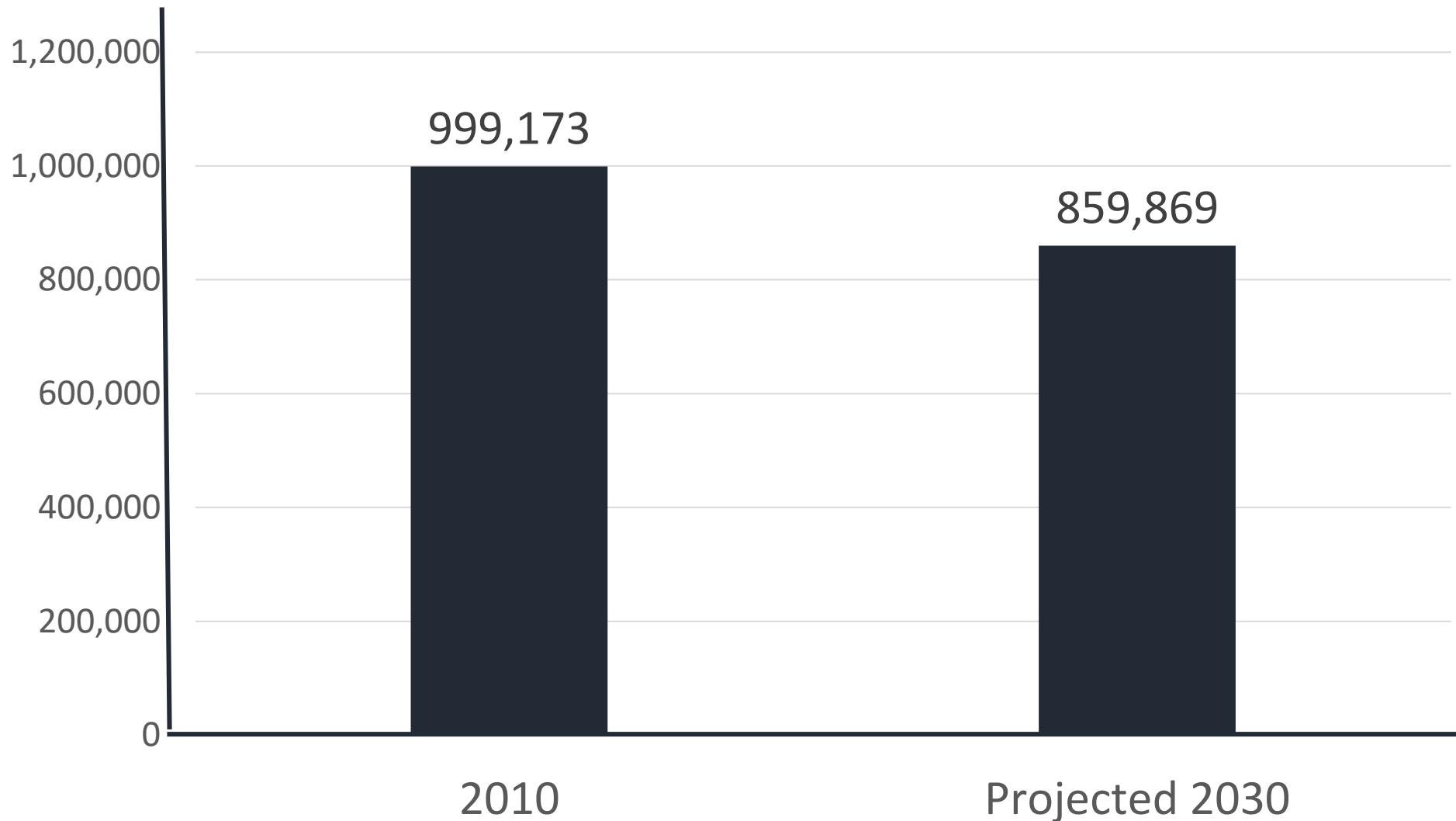
Slowing birthrates,  
aging baby boomers,  
declining participation  
rates, immigration  
debates



# Age Components of Projected WV Population Change 2015-2030



# WV Working Age Population 25-64



# PROJECTED CHANGE IN LABOR FORCE AGE POPULATION

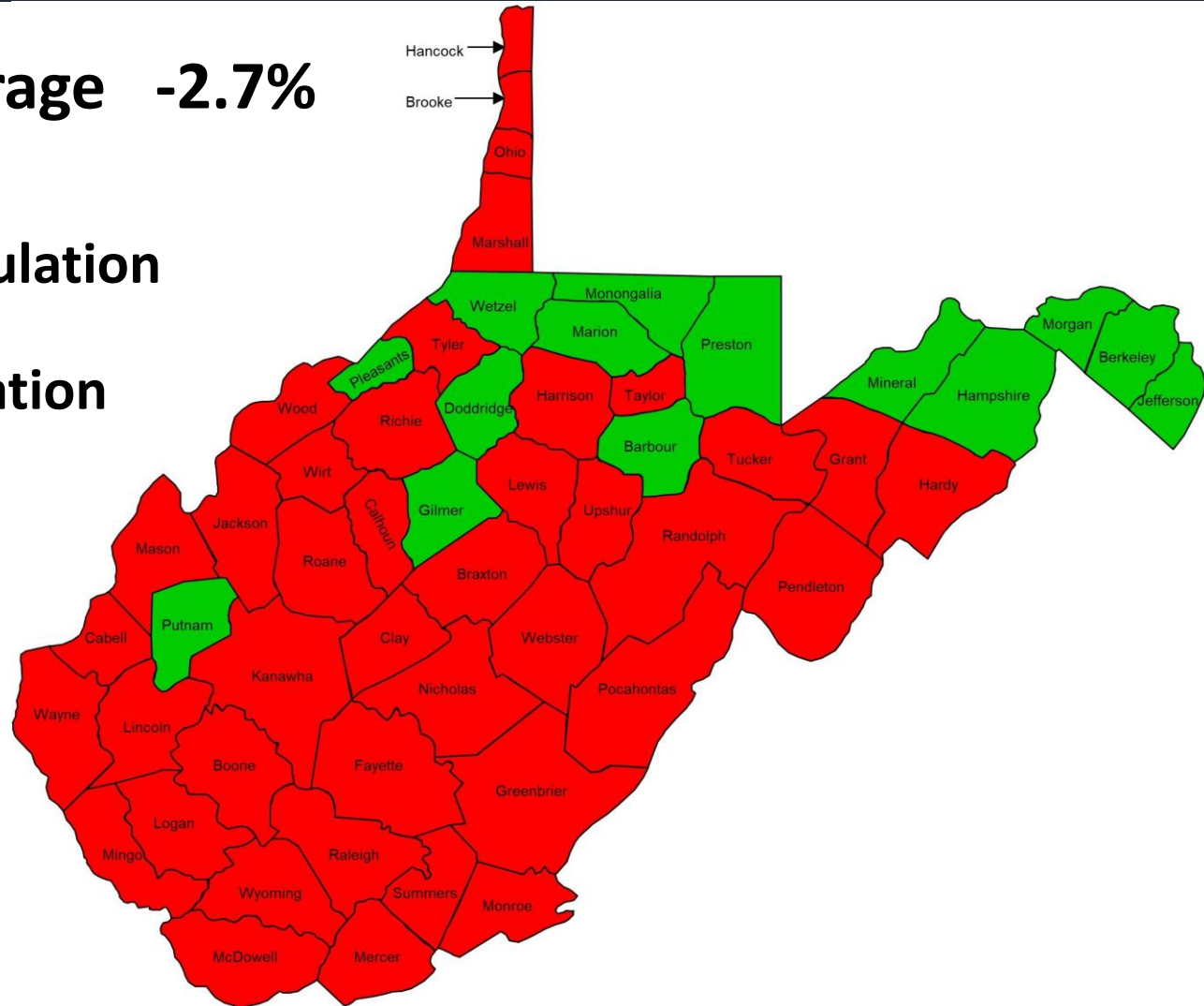
Ages 25 – 44

2017 - 2027

**West Virginia Average -2.7%**

 **Growing population**

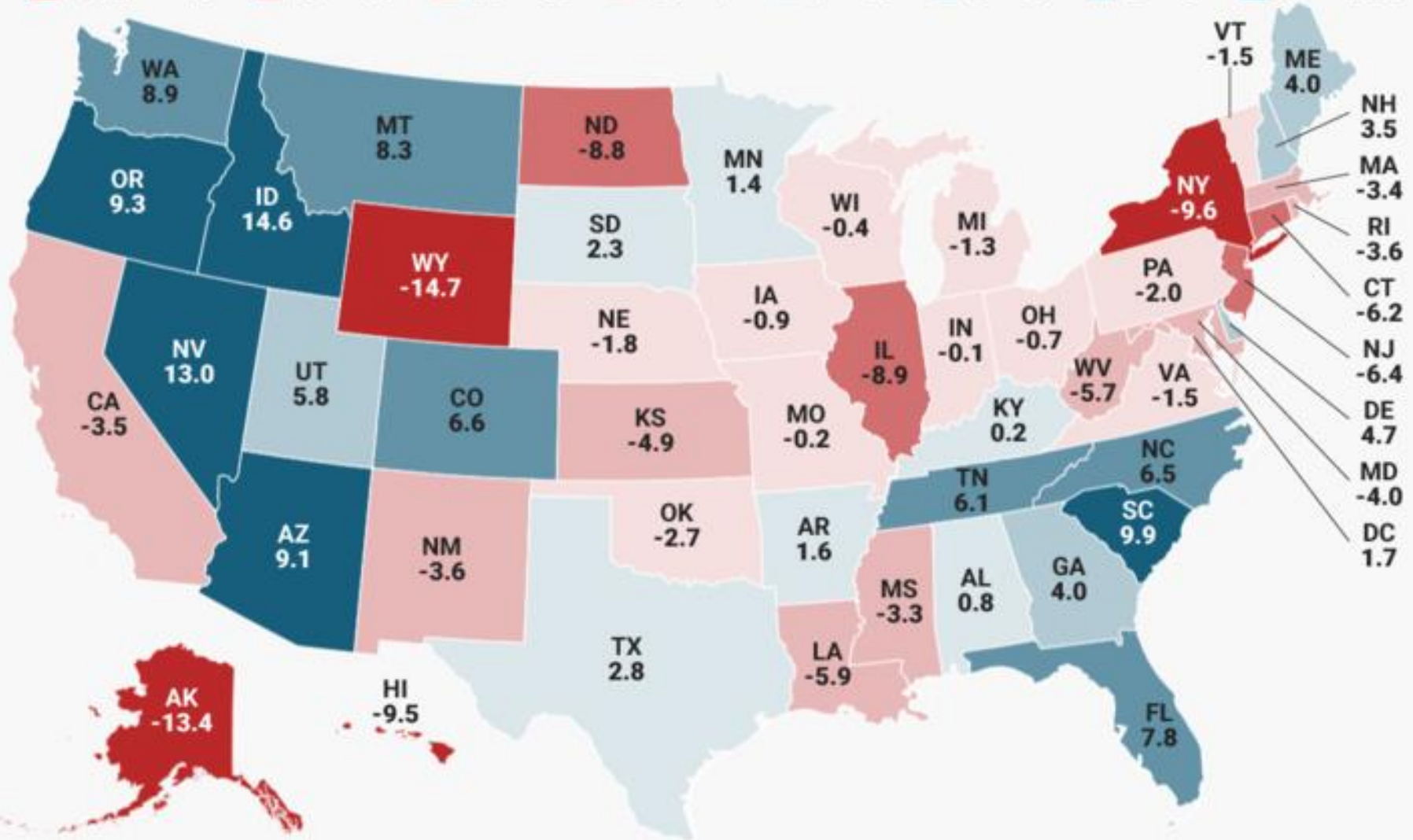
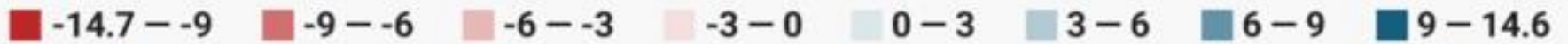
 **Losing population**





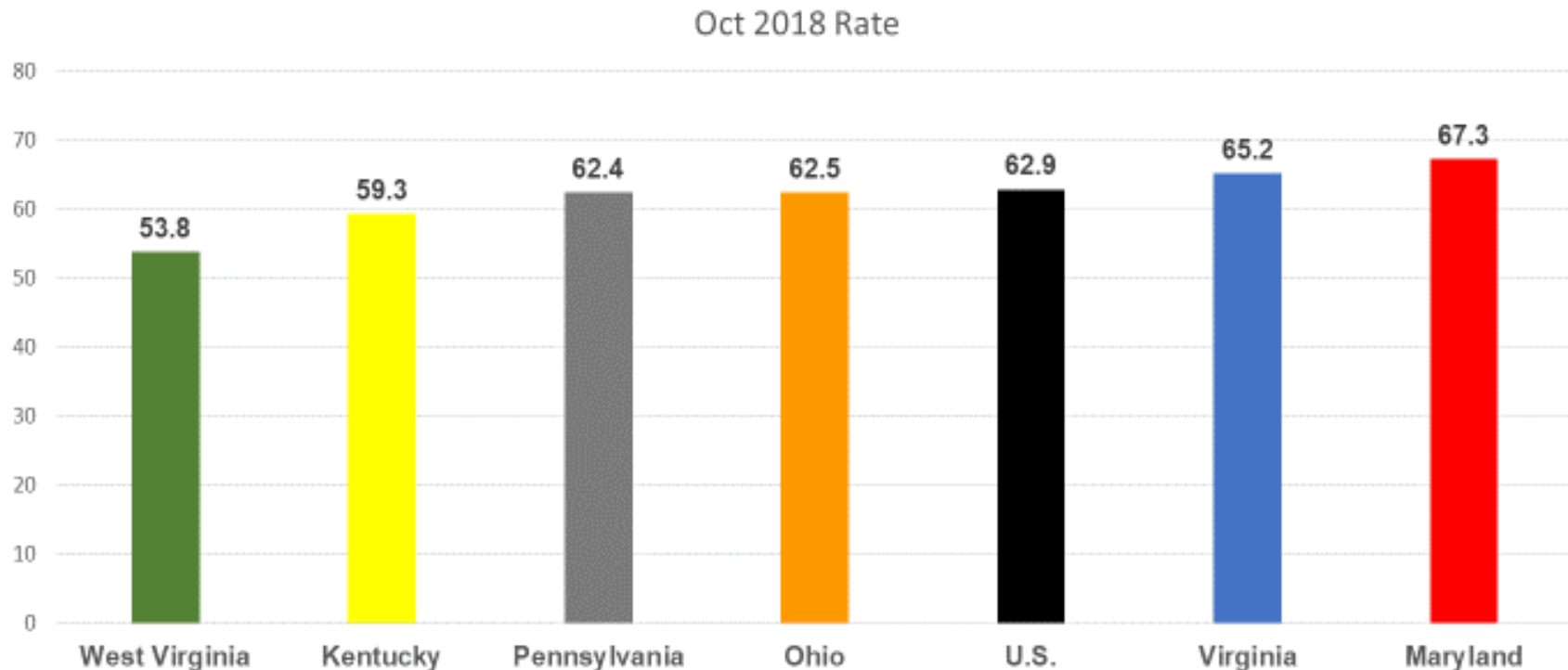
# NET DOMESTIC MIGRATION

NET DOMESTIC MIGRATION PER 1,000 RESIDENTS, JULY 1, 2016 – JULY 1, 2017



# Workforce Analysis & Recommendations

## Labor Force Participation Rates

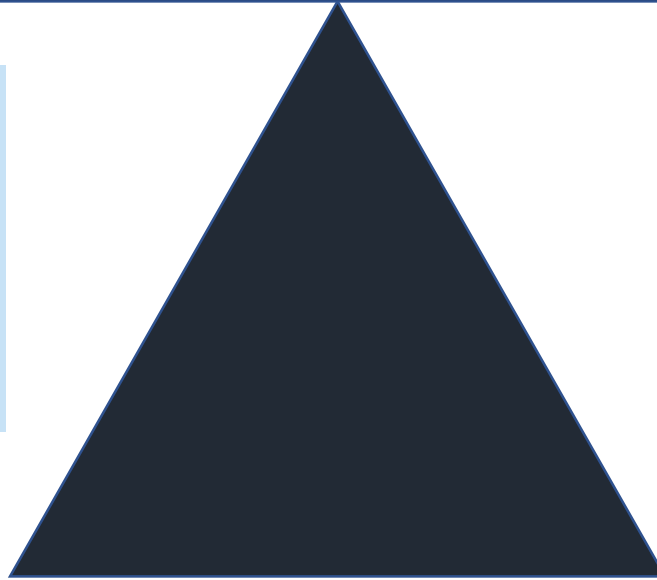


Source: U.S. Bureau of Labor Statistics

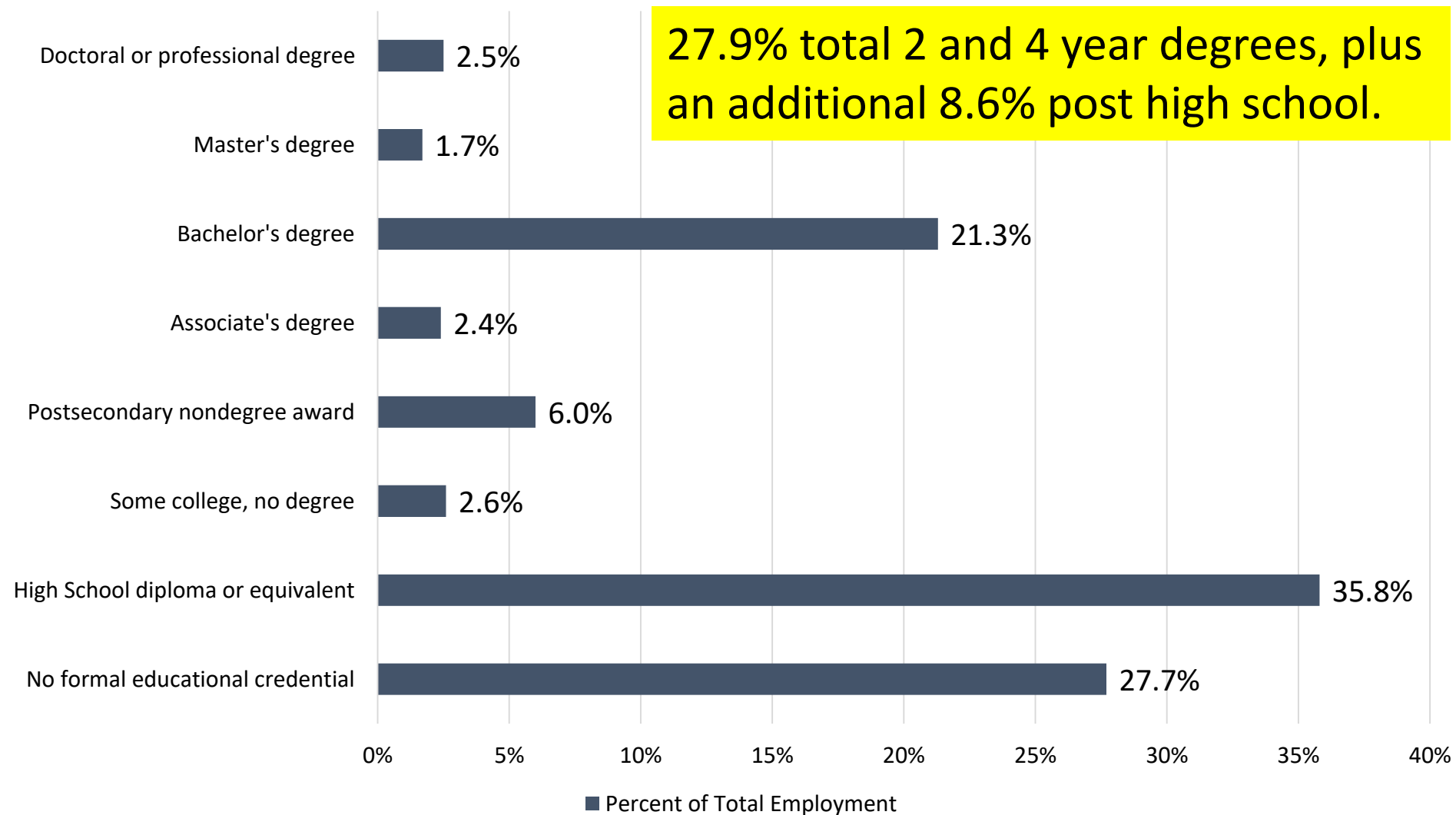
# The Rising Skills and Education Balance

Employers Demand  
Higher Skills But Are  
Not Finding Them

More People Go To  
College, But We Seem  
to Have a Mismatch

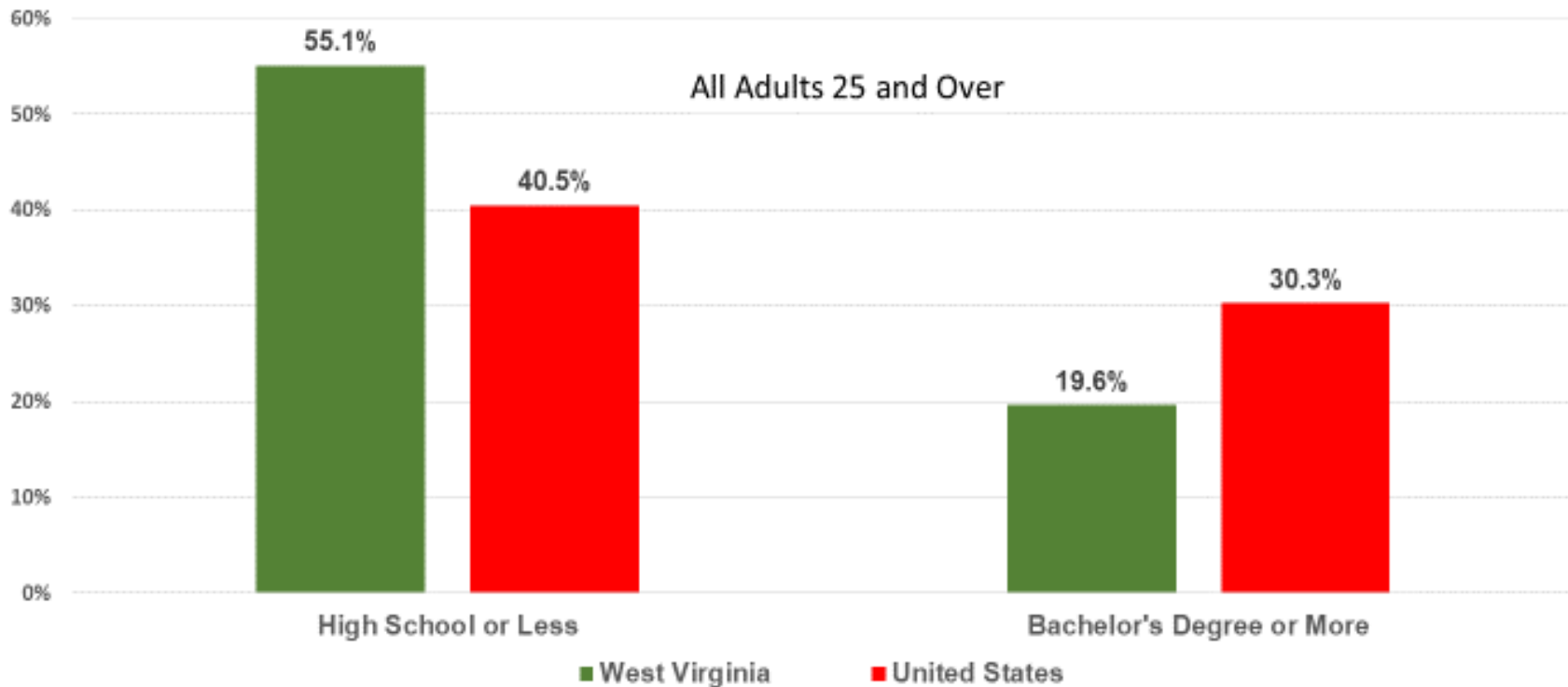


# Typical Entry-Level Education Requirement as Percent of Total Employment – May 2016



# Workforce Analysis & Recommendations

## Education Attainment



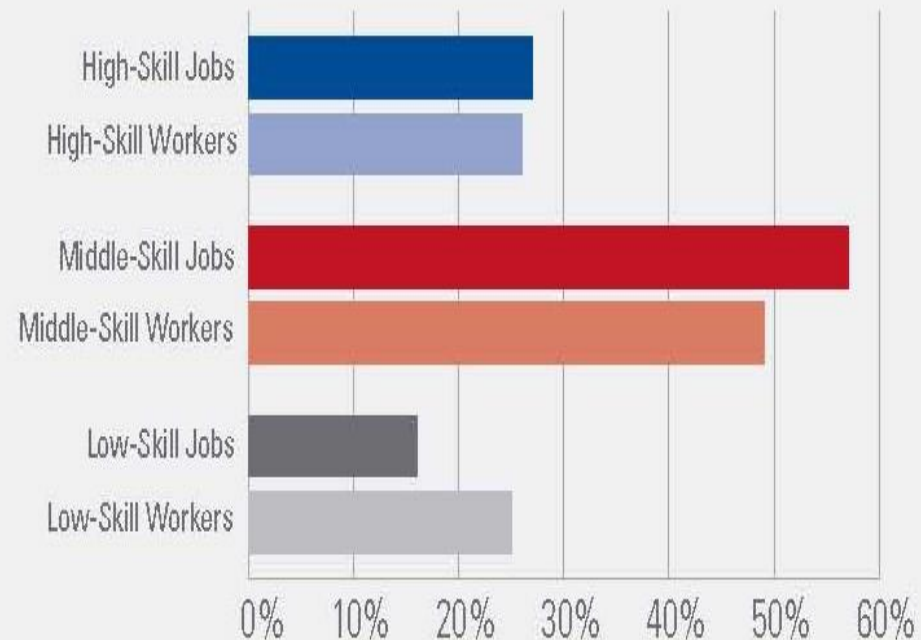
Source: U.S. Census Bureau, 2016 American Community Survey

# 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.

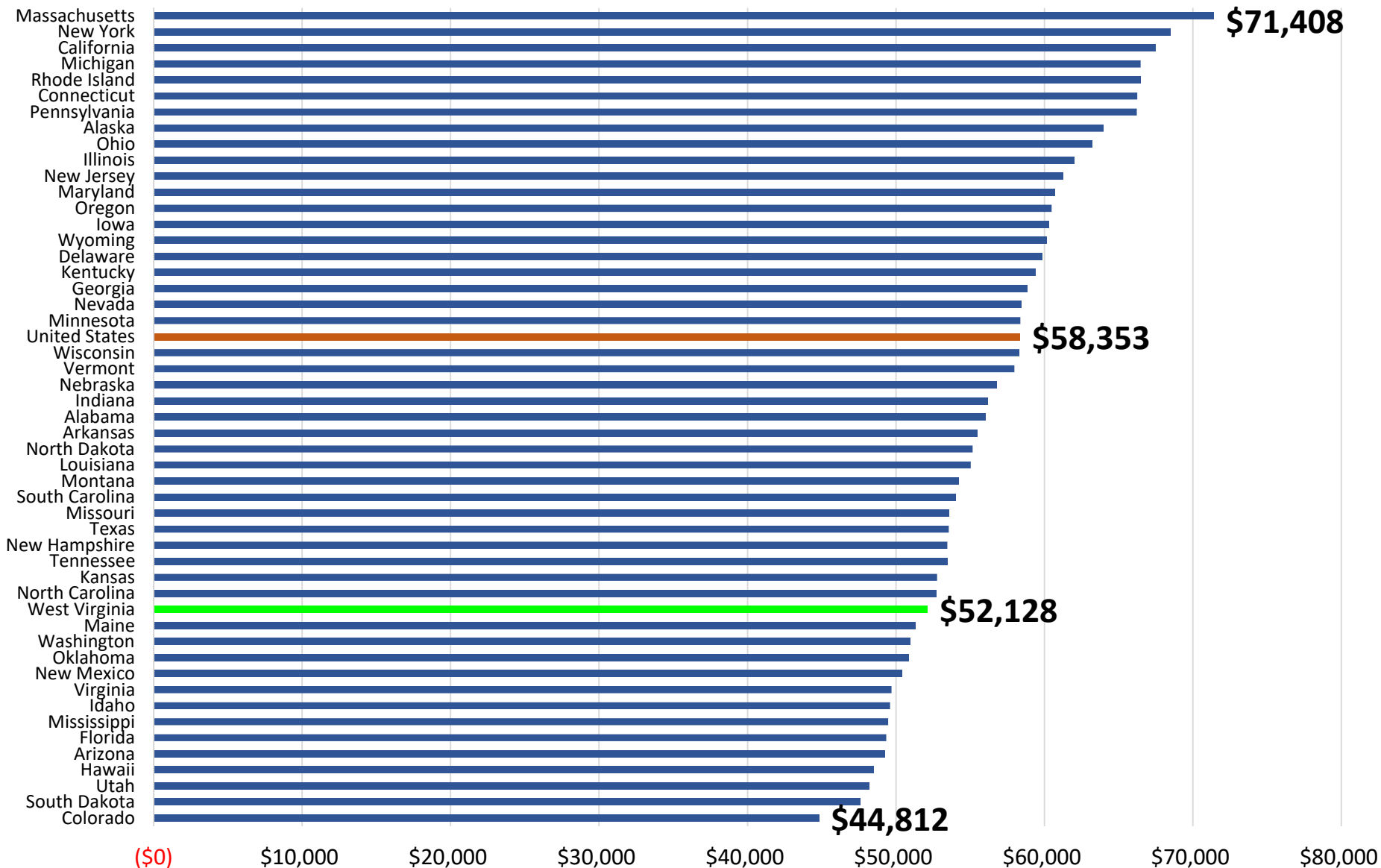
# Workforce Analysis & Recommendations

## WV Nonfarm Employment, October 2018 Private and Public Sector Jobs

<u>Sector</u>	<u>Employment</u>	<u>% of Total</u>
	Government	20.6%
	Trade, Transportation, Utilities	17.8%
	Education & Health Services	17.5%
	Leisure & Hospitality	9.9%
	Professional & Business Services	8.7%
	Manufacturing	6.3%
	Construction	4.6%

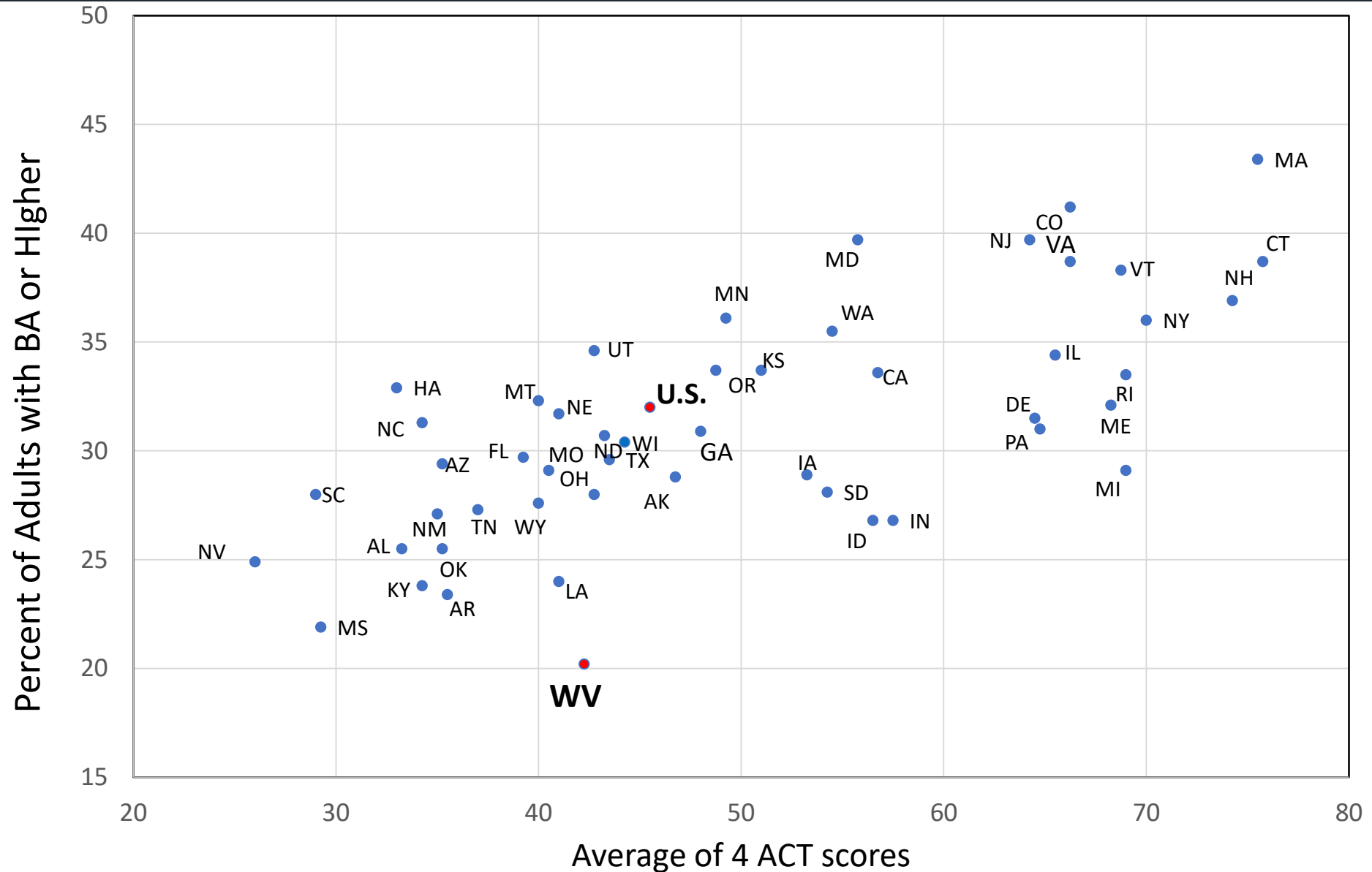
- Mining and logging account for 2.9 percent of jobs.

# Average Teacher Pay – 2017 Adjusted for Cost of Living



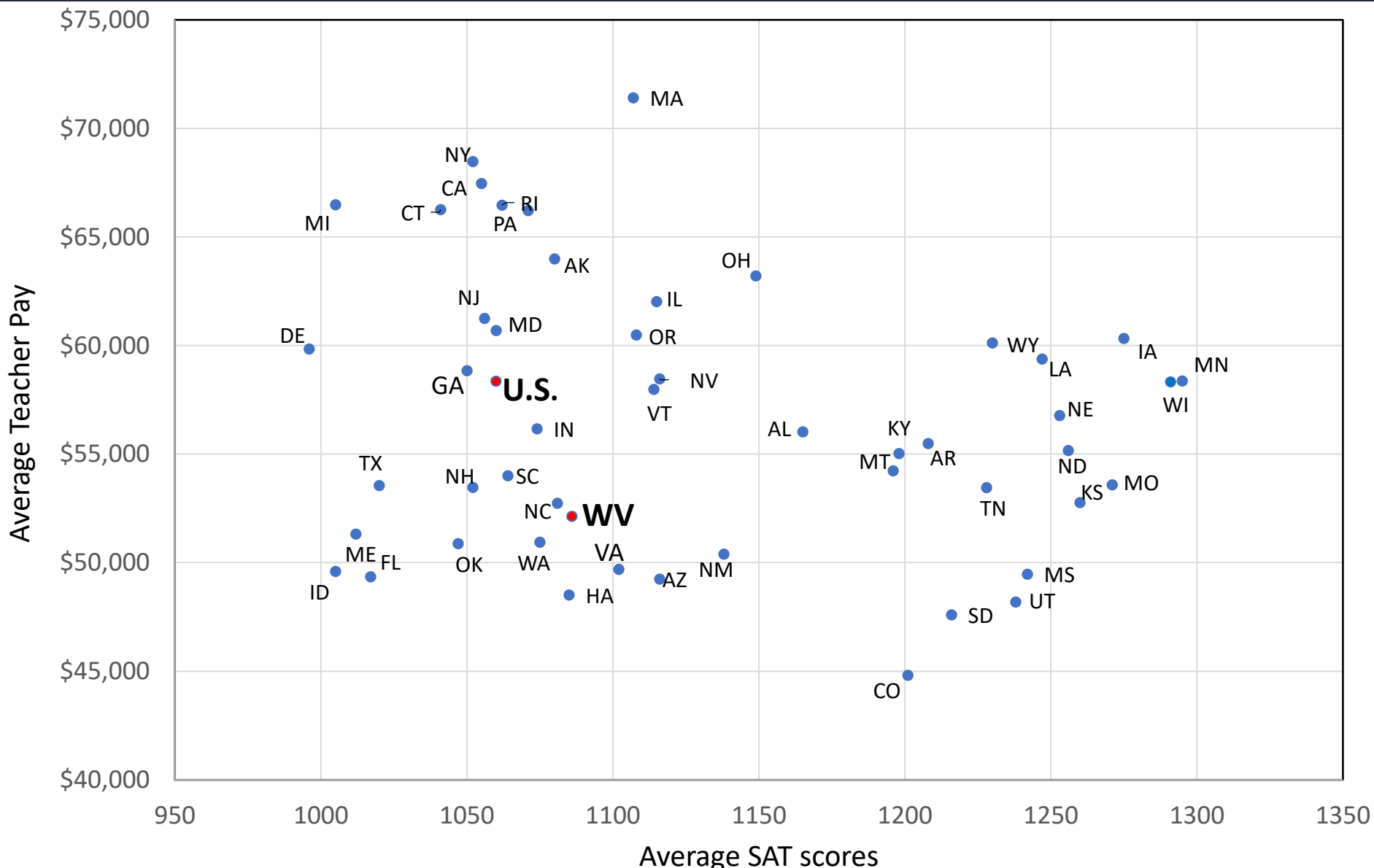


# Educational Attainment vs High School ACT scores



Source: ACT.org & US Census Bureau  
ACS 2017 1YR

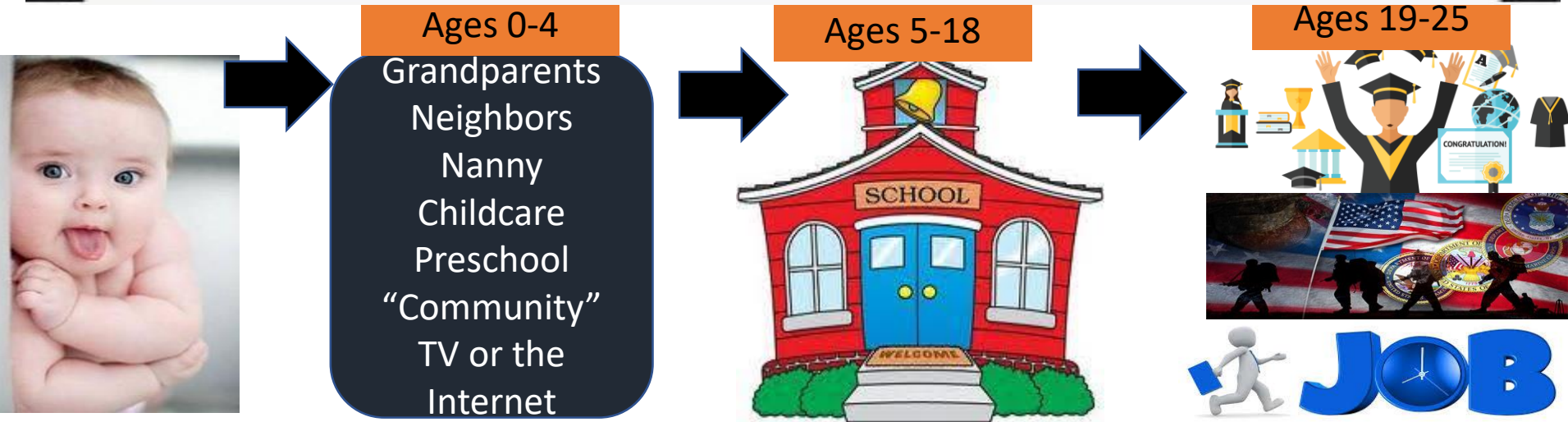
# Teacher Pay (adj for COL) vs High School SAT scores



Source: The College Board & US Census Bureau  
ACS 2017 1YR

# What is a Workforce or Talent Pipeline?

The cumulative influence of family, community, educational and skill training organizations, and of employers on the skill development of citizens to meet both their needs for livelihood and local employer's need for appropriately skilled workers.



Teen  
Pregnancy  
Neo-Natal  
Care

Parent Training  
Better  
Day-Care  
Universal K or  
Pre-K

Academic Foundation  
Soft Skill Development  
Career Exploration  
Skills Assessment  
Work Experience  
Technical Skills

Skill Development  
On-the-Job Training  
Continuous Retraining

So  
WHAT?

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# Workforce Analysis & Recommendations

**A 2017 review by the National Skills Coalition (NSC) found that West Virginia lacks some important statewide policies:**

- **Integrated Education & Training** – 18 states provide a policy and/or funding that helps people to gain better job skills and basic skills (English, math) at the same time. This can allow workers with basic skill gaps to move up to middle-skill jobs.
- **Stackable Credentials** – Allow individuals to prove their work skills without spending the time and money to earn a degree. Short-term credential programs are particularly useful for working adults and parents.
- **Alignment Policies** – these align several different policies that make it easier for low-skill, low-wage adults to get on pathways to improve skills and move up to better jobs. Twelve states have alignment policies.

# Workforce Analysis & Recommendations

## Improving Workforce Quantity

### 1) Target Disconnected Groups to Increase Workforce Participation

Ex-offenders  
Military Veterans  
Disabled Citizens

### 2) Expand Talent Attraction and Retention Efforts



#### Recommendations

- ✦ Increase outreach to disconnected youth, regional business collaboration to offer paid work experiences, and provide support services as they enter the workforce.
- ✦ Develop a statewide education and job training program for offenders, beginning while they are still incarcerated.

#### Recommendations

- ✦ Deliver a consistent message by building a collaboration of state agencies, regional economic development agencies, the Chamber of Commerce, and leading employers.
- ✦ Target and tailor messaging for: alumni from all WV colleges and universities, residents of nearby metropolitan areas with a higher cost of living; and others with family in-state.
- ✦ Highlight concrete information on job opportunities blended with data on cost of housing, cost of living, and amenities such as outdoor recreation.
- ✦ Consider creation of financial incentives for hard-to-fill positions in high-demand fields.

# Workforce Analysis & Recommendations

## Improving Workforce Quantity

### 3) Improve Career Pathway Programs



### 4) Greater Career Awareness



#### Recommendations

- ✦ Form closer partnerships between high schools, CTCs, universities and businesses to match career pathways to regional needs.
- ✦ Promote pathway programs to existing adult workers as a way to improve their skills and move up to higher-wage jobs.

#### Recommendations

- ✦ Expand career awareness experiences like WVU Tech's summer academy. WVU could bring this program to campuses in Parkersburg and Morgantown, and also offer a summer academy for boys from economically disadvantaged and rural communities.
- ✦ Incentivize the creation of regional websites that highlight regional technical career opportunities and how to get the education, training, and work experience to prepare for them.

# Workforce Analysis & Recommendations

## Improving Workforce Quality

### 5) Increase Work-Based Learning Opportunities



### 6) Increase Apprenticeships



- ✦ Expand Simulated Workplace to high schools across the state,
- ✦ Connect more college students all around the state with work opportunities at firms in their region. Using a model such as Experience WV where needed, engage all colleges and universities (public and private) in the state.
  
- ✦ Maintain and increase the momentum of the Apprenticeship in Motion (AIM) collaboration
- ✦ Expand apprenticeships in key sectors like healthcare and information technology.
- ✦ Consider incentives for: a) businesses developing apprenticeship programs



# Workforce Analysis & Recommendations

## Improving Workforce Quality

### 7) Upskill Adult Workers



### 8) Strengthen Industry Sector Strategies



- ✦ Encourage county, region, and state participation in ACT Work Ready Communities.
- ✦ Make more education financial aid available for short-term, non-degree programs
- ✦ Ensure that CTCs in every region are engaged in continuous communication with regional employers to fine-tune curriculum offerings to in-demand occupations and skills.
  
- ✦ Prioritize the creation of a new workforce development strategy for key industry sectors in each region of the state. Success will require participation from CTCs, universities, K-12 schools, and industry representatives. The state should provide funding and technical assistance.

# Get Comfortable with Data- Everybody Will Want More



# Workforce Analysis & Recommendations

## 9) Better Use of Data Analysis

West Virginia has some good resources for analyzing student outcomes and workforce data, and good examples of how analysis can be used to improve education and training alignment with workplace needs. Better use of data can positively impact both workforce quantity and quality initiatives – from targeting the right skills training to focusing professional recruitment.

In 2016, WVU's Bureau of Business and Economic Research published a review of the outcomes for West Virginia public college graduates who stayed to work in the state.

- Sixty-two percent of in-state students continued to work in West Virginia after graduation, compared with 10 percent of out-of-state students.
- Sixty-five percent of those who earned an associate degree were working in the state, compared with around 40 percent of those with a bachelor's degree or graduate degree.
- Women accounted for 57 percent of all public higher education graduates, and were 10 percent more likely than men to be working in-state after graduation.
- Those receiving a merit-based PROMISE scholarship or need-based Higher Education Grant Program funds were much more likely to be working in-state after graduation.
- Average income for graduates working in-state was \$43,500.

# Recommendations

## 10) The Business Community Must

Take  
the Lead





# Collaboration Continuum

**Collective Impact**

**Coordinated Impact**

**Individual Impact**

**Nobody Does Anything**

**Cross Purposes**

**Destructive Impact**

**Destroying Impact**

## Collective Impact Model

Common Agenda

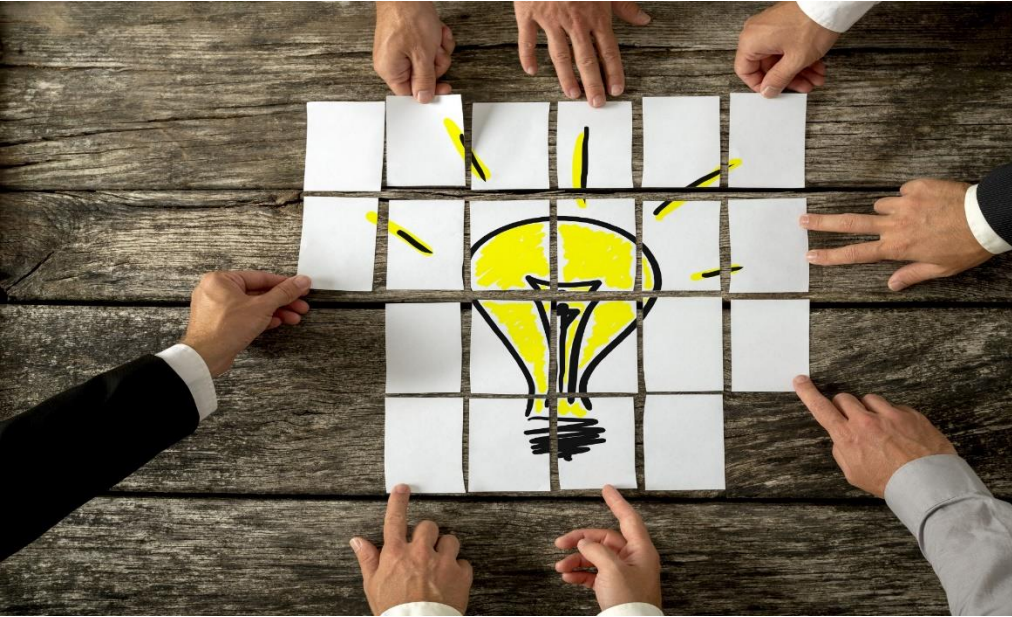
Shared Measurements

Reinforcing Activities

Continuous Communication

Backbone Support

# Collective Intelligence & Collaborative Leadership



Group leadership is not natural, but it can be nurtured and it can be the most effective leadership model where there are multiple stakeholders

## Strategic Perspective

- ✓ Focusing on Priorities

## Innovation Mindset

- ✓ Creating new & different



## 4 Dimensions of Group Leadership Success

### Working Together

- ✓ Managing conflict

### Getting Things Done

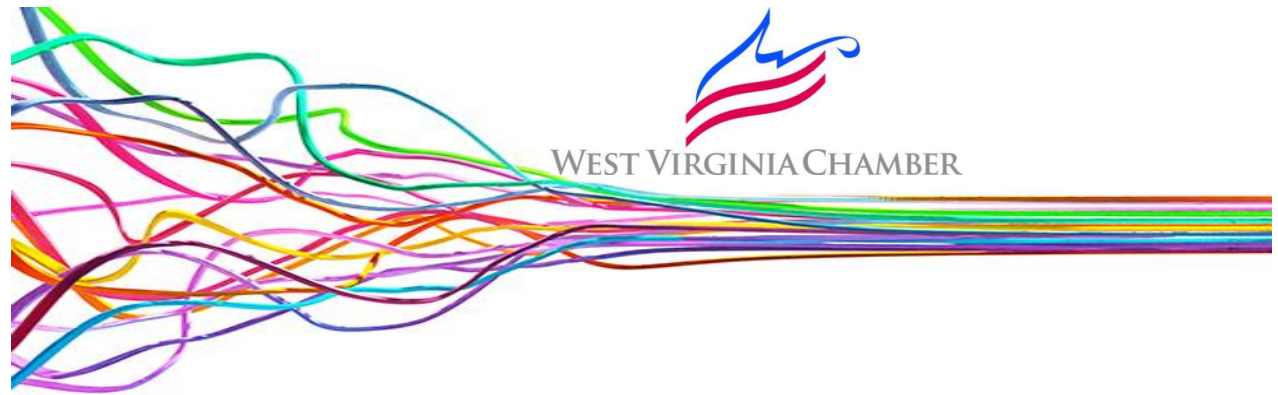
- ✓ Managing information
- ✓ Making timely decision
- ✓ Measuring progress



# Complexity & Effective Collaboration

## The Five Cs

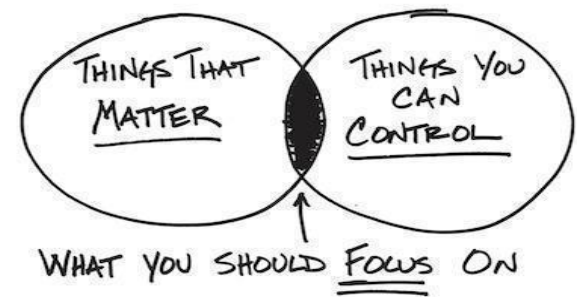
1. **Clarifying** Purpose- Start with Why
2. **Convening** the Right People (Authority to Act- Resources-Expertise- Unique Info- Stakes)
3. **Cultivating** Trust- Psychological Safety
4. **Coordinating** Existing Activities
5. **Collaborating** for Systems Impact- Illness, not Symptoms



# 8 Things I Have Learned About Collaboration over 38 Years ...

- 1. People, and organizations collaborate when it is in their interest to do so.**
- 2. Where you stand always depends on where you sit.**
- 3. Collaboration is easier in times of plenty and hard in times of scarcity.**
- 4. When crisis > complacency = cooperation.**
- 5. People collaborate when there is a chance of success.**
- 6. People collaborate when they have something specific to do.**
- 7. Collaborations work better with measurable goals.**
- 8. Patience is a virtue for successful collaboration.**

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

