

Navigating Rapid Change & Complexity

“Sir, the possibility of successfully navigating an asteroid field is approximately 3,720 to1.” (C-3PO to Han Solo in Star Wars)



Place Comparisons Data Analytics



Trendspotting



Best Practices



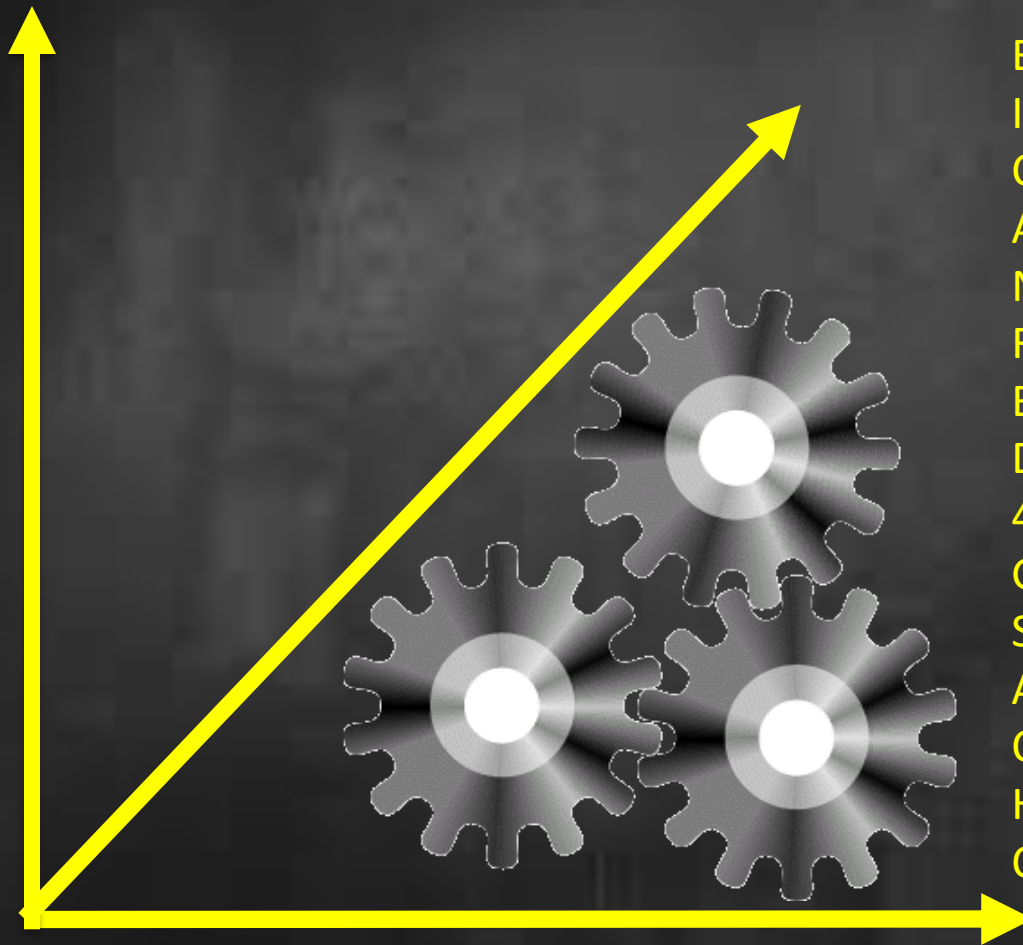
Collaborative (Group) Leadership



- ✓ Intentional
- ✓ Specific
- ✓ Measurable Actions

Competitive Improvement

Tracking Trends and Anticipating Tangents

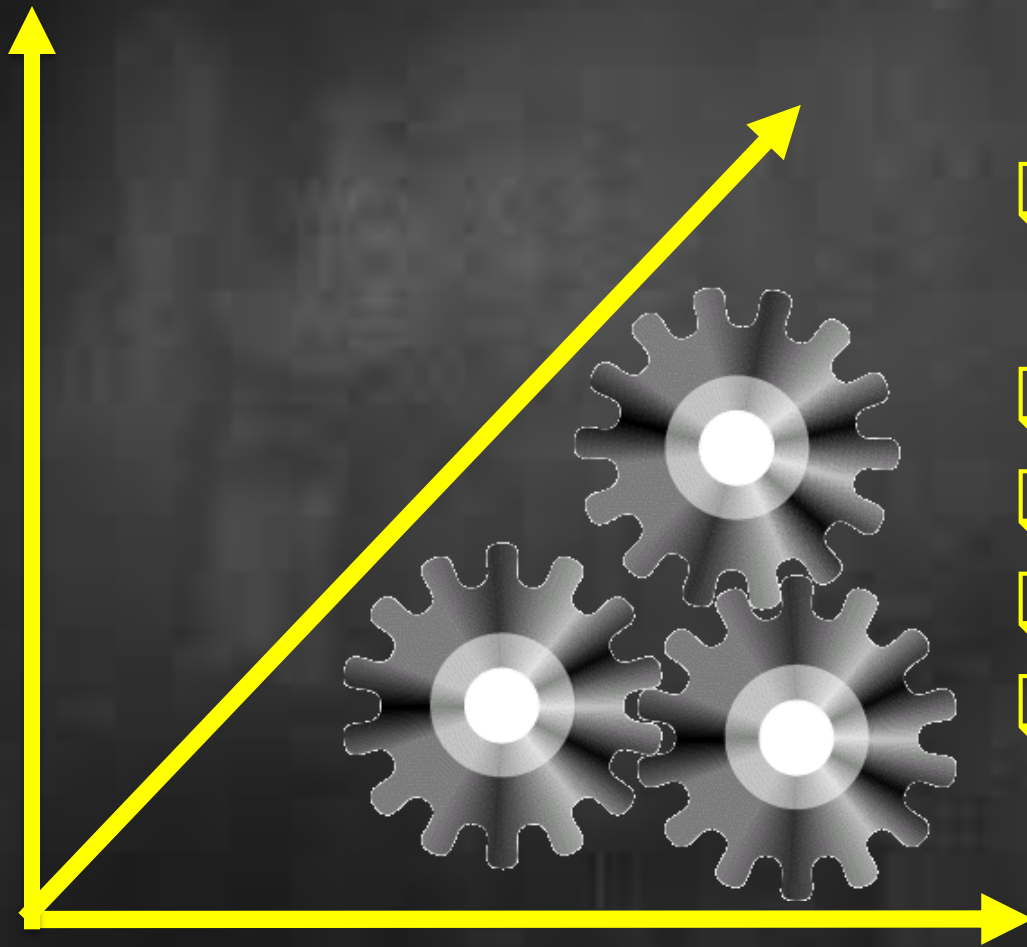


Big Data Analytics
IoT
Cognitive Systems
Augmented Reality
Nanotechnology
Robotics
Blockchain
Drones
4-D printing
Genomics
Smart Grid
Artificial Intelligence
Cyberwar
Human-Machine
Convergence

Extended Life
Declining Fertility Rate
Decreasing Poverty
Declining Marriage Rate
Resource Competition
Expanding Consumption
Inequity
Weather Impacts
Evolving Governance
Independent Workers
Nationalism
Family Transformation
Education Revolution
Natural Language
Processing
Computer Vision

Political...Social....Demographic....Consumer Preferences....Technology....Global....Equity....Culture...Purpose.....Choices...Biological

Tracking Trends and Anticipating Tangents



- ☐ Urban Winners & Losers
- ☐ People/Talent Wars
- ☐ Tech Tomorrow
- ☐ State Competitions
- ☐ Leadership for the Future

Political...Social....Demographic....Consumer Preferences....Technology....Global....Equity....Culture...Purpose.....Choices...Biological

First Rule To Understanding Competitiveness

**STOP
DRINKING
KODOL-
AID**

Your Own

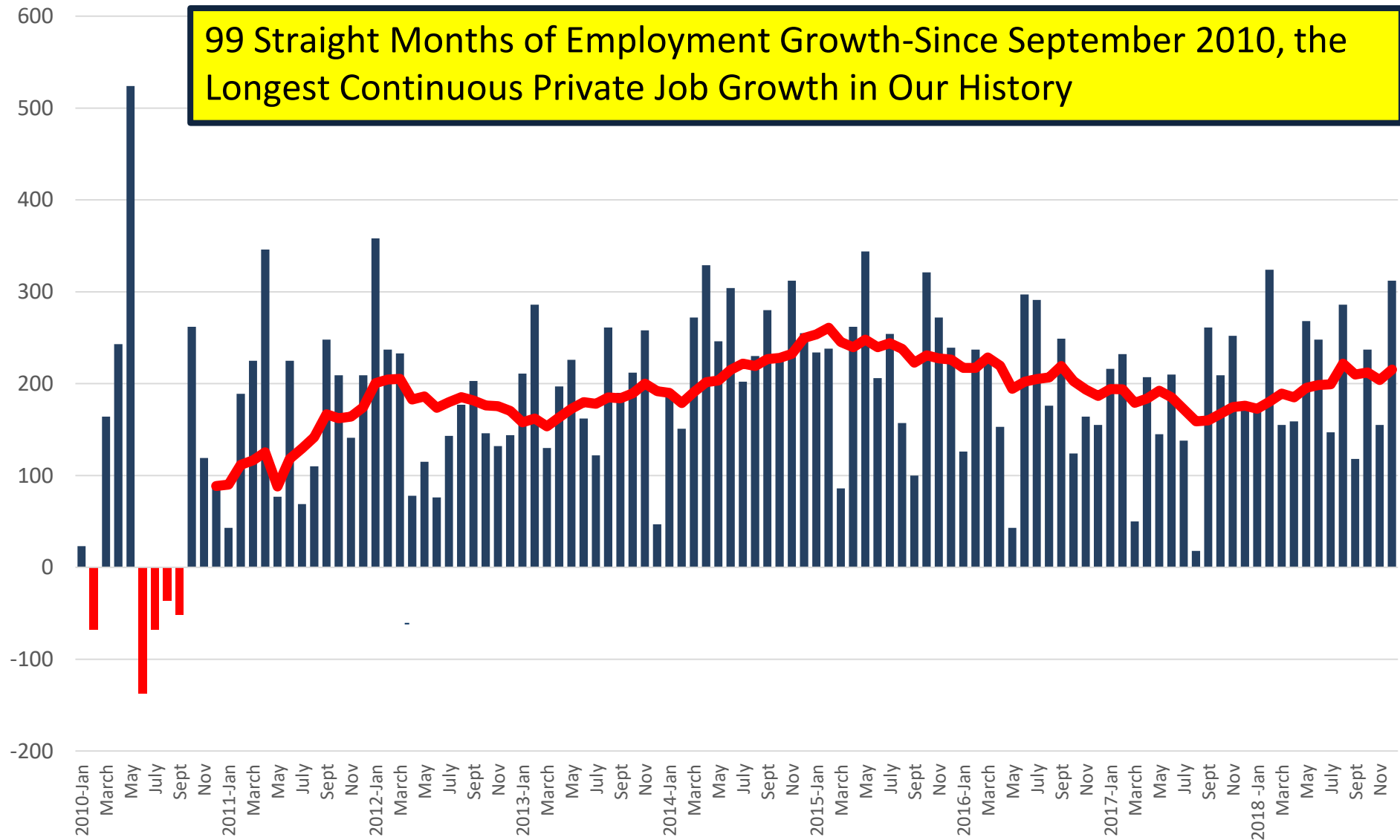


How's Our Economy?

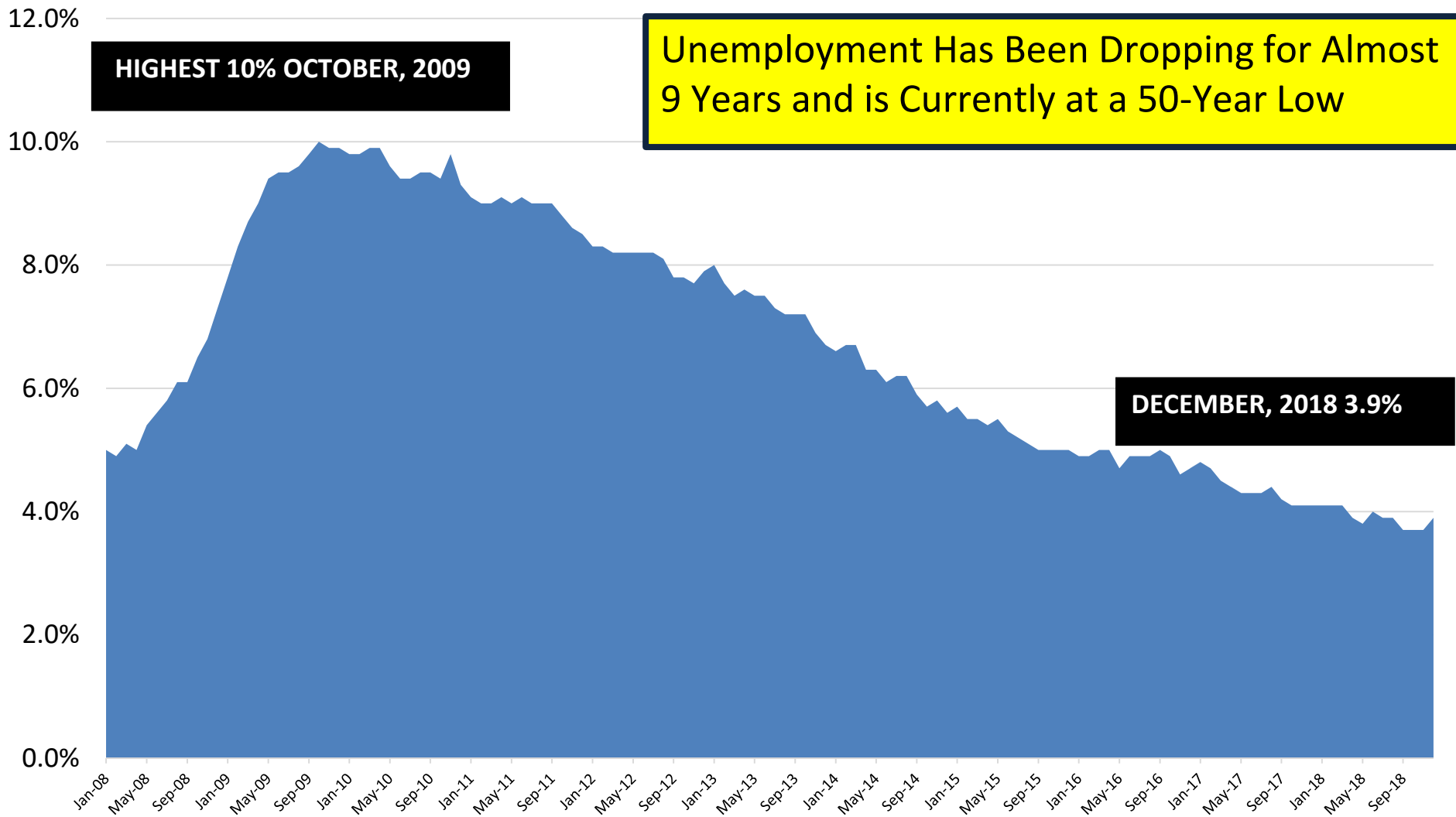


USA Nonfarm Payroll Employment

99 Straight Months of Employment Growth-Since September 2010, the Longest Continuous Private Job Growth in Our History



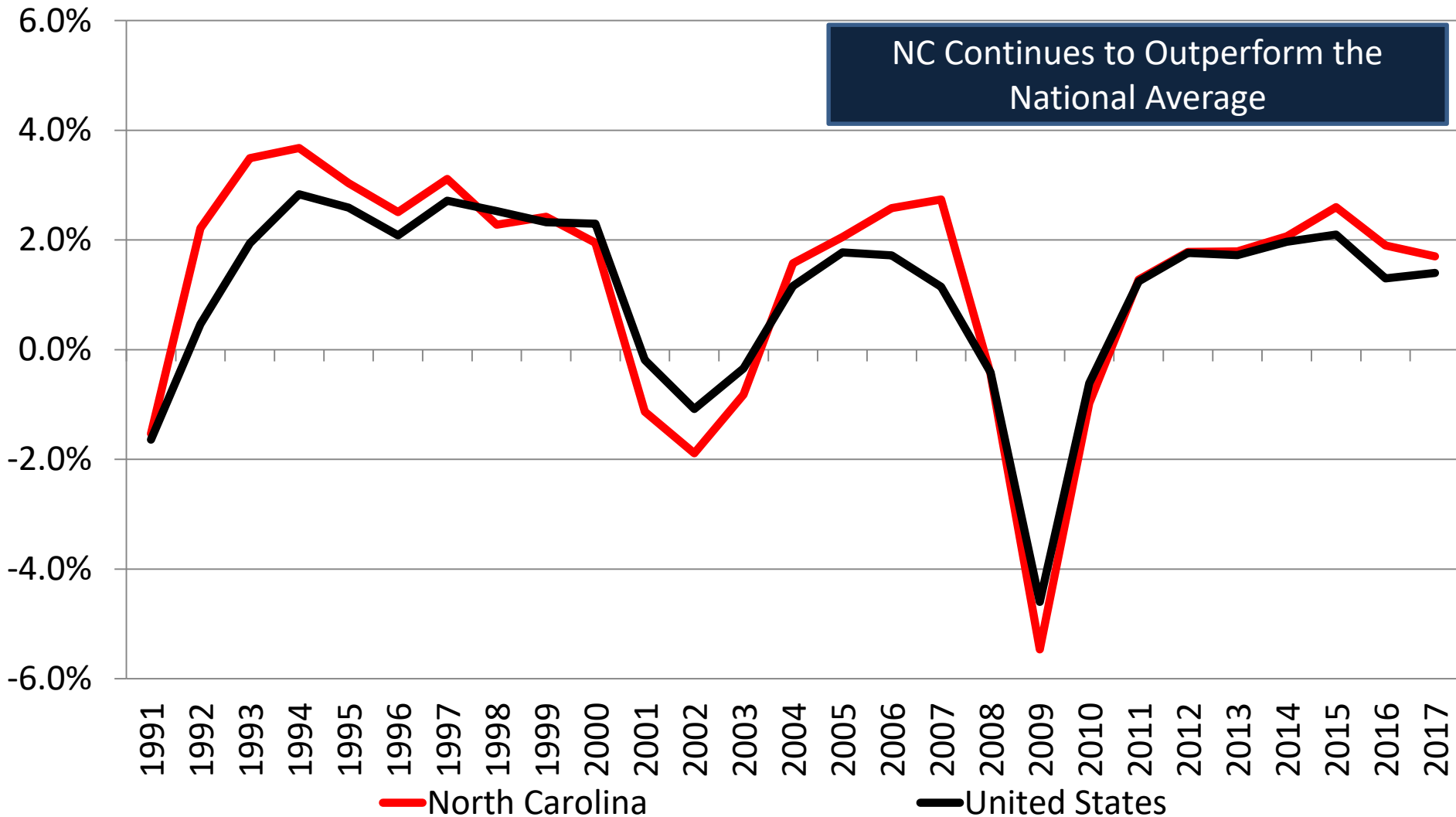
U.S. Unemployment Rate



North Carolina Economic Performance

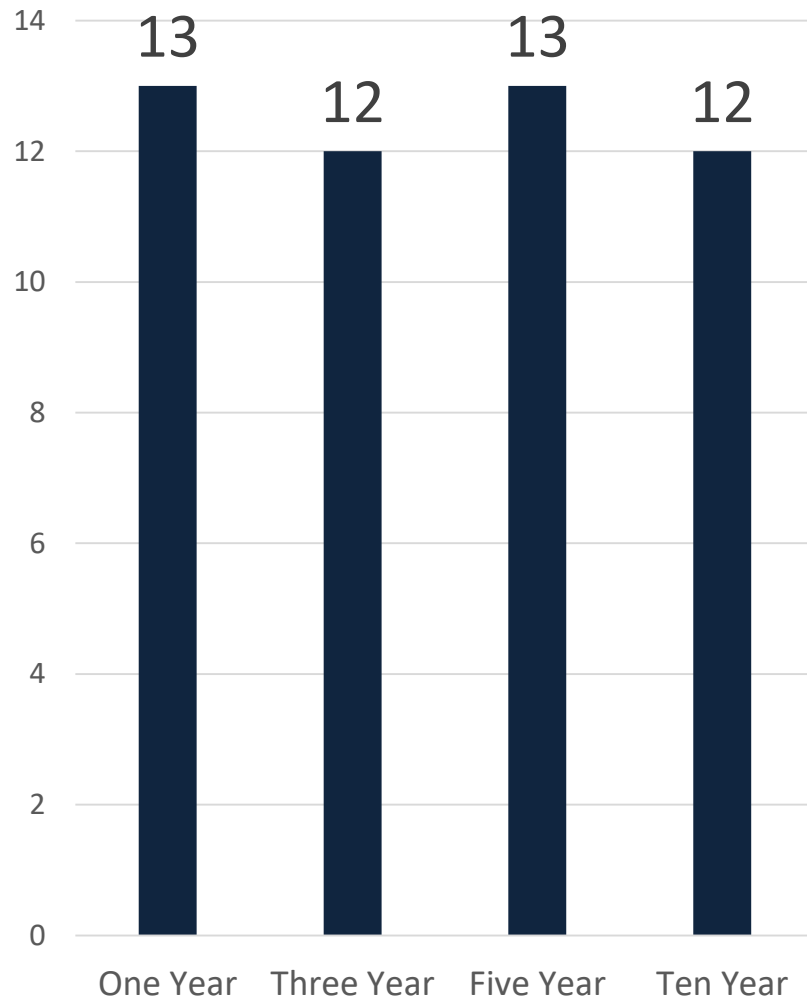


Annual Percentage Change Total Jobs



% Job Growth By State Rankings

North Carolina Rank



Neighbor's Rank

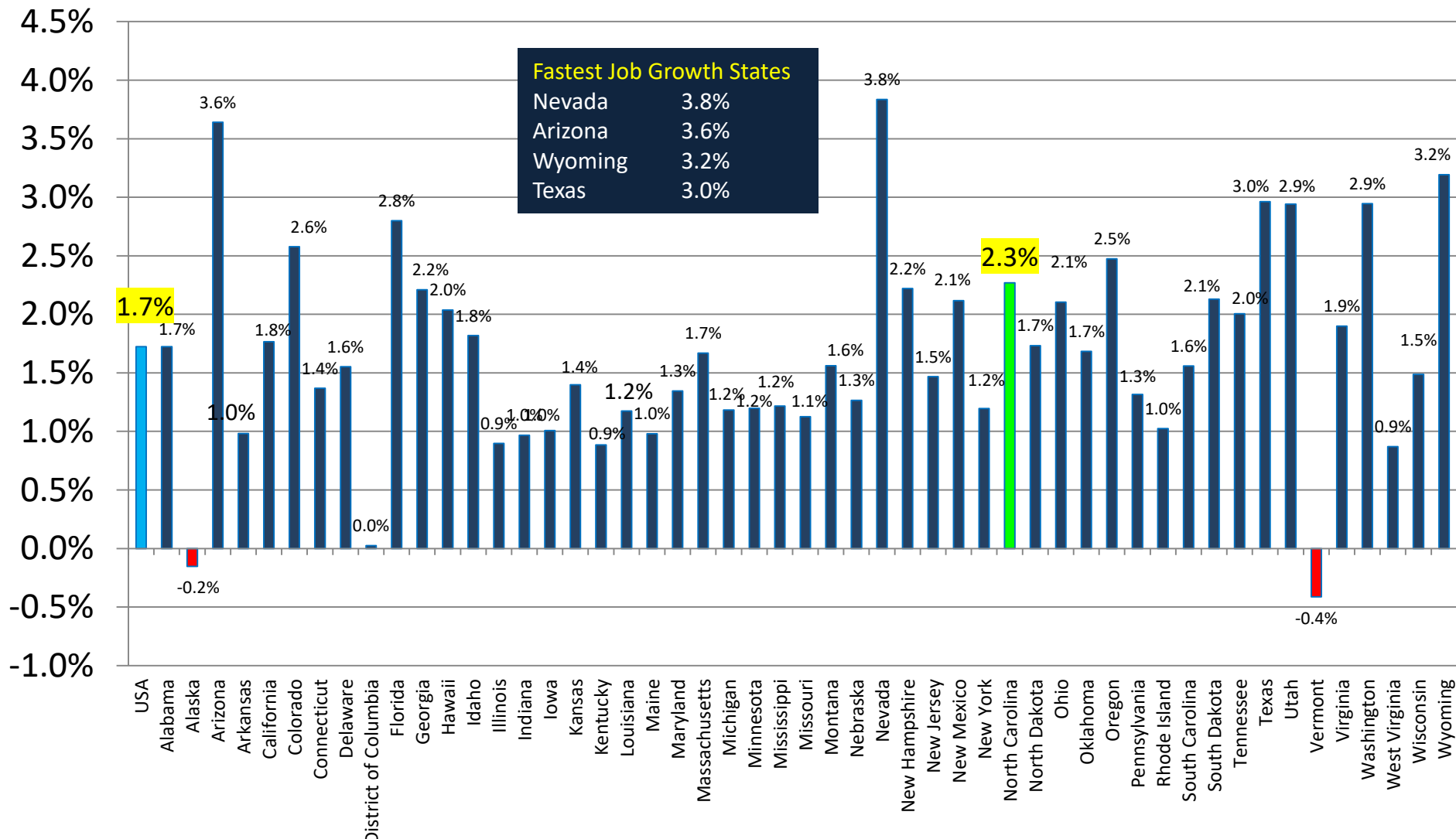
	<u>1 Year</u>	<u>3Year</u>	<u>5 Year</u>	<u>10 Year</u>
SC	10	11	11	11
TN	14	13	14	18
VA	19	16	28	26
GA	9	9	9	17
FL	7	3	3	2

Top States

<u>1 Year</u>	<u>3 Year</u>	<u>5 Year</u>	<u>10 Year</u>
Nevada	Utah	Utah	North Dakota
Utah	Nevada	Nevada	Texas
Idaho	Florida	Florida	Utah

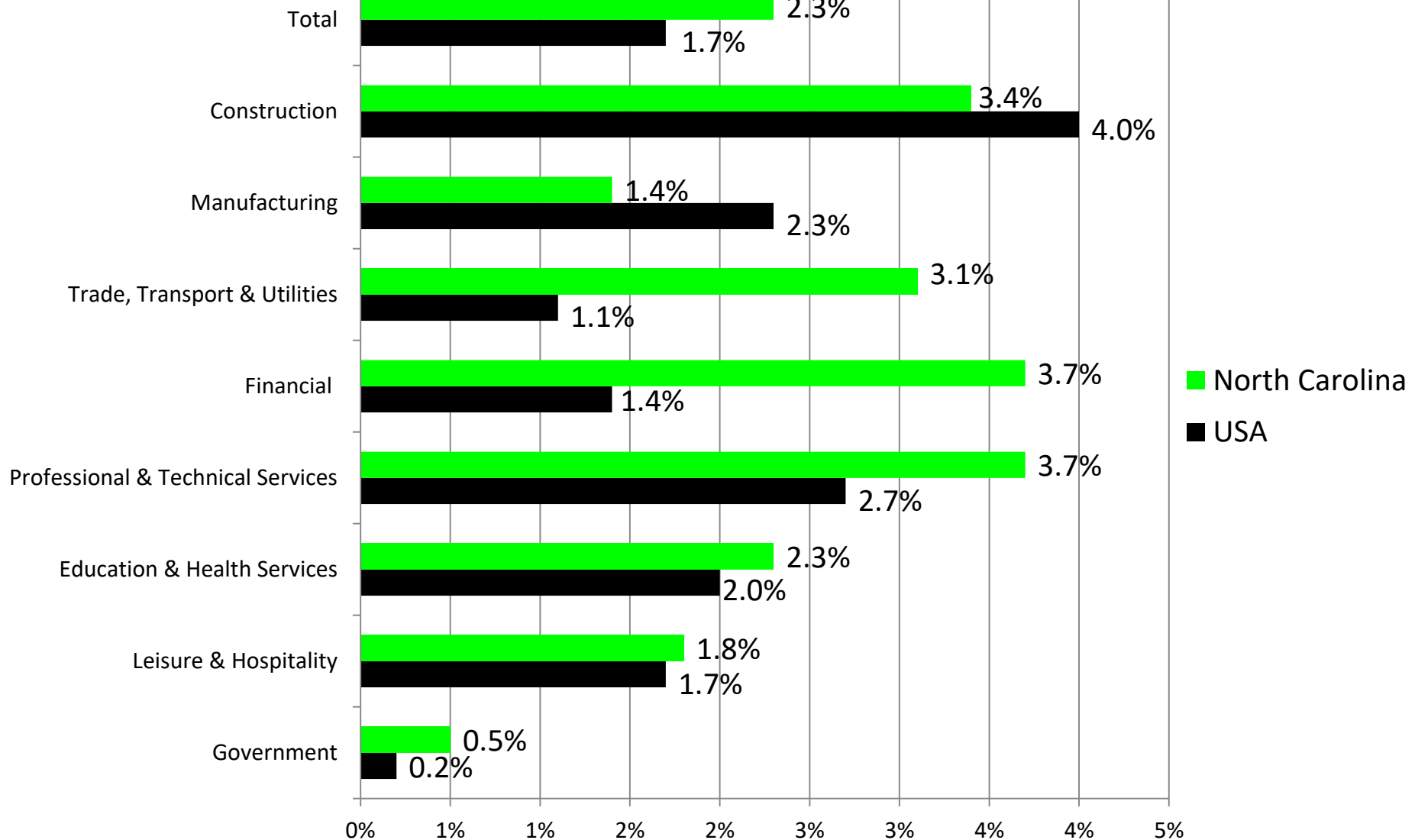
All States 1-Year

Total Non-Farm Employment Percentage Change Nov 2017 to Nov 2018



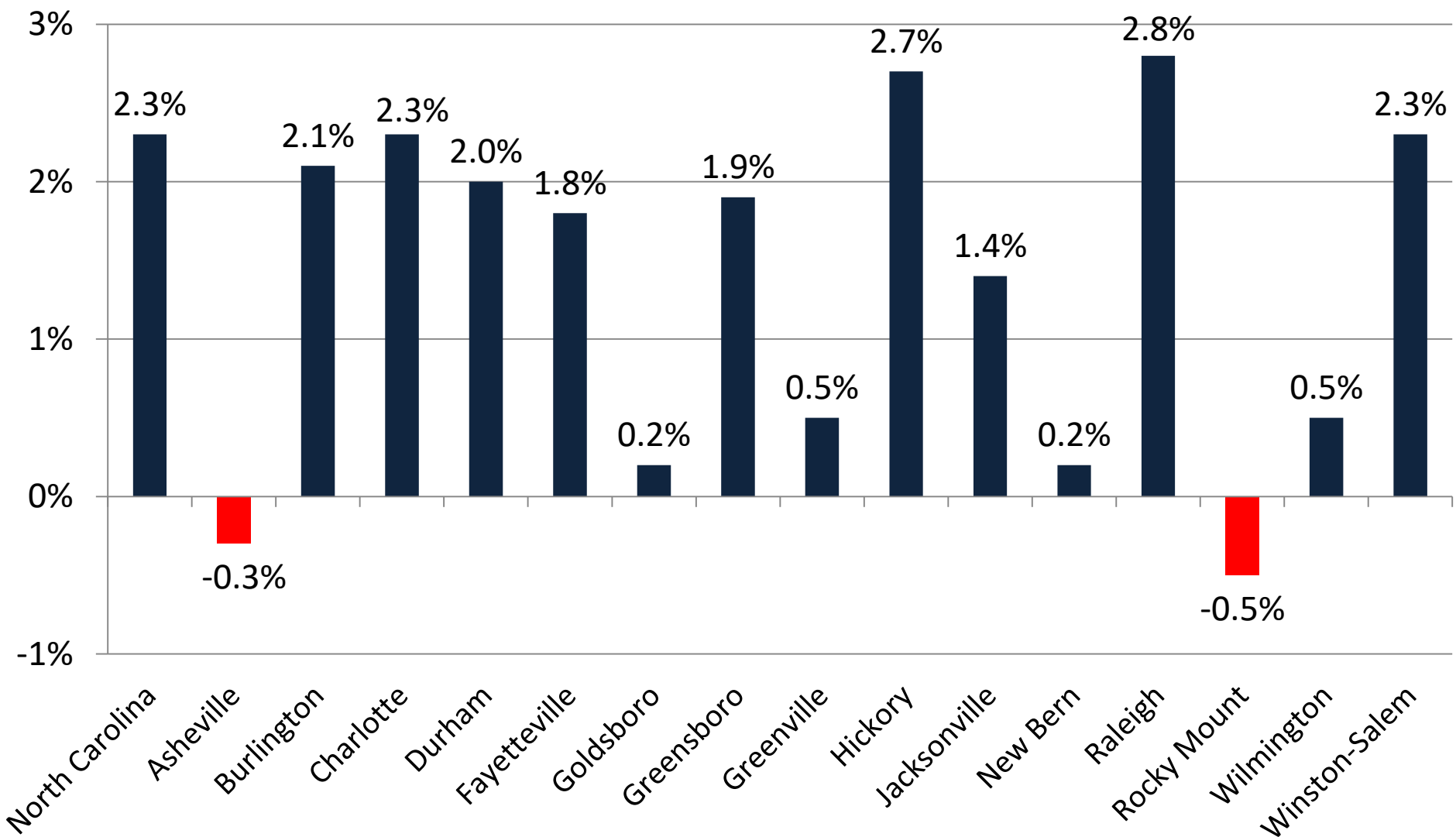
Employment Gains By Sector for the USA and North Carolina

November 2017-2018



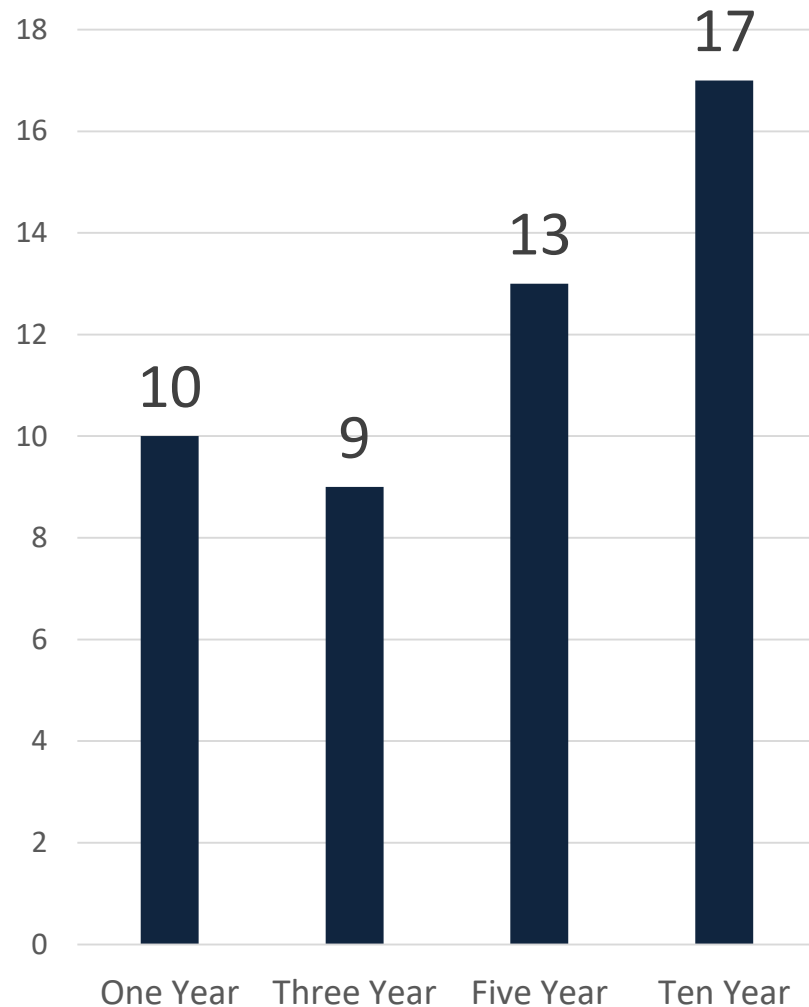
North Carolina Metro

Non-Farm Employment November 2017 to November 2018



% Wage Growth By State Rankings

North Carolina Rank



Neighbors Rank

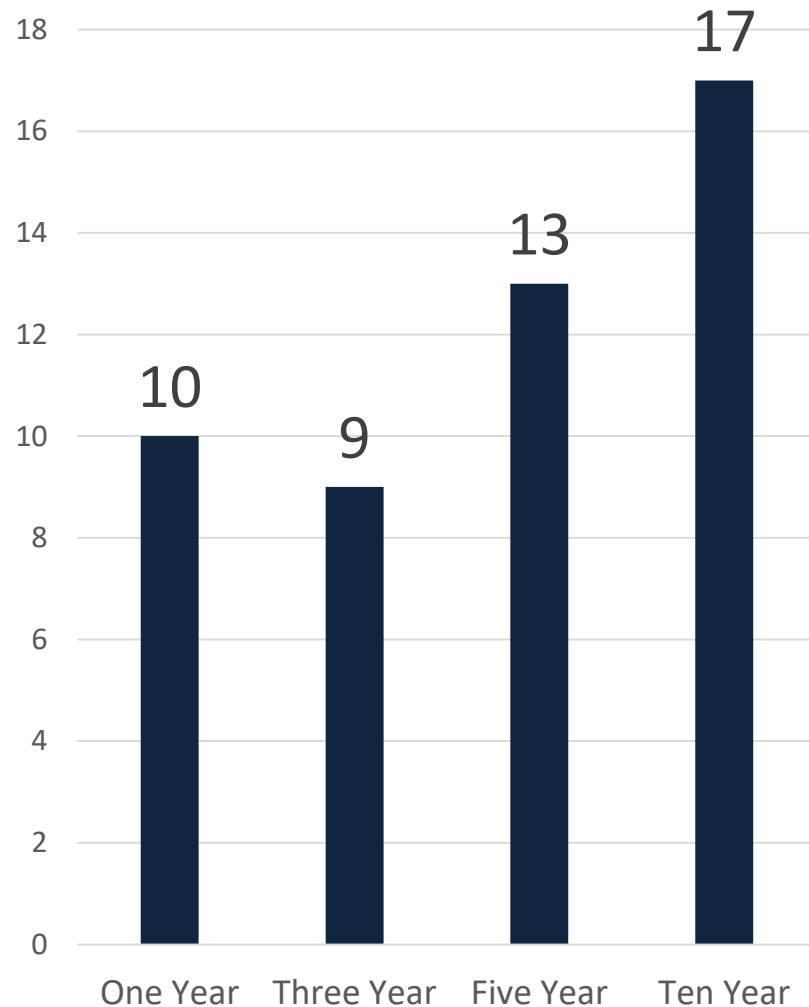
	<u>1 Year</u>	<u>3Year</u>	<u>5 Year</u>	<u>10 Year</u>
SC	17	14	18	21
TN	24	20	31	23
VA	21	36	40	34
GA	29	14	17	29
FL	22	18	25	8

Top States

<u>1 Year</u>	<u>3 Year</u>	<u>5 Year</u>	<u>10 Year</u>
WA	WA	WA	ND
CA	CA	SD	WA
ND	HI	CA	SD

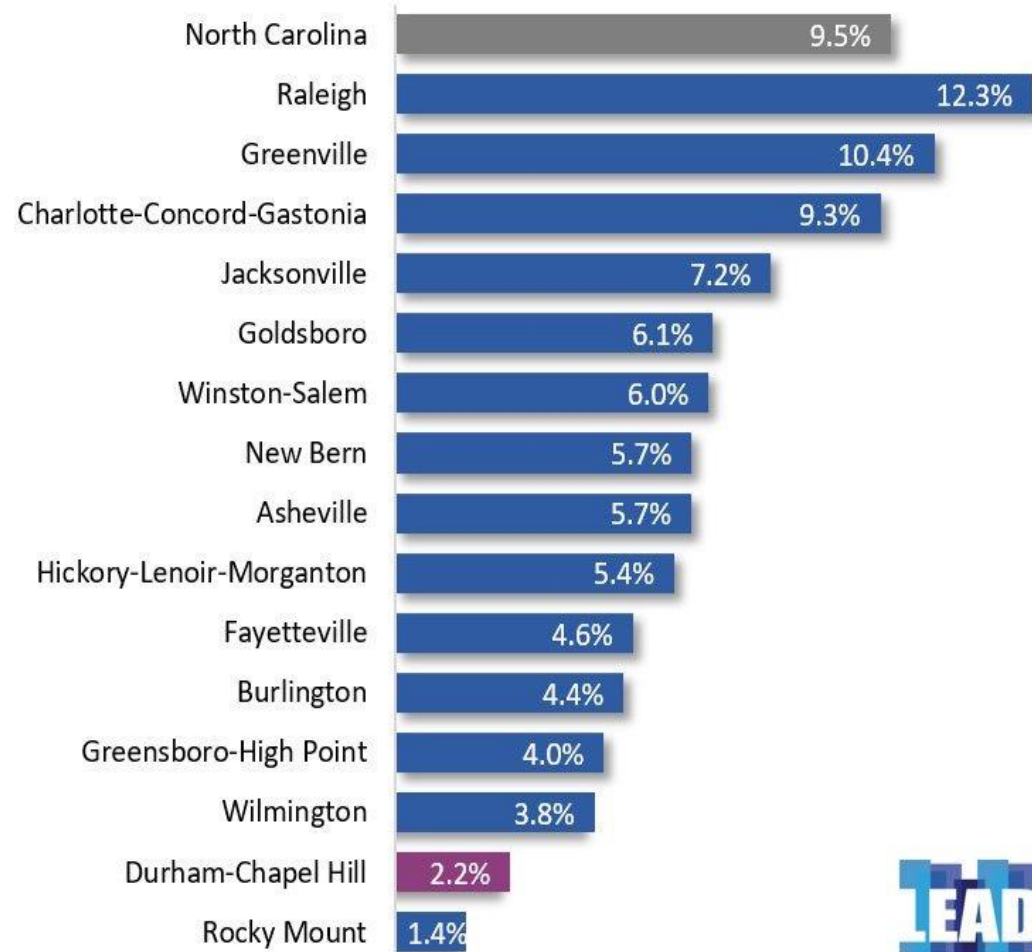
% Wage Growth By State Rankings

North Carolina Rank



Growth in Real Average Wages by MSA

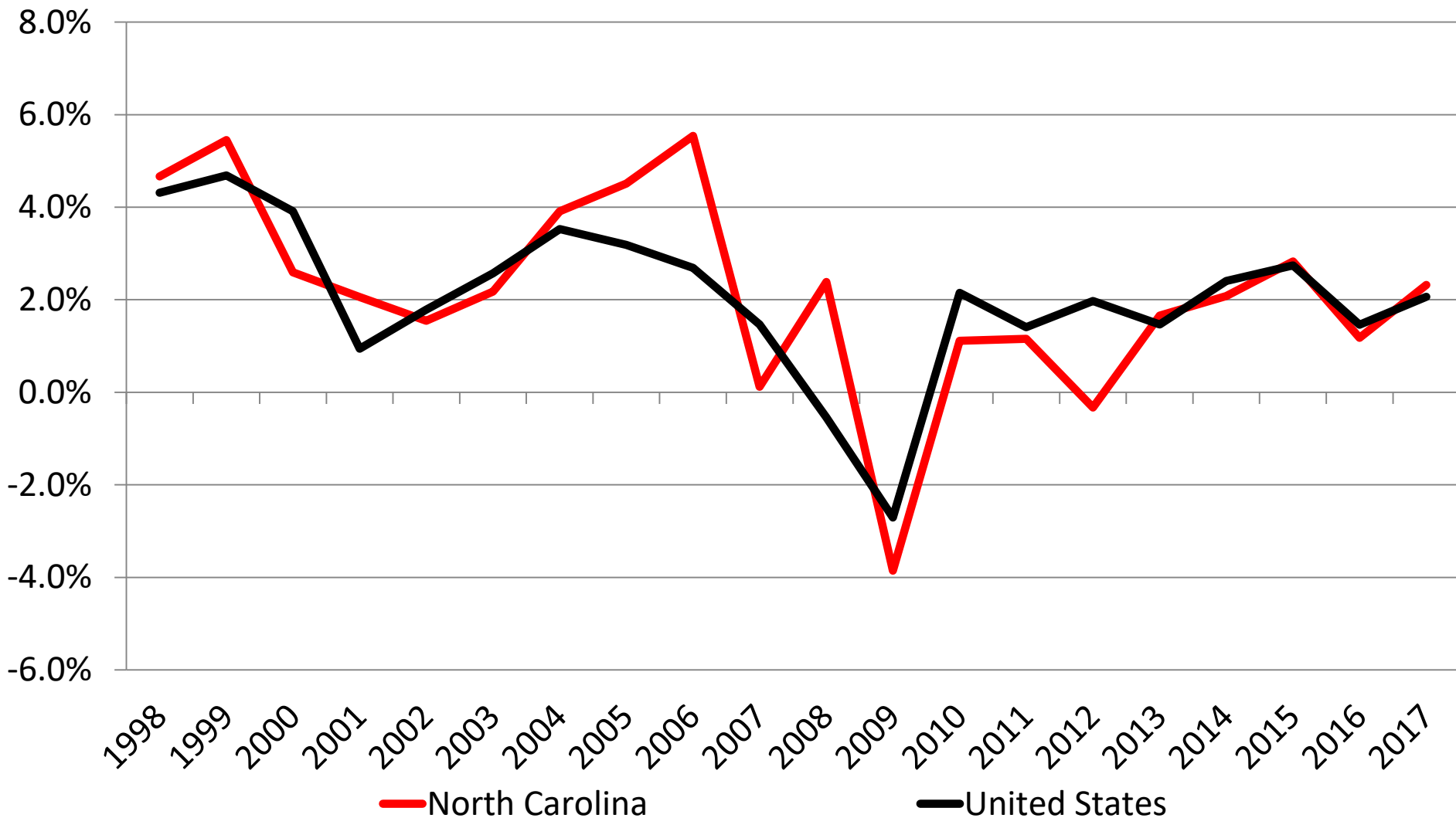
Q2 2008-2018



Source: NC Commerce, LEAD QCEW, wages adjusted for inflation using BLS' CPI

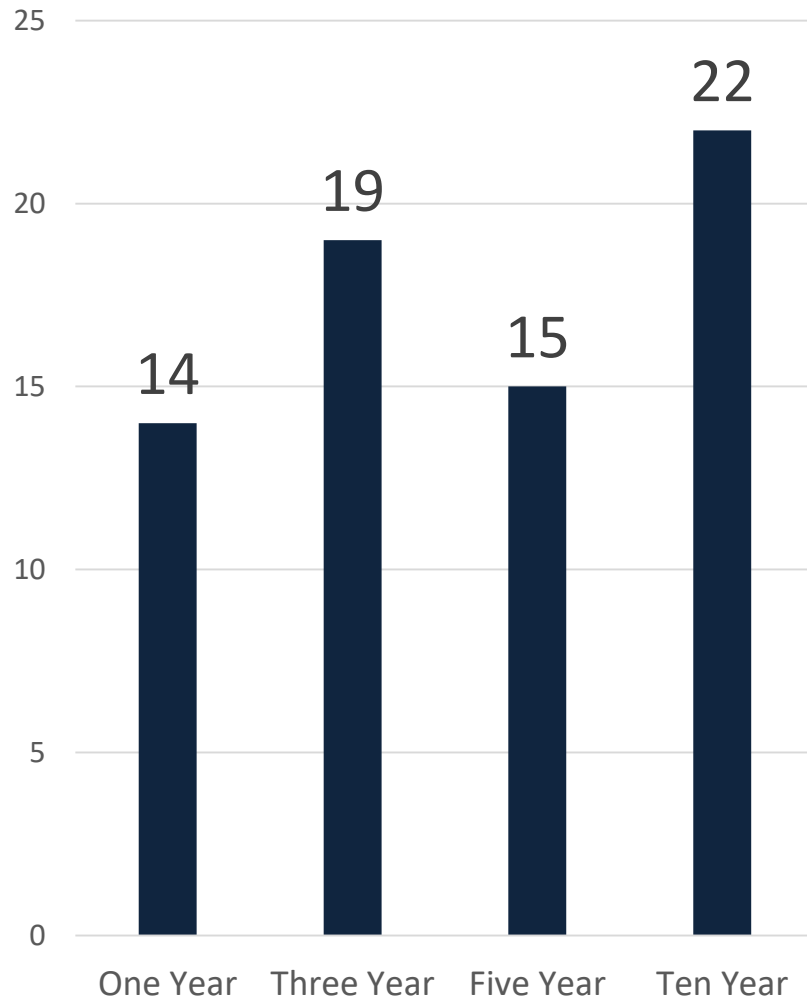


Annual Percentage Change GDP



% GDP Growth By State Rankings

North Carolina Rank



Neighbors Rank

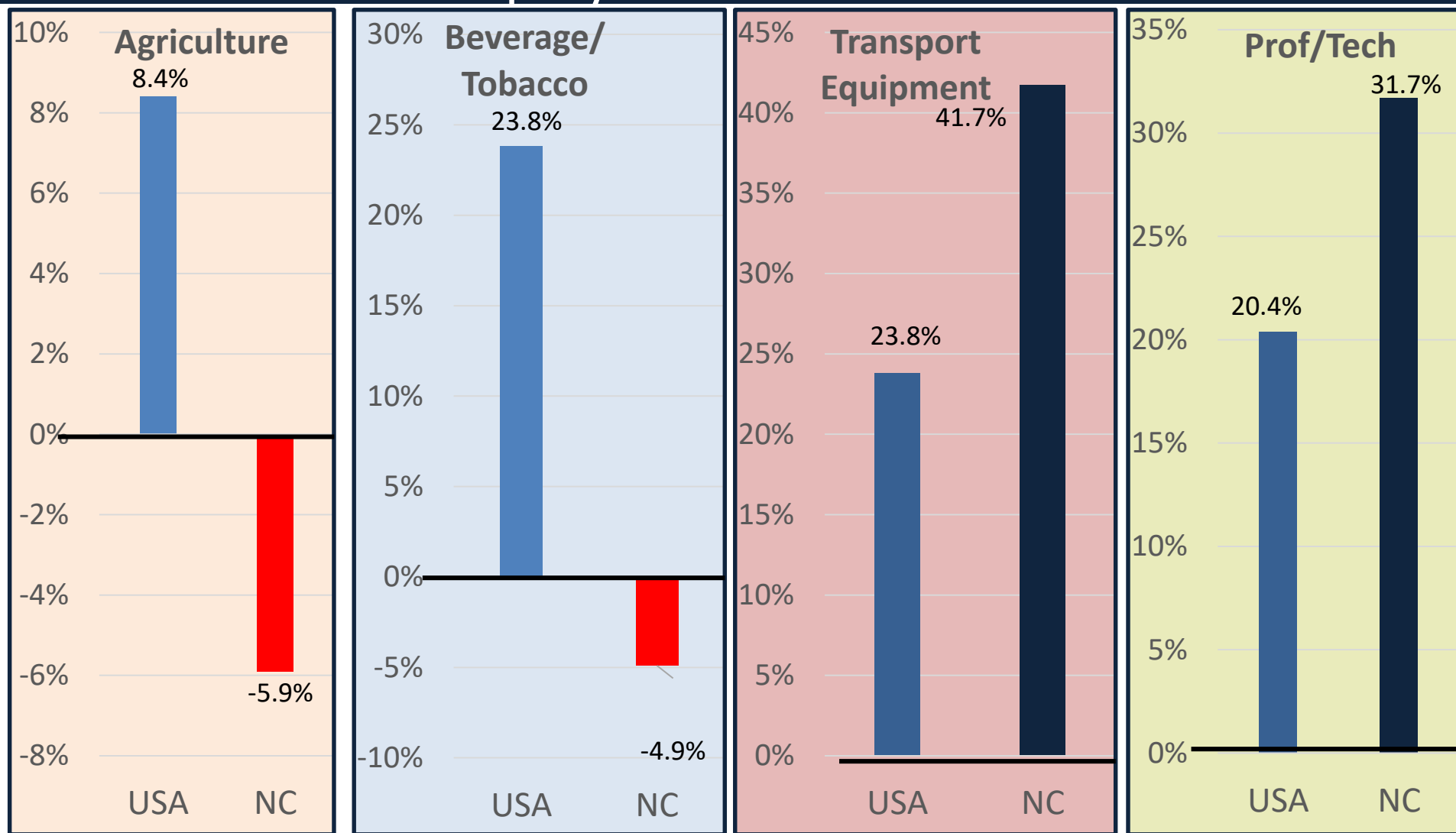
	<u>1 Year</u>	<u>3 Year</u>	<u>5 Year</u>	<u>10 Year</u>
SC	16	12	9	18
TN	13	9	11	11
VA	19	27	38	31
GA	8	6	8	25
FL	17	7	7	39

Top States

<u>1 Year</u>	<u>3 Year</u>	<u>5 Year</u>	<u>10 Year</u>
WA	WA	WA	ND
CO	OR	CA	TX
NV	UT	CA	NE

Tracking the NC Economy Evolution Post-Recession

Employment- 2010-2017

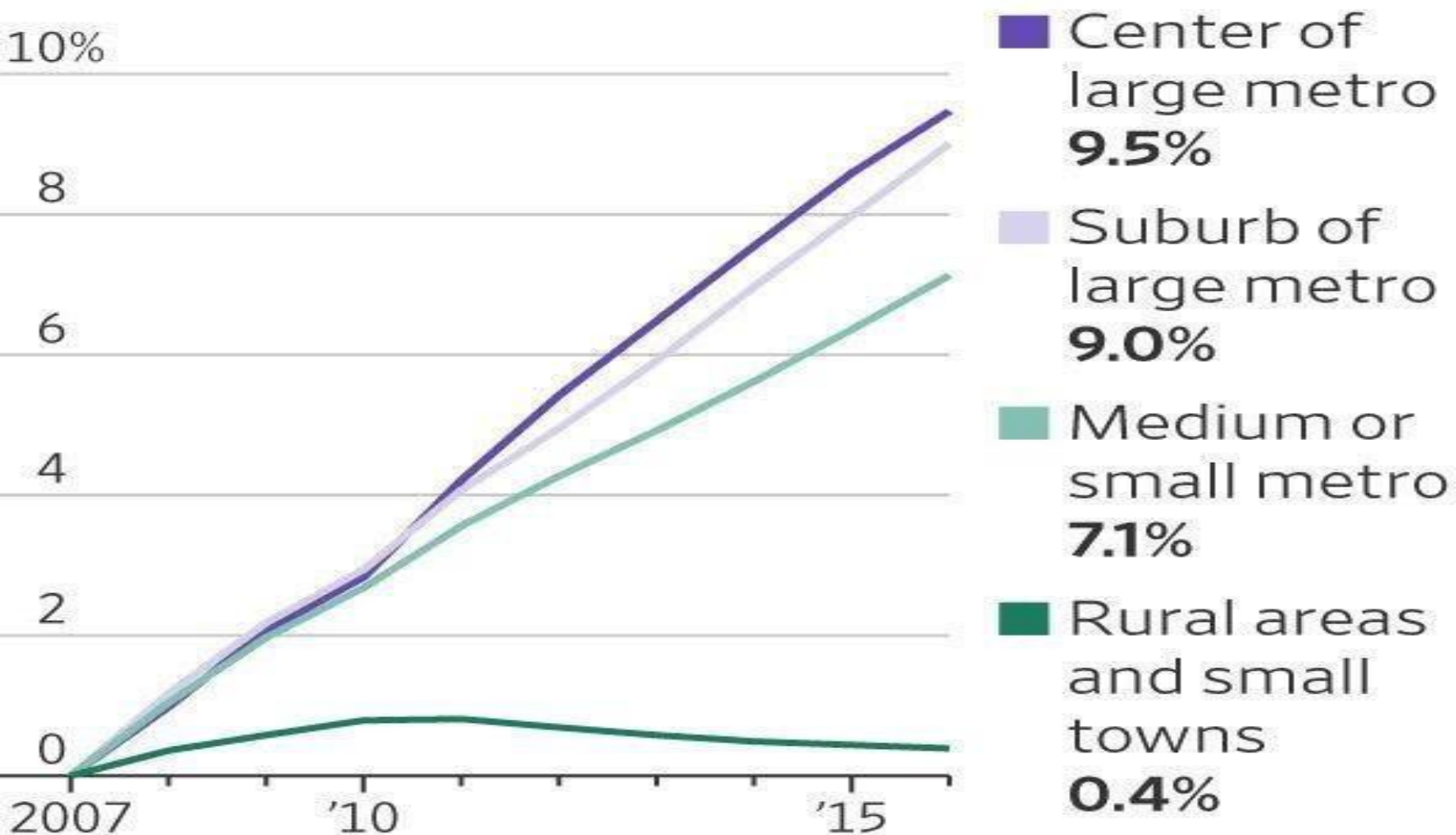


1) Urbanization-People, Wealth and Jobs Continue to Concentrate with Fewer Winners

Size Matters



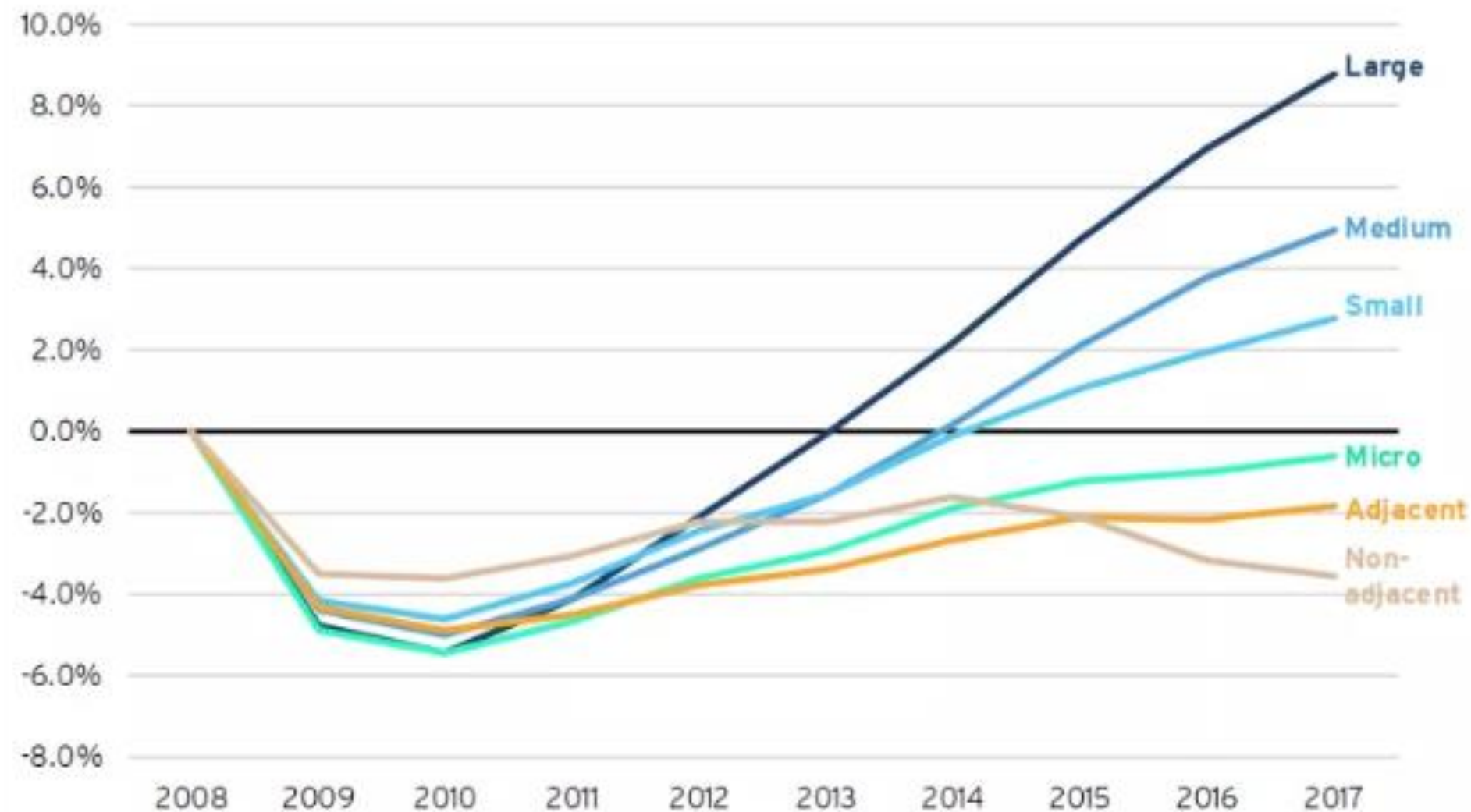
Change in population since 2007



Source: Census Bureau

Employment by community size type

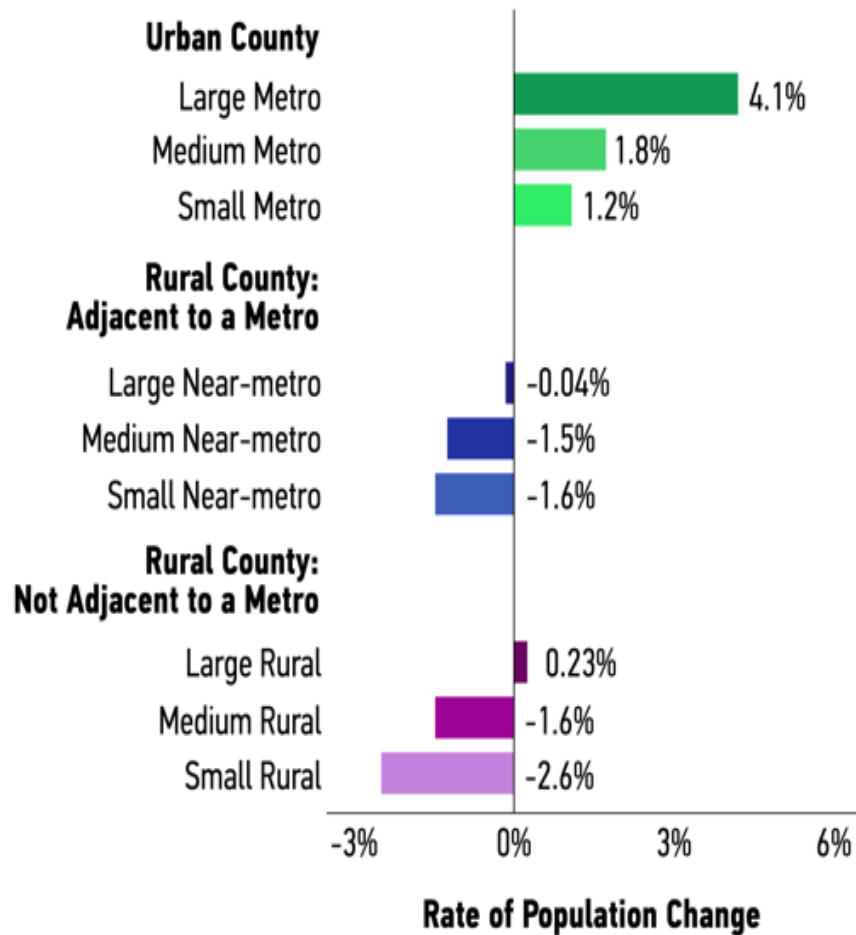
Percent change since 2008, 2008-17



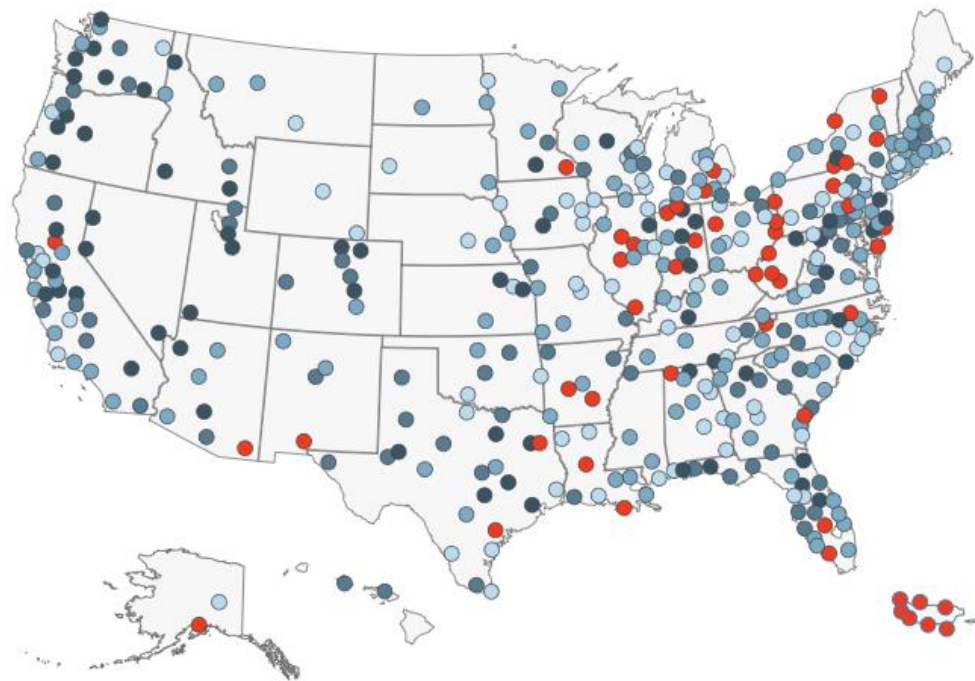
Source: Brookings analysis of QCEW data

Rate of Population Change 2001-2016

Rate of Population Change

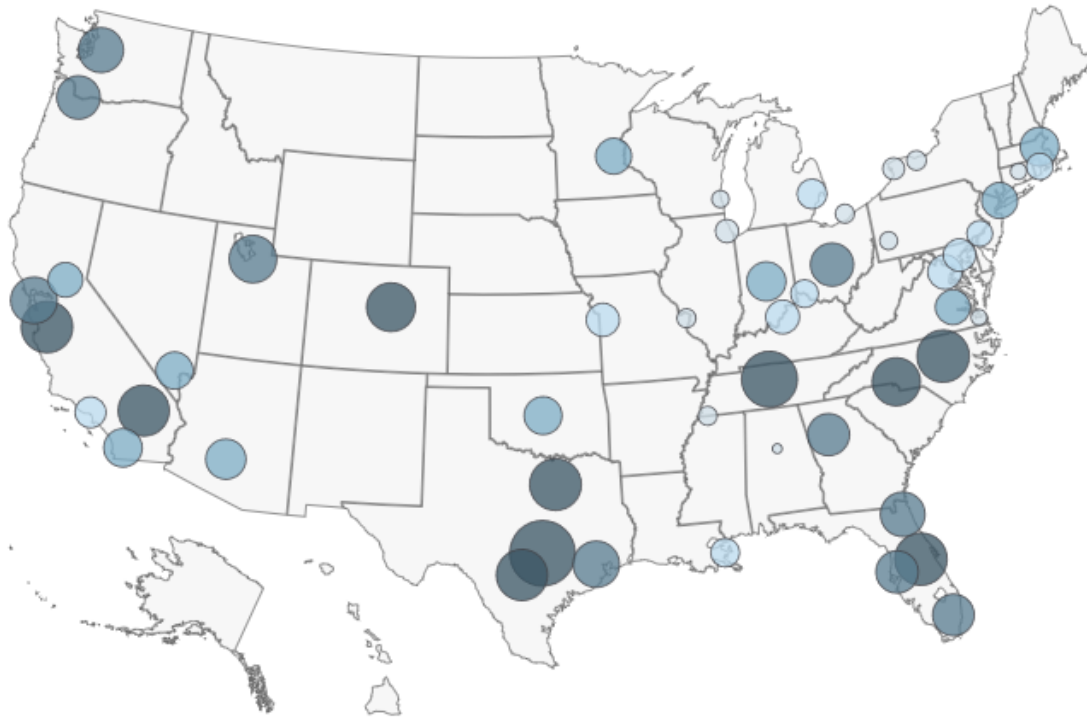


% Change in Total Nonfarm Employment for Metros August 2017 to August 2018, not seasonally adjusted



Source: U.S. Department of Agriculture (Madison McVeigh/CityLab)

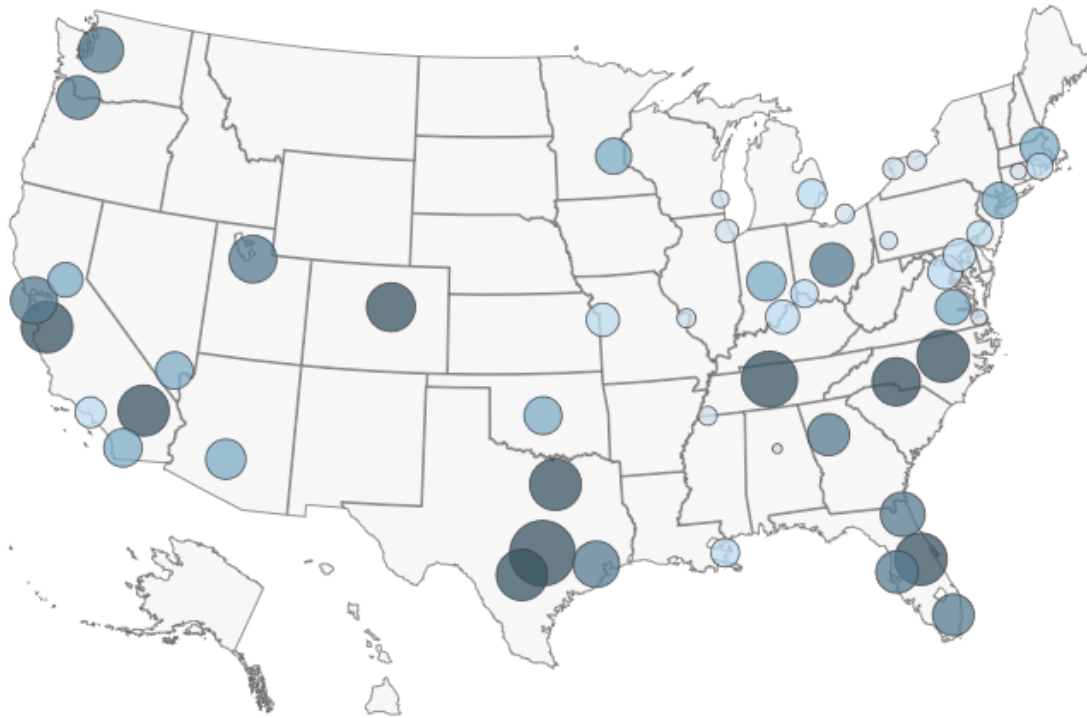
Percent Change in Employment for Metros with a Census 2010 Population of 1 Million or More August 2008 to 2018



Fastest Growing

1. Austin +35.3
2. Nashville +25.7
3. Orlando +22.6
4. Raleigh +22.5
5. Dallas +22.0
6. San Jose +21.9
7. San Antonio +21.6
8. Riverside +21.5
9. Denver +19.6
10. Charlotte +19.1

Percent Change in Employment for Metros with a Census 2010 Population of 1 Million or More August 2008 to 2018



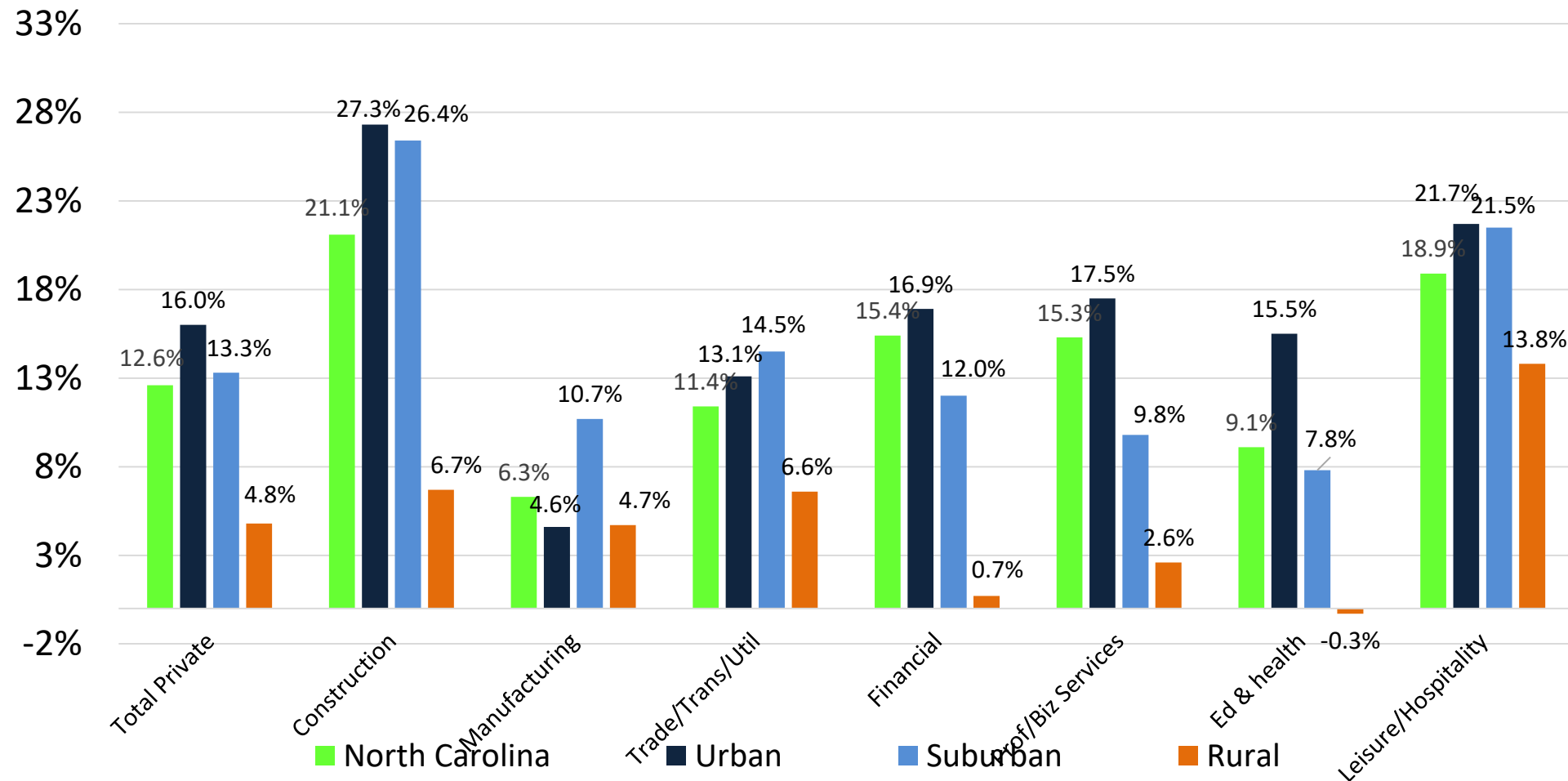
Growing Below 10%

- | | | |
|-----|------------------|------|
| 1) | Birmingham | 0.8% |
| 2) | Norfolk/VA Beach | 2.1% |
| 3) | Pittsburg | 2.7% |
| 4) | St Louis | 3.0% |
| 5) | Memphis | 3.0% |
| 6) | Cincinnati | 6.4% |
| 7) | New Orleans | 6.9% |
| 8) | Kansas City | 9.1% |
| 9) | Louisville | 9.4% |
| 10) | Washington | 9.8% |

NC Job Growth 2012-2017

By County Designation

Percentage Job Growth



2) Talent Wars



TALENT

Workforce Development Challenges of Both Quality and Quantity





THE HEADWINDS

FOR WORKFORCE SOLUTIONS

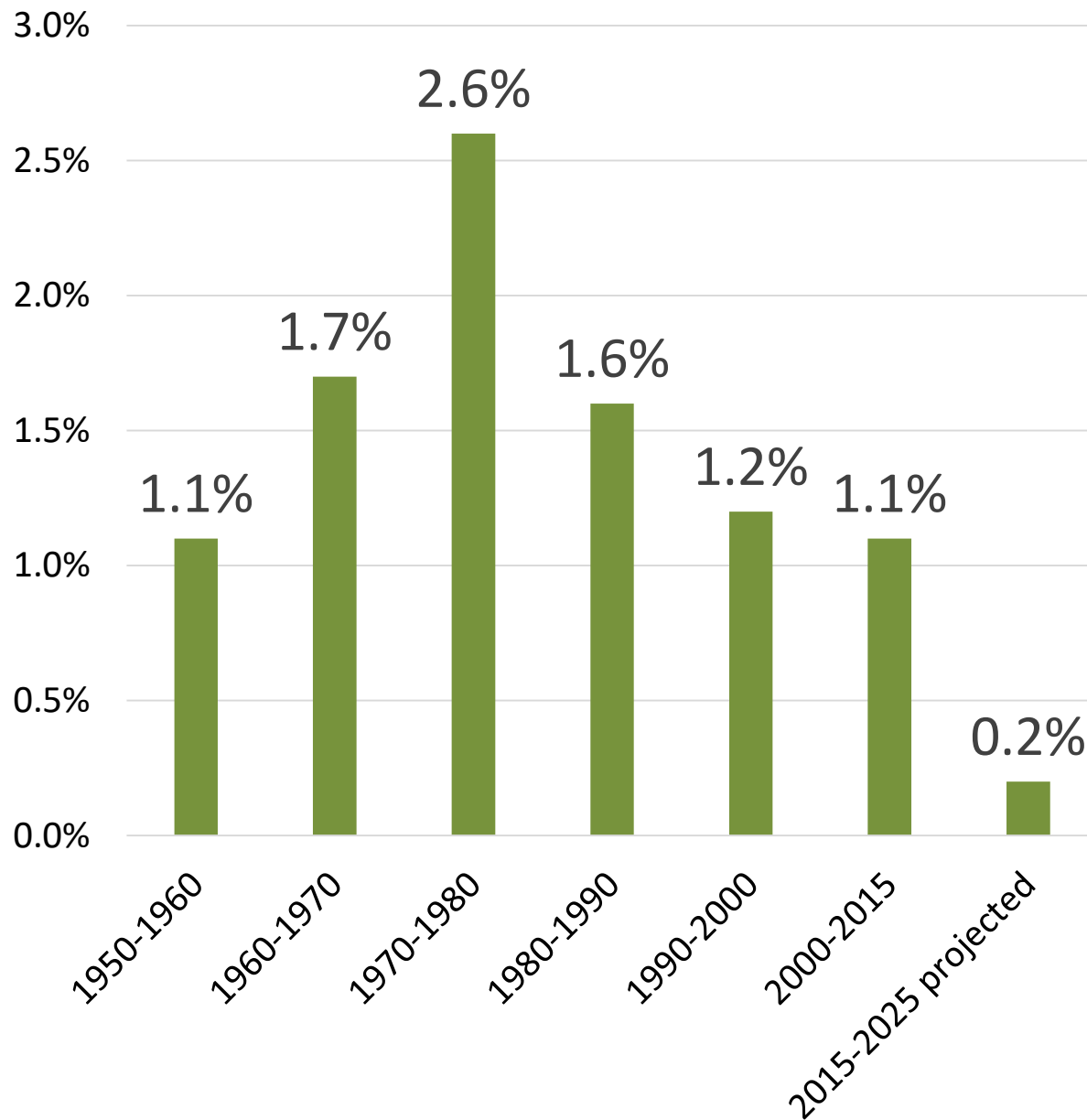
Economics

Demographics

Techno/Skill Shifts

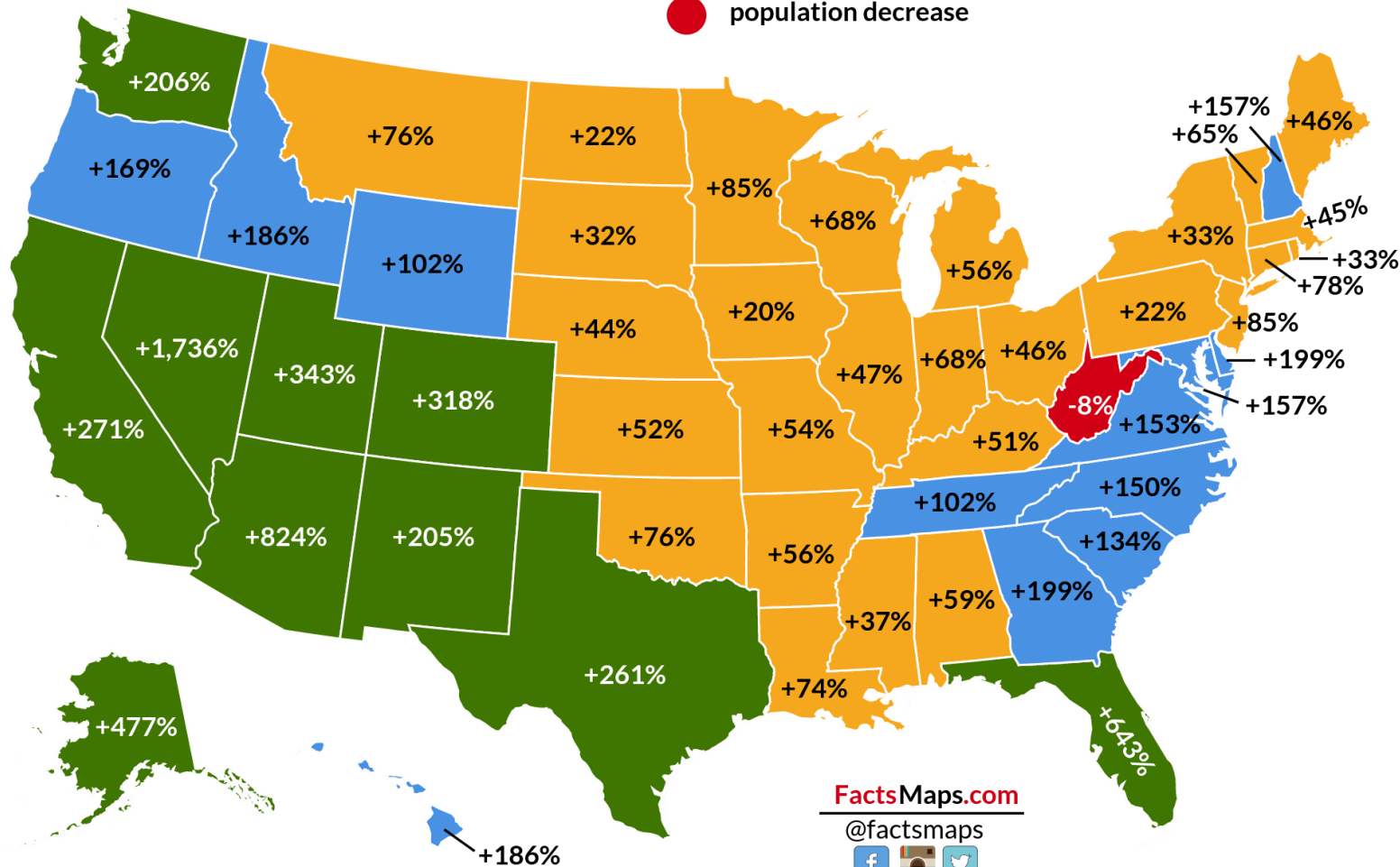
Politics/Policies

U.S. Annual Rates of Labor Force Growth



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

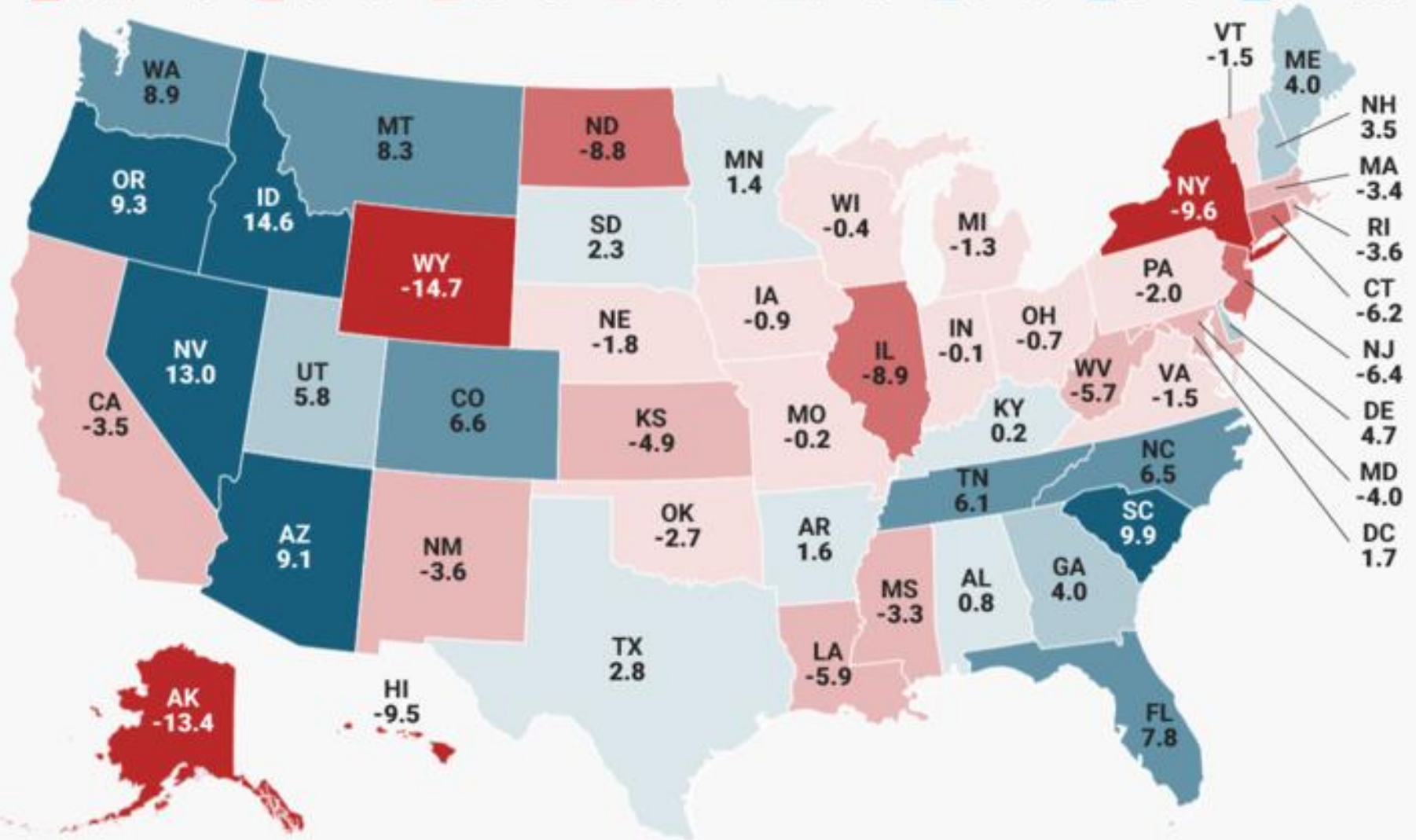


Source: United States Census Bureau

NET DOMESTIC MIGRATION

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

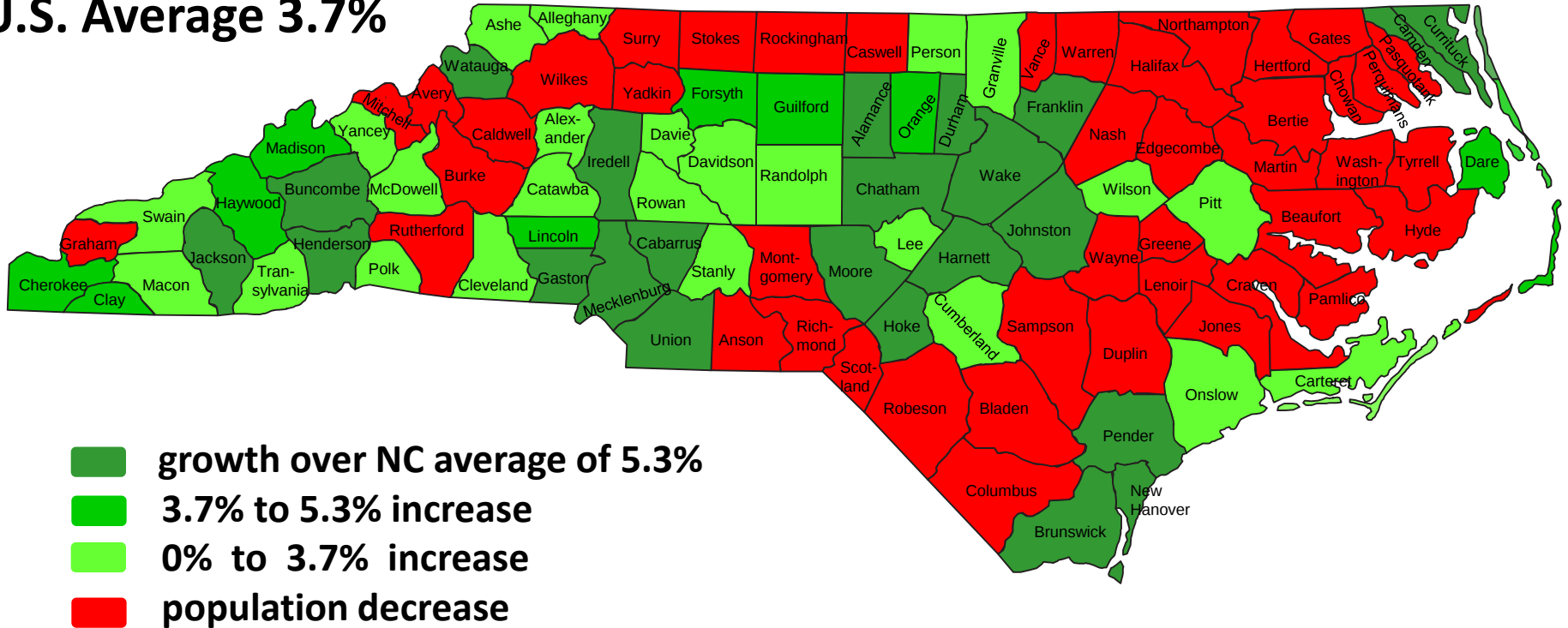
■ -14.7 – -9 ■ -9 – -6 ■ -6 – -3 ■ -3 – 0 ■ 0 – 3 ■ 3 – 6 ■ 6 – 9 ■ 9 – 14.6



Population Growth More Concentrated 5 Year Percentage Change 2012 - 2017

North Carolina Average 5.3%

U.S. Average 3.7%

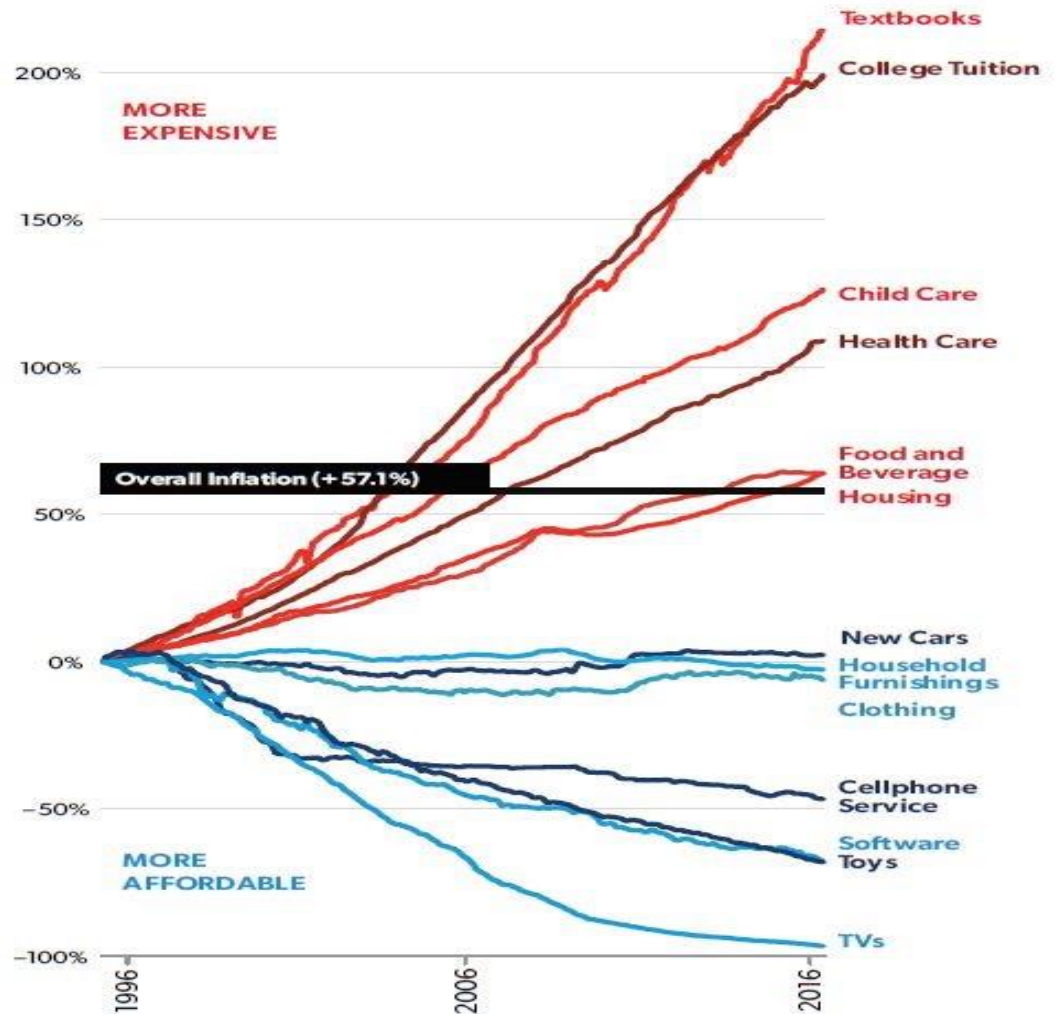


Millennials Are Not Having Children?



Price Changes (Jan. 1996–Dec. 2016)

Selected Consumer Goods and Services



Source: Bureau of Labor Statistics.

Millennials Are Not Having Children?



Placemaking is It



Our Physical Space is Changing





Some Trends
Re-Urbanizing
Special-Not
Cookie Cutter
24 hour spaces
Retail Reinvention
Experience, Not
Just Place
Future “teching”

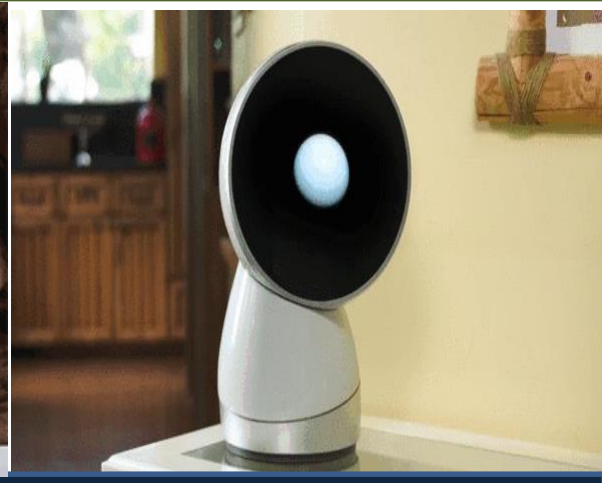
A Visualized World is Here How Do We Look on Instagram?



3) Tech Tomorrow is Already Here



The Next Big Things Personal-Augmented Reality-AI-Drones



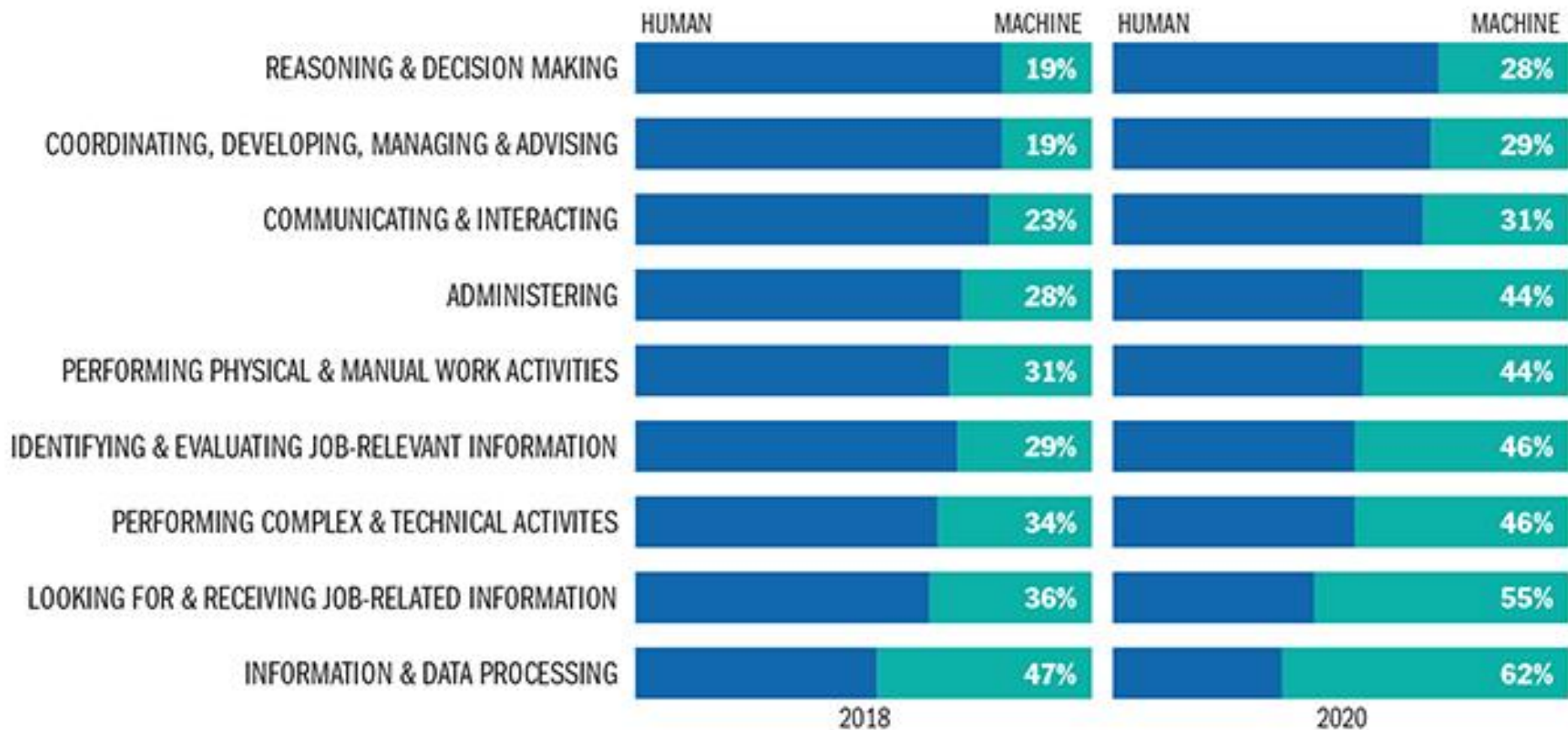
The Next Big Things

Personal-Augmented Reality-AI-Drones



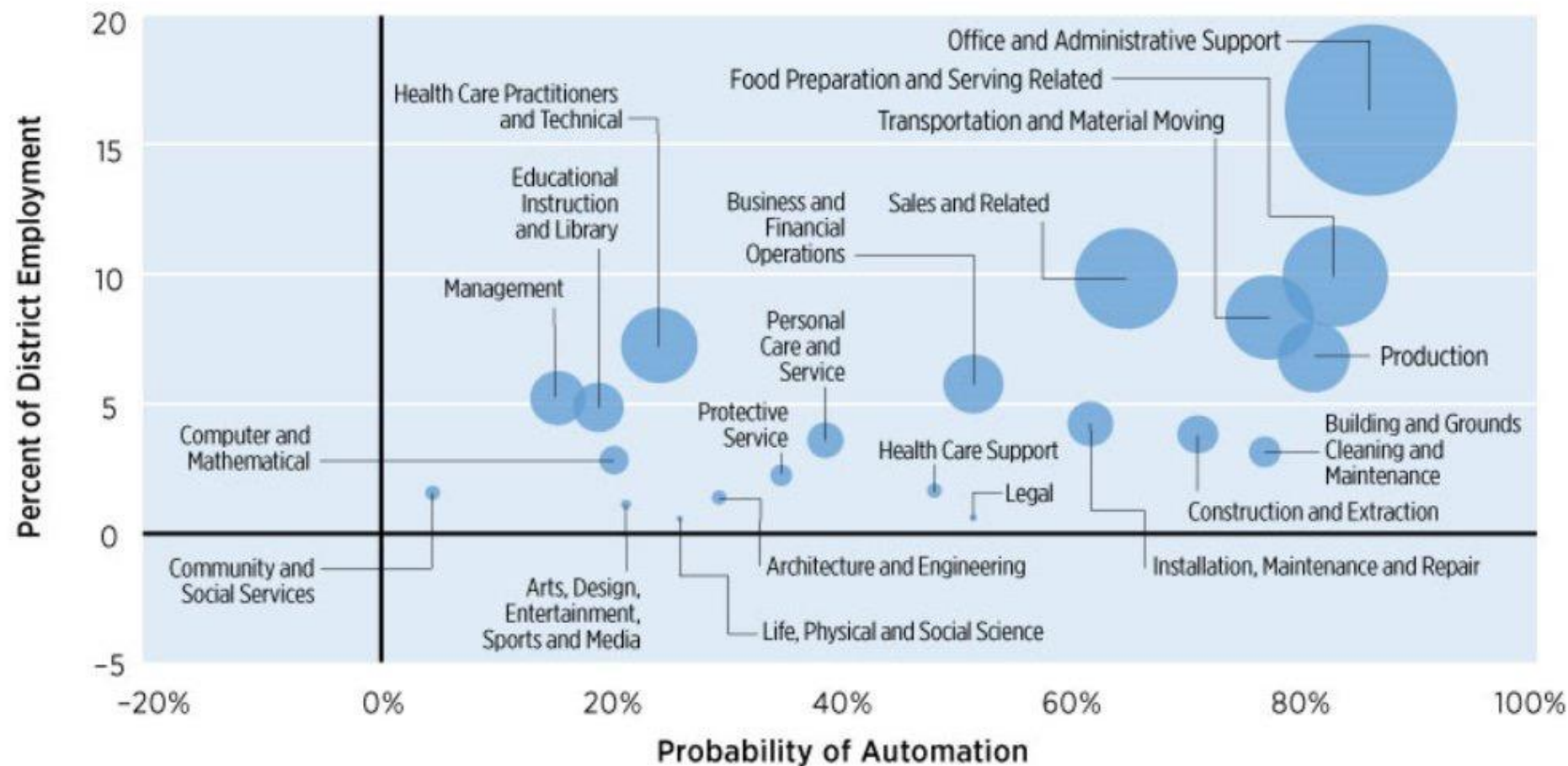
We Are Just Beginning a New Wave

RATIO OF HUMAN-MACHINE WORKING HOURS, 2018 VS. 2022 (PROJECTED)



SOURCE: FUTURE OF JOBS SURVEY 2018, WORLD ECONOMIC FORUM

Which Jobs Are Most at Risk of Being Automated?



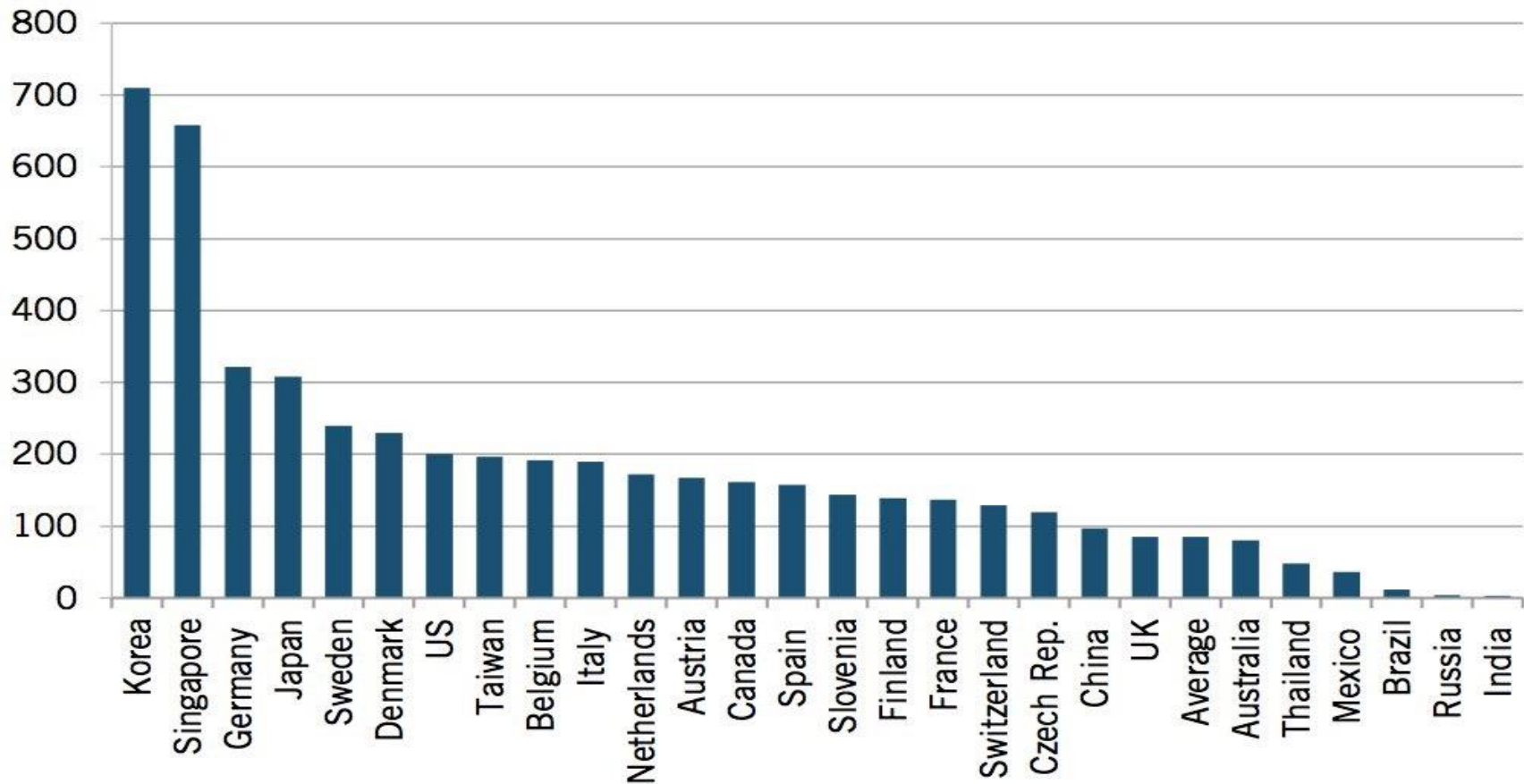
SOURCES: Census Bureau's Occupational Employment Statistics, Frey and Osborne, authors' calculations.

NOTE: The figure shows a positive correlation between probability of automation and percentage of employment for occupations in the Eighth District. Probability of automation is on the horizontal axis, while percentage of employment is on the vertical axis. The size of the bubbles represents the number of jobs in each occupation.

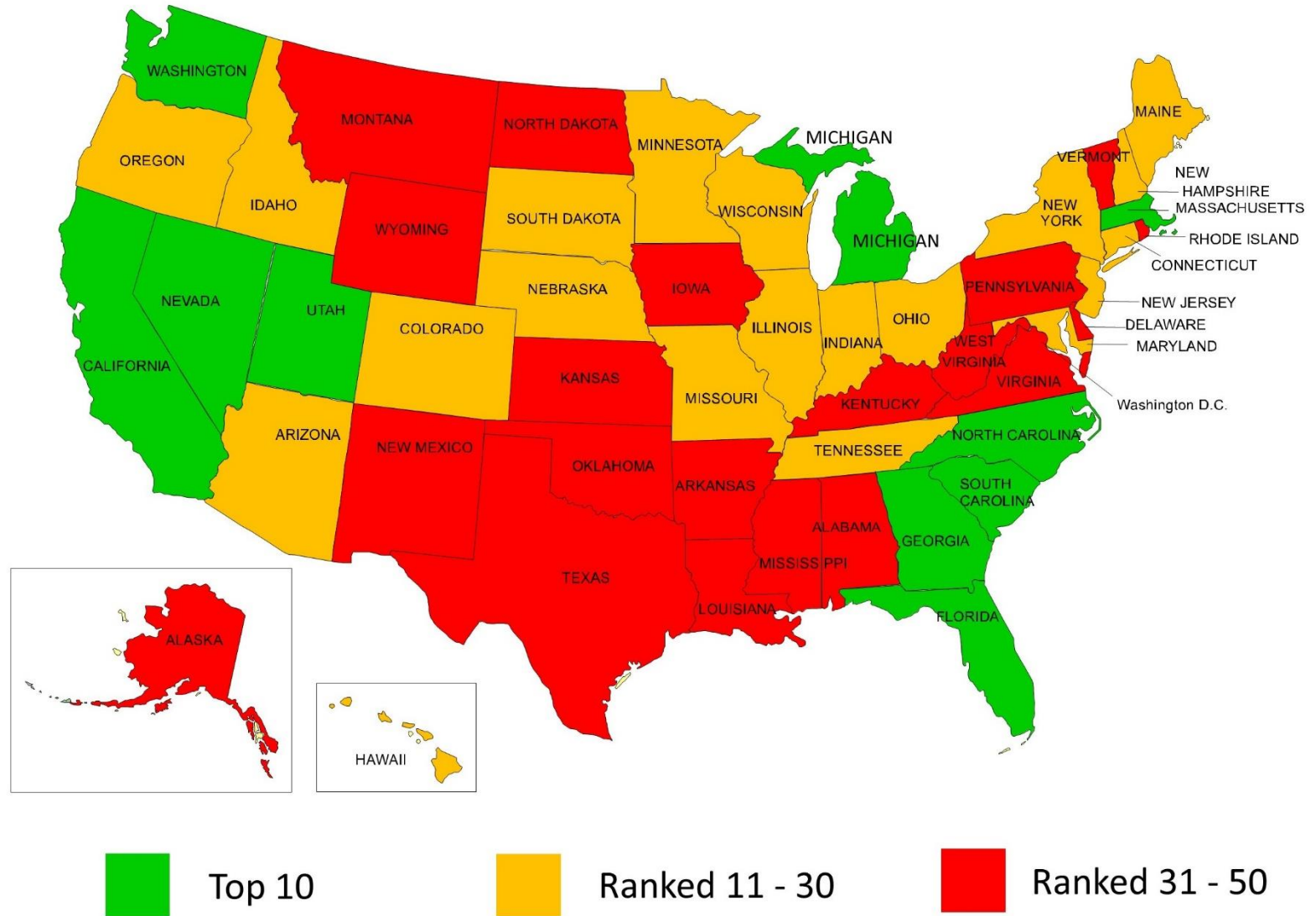
■ FEDERAL RESERVE BANK OF ST. LOUIS

USA Manufacturing Has More Robots in Its Future

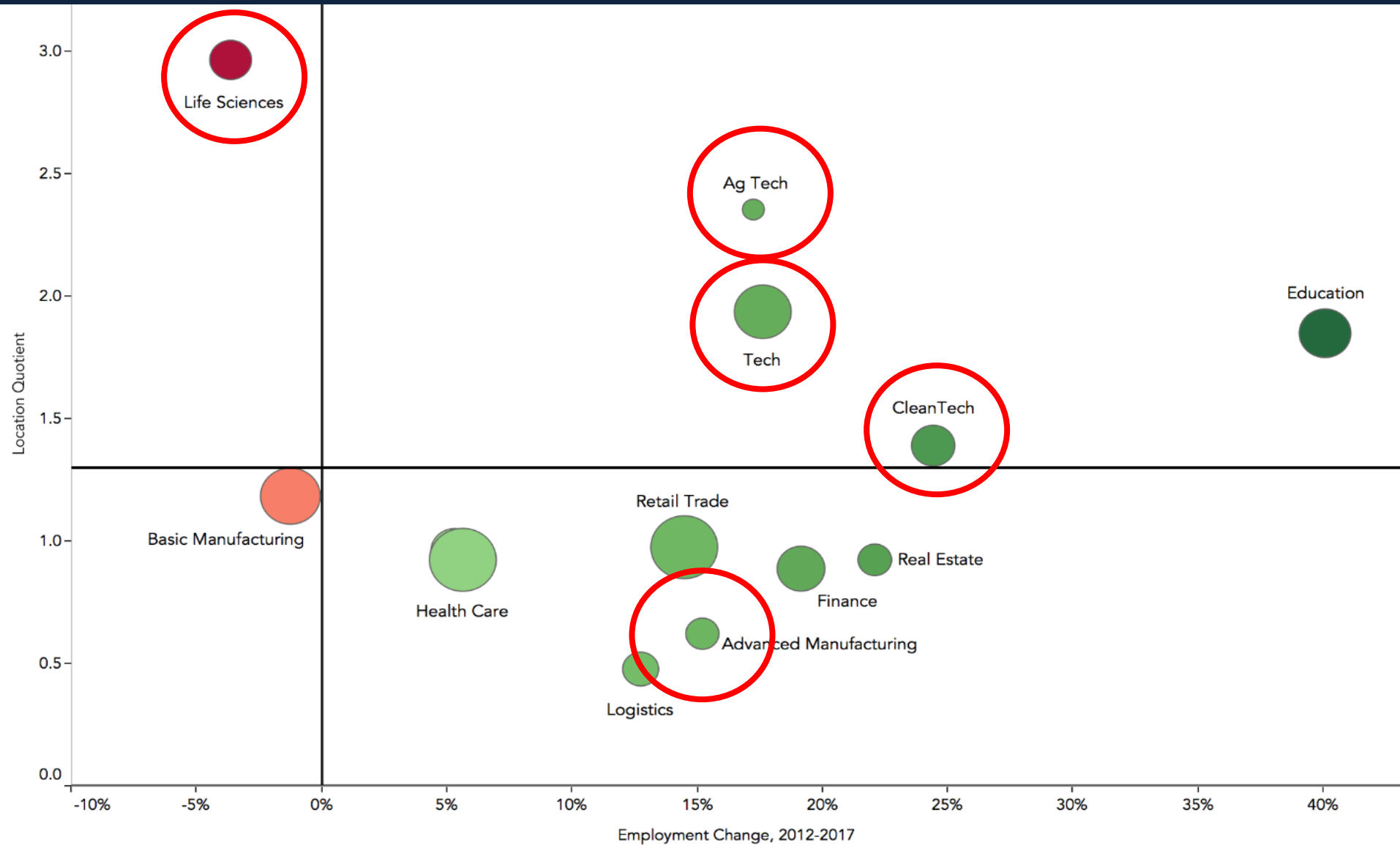
Figure 1: Robots Per 10,000 Manufacturing Workers, 2017⁷



Tech Sector Employment Growth, 2012-2017



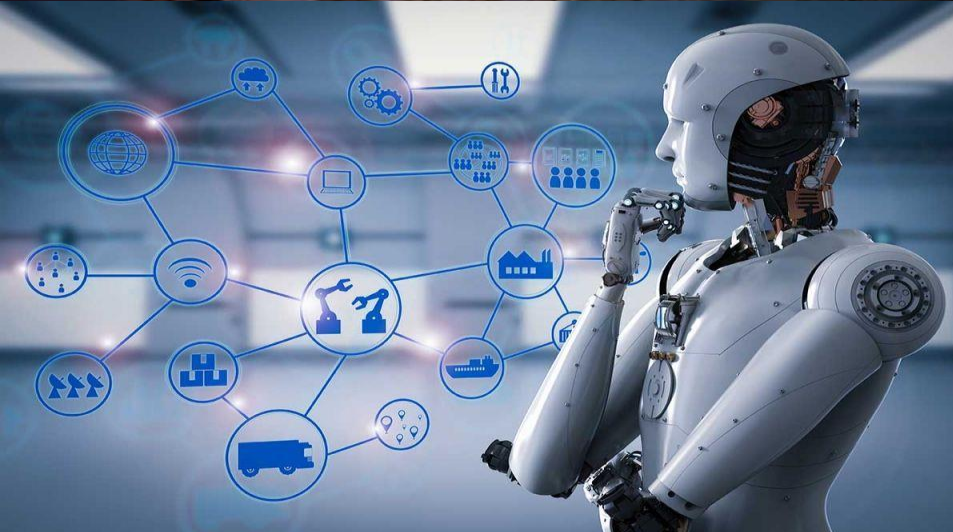
RTRP Cluster Chart



The Intersection of Trends is Where the Future is Reimagined



MACHINE
LEARNING



4) State Competitions



Recent Rankings - North Carolina

Each Ranking is Multivariant Statistical Model

	2015	2016	2017	2018
Forbes	2	2	1	1
CNBC	9	5	5	9
Chief Executive	3	3	3	3
Site Selection	2	2	2	2

When averaging the rankings from the “best state” lists North Carolina, Texas, Virginia, Colorado, Florida, Georgia and Utah are consistently ranked near the top.

DCI – 5 Most Favorable Business Climate

2017	2014	2011	2008	2005	2002	1999	1996
TX 42%	TX 50%	TX 49%	TX 41%	TX 33%	TX 25%	TX 30%	NC 33%
FL 22%	FL 18%	NC 27%	NC 30%	NC 26%	NC 20%	CA 22%	TX 28%
GA 20%	GA/NC 17% (tie)	SC 14%	GA 20%	SC 20%	SC 18%	NC 20%	GA 27%
SC 15%	SC 12%	TN 14%	FL/TN 15%	GA 18%	FL 18%	GA 17%	SC 21%
NC 15%	TN 11%	FL 14%	NV 14%	NV 16%	GA 15%	FL 14%	TN 20%

Rankings and Performance



States By Average Ranks by Forbes, CNBC, and Chief Executive

Forbes released 11/28/18; CNBC released 7/10/18; Chief Executive released 5/3/18

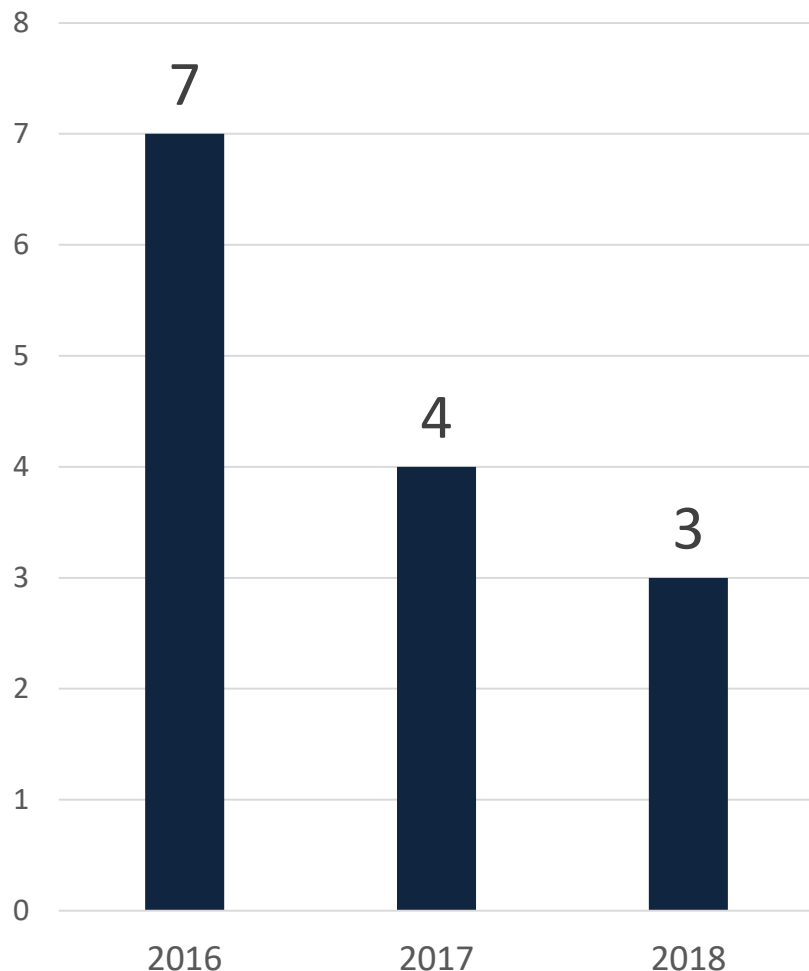
Plotted Against

Actual Performance for Job Growth, Wage Growth and Growth in GDP

3 years 2014-2017 Jobs & Wages: BLS QCEW annual; GDP: BEA

State Rankings-**Corporate Tax Rate** By the Tax Foundation

North Carolina Rank



Neighbors Rank

	<u>2016</u>	<u>2017</u>	<u>2018</u>
SC	16	15	15
TN	18	22	21
VA	6	6	6
GA	9	10	10
FL	17	19	19

Top States 2018

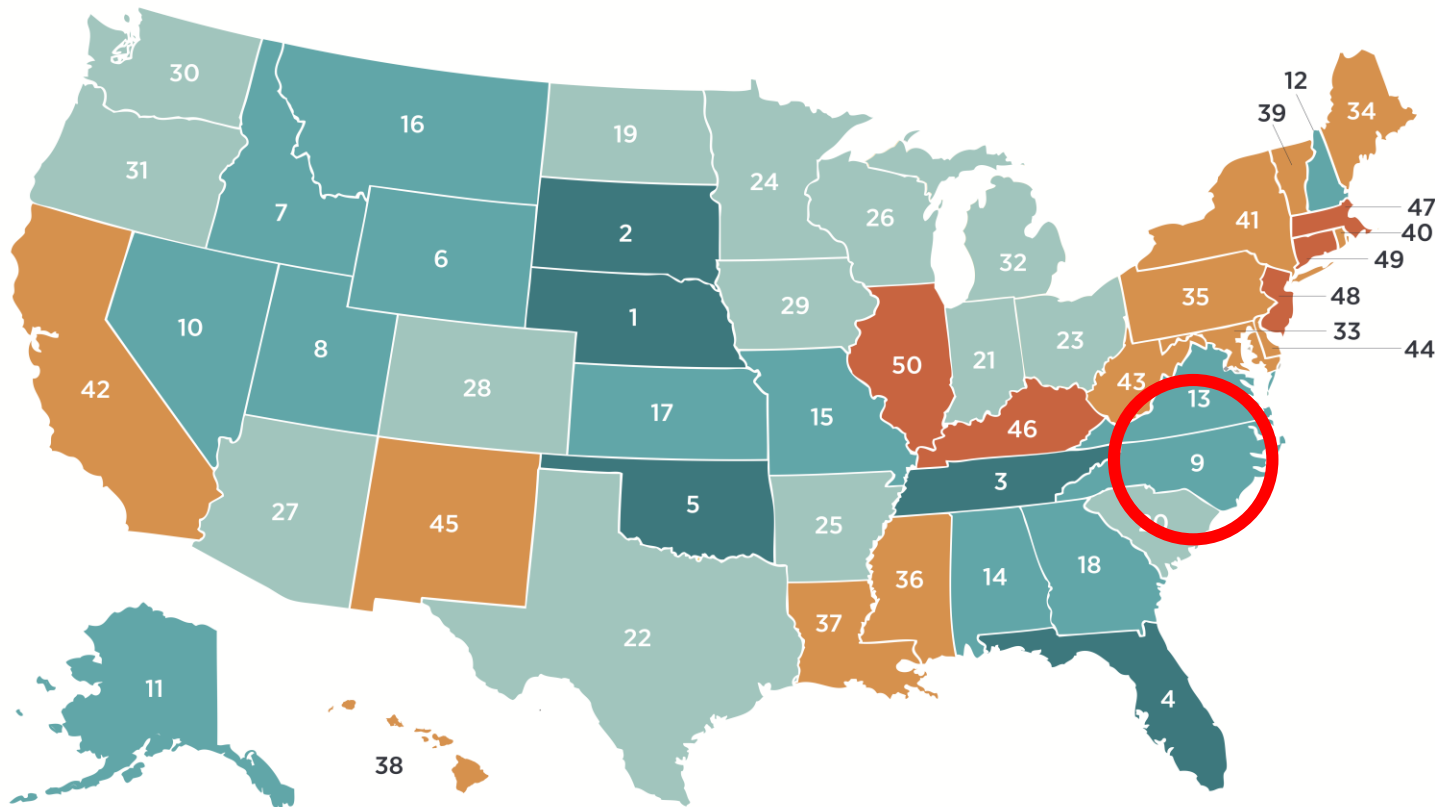
- 1) South Dakota
- 2) Wyoming
- 3) North Carolina
- 4) Utah
- 5) Missouri
- 6) Virginia
- 7) New York

State Fiscal Conditions Rankings

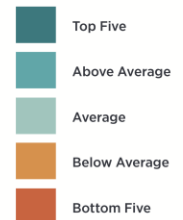
2018
EDITION

OVERALL FISCAL CONDITION

HOW DO THE 50 STATES RANK?



OVERALL FISCAL CONDITION RANK



TOP FIVE

1. Nebraska
2. South Dakota
3. Tennessee
4. Florida
5. Oklahoma

BOTTOM FIVE

46. Kentucky
47. Massachusetts
48. New Jersey
49. Connecticut
50. Illinois

SOURCE
Eileen Norcross and Olivia Gonzalez, "Ranking the States by Fiscal Condition, 2018 Edition" (Mercatus Research, Mercatus Center at George Mason University, Arlington, VA, October 2018).

MERCATUS CENTER
George Mason University

What Are The Other Considerations?

Incentive Competitiveness
Long-term Risk Factors
(Weather-Fiscal-Governance)
Quality of Place Factors

WalletHub-Best Place for Families

Top Rated States

1. Minnesota
2. Massachusetts
3. North Dakota
4. Vermont
5. New Hampshire
6. New York
7. Wisconsin
8. New Jersey
9. Rhode Island
10. Nebraska

North Carolina

- Overall rank #38
- Health/Safety #37
- Education/Childcare #29
- Affordability #43
- Socio-economic #27

Worth Considering- Crime Rates, Health Statistics, Education Support & Rankings, Daycare Quality, Poverty & Economic Mobility, Tolerance

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 Index 2018- Over 50 Factors

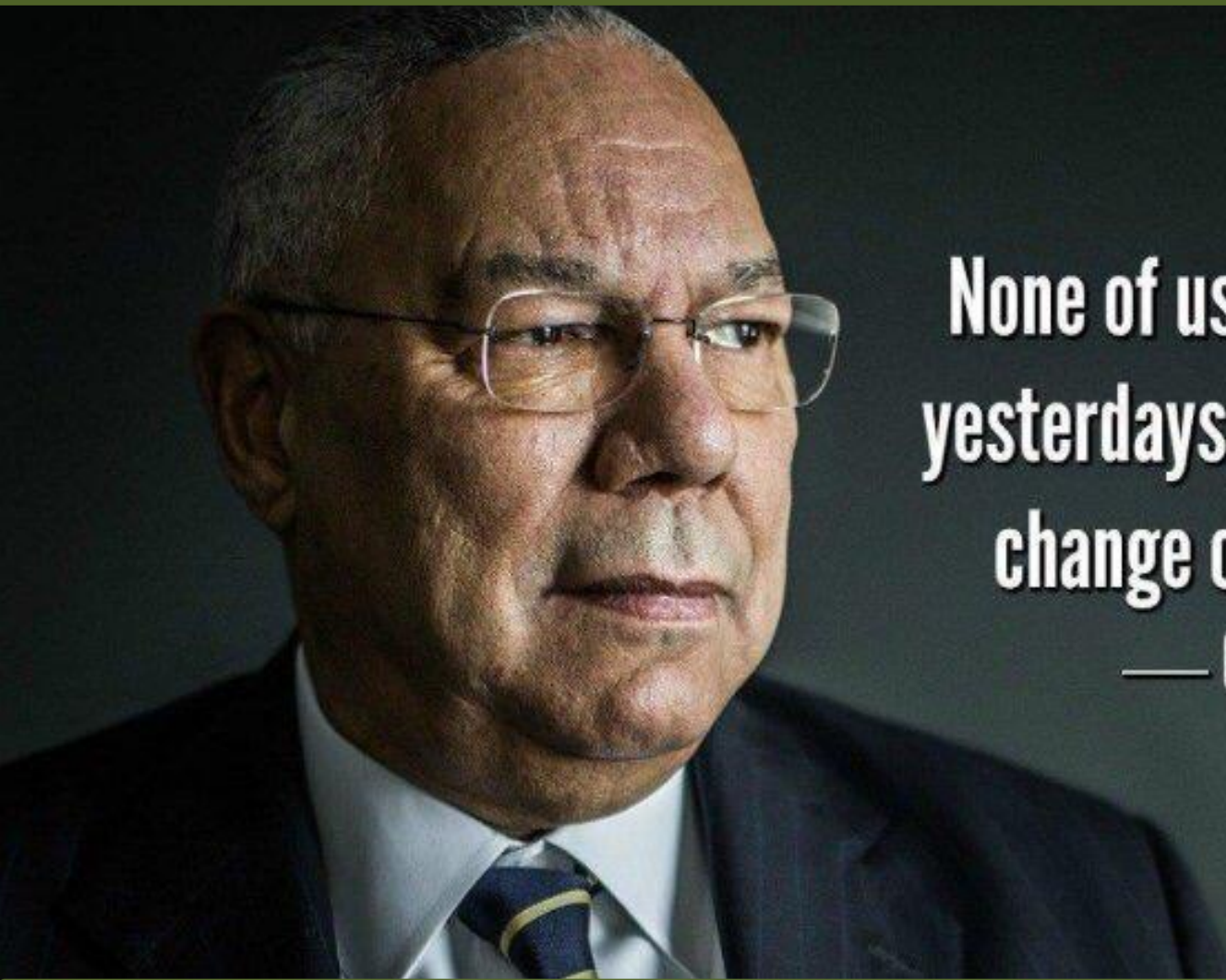
2018 OVERALL STATE RANKINGS

		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	2	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

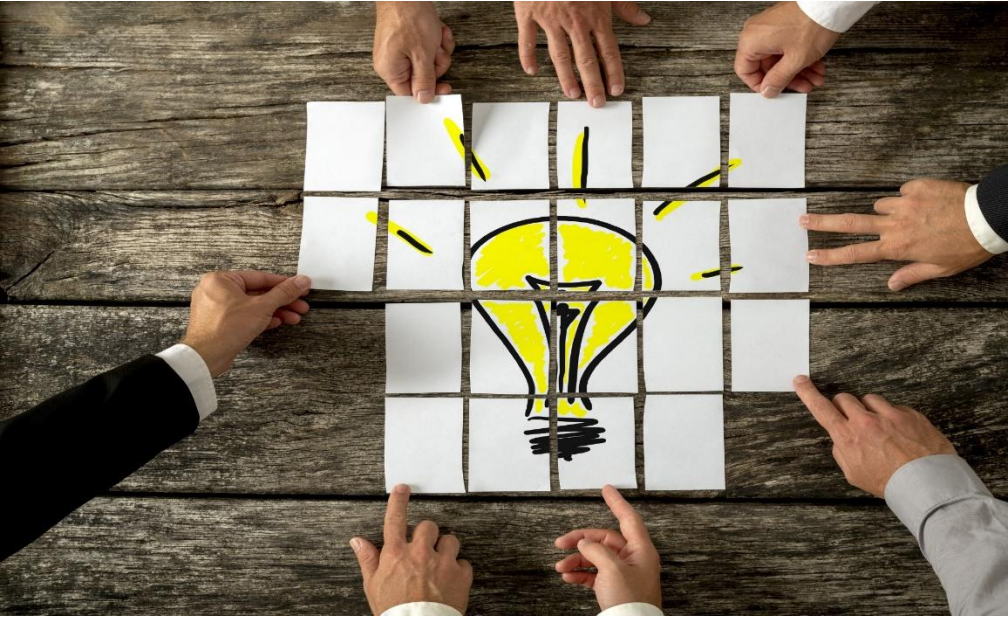
5) Leadership is More Important But Different



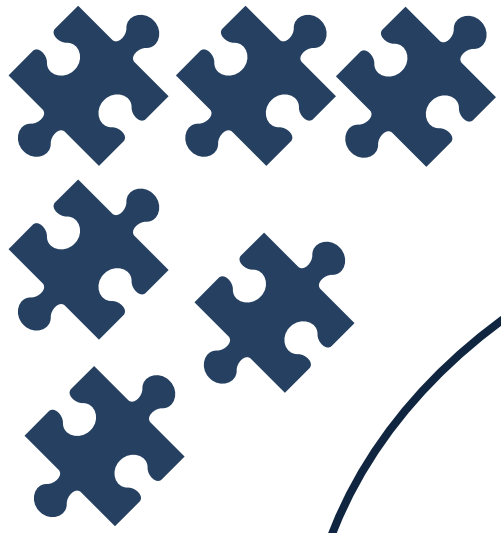
**None of us can change our
yesterdays, but all of us can
change our tomorrows.**

— Colin Powell

Collective Intelligence & Collaborative Leadership

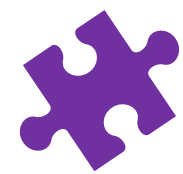


Group leadership is not natural, but it can be nurtured and it can be the most effective leadership model where there are multiple stakeholders

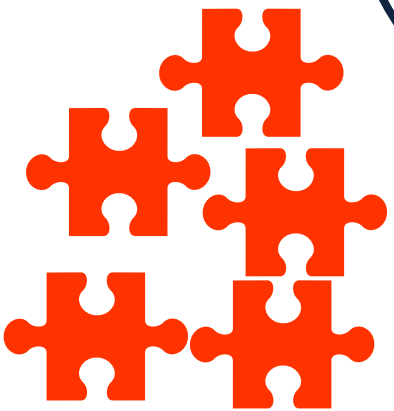


Public Sector
Fed-State-Local

Education and Training



Private
Sector
Players



Non-Profits



Strategic Perspective
✓ Focusing on Priorities

Group
Leadership

Innovation Mindset
✓ Creating new & different

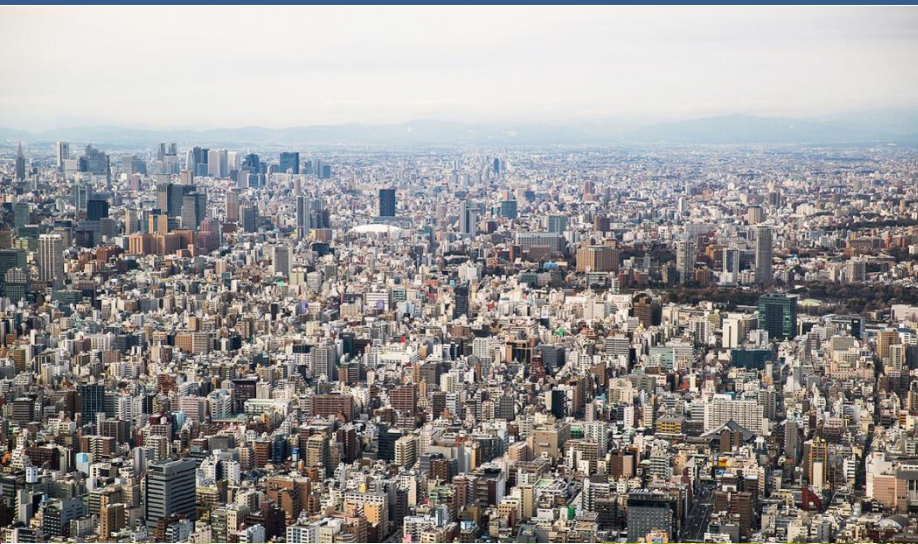


4 Dimensions of Group Leadership Success

Working Together
✓ Managing conflict

Getting Things Done
✓ Managing information
✓ Making timely decision
✓ Measuring progress

So What Do The Trends Show?



What Do You (We) See as The Trends for the Next 10 Years That Will Impact Our Region?

Political or
Leadership

Economic or
Business

Trends 2018-2028

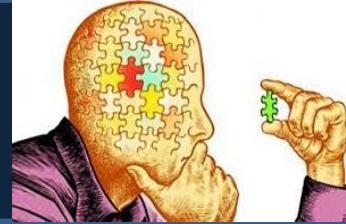
Social or Consumer

Technological

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

ANY
QUESTIONS
?