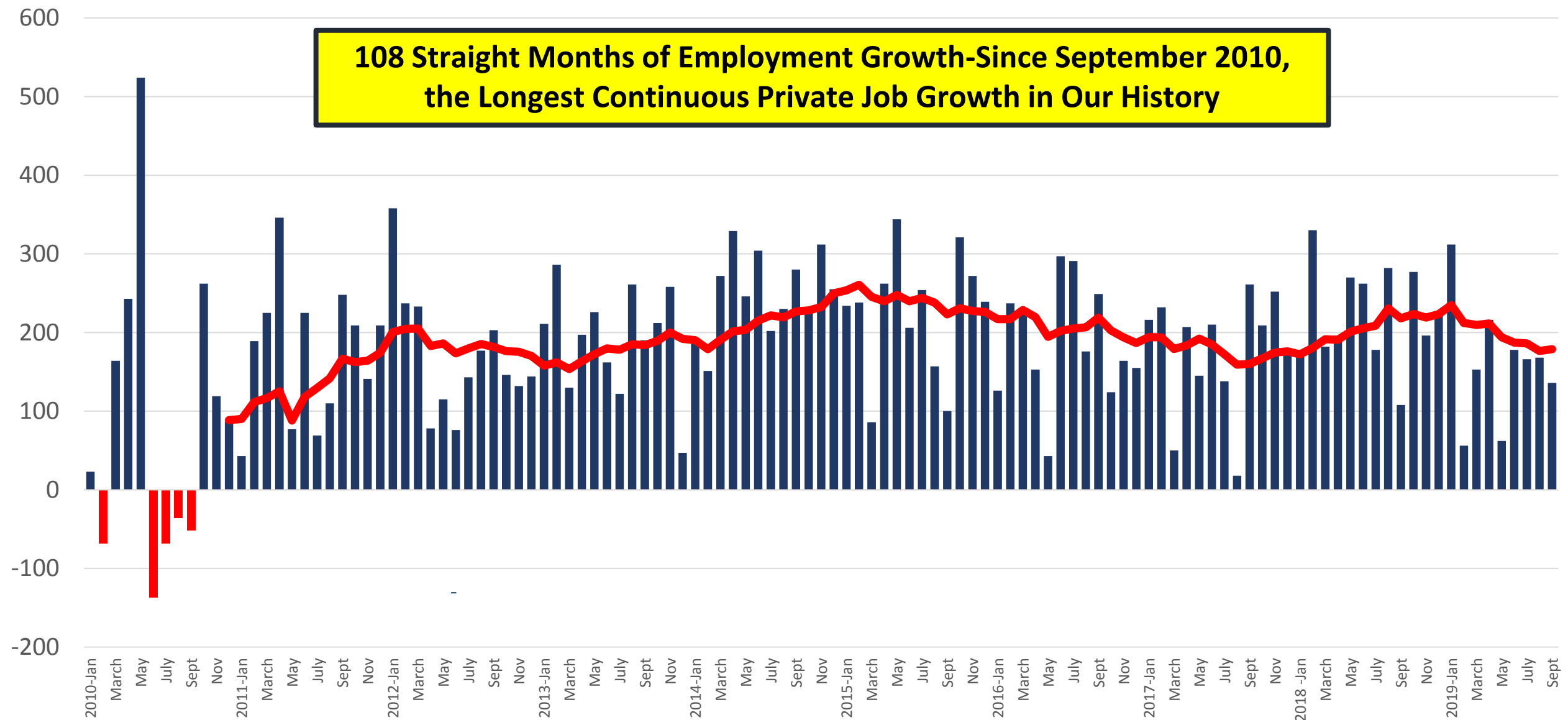
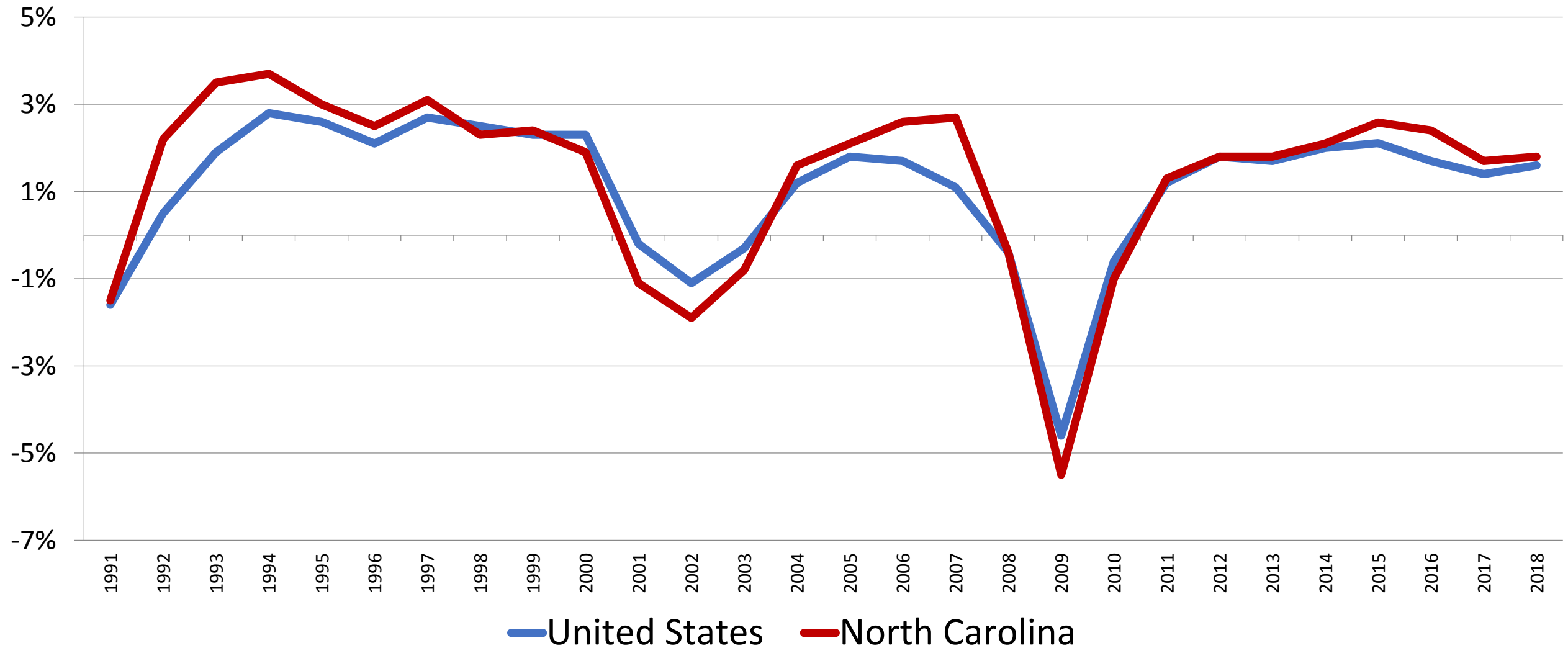




USA Non-Farm Payroll Employment

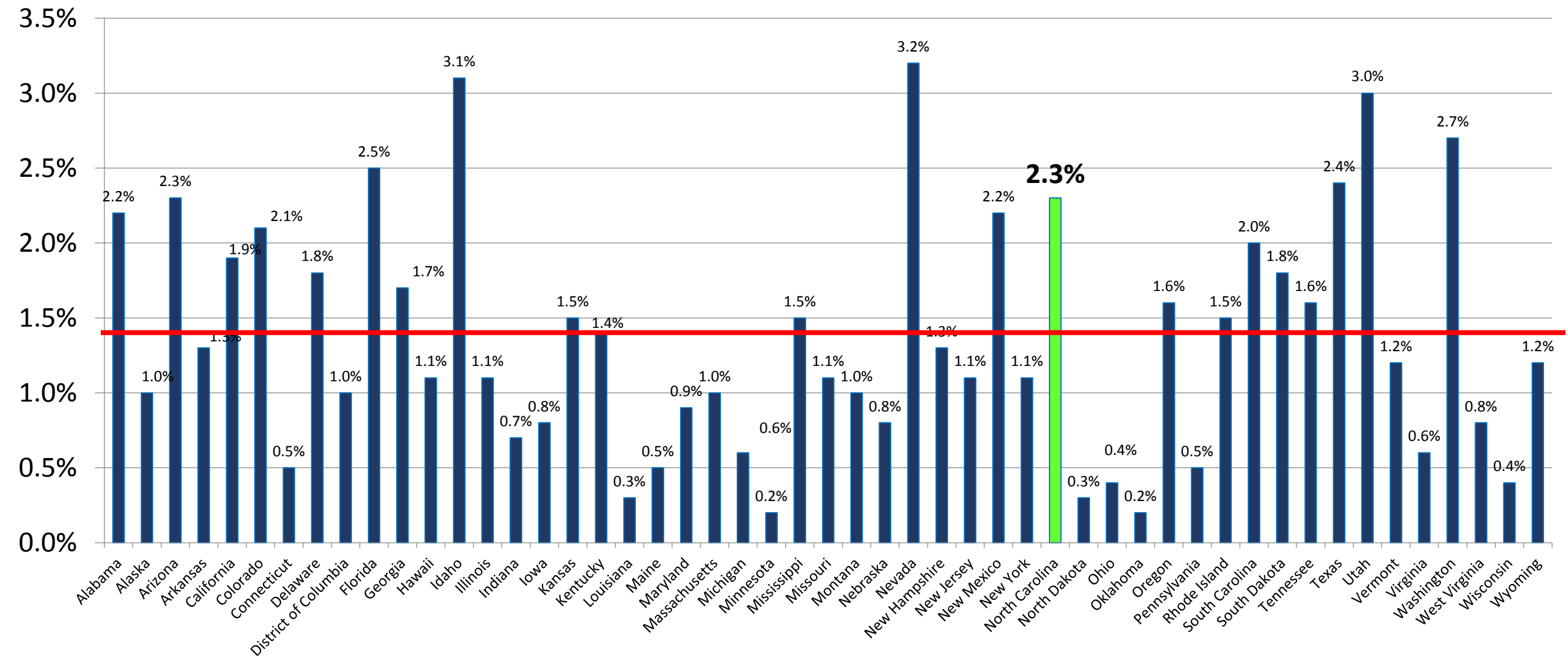


Percentage Annual Job Change 1990-2018



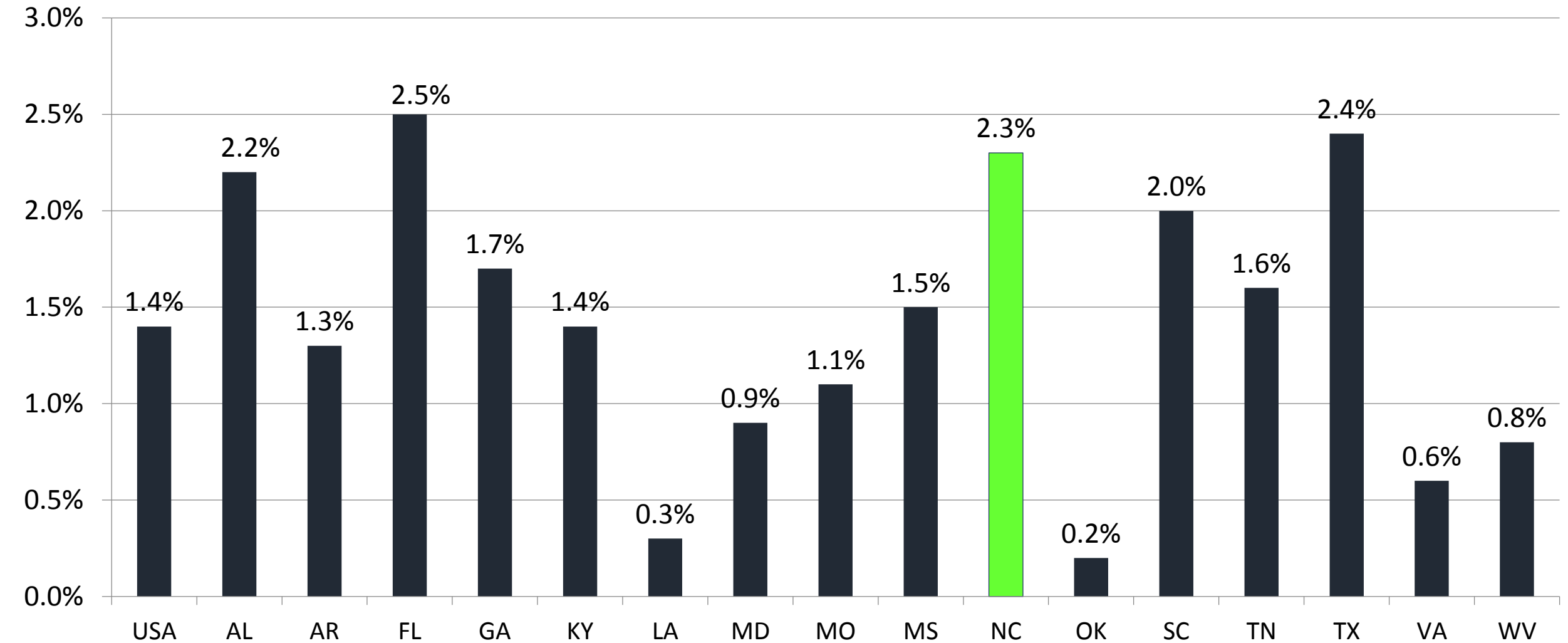
All States 1-Year

Total Employment Percentage Change Sept 2018 to Sept 2019

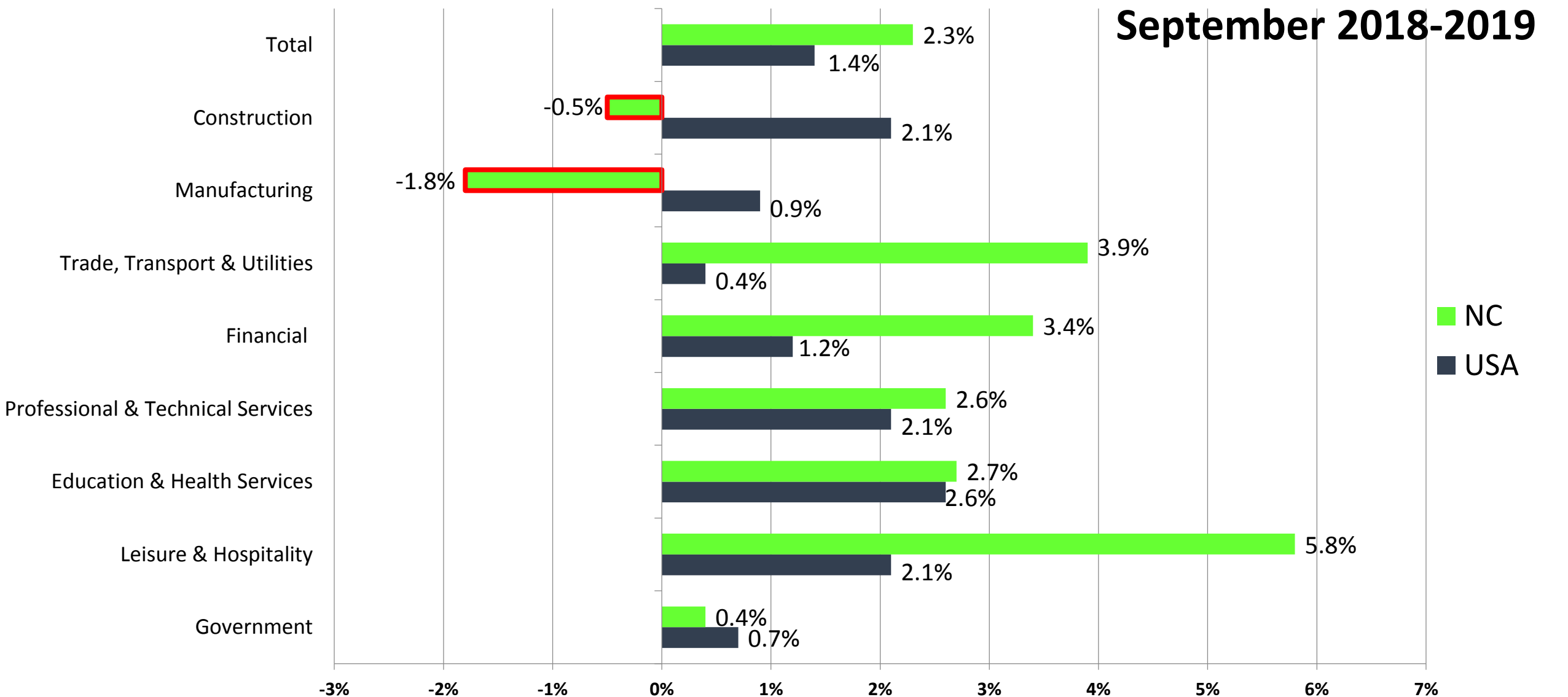


Southern States 1-Year

Non-Farm Employment September 2018 to September 2019

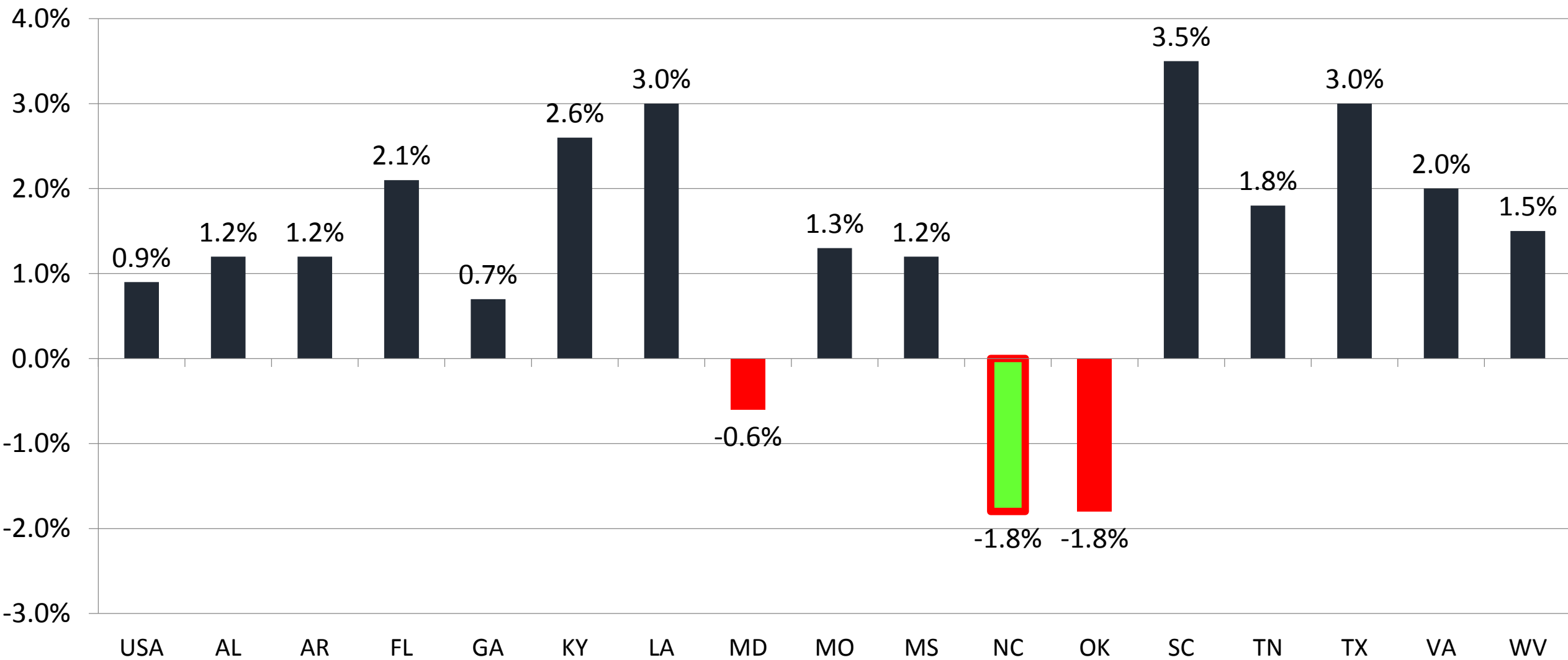


Employment Gains By Sector for the United States and NC



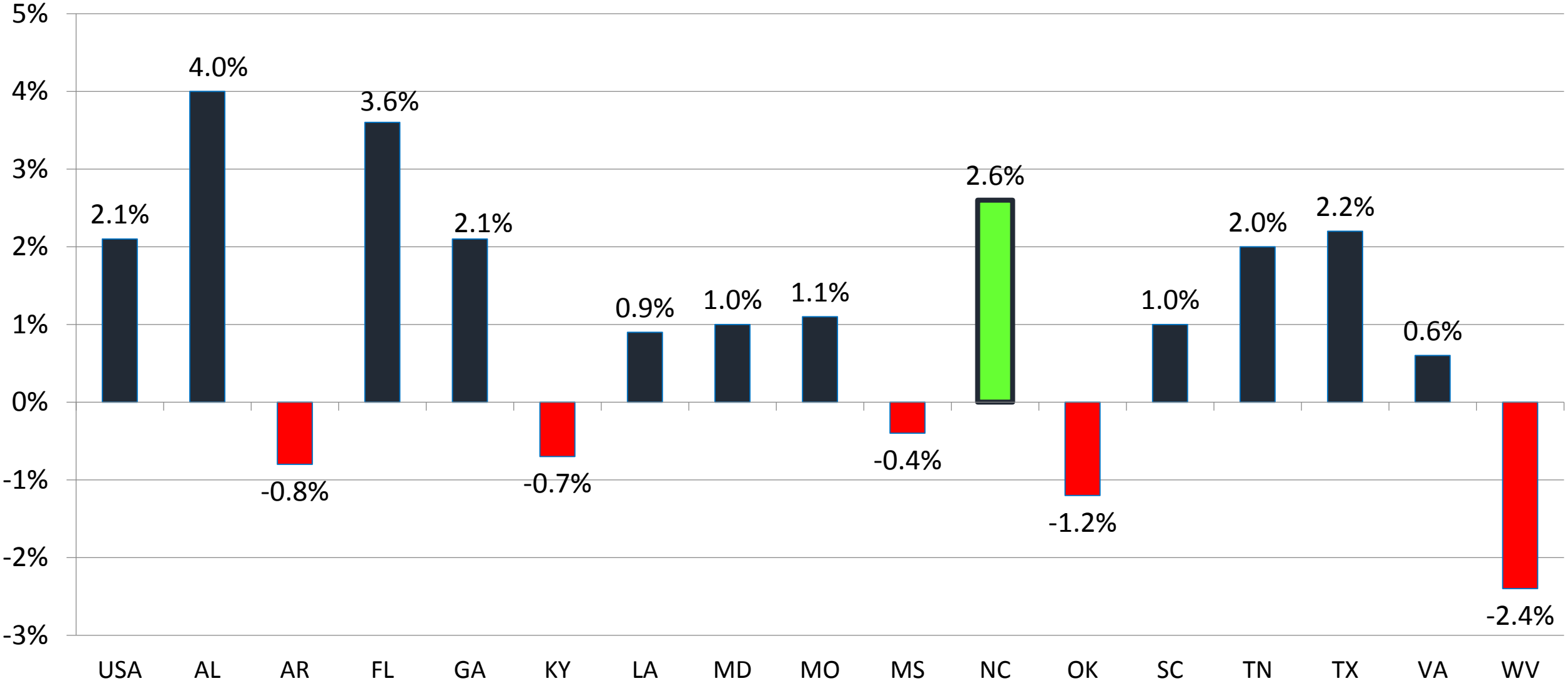
Southern States 1-Year

Manufacturing Employment Sept 2018 to Sept 2019

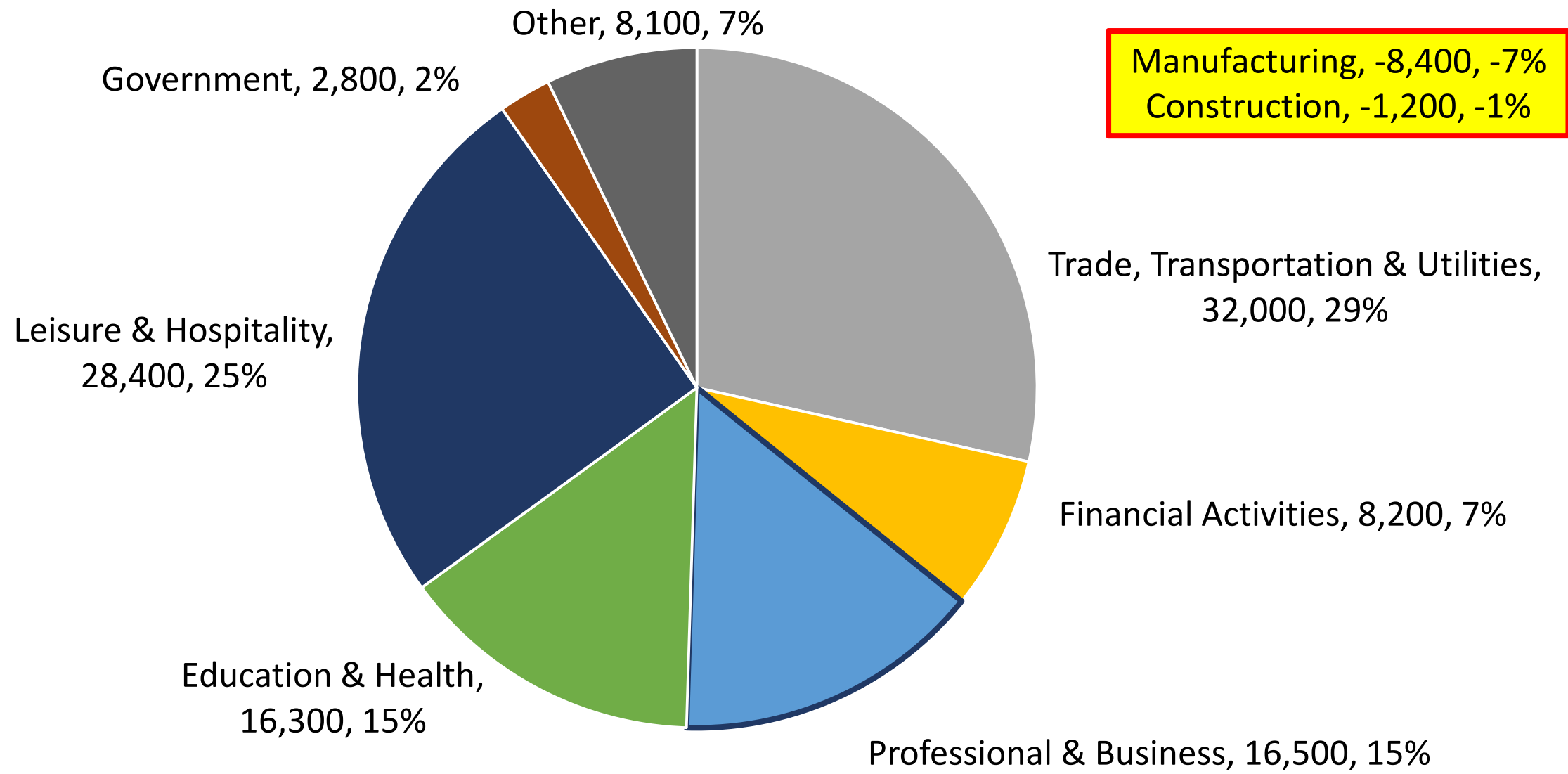


Southern States 1-Year

Professional & Business Services Employment Changes Sept 2018 to Sept 2019

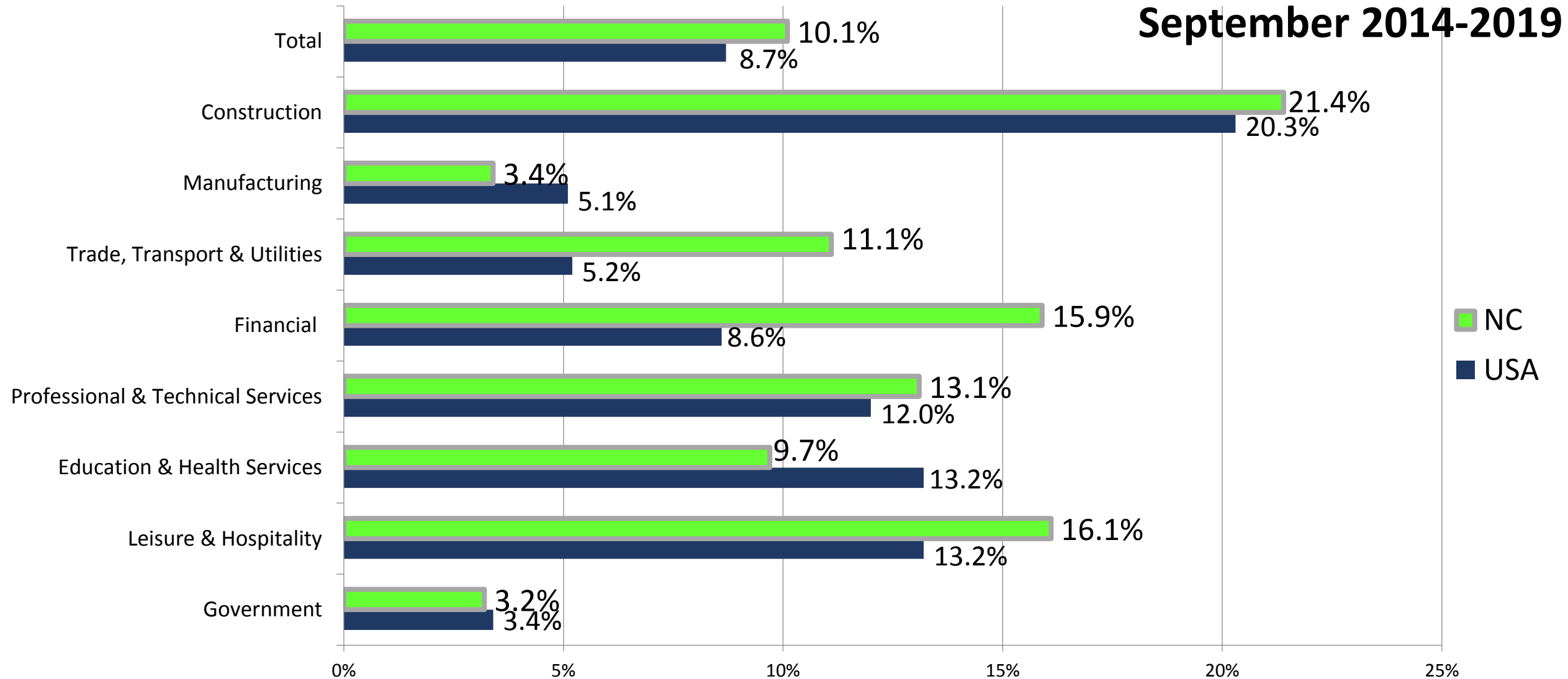


NC Employment Growth September 2018 – September 2019

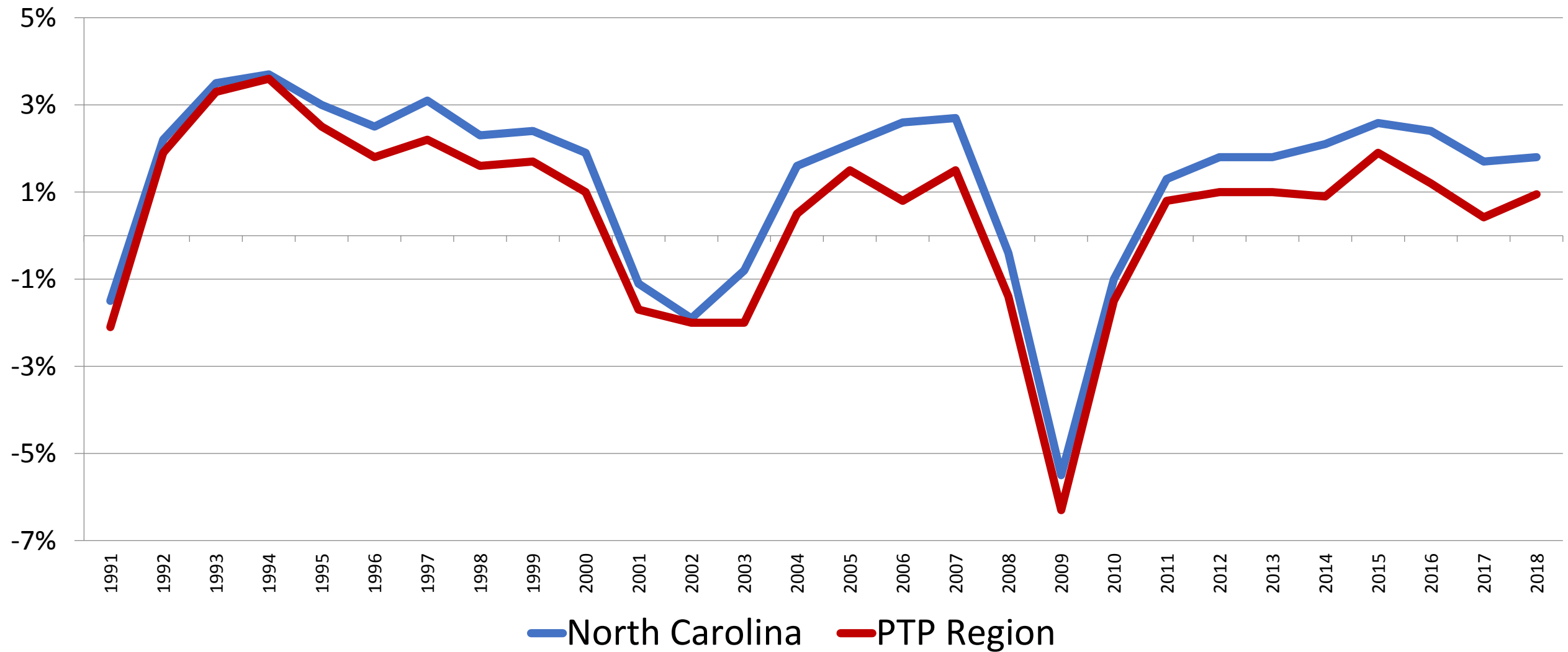


Employment Gains By Sector for the United States and NC

September 2014-2019

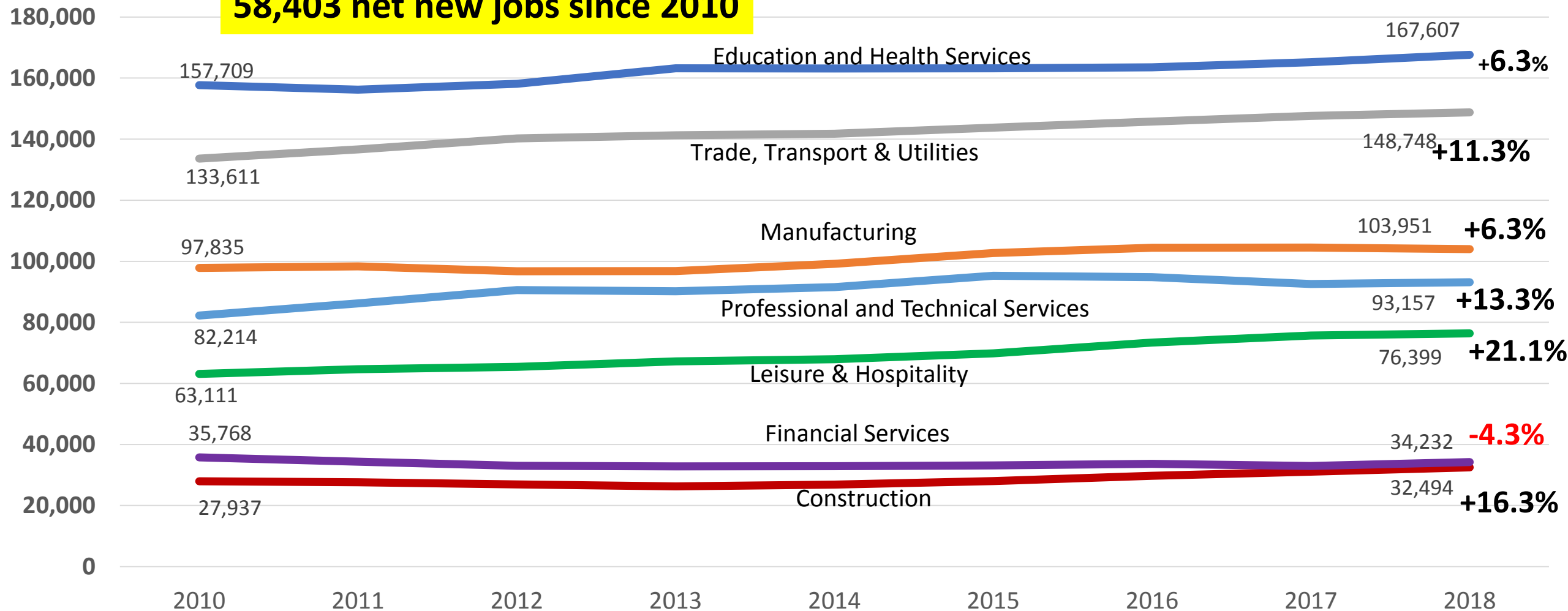


Percentage Annual Job Change 1990-2018



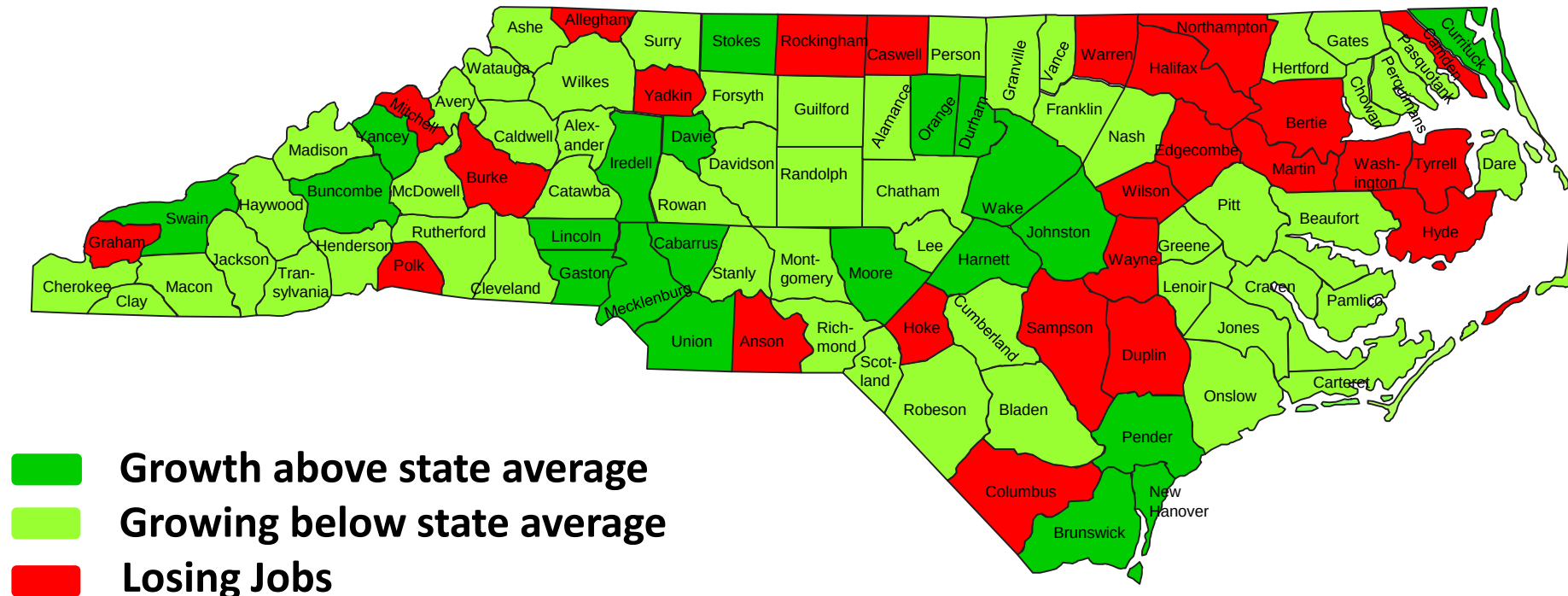
PTP Employment Trends 2010-2018

58,403 net new jobs since 2010

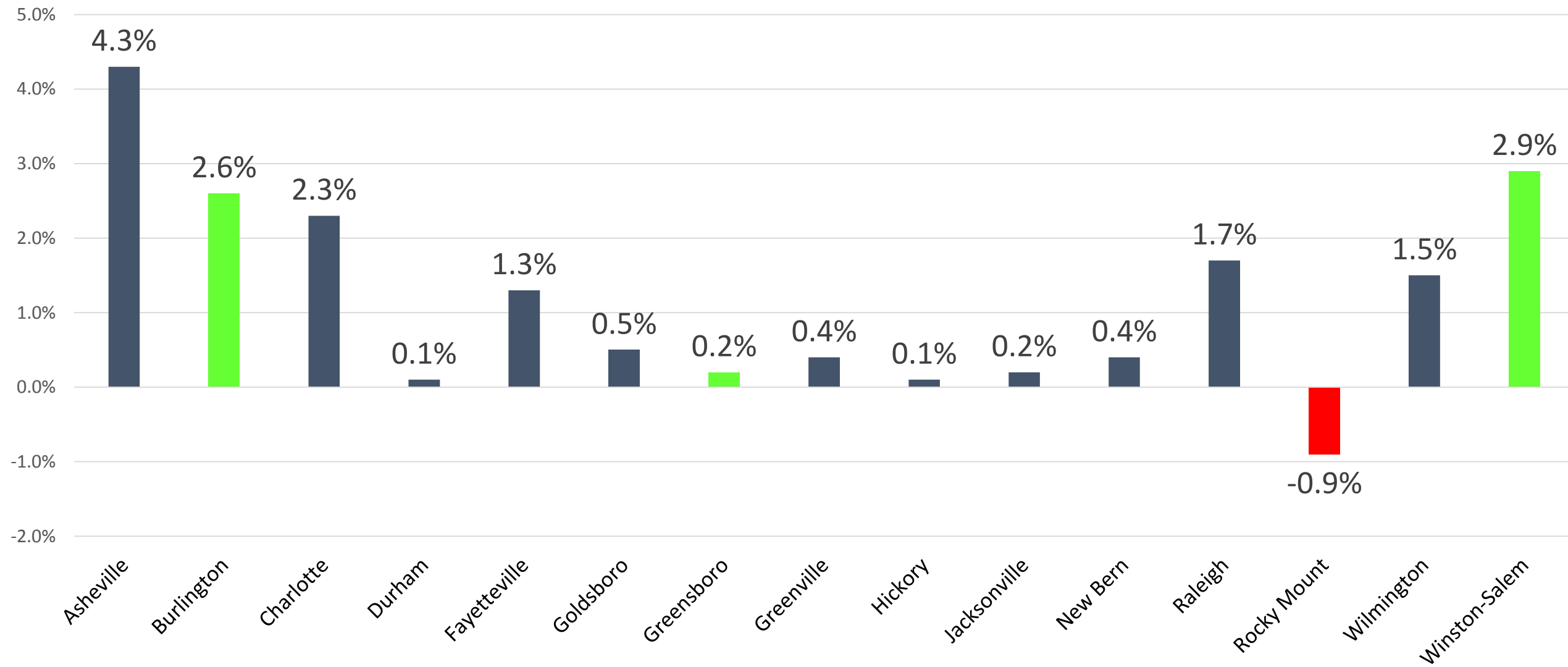


5 Year Job Growth 2013-2018

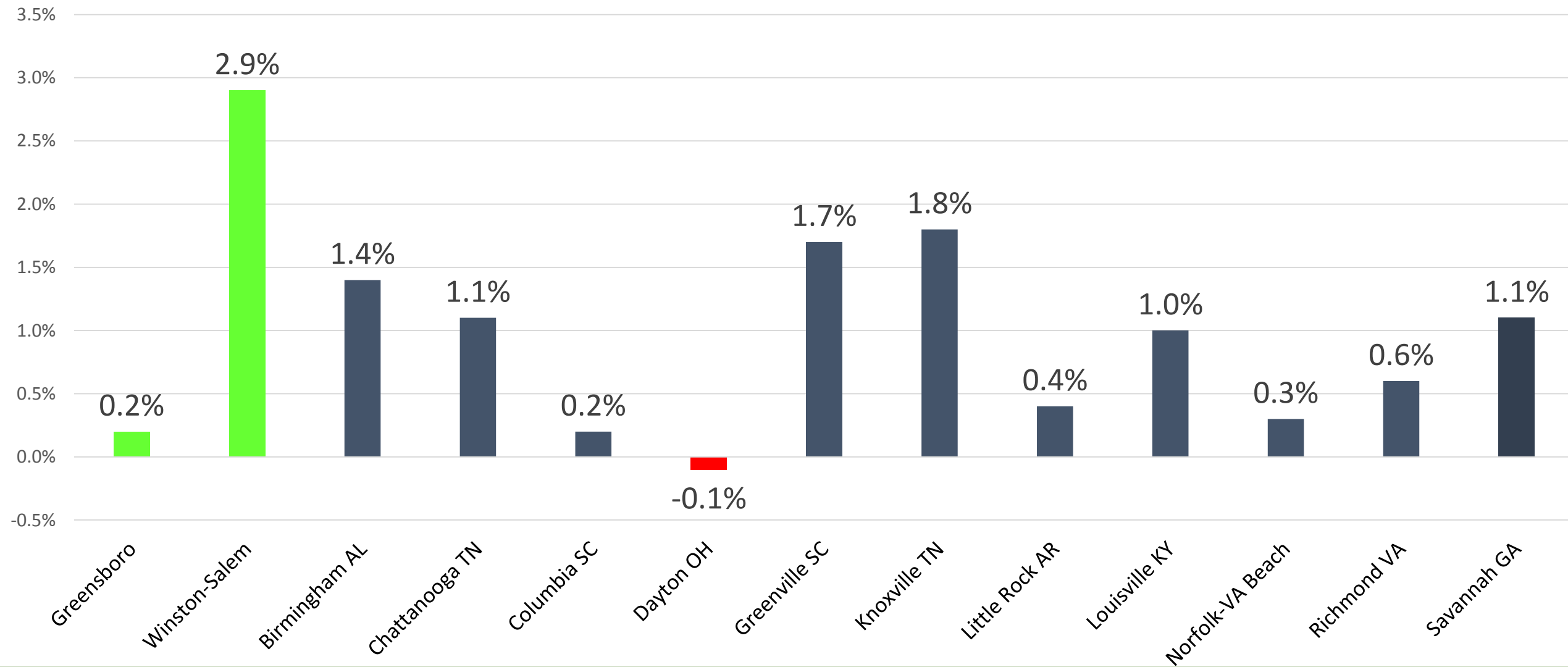
North Carolina Average 10.9%



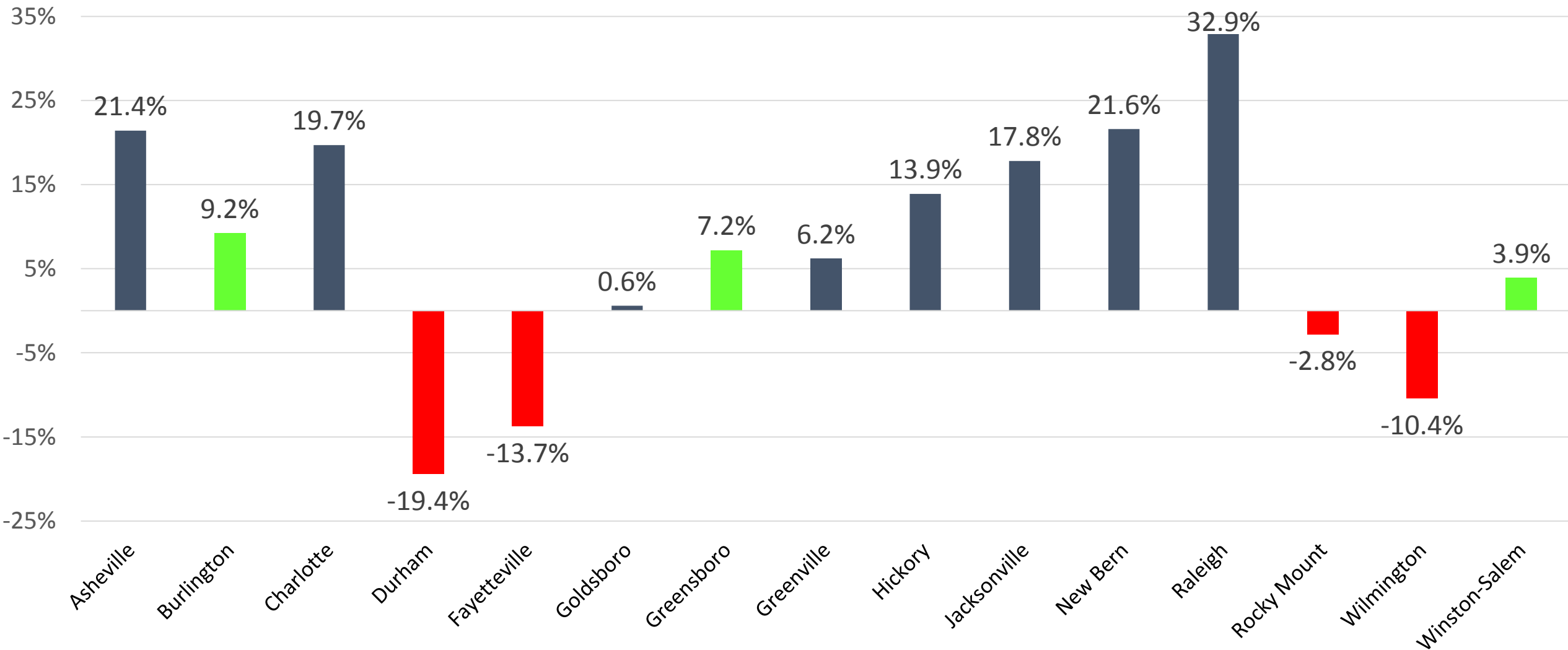
NC Metro % Non-Farm Employment Growth August 2018- August 2019



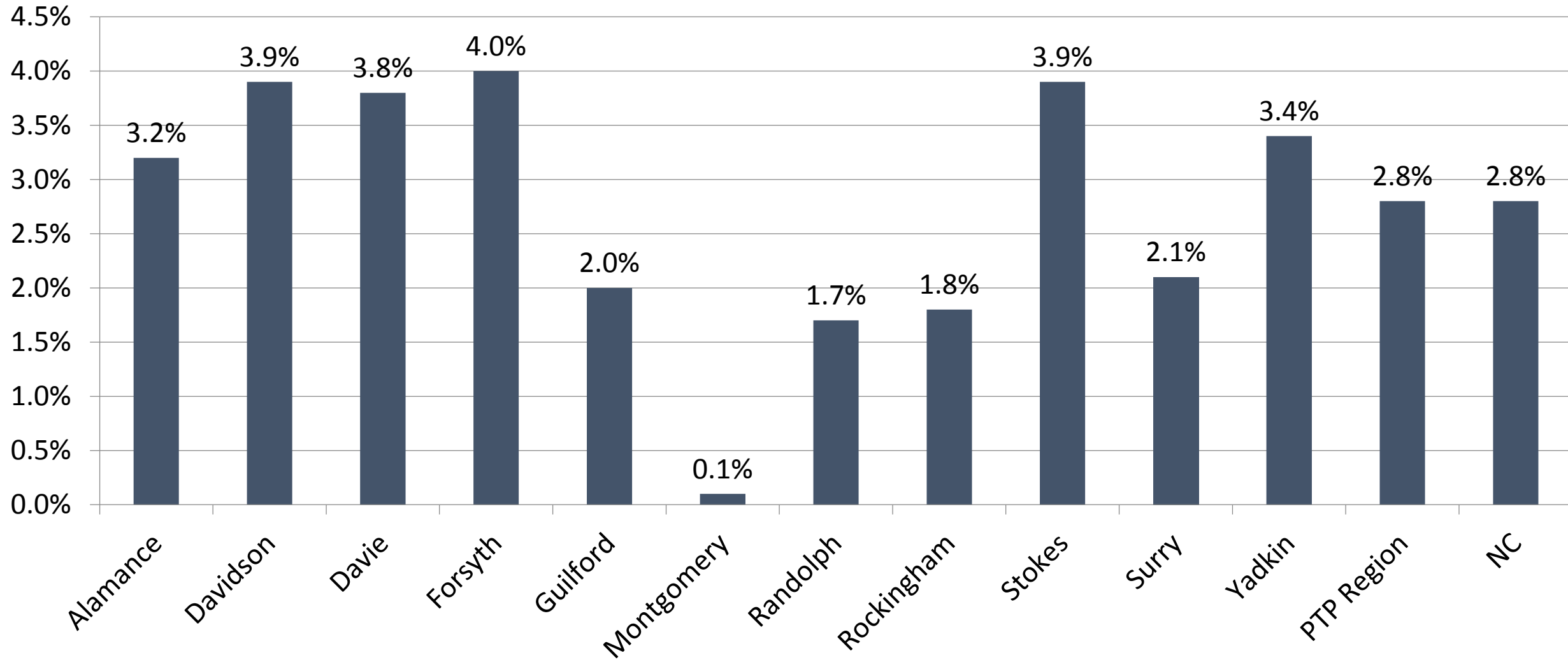
Similar Size Metros % Non-Farm Employment Growth August 2018- August 2019



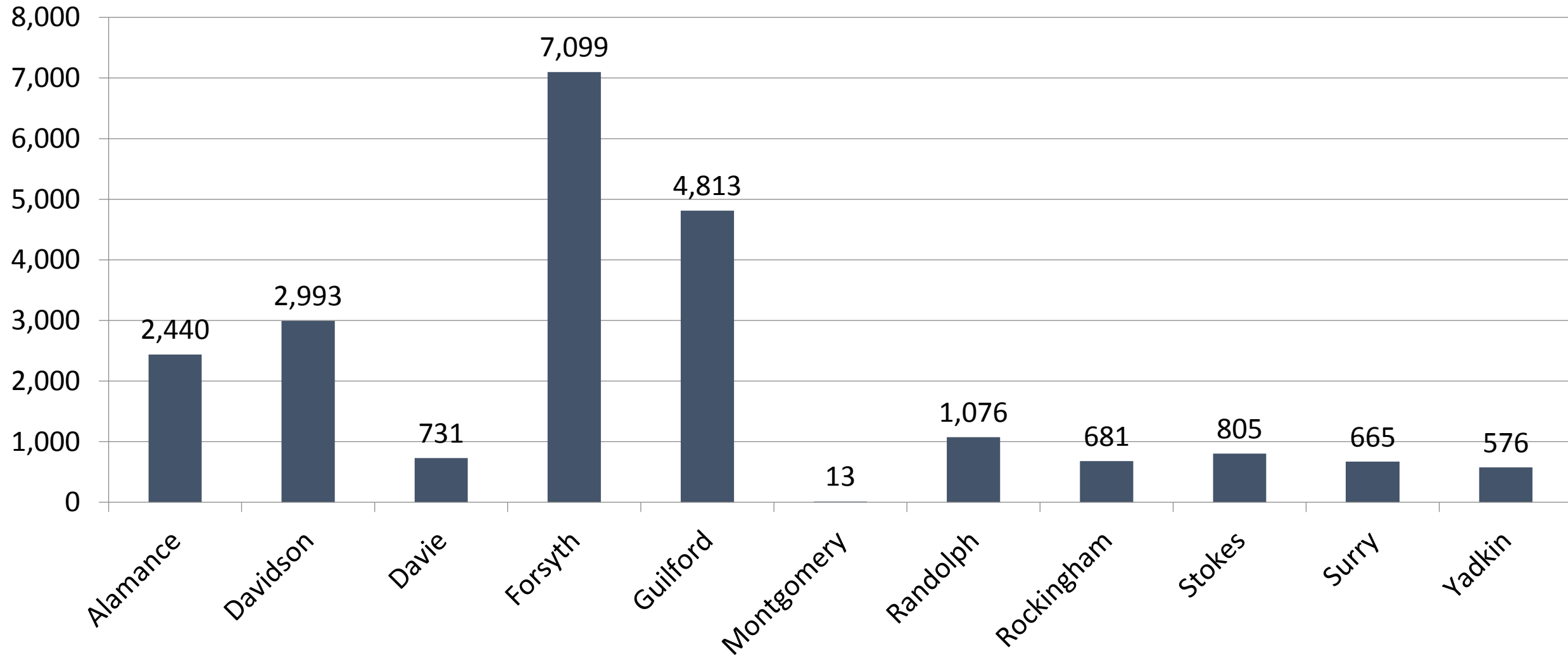
NC Metro Manufacturing % Job Growth 2010-2018



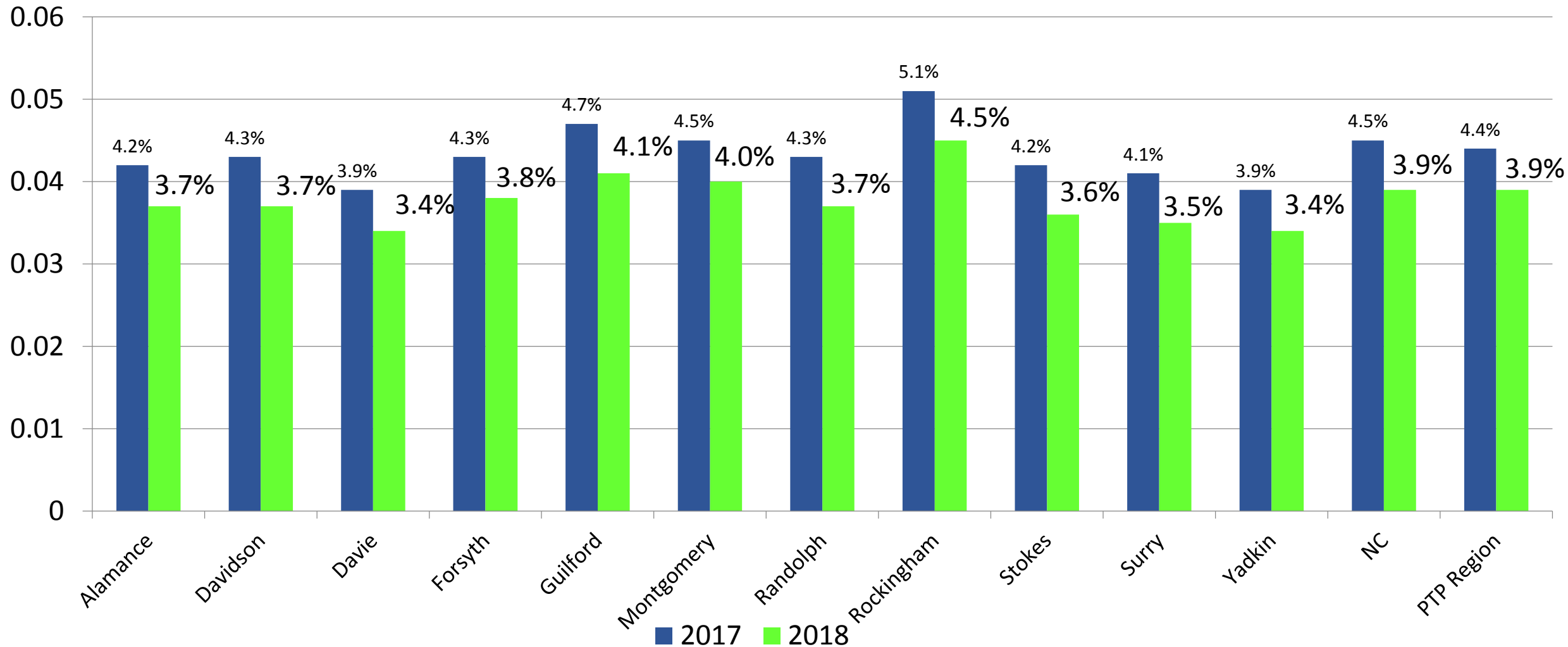
PTP County Employment Growth August 2018 – August 2019



PTP County Employment Growth August 2018 – August 2019



PTP Counties Change in Unemployed Rate 2017–2018



NC Ranked Compared to All States

	<u>Job Growth</u>	<u>Wage Growth</u>	<u>GDP Growth</u>
1 Year 2017 – 2018	13	9	12
5 Year 2013 – 2018	13	10	15
10 Year 2008 - 2018	13	18	31

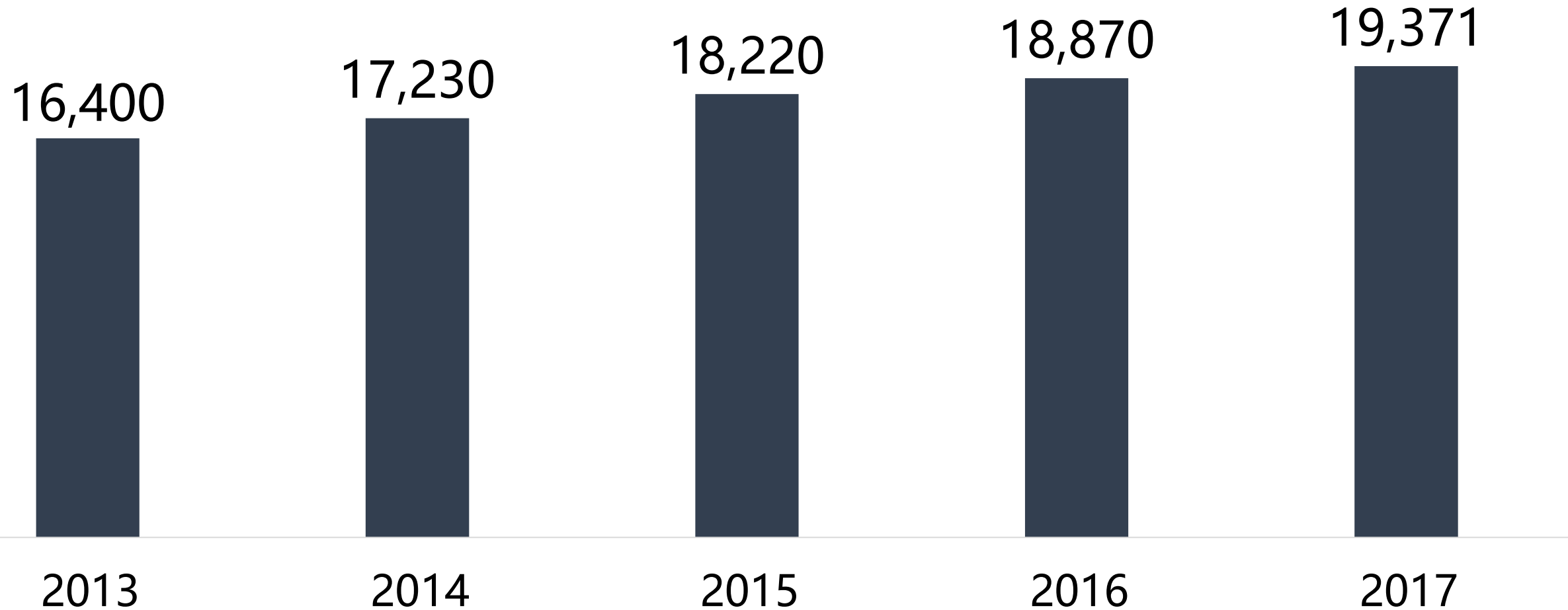
DC is included so that all rankings are of 51 “states”

87 separate 6-digit
NAICS code sectors
characterize the Total
Technology Sector



North Carolina Total Tech Establishments, 2013-2017

2,971 New Tech establishments Over the Past 5 Years



North Carolina's Technology Industry by Sub-Categories 2017

Tech Category	Employment 2017	Change 2016-2017	Change 2012- 2017	Establishments 2017
Energy Tech	13,205	0.0%	12.3%	383
Environmental Tech	23,158	1.8%	17.0%	1,522
Life Sciences	80,409	4.1%	12.0%	4,681
IT	137,458	2.6%	21.1%	12,785

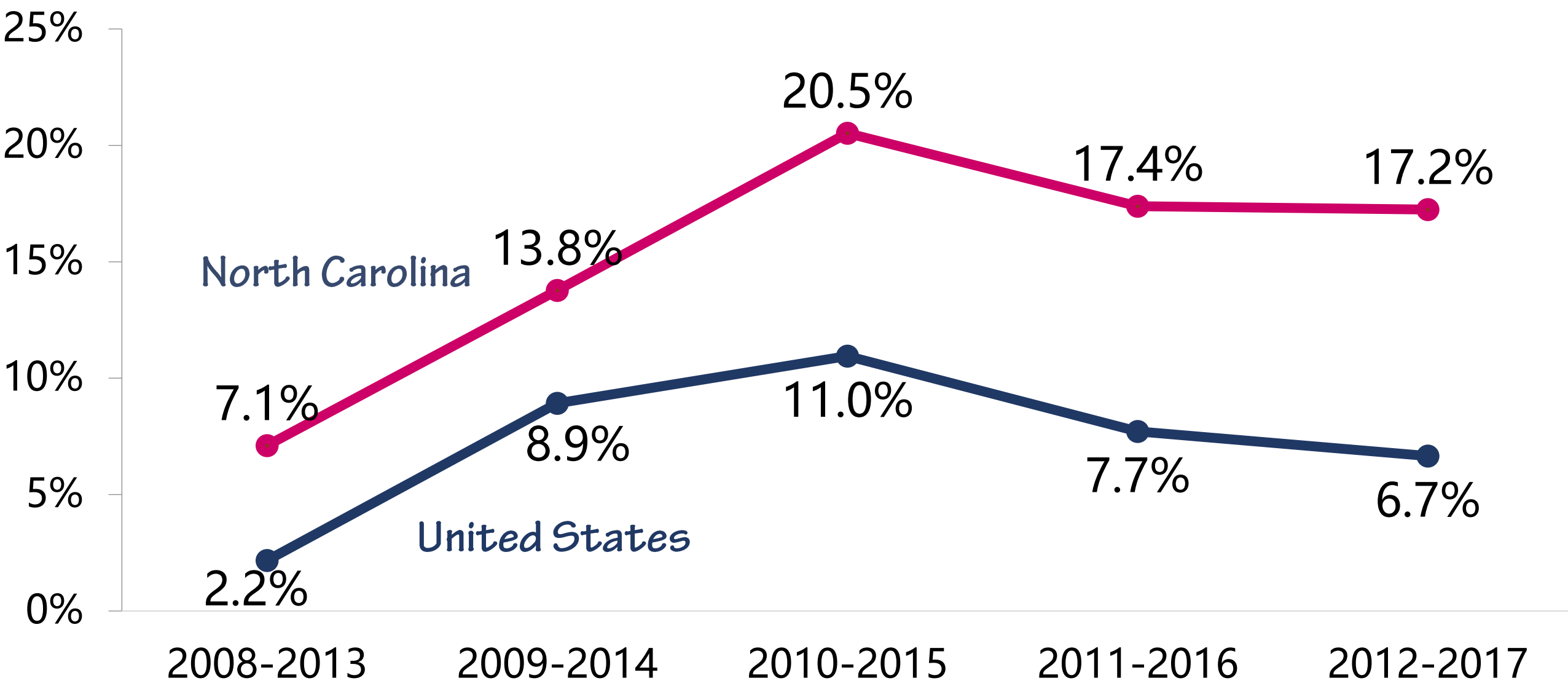
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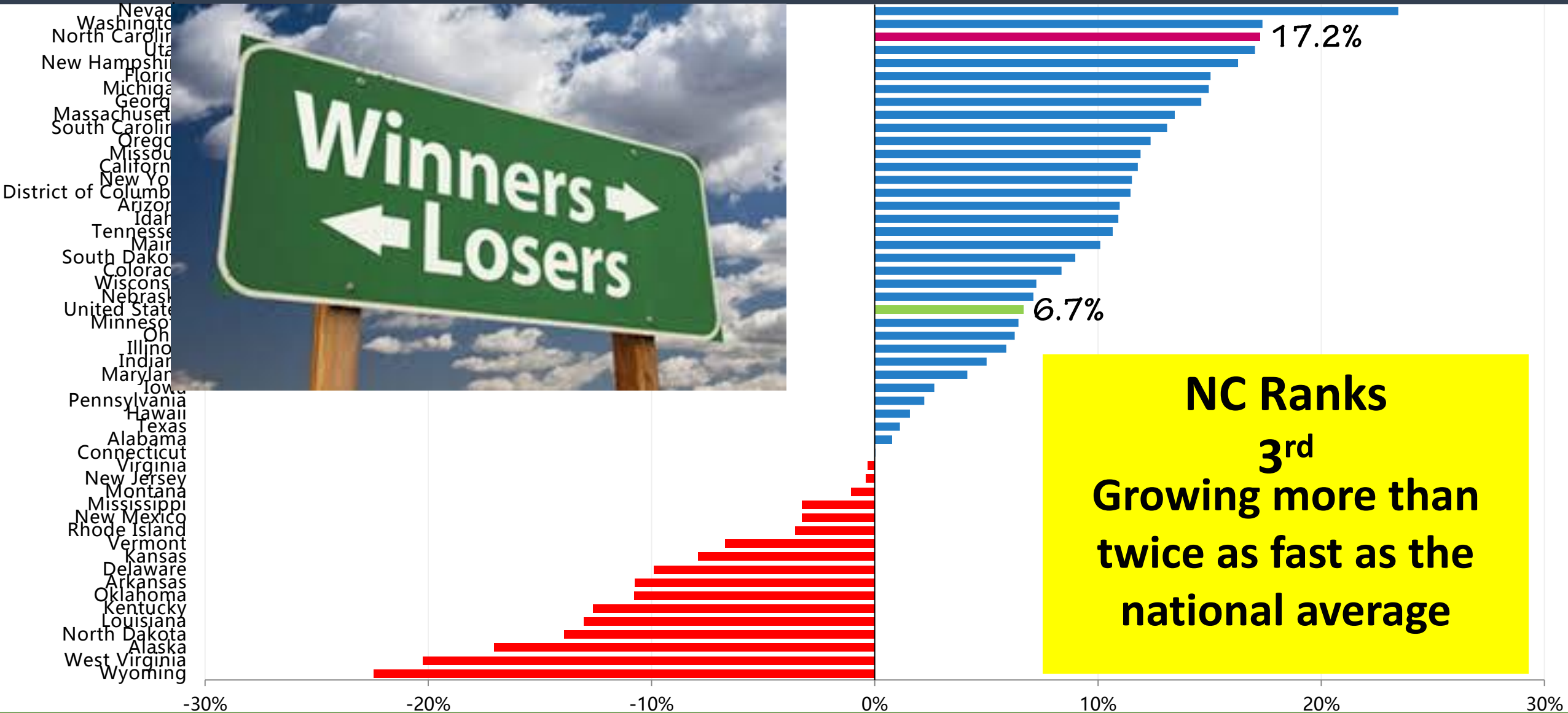
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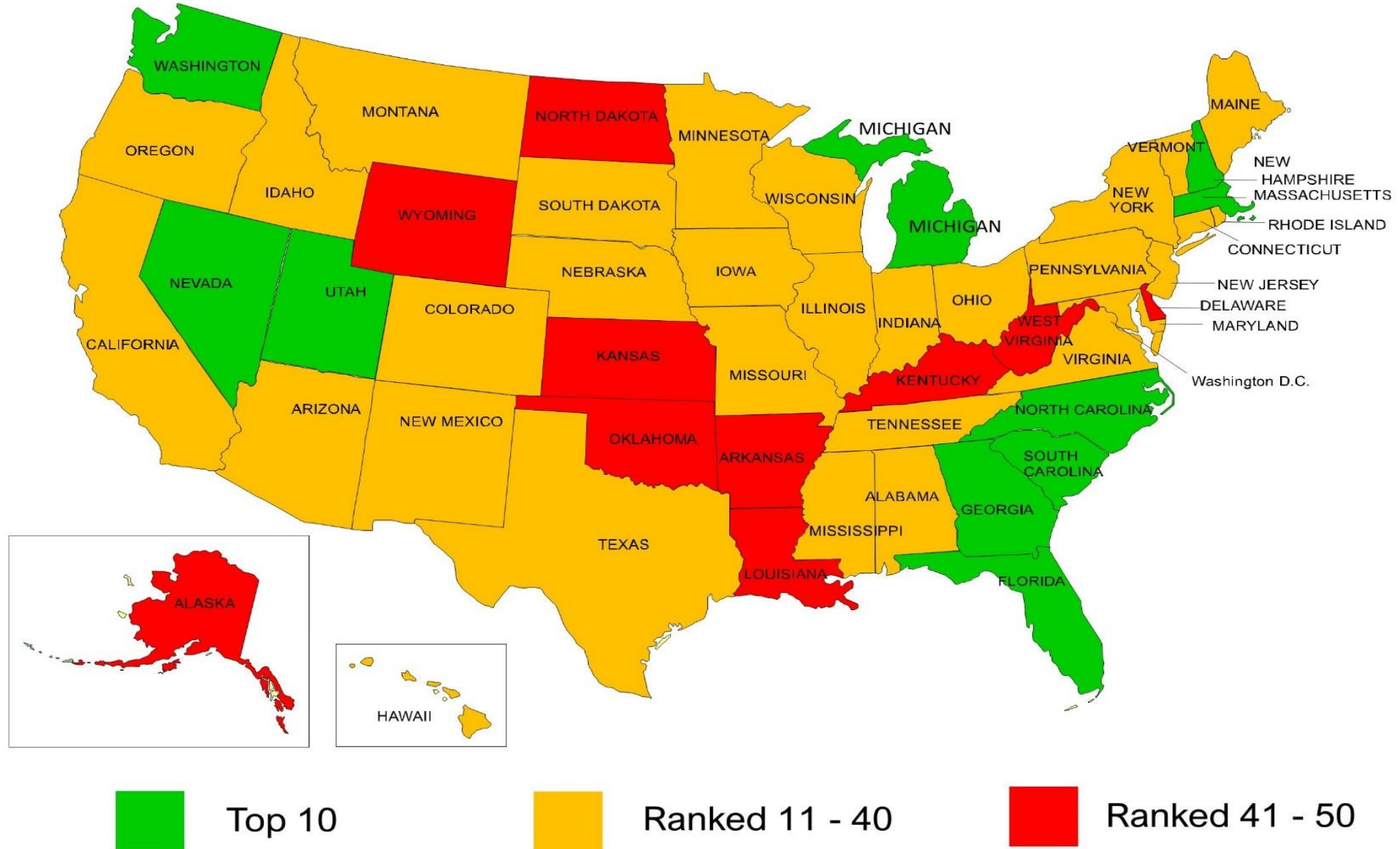
5-Year Growth Rates for North Carolina's Total Tech Sector, 2012-2017



Tech Sector Employment Growth, 2012-2017



Tech Sector Employment Growth, 2012-2017



Average Annual Earnings per Worker by Subsector, 2017

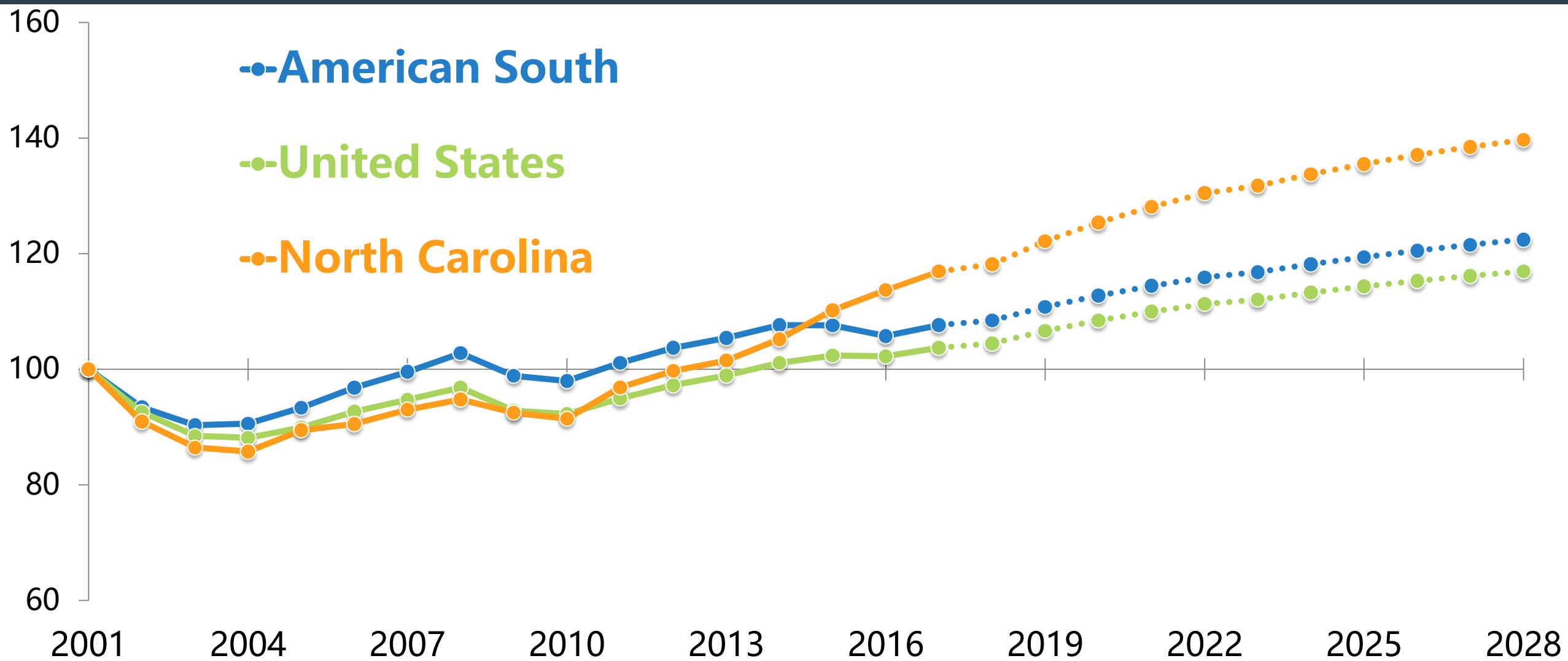
Tech Category	North Carolina	North Carolina (With Purchasing Power)	National Average
Energy Tech	\$130,200	\$143,200	\$147,200
Environmental Tech	\$96,600	\$106,200	\$78,900
Life Sciences	\$113,900	\$125,300	\$124,000
IT	\$112,000	\$123,200	\$138,500

Economic Impact of Technology Sector on State Economy, 2017

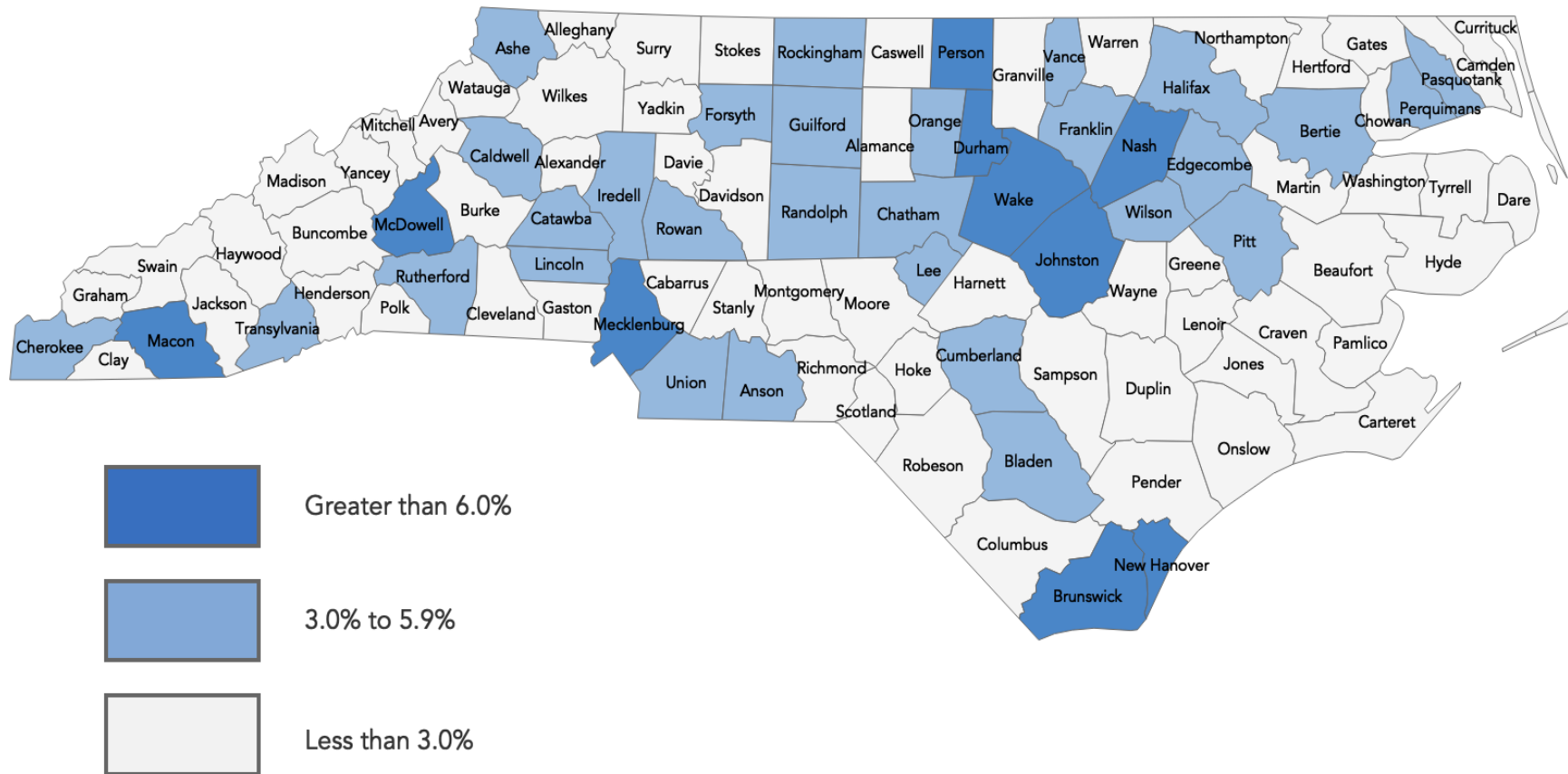
Impact	Employees	Earnings (Millions)	Sales (Millions)
Direct Impact	254,230	\$26,600	\$86,300
Multiplier	3.24	1.99	1.90
Indirect & Induced Impact	569,300	\$26,400	\$78,000
Total Impact	823,530	\$53,000	\$164,300

Long Term Technology Sector Trends

(Percentage Change in Employment Post 2001)



Tech Industry Jobs by County in North Carolina



PTP Tech Sector Summary

Indicator	PTP Counties' Tech Sector 2017	PTP Tech Sector Percent of PTP Total	North Carolina's Tech Sector 2017	PTP Counties Percent of North Carolina Tech Sector
Employees	23,525	3.0%	254,230	9.3%
Establishments	1,688	4.4%	19,371	8.7%
Wages (millions)	\$2,379	5.1%	\$26,557	9.0%
Sales (millions)	\$8,700	5.8%	\$86,280	10.1%

PTP Tech Sector

Technology Categories	PTP Employment 2017	PTP Employment Change 2012-2017	NC Employment 2017	NC Employment Change 2012-2017
Energy Tech	1,215	1.7%	13,205	12.3%
Environmental Tech	3,082	1.1%	23,158	17.0%
Life Sciences	6,675	-10.8%	80,409	12.0%
IT	12,553	8.5%	137,458	21.1%
All Tech Categories	PTP Employment 2017	PTP Employment Change 2012-2017	NC Employment 2017	NC Employment Change 2012-2017
Tech Services	15,976	0.0%	190,373	24.6%
Tech Manufacturing	7,549	3.3%	63,857	-0.3%
TOTAL TECH SECTOR	23,525	1.0%	254,230	17.2%

PTP Average Annual Earnings per Worker 2017

Technology Categories	PTP Counties	PTP Counties (purchasing power)	North Carolina	North Carolina (purchasing power)	National Average
Energy Tech	\$119,700	\$131,680	\$130,200	\$143,200	\$147,200
Environmental Tech	\$68,430	\$75,280	\$96,200	\$106,200	\$78,900
Life Sciences	\$81,810	\$90,000	\$113,900	\$125,300	\$124,900
IT	\$97,690	\$104,460	\$112,000	\$123,200	\$138,500
All Tech Categories	PTP Counties	PTP Counties (purchasing power)	North Carolina	North Carolina (purchasing power)	National Average
Tech Services	\$86,000	\$94,620	\$107,800	\$118,600	\$129,300
Tech Manufacturing	\$100,550	\$110,610	\$125,100	\$137,600	\$137,300
TOTAL TECH SECTOR	\$90,500	\$99,560	\$112,100	\$123,400	\$130,800

Top Occupations for IT Job Postings

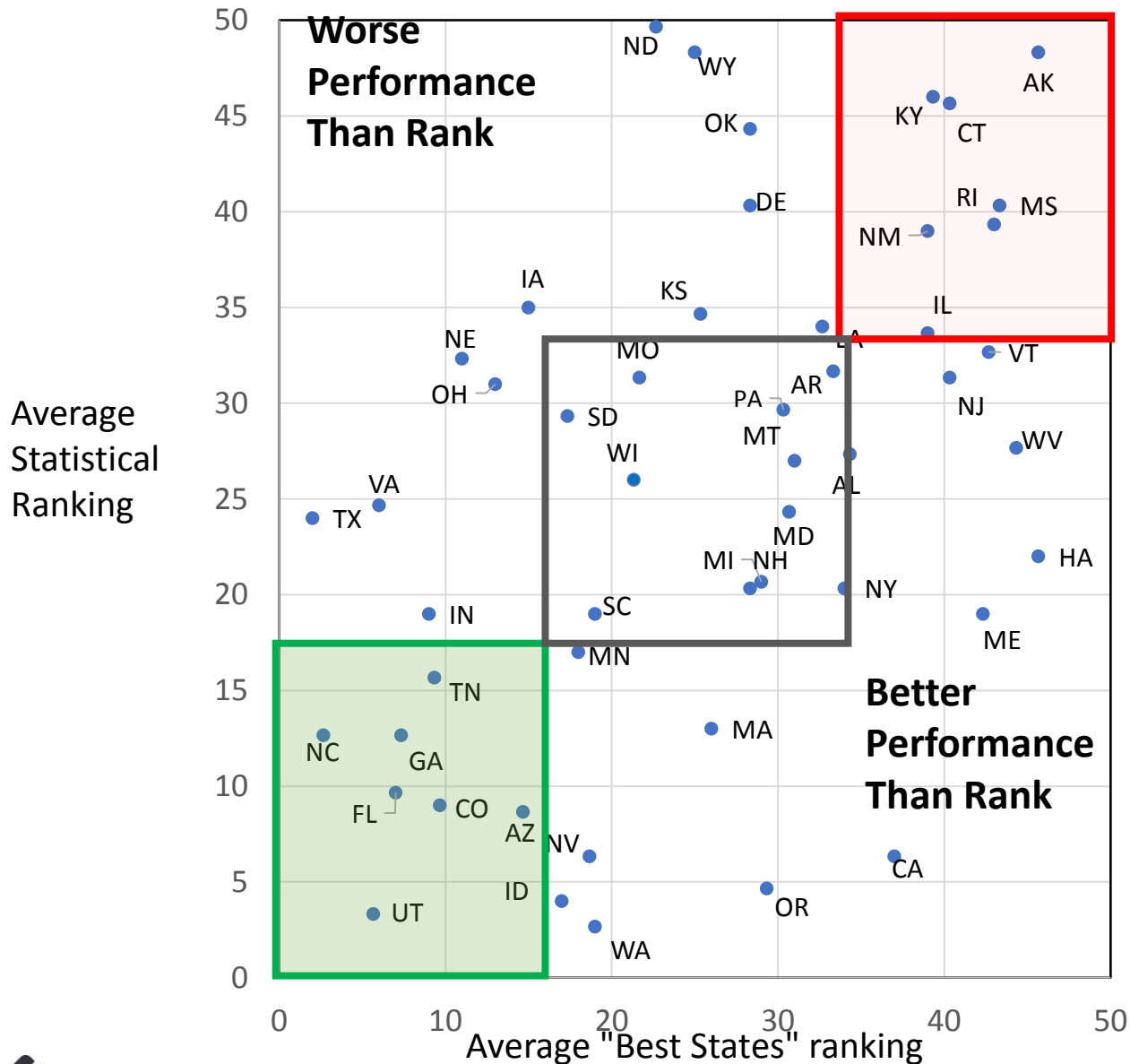


Looking Toward the Future?



2020 State Business Tax Climate Index – State Ranking				
(1 is Best, 50 is Worst) Overall	Corporate Tax	Individual Income	Sales Tax	Property Tax
Alabama 40th	23	30	50	15
Arkansas 46th	34	40	46	29
Florida 4th	9	1	23	13
Georgia 32nd	6	36	29	28
Kentucky 24th	17	18	14	36
Louisiana 41st	37	32	48	33
Maryland 43rd	32	45	19	42
Mississippi 31st	10	27	34	37
Missouri 14th	5	24	24	7
North Carolina 15th	3	16	21	34
Oklahoma 27th	8	33	39	19
South Carolina 30th	4	34	31	30
Tennessee 18th	24	8	47	31
Texas 13th	47	6	36	38
Virginia 25th	14	35	11	32
West Virginia 23rd	17	28	18	17
Source: 2020 Tax Foundation				

Rankings and Performance



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

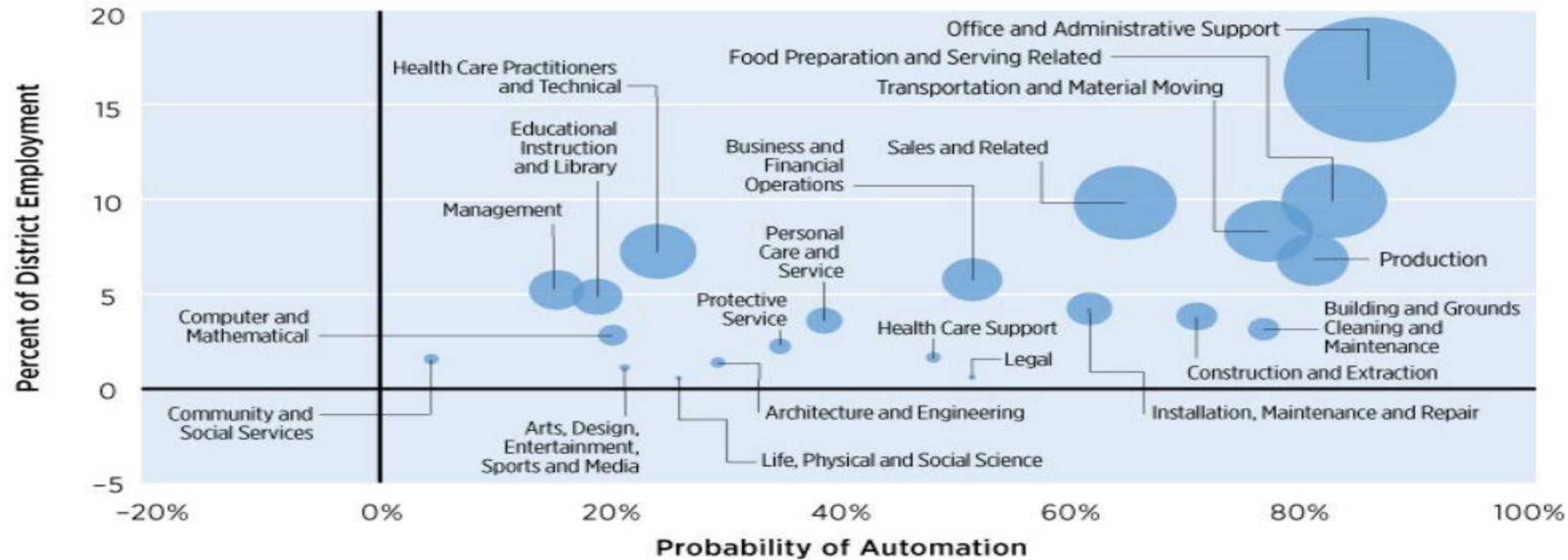
Forbes released 11/28/18; CNBC released 7/10/19; Chief Executive released 5/6/19

Plotted Against

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

3 years 2015-2018 Jobs & Wages: BLS QCEW annual; 3 years 2015-2018 GDP: BEA

Which Jobs Are Most at Risk of Being Automated?

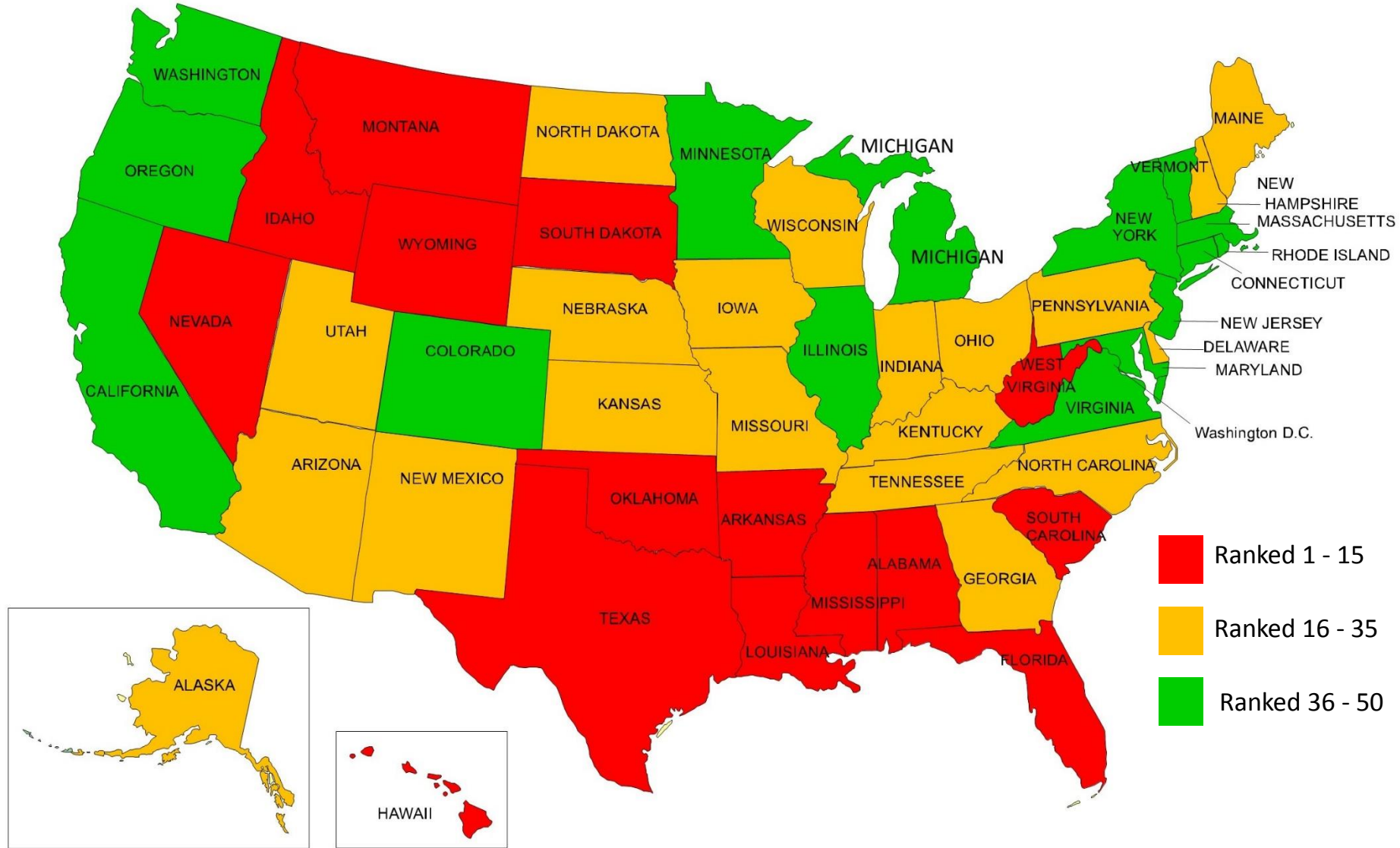


SOURCES: Census Bureau's Occupational Employment Statistics, Frey and Osborne, authors' calculations.

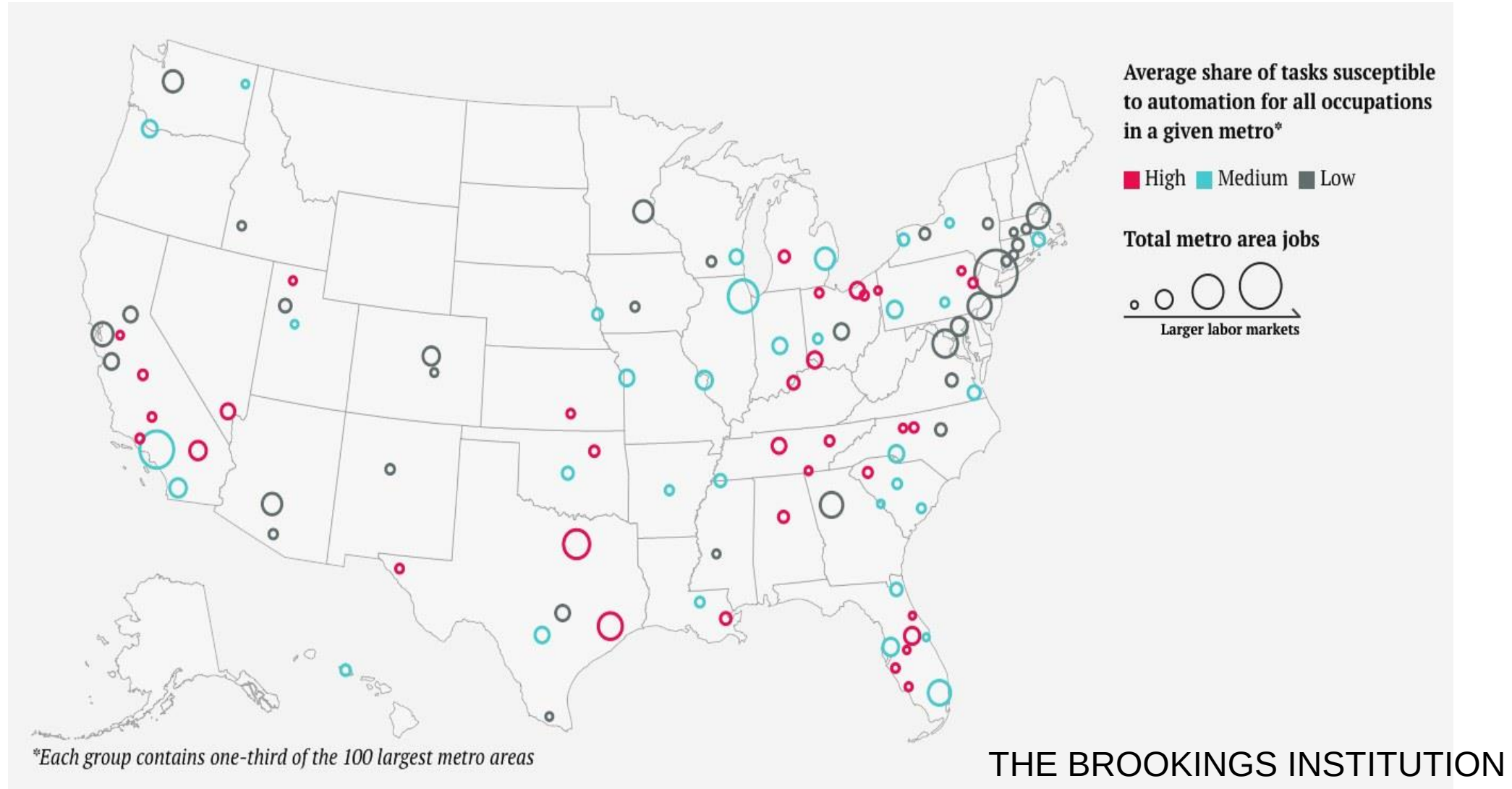
NOTE: The figure shows a positive correlation between probability of automation and percentage of employment for occupations in the Eighth District. Probability of automation is on the horizontal axis, while percentage of employment is on the vertical axis. The size of the bubbles represents the number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

■ FEDERAL RESERVE BANK OF ST. LOUIS

States Where Jobs are Most Vulnerable to Automation



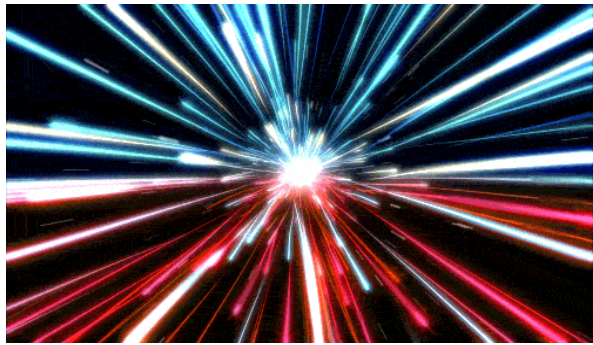
Metro Susceptibility to Automation



Acceleration

Everything Gets Faster & Faster

- Customer expectations are for instantaneous
- Technology adoption time shortens
- Speed to market shortens



Is there anyone here today that believes the pace of change will slow over the next 10 years?

Your High-Tech World 20 Years Ago



You are Probably Riding the Tech Wave?



You are Probably Riding the Tech Wave?



Rapid Technological Advancement

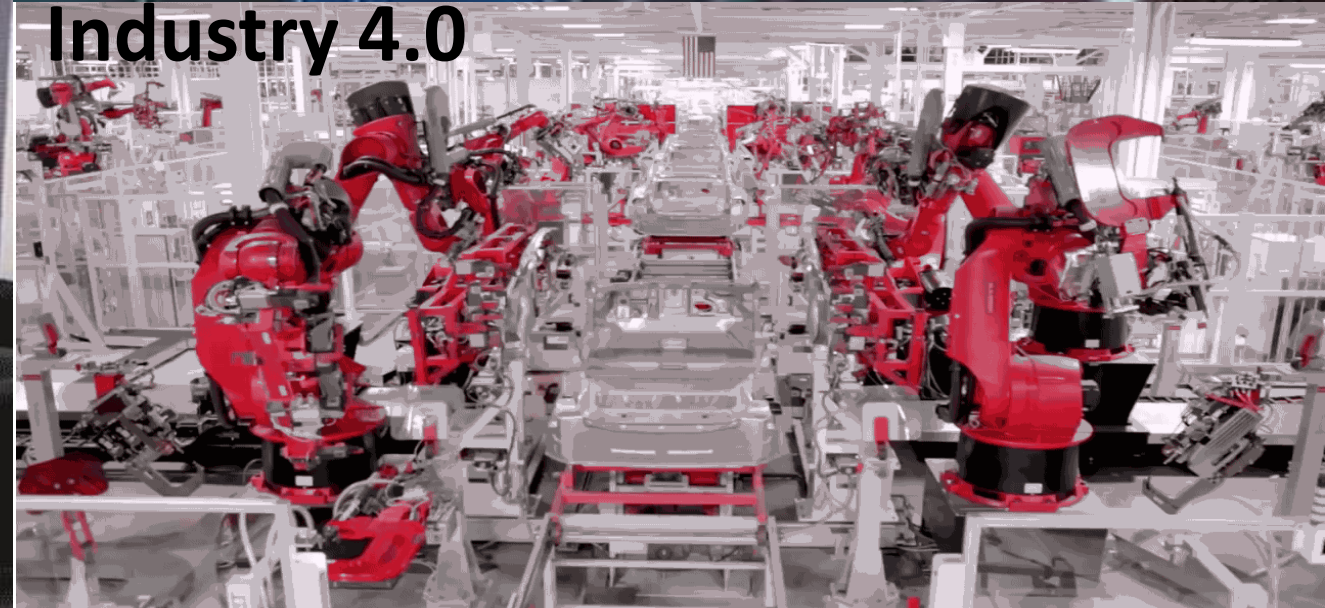
Wearables



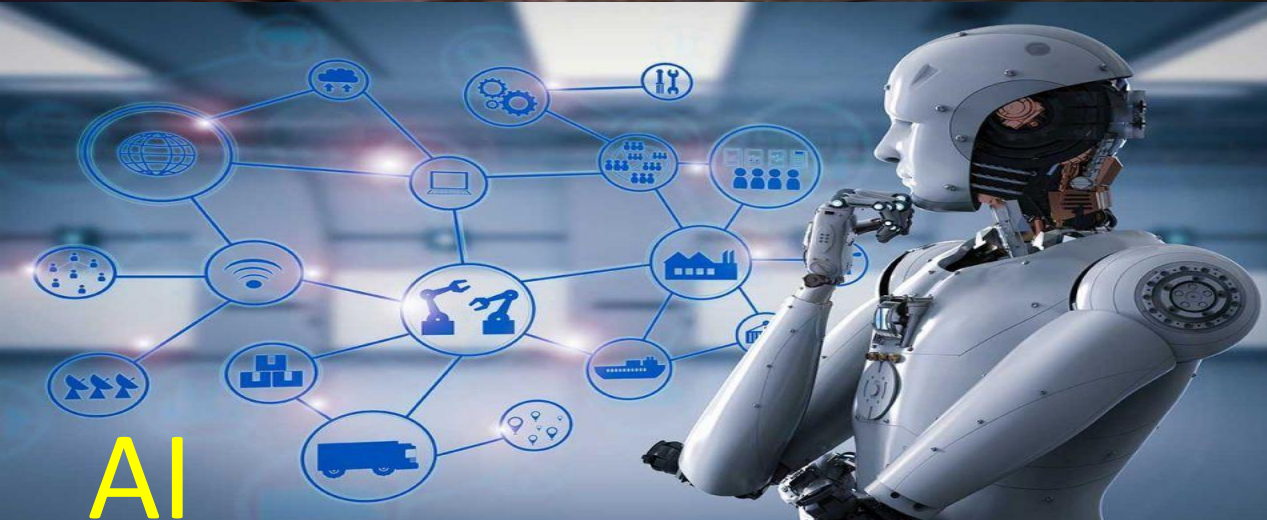
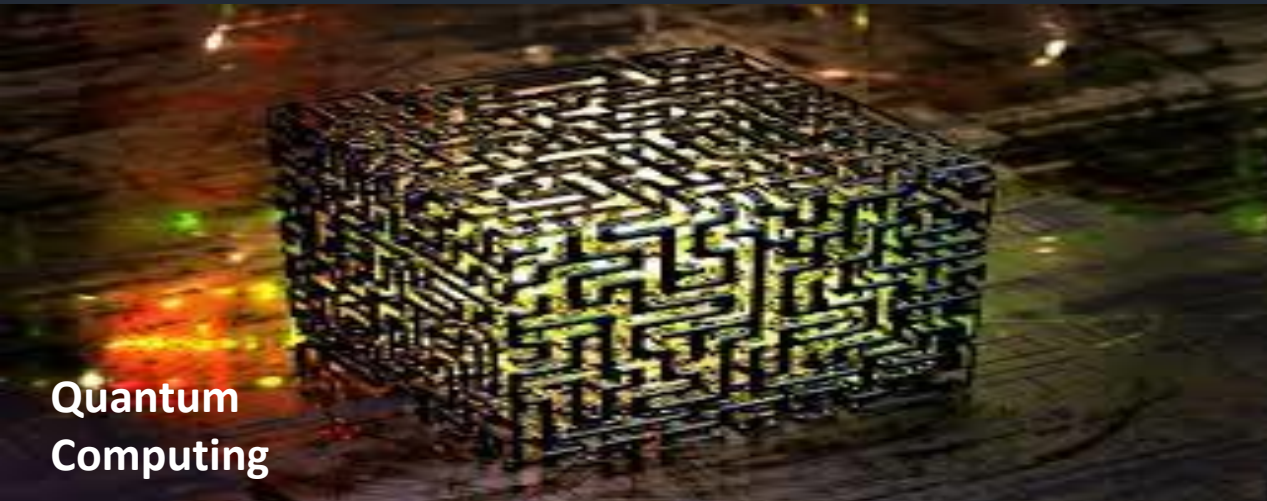
Consumer Robotics



Industry 4.0



The Intersection of Major Tech Trends is Where the Future is Reimagined



Hyper-Connectivity & Data Democratization

- 4.1 billion people on the internet
- By 2021, 2 billion people using digital assistants
- Since I started talking, 75,000 new websites

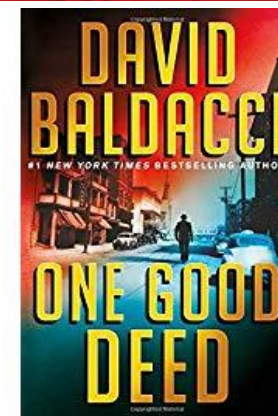
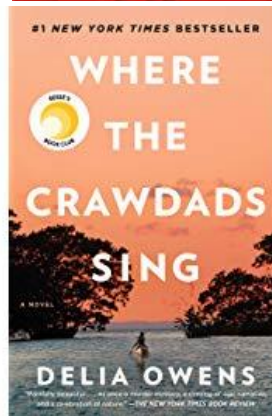


But Also, Segmented-Hyper-Connectivity

- Launched way back in 2017...
- **200 million players and \$2B in revenue**



But Also, Segmented-Hyper-Connectivity



Data Analytics Might Rule the World



Economic Leadership Multifactor Analysis

200 Factors for top 100 Metros

Business Climate (building costs, adjusted COL, household disposable income, rental costs, housing costs, traffic congestion, crime rates, regulatory and legal rankings)

Workforce/Education (educational attainment, standardized tests scores, education expenditures, HB1 visas)

Innovation- (private funded R&D, patents, tech growth, STEM completers, broadband penetration, VC, biz birth rates)

Demographics (population change, projected population growth, age dependency, out-of-state & foreign in-migration, millennial growth, age, poverty)

Economy (GDP, GDP Growth, wages, employment growth, unemployment, economic diversity)

- 1) Raleigh
- 2) Austin
- 3) Seattle
- 4) Dallas
- 5) Charlotte
- 6) Nashville
- 7) Salt Lake City
- 8) San Francisco
- 9) Durham
- 10) Atlanta

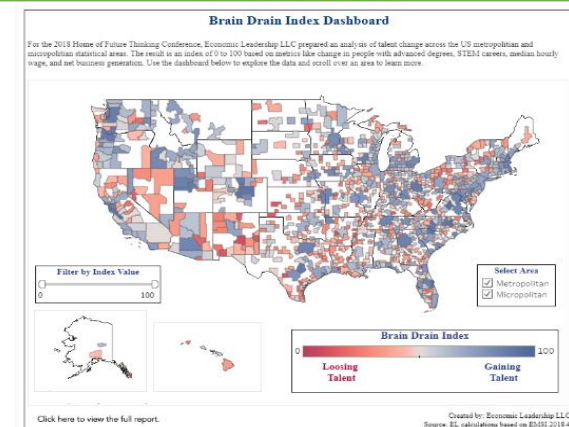
Talent Attraction is the Top Competitive Factor

Brain Attraction Index Components Measured for 933 Metros & Micros Across the County

- Change in Number of People with Advanced Degrees
- Change in STEM Jobs
- Number of STEM Jobs
- Median Hourly Wage for STEM Jobs – Cost of Living Adjusted
- Net Business Generation
- Change in White Collar Jobs
- Science & Engineering Graduates
- Number of People with Advanced Degrees

Top 20 Brain Attraction Index Areas

- 1 Charlottesville, VA
- 2 San Jose-Sunnyvale-Santa Clara, CA
- 3 Raleigh-Cary, NC
- 4 Denver-Aurora-Lakewood, CO
- 5 Charlotte-Concord-Gastonia, NC-SC
- 6 Austin-Round Rock, TX
- 7 Palm Bay-Melbourne-Titusville, FL
- 8 Portland-Vancouver OR-WA
- 9 Columbus, OH





Alexa...What are
the 10 best
restaurants in my
area?

- How many of you would pick #8 to try?
- How many choices would you ask for?

Choice does not Correlate to Satisfaction



Hey Alexa- Where
will be the best place
to find workers for
my business 5 years?



Predictive Analytics

Today PTP's Metros Have **Advantages**

- ✓ Construction costs
- ✓ Traffic Congestion
- ✓ Exports as Percentage of GDP
- ✓ Housing Costs

Disadvantages

- Income Per Capita
- Labor Force Participation Rate
- Millennial Attraction
- Educational Attainment



Predictive Analytics

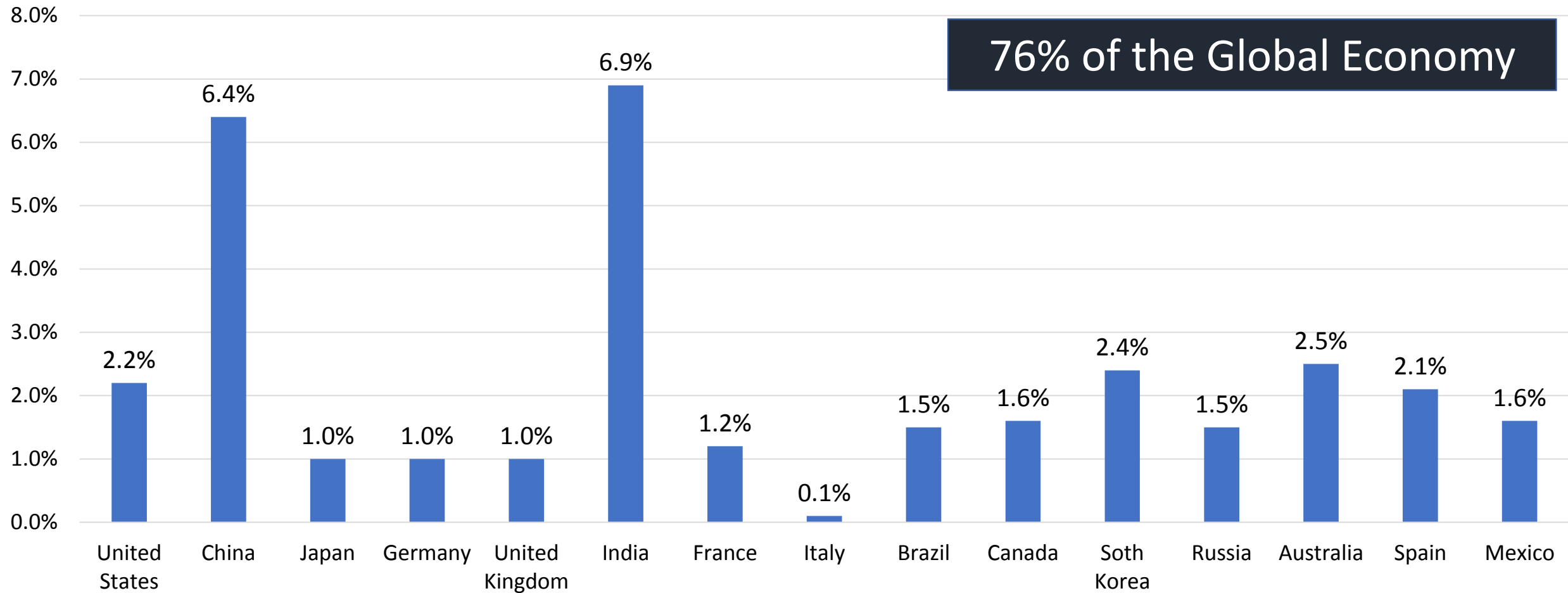
What about the Economy in 2019?



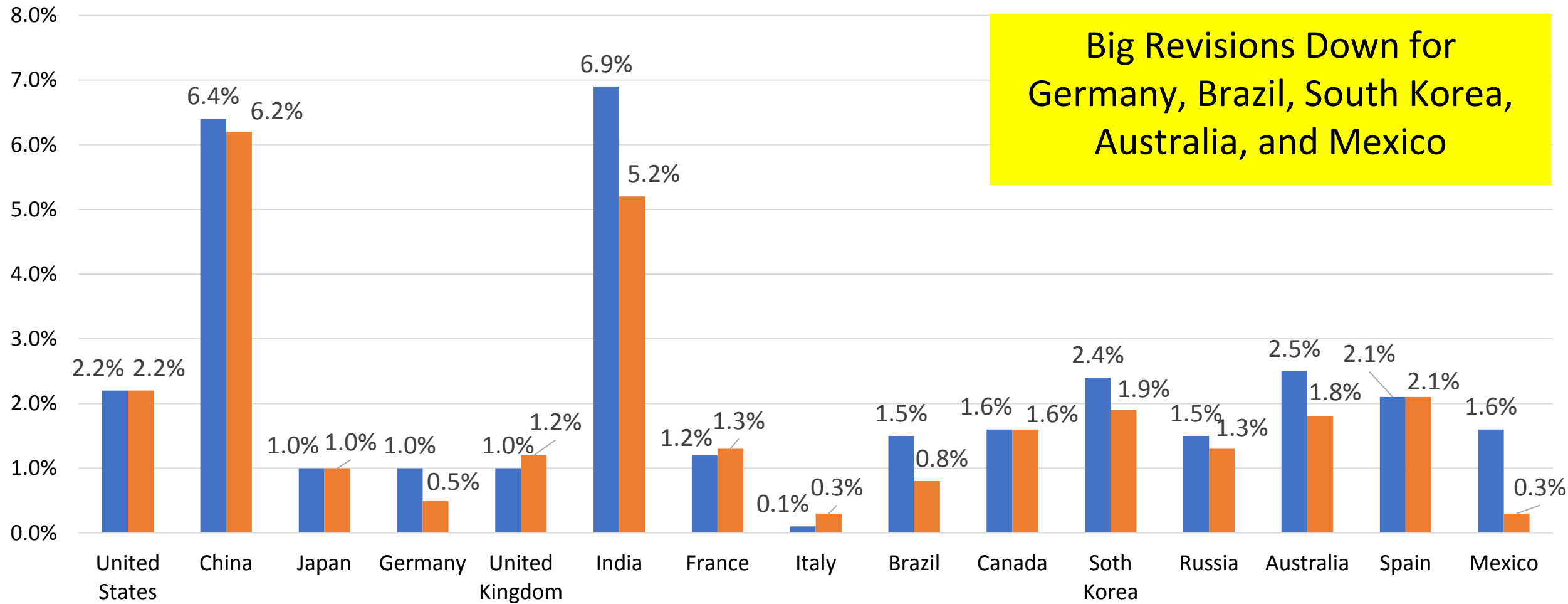
Global Geo-Muddle



Top 15 Countries GDP Growth Projections 2019 (May)



Top 15 Countries GDP Growth Projections 2019 (October)





Impossible to see, the future is.

So what?





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