



**ECONOMIC**  
LEADERSHIP

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southern growth policies board

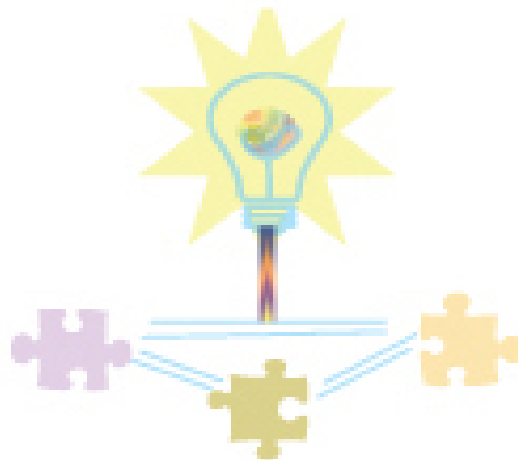


# Re-imagining Workforce Development

**Southern Growth Policies Board's  
2013 Report on the Future of the South**

# INNOVATION U 2.0

Reinventing  
University Roles in a  
Knowledge Economy



Louis G. Tornatzky, PhD  
Elaine C. Rideout, PhD



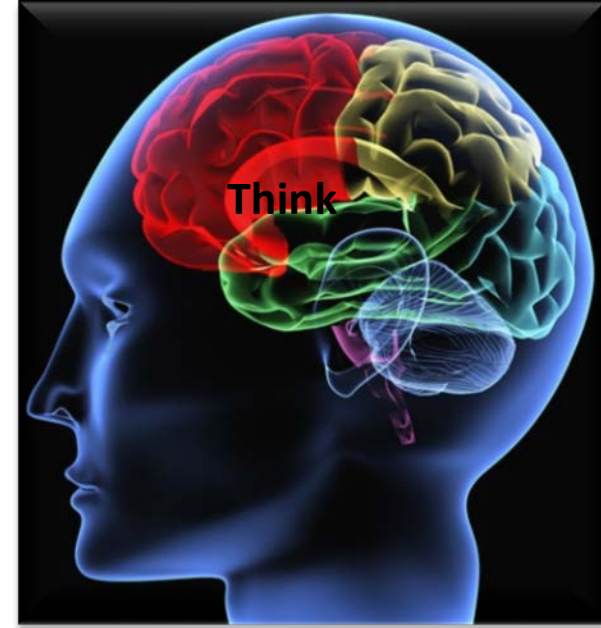
[www.nifi.org](http://www.nifi.org)



## >> Shaping Our Future

How Should Higher Education Help Us Create the Society We Want?

# I Have Nothing Profound to Say



...except, many of the things we  
used to all know we knew, have  
changed

# Today's New "Place" Reality

- The economy changed
- The competition changed
- Locational factors changed
- The U.S. workforce has changed
- The talent demands changed
- Customer (talent & companies) demands/expectations changed
- The pace of change and everything else changed



Everybody farmed and all 4 worked in textile mills of NC (First generation workers)  
Everybody lived in towns of less than 3,000 (sort of)  
The highest grade of school was 6<sup>th</sup>  
No body ever had a passport, airplane ticket, mobile phone, computer or a foreign car



**Roy**

**Margaret**

**Genora**

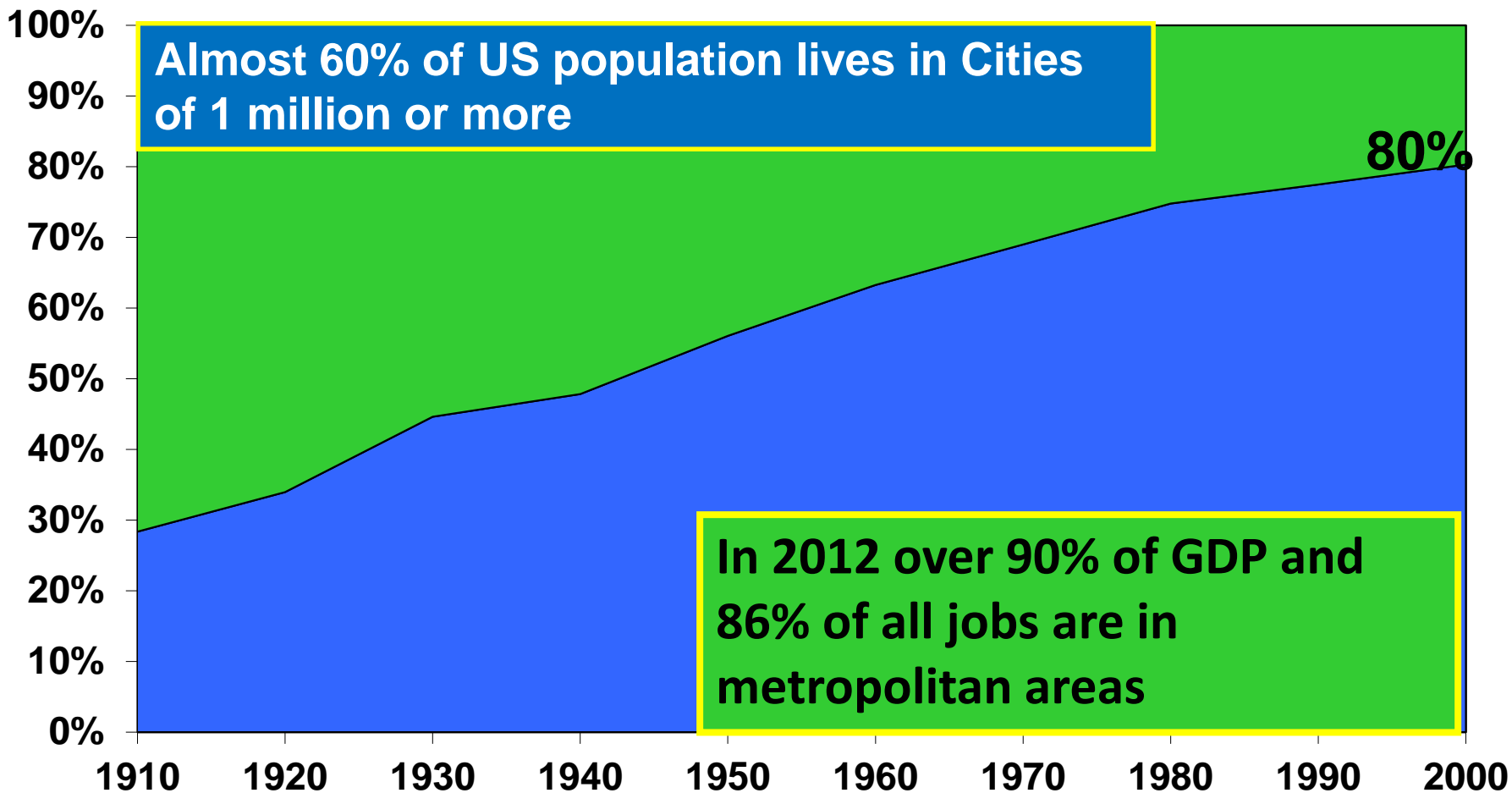
**Wade**

# Urbanization

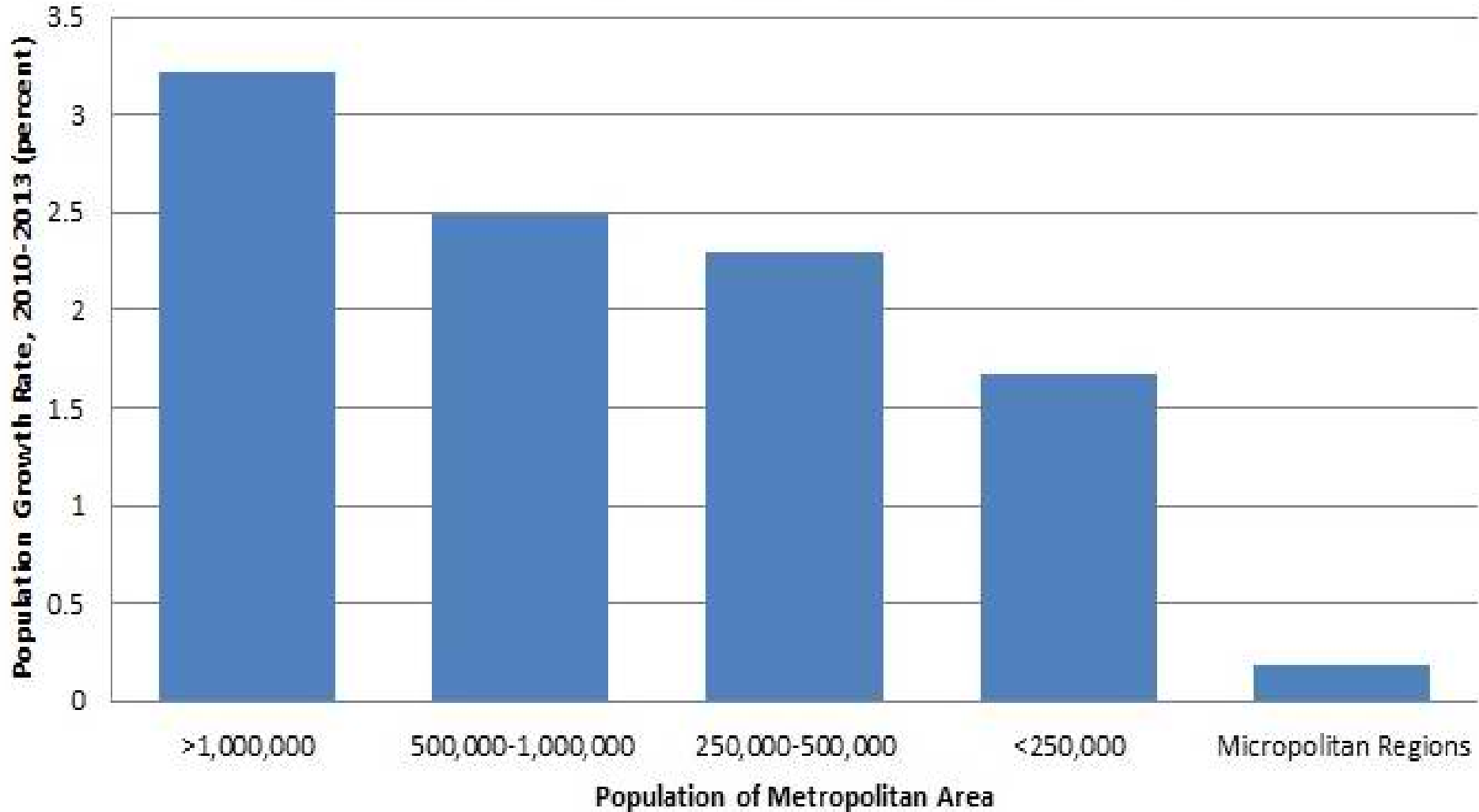




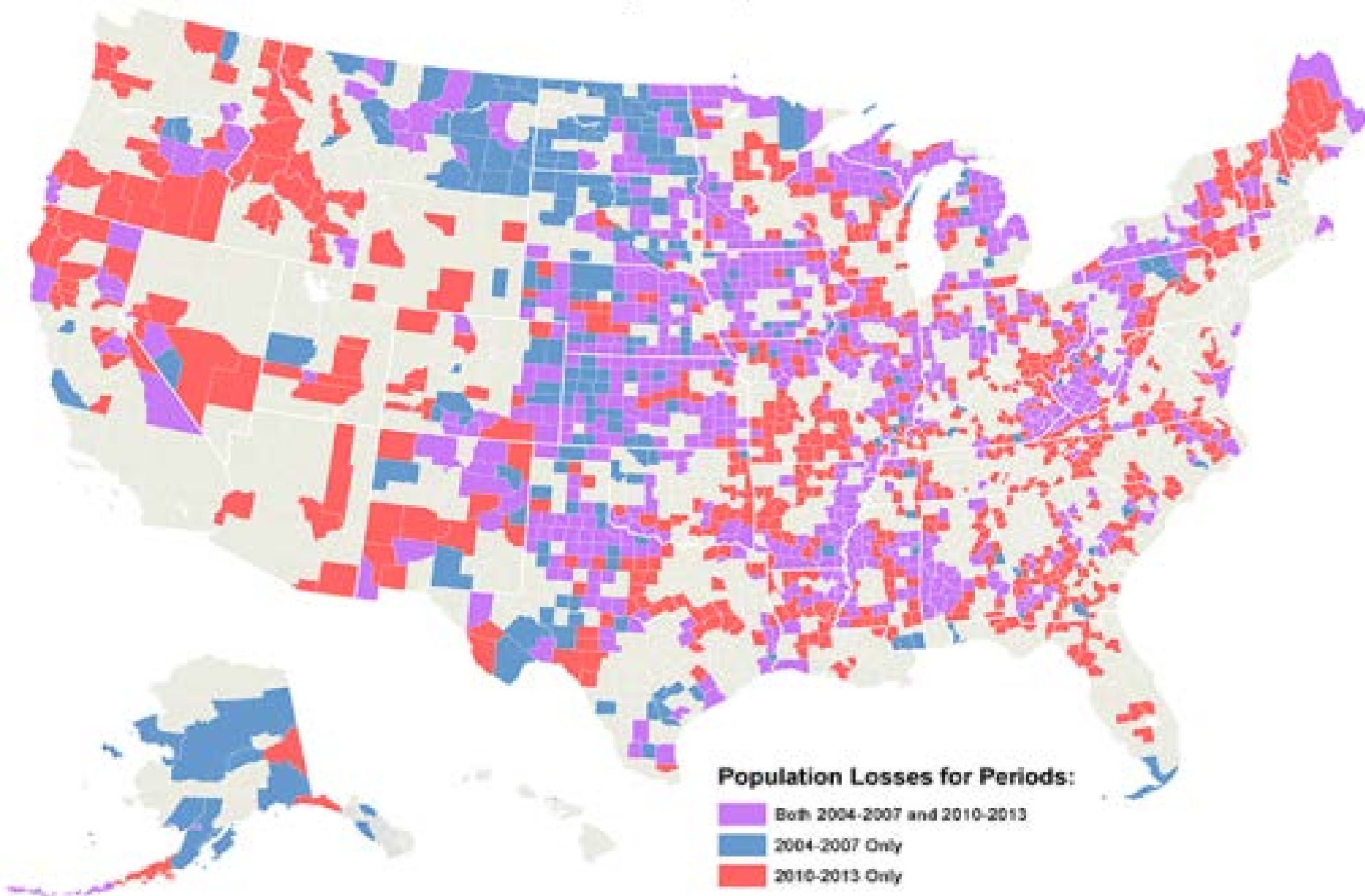
# U.S. Population Concentration Metro-Non-Metro



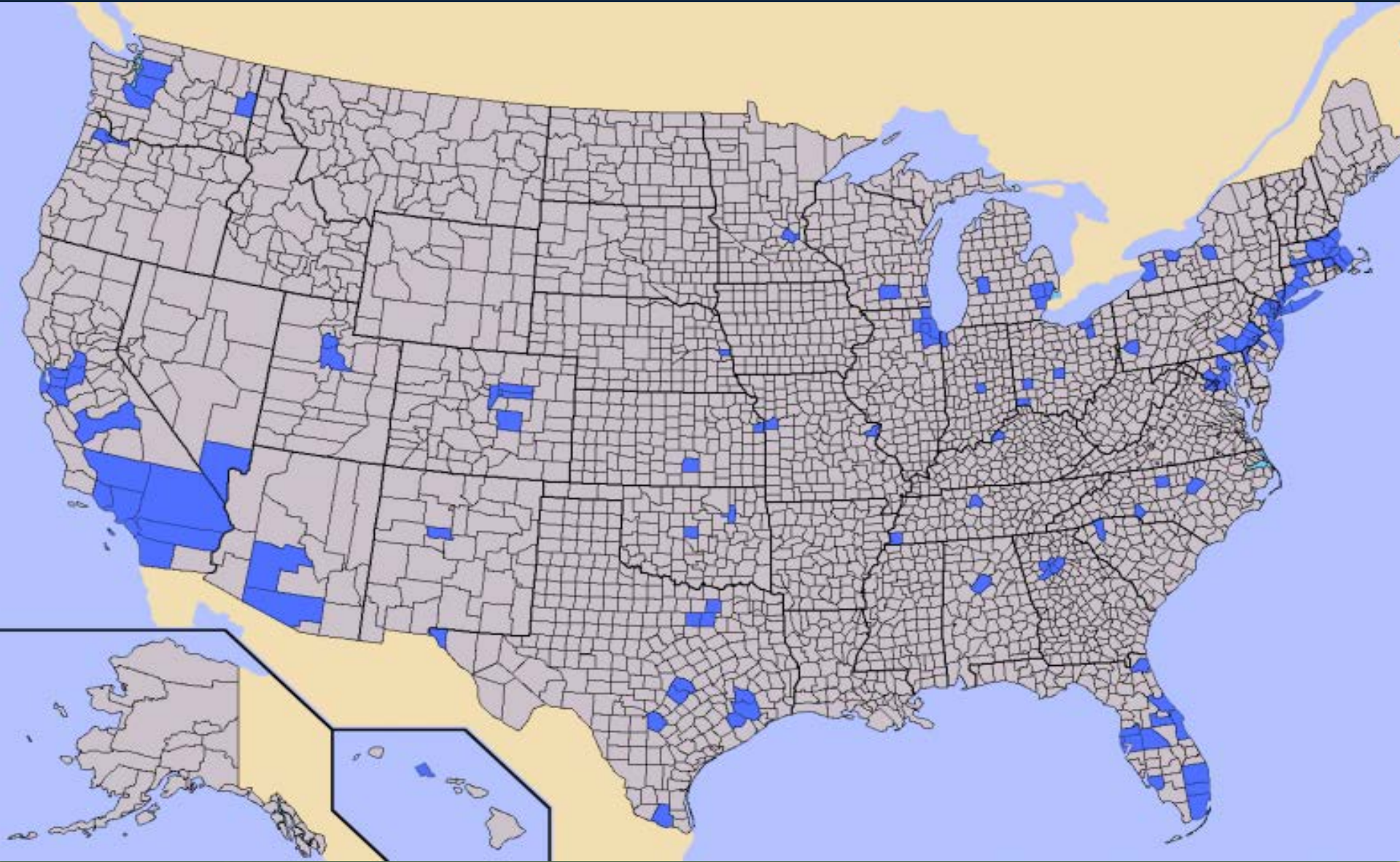
# Population Growth Rate by Regional Size



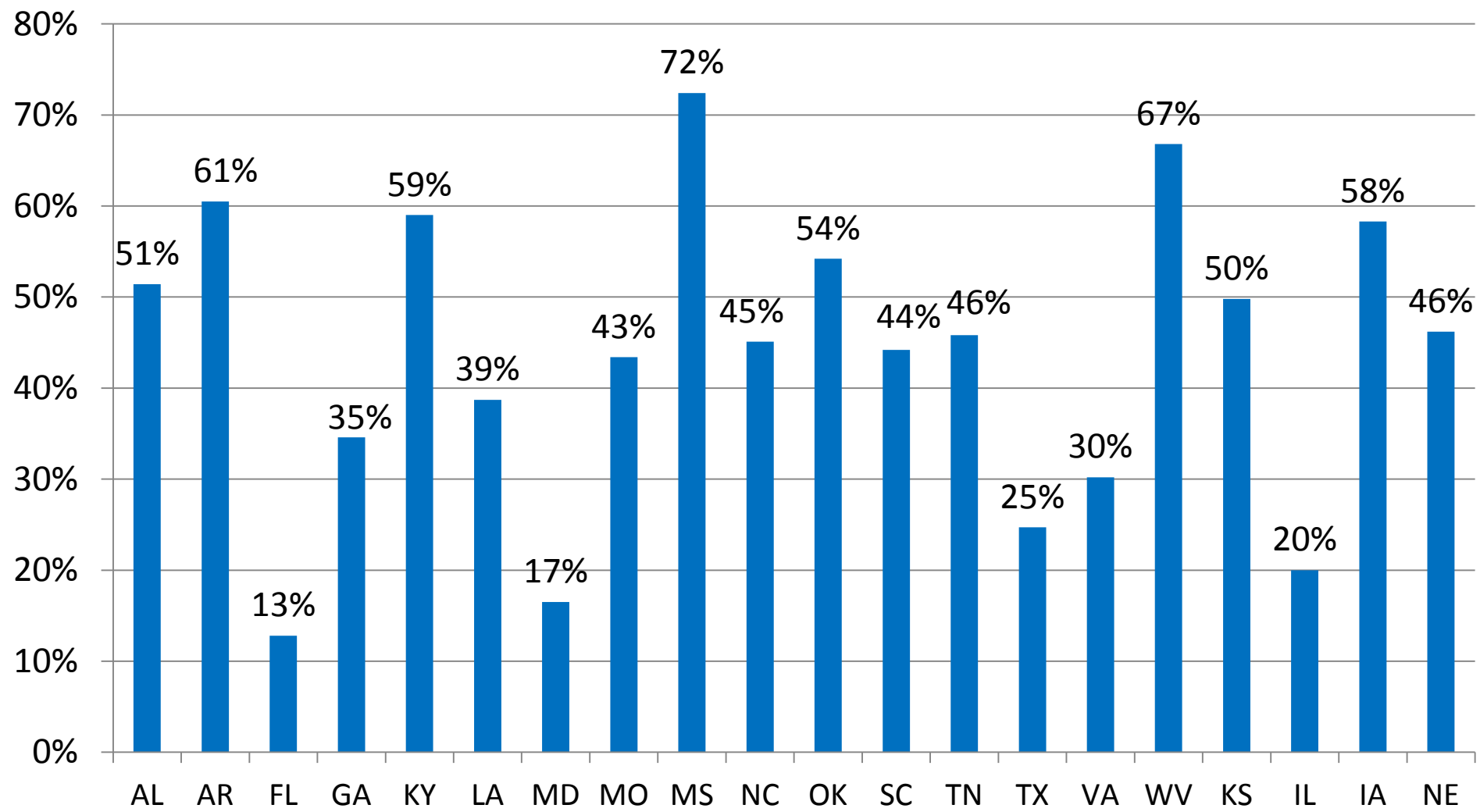
# Population Loss Counties, Outside Large Metropolitan Areas, 2004-2007 and 2010-2013



# Half of the US Population Lives in these 146 Counties



# Southern States % of Population Rural & Small Cities 2010



# The Technology Conundrum



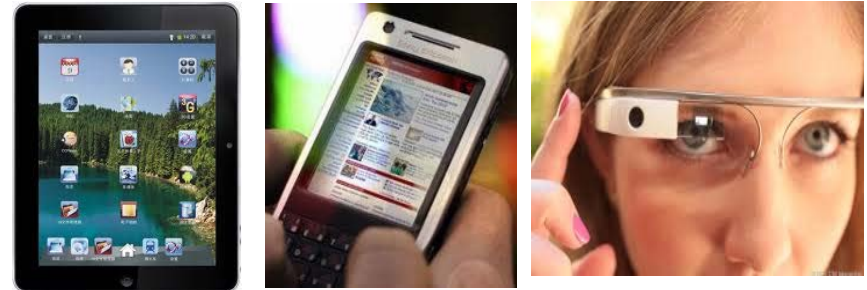
# McKinsey & Company

*Disruptive Technologies: May 2013*

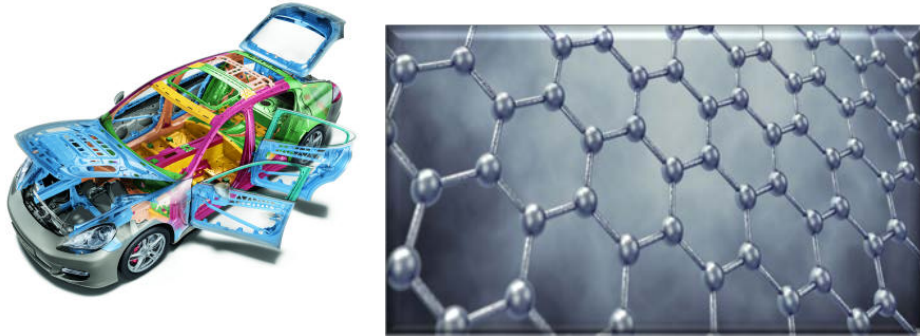
## Energy



## Mobile Internet



## Advanced Materials

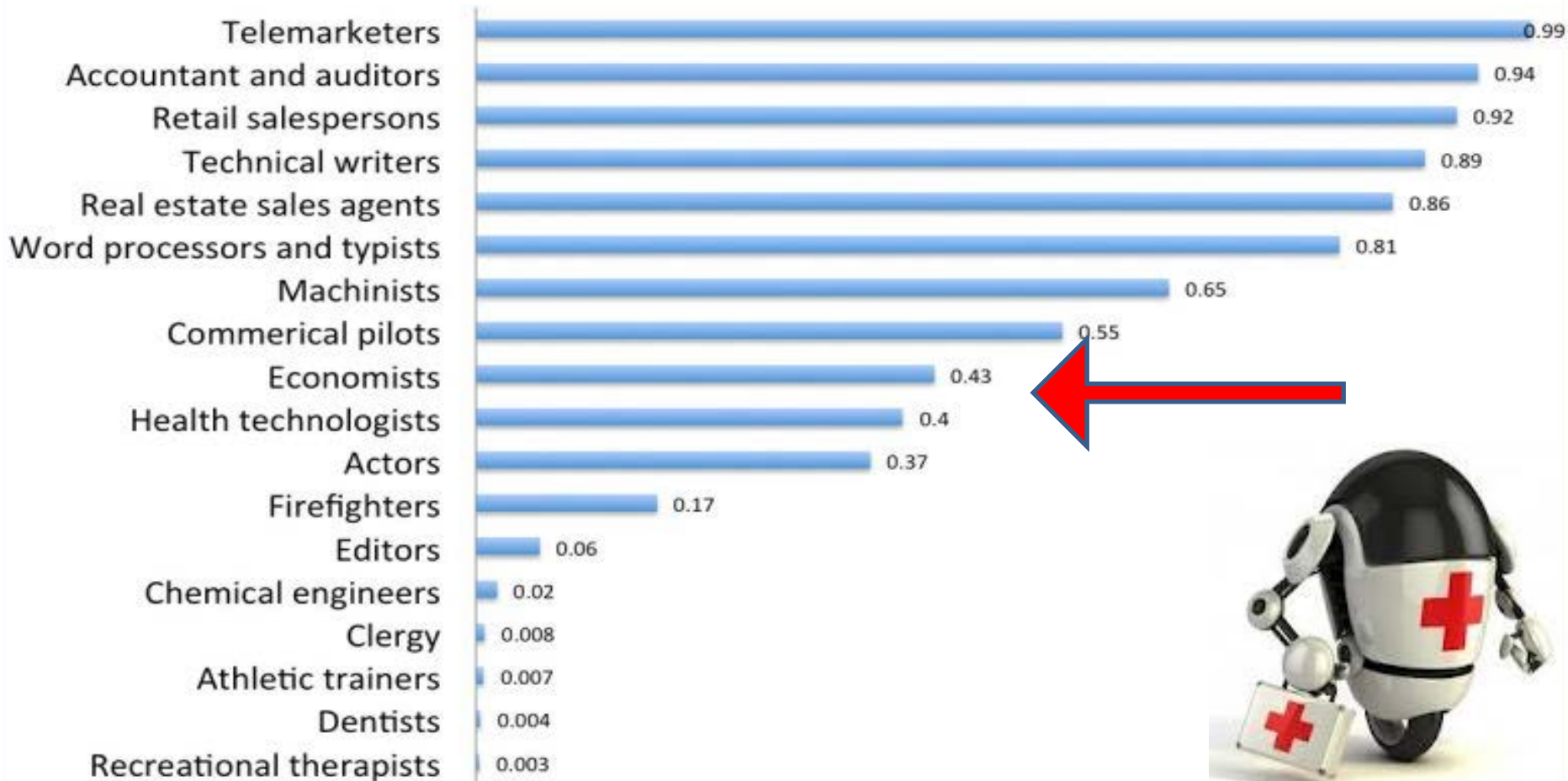


## Next Generation Genomics



## Robotics, Cloud, Digital-intel, 3D Printing

# Probability Robots Will Take Your Job In Next 20 Years, 1=Certain



Source: The Economist, The Future of Employment: How susceptible are jobs to computerisation?



## Most frightening to parents:

“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.”

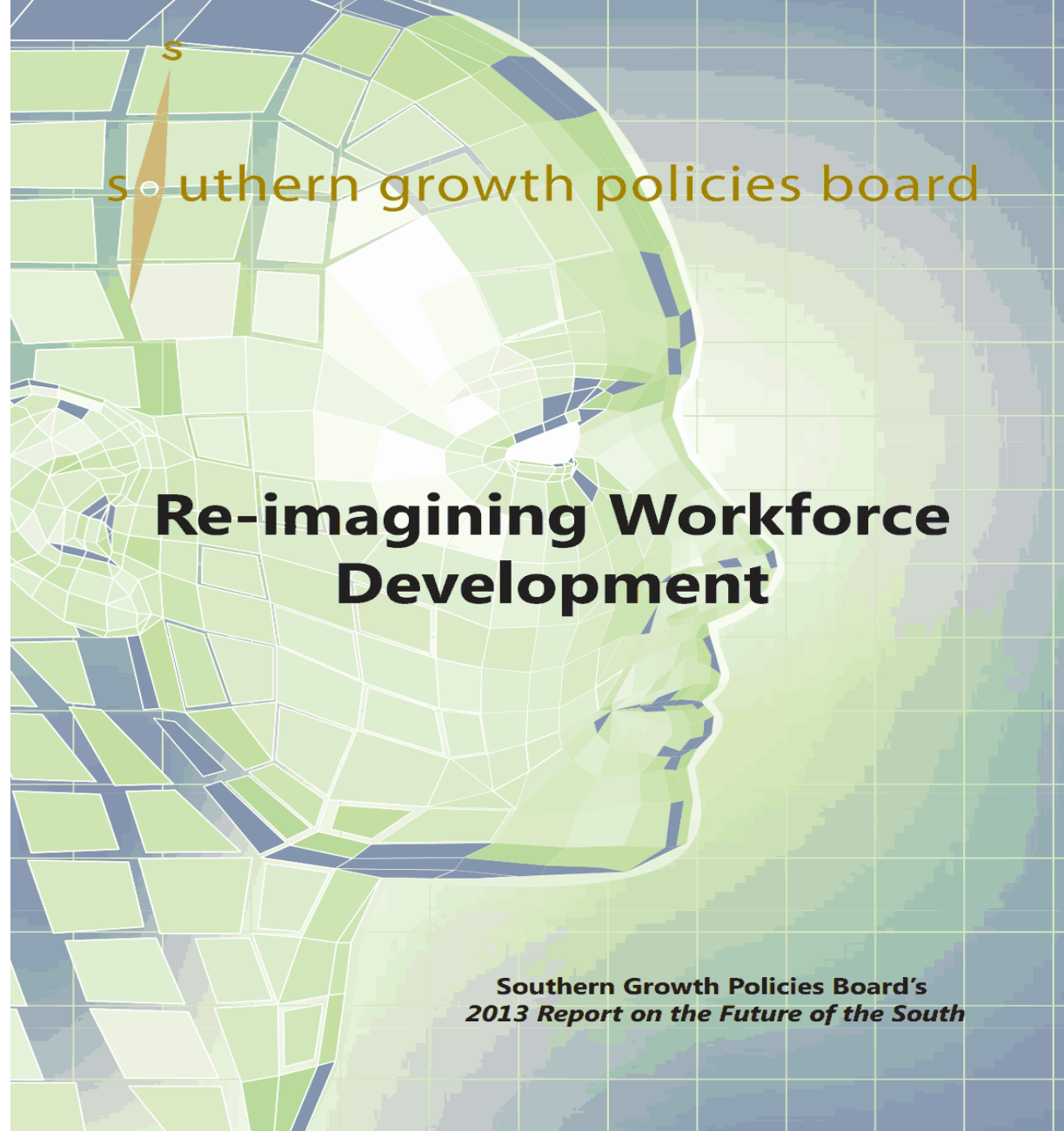
— Howard Rheingold, tech writer and analyst



**Reimagine  
Readiness**

**Reengage Adult  
Learners and  
Disconnected  
Youth**

**Realign  
Relationships  
and Resources**



# Re-imagine Readiness

- Strengthen the connections between education and job skills
- Re-think credentials and their value in the workplace
- Give students more exposure to the world of work
- Scale technology so that every student can benefit from a high quality, personalized learning experience

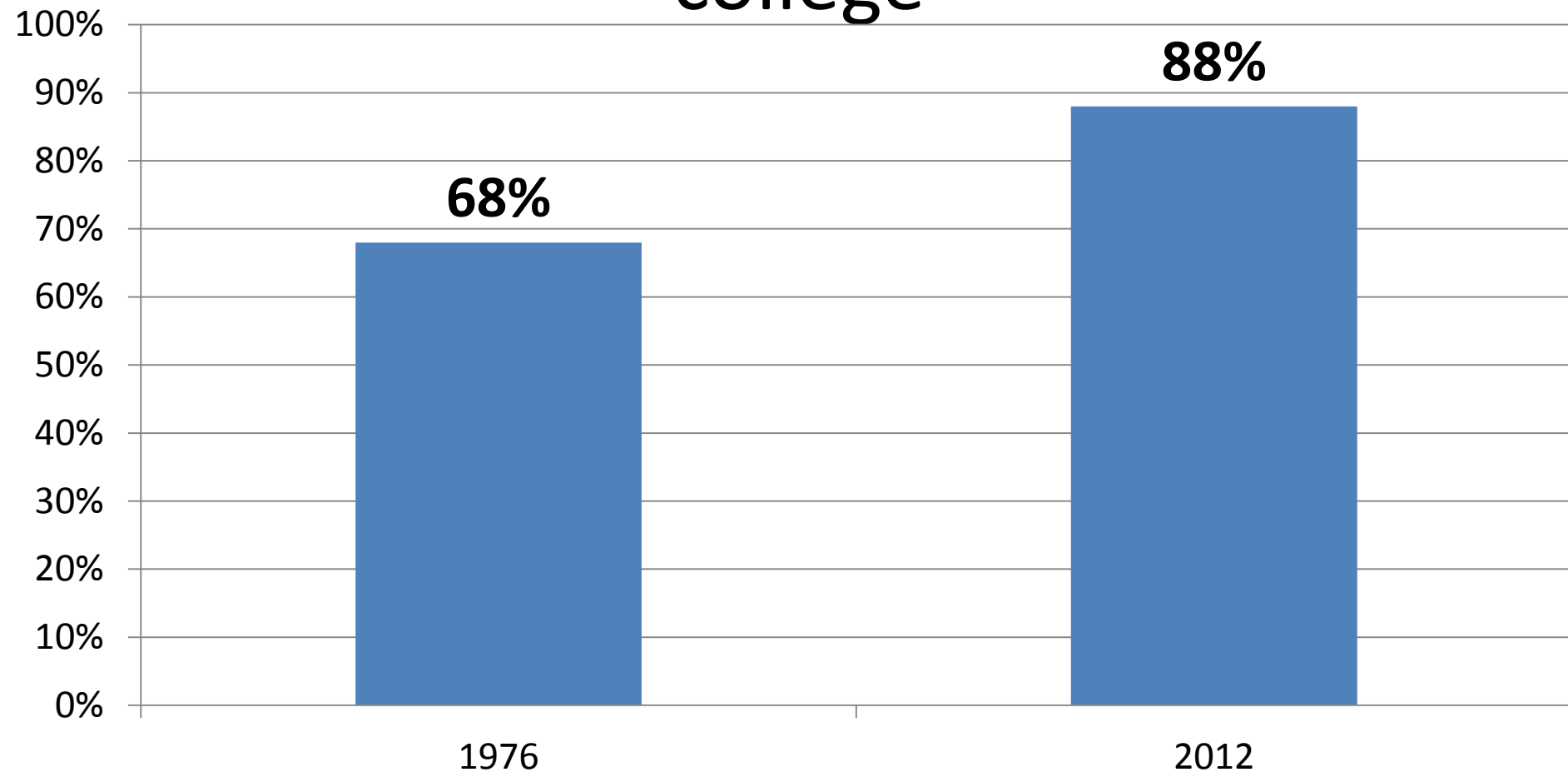


# Re-imagine Readiness

- Strengthen the connections between education and **job skills**
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# % of College Freshman “to be able to get a better job” as an important reason for college



# Top Skills Employers Say They Want (2014)

1. Ability to work in a team
2. Ability to make decisions and solve problems
3. Ability to plan, organize and prioritize work
4. Ability to communicate verbally
5. Ability to obtain and process information
6. Ability to analyze quantitative data
7. Technical knowledge related to the job
8. Proficiency with computer software programs
9. Ability to create and/or edit written reports
10. Ability to sell and influence people

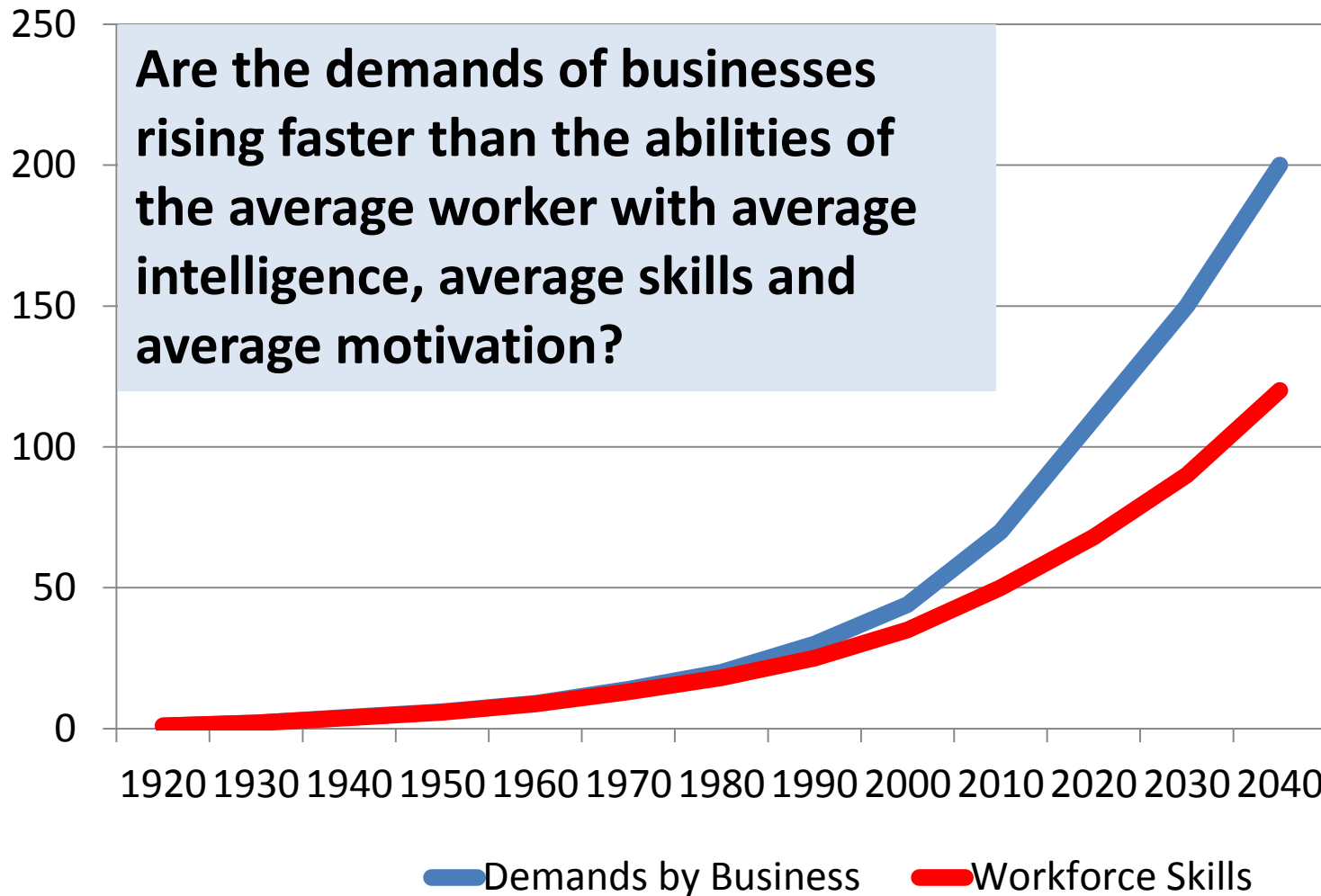
# Rankings of Employee Skills from Most Important to Least Important

<u>Under \$12 per hour</u>	<u>\$12-20 per Hour</u>	<u>Over \$20 per hour</u>
Honesty/Integrity	Honesty/Integrity	Honesty/Integrity
Dependability/Responsibility	Dependability/Responsibility	Dependability/Responsibility
Positive Attitude/Energy	Positive Attitude/Energy	Positive Attitude/Energy
Work Ethic	Work Ethic	Work Ethic
Customer Service	Teamwork	Teamwork
Teamwork	Customer Service	Problem Solving
Professionalism	Professionalism	Verbal Communication
Verbal Communication	Verbal Communication	Professionalism





# Can the Skills of the Talent Pool Keep Up With the Demand for Skills?



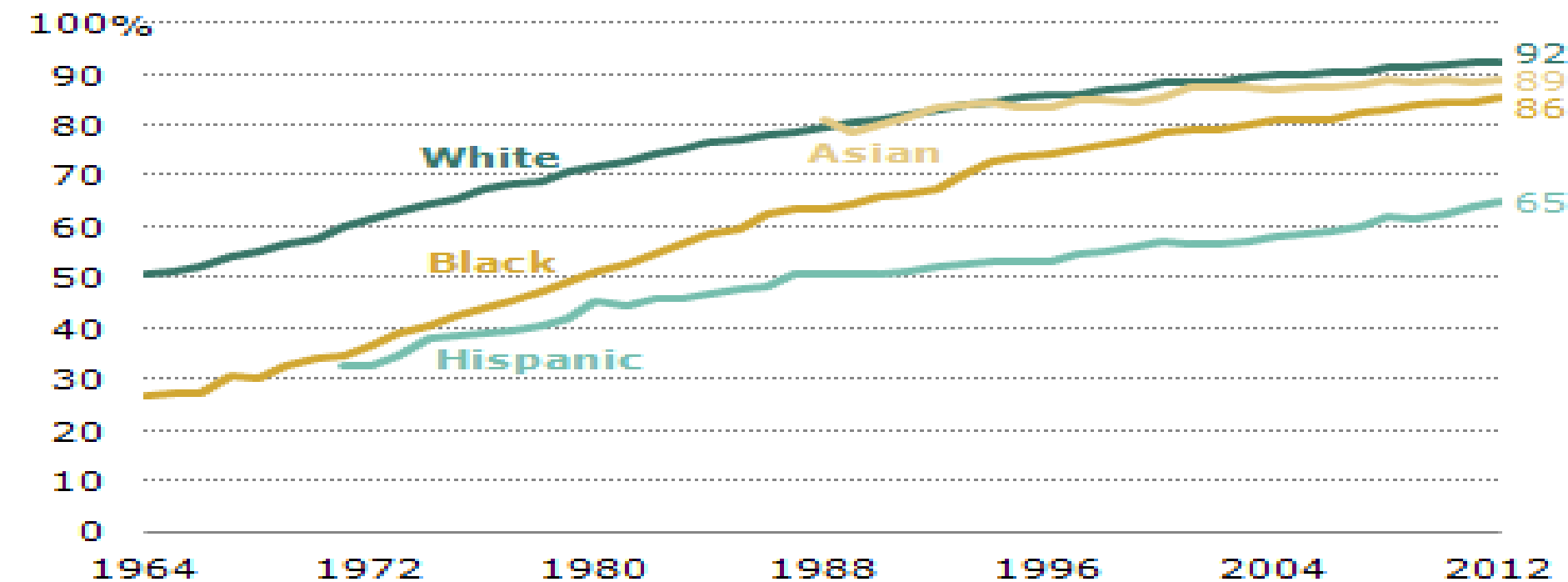
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# High School Completion by Race/Ethnicity, 1964-2012

*% of adults age 25 and older*

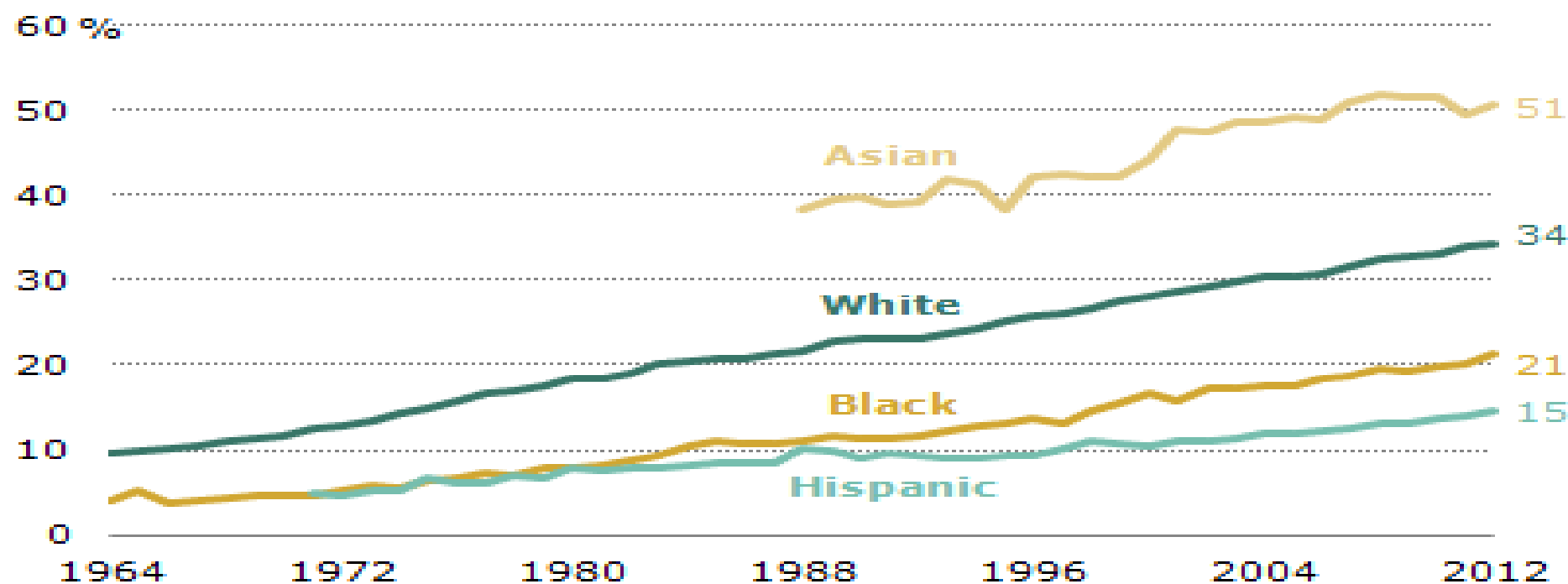


Note: White, black and Asian adults include only those who reported a single race. Native Americans and mixed-race groups not shown. Data for whites, blacks and Asians from 1971 to 2011 include only non-Hispanics. Data for whites and blacks prior to 1971 include Hispanics. Comparable data for Hispanics not available prior to 1971. Data for Asians not available prior to 1988. Asians include Pacific Islanders. Before 1992 refers to those who completed at least 12 years of school. For 1992-2012 refers to those who have at least a high school diploma or its equivalent.

Source: Pew Research Center tabulations of the Current Population Survey Annual Social and Economic Supplement (IPUMS)

# College Completion by Race/Ethnicity, 1964-2012

*% of adults age 25 and older*



Note: White, black and Asian adults include only those who reported a single race. Native Americans and mixed-race groups not shown. Data for whites, blacks and Asians from 1971 to 2011 include only non-Hispanics. Data for whites and blacks prior to 1971 include Hispanics. Comparable data for Hispanics not available prior to 1971. Data for Asians not available prior to 1988. Asians include Pacific Islanders. Before 1992 refers to those who completed at least 16 years of school. For 1992-2012 refers to those who have at least a bachelor's degree.

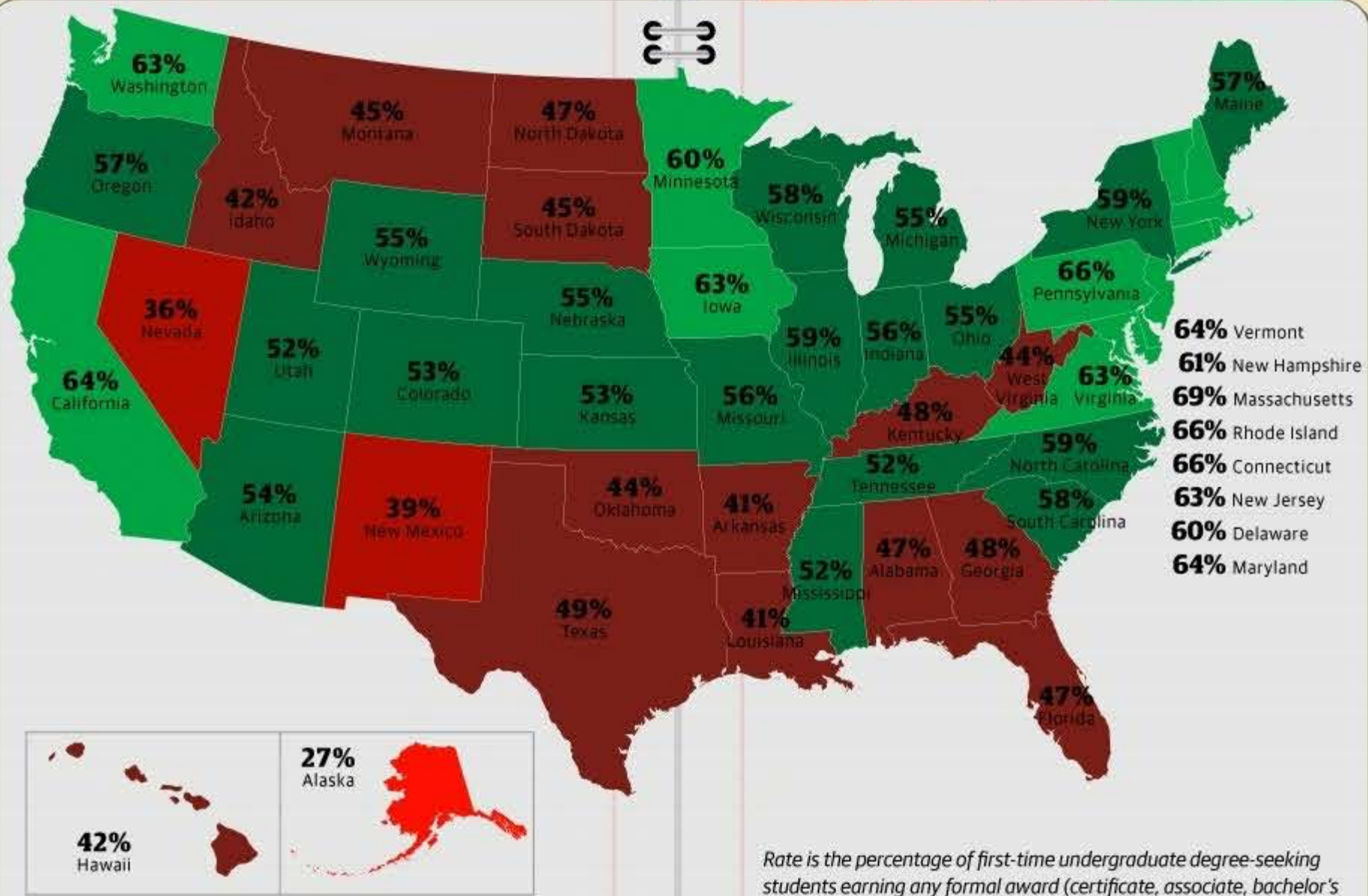
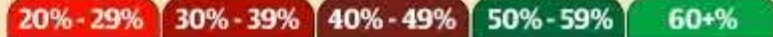
Source: Pew Research Center tabulations of the Current Population Survey Annual Social and Economic Supplement (IPUMS)

PEW RESEARCH CENTER

# Dropout Nation

Nationwide, only **56 percent** of students who begin postsecondary education receive a degree within six years. Here's how it breaks down by state.

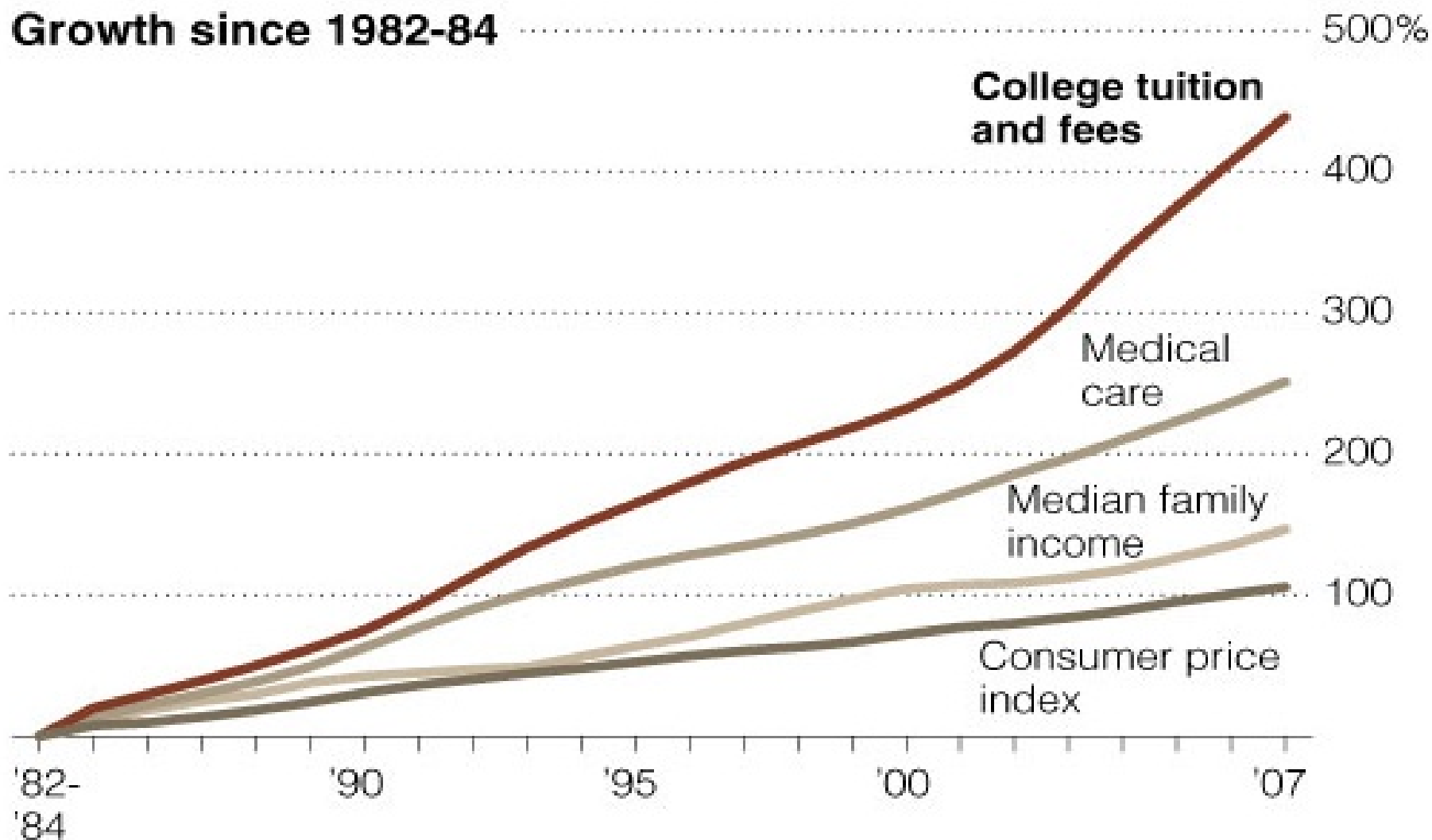
(Graduation Rate)



Rate is the percentage of first-time undergraduate degree-seeking students earning any formal award (certificate, associate, bachelor's degree) within six years at degree-granting institutions as of 2009.

# Soaring College Tuitions

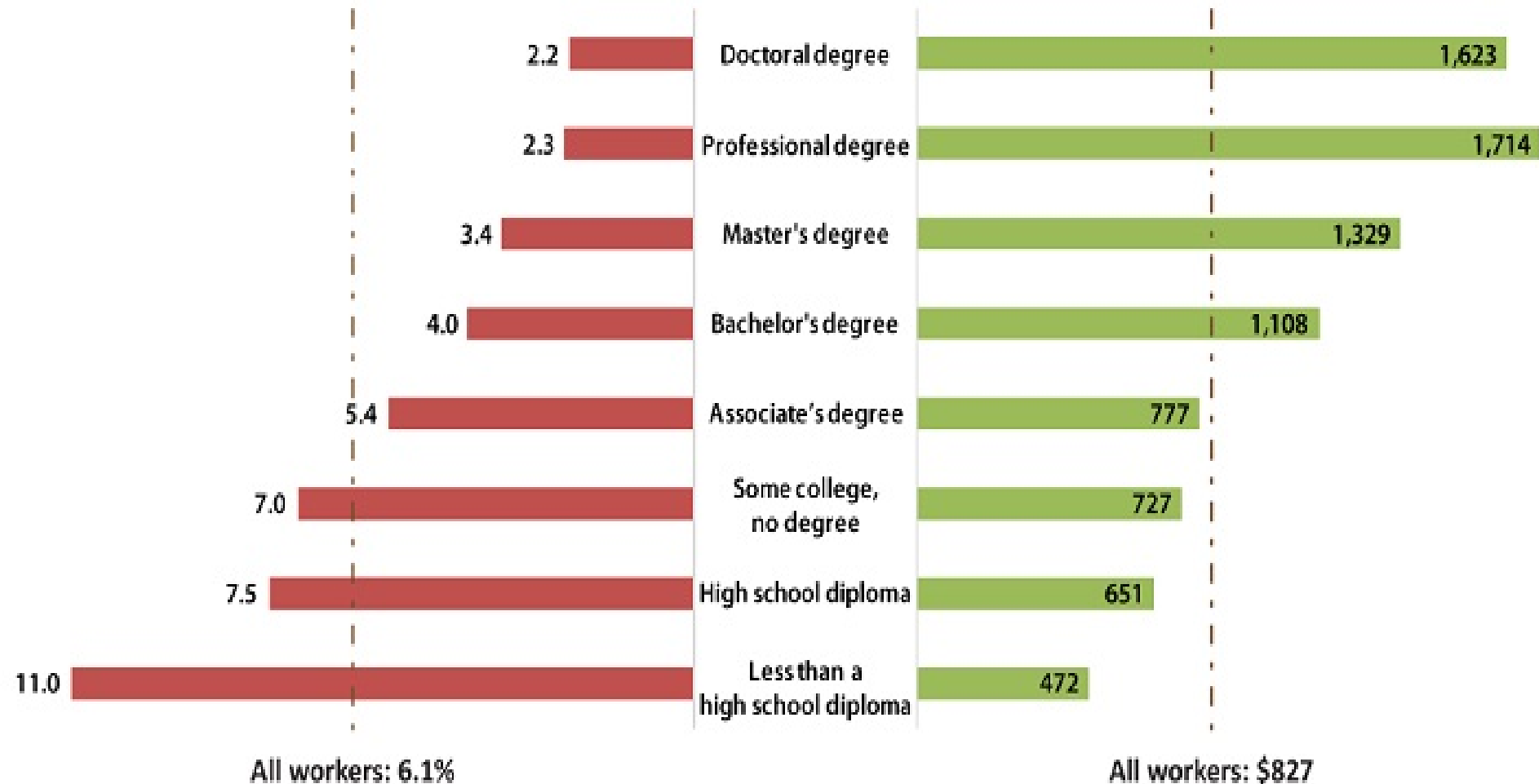
College tuition continues to outpace median family income and the cost of medical care, food and housing.



# Earnings and unemployment rates by educational attainment

Unemployment rate in 2013 (%)

Median weekly earnings in 2013 (\$)



Note: Data are for persons age 25 and over. Earnings are for full-time wage and salary workers.

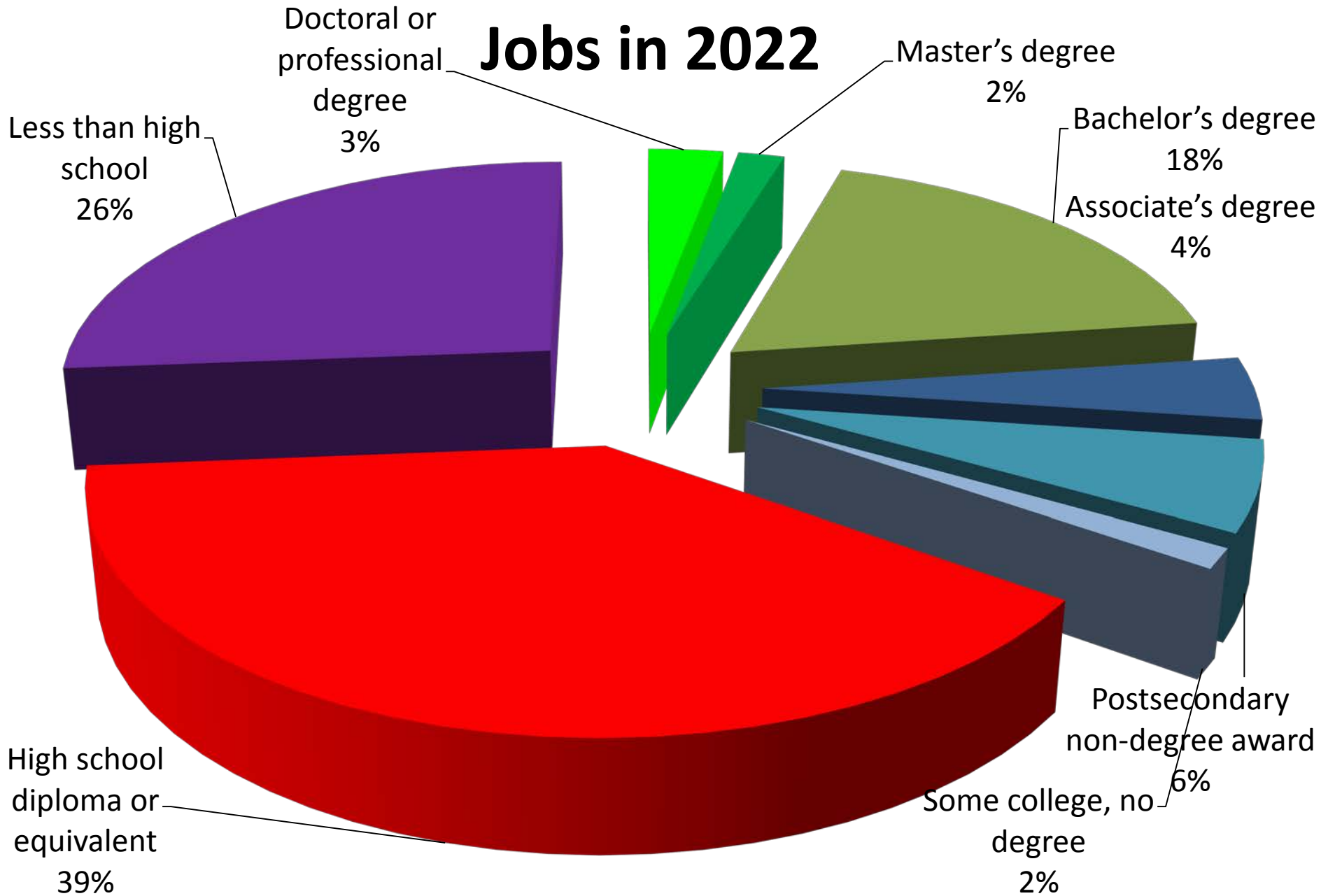
Source: Current Population Survey, U.S. Bureau of Labor Statistics, U.S. Department of Labor

# What % of Jobs, in America, in 2022 will require a Bachelor's Degree or more?

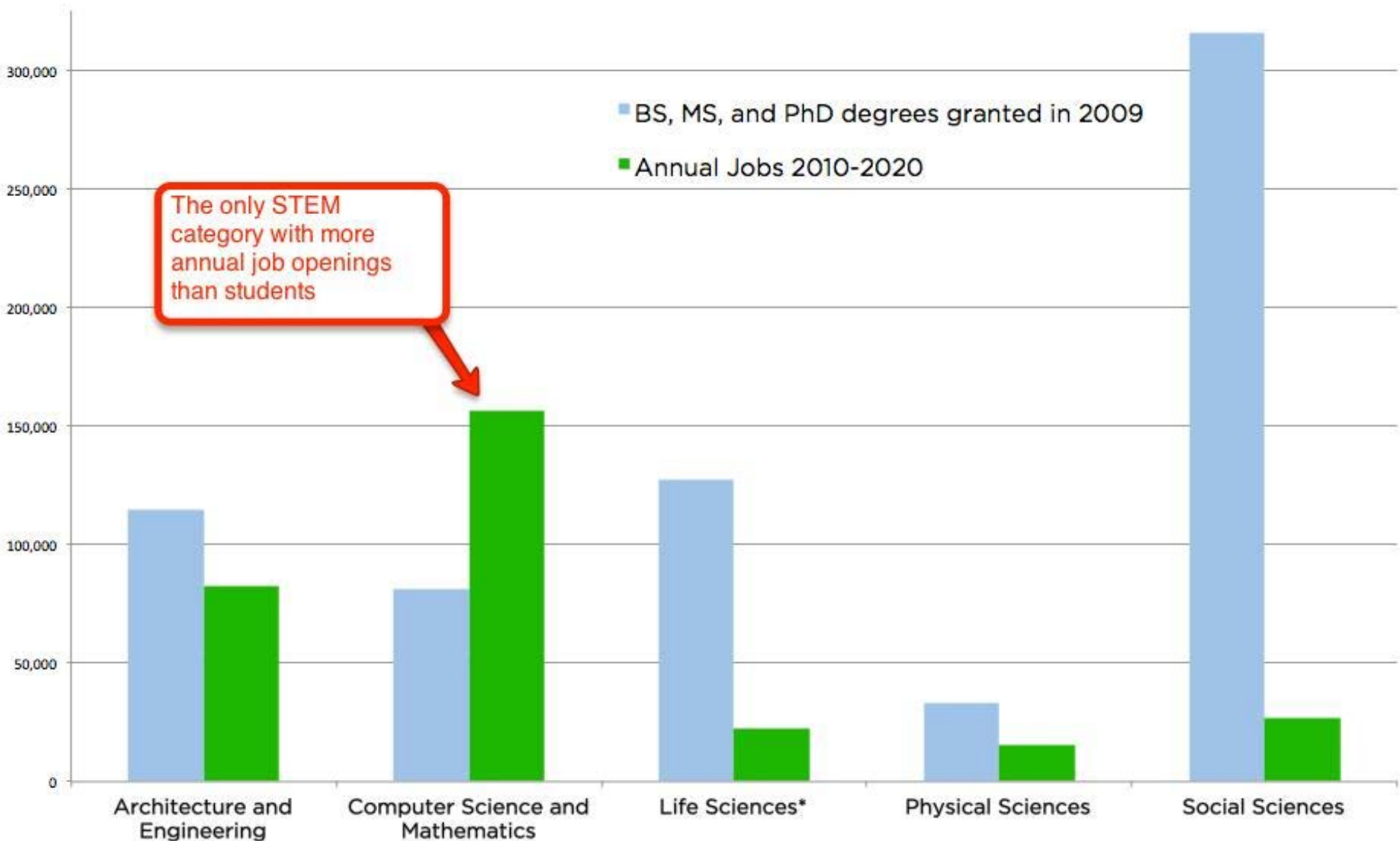




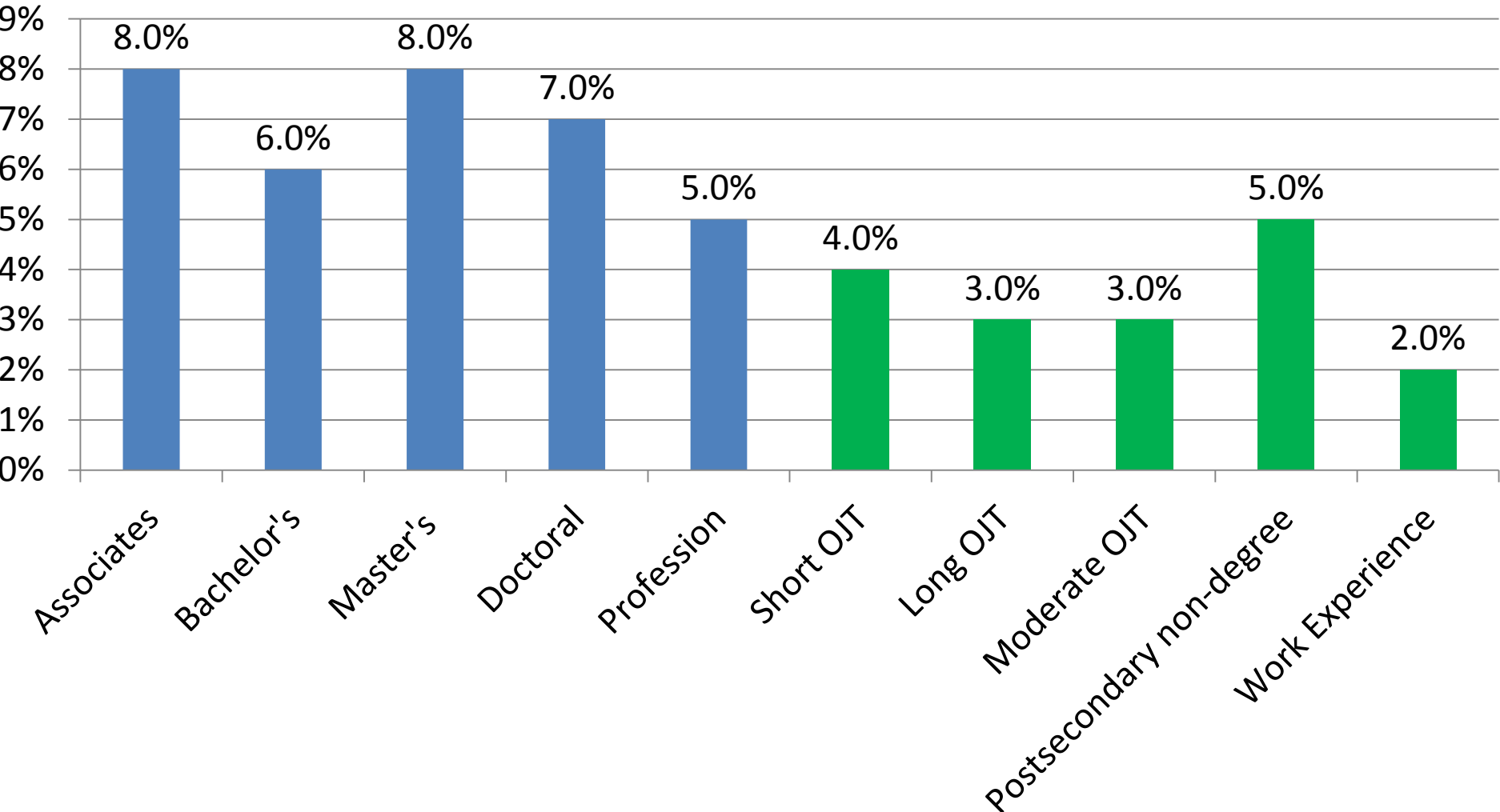
# Jobs in 2022



# Not all STEM Degrees Are Equal



# U.S. Projected Job Growth 2013-2017



THIS FALL,  
I'M GOING TO  
TRADE SCHOOL  
TO BE A WELDER.

LOSER.

Starting  
Salary upon  
graduation:  
**\$50,000**

Starting  
Salary upon  
graduation from  
a pricey, 4 year  
school with a  
liberal arts degree:  
**\$25,000**  
(IF HE'S LUCKY)

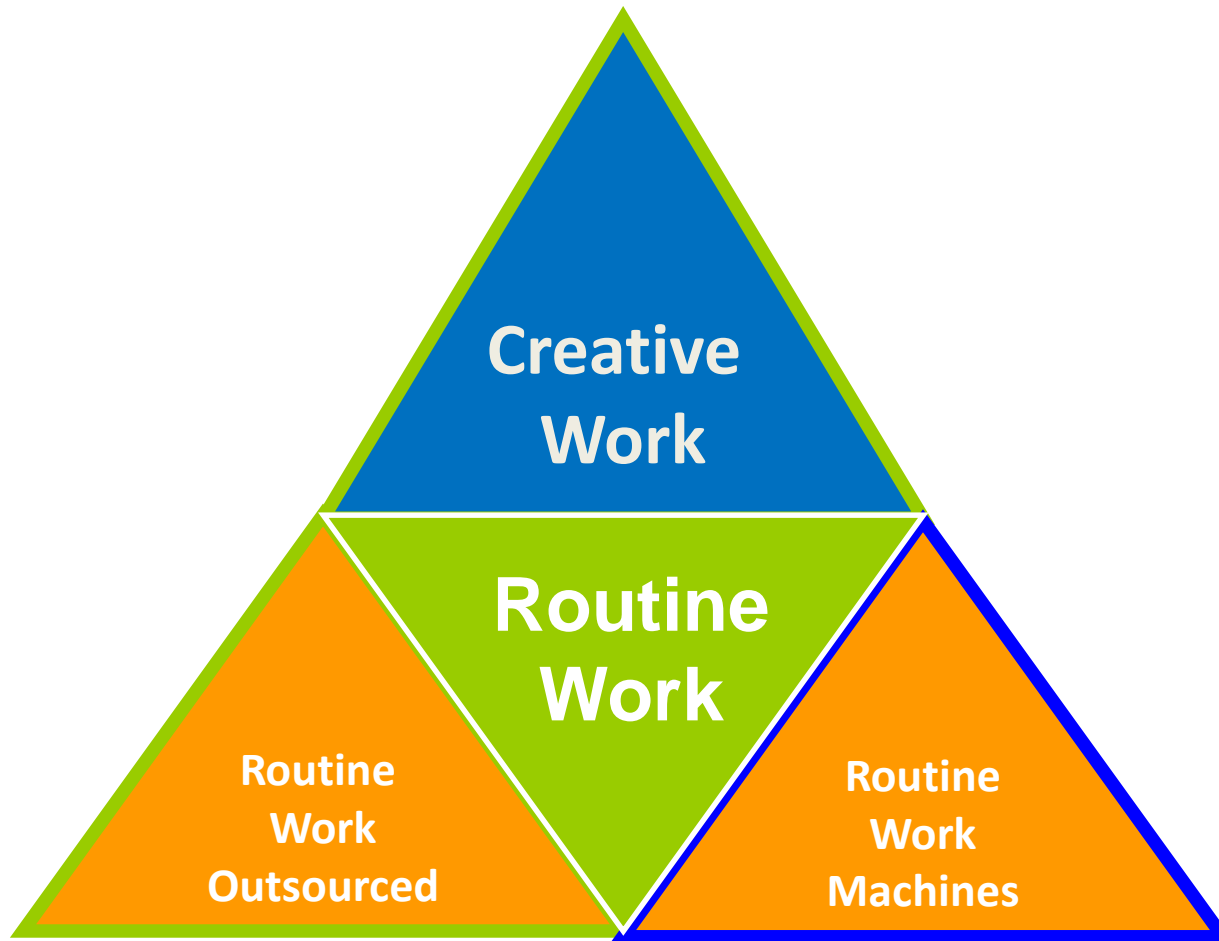
ATTEM  
UT SanDiego  
CAREERS.COM

# Re-imagine Readiness

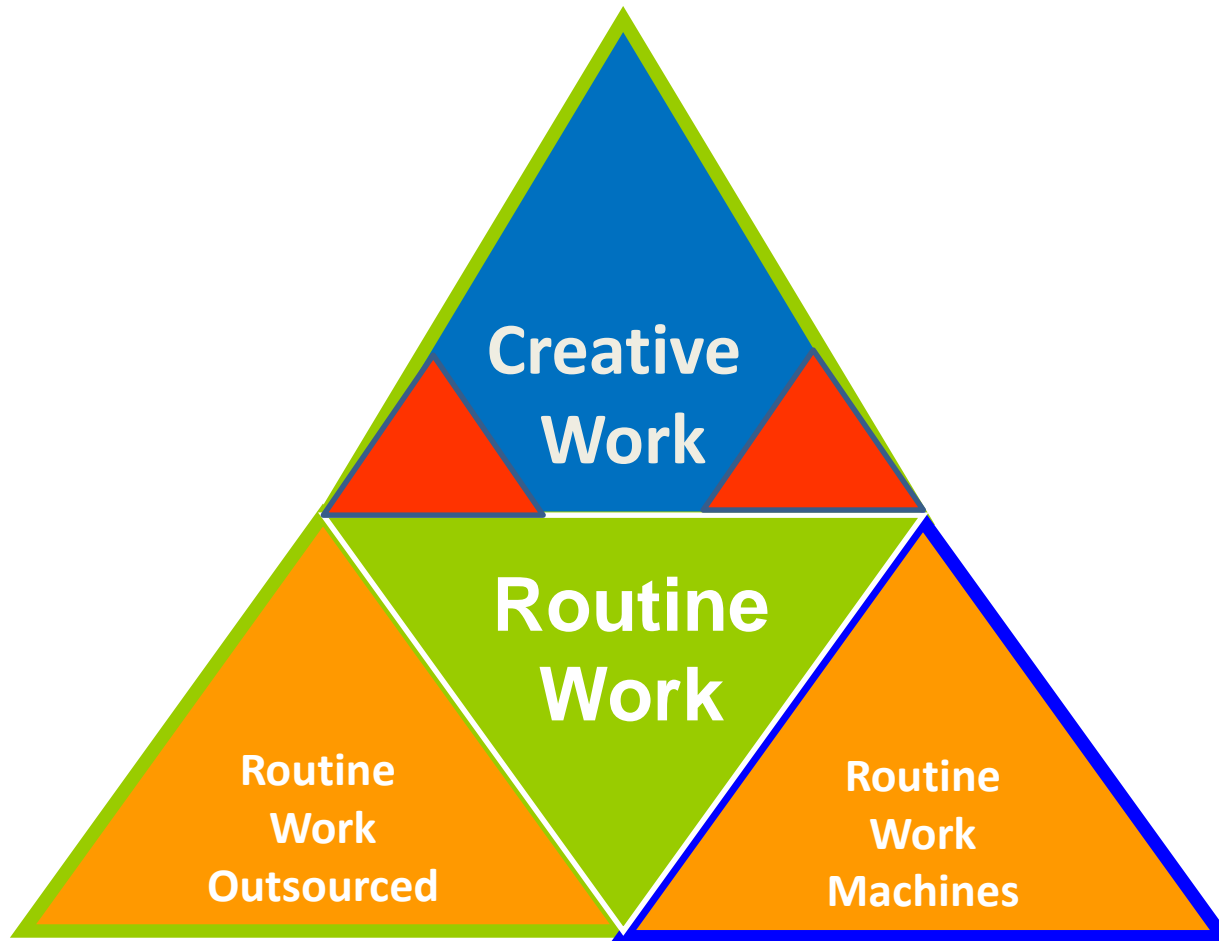
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# Work Shifts



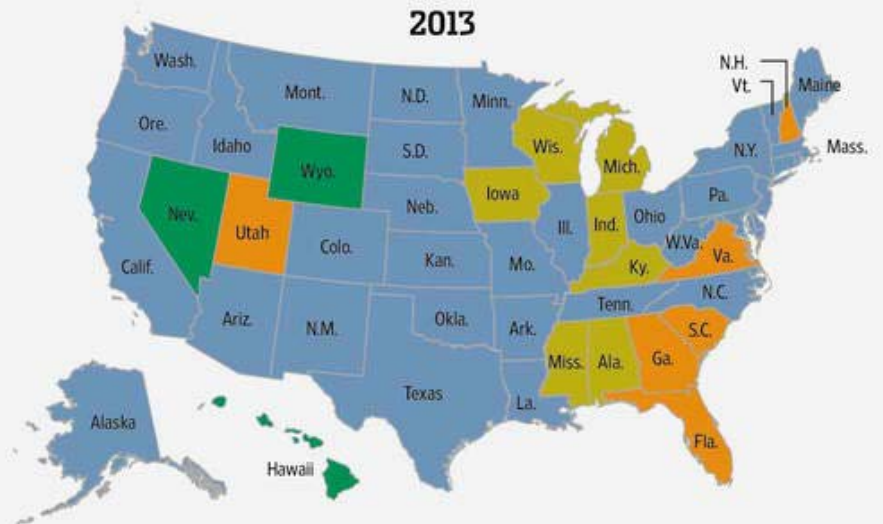
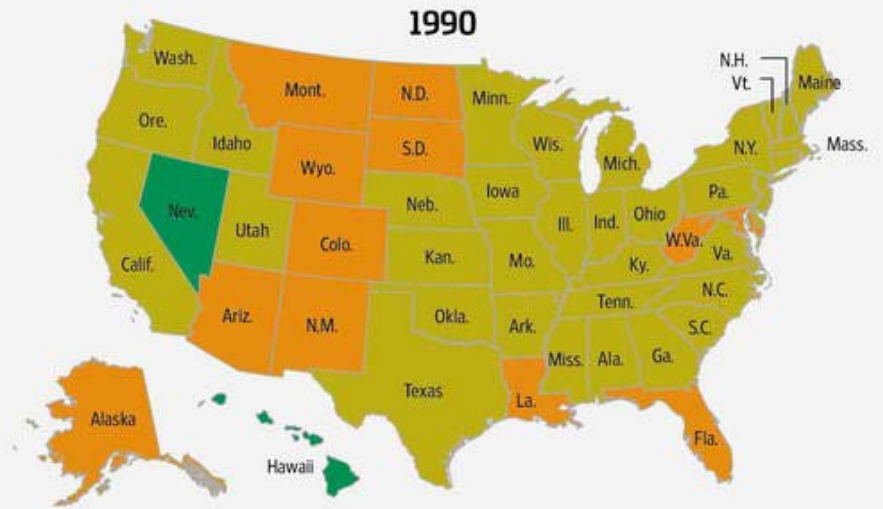
# Work Shifts



The shift in the types of jobs has been swift and profound!

Work Then and Now | Industry with highest employment by state

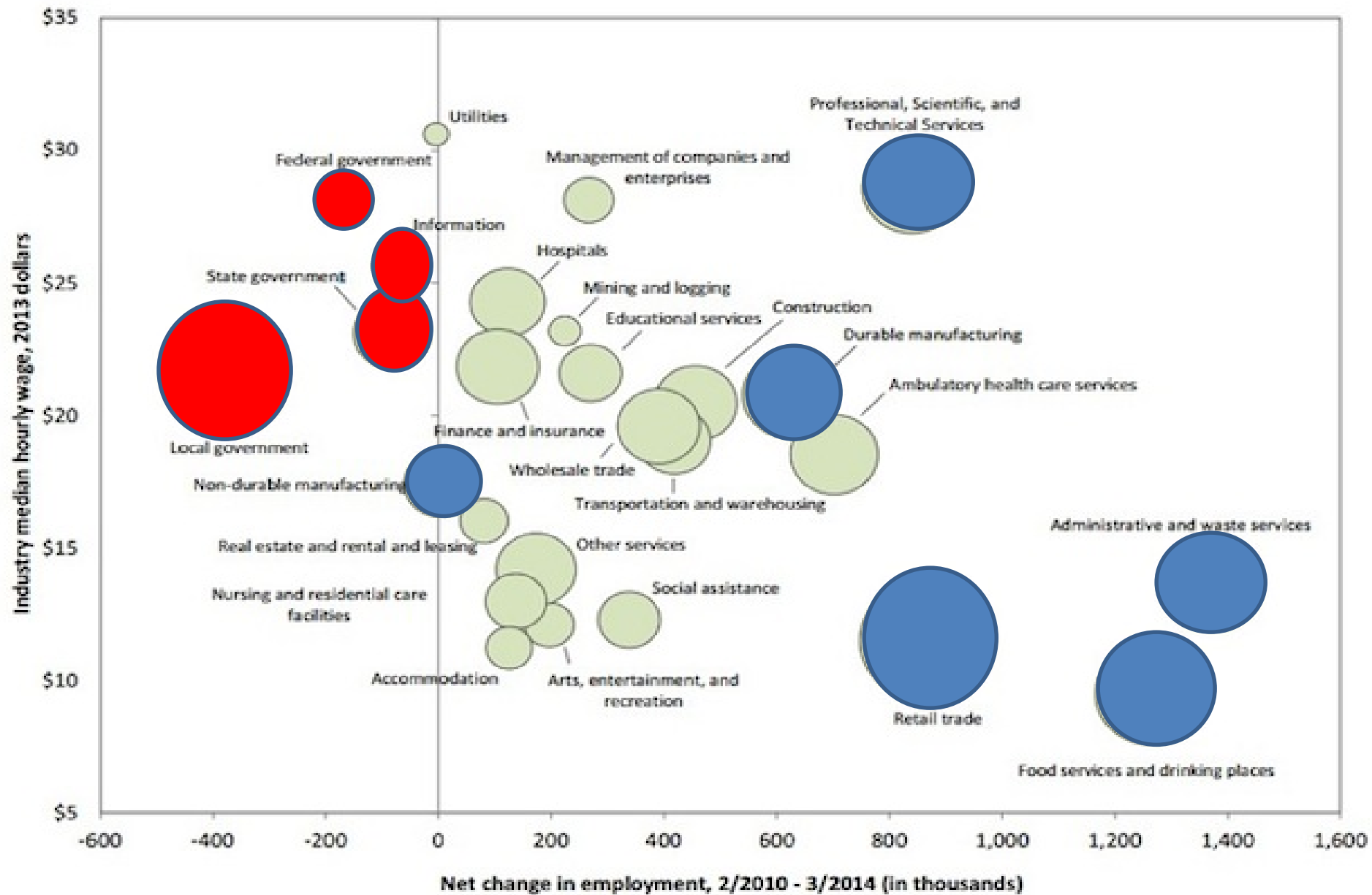
Manufacturing Health care Retail trade Accommodation and food services



Source: U.S. Bureau of Labor Statistics

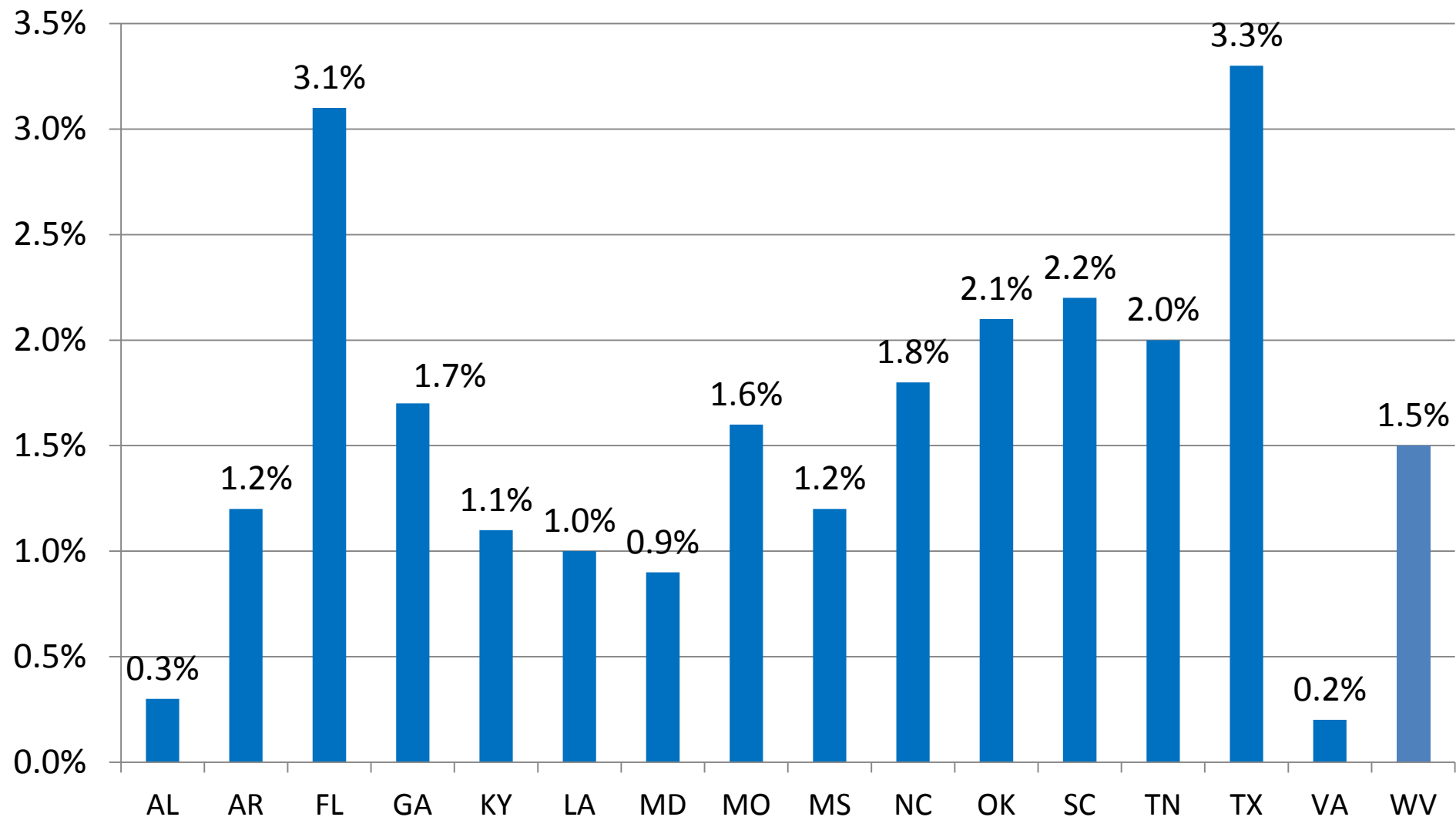
The Wall Street Journal





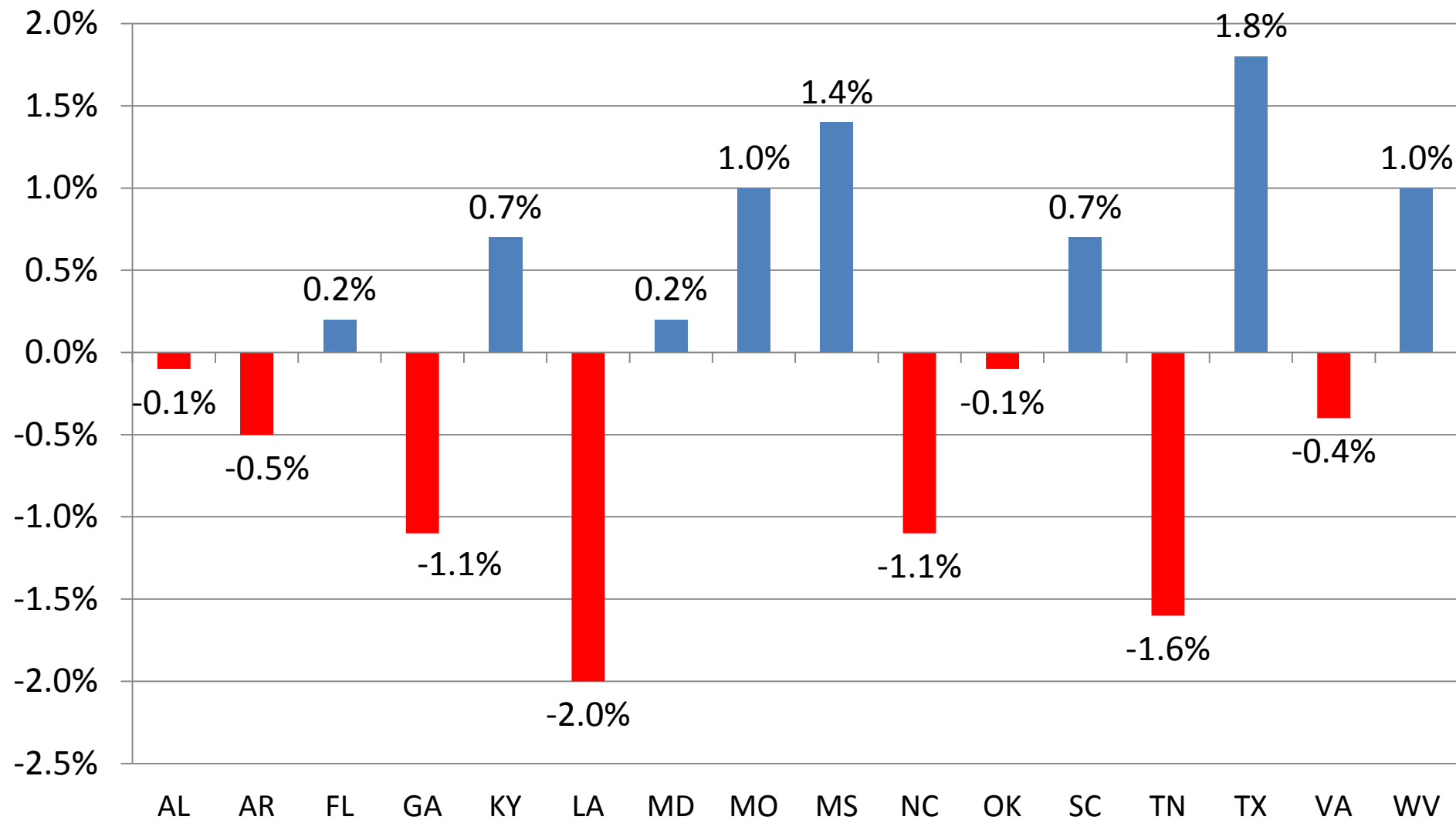
# Southern States 1-Year

Employment Changes June 2013 to June 2014



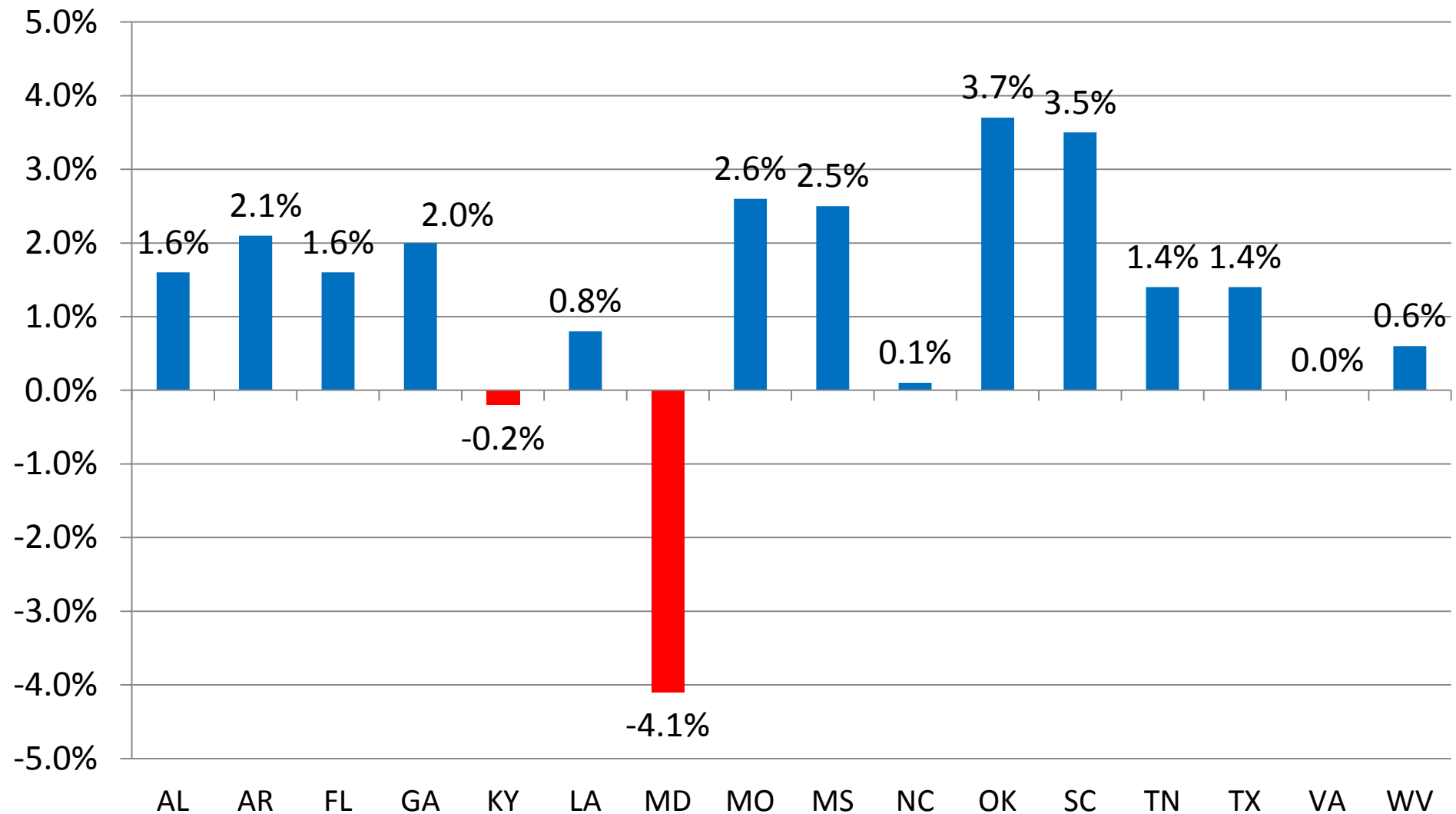
# Southern States 1-Year

Government Employment Changes June 2013 to June 2014



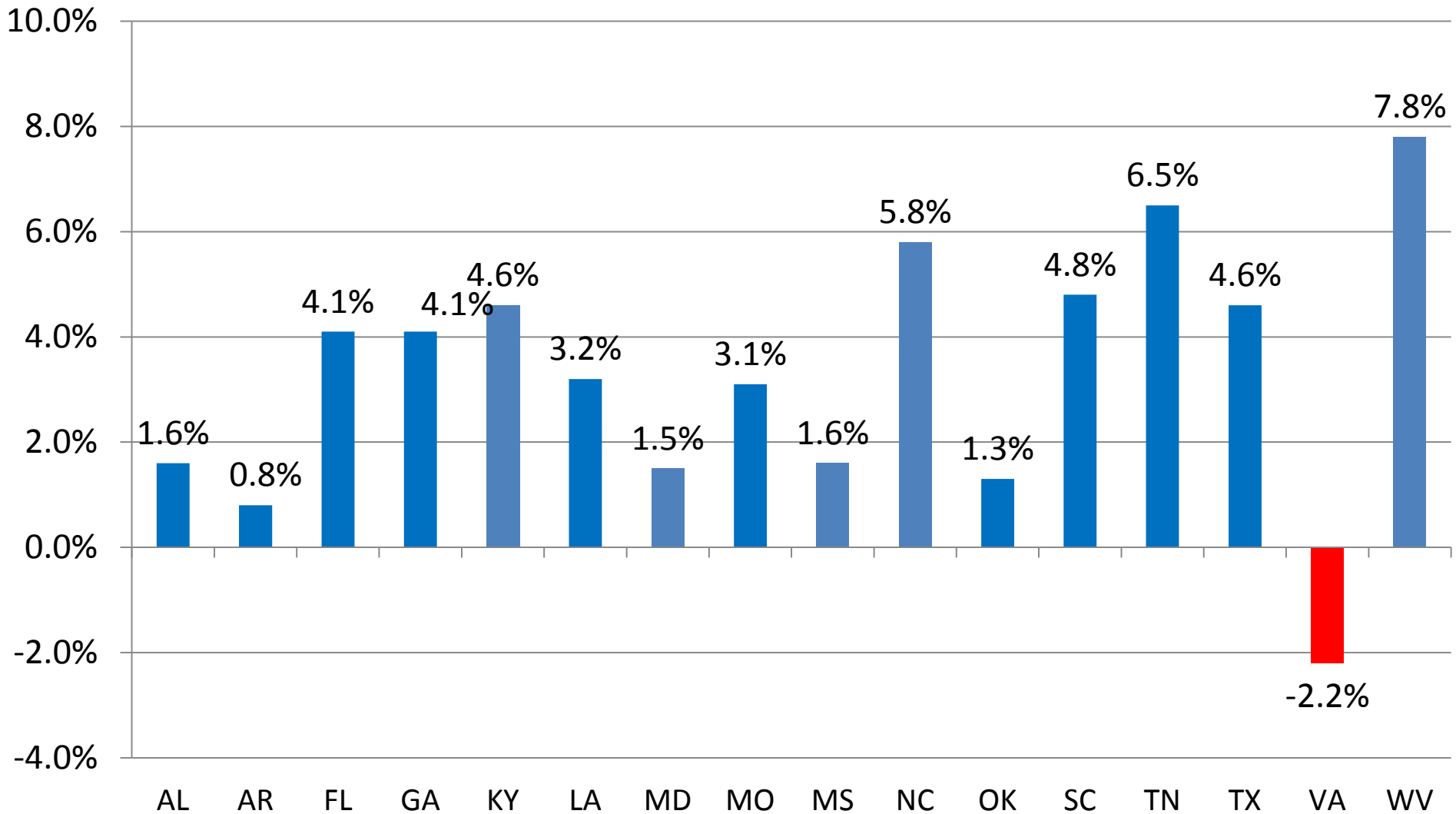
# Southern States 1-Year

Manufacturing Employment Changes June 2013 to June 2014

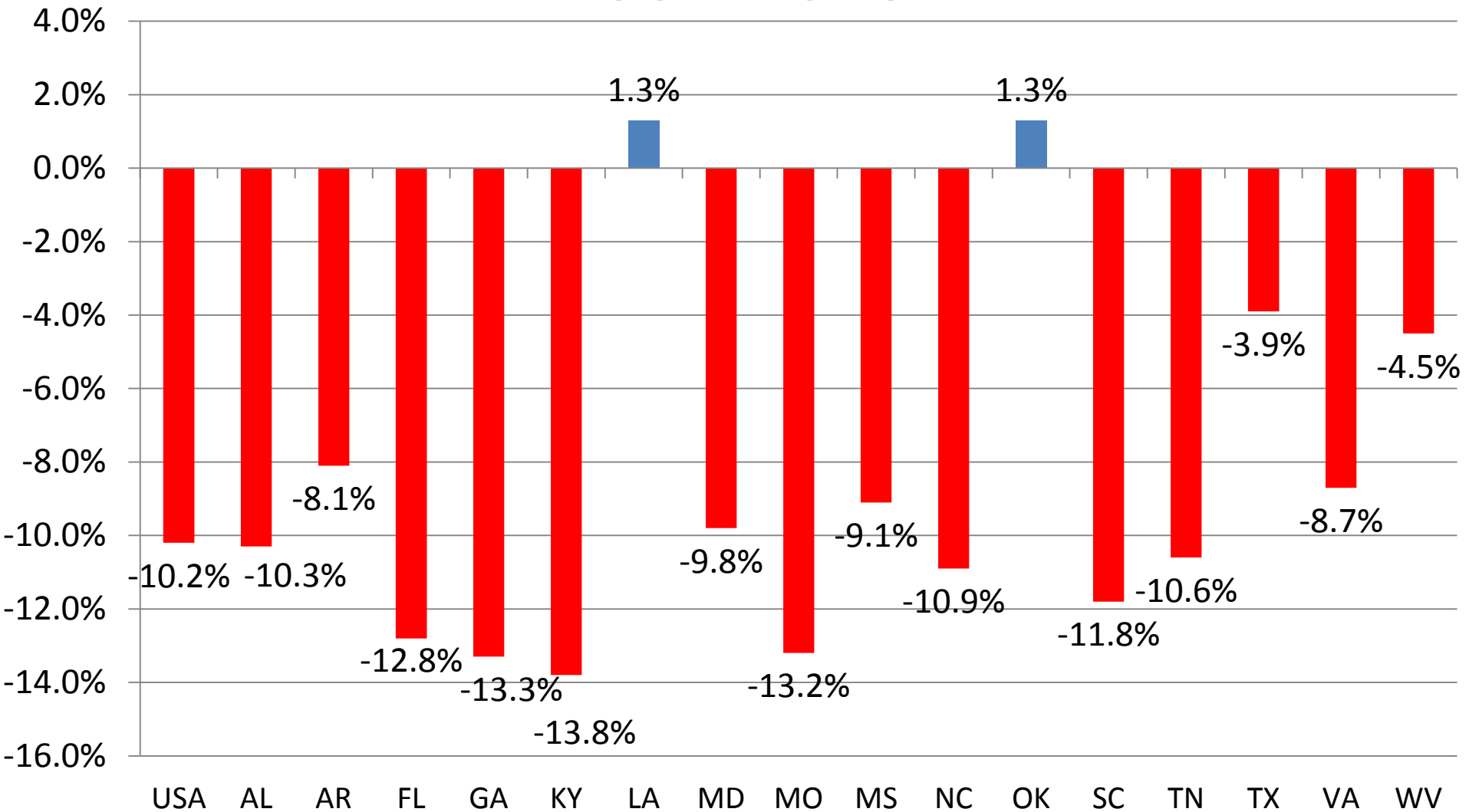


# Southern States 1-Year

Professional & Business Services Employment Changes June 2013 to June 2014



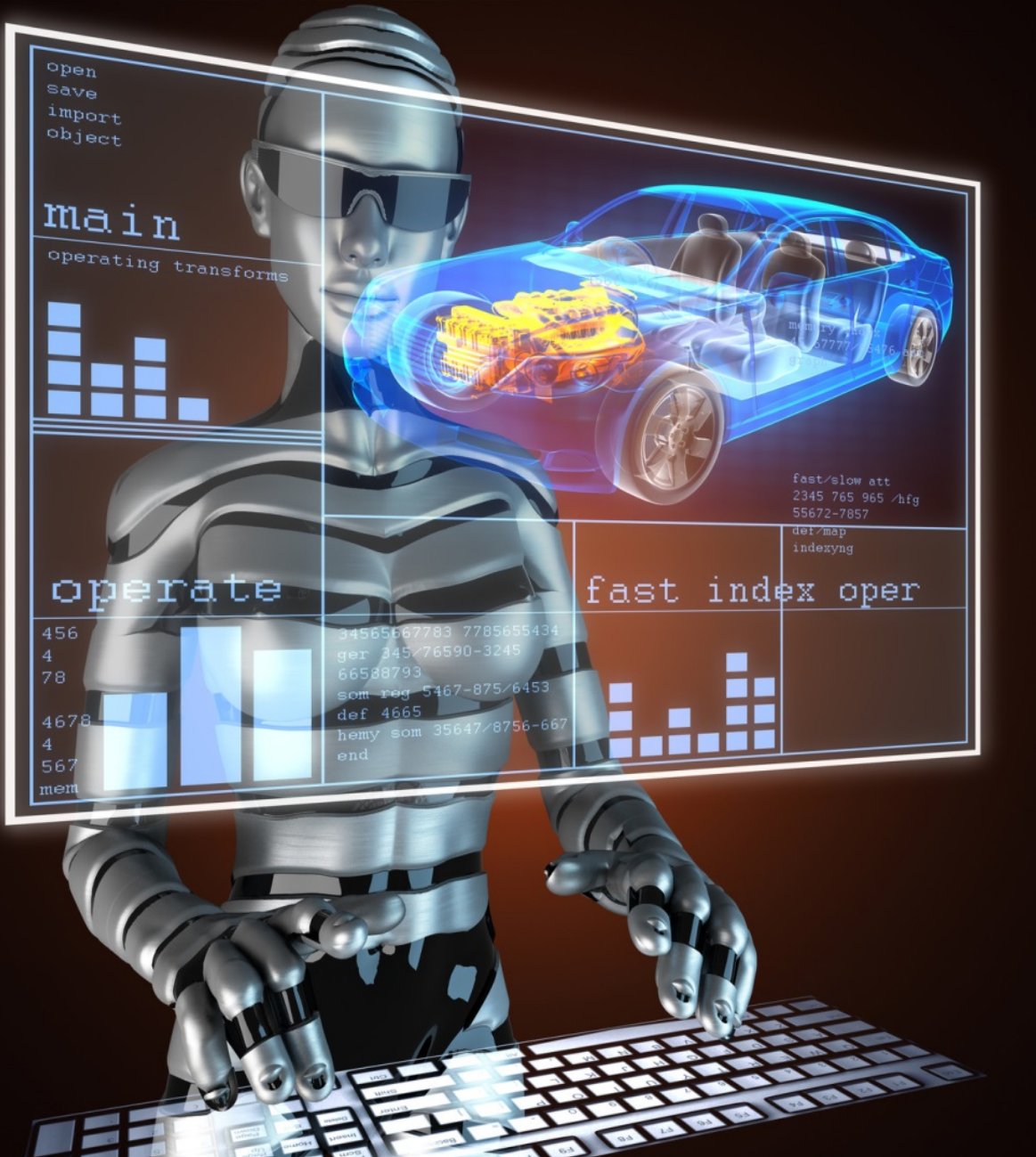
# Southern States- Real Wage Change 2004-2013



# Re-imagine Readiness

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- MOOCs
- Khan Academy
- Virtual High School
- E-textbooks
- Digital gaming content (competency based)
- Ubiquitous learning content

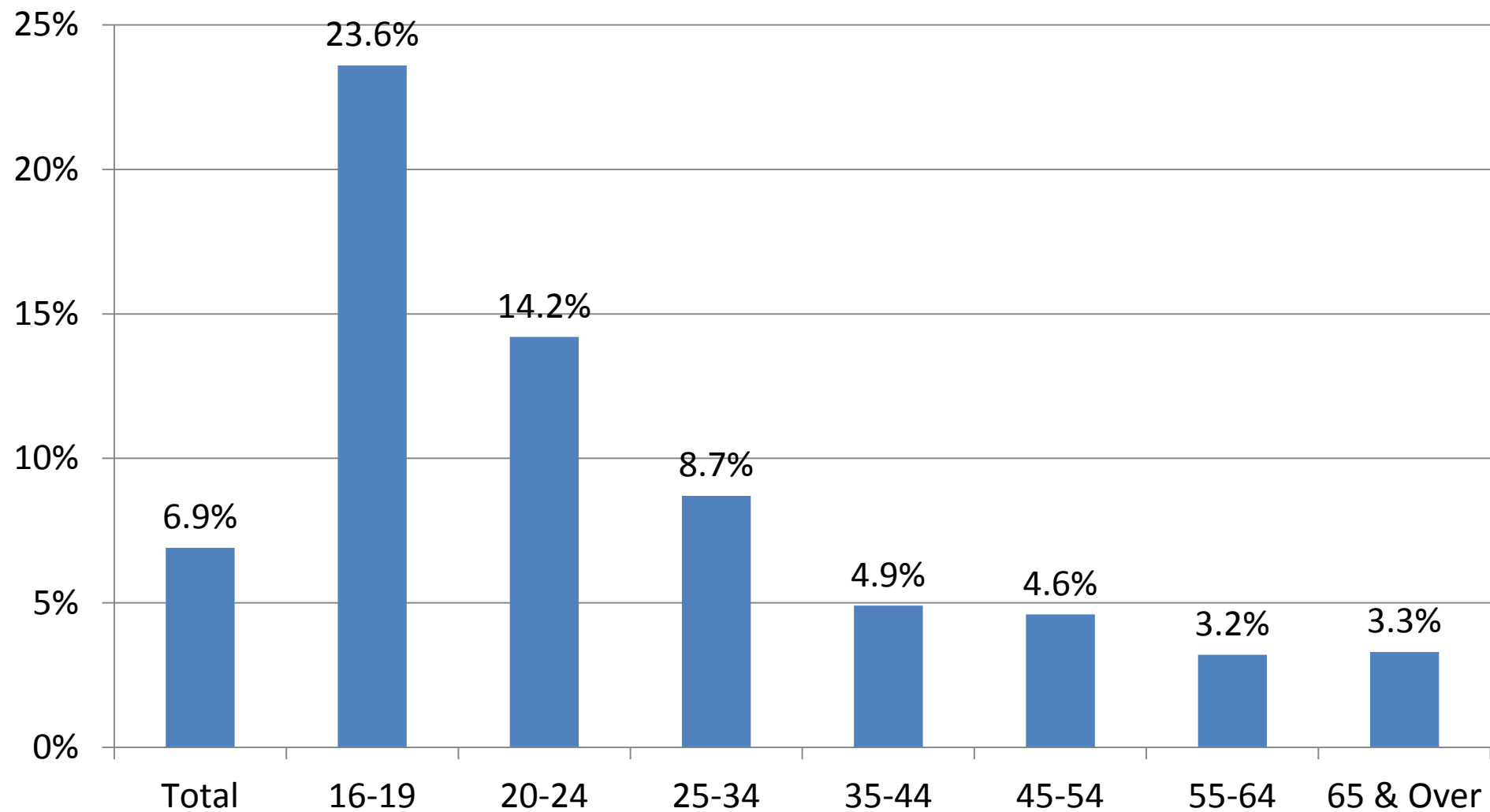


# Re-engage Adult Learners and Disconnected Youth

- Target workers with some credits, but no degree or credential
- Help dislocated workers rejoin the workforce
- Recover disconnected youth



# 2013 Unemployment Rate By Age



# Re-align Relationships and Resources

- Create a continuity in education and workforce development from early childhood through career
- Align and track data across the education and workforce pipeline
- Engage business in a meaningful way



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# Top Factors for Companies Considering New Investment



- 1) Availability of skilled labor
- 2) Highway accessibility
- 3) Labor costs
- 4) Occupancy or construction costs
- 5) Availability of advanced ICT services
- 6) Availability of buildings
- 7) Corporate tax rate
- 8) State & Local Incentives
- 9) Low union profile
- 10) Energy availability and costs

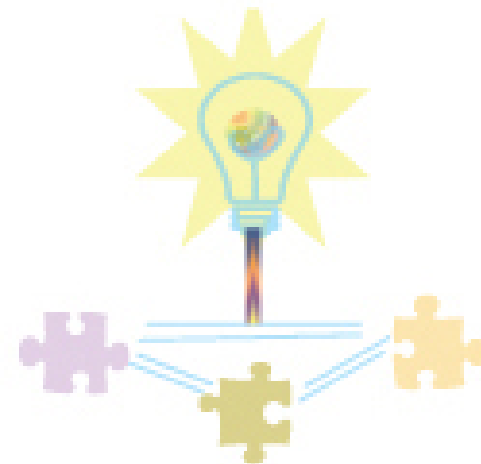
# Innovation

(în' ə-vâ'shən) *n.*

1. The act of introducing  
a new idea or concept.

## INNOVATION U 2.0

Reinventing  
University Roles in a  
Knowledge Economy

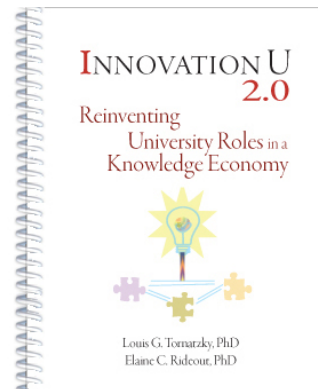


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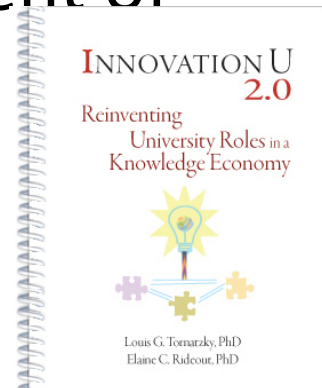
# Overarching Theme

Although U.S. universities excel at education and research, many universities have also focused on impacting regional and national economies.



# The Book's Key Messages

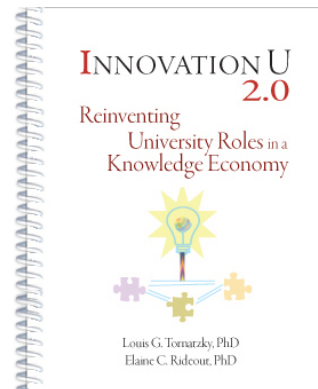
- The force for commercialization **must come from the top leadership of the university**. Engagement with the private sector can be a useful criteria for the hiring of university presidents.
- A cultural shift towards entrepreneurship and risk-taking needs to occur on all **levels of the university**. Senior management with successful engagement of businesses can help drive the change.





# The Book's Key Messages

- Commercialization is only one mechanism of business engagement. Cooperative research projects, if artfully crafted, benefit universities, students, and businesses.
- The models often restructure disciplines and research into new, more functional units.

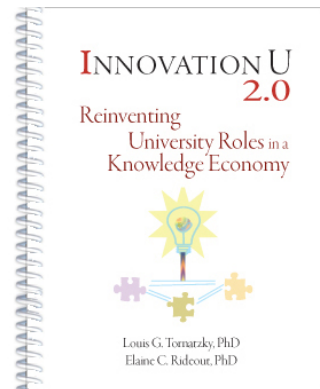


# The Book's Key Messages

- A centralized point of contact, for industry looking for university invention or research, is a hallmark of successful universities, preferably through initial contact with a person reachable by phone or other means.
- One of the most significant trends has been the explosion of programs for student entrepreneurship—both curricular expansion, co-curricular, and extra-curricular. Innovation U's create a system where these elements work together in well-designed, managed, and implemented organizational systems. Such programs are not confined to business students.

# Conference Themes

- Young Faculty can be more motivated to be entrepreneurial
- Diffused entrepreneurial ecosystems are best
- Entrepreneurship adds to the creation of knowledge
- Include international experiences for students
- Bring together, but don't control groups
- Look for unique, blended funding models



# State Innovation Policies

southern growth policies board

- Establish funds in targeted industries to seed new companies
- Hire world-class researchers in targeted disciplines
- Incent university researchers to create companies
- Tax credits for angels and VCs
- Taxes and regulations should encourage company formation
- Increase youth and parent awareness of careers
- Educate legislators and focus efforts



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## >> Shaping Our Future

How Should Higher Education Help  
Us Create the Society We Want?

[http://www.youtube.com/watch?v=uBSQXwt09iU&feature=player\\_embedded](http://www.youtube.com/watch?v=uBSQXwt09iU&feature=player_embedded)

- College should offer students a rich and diverse education...but at the same time many are worried that this might not be practical in today's economy and job market.
- Science and technology are crucial to the country's future...but relatively few see increasing graduates in science and technology fields as an urgent goal.
- College is too costly...but there are mixed views about how acute the problem is in terms of deterring access.

- Everyone should have the chance to go to college...but many question the ideal of encouraging everyone to go to college, especially traditional, four-year programs.
- Higher education can't succeed unless families and K-12 education do their part.



**RISK  
AHEAD**









# ECONOMIC LEADERSHIP

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*"Leadership and learning are  
indispensable to each other."*

*John F. Kennedy*

