

Wisconsin's Shifting Labor Resources and Implications on Economic Growth and Development

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Center for Community and Economic Development
University of Wisconsin-Extension



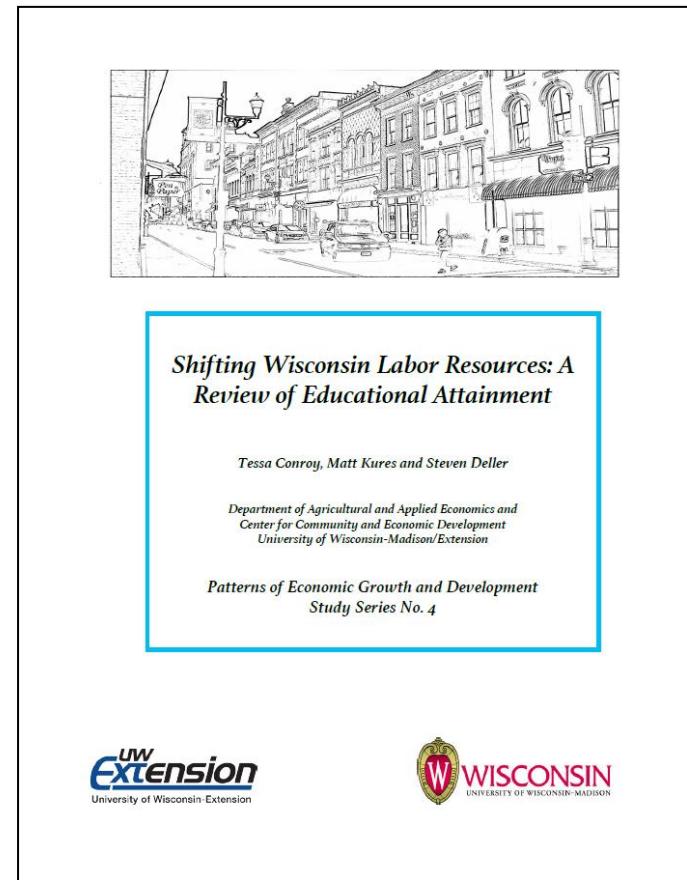
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University Center*

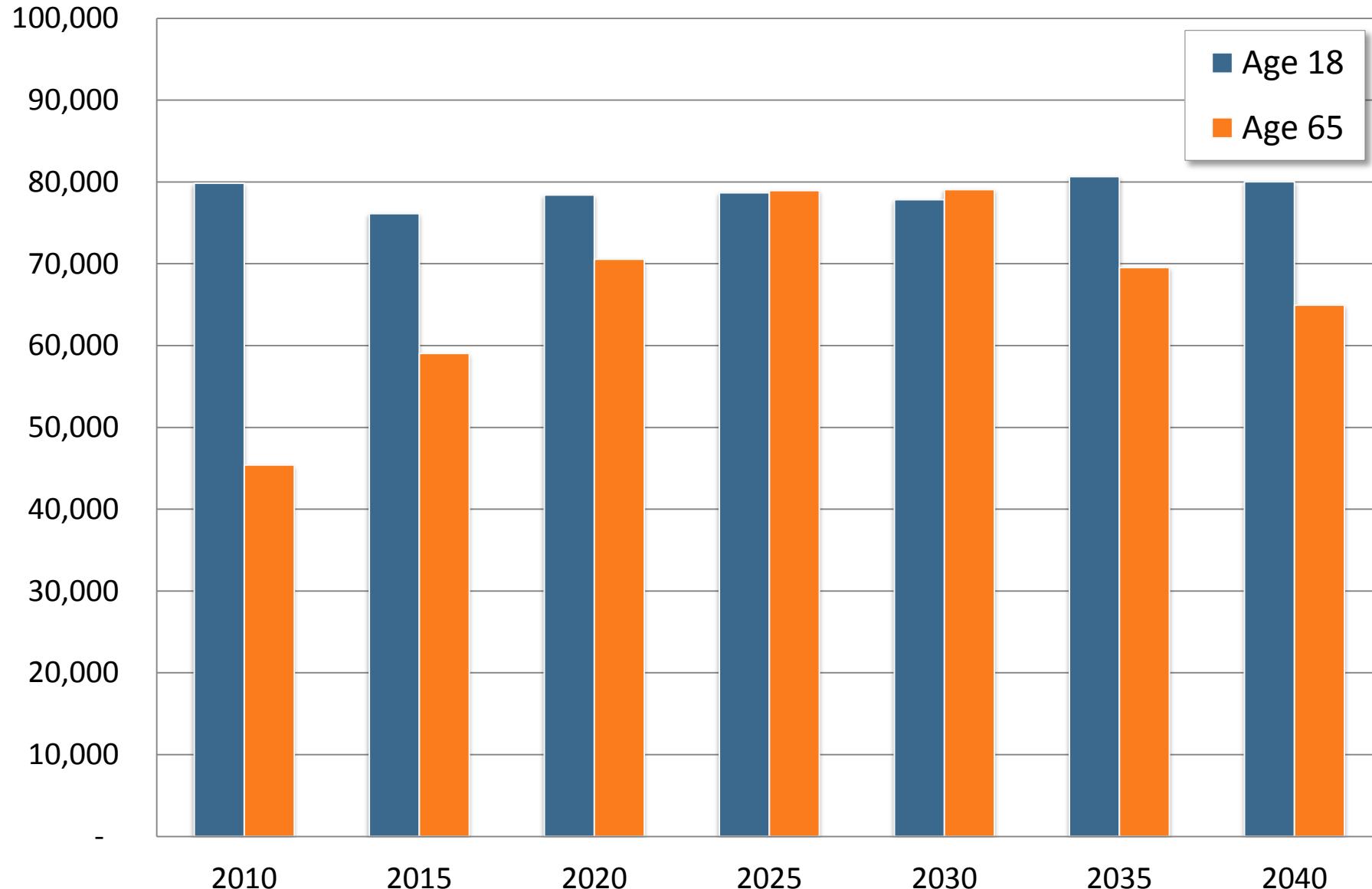
UW
Extension
University of Wisconsin-Extension

Sources of Today's Presentation

- *Shifting Wisconsin Labor Resources: A Review of Educational Attainment – Conroy, Kures and Deller (2016)*
- *The State of Manufacturing In Wisconsin - Conroy, Kures, and Chen (Forthcoming, 2017)*
- *Brain Drain, Brain Gain or Somewhere in the Middle? “Rethinking” Talent Attraction and Retention from a Sticky State Perspective.* Kures (Forthcoming, 2017)

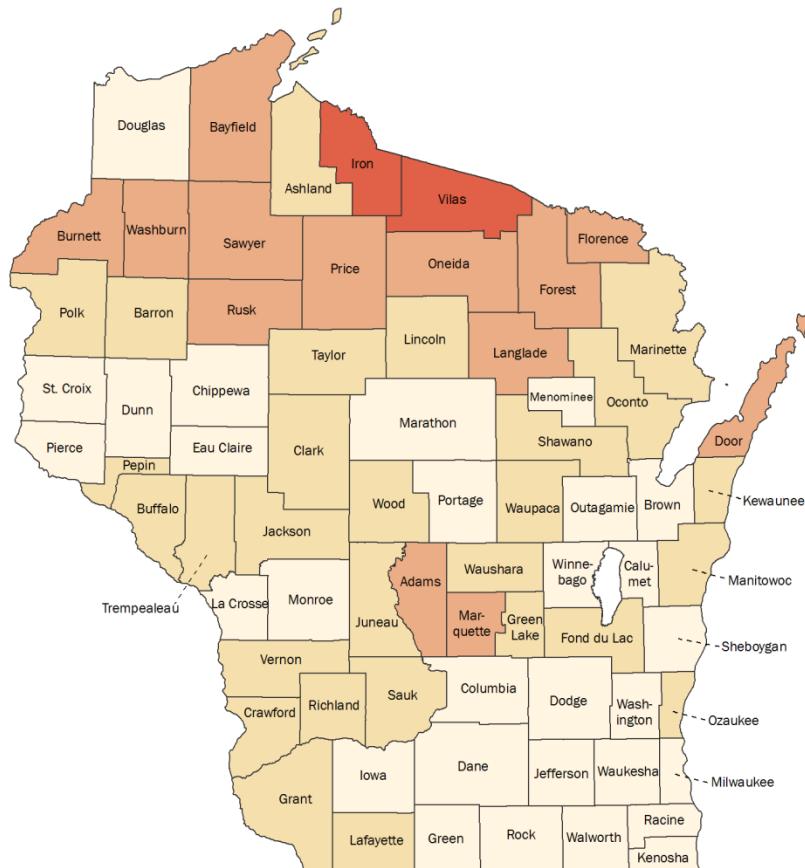


Convergence of the Population Age 18 and Age 65 in the State of Wisconsin – 2010 to 2040

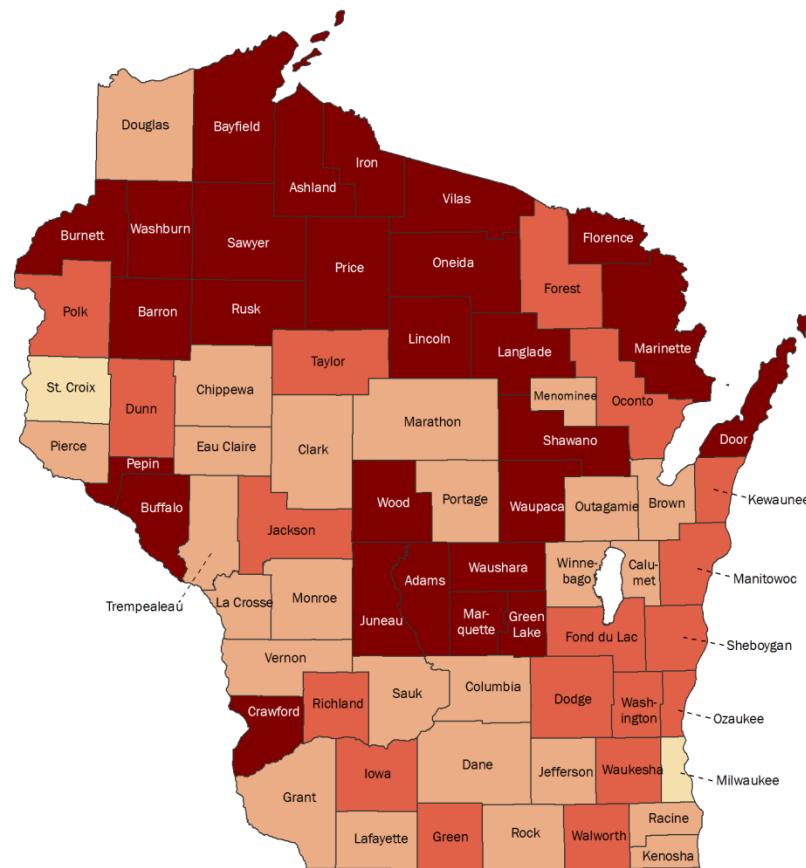


Projected Change in Population Age 65 and Over - 2010 to 2040

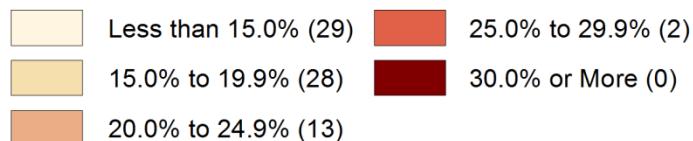
*Share of County Population Age 65 or Older -
2010 Census*



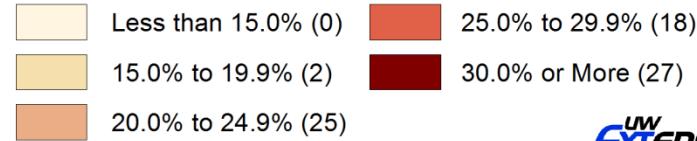
*Share of County Population Age 65 and Over -
2040 Projection*



**Share of Population Age 65 and Over - 2010 Census
(Number of Counties)**

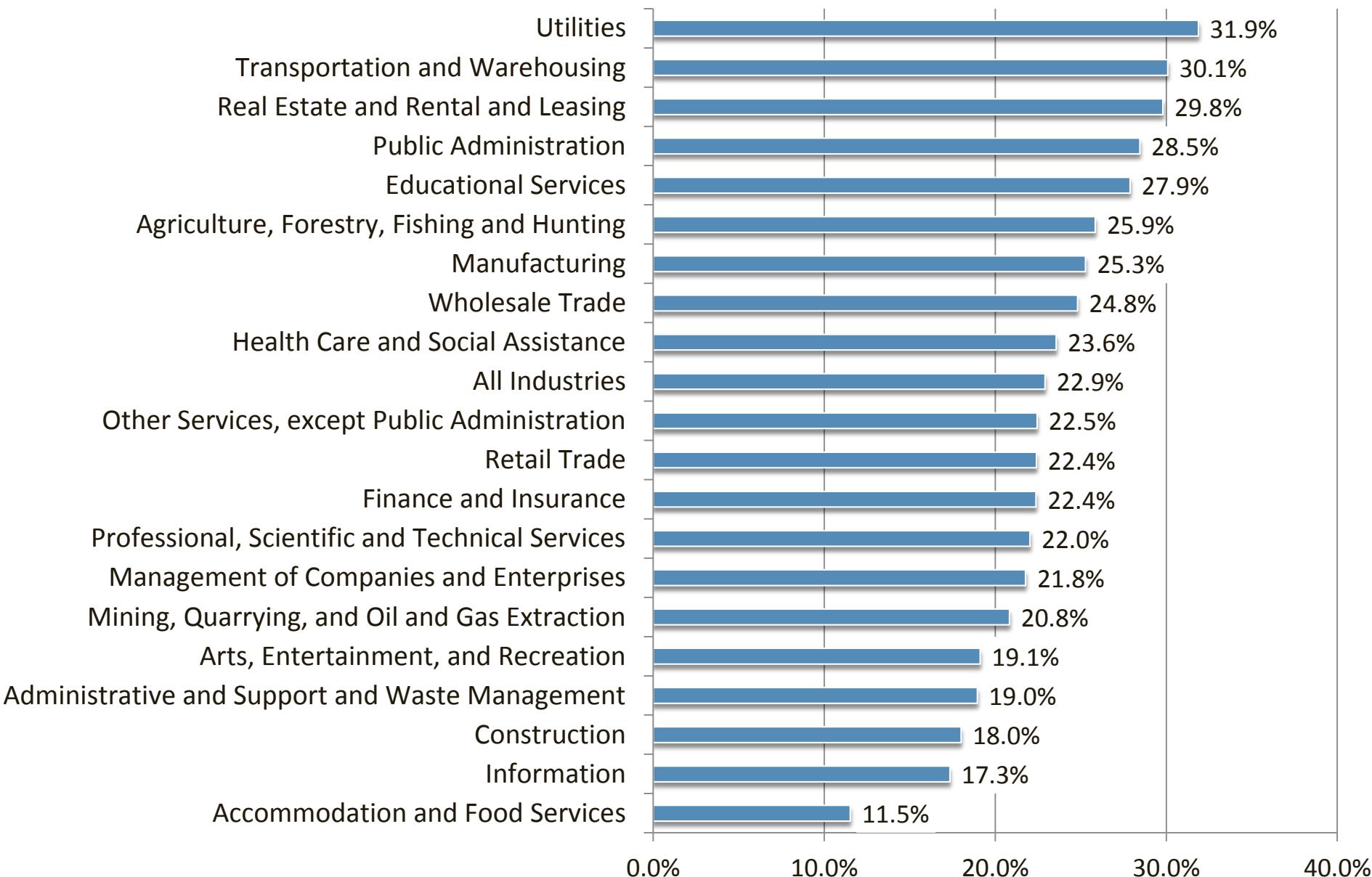


**Share of Population Age 65 and Over - 2040 Projection
(Number of Counties)**



Data Source: Population Projections 2010 to 2040 - WI Department of Administration Demographic Services Center

Percent of Employees Age 55 and Over by Industry Sector (State of Wisconsin Q2 2015)

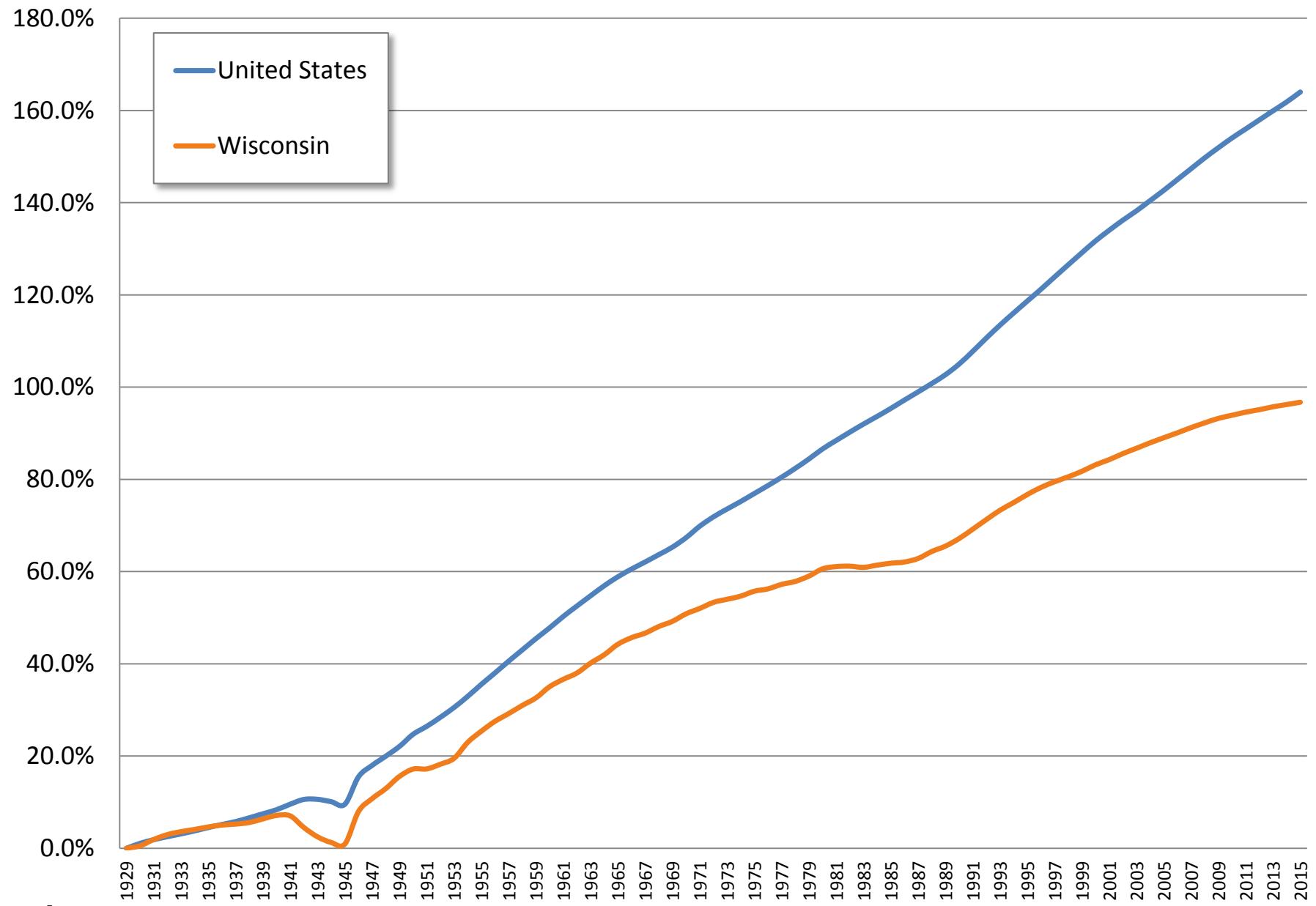


Number of Employees Age 55 and Over by Industry Sector (State of Wisconsin Q2 2015)



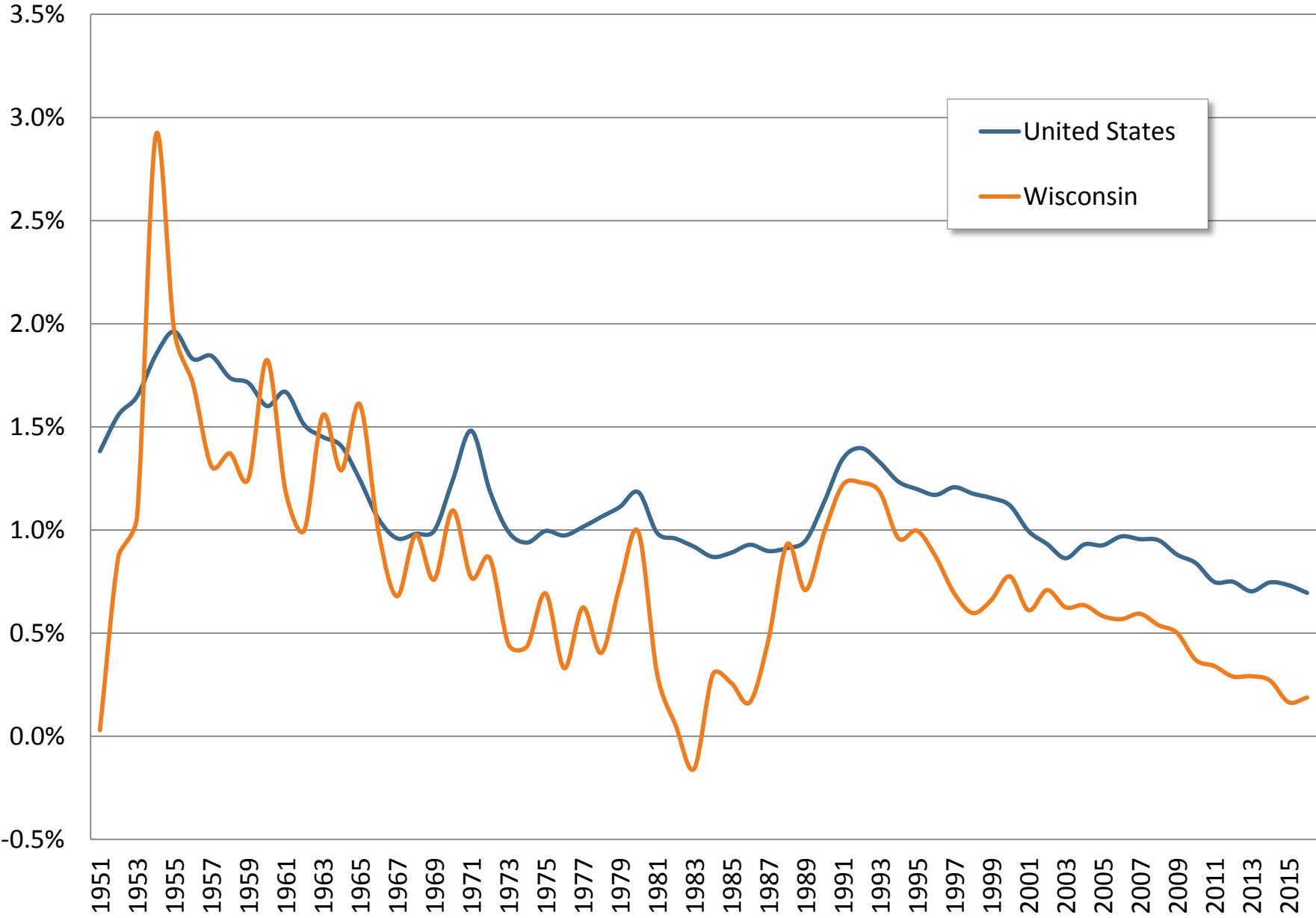
Population Change 1929 to 2015

Percent Change Since 1929

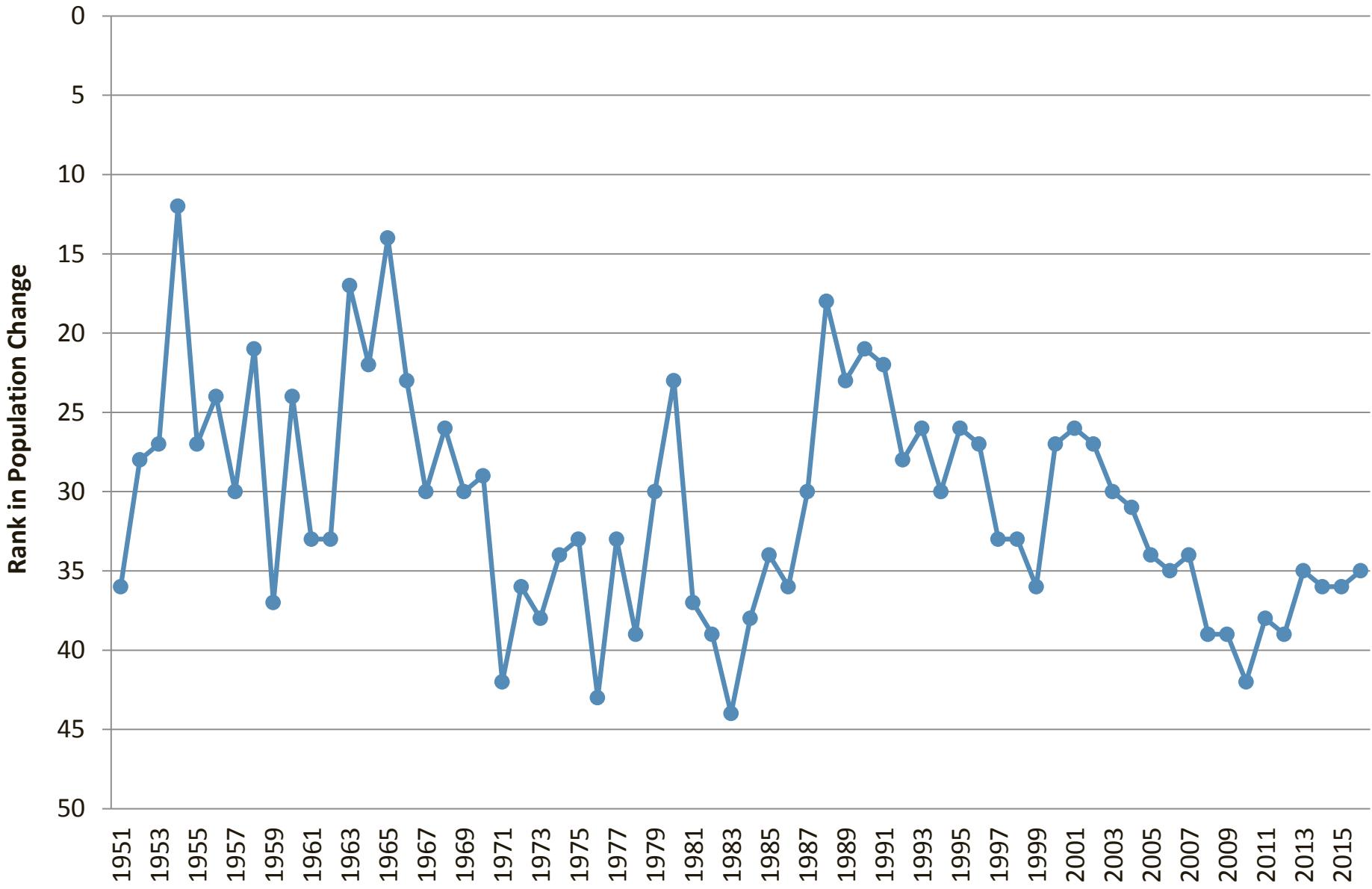


Population Change 1950 to 2015

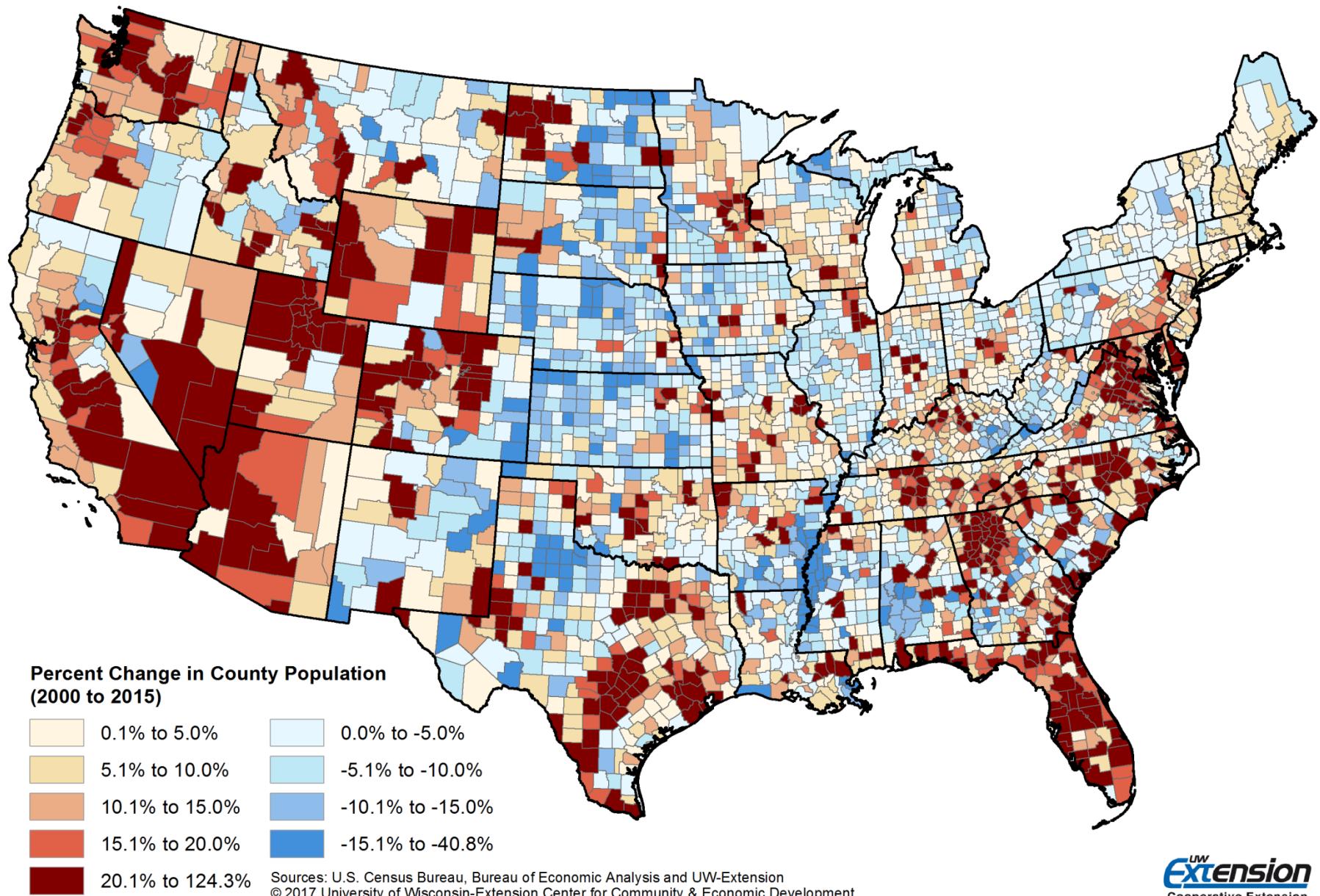
Percent Change in Population from the Prior Year



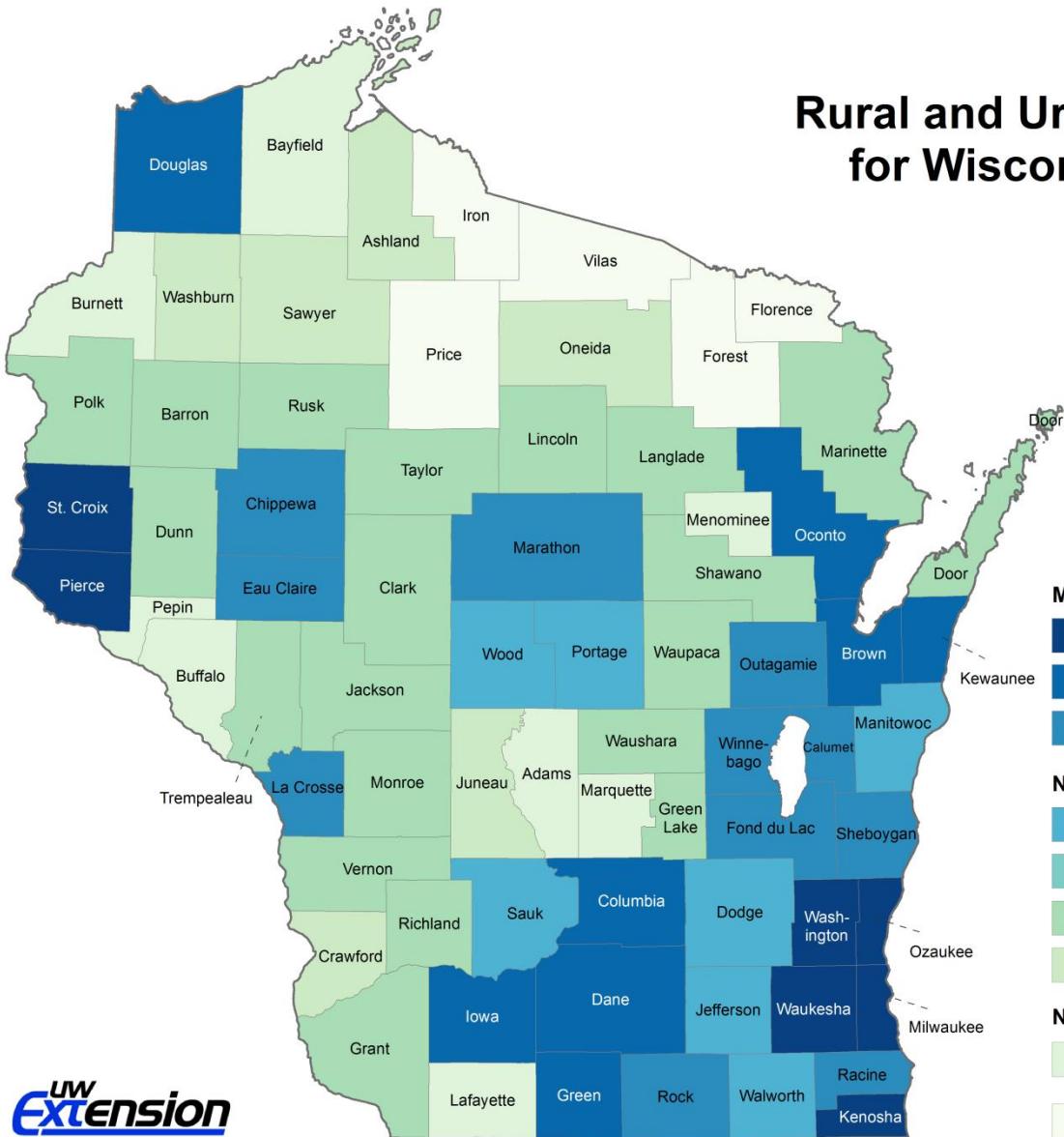
Wisconsin's Annual Ranking in Percent Population Change Among all States



Percent Change in Population by County - 2000 to 2015



Rural and Urban Continuum Codes for Wisconsin Counties - 2013



Metro Counties

- 1 - Counties in an MSA with 1 million people or more
- 2 - Counties in an MSA with 250,000 to 1 million people
- 3 - Counties in an MSA with fewer than 250,000 people

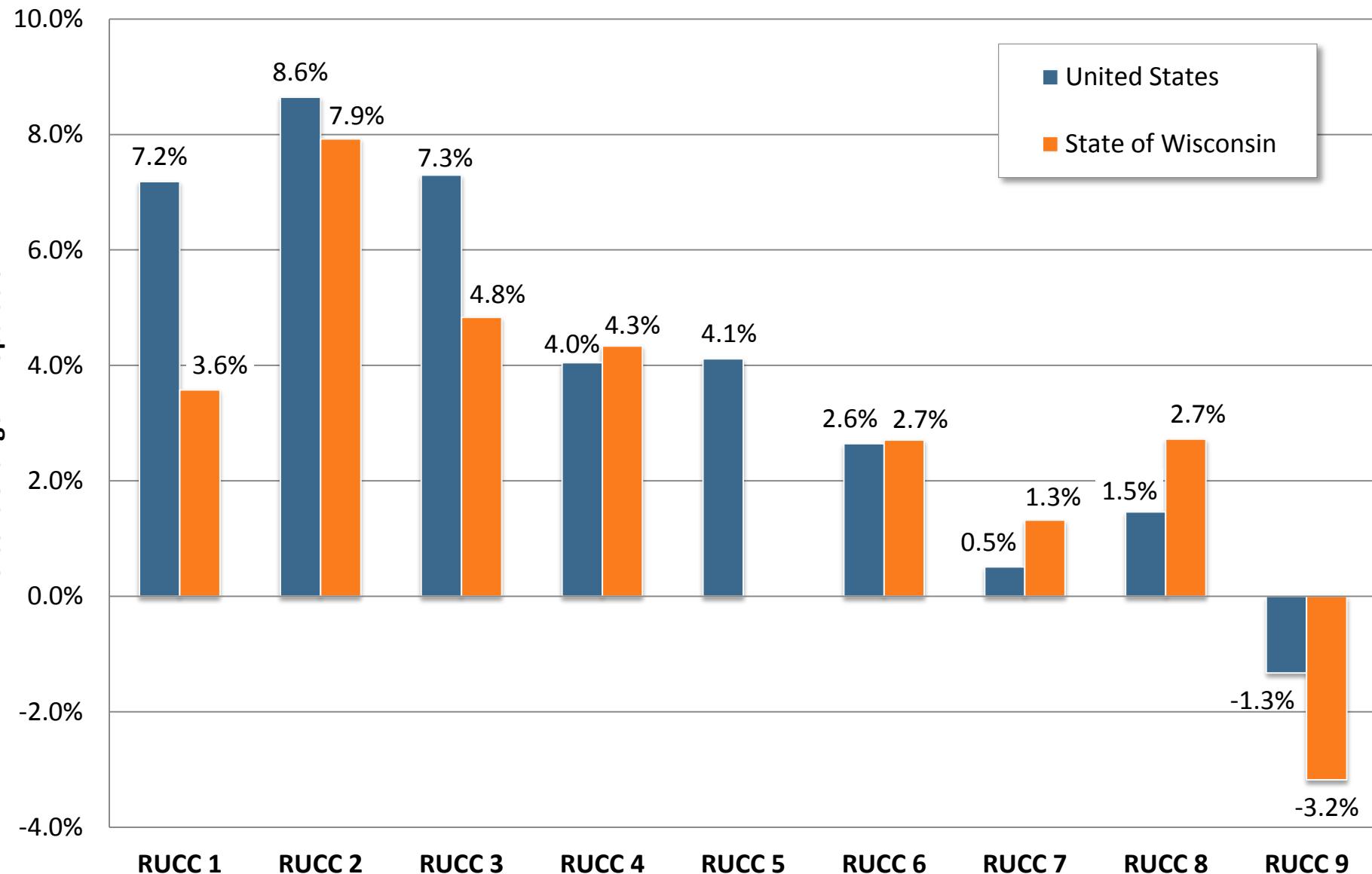
Non-Metro Counties - Urban Population Greater than 2,500

- 4 - Urban pop. of 20,000 or more, adjacent to MSA
- 5 - Urban pop. of 20,000 or more, not adjacent to MSA
- 6 - Urban pop. of 2,500 to 19,999, adjacent to MSA
- 7 - Urban pop. of 2,500 to 19,999, not adjacent to MSA

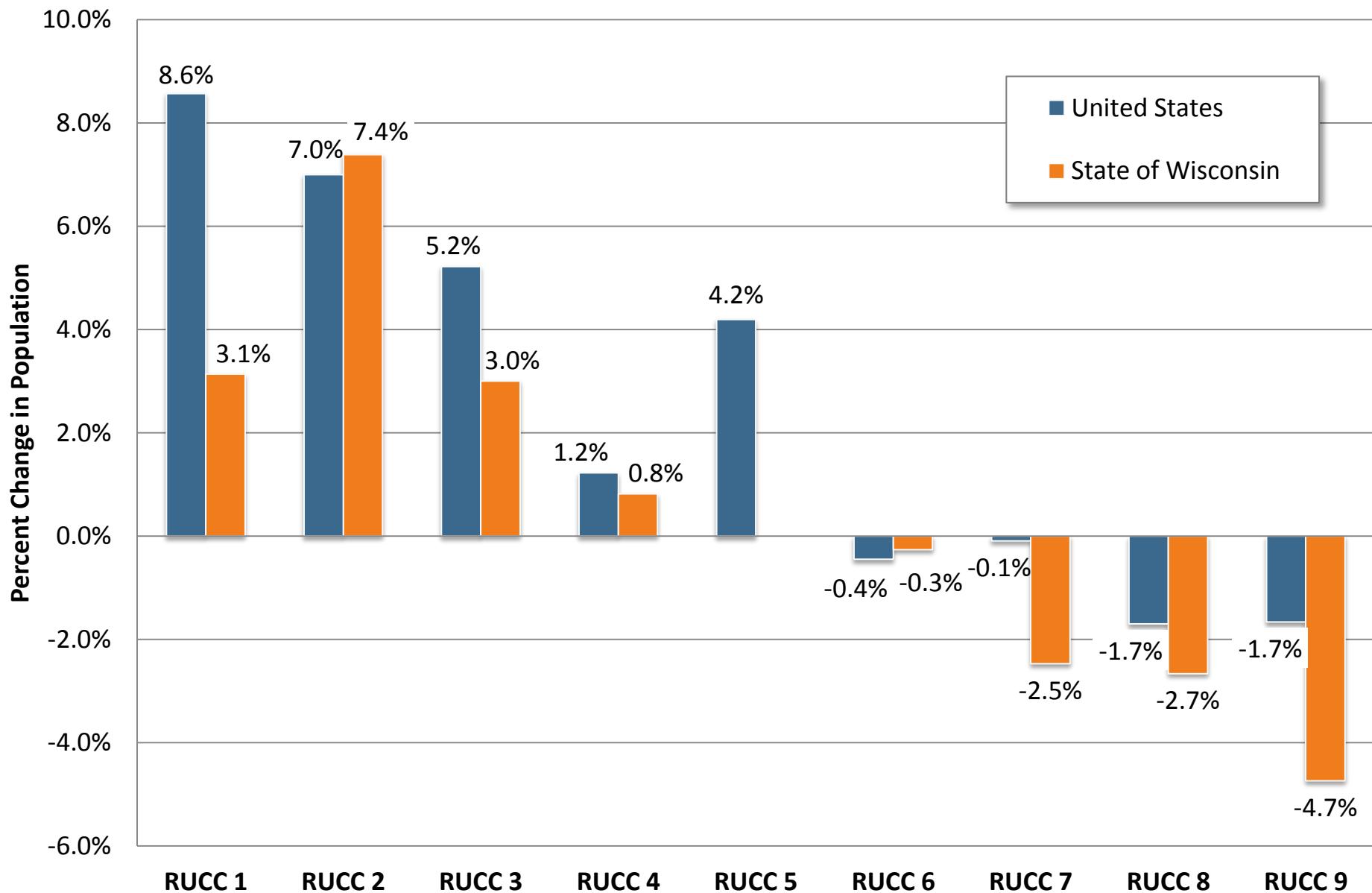
Non-Metro Counties - Urban Population less than 2,500

- 8 - Completely rural or less than 2,500 urban pop., adjacent to an MSA
- 9 - Completely rural or less than 2,500 urban pop., not adjacent to an MSA

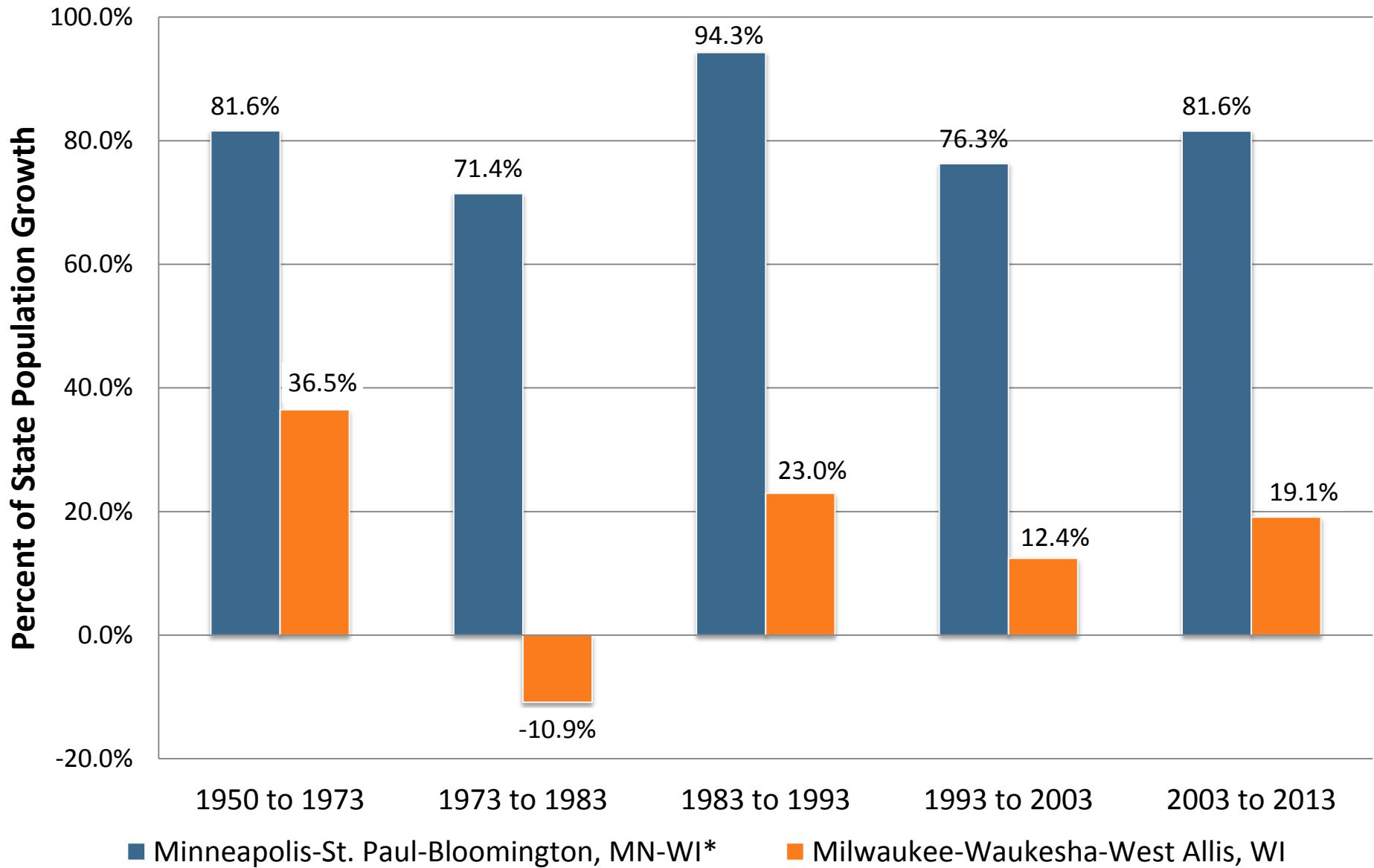
Percent Change in Population 2000 to 2007 By Rural-Urban Continuum Code



Percent Change in Population 2007 to 2015 By Rural-Urban Continuum Code



Largest Metro Area Population Growth as a Share of State Total Population Growth

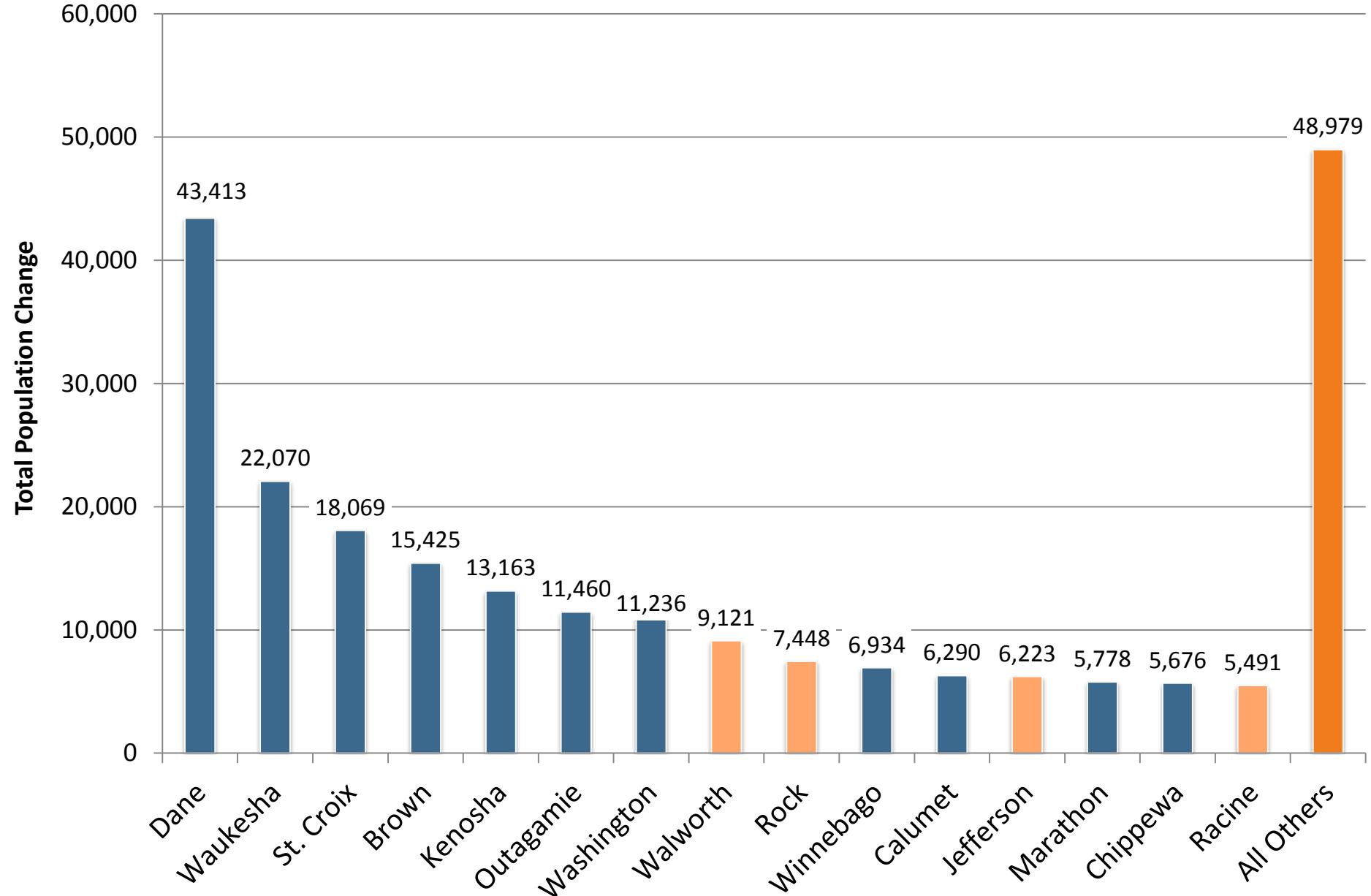


■ Minneapolis-St. Paul-Bloomington, MN-WI*

■ Milwaukee-Waukesha-West Allis, WI

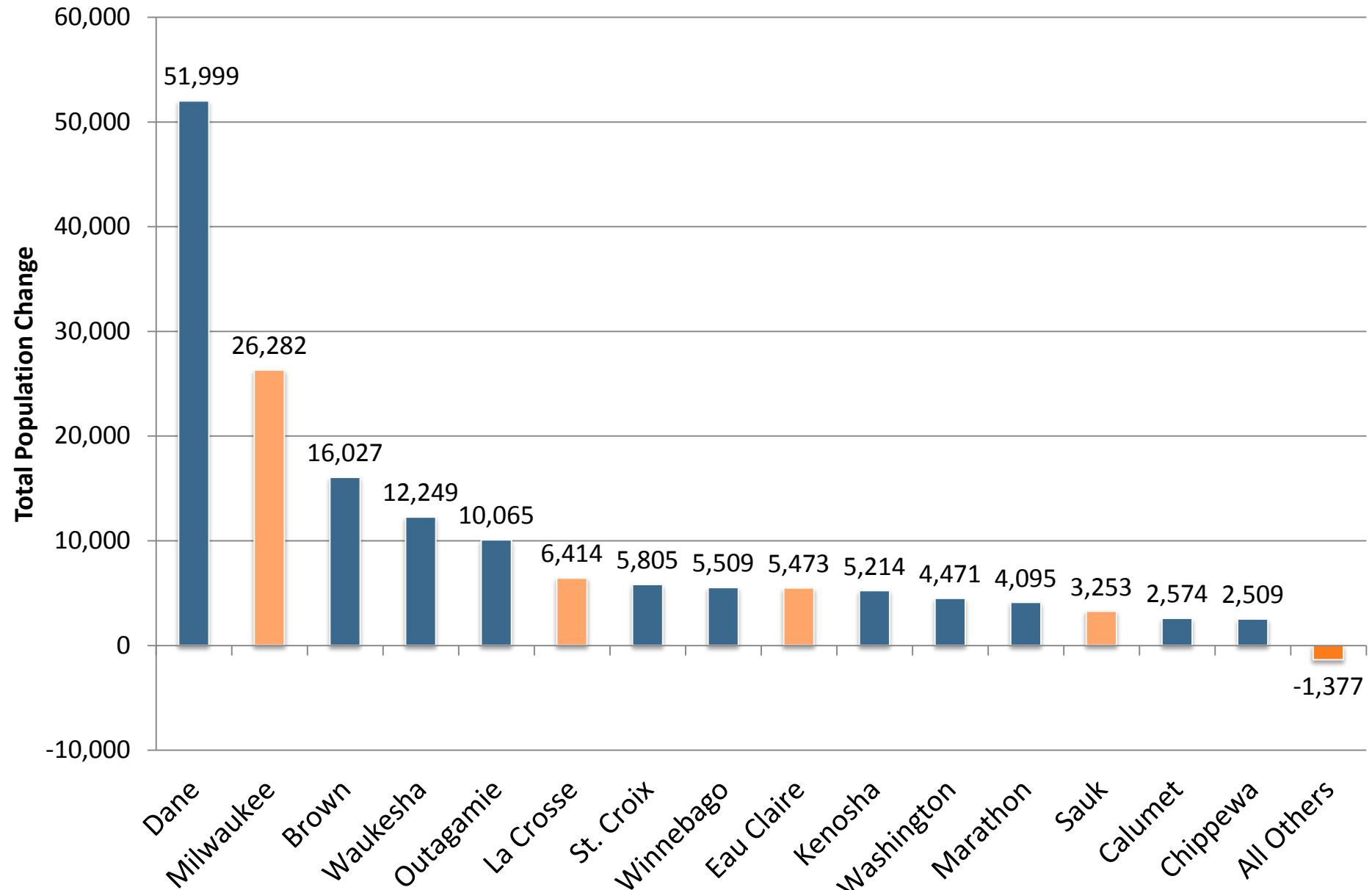
Total Population Change 2000 to 2007

Wisconsin Counties with the 15 Largest Increases

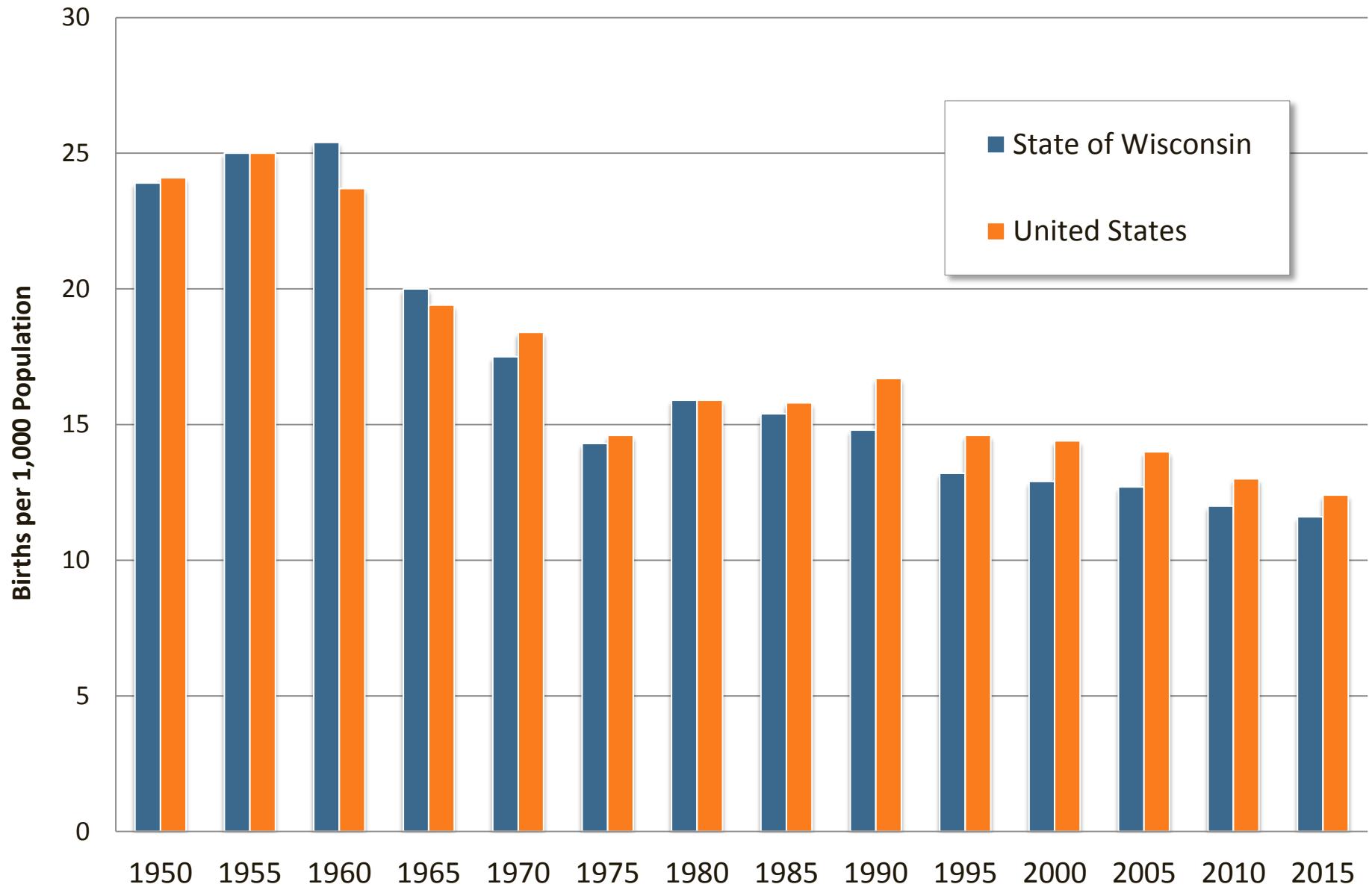


Total Population Change 2007 to 2015

Wisconsin Counties with the 15 Largest Increases

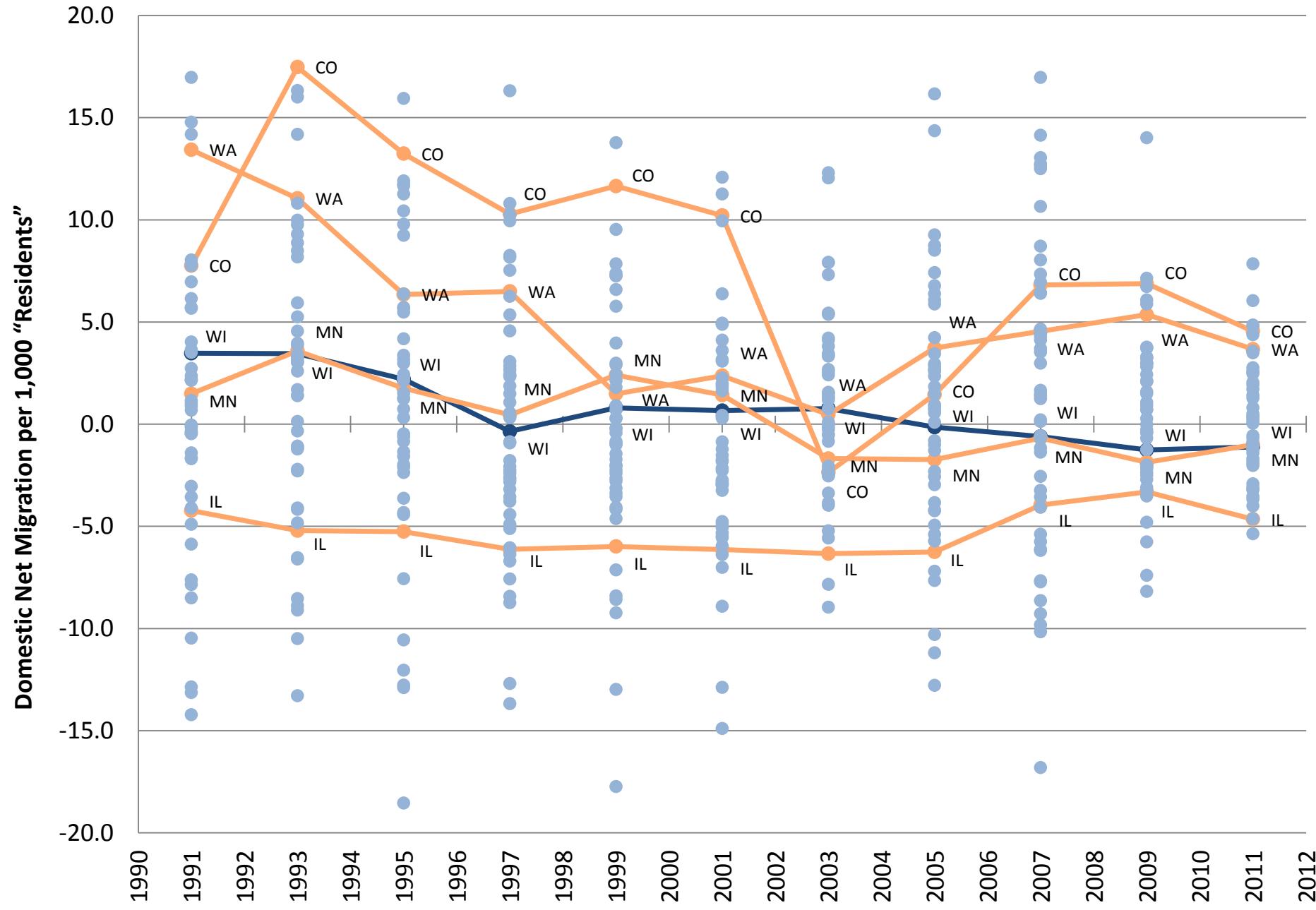


Birth Rates for Wisconsin and the United States (1950-2015)



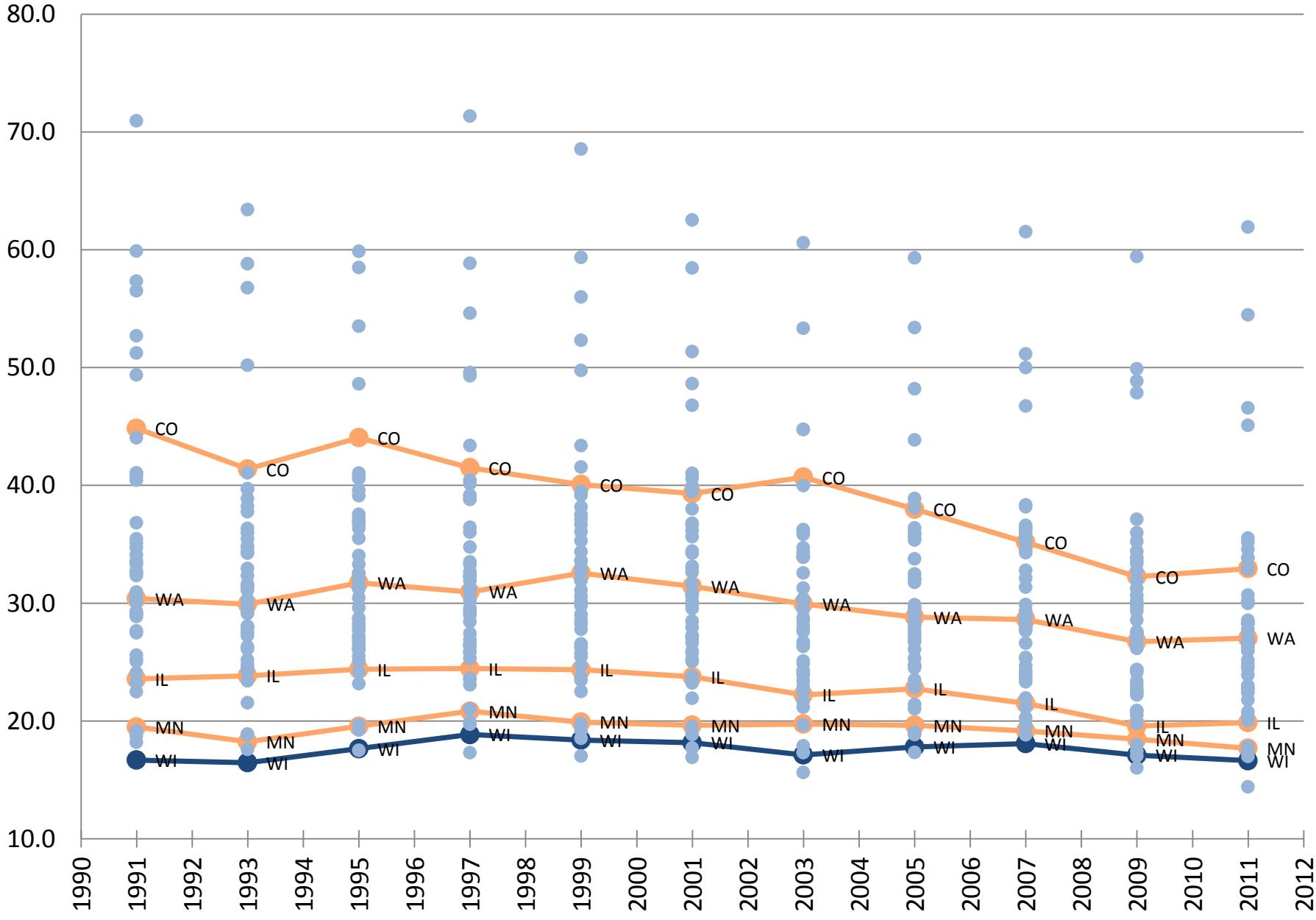
Sources: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services.
and National Vital Statistics Reports, "Births: Final Data for 2014," Volume 64, Number 12, December 23, 2015.

State Domestic Net Migration Rates - 1990 to 2011



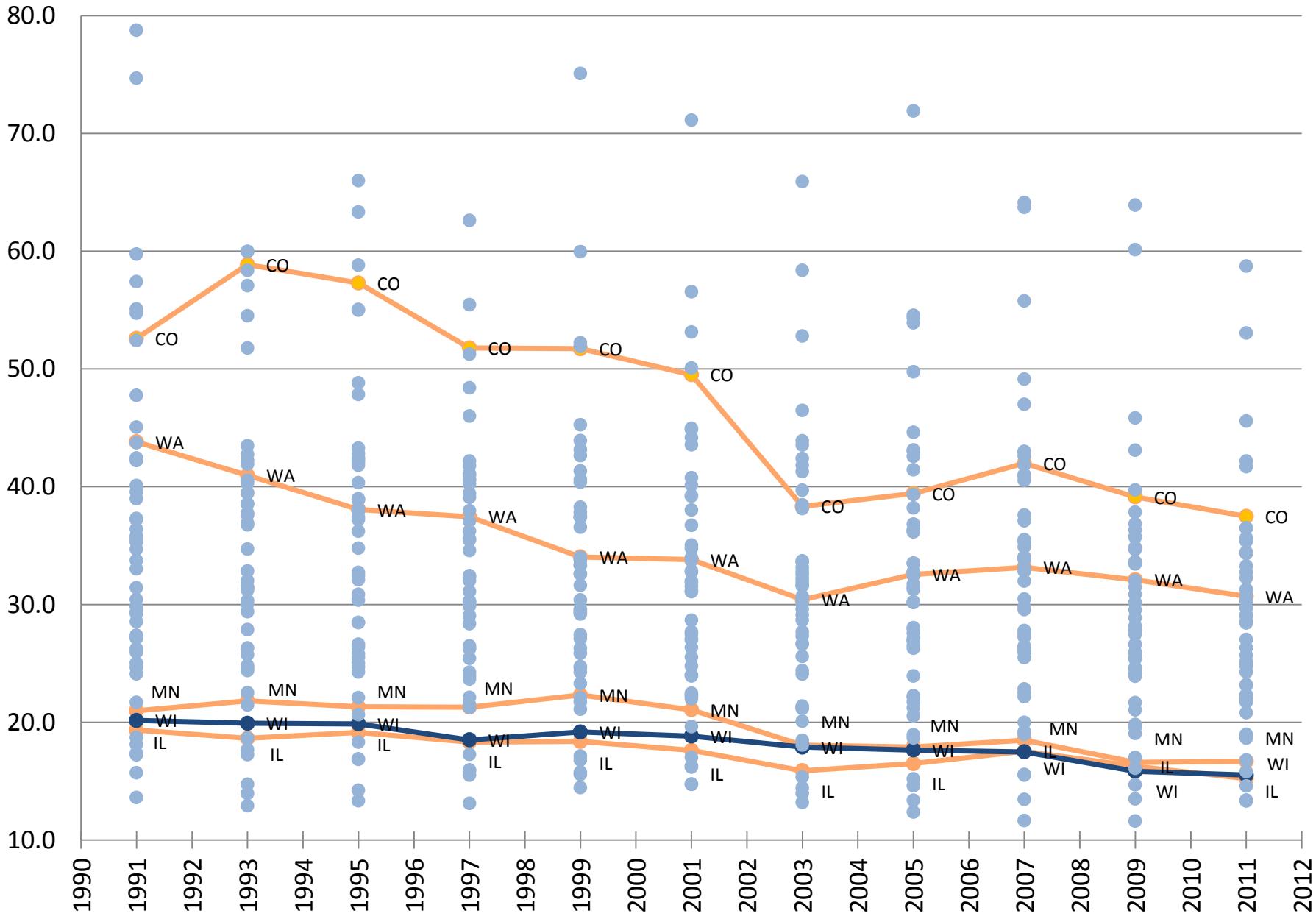
State Domestic Out-Migration Rates - 1990 to 2011

Number of Domestic Out-Migrants per 1,000 "Residents"

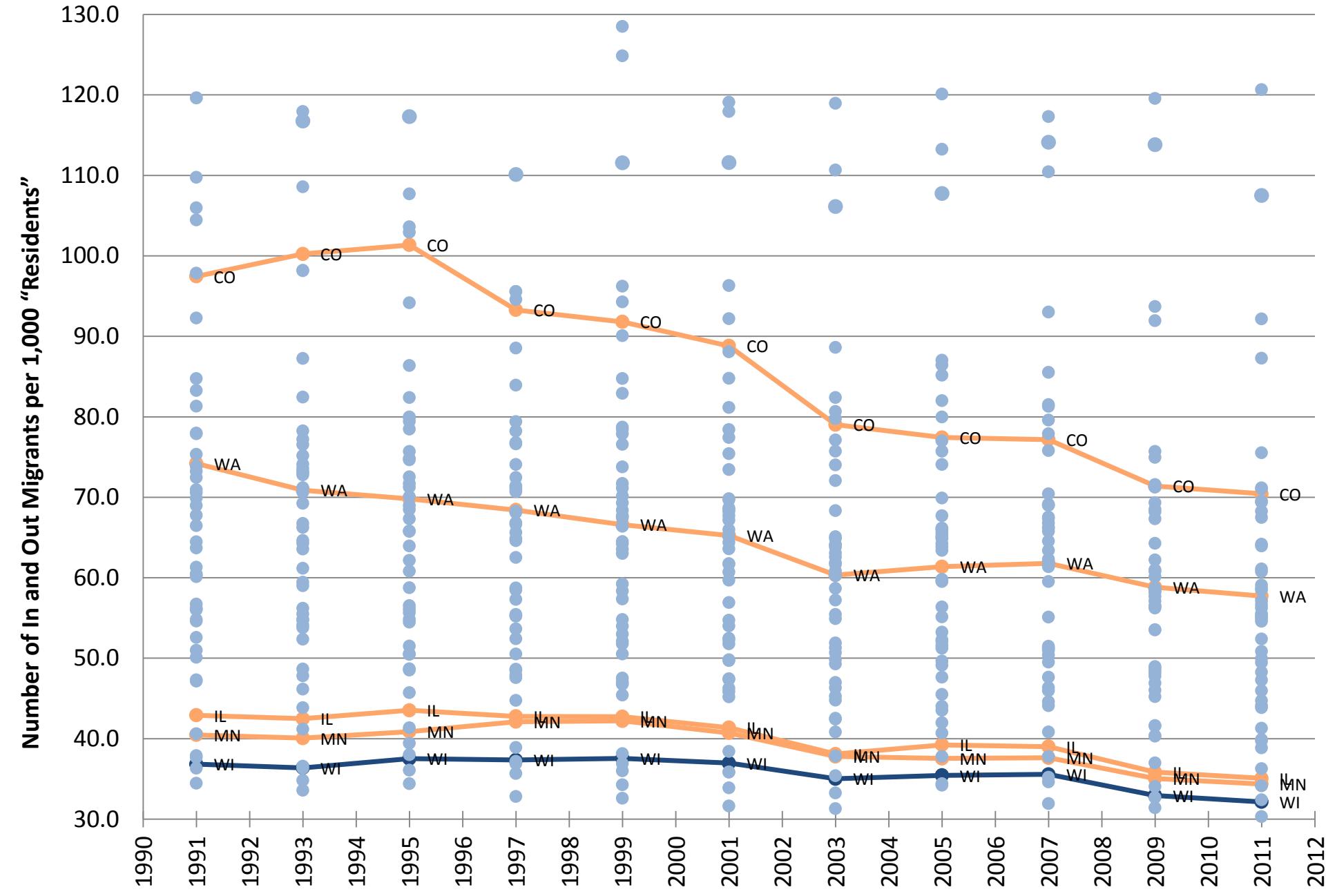


Domestic State In-Migration Rates - 1990 to 2011

Number of Domestic In-Migrants per 1,000 "Residents"

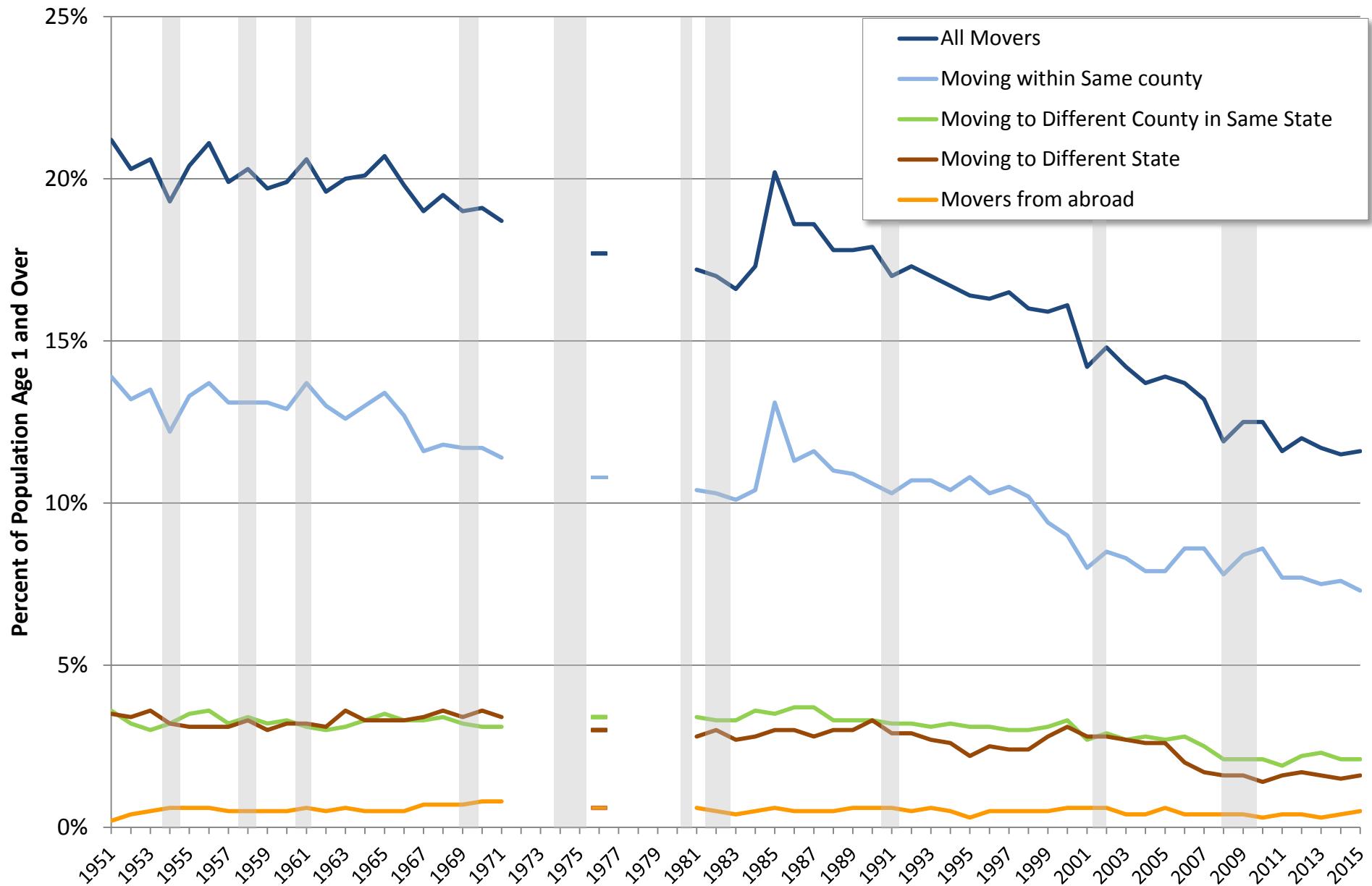


State Domestic Gross Migration Rates (Churn) – 1990 to 2011



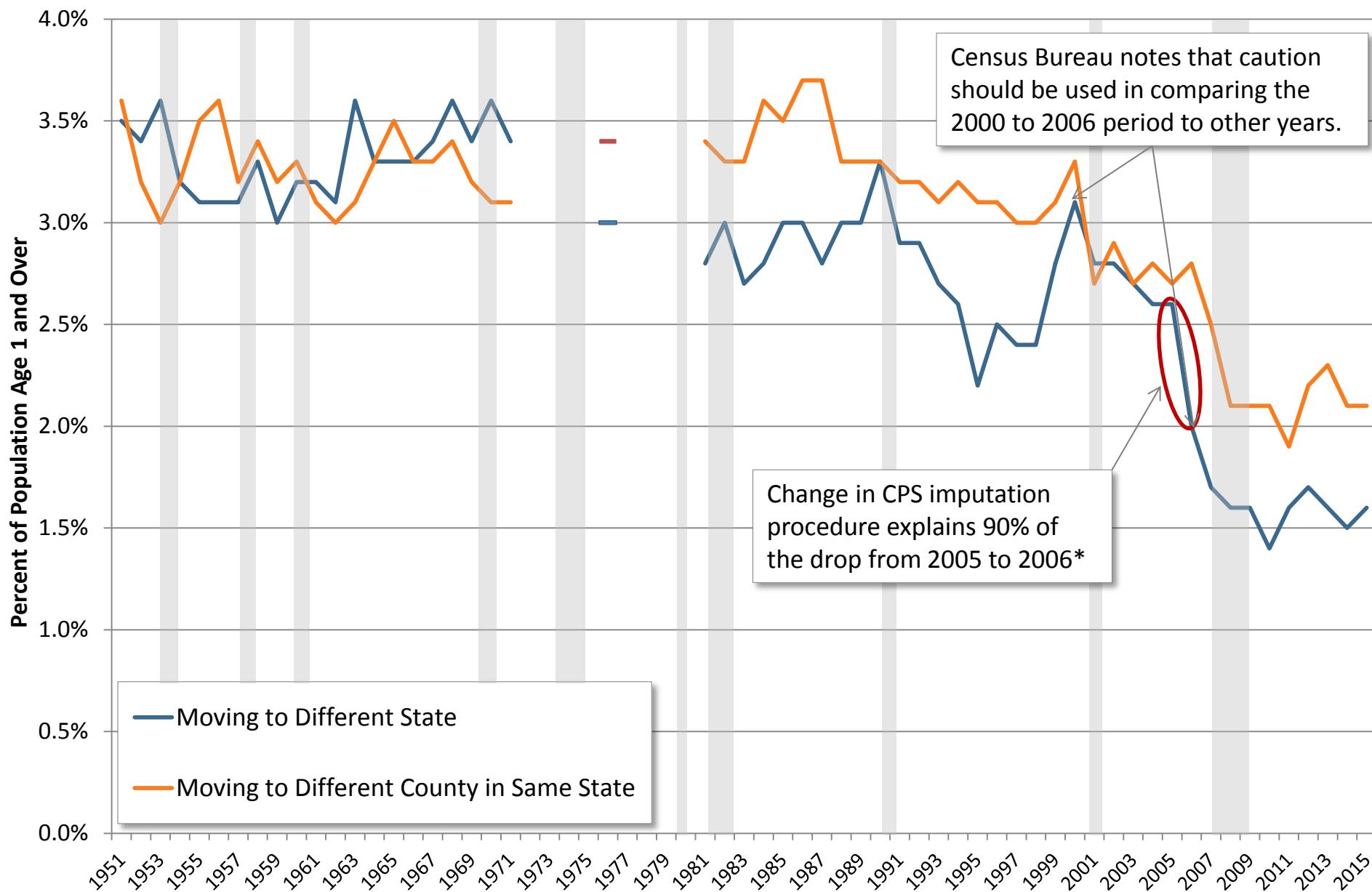
Mobility Rates 1950 to 2015

Percent of United States Population Moving (Age 1 and Over)



Inter-State and Inter-County Mobility 1950 to 2015

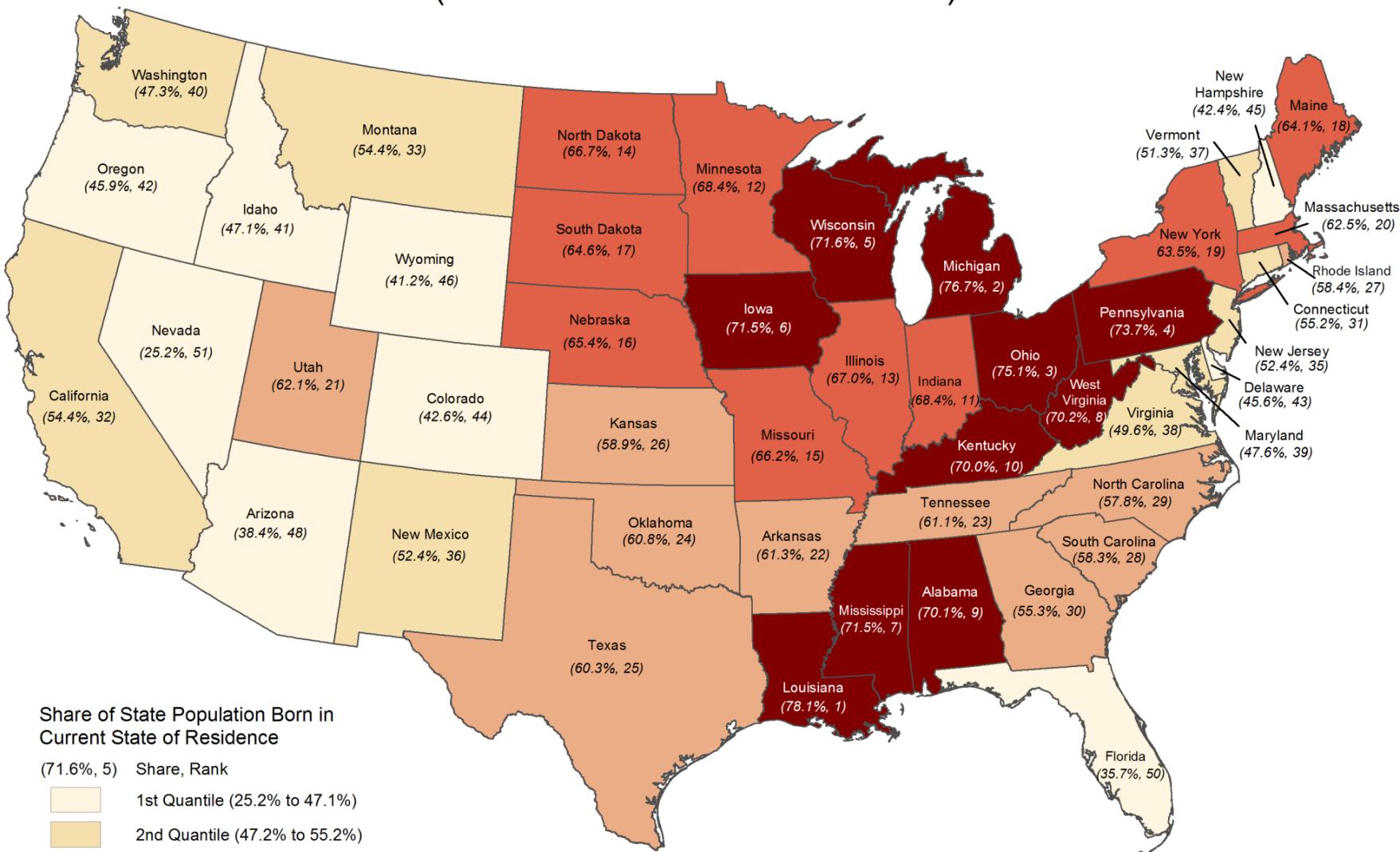
Percent of United States Population Moving Across State Lines (Age 1 and Over)



Trends in Regional and Inter-State Mobility – Possible Explanations

- Economic cycles, labor demand, and changing demographic/socio-economic structures explain some of the downward trend, but do not fully explain long-term shifts;
- The strength, thickness and/or reduced specialization of regional labor markets make it less advantageous to change jobs or move, especially over longer distances;
- Net benefit to changing employers has decreased, making labor market transitions and associated larger geographic movements less desirable to workers;
- The Internet and inexpensive air travel have made it easier to acquire information about new locations;
- Secular-rootedness or “stickiness” of place – Increasing influence of forces that encourage stability such as longevity, affluence, security, and daily mobility. Similarly, the increased value of leisure time, coupled with a convergence in regional housing and labor markets, allows people to remain rooted, yet easily travel for leisure and work;

Share of State Population Born in Current State of Residence (2010 to 2014 Five Year Estimate)



Share of State Population Born in Current State of Residence

(71.6%, 5) Share, Rank

- 1st Quantile (25.2% to 47.1%)
- 2nd Quantile (47.2% to 55.2%)
- 3rd Quantile (55.2% to 62.1%)
- 4th Quantile (62.2% to 68.4%)
- 5th Quantile (68.5% to 78.1%)
- State Border

Alaska (40.6%, 47), Washington DC (36.9%, 49), and Hawaii (54.0%, 34) are not shown on the map.

Sources: U.S. Census Bureau 2010-2014 American Community Survey 5-Year Estimates.

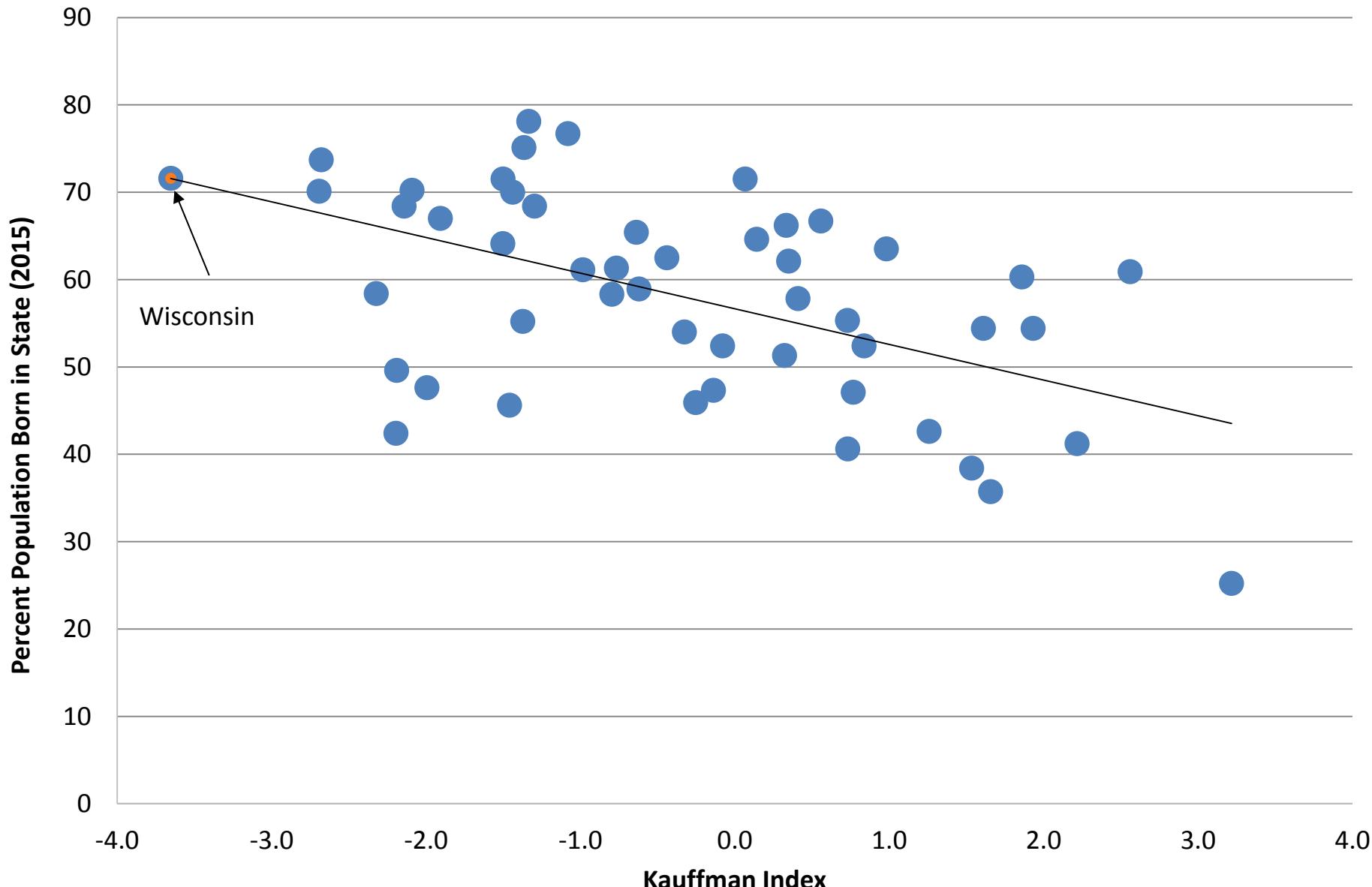
Note: Values are based on a 90-percent confidence interval

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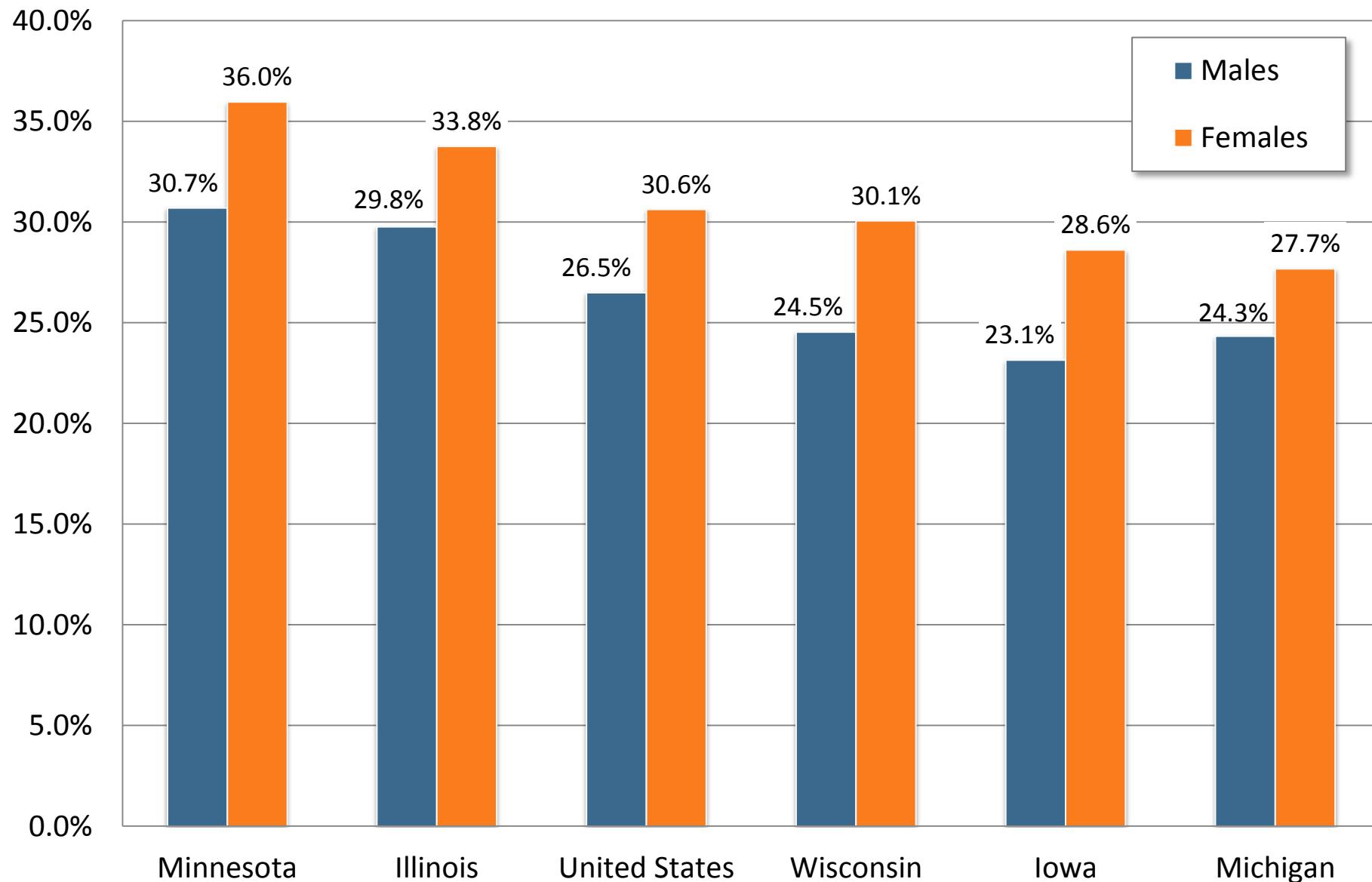
What are some potential implications of Wisconsin's low churn rate in the face of declining inter-state mobility?

- What is our true ability to attract new residents?
- Given our out-migration rates, how much room is there to improve retention?
- Increased emphasis on unemployed/underemployed among working age populations (especially in Milwaukee)?
- Do people follow jobs or do jobs follow people?
- Does ethnocentrism or a potential preference for “in-group” members influence failed migrations to Wisconsin?
- Do we need to emphasize other strategies that reduce dependence on labor availability?
- An altered narrative about amenities and quality of life?
- Does churn influence our entrepreneurial propensity?

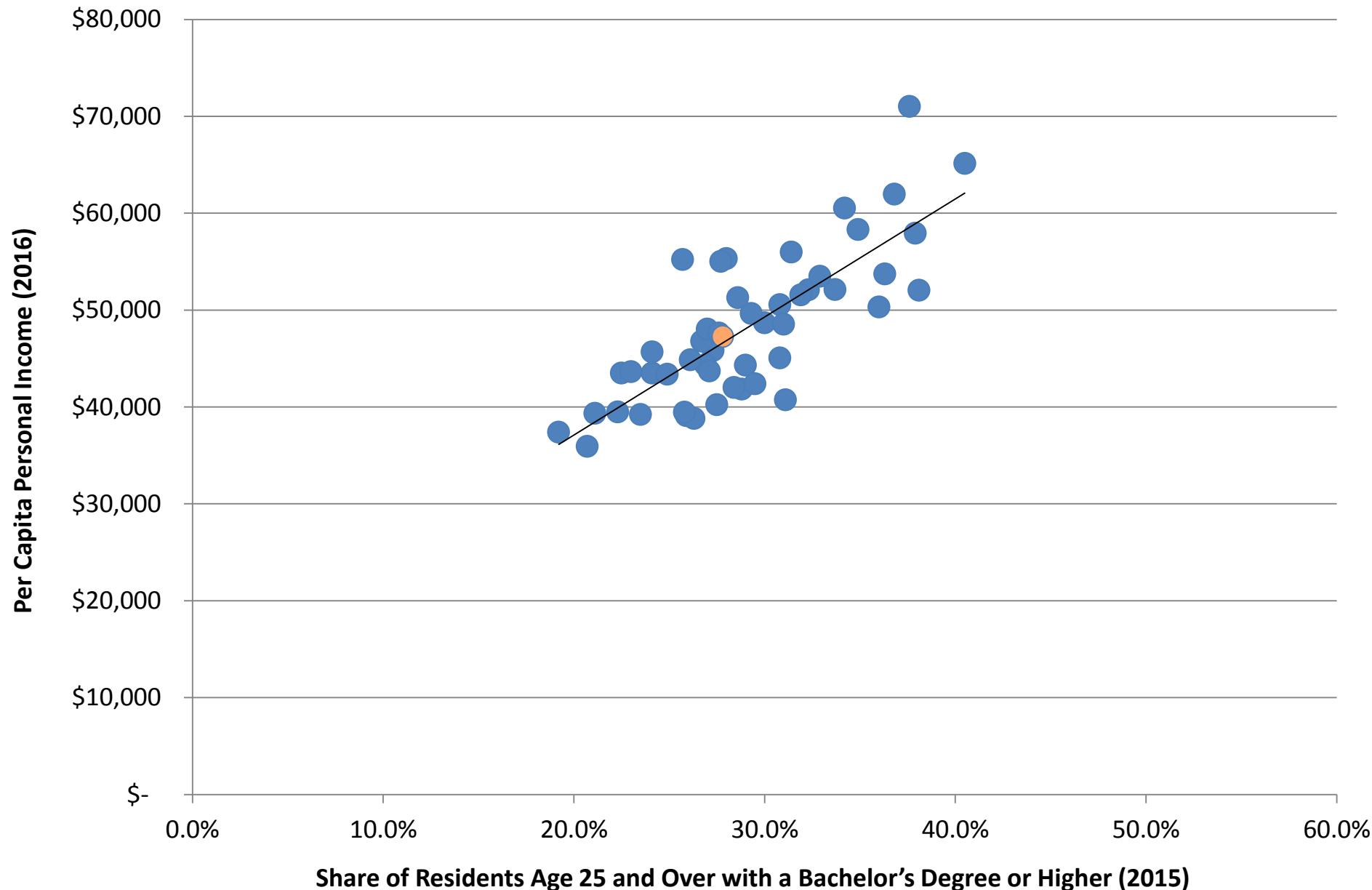
Share of State Residents Born in State vs. Kauffman Index of Entrepreneurship



Share of Residents Age 18 to 64 with a Bachelor's Degree or Higher (2015 1-Year Estimate)

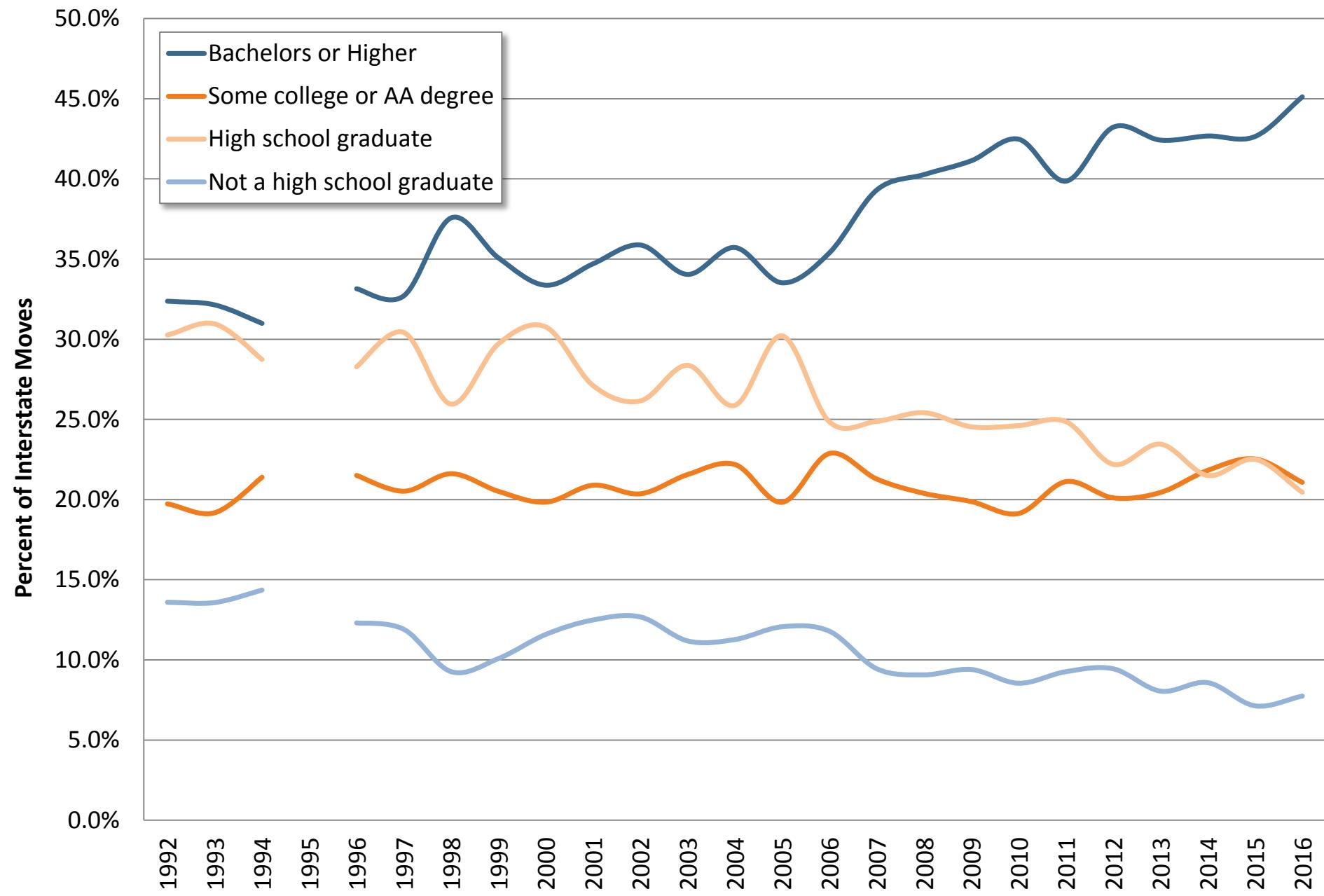


State Per Capita Personal Income vs. Share of Residents Age 25 and Over with a Bachelor's Degree or Higher



Source: U.S. Census Bureau 2015 American Community Survey. Values are subject to margins of error.

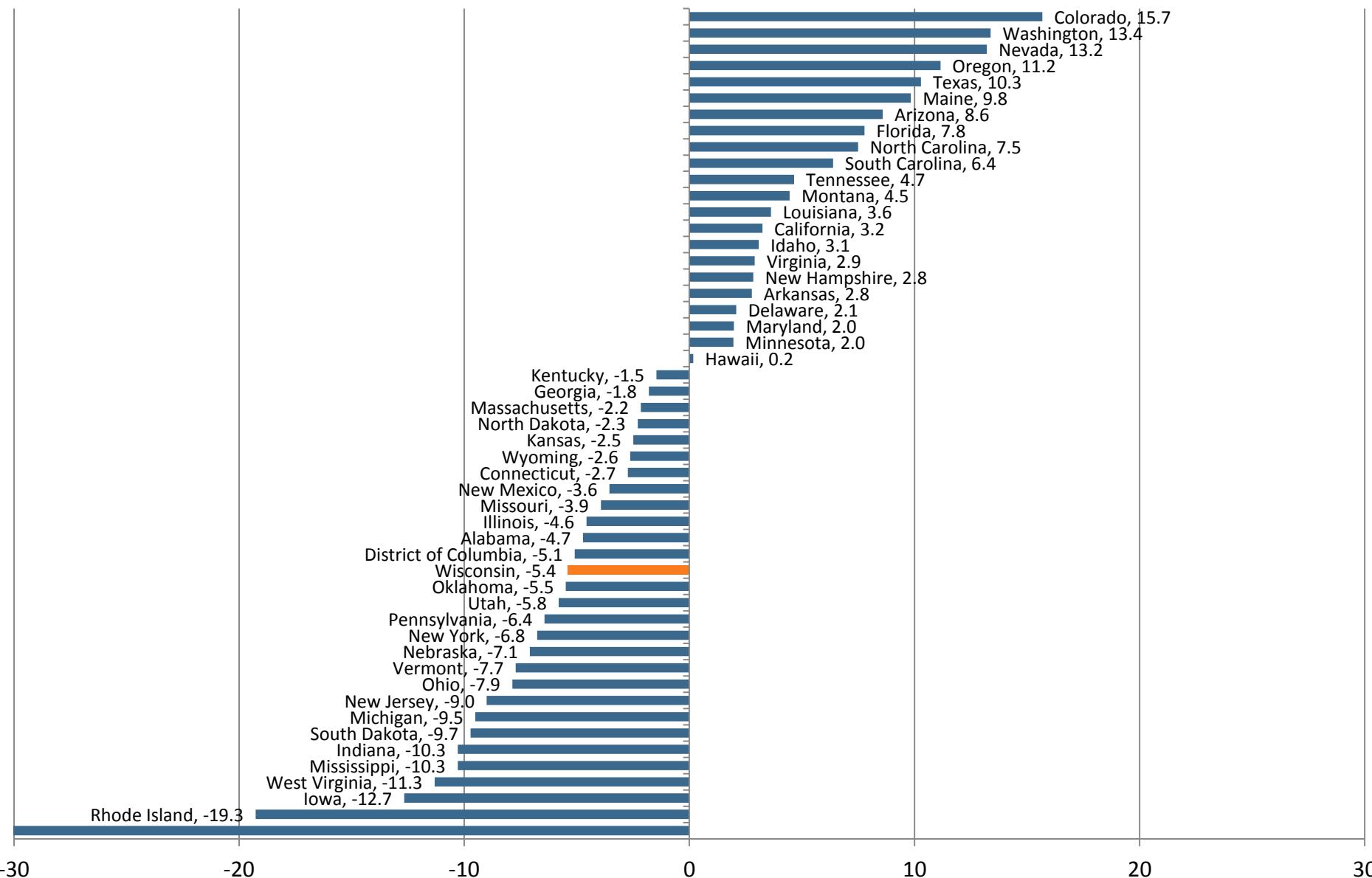
Share of All Interstate Moves by Highest Level of Educational Attainment



WI Domestic Net Migration of College Graduates by Age (2011-2015)

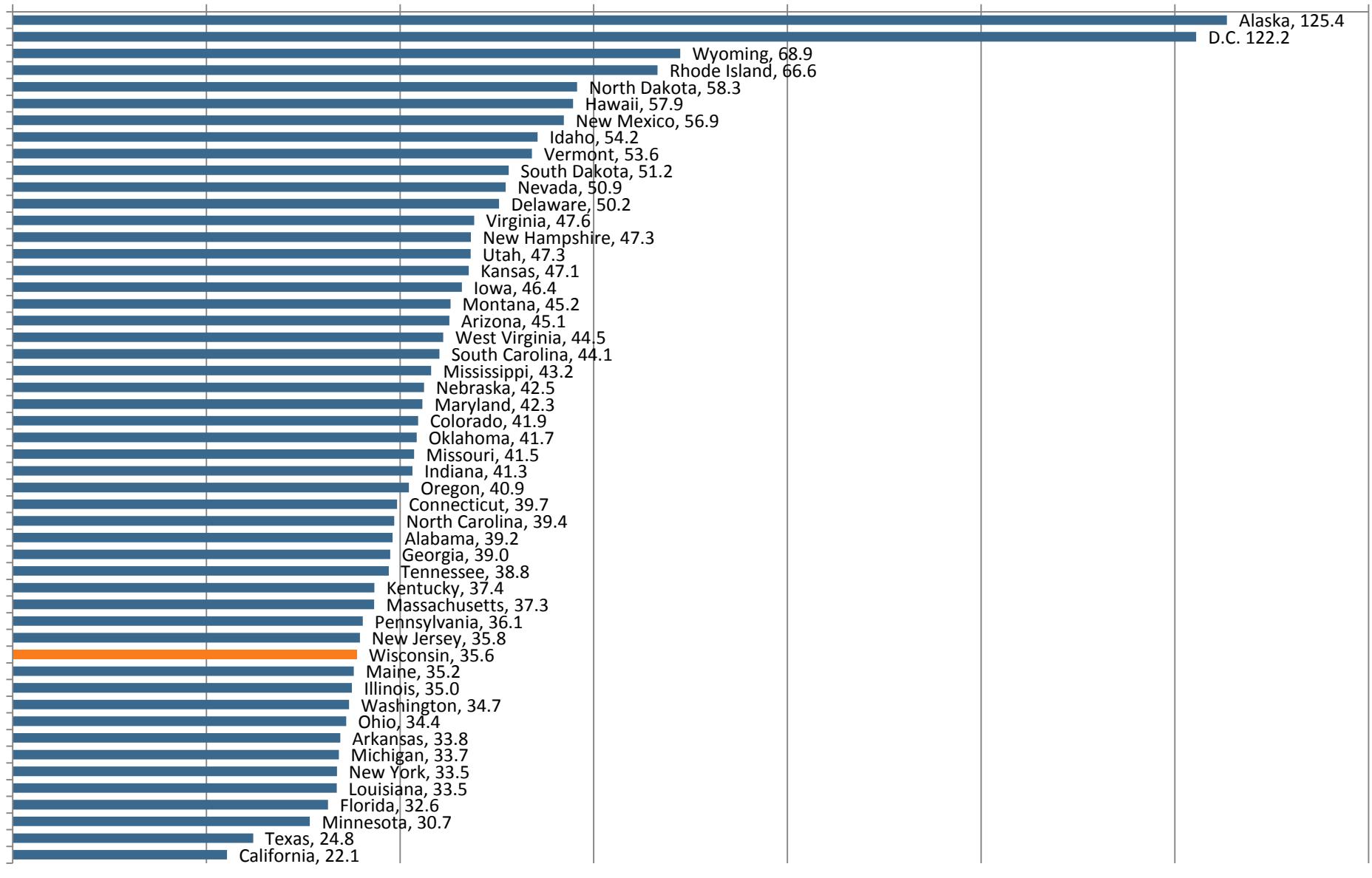
Age Group	In-Migration to Wisconsin	Out-Migration from Wisconsin	Net Migration
18 to 24	6,756	8,221	-1,465
25 to 29	6,757	10,258	-3,501
30 to 34	4,655	5,345	-690
35 to 39	3,202	2,610	592
40 to 44	1,958	1,747	211
45 to 49	1,571	1,468	103
50 to 54	1,390	1,492	-102
55 to 59	1,172	1,373	-201
60 to 64	1,391	1,492	-101
65 to 69	674	1,213	-539
70 to 74	345	608	-263
75 and Over	693	792	-99
<i>Total</i>	30,564	36,619	-6,055

Domestic Net Migration Rate (2011-2015 5-Year Estimates) Per 1,000 Population Age 18 to 64 with a Bachelor's Degree or Higher



Domestic Out-Migration Rate (2011-2015 5-Year Estimates)

Per 1,000 Population Age 18 to 64 with a Bachelor's Degree or Higher

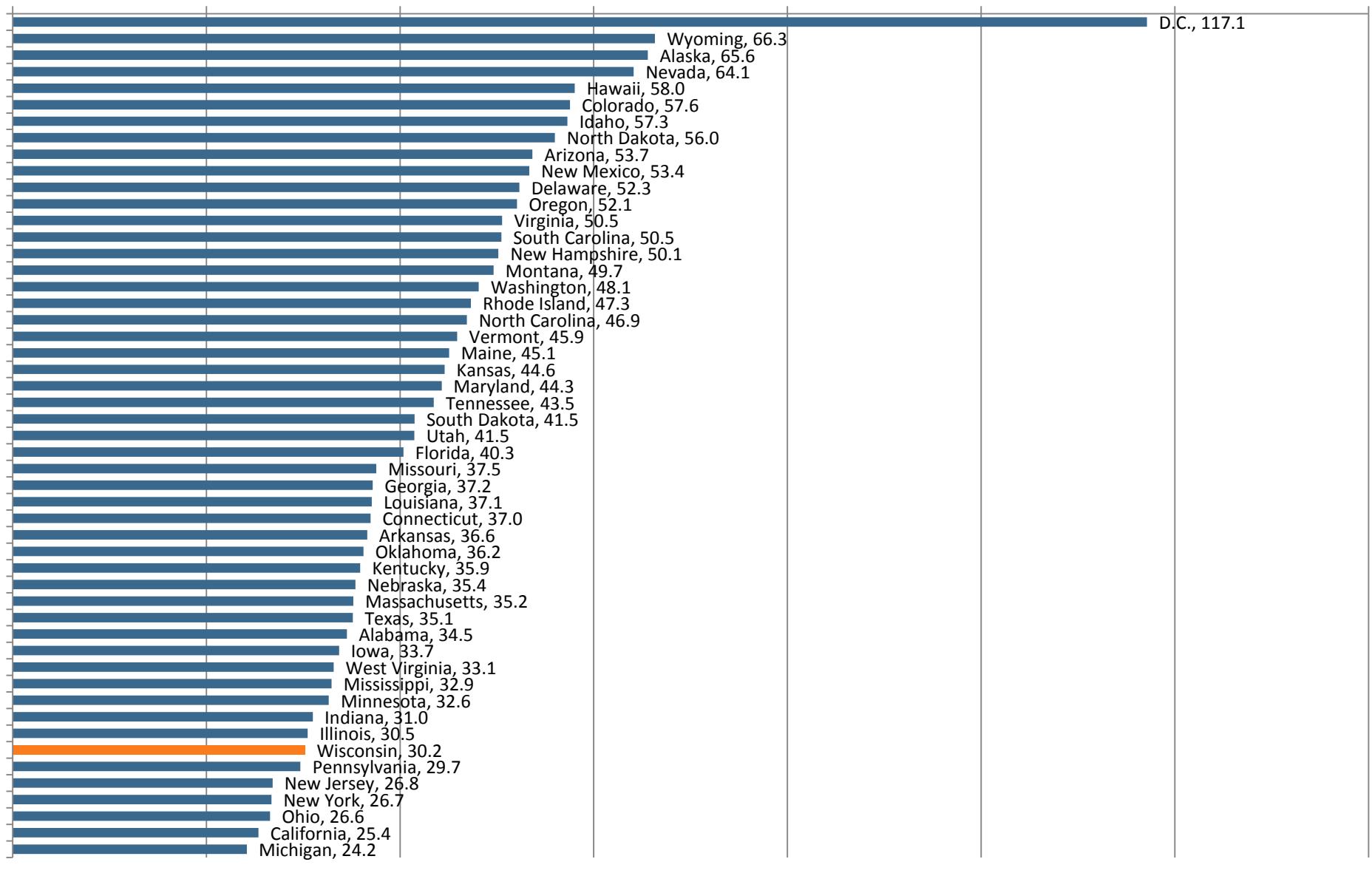


Source: U.S. Census Bureau 2011-2015 American Community Survey PUMS and Author's Calculations – Extracted from IPUMS

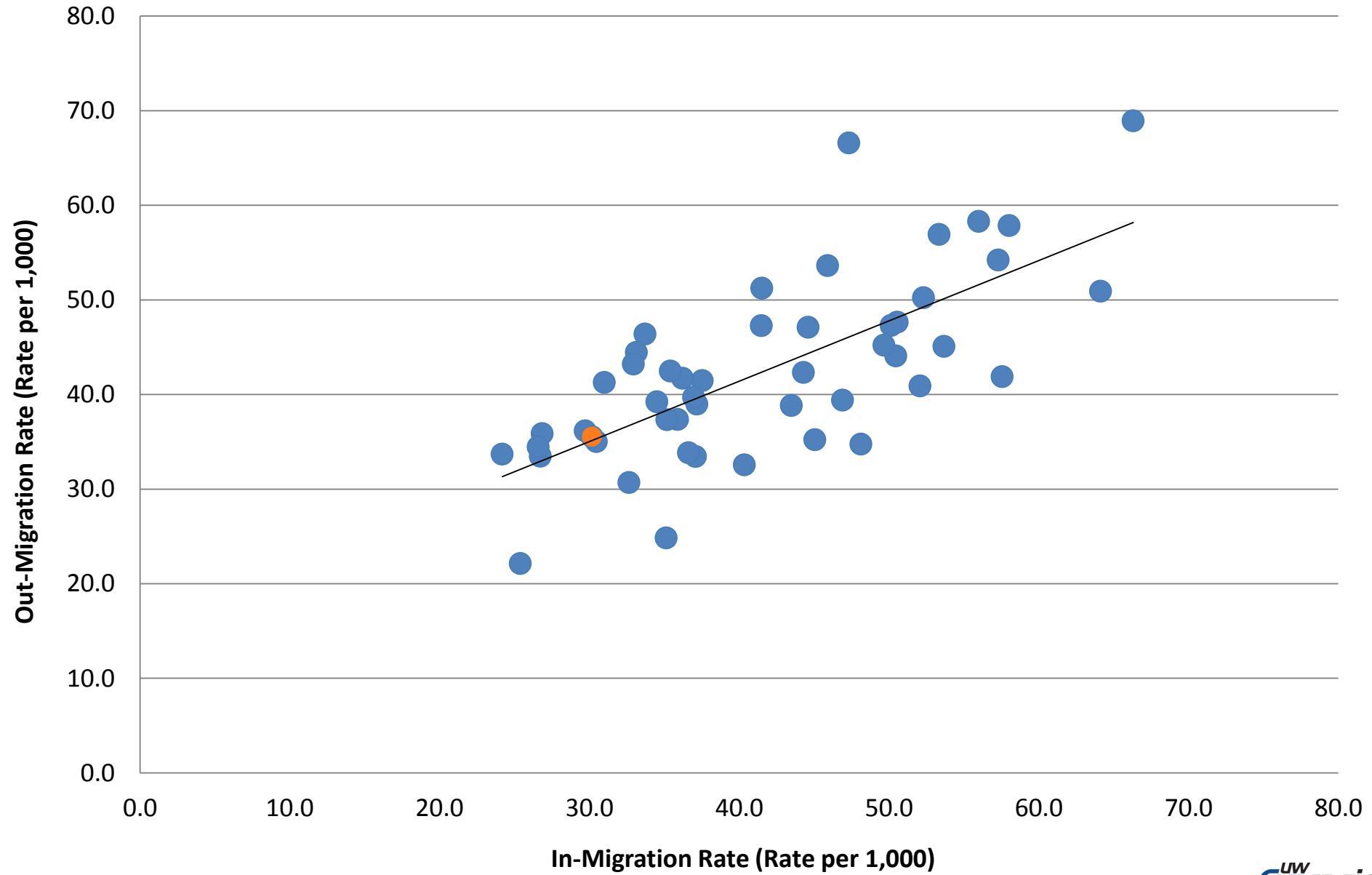
Values are subject to margins of error.

Domestic In-Migration Rate (2011-2015 5-Year Estimates)

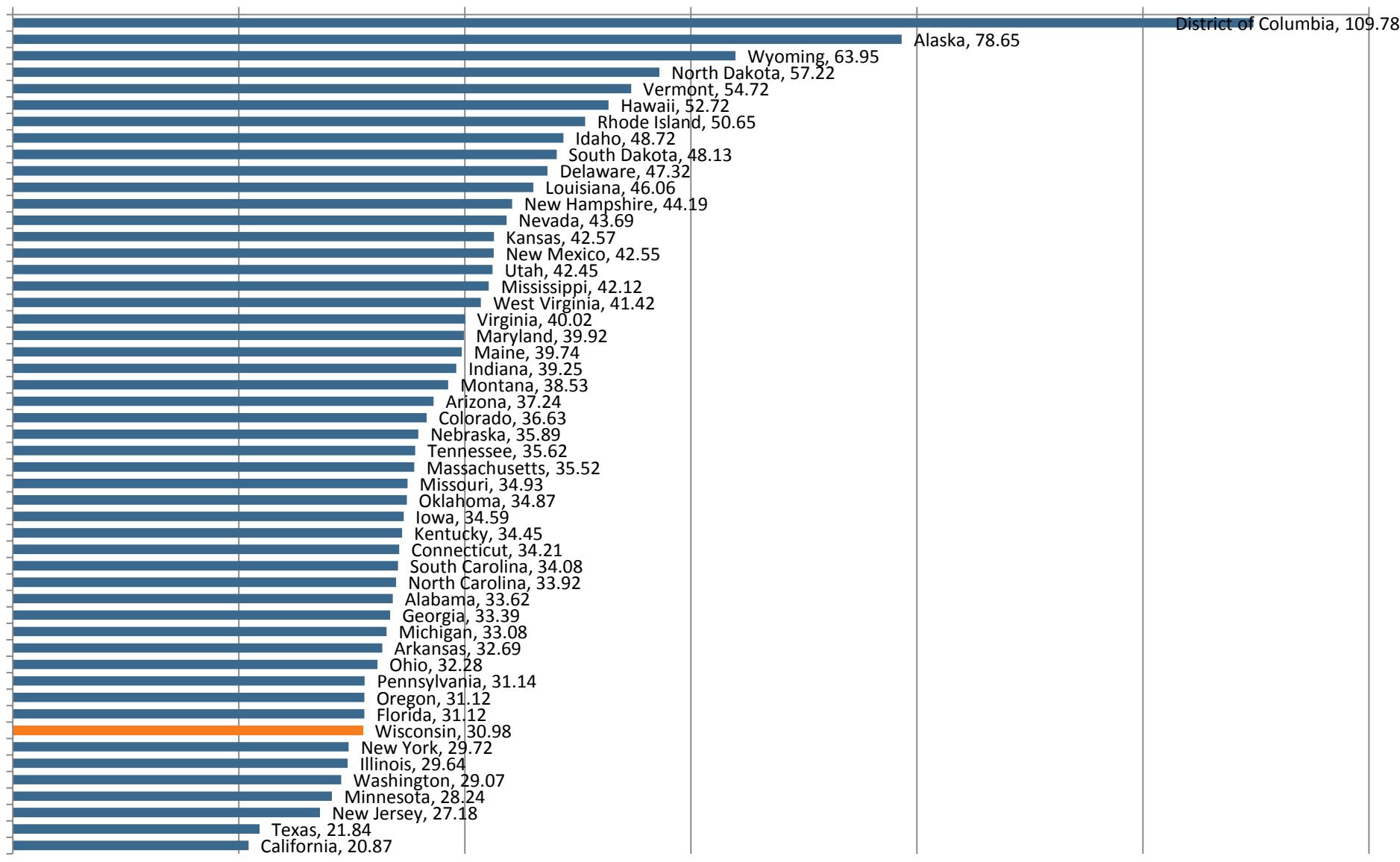
Per 1,000 Population Age 18 to 64 with a Bachelor's Degree or Higher



Migration Dynamism – Correlation between In-Migration Rates and Out-Migration Rates for the Population Age 18 to 64 with a Bachelor's Degree or Higher (2011-2015 5 Year Estimates)



Domestic Out-Migration Rate (2005-2009 5-Year Estimates) Per 1,000 Population Age 18 to 64 with a Bachelor's Degree or Higher



Domestic In-Migration Rate (2005-2009 5-Year Estimates)

Per 1,000 Population Age 18 to 64 with a Bachelor's Degree or Higher

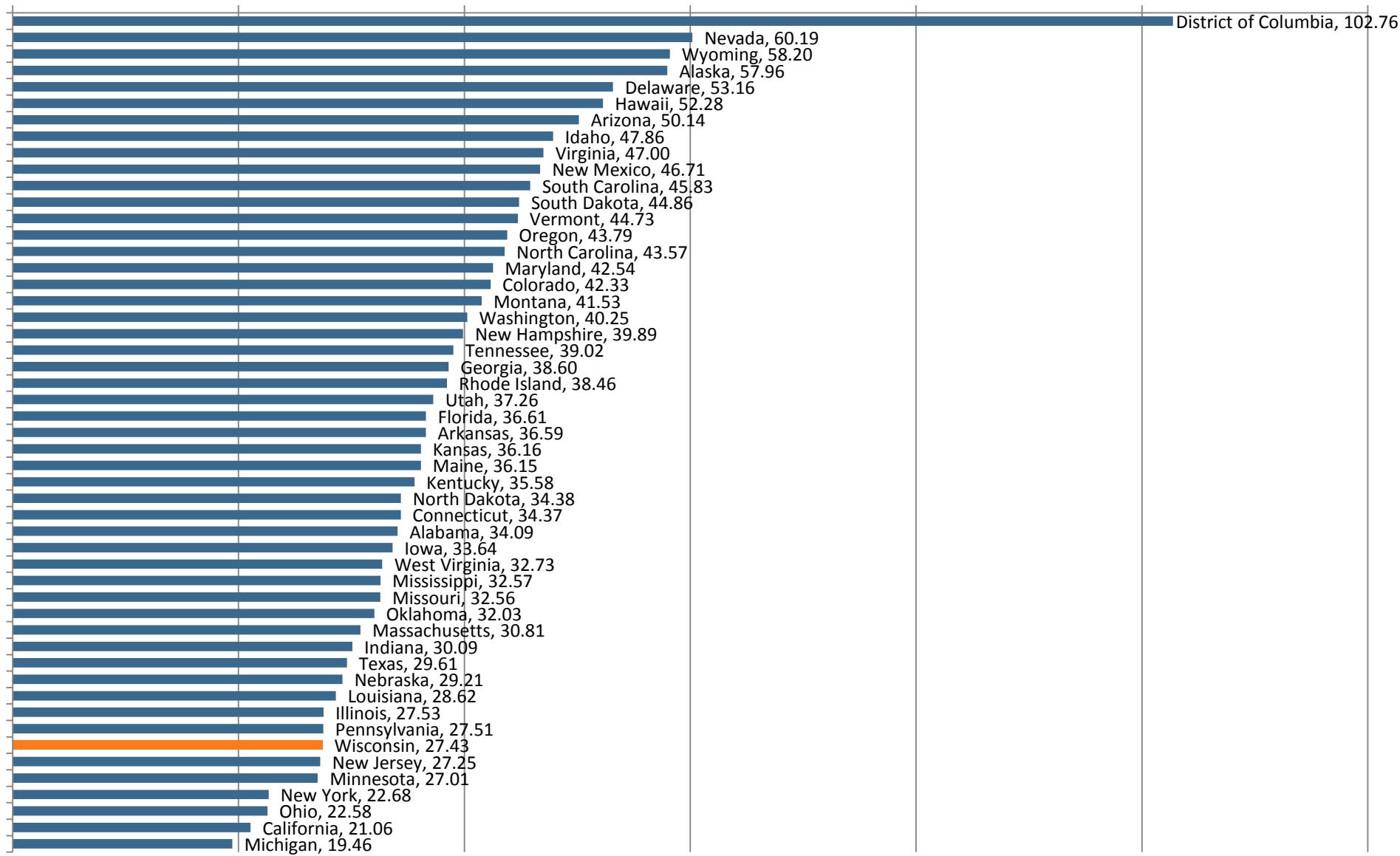
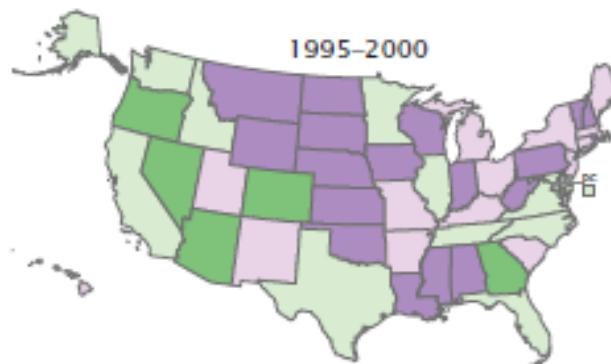
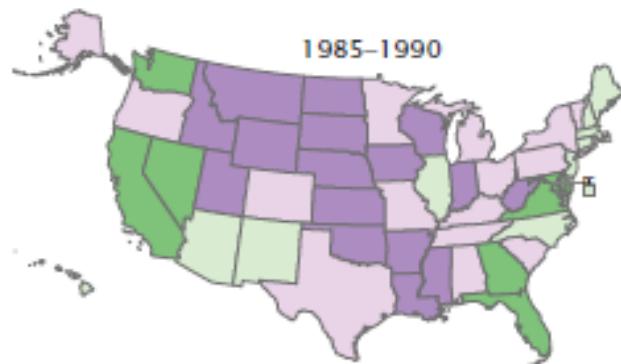
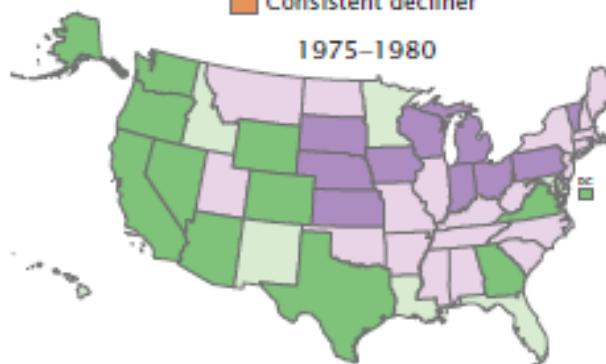
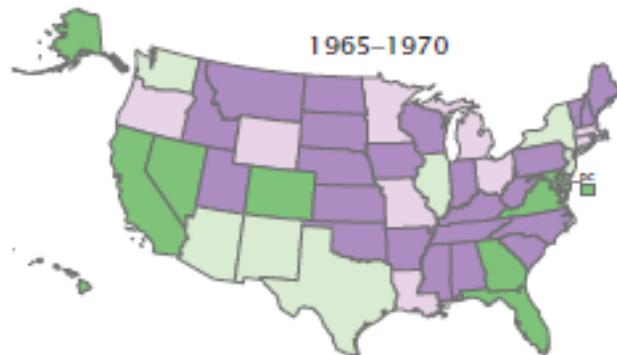
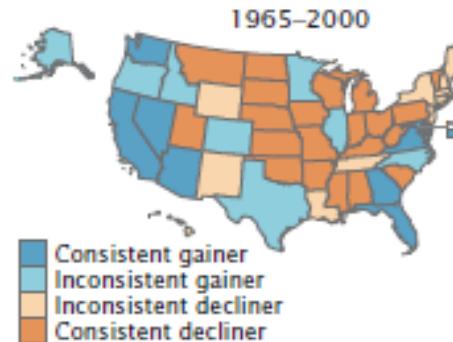


Figure 3.

Domestic Migration of the Young, Single, College-Educated Population by State: 1965 to 2000

Net migration rate (per 1,000 people)

100.0 or more 0.0 to 99.9 -100.0 to -0.1 Less than -100.0



Note: Based on their net migration rates for the four decades, states were classified into one of four categories: consistent gainer, consistent decliner, inconsistent gainer, and inconsistent decliner. Four decades of positive net migration rates resulted in a classification as consistent gainer, whereas four decades of out-migration resulted in a consistent decliner classification. States with both positive and negative net migration rates fell into the inconsistent categories, with the prevalence of each deciding on whether the state was classified as a gainer or decliner. If a state had an even number of positive and negative net migration rates, the rate recorded in Census 2000 was the determining factor.

Source: U.S. Census Bureau, Decennial Census of Population and Housing, 1970 to 2000.

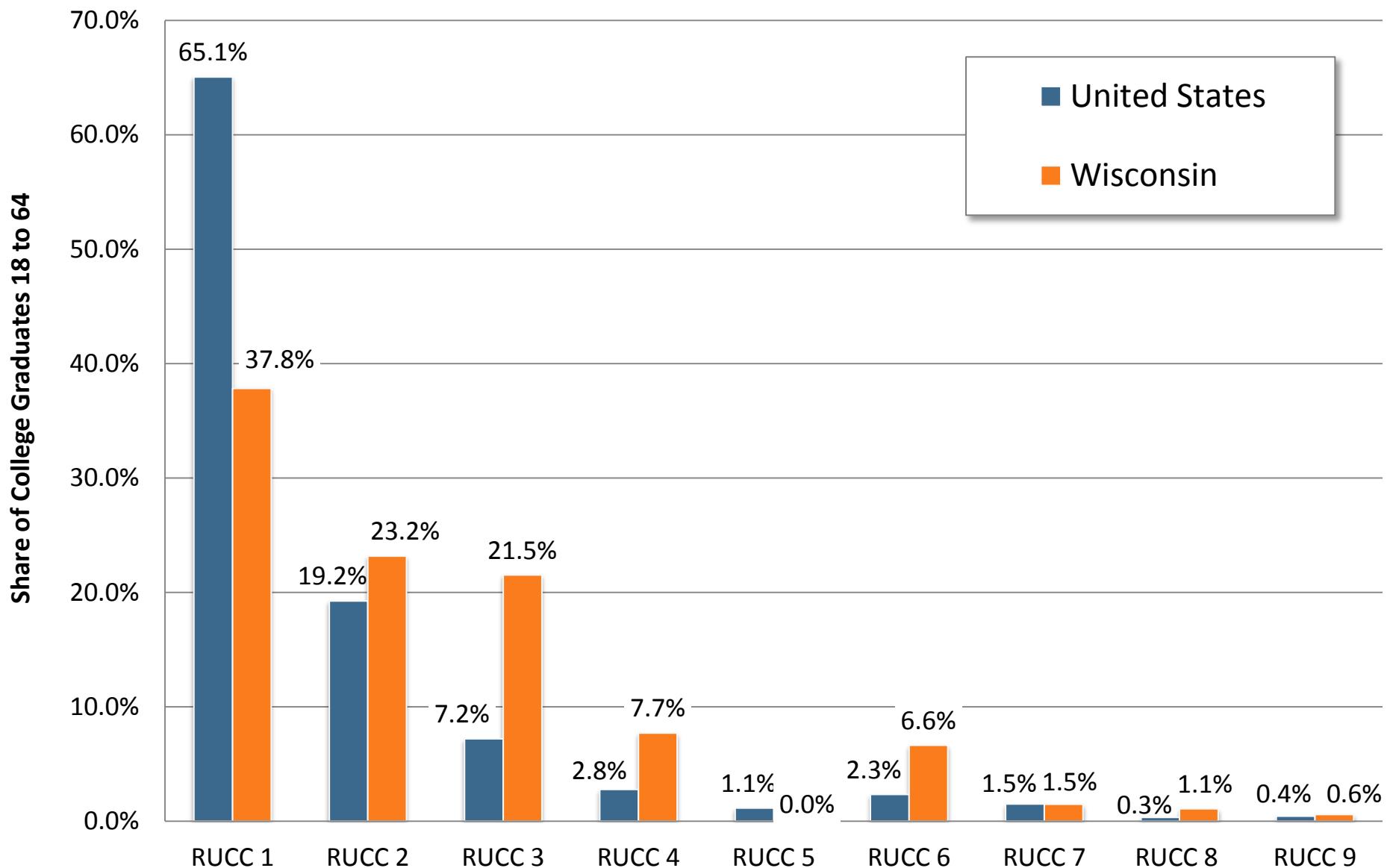
Negative Net Migration of College Graduates from Wisconsin is not a new Phenomenon (and Largely not Driven by Out-Migration).

“Several of the state’s citizens have pointed to these numbers or similar data as a sign that Wisconsin is experiencing a ‘brain drain’ – an alarming net loss of its educational capital (Drilias 1985). However, while the data clearly do signal a net loss of more highly educated persons, the use of emotive expressions such as ‘brain drain’ very likely is exaggerating the importance of what may also be viewed as a relatively small net migration difference.”

“Furthermore... there is evidence in detailed migration rates that Wisconsin is among the top third of states in the ability to retain college graduates. The net loss results largely from Wisconsin’s inability to attract more college educated in-migrants to the state during the 1975-80 period .”

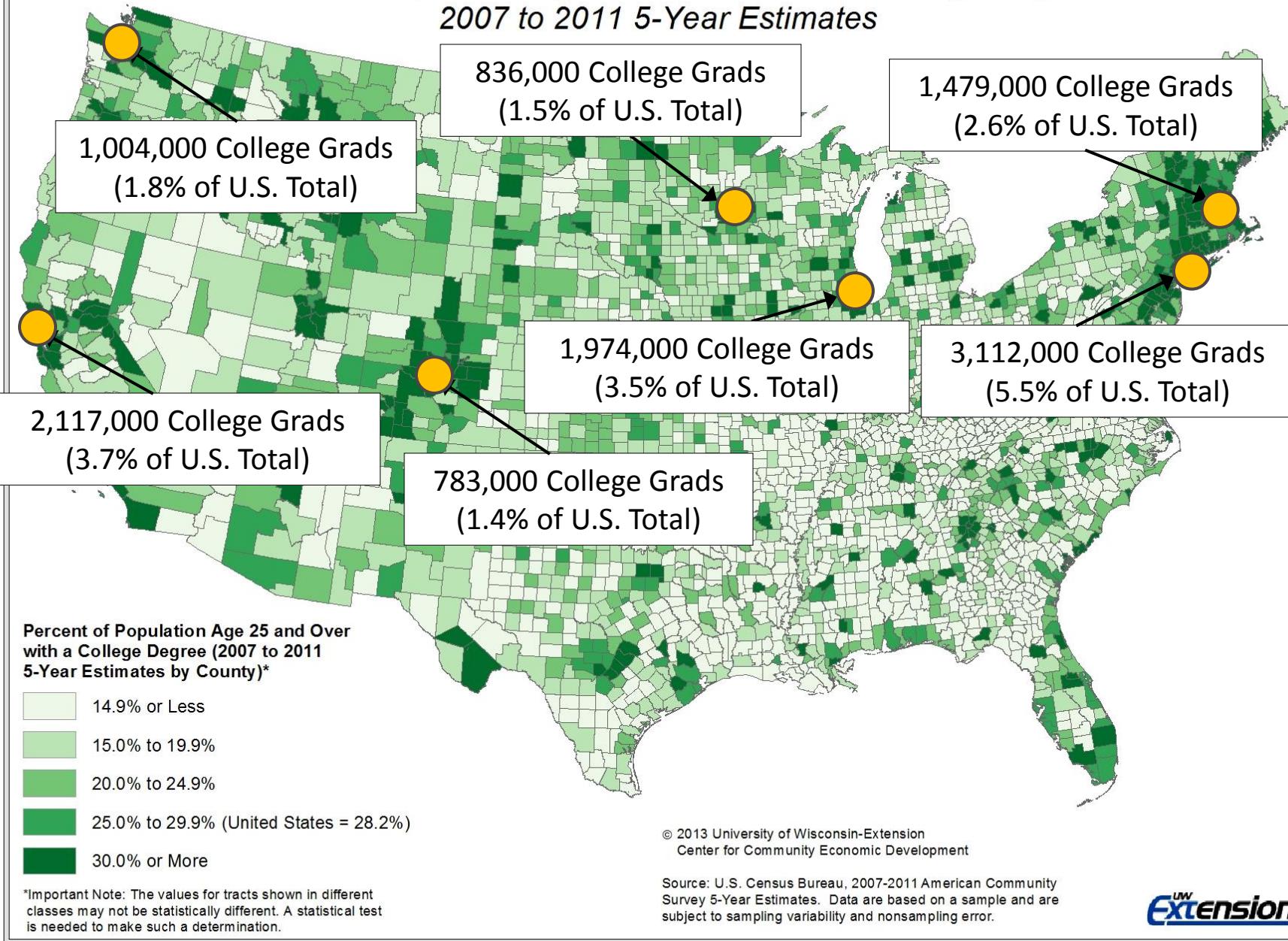
Voss, P.R. (1988) *State Policy Choices: The Wisconsin Experience*. Sheldon H. Danziger and John F. Witte eds. University of Wisconsin Press, Madison, WI.

Understanding Structural Conditions – Distribution of College Graduates Age 18 to 64 by Rural-Urban Continuum Code (2011-2015 5-Year Average)

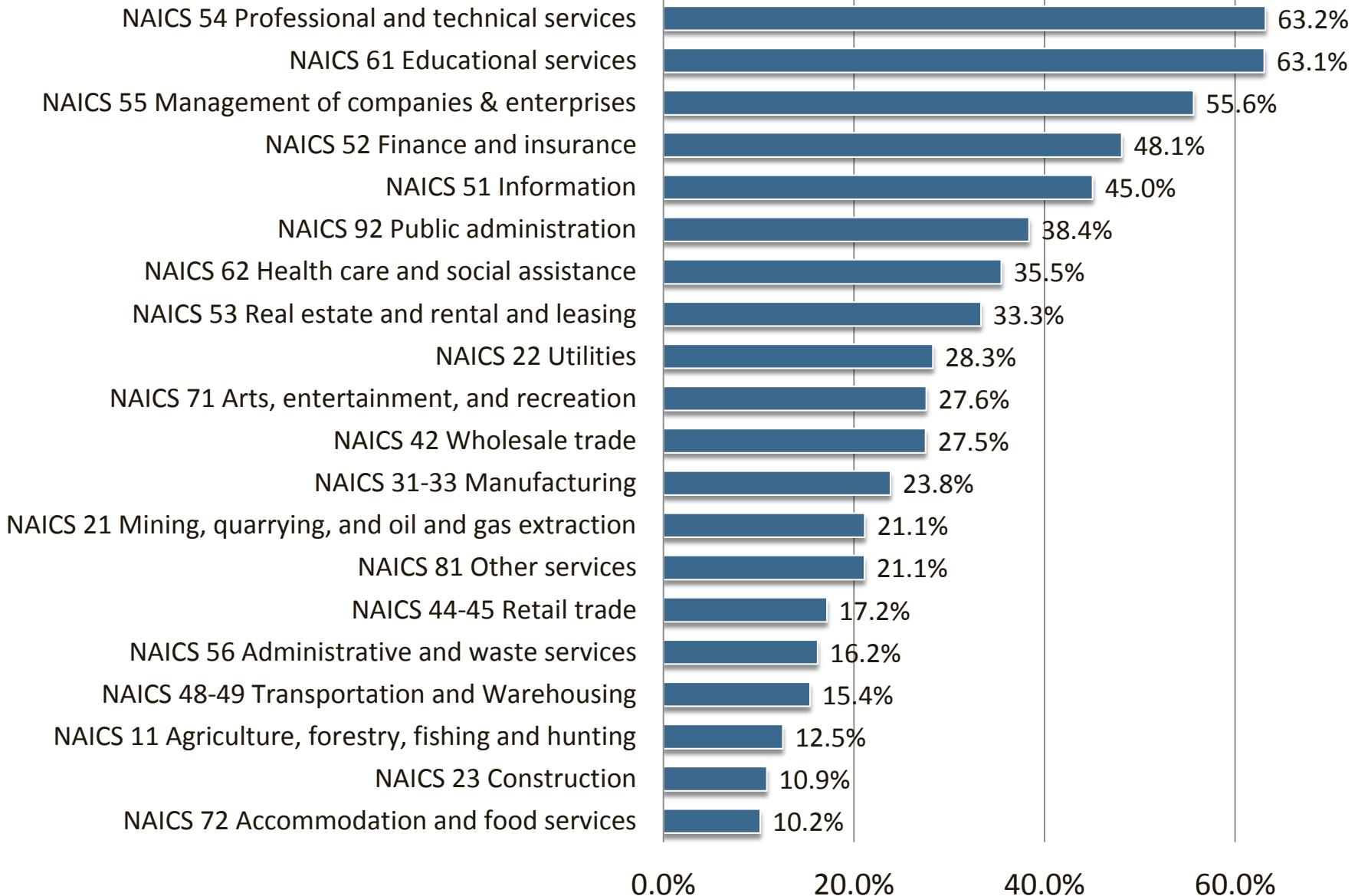


Source: U.S. Census Bureau 2011-2015 American Community Survey and Author's Calculations. Values are subject to margins of error.

Percent of Population Age 25 and Over with a College Degree 2007 to 2011 5-Year Estimates



Understanding Structural Conditions - National Share of Industry Sector Employees with a Bachelor's Degree or Higher



Source: U.S. Census Bureau 2011-2015 American Community Survey PUMS and Author's Calculations – Extracted from IPUMS
Values are subject to margins of error.

Understanding Structural Conditions - Wisconsin Employment and Average Wage Location Quotients by Industry Sectors with the Greatest Share of Employees with a College Degree

NAICS and Industry Description	% Bachelors or Higher	Employment LQ	Average Wage LQ
54 Professional and technical services	63.2%	0.60	0.90
61 Educational services	63.1%	0.86	1.13
55 Management of companies and enterprises	55.6%	1.54	0.97
52 Finance and insurance	48.1%	1.05	0.84
51 Information	45.0%	0.87	0.83
92 Public administration	38.4%	0.97	0.87
62 Health care and social assistance	35.5%	1.00	1.11
53 Real estate and rental and leasing	33.3%	0.60	0.85
22 Utilities	28.3%	0.74	1.12
71 Arts, entertainment, and recreation	27.6%	0.93	0.89
42 Wholesale trade	27.5%	1.06	1.00
31-33 Manufacturing	23.8%	1.88	0.99
21 Mining, quarrying, and oil and gas extraction	21.1%	0.25	0.70
81 Other services, except public administration	21.1%	0.95	0.91

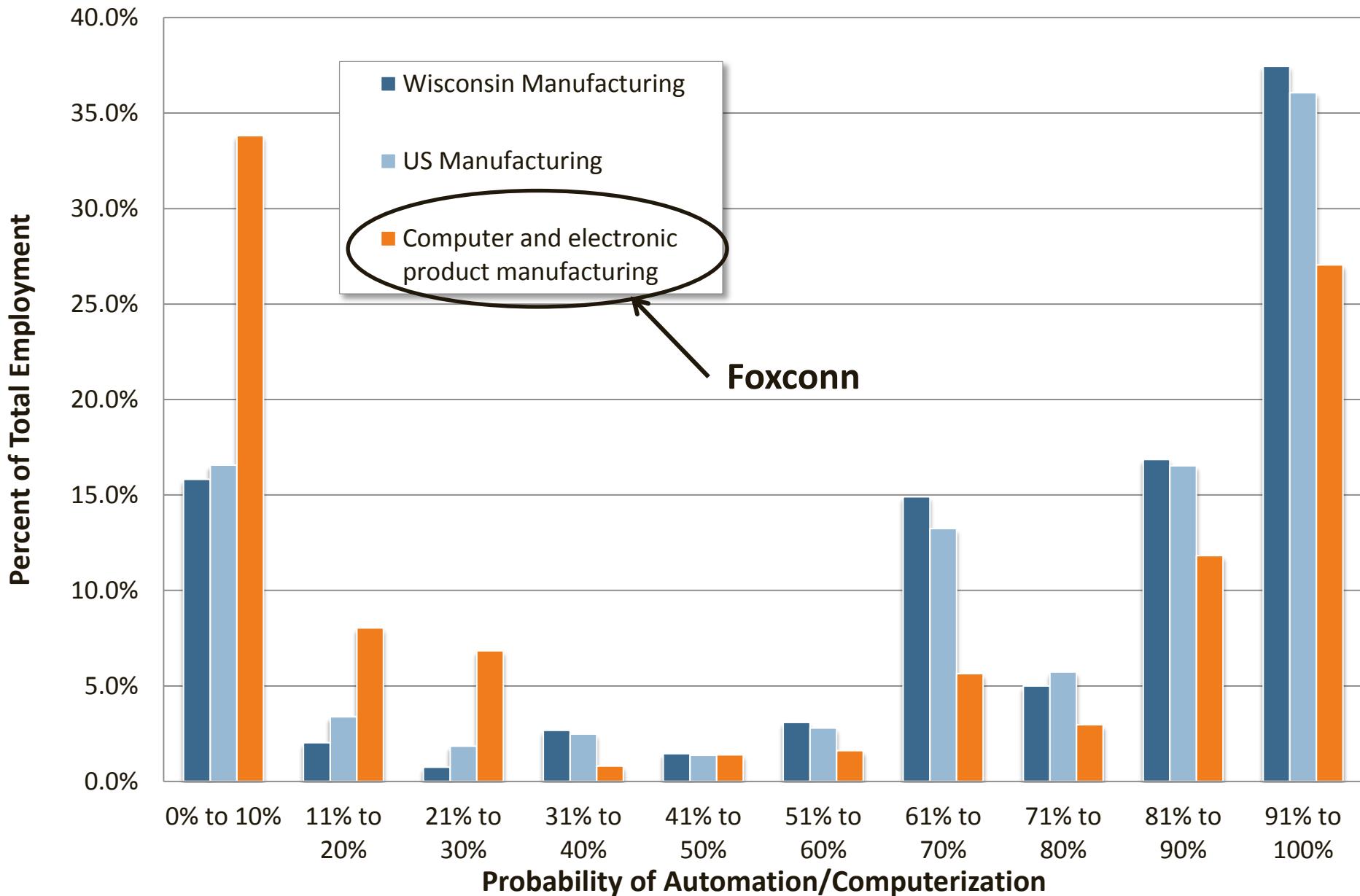
Understanding Structural Conditions - Wisconsin Employment and Average Wage Location Quotients by Manufacturing Sub Sectors with the Greatest Share of Employees with a Bachelor's Degree or Higher

NAICS and Industry Description	% Bachelors or Higher	Employment LQ	Average Wage LQ
334 Computer and electronic product manufacturing	48.3%	0.89	0.67
325 Chemical manufacturing	40.8%	1.07	1.02
324 Petroleum and coal products manufacturing	32.1%	0.20	0.16
339 Miscellaneous manufacturing	30.0%	1.17	1.09
312 Beverage and tobacco product manufacturing	28.7%	0.85	0.79
336 Transportation equipment manufacturing	27.4%	0.82	0.8
335 Electrical equipment and appliance mfg.	26.6%	3.12	3.74
333 Machinery manufacturing	23.4%	3.07	3.29
316 Leather and allied product manufacturing	20.2%	2.24	2.43
323 Printing and related support activities	19.2%	3.33	3.91
322 Paper manufacturing	17.5%	4.12	4.75
315 Apparel manufacturing	16.4%	0.34	0.3
327 Nonmetallic mineral product manufacturing	15.4%	1.18	1.27
331 Primary metal manufacturing	15.0%	2.15	2.16

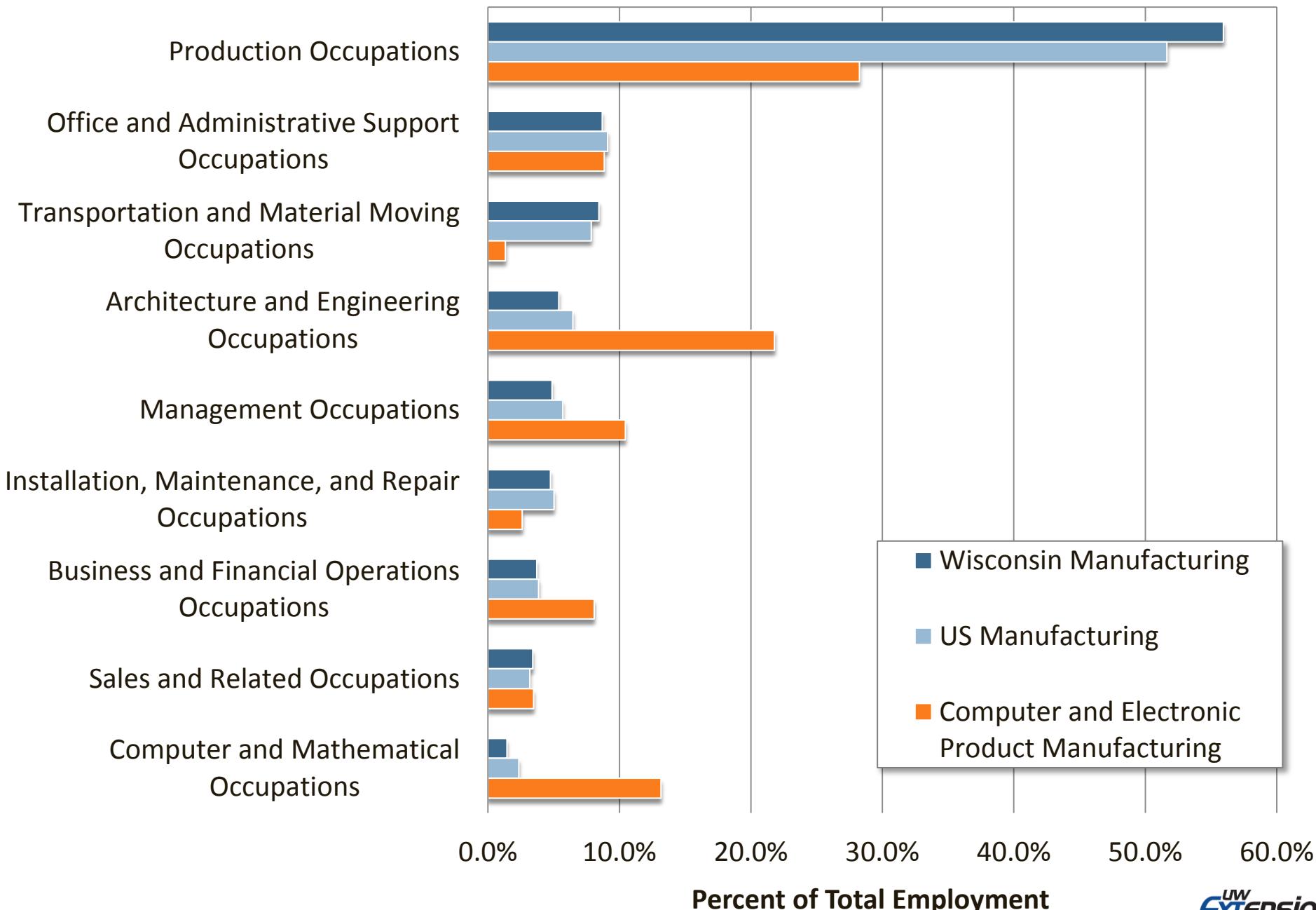
Wisconsin's Manufacturing Sector – 15 Most Common Occupations in 2016 and Probability of Automation/Computerization

NAICS and Industry Description	Number of Employees in WI Manufacturing	Automation Probability
Team Assemblers	32,310	97.0%
First-Line Supervisors of Production and Operating Workers	19,760	1.6%
Laborers and Freight, Stock, and Material Movers, Hand	14,770	85.0%
Machinists	13,080	65.0%
Welders, Cutters, Solderers, and Brazers	13,010	94.0%
Packaging and Filling Machine Operators and Tenders	11,860	98.0%
Inspectors, Testers, Sorters, Samplers, and Weighers	11,340	98.0%
Computer-Controlled Machine Tool Operators,	10,220	86.0%
Sales Representatives, Wholesale and Manufacturing	10,180	85.0%
Maintenance and Repair Workers, General	8,920	64.0%
Cutting, Punching, and Press Machine Setters, Operators, etc.	8,790	78.0%
Paper Goods Machine Setters, Operators, and Tenders	8,580	67.0%
Electrical and Electronic Equipment Assemblers	8,360	95.0%
Food Batchmakers	8,240	70.0%
Office Clerks, General	7,810	96.0%

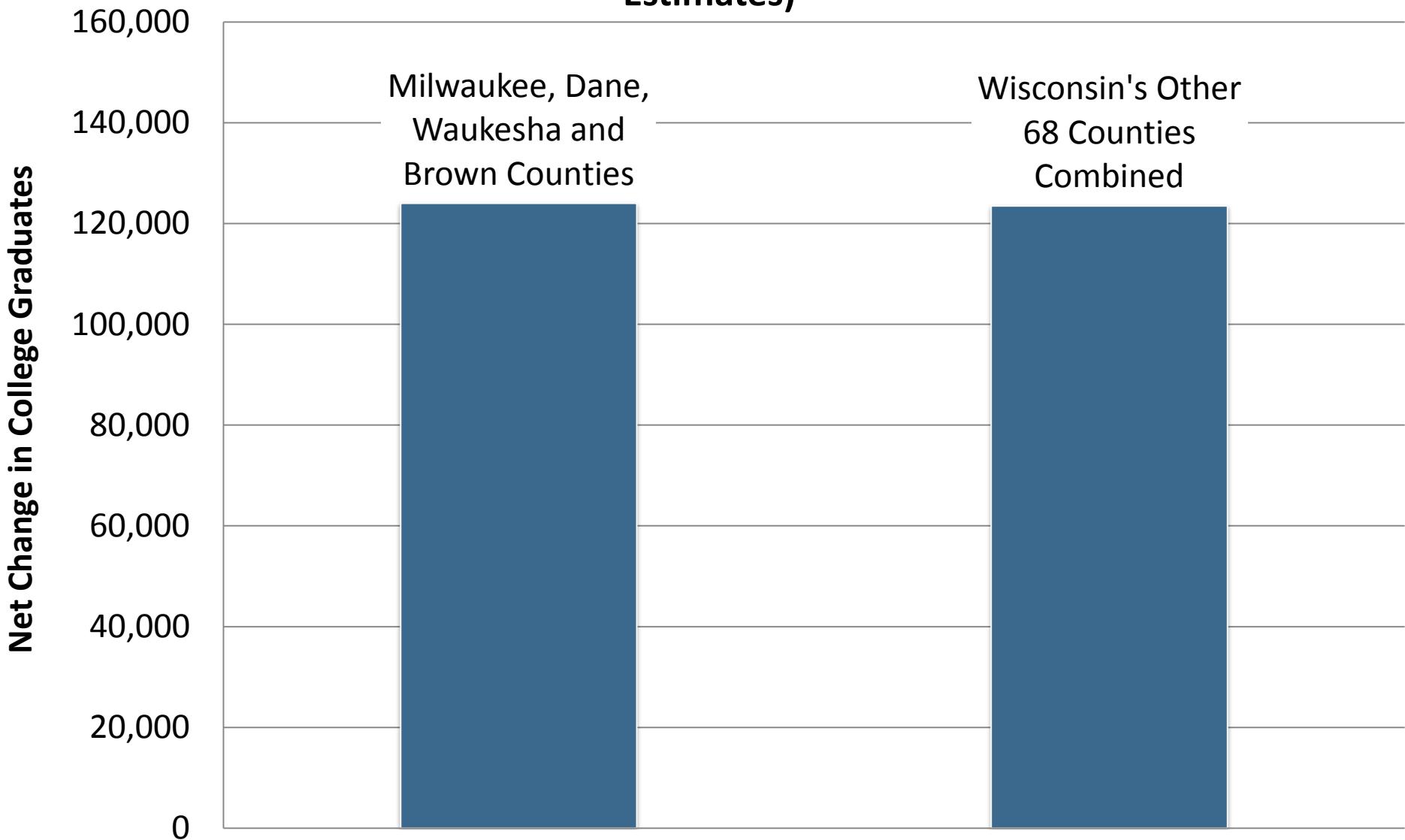
Distribution of Employment by Probability of Automation/Computerization



Share of Total Employment by Occupational Category (2016)

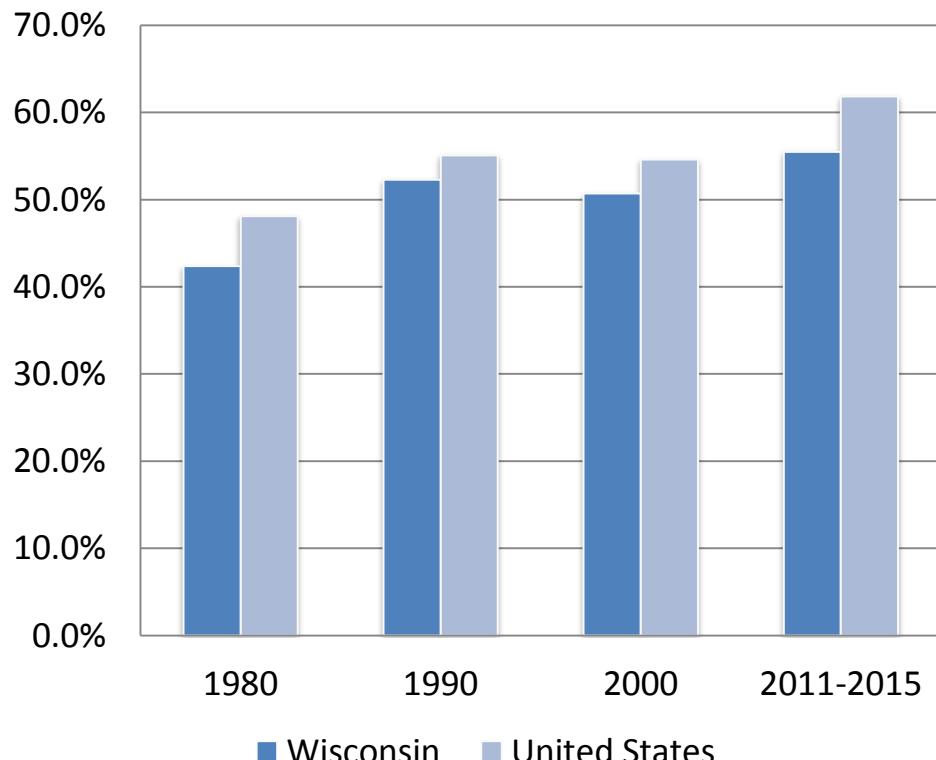


Understanding Structural Conditions – Wisconsin Net Change in College Graduates Age 18 to 64 (2000 and 2011-2015 5-Year Estimates)

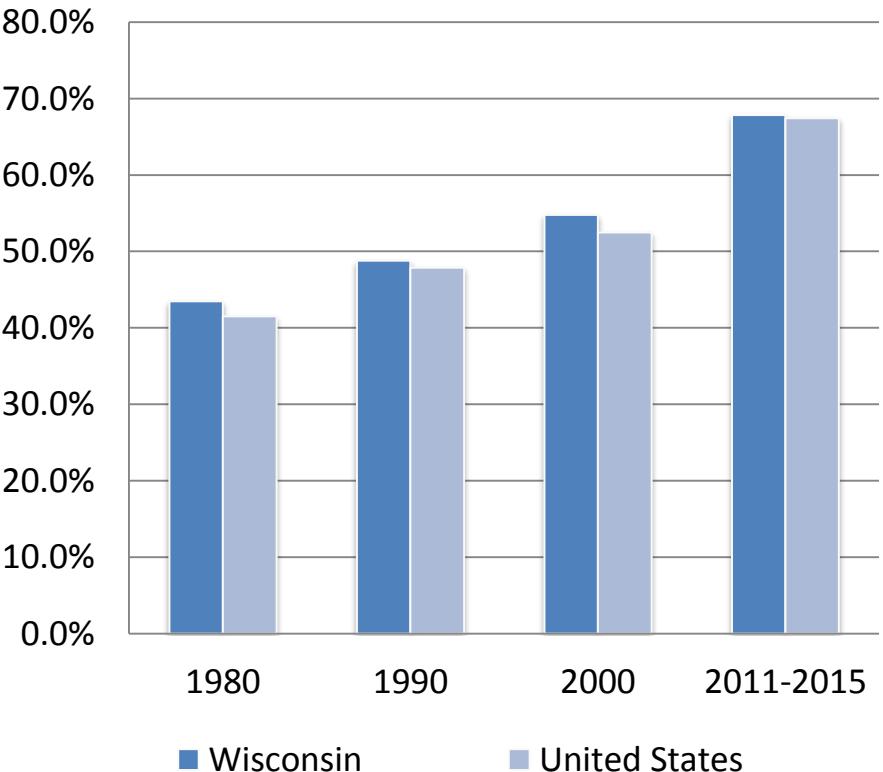


Are Communities Meeting the Needs of Potential Residents?

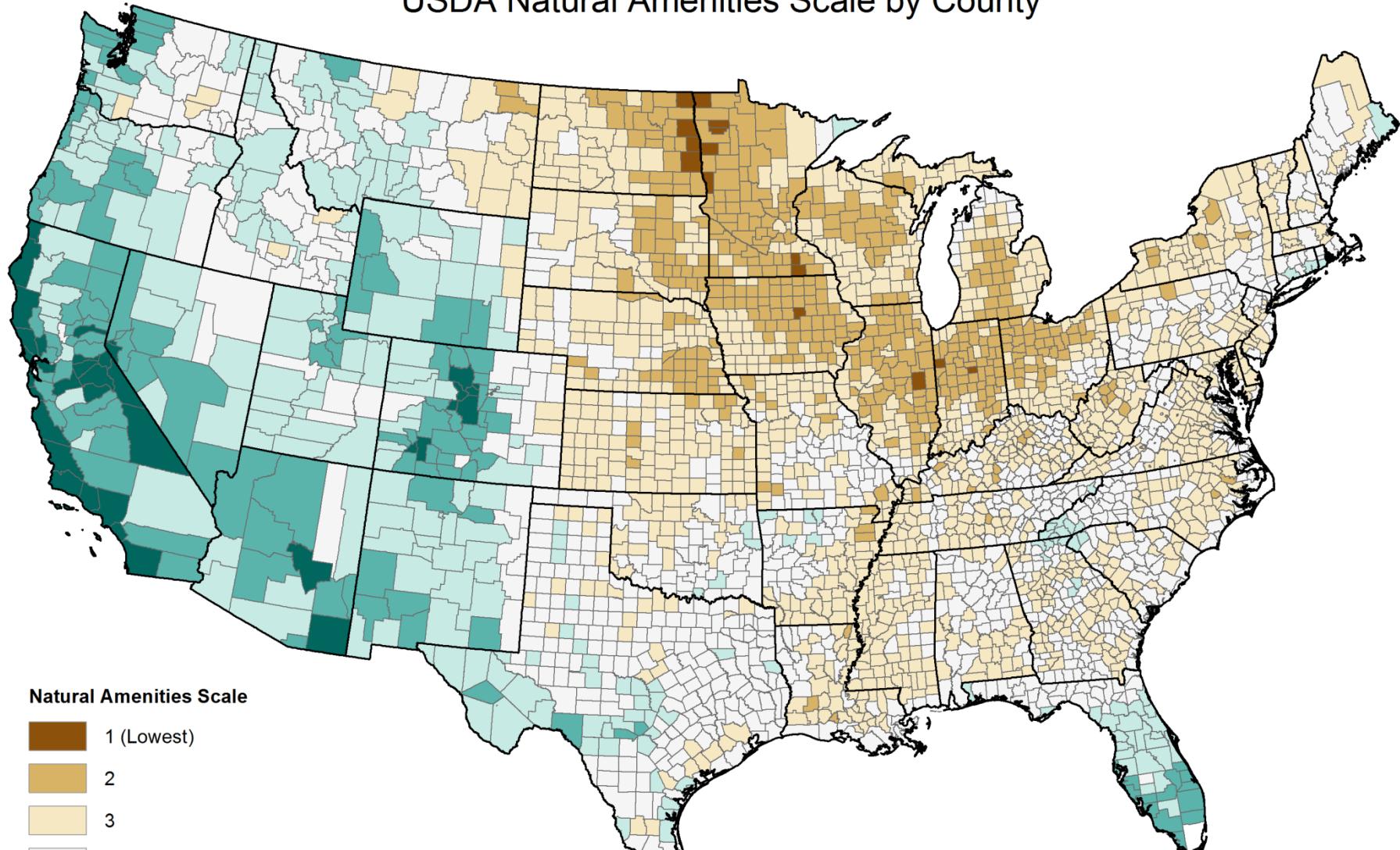
**Householders Ages 25 to 34 -
Percent in Renter Occupied Housing
Units**



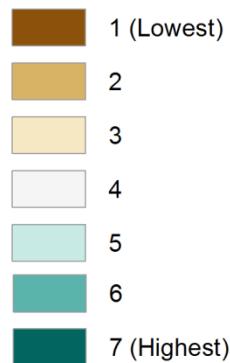
**Percent of Population
Ages 18 to 34 Who Have Never
Married**



USDA Natural Amenities Scale by County



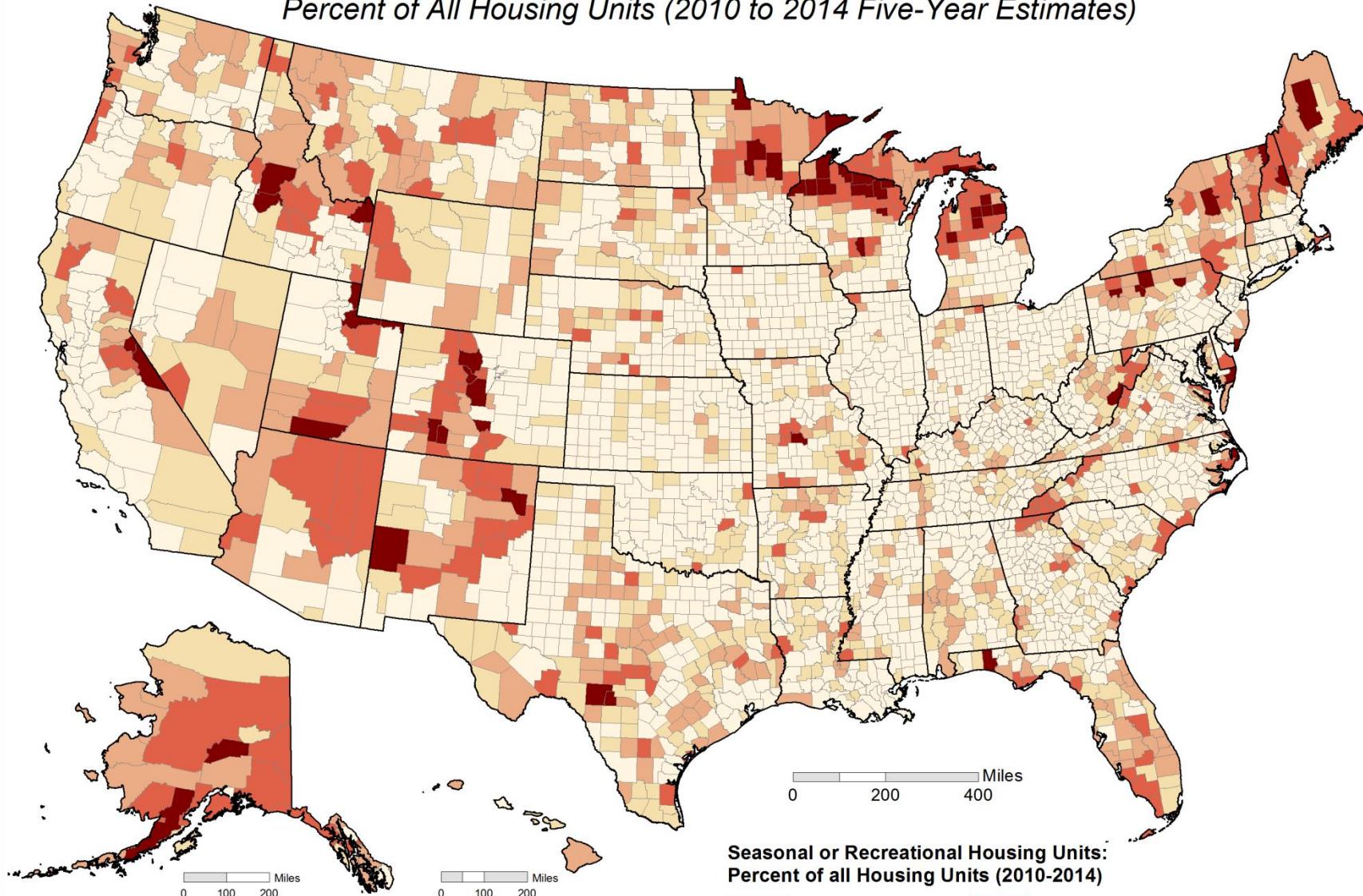
Natural Amenities Scale



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Center for Community and Economic Development

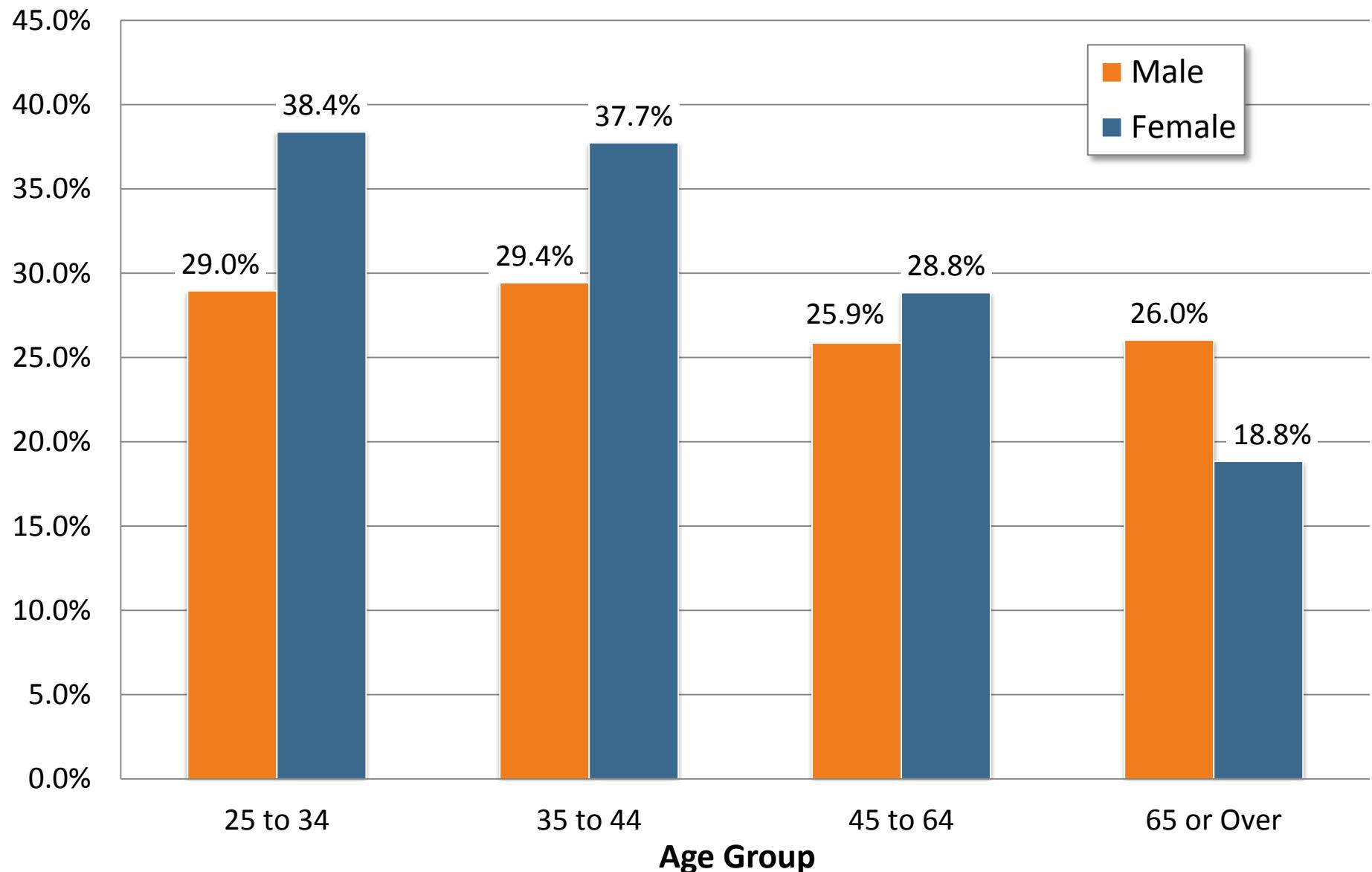
The natural amenities scale is a measure of the physical characteristics of a county area that enhance the location as a place to live. The scale is constructed by combining six measures of climate, topography, and water area that reflect environmental qualities most people prefer. These measures are warm winter, winter sun, temperate summer, low summer humidity, topographic variation, and water area (Source USDA)

Housing Units for Seasonal, Recreational or Occasional Use by County *Percent of All Housing Units (2010 to 2014 Five-Year Estimates)*

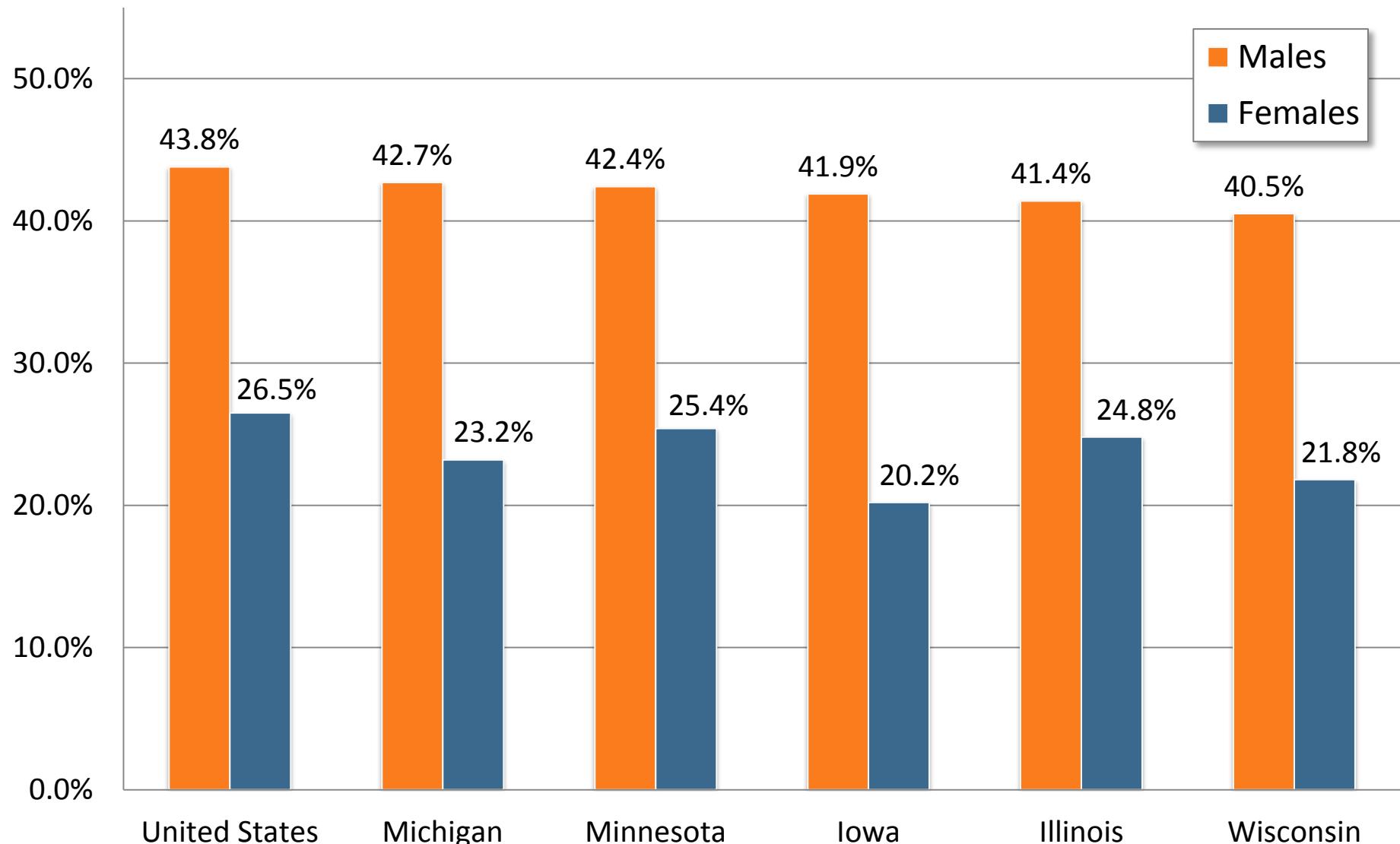


Data Source: U.S. Census Bureau 2010-2014 American Community Survey. Numbers are subject to a margin of error. Housing units for seasonal, recreational, or occasional use are vacant units used or intended for use only in certain seasons or for weekends or other occasional use throughout the year. Seasonal units include those used for summer or winter sports or recreation, such as beach cottages and hunting cabins. Seasonal units also may include quarters for such workers as herders and loggers. Interval ownership units, sometimes called shared-ownership or time-sharing condominiums, are included here.

Share of Wisconsin Residents with a College Degree by Gender and Age Group (2015)

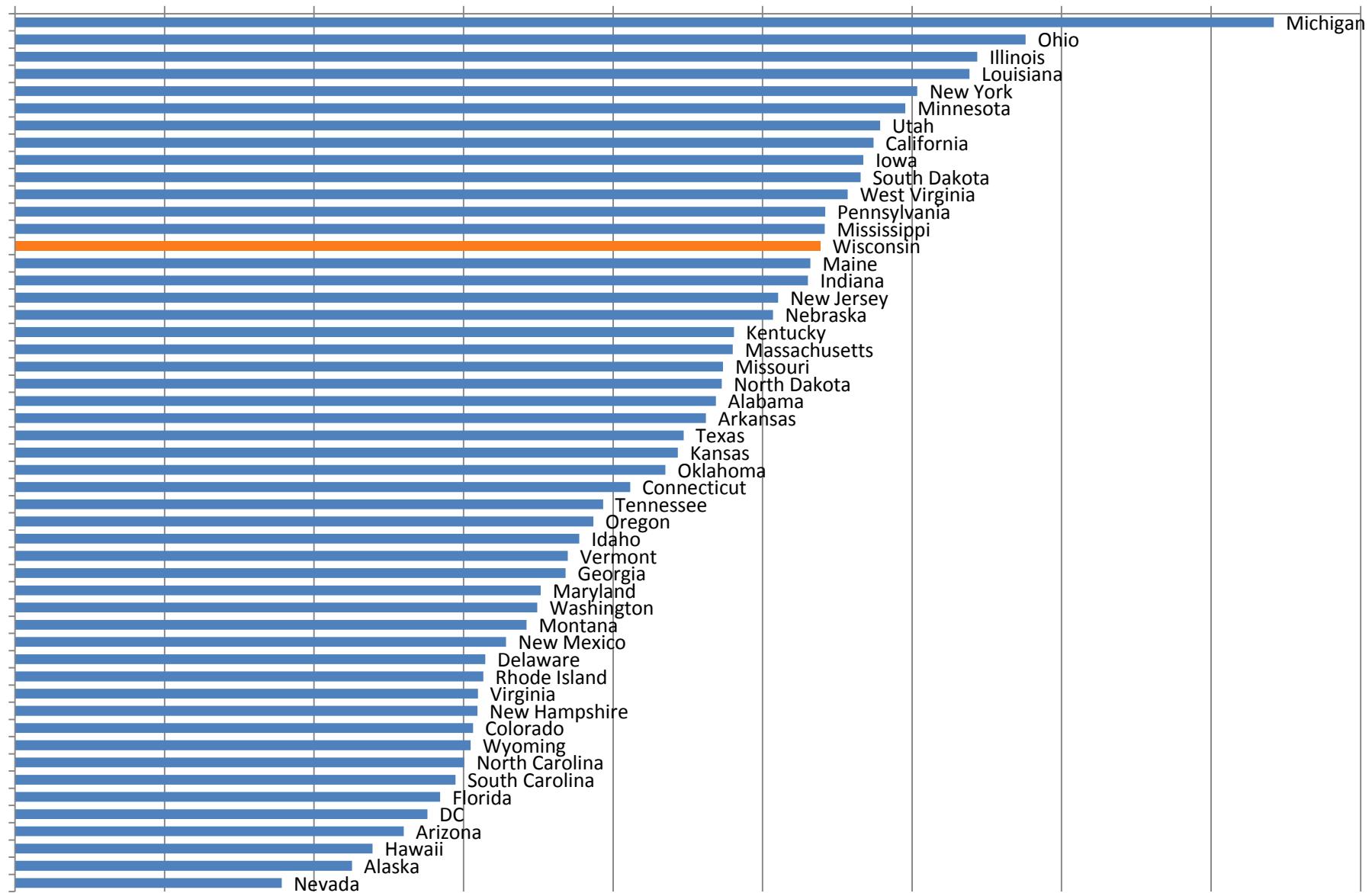


Share of Residents with their First Bachelor's Degree in Science or Technology Fields of Study (2015)

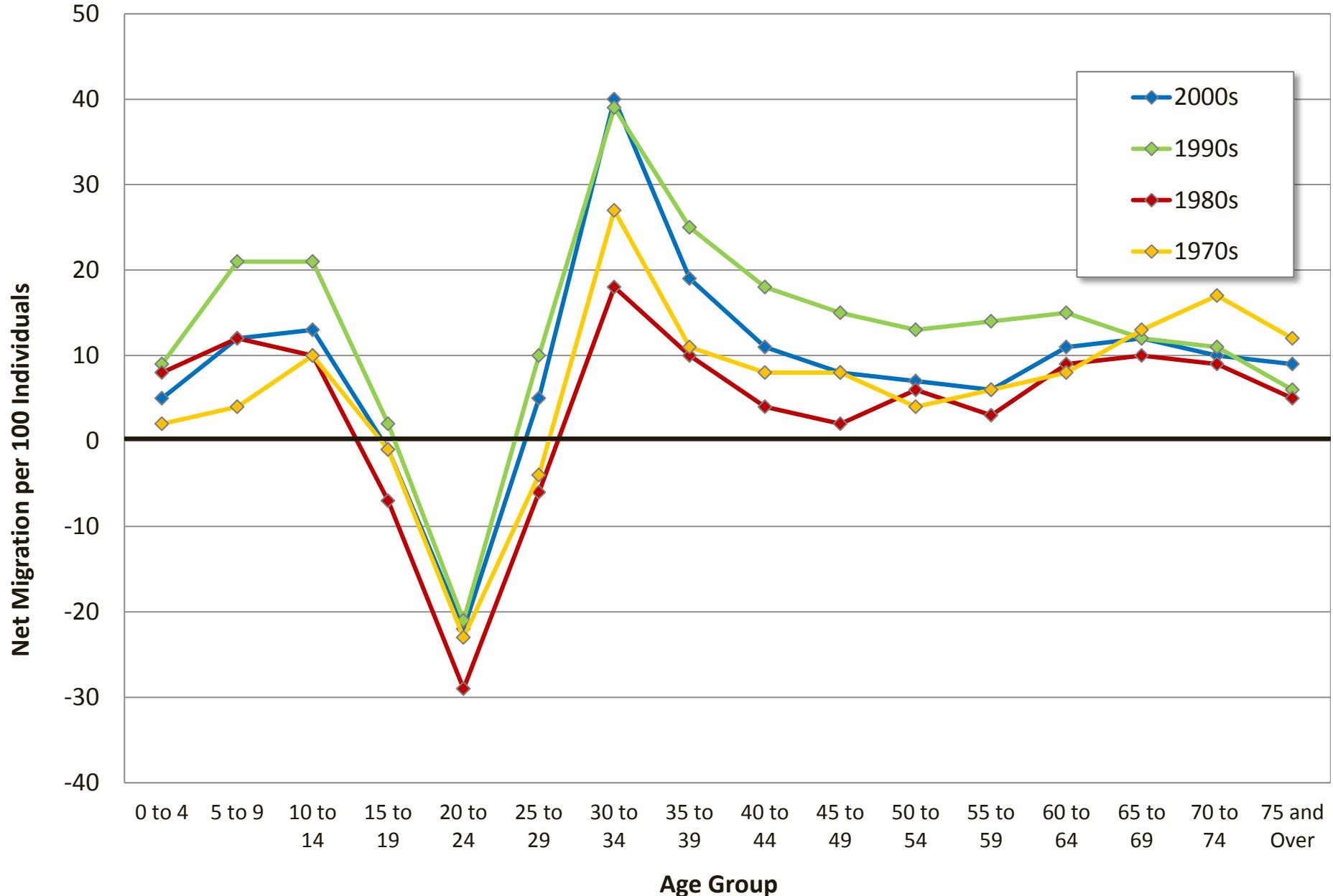


Do They Return? Domestic In-Migration by State 2010-2014

Share of In-Migrants who were also Born in the State (Boomerangs)



Sauk County Net Migration Rates by Age



Source: Age-Specific Net Migration Estimates for US Counties, 1950-2010. Applied Population Laboratory, UW-Madison, 2013

Focusing on Community Assets - Quality of Life Indicators

Life at Home-Housing

- Shelter for the Homeless
- Home Owners and Renters
- Fair Market Rent
- Number of Housing Units
- Age of Housing Stock
- The Cost of a Home
- Residential Building Permits
- Affordable access to high speed Internet

Life at Leisure

- Variety of Leisure Activities
- Support for the Arts
- Performing Arts
- Museums and Gallery Opportunities
- Library Programs
- City and County Parks
- Leisure License Sales
- Number of Third Spaces

Life at School

- Third Grade Reading Comprehension
- High School Graduation Rate
- American College Test (ACT)
- Post Secondary Education
- Extra-and Co-curricular Activities
- Habitual Truancy
- School District Expenditures
- Adult life learning opportunities

Life at Home-Children and Families

- Residents Living in Poverty
- Unmet Basic Needs
- Hunger
- Free and Reduced-Price School Lunches
- Family Structure
- Childcare
- Senior Living Arrangements
- Retirement Activities
- Nutrition
- Health Care Availability

Focusing on Community Assets - Quality of Life Indicators

Life in our Natural Environment

- Ambient Air Quality
- Water Quality & Quantity
- Soil Erosion
- Solid Waste
- Preservation of ag lands
- Preservation and maintenance of environmental corridors

Life Together-Civics and Diversity

- Population Growth
- Demographics
- Voter Participation
- Political Races
- Civil Rights/Discrimination
- Cultural Diversity
- Volunteerism

Life Together-Public Safety

- Perception of Public Safety
- Alcohol and Drug Arrests
- Property Crime
- Violent Crime
- Proportion of Solved Crimes
- Probation and Parole
- Emergency Preparedness

Life on the Road

- Commute Time to Work
- Direct flights
- Mass transit options
- Transportation investments
- Traffic congestion/traffic counts
- Traffic Crashes
- Bike/ped options/trails
- Senior/accessible transit options

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