

America's Mega Trends and How They Will Change (Almost) Everything

Arthur C. Nelson, Ph.D., FAICP

Associate Dean for Research & Discovery

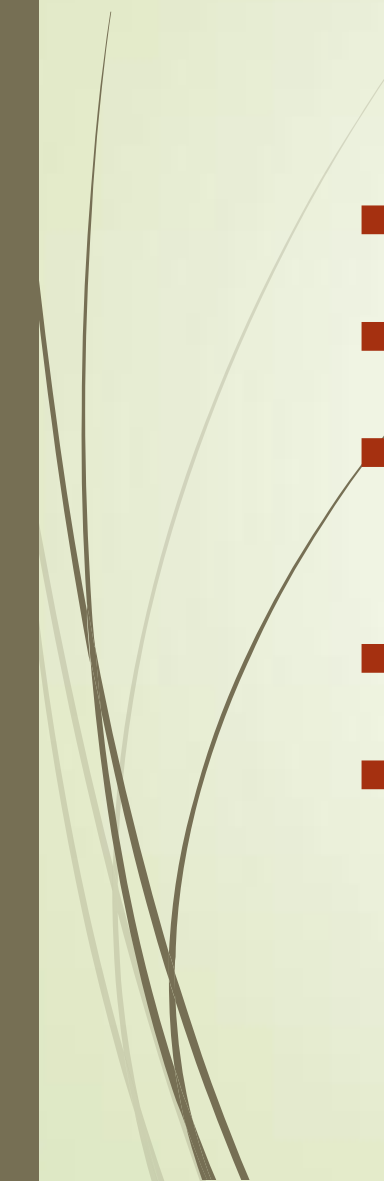
**College of Architecture, Planning and Landscape
Architecture**

University of Arizona

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Themes

- **The rise of Megapolitan America**
 - **Sweeping Demographic Changes**
 - **Emerging Preferences for Something Different**
 - **Disinvestment in the Future**
 - **Implications**
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FOREWORD BY CONGRESSMAN EARL BLUMENAUER

Reshaping Metropolitan America

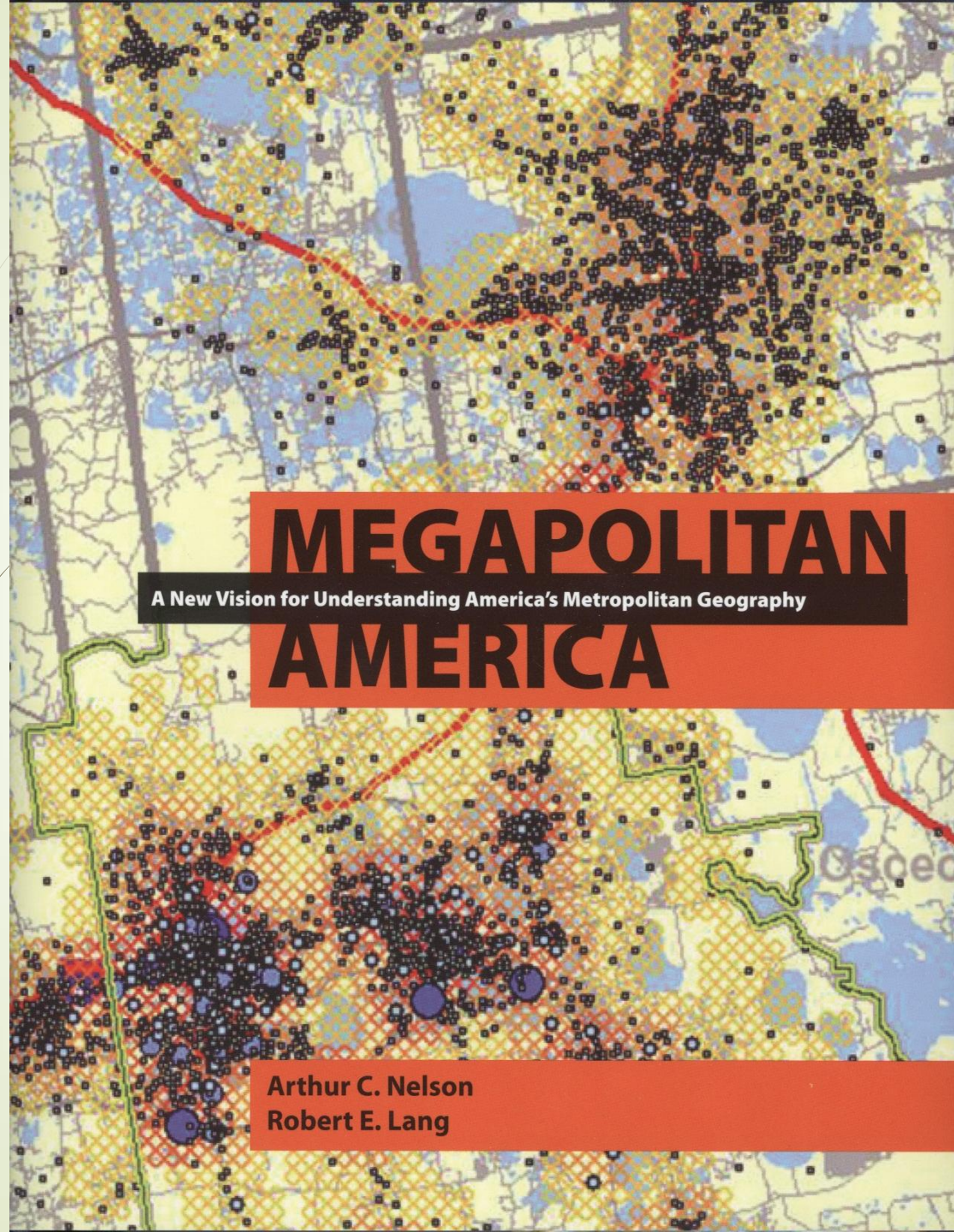
*Development Trends
and Opportunities to 2030*



ARTHUR C. NELSON

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MEGAPOLITAN

A New Vision for Understanding America's Metropolitan Geography

AMERICA

Arthur C. Nelson
Robert E. Lang




Megapolitan Area

Constituting multiple metropolitan areas and their immediate hinterlands as a single economic unit connected through culture, politics, climate, terrain anchored by at least one metropolitan area of more than 2 million people economically networked to at least 2 metropolitan areas of more than 250,000 people within 180 miles and together comprising at least 4 million people by 2040.

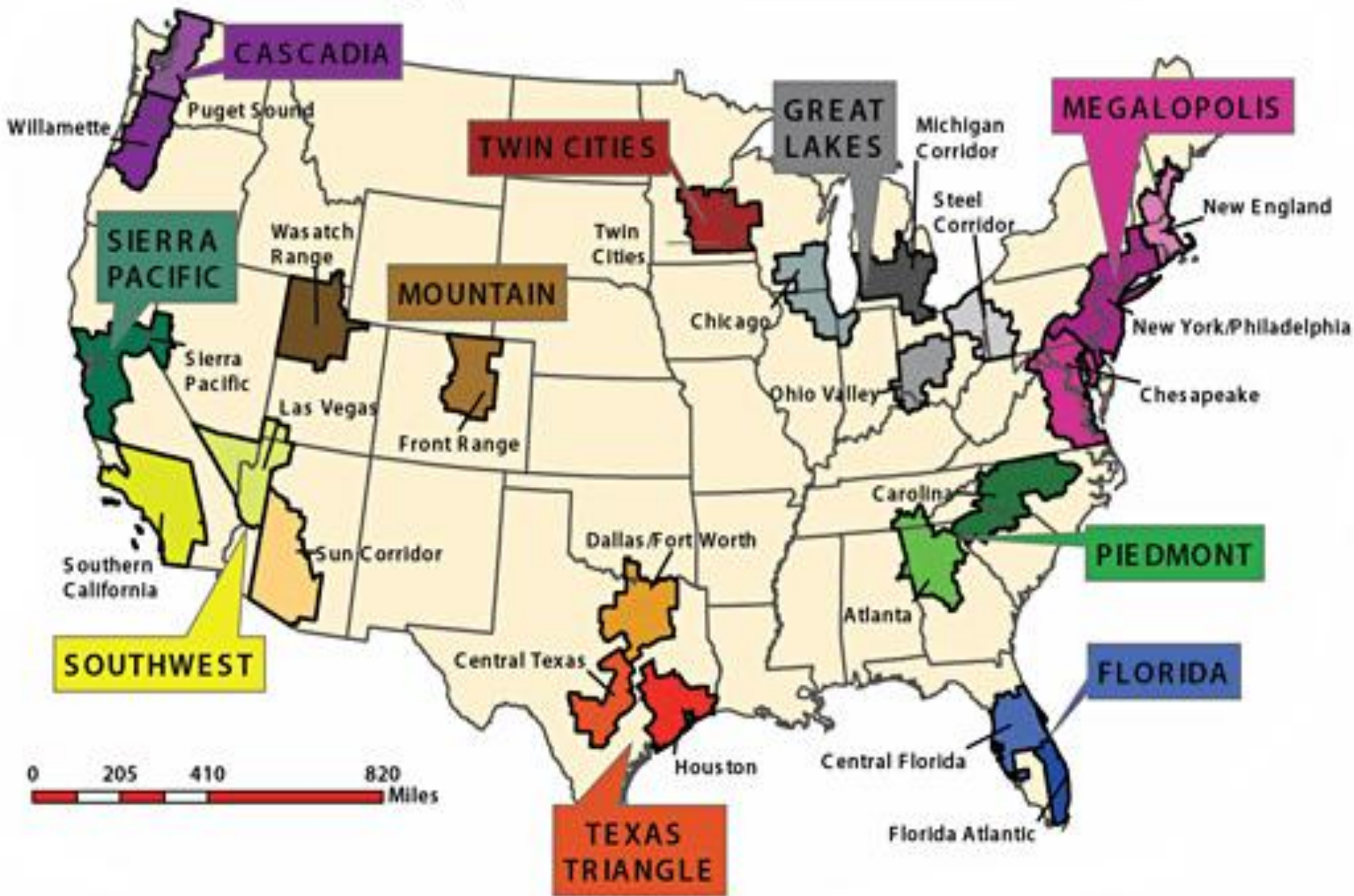


Megapolitan Region

Constituting multiple megapolitan areas as an extended single network connected through culture, politics, climate, terrain.



Megapolitan America/48 States





UNITED KINGDOM

THE NETHERLANDS

GERMANY

BELGIUM

FRANCE

CZECH REPUBLIC

AUSTRIA

SWITZERLAND

ITALY

SLOVENIA

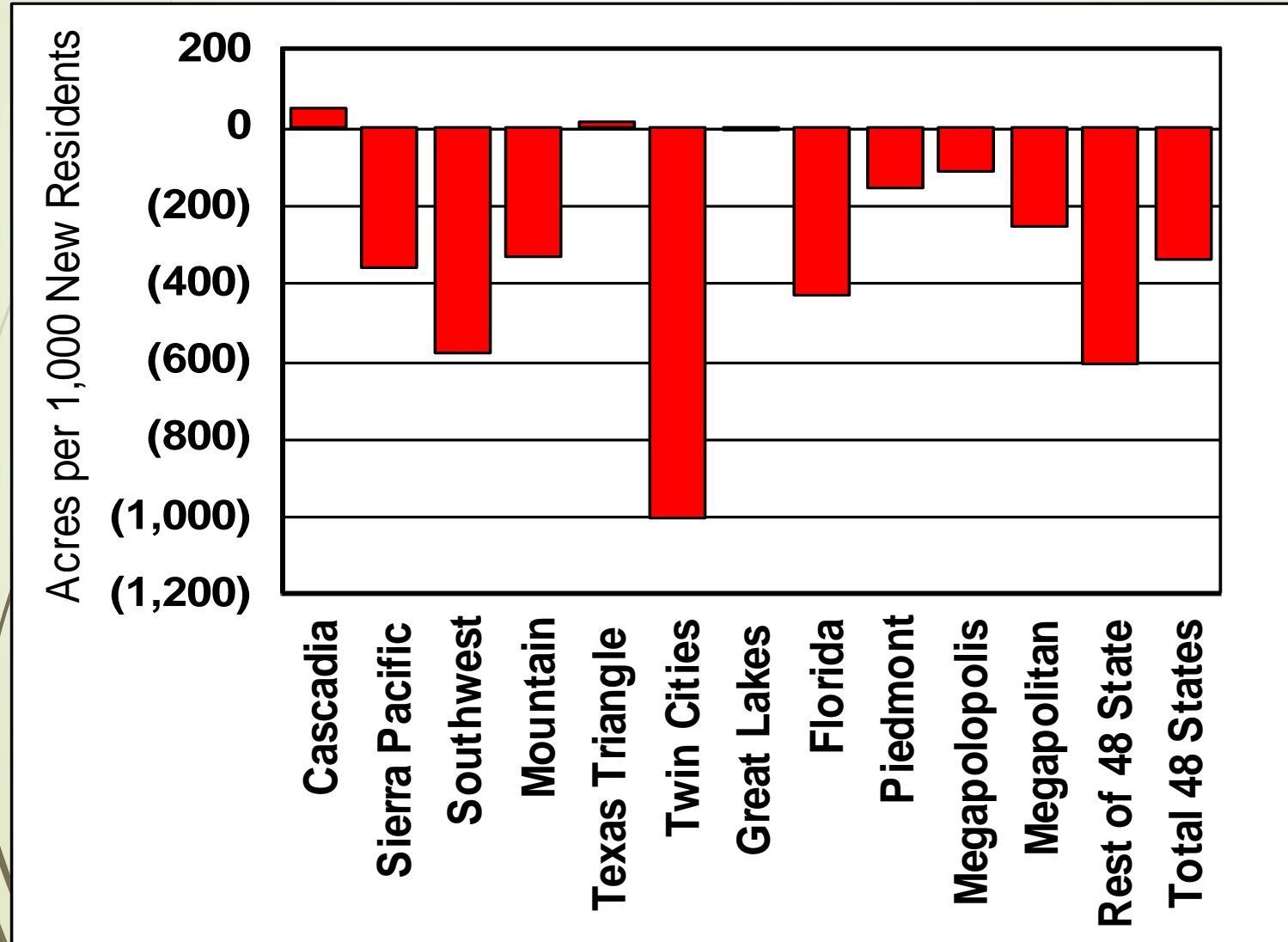
Megapolitan Region Population 2010-2040

Megapolitan Cluster	2010	2040	Change 2010-2040	Percent Change 2010-2040
Cascadia	7,993	11,333	3,340	42%
Sierra Pacific	12,381	16,386	4,005	32%
Southwest	30,552	43,296	12,744	42%
Mountain	6,545	10,033	3,489	57%
Texas Triangle	18,456	28,158	9,702	53%
Twin Cities	5,002	6,745	1,744	35%
Great Lakes	34,710	40,149	5,439	16%
Florida	14,304	21,138	6,834	48%
Piedmont	15,763	22,672	6,909	48%
Megalopolis	53,343	66,040	12,697	28%
Megapolitan Regions	199,048	265,950	66,902	38%
Rest of Contiguous States	108,996	138,300	29,304	27%
Megapolitan Share of 48 States	65%	66%		70%

Megapolitan Ethnicity Change 2010-2040

Megapolitan Cluster	Population Change 2010-2040	White Non-Hispanic Population Change 2010-2040	New Majority Population Change 2010-2040	New Majority Share of Growth, 2010-2040
Cascadia	3,200	335	2,865	90%
Sierra Pacific	4,005	(602)	4,607	115%
Southwest	12,744	(973)	13,717	108%
Mountain	3,505	1,040	2,465	70%
Texas Triangle	9,702	1,417	8,286	85%
Twin Cities	1,605	589	1,016	67%
Great Lakes	5,439	(566)	6,005	110%
Florida	6,834	267	6,567	96%
Piedmont	6,911	1,387	5,524	80%
Megalopolis	13,206	(2,672)	15,878	120%
Megapolitan Regions	67,151	222	66,929	100%
Rest of Contiguous States	29,055	8,683	20,372	70%

Agricultural Land Lost, 1997-2007





New Housing Market Realities

Sub-prime mortgages are history.

20% down-payments are the new normal.

Meaning

- ***Smaller homes → maybe more people per home***
- ***Smaller lots***
- ***More attached units***
- ***More renters → including doubled-up renters***

Population Change 2010-2040

Metric	United States	Arizona	Tucson	Phoenix
Population 2010	309,350	6,414	982	4,211
Population 2040	406,417	10,227	1,512	6,928
Population Change, 2010-40	97,067	3,813	530	2,717
Percent Pop Change, 2010-40	31%	59%	54%	65%

Source: Adapted from Woods & Poole by Arthur C. Nelson

Population 65+ Change 2010-2040

Metric	United States	Arizona	Tucson	Phoenix
Population 2010	40,331	885	152	517
Population 2040	81,250	2,038	353	1,253
Population Change, 2010-2040	40,919	1,153	202	736
Percent Population Change	101%	130%	133%	142%
Share of Population Change	42%	30%	38%	27%

Source: Adapted from Woods & Poole by Arthur C. Nelson

Population Race/Ethnicity Change 2010-2040

Metric	United States	Arizona	Tucson	Phoenix
Baseline				
Population Change, 2010-2040	97,067	3,813	530	2,717
White Non-Hispanic				
Population 2010	201,912	3,810	559	2,541
Population 2040	210,932	4,701	670	3,180
Population Change, 2010-2040	9,020	891	111	639
Percent Population Change, 2010-2040	9%	23%	21%	24%
New Majority				
Population 2010	107,438	2,604	423	1,670
Population 2040	195,485	5,526	842	3,748
Population Change, 2010-2040	88,047	2,922	419	2,078
Percent Population Change, 2010-2040	91%	77%	79%	76%

Source: Adapted by Arthur C. Nelson from Woods & Poole

Net Change in Households by Type, 2010-2040

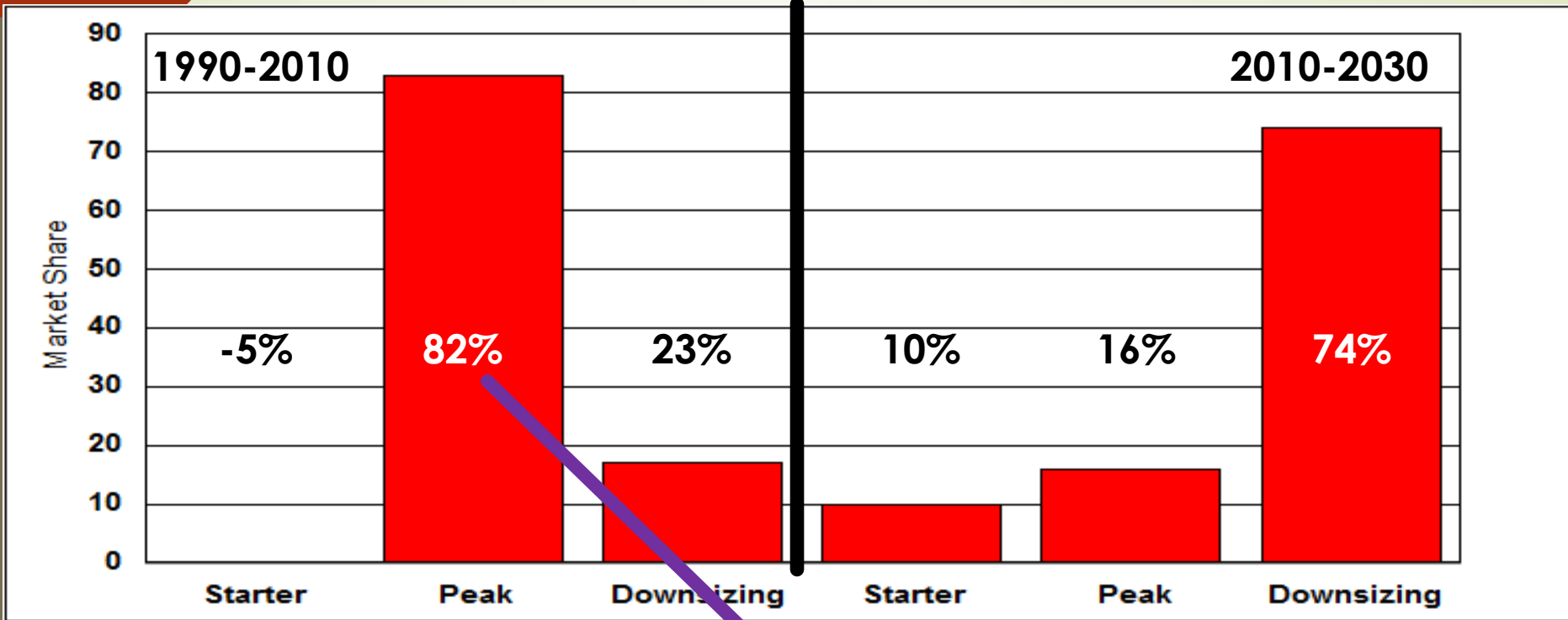
Metric	Nation	Arizona	Tucson	Phoenix
Baseline, 2010	116,945	2,389	389	1,544
Households with Children	34,814	709	102	487
2+ Person HHs Without Children	50,867	1,057	173	664
Single-Person Households	31,264	623	114	393
Household Growth by Type, 2010-2040				
Households 2040	152,171	3,790	599	2,535
Household Growth	35,226	1,401	209	991
HHs with Children	41,568	1,046	140	752
HHs with Children Growth	6,754	337	38	265
HHs with Children Share of Growth	19%	24%	18%	27%
2+ Person HHs Without Children	63,701	1,632	260	1,065
HHs Without Children Growth	12,834	575	87	401
HHs W/out Children Share of Growth	36%	41%	42%	40%
Single-Person HHs	46,902	1,112	199	718
Single-Person HHs Growth	15,638	489	85	325
Single-Person HHs Share of Growth	44%	35%	41%	33%

Source: Arthur C. Nelson

Net Change in Households by Age, 2010-2040

Metric	United States	Arizona	Tucson	Phoenix
<i>Change in Household Growth by Age, 1990-2010</i>				
Household Change	24,951	1,017	127	696
Change in Households <35	(1,285)	111	7	94
Change in Households 35-64	20,457	650	82	456
Change in Households 65+	5,779	256	38	147
Households <35 Share of Growth	-5%	11%	6%	13%
Households 35-64 Share of Growth	82%	64%	65%	65%
Households 65+ Share of Growth	23%	25%	30%	21%
<i>Change in Household Growth by Age, 2010-2040</i>				
Household Change	35,226	1,401	209	991
Change in Households <35	5,885	280	33	219
Change in Households 35-64	10,041	557	73	425
Change in Households 65+	19,300	564	103	347
Households <35 Share of Growth	17%	20%	16%	22%
Households 35-64 Share of Growth	29%	40%	35%	43%
Households 65+ Share of Growth	55%	40%	49%	35%

The US Mass Market for Sprawl is Over

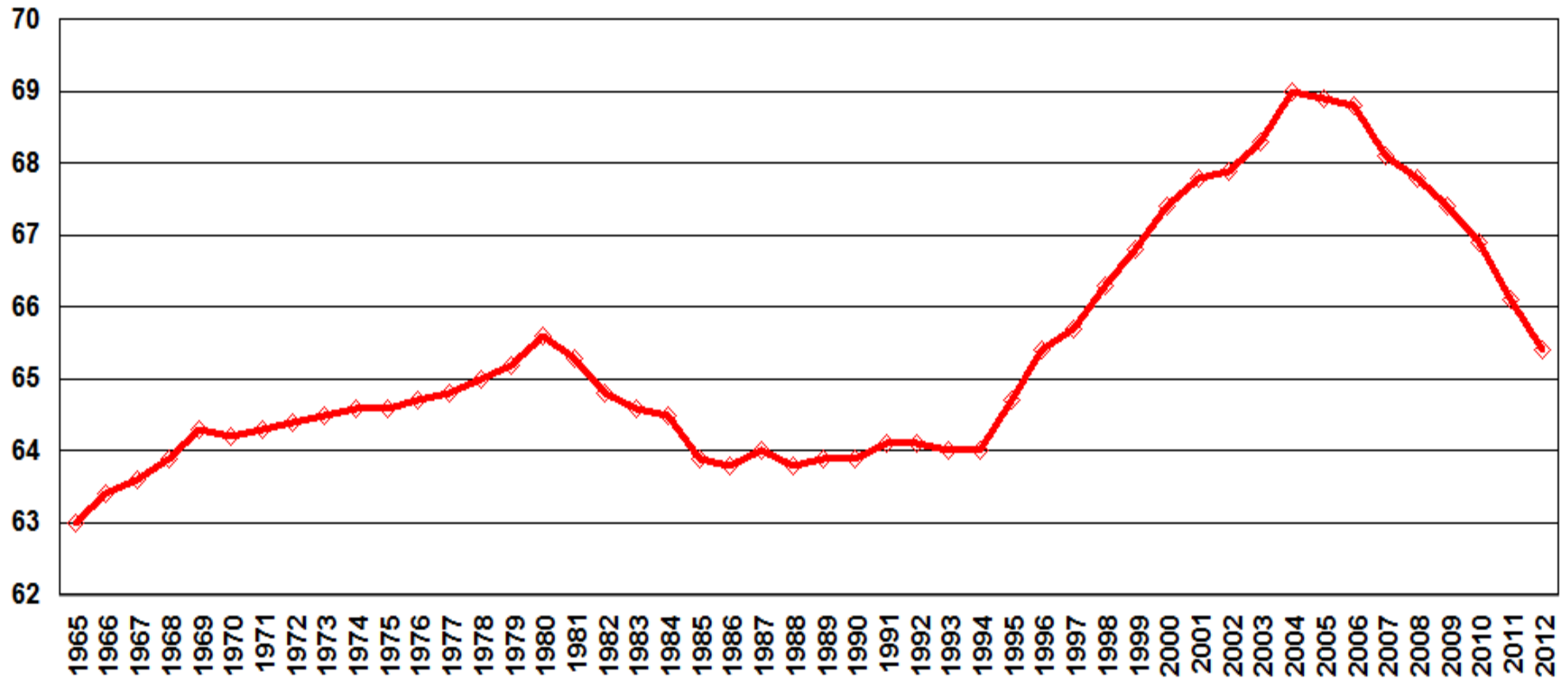


Distribution of Units Built, United States, 1989-2009

Type	Volume	Total Share	Detached Share
New Units	24.5		
Detached	20.7	85%	
0.5-10 ac	8.7	35%	42%

Source: American Housing Survey

Home Ownership Rates US 1965-2012

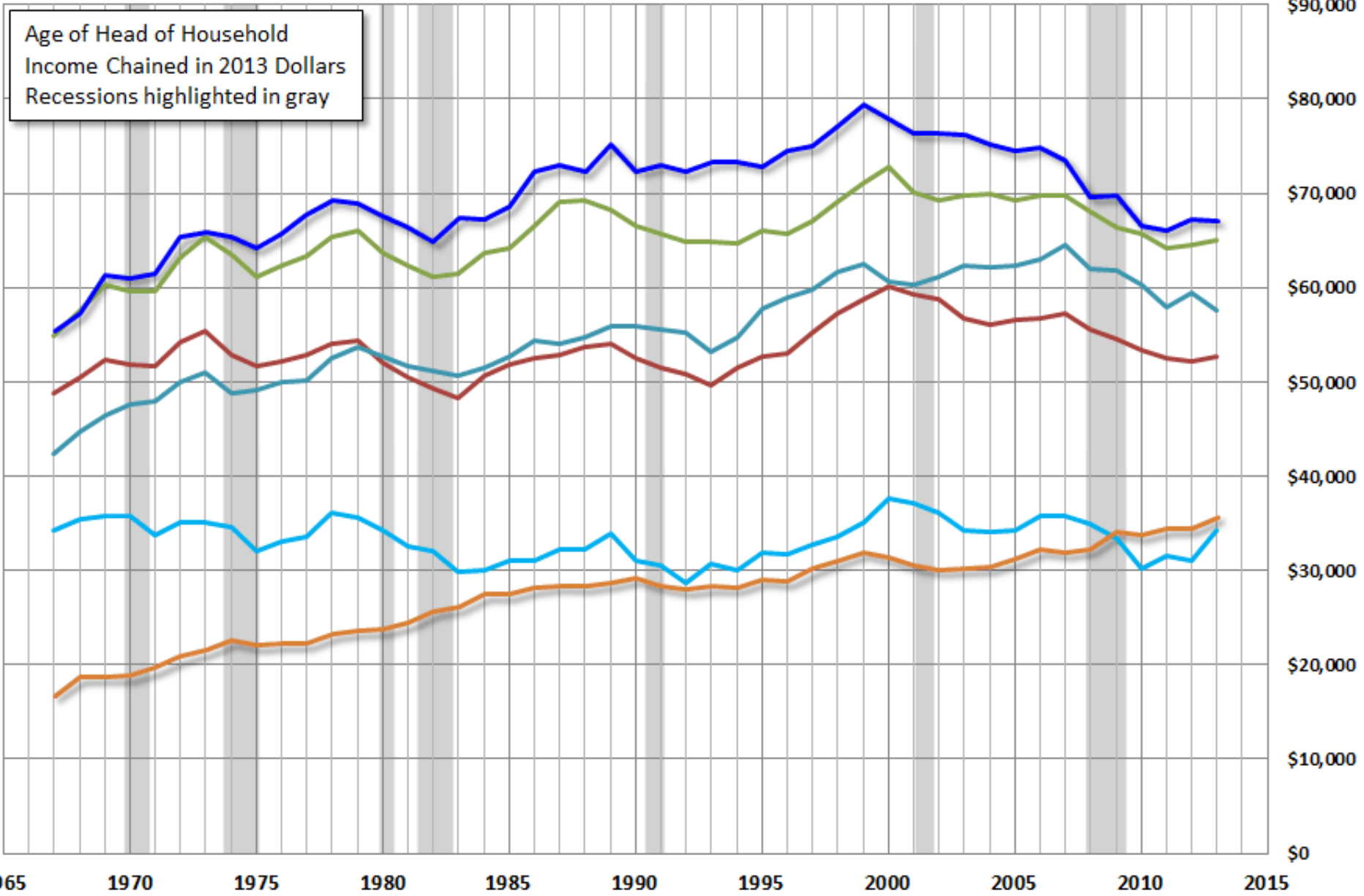


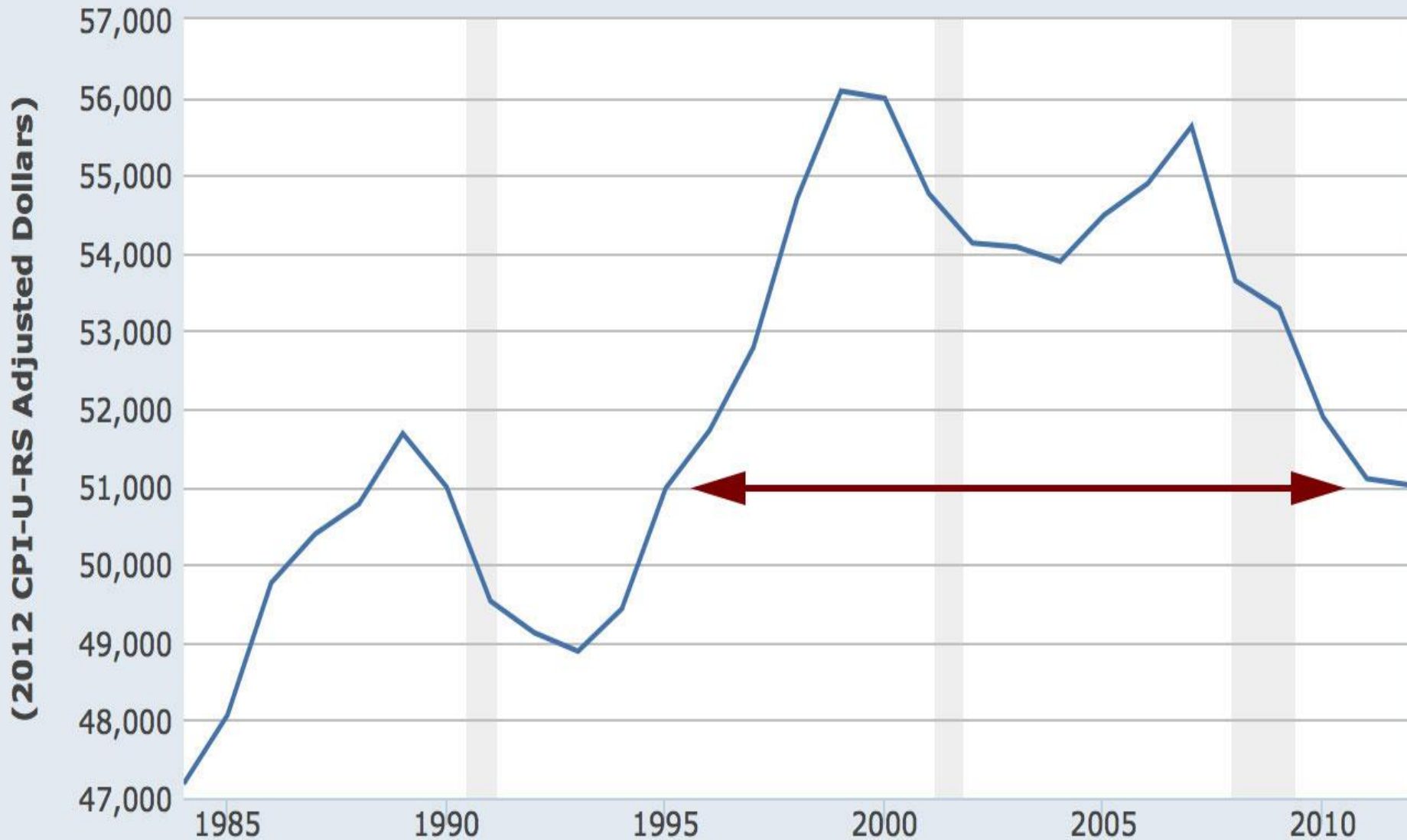
Source: Adapted from Census

Median Real Household Incomes By Age Bracket

15 to 24 Years 25 to 34 Years 35 to 44 Years 45 to 54 Years 55 to 64 Years 65 Years and Over

Age of Head of Household
Income Chained in 2013 Dollars
Recessions highlighted in gray






Source: U.S. Department of Commerce: Census Bureau

Shaded areas indicate US recessions - 2014 research.stlouisfed.org

Conservative Ownership Change, 2010-2040

Metric	United States	Arizona	Tucson	Phoenix
<i>Baseline, 2010</i>				
Owners	76,133	1,577	249	1,010
Renters	40,812	812	140	534
Ownership Rate	65.1%	66.0%	64.1%	65.4%
Renter Rate	34.9%	34.0%	35.9%	34.6%
<i>Tenure Analysis 2010-2040</i>				
Homeowners	94,013	2,391	369	1,565
Renters	58,158	1,399	230	970
Ownership Rate	61.8%	63.1%	61.6%	61.8%
Renter Rate	38.2%	36.9%	38.4%	38.2%
Change in Homeowners	17,880	814	119	555
Change in Renters	17,346	587	90	436
Owner Share of Change	51%	58%	57%	56%
Renter Share of Change	49%	42%	43%	44%



US Preference Demand vs. Supply

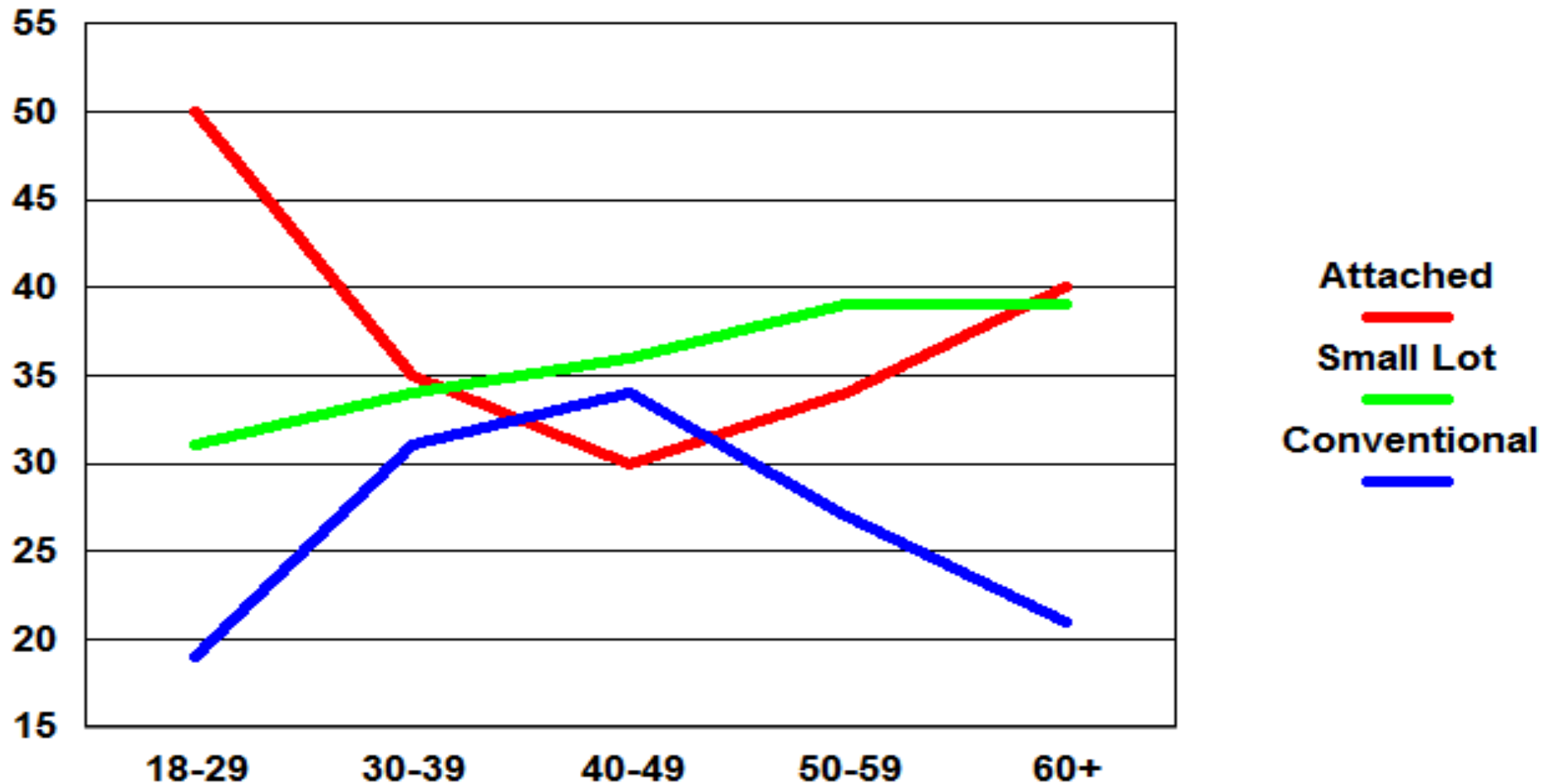
House Type	Nelson	RCLCo**	NAR	AHS
Attached*	38%	33%	38%	28%
Small Lot	37%	35%	37%	29%
Conv. Lot	25%	32%	25%	43%

*Assumes walkable communities, nearby stores/restaurants; potential for some to walk to work

**Gen-Y only, no trade off options

Source: Nelson (2006), RCLCo (2008), NAR (2011), American Housing Survey (2013)

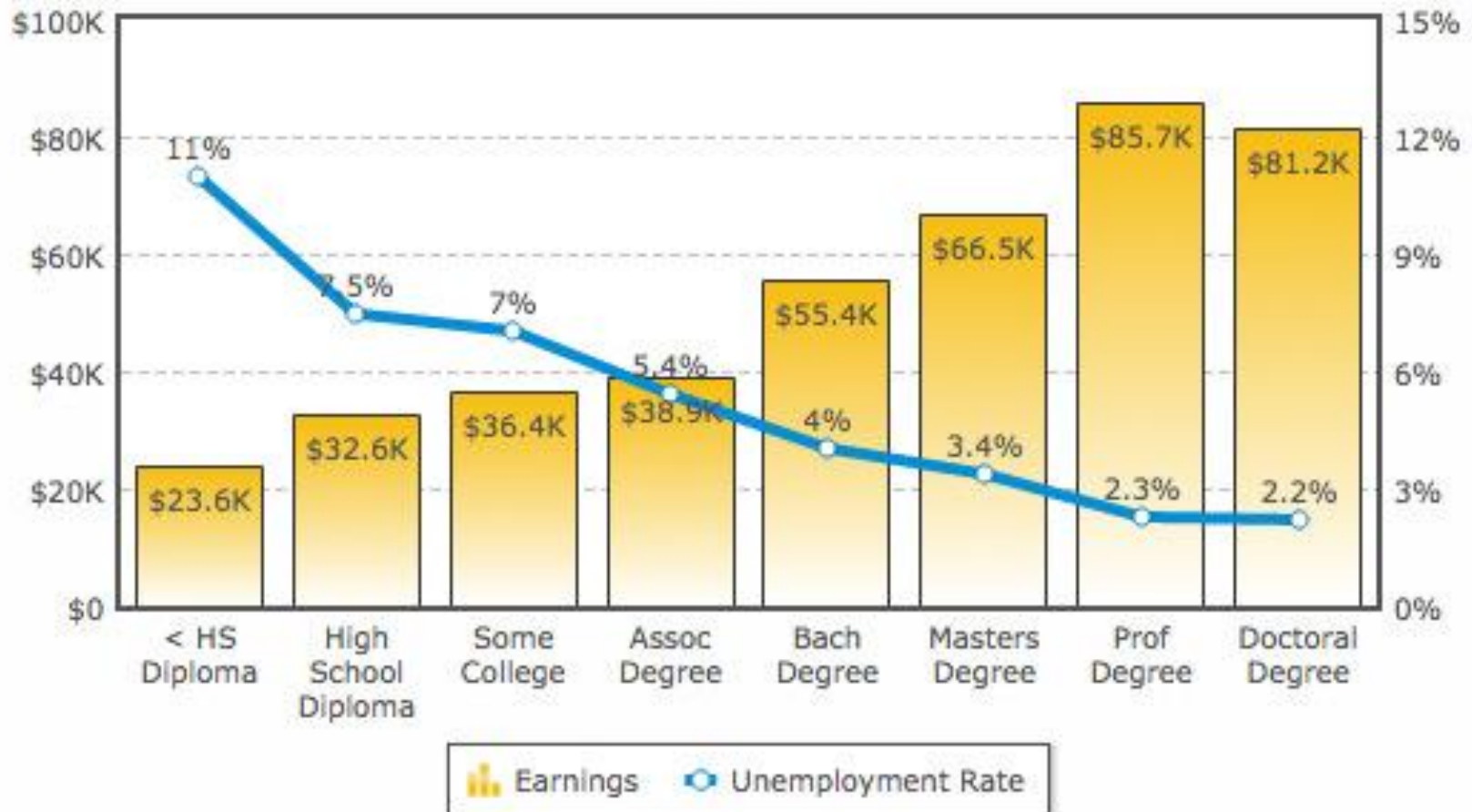
Housing Type Preference by Age



Source: National Association of Realtors (2011)

Education, Income and Unemployment

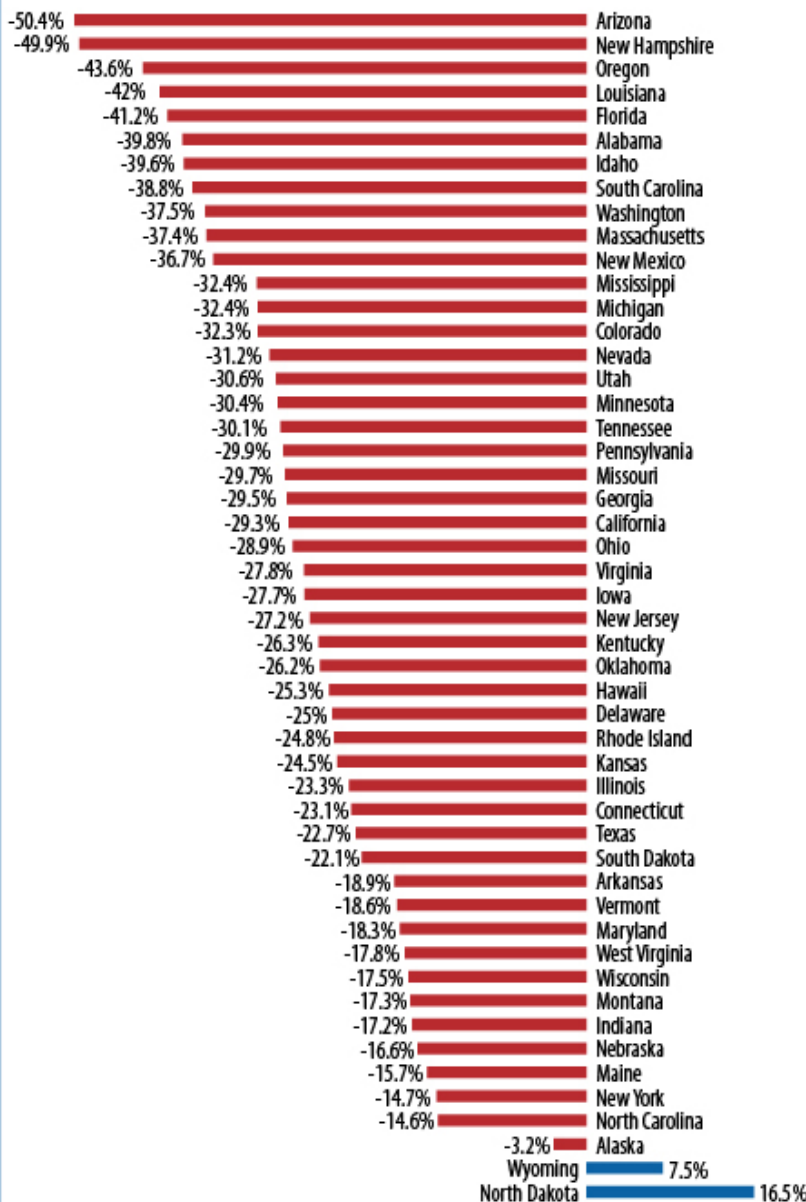
2013 Earnings & Unemployment Rates by Educational Attainment



Source: http://www.55by25.org/ffbf-content/uploads/2014/03/us_census_data-3.jpg

States Have Cut Higher Education Funding Deeply in Recent Years

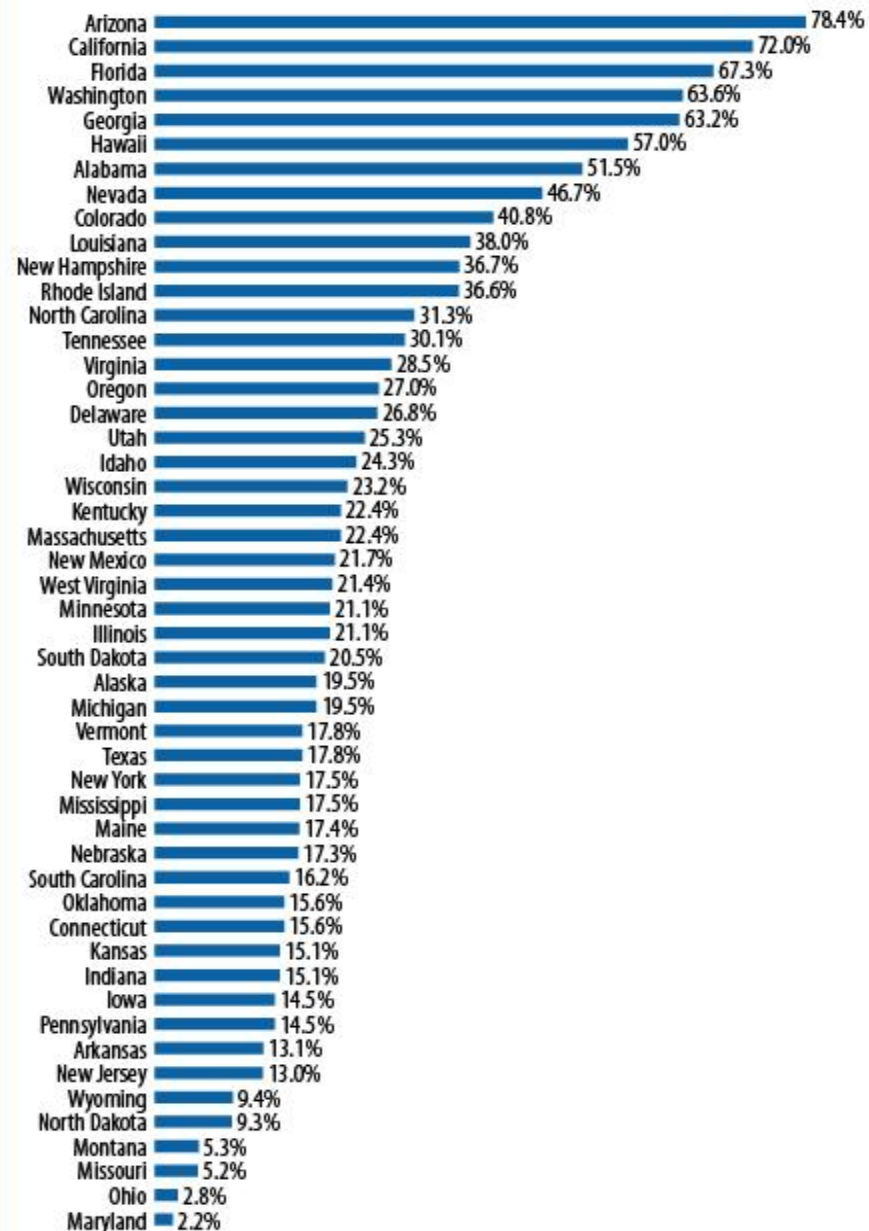
Percent change in state spending per student, inflation adjusted, FY08 - FY13



Source: CBPP calculations using data from Illinois State University's annual Grapevine Report. Illinois data is provided by the Fiscal Policy Center at Voices for Illinois Children. Because enrollment data is only available through the 2012 school year, the enrollment data for 2013 used in these calculations is estimated based on enrollment trends from past years.

Tuition Has Increased Sharply at Public Colleges and Universities

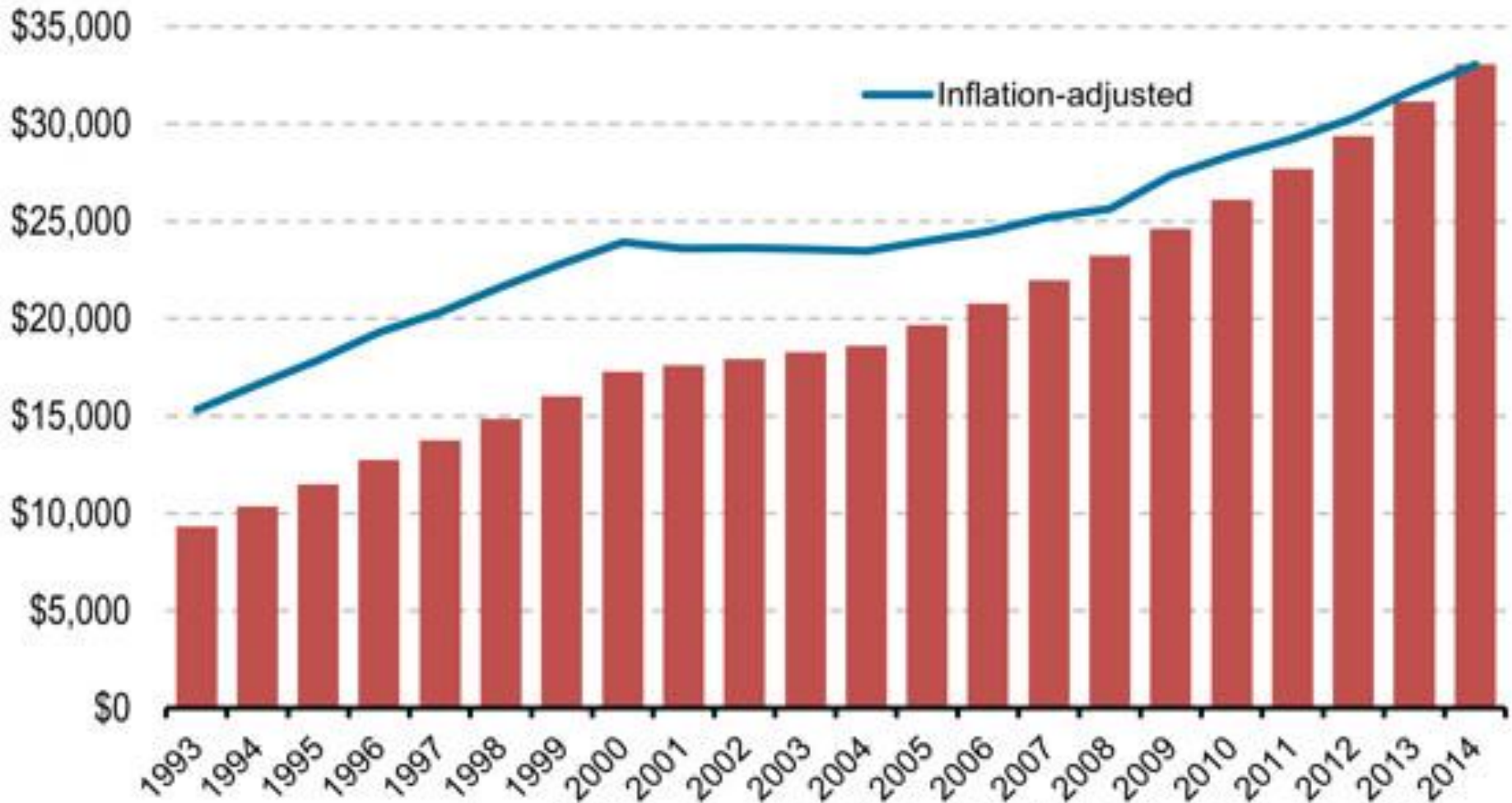
Percent change in average tuition at public, four-year colleges, inflation adjusted, FY08 - FY13



Source: College Board

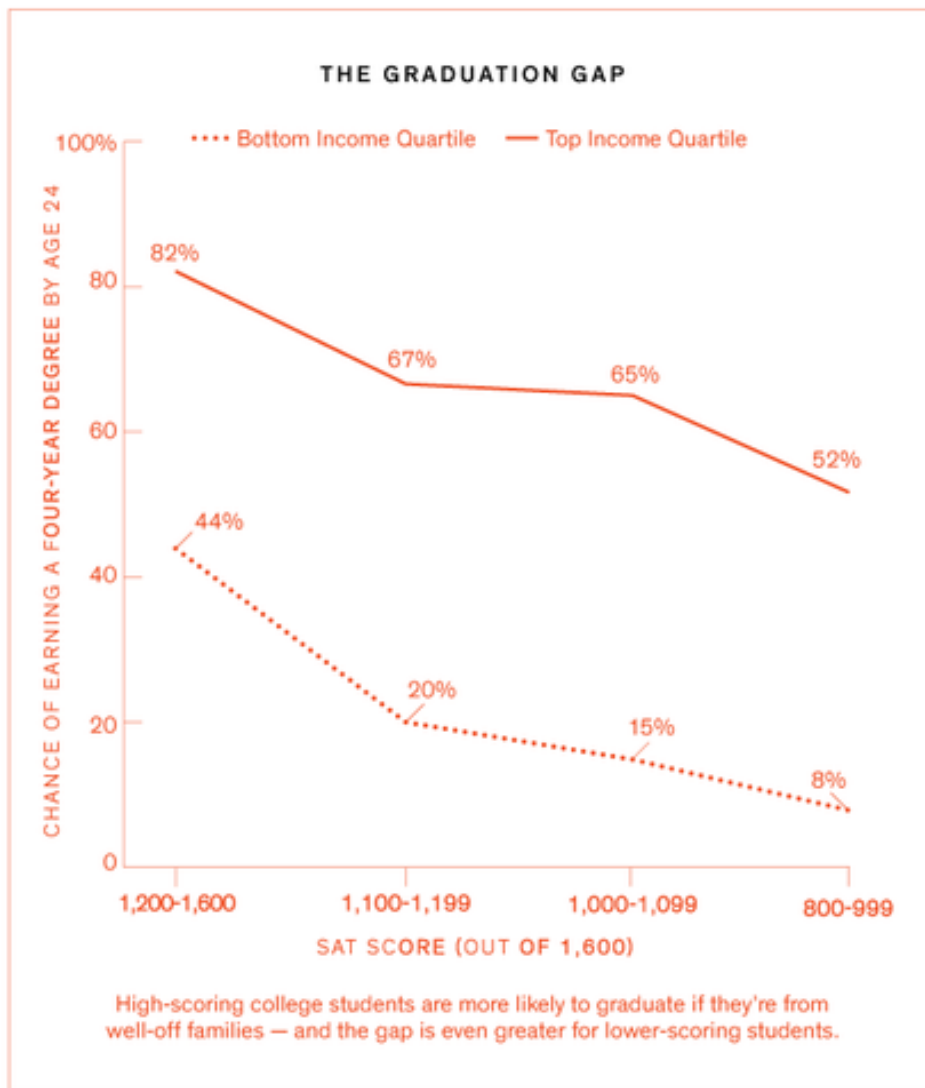
Class of 2014

Average debt per borrower in each year's graduating class.



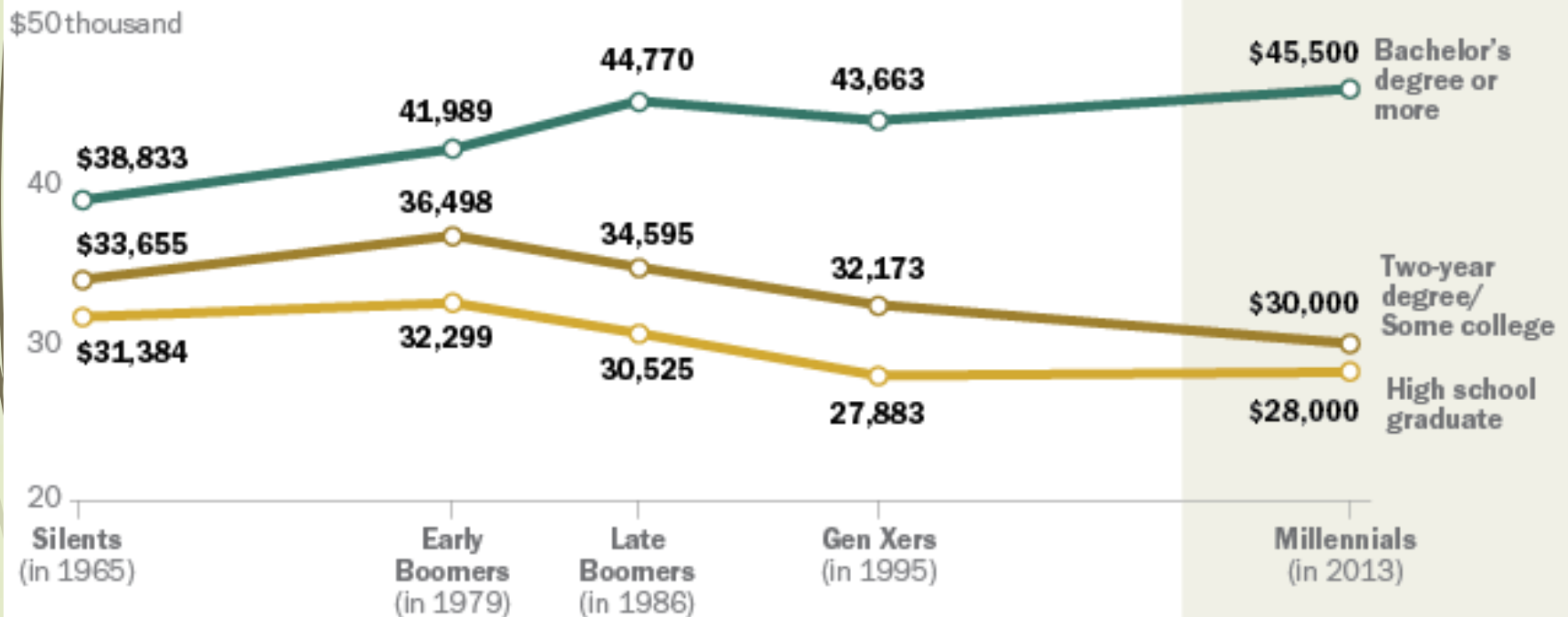
Source: Mark Kantrowitz analysis of National Center for Education Statistics data | WSJ.com

Graduation Rates of High-Scoring Students from Low-Income Families



Higher Education is Key to the Nation's Future Economy

Median annual earnings among full-time workers ages 25 to 32, in 2012 dollars

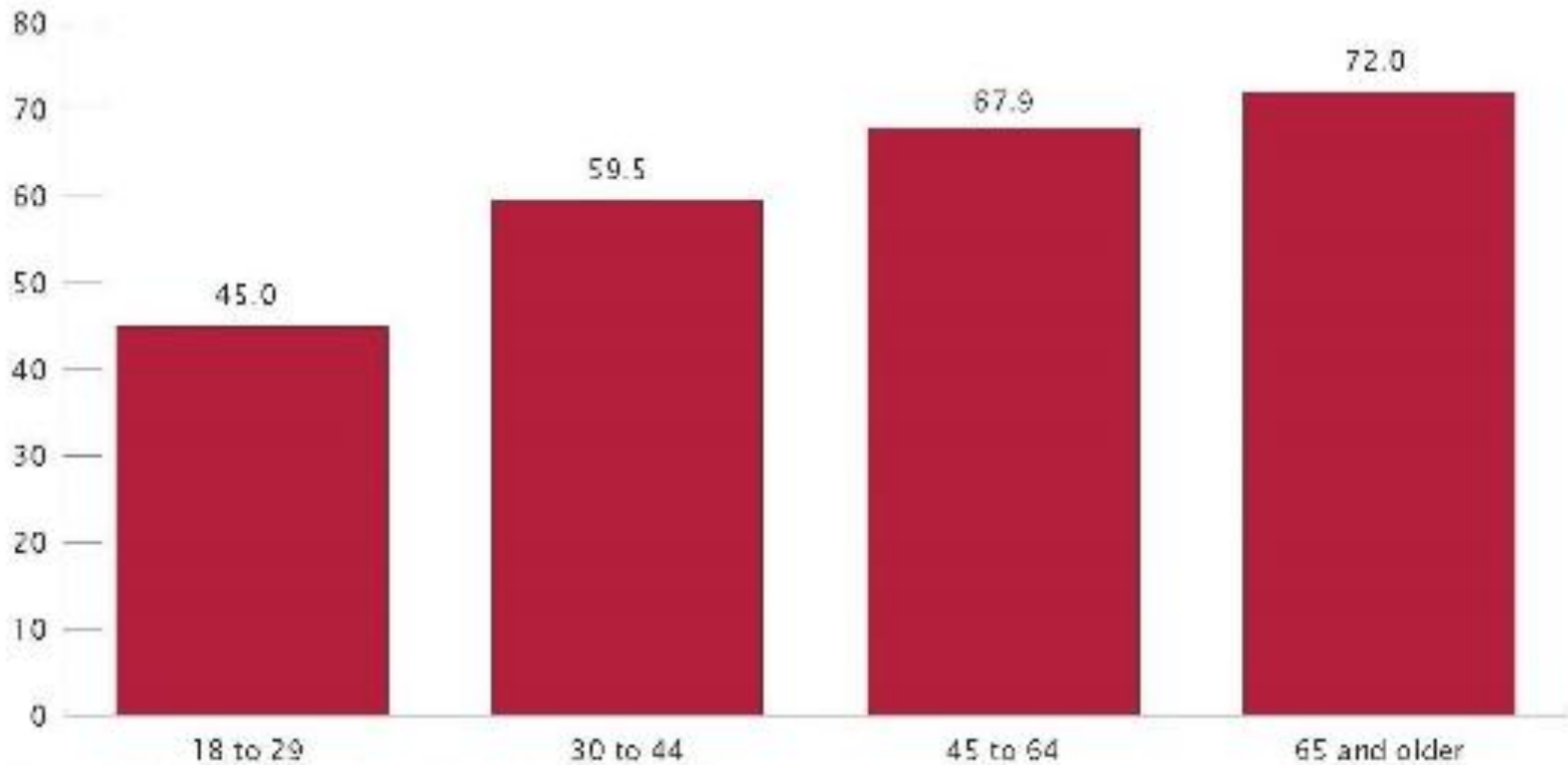


Source: Pew Research Center tabulations of the 2013, 1995, 1986, 1979 and 1965 March Current Population Survey (CPS) IPUMS

Who Calls the Voting Shots?

Voting Rates, by Age, for the Voting-Age Citizen Population: 2012

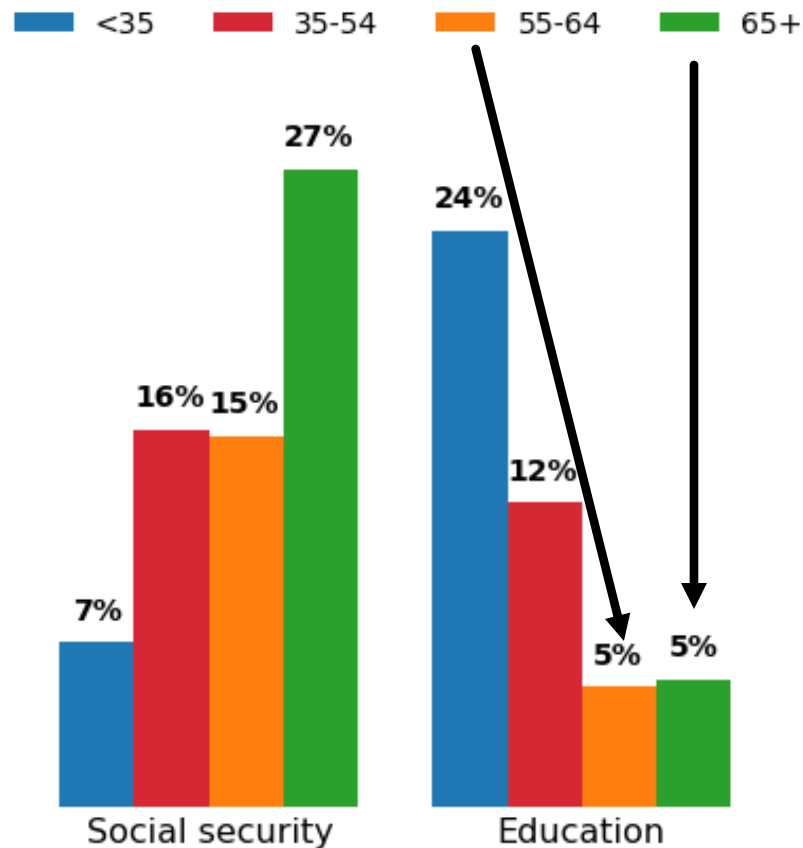
(in percent)



Source: U.S. Census Bureau, Current Population Survey, 2012.

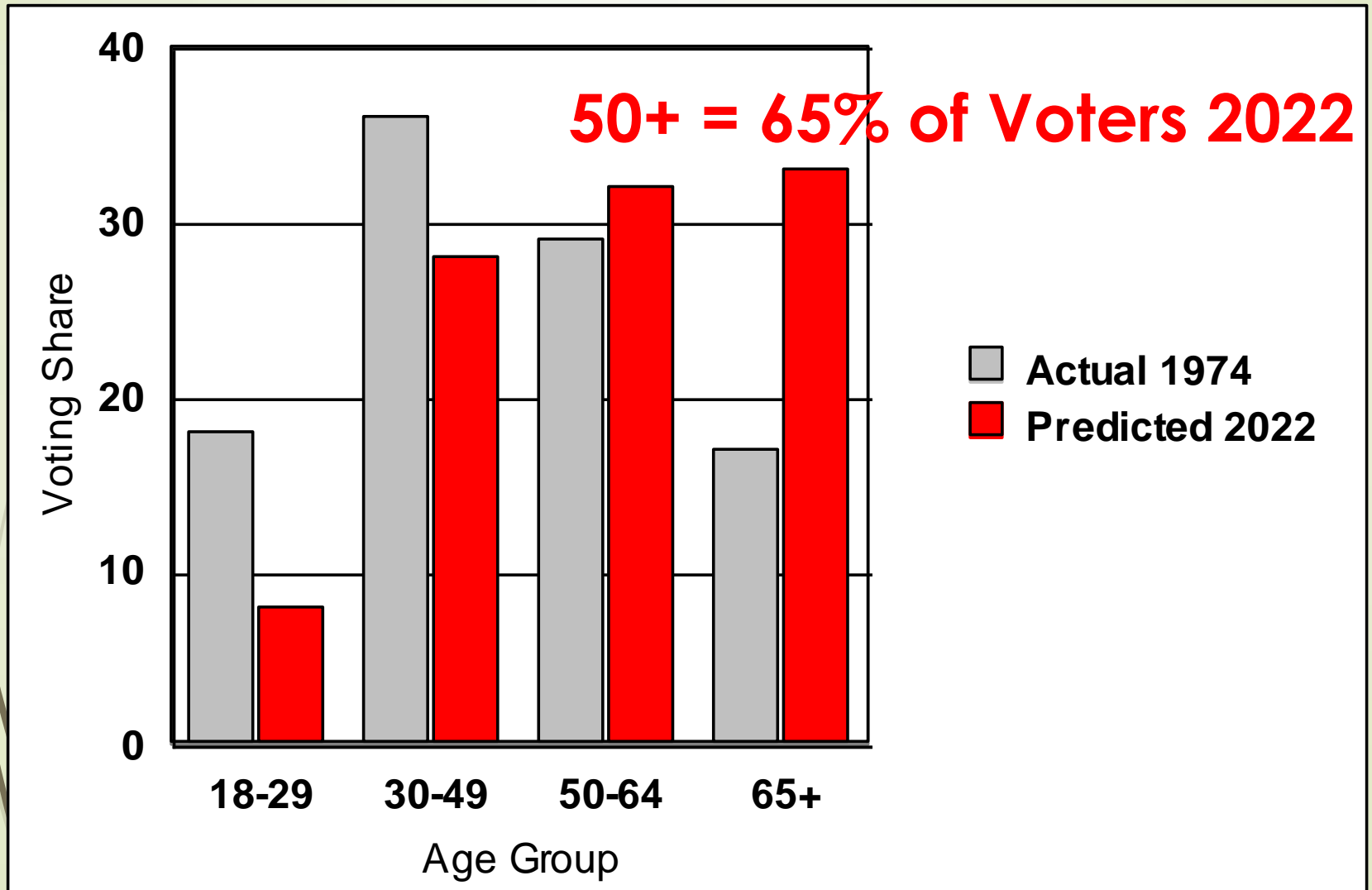
Aging Boomers will keep Social Security but Vote “No” for Schools

U.S. Poll: Where is it most important for the U.S. government to spend your tax dollars?



Data source: UT Energy Poll (utenergypoll.com), Wave 7
Author: Randy Olson (randalolson.com / @randal_olson)

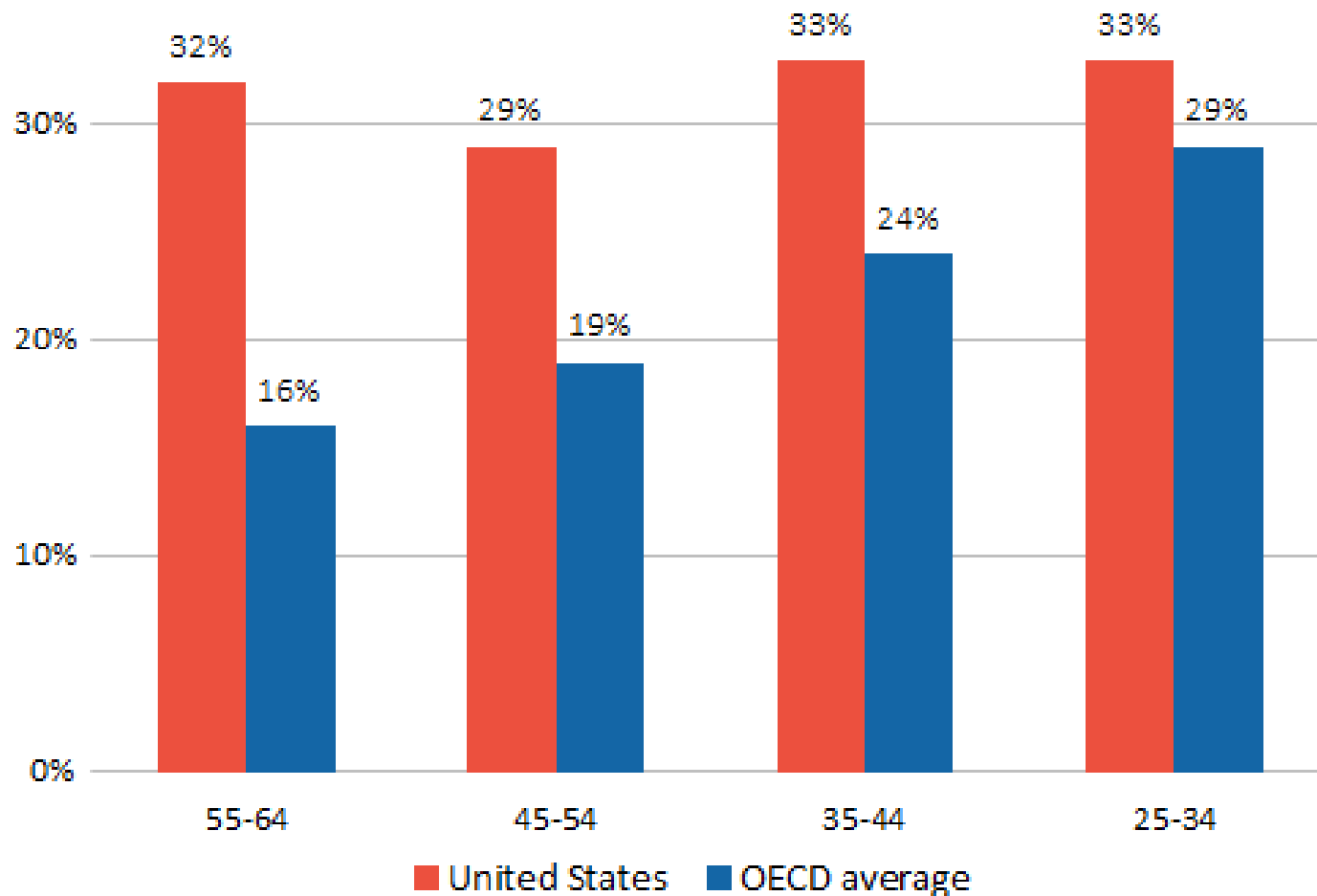
Share of Voters by Age Group 1974-2022



Source: Public Perspective, May/June 2003

OECD countries are rapidly catching up to the U.S. in college degree attainment

Percentage degree attainment in OECD countries and the U.S. by age group, 2010



Source: National Center for Education Statistics

Scenario?

- Unwilling to vastly increase spending to expand the supply of college-educated workers
- Increasing demand for college-educated workers can be offset by cherry-picking world supply
- H-1B capped at 65k → Microsoft's dilemma
- Increase H-1B up to ~500k
- Immigration: 1.0M/yr → 2.5M/yr

A satellite night view of Earth, showing the Americas illuminated by city lights. The lights are concentrated in the eastern and western coasts, with a dense network of smaller lights in the interior. The background is the dark blue and black of space, with some faint stars visible.

America @ 1 Billion by 2100?

Image: apod.nasa.gov/apod/ap001127.html