



The 7th Inning Stretch

Greater Phoenix Chamber of Commerce

September 25, 2018

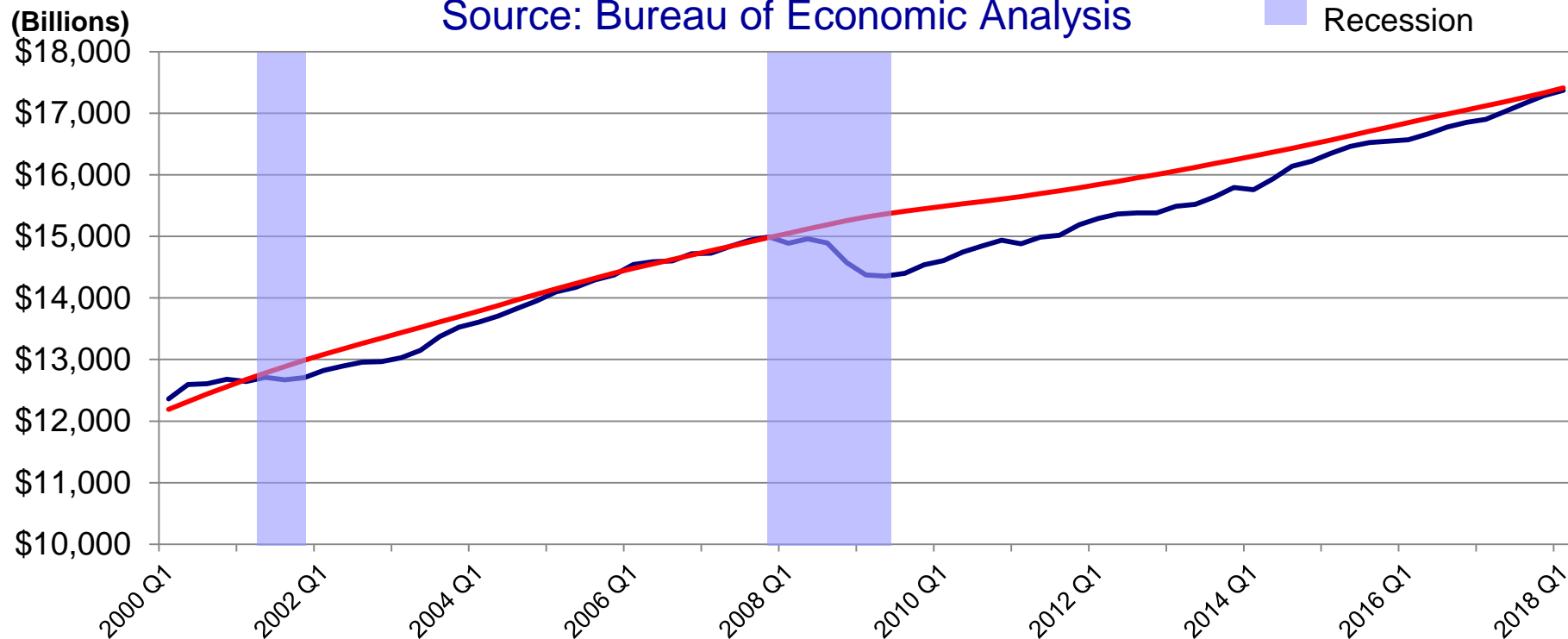
Presented By:
Elliott D. Pollack
CEO, Elliott D. Pollack & Company



Elliott D. Pollack & Company

Real Versus Potential GDP 1970-2018*


Source: Bureau of Economic Analysis



Strong Economy

- **Tax cuts helped a lot**
- **Continued fiscal stimulus**
- **Significant Trade war unlikely**
- **Strong plant and equipment spending**
- **Few obvious imbalances**





**Too early to tell how much
of a slowdown it will be.
It is likely to be mild.**





**A Recession will happen at
some point but not soon.**

**Right now imbalances
seem relatively mild.**



**Strong economy (strong
consumer spending, business
investment and exports) lead to:**








**Quantitative
Easing**



**Quantitative
Tightening**





Quantitative Easing Versus Quantitative Tightening

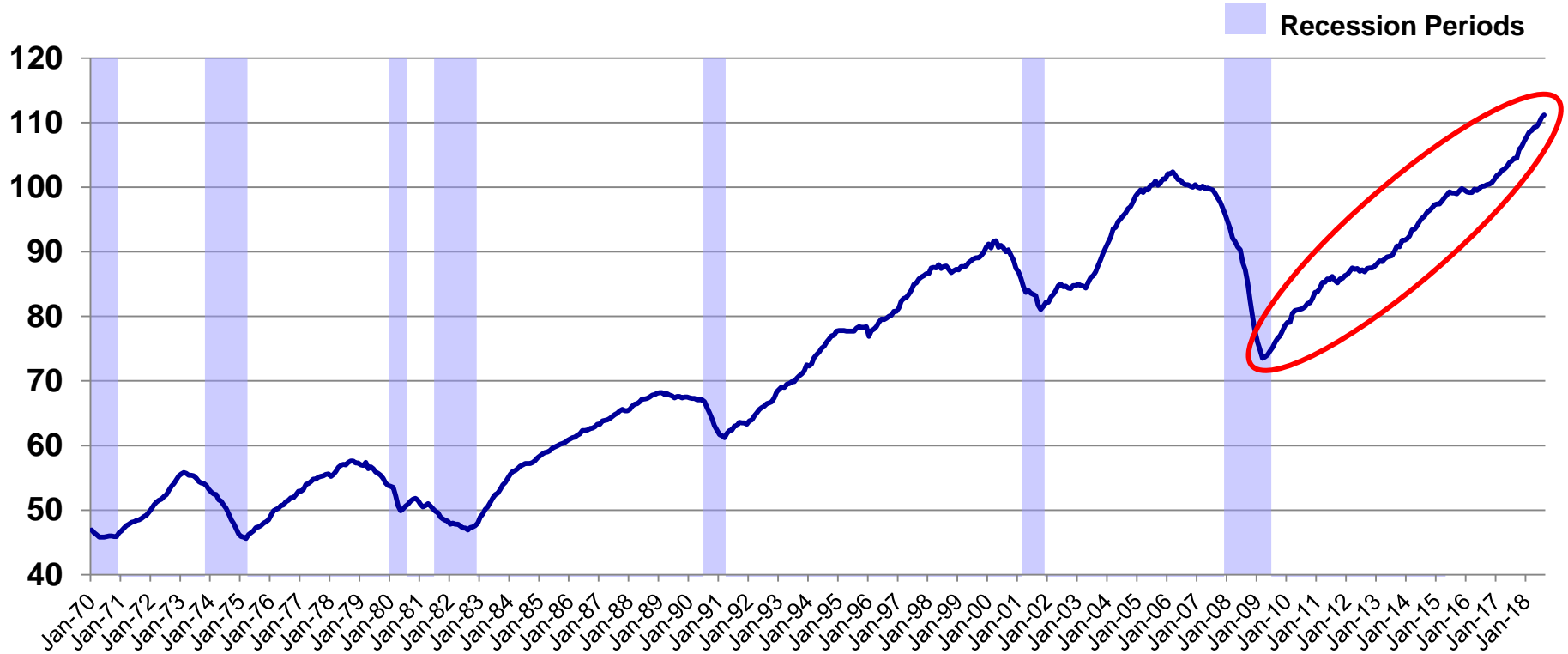
- Bad for asset prices
- Higher short term rates
- Higher long term rates
- Flattening of the Yield Curve
- Cap rates increase
- Companies may delay investment



U.S. Leading Indicators

1970 – 2018*

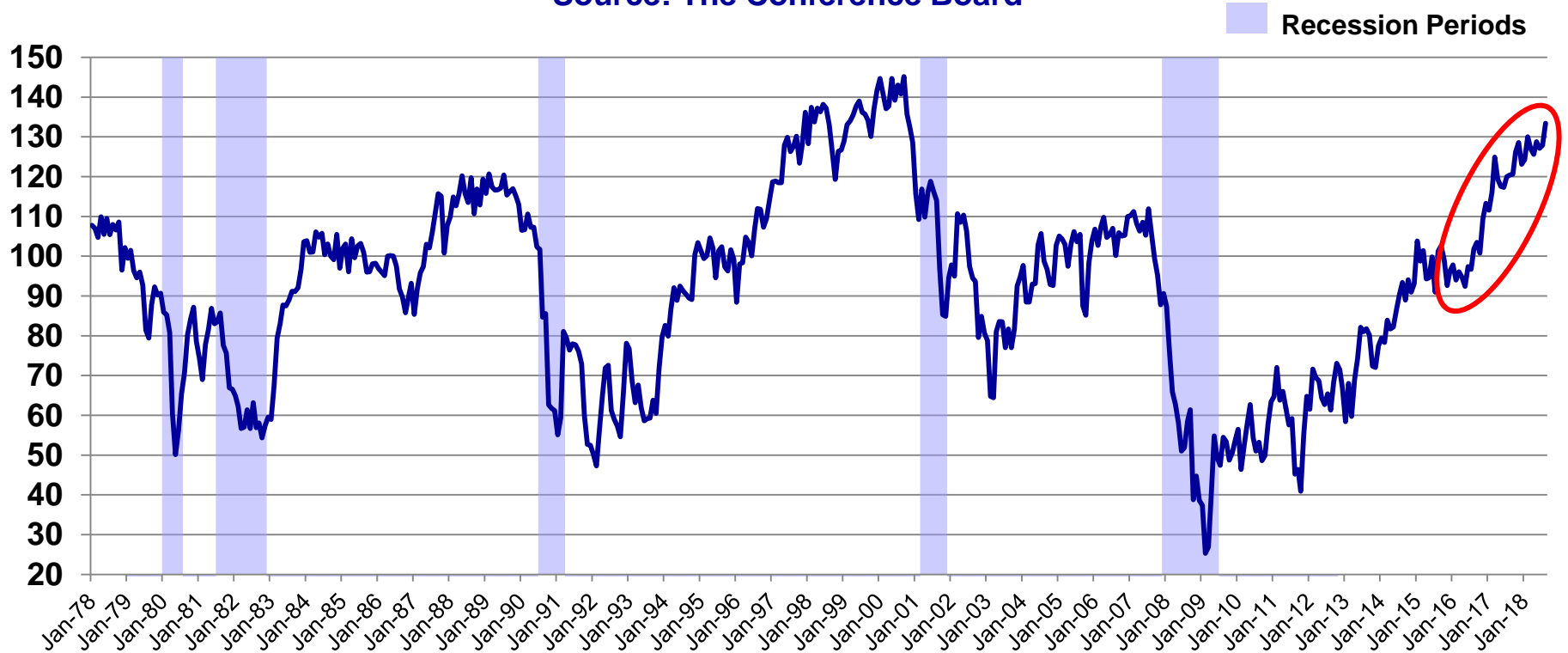
Source: The Conference Board



Consumer Confidence

1978 – 2018*

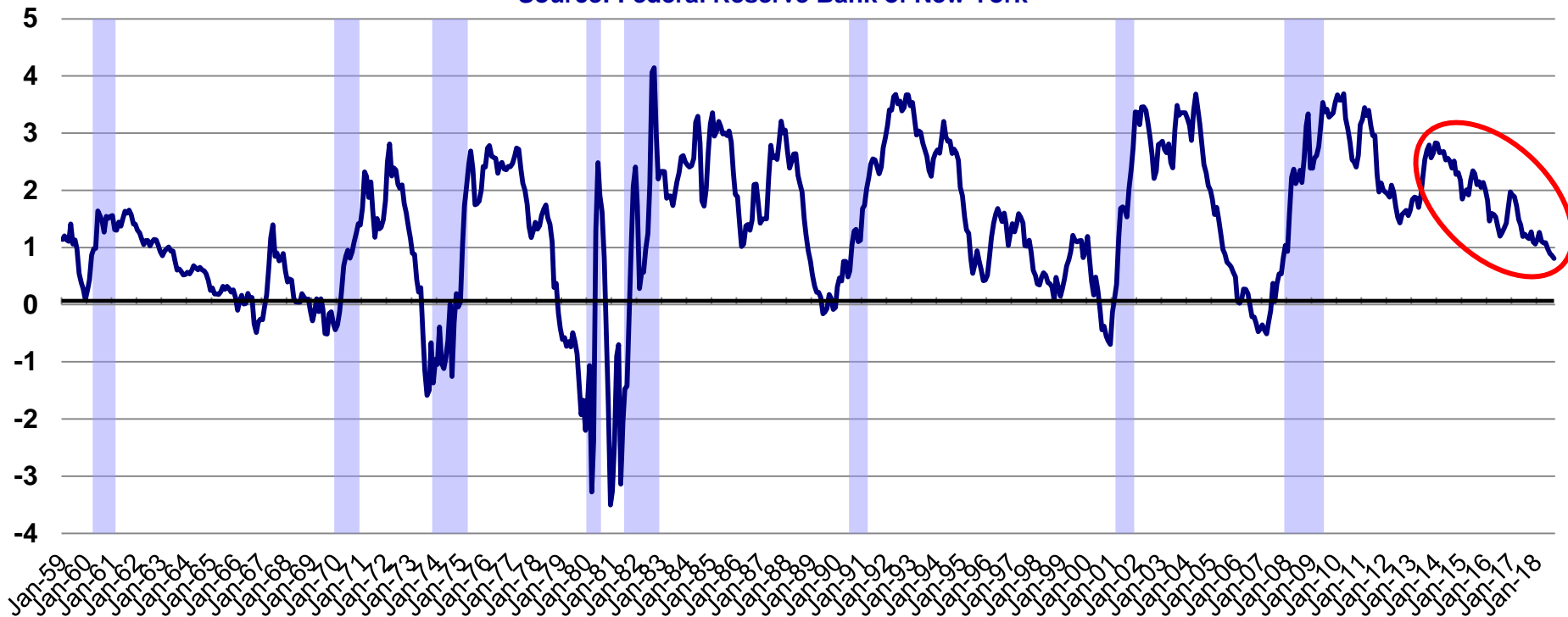
Source: The Conference Board



Treasury Spread: 10 year bond rate less 3 month bill rate 1959 – 2018*

Source: Federal Reserve Bank of New York

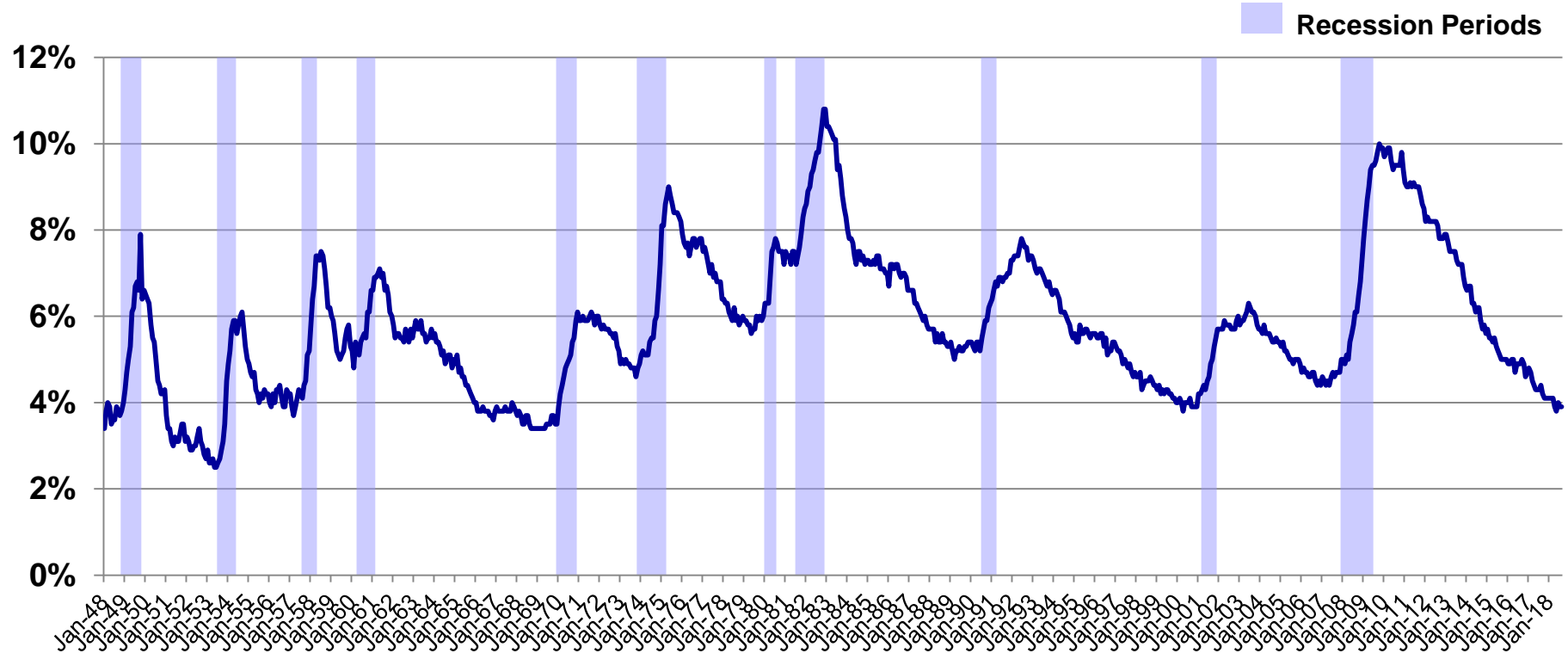
Recession Periods



U.S. Unemployment Rate

1948 – 2018*

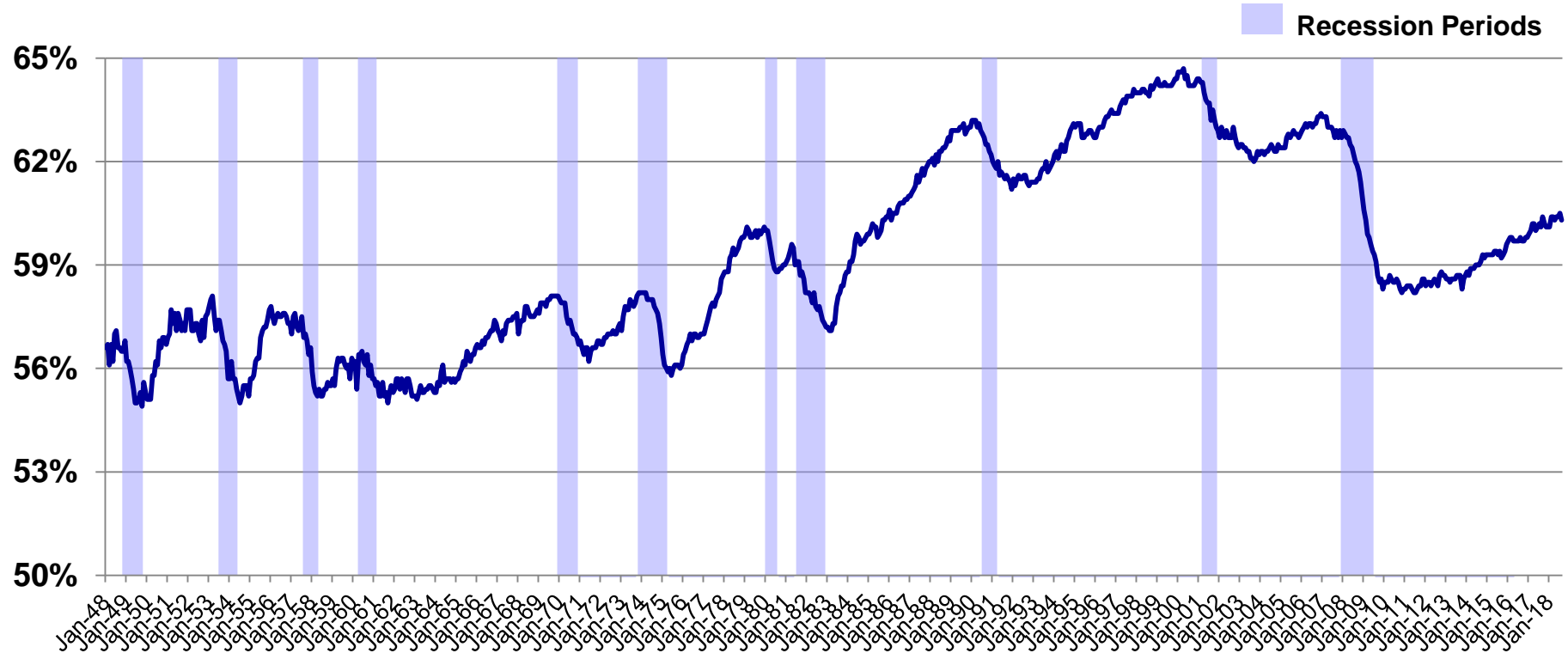
Source: Bureau of Labor Statistics



Employment to Population Ratio

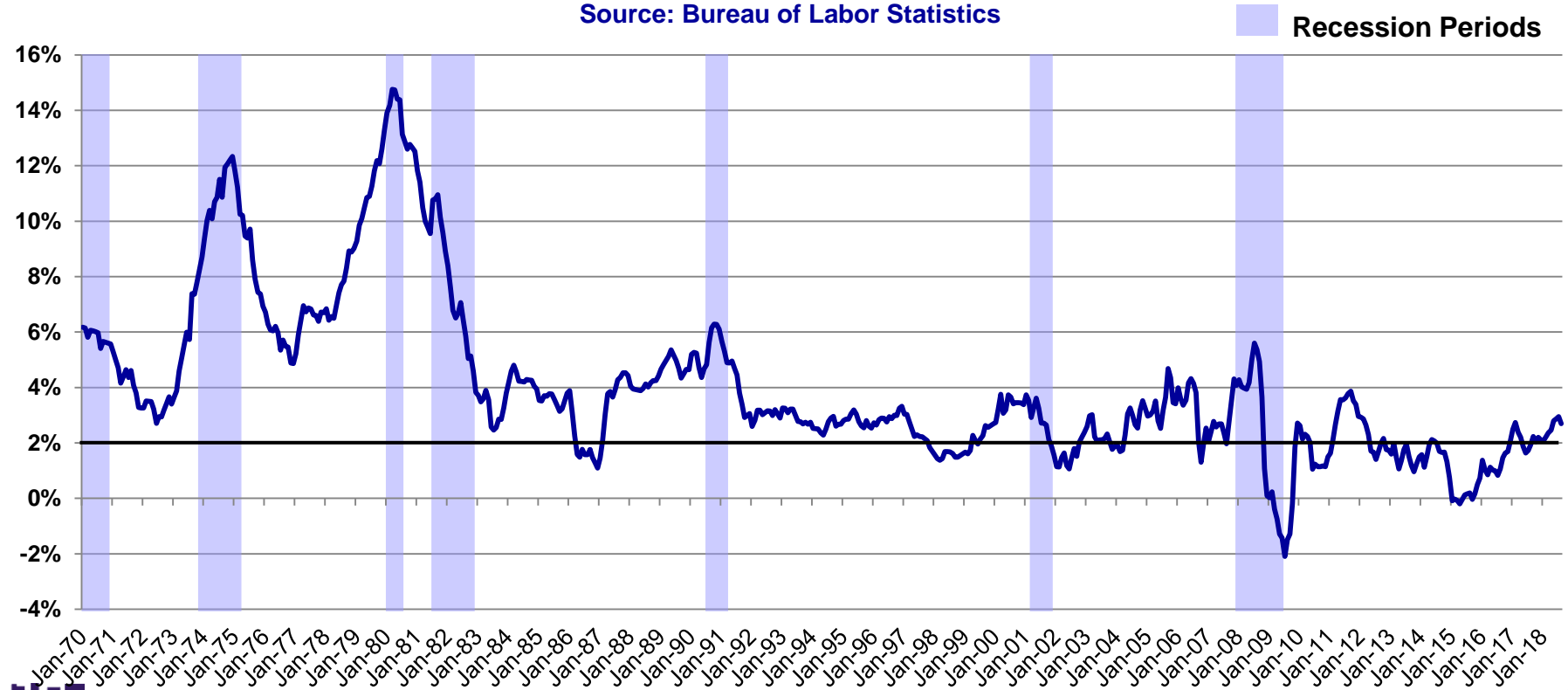
1948 – 2018*

Source: Bureau of Labor Statistics



U.S. Consumer Price Index Annual Percent Growth 1970 – 2018*

Source: Bureau of Labor Statistics



Recession Periods



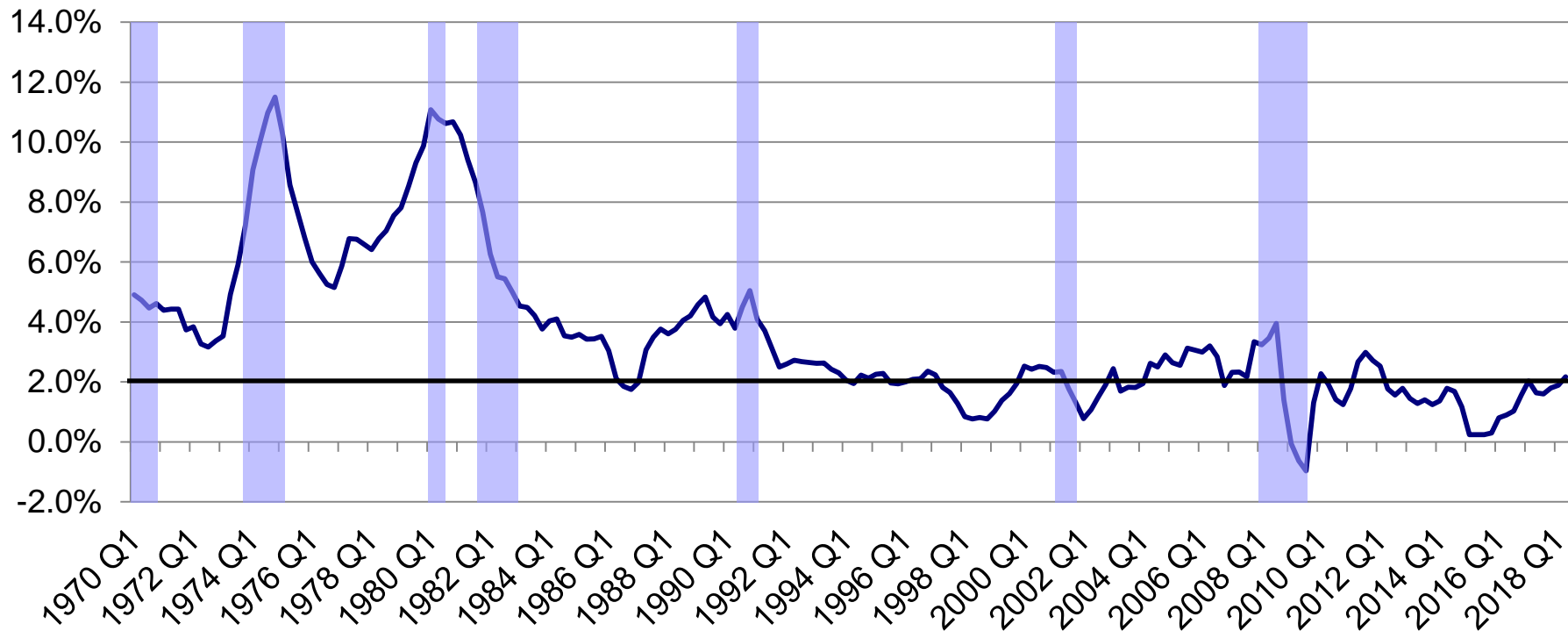
Personal consumption expenditures: Implicit Price Deflator

Annual % Change

1970-2018*

Source: U.S. Bureau of Economic Analysis

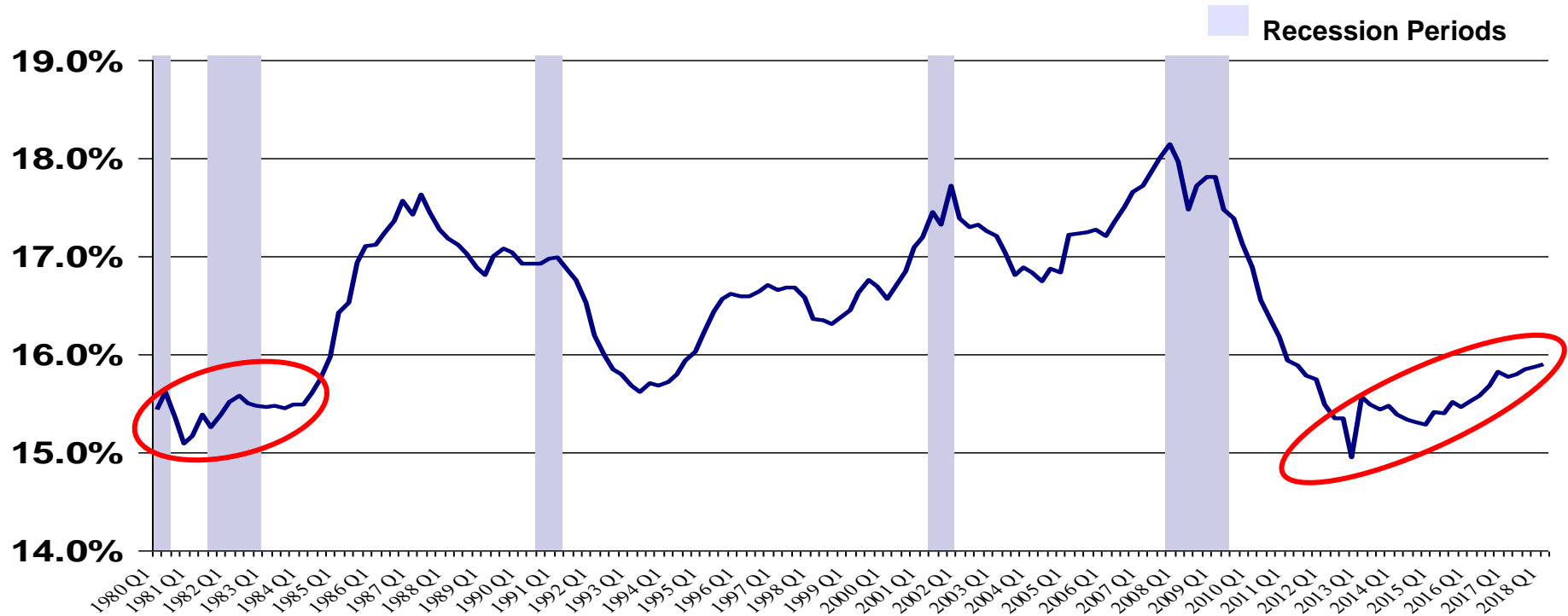
Recession



Financial Obligation*

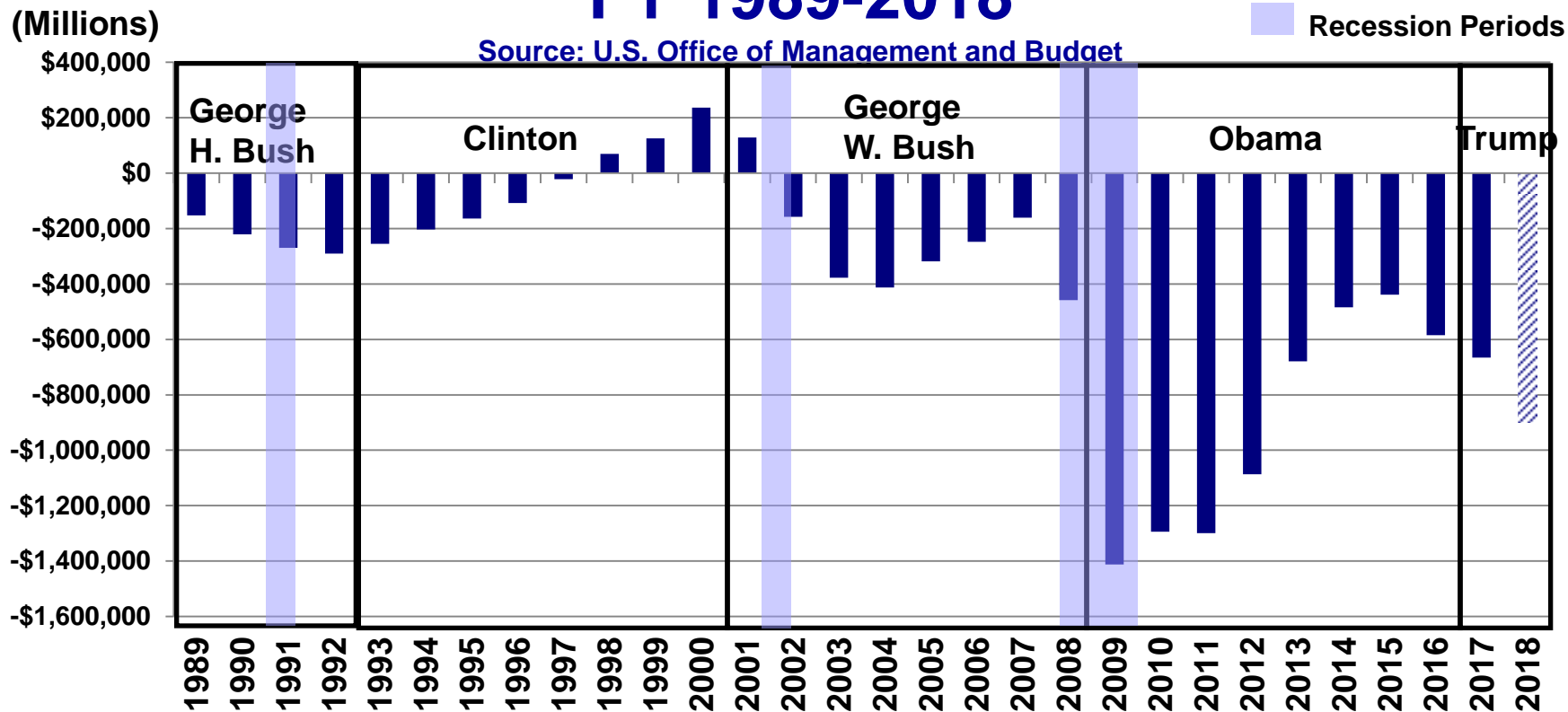
1980 – 2018**

Source: Federal Reserve



Federal Surplus or Deficit FY 1989-2018

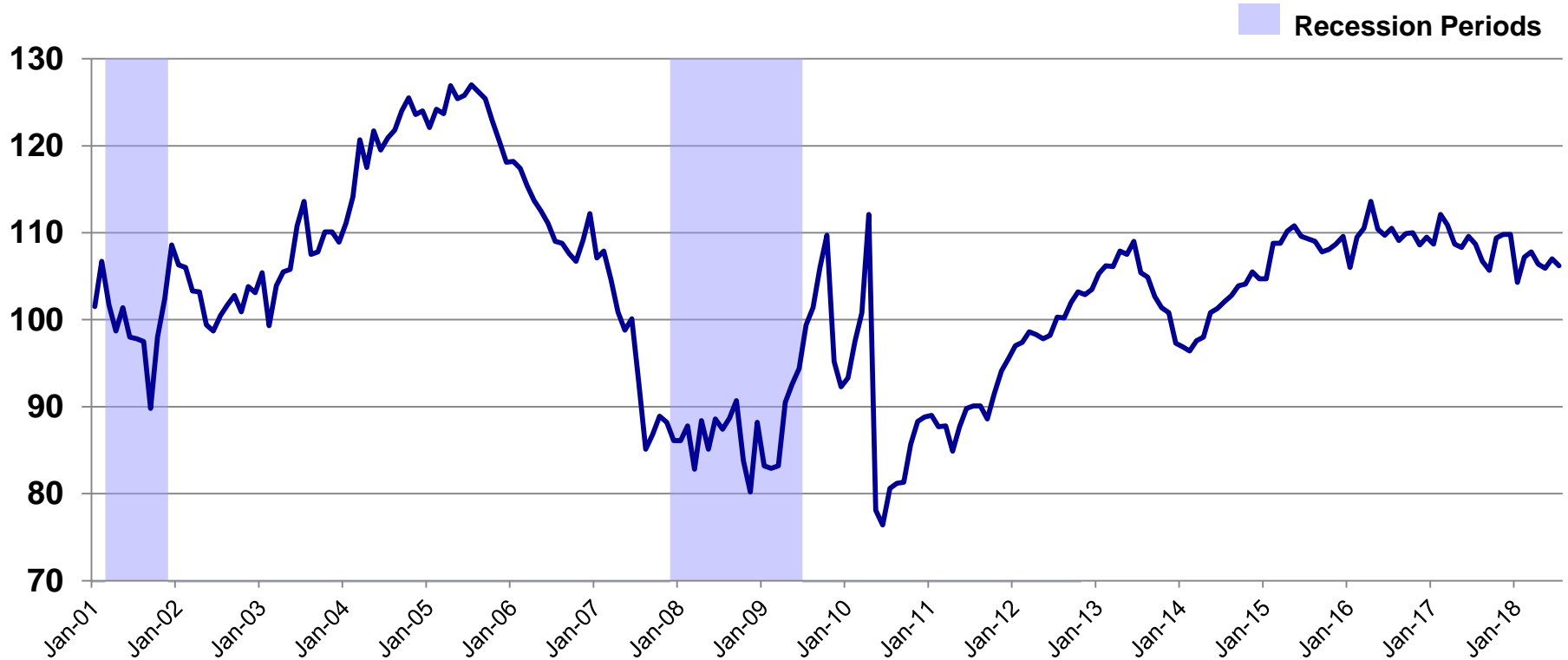
Source: U.S. Office of Management and Budget



Pending Home Sale Index

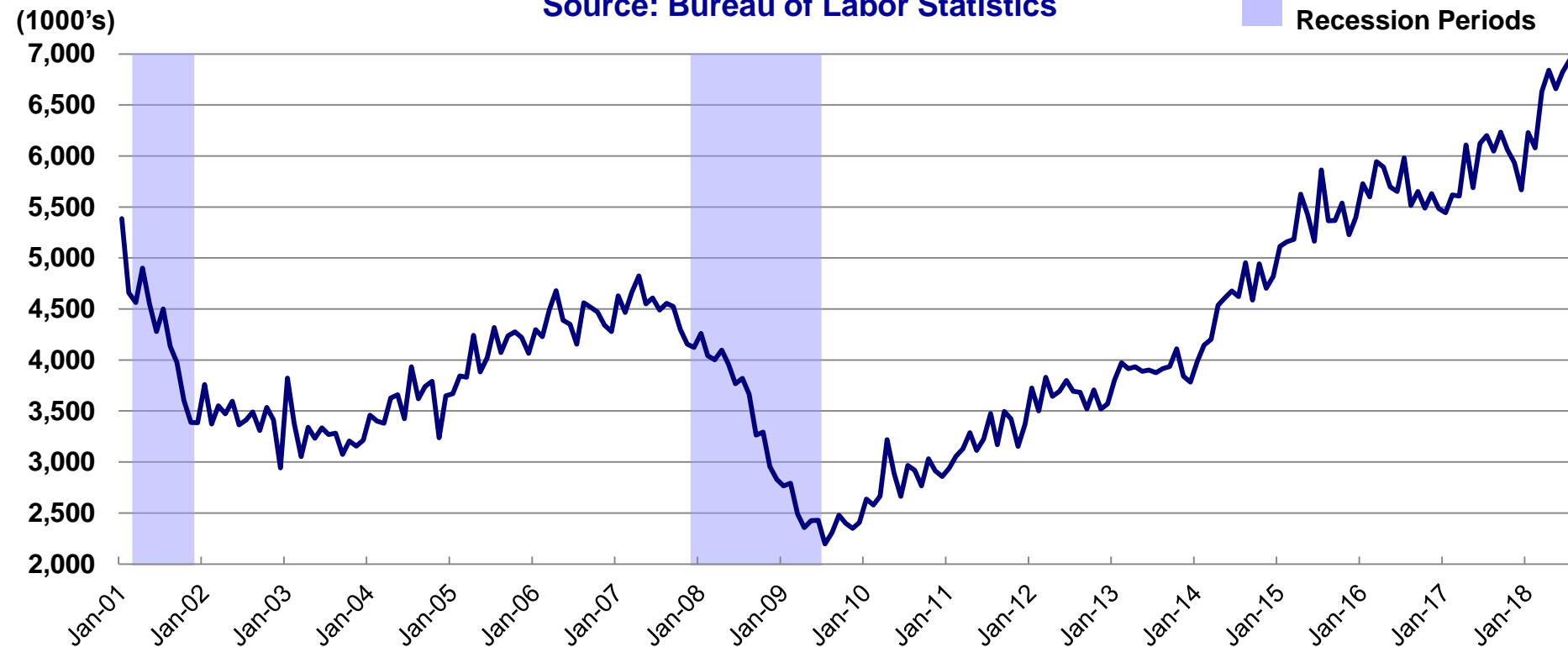
2001-2018*

Source: National Association of Realtors



Job Openings 2001 – 2018*

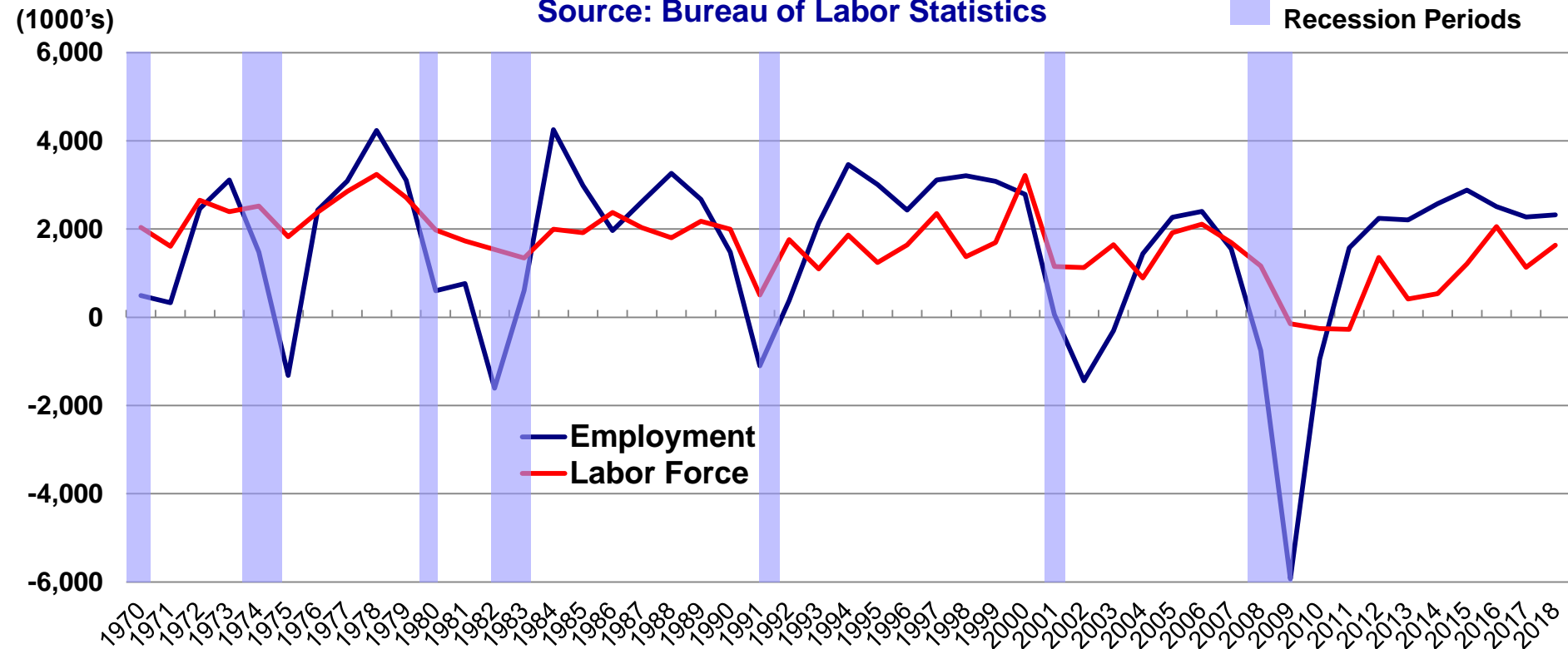
Source: Bureau of Labor Statistics



Employment Versus Labor Force Growth 1970– 2018*

Source: Bureau of Labor Statistics

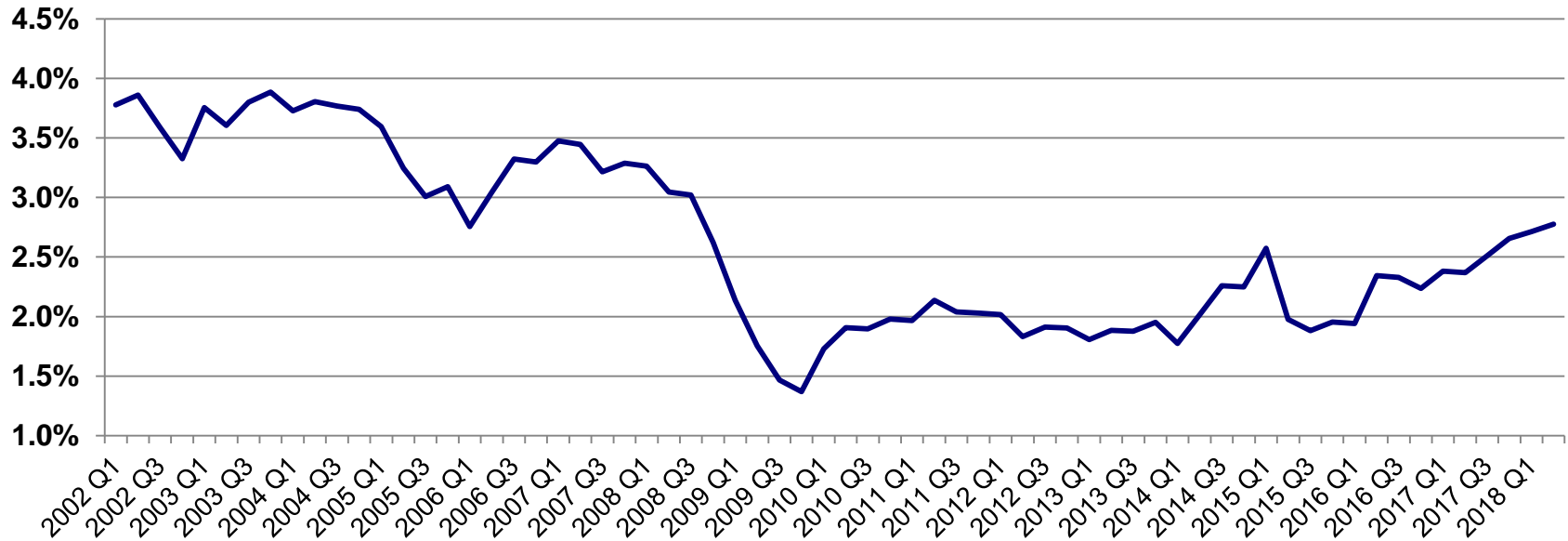
Recession Periods



Employment Cost Index

2002-2018*

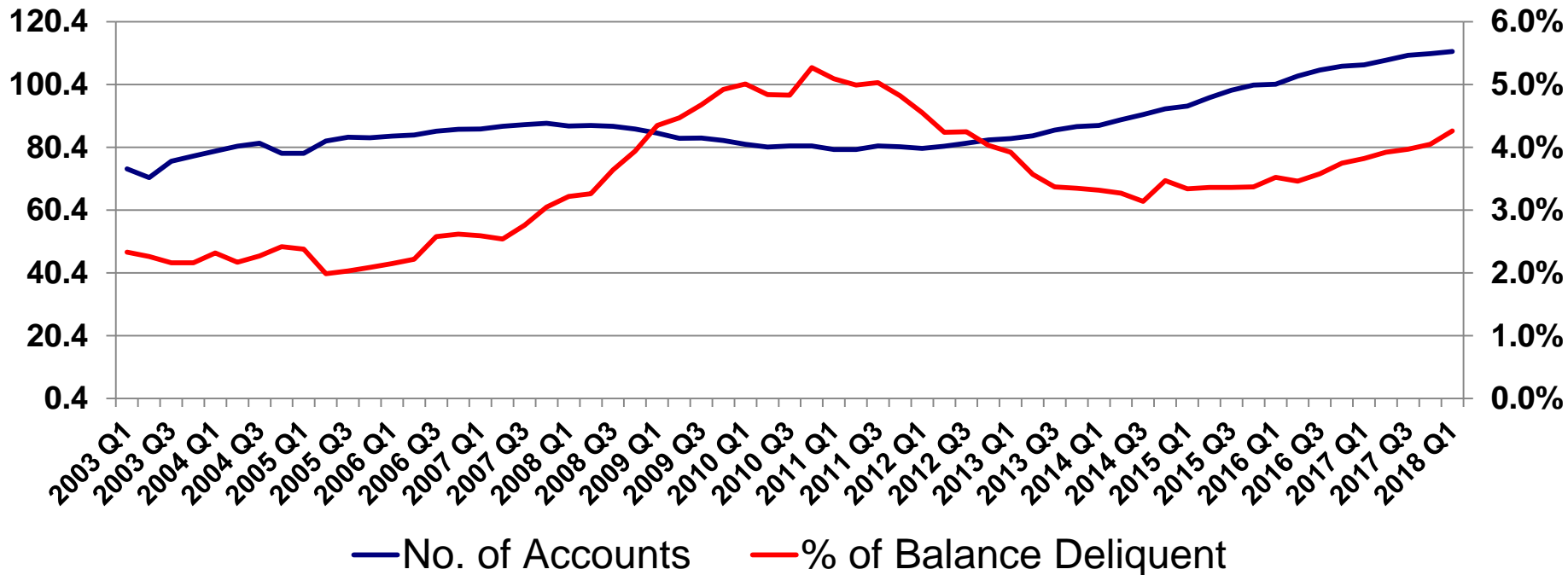
Source: Bureau of Labor Statistics



Auto Loans

Source: New York Fed Consumer Credit Panel/Equifax

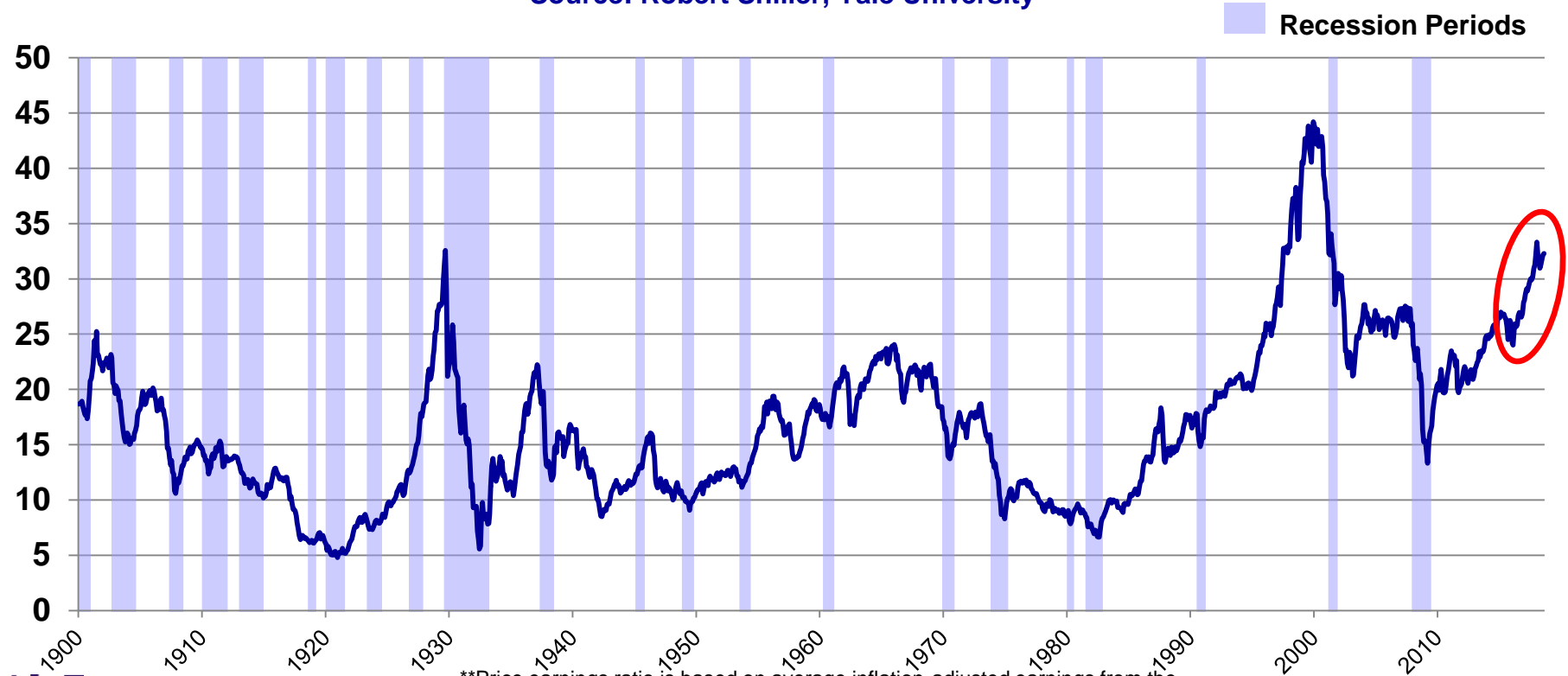
(Millions)



Cyclically Adjusted PE Ratio**

1950 – 2018*

Source: Robert Shiller, Yale University

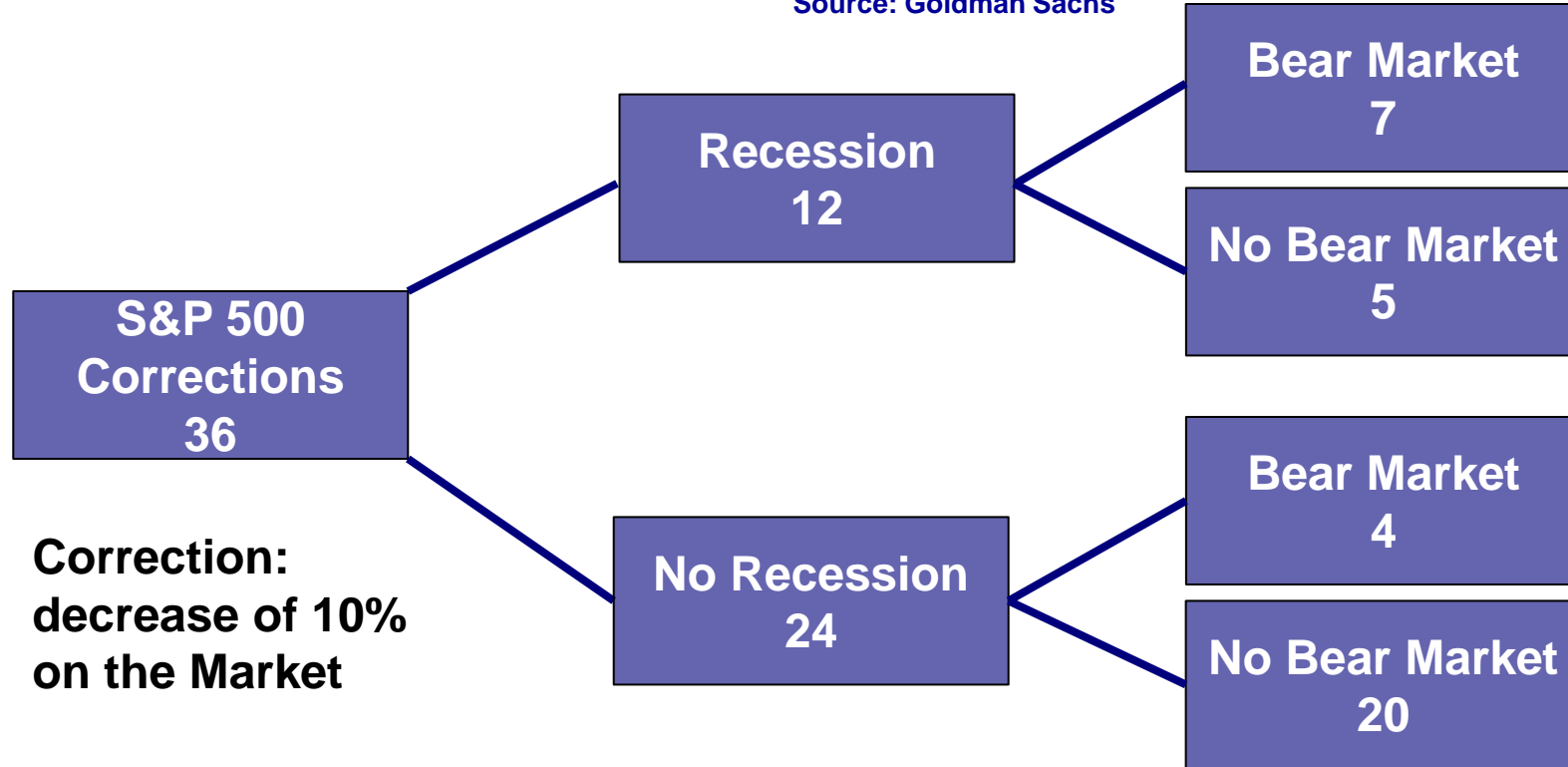


Bear Markets



Stock Market is a bad Predictor of Recessions: Corrections since WWII

Source: Goldman Sachs



Canadians Response to NAFTA Negotiations: Build the Wall!





Effects of a Trade War

- 1. Higher prices on inputs**
- 2. Jobs? Depends on structure. Probably a minor plus**
- 3. Intellectual Property Rights**

Will have a relatively minor effect on U.S. economy



Trade War or Negotiation?

- **23% of Chinese Exports end up in the U.S.**
- **8% of U.S. exports end up in China.**
- **20% of Chinese GDP is exports**
- **<10% of U.S. GDP is exports**



Trade War or Negotiation?

- **So, 4.6% of China's economy depends on exports to the U.S.**
- **0.7% of U.S. economy depends on exports to China.**
- **65% of the U.S. trade deficit is with China.**





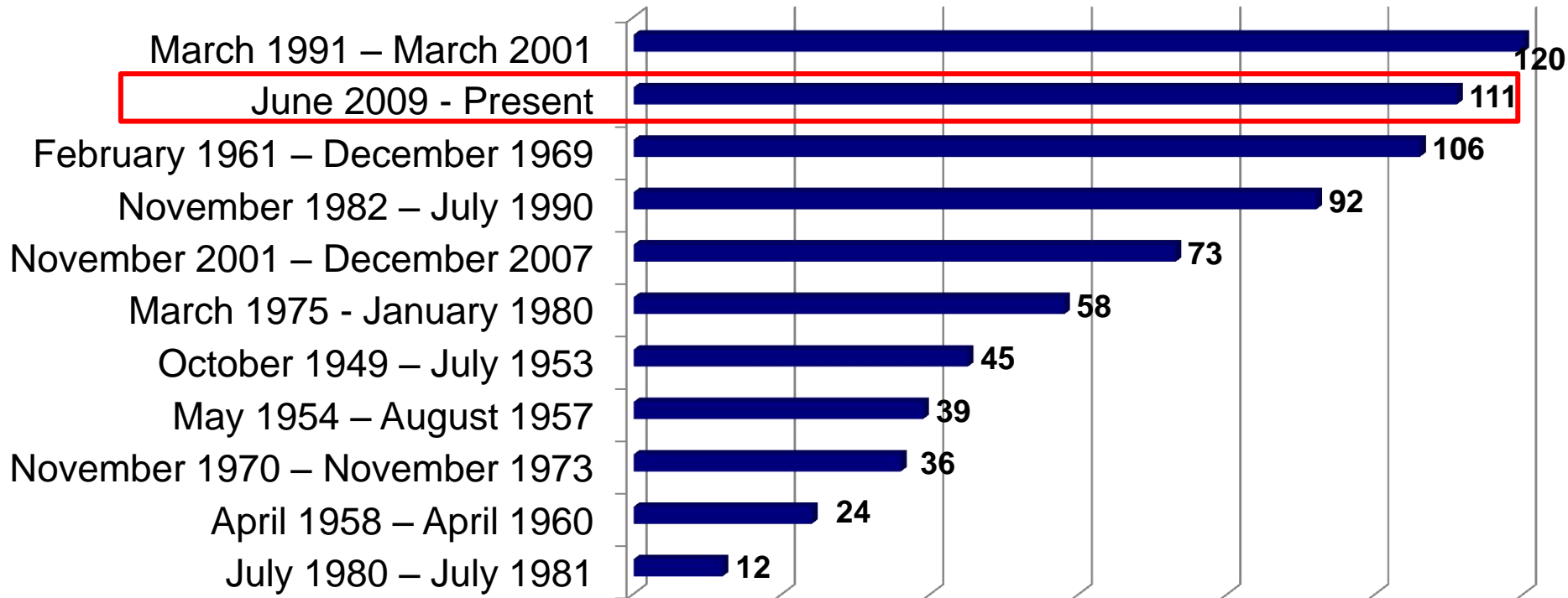
Trade War or Negotiation?

- **China needs exports to keep jobs.**
- **They probably don't want a U.S. recession.**



U.S. BUSINESS CYCLE EXPANSIONS

Source: National Bureau of Economic Research




But, it is not over!





**Expansions don't die
of old age.**





**They die because an economy
becomes vulnerable to
exogenous shocks or asset
bubbles or a tightening in
the credit market.**





**As recoveries get older, they
become more vulnerable to
shocks...**

**...Just as people get older they
become more vulnerable to
diseases.**



**2019 will probably still be a
good year.**



**Tax cuts, deficit spending and plant
& equipment spending should keeps
things going nicely.**





Probability of a recession still relatively low

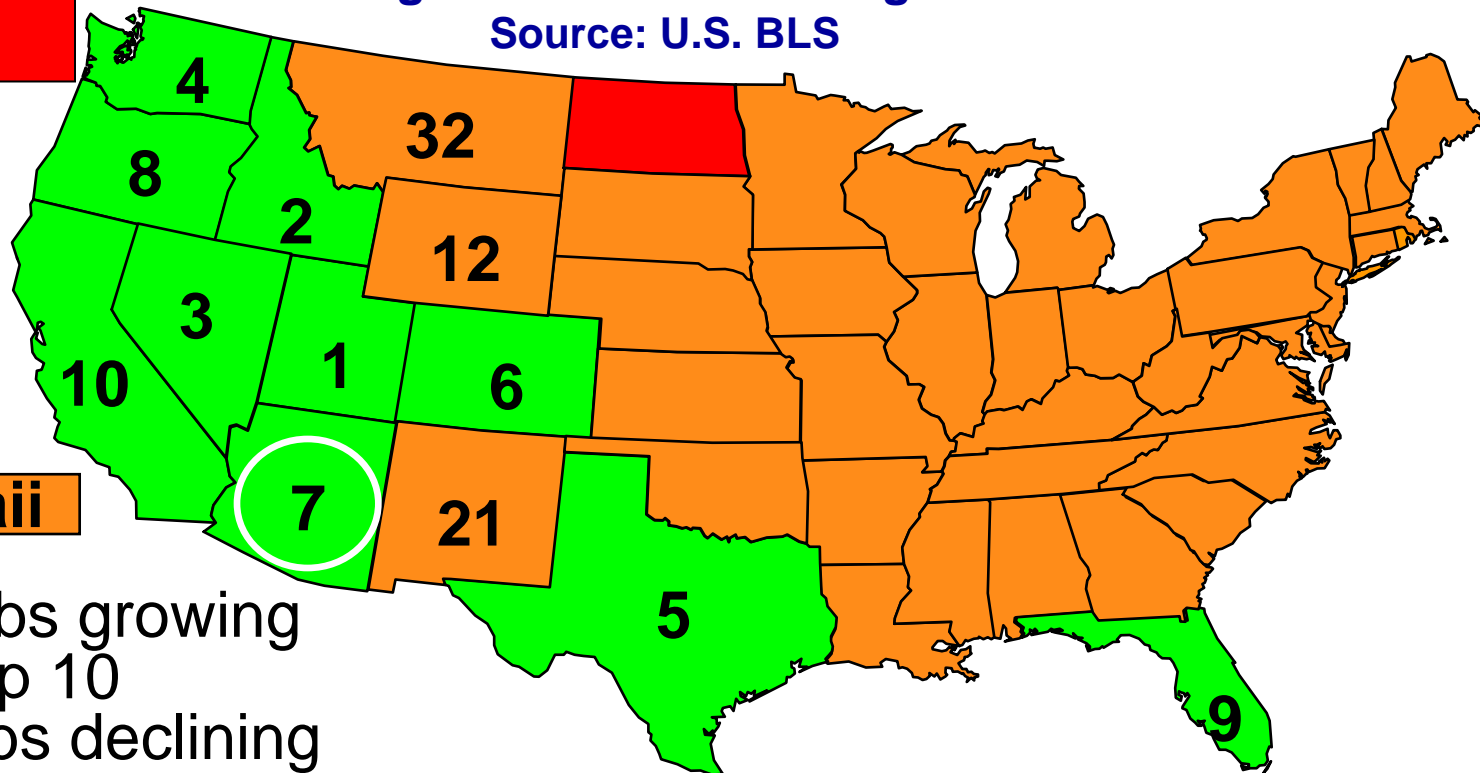


Job Growth 2018

YTD August 2018 vs. YTD August 2017

Source: U.S. BLS

Alaska
50



17

Hawaii

- Jobs growing
- Top 10
- Jobs declining



Arizona Employment Growth

Arizona's Rank Out of 50 States

Source: Arizona State University, U.S. Bureau of Labor Statistics

Year	Rank
1997	2
1998	1
1999	2
2000	5
2001	9
2002	10
2003	4
2004	2
2005	2
2006	2
2007	17

Year	Rank
2008	46
2009	49
2010	49
2011	27
2012	9
2013	9
2014	18
2015	11
2016	7
2017	5
2018*	7



Employment Growth

From Bottom of Recession to Now

Seasonally Adjusted
Source: BLS

Area	% Change	% of Arizona Growth	2017 Annual Wages
United States	14.5%		\$55,331
Arizona	20.7%	100.0%	\$49,752
Greater Phoenix	25.8%	88.4%	\$52,043
Greater Tucson	9.7%	6.9%	\$43,584
Balance of State	6.8%	4.7%	\$37,579



Phoenix-Mesa-Scottsdale Employment Growth

(Ranking among all metro areas greater than 1,000,000)

Source: Arizona State University, U.S. Bureau of Labor Statistics

Year	Rank	# MSA's
1997	2	22
1998	1	23
1999	3	24
2000	7	25
2001	7	26
2002	5	25
2003	3	25
2004	3	25
2005	1	26
2006	1	27
2007	10	29

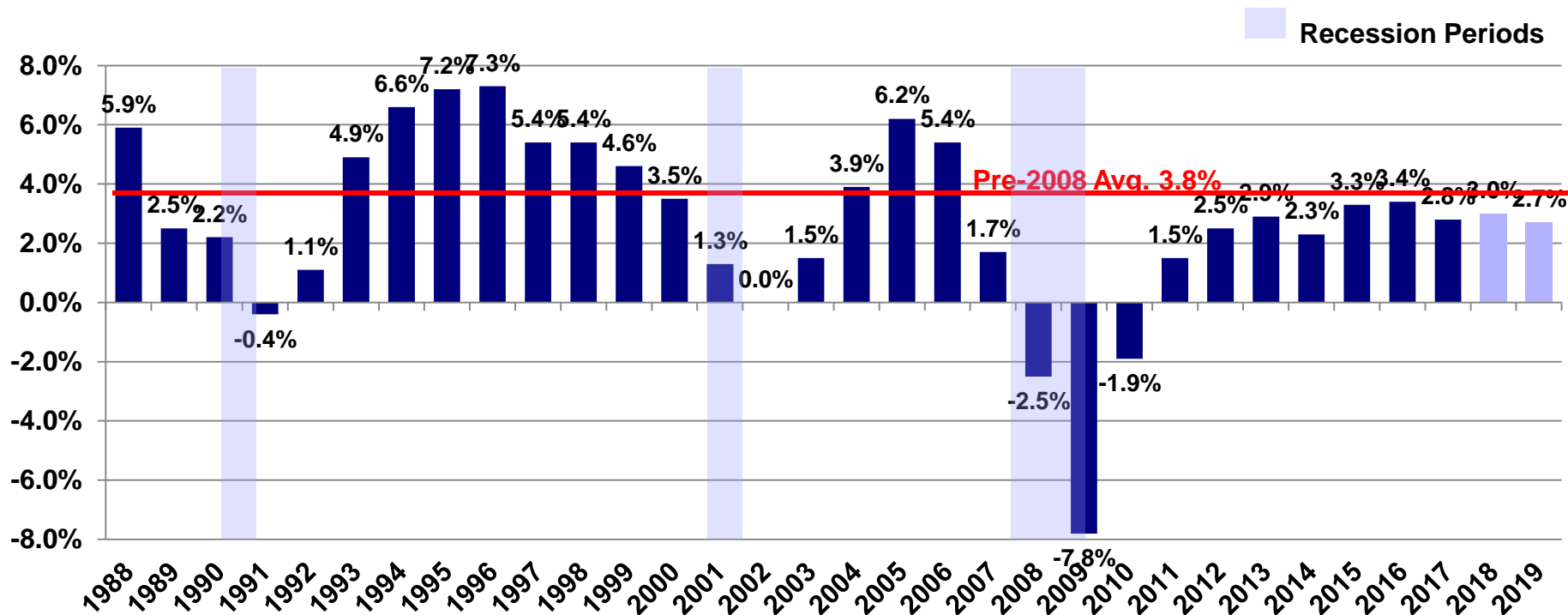
Year	Rank	# MSA's
2008	25	29
2009	23	24
2010	23	23
2011	14	25
2012	10	28
2013	7	29
2014	15	31
2015	10	32
2016	7	34
2017	5	34
2018*	7	34



Greater Phoenix Employment*

Annual Percent Change 1988–2019**

Source: Office of Economic Opportunity



*Non-agricultural wage & salary employment. Changed from SIC to NAICS reporting in 1990.

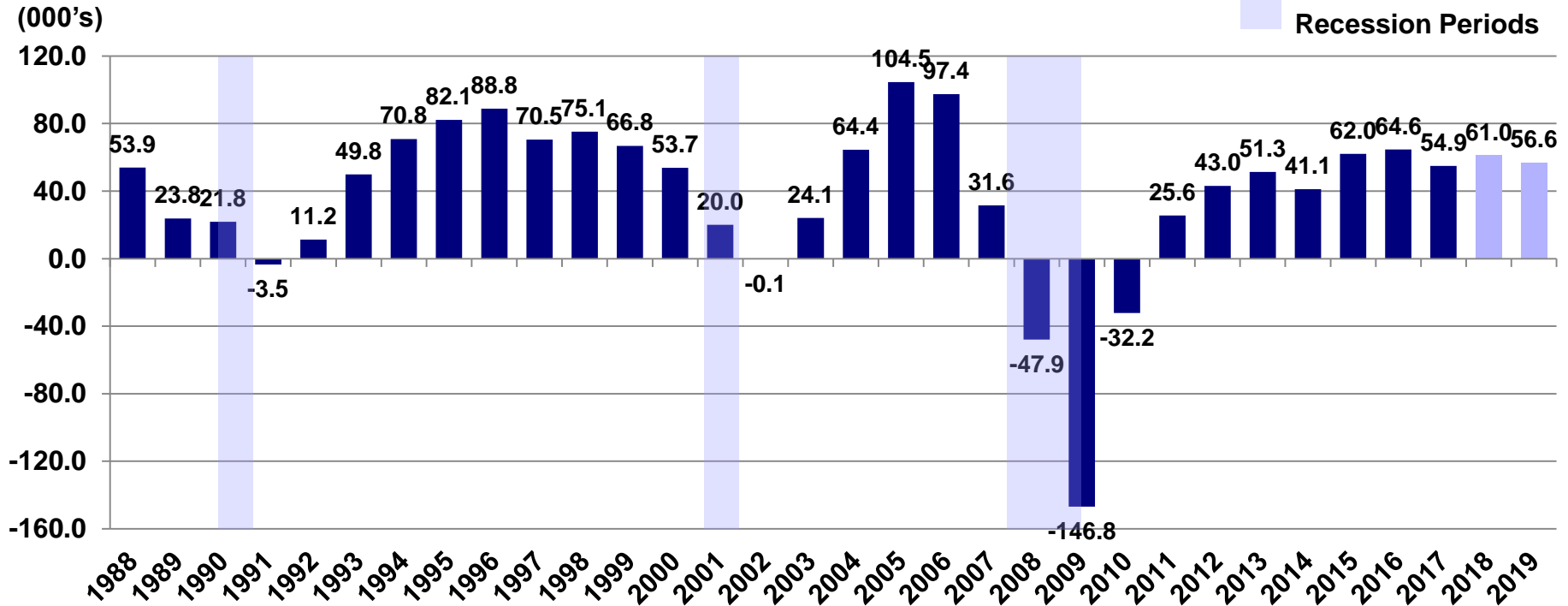
**2018 & 2019 forecasts from Elliott D. Pollack & Co. as of August 2018.



Greater Phoenix Employment*

Net Annual Growth Change 1988–2019**

Source: Office of Economic Opportunity



*Non-agricultural wage & salary employment. Changed from SIC to NAICS reporting in 1990.

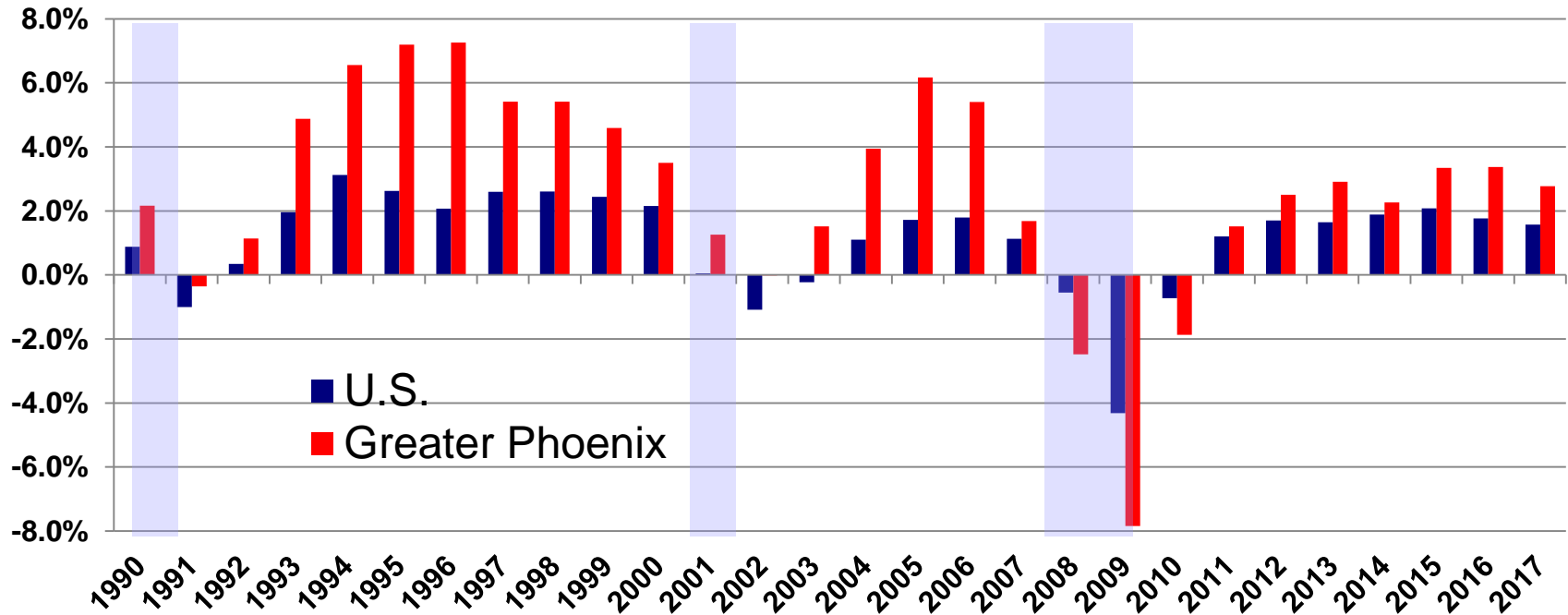
**2018 & 2019 forecasts from Elliott D. Pollack & Co. as of August 2018.



Employment: Greater Phoenix to U.S. Annual Growth Rate 1990-2017

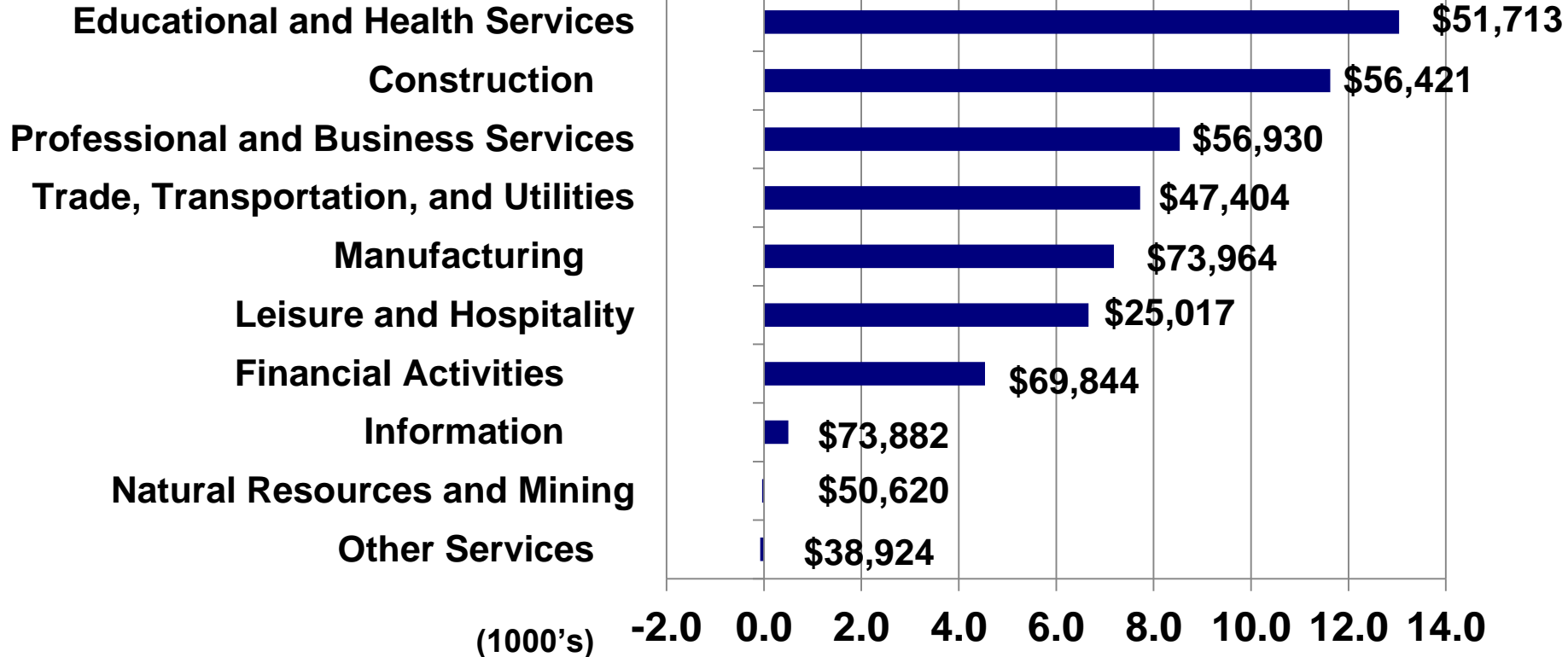
Source: Bureau of Labor Statistics

Recession Periods



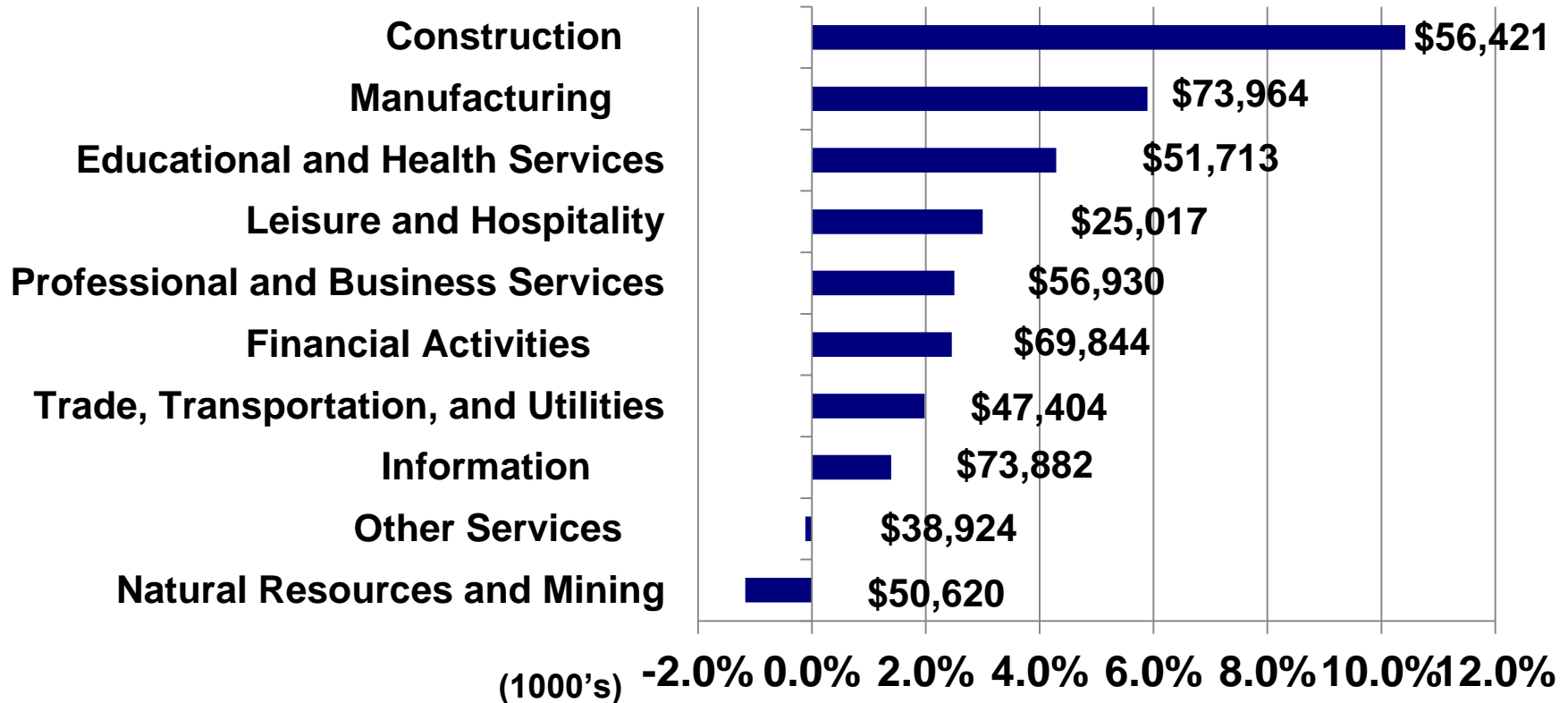
2018*

Net Job Growth and Wages



2018*

% Job Growth and Wages



Population Growth after Recessions

Greater Phoenix

Source: Office of Economic Opportunity

Years	% Growth	APR
1975-1980	20.1%	3.7%
1981-1990	35.5%	3.4%
1991-2001	46.0%	3.9%
2001-2007	21.6%	3.3%
2009-2017	8.7%	1.3%





Growth itself is an economic driver in Greater Phoenix—

People moving to the State create demand for goods and services that create more jobs.

When you grow around 1.8% instead of 3.6%, the part of the economy that is based on servicing new population becomes much smaller.



Greater Phoenix Population

Source: U.S. Bureau of Census; Office of Economic Opportunity; UofA Forecasting Project

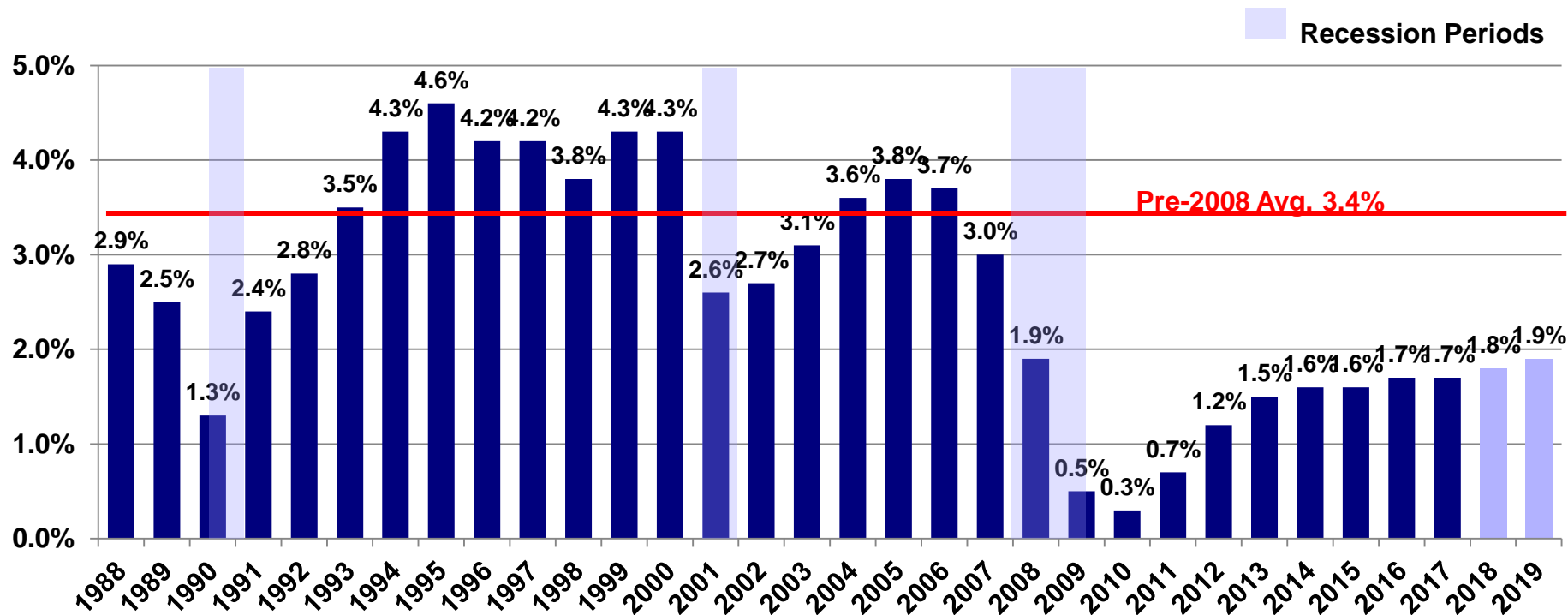
Period Ending	Population	Change	APR
1970	1,039,807		3.5%
1980	1,600,093	560,286	4.4%
1990	2,249,116	649,023	3.5%
2000	3,275,362	1,026,246	3.8%
2010	4,200,427	925,065	2.5%
2015	4,482,906	282,479	1.3%
2020*	4,905,735	422,829	1.8%
2025*	5,348,237	442,502	1.7%

*Forecasts from UofA
1970-2010 10 year period
2010-2025 5 year period



Greater Phoenix Population Annual Percent Change 1988–2019*

Source: Office of Economic Opportunity, EDPCo

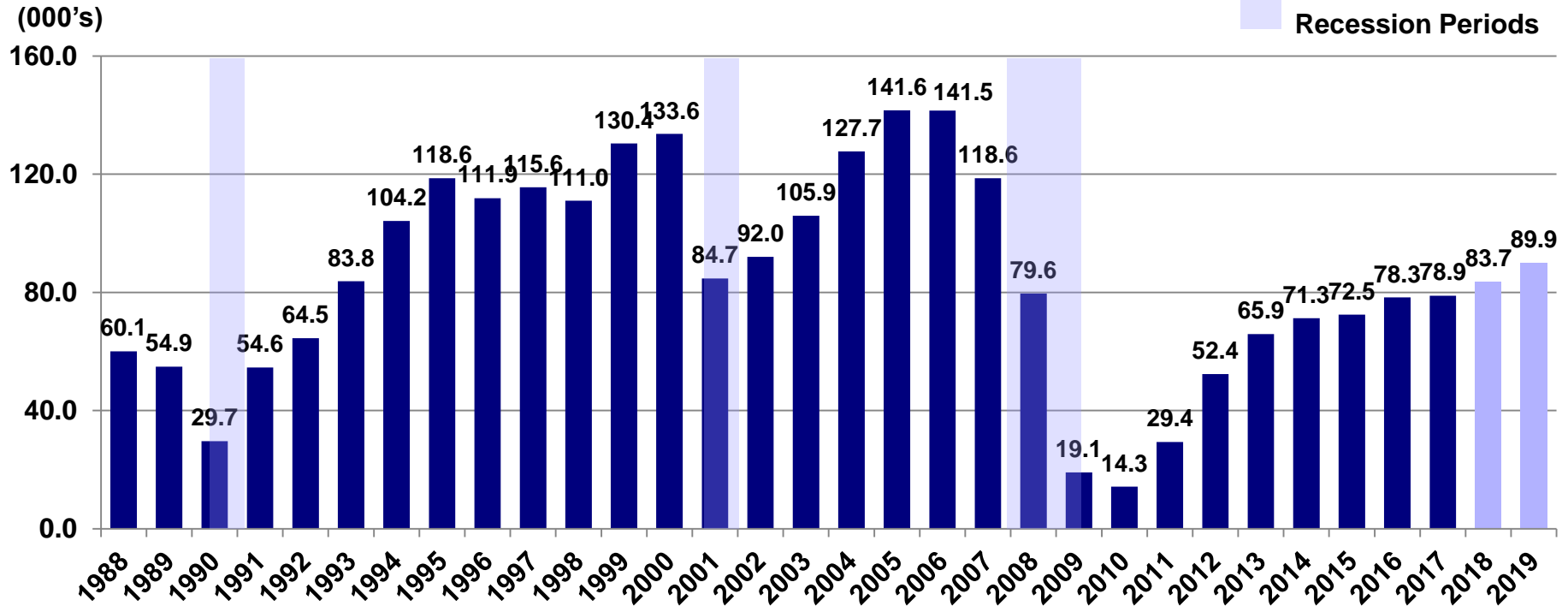


*Estimates for 2011, 2012, 2013, 2014, 2015 and 2016 and forecasts for 2018 and 2019



Greater Phoenix Population Annual Net Change 1975–2019*

Source: Office of Economic Opportunity, EDPCo

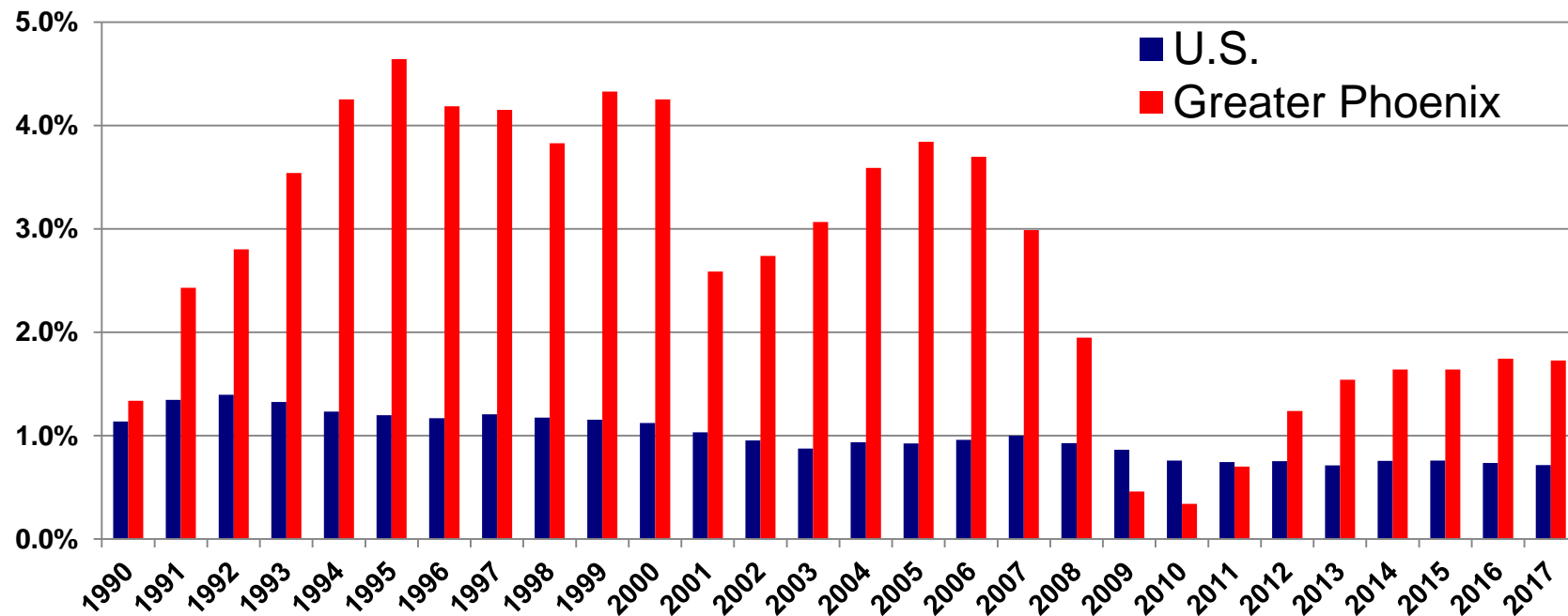


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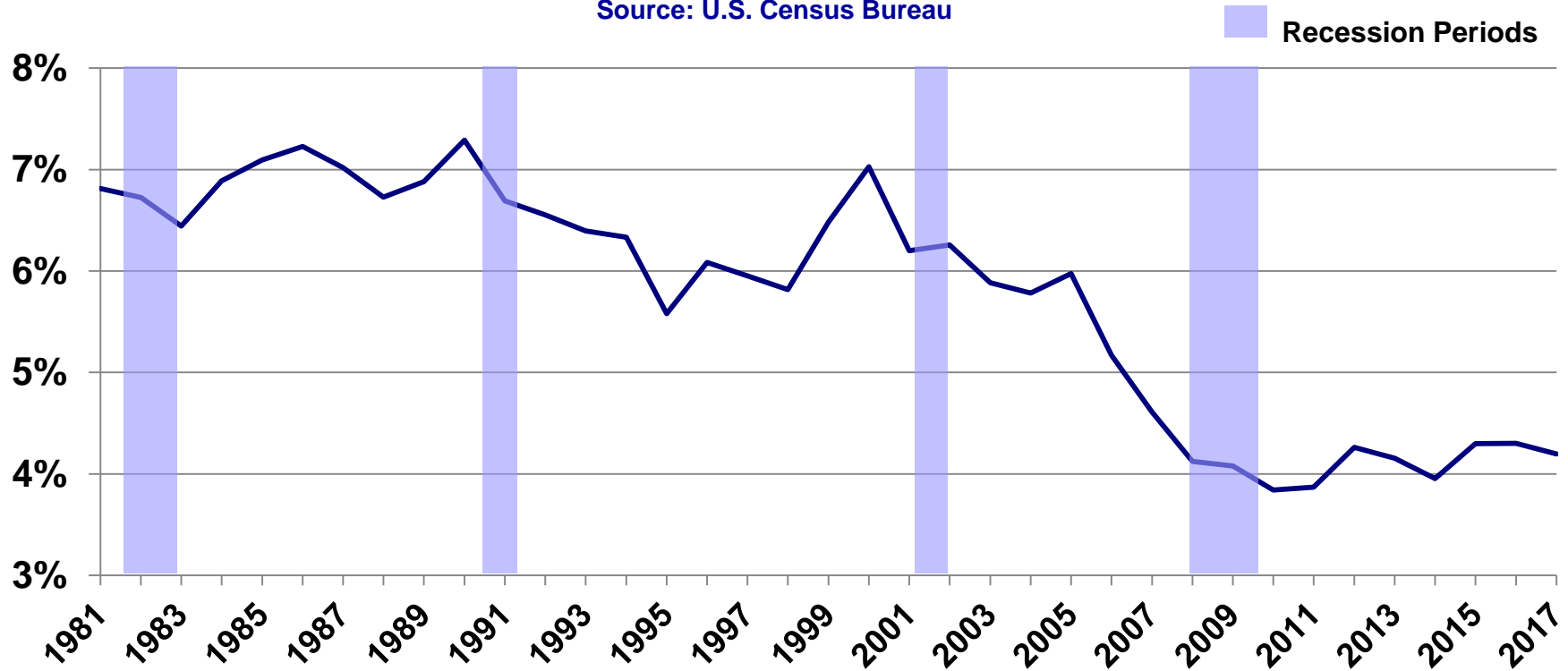
Population: Greater Phoenix to U.S. Annual Growth Rate 1990-2017

Source: U.S. Census Bureau; Office of Economic Opportunity; EDPCo



Total Movers as a % of Total U.S. Population

Source: U.S. Census Bureau

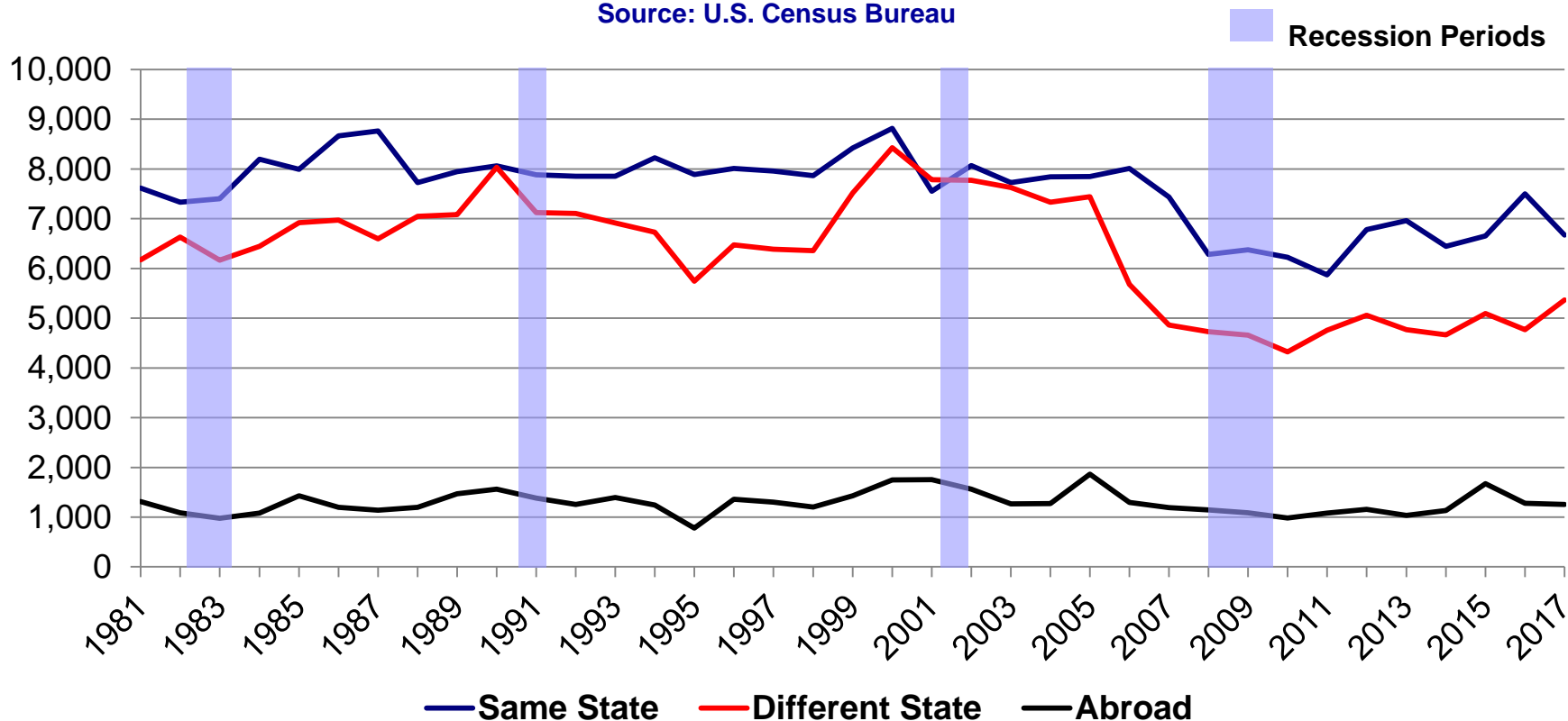


Note: Includes all movers except movers within same county



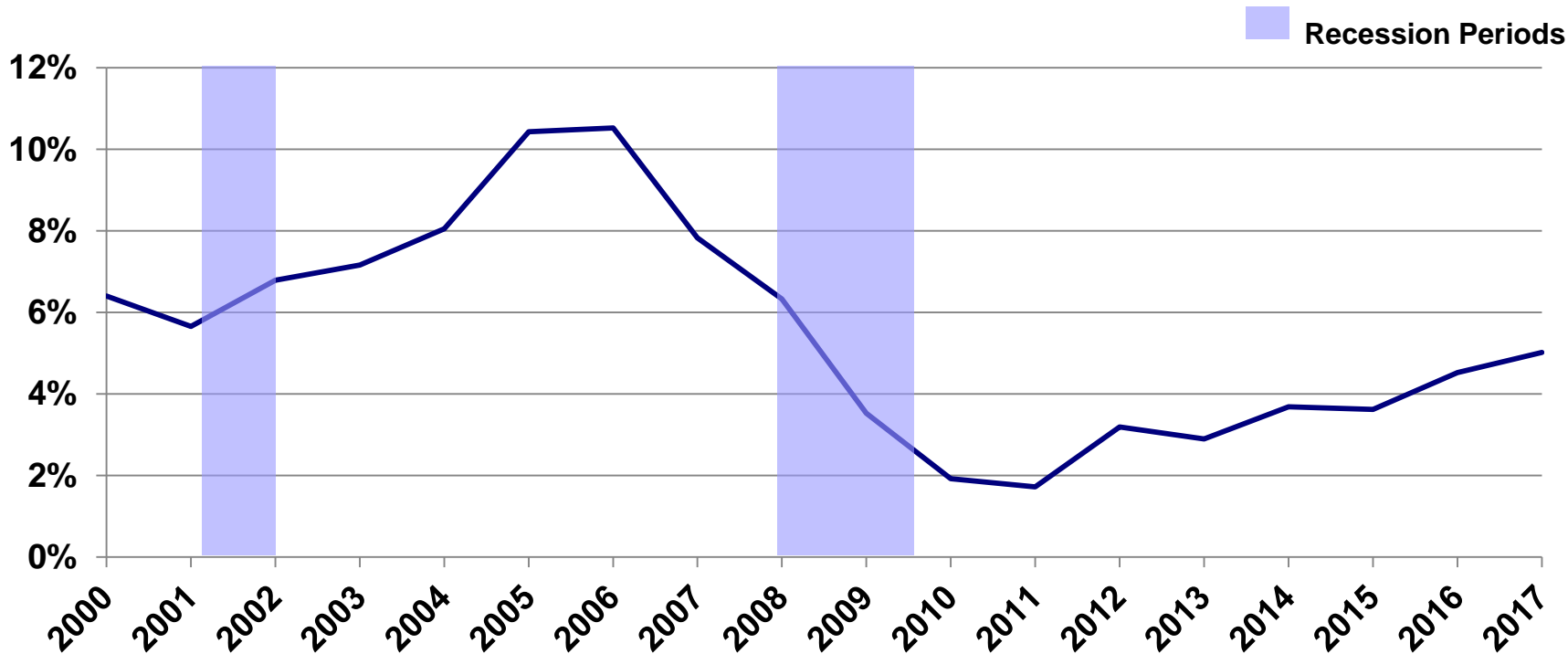
Movers from an Outside Area 1981-2017

Source: U.S. Census Bureau



Arizona Capture Rate

Source: U.S. Census Bureau



Note: Does not include in-state movers;
Net migration numbers.



2017 Population Growth Rank By County

Source: U.S. Census Bureau

Rank	County	Population	Net Chg.	Percent Chg.
1	Maricopa, AZ	4,307,033	73,650	1.7%
2	Clark, NV	2,204,079	47,355	2.2%
3	Riverside, CA	2,423,266	36,744	1.5%
4	Harris, TX	4,652,980	35,939	0.8%
5	Tarrant, TX	2,054,475	32,729	1.6%
6	King, WA	2,188,649	32,687	1.5%
7	Bexar, TX	1,958,578	30,831	1.6%
8	Dallas, TX	2,618,148	30,686	1.2%
9	Denton, TX	836,210	27,911	3.5%
10	Collin, TX	969,603	27,150	2.9%



Greater Phoenix Occupied Housing

Source: 2017 American Community Survey

Type	Housing Units	% of Total
Total	1,675,676	
Single Family	1,216,570	72.6%
Multi-Family	369,312	22.0%
Other	89,794	5.4%




Greater Phoenix Renter-Occupied Housing

Source: 2017 American Community Survey

Type	Housing Units	% of Total
Total	608,752	
Single Family	253,364	41.6%
2-49 Units	248,598	40.8%
50 or More Units	85,648	14.1%
Other	21,142	3.5%



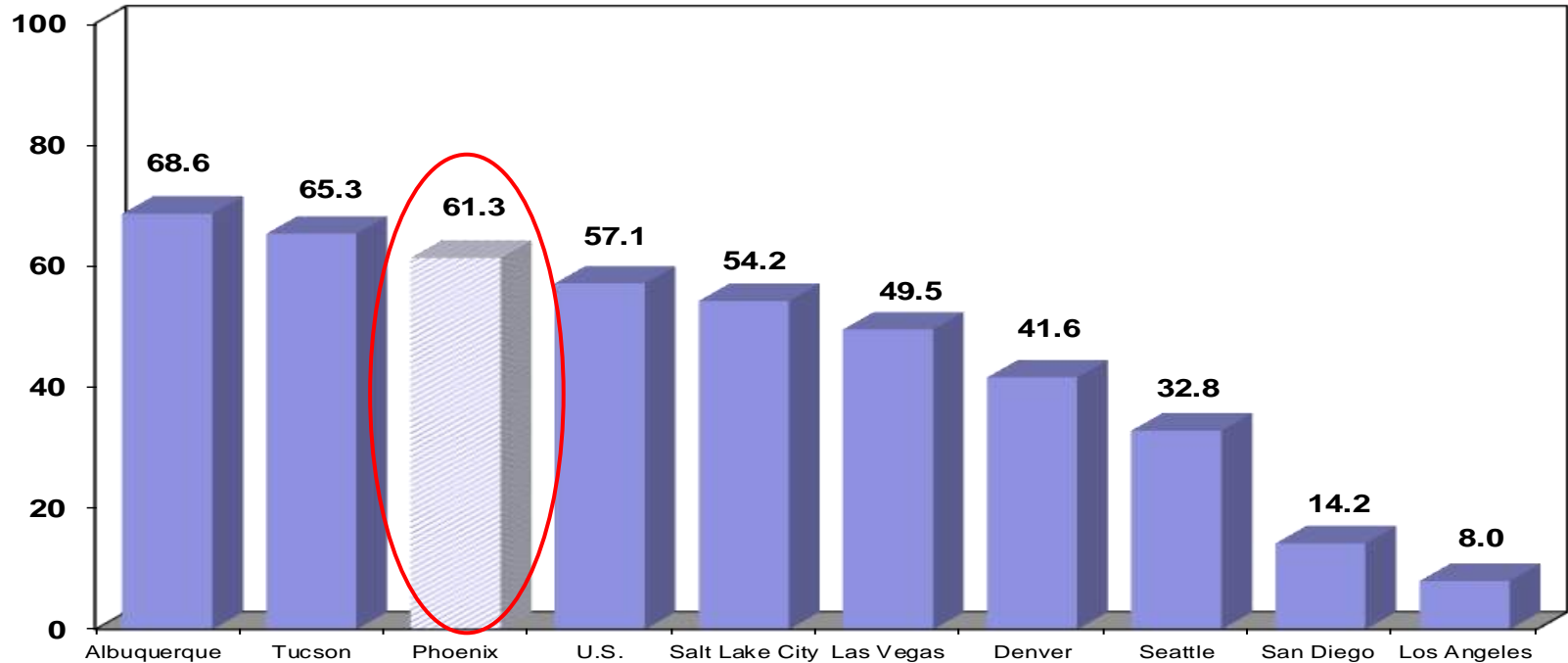


**Affordability is a key-concern, for
millennials entering the marketplace and
for the retirement population moving to
Phoenix.**



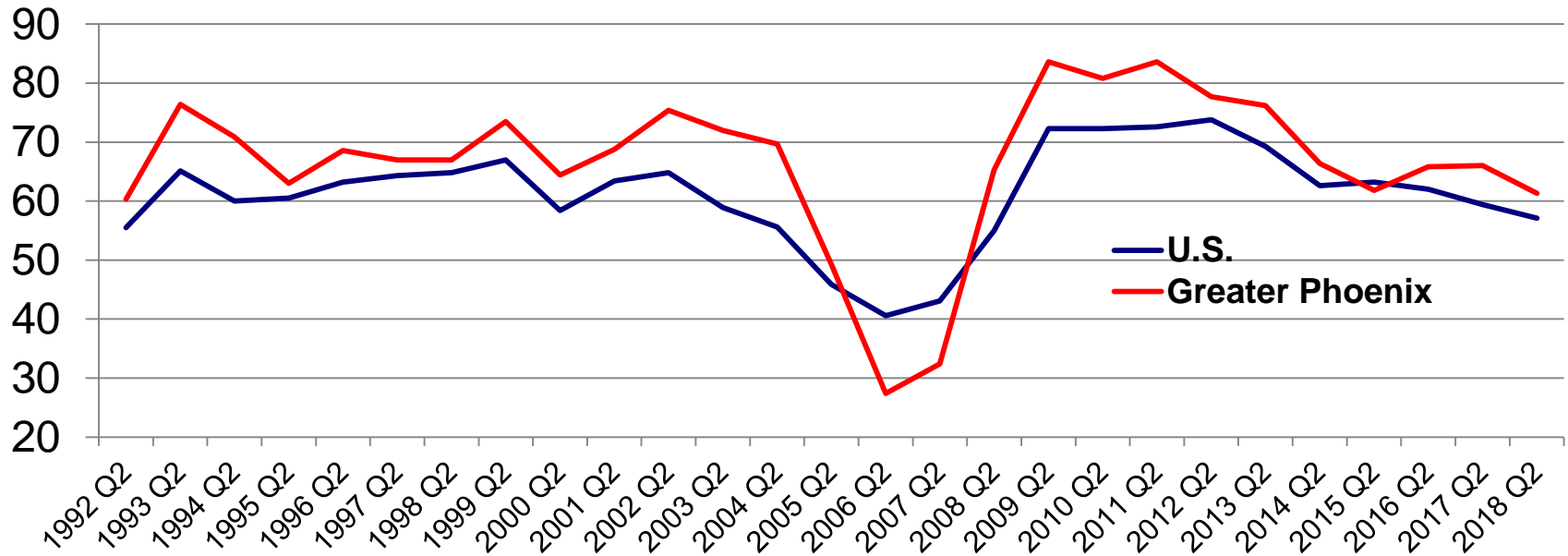
Housing Opportunity Index 2018 Q2

Source: NAHB/Wells Fargo



Housing Opportunity Index 1992-2018

Source: NAHB/Wells Fargo



Source: ARMLS



Builders are facing supply side constraints:

- **Cost of buildable lots**
- **Increasing construction material costs**
- **Sufficient labor???**

And demand side constraints of rising mortgage interest rates

The result is upward pressure on housing prices and reduced affordability.

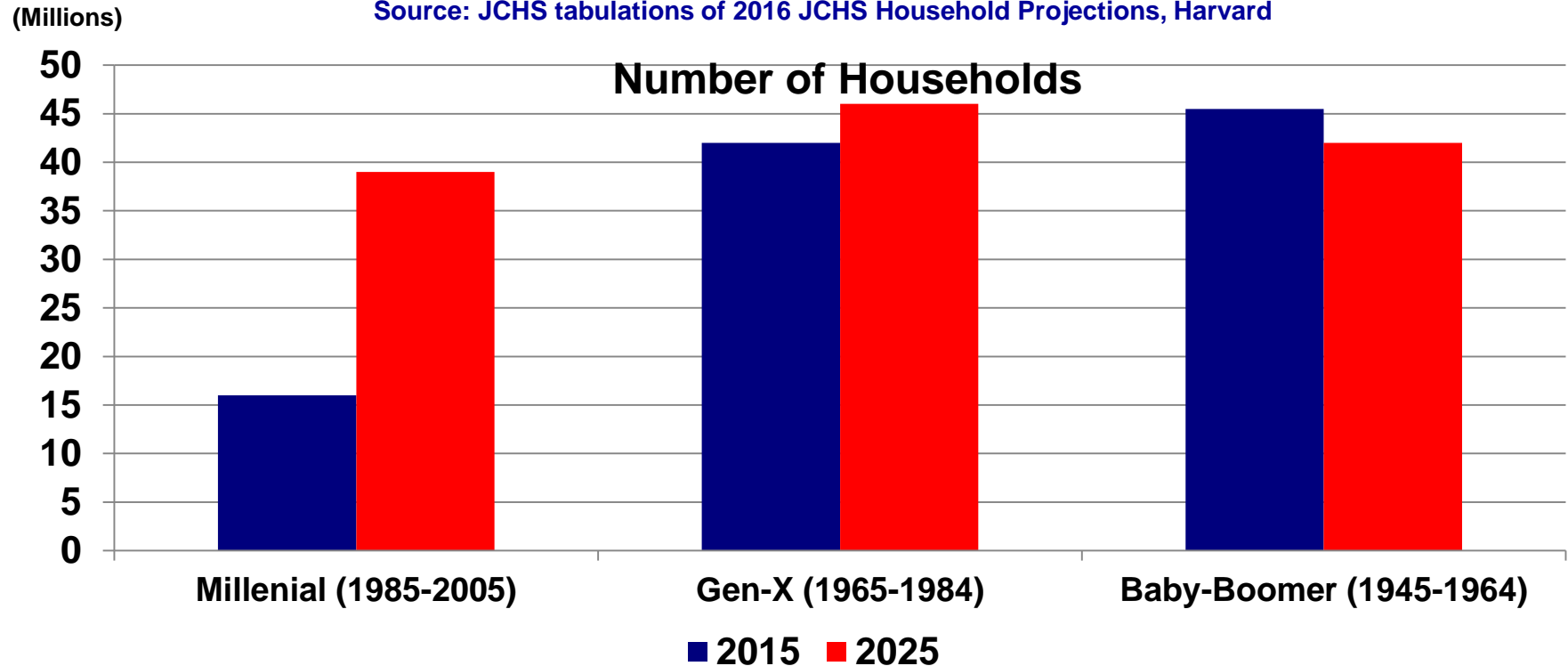


Top-seller are mostly smaller-lot, lower-priced new home communities- communities target entry-level and value-oriented buyers.



Most new Housing demand over the next 10 years will come from millennials

Source: JCHS tabulations of 2016 JCHS Household Projections, Harvard



Millennials



Baby Boomers



Baby Boomers Versus Millennials

Aged 25-34

Source: Bowling Green State University; 1980 Decennial Census; 2015 American Community Survey; CDC

	Baby Boomers (1980)	Millennials (2015)
Married	68%	40%
Never Married	20%	53%
Age first marriage Males	25	≈30
Age first marriage Females	22	≈28
Mean Age at First Child	23	≈27
Live in Independent Households	84%	59%
Lived with Parents/Grandparents	9%	22%



Greater Phoenix

Homeownership Rates by Age Group

Source: 2017 American Community Survey 1-Year Estimates; OEO

Householder Age	% of Total Occupied	Current Population	10 Years from Now
15 to 24 years	13.9%	626,087	858,758
25 to 34 years	<u>40.1%</u>	<u>679,718</u>	<u>850,678</u>
35 to 44 years	<u>55.6%</u>	<u>617,153</u>	<u>751,644</u>
45 to 54 years	65.3%	596,066	704,419
55 to 64 years	76.6%	544,408	698,575
65 to 74 years	82.3%	426,671	644,944
75 to 84 years	82.9%	218,059	382,887
85 years and over	70.0%	79,972	138,025
Total	63.7%	3,788,134	5,029,930



Greater Phoenix Renter-Occupied Housing by Age and Tenure

Source: 2017 American Community Survey

	Under 35	35 to 64	65 and Over
Single Family	32.4%	51.7%	37.7%
Multi-Family	67.6%	48.3%	62.3%
Total	100%	100%	100%

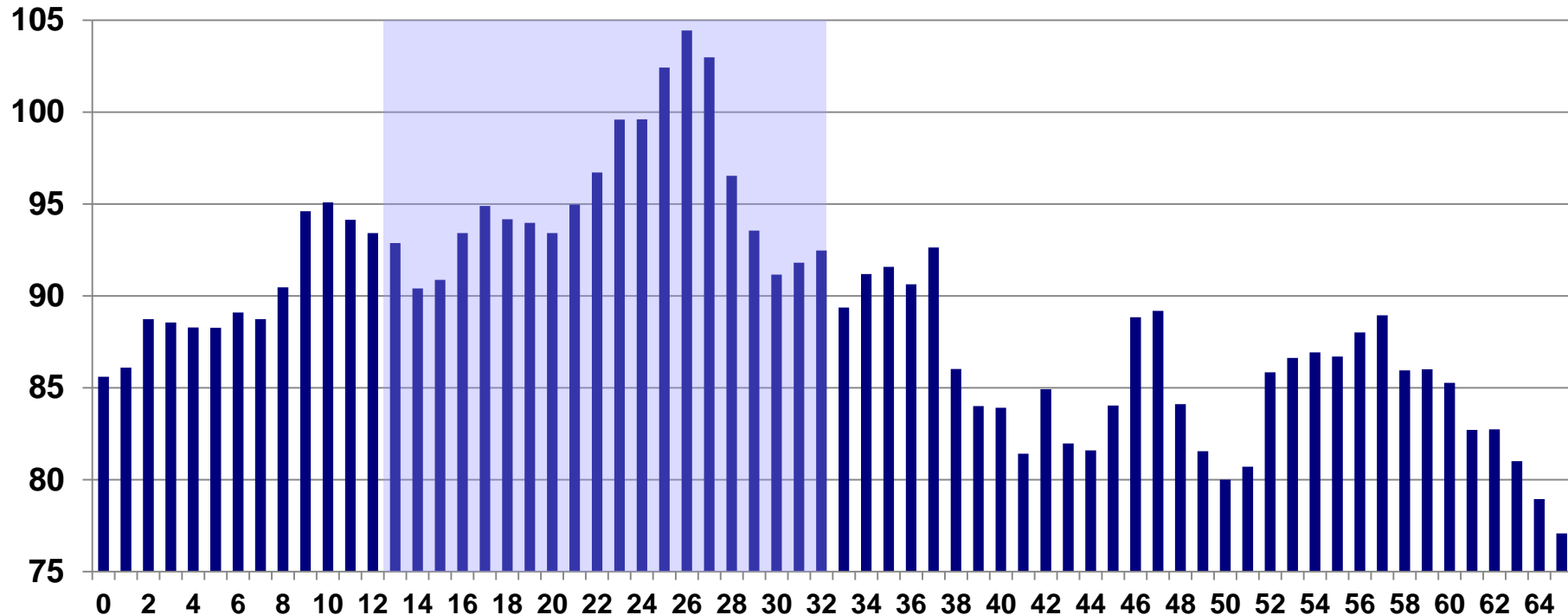


Arizona Population by Age

2017

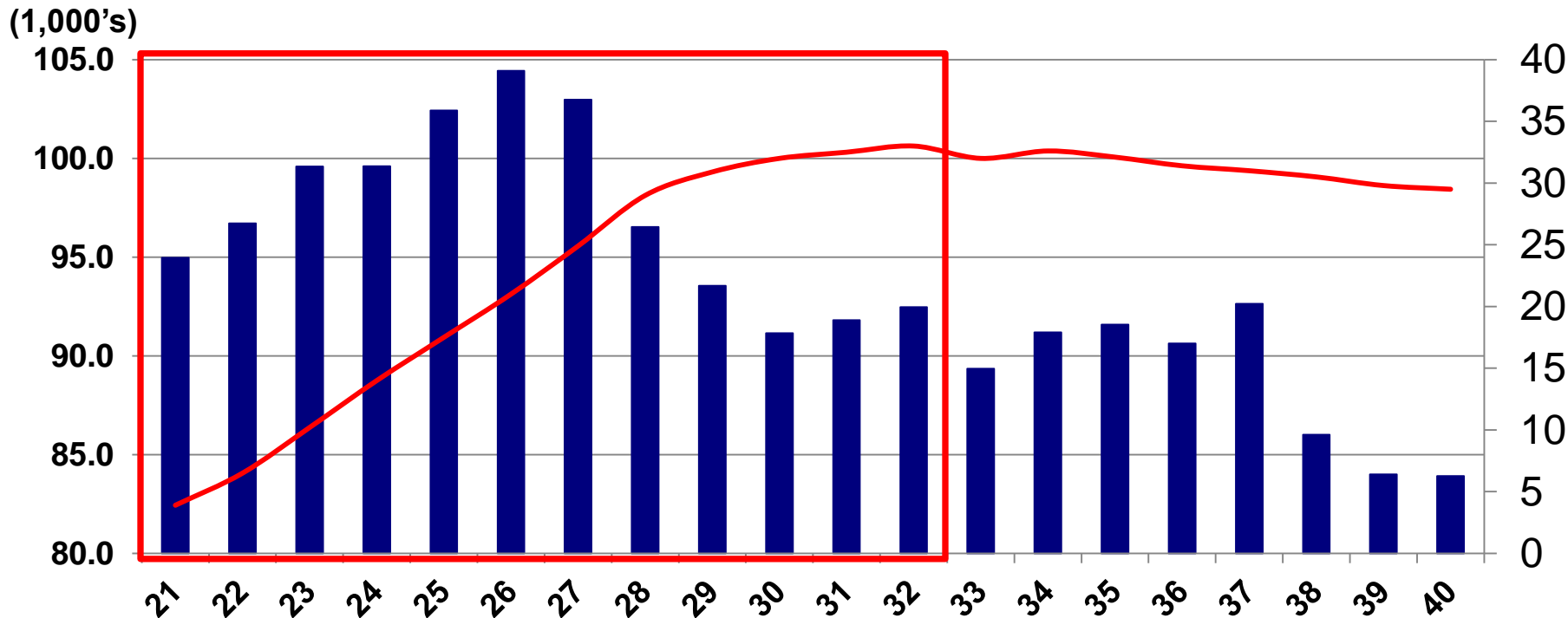
Source: U.S. Census Bureau

(1,000's)



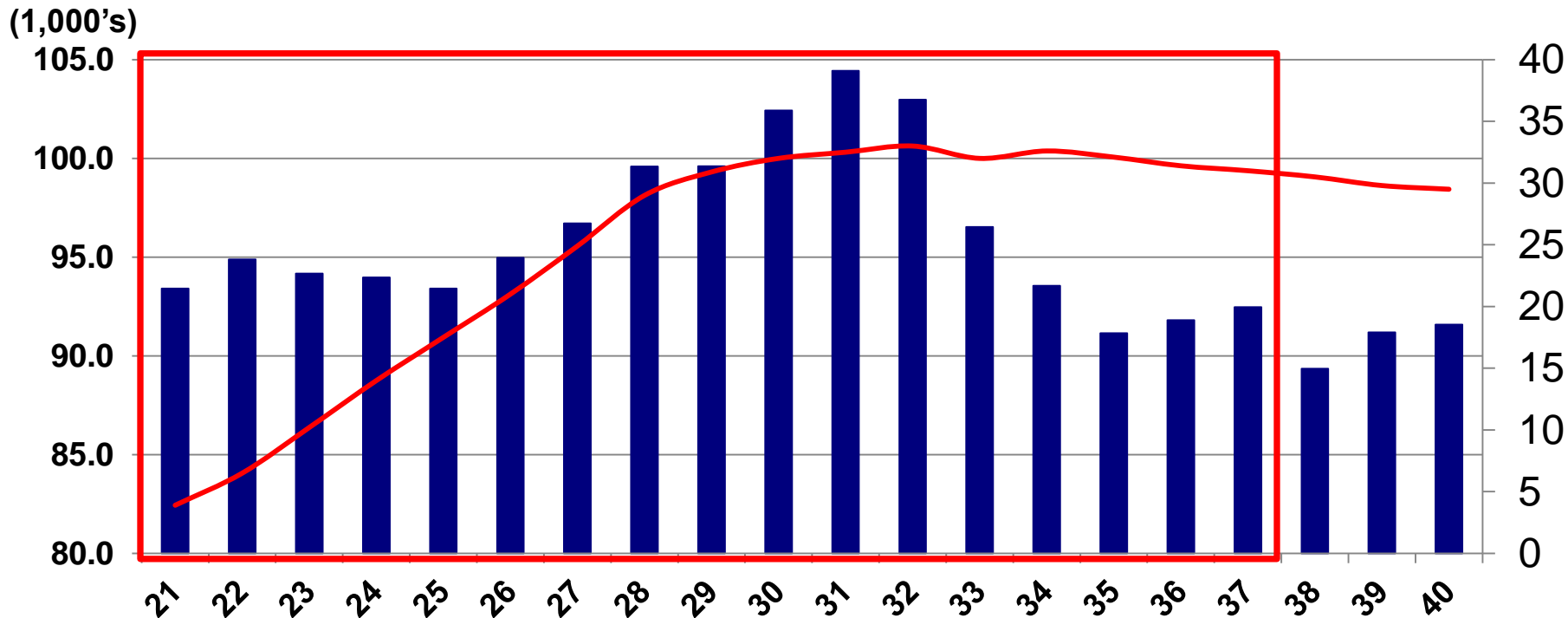
Arizona Number of Persons vs. Home-Purchase Loan Applications 2017

Source: U.S. Census Bureau



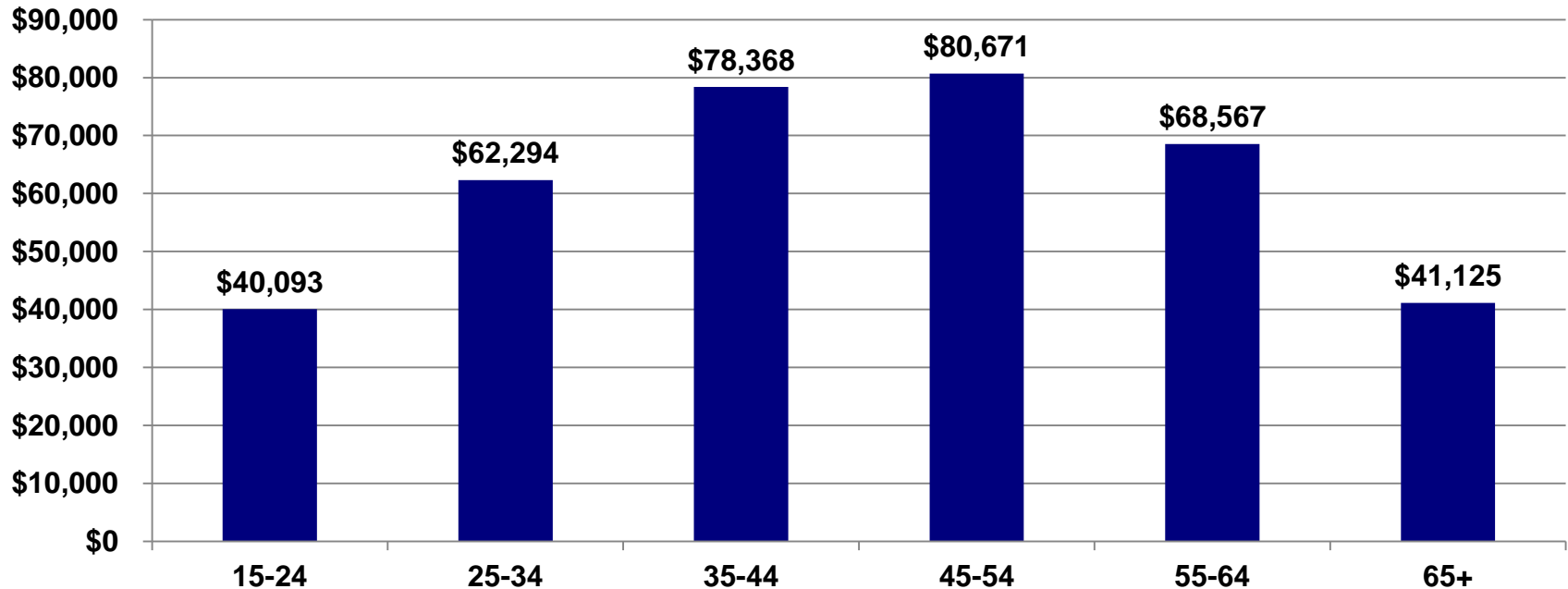
Arizona Number of Persons vs. Home-Purchase Loan Applications 2022

Source: U.S. Census Bureau



Median Household Income by Age Group 2017

Source: U.S. Census Bureau





**Millennials were hit with
several factors that, for many,
delayed home buying from
their 20's and 30's.**





These Factors Include:

- The Great Recession and the lack of job opportunities
- Greater acceptance of larger amounts of student debt
- Social mores are changing and becoming acceptable:
 - Delay of Marriage
 - Living with Mommy and Daddy
 - Becoming less materialistic



Many of those changes are coming to an end as millennials start to:

- Pay off student loan debt
- Benefit from a strong economy
- Realize they are subject to the laws of biology



Student Loans

Source: Federal Reserve; Citizens Financial Group

- 70% of students leave college with debt
- Standard repayment plan is 10 years
- 60% of students are expected to pay off their loan in their 40's



This is the
prime of my life.
I'm young, hot,
and full of _____

Crippling debt.



Student Debt Distribution

Source: Federal Reserve Bank of New York Consumer Credit Panel / Equifax

Balance	Number of Borrowers 2017 Q4	2017 Borrower
\$1 and \$5,000	8,547,500	28,250,100
\$5,000 and \$10,000	7,425,400	
\$10,000 and \$25,000	12,277,200	
\$25,000 and \$50,000	8,609,700	8,609,700
\$50,000 and \$75,000	3,681,000	7,855,700
\$75,000 and \$100,000	1,612,600	
\$100,000 and \$150,000	1,347,400	
\$150,000 and \$200,000	604,900	
\$200,000+	609,800	



Student Loan or Mortgage Payment

Original Amount	Monthly Payment	Potential Mortgage
\$200,000	\$2,121	\$411,396
\$150,000	\$1,591	\$308,547
\$100,000	\$1,061	\$205,698
\$75,000	\$795	\$154,274
\$50,000	\$530	\$102,849
\$25,000	\$265	\$51,425
\$10,000	\$106	\$20,570

Assumptions:

Monthly Payment

10 years


5% interest rate

Potential Mortgage

30-year mortgage

4.65% Interest rate





Most millennials should have their student debt paid within 5 to 10 years after graduating with their highest degree.

First millennials hit 22 in 2007.



**Millennials will start turning
35 in 2020**



Millennials Rent for Life?

Source: Fannie Mae

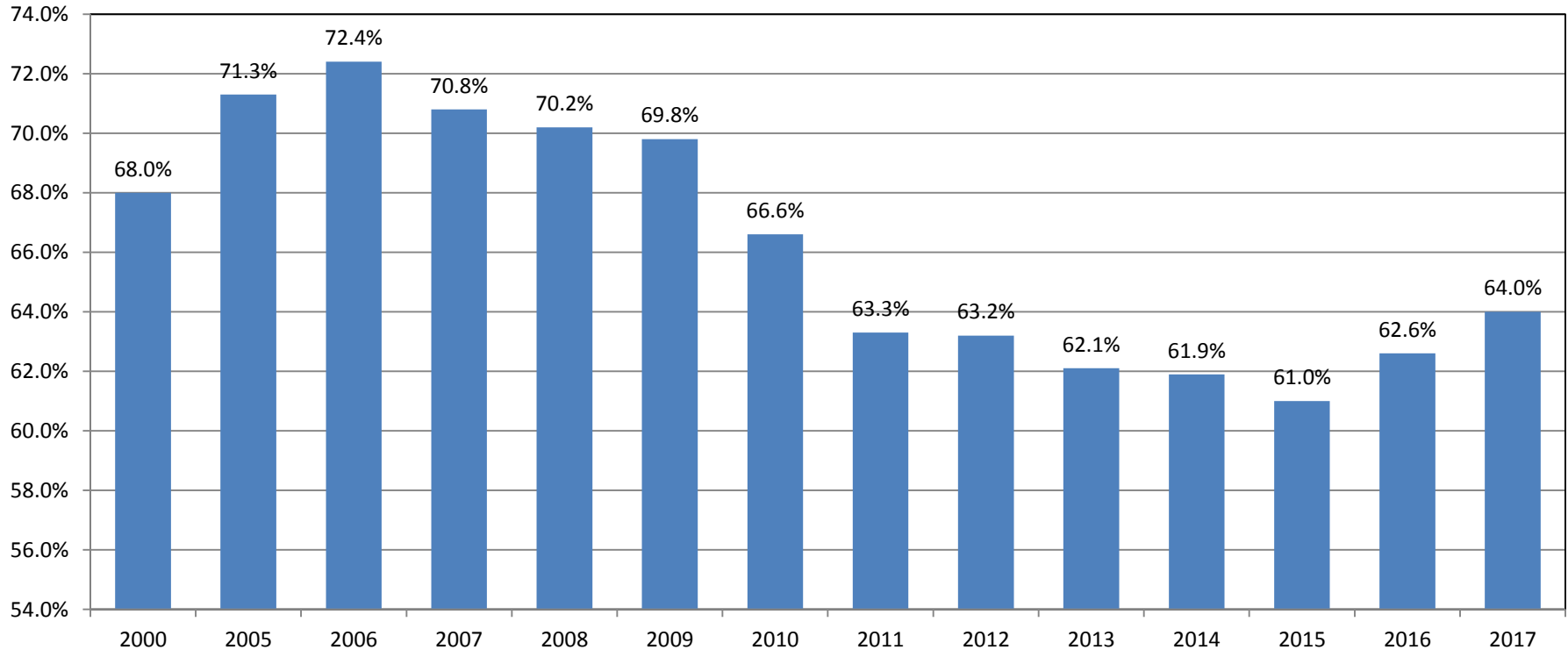
According to Fannie Mae's Renters Survey:

- 37% are renting in order to get ready to buy a home
- 46% said their biggest obstacle to doing so is saving up for a down payment and closing costs
- 95% said they plan to own someday



Homeownership Percentage Greater Phoenix

Source: U.S. Census, American Community Survey





Conclusion:

Significant pent up demand.

Outlook remains strong!

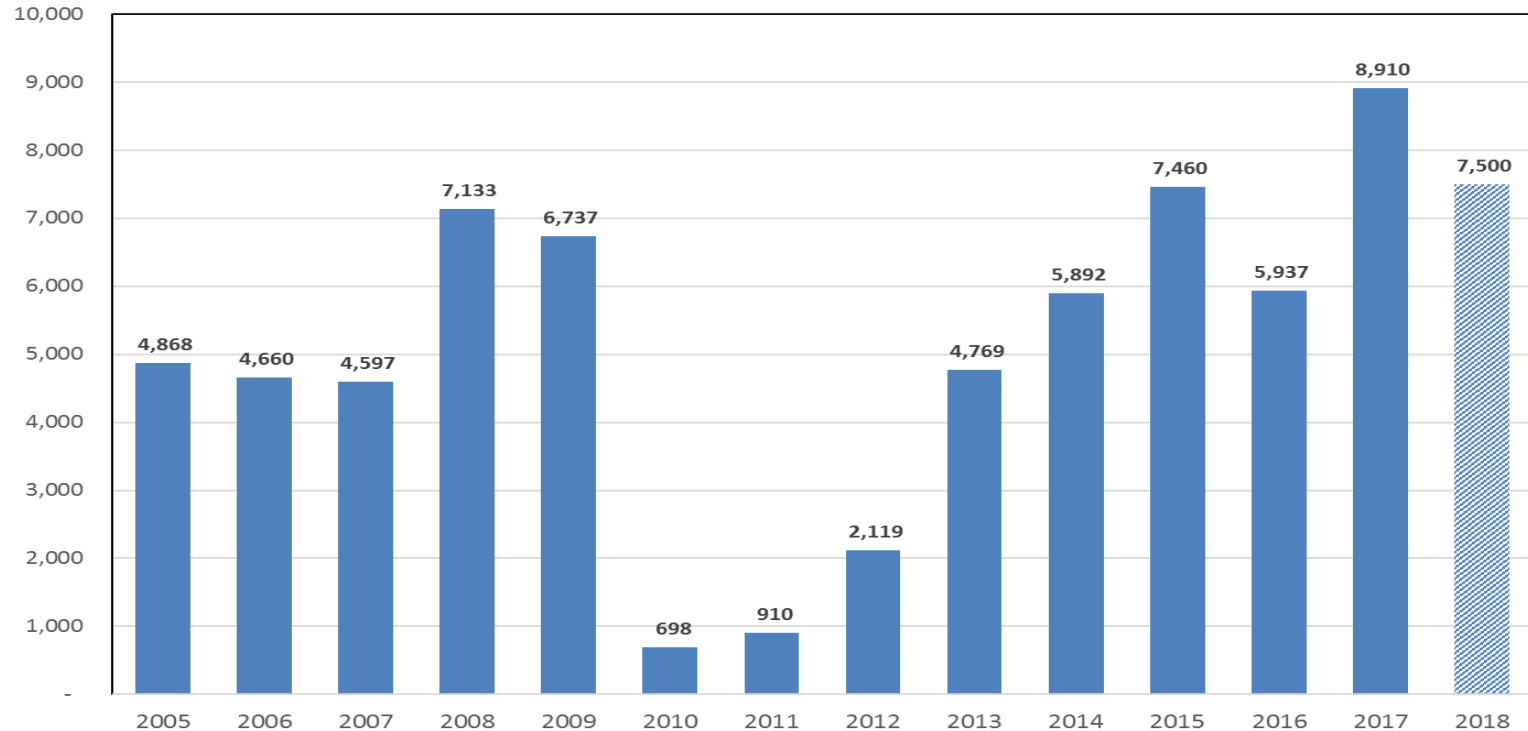


Apartments



Apartment Unit Deliveries Maricopa County 2005-2017

Source: RealData





**High end apartment demand will
continue to be strong.**

**But there is a lot of high priced
supply coming to market.**



Where is the supply/demand imbalance?





Worker Housing

Source: Everest Holdings

- The strongest demand is in worker housing
- Households earning between 60% and 120% of median household income.
- This not Subsidized housing
- Police officer, firefighters, teachers, retail workers, hospital workers, etc.
- Housing that is affordable (20 to 30 percent of Household income).
- Traditional Apartments, SF rentals and for-sale housing.
- Close to major employment centers and transportation routes.

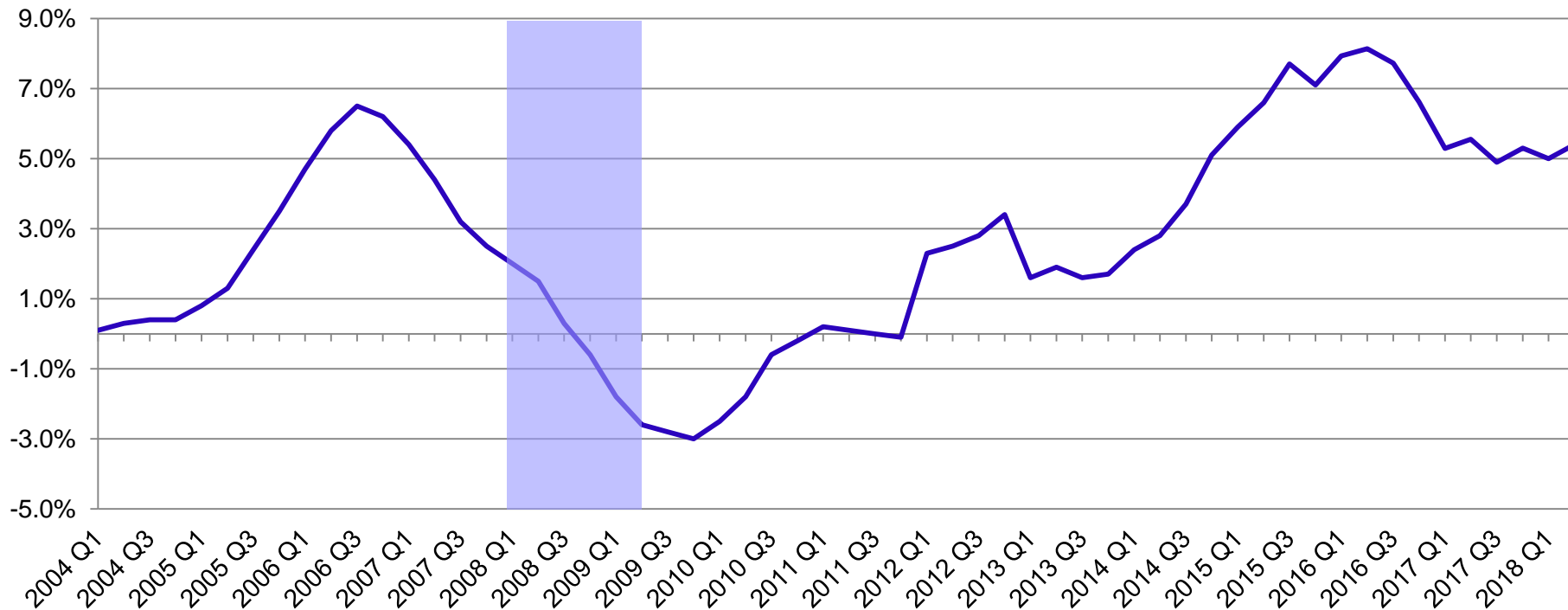


Greater Phoenix Multi-Family Average Rent Percent Change a Year Ago

2004 – 2018*

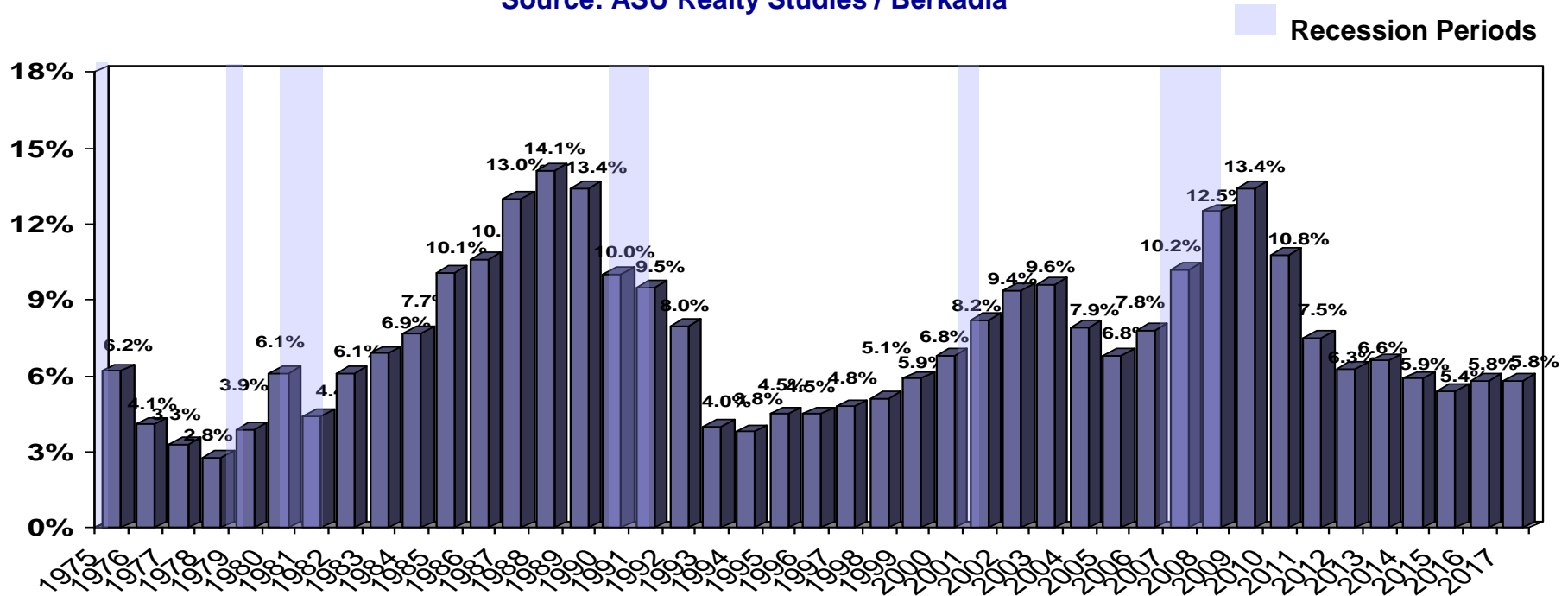
Source: RealData Inc.

Recession Periods



Multi-Family Year-End Vacancy Rates Greater Phoenix County 1975–2017

Source: ASU Realty Studies / Berkadia**



OFFICE



INDUSTRIAL



RETAIL

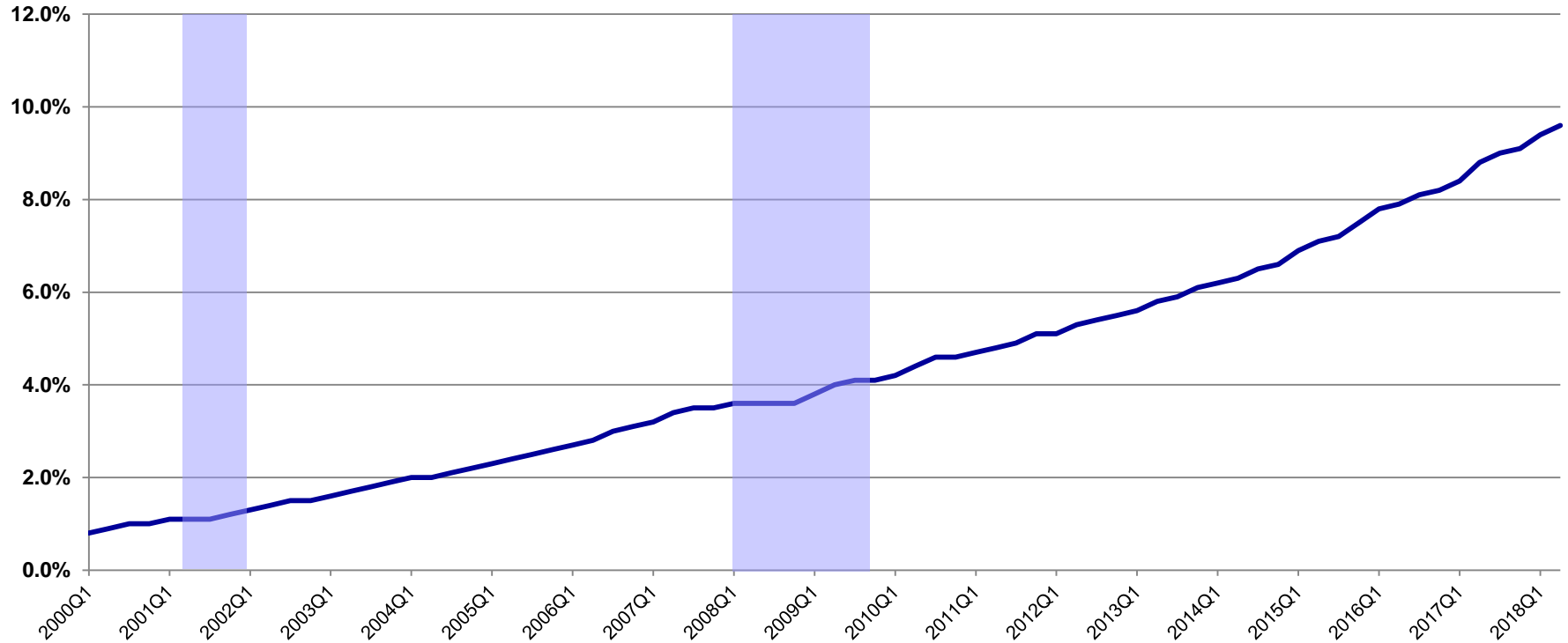


E-Commerce Retail Sales as a Percent of Total Sales

2000 – 2018*

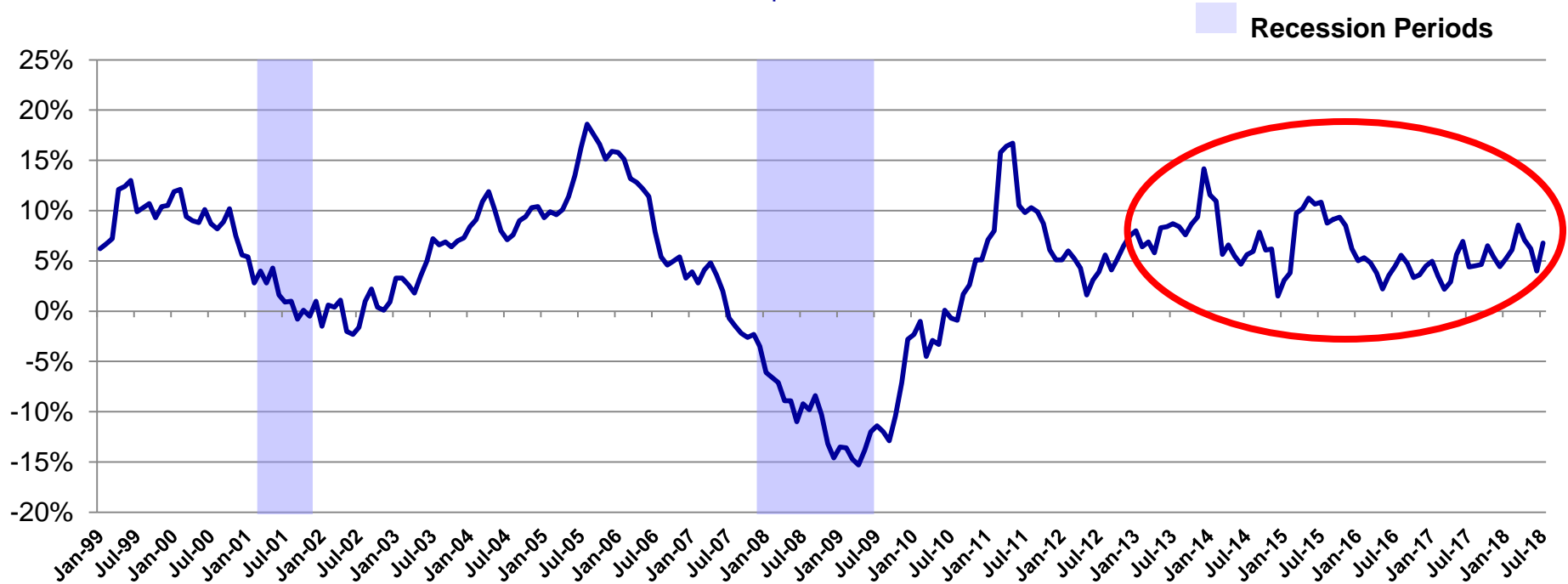
Source: U.S. Census Bureau

Recession Periods



Maricopa County Retail Sales Percent Change Year Ago* 1999 – 2018**

Source: Arizona Department of Revenue



*Data through July 2018

**3-month moving average

Note: January 2010 and March 2010 retail sales are estimates.





Overall Conclusions:

**Rate of growth likely to slow
somewhat in 2019.**


**But 2019 should still be a good
year.**





**Nothing indicates an
imminent recession.**





**We are in the bottom of the 7th or the
top of the 8th inning of what has
been a very long game.**

Could go to extra innings???



PETCO PARK

14th Inning Stretch

	<u>11</u>	<u>12</u>	<u>13</u>	<u>14</u>	<u>15</u>	<u>16</u>	<u>17</u>	<u>18</u>	<u>19</u>	R	H	E	L
D'BACKS	0	0	0	0						4	8	0	6
PADRES	0	0	0							4	18	0	14