



Second Half of 2016: Same Anemia, More Crazyiness.

Maricopa County Board of Supervisors

August 15th, 2016

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



RISKS

- **Higher now that we are deeper into the expansion.**
- **The Election - Assume both major-parties will not live up to their platform if elected.**



So, it's time to be cautious.



**Overall, expansions don't
die of old age.**



**They die from things that
make an economy vulnerable
to exogenous shocks or asset
bubbles or a tightening in
Fed policy.**



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

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



So, it is time to be more cautious and at least consider alternatives.



**“The time to repair the roof is
when the sun is shining.”**

[State of the Union Address January 11, 1962]

— John F. Kennedy



Maricopa County is entering a period of unknowns.



**Over the last two decades,
Elliott D. Pollack & company's
job has been to
help the County stay out of
financial trouble.**



This has been a successful endeavor because...

1. Reasonable forecasts
2. An excellent County staff
3. A realistic and thoughtful Board of Supervisors



The County now faces...

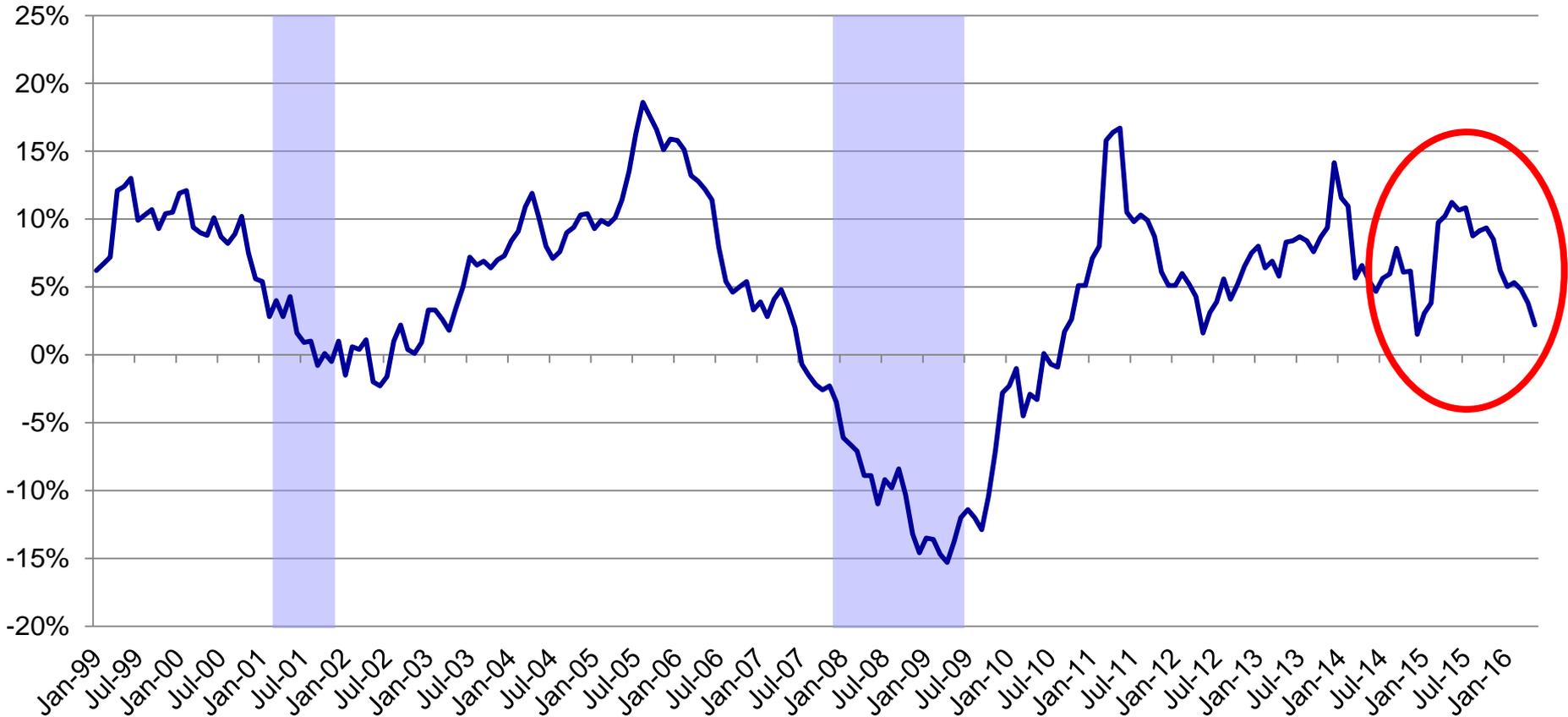
1. A potential slowdown in economic activity.
2. A potentially diminishing contingency fund, at a time when you don't want it to be diminished.
3. The last few months of sales tax growth have been very slow. FY17 forecasts will be impacted.



Maricopa County Retail Sales Percent Change Year Ago* 1999 – 2016**

Source: Arizona Department of Revenue

Recession Periods



*Data through May 2016

**3-month moving average

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



**When you add this to how late
we are in the economic cycle,
it is time to play things closer
to the vest.**



Therefore...

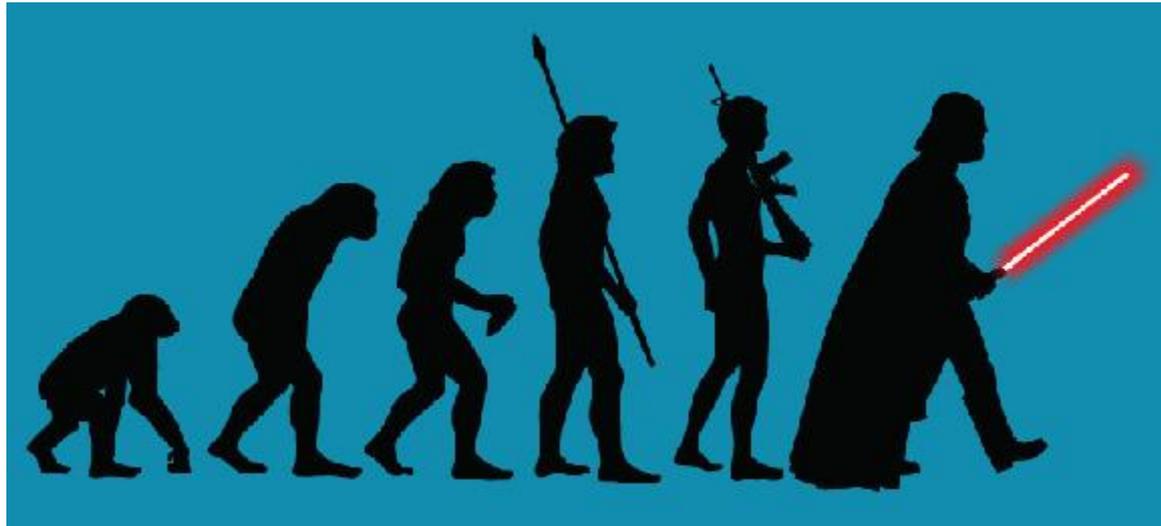
It is recommended the forecast be brought down to the “Pessimistic” scenario.



Where We Stand—

- The expansion is starting to show signs of middle age.

**YOU ARE
SOMEWHERE
AROUND HERE**

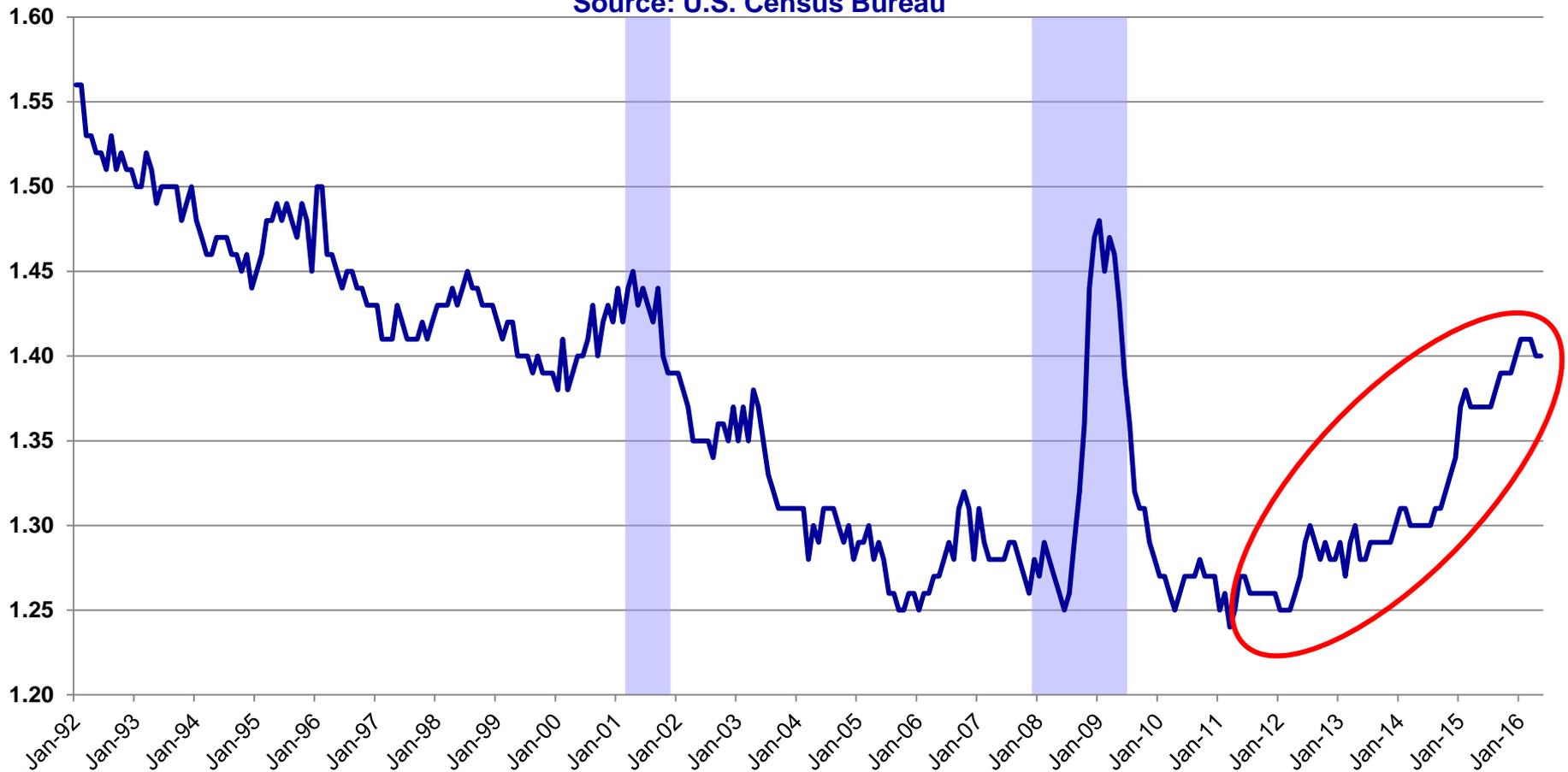


Inventories to Sales Ratio is out of Line

U.S. Inventories to Sales Ratio 1992 – 2016*

Source: U.S. Census Bureau

Recession Periods



Excess inventory, mainly in autos.



Average Age of Auto Fleet (all light vehicles)

- 2015 – 11.5 years
- 2014 – 11.4 years
- 2013 – 11.3 years
- 2010 – 10.6 years
- 2005 – 9.5 years
- 2000 – 8.9 years
- 1995 – 8.4 years

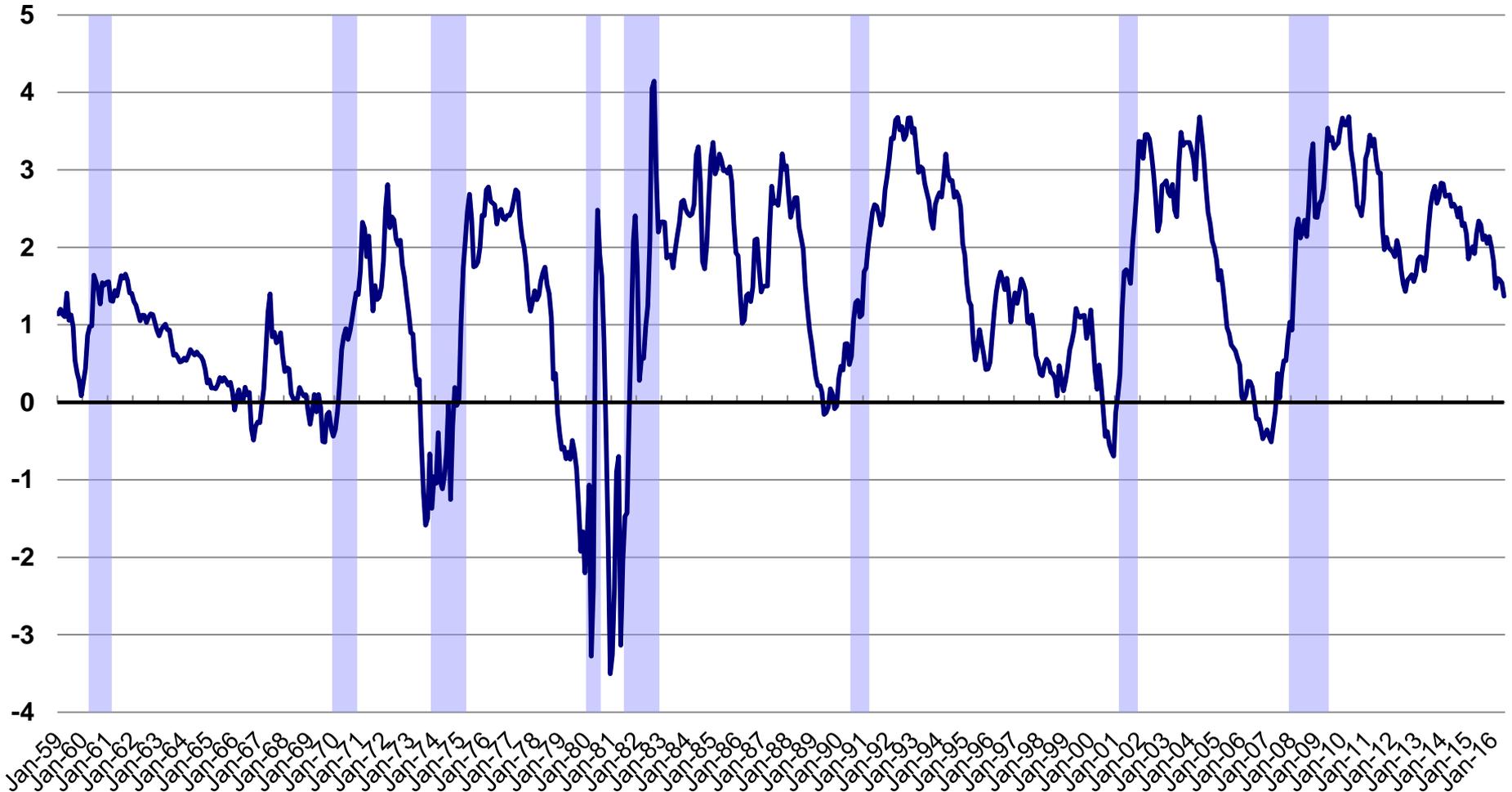
Source: R.L. Polk Company, IHS



Treasury Spread: 10 year bond rate less 3 month bill rate 1959 – 2016*

Recession Periods

Source: Federal Reserve Band of New York



Conclusion

- **The possibility of a recession today is higher than it was earlier in the cycle.**



Consumers

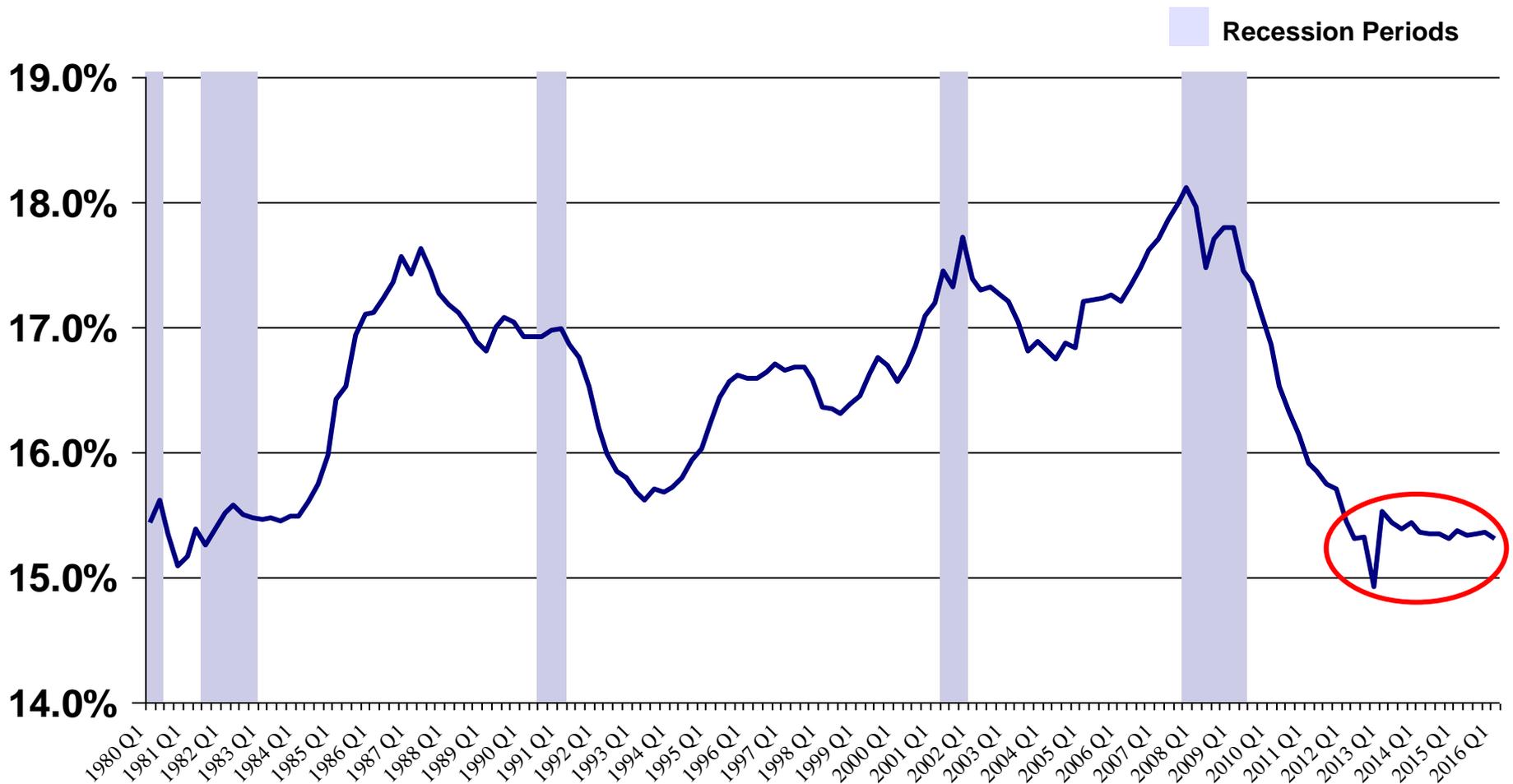
- Debt burden low



Financial Obligation Ratio*

1980 – 2016**

Source: Federal Reserve

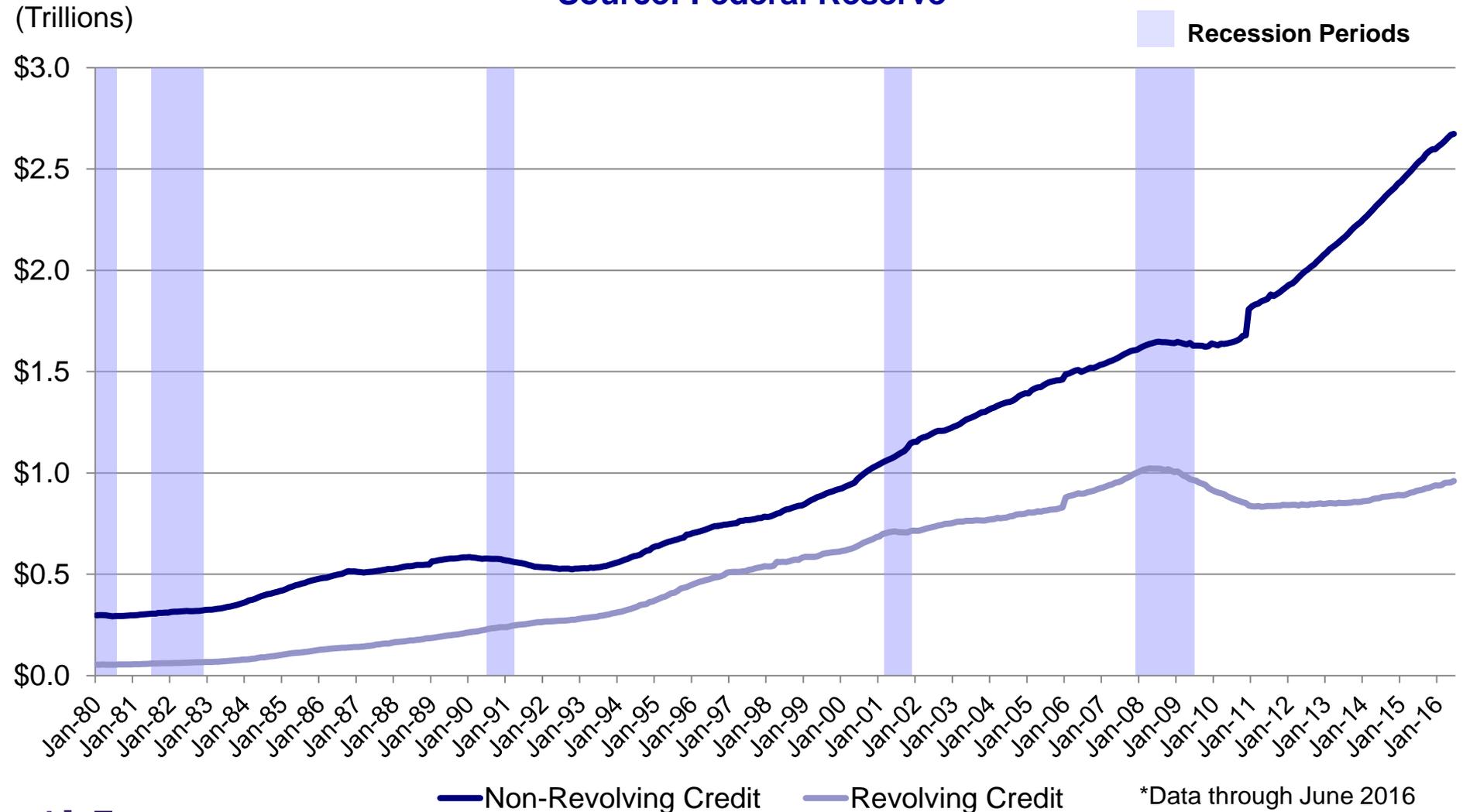


*Ratio of mortgage and consumer debt (including auto, rent and tax payments) to disposable income.

**Data through the first quarter 2016

U.S. Consumer Credit 1980 – 2016*

Source: Federal Reserve



*Data through June 2016

Revolving credit remains more than \$61.0 billion below its 2008 peak.

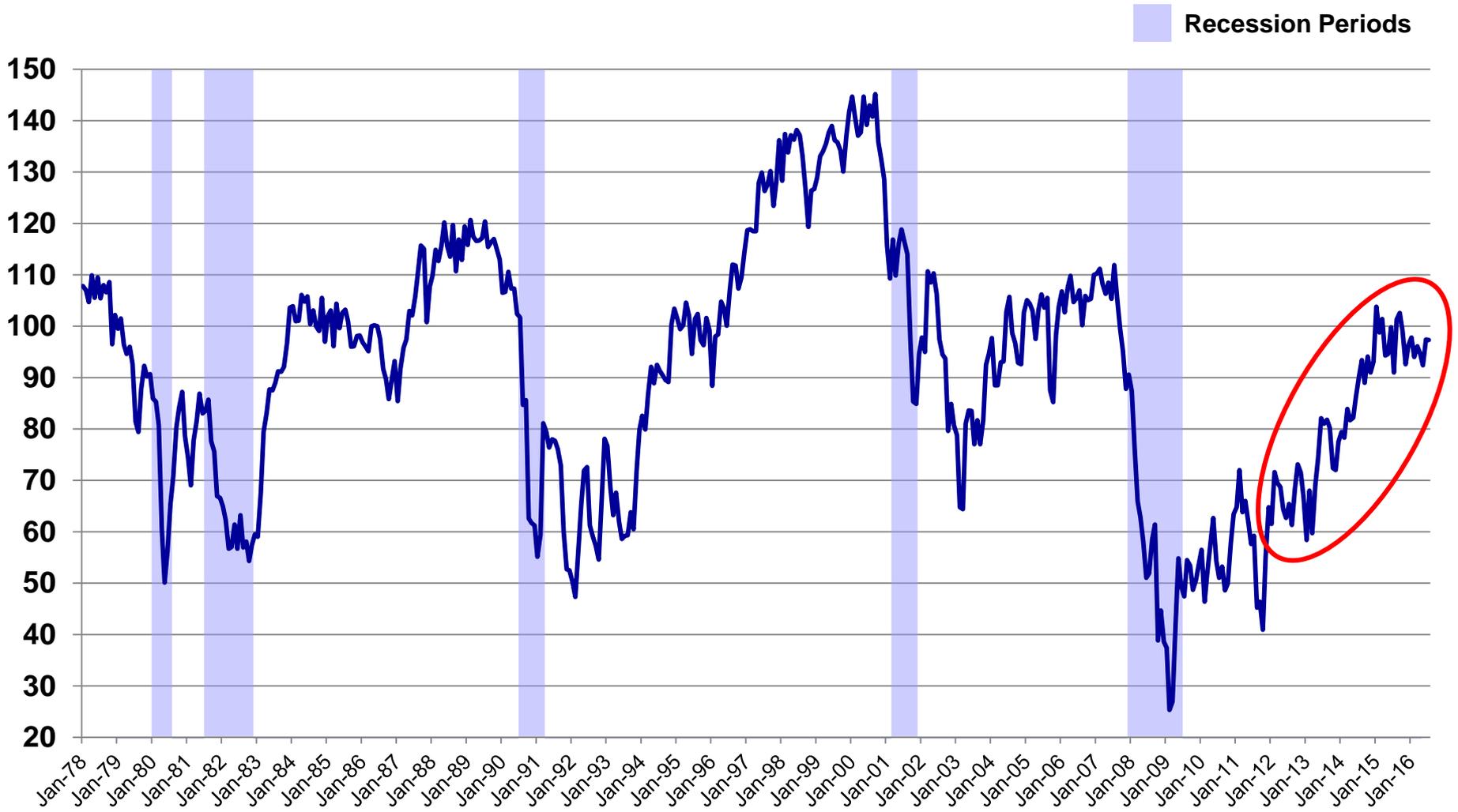
Consumer Liquidity Improving



Consumer Confidence

1978 – 2016*

Source: The Conference Board



- No irrational exuberance



- Net worth improved



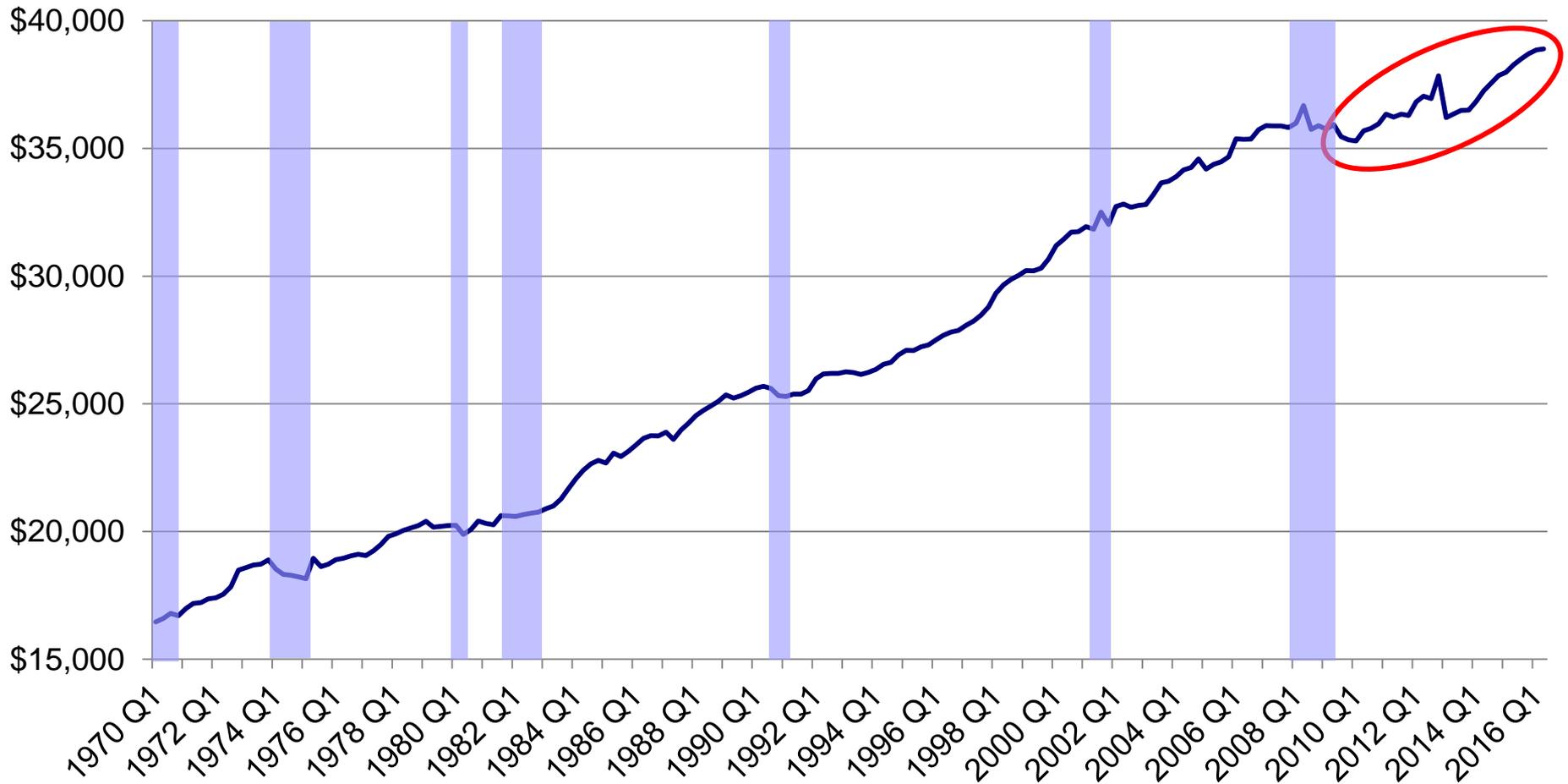
- Real income growth



Real Disposable Personal Income Per Capita 1970-2016*

Source: Bureau of Economic Analysis

Recession



- Inflation low



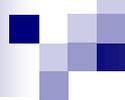
Daily Crude Oil Prices: West Texas Intermediate 1994 - 2016*

Source: U.S. Energy Information Administration

(Dollars per Barrel)

Recession Periods





• Oil prices low

- 1) In 2005, about 60% of consumption was imported.
- 2) In 2013, about 35% was imported.
- 3) In 2015, the Department of Energy estimates about 21% will be imported.



- No capacity issues



Government

- Not a drag on economy



- Fed policy still expansive



Housing

- Prices up, but modestly



Average Annualized Quarterly Growth Rates During Economic Expansions 1954 – 2016*

Source: Bureau of Economic Analysis, National Bureau of Economic Research

<u>Expansion Period</u>	<u>Avg. Growth Rate</u>
May 1954 – August 1957	3.8%
April 1958 – April 1960	6.2%
February 1961 – December 1969	4.9%
November 1970 – November 1973	4.4%
March 1975 - January 1980	4.5%
July 1980 – July 1981	3.2%
November 1982 – July 1990	4.3%
March 1991 – March 2001	3.6%
November 2001 – December 2007	2.8%
June 2009 - Present	2.1%



Long term slower growth is generally related to...

- Higher taxes
- Oppressive and unsteady regulation
- Barriers to trade
- Monetary



NATIONAL ECONOMY –

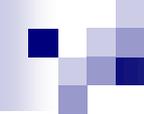
**Continued subpar growth.
But, expansion should
continue.**



Bottom Line

Slow Intermediate Term Growth





Greater Phoenix

**(73% total non-farm Employment
in the state)**



Employment Growth

From Bottom of Recession to Now

Seasonally Adjusted

Source: BLS

Area	% Change	% of Arizona Growth	2015 Annual Wages
United States	10.6%		\$52,874
Arizona	13.5%	100.0%	\$47,497
Greater Phoenix	16.3%	86.2%	\$49,909
Greater Tucson	7.6%	8.2%	\$41,675
Balance of State	5.3%	5.6%	\$35,743

Note: Start of Recession Sept. 2010 to June 2016
 Wages for Private industries
 2015 Wages are Preliminary Estimates

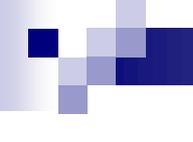


Arizona–

The State has had a significant recovery in both absolute and relative terms.

It is only when we compare ourselves to previous Arizona recoveries that we look so bad.





The World has Changed for Arizona and Maricopa County

Pre-2007
Post-2007



Arizona Employment Growth

Arizona's Rank Out of 50 States

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

Year	Rank
1993	5
1994	2
1995	2
1996	2
1997	2
1998	1
1999	2
2000	5
2001	9
2002	10
2003	4
2004	2

Year	Rank
2005	2
2006	2
2007	17
2008	46
2009	49
2010	49
2011	27
2012	8
2013	9
2014	17
2015	11
2016*	7



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
1993	2	19
1994	1	19
1995	1	20
1996	1	21
1997	2	22
1998	1	23
1999	3	24
2000	7	25
2001	7	26
2002	5	25
2003	3	25
2004	3	25

Year	Rank	# MSA's
2005	1	26
2006	1	27
2007	10	29
2008	25	29
2009	23	24
2010	23	23
2011	14	25
2012	10	28
2013	7	29
2014	15	31
2015	11	32
2016*	4	32



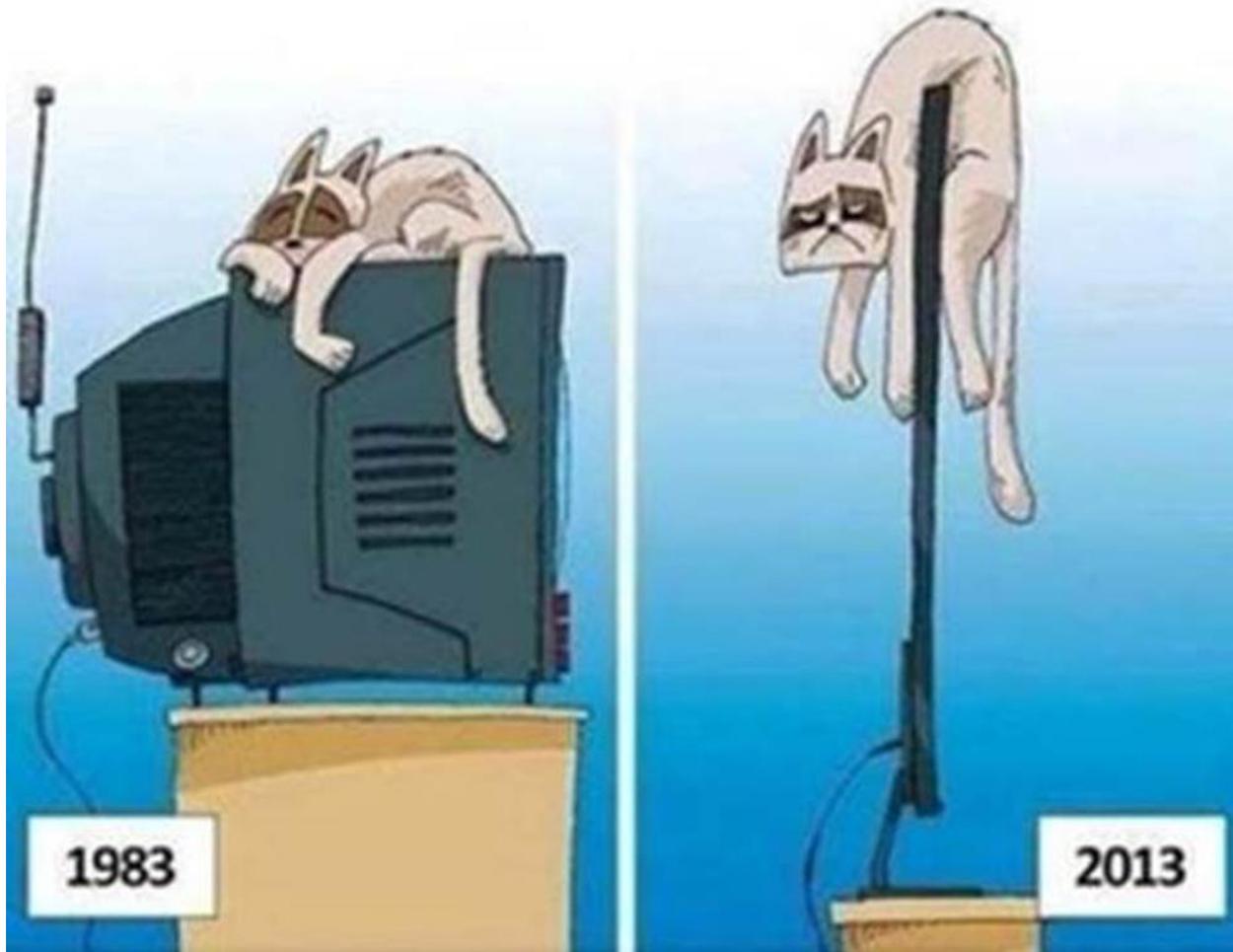
**Why has Arizona growth in
this cycle been subpar
relative to its
historical norm?**



- 
- (1) Sub normal national recovery
 - (2) Slowdown in
population flows
 - (3) Slow housing recovery
 - (4) Local factors



What has changed?



Growth itself is an economic driver in Arizona–

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

When you grow at 1.8% instead of 3.2%, the part of the economy that is based on servicing new people shrinks.



**Fewer people mean fewer houses
& less commercial construction.**

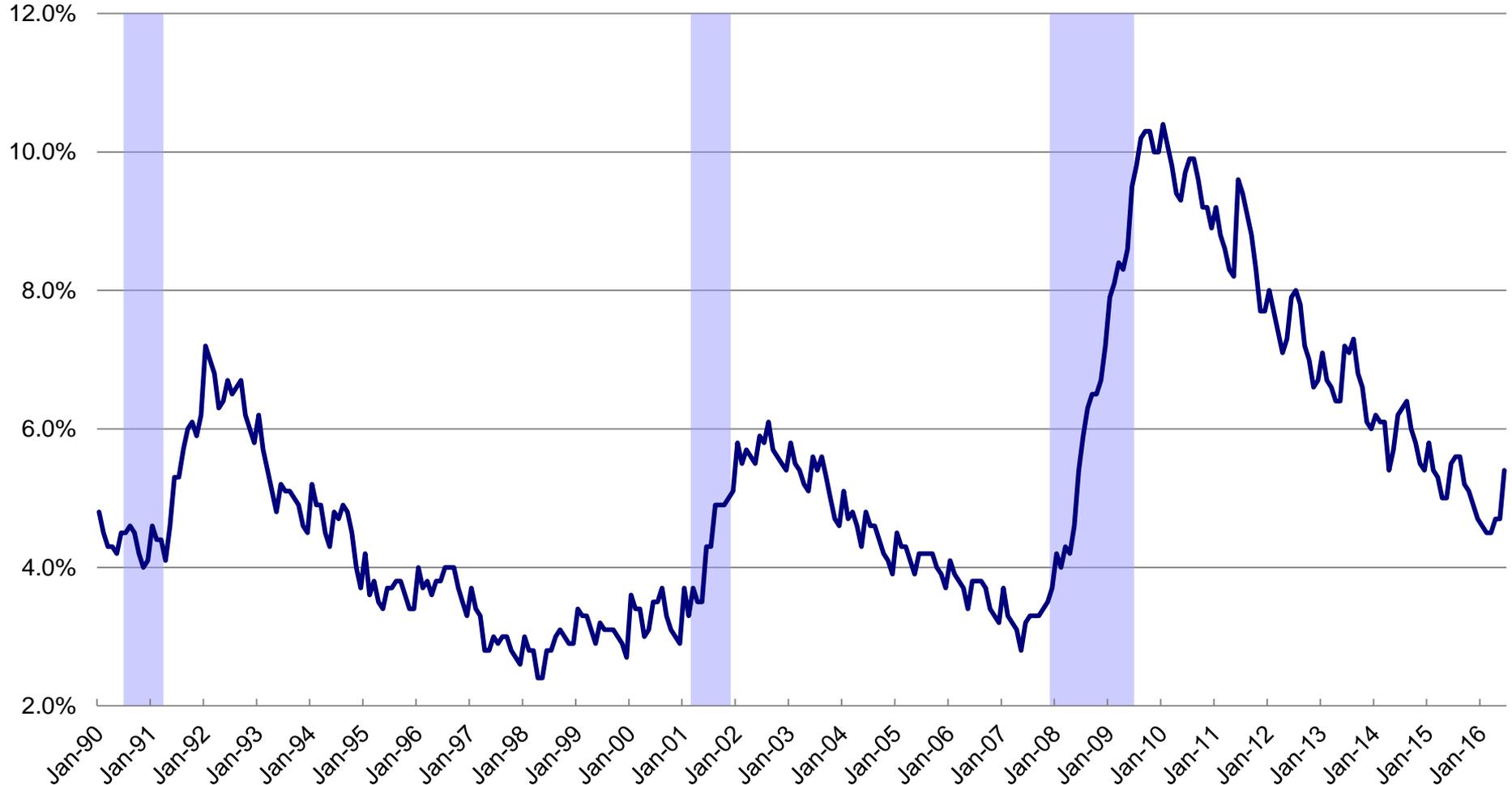


Greater Phoenix Unemployment Rate

1990 – 2016*

Source: Bureau of Labor Statistics

Recession Periods



Employment Growth

From Bottom of Recession (Start of Recovery) Greater Phoenix Employment, Seasonally Adjusted

Source: BLS

Recession	Emp. Trough	69 mos. Later	% Growth
1974-1975	Dec-74	Sep-80	43.8%
1981-1982	Sep-82	Jun-88	43.0%
1991	Aug-91	May-97	37.3%
2001	Dec-01	Sep-07	21.9%
2007-2009	Sep-10	June-16	16.8%



Population Growth after Recessions

Greater Phoenix

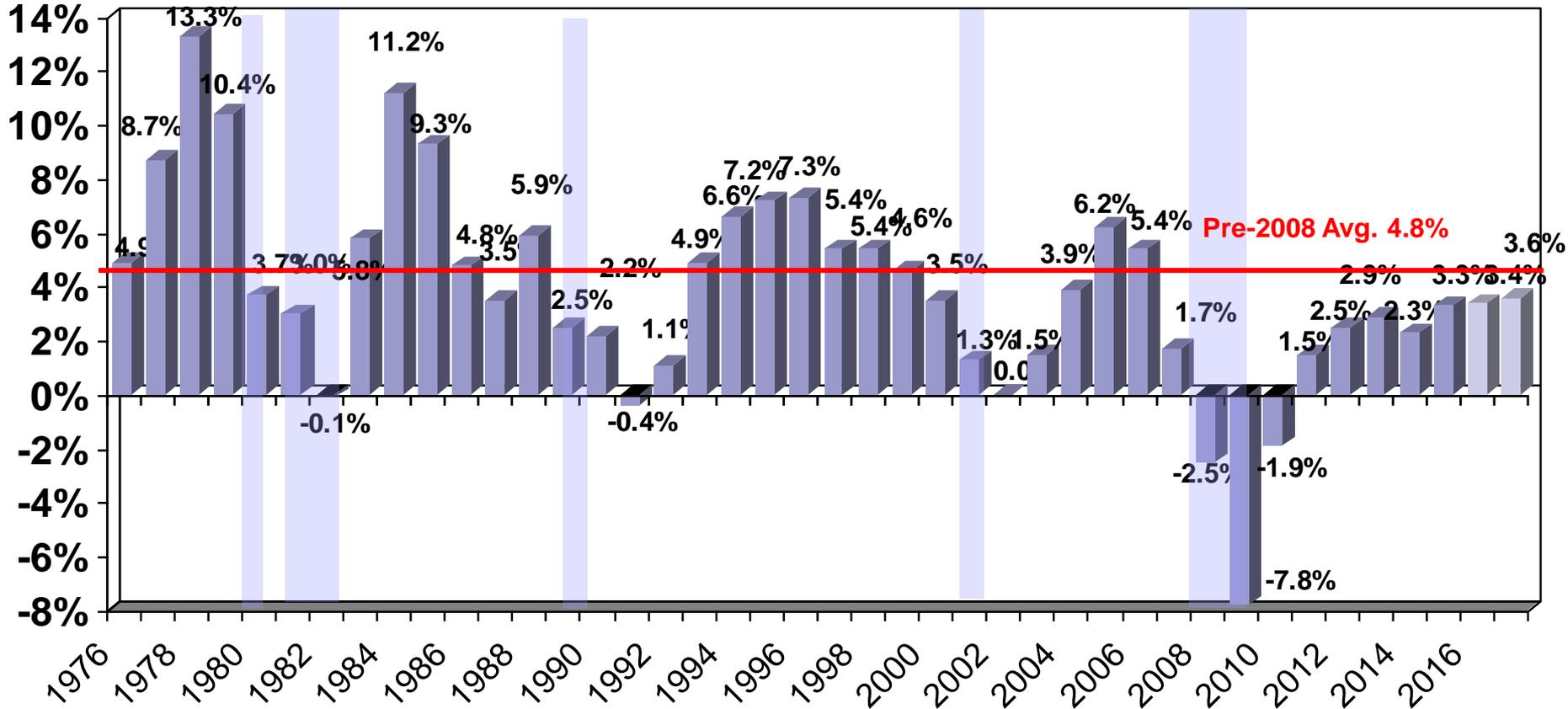
Source: ADOA

Start of Recovery	Population	Population 6 years later	% Growth
1975	1,377,700	1,658,988	24.0%
1981	1,658,988	2,102,571	26.7%
1991	2,301,825	2,900,325	26.0%
2001	3,360,062	4,087,390	21.6%
2009	4,186,130	4,482,906	7.1%



Greater Phoenix Employment* Annual Percent Change 1976–2017**

Source: Arizona Department of Administration



Pre-2008 Avg. 4.8%

Recession Periods

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

**2016 & 2017 forecasts from Elliott D. Pollack & Co. as of June 2016.



Arizona Jobs Regained Since Bottom of Cycle— Most Industries Yet to Regain Lost Jobs



Source: U.S. Bureau of Labor Statistics, Thousands of Jobs, Seasonally Adjusted, June 2016.



Share of Total Non-farm Employment

Source: Bureau of Labor Statistics, U of A Forecasting Project

Industry	Manufacturing		Professional and Business Services		Educational and Health Services	
	U.S.	Greater Phoenix	U.S.	Greater Phoenix	U.S.	Greater Phoenix
1975	21.9%	17.4%	7.8%	9.5%	7.1%	7.1%
1980	20.7%	17.2%	8.3%	9.0%	7.8%	7.1%
1985	18.3%	15.0%	9.1%	10.4%	8.9%	7.6%
1990	16.2%	13.4%	9.9%	10.9%	10.1%	9.0%
1995	14.7%	12.1%	10.9%	13.7%	11.4%	9.2%
2000	13.1%	10.2%	12.6%	16.7%	11.6%	8.7%
2005	10.6%	7.6%	12.6%	16.5%	13.2%	10.4%
2010	8.8%	6.5%	12.8%	16.0%	15.3%	14.1%
2015	8.7%	6.3%	13.9%	16.9%	15.5%	14.7%



2015 Average Annual Wages

Source: U.S. Bureau of Labor Statistics

Industry	U.S.	Greater Phoenix	% of U.S.
All Industries	\$52,874	\$49,909	95.3%
Natural resources and mining	\$58,468	\$48,377	82.7%
Construction	\$57,016	\$52,225	91.6%
Manufacturing	\$64,305	\$73,001	113.5%
Information	\$95,038	\$67,054	70.6%
Financial activities	\$87,914	\$67,235	76.5%
Professional and business services	\$69,266	\$54,955	79.3%
Education and health services	\$47,384	\$49,949	105.4%
Leisure and hospitality	\$21,804	\$23,311	106.9%
Other services	\$35,118	\$35,139	100.1%

Note: Wages for Private industries
2015 Wages are Preliminary Estimates



All Industries Percent of U.S. Average Annual Wages

Source: U.S. Bureau of Labor Statistics

Year	Greater Phoenix	% of U.S.
2002	\$35,848	98.1%
2003	\$36,772	98.0%
2004	\$38,550	98.5%
2005	\$40,005	98.8%
2006	\$41,898	98.8%
2007	\$43,353	97.7%
2008	\$44,087	97.2%

Year	Greater Phoenix	% of U.S.
2009	\$44,368	98.3%
2010	\$45,061	97.0%
2011	\$46,459	97.2%
2012	\$47,682	96.9%
2013	\$47,801	96.2%
2014	\$48,867	95.3%
2015	\$49,909	94.4%



Where are the Inflows of Population?



For the U.S. as a Whole

- 2001 – 2005
- 2011 – 2015

Total Movers down 24%

- Movers from abroad (down 16.3%)
- Movers from other states (down 35%)
- Movers from other counties
in the state (down 14.7%)



Arizona Capture Rate (from abroad and between states)

- **2001 – 2005 = 8.1%**
- **2011 – 2015 = 3.5%**



Conclusion:

- **Due to the lack of national, international, and in state population flows:**
 - 1. Jobs that would have been created by the domestic demand from people moving here has also been reduced.**
 - 2. It has taken longer to absorb the excess inventory of single family, office, etc. Construction employment has suffered.**

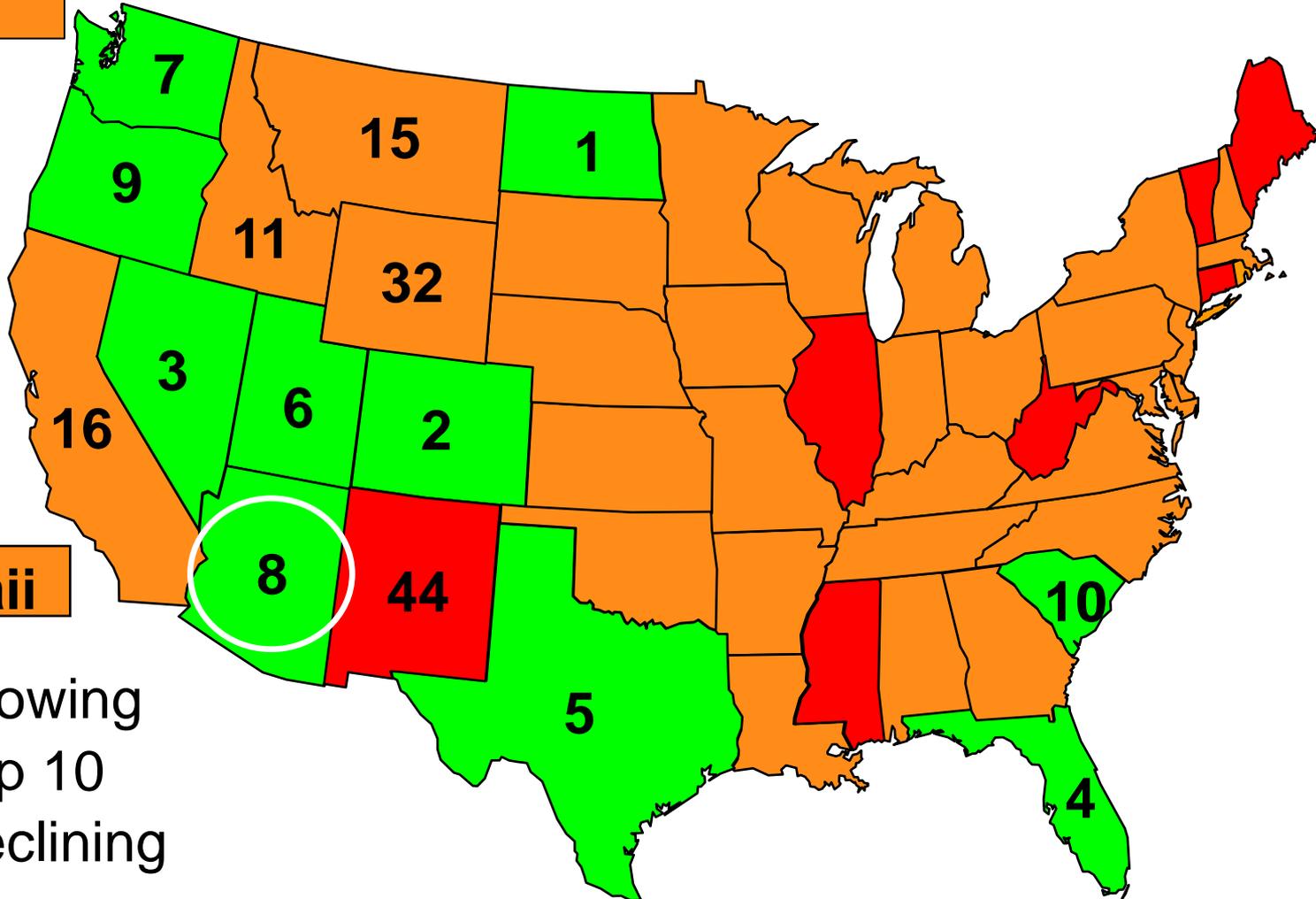
Thus, the economy would have been stronger.



Population Growth 2015

Source: U.S. Census Bureau

Alaska
39



19

Hawaii

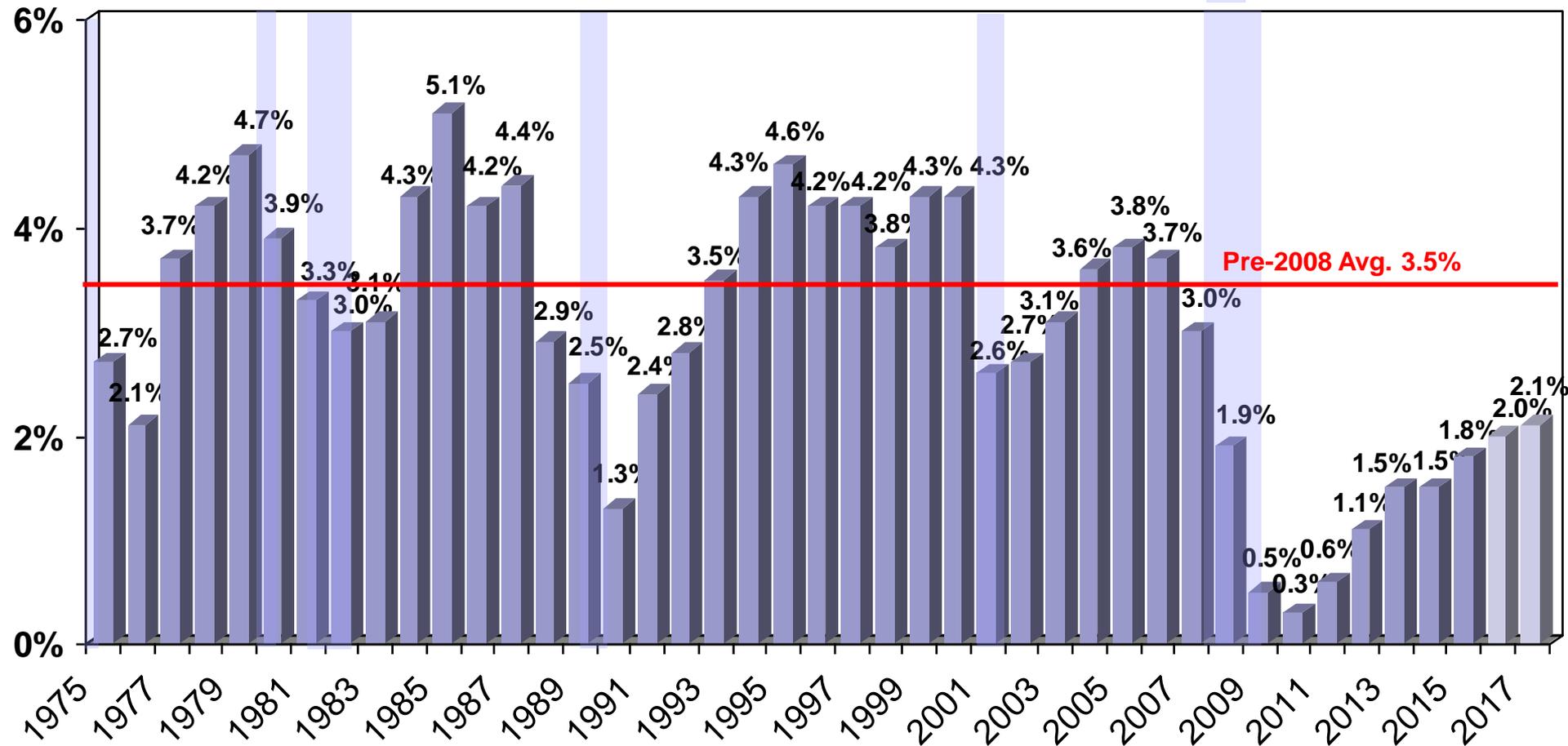
-  Growing
-  Top 10
-  Declining

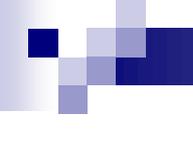


Greater Phoenix Population Annual Percent Change 1975–2017*

Source: AZ Dept. of Administration, EDPCo

Recession Periods





In terms of national migration, we are doing O.K. But, there is less migration overall

In terms of international migration, we are doing poorly. And, there is also less international migration.



**How quickly are population
flows going to recover?**



SLOWLY!



Greater Phoenix Population

Source: U.S. Census Bureau; AZ Dept. of Administration; University of Arizona Forecasting Project; EDPCo

Greater Phoenix Population Estimates and Projections			
Population	2015	2016	2017
EDPCo			
Forecast as of June 2016	4,482,906	4,572,564	4,668,588
Net Change	78,018	89,658	96,024
% Change	1.8%	2.0%	2.1%
U of A Forecasting Project			
Forecast as of 2016 Q2	4,482,906	4,569,590	4,666,992
Net Change	78,018	86,684	97,402
% Change	1.8%	1.9%	2.1%
Arizona Dept. of Administration			
Forecast as of 2015 Q4	4,482,906	4,569,800	4,661,600
Net Change	78,018	86,894	91,800
% Change	1.8%	1.9%	2.0%



Greater Phoenix Population

Source: U.S. Bureau of Census; Arizona Department of Administration; University of Arizona Forecasting Project

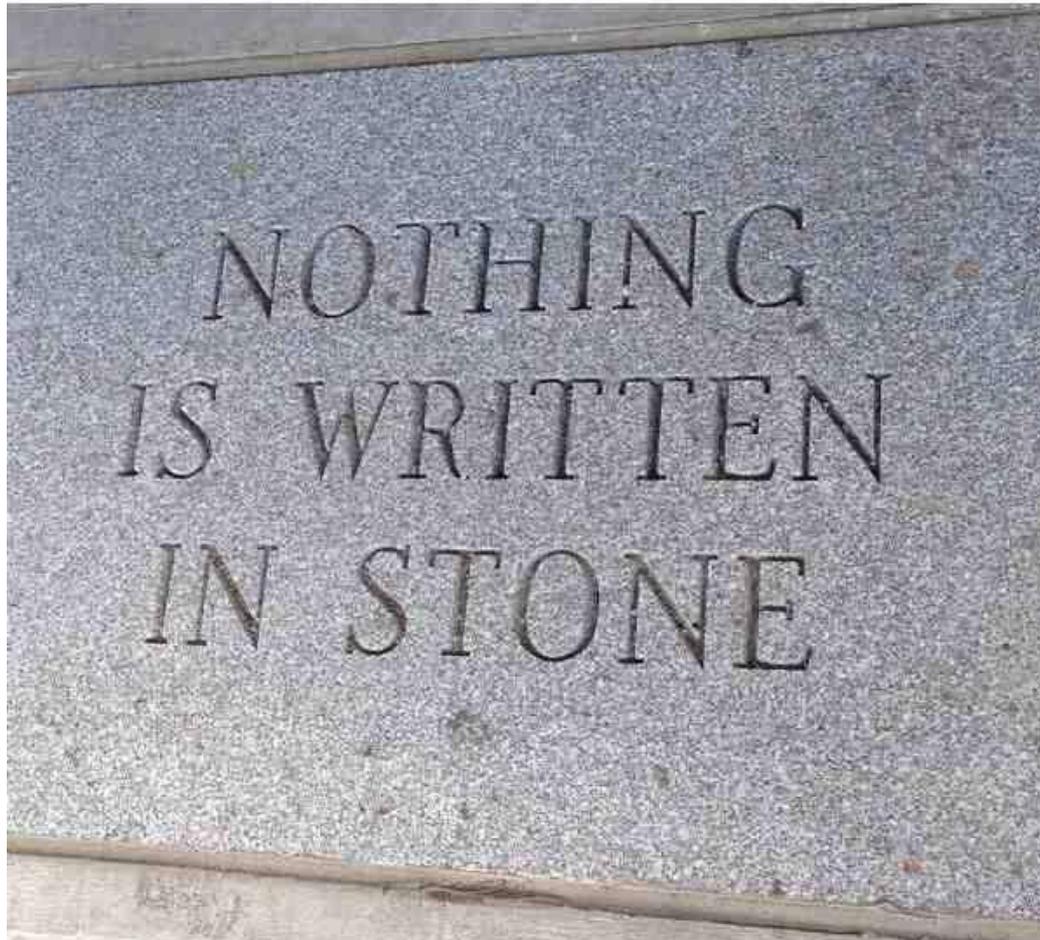
YEAR	POPULATION	APR
1960	726,183	6.9%
1970	1,039,807	3.7%
1980	1,600,093	4.4%
1990	2,238,498	3.4%
2000	3,251,876	3.8%
2010	4,192,887	2.6%
2015	4,482,906	1.3%
2020*	4,975,050	2.1%
2025*	5,486,091	2.0%



**If you believe that
population forecast,
it implies an average of
about 20,000 single family units will
be built each year
from 2015 through 2020.**



How quickly will housing recover?



Parade of Horribles

Housing



What is keeping potential buyers out of the housing market?

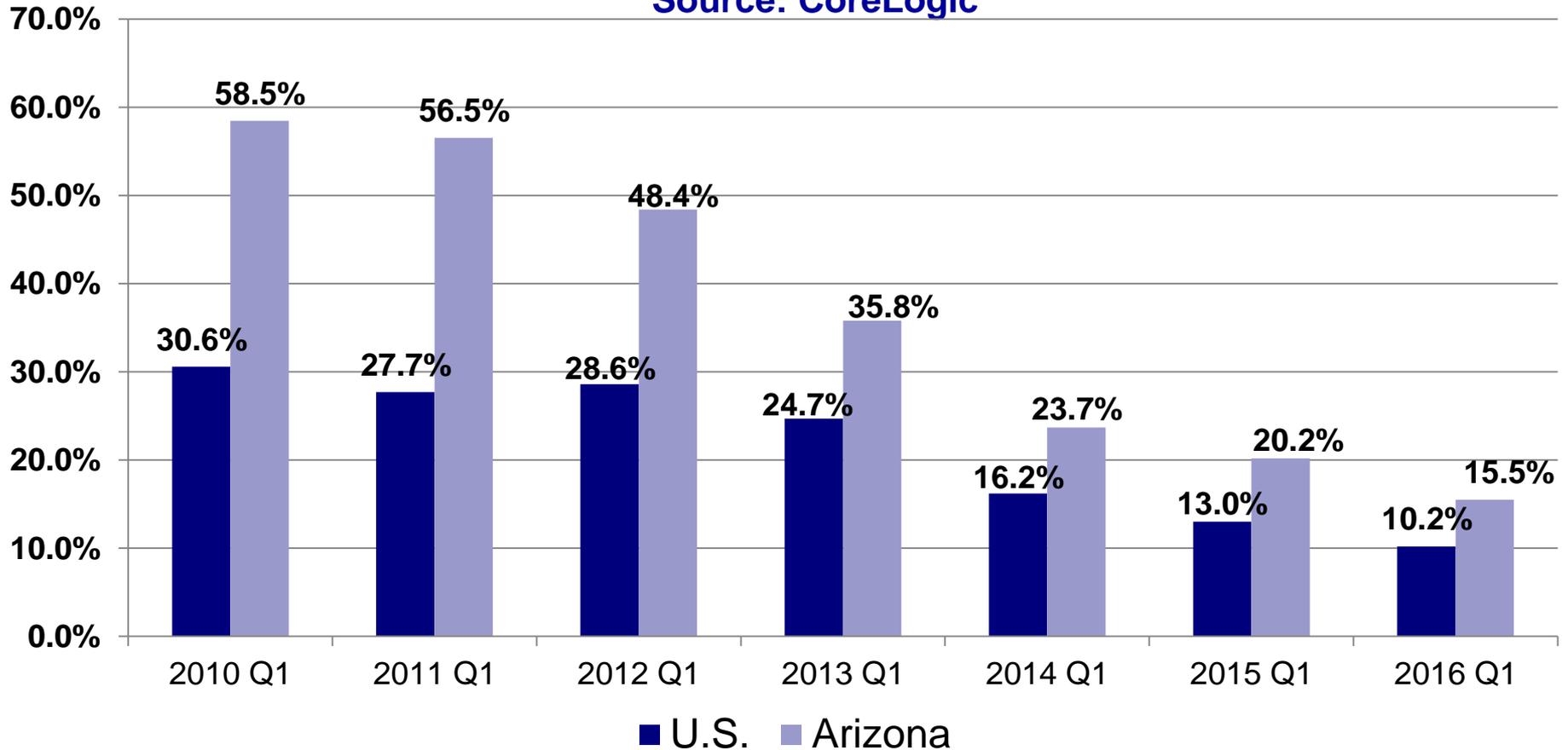
Parade of horrors:

- (1) Negative Equity
- (2) FHA Loan Limit
- (3) Foreclosures
- (4) Short Sales
- (5) Millennials
- (6) Student Loans
- (7) Tougher Loan Standards



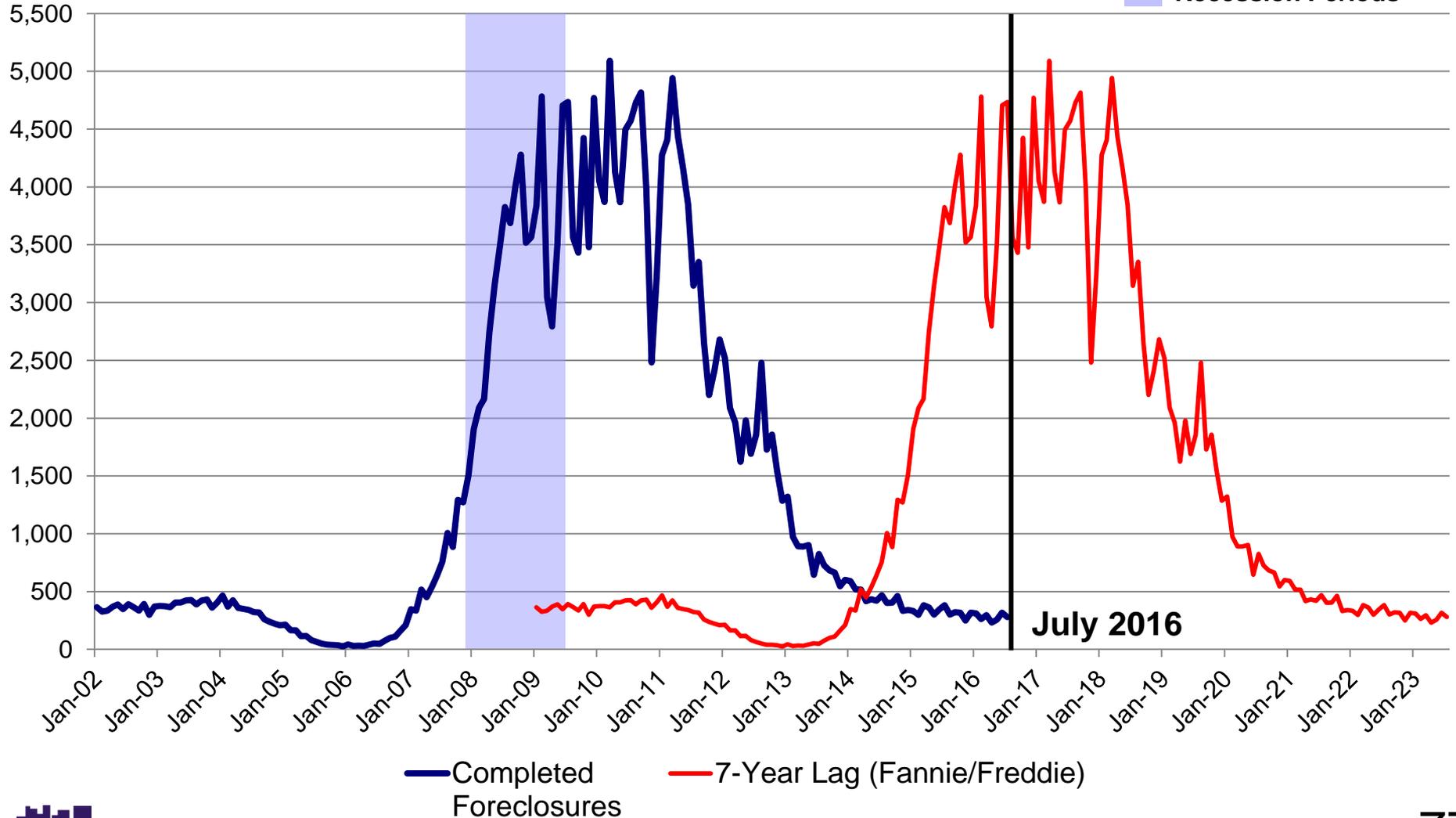
U.S. and Arizona Negative Equity Share Plus Near Negative Equity Share 2010–2016

Source: CoreLogic



Maricopa County Foreclosure Lag 2002–2023

Source: Information Market



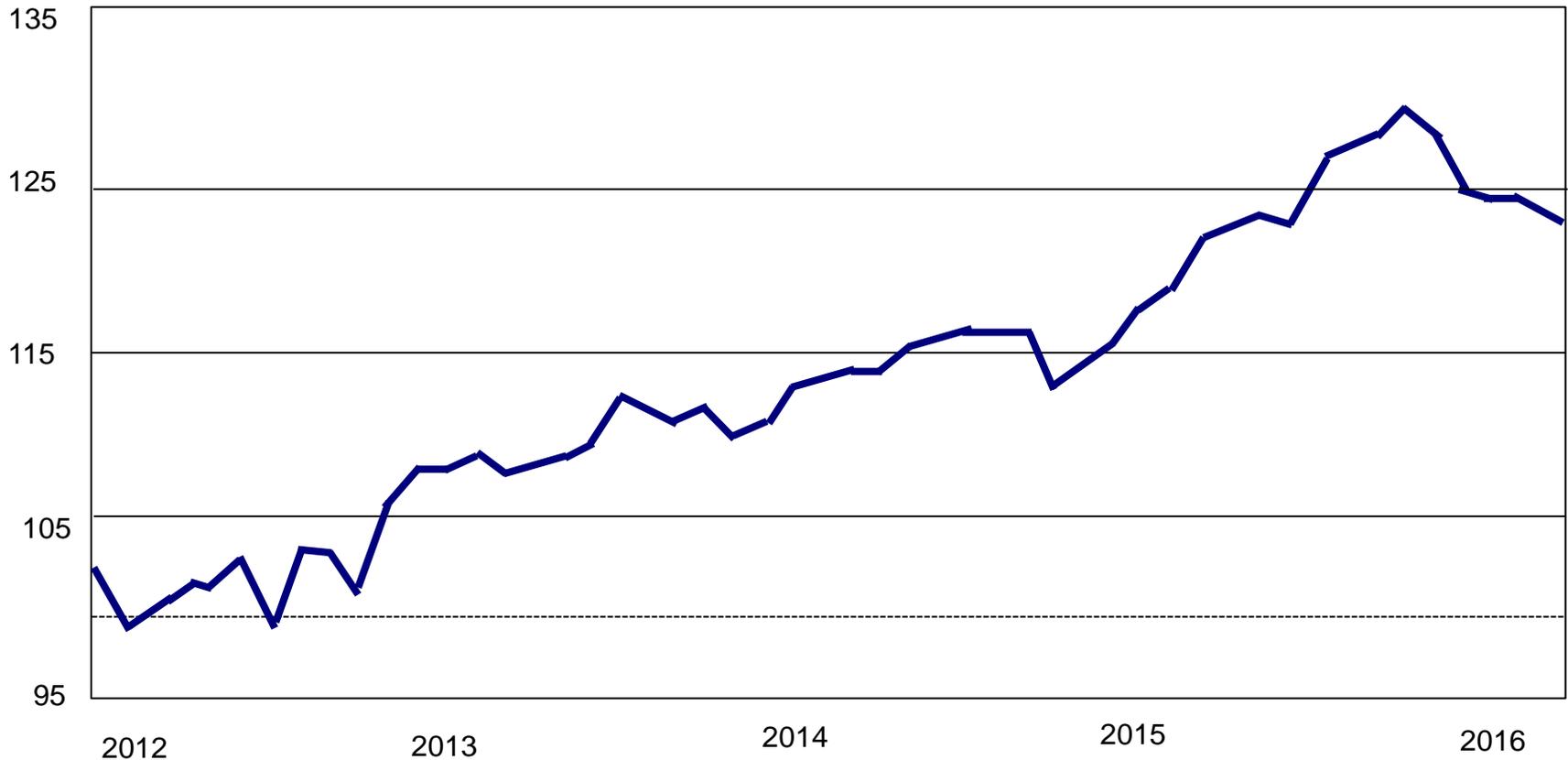
Mortgage Credit Availability Index

2012 – 2016*

March 2012 = 100

Source: Mortgage Bankers Association

Recession Periods



*A decline in the MCAI indicates that lending standards are tightening, while increases in the index are indicative of loosening of credit.

*Data through May 2016



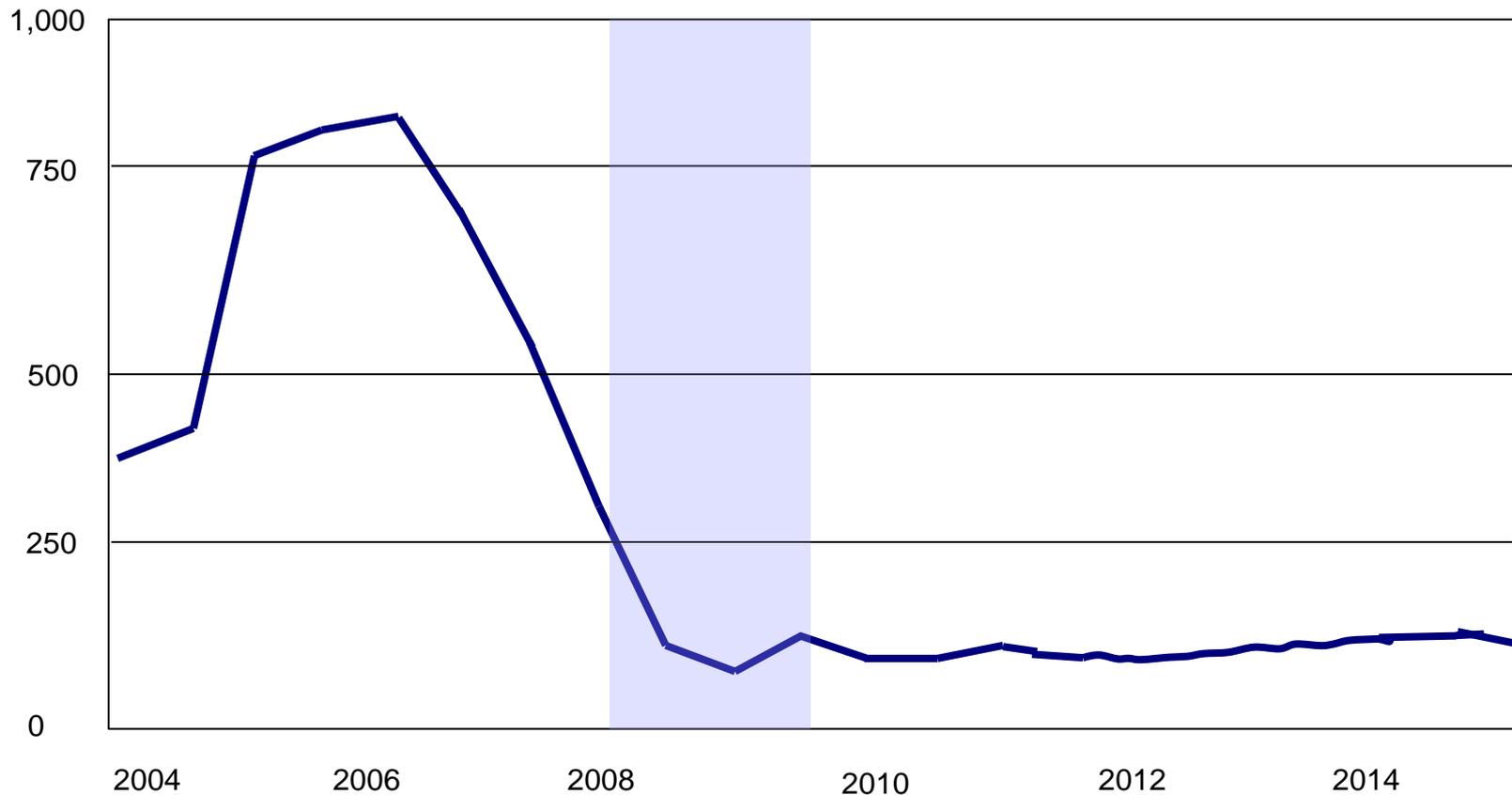
Mortgage Credit Availability Index

2004 – 2016*

March 2012 = 100

Source: Mortgage Bankers Association

Recession Periods



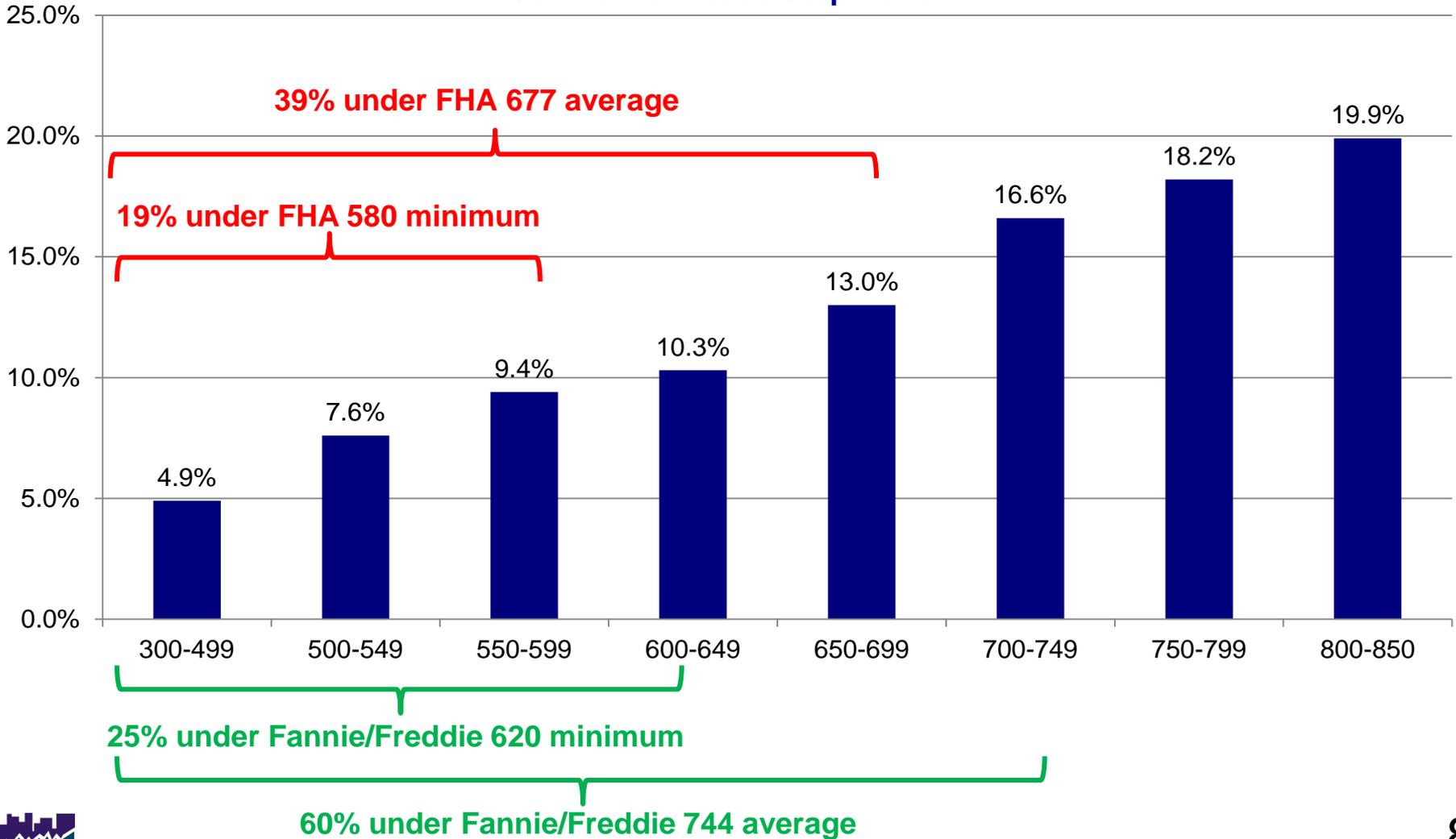
*A decline in the MCAI indicates that lending standards are tightening, while increases in the index are indicative of loosening of credit.

*Data through May 2016



FICO Score Distribution Percent of Population April 2015

Source: Fair Isaac Corporation



Good news for housing.

- (1) Economic growth is good in Greater Phoenix
- (2) Mortgage rates are low & lending is loosening up a bit
- (3) Affordability is still good

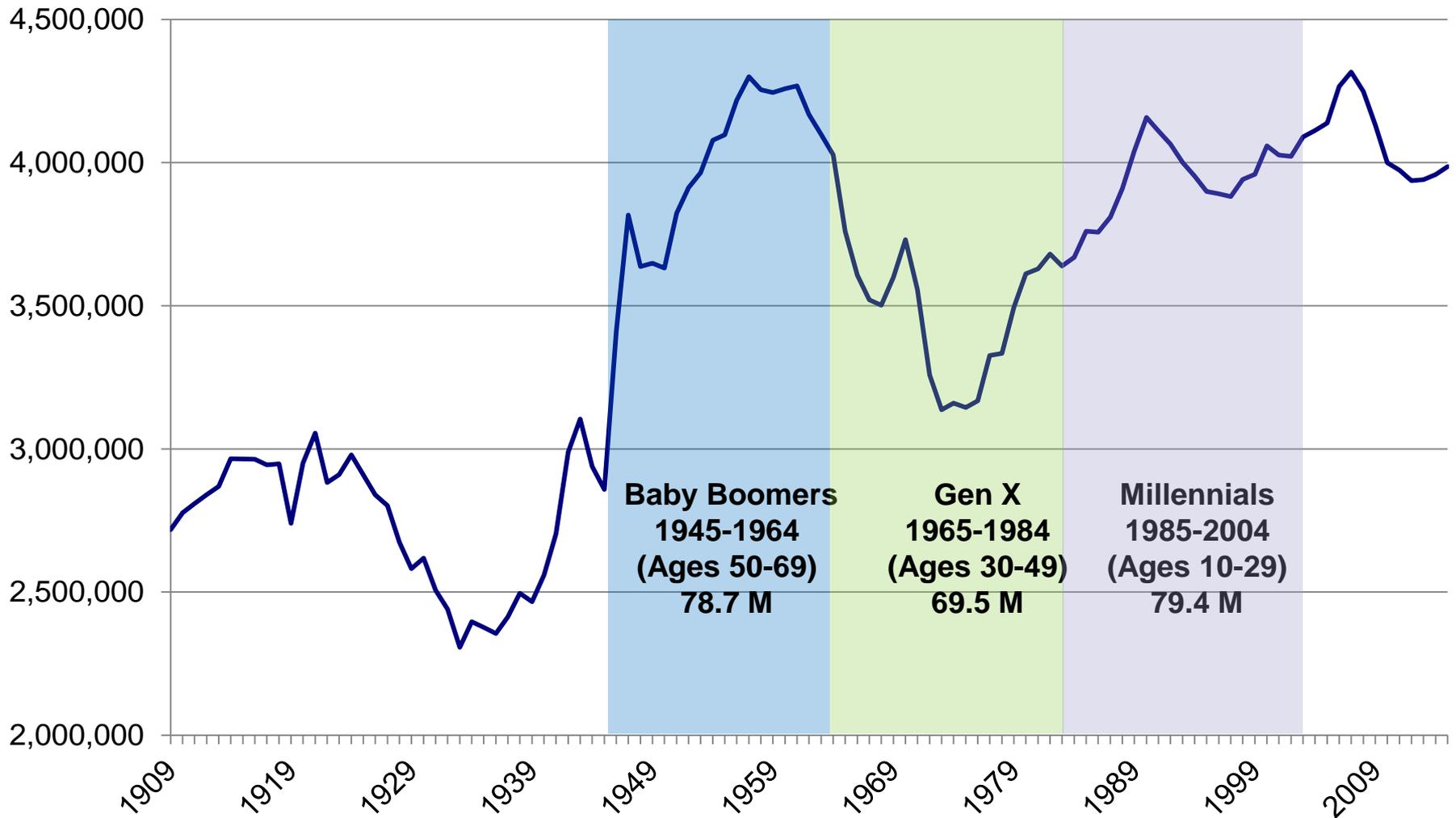


Millennials



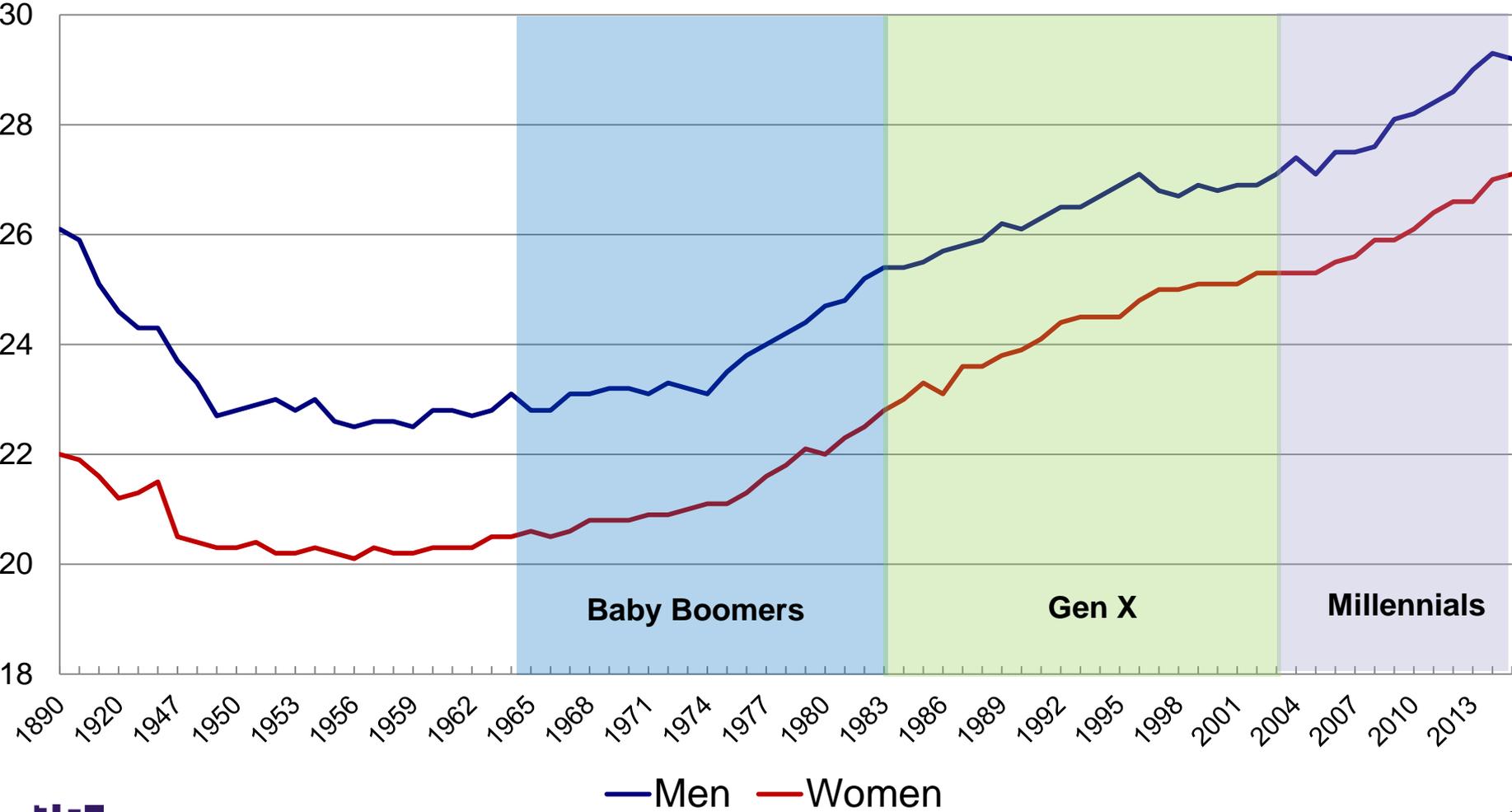
U.S. Birth Index 1909-2015

Source: U.S. Census Bureau; Harvard Joint Center for Housing Studies



U.S. Median Age at First Marriage 1890-2015

Source: U.S. Census Bureau



Percent of 18-33 Year Olds Married

Source: Pew Research

- **In 1960 - 64% were married (Silent Generation)**
- **In 1980 - 49% were married (Baby Boomers)**
- **In 1997 - 38% were married (Gen X)**
- **In 2014 - 28% were married (Millennials)**



**When you delay marriage you
delay children. That delays
housing. That delays demand for
housing “stuff”.**



Total Student Loan Debt Has Quadrupled!



Total Student Loan Balances

Billions of Dollars

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

Year	TOTAL
2004 Q1	\$259.8
2005 Q1	\$363.6
2006 Q1	\$434.5
2007 Q1	\$506.4
2008 Q1	\$579.2
2009 Q1	\$662.8
2010 Q1	\$757.8
2011 Q1	\$839.2
2012 Q1	\$903.7
2013 Q1	\$986.0
2014 Q1	\$1,111.0
2015 Q1	\$1,189.0
2016 Q1	\$1,261.0



Expenses that Delayed Saving for a Down Payment or Home Purchase - 2015

By Age

Source: National Association of Realtors 2015

	All Buyers	35 and younger	35 to 50	51 to 60	61 to 69	70 to 90
Student Loans	51%	53%	31%	9%	5%	3%
Credit Card Debt	47%	35%	44%	36%	23%	19%
Car Loan	35%	31%	20%	17%	7%	6%
Child Care Expenses	18%	14%	18%	6%	2%	*
Health Care Costs	13%	10%	9%	13%	13%	11%
Other	17%	17%	24%	46%	62%	71%
Median Years Delayed	3	3	4	5	6	5



Student Loan Impact on Economy

If people are paying student loan debt, they are not buying houses, furniture, beers, etc. Unless incomes are higher because of their degree.



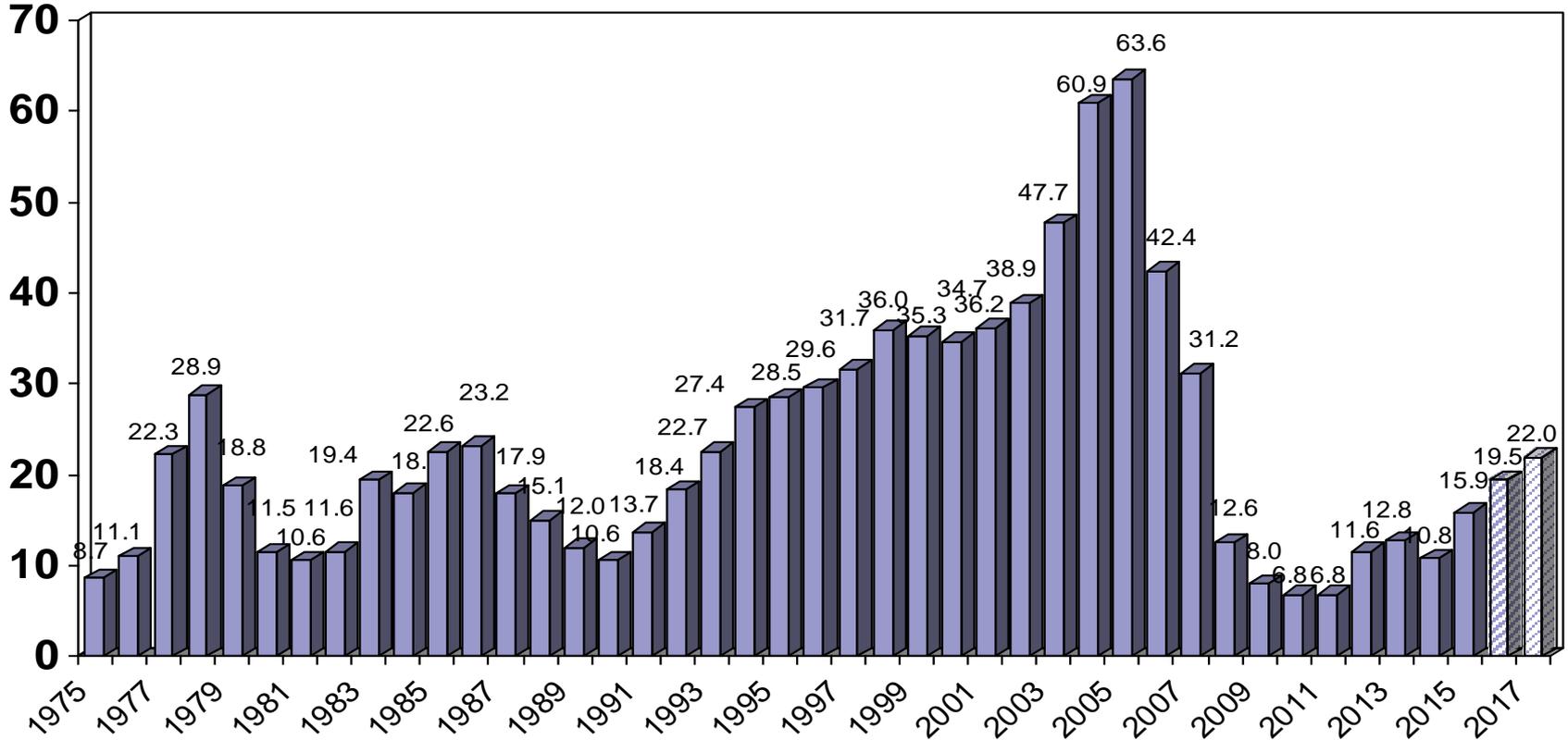
The housing recovery is likely to continue.



Single Family Permits Greater Phoenix 1975–2017*

Source: RL Brown & Elliott D. Pollack & company

Permits
(000)



*2016 and 2017 forecast is from Elliott D. Pollack & Company as of second quarter 2016.

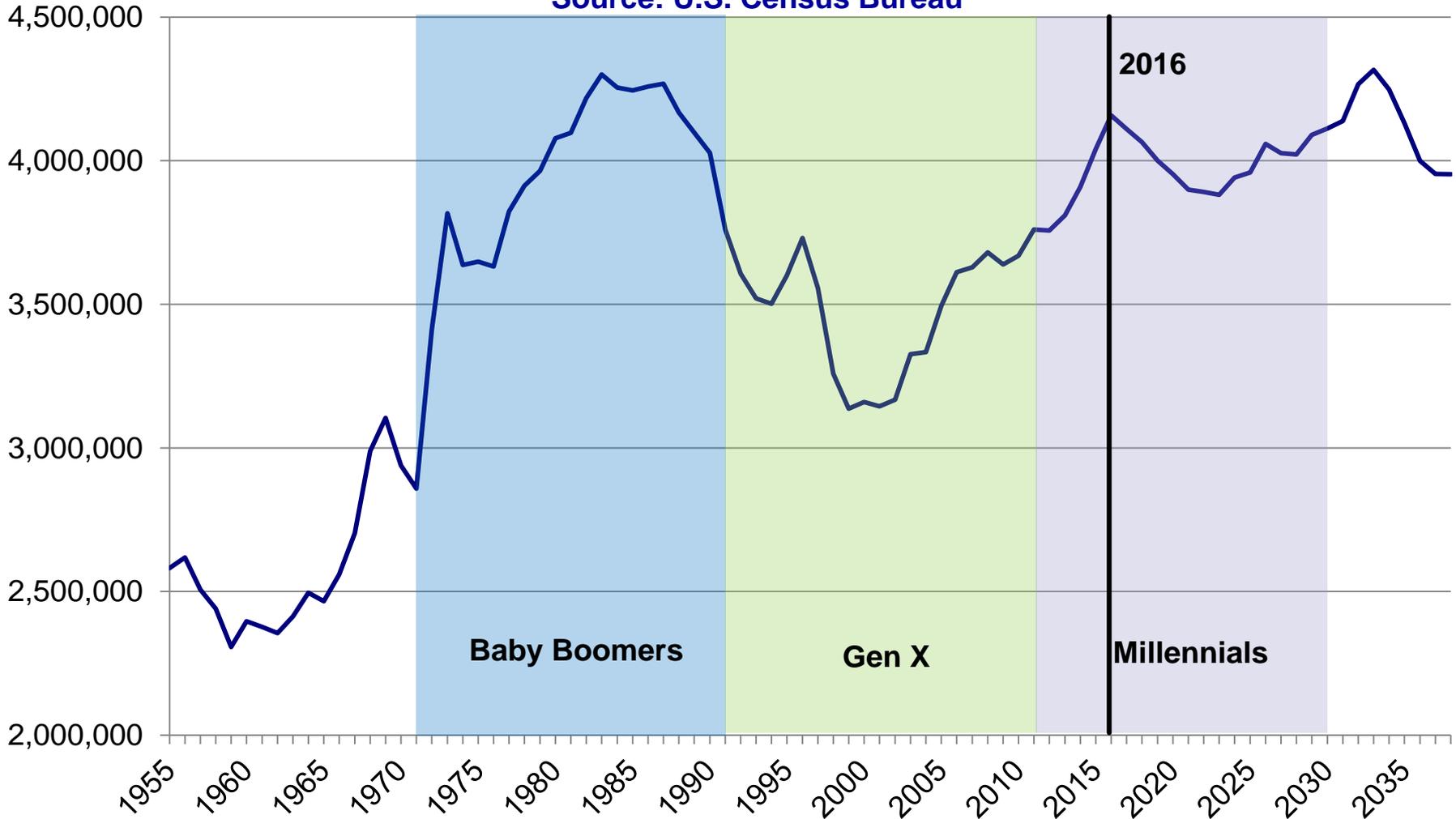


Multi-Family



Apartments Births → 26 year lag 1955-2038

Source: U.S. Census Bureau

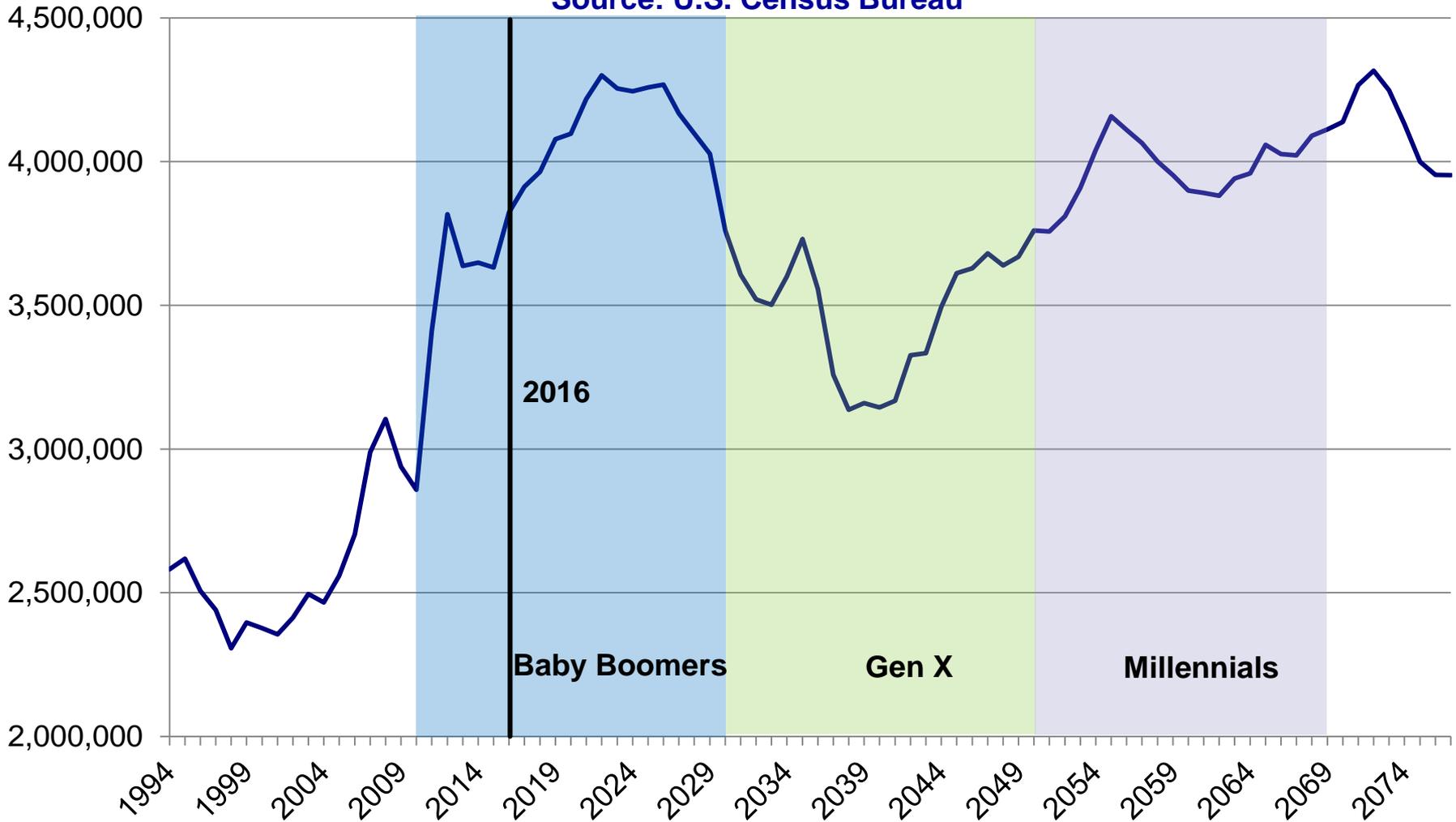


Retirement Home Cycle

Births → 65 year lag

1994-2076

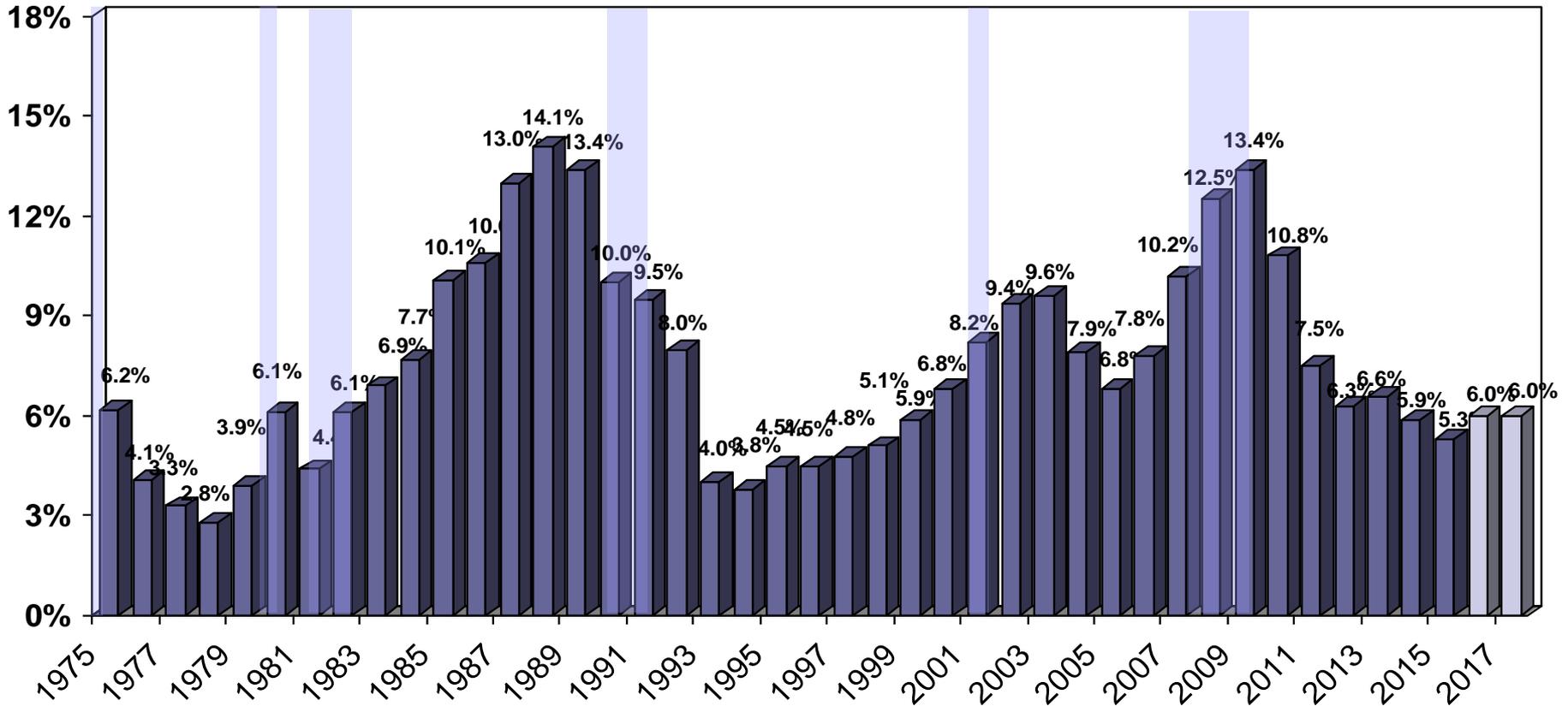
Source: U.S. Census Bureau



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

Source: ASU Realty Studies / Berkadia**

Recession Periods



*2016 & 2017 are forecasts from *Elliott D. Pollack & Co.*

**Data prior to 2005 is from ASU



Multi-Family Housing Market

Source: PMHS, Kasten Long, and RealData

	<u>Absorption</u>	<u>Completions</u>
2007	(5,846)	4,637
2008	(4,466)	7,037
2009	(5,319)	6,737
2010	20,743	698
2011	2,154	910
2012	3,028	2,031
2013	4,822	4,452
2014	4,716	5,658
2015	3,728	6,720



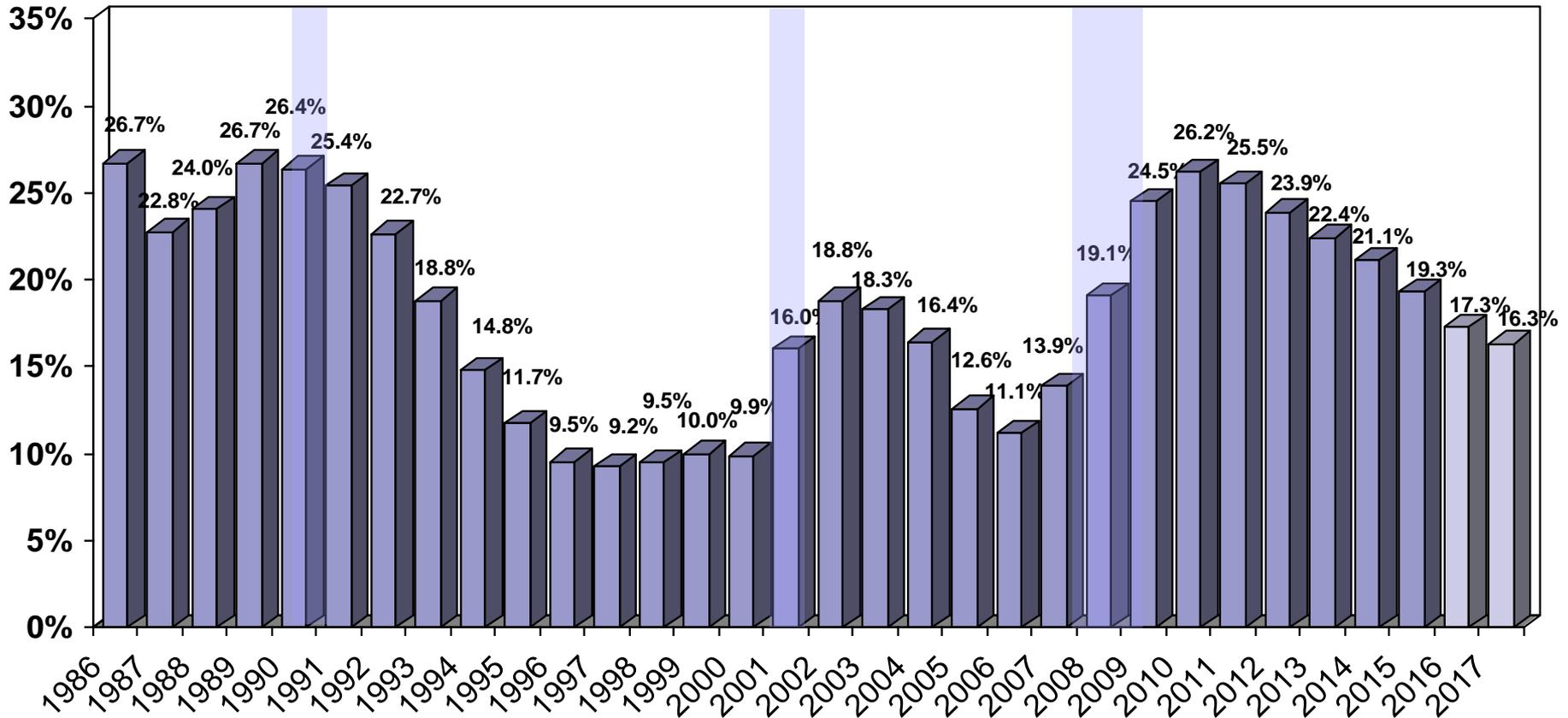
OFFICE



Office Space Year-End Vacancy Rates Greater Phoenix 1986–2017*

Source: CBRE

Recession Periods



*2016 & 2017 are forecasts from Greater Phoenix Blue Chip.



Greater Phoenix Office Market*

Source: CBRE

Year	Absorption (sf)	Chg in Inventory (sf)
2005	3,119,293	7,987
2006	3,245,888	2,320,302
2007	1,500,704	4,905,374
2008	(603,112)	3,402,646
2009	(667,329)	1,798,415
2010	233,670	2,011,404
2011	1,857,433	3,144,910
2012	2,020,529	973,282
2013	1,721,366	(35,566)
2014	1,969,716	1,107,906
2015	3,779,039	3,763,828
2016**	2,003,933	451,206

*All Leased multi-tenant space greater than 10,000 SF.

** Data through the second quarter 2016



**As of the second quarter 2016,
there were 1.8 million square
feet of total office space under
construction including 987,605
square feet of speculative office
space.**

Source: CBRE



Under any reasonable employment growth scenario, we believe it will be at least 2017-2018 before any significant office construction occurs (although some sub-markets like Tempe and downtown Scottsdale will be sooner).



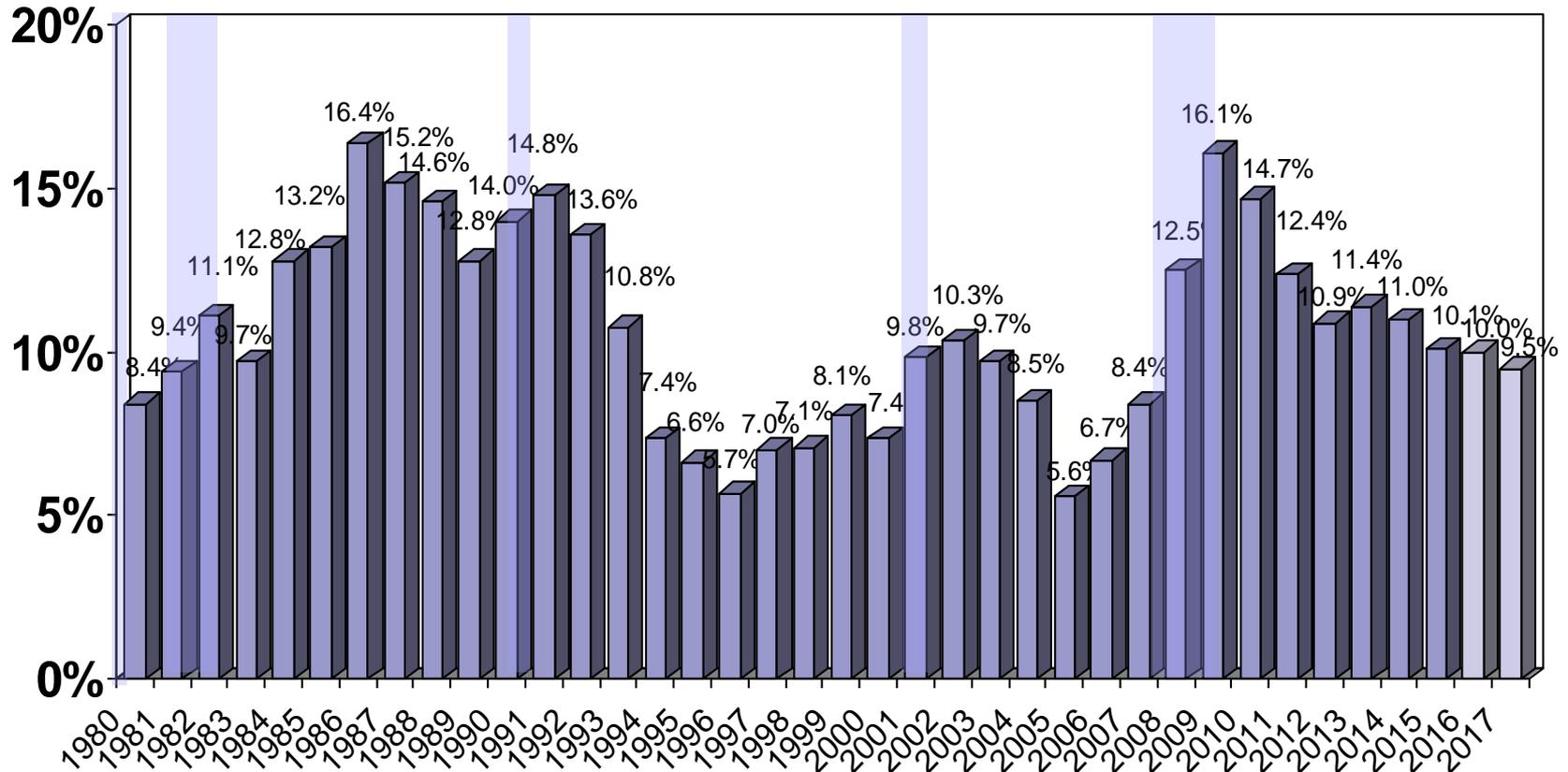
INDUSTRIAL



Industrial Space Vacancy Rates Greater Phoenix 1980 – 2017*

Source: CBRE

Recession Periods



Greater Phoenix Industrial Market

Source: CBRE

Year	Absorption (sf)	Chg in Inventory (sf)
2005	13,349,129	7,072,477
2006	6,032,175	7,829,959
2007	8,359,835	13,914,181
2008	629,838	13,467,215
2009	(4,649,352)	4,753,218
2010	4,455,097	2,451,202
2011	7,753,111	2,842,185
2012	7,405,168	3,358,724
2013	8,783,982	8,902,571
2014	6,214,680	6,791,313
2015	7,046,663	3,966,434
2016*	5,021,394	2,492,687





**As of the second quarter 2016,
there was 3.5 million square feet
of total industrial space under
construction including
2.1 million square feet
of speculative industrial space.**

Source: CBRE



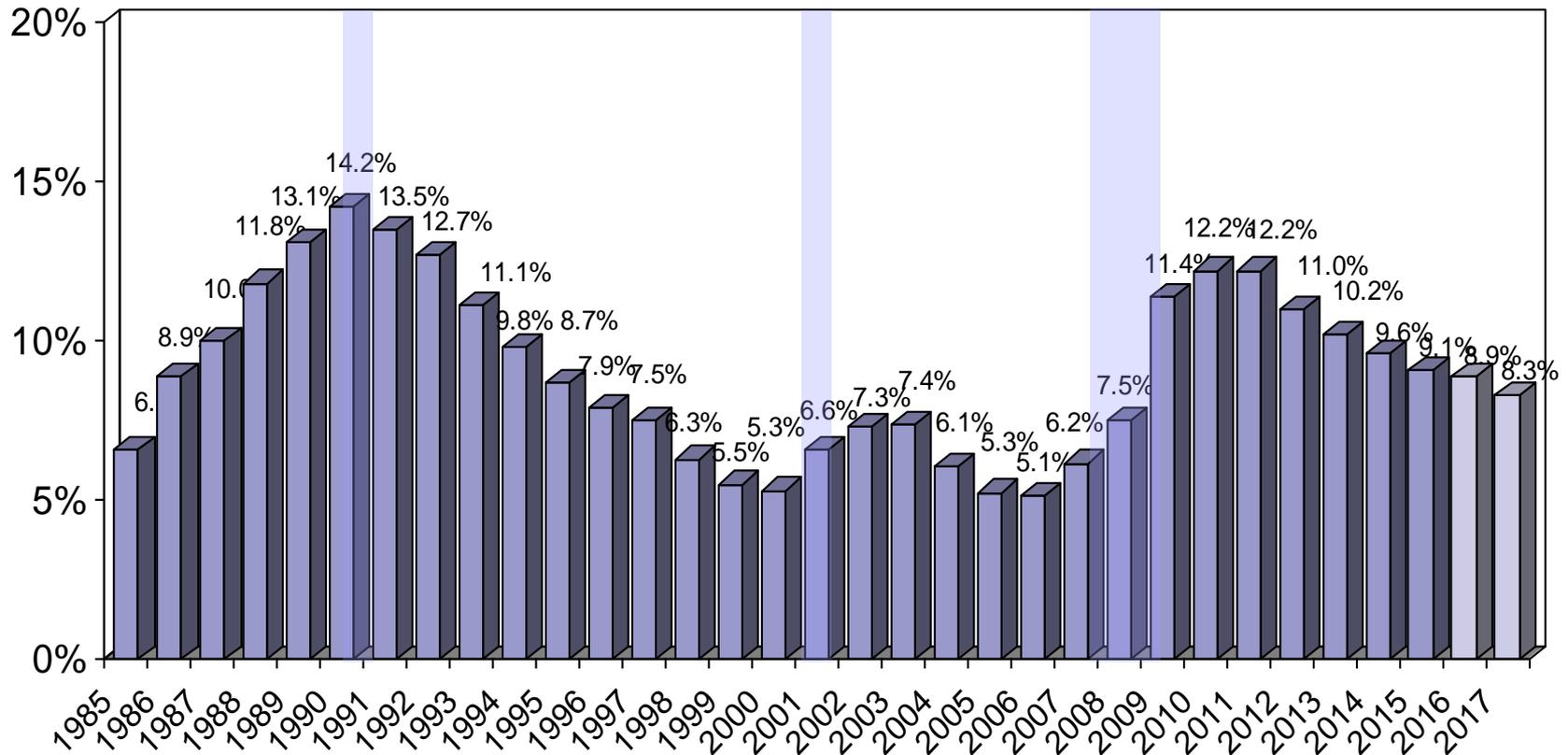
RETAIL



Retail Space Vacancy Rates Greater Phoenix 1985–2017*

Source: CBRE**

Recession Periods



*2016 & 2017 are forecasts from the Greater Phoenix Blue Chip

** Data prior to 1992 is from Grubb & Ellis



Greater Phoenix Retail Market

Source: CBRE

Year	Absorption (sf)	Chg in Inventory (sf)
2005	6,708,155	6,248,789
2006	5,244,597	4,582,618
2007	9,424,362	11,104,865
2008	3,395,986	6,229,205
2009	(1,117,100)	4,405,985
2010	(75,352)	902,380
2011	(152,647)	24,543
2012	1,879,005	184,932
2013	1,579,202	(325,959)
2014	1,487,313	(49,225)
2015	1,150,192	164,859
2016*	521,159	421,077



**As of the second quarter 2016,
there were 918,961 square feet
of total retail space
under construction and 0
square feet of speculative retail
construction.**

Source: CBRE



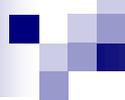
CONCLUSIONS: How will it all turn out?



Greater Phoenix–

No traditional boom in Greater Phoenix until population increases more rapidly and housing makes a more meaningful recovery.





This is the boom...
“It’s as good as it gets!”



Maricopa County

Risks



Reality

Again, you can't tell well in advance when a recession will occur.



Time to be Cautious!

- **If the FY17 revenues come in at “Pessimistic” level, budget could be off by \$10.0 million.**

(Estimate for state shared sales tax, state shared VLT and Jail sales tax)



Time to be Cautious!

The damage of that type of shortfall could be a problem given the risks to the reserves.

Therefore, you must play things close to the vest.



Maricopa County Forecasts

Most Likely (Trend)						
	Actuals	Forecast				
	FY16	FY17	FY18	FY19	FY20	FY21
Population	1.8%	1.9%	2.0%	1.9%	2.1%	2.1%
Employment	3.5%	3.5%	2.8%	2.5%	3.0%	3.0%
Retail Sales	6.0%	4.5%	4.0%	4.0%	4.5%	4.5%
Total Permits	23.0%	18.0%	15.0%	10.0%	5.0%	3.2%



Maricopa County Forecasts

Recession Scenario						
	Actuals	Forecast				
	FY16	FY17	FY18	FY19	FY20	FY21
Population	1.8%	1.3%	0.9%	0.7%	1.0%	1.5%
Employment	3.5%	2.2%	1.1%	(1.0%)	2.4%	2.8%
Retail Sales	6.0%	4.2%	2.0%	(1.0%)	3.5%	4.5%
Total Permits	23.0%	10.0%	2.0%	(10.0%)	(15.0%)	(5.0%)

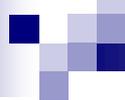


**“The time to repair the roof is
when the sun is shining.”**

[State of the Union Address January 11, 1962]

— John F. Kennedy





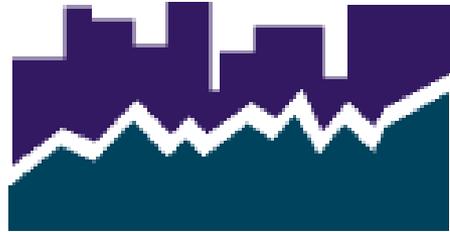
**This is as “shining” as it’s
going to get!**





**KEEP
CALM
AND PROCEED
WITH
CAUTION**





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