



DEMOGRAPHY SECTOR LAUNCH

**BREAKING JOBS NUMBERS,
2015 BIRTHS/DEATHS NEWS,
LONG-TERM HOUSING, &
MORE**

JUNE 16, 2016



DISCLAIMER

DISCLAIMER

Hedgeye Risk Management is a registered investment advisor, registered with the State of Connecticut. Hedgeye Risk Management is not a broker dealer and does not provide investment advice for individuals. This research does not constitute an offer to sell, or a solicitation of an offer to buy any security. This research is presented without regard to individual investment preferences or risk parameters; it is general information and does not constitute specific investment advice. This presentation is based on information from sources believed to be reliable. Hedgeye Risk Management is not responsible for errors, inaccuracies or omissions of information. The opinions and conclusions contained in this report are those of Hedgeye Risk Management, and are intended solely for the use of Hedgeye Risk Management's clients and subscribers. In reaching these opinions and conclusions, Hedgeye Risk Management and its employees have relied upon research conducted by Hedgeye Risk Management's employees, which is based upon sources considered credible and reliable within the industry. Hedgeye Risk Management is not responsible for the validity or authenticity of the information upon which it has relied.

TERMS OF USE

This report is intended solely for the use of its recipient. Re-distribution or republication of this report and its contents are prohibited. For more details please refer to the appropriate sections of the Hedgeye Services Agreement and the Terms of Use at www.hedgeye.com

PLEASE SUBMIT QUESTIONS* TO

QA@HEDGEYE.COM

**ANSWERED AT THE END OF THE CALL*

INTRODUCING THE DEMOGRAPHY SECTOR

- 1. My Background & Method**
- 2. Range of Issues the Sector will Cover**
- 3. Interpreting Breaking Job Numbers**
- 4. Deaths Up, Births Down: Early 2015 Data from NVSS**
- 5. Long-Term Housing Forecast**
- 6. Drivers Behind Sinking Long-Term Rates**

1. MY BACKGROUND & METHOD

- ❑ **Graduate Degrees in History & Economics (Yale)**

- ❑ **Demography, Economics, Fiscal Policy:**

Advisor to Lehman Brothers, Blackstone; Senior Associate at CSIS
Author of *On Borrowed Time*, *Graying of the Great Powers*

- ❑ **Social Trends, Generational Theory:**

Author of *Generations*, *The Fourth Turning*, *Millennials Rising*, etc.

- ❑ **Frequent Speaker/Consultant:**

to corporations, asset managers, colleges, public agencies

- ❑ **METHOD:** Forecasting social behavior by combining careful empirical measurement with an interdisciplinary understanding of historical patterns and relevant social sciences (especially: economic, demographic, and generational theory).

2. RANGE OF ISSUES THE SECTOR WILL COVER

Breaking Macro and Sentiment Indicators: employment, production, sales, credit spreads, inflation, confidence, political events, etc., with emphasis on breadth of coverage & holistic understanding. Time frame: Trade+Trend (anything < 3 mths)

“Demography” Strictly Speaking: news, forecasts, causes, & effects of population trends, including fertility, mortality, morbidity, migration, mobility, marriage, household formation, etc. Time frame: Trend+Tail+Supertail (anything > 3 wks)

Impact of Generational and Demographic Change on Particular Industries.

Examples: Housing, Media, Telecom, CPG, Retail, Hospitality, Travel, Insurance, Financial Services. Time frame: Trend+Tail+Supertail (anything > 3 wks).

Big Structural Questions: Such as social trends, “secular stagnation,” productivity, business dynamism, profit margins, equity valuations, long-term real rate of return. Time frame: Tail+Supertail (anything > 3 mths).

2. RANGE OF ISSUES THE SECTOR WILL COVER

Breaking Macro and Sentiment Indicators: employment, production, sales, credit spreads, inflation, confidence, political events, etc., with emphasis on breadth of coverage & holistic understanding. Time frame: Trade & Trend (anything < 3 mths)

“Demography” Strictly Speaking: news, forecasts, causes, & effects of population trends, including fertility, mortality, morbidity, migration, mobility, marriage, household formation, etc. Time frame: Trend, Tail, Supertail (anything > 3 wks)

Impact of Generational and Demographic Change on Particular Industries.

Examples: Housing, Media, Telecom, CPG, Retail, Hospitality, Travel, Insurance, Financial Services. Time frame: Trend, Tail, Supertail (anything > 3 wks).

Big Structural Questions: Such as social trends, “secular stagnation,” productivity, business dynamism, profit margins, equity valuations, long-term real rate of return. Time frame: Tail, Supertail (anything > 3 mths).

A person wearing a dark suit jacket over a light blue button-down shirt is holding a rectangular piece of brown cardboard with both hands. The cardboard has the words "NEED A" on the top line and "JOB!" on the bottom line, written in black marker. The edges of the cardboard are rough and torn. The background is a plain, light gray.

NEED A
JOB!

3. INTERPRETING BREAKING JOB #S

BIGGEST JOB # TREND: THE SPREAD OF RED

	-----MoM-----				-----		-- SMA CROSSOVERS --			-----TRAILING 5Y ZSCORE-----			
	FEB	MAR	APR	MAY	M:YoY	3MMA:YoY	1-3MMA	3-12MMA	12-24MMA	Z-MoM	Z-3MMA	Z-M:YoY	Z-3MMA:YoY
NATIONAL ACTIVITY													
NFP Employment	0.16%	0.13%	0.09%	0.03%	1.69%	1.84%	-0.05%	-0.06%	-0.02%	-2.23	-1.28	-0.24	0.30
Private Goods-Producing	-0.10%	-0.04%	-0.07%	-0.18%	0.26%	0.46%	-0.09%	-0.12%	-0.08%	-2.27	-1.77	-2.45	-2.27
Private Service-Providing	0.20%	0.16%	0.11%	0.06%	1.93%	2.06%	-0.05%	-0.05%	-0.01%	-1.62	-0.74	0.62	1.08
ADP Payroll Employment	0.17%	0.17%	0.14%	0.14%	2.04%	2.06%	-0.01%	-0.02%	-0.01%	-0.82	-0.72	-0.57	-0.42
NFP Employment: Goods-Producing	0.00%	0.05%	-0.04%	-0.01%	0.54%	0.56%	-0.01%	-0.04%	-0.06%	-1.65	-1.63	-2.25	-2.32
NFP Employment: Service-Providing	0.21%	0.19%	0.17%	0.17%	2.33%	2.36%	-0.01%	-0.02%	0.00%	-0.29	-0.17	0.72	0.84
Index of Aggregate Weekly Hours	-0.38%	0.10%	0.10%	0.10%	1.64%	1.74%	0.00%	-0.04%	-0.03%	-0.31	-0.33	-1.55	-1.37
FRB-BGOV: Δ in FRB Labor Market Index	-2.40	-3.00	-3.40	-4.80	-7.00	-4.70	-1.07	-3.67	-1.83	-2.53	-2.33	-1.74	-1.09
FRB-CHI: Ntnl Activity Index: Employment	0.05	-0.04	-0.02	N/A	-0.17	-0.08	-0.02	-0.06	-0.04	-1.10	-0.99	-0.97	-0.48
FRB-KC: Labor Market Indicator: Level	0.03	0.03	0.06	0.06	0.19	0.22	0.01	0.07	0.18	1.52	1.56	-1.49	-1.22
FRB-KC: Labor Market Ind.: Momentum	0.66	0.45	0.50	0.56	-0.32	-0.36	0.05	-0.27	-0.18	-0.93	-1.15	-0.92	-1.05
ISM: Manufacturing PMI: Employment	48.50	48.10	49.20	49.20	-2.90	-1.70	0.37	-0.78	-2.00	-1.36	-1.50	-0.27	0.04
Markit: Manufacturing PMI: Employment	51.52	52.06	50.16	51.09	-3.16	-2.74	-0.01	-1.19	-0.84	-1.61	-1.68	-1.36	-1.19
ISM: Non-Manufact. Index (NMI): Emp.	49.70	50.30	53.00	49.70	-6.10	-5.03	-1.30	-3.33	-0.82	-1.79	-1.29	-2.18	-1.91
Markit: Services PMI: Employment	54.23	54.17	52.97	51.81	-3.43	-1.89	-1.18	-0.78	0.07	-1.15	-0.26	-1.98	-1.19
REGIONAL ACTIVITY													
FRB-NY: Current Employment Diff Index	8.90	14.81	8.21	4.19	-6.38	-3.27	-4.88	-2.33	-1.51	-0.63	0.12	-0.75	-0.42
FRB-Phil: Current Employment Diff Index	-4.40	1.50	-15.10	1.40	-11.30	-16.57	5.47	-2.76	-5.53	-0.29	-0.94	-0.82	-1.32
FRB-Dallas: Current Employment Diff Ind	-11.10	-10.30	-3.70	-6.70	3.50	-2.60	0.20	-3.85	-4.64	-1.59	-1.68	0.54	-0.05
FRB-NY (Emp): Current Manf Emp Diff Ind	-0.99	-1.98	1.92	2.08	-3.13	-10.44	1.41	3.71	-6.89	-0.39	-0.56	-0.02	-0.68
FRB-RICH: Current Manf Emp Diff Index	9.00	11.00	8.00	4.00	-1.12	1.15	-3.67	2.02	-1.64	-0.19	0.51	-0.06	0.23
FRB-RICH: Current Service Emp Diff Index	9.00	15.00	13.00	18.00	4.33	3.57	2.67	1.52	0.72	1.58	1.25	0.28	0.18
FRB-PHIL: Current Manf Emp Diff Index	-5.00	-1.10	-18.50	-3.30	-11.10	-16.30	4.33	-6.38	-5.53	-0.94	-1.57	-0.81	-1.30
FRB-DALLAS: Current Manf Emp Diff Ind	-9.40	-6.20	0.00	-1.80	3.50	-3.33	0.87	0.78	-4.84	-0.93	-1.06	0.55	-0.12
FRB-KC: Current Manf Emp Diff Index	-20.00	-12.00	-12.00	-13.00	1.00	-1.33	-0.67	-0.67	-5.50	-1.47	-1.43	0.45	0.21

Source: FRED, Markit, Hedgeye (2016)

NATIONAL SMA CROSSOVERS: NEARLY ALL < ZERO

	-----MoM-----						-- SMA CROSSOVERS --			-----TRAILING 5Y ZSCORE-----			
	FEB	MAR	APR	MAY	M:YoY	3MMA:YoY	1-3MMA	3-12MMA	12-24MMA	Z-MoM	Z-3MMA	Z-M:YoY	Z-3MMA:YoY
NATIONAL ACTIVITY													
NFP Employment	0.16%	0.13%	0.09%	0.03%	1.69%	1.84%	-0.05%	-0.06%	-0.02%	-2.23	-1.28	-0.24	0.30
Private Goods-Producing	-0.10%	-0.04%	-0.07%	-0.18%	0.26%	0.46%	-0.09%	-0.12%	-0.08%	-2.27	-1.77	-2.45	-2.27
Private Service-Providing	0.20%	0.16%	0.11%	0.06%	1.93%	2.06%	-0.05%	-0.05%	-0.01%	-1.62	-0.74	0.62	1.08
ADP Payroll Employment	0.17%	0.17%	0.17%	0.15%	2.04%	2.06%	-0.01%	-0.02%	-0.01%	-0.82	-0.72	-0.57	-0.42
NFP Employment: Goods-Producing	0.00%	0.05%	-0.04%	-0.01%	0.54%	0.56%	-0.01%	-0.04%	-0.06%	-1.65	-1.63	-2.25	-2.32
NFP Employment: Service-Providing	0.21%	0.19%	0.17%	0.17%	2.33%	2.36%	-0.01%	-0.02%	0.00%	-0.29	-0.17	0.72	0.84
Index of Aggregate Weekly Hours	-0.38%	0.10%	0.10%	0.10%	1.64%	1.74%	0.00%	-0.04%	-0.03%	-0.31	-0.33	-1.55	-1.37
FRB-BGOV: Δ in FRB Labor Market Index	-2.40	-3.00	-3.40	-4.00	-7.00	-4.70	-1.07	-3.67	-1.83	-2.53	-2.33	-1.74	-1.09
FRB-CHI: Ntnl Activity Index: Employment	0.05	-0.04	-0.02	N/A	-0.17	-0.00	-0.02	-0.06	-0.04	-1.10	-0.99	-0.97	-0.48
FRB-KC: Labor Market Indicator: Level	0.03	0.03	0.06	0.06	0.19	0.22	0.00	0.07	0.18	1.52	1.56	-1.49	-1.22
FRB-KC: Labor Market Ind.: Momentum	0.66	0.45	0.50	0.50	-0.32	-0.36	0.05	-0.27	-0.18	-0.93	-1.15	-0.92	-1.05
ISM: Manufacturing PMI: Employment	48.50	48.10	49.20	49.20	-2.90	-1.70	0.37	-0.78	-2.00	-1.36	-1.50	-0.27	0.04
Markit: Manufacturing PMI: Employment	51.52	52.06	50.16	51.09	-3.16	-2.74	-0.01	-1.19	-0.84	-1.61	-1.68	-1.36	-1.19
ISM: Non-Manufact. Index (NMI): Emp.	49.70	50.30	53.00	49.70	-6.10	-5.03	-1.30	-3.33	-0.82	-1.79	-1.29	-2.18	-1.91
Markit: Services PMI: Employment	54.23	54.17	52.97	51.80	-3.43	-1.89	-1.18	-0.78	0.07	-1.15	-0.26	-1.98	-1.19
REGIONAL ACTIVITY													
FRB-NY: Current Employment Diff Index	8.90	14.81	8.21	4.19	-6.38	-3.27	-4.88	-2.33	-1.51	-0.63	0.12	-0.75	-0.42
FRB-Phil: Current Employment Diff Index	-4.40	1.50	-15.10	1.40	-11.30	-16.57	5.47	-2.76	-5.53	-0.29	-0.94	-0.82	-1.32
FRB-Dallas: Current Employment Diff Ind	-11.10	-10.30	-3.70	-6.70	3.50	-2.60	0.20	-3.85	-4.64	-1.59	-1.68	0.54	-0.05
FRB-NY (Emp): Current Manf Emp Diff Ind	-0.99	-1.98	1.92	2.08	-3.13	-10.44	1.41	3.71	-6.89	-0.39	-0.56	-0.02	-0.68
FRB-RICH: Current Manf Emp Diff Index	9.00	11.00	8.00	4.00	-1.12	1.15	-3.67	2.02	-1.64	-0.19	0.51	-0.06	0.23
FRB-RICH: Current Service Emp Diff Index	9.00	15.00	13.00	18.00	4.33	3.57	2.67	1.52	0.72	1.58	1.25	0.28	0.18
FRB-PHIL: Current Manf Emp Diff Index	-5.00	-1.10	-18.50	-3.30	-11.10	-16.30	4.33	-6.38	-5.53	-0.94	-1.57	-0.81	-1.30
FRB-DALLAS: Current Manf Emp Diff Ind	-9.40	-6.20	0.00	-1.80	3.50	-3.33	0.87	0.78	-4.84	-0.93	-1.06	0.55	-0.12
FRB-KC: Current Manf Emp Diff Index	-20.00	-12.00	-12.00	-13.00	1.00	-1.33	-0.67	-0.67	-5.50	-1.47	-1.43	0.45	0.21

ALL RED!!!

Source: FRED, Markit, Hedgeye (2016)

LOOKING OUT FOR THE BIG SIGMA EVENTS

	-----MoM-----				-----		-- SMA CROSSOVERS --			-----TRAILING 5Y ZSCORE-----			
	FEB	MAR	APR	MAY	M:YoY	3MMA:YoY	1-3MMA	3-12MMA	12-24MMA	Z-MoM	Z-3MMA	Z-M:YoY	Z-3MMA:YoY
NATIONAL ACTIVITY													
NFP Employment	0.16%	0.13%	0.09%	0.03%	1.69%	1.84%	-0.05%	-0.06%	-0.02%	-2.23	-1.28	-0.24	0.30
Private Goods-Producing	-0.10%	-0.04%	-0.07%	-0.18%	0.26%	0.46%	-0.09%	-0.12%	-0.08%	-2.27	-1.71	-2.45	-2.27
Private Service-Providing	0.20%	0.16%	0.11%	0.06%	1.93%	2.06%	-0.05%	-0.05%	-0.01%	-1.53	-0.74	0.62	1.08
ADP Payroll Employment	0.17%	0.17%	0.14%	0.14%	2.04%	2.06%	-0.01%	-0.02%	0.01%	-0.82	-0.72	-0.57	-0.42
NFP Employment: Goods-Producing	0.00%	0.05%	-0.04%	-0.01%	0.54%	0.56%	-0.01%	-0.04%	0.06%	-1.65	-1.63	-2.25	-2.32
NFP Employment: Service-Providing	0.21%	0.19%	0.17%	0.17%	1.72%	1.74%	-0.06%	-0.02%	0.00%	-0.29	-0.17	0.72	0.84
Index of Aggregate Weekly Hours	-0.38%	0.10%	0.10%	0.10%	1.64%	1.74%	0.00%	0.04%	0.03%	-0.31	-0.33	-1.55	-1.37
FRB-BGOV: Δ in FRB Labor Market Index	-2.40	-3.00	-3.40	-4.80	-7.00	-4.70	-1.07	-3.67	-1.09	-2.53	-2.33	-1.74	-1.09
FRB-CHI: Ntnl Activity Index: Employment	0.05	-0.04	-0.02	N/A	-0.17	-0.08	-0.02	-0.06	-0.04	-1.10	-0.99	-0.97	-0.48
FRB-KC: Labor Market Indicator: Level	0.03	0.03	0.06	0.06	0.19	0.22	0.01	0.07	0.18	1.52	1.56	-1.49	-1.22
FRB-KC: Labor Market Ind.: Momentum	0.66	0.45	0.50	0.56	-0.32	-0.36	0.05	-0.27	-0.18	-0.93	-1.15	-0.92	-1.05
ISM: Manufacturing PMI: Employment	48.50	48.10	49.20	49.20	-2.90	-1.70	0.37	-0.78	-2.00	-1.36	-1.50	-0.27	0.04
Markit: Manufacturing PMI: Employment	51.52	52.06	51.56	51.06	-2.70	-2.70	-1.39	-1.39	-0.94	-1.61	-1.68	-1.36	-1.19
ISM: Non-Manufact. Index (NMI): Emp.	49.70	50.30	55.00	49.70	-6.10	-5.03	-1.30	-5.33	-0.82	-1.79	-1.29	-2.18	-1.91
Markit: Services PMI: Employment	54.23	54.17	52.97	51.81	-3.43	-1.89	-1.18	-0.78	0.07	-1.15	-0.20	-1.98	-1.19
REGIONAL ACTIVITY													
FRB-NY: Current Employment Diff Index	8.90	14.81	8.21	4.19	-6.38	-3.27	-4.88	-2.33	-1.51	-0.63	0.12	-0.75	-0.42
FRB-Phil: Current Employment Diff Index	-4.40	1.50	-15.10	1.40	-11.30	-16.57	5.47	-2.76	-5.53	-0.29	-0.94	-0.82	-1.32
FRB-Dallas: Current Employment Diff Ind	-11.10	-10.30	-3.70	-6.70	3.50	-2.60	0.20	-3.85	-4.64	-1.59	-1.68	0.54	-0.05
FRB-NY (Emp): Current Manf Emp Diff Ind	-0.99	-1.98	1.92	2.08	-3.13	-10.44	1.41	3.71	-6.89	-0.39	-0.56	-0.02	-0.68
FRB-RICH: Current Manf Emp Diff Index	9.00	11.00	8.00	4.00	-1.12	1.15	-3.67	2.02	-1.64	-0.19	0.51	-0.06	0.23
FRB-RICH: Current Service Emp Diff Index	9.00	15.00	13.00	18.00	4.33	3.57	2.67	1.52	0.72	1.58	1.25	0.28	0.18
FRB-PHIL: Current Manf Emp Diff Index	-5.00	-1.10	-18.50	-3.30	-11.10	-16.30	4.33	-6.38	-5.53	-0.94	-1.57	-0.81	-1.30
FRB-DALLAS: Current Manf Emp Diff Ind	-9.40	-6.20	0.00	-1.80	3.50	-3.33	0.87	0.78	-4.84	-0.93	-1.06	0.55	-0.12
FRB-KC: Current Manf Emp Diff Index	-20.00	-12.00	-12.00	-13.00	1.00	-1.33	-0.67	-0.67	-5.50	-1.47	-1.43	0.45	0.21

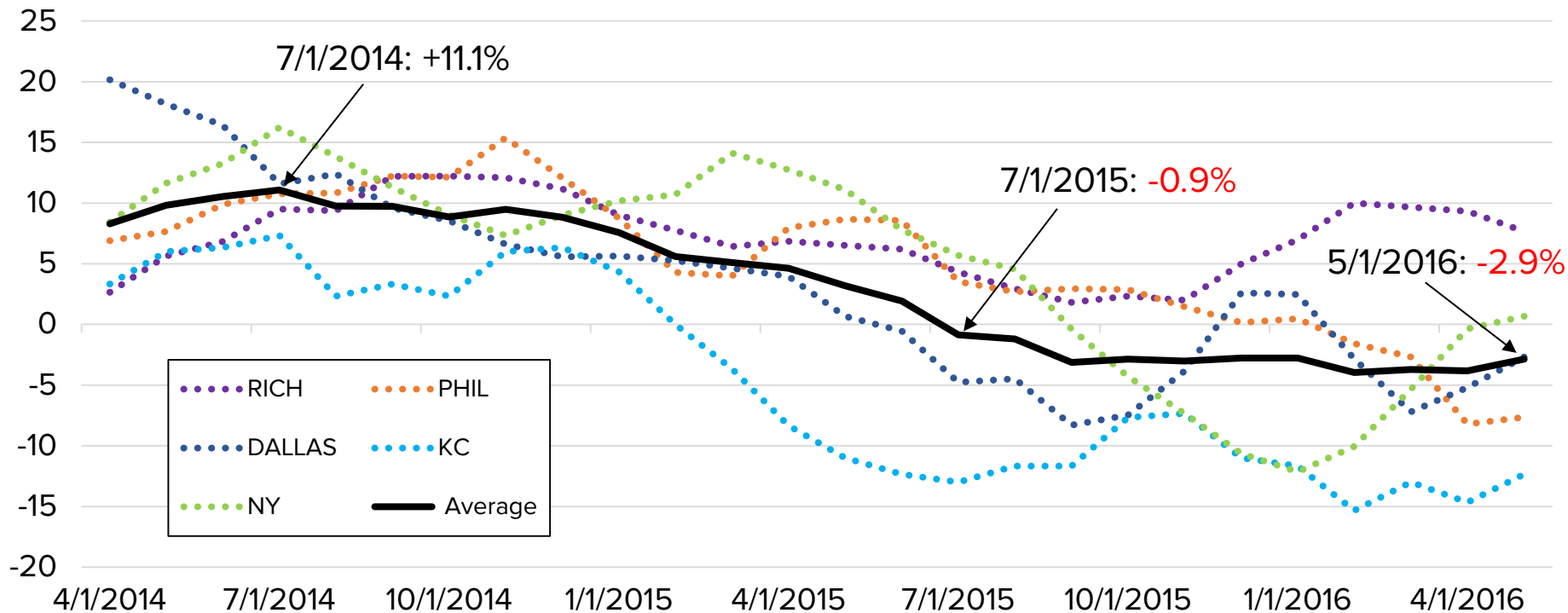
2-3 SIGMA EVENTS

1.5-2 SIGMA EVENTS

Source: FRED, Markit, Hedgeye (2016)

FED 5 MANF JOB INDEXES RED SINCE JULY, 2015

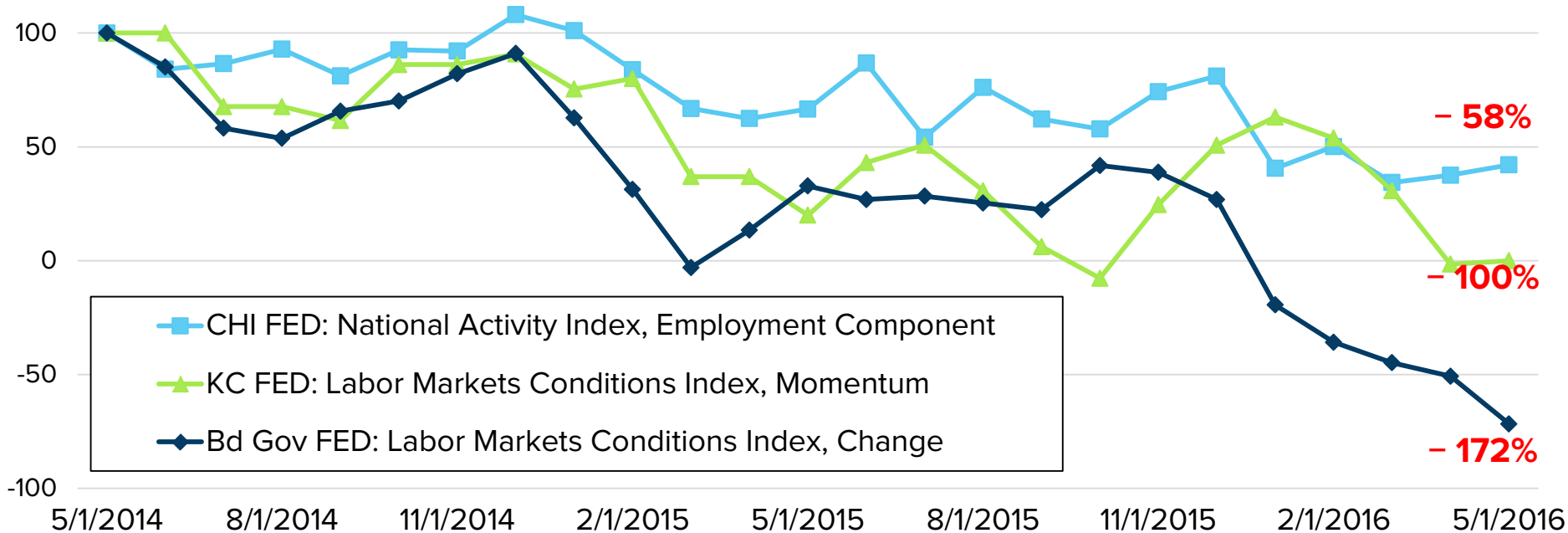
3 MMAs of 5 Regional Fed Manf. Employment Diffusion Indexes



Source: FRED (2016)

AND WHAT ABOUT JANET'S FAVORITE INDEX?

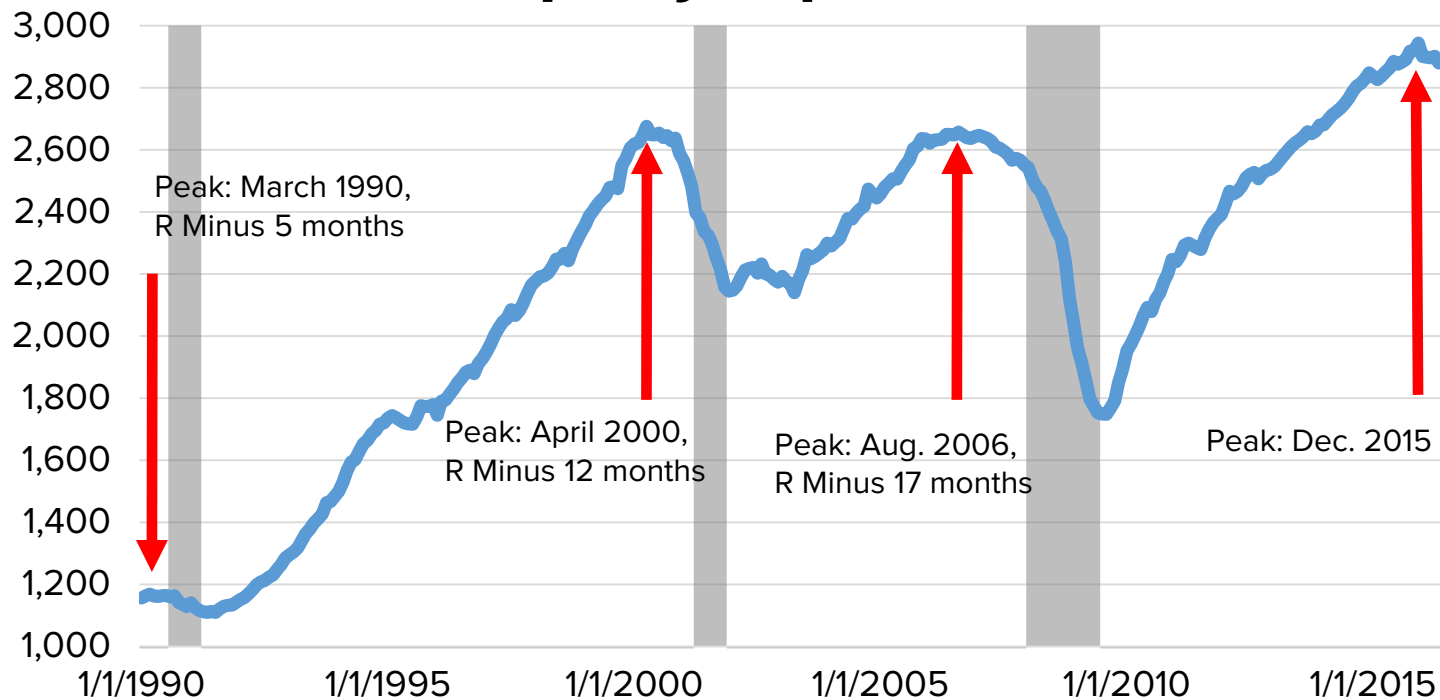
3 National Labor Indicators Computed by the Fed Index: 5/1/2014 = 100



Source: FRED (2016)

“OTHER” JOB INDICATORS: TEMP EMPLOYMENT

Number of Persons (in Thousands) Employed by Temporary Help Services

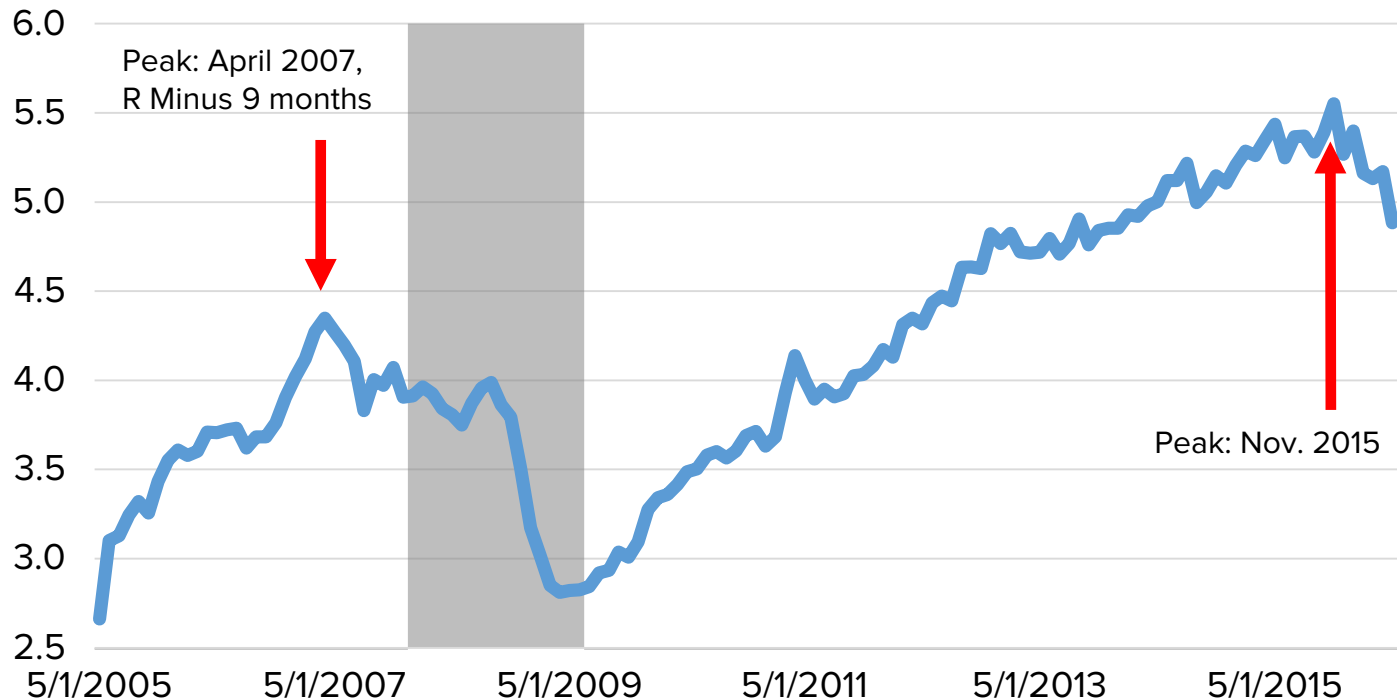


Source: FRED (2016)

The number of temporarily employed individuals peaked before the last three recessions. In December, this number peaked again.

“OTHER” JOB INDICATORS: HELP WANTED ADS

Total Number of Online Help Wanted Ads (in Millions)



Source: The Conference Board (2016)

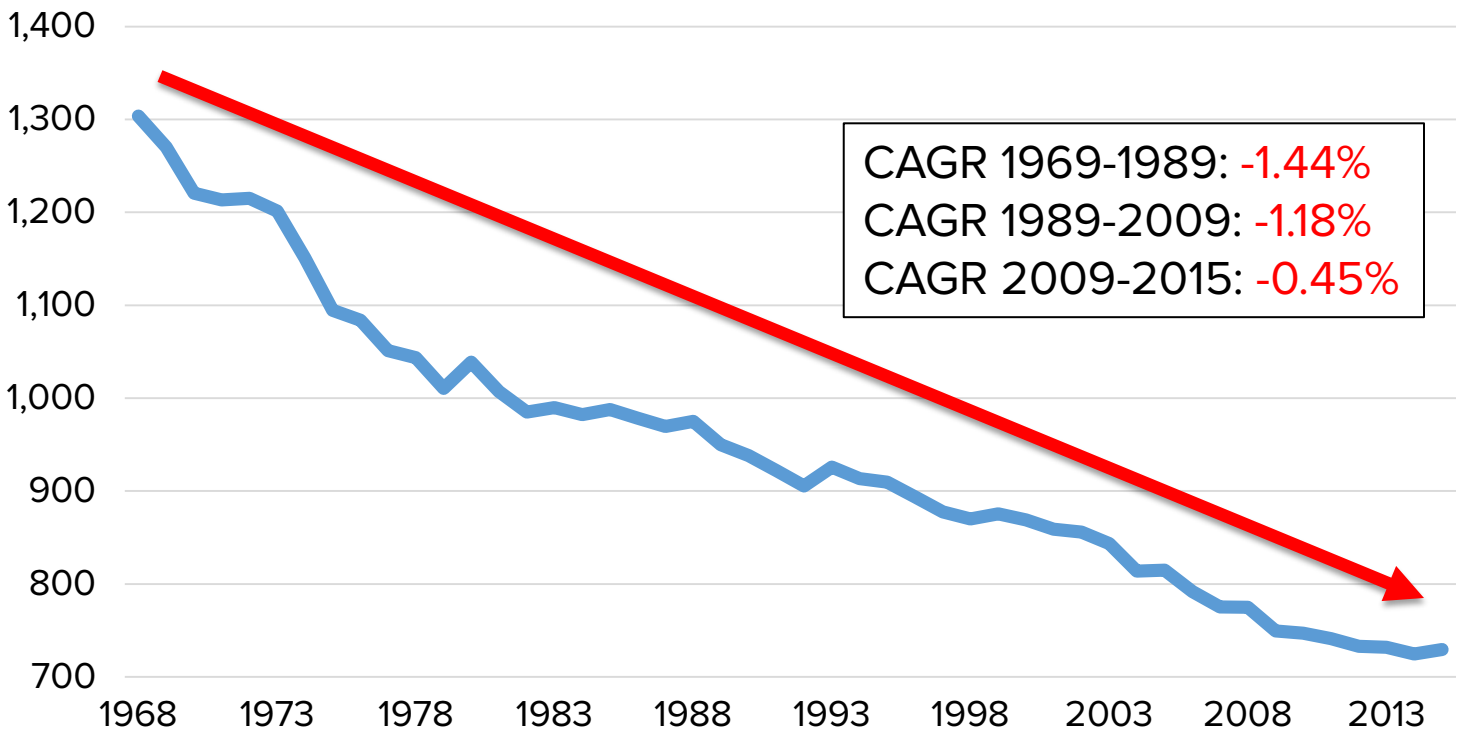
The number of online help wanted ads peaked before the last recession. Last November, this number peaked again.



4. DEATHS UP, BIRTHS DOWN IN 2015

MORTALITY ON A LONG TERM DECLINE...

Age-Adjusted Mortality Rate Per 100,000

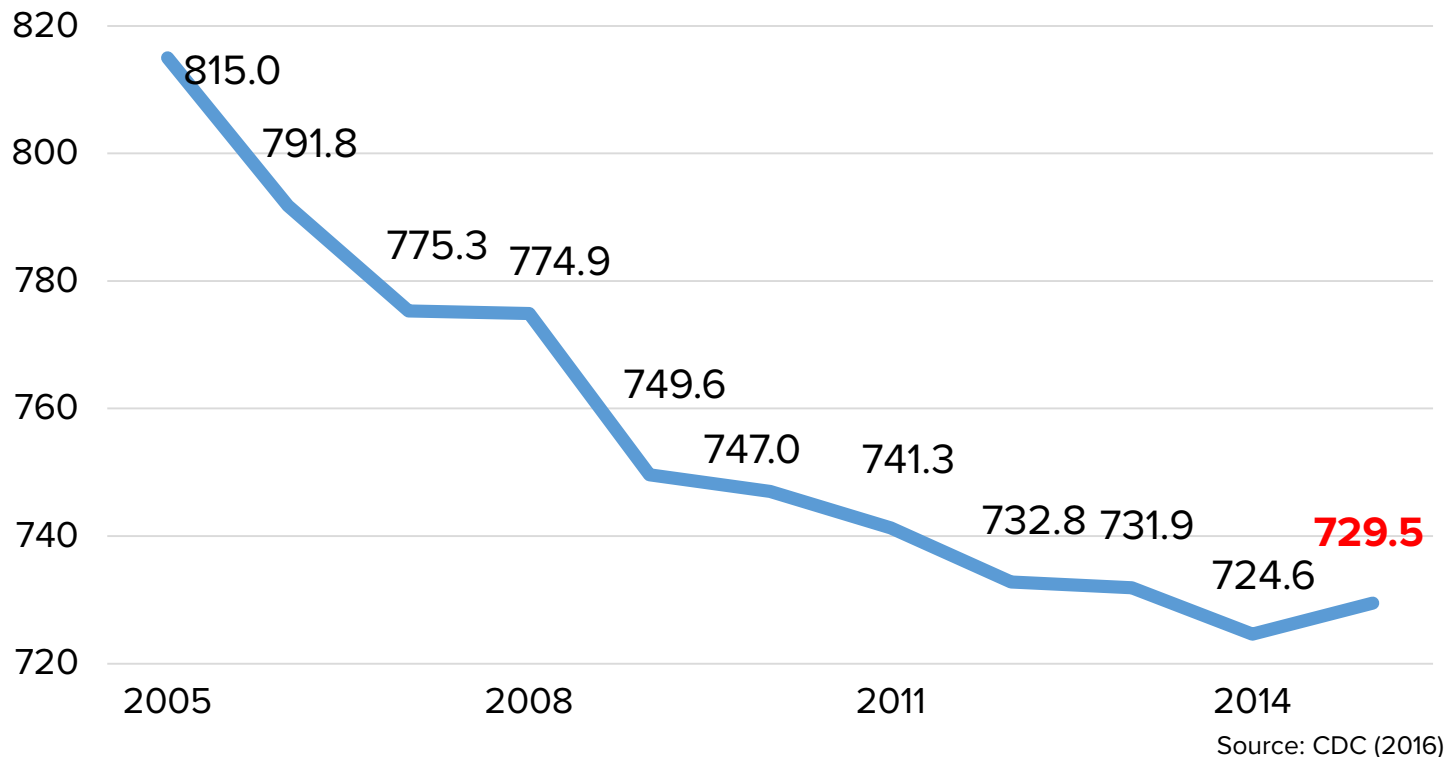


Source: CDC (2016)

Though the age-adjusted mortality rate has been on a long-term downward slope, lately that slope has flattened.

...THAT IS, UNTIL 2015.

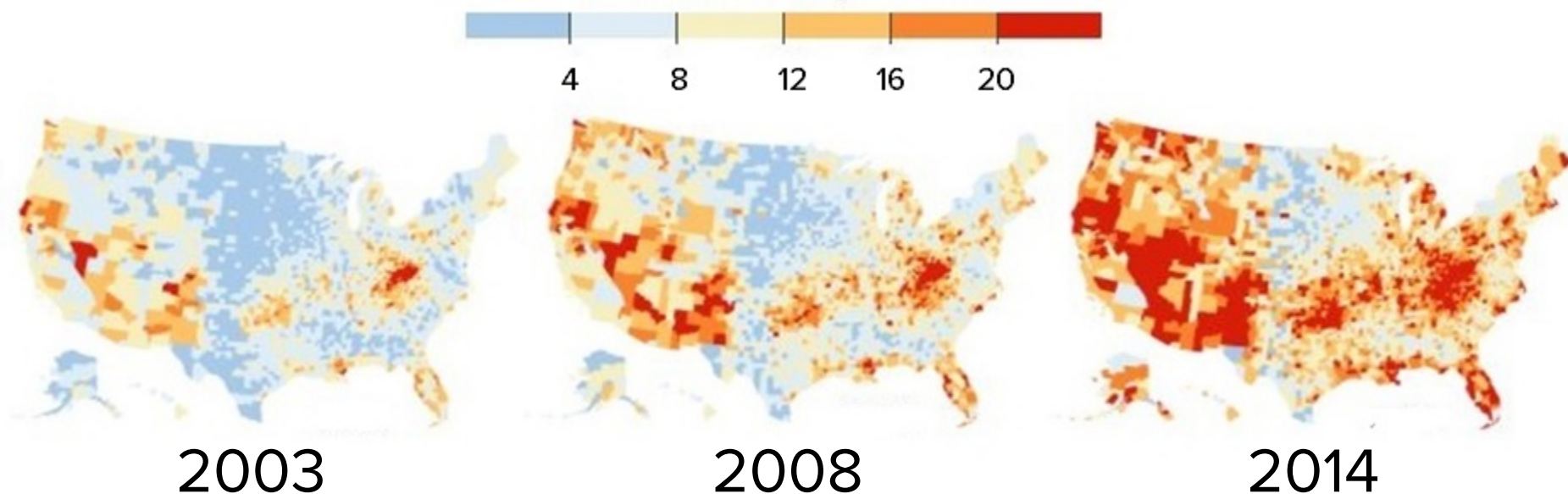
Age-Adjusted Mortality Rate Per 100,000



Not only did the mortality rate rise in 2015, the rate has shown negligible decline going back to 2012.

EPIDEMIC OF DRUG OVERDOSE DEATHS...

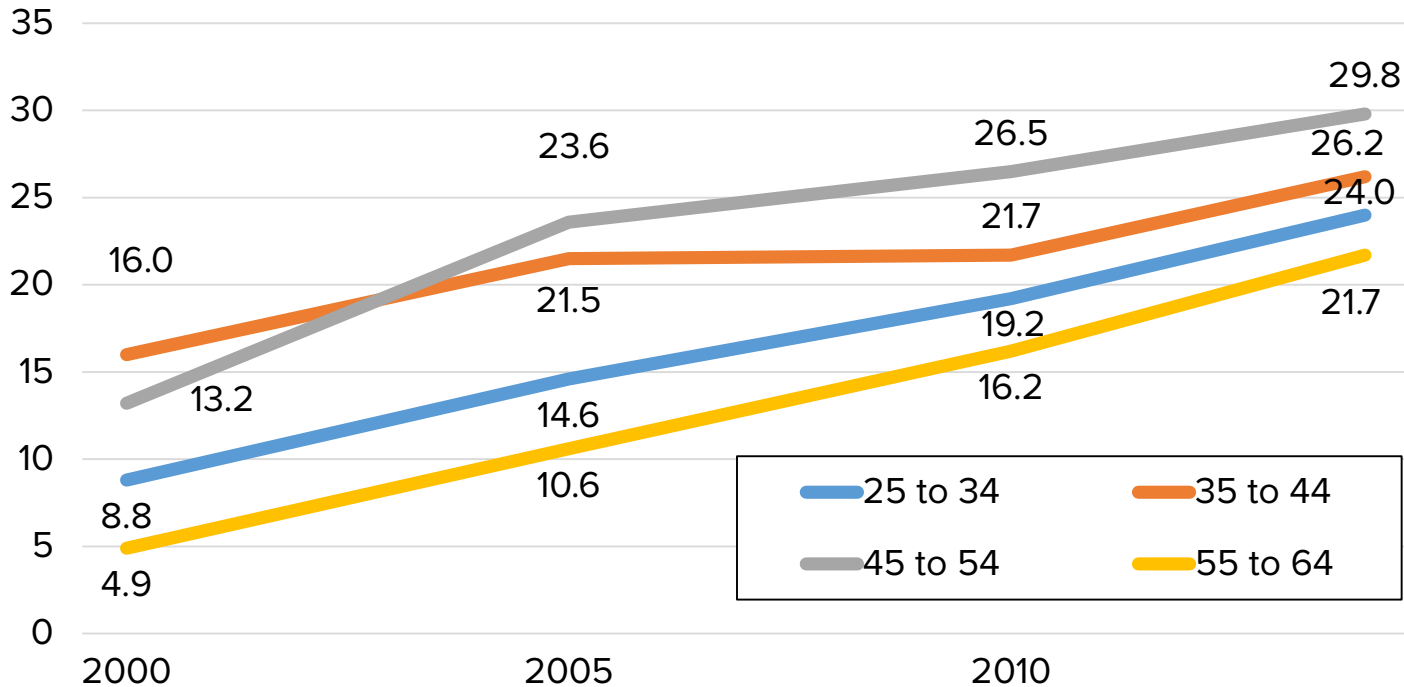
Overdose Deaths per 100,000



Source: CDC, *The New York Times* (2014)

AND ALL AGE BRACKETS UNDER 65 TAKING PART.

Crude Rate of Drug-Induced Deaths per 100,000



Source: CDC (2016)

% Increase in
Drug Death Rate,
2000-2014:

age 25-34: **173%**

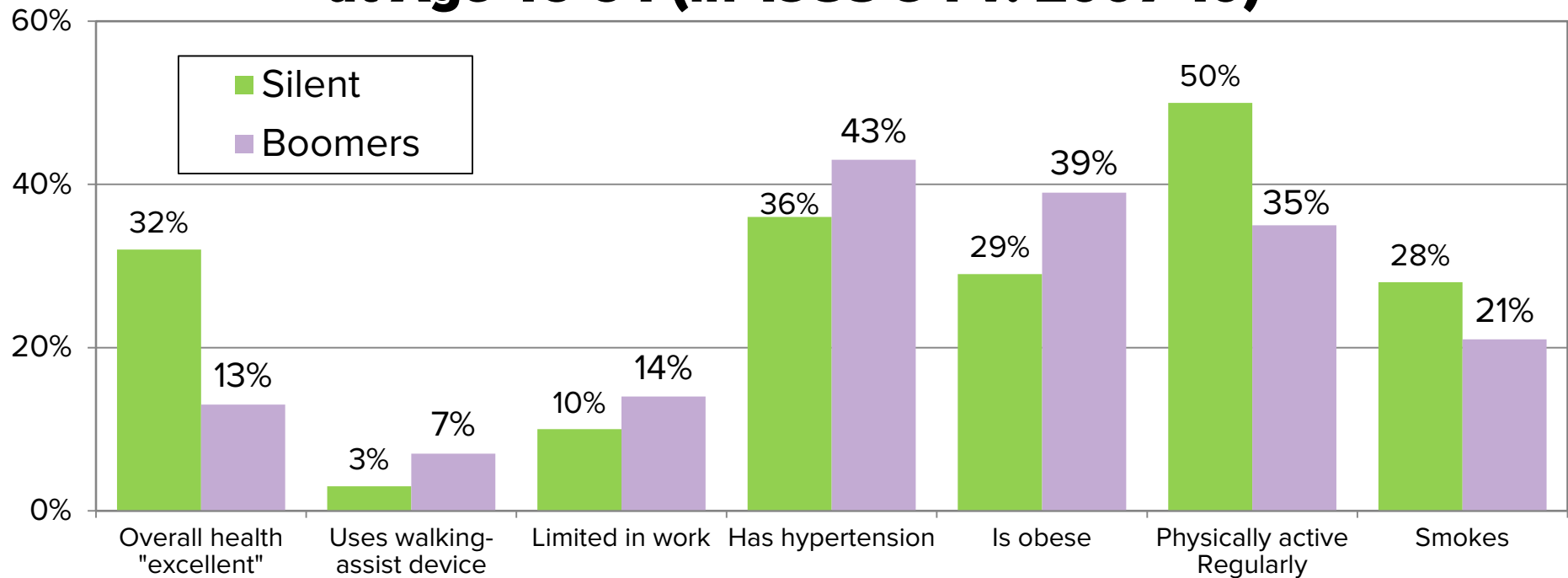
age 35-44: **64%**

age 45-54: **126%**

age 55-64: **343%**

BOOMERS NOT AS HEALTHY IN MIDLIFE

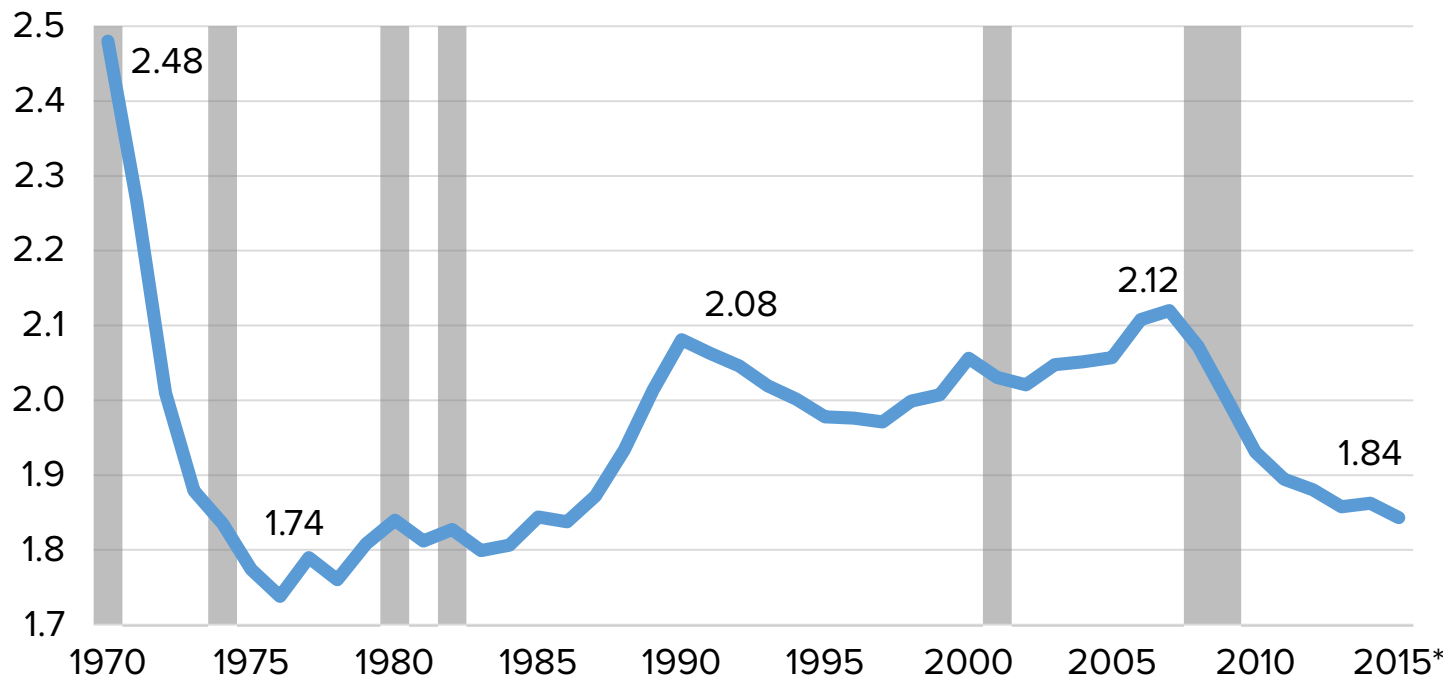
Comparing the Health of Boomers and Silent at Age 46-64 (in 1988-94 v. 2007-10)



Source: "Status of Baby Boomers' Health," by King, et al. (JAMA, 2013)

FERTILITY RATE CONTINUES LONG SLIDE

Total Fertility Rate (1970-2015)



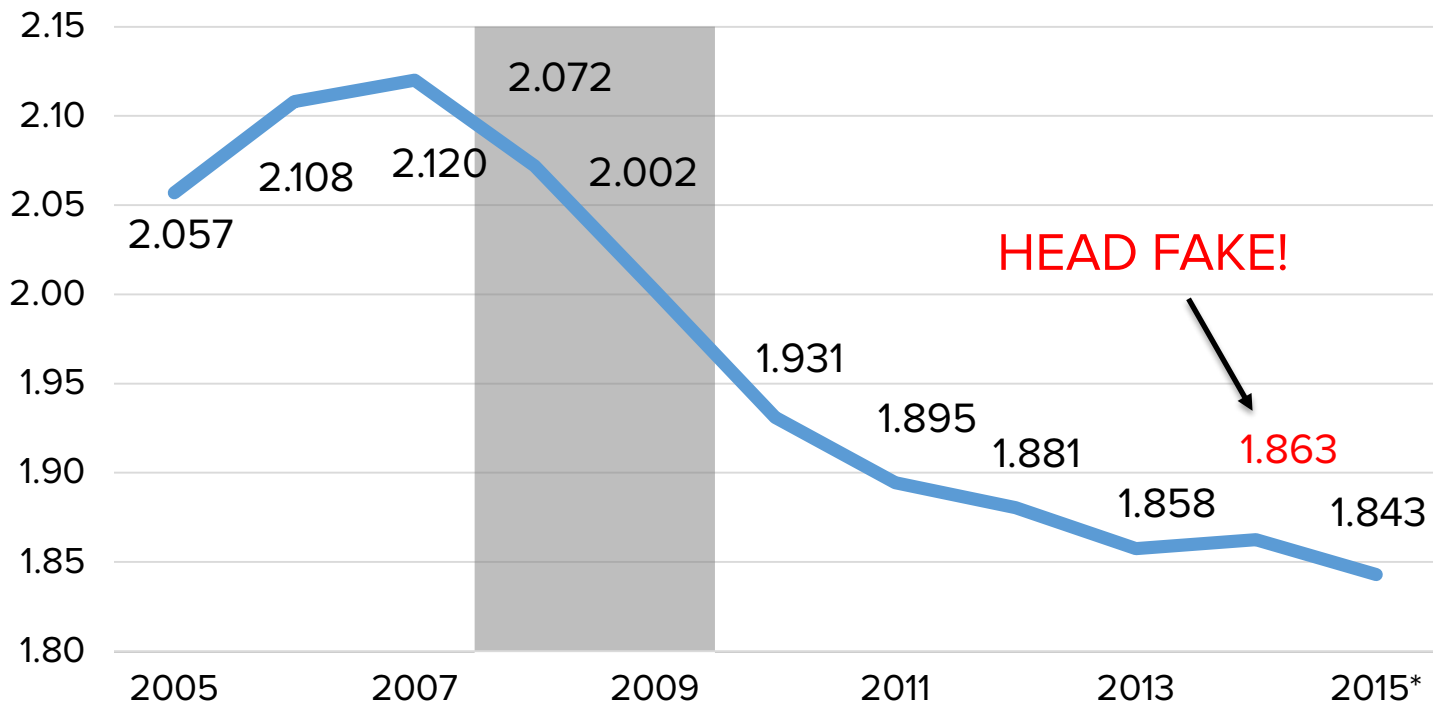
* Preliminary data.

Source: CDC (2016)

Total fertility has fallen 26% from 1970 to 2015. We remain above the record 1976 low (during the Gen-X “baby bust”). But not by much.

FERTILITY DOWNTREND

Total Fertility Rate (2005-2015)



* Preliminary data.

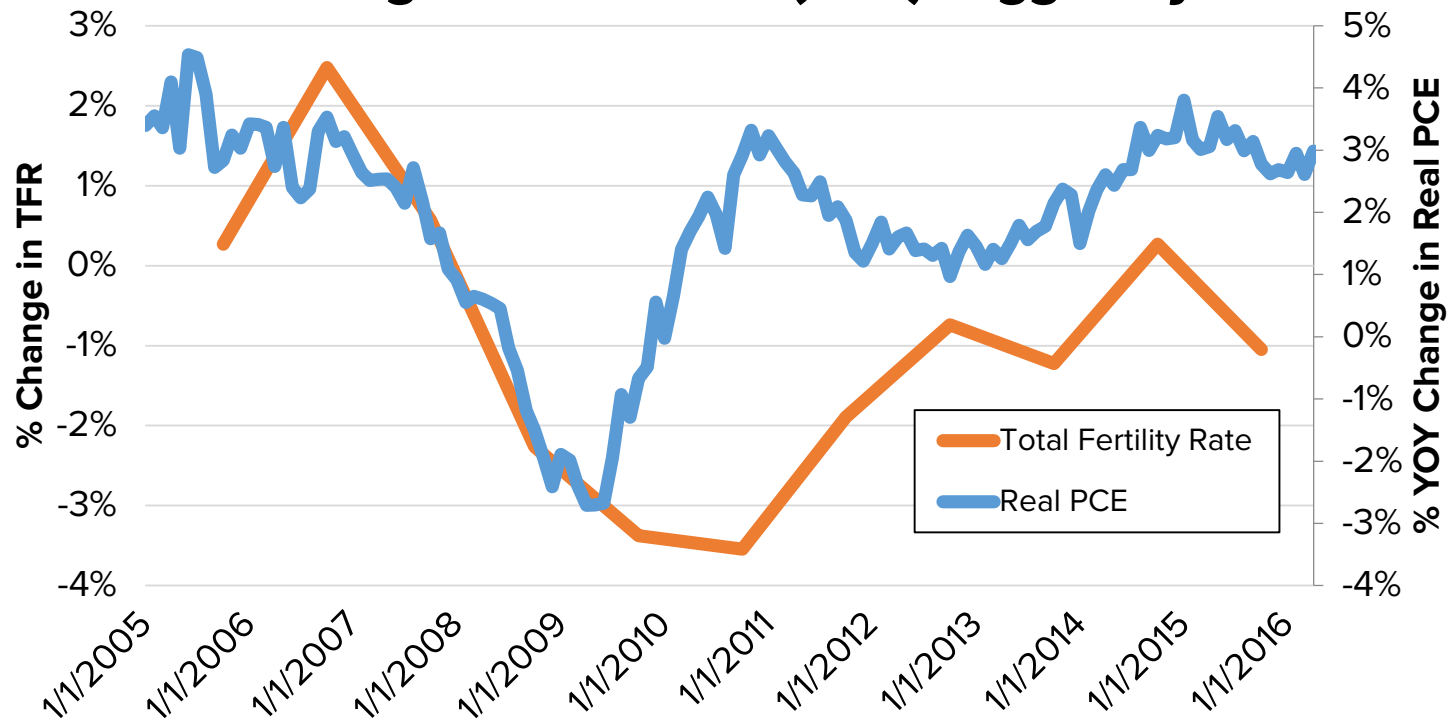
Source: CDC (2016)

2014's rise may have been an anomaly. Or it may have been the "rebound" many were waiting for. Is the rebound now over?

THE NINE-MONTH BABY INDICATOR

% YOY Change in Real Monthly PCE

Versus % Change in Birth Rate (TFR) Lagged by 9 Months



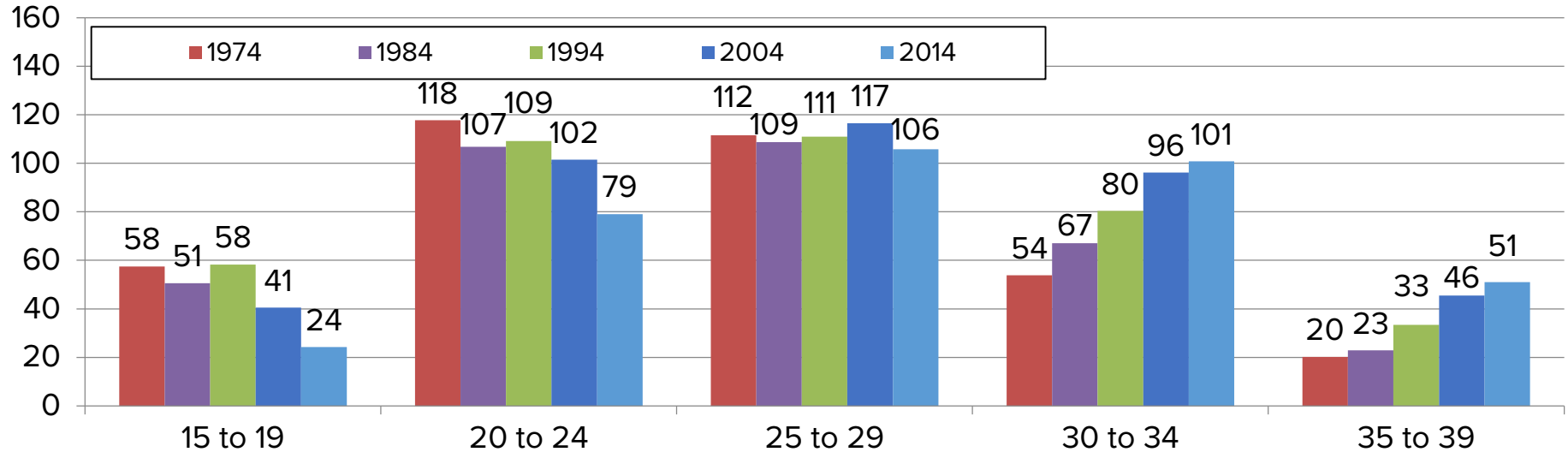
Source: Fred, CDC (2016)

Virtuous Cycle: More Spending → Positive View of Future → More Babies → More Spending.

Vicious Cycle: Above in Reverse.

BIRTHS DOWN IN TEENS & 20S, UP IN 30S

Birth Rates by Age of Mother

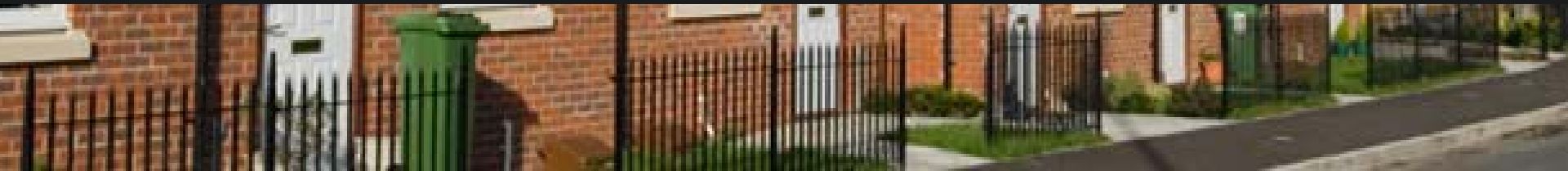


Source: CDC (2016)

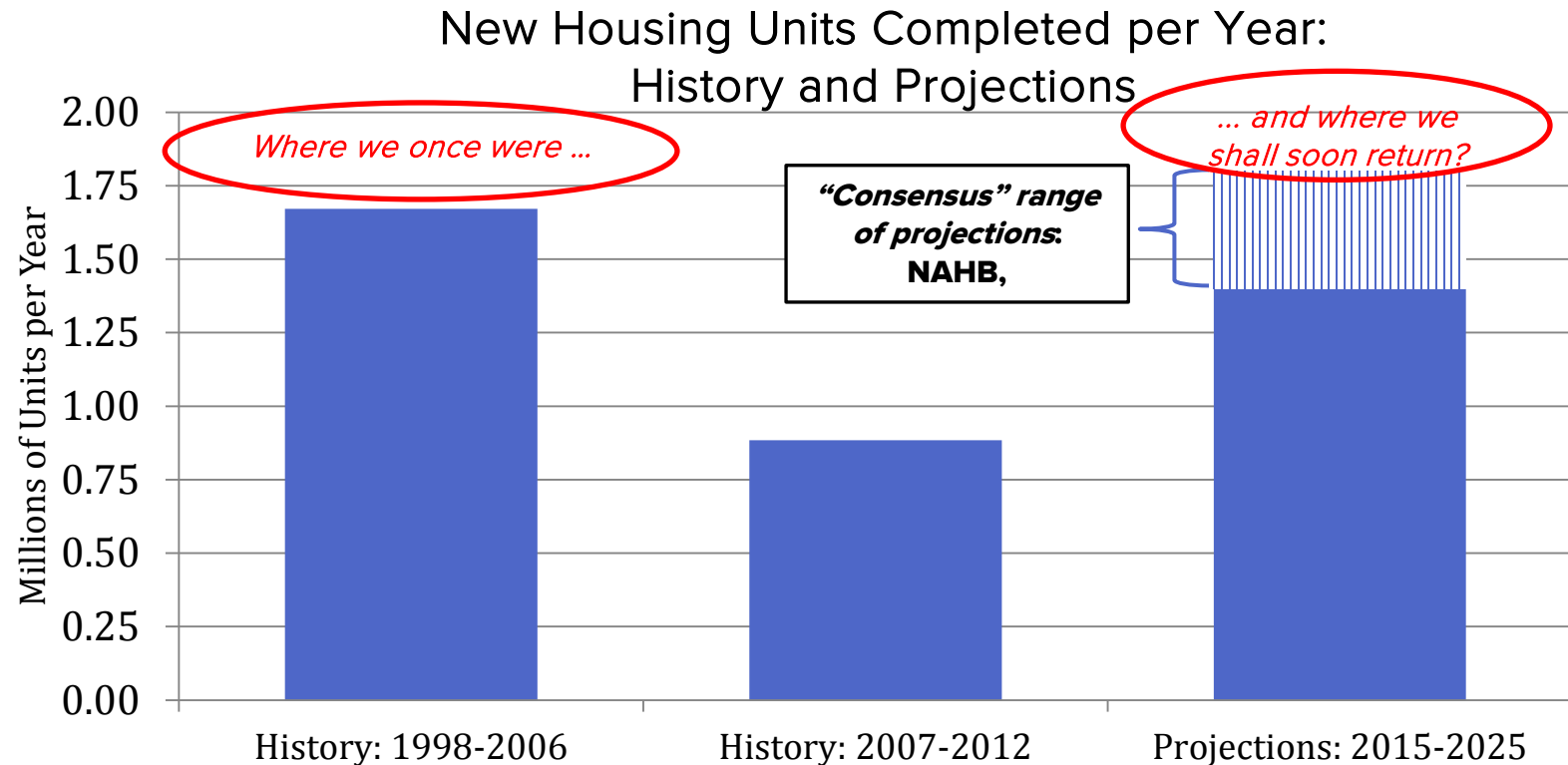
SINCE 1974, BIRTH RATES HAVE GONE WAY DOWN IN TEENS AND 20S—AND WAY UP IN 30S AND 40S. XER MOMS ARE PIONEERING LATER CHILD BIRTH.



5. LONG-TERM HOUSING FORECAST



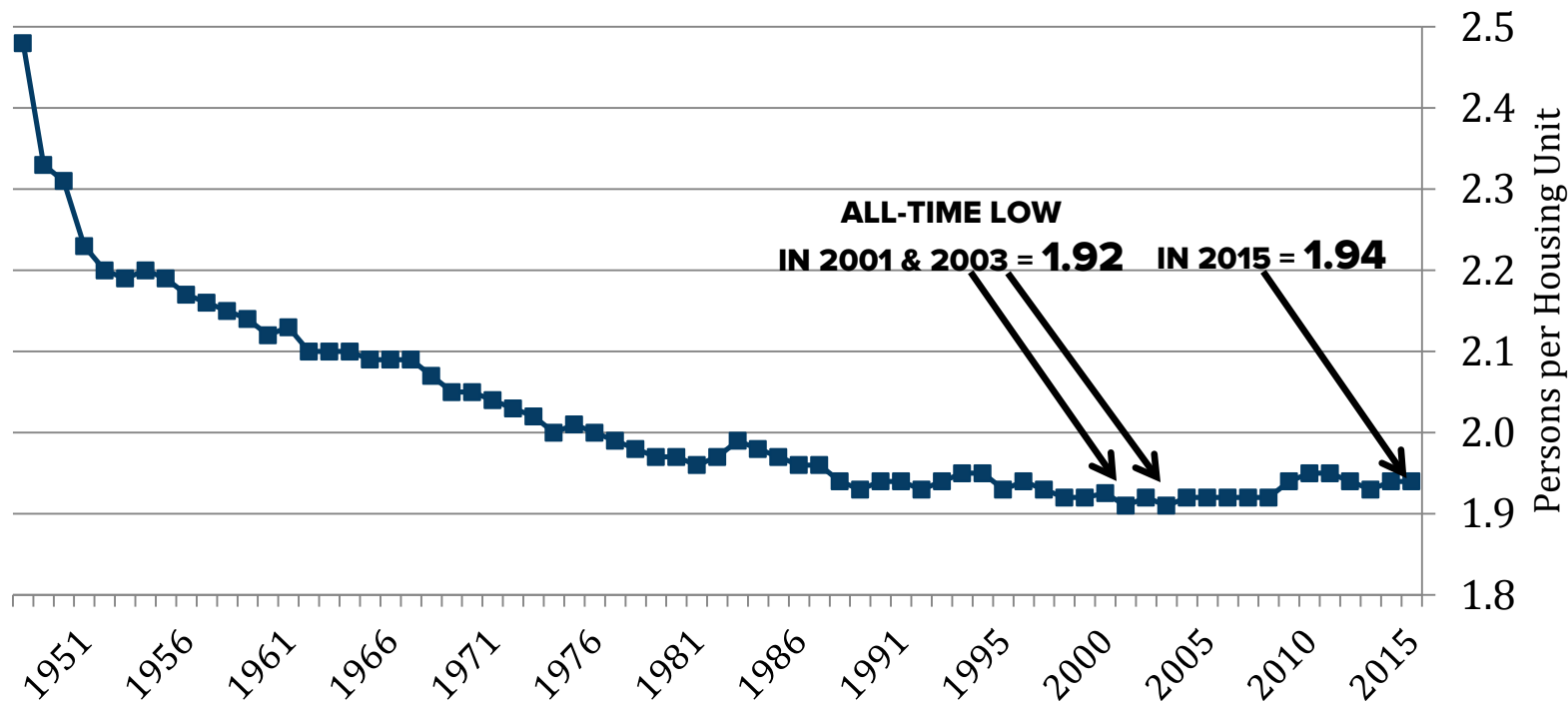
EXPECTED “RETURN TO NORMALCY” IN HOUSING



Source: U.S. Census (2008-2016) and financial media

ADULTS PER HH UNIT IS FAIRLY STEADY

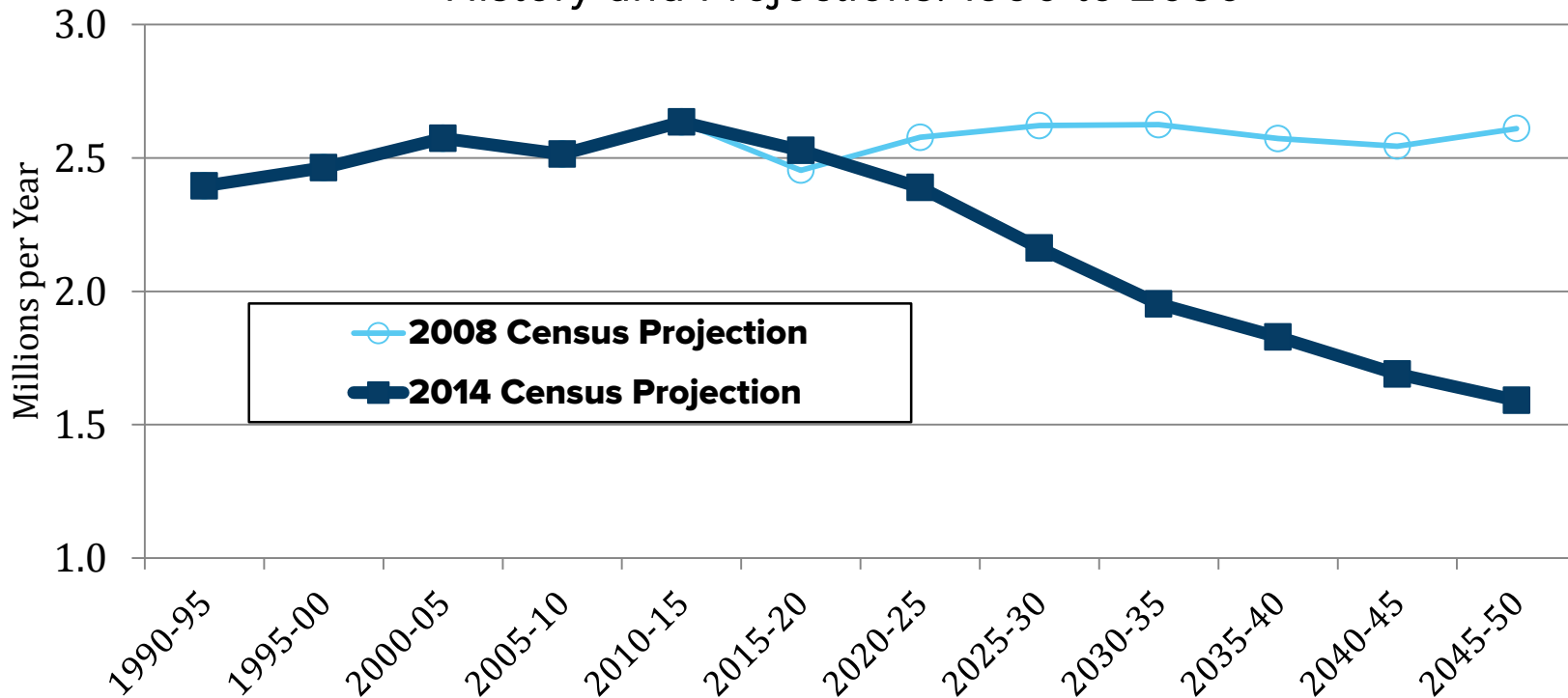
Adults per Occupied Housing Unit,



Source: U.S. Census (2008-2016)

NEW CENSUS ESTIMATES → FEWER NEW ADULTS...

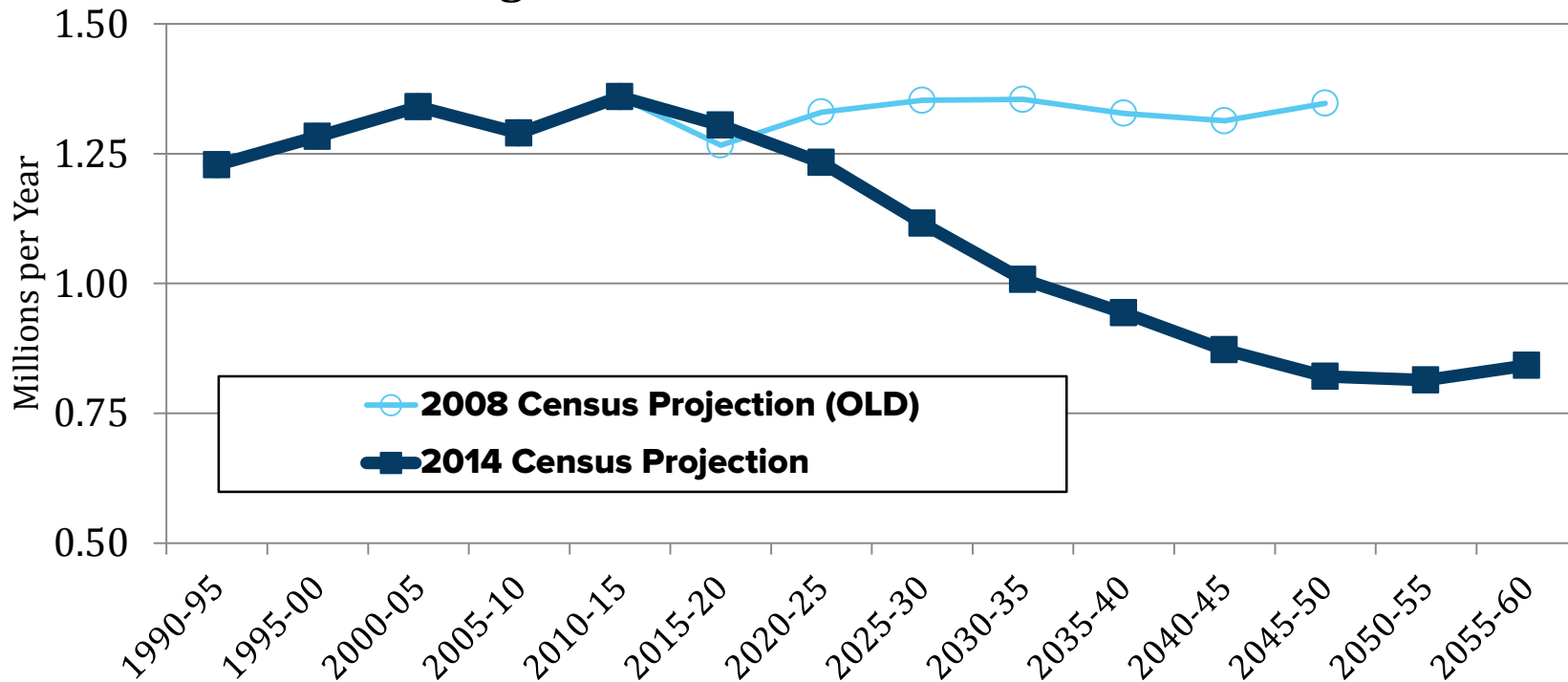
Average Annual Growth in Population of U.S. Adults,
History and Projections: 1990 to 2050



Source: U.S. Census (2008-2016)

... WHICH MEANS FEWER NEW HOMES

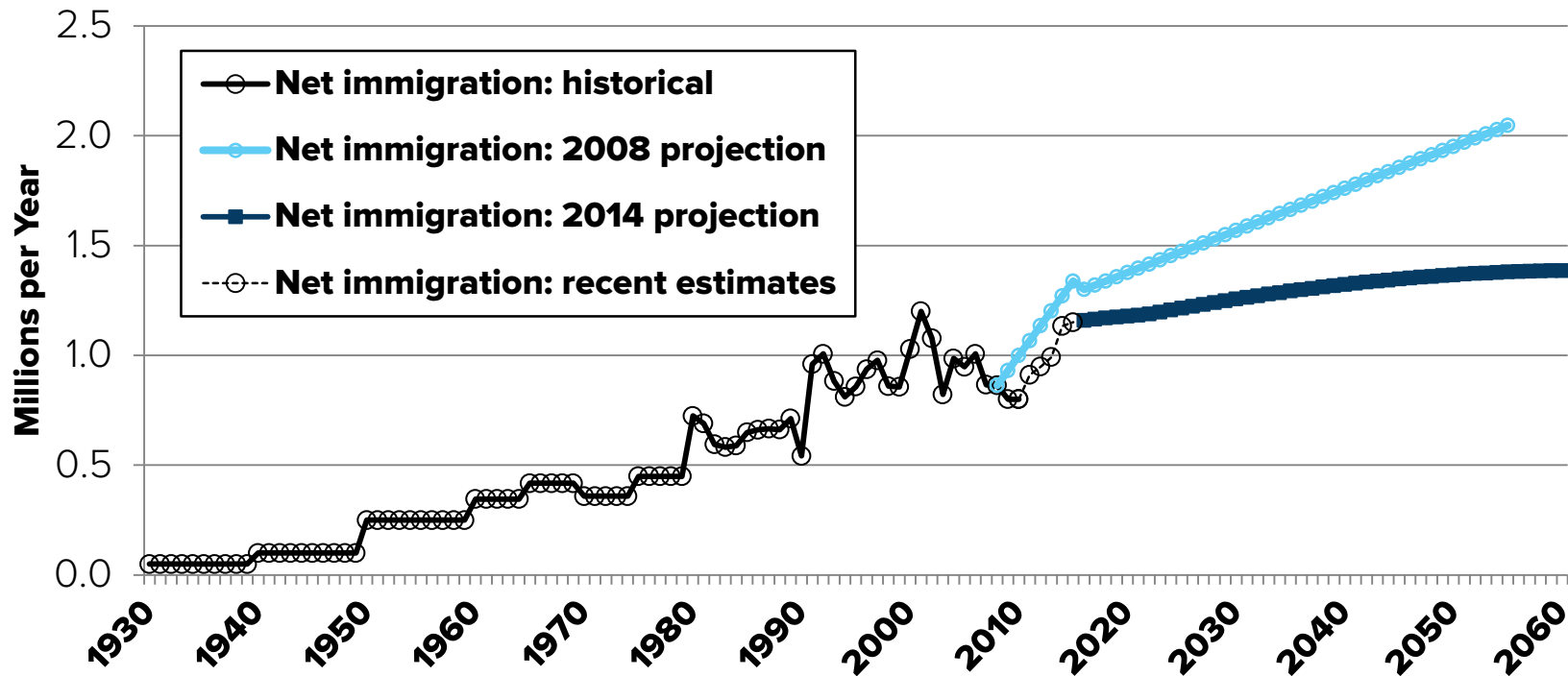
Average Annual Growth in Demand for Housing Units,
Assuming Constant Persons-Per-Unit: 1990 to 2050



Source: U.S. Census (2008-2016)

THE DIFFERENCE MAKER? NET IMMIGRATION

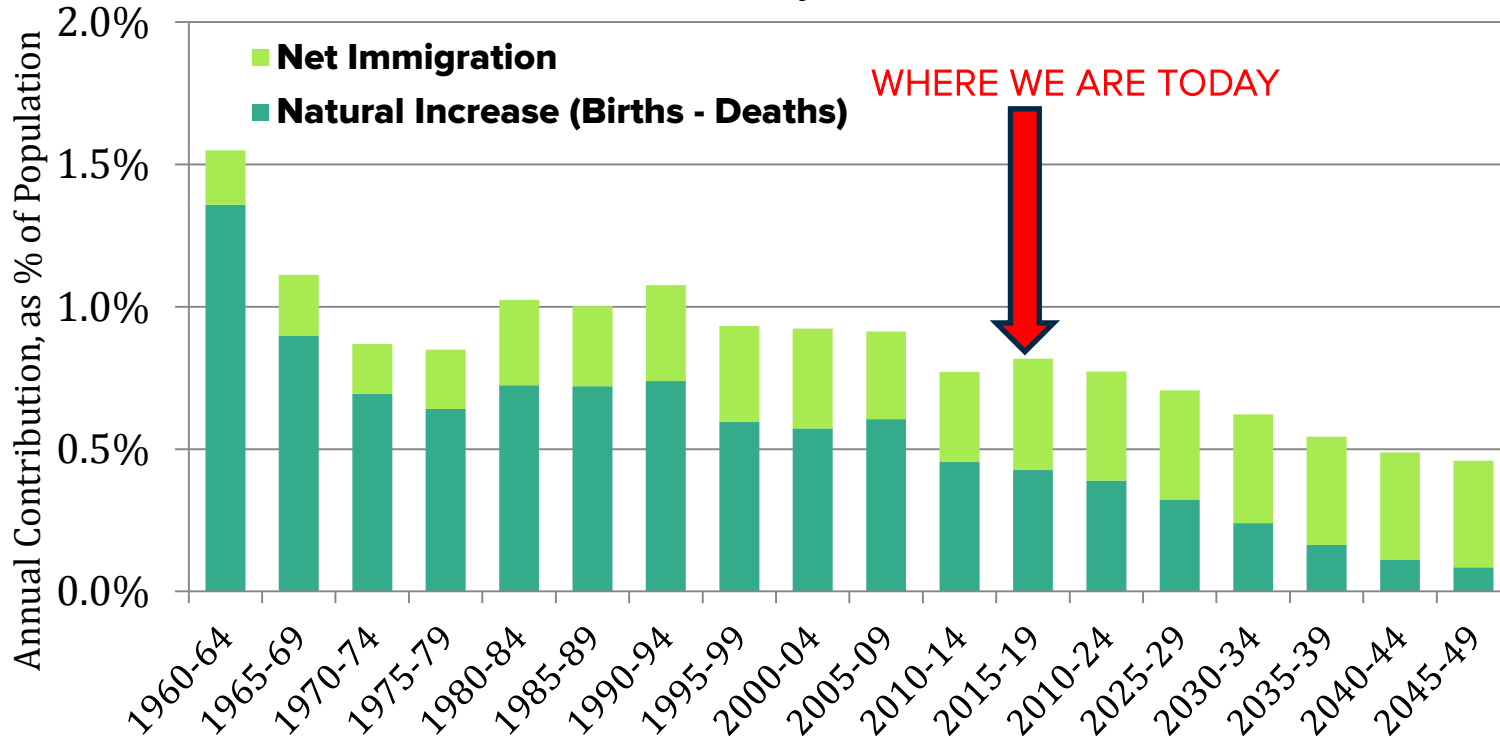
Annual Net Immigration,
History and Projections: 1930 to 2060



Source: U.S. Census (2008-2016)

WHY IMMIGRATION IS SO CRITICAL

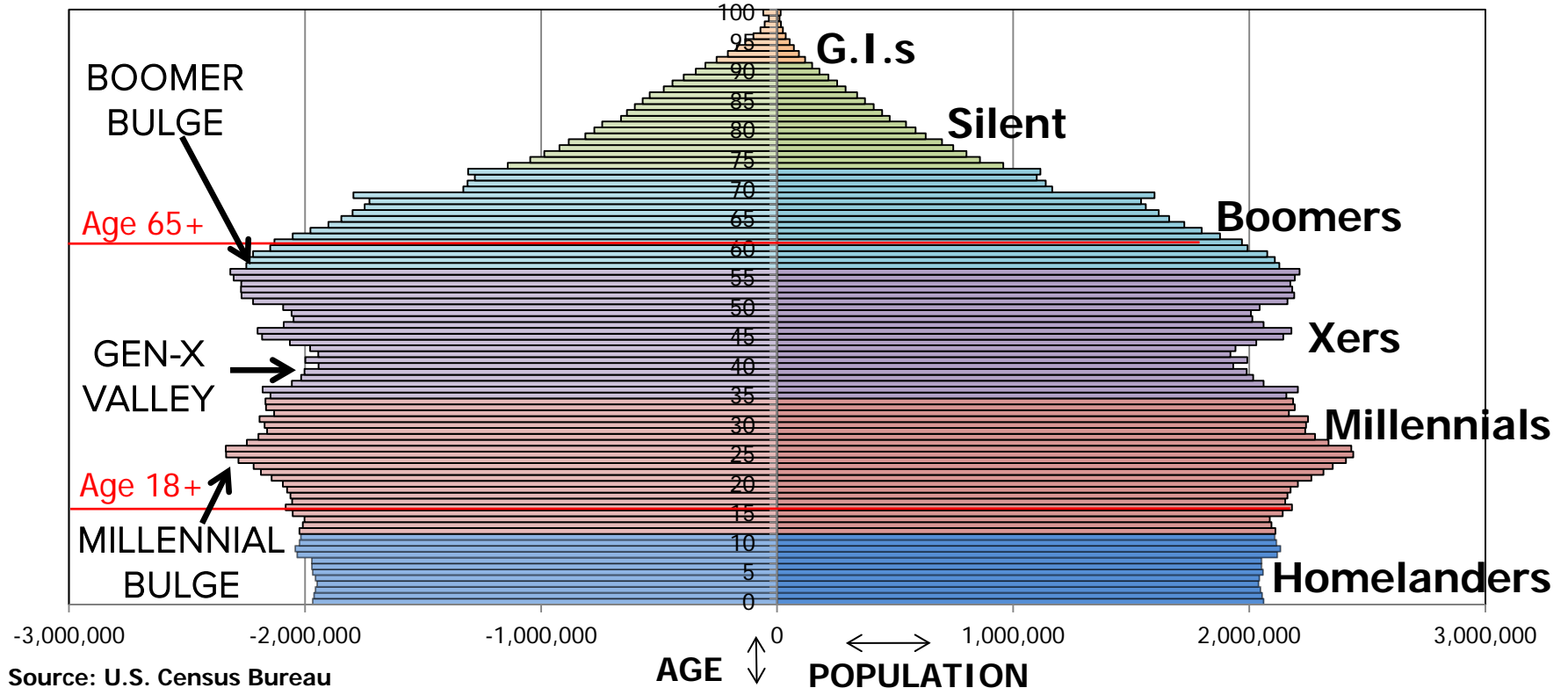
Annual Contributions to Population Growth:
Historical & Projected to 2049



Source: U.S. Census (2008-2016)

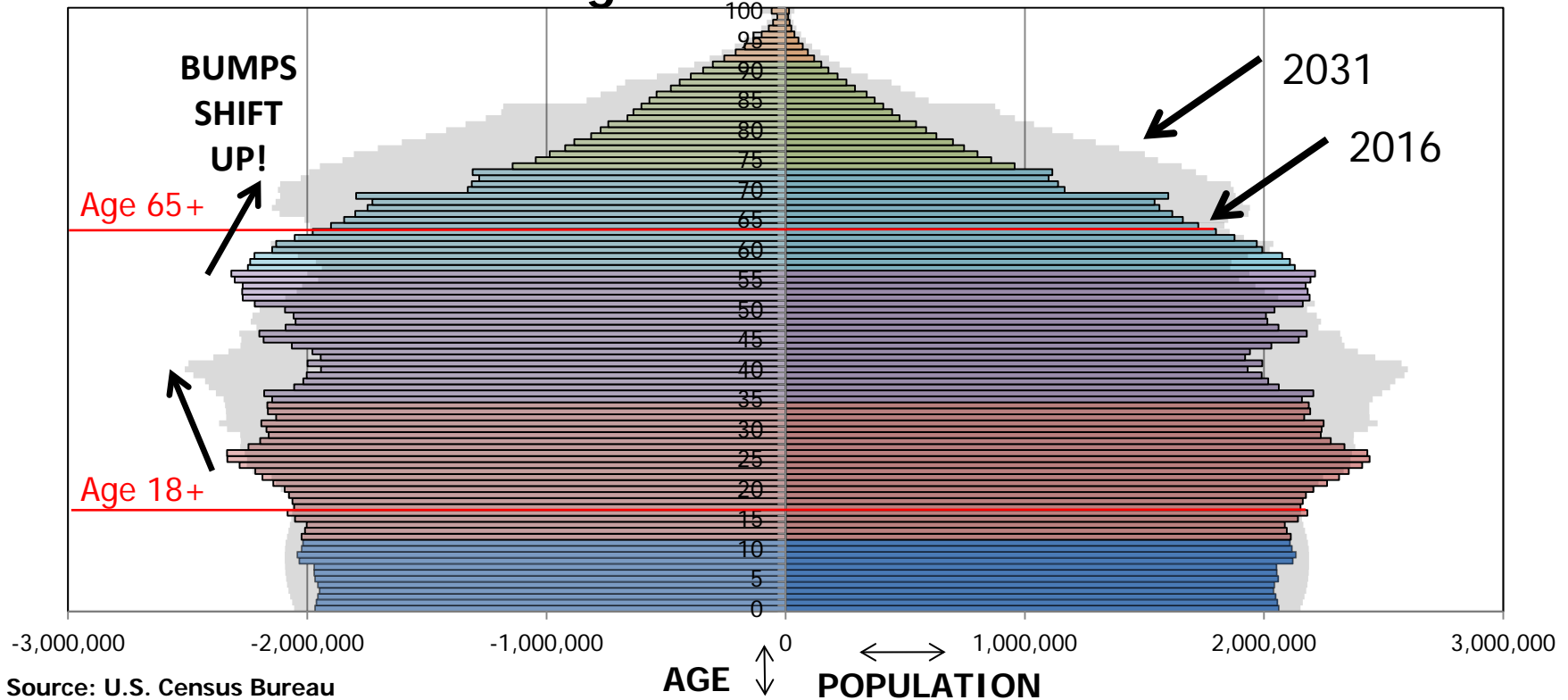
AMERICA'S POPULATION PYRAMID, TODAY

Population by Sex and Age: 2016



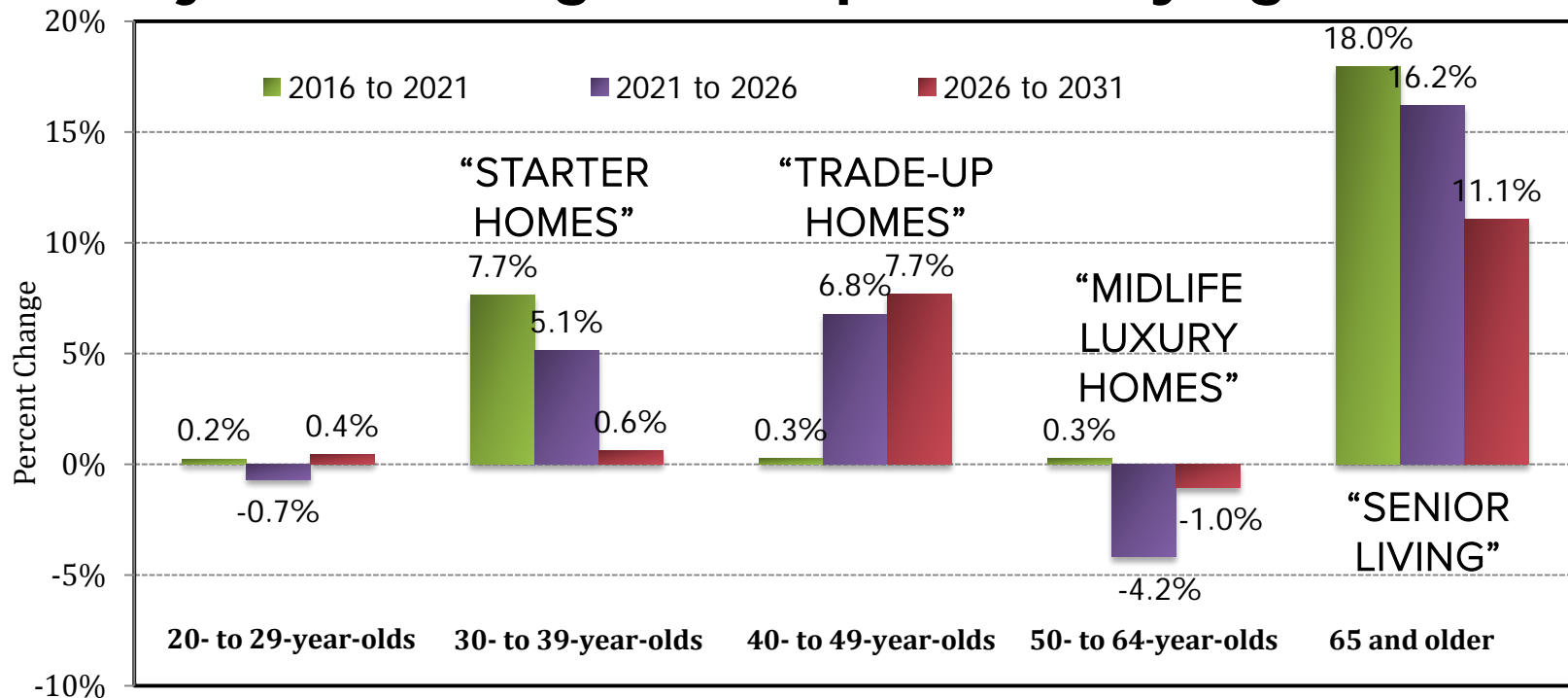
15 YEARS FROM NOW

Population Projections by Sex and Age: Change from 2016 to 2031



BOOM FOR STARTERS AND SENIORS, BUST FOR MIDLIFE

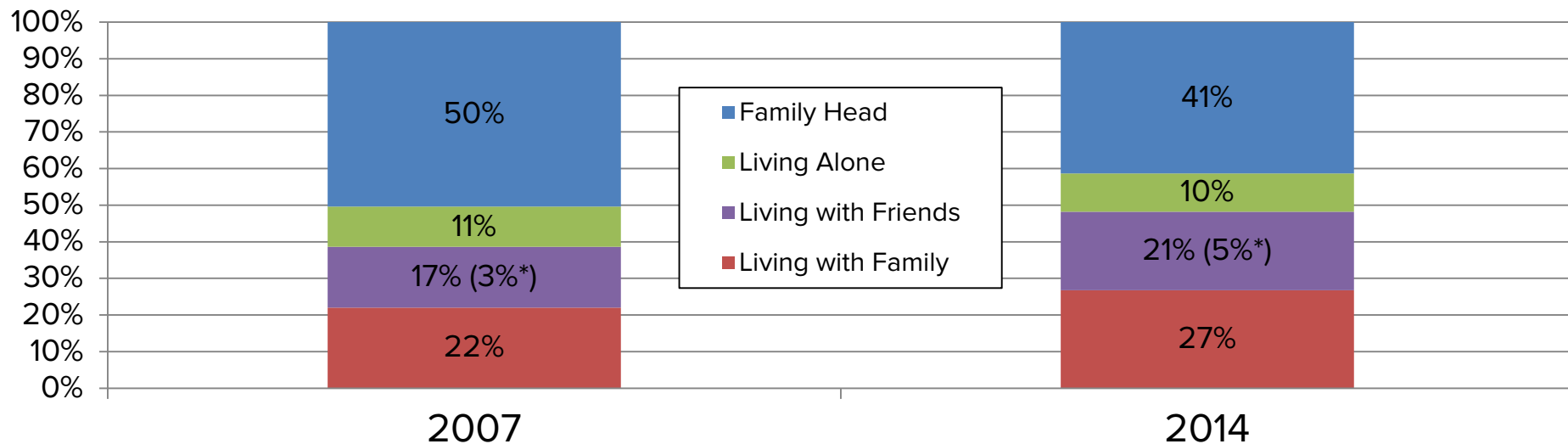
Projected Changes in Population by Age Bracket



Source: U.S. Census Bureau (2016)

MILLENNIAL FAMILY FORMATION DOWN

Living Arrangements of 25- to 29-year-olds, 2007 vs. 2014



(*) is percent of "Living with Friends" consisting of unmarried cohabitating couples without children.

Source: Census (2015)

WHAT'S DOWN? FAMILY HEADS (BY 9 PERCENTAGE POINTS). WHAT'S UP? LIVING WITH FAMILY AND LIVING WITH FRIENDS.

EX COLLEGE DEBT, YOUNG DON'T BORROW

2003-2015 Change in Real Per-Capita Debt, by Type

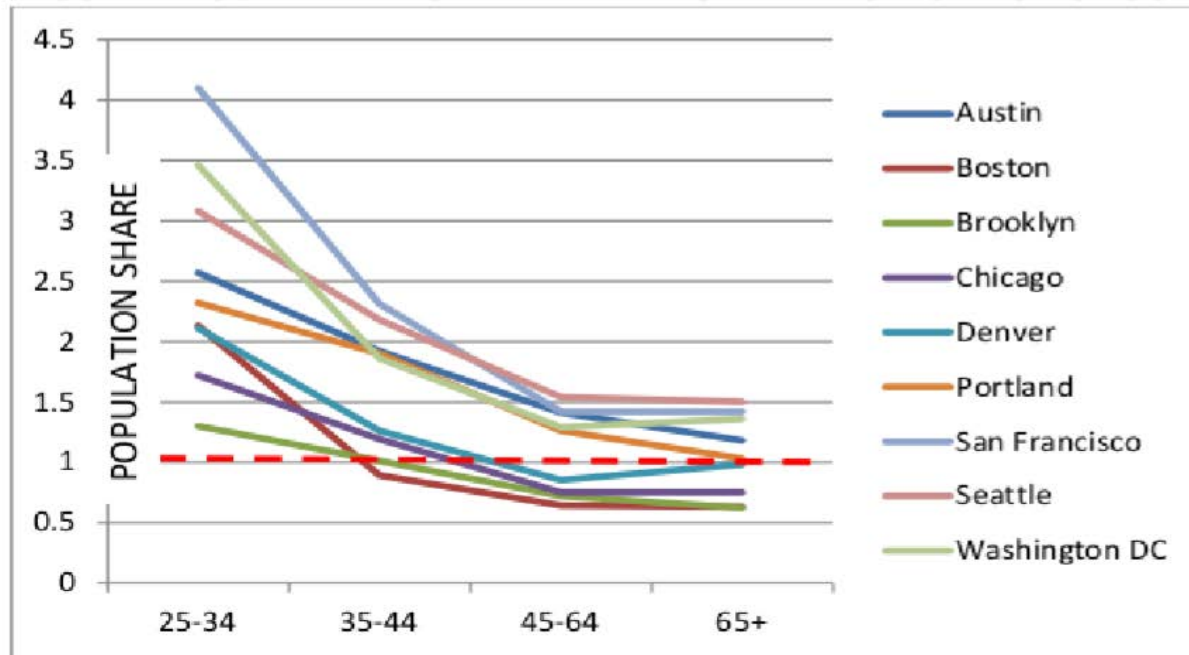
Debt type	Age 30 \$	Age 30 %	Age 65 \$	Age 65 %
Home-secured	-\$8,195	-28%	+\$11,191	+47%
Credit card	-\$1,121	-36%	-\$11	0%
Auto loan	-\$292	-6%	+\$1,102	+29%
Student loan	+\$6,912	+174%	+\$857	+886%

Source: New York Fed (2016)

LARGE RISE IN COLLEGE DEBT IS BALANCED BY DECLINES IN EVERY OTHER TYPE OF MILLENNIAL BORROWING

MILLENNIALS FUELING URBAN BOOM

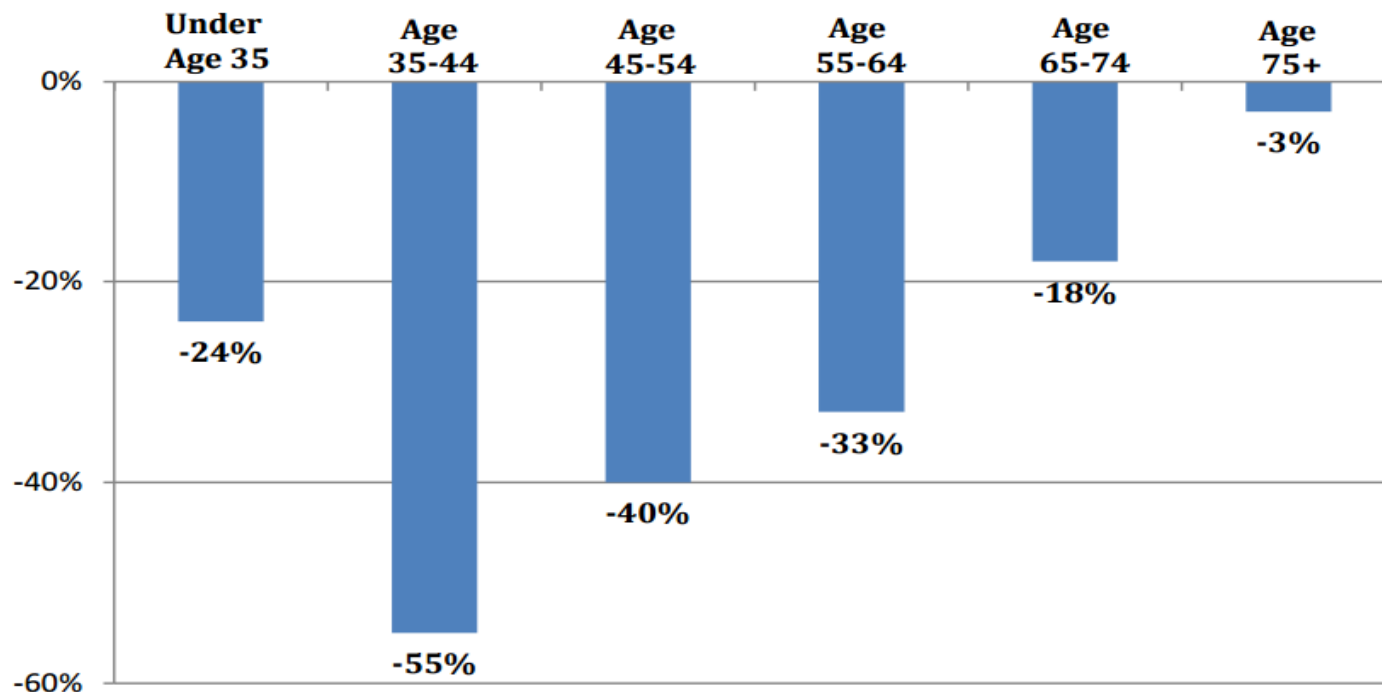
FIGURE 1: OVER- AND UNDER-REPRESENTATION OF AGE GROUPS IN MAGNET CITIES



Age groups above the dotted red line are over-represented and below the dotted red line are under-represented in the city's population

GEN X IN TROUBLE

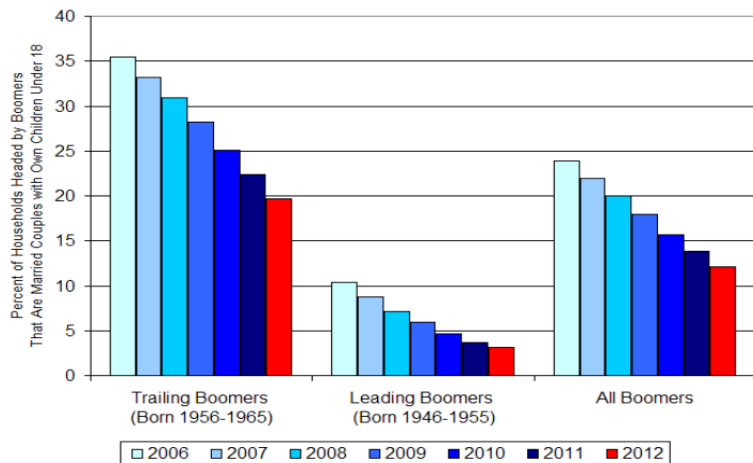
Figure 9: Change in Real Median Household Net Worth, by Age: 2007 to 2010



Source: SCF, Fed Bulletin (2007 and 2010)

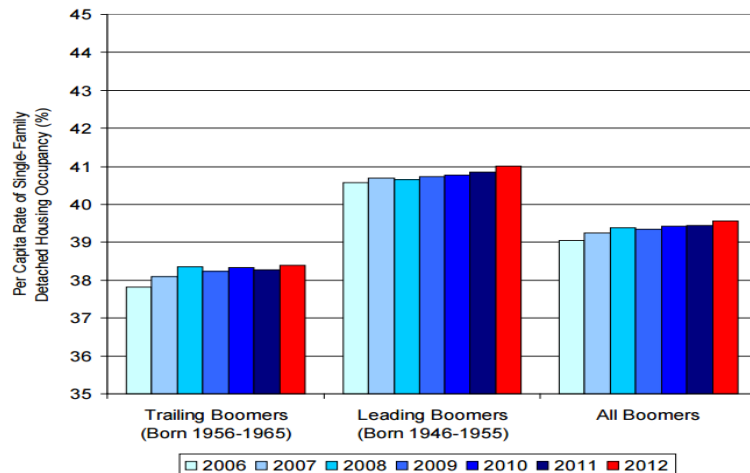
BOOMERS “AGING IN PLACE”

Exhibit 1. The Nuclear Family Household Has Become Much Less Common Among Boomers



Source: U.S. Census Bureau, American Community Survey Public Use Microdata Sample

Exhibit 2. So Far, Boomers Are Staying in Single-Family Detached Homes



Source: U.S. Census Bureau, American Community Survey Public Use Microdata Sample

BOOMERS' FAMILIES
ARE GETTING
SMALLER...

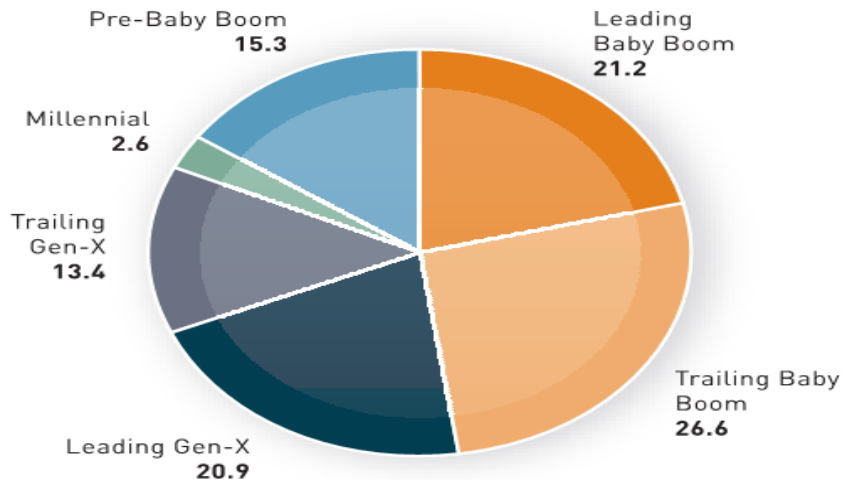


BUT THE SHARE LIVING
IN SINGLE-FAMILY
DETACHED HOMES IS
UNCHANGED

GOLDEN AGE OF HOME REMODELING

The Baby Boomers Continue to Dominate Spending, While Millennials Still Account for Only a Small Share of the Market

Share of Improvement Spending by Generation (Percent)



Homeowner Spending in 2013 = \$192 Billion

Notes: The pre-baby boom generation was born before 1945, leading baby boom in 1945–54, trailing baby boom in 1955–64, leading gen-X in 1965–74, trailing gen-X in 1975–84, and millennial in 1985–2004. Tabulations use JCHS-adjusted weights.

Source: Table A-3.



6. THE SINKING RATE CONUNDRUM

WHY DO RATES KEEP GOING DOWN?

10-Year Treasury, Constant Maturity: Expected Real Interest Rate



Nominal 10Y Treasury rate adjusted for 10Y inflation expectation. Source: FactSet, Cleveland Federal Reserve Bank (2016)

OK, LINE UP ALL THE SUSPECTS

- ☐ CB financial repression (Austrians)
- ☐ debt leverage overhang (Rogoff & Reinhardt)
- ☐ “secular stagnation” (Summers)
- ☐ innovation exhaustion (Gordon)
- ☐ political & policy uncertainty (just about everyone)
- ☐ neoclassical fundamentals (*say what???*)

LET'S GO BACK TO FUNDAMENTALS

Solow-Swan Growth Model (1956)

Formula for the Equilibrium Real Rate of Return in a Growing Economy

$$r = \alpha * \frac{n + g + \delta}{s}$$

LET'S GO BACK TO FUNDAMENTALS

Solow-Swan Growth Model (1956)

Formula for the Equilibrium Real Rate of Return in a Growing Economy

The diagram illustrates the formula for the equilibrium real rate of return in a growing economy. The formula is
$$r = \alpha * \frac{n + g + \delta}{s}$$
 where r is the Real Rate of Interest (MRR on Capital Stock), α is a constant, n is the Rate of Employment Growth, g is the Rate of Productivity Growth, δ is the depreciation rate, and s is the Savings Rate. Red circles highlight the variables r , n , g , and s , with red lines connecting them to their respective labels.

Rate of Employment Growth

Rate of Productivity Growth

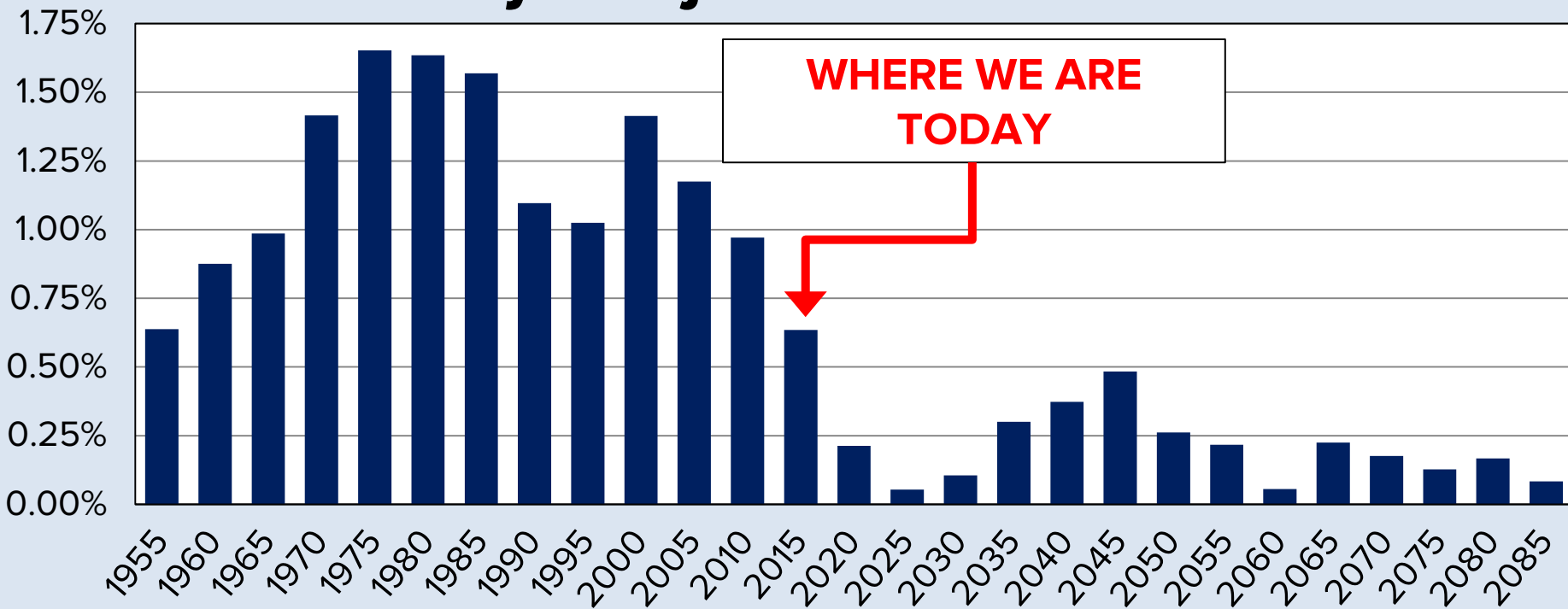
Real Rate of Interest
(MRR on Capital Stock)

Savings Rate

$$r = \alpha * \frac{n + g + \delta}{s}$$

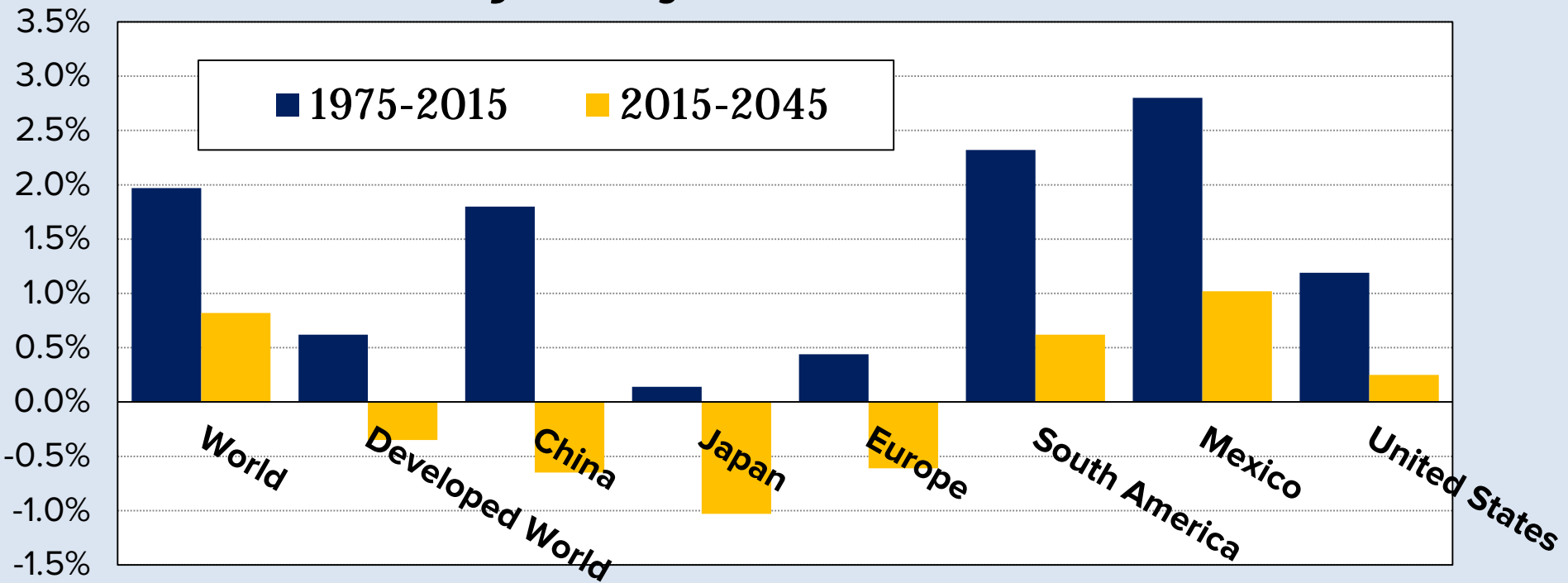
WORKFORCE GROWTH IS SLOWING IN U.S.

U.S. Population Age 20-64, 5-Year CAGR, History & Projections: 1950 to 2085



... AND AROUND THE WORLD

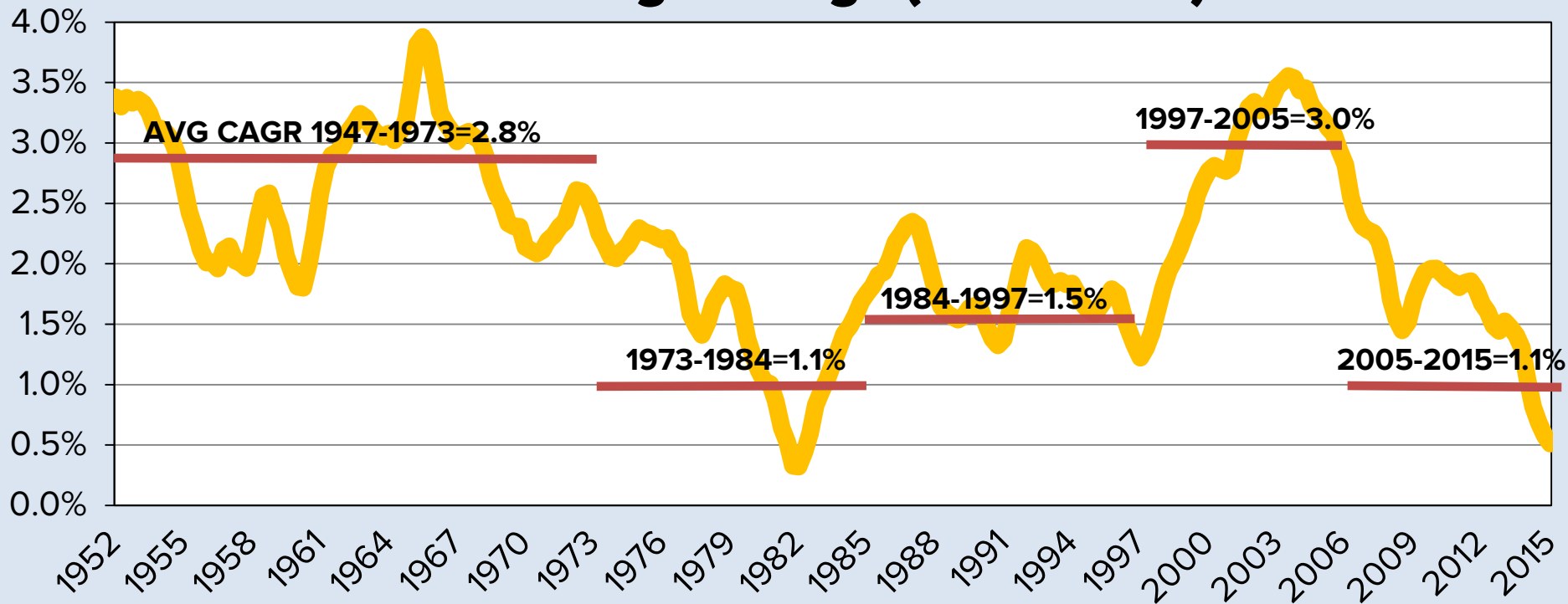
Global Population Age 20-64, CAGR by Region, History & Projections: 1975 to 2045



Source: UN Population Division (2016)

PRODUCTIVITY GROWTH IS SLOWING IN U.S.

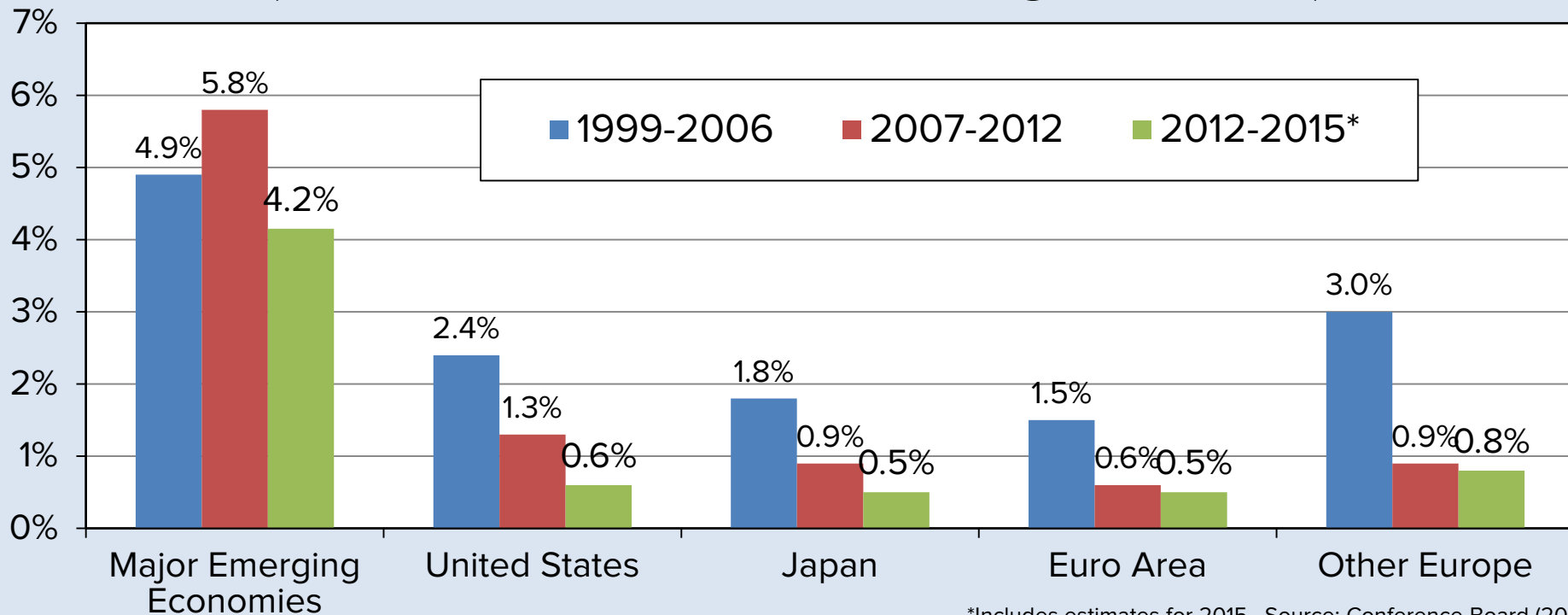
Quarterly U.S. NFP Real Output Per Hour, YOY, 5YR Moving Average (1952-2015)



Source: BLS (2016), BEA (2016)

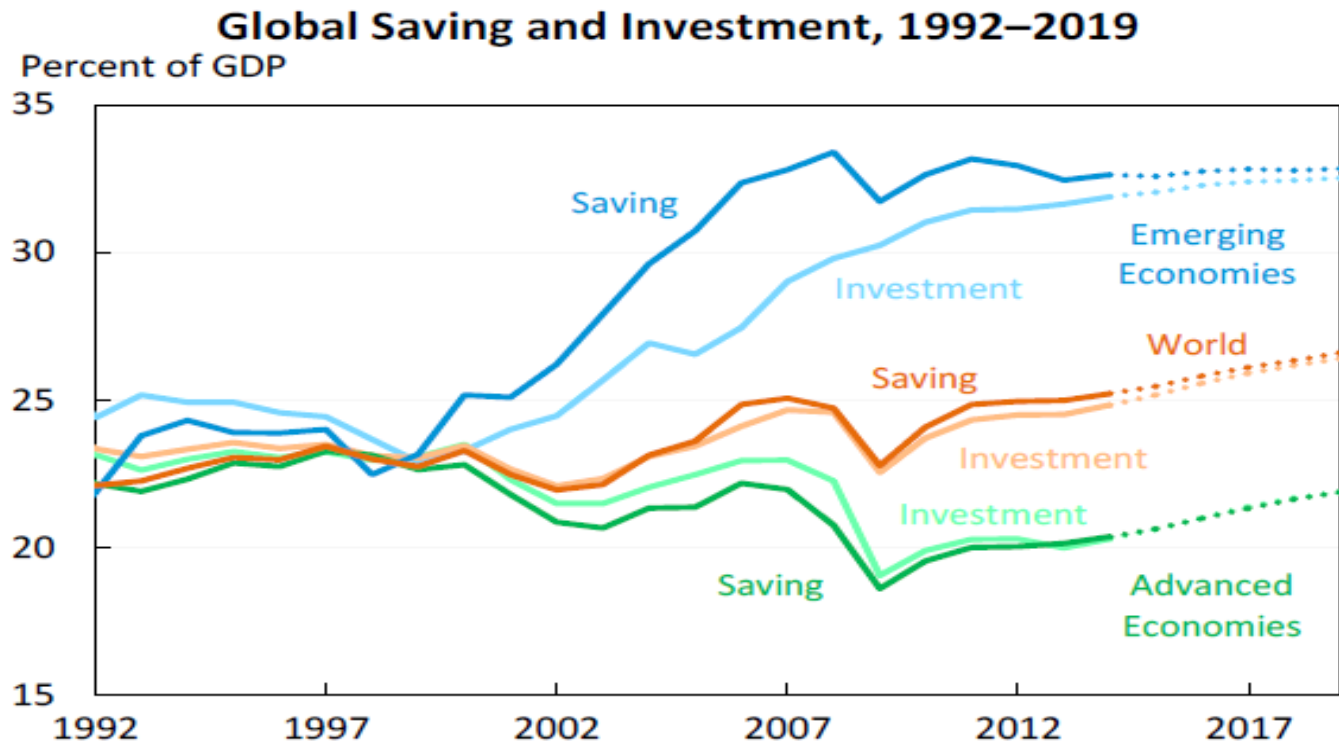
... AND AROUND THE WORLD

Labor Productivity Growth (GDP Per Hour, Annual Average, Percent)



*Includes estimates for 2015. Source: Conference Board (2015)

AS FOR SAVINGS, NO DEARTH FOR NOW



LET'S GO BACK TO FUNDAMENTALS

Solow-Swan Growth Model (1956)

Formula for the Equilibrium Real Rate of Return in a Growing Economy

The diagram illustrates the formula for the equilibrium real rate of return in a growing economy. The formula is
$$r = \alpha * \frac{n + g + \delta}{s}$$
 where r is the Real Rate of Interest (MRR on Capital Stock), α is the capital share parameter, n is the Rate of Employment Growth, g is the Rate of Productivity Growth, δ is the depreciation rate, and s is the Savings Rate. Red circles highlight the variables r , n , g , and s , with red lines connecting them to their respective labels.

Rate of Employment Growth

Rate of Productivity Growth

Real Rate of Interest
(MRR on Capital Stock)

Savings Rate

$$r = \alpha * \frac{n + g + \delta}{s}$$



DEMOGRAPHY SECTOR LAUNCH

**BREAKING JOBS NUMBERS,
2015 BIRTHS/DEATHS NEWS,
LONG-TERM HOUSING, &
MORE**

JUNE 16, 2016

