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College of Business Administration
Center for Real Estate

2016 Center for Real Estate Strategies Conference

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Marquette University

September 8, 2016



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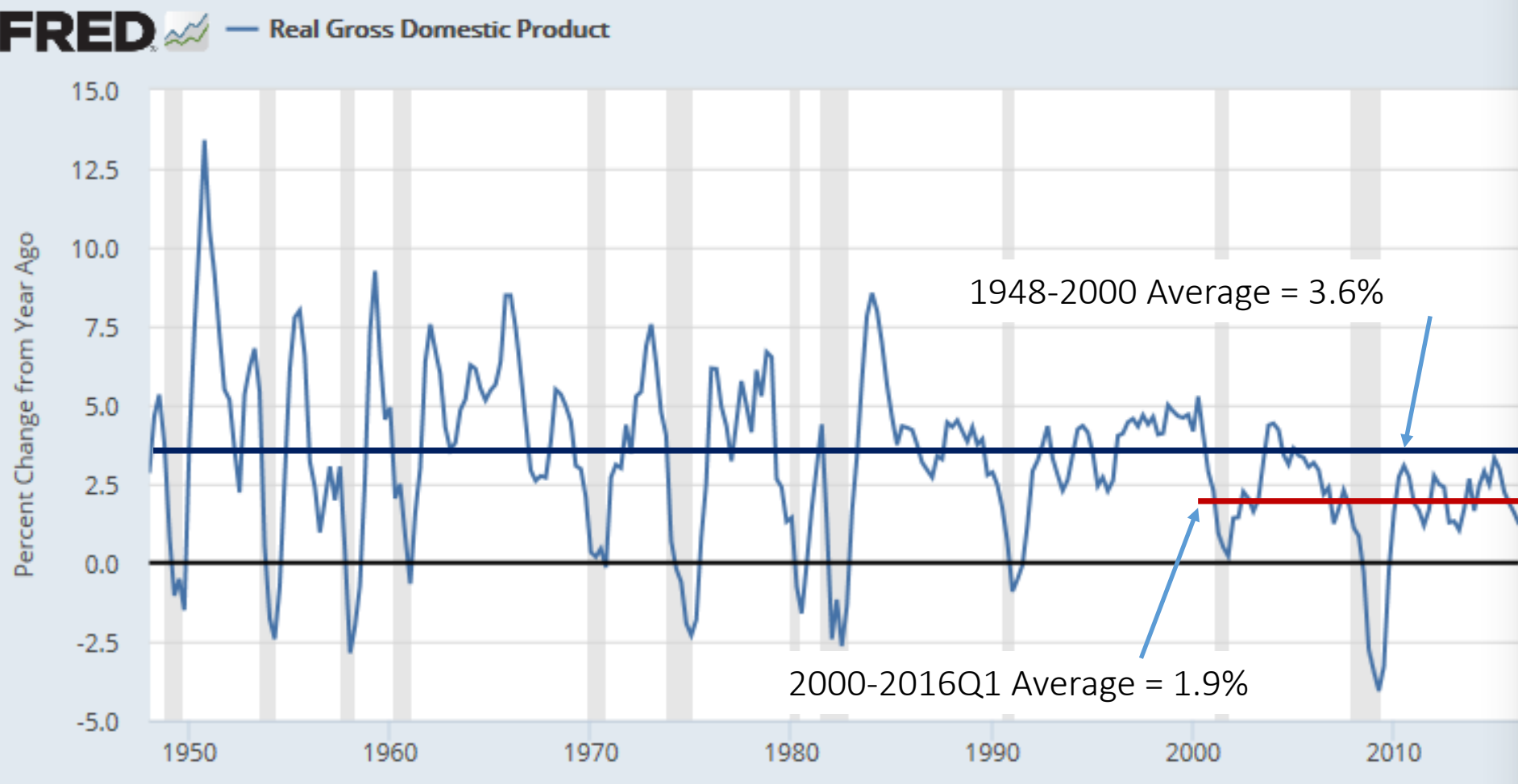
Source: NYT, Greg Mankiw, "One Economic Sickness, Five Diagnoses, June 17, 2016



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U.S. GDP growth has underperformed expectations since 2000



Source: Federal Reserve Economic Data and Marquette University.

Why a 1% GDP underperformance matters

- 2016Q2 GDP: \$18.5 trillion
- 3.6% v. 1.9% GDP growth = 33.5% faster cumulative growth rate 2000-2016;
or a 2016Q2 GDP of \$24.6 trillion (\$6.1 trillion increase)
- 2.6% v. 1.9% GDP growth since 2000 = 13.6% faster cumulative growth rate 2000-2016;
or a 2016Q2 GDP of \$21.0 trillion (\$2.5 trillion increase)

Five possible explanations for persistent slow GDP growth:

- I. Secular Stagnation (Paul Samuelson 1948, and Lawrence Summers)
- II. Great Recession Hangover (financial crises have longer hangovers)
- III. Statistical Mirage (Hal Varian)
- IV. Slower Innovation/Productivity (Robert Gordon)
- V. Policy Missteps (not gonna go there!)

Source: NYT, Greg Mankiw, "One Economic Sickness, Five Diagnoses, June 17, 2016



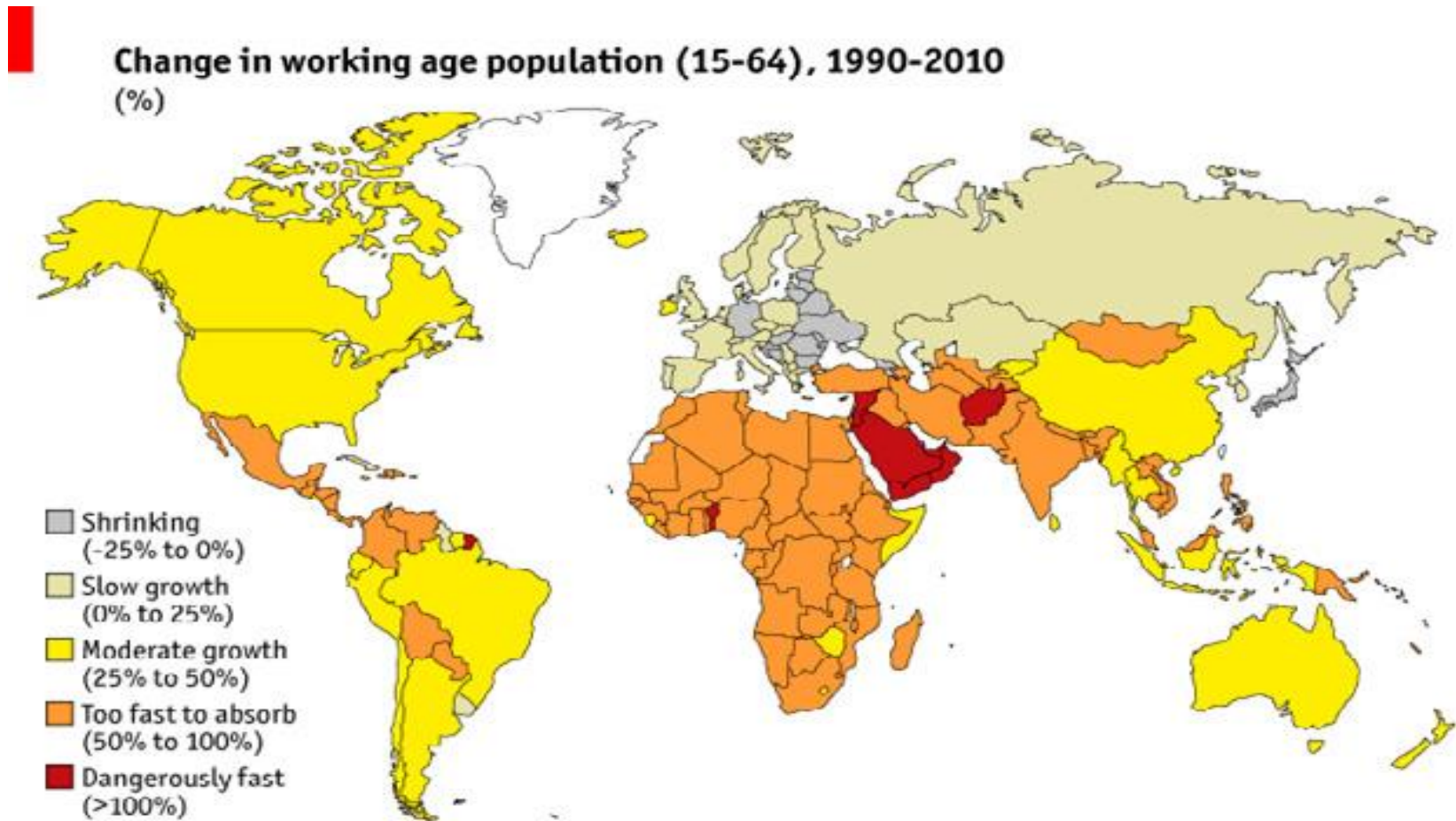
Secular Stagnation

Secular stagnation: Lawrence H. Summers, former economic adviser to President Obama, [has suggested](#) that the problem *predates the recent financial crisis*. He points to the long-term decline in inflation-adjusted interest rates as evidence of reduced demand for capital to fund investment projects. *He cites several reasons for the change, including lower population growth, lower prices for capital goods. . . .*

Source: NYT, Greg Mankiw, “One Economic Sickness, Five Diagnoses, June 17, 2016



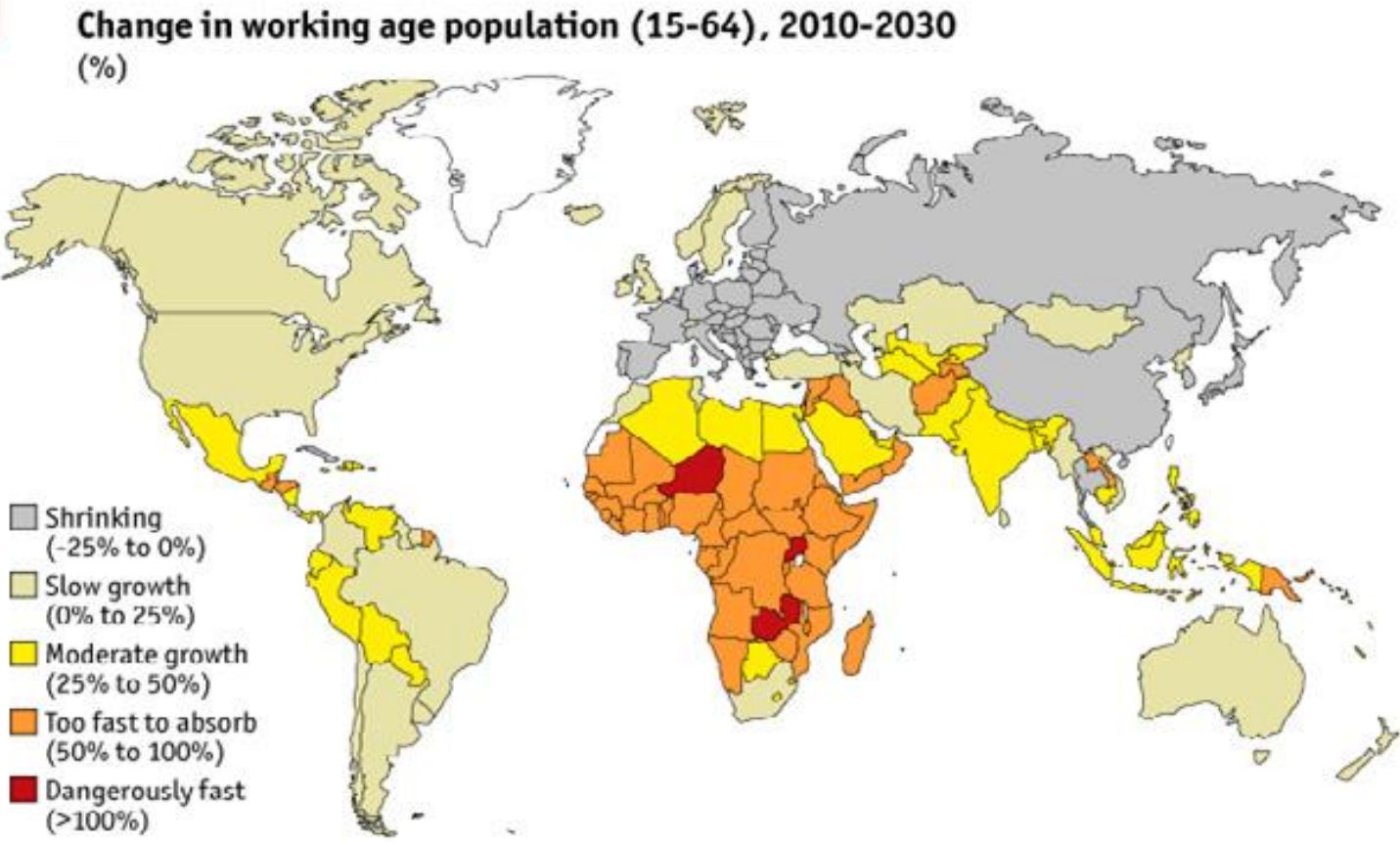
Work force population growth was solid in most regions of the world (1990-2010)



Source: World Population Prospects: The 2012 Revision, Medium Variant.

Source: Economist Intelligence Unit, What's Next Future Global Trends Affecting Your Organization: Engaging and Integrating a Global Workforce, February 2015.

Global work force population growth rates will be slow, but for Africa, 2010-2030



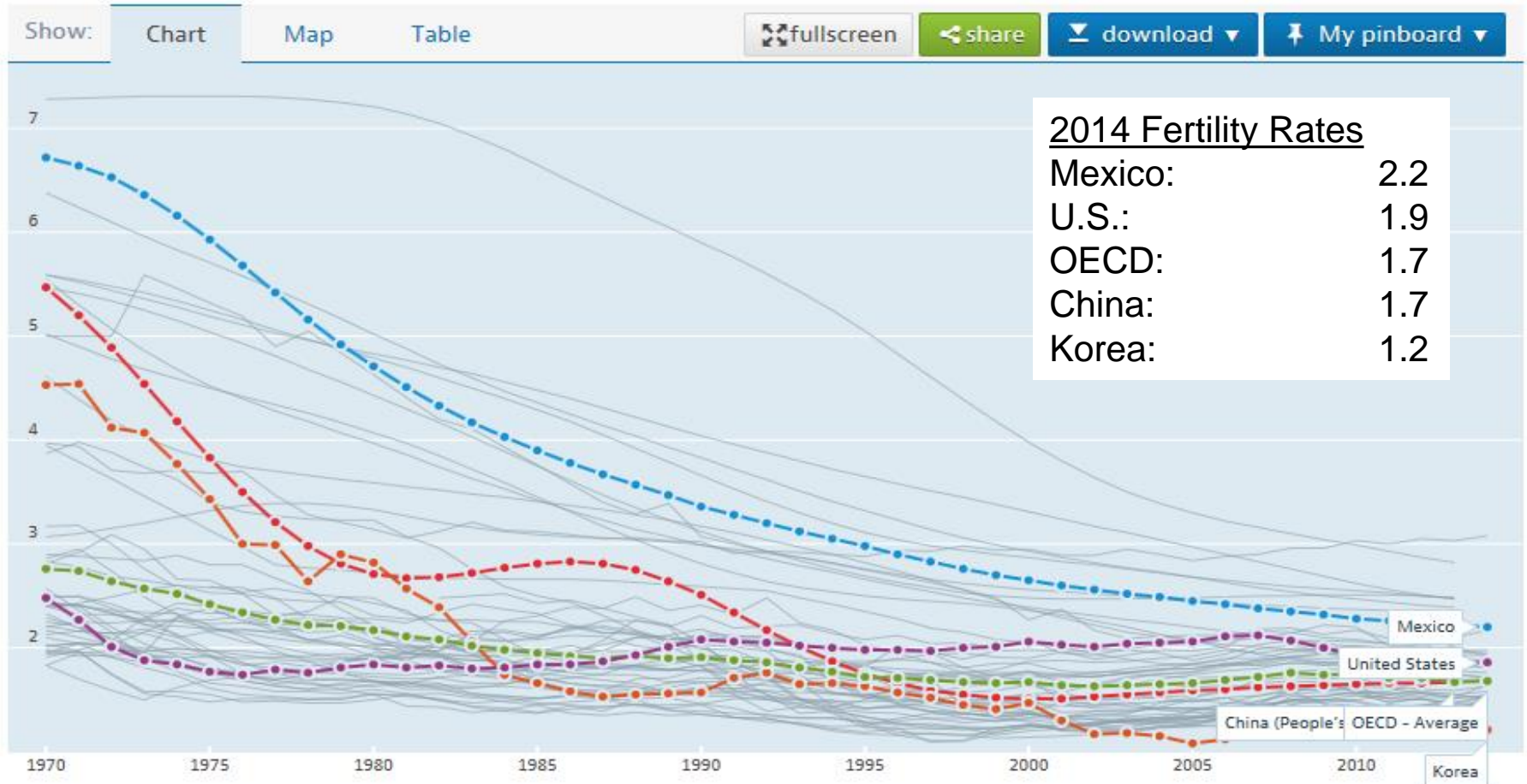
Source: World Population Prospects: The 2012 Revision, Medium Variant.

Source: Economist Intelligence Unit, What's Next Future Global Trends Affecting Your Organization: Engaging and Integrating a Global Workforce, February 2015.

The fertility rate in the 35 OECD Countries is 1.7

Fertility rates Total, Children/woman, 1970 - 2014

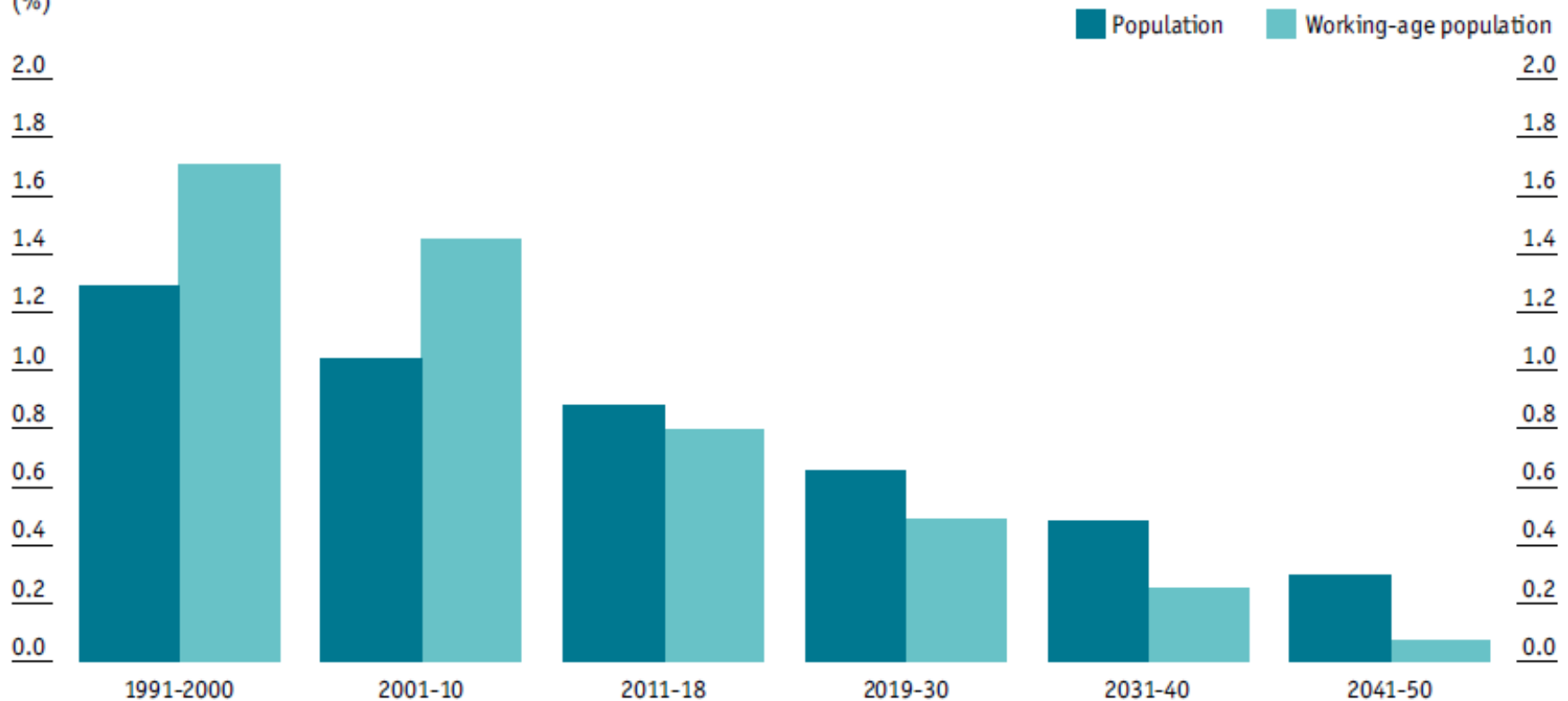
Source: Demographic references



Source: OECD Webpage: <https://data.oecd.org/pop/fertility-rates.htm>. September 5, 2016.

Global population growth and working-aged population growth is falling – fewer workers = lower GDP growth

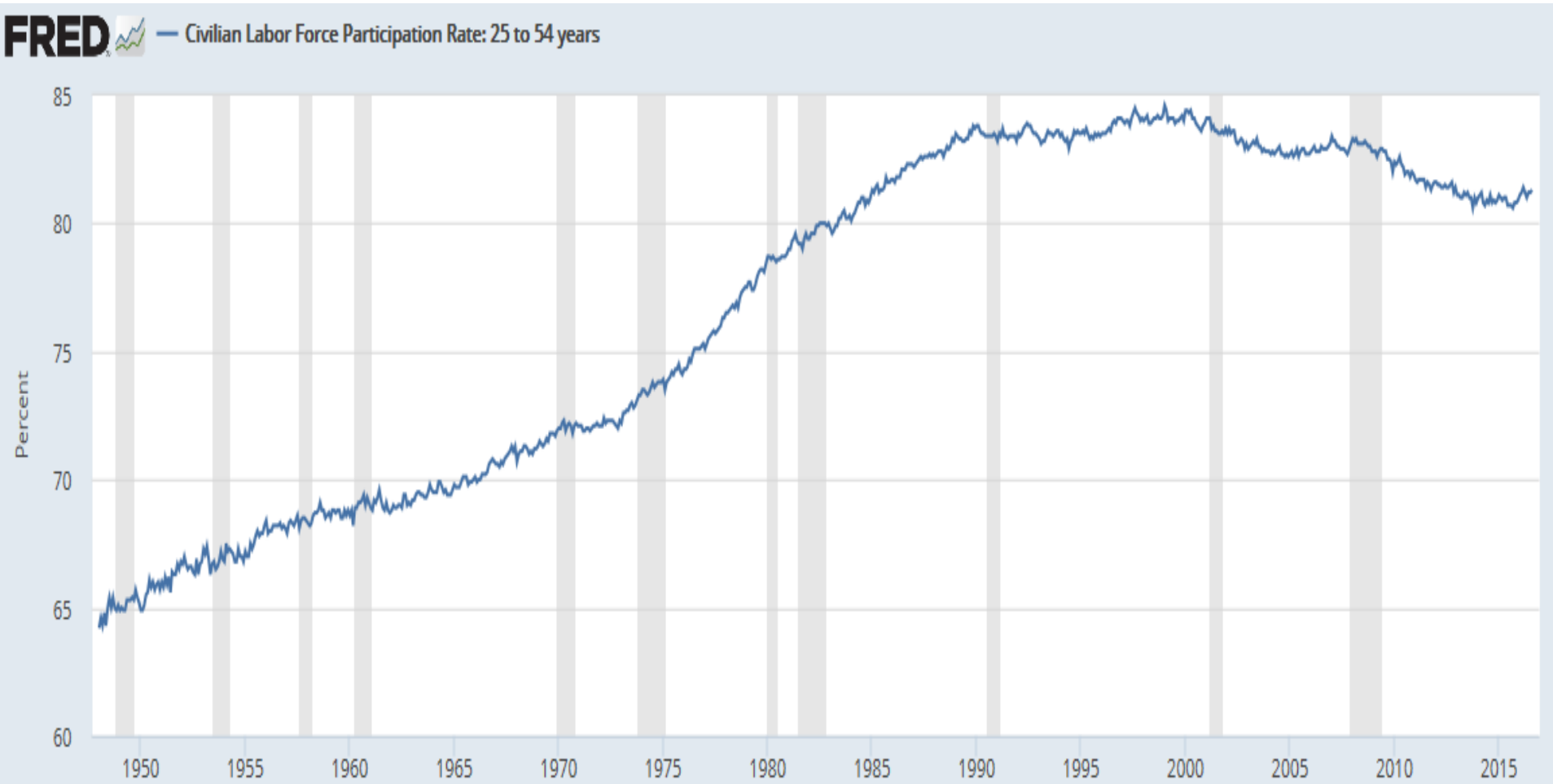
Average growth in global population (%)



Source: The Economist Intelligence Unit.

Source: Economist Intelligence Unit, “Long Term Macroeconomic Forecasts, Key Trends to 2050, 2015.

Women joining the labor force fueled labor force participation rates through 1990. Rates peaked at 84.6% and currently are 81.3%



Source: Federal Reserve Economic Data.



Secular Stagnation

Since 2000:

- I. The declining global work force growth is generating a global GDP reduction of about 0.8-0.9% per year, and the U.S. is seeing a drop of about 0.3-0.4% per year.
- II. Reductions in labor force participation rates likely contribute to a 0.2-0.3% per year reduction in U.S. economic growth.
- III. In summary, secular stagnation likely results in 0.5-0.7% per year reduction in U.S. annual GDP Growth, and those trends are unlikely to change.



The Great Recession Hangover

A hangover from the crisis: The recession of 2008-9 was caused by the worst financial crisis since [the Great Depression](#) of the 1930s.

During the recent crisis, many feared another Great Depression would follow. We averted that catastrophe, but *the anxiety may linger, causing businesses to be reluctant to borrow to finance risky investments and banks reluctant to finance them.* The good news is that hangovers eventually dissipate, but patience is required.

Source: NYT, Greg Mankiw, “One Economic Sickness, Five Diagnoses, June 17, 2016



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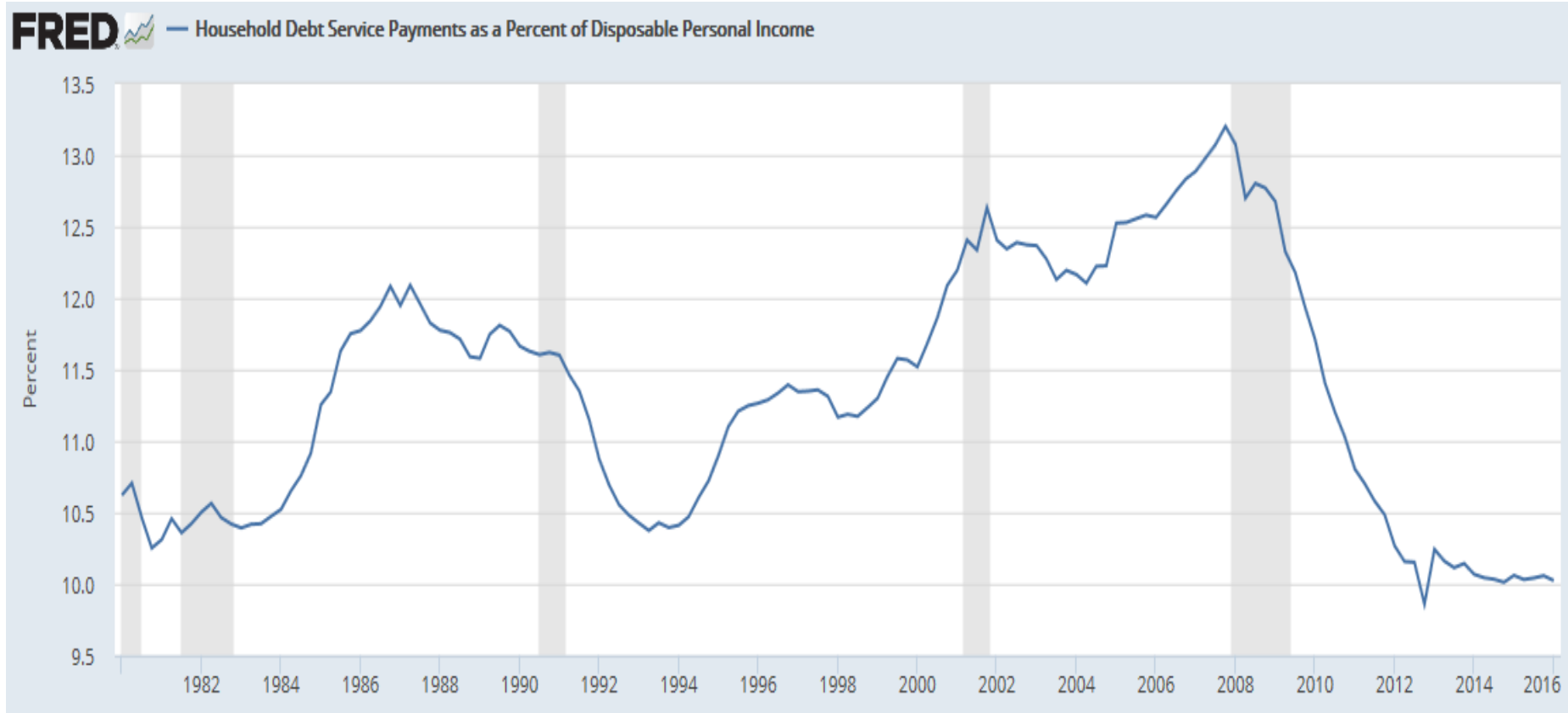
Household-debt-to-GDP has fallen significantly since the Great Recession



Source: Federal Reserve Economic Data.



Household debt service payments are at or near 36 year lows



Source: Federal Reserve Economic Data.

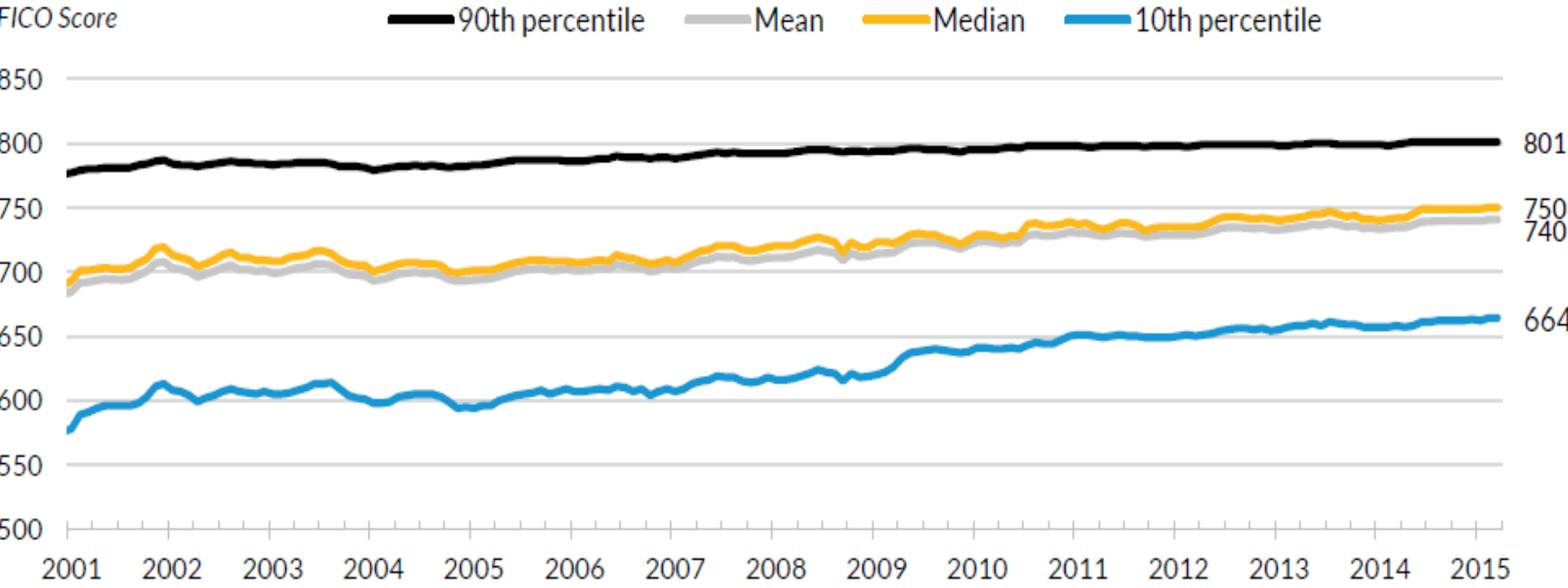


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FICO scores increased during and since the Great Recession, the average score for Fannie Mae originations is 749 for 2016Q2.

Borrower FICO Score at Origination



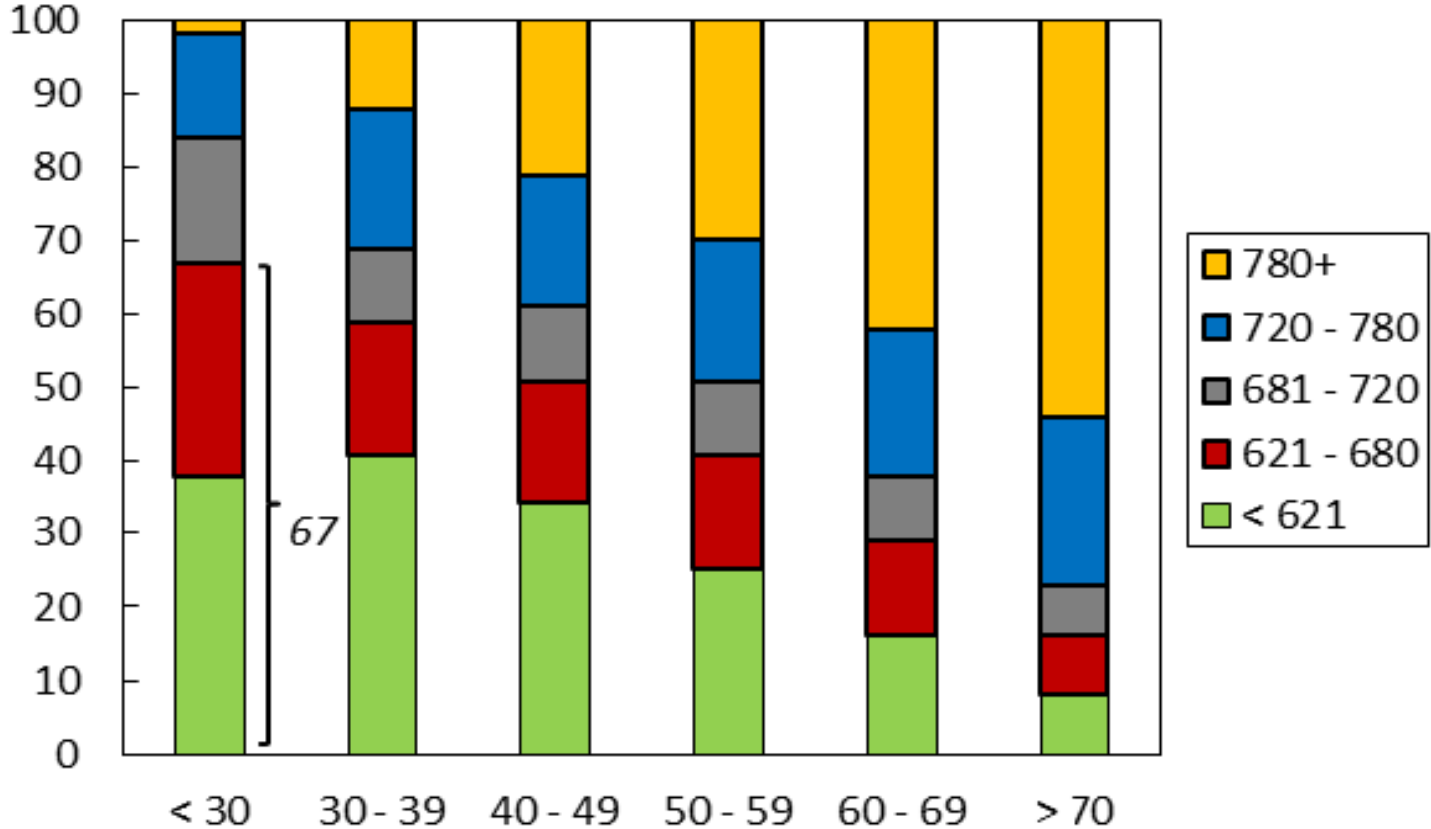
Sources: CoreLogic Servicing and Urban Institute.
Note: Purchase-only loans.

March 2015

Source: *Housing Finance at a Glance: June 2015*, Urban Institute, Goodman et al.

Consumer credit remains tight, the average FICO score is 695

FICO Score Distribution by Age Group



Source: Federal Reserve Bank of New York.

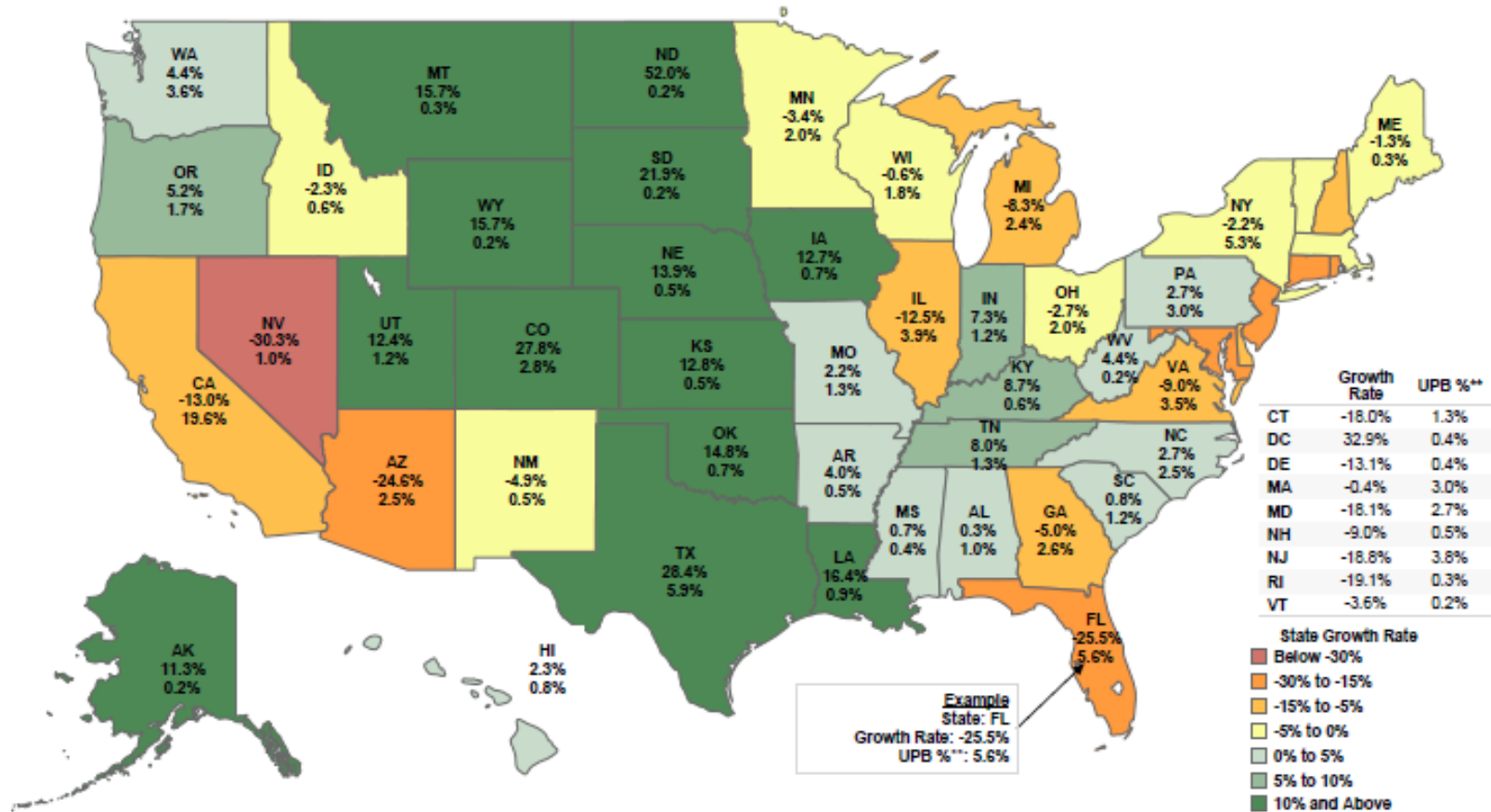
Source: "15 Economic Facts about Millennials, The Council of Economic Advisors, Oct. 2014.

Home prices are 2.8% lower in 2016Q2 than the 2006Q3 peak



Home Price Change From 2006 Q3 Through 2016 Q2*

United States: -2.8%



*Source: Fannie Mae. Home price estimates are based on purchase transactions in Fannie-Freddie acquisition and public deed data available through the end of June 2016. UPB estimates are based on data available through the end of June 2016. Including subsequent data may lead to materially different results.

“Too big to fail banks” and community bank remain challenged

Many “too big to fail” banks remain reluctant due, in part, to huge legal penalties:

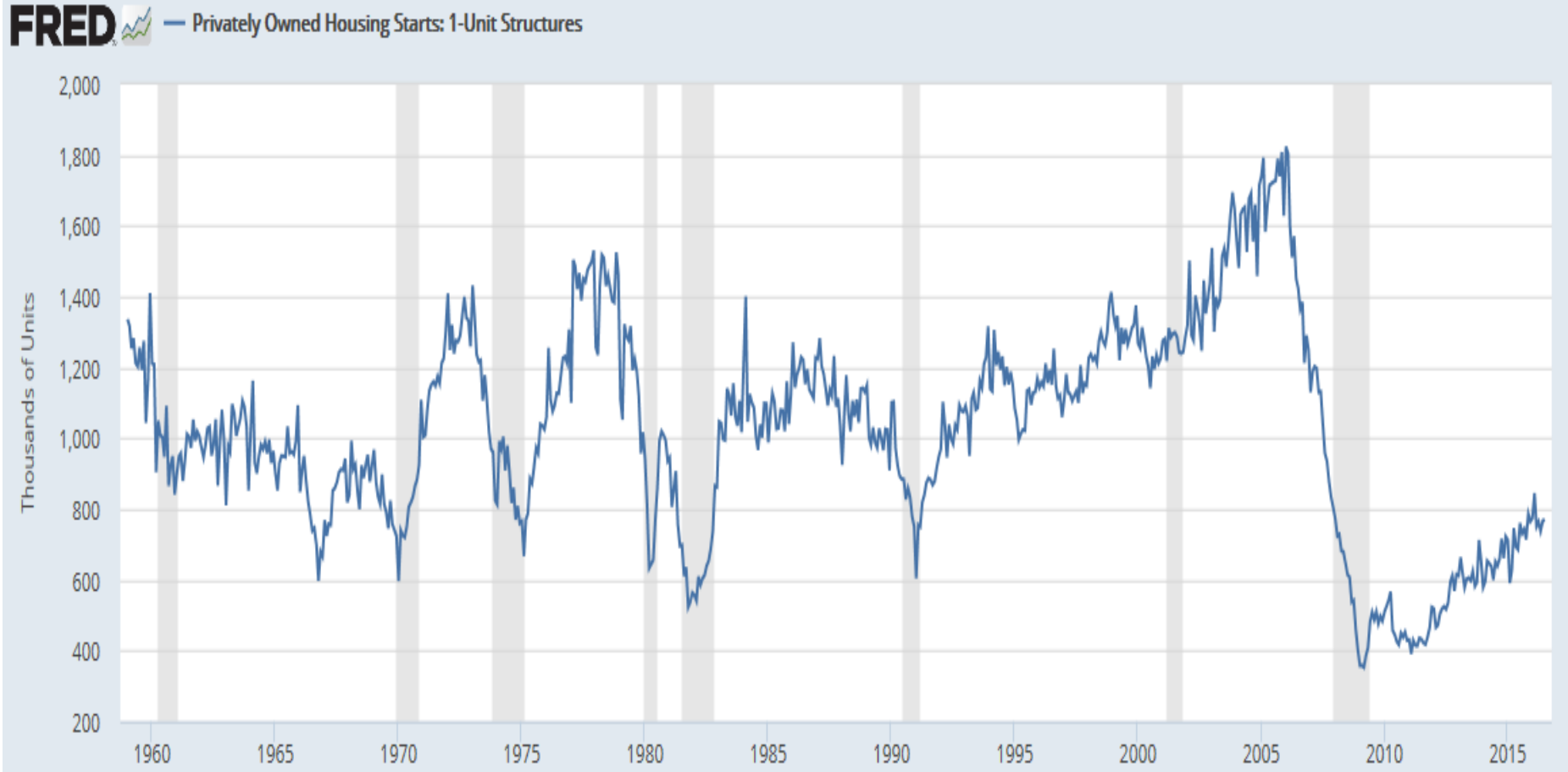
BofA	\$57.5 billion
JPMorgan	\$31.3 billion
Citigroup	\$12.6 billion
Wells Fargo	\$9.7 billion

Community banks are swamped with regulation challenges:

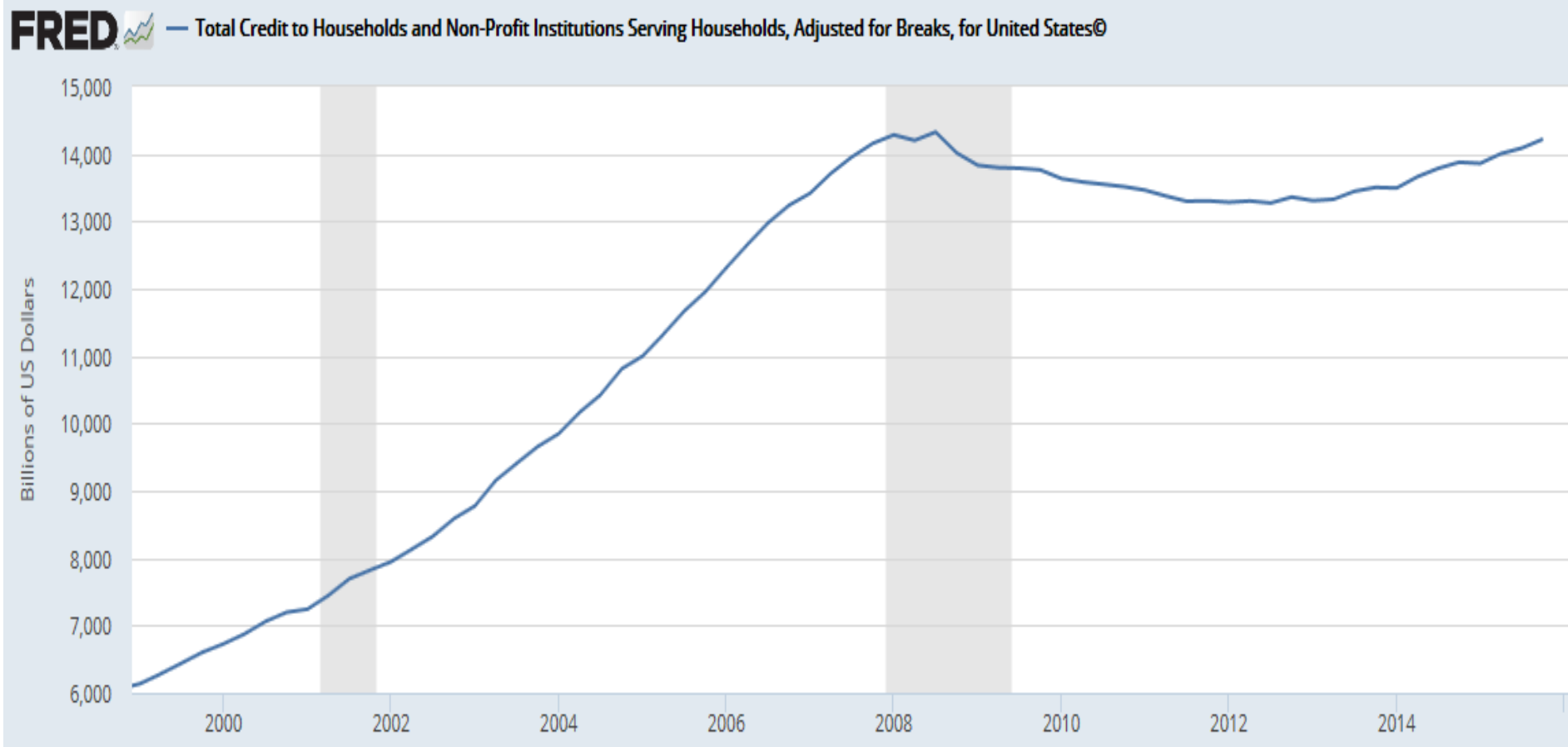
- Basel III
- Sarbanes-Oxley
- Dodd-Frank
- Consumer Financial Protection Bureau
- Others

Source: Economist, August 8, 2015, p. 13.

Consumer, lender, and developer caution are all contributing to weak single-family construction starts



Since 2000, household debt levels have grown 5.1% (2.9% real growth) a year (CPI = 2.2%), all of that growth occurred prior to 2008



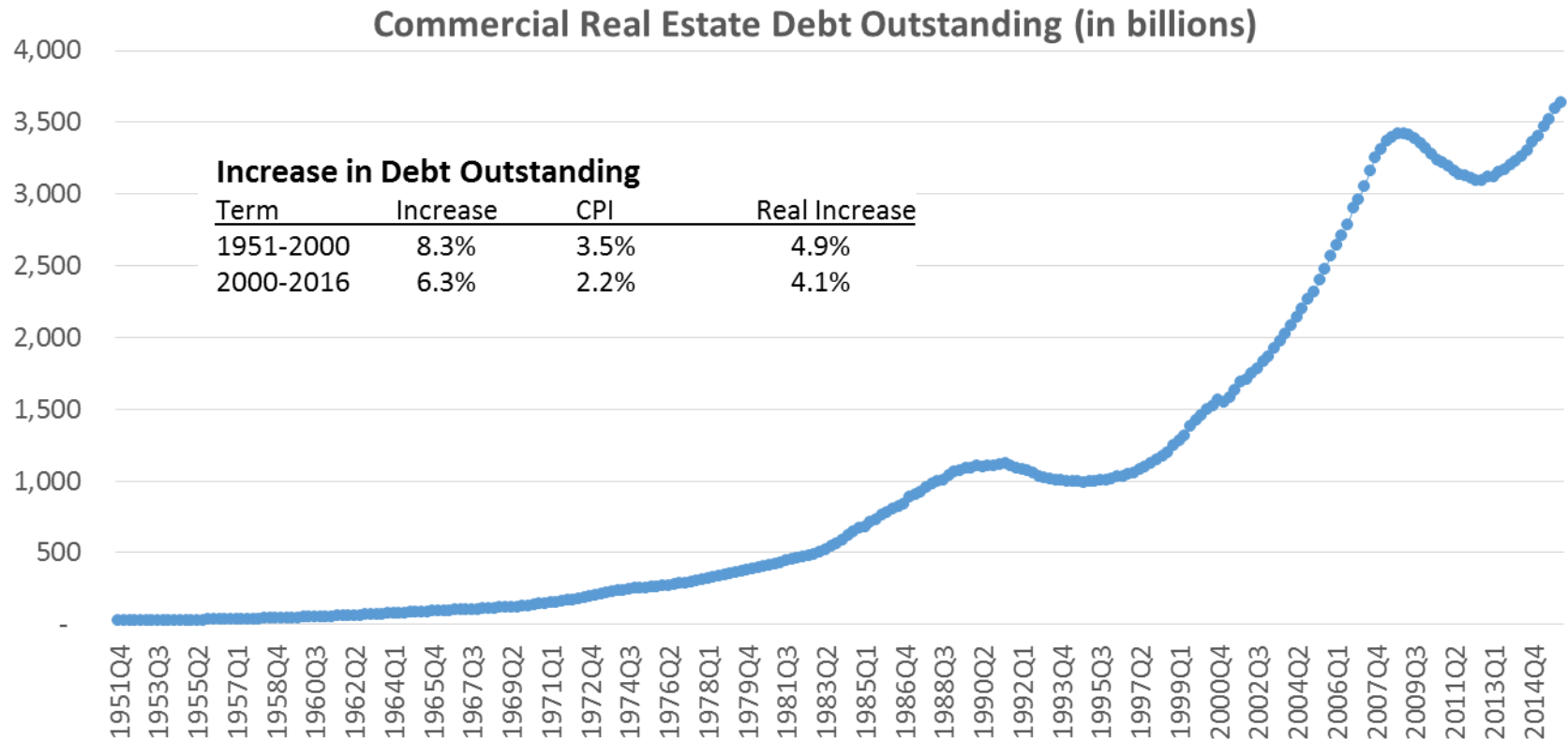
Source: Federal Reserve Economic Data.



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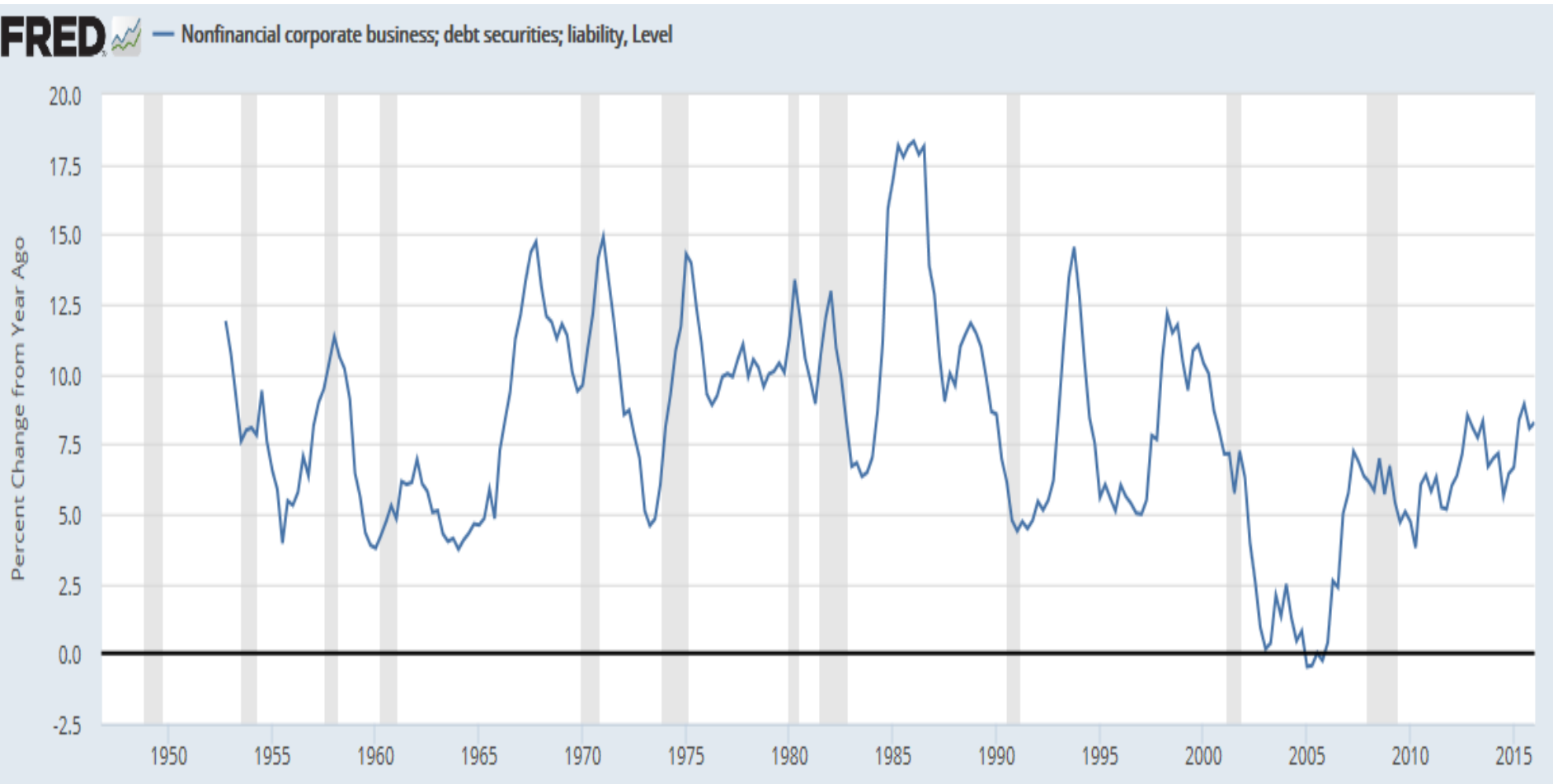
Commercial real estate debt outstanding, remains in line with past real growth



Source: Board of Governors of the Federal Reserve System and Marquette University, June 2016.



Corporate debt has grown 5.2% (3.0% in real terms) since 2000



Source: Federal Reserve Economic Data.

Great Recession Hang Over

In Summary:

No growth in consumer debt since 2008 (about 69% of the economy) is simply making up for pre 2008 spending – getting back to normal.

Reduced housing related growth likely reduced GDP about 0.2-0.4% per year.

Both commercial real estate lending and corporate lending has likely not been a significant impediment to GDP growth.



A Statistical Mirage

- A statistical mirage: *When quality improvements and new products are pervasive and so different from what came before, the national income accountants who construct gross domestic product might underestimate how much life is getting better.*



Hal Varian, suggests that the U.S. doesn't have a productivity problem, it has a measurement problem.

Source: NYT, Greg Mankiw, "One Economic Sickness, Five Diagnoses, June 17, 2016 and WSJ, Timothy Aepfel , Silicon Valley Does Not Believe that Productivity is Down, July 16, 2015 .

The Free Technology and GDP Measurement Problems

Technology Innovation

- Wireless communication – connecting at Summerfest or a Packer game
- A Google search – no card catalog, better decision making
- GPS – from knowing where you are or how fast a shipment is moving
- Share economy – is all VRBO and Air B-N-B measured?
- Music – stream music free, music that I want to listen too, through my phone, to a wireless Big Jam Box
- Creating this PowerPoint deck – better quality data, faster retrieval, limited need to generate new images, often without subscription requirements



The Free Technology and GDP Measurement Problems

Technology improvement

- Automotive – airbags, low emission vehicles, vehicle electronics, controlled cruise control, driverless cars, etc.)
- Healthcare – from quality of scheduling to quality of diagnostics (targeted chemo and radiation therapies to genetics based immunotherapy)
- Computers and internet speeds, how is the doubling of CPU speeds and internet connections measured? (remember dialup?)

In summary, how much are free things and difficult to measure improvements worth to you? Way to personal to measure, but valuable!

Slower Innovation

Slower innovation Robert Gordon, believes the pace of innovative activity has declined. This generation's innovations, like the smartphone and social media, are just not as life-changing.

This theory is the most pessimistic. If he's right, we may have little choice but to get used to slower (no?) growth.

Source: NYT, Greg Mankiw, "One Economic Sickness, Five Diagnoses, June 17, 2016



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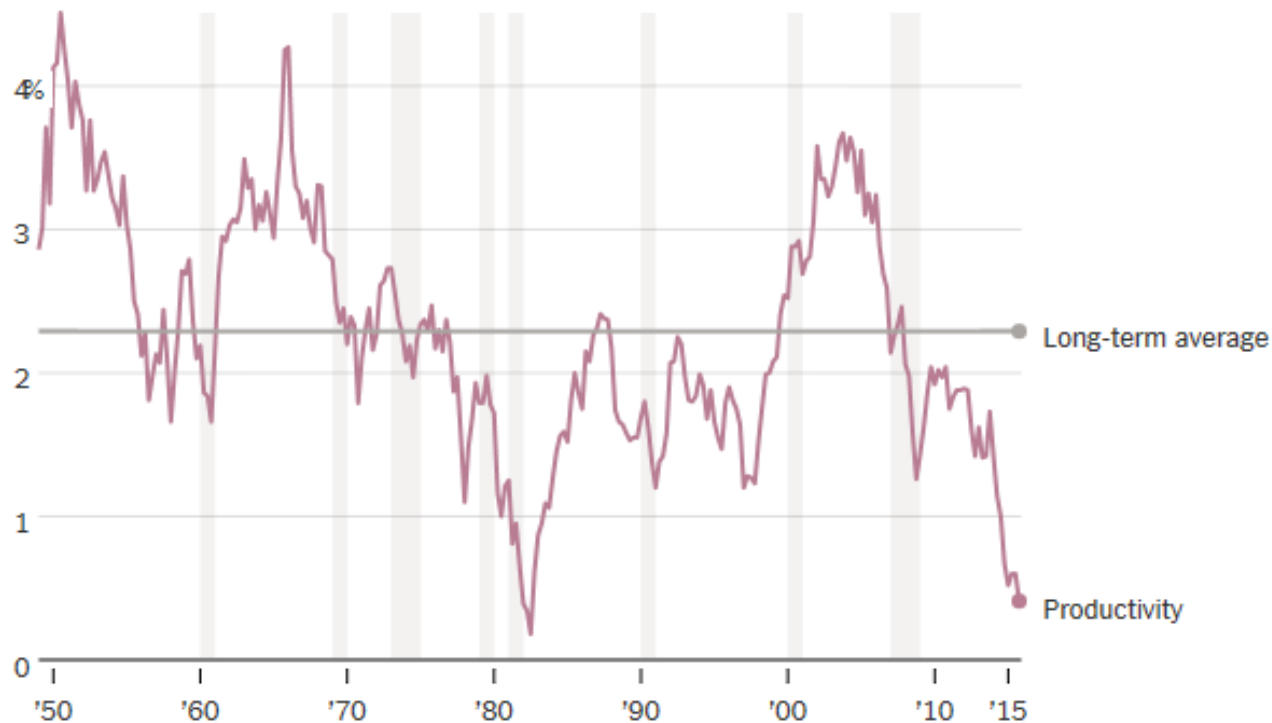
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Productivity growth is noisy and it can be difficult to pinpoint the source of productivity gains

Productivity Growth Is Slowing

Americans' output per hour of work is growing more slowly than it has since the early 1980s.

Five-year rolling average of annual productivity growth



Source: NYT, Neil Irwin, "Why is Productivity so Weak: Three Theories, April 28, 2016.



Big innovation and productivity enhancers are behind us

I. All the “big” things that generated big productivity gains (i.e. 2-3% annual productivity gains) were invented over the past 150 years, with few “big” innovations over the past 40 years:

- Electricity and electric distribution
- Structural steel
- Hydraulics
- Indoor plumbing
- Air travel
- Internal combustion engine
- Central heating and air conditioning

II. On a relative scale, today’s innovation does not match up

- The internet
- Google searches
- GPS



Summary

- I. Much of the slow down in GDP from 3.6% pre 2000 to 1.9% post 2000, is roughly explainable
- II. Many of the causes of the slow down are likely to persist, even the cyclical Great Recession Hangover impacts
- III. Past GDP growth rates are unlikely to return as the population growth, workforce growth, and productivity growth does not exist to sustain it
- IV. Since 2010, the U.S. GDP growth rate was 2.2%, expect that to be the new target, which will likely keep return rates low in the future as well.





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