2016 Center for Real Estate Strategies Conference

Mark J. Eppli
Bell Chair in Real Estate
Marquette University

September 8, 2016
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!)

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

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

The fertility rate in the 35 OECD Countries is 1.7

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

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.

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

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

Home prices are 2.8% lower in 2016Q2 than the 2006Q3 peak.
“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.
Commercial real estate debt outstanding, remains in line with past real growth

<table>
<thead>
<tr>
<th>Term</th>
<th>Increase</th>
<th>CPI</th>
<th>Real Increase</th>
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<tr>
<td>1951-2000</td>
<td>8.3%</td>
<td>3.5%</td>
<td>4.9%</td>
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<tr>
<td>2000-2016</td>
<td>6.3%</td>
<td>2.2%</td>
<td>4.1%</td>
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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.

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.

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

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.