Current Growth, Inflation and Price Level Developments in the U.S.

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President and CEO

Keio University
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Tokyo, Japan

Any opinions expressed here are my own and do not necessarily reflect those of the Federal Open Market Committee.
Introduction
Key themes in this talk

• On balance, the U.S. macroeconomic data have been relatively weak since the March FOMC meeting.
• U.S. inflation and inflation expectations have surprised to the downside in recent months.
• Low U.S. unemployment readings are probably not an indicator of meaningfully higher inflation over the forecast horizon.
• The U.S. price level has begun to deviate noticeably from the 2 percent path established in the mid-1990s.
Recent Economic Growth in the U.S.
Real GDP growth around 2 percent

• Real GDP growth measured from one year earlier has averaged just 2.1 percent over the last seven years.
• The last two years have shown very little change in year-over-year real GDP growth.
  o 2015-Q4: 1.9 percent; 2016-Q4: 2.0 percent.
• A natural conclusion is that the economy has converged upon a growth rate of about 2 percent.
• Is the U.S. economy likely to move meaningfully off of this trend in 2017?
  o The short answer is no.
U.S. real GDP growth in 2017

• The current estimate for U.S. real GDP growth in the first quarter of 2017 is 0.7 percent at an annual rate.*

• The current estimate for the year-over-year growth rate through the first quarter is 1.9 percent.

• Tracking estimates for second-quarter real GDP growth suggest some improvement from the first quarter, but not enough to move the U.S. economy away from a regime characterized by 2 percent trend growth.

* This is the Bureau of Economic Analysis’ advance estimate released on April 28. A second estimate will be released on May 26 at 8:30 a.m. EDT.
# Tracking estimates for 2017-Q2 U.S. real GDP growth

<table>
<thead>
<tr>
<th>Source</th>
<th>Date</th>
<th>Estimate*</th>
<th>2017-H1†</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blue Chip Consensus</td>
<td>May 10</td>
<td>3.1%</td>
<td>1.9%</td>
</tr>
<tr>
<td>Atlanta Fed GDPNow</td>
<td>May 16</td>
<td>4.1%</td>
<td>2.4%</td>
</tr>
<tr>
<td>St. Louis Fed Economic News Index</td>
<td>May 19</td>
<td>2.6%</td>
<td>1.7%</td>
</tr>
<tr>
<td>FRBNY Staff Nowcast</td>
<td>May 19</td>
<td>2.3%</td>
<td>1.5%</td>
</tr>
<tr>
<td>CNBC Moody’s Consensus (median)</td>
<td>May 23</td>
<td>3.7%</td>
<td>2.2%</td>
</tr>
<tr>
<td>Macroeconomic Advisers</td>
<td>May 23</td>
<td>3.9%</td>
<td>2.3%</td>
</tr>
</tbody>
</table>

* percent change from the previous quarter, annualized

† average of Bureau of Economic Analysis’ 2017-Q1 advance estimate (0.7%) and 2017-Q2 estimates
Residual seasonality?

• In recent years, first-quarter real GDP growth in the U.S. has generally been lower than in other quarters, despite the desezasonalization process used to assemble the data.
• The magnitude of this effect is debatable.
• It may be better to use real GDP growth measured from one year earlier to gauge performance.
• If residual seasonality is the issue, then second-quarter real GDP growth should be discounted appropriately.
Q1 vs. Q2 real U.S. real GDP growth

Source: Bureau of Economic Analysis and author’s calculations. Last observation: 2017-Q1 (advance estimate).
The Financial Market Reaction to the March Increase in the Policy Rate
The March FOMC decision

- The FOMC increased the policy rate at the March meeting.
- This was viewed in financial markets as suggesting a policy rate increase at the June meeting as well.
- Ordinarily, when the policy rate is on an increasing path:
  - longer-term interest rates are expected to rise in tandem,
  - both inflation and inflation expectations are expected to remain consistent with the FOMC’s 2 percent inflation target, and
  - financial market expectations of the policy rate path should remain consistent with the Committee’s projections.
The financial market reaction

• Financial market readings since the March decision have moved in the opposite direction:
  o longer-term U.S. yields have declined,
  o U.S. inflation expectations have weakened, and
  o market expectations of the policy rate path have remained below the median path in the FOMC’s Summary of Economic Projections.

• This may suggest that the FOMC’s contemplated policy rate path is overly aggressive relative to actual incoming data on U.S. macroeconomic performance.
Longer-term U.S. yields have declined

Inflation expectations have weakened

Inflation readings are lower

<table>
<thead>
<tr>
<th>Inflation measure</th>
<th>Dec-2016</th>
<th>Last obs.</th>
<th>Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sticky CPI (FRB of Atlanta)</td>
<td>258</td>
<td>224</td>
<td>-34</td>
</tr>
<tr>
<td>Median CPI (FRB of Cleveland)</td>
<td>250</td>
<td>237</td>
<td>-13</td>
</tr>
<tr>
<td>Core CPI</td>
<td>220</td>
<td>190</td>
<td>-30</td>
</tr>
<tr>
<td>Trimmed-mean PCE (FRB of Dallas)</td>
<td>186</td>
<td>181</td>
<td>-5</td>
</tr>
<tr>
<td>Core PCE</td>
<td>175</td>
<td>156</td>
<td>-19</td>
</tr>
</tbody>
</table>

Values are expressed in basis points. Inflation rates are measured as percent changes from one year earlier.
Source: Bureau of Labor Statistics, FRB of Cleveland, FRB of Atlanta, Bureau of Economic Analysis, FRB of Dallas and author’s calculations. Last observations: March 2017 (PCE) and April 2017 (CPI).
Market expectations of the policy rate path remain below FOMC projections

Labor Market Improvement Slowing
U.S. labor market improvement is slowing

• Growth in the labor input has slowed over the last two years.

• Nonfarm payroll employment growth measured from one year earlier was 2.3 percent in February 2015 and has slowed to 1.6 percent today.

• Private hours growth measured from one year earlier was 3.4 percent in February 2015 and has slowed to 1.7 percent today.

• Bottom line: Labor market improvement has been slowing, perhaps close to a trend pace, given the current labor productivity growth regime.
U.S. employment growth has slowed

U.S. hours growth has slowed

U.S. labor productivity growth is low

Does the Low U.S. Unemployment Rate Signal a Meaningful Rise in Inflation?
Unemployment is low

• The U.S. unemployment rate declined to 4.4 percent in the April reading.
• Does this mean that U.S. inflation is about to increase substantially?
• The short answer is no, based on current estimates of the relationship between unemployment and inflation.
Unemployment and inflation

The estimated influence of unemployment on inflation

• Let’s consider one study, Blanchard (2016), which estimates a Phillips curve relationship for the U.S.*
• Let’s suppose the unemployment rate continued to fall from current levels.
• How much would the inflation rate increase according to these estimates?

The estimated influence of unemployment on inflation

<table>
<thead>
<tr>
<th>Unemployment rate</th>
<th>Core PCE inflation rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.4% *</td>
<td>1.6% *</td>
</tr>
<tr>
<td>4.1%</td>
<td>1.7%</td>
</tr>
<tr>
<td>3.6%</td>
<td>1.8%</td>
</tr>
</tbody>
</table>

* current value (April 2017 for unemployment, March 2017 for inflation)

- Bottom line: Even if the U.S. unemployment rate declines substantially further, the effects on U.S. inflation are likely to be small.
Is the U.S. Falling Off the 2 Percent Price Level Path?
The U.S. price level is falling short of the 2 percent path

• Standard macroeconomic theory suggests that the signature of optimal monetary policy is maintenance of a price level path.*

• The U.S. did maintain a 2 percent price level path between 1995 and 2012.

• Since then, however, the U.S. price level has begun to diverge from the 2 percent path.

• The current price level is 4.6 percent below the previously established path.

• This is not as severe as the 1990s Japanese experience, but it is worrisome.

The U.S. price level path

The Japanese price level path

Conclusion
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• On balance, the U.S. macroeconomic data have been relatively weak since the March FOMC meeting.
• U.S. inflation and inflation expectations have surprised to the downside in recent months.
• Low unemployment readings are probably not an indicator of meaningfully higher inflation over the forecast horizon.
• The U.S. price level has begun to deviate noticeably from the 2 percent path established in the mid-1990s.
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