Economic Outlook and Monetary Policy

Federal Reserve Bank of Chicago
Academic Advisory Council Meeting
May 17, 2019

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Senior Vice President
Federal Reserve Bank of Chicago
GDP and Private Domestic Final Demand

Real GDP Growth
(quarterly annualized percentage change)

Source: Bureau of Economic Analysis from Haver Analytics
Labor Market Remains Healthy

Monthly Change in Nonfarm Payroll Employment (thousands)

Unemployment Rate (percent)

Trend estimates from Chicago Fed staff calculations
Wage Growth and Income Expectations

Wage Growth
(year-over-year percentage change)

Univ. of Mich Survey of Consumers:
Expected Real Income Growth
(index)

Source: Bureau of Labor Statistics from Haver Analytics and University of Michigan Survey of Consumers
Household Spending Softer

Real PCE Growth
(3-month annualized percentage change in the 3-month moving average)

Source: Census Bureau and Bureau of Economic Analysis from Haver Analytics
Business Investment Indicators

Nondefense Capital Goods ex. Aircraft (billions of $)

<table>
<thead>
<tr>
<th>Year</th>
<th>2012</th>
<th>'14</th>
<th>'16</th>
<th>'18</th>
</tr>
</thead>
<tbody>
<tr>
<td>New Orders</td>
<td>72</td>
<td>70</td>
<td>68</td>
<td>66</td>
</tr>
<tr>
<td>Shipments</td>
<td>66</td>
<td>68</td>
<td>70</td>
<td>72</td>
</tr>
</tbody>
</table>

Mar-2019

Private Nonresidential Structures (billions of $, saar)

<table>
<thead>
<tr>
<th>Year</th>
<th>2012</th>
<th>'14</th>
<th>'16</th>
<th>'18</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nonresidential Construction</td>
<td>3</td>
<td>2</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Baker-Hughes Rig Count (thousands)

<table>
<thead>
<tr>
<th>Year</th>
<th>2012</th>
<th>'14</th>
<th>'16</th>
<th>'18</th>
</tr>
</thead>
<tbody>
<tr>
<td>Baker-Hughes Rig Count</td>
<td>200</td>
<td>250</td>
<td>300</td>
<td>350</td>
</tr>
</tbody>
</table>

Mar-2019

Apr-2019

Source: Census Bureau and Baker Hughes from Haver Analytics
Global Growth Slowdown

JPMorgan Global Manufacturing PMI
(50+ equals expansion)

Euro Area PMI

China PMI

Source: IHS Markit PMI from Haver Analytics
# Real GDP Forecasts

<table>
<thead>
<tr>
<th></th>
<th>Q1</th>
<th>Q2</th>
<th>2019</th>
<th>2020</th>
<th>2021</th>
</tr>
</thead>
<tbody>
<tr>
<td>Macroadvisers (5/10)</td>
<td>3.1*</td>
<td>2.1</td>
<td>2.4</td>
<td>2.0</td>
<td>1.6</td>
</tr>
<tr>
<td>Blue Chip (5/10)</td>
<td>2.0</td>
<td></td>
<td>2.3</td>
<td>1.7</td>
<td></td>
</tr>
<tr>
<td>FRB Atl GDPNow (5/9)</td>
<td>1.6</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>March FOMC SEP (3/20)</td>
<td></td>
<td></td>
<td>2.1</td>
<td>1.9</td>
<td>1.8</td>
</tr>
<tr>
<td>December SEP (12/19)</td>
<td></td>
<td></td>
<td>2.3</td>
<td>2.0</td>
<td>1.8</td>
</tr>
</tbody>
</table>

*Estimated revision
Inflation – Some Softer Numbers

PCE Price Index
(12-month percent change)

<table>
<thead>
<tr>
<th></th>
<th>Feb</th>
<th>Mar</th>
<th>Apr</th>
</tr>
</thead>
<tbody>
<tr>
<td>Core CPI</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Monthly</td>
<td>0.1</td>
<td>0.1</td>
<td>0.1</td>
</tr>
<tr>
<td>Yr/Yr</td>
<td>2.1</td>
<td>2.0</td>
<td>2.1</td>
</tr>
<tr>
<td>Core PCE</td>
<td>1.7</td>
<td>1.6</td>
<td></td>
</tr>
</tbody>
</table>

Source: Bureau of Economic Analysis from Haver Analytics
Likely Transitory Contributors

**PCE: Portfolio Management Services**
(year over year percentage change)

<table>
<thead>
<tr>
<th>Year</th>
<th>Feb</th>
<th>Mar</th>
<th>Apr</th>
</tr>
</thead>
<tbody>
<tr>
<td>PPI: Portfolio Management</td>
<td>-3.8</td>
<td>-2.0</td>
<td>3.9</td>
</tr>
</tbody>
</table>

**PCE: Clothing and Footwear**
(year over year percentage change)

<table>
<thead>
<tr>
<th>Year</th>
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<th>Mar</th>
<th>Apr</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPI: Apparel</td>
<td>-0.8</td>
<td>-2.2</td>
<td>-3.0</td>
</tr>
</tbody>
</table>

Source: Bureau of Economic Analysis from Haver Analytics
Inflation Expectations Indicators Still Low

Inflation Surveys (percent)

University of Michigan Expected CPI Inflation: 5-10 Years Ahead

SPF CPI Forecasts: Next 10 Years

TIPS 5F/5 Inflation Compensation (percent)

Source: Federal Reserve Board, University of Michigan Survey of Consumers, and Survey of Professional Forecasters from Haver Analytics
Dollar and Oil Prices

Exchange Rate and Import Prices
(index, 2012=100)

Broad Trade-Weighted Dollar

Non-Petroleum Import Prices

Brent Crude Oil Prices and Futures
(dollars)

Source: Federal Reserve Board, Bureau of Labor Statistics, Energy Information Administration, and CME from Haver Analytics
Financial Market Developments

S&P 500 Index

Corporate Bond Spreads
(spread over 10 year treasury, percent)

Source: Wall Street Journal and ICE/Bank of America Merill Lynch from Haver Analytics
Financial Market Developments

10 Year Treasury
(percent)

Mkt Pricing for Year-End Fed Funds Rate
2019, 2020, and 2021
(derived from OIS futures contracts, percent)

2019: 2.2%
2020: 2.0%
2021: 2.0%

Source: Federal Reserve Board
Private Sector Monetary Policy Outlook

Distribution of Federal Funds Rate Target at Year End 2019 (percent)

CME (Market Pricing) May 9

Blue Chip Financial Forecasts (Survey) May 1
March FOMC Balance Sheet Communications

- **Slower pace of drawdown in balance sheet beginning May 2019.**
  - Technically, do by reducing the cap on redemptions.

- **Conclude drawdown end of September 2019.**

- **Then expect to hold balance sheet size roughly constant for a time.**
  - During this time, gradual increases in non-reserve liabilities (currency, Treasury accounts, etc) => corresponding gradual decline in reserves.
Source: Federal Reserve Board from Haver Analytics. Dashed lines are author’s assumptions based on redemption caps, schedule of maturing Treasuries, recent trends in MBS runoff, and growth of (most) non-reserve liabilities in line with nominal GDP.
Balance Sheet Decisions Still to be Made

- **Ultimate level of reserves (when to stop the drawdown):**
  - Once reserves at a level consistent with “efficient and effective implementation of monetary policy,” stop drawdown; increase balance sheet in line with trend growth of non-reserve liabilities.
  - When occurs, will be normal part of operations to maintain ample-reserves monetary policy implementation regime and would not represent a change in the stance of monetary policy.

- **Eventual maturity structure of assets:**
  - Due to LSAPs and MEP, current duration ≈ 5-1/2 years vs. 2-1/2 to 3 years pre-crisis.
  - Maturity choice involves many complex issues and possible implications for the stance of policy. Committee has had preliminary discussions; plan return to issue toward end of year. No pressing need to resolve; any decisions will be implemented with advance notice allowing for smooth adjustment.