Fundamentals in Public Finance

Economic Update

June 2019

Presented by:
Kyle Jones, Managing Director
Portfolio Strategies Group
Agenda

REVIEW
Where are we today and how have capital markets reacted?

OUTLOOK
What is the Federal Reserve telling us?

KEY TRENDS
What are we watching?
Where are we today and how have capital markets reacted?
Economic Growth Accelerated in the First Quarter

U.S. Real GDP Forecast To Slow
(QoQ, SAAR)

Source: Bloomberg, latest data available as of June 2019. SAAR is seasonally adjusted annualized rate. Wage growth is measured by average hourly earnings (YOY % change).
First Quarter GDP Beats Expectations

U.S. GDP Contributors and Detractors

Source: Bureau of Economic Analysis, as of May 2019. 1st quarter contributions are based on the 2nd GDP growth estimate.
But Consumer Expectations Are Weakening

Source: Bloomberg and Conference Board, as of 05/31/2019.

Consumers optimistic about the future

Consumers less optimistic about the future
Retail Sales Down 0.2% in April After Large Gain in March

- Retail sales declined 0.2% in April after a 1.2% increase in March.

- Auto and other motor vehicles fell 1.2%.
- Clothing and clothing accessories decreased 0.2%.
- Furniture and home furnishings saw no change (0.0%).
- Food and beverage stores rose 0.2%.
- Restaurants and bars increased 0.2%.
- Electronics and appliances declined 1.3%.

Stock Market Struggles on Concerns of Trade Wars and Slowing Growth

S&P Price Change

-6.6% Since Trump Tweets About Tariffs

+17.8% since 12/24

2017 close

Source: Bloomberg, as of 05/31/2019.
Treasury Yields Continue to Fall

2-Year Treasury

1.00% 1.25% 1.50% 1.75% 2.00% 2.25% 2.50% 2.75% 3.00% 3.25%

May '17 Nov '17 May '18 Nov '18 May '19

Highest since 2008

10-Year Treasury

3.25% 3.00% 2.75% 2.50% 2.25% 2.00% 1.75% 1.50% 1.25% 1.00%

May '17 Nov '17 May '18 Nov '18 May '19

Highest since 2011

Source: Bloomberg, as of 05/31/19.
Yield Curve Inversion Persists

<table>
<thead>
<tr>
<th>Tenor</th>
<th>05/31/19</th>
<th>Year-End 12/31/18</th>
<th>Year-End 09/28/2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>3 month</td>
<td>2.34%</td>
<td>2.35%</td>
<td>2.20%</td>
</tr>
<tr>
<td>1 year</td>
<td>2.20%</td>
<td>2.60%</td>
<td>2.56%</td>
</tr>
<tr>
<td>2 year</td>
<td>1.92%</td>
<td>2.49%</td>
<td>2.82%</td>
</tr>
<tr>
<td>3 year</td>
<td>1.87%</td>
<td>2.46%</td>
<td>2.88%</td>
</tr>
<tr>
<td>5 year</td>
<td>1.91%</td>
<td>2.51%</td>
<td>2.95%</td>
</tr>
<tr>
<td>10 year</td>
<td>2.12%</td>
<td>2.68%</td>
<td>3.06%</td>
</tr>
<tr>
<td>30 year</td>
<td>2.57%</td>
<td>3.01%</td>
<td>3.21%</td>
</tr>
</tbody>
</table>

Source: Bloomberg, as of 05/31/2019.

U.S. Treasury Yield Curve

Inversion
Short-Term Yield Relationships Have Realigned

3-month T-bill vs. 3-month LIBOR vs. SOFR

Source: Bloomberg as of 05/31/2019.
## Short-Term Credit Offer Value

<table>
<thead>
<tr>
<th>Maturity</th>
<th>Treasury</th>
<th>Federal Agency</th>
<th>Commercial Paper</th>
</tr>
</thead>
<tbody>
<tr>
<td>3-Month</td>
<td>2.34%</td>
<td>2.30%</td>
<td><strong>2.46%</strong></td>
</tr>
<tr>
<td>6-Month</td>
<td>2.34%</td>
<td>2.23%</td>
<td><strong>2.44%</strong></td>
</tr>
<tr>
<td>9-Month</td>
<td>2.25%</td>
<td>2.23%</td>
<td>2.43%</td>
</tr>
<tr>
<td>1-Year</td>
<td>2.20%</td>
<td>2.19%</td>
<td></td>
</tr>
<tr>
<td>2-Year</td>
<td>1.92%</td>
<td>1.90%</td>
<td></td>
</tr>
<tr>
<td>3-Year</td>
<td>1.87%</td>
<td>1.86%</td>
<td></td>
</tr>
<tr>
<td>5-Year</td>
<td>1.91%</td>
<td>1.91%</td>
<td></td>
</tr>
<tr>
<td>10-Year</td>
<td>2.12%</td>
<td>2.14%</td>
<td></td>
</tr>
</tbody>
</table>

Source: Bloomberg BVAL yield curves for Treasuries. TradeWeb for Federal Agency yields. 3-, 6-, and 9-month commercial paper yields from A-1 issuers. Yields are for indicative purposes only; actual yields may vary by issue. Yields as of 05/31/19.
### Implied Forward Treasury Rates Show Little Expected Change

<table>
<thead>
<tr>
<th>Maturity</th>
<th>Current Yield</th>
<th>1-year Forward</th>
<th>2-year Forward</th>
<th>3-year Forward</th>
<th>5-year Forward</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 year</td>
<td>2.19%</td>
<td>1.65%</td>
<td>1.78%</td>
<td>1.96%</td>
<td>2.31%</td>
</tr>
<tr>
<td>2 year</td>
<td>1.93%</td>
<td>1.72%</td>
<td>1.87%</td>
<td>1.97%</td>
<td>2.31%</td>
</tr>
<tr>
<td>3 year</td>
<td>1.88%</td>
<td>1.80%</td>
<td>1.90%</td>
<td>2.08%</td>
<td>2.34%</td>
</tr>
<tr>
<td>5 year</td>
<td>1.91%</td>
<td>1.93%</td>
<td>2.06%</td>
<td>2.19%</td>
<td>2.37%</td>
</tr>
<tr>
<td>7 year</td>
<td>2.02%</td>
<td>2.05%</td>
<td>2.16%</td>
<td>2.25%</td>
<td>2.51%</td>
</tr>
<tr>
<td>10 year</td>
<td>2.13%</td>
<td>2.19%</td>
<td>2.32%</td>
<td>2.43%</td>
<td>2.62%</td>
</tr>
<tr>
<td>30 year</td>
<td>2.57%</td>
<td>2.60%</td>
<td>2.65%</td>
<td>2.70%</td>
<td>2.78%</td>
</tr>
</tbody>
</table>

Source: Bloomberg, as of 5/31/19.
What is the Federal Reserve telling us?
Dual Mandate… Dueling Mandates

The Federal Reserve has been given a DUAL MANDATE

Price Stability

Maximum Employment
Unemployment Rate Drops to 49-Year Low in April

Source: Bloomberg, as of May 2019.

Monthly Change in Nonfarm Payrolls

Unemployment Rate

Source: Bloomberg, as of May 2019.
Employment Indicators

**Labor Force Participation Rate**

- **Prime Age (rt)**
- **Total (lt)**

**U-6 Underemployment Rate**

- 17.1%
- 7.3%

**Average Hourly Earnings (YoY %)**

- 3.2%

**Total Private Sector Average Weekly Hours**

Source: Bloomberg, most recent data as of May 2019. BLS defines “prime-age” as individuals ranging from 25 – 54 years of age.
Core Inflation Hits the Fed’s 2% Target

Inflation Measures (YoY)

Expectations for Average Inflation Rate over Next 5 Years

Source: Bloomberg, latest data available as of April 2019. Inflation expectations based on yield difference between 5-year Treasury note and 5-year Treasury Inflation Protected Securities (TIPS).
## Differences Between Inflation Indicators

<table>
<thead>
<tr>
<th>Measures</th>
<th>Import Prices</th>
<th>PPI</th>
<th>CPI</th>
<th>PCE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Composition</td>
<td>Price of goods or services purchased from abroad by U.S. residents</td>
<td>Selling prices received by domestic producers of goods and services</td>
<td>Prices paid by urban consumers for a market basket of goods and services</td>
<td>Prices paid for goods and services purchased by or on behalf of persons</td>
</tr>
<tr>
<td>Release</td>
<td>Monthly Before the 15th of the month 1-month lag</td>
<td>Monthly Before the 15th of the month 1-month lag</td>
<td>Monthly Before the 15th of the month 1-month lag</td>
<td>Monthly End of month 1-month lag</td>
</tr>
</tbody>
</table>

### Graphs

- **Goods**
- **Food**
- **Energy**
- **Services**
Fed Indicates No Rate Hikes in 2019...

Fed Participants’ Assessments of ‘Appropriate’ Monetary Policy

<table>
<thead>
<tr>
<th>History of Recent Fed Rate Hikes</th>
<th>2019</th>
<th>2020</th>
<th>2021</th>
<th>Longer Term</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dec ’18</td>
<td>2.25 - 2.50%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sept ’18</td>
<td>2.00 - 2.25%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Jun ’18</td>
<td>1.75 - 2.00%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mar ’18</td>
<td>1.50 - 1.75%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dec ’17</td>
<td>1.25 - 1.50%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Jun ’17</td>
<td>1.00 - 1.25%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mar ’17</td>
<td>0.75 - 1.00%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dec ’16</td>
<td>0.50 - 0.75%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dec ’15</td>
<td>0.25 - 0.50%</td>
<td></td>
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</tr>
</tbody>
</table>

Fed expects no hikes in 2019

Market is pricing in a 83% chance of a rate cut by year end

Source: Federal Reserve and Bloomberg. Individual dots represent each Fed members’ judgement of the midpoint of the appropriate target range for the federal funds rate at each year-end. Fed funds futures as of 5/28/19.
Months Between Fed Hikes and Cuts Over Last Five Cycles

Federal Funds Target Rate - Midpoint

<table>
<thead>
<tr>
<th></th>
<th>Months Between Last Rate Hike and First Rate Cut</th>
<th>Months Between Last Rate Cut and First Rate Hike</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minimum</td>
<td>4 month</td>
<td>8 month</td>
</tr>
<tr>
<td>Average</td>
<td>10 months</td>
<td>27 months</td>
</tr>
<tr>
<td>Maximum</td>
<td>18 months</td>
<td>85 months</td>
</tr>
<tr>
<td>Last Cycle</td>
<td>15 months</td>
<td>85 months</td>
</tr>
</tbody>
</table>

Source: Bloomberg.
What are we watching?
Market Indicators Not Pointing to an Imminent Recession

- **Yield Curve (bps)**: 10-year – 3-month
- **Index of Leading Indicator**: (SA, YoY)
- **Corporate Yield Spreads**: 1-5 Year A-AAA (OAS)
- **ISM Manufacturing**
- **Initial Jobless Claims**
- **Duration of U.S. Expansion Periods**

Source: Bloomberg, as of 5/31/2019.
Additional Tariffs on $200B of Chinese Imports Increases Costs to U.S. Consumers

- **Tax Payments**: The increased cost to the consumer that is being captured by the U.S. government

- **Deadweight Loss (‘DWL’)**: The increased cost to the consumer that is lost to the U.S. economy as imports are being sourced from less efficient countries

**U.S. Tariff Total Annual Cost to Consumers**

- Tariffs Instituted in 2018 (10%): $16.8 Billion in DWL
- Add'l Tariffs Instituted in 2019 (15%): $79.1 Billion
- Tax Payments: $26.9 Billion
- Deadweight Loss: $69.3 Billion
- Additional Tariffs on $200B of Chinese Imports Increases Costs to U.S. Consumers

Source: Federal Reserve Bank of New York.
Trump Administration Announces New Tariffs on Mexico

Share of U.S. Imports from Mexico

- Related-Party Trade: 67%
- Intermediate Input Trade: 40%

Related-party trade is defined as trade within firms with at least 10% ownership in the trading partner.

Source: Deutsche Bank Research and Wall Street Journal.
U.S. Federal Budget Deficit And Interest Cost Projected To Soar

Sources: Bureau of Fiscal Service, Congressional Budget Office. Data as of May 2019.
Will the UK & the EU Reach a Withdrawal Agreement Before Brexit?

September 20
Informal EU leaders met to discuss Brexit. The UK’s proposal was opposed due to the fact it would have them stay in the single market for goods but not for services.

November
U.K. Prime Minister secured cabinet approval for her Brexit deal and European Union leaders formally agreed upon the Brexit deal. The stage is set for a tougher vote in Parliament on the U.K.’s exit from the bloc.

January 2019
British politicians rejected the Brexit agreement, complicating the UK’s departure from the EU. Members of parliament voted 432 to 202 to rebuff the deal.

Early-Mid February
Brexit negotiations will be restarted with the EU over the backstop with the bloc’s leaders. And assuming a revised deal with Brussels is agreed upon, May will still have to try to win a so-called meaningful vote in the Commons.

May 24
Theresa May announces resignation after missing the April 12th deadline.

March 21-22
The final EU Summit that the UK will attend as a member country will be held.

March 29
Brexit Day

2019

April 12

May 24

October 31

Source: Bloomberg
Geopolitical Risks Persist Around the Globe

- North Korea tensions
- South China Sea conflict
- Russia – Ukraine tensions
- Brexit, French protests, Italy’s budget woes, EU fragmentation
- US – China trade tensions
- Russia – US withdrawal
- Indio-Pakistani Tensions
- US – Mexico border and trade tensions
- Turkey currency crisis
- Argentina currency crisis
- US – Border Security Funding
- Venezuela political crisis
- North Korea tensions
Summary of Our Outlook – Balance of 2019

**Economy**
U.S. to slow while other regions stabilize at lower levels

**Central Banks**
Interest rate decreases under consideration as economic growth moderates and trade concerns intensify

**Political Uncertainty**
Likely to remain a headwind for both economy and capital markets

**Equities**
Positive returns as the economy avoids a recession and is supported by more attractive valuations

**Fixed Income**
Income will be a major driver of returns with credit markets outperforming interest rate-sensitive investments
Questions?
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