A Look at Previous Fed “Tightening” Episodes

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Outline of Talk

• Institutional Factors.

• Lift-off in 2015? Not Whether But When?


• Evidence from Previous Fed Tightening Episodes.
Disclaimer

The views I will express are my own and do not necessarily reflect the positions of the Federal Reserve Bank of St. Louis or the Federal Reserve System.
Motivation

“Like most of my FOMC colleagues, I believe that the appropriate time has not yet arrived, but I expect that conditions may warrant an increase in the federal funds rate target sometime this year.”

(Chair Yellen, Speech, March 27, 2015)
Institutional Factors

• The “anguish of central banking”: The FOMC’s decision to raise the federal funds target often “evoked violent criticism” of its actions.

• The Fed is often accused of running a policy that favors financial markets (Wall Street) at the expense of the public and savers (Main Street).

• Maintaining price stability sometimes requires making unpopular—but wise—decisions.
Institutional Factors

- Historically, the decision to raise the federal funds target is generally much more difficult than the decision to lower the target.

- Timing the lift-off is always an issue that is intensely debated—both internally and externally.

- And we see that debate played out today, as well.
The Majority of Blue Chip Forecasters Now Expect a September 2015 Lift-Off.

**Expected Timing of the FOMC's Lift-off From the Zero Lower Bound**

Percent of respondents

- **January Blue Chip**
  - Apr. 28-29, 2015: 0.0%
  - Jun. 16-17, 2015: 64.7%
  - Jul. 28-29, 2015: 14.8%
  - Sept. 16-17, 2015: 41.5%
  - Oct. 27-28, 2015: 17.6%
  - Dec. 15-16, 2015: 0.0%
  - Jan. 2016: 0.0%
  - Feb. 2016: 0.0%
  - Mar. 2016: 0.0%
  - June 2016 or Later: 0.0%

- **February Blue Chip**
  - Apr. 28-29, 2015: 0.0%
  - Jun. 16-17, 2015: 41.5%
  - Jul. 28-29, 2015: 14.8%
  - Sept. 16-17, 2015: 41.5%
  - Oct. 27-28, 2015: 17.6%
  - Dec. 15-16, 2015: 0.0%
  - Jan. 2016: 0.0%
  - Feb. 2016: 0.0%
  - Mar. 2016: 0.0%
  - June 2016 or Later: 0.0%

- **April Blue Chip**
  - Apr. 28-29, 2015: 0.0%
  - Jun. 16-17, 2015: 41.5%
  - Jul. 28-29, 2015: 14.8%
  - Sept. 16-17, 2015: 74.1%
  - Oct. 27-28, 2015: 0.0%
  - Dec. 15-16, 2015: 0.0%
  - Jan. 2016: 0.0%
  - Feb. 2016: 0.0%
  - Mar. 2016: 0.0%
  - June 2016 or Later: 0.0%

**SOURCE:** Blue Chip Economic Indicators, January 10 and February 10, 2015
Lift-off in 2015?

- The FOMC removed the “patience” language at the March 17-18 meeting.

- “Now this is not the end. It is not even the beginning of the end. But it is, perhaps, the end of the beginning.” (Winston Churchill)

- But the Fed’s projections also indicated much less tightening from 2015 to 2017.
Uncooperative data! The Fed and private forecasters have been too optimistic.

A Timeline of FOMC Projections of Real GDP Growth, 2013-2016
Q4/Q4 % Change, mid-point of central tendency
Inflation has also been much weaker than the FOMC has expected.
Yellen: Don’t Wait for 2% Inflation

• “I would not consider it prudent to postpone the onset of normalization until we have reached, or are on the verge of reaching, our inflation objective.”

• History suggests that monetary policymakers have in the past stayed too easy for too long.

• The 1970s and the early 2000s are the most poignant examples.
How Does Monetary Policy Affect the Economy: Traditional Channels

• Spending on interest-sensitive goods

• Bank lending

• Firm balance sheets

• Household net worth

• Asset prices
How Did Past Episodes of Monetary “Tightening” Affect Financial Markets and the Real Economy?
Cumulative Rate Increases Were the Largest in the 2004-2006 Episode.

Cumulative Increase in Fed Funds Target During Four Episodes and the Expected Median Increase from Late 2015 to Late 2018 Percent

<table>
<thead>
<tr>
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</thead>
<tbody>
<tr>
<td>Cumulative</td>
<td>3.31</td>
<td>3.00</td>
<td>1.75</td>
<td>4.25</td>
<td>3.13</td>
<td>2.26</td>
</tr>
</tbody>
</table>

SOURCE: Author's calculations, Federal Open Market Committee (March 2015) and Primary Dealer Survey (March 2015).
Markets Generally Have Underestimated the Magnitude of FOMC Tightening.

**Magnitude of Tightening Episodes: Actual vs. Market Expectations**

Percent, daily data

<table>
<thead>
<tr>
<th>Year</th>
<th>Projected</th>
<th>Actual</th>
</tr>
</thead>
<tbody>
<tr>
<td>1988-89</td>
<td>2.46</td>
<td>3.31</td>
</tr>
<tr>
<td>1993-94</td>
<td>3.00</td>
<td>3.42</td>
</tr>
<tr>
<td>1999-2000</td>
<td>1.10</td>
<td>1.75</td>
</tr>
<tr>
<td>2004-2006</td>
<td>3.94</td>
<td>4.25</td>
</tr>
</tbody>
</table>

Projected:  
Actual:
Credit Risk Spreads and Stock Prices Generally Fall Early in the Tightening Period. Risk spread rises later.

**Corporate Yield Spread**
*Basis Points*

- **Source:** Moody's, BoAML/Haver Analytics

**S&P 500 Index**
*Index (t=100)*

- **Source:** FT/Haver Analytics
Industrial Production and Real Consumer Spending Declines About a Year or so after the Lift-Off.

**Industrial Production Growth (Relative to Lift-Off)**

*Indexed Year/Year % Change, (t=1)*

- Source: FRB/ Haver Analytics

**Real Consumption Growth (Relative to Lift-Off Month)**

*Indexed Year/Year % Change, (t=1)*

- Source: BEA/ Haver Analytics
In Three of the Four Episodes, the Yield Curve Inverted After About a Year.
Summarizing Key Findings

• Markets tend to under-estimate the magnitude and persistence of tightening episodes.

• The economy generally improves during the first year of the tightening, but then gives way to slower growth.

• Stock prices tend to peak after the economy begins to slow.

• The yield curve inverted in three of the four episodes.
Will the “Average” Prevail This Time?

- History suggests that long expansions with low inflation tend to have smaller increases in the Fed’s policy rate.

- Thus, keeping inflation low and stable is key!

- But history also suggests that each tightening cycle depends significantly on underlying economic conditions.

- Oil shocks have been important in the past.
Will the “Average” Prevail This Time?

“The average pace of tightening observed during previous recoveries could well provide a highly misleading guide to the actual course of monetary policy over the next few years.”

(Chair Yellen, March 27, 2015)
On Average, the Longer the Expansion the Smaller the Increase in the Real FFR.

Change in Real Federal Funds Rate During Business Expansions and the Length of Business Expansions Since 1960
Percentage points

Length of Expansions (months)

R² = 0.4265
About a Year Elapses After the Final Tightening and the Expansion Peak.

<table>
<thead>
<tr>
<th>Episode</th>
<th>First Tightening (Date)</th>
<th>Final Tightening (Date)</th>
<th>Duration (Months)</th>
<th>Total Tightening (basis points)</th>
<th>Business Cycle Peak (Date)</th>
<th>Interval Between Last Tightening and Peak (Months)</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1)</td>
<td>April 1988</td>
<td>May 1989</td>
<td>14</td>
<td>331</td>
<td>July 1990</td>
<td>14</td>
</tr>
<tr>
<td>(2)</td>
<td>Feb. 1994</td>
<td>Feb. 1995</td>
<td>13</td>
<td>300</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>(3)</td>
<td>June 1999</td>
<td>June 2000</td>
<td>13</td>
<td>175</td>
<td>March 2001</td>
<td>9</td>
</tr>
</tbody>
</table>

**Medians:**

- Duration: 13.5 months
- Interval: 14 months

**SOURCE:** Author's calculations
Key Takeaways

• The Fed’s decision is to tighten is generally more difficult than the decision to ease.

• Financial market participants and a majority of the FOMC expect lift-off to occur sometime this year—though the data will tell us when and how much.

• Previous Fed tightening episodes revealed that markets generally under-estimated the amount of tightening.
QUESTIONS?