Fed Thoughts:
What A Difference A Year Makes

At this time in 2016, US monetary policymakers were reeling from the reaction in financial markets wrought by their quarter-point rate hike at their December meeting. This was not the plan. Some tightening in 2015 had been tipped for what seemed like forever, so there was no element of surprise in the Federal Open Market Committee (FOMC) slipping into action just before the year closed. After the move though, the dollar appreciated sharply, equity prices tanked, and debt spreads widened. Only a significant decline in Treasury yields—out of place after the tightening by the US Federal Reserve (Fed)—prevented financial conditions (the key elements of which are shown in the chart below) from choking off economic expansion. The net effect was a full frontal assault on many fixed-income portfolios.

While the policy timing was eerily echoed in 2016, the financial market fall-out was not. The three factors that make this time different are discussed below.

First, despite the FOMC’s protestation that all decisions are data dependent and made meeting-by-meeting, the group was focused more on the calendar in 2015 than on incoming information. The Fed had stated that they were going to tighten before the calendar ran out that year. In fact, US economic data had been disappointing in the run-up to their meeting (as illustrated in the chart below). This time around, however, both momentum from global manufacturing and market enthusiasm for a new administration have pushed incoming data above the forecasts of economists. Moreover, relative to the baseline for economic activity, the risks seem skewed to the high side.
Second, many of those earlier macro concerns were directed toward China, the most important engine of growth in emerging markets. As emphasized in Google search interest about the ‘China slowdown’, the beginning of 2016 was associated with mounting doubts about the growth model. As 2017 opened, President Xi Jinping of China has been lauded by the international community for his nation’s support of globalization and contribution to economic progress.\(^1\)

Third, the 25-basis-point Fed hike on December 15th meant more in markets in 2015 than an incremental tightening in reserve market conditions. Investors had interpreted the hike as a worrying sign that policymakers intended to follow through with their rate guidance and tighten four more times the next year. This path was nowhere near priced into assets and seemed outsized relative to circumstances. Twelve months later, Fed officials have significantly ratcheted down their guidance, to the point that there is little white space between their expectations and Eurodollar-futures rates. The prospect that the Fed walks up that shallow incline apparently poses no special challenge to market participants.

**The Near-Term Conundrum:**

If economic momentum is established, aggregate demand risks are to the upside, resource slack is mostly used up and the market is comfortable with two-to-three actions this year, then why doesn’t the FOMC make a move at its meeting on January 31st to February 1st?

Simply, we have not been told so. In the modern era of Fed communication, officials have been willing to disappoint (by not acting when doing so is ‘priced in’) and less willing to surprise (by acting when doing so is not ‘priced in’). With that said, we are currently living in the latter case,\(^1\)

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\(^1\) This was discussed in “Outbound from Davos”, [https://www.weforum.org/agenda/2017/01/full-text-of-xi-jinping-keynote-at-the-world-economic-forum](https://www.weforum.org/agenda/2017/01/full-text-of-xi-jinping-keynote-at-the-world-economic-forum)
with a de minimis probability of action expected at this meeting, given that there have been no announcements from the Fed to suggest otherwise. Add to the mix uncertainty surrounding a new occupant in the White House and the lack of a scheduled press conference to explain a surprise action, and we are left with little weight on a policy move this week.

Fed Chairwoman Janet Yellen already told us this, of course. In a recent speech, her summary of the rate guidance from December was that FOMC participants “were expecting to increase our federal funds rate target a few times a year until, by the end of 2019, it is close to our estimate of its longer-run neutral rate of 3%.” Between now and the end of 2019, there are 24 FOMC meetings already on the schedule. To get the funds rate to 3%, the Fed will need to vote for one-quarter percentage point rate hikes at nine of them. To get it close, but not at 3% implies something less than that, or two to three firings per year. A cautious central bank (that is, one run by Janet Yellen) will opt for a slower pace at first.

The Fed riddle for today:
Tell us please, how far away
Is a ship well under way?

Fed policy accommodation encompasses both a policy rate below its equilibrium level and a balance sheet that is large by historical standards. Policy renormalization involves unwinding both forms of stimulus.

In principle, the task on the rate side can be counted in basis points, as the job is done when the Fed reaches its dual mandate with the funds rate at its equilibrium as described in extant rate guidance. The reality in a dynamic economy is that monetary policy typically hits its goals only in passing; the equilibrium real rate is a changeable and elusive concept and rate guidance is a current intention, not a contract. As for balance-sheet action, timing is more knowable than consequence. We understand by repetition in FOMC statements that reinvestment will not be stopped until “normalization of the federal funds rate is well under way.” It seems that markets interpret this as triggered when the Fed is about half way home on rates. For example, the mean observation in the Federal Reserve Bank of New York (FRBNY) survey of primary dealers about the start of balance-sheet renormalization pins the date about 18 months hence, with the funds rate expected to be close to 1 ½%, or half the distance to a terminal funds rate of 3%. Our forecast pushes this out a little further out, to the second half of 2018 or early 2019, subject to the potential personnel shock in the naming of a new Fed chair.

Why? As already noted, we see the Fed as journeying somewhat slower to 3%. Moreover, policymakers who are fretting about asymmetric risks in moving the funds rate should be especially wary about the market reaction to balance-sheet shrinkage, a concern heightened by the taper tantrum debacle of 2013.

Even so, talk about an earlier exit has been preoccupying investors, perhaps because there are few other near-term secrets of the Fed temple. This behooves us to ask how significant was the imprint of the Fed’s balance-sheet experimentation on markets and how durable will it prove to be? The underlying irony of quantitative easing (QE) is that it cannot be quantified, as there is no widely accepted model linking balance-sheet metrics to asset prices. The default is to form some estimate of how much the introduction of QE mattered in order to set an upper bound for its unwinding. The prevalent approach to estimate the effects of QE, well represented by the paper presented to central bankers at a recent Jackson Hole symposium, relies on an event-study methodology to gauge the movement in key asset prices in narrow windows bracketing the

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2 https://www.federalreserve.gov/newsevents/speech/yellen20170118a.htm
4 The survey can be found here: https://www.newyorkfed.org/medialibrary/media/markets/survey/2016/Dec-2016-SPD-Results-Public-Release.pdf
The well-known limitations bear repeating: while market participants may have cottoned on to the policy change before its announcement, the effects of (or offset to) the policy may accumulate outside the observation windows, and other influences may intrude within the windows.

Quantifying Quantitative Easing, Of A Sort

Our fate is to play with the toys the gods gave us. The chart below plots the nominal federal-funds rate in the modern era of Fed communications, where the vertical lines pick out weeks in which there were major announcements about more accommodative balance-sheet policy.

Federal Funds Target Rate

The seven chosen are listed in the table below, along with a policy tightening—the announcement of the start of tapering. We then calculated the change in fixed-income yields in the weeks (Friday to Friday) surrounding these events.

Timeline of Fed Unconventional Monetary Policy

To put in perspective the total change over these seven weeks, note (as demonstrated in the shaded region of the next chart) that the Fed stayed pinned to the zero lower bound of its policy rate from mid-December 2008 to mid-December 2015. Conveniently enough, the generic ten-year Treasury yield opened and closed the period at exactly the same level—the net change was zero. Any effect of QE announcements was offset in the end by other influences on the ten-year rate.

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The two tables below look at US financial market quotes and sovereign yields, respectively, with the first column in each providing the changes in the seven event weeks and the second listing the net change over the zero lower bound period. This rough measure of influence in the first column suggests that QE pulled the ten-year Treasury yield down about 70 basis points, with lesser effects as maturities shortened or lengthened from there. Most of the decline at the ten-year maturity was due to an even larger drop in real yields which was offset somewhat by a revival in inflation compensation. The design of policy, of course, was to pull real yields down so as to encourage demand that moved inflation back toward the Fed’s goal. Those changes in the event window made up a significant share of the changes over the entire period.

### U.S. Financial Market Quotes
Change 12/19/08 to 12/11/15, percentage points

<table>
<thead>
<tr>
<th></th>
<th>In Unconventional Policy Window</th>
<th>Entire Period</th>
</tr>
</thead>
<tbody>
<tr>
<td>Two-year nominal</td>
<td>-0.23</td>
<td>0.14</td>
</tr>
<tr>
<td>Three-year</td>
<td>-0.32</td>
<td>0.13</td>
</tr>
<tr>
<td>Five-year</td>
<td>-0.53</td>
<td>0.20</td>
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<tr>
<td>Ten-year</td>
<td>-0.69</td>
<td>0.00</td>
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<tr>
<td>Thirty-year</td>
<td>-0.30</td>
<td>0.32</td>
</tr>
<tr>
<td>Ten-year inflation-protected</td>
<td>-1.19</td>
<td>-1.32</td>
</tr>
<tr>
<td>Ten-year break-even inflation</td>
<td>0.53</td>
<td>1.37</td>
</tr>
<tr>
<td>S&amp;P 500 Index</td>
<td>13.58</td>
<td>126.6</td>
</tr>
<tr>
<td>Bloomberg Dollar Spot</td>
<td>-6.71</td>
<td>17.8</td>
</tr>
<tr>
<td>Implied volatility on S&amp;P500 (VIX)</td>
<td>-6.34</td>
<td>-20.5</td>
</tr>
</tbody>
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Source: Bloomberg, accessed 1/26/17 and Standish calculations.

QE pushed up the S&P 500 equity price index, but evidently much more was at work to account for the more than doubling of share values during the period. The Fed was relatively more successful in suppressing the expected volatility of share prices—long live the Bernanke put—and the dollar depreciated on QE news against its general rising tide. As shown in the second table, QE announcements were also mostly associated with decline in the yields of other sovereign securities at the ten-year maturity. The QE-related change, though, was generally a small share of the net decline.

Ten-Year Sovereign Yields In Advanced Economies
Change 11/14/08 to 1/20/17, percentage points

<table>
<thead>
<tr>
<th>Country</th>
<th>In Unconventional Policy Window</th>
<th>Entire Period</th>
</tr>
</thead>
<tbody>
<tr>
<td>Canada</td>
<td>-0.33</td>
<td>-1.40</td>
</tr>
<tr>
<td>Germany</td>
<td>-0.23</td>
<td>-2.46</td>
</tr>
<tr>
<td>France</td>
<td>-0.35</td>
<td>-2.61</td>
</tr>
<tr>
<td>Italy</td>
<td>-0.39</td>
<td>-2.82</td>
</tr>
<tr>
<td>Spain</td>
<td>-0.07</td>
<td>-2.22</td>
</tr>
<tr>
<td>UK</td>
<td>0.18</td>
<td>-1.37</td>
</tr>
<tr>
<td>Switzerland</td>
<td>-0.06</td>
<td>-2.37</td>
</tr>
<tr>
<td>Japan</td>
<td>-0.10</td>
<td>-0.91</td>
</tr>
<tr>
<td>US</td>
<td>-0.69</td>
<td>0.00</td>
</tr>
</tbody>
</table>

Source: Bloomberg, accessed 1/26/17 and Standish calculations.

What goes up in price with a policy event is likely to go down with a removal of that policy. Three factors, however, suggest that it would be unwise to reverse the signs in these tables to gauge the consequences of a policy unwind.

First, stopping reinvestment of maturing and pre-paying securities produces a slowly declining profile of portfolio holdings, not as rapid as the ascent through outright purchases. Moreover, the terminal amount of asset runoff is understood—the Fed will get back to a Treasury-only footing—whereas announcements at the inception of programs unleashed unbridled expectations in markets of their scope.

Bernanke and Reinhart speculated in a 1994 paper that there are multiple channels by which QE affects financial market conditions, including the signaling of the central bank’s intent to keep the policy rate pinned at its zero lower bound and the spread-consequences of the rebalancing of private portfolios as Treasury securities are lifted from them by the Fed. This leads us to entertain two additional militating mechanisms about the unwind.

For one, market participants do not expect rate policy to get easier from here, with under a 10% probability embedded in Eurodollar-rate futures of a rate cut by the end of this year (as shown in the chart below). As a consequence, there is not that much downside pull from the expectation of lower rates to be removed by the adverse signal of reversing QE.

**Funds Rate Below 0.875 Percent by 12/13/17**

Probability inferred from Eurodollar futures, percent

Source: Bloomberg, accessed 1/26/17.

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For another, portfolio shares in the hands of the public have already moved in the direction of a smaller Fed footprint since QE net purchases were halted in October 2014. As shown by the dark blue line in the chart below, the outstanding amount of securities of the Treasury and government-sponsored enterprises continued to climb even after the Fed’s holdings moved sideways. The 1.3 percentage point decline in the Fed share of outstanding securities is still large, of course, but it will be smaller still when monetary policymakers finally get around to shrinking their balance sheet.

**Treasury and GSE Securities**

Source: Federal Reserve, the Financial Accounts of the US as of 1/25/17
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