Fixed Income
US Rates

US Rates

Funds path distribution and Treasury curve value

- **The market's implied funds path is roughly fair given the risks of a delayed tightening start and return to the zero bound**
- **Investors' focus on the most likely path ignores the 50% probability of a later start in primary dealer survey**
- **Breakeven Treasury curves for various tightening scenarios estimate the value and risks for changes to the funds path**

FOMC statistical correction

The typical discussion on the FOMC's dot plot and the Federal Reserve Bank of New York's survey of primary dealers focuses on the most likely tightening path. For example, the San Francisco Federal Reserve Bank's September analysis of the FOMC and dealer survey focused on the differences between their most likely paths. It generated a number of bearish headlines on the differences and briefly pushed 10-year Treasury yields to 2.60%.

However, a closer look at the dealer survey reveals important details on the distribution of the expected start date for a tightening (Figure 1) and the probability of a return to the zero bound shortly after a tightening starts (20%). The FOMC dot plots (Figure 2) focus on the most likely rate: we believe this overstates the expected funds rate in 2017 by as much as 100bp. Further, the risks around the most likely rate path are biased to lower rates as the funds rate approaches its longer-run target. The FOMC and dealer longer-run funds projections are near the expected longer-run GDP growth rate. By our analysis, this means that the projected rates are likely more than the economy can take given the historical relationship between rates and longer-run GDP (see *Peak Rates: A new era for US Treasuries*, 5 February 2014). Therefore, the terminal funds rate appropriate for the economy may be 100bp, or more, lower than the current guidance, in our view.

The market's implied tightening path appears to be roughly at fair value, based on adjustments using the dealers' probability of a tightening delay and return to the zero bound. The typical discussion on the funds path focuses only on the most likely path. Dealers give a 28% probability to a June 2015 start, but a 50% probability to a later start. The news headlines, in contrast, have often suggested a 100% probability for a June start.

The breakeven Treasury yield curve calculations are updated for the November Treasury benchmark issues for various scenarios for the tightening start date, terminal funds rate, and our estimates of the path based on the FOMC dot plot and dealer survey. We expect a narrow trading range in the near term given our belief that the economic data and the December FOMC meeting statement are unlikely to shift the rate outlook.

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September funds lift-off expected

The New York Federal Reserve released the results of its October survey of primary dealers this week. The news headlines focused on the most likely start date for a tightening. However, that is a flawed method of valuing securities, in our opinion. The price of a security should reflect its expected value – the sum of the probability of an outcome multiplied by its value. However, the discussion of the Fed tightening outlook focused only on the most likely path and typically ignored any alternate scenario. The dealer survey provides information that allows us to look at the effect this wider distribution has on the funds path.

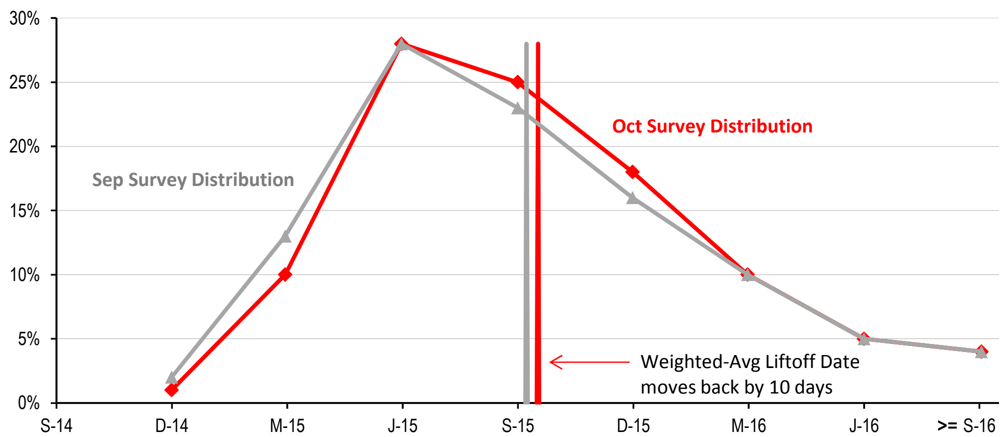
Figure 1 shows the distribution of the dealers' probability estimates for the start date of a Fed tightening cycle (for September and October surveys). The most likely start is June 2015 according to the survey, but the probability assigned to this date is only 28%. The probability assigned to a September 2015 or later start date is over 50%. While not widely commented upon, the probability of a later start date increased from September to October, as dealers reduced their estimates of the probability of a funds lift-off before June 2015. Thus, the expected start date for Fed hikes has actually moved back more than one week since the September survey.

Bias in the dots

Figure 2 reviews the FOMC's dot plot showing the committee members' September projections for the year-end funds rate and longer-run funds rate. The plot for the individual members' view of the correct funds rate given their economic forecast for each year is on the left for each period (light grey dots). The median view for all members, along with the average for the dovish members, the results from the dealer survey, and the market implied rate, are on the right side for each period.

The median for all members is most frequently discussed in the market. However, this measure is heavily influenced by the most hawkish members on the FOMC. While these members may dissent in a vote, they are unlikely to change the results of a vote, in our view. Therefore, we believe the "dovish average" of the FOMC's rate projections is a better summary of the likely views of voters. The gives equal weight to the views of voters in the majority decision; it excludes those unlikely to be in it. This approach is more sensitive to the various views. It identified the downward shifts since 2011 in the FOMC's median longer-run funds view from 4.25% to 3.75%. In contrast, the median view showed the shift after the fact.

Figure 1: Primary dealer survey expectations for the timing of the first Fed hike



Source: HSBC, New York Federal Reserve dealer survey

The median tightening path is typically 50bp or more above the dovish average. This confirms our view that there is a significant bias in the median measure. The tightening path for the dealer survey is near that of the dovish average. Note that this chart reflects the most likely tightening path. It does not measure the skewed probabilities of an earlier or later lift-off date.

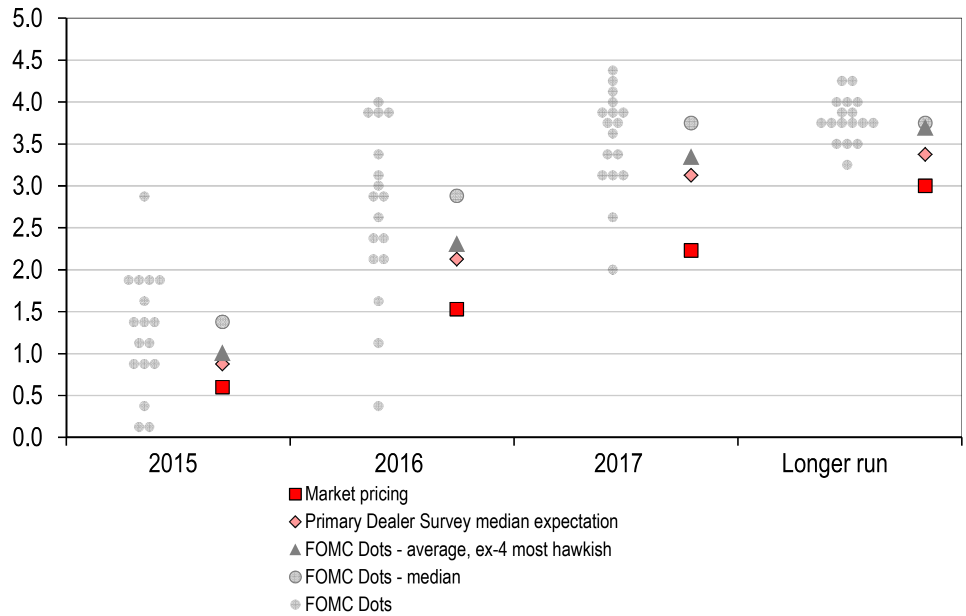
The market's implied tightening path is significantly below all of the above measures. This reflects investors' views on a range of risks that are not measured in the FOMC dots. These risks are frequently ignored in headlines and in analysis of the Fed funds outlook but are important in valuing the yield curve, in our opinion.

Back to zero

The dealer survey reported a 20% probability that the Fed funds rate would return to the zero bound within two years of a funds lift-off. This has a significant shift on the expected value of the funds rate in 2017. If the probability of return to zero is 20%, and the probability of the dealers' most-likely rate is 80% (say, a 3% funds rate for end-2017), then we estimate the dealers' expected funds rate for end-2017 would be roughly 2.4%. This is still likely to be too high an estimate for the funds rate, in our view. The skew in the probability distribution is toward lower rates, but the above estimate assigns all of the probability of non-zero rates (80%) toward the most likely rate level. Also, shifting the expected start date from June to September, which is implied by the dealer survey results, would lower the expected funds rate in 2017 by roughly 25bp. Therefore, we estimate the expected funds rate is likely to be nearly 100bp below the dot plot median based on the most likely rate.

The bottom line is that we believe the market's implied prices for the path of the funds rate appear roughly fair today given the likely statistical biases in the most popular views of the FOMC dot plot and dealer survey. The bearish consensus on rates is unlikely to have considered this bias, in our view.

Figure 2: FOMC participants' projections for target Fed funds rate at year-end, %



Source: HSBC, NY Federal Reserve dealer survey results, FOMC Summary of Economic Projections

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Breakeven Treasury rates

Table 1 updates our calculations for the benchmark Treasury curve breakeven yields for various Fed funds lift-off dates. It assumes a 100bp per year tightening path to a 3.75% final funds rate, and that Treasury yields are 10bp below the IOER rate path.

The breakeven rate calculation has been set to match the November benchmark maturity dates. Note that as time passes the current low funds rate drops out of the breakeven calculation. This effect means that the breakeven yields for the current intermediate maturity benchmarks should increase roughly 3bp between 30 November and 31 December. As the benchmark maturities roll out the maturity curve, into periods with a higher future funds rate, then this increases the breakeven yield further.

Table 2 illustrates the effect of changing the terminal funds rate on the breakeven yields. This table assumes a June 2015 lift-off and a 100bp per year tightening pace. The current 2.3% to 2.4% 10-year Treasury yield range is consistent with a final funds rate above 2.75%, and below 3.25%, given the results in this table.

These tables are a useful tool for identifying the sensitivities of various curve points to changes in the expected lift-off date for a tightening cycle and for changes in the terminal funds rate. Table 3 shows our estimate for the breakeven Treasury yield curve based on the FOMC median and dovish average funds paths. It also shows the curve based on the October dealer survey. In this case we assume the lift-off date is June 2014, and also a tightening path slightly higher than our 100bp per year estimate based on the FOMC and dealer views.

Table 1: Benchmark Treasury curve breakeven yields for various Fed funds lift-off dates

Tightening start date	11/30/16	11/15/17	11/30/19	11/15/24	11/15/44
Jun-15	0.76%	1.22%	2.07%	2.84%	3.36%
Sep-15	0.58%	1.02%	1.90%	2.75%	3.32%
Dec-15	0.44%	0.84%	1.72%	2.65%	3.28%

Source: HSBC
Assumes 100bp per year tightening with 3.75% final funds

Table 2: Benchmark Treasury curve breakeven yields for various terminal funds rate

Vary final funds rate	11/30/16	11/15/17	11/30/19	11/15/24	11/15/44
3.75	0.78%	1.25%	2.11%	2.87%	3.37%
3.25	0.78%	1.24%	1.99%	2.57%	2.96%
2.75	0.78%	1.22%	1.81%	2.24%	2.53%

Source: HSBC
Assumes June-15 start, 100bp/yr pace

Table 3: Benchmark Treasury curve breakeven yields for FOMC median, dovish average, and dealer expectations for funds rate

FOMC and dealer view	11/30/16	11/15/17	11/30/19	11/15/24	11/15/44
FOMC median	1.12%	1.78%	2.55%	3.10%	3.47%
FOMC dovish avg	0.80%	1.35%	2.23%	2.93%	3.40%
Dealer survey	0.80%	1.33%	2.14%	2.77%	3.19%

Source: HSBC
Dovish average drops four most hawkish views.

Disclosure appendix

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