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The neutral rate: What it means for Fed policy and bond markets

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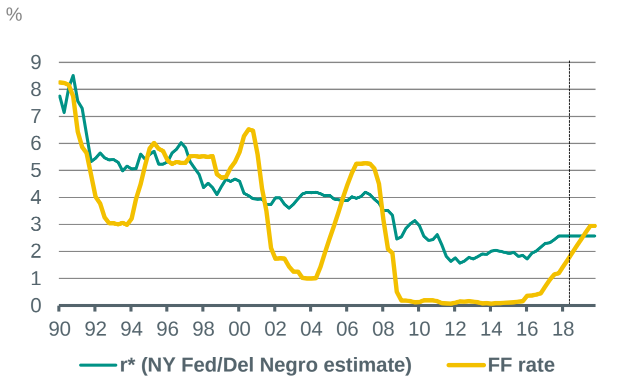
- **The neutral federal funds rate, often referred to as *r**, is the rate at which monetary policy is neither accommodative, nor restrictive**
- **The neutral rate is lower than in the past, and is likely to stay low**
- **Higher productivity growth could drive a modest increase in the neutral rate, but the structural drags from the ageing population and the EM savings glut are likely to prevail**
- **Based on this, and on our view of five more 25bp hikes, we project the fed funds rate will turn restrictive by mid-2019**
- **As the neutral rate is not observed, there is a risk of under- or over-shooting, and it is important to monitor for signs of a policy mistake**

Defining the neutral rate

"There is a certain rate of interest on loans which is neutral in respect to commodity prices, and tends neither to raise nor to lower them."
--Knut Wicksell (1898)

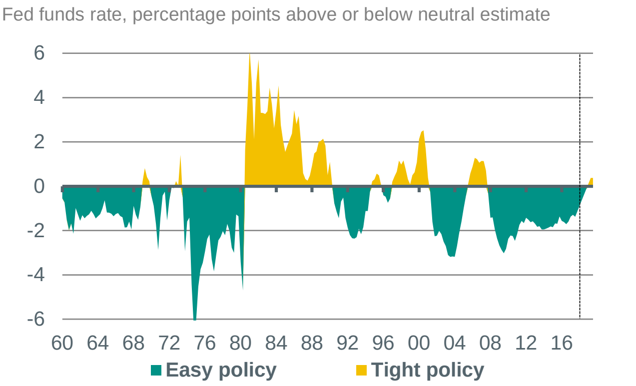
How far will the Fed go in raising interest rates? The answer to this question will ultimately depend on two key variables: 1) to what extent output expands above potential (and therefore to what extent policy will need to be restrictive), and 2) where the neutral rate of interest is. In this note we will focus on the latter question.

Fed is set to continue gradual rate hikes



Source: NY Fed, Thomson Reuters Datastream, ABN AMRO Group Economics

Policy to turn restrictive for the first time since 2008



Source: NY Fed, Thomson Reuters Datastream, ABN AMRO Group Economics

What *is* the neutral rate of interest? Former Fed Chair Yellen often referred to it as "the rate that is needed to keep the economy on an even keel." San Francisco Fed president John Williams defined it as the rate 'expected to prevail when the economy is at full strength'. More simply, it can be described as the rate at which monetary policy is neither accommodative, nor restrictive.

Charting the path of the neutral rate

As the neutral rate is not observed, it cannot be pinpointed with precision, but only estimated. What does seem almost certain is that it has fallen considerably since the global financial crisis, by between 1.5-3 percentage points. Probably the most widely cited estimate of the neutral rate is from Laubach & Williams (2003, updated in 2015), but there have also been important contributions from Del Negro et al (2017) and most recently, from St Louis Fed President Bullard (2017-18). The various estimates suggest that the real neutral rate has fallen from a 2-3% range pre-crisis, to a -0.5-0.5% range post-crisis, with equivalent nominal rates being 4-5% and 1.5-2.5% respectively (using the Fed's 2% inflation target). While Laubach & Williams' estimate assumes trend growth (i.e. productivity + labour force growth) as the primary driver, Del Negro et al and Bullard both add the demand for safe and liquid assets as an additional driver to the estimate. The latter works support former Fed Chair Bernanke's analysis ascribing the fall in global interest rates to the emerging markets savings glut following the Asian Financial Crisis in 1997. All told, our base case assumes a neutral rate at the midpoint of estimates – i.e. c.2% nominal – with the potential to move up to c.2.5% in the coming years.

Neutral rate estimates

	Del Negro (NY Fed)	Laubach & Williams	Bullard	Average	Long-run (FOMC)
Real	0.5	0.0	-0.8	**-0.1**	**0.9**
Nominal	2.5	2.0	1.2	**1.9**	**2.9**

Source: New York Fed, St. Louis Fed, ABN AMRO Group Economics. *Bullard provides a range estimate, and we have taken the midpoint for this table.

Potential for the neutral rate to increase

Most FOMC members believe there is some scope for the neutral rate to increase in future, hence the median 'long run' estimate by the FOMC is 2.9% (nominal, so 0.9% real) as of the latest March projections. This likely rests on the assumption that there will be some pickup in productivity growth over the coming years, a view that we also subscribe to given that investment is now shifting into a higher gear. However, based on past shifts over an economic cycle, the neutral rate is unlikely to move by more than 1pp over the coming years. Meanwhile, there appears little case for a near term structural shift either, given the other factors driving it – labour force growth (which is being dampened by population ageing) and the demand for safe assets (which is being fuelled by the EM savings glut and central bank QE). The demand for safe assets may ease somewhat given that the Fed is winding down its balance sheet, while EM no longer runs a current account surplus in aggregate. However, demand will remain elevated as the QE unwind will be gradual, while other central banks will likely maintain a high stock of assets for years to come. At the same time, EM is not moving to a *large* deficit, and so the stock of excess savings should continue to weigh on the neutral rate.

Box: Breaking down the drivers of the neutral rate

St Louis Fed president James Bullard takes a so-called 'regime switching' approach to estimating the neutral rate, which gives a range of neutral rate estimates depending on one's expectation for whether, for instance, productivity growth will remain low or whether it will revert to a higher growth regime in the coming years (see here for the full description). Bullard assumed that for two such variables – productivity and the desire for safe assets – that the economy is in a 'low state' regime and will likely remain so. For labour force growth, he was more open-minded given the recent pickup, and so he gave two estimates – one where labour force growth is in the low state and one where it is in the high state. Below, we present Bullard's high and low state estimates for each contribution, alongside an estimate assuming labour force growth is somewhere between the low- and high- state regime, which gives a real neutral rate estimate of -0.83%.

Bullard's estimate breakdown

	High	**low**	**Est.**
Productivity	2.9	1.3	1.3
Labour force	1.3	0.5	0.9
Desire for safe assets	0.6	-3.1	-3.1
Total	4.8	-1.3	-0.8

What is striking in these estimates is just how much of a contribution the desire for safe assets makes to the low level of the neutral rate vis-à-vis productivity and labour force growth. This means that even in an optimistic scenario where productivity and labour force growth *both* reverted to a high state regime, this would only add at most two percentage points or so to the neutral rate estimate. A more likely scenario is that only productivity growth increases somewhat – as we expect – given that investment is now shifting into a higher gear. While the labour force might continue to grow relatively strongly in the very near term, with more opportunities and higher wage growth drawing discouraged prime-age workers back into the labour market, the structural drag from the ageing population will, if anything, intensify in the years ahead.

The importance of trend growth for the neutral rate has an intuitive logic, as weaker realised growth feeds through to expectations, which in turn dampens investment demand. The importance of the desire for safe assets – and the EM savings glut – is less intuitive, however. How could it be that an excess of EM savings exerts such a big influence on the sensitivity of the domestic US economy to interest rates? It may help to think of (global) interest rates as the clearing rate between savings and investments. Incoming Fed Vice Chair Clarida has referred to it as '*an excess of global savings relative to desired investment opportunities'*. With much of this excess in global savings finding its way into developed government bond markets, the risk free rate for those economies is lowered. In turn, the rate of return that riskier assets (including fixed capital investments in the 'real economy') must offer to attract investors is also lowered.

What this means for Fed policy

In the previous cycle, the fed funds rate peaked at +1.5pp above the neutral rate in 2007, using Del Negro (New York Fed) estimates of the neutral rate at the time. While official estimates of the output gap from then do not suggest the economy was overheating to a historically large extent, the global commodity price boom – which drove an increase in inflation expectations and wage growth – as well as excesses in the housing market, arguably called for a restrictive policy stance from the Fed. It seems unlikely that Fed policy would have to be quite so restrictive in the current economic cycle, barring the kind of exogenous shocks we saw pre-crisis. However, Fed policy will likely have to be *somewhat* restrictive, unless higher interest rates rein in the strong labour market more quickly (not our base case). So, perhaps 0.5-1pp above the neutral rate.

Our base case is for the fed funds target range to settle at 2.75-3.00%, which would be 0.5-1.5pp above current estimates of the neutral rate. This would seem appropriate given the upside risks coming from fiscal stimulus, and if the Fed's goal is for a moderately restrictive policy stance over the coming years, bearing in mind the lags with which monetary policy works.

But vigilance is required

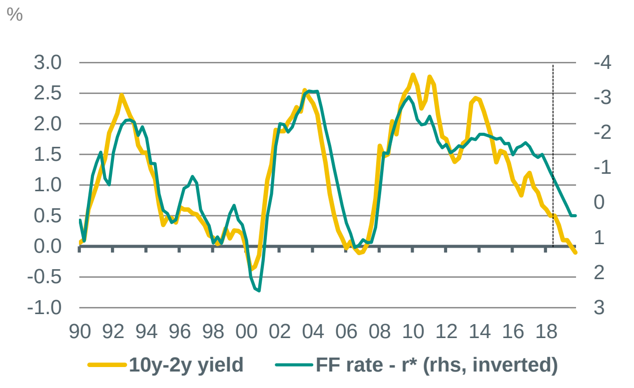
As the neutral rate is unobservable and only an estimate, we should be vigilant for signs of overheating in the economy, as this would suggest estimates are too low. Equally, we should be vigilant of the potential for a 'policy mistake' by the Fed, where estimates of the neutral rate turn out to have been too high, and the risk that an overly restrictive policy stance pushes the economy into a recession.

So far, there is little sign of a dampening effect from rate hikes on the economy, and given that fiscal policy is expanding while monetary policy is tightening, we are not likely to see any impact from this until probably H2 2019, or H1 2020. At that time, the fiscal impulse will fade, and the lagged passthrough of tighter policy will become evident.

Implications for bond markets…

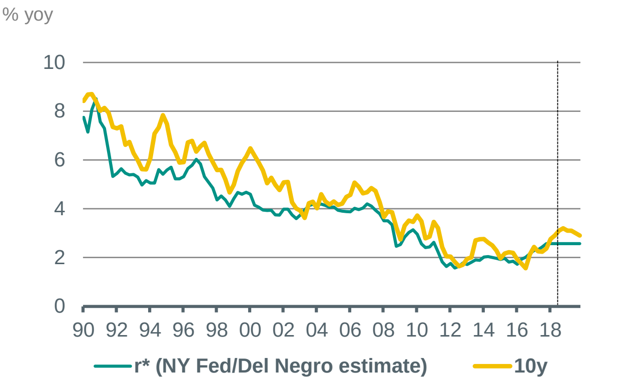
There is a remarkably tight relationship between the yield curve, and the gap between the fed funds rate and the neutral rate estimates, as evident in the chart below. The chart also suggests that, more recently, the market is perhaps taking a different view of where the neutral rate is (i.e. it thinks it is lower), or it could also suggest that the market is more forward looking than it used to be – reflecting perhaps that the Fed is more transparent about its future plans via the quarterly 'dot plots' than it used to be. Another (and perhaps related) reason for the recent divergence is the structural decline in term premia, which among other things reflects reduced uncertainty over the future path of inflation. Whether the curve continues to flatten or re-steepens will arguably depend on the dampening effect rate hikes have on the economy. Our view is that this will not be evident in the near term, due to expanding fiscal policy and the strength of momentum in the

Yield curve tracks policy stance remarkably closely



Source: NY Fed, Thomson Reuters Datastream, ABN AMRO Group Economics

10y Treasury yield is rarely significantly above *r**



Source: NY Fed, Thomson Reuters Datastream, ABN AMRO Group Economics economy, though the yield curve could price in a slowdown scenario during the course of next year. Our base case has the 2y yield reaching 2.70% in Q3, and peaking at 2.90% in Q4, as markets price in a quarterly pace of rate hikes. Our expectation for 10y yields is more modest, however, with it rising to (and peaking at) 3.20% by Q4. We therefore expect a continued flattening of the yield curve, with the 2s10s falling from around 50bp at present, to 40bp in Q3 and 30bp in Q4. We expect the curve to invert slightly by the end of our forecast horizon in Q4 19, as markets begin to price in slower growth, and an increased risk of recession.

…and for the long-term 10y Treasury yield

The 10y Treasury yield typically tracks moves in the neutral rate closely, with a modest term premium. The spread since the Fed began informal inflation targeting in the late 1990s has been +70bp, but since the crisis has fallen to +30bp. While QE has depressed term premium to an extent, and this is likely to unwind gradually, some portion of the term premium compression should remain given the decline in inflation uncertainty. If we take the midpoint of the range of the nominal neutral rate estimates (c.2.0%) and the pre- and post-crisis spread (c.50bp), we get a longterm equilibrium US Treasury yield of 2.50%. While the structural drags on the neutral rate are likely to persist, we expect some increase in the coming years on the back of higher productivity growth, perhaps by up to 50bp. This could ultimately take the equilibrium 10y Treasury yield to 3.00%.

ABN AMRO long-run equilibrium estimates	
Neutral fed funds rate	2.5%
10y US Treasury yield	3.0%

Interest Rate Forecasts

*denotes forecasts

US Interest Rate Forecasts	Now	2018Q2*	2018Q3*	2018Q4*	2019Q4*
IOER rate (Fed funds rate upper bound)	1.75	2.00	2.25	2.50	3.00
2y Treasury	2.57	2.60	2.70	2.90	2.90
10y Treasury	3.07	3.10	3.10	3.20	2.80
US 2s10s	50	50	40	30	-10

Source: Bloomberg, ABN AMRO Group Economics.

Find out more about Group Economics at: **https://insights.abnamro.nl/en/**

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