Investment Insights

UBS Asset Management
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As the economic cycle in the US matures, investors' focus is sharpening on when and at what level official US interest rates will peak. A key part of the debate centers on equilibrium real interest rates, the theoretical rate at which capital supply and demand in the economy are in perfect balance and which effectively determines whether monetary policy is restrictive or loose. In this issue of *Investment Insights* we assess current estimates of the real equilibrium rate in the US relative to the Fed's own long-term estimates—and consider the likelihood that the Fed may over tighten in this cycle.

Could the Fed cause the next recession? (US monetary policy and the real equilibrium rate)

Louis Finney

After six rate hikes over a period of more than two years, the US Federal Reserve's (Fed's) tightening phase is now well progressed. With the passage of time, the debate around when the tightening will end and at what level is gathering pace.

At the time of writing, the median of the widely watched 'dot plot' rate projections of all members of the Fed's rate-setting Federal Open Market Committee suggests that the Fed Funds Target Rate will peak at around 3.4% in early 2020. This compares to the Fed's long-term rate of nominal rates at 2.9%.

Currently, the market is pricing a lower path of rates than that derived from the Fed's dot plot, expecting the Fed Funds Target Rate to peak at around 2.75%. The broad rationale for further rises is that US demand growth is currently above trend and inflation is likely to keep rising. Consequently some further tightening is needed to bring both to a more sustainable rate. Current estimates project growth to be 2.8% for 2018 and 2.5% for 2019. Headline CPI is expected to touch 2.5% and Core PCE (which excludes the volatile Food and Energy series) 2.0% in the coming months.

We broadly agree with the market's current view. The strength of demand growth and the prospect of rising core inflation warrant a continuation of the gradual removal of monetary policy support into 2019. But after that, we are more circumspect—seeing the risks between growth vs recession and inflation vs deflation as more balanced.

It is, of course, possible that the Fed Funds Target Rate rises above the current real growth rate. Both the Fed's dot plot and current market expectations as reflected in the Fed Fund futures contract suggest that it will. This would imply a further flattening of the yield curve. At this point, the economy becomes very sensitive to any further increases in policy rates unless absolutely warranted by growth or inflation. One possible path to a recession in the US is where bond investors suddenly become concerned about the government deficits due to the recently announced tax cuts and spending plans. To reflect their concern investors may demand a higher yield—pushing long term nominal rates above 4.0%. This would likely put significant pressure on the government deficit as debt service costs rise more sharply than tax receipts.

Key to a more detailed understanding of the overall policy stance and where official policy rates may go is the equilibrium real interest rate. Also referred to as the

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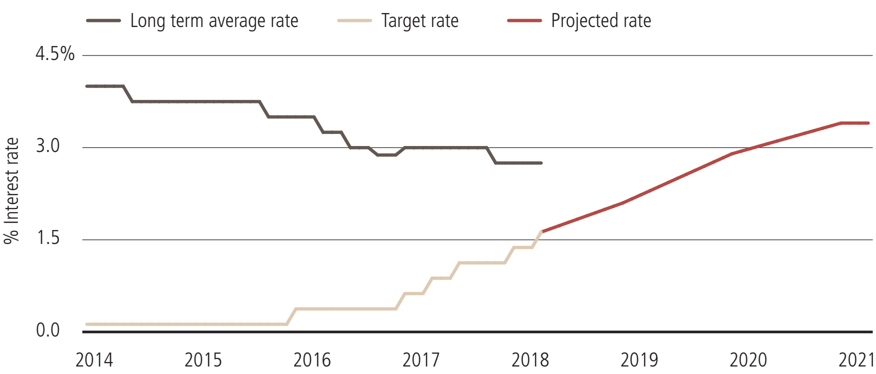
neutral real rate or simply as r*, the equilibrium real rate is the theoretical level of interest rates, adjusted for inflation, at which capital supply and capital demand in an economy are in balance. If official interest rates adjusted for inflation are higher than r*, monetary policy is restrictive; if lower than r*, monetary policy is stimulative. Estimates of r* under the Taylor Rule are therefore a key input into the decision making of major central banks including the Fed—and important for investors in understanding the policy stance as well as a key input into tactical asset allocation decision making and long-term capital market return expectations.

Yet for an input central to so much in capital markets, the equilibrium real rate is notoriously difficult to estimate. In technical terms, r* is uncertain and variable. The change from 2.0% to 0.9% in the US Federal Reserve's own long-term estimate of r* since 2014, reflecting the difference between the Fed's estimated long-term Target Rate of 2.9% and long-term inflation rate of 2.0%, reinforces the point.

The key turning point for investors to watch is when the policy rate adjusted for inflation rises above r*. At this point monetary policy can quickly turn from neutral to contractionary. The danger to growth and to markets is if r* is actually even lower than the Fed believes and the Fed tightens policy rates too much—prompting a faster deceleration in demand growth than the Fed really wants.

Exhibit 1: When do they cross?



Source: Morningstar Direct, Analysis by UBS Asset Management.

Estimating r*

The first formal thinking about the equilibrium interest rate was done by Knut Wicksell, a Swedish economist around the end of the 19th century. In the 1930s, Irving Fisher looked at the determination of nominal interest rates and broke interest rates into expected inflation and a real rate.

In 1993, John Taylor expounded on his now famous Taylor Rule (1993), using an estimate of 2.0% for r*, slightly below a long run growth estimate of 2.2%. For a long time, 2.0% was the default estimate of the equilibrium real rate and it certainly had a lot of empirical support through the 1990s. Since then, real GDP growth has been noticeably lower and estimates of r* have been lowered as economists and market analysts have begun to rethink the level of potential growth and the various cyclical and structural factors determining r*. Over time one of the most important developments in our understanding of the equilibrium rate is the idea that r* is not a static, immutable rate but rather changes significantly over time and through the course of the cycle. Intuitively, this makes more sense to us than the idea that r* is static, even if long-term estimates are an essential part of long-term returns modelling.

Other academic studies have produced broadly analogous estimates to the Fed's 0.9% r* estimate. Orphanides (2014) suggested that r* would be around 1.0% for the coming decade.

Since Taylor's formulation of r* some twenty five years ago, economists have developed more sophisticated models and explored in more detail the concept of a variable r*. One notable formulation is the Laubach-Williams (LW) model (2003), which is currently projecting r* at 0%. However, as noted by other researchers (Lafourcade, Carpenter, and Kapteyn, March 2018), LW estimates have wide confidence intervals and are just models—actual policy will be data and regime dependent, subject to the zeitgeist of the times. Right now that zeitgeist is wrestling with two economic trends:
i) short-term strengthening of economic growth and inflation, and ii) longer run growth and inflation being still lower than expected due to demographics, low productivity growth and a persistent low inflation psychology.

Why r* may be lower than previous estimates

We agree with the theory that r* is a dynamic and not static rate. There are a number of potential supports to the view that r* may be lower now than the Fed's current longer-term 0.9% estimate.

– Trend real GDP growth in this cycle may be lower than previously thought and lower than long-term trend growth.

– r* should be related to the level of real GDP growth and we think r* could be thought of as a variable ratio to growth. As the following table shows, some simple ex-post estimates of r* using average Fed Funds Target Rate and inflation figures show a highly variable relationship to demand. For the entire period (1959 to 2017), we estimate r* to be 1.7%, compared to real GDP growth of 3.0%, a simple proportion that matches long run historical proportions would produce an r* of 1.8% x 0.57 = 1.0%, just above the current 0.9% figure estimated by the Fed.

– Whatever the historic proportion of GDP growth r* has been, it should be lower now because of demographic factors including lower population growth. The highest real r* period was the 1960s and 1970s. With the baby-boomers entering their peak consumption years and population growth was over 1.0%. Interest rates had to be high to entice lower consumption allowing for the proper amount of savings to be transformed into investments. With an ageing population and low fertility rates, the situation is now reversed: there is a "savings glut", driving market-clearing yields lower.

– Another potential driver to a lower r* is that we should additionally adjust for an inflation risk premium. Technically,

r = nominal rate - expected inflation - inflation risk premium*

Using the Fed's figures, we know the nominal rate (2.9%) and expected inflation (2.0%), but the inflation risk premium is unobservable. Conventional wisdom is that it is quite small, possibly 0.05% or so, which is why it is typically ignored. But historically, some of the higher ex-post real rates probably have some inflation premium being rewarded, especially in the 1970s and 1980s. For example, when inflation is 10.0%, this means a 2.5% quarterly rate which could vary from 2.0% to 3.0%. It wouldn't be implausible to assume that this inflation risk premium would move up from 0.05% to 0.1% to 0.2%.

r* estimates v real GDP and population growth 1959–2017

Time period	Real GDP growth	Average target rate	Core PCE	r* estimate (Target rate-Core PCE)	Comparison to GDP: Difference	Comparison to GDP: Proportion	Population growth
From 1959 to 1979	3.8	5.4	4.4	1.1	2.7	0.28	1.2
From 1980 through 1999	3.2	7.5	3.5	4.0	-0.8	1.24	1.1
Since Dec. 2000	1.9	1.8	1.8	-0.1	2.0	-0.04	0.9
From March 1959 to Dec. 2017	3.0	5.0	3.3	1.7	1.3	0.57	1.1

For the entire period (1959 to 2017), we estimate r* to be 1.7%, compared to real GDP growth of 3.0%.

Taking these factors in aggregate gets to an r* of somewhere between 0.25% to 0.9% for this cycle. The implication would be that in two years with rates above 2.75%, the Fed could well be into a contractionary policy. Of course, the Fed has historically raised policy rates above r* deliberately to ease concerns about unsustainably strong demand growth and inflation. This is what the Fed dot plots and the Fed Fund Futures are forecasting. The key point here is that if r* is actually 0.25% as opposed to 0.9%, then Fed policy could get restrictive earlier than the Fed believes or indeed wants to be.

But we should also consider the case for r* to be higher than the Fed's 0.9% estimate. The basic argument here is that trend GDP growth is actually stronger and more sustainable than anticipated, driven by, for example, rising labor force participation, or stronger-than-forecast population growth, or a welcome boost in productivity after a spike in corporate capital expenditure at least partly inspired by the recent tax reform. There are already signs that signs of a pick-up in US corporate capex, but our view, like the wider market's, is that despite these developments the US economy is simply too late cycle for capex to boost productivity quickly or meaningfully enough to lift r* significantly in this cycle.

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Nonetheless, the implications for asset classes should r* indeed by higher than the Fed's current long-term estimate are potentially significant—most obviously for higher long-term yields across the fixed income universe. Elsewhere, risk premia across asset classes have been compressed largely because of widespread investor belief in a low growth, low r* world. Should the lower for longer premise be definitively debunked, valuations across asset classes are likely to derate significantly amidst much higher price volatility—even if a higher r* reflecting a higher growth rate is good news for the economy.

Summary thoughts

Unless long run growth or inflation prospects become significantly higher, on balance we believe the arguments for r* currently being lower than the Fed's longer-term estimate are stronger than the arguments that it is currently higher. If true and the current burst of demand growth is transient, interest rates could become contractionary in as little as 12 months. With fiscal policy constrained by large budget deficits, the Fed has to be extremely careful not to make a policy mistake.

Further reading
If you would like to learn more about the ways we can help you meet your investment challenges, please contact your UBS representative or visit **www.ubs.com/am.**

References

- Laubach, Thomas, and John C. Williams. 2003. *"Measuring the Natural Rate of Interest,"* Review of Economics and Statistics, 85(4), November, 1063–1070.
- Lafourcade, Pierre; Carpenter, Seth; and Kapteyn, Arend, UBS Global Research: Macro Keys: *Fed Movement in the 'long run' dot*, March 2019
- Orphanides, Athanasios, *"The Wicksellian Natural Rate of Interest"*, UBS Asset Management, November 2014
- Taylor, John B. *"Discretion versus policy rules in practice"* Carnegie-Rochester Conference Series on Public Policy 39 (1993) 195–214, North Holland

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