



MACRO AND MARKET PERSPECTIVES • NOVEMBER 2018

# Navigating interest rates by the North Star



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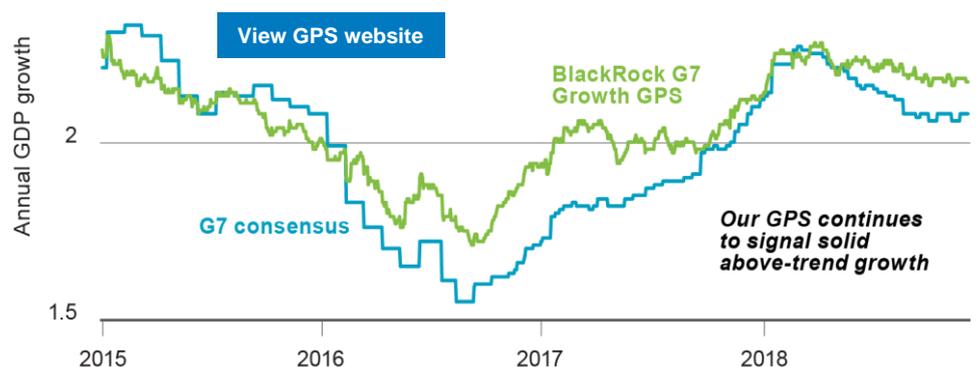
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We believe the neutral interest rate can help guide the overall direction of monetary policy. It therefore also impacts asset valuations. Yet traditional models only focus on the long-term neutral rate, which can be buffeted by short-term financial forces. We add the impact of financial cycles when estimating neutral rates and find that the Federal Reserve has reason to keep tightening policy in line with its own rate projections – above market expectations – to get to a neutral policy stance by the end of 2019. Highlights:

- We arrive at a new estimate for neutral rates – also known as  $r^*$  – and introduce a new short-term neutral rate that incorporates financial cycle booms and busts. When the financial cycle is heating up through robust credit growth, the neutral rate that stabilises the economy may be higher than traditional, long-term estimates.
- The current US financial cycle argues for the Fed to lift rates higher than market expectations to prevent the economy overheating – especially with the economy at full capacity and inflation near the 2% target. It is different in the eurozone. A subdued financial cycle keeps our short-term estimate of neutral below its long-term trend. That suggests the European Central Bank should keep monetary policy looser than the long-term trend to boost risk appetite.
- The neutral rate is useful when gauging the risk of a big correction in financial markets. Equity markets are historically more volatile when rates approach neutral. Volatility aside, our estimates of the neutral rate suggest that from a macro viewpoint US equity market valuations may not be as stretched as commonly thought.
- $R^*$  for central bankers is like the North Star for sailors – a crucial guide. Fed Chair Jerome Powell said “navigating by the stars” is tough because the stars keep moving. But central banks cannot ignore the debate, in our view: Neutral rates have become a key part of communication and forward guidance. Based on our short-term neutral rate, the Fed pushing rates up to its median projection would not represent a significant overshoot and would only just nudge policy towards the tight side.

## Economic snapshot

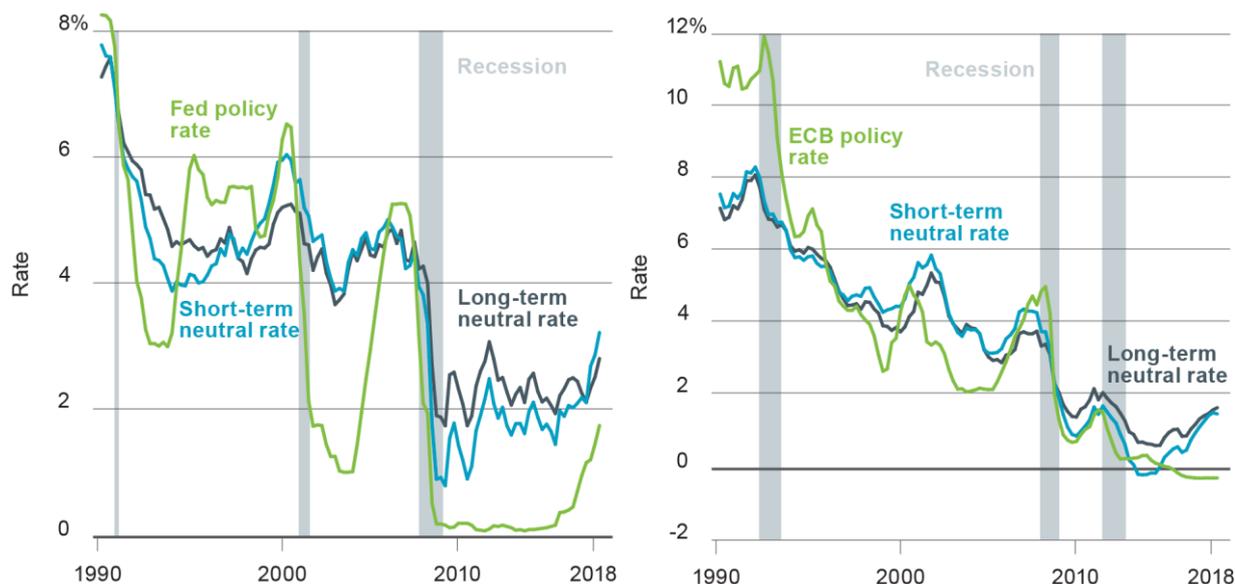
BlackRock Growth GPS vs. G7 consensus, 2015-2018  
2.5%



Sources: BlackRock Investment Institute, with data from Bloomberg and Consensus Economics, November 2018. Notes: The GPS in green shows where the 12-month consensus forecast may stand in three months' time for G7 economies. The blue line shows the current 12-month economic consensus forecast as measured by Consensus Economics. Forward-looking estimates may not come to pass.

## Tracking neutral

US and eurozone long- and short-term neutral rates, real policy rates and recession bands, 1990-2018



Sources: BlackRock Investment Institute, Federal Reserve, National Bureau of Economic Research and European Central Bank, with data from Thomson Reuters, November 2018. Notes: This chart shows the US and eurozone policy rates with our estimate of the short-term and a long-term neutral rates. The neutral rates are estimates based on an econometric model from a July 2018 [ECB working paper](#). This model takes into account financial cycle dynamics.

## Stargazing

Neutral interest rates – interest rates that would neither stimulate nor hold back economic growth – are a major focus for investors and policymakers. What neutral rates – also known as  $r^*$  – say about monetary policy can help us judge where an economy is in an upturn or downturn and what the fair value for equity and government bond markets is. There are well-known difficulties in estimating the level of neutral – and how close the policy rate is to it. There is uncertainty around the central estimate and it can move around over time. Yet we find the concept of neutral useful as a macroeconomic gauge.

We present updated neutral rate estimates for the US and the euro area. We distinguish between the traditional long-term neutral rate, which purely captures structural trends such as potential growth and demographics, and a short-term neutral rate that reflects the current state of the financial cycle (more on page 3). We estimate the real (inflation adjusted) short-term neutral rate in the US to be around 120 basis points. The eurozone real neutral rate is significantly lower at 10 basis points, with a GDP-weighted average of the two estimates coming to around 70 basis points. See the *Tracking neutral* charts.

After the 2007-2008 global financial crisis, many central banks used the steep fall in neutral rates to justify a zero interest rate policy – and in the eurozone and Japan a negative interest rate policy. It was also used as an explanation for a range of unconventional policy measures, such as quantitative easing. Similarly, investors have used low estimates of neutral rates – along with other structural factors such as excess global savings – to understand why long-term bond yields have been so historically low. See our [November 2017 Global macro outlook](#) for details.

Investors have also used neutral-rate estimates to assess how high the Fed might lift interest rates in its process of policy normalisation, which has lasted for three years so far. The neutral-rate debate has become more nuanced as the Fed's 2-2.25% nominal policy rate approaches the neutral level. At Jackson Hole in August, Fed Chair Jerome Powell [expressed his reservations](#) against using neutral rates as a guide for day-to-day monetary policy decisions. Yet Powell later stressed that the federal funds rate is ["a long way from neutral."](#) contributing to a jump in Treasury yields and a slide in equities in early October.

Whether central bankers like it or not, we see the neutral-rate discussion as a key element of central bank communication with financial markets and for forward guidance.

## It's about the financial cycle

The past two US recessions have been closely associated with financial shocks. That suggests that financial booms and busts – not just business cycles – need to be taken into account when looking at whether interest rates are stimulative or restrictive. We adapt earlier estimates of the neutral rate – the most famous being the Laubach and Williams model – by incorporating financial cycles, using the credit gap as a proxy. The credit gap measures the difference between total volume of inflation-adjusted credit in the private sector compared with its long-term average.

We use our model – inspired by [Krustev \(2018\)](#) – to estimate two measures of the neutral rate: a long-term measure that would stabilise the economy if the financial cycle were in a steady state (a theoretical state of economic equilibrium or neutrality), and a short-term rate that is determined by financial cycle dynamics. If the short-term rate is above the long-term rate, the economy is leveraging up. If the short-term rate is below the long-term rate, the economy is deleveraging. Yet the difference between the short- and long-term neutral rates does not tell us anything on whether levels of leverage are too large or too limited.

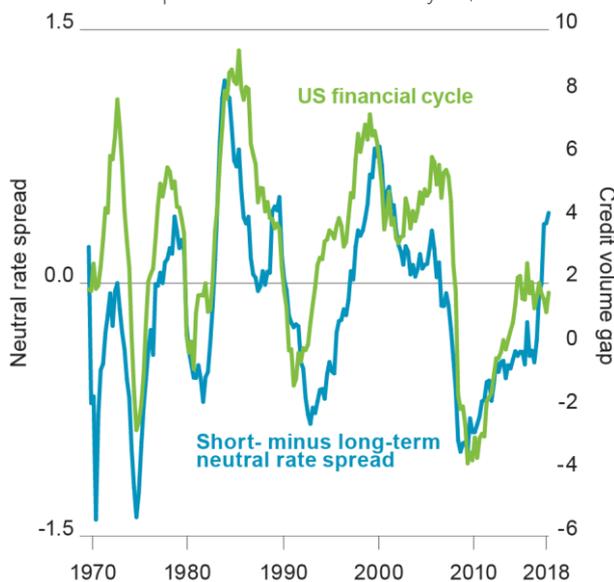
The length and magnitude of financial cycles have increased across developed markets since the 1980s. The financial cycle has become such an important macroeconomic force that market participants often refer to financial super-cycles. These super cycles can stretch well beyond the typical business cycle, such as in 2001 when the dot-com implosion and ensuing US recession did not significantly disrupt credit flows. A sustained increase in financial leverage pushes our estimate of the short-term neutral rate above its long-term trend – and that is happening in the US now. See the *Heating up* chart. A drawn-out phase of deleveraging, such as that after the financial crisis, pushes the neutral rate below its long-term trend.

This has important implications for monetary policy. When economic output is above potential, policy rates should rise above long-term neutral to hold down inflation. When we take into account the financial cycle – specifically a sustained period of growing financial leverage – policy rates should be *even higher* above long-term estimates of neutral to prevent overheating. When the economy is deleveraging and animal spirits are subsiding, the central bank should cut rates *even further below* the long-term level of neutral to prevent any deflationary drag from deepening.

Since the mid-1980s, the spread between real short-term policy rates in the US and the short-term neutral rate has peaked at around 100 basis points in Fed tightening cycles and has bottomed out at around -200 basis points in Fed easing cycles. It is currently at -150 basis points. See the *Mind the gap* chart. By this measure, the Fed still has some way to go to get to a rate setting that approaches neutral. And the broader message from our short-term neutral rate estimates is very clear: The Fed and ECB are both still providing policy stimulus.

### Heating up

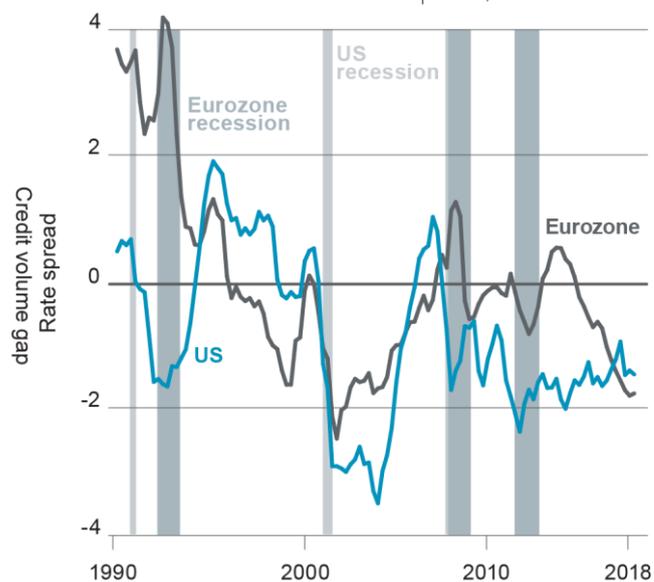
Neutral rate spread and US financial cycle, 1970-2018



Sources: BlackRock Investment Institute, with data from Thomson Reuters, November 2018. Notes: This chart shows the gap between our short- and long-term neutral rate estimates and the model's estimate of the US financial cycle – the difference between volumes of credit outstanding to the private non-financial sector compared with its long-term average.

### Mind the gap

Short-term real and neutral rate spread, 1990-2018



Sources: BlackRock Investment Institute, Federal Reserve, ECB, NBER, Centre for Economic Policy Research, with data from Thomson Reuters, November 2018. Notes: This chart shows the spread between the short-term real neutral rate and the actual short-term policy rate in the US and the eurozone.

## A structurally lower neutral rate

The US long-term neutral rate fell in the post-crisis environment, reflecting lower potential growth, a rapidly shrinking pool of “safe” assets and elevated global savings. Yet the short-term neutral rate moved *even lower* than this long-term level as the private sector – especially US households grappling with the property crisis – rapidly deleveraged. This meant the Fed had to push rates even lower than the long-term neutral rate would have suggested at the time.

As private-sector debt grows again and animal spirits rise, short-term neutral has pushed past the long-term rate. The real long-term neutral interest rate now stands at around 0.9%, while the real short-term neutral rate is around 1.2% – and rising. The first of these estimates corresponds to the latest Fed forecasts of the longer-term policy rate of 3%. Yet the Fed is also signalling a shorter-term “overshoot” in 2020-2021 of around 3.4%, which would be consistent with our estimate of the short-term neutral rate. This comes as GDP is growing at above-potential rates, the unemployment rate is below the non-accelerating inflation rate of unemployment (NAIRU), the economy is at full capacity and fiscal policy is expansionary – on top of this the financial cycle is gearing up. If anything, the Fed is falling behind in getting policy to a more neutral setting, causing financial imbalances to build up.

In the eurozone, deleveraging has faded but not by enough to push short-term neutral above long-term neutral. Our estimate of the short-term neutral rate is near zero compared with the 0.1% long-term rate. Low long-term neutral rates in the eurozone can be explained by lower potential output growth than the US as well as weaker animal spirits.

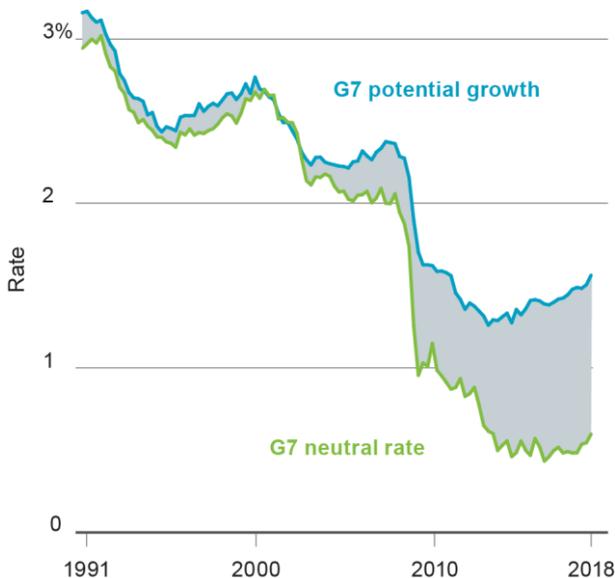
Traditional models that estimate neutral rates are dependent on potential growth trends. But the G7 neutral rate has fallen much further than combined G7 potential growth, so it's not just about slower population growth and soft productivity. See the *Falling star* chart. This is due to an array of structural factors, in our view, especially elevated global savings relative to higher fiscal deficits and the drag of greater financial regulation.

We have [highlighted](#) the role of global savings relative to the available pool of perceived safe assets – an important factor in determining the neutral level of interest rates. The global savings rate remains high – even if it is no longer rising – holding down the term premium in long-term bond yields as interest-rate-insensitive demand for government bonds has remained high. See the *Suppressive savings* chart.

Revived productivity growth on the back of greater business investment and faster automation could drive the long-term neutral rate higher. Other forces could also contribute. Chunky corporate profits – another reason for high global savings – could be eroded if globalisation fades, labour shortages rise and large technology companies face stiffer regulation. Higher budget deficits could replenish the available pool of perceived safe assets as the baby boom generation starts to spend their savings in retirement, reducing demand for those assets. But so far, the upward drift in long-term neutral has been limited relative to the short-term neutral rate.

### Falling star

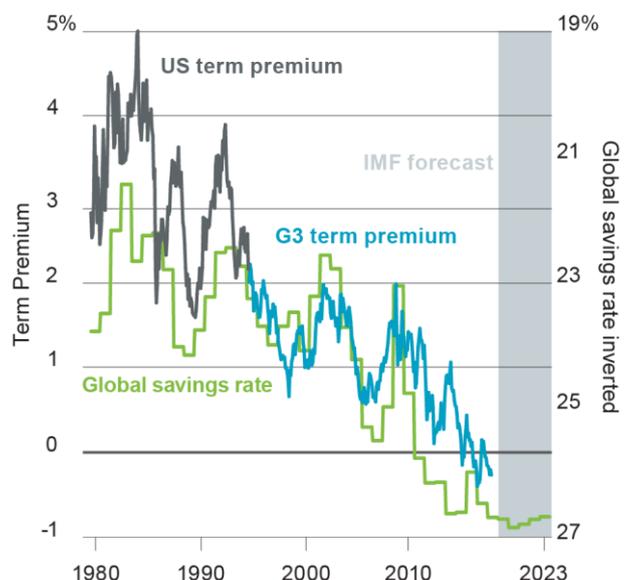
G7 neutral rate and potential growth, 1991-2018



Sources: BlackRock Investment Institute, with data from Thomson Reuters, November 2018. Notes: This chart shows estimates of the average G7 neutral rate and potential growth and the gap between the two. Estimates are derived using models similar to Holston, Laubach, Williams (2016) and then aggregated via GDP-weights.

### Suppressive savings

G3 term premium and global savings rate, 1980-2023



Sources: BlackRock Investment Institute and International Monetary Fund, with data from Thomson Reuters, November 2018. Notes: This chart shows estimates of the G3 term premium and before 1995 the US term premium. The term premium is estimated via a model similar to the New York Fed's. The green line shows the global savings rate with IMF forecasts for 2019-2023. Forward-looking estimates may not come to pass.

## Financial markets and the North Star

The neutral rate helps us understand the “fair value” of interest rates – based on the long-term level of short-term rates – and can be a gauge for the risks of a sharp correction in equity markets. Our long-term neutral estimate is consistent with a 10-year yield of around 3.5% for US Treasuries and around 2% for their German equivalent in equilibrium economic conditions, assuming some stabilisation of inflation expectations around central bank targets.

Equity markets have historically become more volatile when short-term rates close in on the neutral level, as we’ve seen this year. And so neutral rates also provide clues about the sustainable level of equity market valuations. The neutral rate should be used instead of the inflation-adjusted bond yield when calculating the equity risk premium and the forward price-to-earnings (p/e) ratio, in our view. If our neutral estimates are correct and they remain subdued compared with historical levels, U.S. equity valuations may not be as stretched as commonly thought.

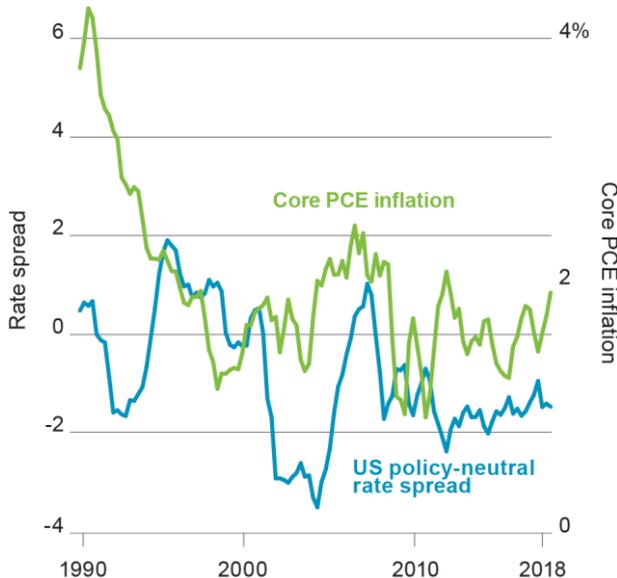
The short-term neutral rate tells a tale of two different monetary policies in the US and eurozone. In the US – where credit creation has picked up again and exceeds nominal GDP growth (see our August 2018 Macro and market perspectives [Beware of the Q Trap](#)) – the short-term neutral rate has risen above its long-term trend. If the financial cycle heats up further in the US, the Fed could be forced to lift rates even higher than it currently projects. See the *Room to rise* chart. In the eurozone, the subdued financial cycle still keeps the short-term rate below its long-term trend. The ECB may need to keep monetary policy at an even looser level than long-term neutral estimates suggest.

Neutral rates are a useful guide for all these reasons – even with the usual caveats. While neutral rates – r-star – may provide a North Star for academic macroeconomists, in practice “navigating by the stars” – as Powell called it in August – is much more complicated for central bankers and market participants. The position of the stars – be it r-star or NAIURU – is not fixed in the macroeconomic universe. Depending on the kind of telescope (model) being used in such macroeconomic “stargazing,” the conclusion could be entirely different – and the stars are always blurry.

**Bottom line:** Neutral rates are an important anchor for market expectations on the future path of interest rates, in particular the long-term rate the Fed should adopt under normal conditions. Central banks cannot ignore the debate about the neutral level. Central bankers should be mindful when providing forward guidance beyond the next few meetings, in our view. The median rate projection by Fed officials – at 3.4% in 2020 and 2021, it is higher than market pricing and above the long-term projection of 3% – suggests an acknowledgment of needing to “lean against the wind” to prevent overheating. Our estimate of short-term neutral rates reaffirms that view, even as some in the market debate about a potential pause. See the *Defence of the dots* chart. The Fed has room to push rates higher – yet to levels that would still be historically low.

### Room to rise

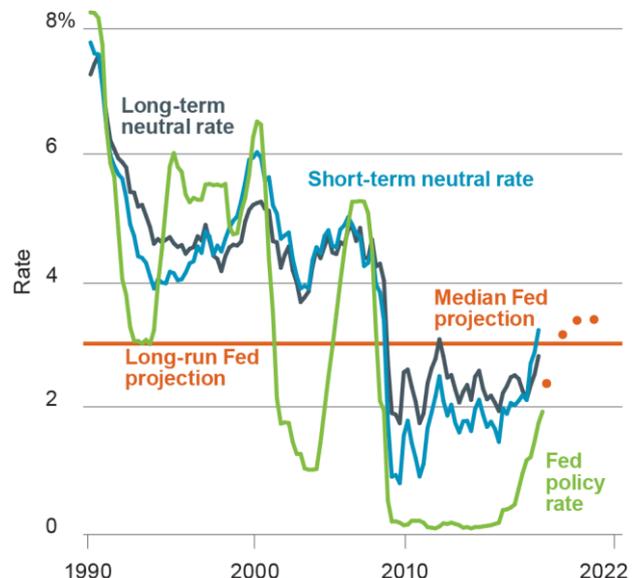
US policy rate minus neutral, and inflation, 1990-2018



Sources: BlackRock Investment Institute, with data from Thomson Reuters, November 2018. Notes: This chart shows the gap between the actual US policy rate and the short-term neutral rate and the annual rate of core PCE inflation.

### Defense of the dots

Fed policy rate and neutral rates, 1990-2021



Sources: BlackRock Investment Institute, with data from Thomson Reuters, November 2018. Notes: This chart shows the actual Fed policy rate, estimates of the long-term and short-term neutral rates (as defined previously), and the median FOMC projection from the most recent summary of economic projections (September 2018). Forward-looking estimates may not come to pass.

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