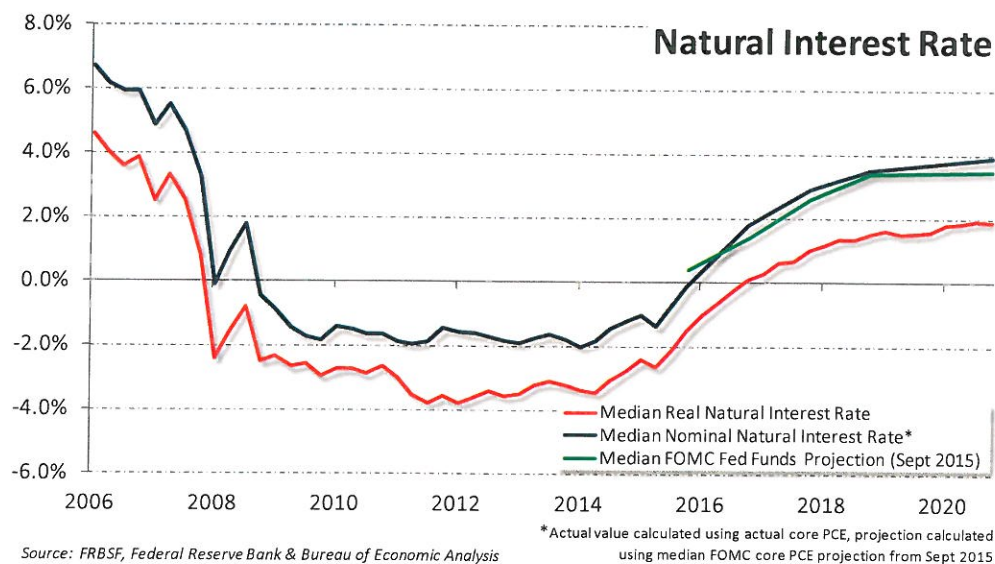


The Fed's current thinking about natural rates is laid out in a recent [economic letter](#) from the San Francisco Fed.² The paper concludes "the natural rate of interest is expected to remain below its long-run level for some time;" thus justifying the FOMC hiking rates gradually. The paper also acknowledges "a great deal of uncertainty" because the Fed has consistently overestimated the natural rate since 2006. (At least they haven't given up after a decade of misunderestimating.)

The real natural interest rate is the real, risk-free rate where the economy is at neutral. At the moment, the Fed estimates it is about -2.1%. That means the nominal natural rate is -1.8% when we add back 0.3% inflation. As a result, it is entirely appropriate to keep the funds rate near zero. (In fact a case can be made to drop the rate *below* zero, as Kocherlakota did at the last meeting.) The real natural rate is expected to rise to zero early next year and to 2% by 2019. We adjusted the historical rate using the core PCE and forecast rate using the FOMC's median forecast for the core PCE³ and came up with the following:



Note the FOMC's median fed funds forecast lags behind the natural rate in 2016 and 2017, but catches up in 2018. This is the "gradual path" of rate hikes Yellen and others have emphasized for months.

The catch, of course, is that the FOMC funds rate forecast contains two variables that could throw it wildly off base.

- The first is the inflation forecast. If the core PCE is 1% in 2018 rather than the 1.9% median FOMC forecast, then the nominal natural rate will be 90bps lower than the Fed thinks.
- The second is the natural rate forecast itself. As below chart shows, the natural rate has consistently confounded the Fed since 2007. The natural rate rose in 2015, but not as fast as the Fed thinks it will rise in 2016 and '17.

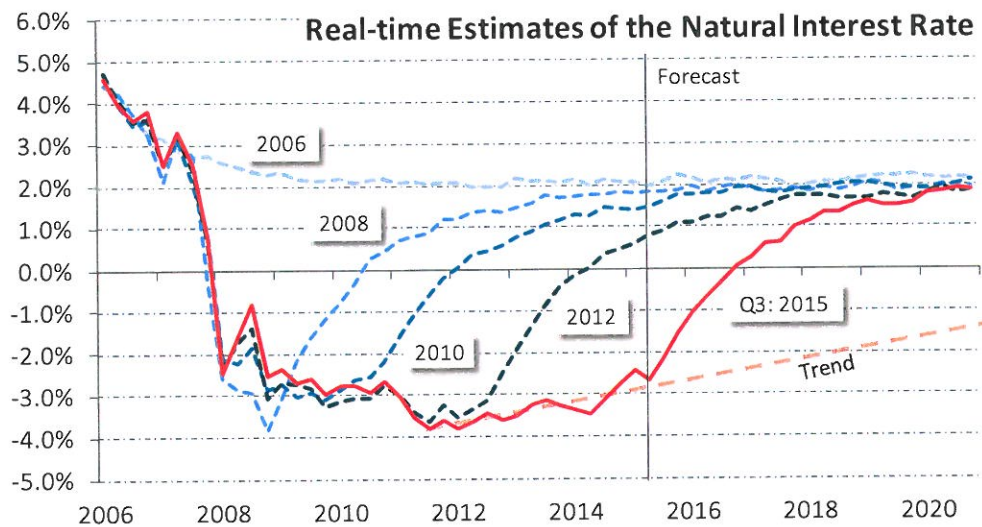
² [Why So Slow? A Gradual Return for Interest Rates](#), Vasco Cúrdia. FRBSF Economic Letter, October 12, 2015. Similar work was published by the New York Fed in May, [Why Are Interest Rates So Low?](#), Marco Del Negro, Marc Giannoni, Matthew Cocci, Sara Shahanaghi, and Micah Smith, NY Federal Reserve.

³ We used the core because i.) The Fed uses the core, and ii.) The core is less volatile, resulting in a smoother curve.

The Fed isn't reexamining the way it thinks because it wants to. It is doing it because it has to.

The below chart, reproduced from the San Fran Fed paper (we added the trend line) shows the danger of assuming the natural rate will return to "normal" when normal is the prevailing rate during the unprecedented four-decade credit boom from 1960 to 2000. Each forecast since 2006 was too high, and every time the Fed pushes the expected rise in both natural rate and inflation outward, the most cautious FOMC members gained credibility. As for the current forecast, it is actually less gradual than the 2012 forecast. And like every forecast before it, it is far less gradual than the prevailing trend since the natural rate started rising in 2011.

The reason the trend is so flat is because credit demand is weaker than it used to be. A lot weaker. After all, interest rates are nothing more than the price of borrowed money and like other prices they are determined by the intersection of supply and demand. **The gradual path of tightening advocated by the Fed is actually a lot less gradual than the trend in the natural rate. It is predicated on a significant acceleration in credit market healing starting today, which is one more reason to think normalization will be a lot more gradual than the FOMC thinks.**



Source: Federal Reserve Bank of San Francisco

– Chris Low, Chief Economist