Economic Research

The Fed, Policy Rules and Market rates 2 March 2015

It is a long time since the US Federal Reserve last raised rates (in June 2006, from 5% to 5.25%) and one has to go back over a decade to find the start of a tightening cycle (in June 2004, from 1% to 1.25%).Consequently there are many in the financial markets who have never experienced a period of rising interest rates although that may be about to change, judging by rate expectations; the Fed Funds rate is currently trading at 0.12% (the Fed's target is 0-0.25%) and the futures market is pricing in a strong probability of a rate rise over the late-summer and autumn this year.

Of course the Fed itself has also changed tack in terms of monetary policy, in response to the improvement in the real economy, including strong employment growth and a decline in the unemployment rate. Consequently the FOMC terminated its asset purchase programme last year and has now dropped its forward guidance on rates, indicating that the decision will now be data dependent. That does not mean that a rate rise is inevitable (some FOMC members are worried that inflation is low and may not pick up as anticipated) and the exact timing is clearly debatable, but what is interesting is the divergence between the market's rate expectations over the next few years and that indicated by the published views of the FOMC.

One standard method of predicting the future path of Fed policy is using the Taylor rule, first put forward in 1993. The original formulation envisaged an equilibrium Fed funds rate of 4%, with the Fed adjusting policy if growth moved away from trend or if inflation deviated from target (assumed to be 2%). A popular variant of the model uses an empirical relationship between unemployment and economic growth (Okun's law) to derive a rule which includes the unemployment rate as a proxy for full employment instead of GDP or

$$r = 1 + 1.5PCE - (UR - URF)$$

where r= the Fed funds rate, PCE is the annual inflation rate (the Fed prefers the consumption deflator to the CPI) , UR is the unemployment rate and URF is the rate associated with full employment

We can use such a model to project the Feds fund rate implied by the latest forecast made by the FOMC members (based on the central tendency). That envisages the unemployment rate falling to 5.25% by the fourth quarter of 2015, and as such around the Fed's idea of full employment (an unemployment rate between 5.2% and 5.5%). The FOMC expects inflation (at 1.3%) to remain below target this year but to move up to just under 2% by 2017, and based on those forecasts the Taylor rule implies a Fed funds rate of 2.9% at end-15, 3.9% at end-16 and 4% in 2017.

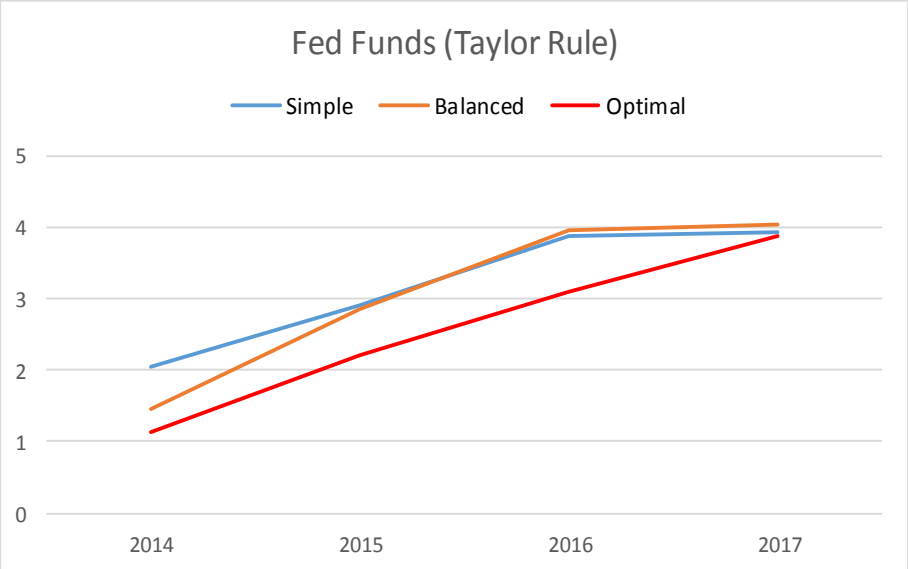
Indeed, the rule indicates that Fed policy should have been much tighter at the end of last year (around 2%) . The severity of the Great Recession and the sluggish nature of the economy have persuaded central bankers that this time is different, however, and Janet Yellen, in a speech in June 2012 * put forward reasons why policy should remain looser for longer and discussed two alternatives to the Taylor rule as outlined above.

The first , a Balanced rule, doubled the weight on the unemployment variable. This did imply a different rate trajectory given the level of unemployment at that time but such a model now shows little difference from the basic Taylor rule, because the unemployment rate is so close to full employment- the path of the Fed funds rate is virtually identical in the two models.

Yellen went on the put forward a third approach - optimal control. This involves using a range of Fed funds rate in a model of the US economy in order to minimize a loss function, with the latter set in terms of the deviation of unemployment and inflation from target levels. That approach did imply a longer period of zero rates and a slower tightening cycle, albeit also rising to around 4% in the medium term. We do not know what that optimal control approach states now but based on the charts published in the Yellen paper it may imply a Fed funds rate of 1.25% by end-15 and 3% by end-16.

The Fed will not slavishly follow any model in setting policy and the data may disappoint but what is striking is the divergence between market rates and that implied by any of the three models *if the fed 's economic forecasts are broadly right.* For example, 3- year bond yields are currently trading at 1% with the 2-year at 0.63%, which implies a 1-year rate in two years time of 1.7%. If the market is wrong in its implied pessimism on inflation and growth there is a very big bond market accident waiting to happen.

* Yellen, *'Perspectives on Monetary Policy'* , Federal Reserve, June 2012



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