Wednesday, December 16, 2015

Global Macro Themes: Neo-Fisherian Folly

It has always been our view that one positive aspect of the Great Recession was that it offered up the opportunity to analyse a once-in-a-lifetime event in more detail than was ever previously possible. Our hope was that this would greatly enhance our understanding of the economic machine eventually resulting in more insightful policymaking. Unfortunately, it appears that we have been too optimistic in this hope as evidenced by the emergence of Neo-Fisherianism – a theory that turns conventional thinking about monetary policy on its head. Even more unfortunately, it appears that leading central bankers are giving serious contemplation to such ideas. As we will explain in this research note we consider this to be an error of judgement with potentially grave economic and financial consequences.

Stability Concerns

Between 2008/9 central banks in the advanced world aggressively lowered official interest rates in a desperate attempt to combat deflationary pressures that threatened to drag the global economy into a second Great Depression, eventually pinning them at the effective zero lower bound. When this proved insufficient many central banks went further and adopted unorthodox policy tools such as large-scale asset purchase programmes to inject even more monetary stimulus.

What was, and remains, clear is that these perceived extremely accommodative monetary stances were considered to be *emergency* settings and consequently unlikely to be sustained for very long, especially given that demand-side stimulus was reinforced by fiscal policy. It is with much surprise, therefore, that seven years later official interest rates remained pinned to the floor; a reality that has prompted much soul-searching on the part of monetary policy setters.

Given central banks have used nominal interest rates as the primary instrument of monetary policy for decades (replacing earlier money supply targets or exchange rate anchors) and in light of the unusual stability of officially-set interest rates over the past seven years it may come as a surprise to many that such arrangements have long troubled economists. Indeed, Friedman raised this very concern in 1968[1].

[1] See: https://www.aeaweb.org/aer/top20/58.1.1-17.pdf . Similarly, 1975 Sargent and Wallace argued that nominal interest rate targets lead to the problem of indeterminacy see: http://isites.harvard.edu/fs/docs/icb.topic500592.files/sargent%20wallace.pdf

In explaining why a central bank could not peg interest rates for more than very limited periods of time Friedman outlined a scenario where the central bank sought to keep interest rates low. Beyond the initial standard effects he pointed out that,

"A fourth effect, when and if it becomes operative, will go even farther, and definitely mean that a higher rate of monetary expansion will correspond to a higher, not lower, level of interest rates than would otherwise have prevailed. Let the higher rate of monetary growth produce rising prices, and let the public come to expect that prices will continue to rise. Borrowers will then be willing to pay and lenders will then demand higher interest rates - as Irving Fisher pointed out decades ago. This price expectation effect is slow to develop and also slow to disappear. Fisher estimated that it took several decades for a full adjustment and more recent work is consistent with his estimates.

These subsequent effects explain why every attempt to keep interest rates at a low level has forced the monetary authority to engage in successively larger and larger open market purchases."

In other words, Friedman was worried about the *long-run* stability (instability in other words) of inflation under nominal interest rate pegs.

During the lengthy time period that central banks have used nominal interest rate targets as the primary policy instrument these rate was frequently altered. Because of this the conditions that could have resulted in the concerns expressed by Friedman (namely long periods of unchanged central bank interest rates) never arose. However, as mentioned above, in the post Great Recession period official interest rates have been extremely stable because of the constraint[2] imposed by the zero bound, i.e. they have, in effect, become more peg-like.

Moreover, contrary to the fear of surging inflation when ZIRP was initially adopted (further heightened by central banks subsequently implementing QE programmes) inflation rates in the advanced economies have tended, on the whole, to stay low.

This combination of unusual stability in central bank interest rates at historically low levels and low inflation outturns has sparked renewed interest in the Fisher equation which, as Friedman notes in the above quote, states that:

$$i = r + \boldsymbol{\pi}^{e}$$

where i denotes the nominal interest rate, r denotes the real interest rate and $\boldsymbol{\pi}^{e}$ denotes expected inflation.

[2] The constraint imposed by the zero bound on nominal interest rates is being challenged as we discussed in *"GMT – Challenging Cash As King"*, 8 June 2015.

What clearly falls out of the Fisher equation is that there is a positive relationship between inflation (or more formally inflation expectations) and interest rates – a result that appears to contradict the generally assumed negative relationship that, rather importantly, guides monetary policy operations.

In discussing the relationship between nominal interest rates and inflation, in 2010 Minneapolis Fed Reserve President Kocherlakota made the following comment, which attracted much attention at the time:

"It is conventional for central banks to attribute deflationary outcomes to temporary shortfalls in aggregate demand. Given that interpretation, central banks then respond to deflation by easing monetary policy in order to generate extra demand. Unfortunately, this conventional response leads to problems if followed for too long. The fed funds rate is roughly the sum of two components: the real, net-of-inflation, return on safe short-term investments and anticipated inflation. Monetary policy does affect the real return on safe investments over short periods of time. But over the long run, money is, as we economists like to say, neutral. This means that no matter what the inflation rate is and no matter what the FOMC does, the real return on safe short-term investments averages about 1-2 percent over the long run.

Long-run monetary neutrality is an uncontroversial, simple, but nonetheless profound proposition. In particular, it implies that if the FOMC maintains the fed funds rate at its current level of 0-25 basis points for too long, both anticipated and actual inflation have to become negative. Why? It's simple arithmetic. Let's say that the real rate of return on safe investments is 1 percent and we need to add an amount of anticipated inflation that will result in a fed funds rate of 0.25 percent. The only way to get that is to add a negative number—in this case, –0.75 percent. ***To sum up, over the long run, a low fed funds rate must lead to consistent—but low—levels of deflation[3]."*** [Ed. Note: our emphasis]

Kocherlakota's comments, which have been echoed by fellow FOMC member St. Louis Fed Governor Bullard, suggest that leading central bankers are reconsidering the long assumed negative relationship between the two variables in light of recent experience; a potentially profound change given that this relationship constitutes the intellectual basis for central banking practice around the globe.

The Neo-Fisherian Rebellion

Predicated on these longstanding concerns about the long-run stability of inflation under interest rate pegs, and the observed low inflation rates witnessed under ZIRP, some economists have suggested that a low or zero nominal interest

[3] Apologies for the length of the quotes, but we want to ensure that there is no hint of cherry-picking selective phrases and misrepresenting the arguments.

rate is not, as commonly assumed, part of the solution but rather constitutes part of the problem. Based on this premise they are calling for central banks to raise interest rates in order to boost inflation.

What might superficially appear to be a rather obvious conclusion from the Fisher equation, in reality represents not only a radical departure from monetary policy orthodoxy but contains a huge leap in logic. It implies that the causation goes from interest rates to inflation rather than the reverse, which is implicitly suggested by the formulation of the Fisher equation[4] and explicitly stated by Friedman.

The Challenge

With economic data over the past several years apparently on the side of the Neo-Fisherians the greatest challenge facing them is to outline the channels or mechanisms by which causation runs from higher nominal interest rates to higher inflation expectations. Very often this is missing from their analysis. Rather the result is often simply confirmed by macroeconomic model simulations that incorporate the Fisher equation. Obviously this is just proof by assertion, which as everyone knows constitutes no proof at all[5]. Digging deeper into the literature some mechanisms by which raising interest rates can lead to higher inflation expectations have been proposed.

The main argument is that by the very act of raising the nominal interest rate a central bank is signalling a brighter economic future, encouraging households to anticipate higher future inflation. In short, the central bank "bluffs" the private sector into making the first step in a self-fulfilling prophecy. We acknowledge that this channel cannot be refuted via logic because such "goosing" is possible. That said, we consider it unlikely, given the private sector is assumed to be – not unrealistically - rational and forward-thinking and not simply, naively, or even slavishly, following the lead of the central bank.

Other potential mechanisms that have been suggested are based on intertemporal substitution effects. This line of reasoning is normally associated with interest rate cuts, which are considered stimulative because they provide incentives for consumers to bring future forward demand by lowering the benefits of delaying consumption.

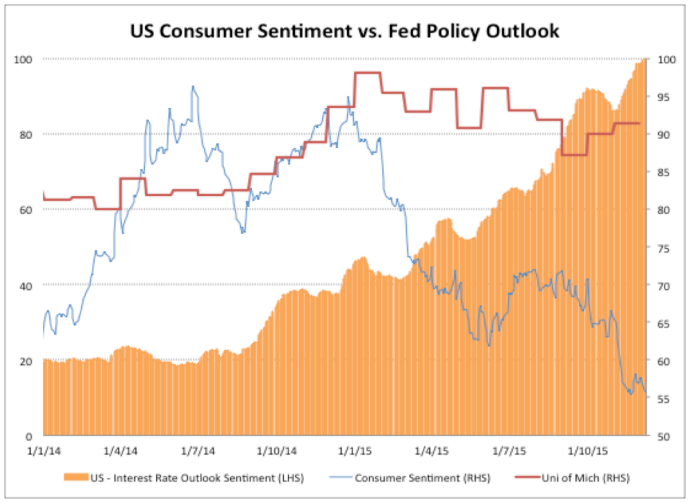
Arguing the reverse-causality crucially depends on the fact that when central banks typically begin to raise the interest rate it is a prelude to further increases. Hence, so the Neo-Fisherian argument goes, following an initial increase in the interest rate consumers anticipate that interest rates will be even higher in future time periods, which incentivizes them to shift future consumption to the present time, boosting contemporaneous aggregate demand.

[4] By which we mean inflation expectations are on the right of the equal sign not the left.
[5] This ignores the joke that only in economics is there proof by repeated assertion.

We agree that this is a novel argument, but novelty is no assurance of veracity. Indeed, there are reasons for doubt. Over recent years, there have been several instances of central banks having raised their interest rate target only to have subsequently lowered them; the Riksbank and the ECB being are two rather obvious examples. Such policy reversals not only weaken this line of argument, but call into question the very validity of Neo-Fisherianism theory that interest rate increases are stimulative.

Furthermore, specifically in relation to the Fed, while signalling to the market their "Liftoff" intentions there has been a clear an obvious attempt to temper expectations as to the probable pace at which interest rates will be subsequently raised; again, something that serves to undermine the importance of this mechanism.

As we pointed out in the earlier blog post[6] the greatest issue facing the Neo-Fisherians is that since the Fed have been consistently signalling their intention to raise interest rates this year, and given the importance attached to expectations in the theory, one would expect at least some signs of either more robust consumer confidence (the "goosing" mechanism) or at the very least increased inflation expectations (the foundation of Neo-Fisherianism).

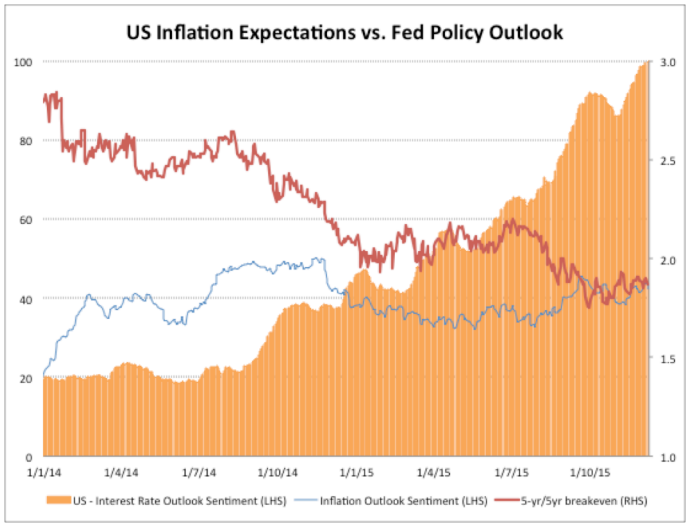


Yet, as the accompanying charts show, there is scant evidence of either of these trends in the official data or the sentiment data published by Amareos.

During 2015 sentiment towards the US interest rate outlook (the orange bar), has risen to stand at 100, indicative of almost uniform agreement that Fed "Liftoff" is imminent. However, both the monthly University of Michigan survey and daily consumer sentiment indices derived from mainstream and social media sources have been trending lower.

Similarly, US 5-year/ 5-year breakeven inflation rates and the inflation outlook sentiment indices shown in the chart below confirm that private sector inflation expectations have remained stable over the time frame that the market has moved to fully discount imminent Fed "Liftoff". Again, this is contrary to the proposed positive relationship, where causality runs from the former to the latter, of Neo-Fisherianism.

[6] See: http://www.blackswaneconomics.com/in-the-news/great-rate-debate-1272.html



So, while the Neo-Fisherian theory, unlike orthodox monetary theory, appears to account for the failure of US inflation to rise during ZIRP, the failure of inflation expectations or consumer confidence to have risen in tandem with increased conviction of Fed "Liftoff" points to a serious, if not fatal, flaw with Neo-Fisherianism.

A Third Way

If neither orthodox nor Neo-Fisherian theories provide a good account of what investors and policymakers have experienced over the past several years it would appear to leave the financial world in a bit of a quandary. There is, thankfully, a further possible explanation, one which crucially depends upon how the calibration of a monetary policy stance is defined.

In the first page we characterized ZIRP as being "extremely accommodative", but we prefaced this with the word perceived – this was very deliberate on our part. Conditioned by our experiences over the past several decades almost everyone has become accustomed to thinking about zero nominal interest rates as obviously accommodative, especially when reinforced by central banks aggressively growing their balance sheets via their respective asset purchase programmes. However, is this characterization really valid?

A priori it is impossible to verify because determining how accommodative or tight a given interest rate level is is only possible in comparison to the prevailing level of the natural interest rate; a concept developed by the famous economist Knut Wicksell back in 1898.

The standard definition of the natural (or neutral) interest rate is the rate that keeps the economy operating at full employment and stable inflation – in economic parlance, the potential GDP growth rate. In the event that the actual interest rate is above the natural interest rate monetary policy can be considered "tight", whereas if the actual interest rate is below the natural rate monetary policy can be considered "easy". Unfortunately, following this very simple and straightforward rule is immeasurably complicated by the fact that the natural interest rate is not directly observable; it has to be estimated. Hence, it is unknowable either in advance or even in real time.

As a general rule, it is assumed that because an economy's potential growth rate is determined by long-run factors, such as demographic trends, labour force participation rates and productivity growth rates the natural rate of interest is largely stable through time. However, in order to explain the lack of inflation pressures during ZIRP without resorting to Neo-Fisherian theories requires a declining natural rate of interest for reasons we will go on to explain.

Interestingly, in support of this hypothesis the last set of FOMC minutes contained the following paragraph:

*"Estimates derived using a variety of empirical models of the U.S. economy and a range of econometric techniques indicated that short-run r** [Ed. Note the natural or neutral interest rate] *fell sharply with the onset of the 2008–09 financial crisis and recession, quite likely to negative levels. Short-run r* was estimated to have recovered only partially and to be close to zero currently, still well below levels that prevailed during recent economic expansions when the unemployment rate was close to estimates of its longer-run normal level[7]."*

A declining natural rate of interest is the essence of the "secular stagnation" hypothesis put forward by Larry Summers in 2014[8]. According to this hypothesis the economy continues to suffer from an excess of saving over investment, (i.e deficient aggregate demand) which exerts downward pressure on interest rates - both real and nominal - which cannot be corrected by monetary policy due to either the constraint imposed by zero lower bound and/or because it is associated with increased financial instability.

Based on this hypothesis, according to Summers' the best policy prescription is expansionary fiscal policy aimed at promoting public investment, especially infrastructure. Others have also suggested that ZIRP be replaced by NIRP (negative interest rate policy) effectively using technology to remove the constraint imposed via the zero bound on nominal interest rates[9].

The Missing Link

While these policy prescriptions are superior to the Neo-Fisherian prescription of raising interest rates to reflate the economy, we judge them to be also flawed; particularly NIRP for reasons we discussed in a previous BSEC blog post[10]. This is because the theory fails to consider the role played by one key economic variable, which when considered fully not only accounts for the decline in the natural rate of interest but also the subsequent failure of ZIRP to raise inflation, namely debt.

[7] See: http://www.federalreserve.gov/monetarypolicy/files/fomcminutes20151028.pdf
[8] See: http://larrysummers.com/wp-content/uploads/2014/06/NABE-speech-Lawrence-H.-Summers1.pdf
[9] For further details see footnote two above.
[10] See: http://www.blackswaneconomics.com/in-the-news/low-go-thoughts-eradicating-zlb-1178.html

Rogoff, who like Summers' is a Professor at Harvard University, discussed the role of debt in accounting for the lacklustre growth following the Great Recession in a blog post written earlier this year[11], presenting his theory as a competitor to secular stagnation. While Rogoff's focus on debt is both valuable and interesting we consider that he too underemphasises its importance in lowering the neutral rate of interest.

To illustrate this point, consider one of the aforementioned (orthodox) channels by which lower interest rates boost contemporaneous economic growth; namely by incentivising households to bring forward future consumption, either via reduced savings or borrowing (i.e. assuming debt). Given households are subject to budget constraints such intertemporal substitution of demand implies a reduced set of future consumption possibilities and, hence, weaker economic growth. To the extent that companies anticipate lower future consumption the rational response is to scale back investment in new projects and/or upgrades to existing projects as their expected returns will be perceived as having declined. The result is higher corporate net saving[12]. Combined these two effects serve to reduce the natural rate of interest.

Given monetary policy is best defined as the difference between the actual and the natural interest rate a decline in the latter means that for any given level of the actual interest rate, monetary policy becomes correspondingly tighter. Mitigating this effect necessitates the central bank having to cut the interest rate even further to maintain the same level of monetary stimulus, leading to the establishment of a negative feedback loop where debt[13] – and its intertemporal effect on demand – provides the key element.

By thinking about the relationship between nominal interest rates and inflation in this manner, and understanding the important role played by debt, it is possible to account for the lack of inflation witnessed under ZIRP without having to resort to reversing the causality between the two variables as Neo-Fisherianism does.

That said, this alternate theory generates an extremely profound conclusion for monetary policy. Intertemporal disequilibrium reflected in high levels of indebtedness implies that interest rate cuts will be ineffective at generating a self-sustaining economic recovery (interest rate increases are even worse).

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[11] See: http://www.voxeu.org/article/debt-supercycle-not-secular-stagnation

[12] This corporate behaviour is already well documented. See: http://www.blackswaneconomics.com/in-the-news/corporate-savings-glut-1257.html

[13] Perhaps the most pernicious aspect of this debt cycle hypothesis is that in the expansion phase there is natural tendency for inflation pressures not to materialize because while increased borrowing increases economic growth and with it the demand for money, at the same time under a fiat money system debt provides the foundation for private sector money creation[13]. Hence, money demand and supply imbalances, which is the underlying source inflation pressures, are moderated. This is arguably one of the main critiques against providing central banks with very narrowly defined mandates, as remains the case.

This means that tackling this "debt trap" becomes one of the more pressing – if not the most pressing - economic goal at the present time, one that will require much more dramatic alterations to the operation of monetary policy than currently being considered.

For those readers interested to know more about these alterations, and their economic and financial market implications, we covered them in two previously published research notes, *"GMT – Exit Strategies: Pandora's Box",* 22 December 2014 and *"GMT - Fiscal Dominance: Fifty Shades Of Debt"*, 3 March 2015" - both are available to BSEC and Amareos subscribers.