Neo-Fisherianism

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Introduction
Purpose of the talk

- This talk considers “neo-Fisherianism,” a topic of academic interest, especially within the macroeconomics learning literature.

- The direct links between this topic and current monetary policy are limited.

- Neo-Fisherianism may, however, prove to be an important consideration for monetary policy in the medium and longer term.
Background

- The Fisher equation is central to macroeconomics.
- Benhabib, et al., (2001) combined the Fisher equation with a Taylor-type policy rule and the ZLB.
- They argued that global analysis reveals a second, “unintended” steady state characterized by near-zero short-term nominal interest rates and low or negative inflation.
- Bullard (2010) argued that *unmitigated* ZIRP may cause convergence to this unintended steady state.
- The learning literature says otherwise.
Neo-Fisherianism

The idea that the Fisher equation could dictate the convergence dynamics over the medium or longer term has come to be called “Neo-Fisherian.”

The core idea is that maintaining \textit{and committing} to ZIRP for a sufficiently long period of time could lead to low inflation expectations and low actual inflation.

- Garcia Schmidt and Woodford (2015, slides) verify this possibility under RE in a standard NK model.

This talk

- Japan has been the poster child for the low nominal interest rate, low inflation (LL) steady state for two decades.
  - This motivated the original BSU (2001) “perils” paper.

- In this talk I will look informally at the state of more recent empirical evidence for convergence to the LL steady state across key developed economies.

- This evidence is arguably pointing toward LL convergence.

- The macro learning literature results tend to be at odds with this empirical evidence.
Benhabib, Schmitt-Grohe, and Uribe
What Benhabib, *et al.* (2001) said

- Policymakers control a short-term nominal interest rate.
- Policymakers are rigidly committed to a Taylor-type rule with inflation as the single argument.
  - (How does this mesh with unconventional monetary policy?)
- The rule obeys the Taylor principle: The policy rate responds more than one-for-one with deviations of inflation from target near the “targeted” steady state.
- The zero lower bound constrains the policy rate from below.
- Result: Models with these features have a LL steady state.
The U.S. and Japan through the lens of BSU (2001)

Source: OECD's Main Economic Indicators and author's calculations. Last observation: June 2015.
How relevant is the LL steady state?

- Financial markets tend to put high weight on the possibility of convergence to LL.
  - August 10, 2015 news item: A survey at a recent gathering of Wall Street professionals said 78 percent are “more worried about deflation than inflation.”

- The learning literature and policymakers tend to put low or zero weight on convergence to LL.
  - The LL steady state tends to be unstable under standard learning analyses—a sort of “victory” for the learning literature.
Some sample academic literature

- Werning (2012): NK model has no LL steady state included, yet analyzes R=0 and associated dynamics.

- Garcia Schmidt and Woodford (2015, slides): LL in NK model is a RE curiosum, and a reasonable departures from RE suggest it is not a relevant medium-term outcome.


- Schmitt-Grohe and Uribe (2013): Alternative NK model under RE includes LL in which raising the policy rate raises inflation.
Slaves to the NK abstraction?

- Departures from the NK model may fit the data better.
- The stability properties of these equilibria under learning are unknown.
- Andolfatto and Williamson (2015): Assume RE. Allow for liquidity premia on bonds and possible asset shortages. LL can be persistent.
- Caballero and Farhi (2015): Assume RE. Shortage of safe assets. LL can be persistent.
- Eggertsson and Mehrotra (2014): “Secular stagnation” under RE.
The Recent Time Series Evidence
The recent time series evidence

- Let’s consider a schematic representation of the two BSU steady states.
- Assume an inflation target of 2 percent across countries.
- Assume a short-term steady state real interest rate of 1 percent for all countries.
- Use headline inflation measured from one year earlier from the OECD main economic indicators for comparability.
  - Inflation rates have been smoothed using a MA(5) filter.
- In these charts, the policy rate is on the left axis and inflation is on the right axis, and the difference in scale is the real rate.
Japan

- Japan has spent a lot of time near the LL steady state since 1995.
- Japan did not have an inflation target until recently.
- Abenomics dates from the political rise of Shinzo Abe beginning in late 2012.
- The BOJ “QQE” program has arguably had an important impact and may be moving inflation closer to the 2 percent target.
Japan

Source: OECD's Main Economic Indicators and author’s calculations. Last observation: June 2015.
U.S.A.

- The U.S. had inflation above target as of January 2012, but has since seen inflation decline.

- The Fed pursued unconventional monetary policy following the crisis, once beginning in 2010 and again beginning in 2012.

- The most recent program ended in 2014.

- Those programs have left the Fed with a $4.5 trillion balance sheet.
United States

Source: OECD’s Main Economic Indicators and author’s calculations. Last observation: June 2015.
Euro area

- Euro area inflation was above target as of 2012, but has also declined since that time.
- The ECB generally resisted unconventional monetary policy, either forward guidance or quantitative easing, until this year.
- Key motivation: Inflation was falling far below target.
- The current ECB QE program is expected to continue until September 2016.
- Main development in the global economy in the last two years is that the Euro Area has begun to look more like Japan.
Euro area

Source: OECD’s Main Economic Indicators and author’s calculations. Last observation: June 2015.
United Kingdom

- The United Kingdom generally has been thought to be less affected by neo-Fisherian concerns.
- Inflation has generally been above target since 2008.
- Recently, however, inflation has fallen to low levels.
United Kingdom

Source: OECD's Main Economic Indicators and author's calculations. Last observation: June 2015.
Sweden

- Let’s look at some smaller open economies.
- The Riksbank raised rates to combat rising inflation during 2011 and 2012, but inflation then fell considerably below target.
- Inflation has stabilized at zero over the last two years, and the Riksbank has experimented with negative policy rates recently.
Sweden

Source: OECD's Main Economic Indicators and author's calculations. Last observation: June 2015.
Switzerland

- The Swiss economy has arguably been almost as close to the LL steady state as Japan over the last decade.
- Swiss inflation has been zero or negative for 3.5 years.
- The SNB has also experimented with negative policy rates.
Switzerland

Source: OECD's Main Economic Indicators and author's calculations. Last observation: June 2015.
Lessons from this evidence

- The policy rates in these countries have been near zero for most or all of the last 6.5 years.
- Conventional NK theory suggests higher inflation should have materialized, and on a time scale far shorter than 6.5 years.
- Let’s assess whether these countries are closer today to the targeted steady state or the LL steady state.
- Let’s use Euclidean distance in the policy rate and the inflation rate.
### Distances from steady states in June 2015

<table>
<thead>
<tr>
<th></th>
<th>High s.s.</th>
<th>Low s.s.</th>
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<tr>
<td>United States</td>
<td>3.52</td>
<td>0.97</td>
</tr>
<tr>
<td>Japan</td>
<td>3.04</td>
<td>2.20</td>
</tr>
<tr>
<td>Euro area</td>
<td>3.68</td>
<td>1.05</td>
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<tr>
<td>United Kingdom</td>
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<tr>
<td>Sweden</td>
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</tr>
<tr>
<td>Switzerland</td>
<td>5.13</td>
<td>1.15</td>
</tr>
</tbody>
</table>

Source: OECD’s Main Economic Indicators and author’s calculations. Last observation: June 2015.
Distance from the LL steady state

- The table indicates that as of June 2015, all countries are better described as close to the LL steady state than the targeted steady state.
- Some of this is because policy rates remain near zero.
- One could interpret recent QQE in Japan and QE in Europe as indicating that policymakers intend to remain at the zero policy rate for quite some time into the future.
- This commitment may be long enough to strengthen neo-Fisherian dynamics.
Further Considerations
Bottom line

- The bottom line is that a case can be made that the LL steady state has, in an empirical sense, a basin of attraction.

- This conflicts with the general result from the learning literature that the LL steady state is locally unstable.

- There are of course many other possibilities.

- The standard NK model may not be the right abstraction, as Evans, Andolfatto-Williamson, Caballero-Fahri, Eggertsson-Mehrotra, Schmitt-Grohe-Uribe and others suggest.

- Also, other global factors may be important. One is the price of oil.
Oil price shock in 2014 has affected inflation

Extent of the oil price effect on measured inflation

- I have argued in interviews and commentary that the Fed should look through the oil price shock and expect inflation to rise in the coming quarters and years.

- A rigorous measure of smoothed inflation like the Dallas Fed trimmed-mean PCE inflation rate suggests headline inflation may be closer to target soon.

- The Atlanta Fed’s “sticky price CPI inflation” measure is somewhat above target. True believers in NK theory would target sticky price inflation (see Eusepi et al., 2011).
  - One has to adjust for differences in CPI vs. PCE inflation.
Smoothed measures of U.S. inflation

Source: FRB Atlanta and FRB Dallas. Last observation: June 2015.
Smoothed measures of inflation were lower in 2010

- In the summer of 2010, I began arguing via the “seven faces” paper that inflation was “too low.”
- At that time, even smoothed measures of inflation had fallen below 1 percent.
- This is apparent in the previous chart.
- Today, smoothed measures of inflation look less threatening, bolstering the case that policymakers may be wise to expect temporary influences on headline inflation to abate.
Inflation expectations

- The neo-Fisherian story requires that inflation expectations tend to fall as the ZIRP policy continues.
- Central banks like the Fed have put heavy weight on the idea that actual inflation expectations are well-anchored.
- One way to look at inflation expectations is to consider TIPS-based measures.
  - For many countries considered here, 10-year expected inflation is below 2 percent. The exception is the U.K.
Inflation expectations generally below target

Longer-term bond yields

- The neo-Fisherian story would also suggest that nominal bond yields should decline over time as expected inflation and possibly inflation risk premia would tend to move lower as convergence occurred.

- This may be happening.
Bond yields

10-year Government Bond Yields

Summary
Summary

- Policymaker conventional wisdom and NK theory both suggest low nominal rates should cause inflation to rise.

- The simple empirical evidence reviewed here suggests this is not happening even after 6.5 years of ZIRP.

- There are still reasons for maintaining faith in the conventional wisdom, including a major oil price shock and arguably anchored inflation expectations.

- The general result from the learning literature on the local instability of the LL steady state seems unhelpful—it predicts a natural return of inflation.
Future policy

- Even if the Fed begins normalization this year, U.S. and other rates will still be exceptionally low over the medium term.

- These very low rates may be pulling inflation and inflation expectations lower via the neo-Fisherian mechanism.

- For now, I am willing to argue that current inflation is low in part due to temporary commodity price movements, and that inflation expectations remain well anchored.

- If the neo-Fisherian effect is strong in the quarters and years ahead, however, we will need to think about monetary policy in alternative ways.
References

References


