Discussion: Inflation in the Great Recession and New Keynesian Models

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http://e105.org/e607

FRBoard/JHU
[NK DSGE models] are not designed to be theories of financial crises.
Question for Sargent

What about the aftermath?

When do the models ‘kick back in’?
[NK DSGE models] cannot explain the stabilization of inflation at positive rates in the presence of long-lasting slack
Key equation of paper

\[ SW + BGG = \text{Sargent/Hall wrong} \]
This paper

We conclude that while the model considered does not capture all short-term fluctuations in key macroeconomic variables, it has proven to be surprisingly accurate during the recent crisis and the subsequent recovery.
Interesting standard

‘surprisingly accurate’
'Early morning call from Stockholm’ surprises
Stephen King surprises
‘Congratulations, you’ve been selected’ surprises
Bottom line

- Paper invites us to think ‘good surprise’
- I see an * that needs a bit more exploring
Note:

Authors and their RA very helpful in providing me some extra info. to begin that exploration
Main question

Can NK DSGE model match joint GDP and inflation dynamics of the crisis?
Main question, with refinement

Can NK DSGE model match joint GDP and inflation dynamics of the crisis without large, exogenous ‘markup’ shocks?
Preliminary: Analytic NKPC reality

Ignoring markup shocks, inflation driven by discounted present value of expected future marginal cost
If MC is smooth & persistent, only 2 ways to keep inflation stable

1. MC is stable
   hence, expected to stay stable

2. MC falls (or rises), but is expected to quickly mean revert
   2 has been under-emphasized, main contribution of the paper
Approach 1

A dynamic simulation
What if in Sept. 2008...

We told people the funds rate & credit spread in 2008:Q4...

What would they have predicted for next 4 years?
Surprising

...but which kind of surprise?
If this sim. represents the crisis

very bad surprise for policymakers
This sim.

- No TARP, No Stimulus, No extraordinary accommodation
Federal Funds Rate

Date:

2009 2010 2011 2012 2013

Rate:

0.25 0.5 0.75

2009 rate decrease followed by steady increase until 2013.
I think the paper needs to explore whether this is a simulation of the crisis.
Net Worth

Net worth, 4–quarter change

Model

Data (see comment)
Investment

Cumulative investment growth

-30
-20
-10
0
2009
2010
2011
2012
2013

date

2009
2010
2011
2012
2013
The spread

Credit Spread

Date

2009 2010 2011 2012 2013

Credit Spread
The problem

- In U.S., crisis looked like 2 hideous quarters
- Followed by rapid return to tepid outcomes for many years
My own Hall-like statement

- Persistent Gaussian shocks won’t (are highly unlikely to) do that
- Model will smear any event out over every shock and over time
Suggestion: Clarify what shock(s) we are viewing

- Difference a dynamic simulation from 2008:Q3 & 2008:Q3+
- Explore and report the implied update to the smoothed structural shocks as well as other latent and observed variables
Bottom line on the simulation

- The sim. is not obviously about the crisis.
- This sim. is an example of a shock that makes GDP follow the crisis path and inflation remains stable.
But...
Method 2

Look at inflation, stripped* of markup shocks in the smoothed (full sample) estimates of latent variables
Method 2
2 related comments

1. Very, very different exercise than the dynamic sim.
   We need to know much more about what the model thinks happened in the aftermath data

2. We can deduce one important thing
Remember

Ignoring markup shocks, how do we keep inf. stable with falling MC?
MC and forecast

MC

t
Doh!
Surely it’ll come back
Doh!
Surely it’ll come back
And so forth
Whiskers
Hall problem, now 2 solutions

- Old: Highly implausible sequence of markup shocks
- New: Highly implausible sequence of shocks driving MC
Defense in the paper

- The NKPC-based expectation has similar RMSPE to ‘natural’ benchmarks
  To me, largely irrelevant
The issue: What is an ‘explanation’?

- This multi-year sequence of ‘surprises’ is an extreme tail event
  Of course, low probability sequences happen

- But should be clear when our ‘explanation’ is more or less:

  Rare s* * * happens.
For example,

- Policy implications? Lesson for aftermath of other financial crises?
- None, Forget it, won’t happen again.
Suggestion

- We can properly evaluate the ‘freakishness’ of stable inflation in the face of falling MC.
  Faust-Gupta, posterior predictive analysis

- Less intuitive, but more relevant than the forecast benchmark exercises
Fairly General Result

- Macroeconomics focusses on repeated, troubling, events
- Current DSGE models think the world is very, very smooth
- In these models, the main objects of our studies are repeated instances of similar freak events
  Collectively unimaginably unlikely
My view of this paper and literature

- We are at very early stage in DSGE modelling of business cycles and crises
- This paper is exactly the kind of work we need

These authors are the very best in the field
My view of this paper and literature

- Many opportunities to more fully explore the Hall puzzle
- and strengths and weaknesses of SW-BGG in this regard