Discussion of:

The Effects of Monetary Policy and Other Announcements

by C. Gu, H. Han, and R. Wright

Todd Keister
Rutgers University

ITAM-PIER Conference on Macroeconomics
August 24, 2017

Outline

- Review the basic mechanism
  - aim to understand general features of results
- Discuss interpretations/conclusions in the simplest model
  - do early announcements really increase volatility?
  - if so, what force(s) drive this result?
- Raise 3 questions

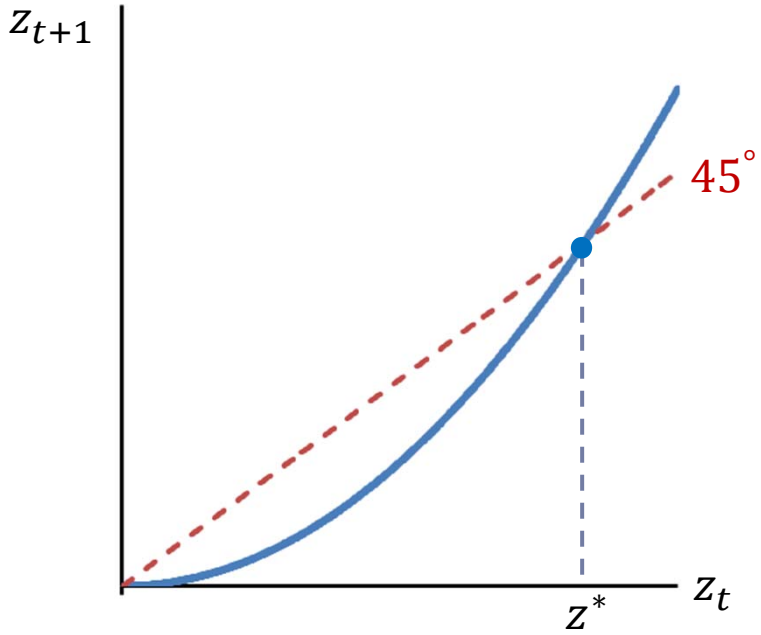
A (very) basic model

- Define:
  - $M_t =$ nominal money supply
  - $p_t =$ price level $\Rightarrow$ $\frac{p_{t+1}}{p_t} =$ inflation
  - $z_t = \frac{M_t}{p_t}$ real money balances
- Accounting: $$\frac{M_{t+1}}{M_t} = \frac{p_{t+1}}{p_t}\frac{z_{t+1}}{z_t}$$
- Assume: $$z_t^d = g\left(\frac{p_t}{p_{t+1}}\right)$$
- Equilibrium: $$z_t = g\left(\frac{M_t}{M_{t+1}}\frac{z_{t+1}}{z_t}\right)$$

or $$z_{t+1} = \frac{M_{t+1}}{M_t} g^{-1}(z_t) z_t$$

Dynamics of z_t

$$z_{t+1} = \underbrace{\frac{M_{t+1}}{M_t}}_{\text{if constant …}} g^{-1}(z_t) z_t$$



completely standard

- (Obvious) point: must start at z^* for money to retain value

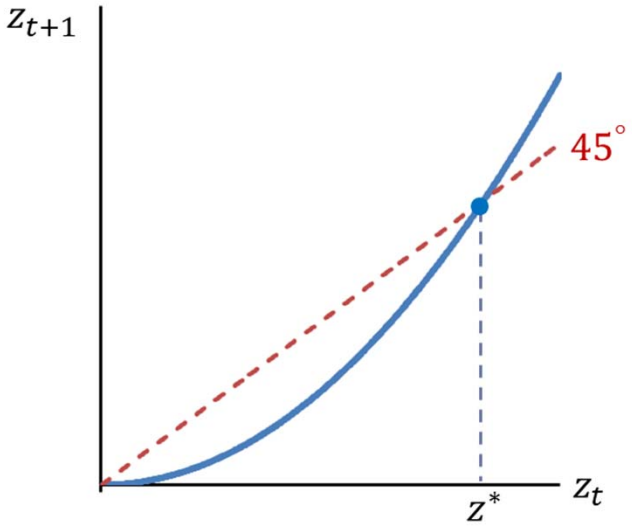
Policy announcements

- Suppose $M_t = M$ for $t < T$,
  $M' > M$ for $t \geq T$

What is the path of z_t, p_t?

Result 1: The price level must fully adjust by period T

- might have thought: some adjustment before T and some after
- but that *cannot* happen here if money is to retain value



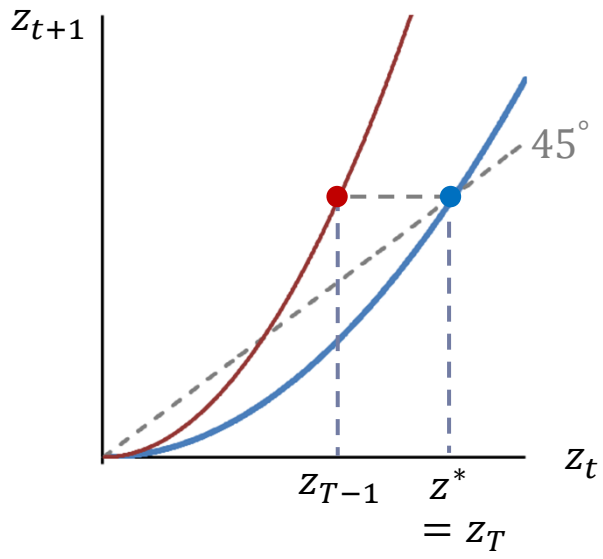
$\frac{M'}{p_T} = z^*$ must hold

The day before

- What happens at period $T-1$?

$$z_T = \frac{M'}{M} g^{-1}(z_{T-1}) z_{T-1}$$

the law of motion is different for one period



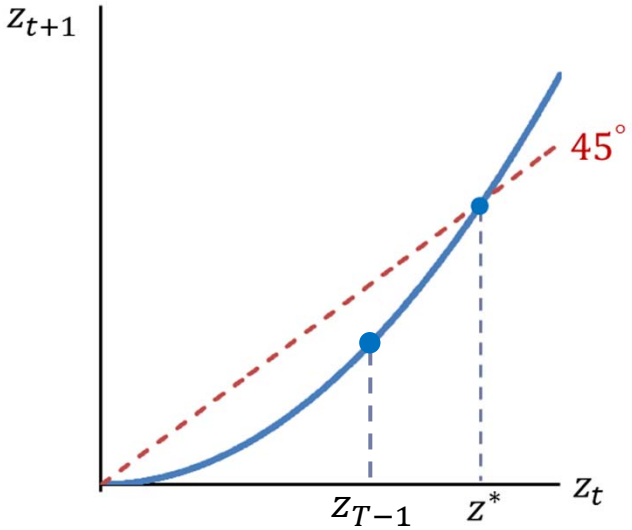
pins down z_{T-1} ($\Rightarrow p_{T-1}$)

Result 2: z_{T-1} is independent of what happened before

- might have thought: a long lead time implies less adjustment is needed in the last period

Impact of news

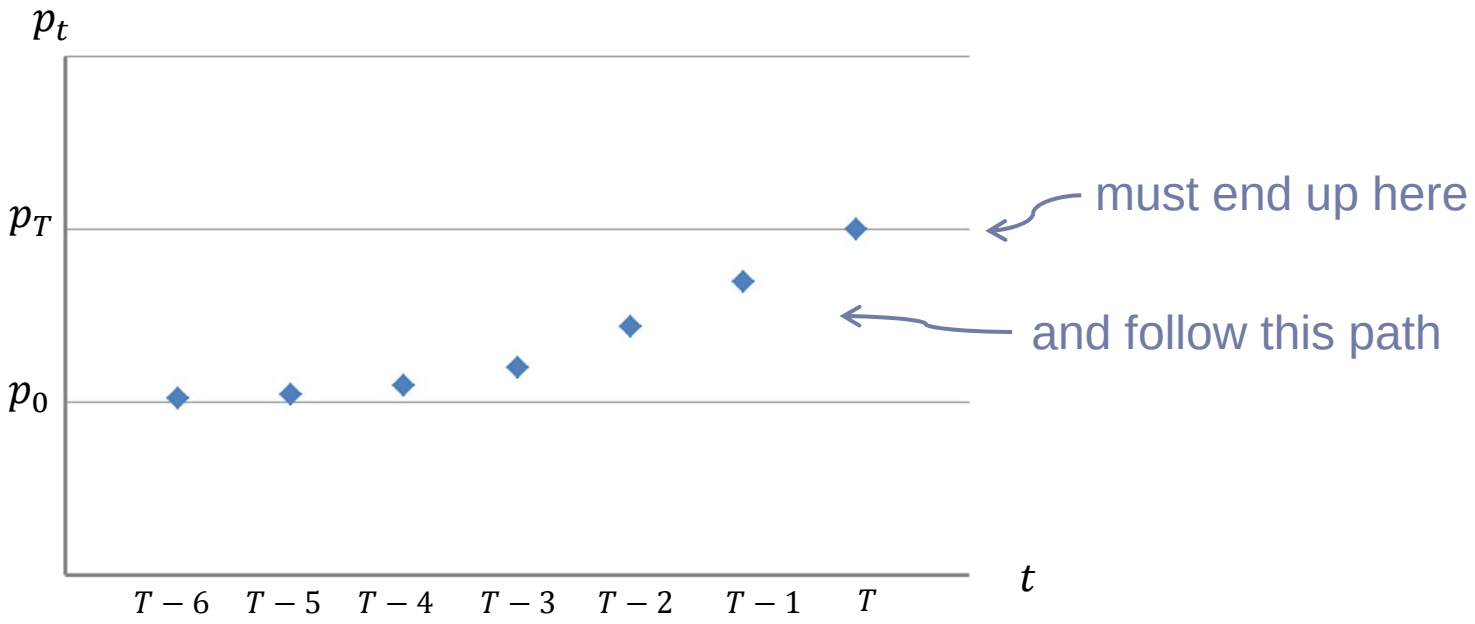
- What happens at the time of the announcement?
- Must start on the (unique) path that hits z_{T-1} in $T-1$ steps
  - more steps ⇒ start closer to the (original) steady state



Result 3: The change in z on announcement is <u>decreasing</u> in T.

Another view

- Looking at the behavior of p_t:



- Price level jumps from p_0 to this path on announcement
  - earlier announcement ⇒ smaller initial jump

Early announcements and volatility

- Does an earlier announcement ↑ or ↓ volatility?
  - answer depends on the *comparison* you make
- Paper: benchmark is a complete surprise at T
  - no change in z_t → any early announcement increases volatility
  - but … this case seems very special
- Suppose agents will find out at least one period in advance
  - no complete surprises; plans "leak" out one period in advance
  - or can choose to announce plans earlier

⇒ Clear sense in which earlier announcement lowers volatility

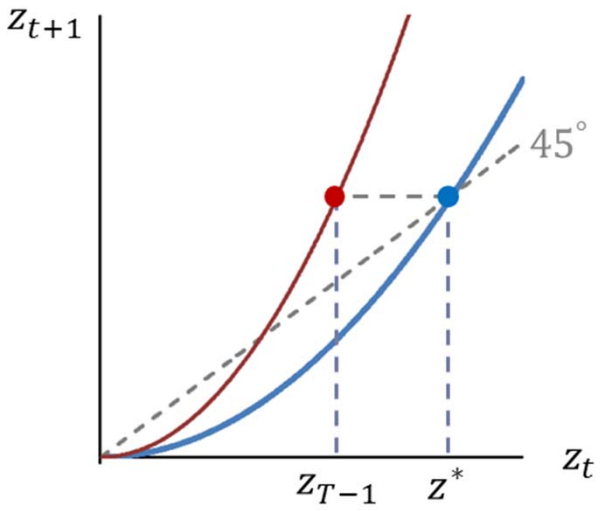
- intuition: total change in p_t is fixed
- early announcement ⇒ this change is spread over more periods

News about real shocks

- Suppose the event is instead a change in money demand
  - in period $T-1$, agents have a lower need for real balances

$$z_T = \frac{M}{M} g_2^{-1}(z_{T-1}) z_{T-1}$$

again, the law of motion is different for one period



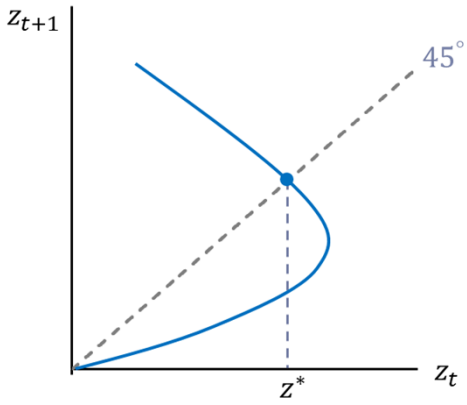
qualitatively the same!

- Results are (essentially) the same:
  - change between $T-1$ and T is independent of the lead time
  - earlier news leads to a smaller jump on announcement

Summary

- My (very) simple model: earlier news ⇒ less volatility
  - opposite to the message of the paper
  - so … what is my model missing?

1. I have ruled out complete policy surprises
   - but … is that what the paper is really about?
2. I have assumed g is nicely behaved
   - with strong income effects, etc …
3. My model is very simple
   - no other asset returns appear in g
   - no other variables to be volatile



How important is each of these?

Three questions

1) What is the relevant benchmark?

- The case where ΔM is a complete surprise does not seem to be a great benchmark (to me)
  - policy is neutral, so … why is it being done?
  - has no counterpart for the case of a real news shock
- Better benchmark: agents learn the shock at $T-1$…
  - either a policy announcement or a real news shock
- Question: what happens when they learn it earlier?
  - simple model: early news reduces volatility, as expected
  - focus: what force(s) can overturn this result?

2) What force(s) overturn the basic result?

- How important are complex dynamics associated with non-monotonicity of g?
  - some conjectures for "small" news:

stability of steady state	dynamics	effect on volatility
unstable	monotone	↓
unstable	oscillating	↓?
stable	oscillating	↑

  - are there general results along these lines?

- How important are other features of the model?
  - other arguments in the g function that I have ignored
  - volatility of other variables in the (richer) model

3) What should a policy maker take away?

- Paper emphasizes that “forward guidance” can create volatility
  - but is this a model of forward guidance in the usual sense(s)?
- Alternative: suppose we live in a world with real news shocks that interact with money/liquidity premia
- What should policy makers do?
  - should monetary policy react immediately to news?
  - should monetary *announcements* be made in reaction to news?
  - when should a statistical agency release data?
- Model may provide a platform for answering these questions