“Pushing on a String: U.S. Monetary Policy Is Less Powerful in Recessions”

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Discussion by

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Overview

- Paper presents evidence that the effect of monetary policy shocks on output, expenditure volumes, inflation, etc., is **regime dependent**: it is more powerful in expansions than in recessions (U.S. data)
- Monetary policy shocks to the federal funds rate are taken from Romer and Romer (2004): “narrative” approach to identification.
- Impulse responses estimated by an extension of the **local projection method** in Jorda (2005), extended by Auerbach and Gorodnichenko (2011):
  - no need to specify a full-fledged dynamic model (VAR)
  - extension consists of allowing for different impulse responses across two regimes (booms vs. recessions); smooth transition btw regimes
- Alternative explanation based on differential effects of positive and negative shocks examined (and ruled out)
- Array of robustness checks

Is the evidence really "statistically strong"?

- Let β_h^b and β_h^r, $h = 0, 1, 2, \ldots, 20$ denote impulse responses in booms vs. recessions
- We are interested in testing $H_0^h : \beta_h^b - \beta_h^r = 0$, $h = 0, 1, 2, \ldots, 20$
- The authors consider a sequence of t-stats: $\hat{t}_h$, $h = 0, 1, 2, \ldots, 20$
- Each t-stat is compared with the (asymptotic) 5% critical values ± 1.65
- BUT: this is a **joint** testing problem—individual significance at a given level is misleading

  E.g. if the t-stats were mutually independent, then

$$\text{Prob.}\left[|\hat{t}_h| > 1.65 \text{ for some } h \,\middle|\, H_0^0, \ldots, H_0^{20} \text{ all true}\right]$$
$$= 1 - 0.9^{21} = 0.89$$

Is the evidence really "statistically strong"? (cont'd)

- In this problem the t-stats are correlated—it is not immediately clear how distorted nominal significance levels are
- Still, the fact that the sequence $\hat{t}_h$, $h = 0, 1, 2, \ldots, 20$ crosses ± 1.65 once or twice is not the most convincing evidence against H_0.
- Jorda (2005) does discuss joint inference for β_h, $h = 0, 1, 2, \ldots, H$. Can you generalize to differences across regimes?
- Alternatively, you could try using the White (2000) "reality check" or the Hansen (2005) refinement.

  $\Rightarrow$ Inference based on $\max_h \hat{t}_h$ via block-bootstrap

- (Or don't do anything but acknowledge the issue.)

Interpretation of state dependence

- Interpretation based on asymmetric effect of positive vs. negative shocks ruled out:
  - positive (contractionary) policy shocks found to have larger effects than negative (expansionary) shocks
  - but positive shocks do not appear more common in boom periods (as defined in the paper)
- This type of asymmetry is in line with recent findings by Angrist, Kuersteiner and Jorda (2013); may want to point this out. Second part is a bit surprising.
- Policy implications of results. Is monetary stimulation by cutting the interest rate during recessions doubly doomed?

  A: trying to do something that doesn't work well in general at a time when it is especially ineffective; or

  B: only means that negative **surprises** are ineffective during recessions; the anticipated component of a rate cut may still be stimulative

Specification and estimation issues

- Parameters that control the definition of boom vs. bust and the speed of transition are calibrated rather than estimated
  - state variable=centered seven quarter moving average of real GDP growth; 20% of sample designated as recession
- In fairness, these parameters hard to estimate (identification is weak) and the authors perform some robustness checks; is it enough?
- There are examples of Threshold-VAR models where the threshold is estimated by (quasi-)ML:

  $\Rightarrow$ E.g., Deak and Lenarcic (2013): fiscal multiplier depends on debt-to-GDP ratio

  $\Rightarrow$ Specification search over empirically most relevant state variable
- (This would however reintroduce the disadvantages of the VAR methodology relative to local projections)

Miscellaneous comments

- Briefly mention possible theoretical explanations of why the effect of monetary policy shocks can be expected to depend on the state of the business cycle
- Clarify role of "control" variables x_t in the projection method. Do we need them if the Romer and Romer shocks are truly exogenous?
  - In Jorda (2005) there is a vector $\mathbf{y_t}$ of dependent variables and $x_t = (\mathbf{y_{t-1}}, \ldots, \mathbf{y_{t-p}})$
  - Even if we are interested in the IRF of a single component of $\mathbf{y_t}$ only, what other variables to include is still a choice
  - p is still a choice
  - Robustness checks w.r.t. the specification of x_t to see if it matters

Miscellaneous comments (cont'd)

- Extending robustness checks: use SVAR-based monetary policy shocks instead of Romer and Romer.
  - This is already done to a limited extent, but in a very minimalistic VAR
  - You could use one of the benchmark identification schemes in Christiano, Eichenbaum and Evans (1999)
  - (somewhat weird mixture between VAR modeling and local projections)