A Unified Measure of Fed Monetary Policy Shocks

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Summarize Paper

First-Step

$$\Delta R_{i,t} = \alpha_i + \theta_i \Delta i_t^{IV} + \mu_{i,t}, i = 1, 2, \ldots, 30$$

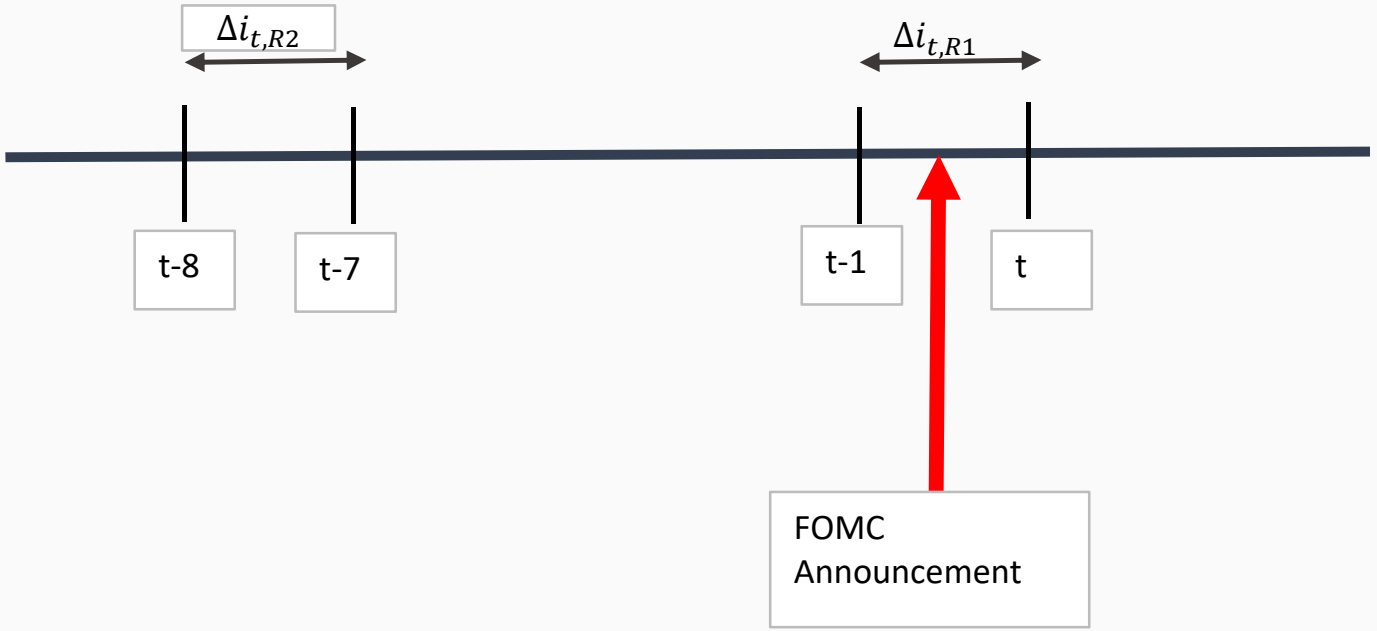
Second-Step

$$\Delta R_{i,t} = \alpha_i + e_t \hat{\theta}_i + \nu_{i,t}, i = 1, 2, \ldots, T$$

- e_t is the monetary policy shock.
- Comparison of e_t to a variety of extracted monetary policy shock series
- Show that e_t does not capture private information by the Fed (more on this later)
- Use e_t in VAR analysis

Identification

$$\Delta i_t^{IV} = \Delta i_{t,R1} - \Delta i_{t,R2}$$



My Thoughts

- In the vein of research that use event study/high frequency information to obtain exogeneity
- Authors have clearly thought very carefully about identification

What is a Monetary Policy Shock?

$$i_t = \underbrace{i_t^* + a_\pi[\pi_t - \pi_t^*] + a_y[y_t - y_t^*]}_{\text{Systematic/Endogenous}} + \epsilon_t^{MP}$$

- Represents the "non-systematic" component of monetary policy
- Taken from a very short term interest rate that the central bank can control (i.e. overnight/Federal Funds Rate)
- Consistent with how people think about it New Keyensian DSGE models ala policy reaction function
- Obvious Challenge
  - What is systematic, what is not?
  - Related to what is exogenous and what is endogenous (classic macro problem)
- If policy is well run, the effect of monetary policy shocks should be small.

Problems brought on by Zero Lower Bound Period

$$i_t = \underbrace{i_t^* + a_\pi[\pi_t - \pi_t^*] + a_y[y_t - y_t^*]}_{\text{Systematic/Endogenous}} + \epsilon_t^{MP}$$

- What is "systematic" when $i_t = 0$ for a prolonged period?
- What can the central bank really control?
  - Overnight rates can be perfectly controlled using open market operations, but longer term yields becomes more questionable
  - Is forward guidance or the revelation of private information part of the monetary policy shock?
    - Monetary news shock? (i.e. revealing ϵ_{t+h}^{MP})
    - Forward guidance as changing the expectations structure, so is not a shock (e.g. Kulish, Morley & Robinson, JME, 2017)
- Shadow short rate "solves" the problems above, but economic agents do not transact/make decisions on the basis of a negative interest rate

Returning to the BRW Shocks

First-Step

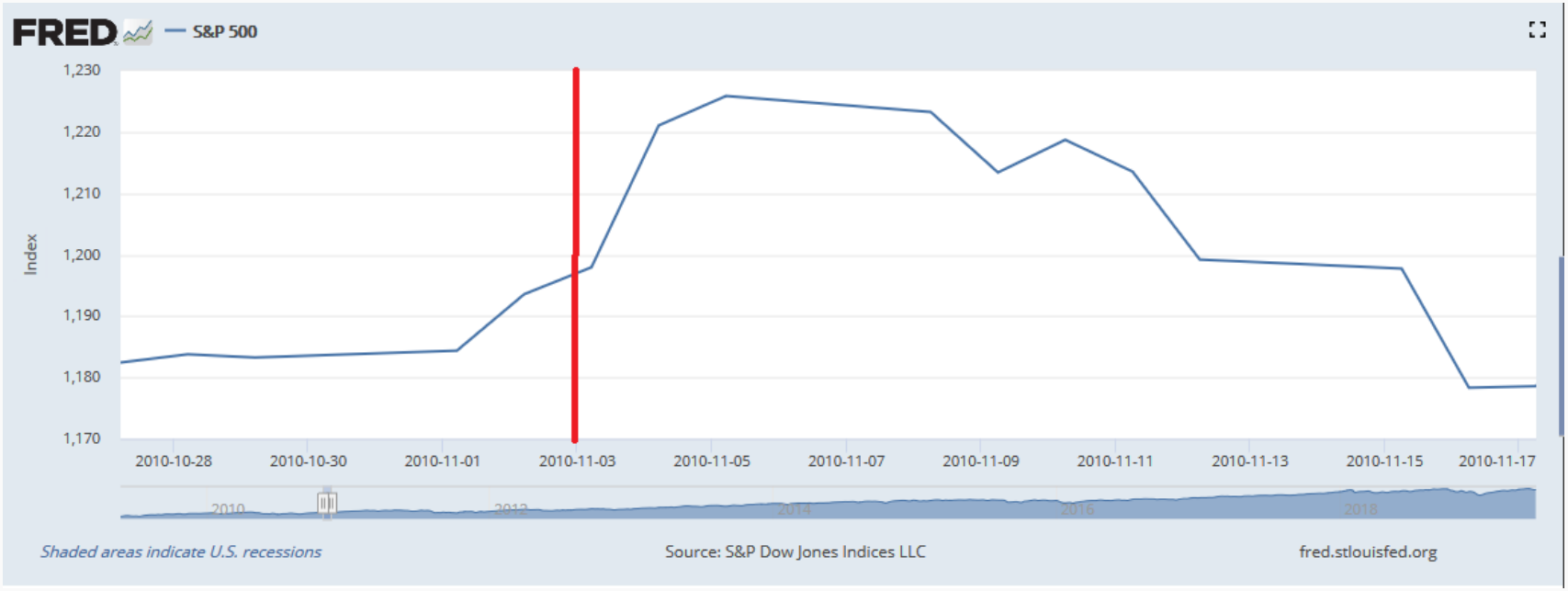
$$\Delta R_{i,t} = \alpha_i + \theta_i \Delta i_t^{IV} + \mu_{i,t}, i = 1, 2, \ldots, 30$$

Second-Step

$$\Delta R_{i,t} = \alpha_i + e_t \hat{\theta}_i + \nu_{i,t}, i = 1, 2, \ldots, T$$

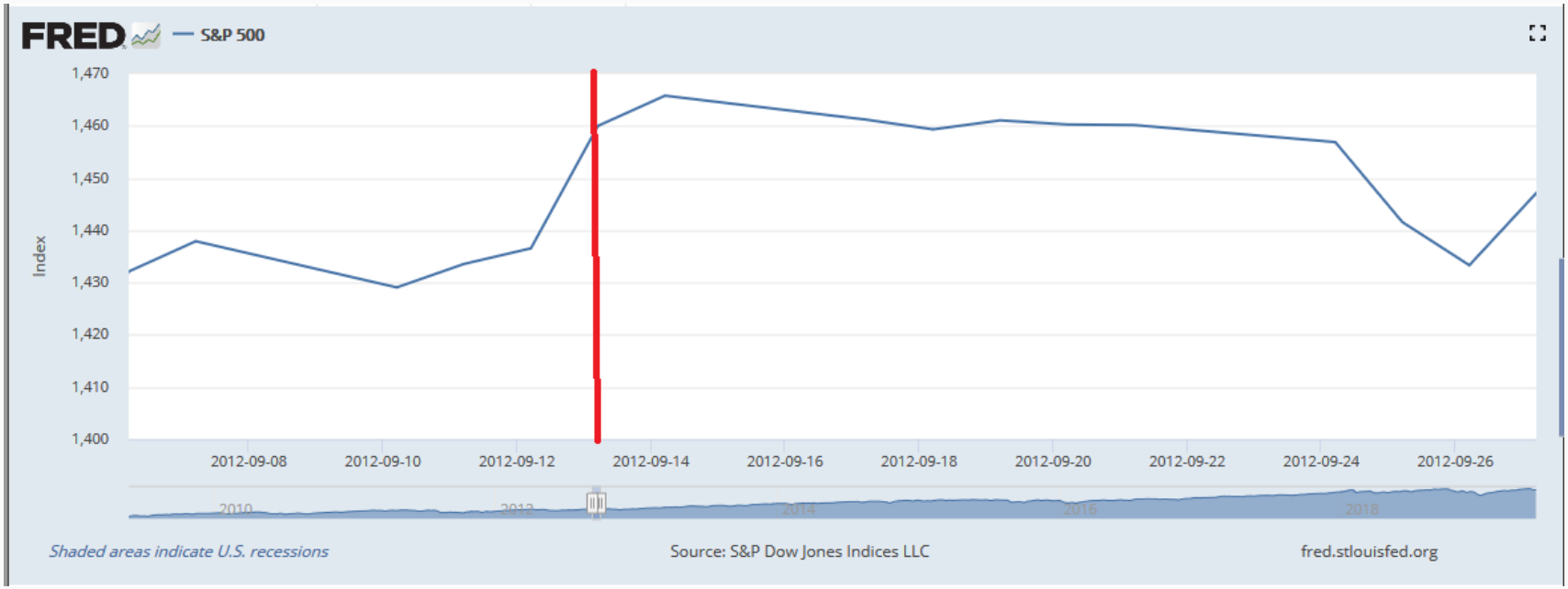
- Closest paper in thinking about the problem (IMO) is probably Inoue & Rossi (2018)
- Δi_t^{IV} is exogenous change in the MP surprise
  - Crucially will depends if Δi_t^{IV} is exogenous
  - If Δi_t^{IV} is exogenous, the follow up question is whether this variation is a monetary policy shock.
- More philosophical/rhetorical
  - If elements of private information by the central bank, forward guidance or imperfect control of the yield curve enter Δi_t^{IV}, is this a measure of monetary policy shocks?
  - Tests for private information with Blue-Chip. Great, but do those guys make any meaningful economic decision? Maybe not, but BRW do better than N& S and SS on these metrics.

Asset Prices React Before and Revert Quickly after Surprises



QE 2

Asset Prices React Before and Revert Quickly after Surprises



QE 3

More Minor Question about the SVAR

Conceptually, if e_t was exogenous and measures a monetary policy shock, we should be able to run

$$X_t = \beta(L)X_{t-1} + \gamma e_t + \nu_t$$

or by local projection

$$X_{t+h} = \beta(L)X_t + \gamma e_t + \nu_{t+h}$$

or by using an interest rate (maybe say a two year rate) in the VAR and using e_t as an external instrument (i.e. 2SLS)
or even

$$X_{j,t} = \gamma(L)e_t + \nu_{j,t}$$

Not sure you need to run e_t in the VAR (since it is exogenous) and do a Cholesky decomposition (since e_t conceptually already identifies the MP shock)

Conclusion

- A very careful and useful exercise
- Enduring Question: What is a monetary policy shock?