# Discussion of Jarociński & Karadi "Deconstructing monetary policy surprises: the role of information shocks"

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Bank of Canada Conference on Central Bank Communications

Fed Information Effect

- FOMC reveals information about state of economy
    - through interest rate decisions and/or
    - through statement (likely more important)
- We don't know much about transmission of information shocks
    - especially about the effects on lower frequency real variables

Emerging Literature on Fed Information Effect

- Barakchian & Crowe (2013), Campbell et al (2012, 2016), Nakamura & Steinsson (2018)
- Melosi (2017), Tang (2015), Lakdawala (2017), Lakdawala & Schaffer (2017), Miranda-Agrippino and Ricco (2017), Paul (2018)
- bunch of papers from this conference

**High-frequency (intra day) data:**
Use sign of stock price response to separate monetary surprises into

❶ "conventional" monetary shocks

- $-$ve corr. between stocks and short rate surprises

❷ information shocks

- $+$ve corr. between stocks and short rate surprises

**Low frequency (monthly) data**
Evaluate effects on macro variables using a SVAR

- Identification using sign restrictions
- separate impulse responses to conventional & information shocks

**Structural model with information effect and financial frictions**

- Estimate parameters by matching impulse responses

**High-frequency (intra day) data:**
Fed : around 1/3 meetings reflect information shocks
ECB : almost 1/2 meetings reflect information shocks

**Low frequency (monthly) data**
Impulse responses for US and Euro Area:

- "Textbook" responses to conventional monetary shock

- "Opposite" response to information shock

**Structural model with information effect and financial frictions**

- suggests that central bank has "information advantage" about (financial) demand conditions

Consider stock price $S_t$ depending on $\varepsilon_t$: conventional shock and $\psi_t$: information shock through effects on

- $r_t$: Discount rate
- $X_t$: News about future dividends

$$S_t\left(r_t(\varepsilon_t, \psi_t), X_t(\varepsilon_t, \psi_t)\right)$$

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Stock response to contractionary conventional shock

$$\frac{dS_t}{d\varepsilon_t} = \frac{\partial S_t}{\partial r_t}\frac{dr_t}{d\varepsilon_t} + \frac{\partial S_t}{\partial X_t}\frac{dX_t}{d\varepsilon_t}$$

Standard macro and asset pricing models $\Rightarrow$

$\frac{\partial S_t}{\partial r_t} < 0 \quad \& \quad \frac{dr_t}{d\varepsilon_t} > 0$

$\frac{\partial S_t}{\partial X_t} > 0 \quad \& \quad \frac{dX_t}{d\varepsilon_t} < 0$

We expect $\frac{dS_t}{d\varepsilon_t} < 0$

Stock response to contractionary information shock

$$\frac{dS_t}{d\psi_t} = \frac{\partial S_t}{\partial r_t} \frac{dr_t}{d\psi_t} + \frac{\partial S_t}{\partial X_t} \frac{dX_t}{d\psi_t}$$

$\frac{\partial S_t}{\partial r_t} < 0$     &     $\frac{dr_t}{d\psi_t} > 0$

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$\Rightarrow$ sign of $\frac{dS_t}{d\psi_t}$ is ambiguous in general

$\frac{dS_t}{d\psi_t} > 0$ if

❶ $\left| \frac{\partial S_t}{\partial X_t} \frac{dX_t}{d\psi_t} \right| > \left| \frac{\partial S_t}{\partial r_t} \frac{dr_t}{d\psi_t} \right|$

❷ $\frac{dr_t}{d\psi_t} < 0$

- It is possible to observe negative correlation between short rates and stock prices even if there is an information shock
- We can probably interpret this paper's findings as representing a lower bound of the effects of information shocks

Use revisions to private sector forecasts: (Blue Chip Data)

- Following Campbell et al (2012, 2016), Nakamura & Steinsson (2018)

Corr(surprises, output forecast revisions) $> 0 \Rightarrow$ information shock



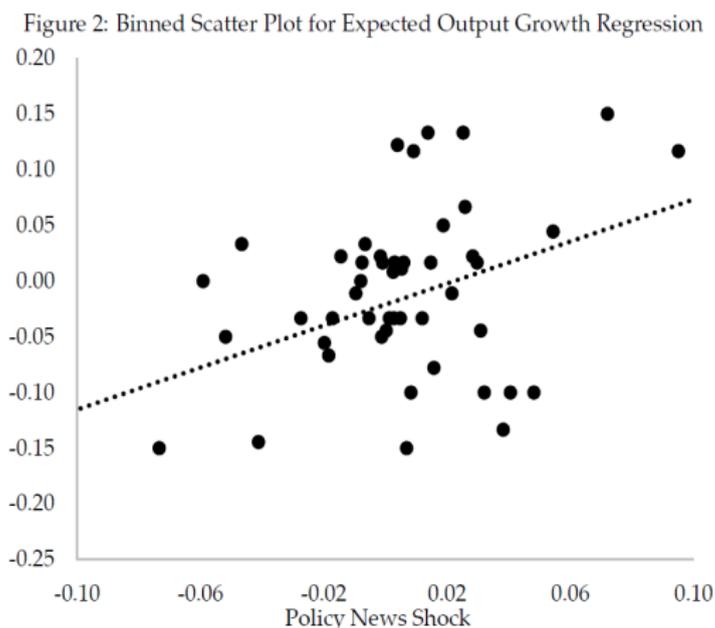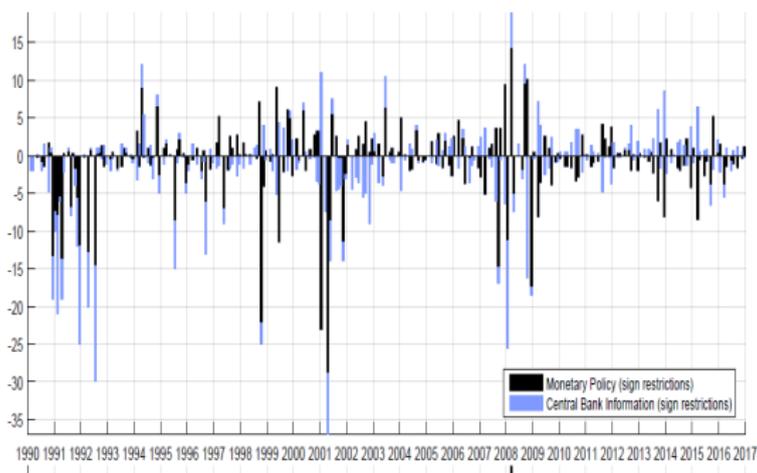Figure 2: Binned Scatter Plot for Expected Output Growth Regression

Figure: Nakamura & Steinsson (2018)

Do information shocks mainly stem from central bank communication? (as in Lakdawala (2017))
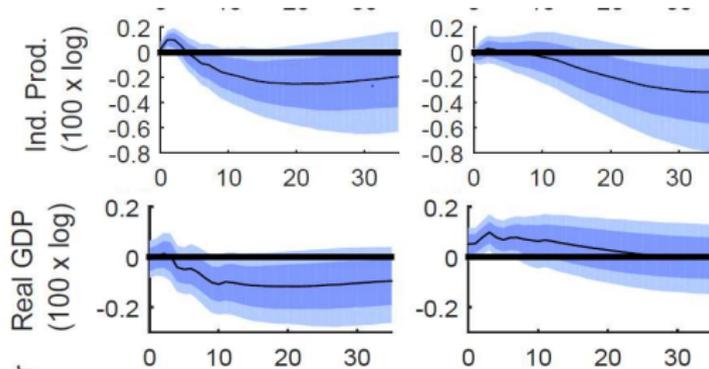
- Or also because of target rate changes?



Redo analysis with GSS (2005) path factor

- Compare effects of information shocks with baseline (3month futures)

For information shock: GDP goes up but not Industrial production

- Check with unemployment rate
- Confirm response of economic activity is not driven by some quirk in the interpolation procedure

They consider 1)pre-crisis sample (79-07) & 2)post-94 futures sample

- Check also a post 1990 sample or at least post-great moderation sample
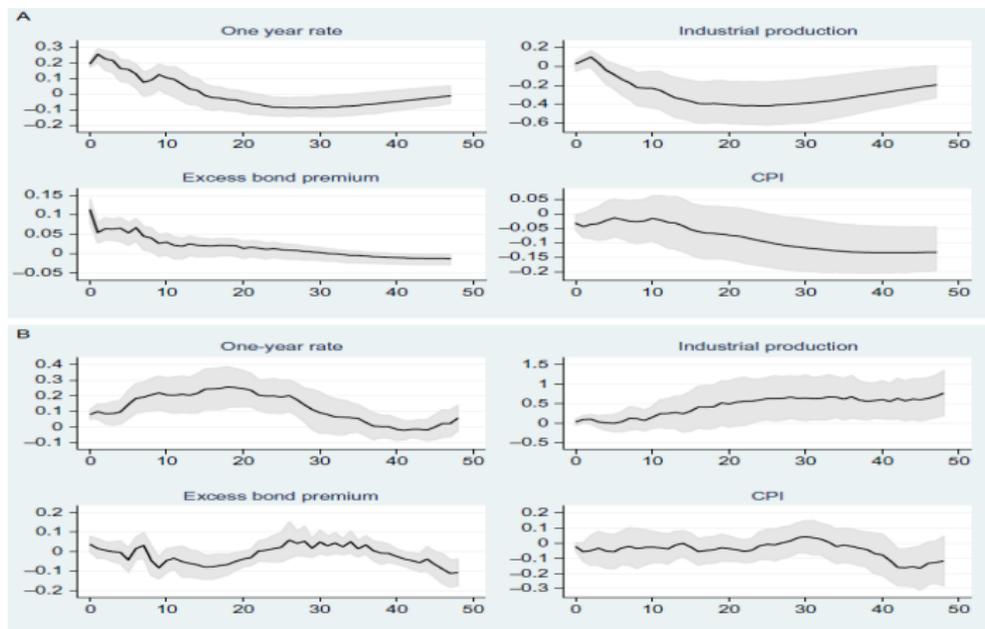


Figure: Ramey (2016): A)1979-2012, B)1990-2012

Are unscheduled FOMC meetings included in sample?

- If yes, then how are the surprises aggregated into monthly series?
- If not, do results change when including them?

Lakdawala & Schaffer (2017)

- Information Effects on stock market strongest on unscheduled FOMC meetings

SVAR is invertible if the structural shocks are spanned by the past and current values of the observed endogenous variables.

Ramey (2016)

*"Sometimes policymakers have more information about the state of the economy than private agents. If this is the case, and we do not include that information in the VAR, part of the identified shock may include the endogenous response of policy to expectations about the future path of macroeconomic variables."*

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- Include Greenbook forecasts in the SVAR?

Test of invertibility for SVARs with external instruments
- Stock & Watson (2017), Plabgorg-Moller & Wolf (2018)
- Granger causality test applicable here?

Basic idea is elegant and paper is very well executed

Reassuring to see consistent effects

- for US and Euro Area
- for sign restrictions and external instruments identification

My suggestions

- Discuss the competing effects of information shocks on stock prices
- Analyze importance of communication vs. target rate changes in driving information effects
- Check robustness
    - forecast revisions for identification
    - unemployment rate in SVAR
    - post great moderation sample
- Check invertibility assumption for the SVAR