

Monetary Policy Surprises Over Time

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Federal Reserve Board

Unconventional Monetary Policy: Effectiveness and Risks
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This Paper – A Summary

- Document the impact of monetary policy surprises (MPS) in the euro area and the United States from 1999 to date.
- Focus on the path-dimension of MPS.
- Find its impact on asset prices has changed over time.
- In particular
 - For the U.S., they find hump-shaped response on yield curve in pre-crisis and post-crisis periods, and an increasing impact in tenors during the crisis.
 - For the euro area, they find a large impact on all interest rates.

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Data

They use a variety of data:

- 3-, 6-, 9-, 12-month ED (US) or OIS (EA) and 2-, 5-, 10-year government bonds to construct the MP factors (for EA include Germany, France, Italy and Spain).
- MP dates as in Rogers et al (2014) updated to the present: MP meeting dates and important speeches.
- Asset prices: FX (USD/EUR, US/GBP, YEN/USD), stock market indexes, term premia, inflation swaps, implied vols, CDS and corporate spreads.
- Mix of 1-day and average 2-day changes.

The analysis

They identify a target factor and a path factor as the first 2 principal components of:

$$X_{TxN} = F_{Tx2} \Lambda_{2 \times N} + \epsilon_{TxN} \quad (1)$$

$$F_{Tx2} = M_r F_{Tx2} \quad (2)$$

where M_r is the residual projection matrix of the nearby future contract for the central bank reference rate.

More about the analysis

They estimate the equation:

$$\Delta y_t = \alpha + \beta_1 r_t^{Fed} + \gamma_1 \bar{F}_{1,t}^{Fed} + \beta_2 r_t^{ECB} + \gamma_2 \bar{F}_{1,t}^{ECB} + u_t \quad (3)$$

where Δy_t is the daily /average of 2 days change in the asset under consideration.

Selecting the right window

Problems:

- 1 Change in MP could be a response to the change in asset prices earlier in the period.
- 2 Both the changes in MP and in asset prices could be responding to macro news released earlier in the period.

Solutions:

- 1 *Use intradaily data to measure MPS:* using narrow window you can be sure that MP decision was not influenced by asset price movements or macro news during the same period.
- 2 *Use intradaily data to measure the change in asset prices Δy_t :* by shrinking the event study window it's less likely that other events took place in the same window.

Compromise: intradaily with pbl 1 and 1-day or 2-day window with pbl 2.

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Coverage of the Paper

- As is, paper seems to be conflating everything that is not a target surprise. (comparability across time?)
- It would be interesting to expand the analysis to do a more specific comparison.
- Perhaps consider a way to have target, LSAP and forward guidance as 3 different shocks.
- Lots of papers have done bits and pieces of the analysis (Swanson 2016, RSW 2014, RSW 2016).
- *Paper would probably gain quite a bit by extending the analysis to be as comprehensive as possible.*

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Effects of Fed Monetary Policy Surprises on Yields/Returns: LSAP and other days

	LSAP		Other	
<i>Intradaily</i>				
Two-year Treasury	-0.05***	(0.01)	-0.18***	(0.02)
Five-year Treasury	-0.21***	(0.01)	-0.25***	(0.01)
Ten-year Treasury	-0.25***	(0.00)	-0.25***	(0.00)
30-year Treasury	-0.22***	(0.02)	-0.16***	(0.01)
UK Gilt	-0.12***	(0.01)	-0.13***	(0.02)
Italian 10 Year	-0.03***	(0.01)	-0.06*	(0.03)
German 10 Year	-0.09***	(0.01)	-0.06***	(0.01)
Ten-year JGB	-0.04***	(0.01)	-0.09***	(0.01)
GBP	0.67***	(0.14)	0.72***	(0.13)
EUR	0.85***	(0.18)	0.98***	(0.25)
JPY	0.68***	(0.16)	1.45***	(0.20)
Stock Returns	0.91***	(0.26)	0.27	(0.34)
<i>Daily</i>				
Corp: Higher Grade	-0.15***	(0.05)	-0.09	(0.09)
Corp: Lower Grade	-0.14***	(0.05)	-0.14*	(0.08)
MOVE Index	-0.01	(0.04)	-0.10*	(0.06)

Effects of Fed Monetary Policy Surprises on Yields/Returns: Effects of First and Second Principal Components

	MPS_{1t}		MPS_{2t}	
<i>Intradaily</i>				
Two-year Treasury	-0.08***	(0.00)	-0.17***	(0.01)
Five-year Treasury	-0.19***	(0.00)	-0.17***	(0.01)
Ten-year Treasury	-0.25***	(0.00)	0.01*	(0.00)
30-year Treasury	-0.20***	(0.00)	0.20***	(0.00)
UK Gilt	-0.13***	(0.01)	-0.03	(0.02)
Italian 10 Year	-0.02***	(0.01)	0.00	(0.02)
German 10 Year	-0.09***	(0.01)	0.02*	(0.01)
Ten-year JGB	-0.05***	(0.01)	-0.02	(0.02)
GBP	0.71***	(0.08)	0.29	(0.19)
EUR	0.91***	(0.11)	0.38*	(0.26)
JPY	1.31***	(0.10)	-0.13	(0.23)
Stock Returns	0.93***	(0.16)	-0.16	(0.40)
<i>Daily</i>				
Corp: Higher Grade	-0.14***	(0.04)	0.10	(0.09)
Corp: Lower Grade	-0.25***	(0.04)	0.22**	(0.09)
MOVE Index	-0.04	(0.03)	-0.23***	(0.06)

Comparison pre-ZLB and ZLB

- Stocks and Bonds:

- Gurkaynak et al. (2005): 25 bps surprise \downarrow in FFTR \Rightarrow 10-yr yields \downarrow about 10 bps and stock prices \uparrow about 2pp.
- Rogers et al (2014): 25 bps surprise \downarrow in the 10-yr yield (without any change in the FFTR) \Rightarrow stock prices \uparrow 0.9pp.
- Based on Gurkaynak et al. (2005) in the pre-ZLB period, the FFTR would have to be cut by about 60 bps to lower 10-year yields by 25 bps, and boost stock prices by about 5pp.

- Credit Spreads:

- Rogers et al (2014): expansionary policy \Rightarrow credit spreads \uparrow (corporate yields fall by less than sovereigns).
- With conventional MP (e.g., Cenesizoglu and Essid, 2012): expansionary policy \Rightarrow corporate credit spreads \downarrow .

There some evidence that while unconventional monetary policy has effects on these other markets, the ZLB constraint makes it less powerful than conventional monetary policy.

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Interdependence of policies

$$\Delta y_t = \alpha + \beta_1 r_t^{Fed} + \gamma_1 \bar{F}_{1,t}^{Fed} + \beta_2 r_t^{ECB} + \gamma_2 \bar{F}_{1,t}^{ECB} + u_t \quad (4)$$

- Fed and ECB policies are in the same equation.
- How many days are MPS of both central banks in the same window?
- *Would be interesting to see whether results are different using separate regressions.*

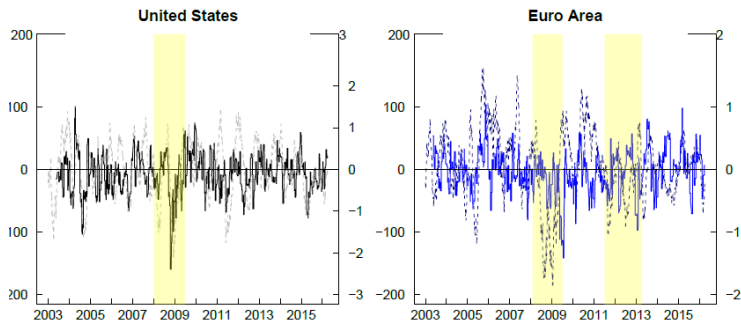
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Control Variables

- Use the Citi Economic Surprise Index (CESI) for US and euro area to control for macroeconomic releases on same day.
- Limitation: it uses asset price information to determine the weights used for the aggregation of macro surprises.
- Solution: use the Scotti (JME, 2016) surprise indexes!



Specify better what you do

- Are the path surprises pre-crisis, crisis and post-crisis computed all in one go?
- What is the window that you are using for MPS (daily) and for the asset price response (two-day average)? Two-day change better than two-day average.
- Are you using futures or spot bond yields to compute the MPS?

Interesting paper!

Looking forward to seeing a future draft...