

Discussion: Learning About Fed Policy From Macro Announcements: A Tale of Two FOMC Days

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Summary of the Paper

- Decompose FOMC days into two sets: preceded with and without macro announcements
- Two Main Empirical Facts
 - ① Reexamine existing evidence around FOMC announcements
 - announcement premium, pre-FOMC drift, upward sloping security market line, etc. only present when preceded by macro announcements
 - ② Predictability of FOMC announcement returns
 - by federal funds futures rate changes on macro announcement days
 - by cumulative return from macro announcement day to FOMC day
 - no predictability on other days
- Other evidence: e.g., secular decline in interest rate, predictable MPS, Fed info effect, etc.
- A model where investors learn about subsequent Fed policy from macro announcement

Main Comments: Outline

- Extremely interesting set of empirical evidence
- Comment 0: Empirical evidence should be organized around a coherent story
- Comment 1: A risk premium based interpretation of FOMC announcement premium following macro announcements
 - Investors are uncertain about Fed's response function
- Comment 2: Interpretation of predictability of FOMC announcement returns
 - risk premium?
 - biased belief?

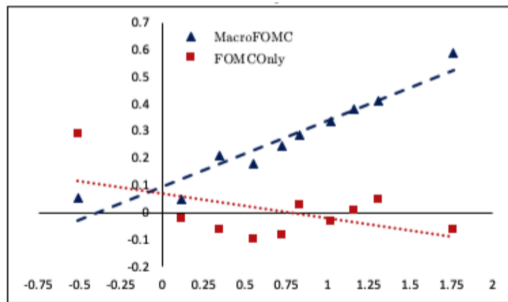
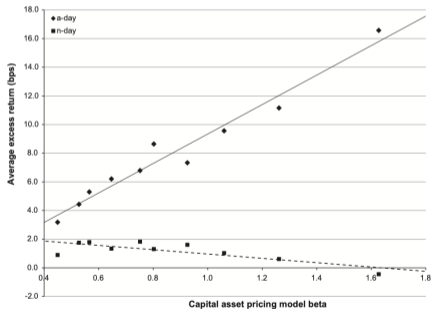
Summary of Empirical Evidence I

- Literature: FOMC day return is 23.5 bps (Savor-Wilson, 2014); pre-FOMC drift is 49 bps (Lucca-Moench, 2015)
- This paper: Both are present only within 5 days following major macro announcements (GDP, unemployment, CPI, Industrial production)

	Same Day	1 Day	2 Days	3 Days	4 Days	5 Days
Panel A. FOMC announcement premium						
Macro	0.32** (0.14)	0.35** (0.14)	0.33** (0.13)	0.23** (0.09)	0.20** (0.09)	0.19** (0.08)
NoMacro	0.11 (0.08)	0.08 (0.08)	0.01 (0.08)	-0.00 (0.11)	-0.01 (0.11)	0.00 (0.14)
Panel B. Pre-FOMC drift						
Macro	0.26** (0.11)	0.29** (0.11)	0.32*** (0.09)	0.29*** (0.07)	0.24*** (0.07)	0.25*** (0.06)
NoMacro	0.20*** (0.07)	0.19*** (0.07)	0.13* (0.07)	0.06 (0.11)	0.12 (0.12)	0.05 (0.14)

Summary of Empirical Evidence I

- Literature: SML is upward sloping on FOMC days (Savor-Wilson, 2014)
- This paper: only preceded with macro announcements



Comment 1: A Risk Premium Based Interpretation

- This paper: Investors learn from macro announcements about Fed policy
- It is not clear why learning can explain the first empirical evidence
- Suggestion 1: I propose a risk premium based model for FOMC premium preceded by macro announcements (Ai-Bansal, 2018; Ai-Han-Xu, 2022)

Suggestion 1: A Risk Premium Based Interpretation

- A simple model where investors are uncertain about Fed's response function (Bauer-Swanson, 2022)
- Consider the case where the monetary policy follows a Taylor rule:

$$i = \phi y + \epsilon \quad (1)$$

where ϕ is the Fed's response function, y is the output gap. Assume $\epsilon = 0$.

- At time T (FOMC), Fed makes interest rate decision based on their best info about y :

$$i_T = \phi \mathbb{E}_t[y] \quad (2)$$

- If **no uncertainty** about ϕ , there is no monetary policy uncertainty, therefore, no announcement premium.

The Case Without Macro Announcement

- Now assume the market **does not know** ϕ , which is a random variable where $\text{Var}[\phi] = \sigma^2$. Suppose output gap $y \sim \mathcal{N}(\bar{y}, \tau^2)$.

- **Two Cases:**

- **Case 1: There is no macro announcement at time $t < T$:**

- $\mathbb{E}_t[y] = \bar{y} \implies i_T = \phi \bar{y}$.
- The monetary policy uncertainty of i_T is

$$\text{Var}_t[i_T] = \text{Var}_t[\phi \bar{y}] = \bar{y}^2 \sigma^2. \quad (3)$$

- Average risk premium is proportional to $\bar{y}^2 \sigma^2$.

The Case With Macro Announcement

- **Case 2: There is a macro announcement at time $t < T$:**

- Assume the macro announcement fully reveals the true value of y , i.e., $\mathbb{E}_t[y] = y \Rightarrow i_T = \phi y$
- Monetary policy uncertainty of i_T is

$$\text{Var}_t[i_T] = \text{Var}_t[\phi y] = y^2 \sigma^2. \quad (4)$$

- If we have many macro announcements, the **average** risk premium will be proportional to

$$\mathbb{E}[y^2 \sigma^2] = (\bar{y}^2 + \tau^2) \sigma^2 \quad (5)$$

- which is higher than Case 1 ($\bar{y}^2 \sigma^2$) when there is no macro announcement.

Intuition

- Intuition:
 - Suppose mkt has **uncertainty about Fed's response function**
 - If there is no macro announcement, mkt knows that Fed would not respond.
 - But if there is macro news, mkt knows that Fed is going to respond to macro conditions.
 - However, mkt is uncertain about **how much** the Fed is going to respond. This adds up to the monetary policy uncertainty, which is associated with a **higher risk premium**.
- Also consistent with this paper's empirical evidence where FOMC announcement premium is higher when the level of VIX is higher (i.e., τ or σ is higher)

Summary of Empirical Evidence II: FOMC Return predictability

- Federal funds futures rate changes on macro announcement days can predict both FOMC returns and pre-FOMC drift.

	Pre-FOMC Drift	Annoucement Premium
ΔFFR_t	0.96 (1.44)	1.04 (0.84)
$\Delta FFR_t \times 1^{macro}$	-18.07*** (5.84)	-19.26*** (5.98)
$\Delta FFR_t \times 1^{macro} \times Days$	7.03** (3.10)	6.18*** (1.99)

- This paper: a reduction in federal funds rate expectations is associated with a positive announcement return

Comment 2: Interpretation of Return Predictability

- How to interpret FOMC return predictability?
- Two explanations from the literature
 - Risk premium
 - Liu-Tang-Zhou (2022): option price based measure of risk premium
 - Ai-Han-Xu (2022): informativeness based measure
 - Biased beliefs
 - Bauer-Swanson (2022): mkt's misperception of the Fed's reaction function to macro news
- Suggestion 2: examine if the evidence is consistent with either or both of them

Conclusion

- An extremely interesting set of empirical evidence
- New evidence on connections between macro announcements and FOMC announcements
- Organize the evidence around one coherent story
- Elaborate more clearly on the economic mechanism