Monetary Policy and the Equity Term Structure

Benjamin Golez and Ben Matthies

Discussant: **Andrei S. Gonçalves**

2022 USC Macro-Finance Conference

Outline

The Traditional Monetary Policy Effect

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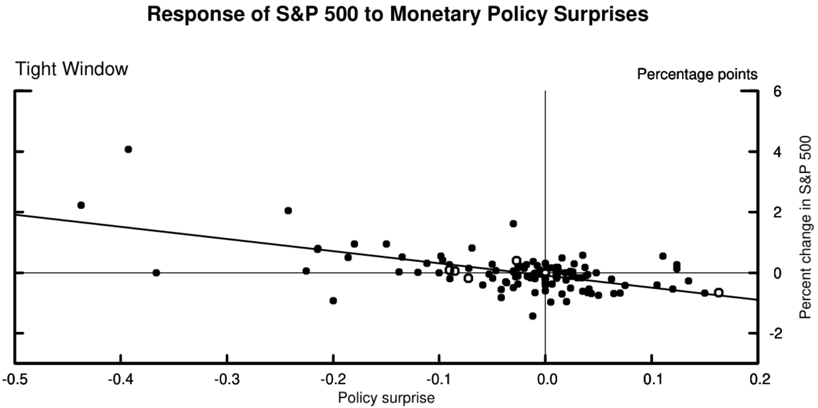

Gürkaynak, Sack, and Swanson (2004)

The Traditional Monetary Policy Effect

The Impact of Monetary Policy on Dividends, Interest Rates, and Future Returns

	Sample Used for VAR	
	1/73–12/02	5/89–12/02
Current excess return	−11.55 (3.87)	−11.01 (3.72)

Bernanke and Kuttner (2005)

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	(3.87)	(3.72)
Future excess returns	6.10	3.29
	(1.74)	(1.10)
Real interest rate	0.64	0.77
	(1.03)	(1.87)
Dividends	−4.82	−6.96
	(1.73)	(2.35)

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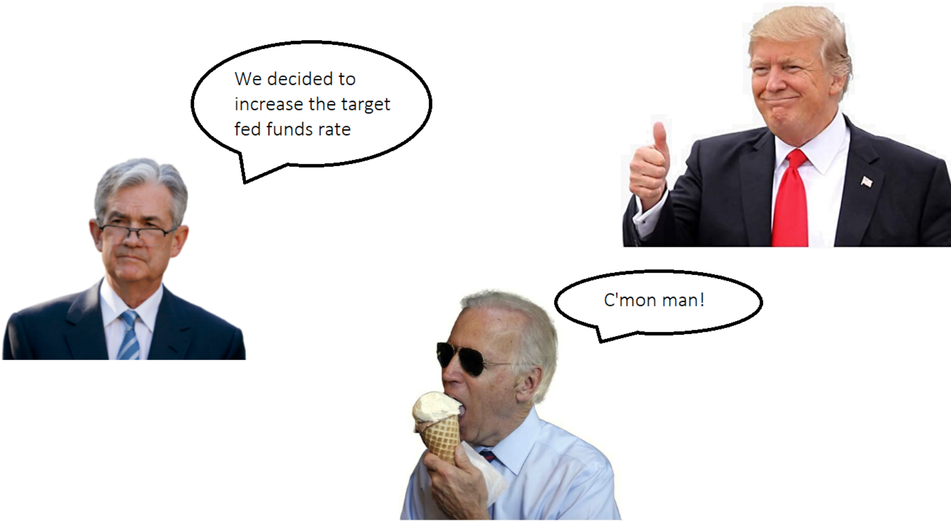

The Fed Information Effect

The Fed Information Effect

We decided to increase the target fed funds rate

A clear indication of how strong the economy is right now

The Fed Information Effect

Nakamura and Steinsson (2018 QJE, page 1304-1305):

"...when an FOMC announcement signals higher interest rates than markets had been expecting, market participants may view this as implying that the FOMC is more optimistic about economic fundamentals going forward than they had thought, which in turn may lead the market participants themselves to update their own beliefs about the state of the economy. We refer to effects of FOMC announcements on private sector views of non-monetary economic fundamentals as 'Fed information effects'"

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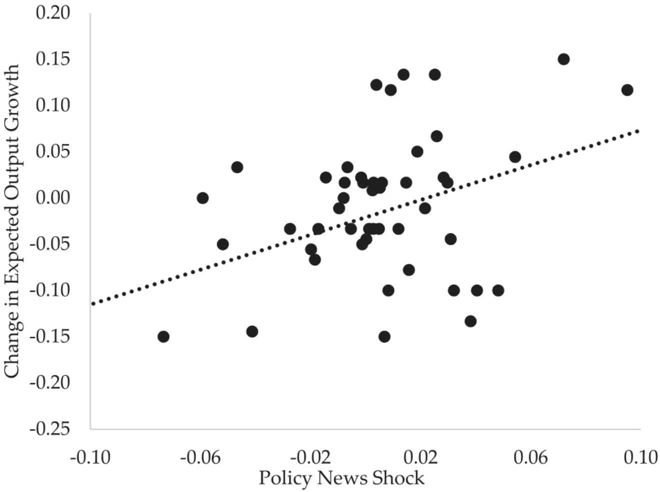

Nakamura and Steinsson (2018)

This Paper in a Nutshell

- Studies how monetary policy affects the equity term structure
- $log(P_t^{(h)}) = log(D_t) + \mathbb{E}_t[g_{t \to t+h}] - \mathbb{E}_t[r_{t \to t+h}^{(h)}]$
- $\uparrow i_t \implies \downarrow P_t^{(Equity)}$ (traditional monetary policy effect)
- $\uparrow i_t \implies \uparrow P_t^{(DivStrip)}$ (Fed information effect)

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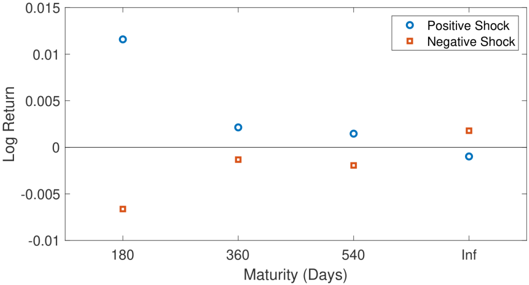
Figure 1: **Average Dividend Strip Return by Monetary Policy Shock**



The Model

$$\Delta\widehat{GDP}_{t+1} = \rho_g \cdot \Delta\widehat{GDP}_t + \varepsilon_{\overline{t}} + b \cdot \iota_t + w_{t+1}$$

$$\iota_t - \iota \equiv \widehat{\iota}_t = \rho_\iota \cdot \widehat{\iota}_{t-1} + \alpha \cdot \mathbb{E}^{cb}_{\overline{t}}[\Delta\widehat{GDP}_{t+1}] + \mu_{\overline{t}}$$

- $\mu_{\overline{t}}$ affects $\widehat{\iota}_t$ but not $\mathbb{E}^{cb}[\widehat{GDP}]$ (traditional monetary policy)
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- Investors infer $\varepsilon_{\overline{t}}$ and $\mu_{\overline{t}}$ based on $\widehat{\iota}_t$
- Short-term $\mathbb{E}^I[\widehat{GDP}] \Rightarrow \sigma^2_\epsilon/\sigma^2_\mu$
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Model Prediction 1: $\Delta P^{(h)}$ Forecasts Growth

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Table 3: **Real Dividend and GDP Forecasting**

Horizon	1Q	2Q	3Q	4Q	5Q	6Q	7Q	8Q
Panel A: Real Dividend Growth								
ΔP^{180}	0.669	0.874	0.965	1.147	1.063	0.947	0.542	0.462
	(0.242)	(0.236)	(0.306)	(0.363)	(0.362)	(0.340)	(0.219)	(0.193)
Adj. R^2	0.046	0.079	0.076	0.106	0.092	0.075	0.017	0.012

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Adj. R^2	0.046	0.079	0.076	0.106	0.092	0.075	0.017	0.012
ΔP^{180}	0.604	0.792	0.899	1.099	1.057	0.875	0.397	0.322
	(0.233)	(0.227)	(0.346)	(0.410)	(0.428)	(0.417)	(0.322)	(0.247)
Δi_t^{u}	0.194	0.247	0.196	0.143	0.017	0.226	0.441	0.429
	(0.245)	(0.318)	(0.356)	(0.371)	(0.376)	(0.394)	(0.465)	(0.439)
Adj. R^2	0.040	0.077	0.070	0.098	0.081	0.069	0.029	0.025
Obs.	84	84	84	84	83	81	79	79

Model Prediction 1: $\Delta P^{(h)}$ Forecasts Growth

Table 3: **Real Dividend and GDP Forecasting**

Horizon	1Q	2Q	3Q	4Q	5Q	6Q	7Q	8Q
Panel B: Real GDP Growth								
ΔP^{180}	0.127	0.173	0.192	0.149	0.111	0.039	0.094	0.057
	(0.060)	(0.072)	(0.102)	(0.079)	(0.054)	(0.037)	(0.122)	(0.089)
Adj. R^2	0.034	0.044	0.041	0.019	0.018	-0.011	0.002	-0.008
ΔP^{180}	0.110	0.174	0.216	0.174	0.102	0.029	0.090	0.044
	(0.058)	(0.081)	(0.097)	(0.087)	(0.068)	(0.049)	(0.142)	(0.097)
Δi_t^u	0.052	-0.003	-0.072	-0.076	0.029	0.032	0.013	0.039
	(0.081)	(0.081)	(0.096)	(0.103)	(0.083)	(0.125)	(0.111)	(0.066)
Adj. R^2	0.033	0.032	0.039	0.018	0.008	-0.022	-0.011	-0.018
Obs.	84	84	84	83	81	79	79	77

Model Prediction 2: $\Delta P^{(h)}$ is Linked to Soft Information

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Table 4: **Text-based Measures and Short-term Asset Return**

η_t^{lda}
η_t^{sent}

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	Short-term asset return (ΔP^{180})			
η_t^{lda}	0.243	0.240		
	(0.103)	(0.101)		
η_t^{sent}			0.015	0.015
			(0.007)	(0.007)
$\Delta\iota_t^s$		0.242		0.245
		(0.104)		(0.105)
Adj. R^2	0.036	0.068	0.027	0.059
Obs.	128	128	128	128

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	Short-term asset return (ΔP^{180})				Market return (ΔP^{∞})			
η_t^{lda}	0.243	0.240			0.003	0.005		
	(0.103)	(0.101)			(0.016)	(0.015)		
η_t^{sent}			0.015	0.015			-0.002	-0.002
			(0.007)	(0.007)			(0.001)	(0.001)
$\Delta\iota_t^s$		0.242		0.245		-0.060		-0.059
		(0.104)		(0.105)		(0.016)		(0.016)
Adj. R^2	0.036	0.068	0.027	0.059	0.008	0.089	0.018	0.111
Obs.	128	128	128	128	128	128	128	128

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1) The Paper's Contribution

- Contributes to debate on existence of Fed information effects
- My view: it can do more
- The mixed evidence is a consequence of offsetting effects:
- Term structure allows you to identify both effects on prices
- Estimate parameters (σ_ϵ^2 and σ_μ^2) to match the magnitude and term structure of the effect of monetary policy shocks
- Quantify the importance of the Fed information effect vis-à-vis the traditional monetary policy channel

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- Contributes to debate on existence of Fed information effects
- My view: it can do more
- The mixed evidence is a consequence of offsetting effects:
  - $\uparrow i_t \implies \downarrow P_t$ (traditional monetary policy effect)
  - $\uparrow i_t \implies \uparrow P_t$ (Fed information effect)
- Term structure allows you to identify both effects on prices
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2) No Interest Rate Variation?

$$r^1_{\overline{t}} = \rho \cdot (\mathbb{E}_{\overline{t}} - \mathbb{E}_{\underline{t}})[\Delta d_{t+1}] \quad \& \quad r^\infty_{\overline{t}} = \sum_{j=0}^{\infty} \rho^j \cdot (\mathbb{E}_{\overline{t}} - \mathbb{E}_{\underline{t}})[\Delta d_{t+j+1}]$$

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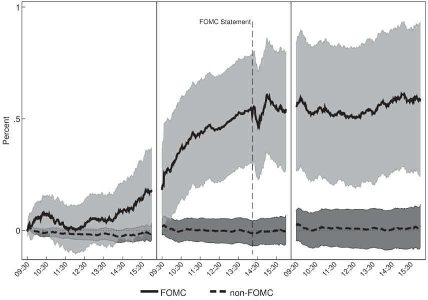

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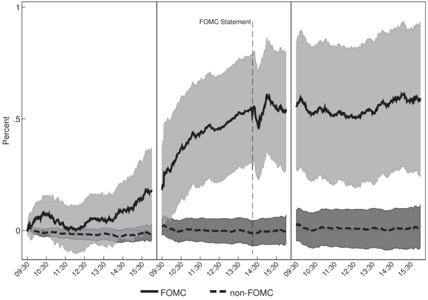

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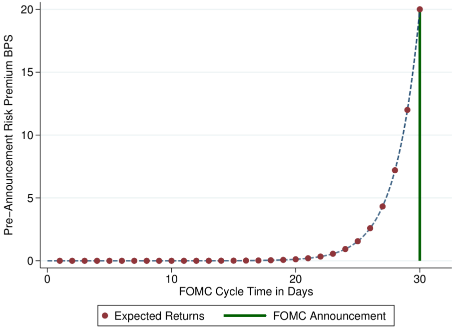

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The Impact of Monetary Policy on Dividends, Interest Rates, and Future Returns

	Sample Used for VAR	
	1/73–12/02	5/89–12/02
Current excess return	−11.55	−11.01
	(3.87)	(3.72)
Future excess returns	6.10	3.29
	(1.74)	(1.10)
Real interest rate	0.64	0.77
	(1.03)	(1.87)
Dividends	−4.82	−6.96
	(1.73)	(2.35)

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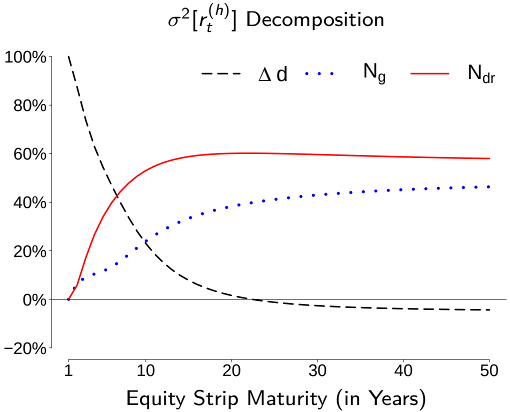

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- Ignoring discount rate variation (argument applies regardless):

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Outline

The Paper

My Comments

Final Remarks

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