

# Discussion: Monetary Policy Uncertainty and Monetary Policy Surprises

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Discussant: Walker Ray, SF Fed & LSE

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This material does not necessarily reflect the views of the Federal Reserve System.

# Main Empirical Findings

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- Term-structure pass-through:

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$$\frac{\partial^2 y_t^{(\tau), TP}}{\partial r_t \partial \sigma_r} \ll \frac{\partial^2 y_t^{(\tau), EX}}{\partial r_t \partial \sigma_r} \leq 0$$

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- Causal link?  $\uparrow$  uncertainty  $\implies$   $\downarrow$  risk-taking



# A Structural Interpretation

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- Bond markets [Vayanos and Vila (2009, 2019), King (2019)]
  - ▶ Mean-variance “arbitrageurs”

$$\max E_t dW_t - \frac{a}{2} \text{Var}_t dW_t \quad st : \quad (\text{ARB})$$

$$dW_t = \left( W_t - \int_0^T X_t^{(\tau)} d\tau \right) r_t dt + \int_0^T X_t^{(\tau)} \frac{dP_t^{(\tau)}}{P_t^{(\tau)}} d\tau \quad (\text{BC})$$

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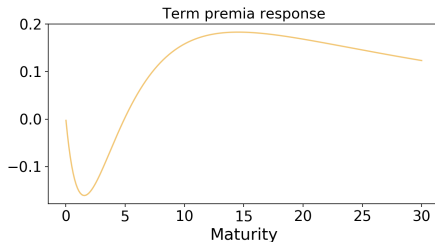
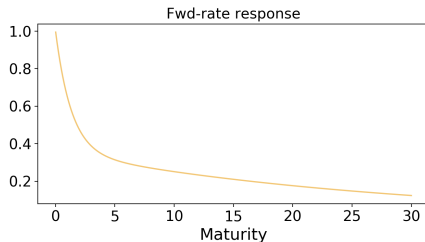
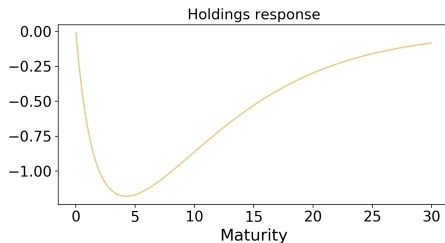
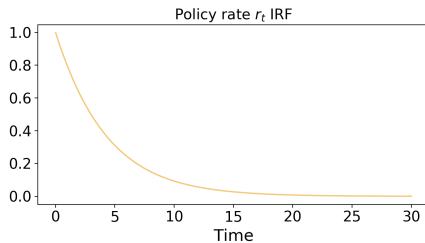
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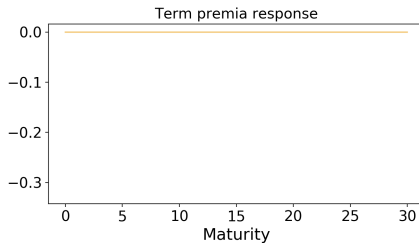
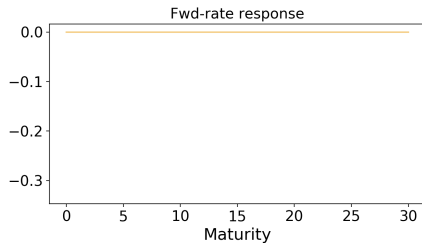
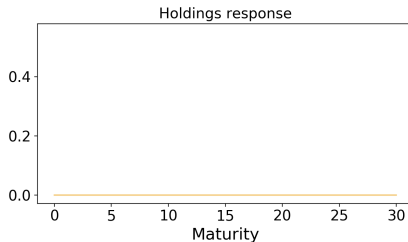
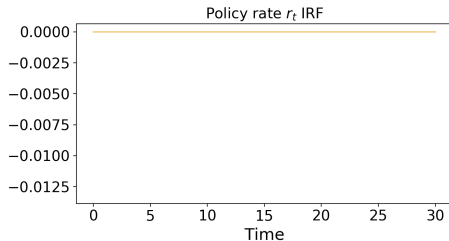
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- How do changes in  $\sigma_r$  affect equilibrium outcomes?

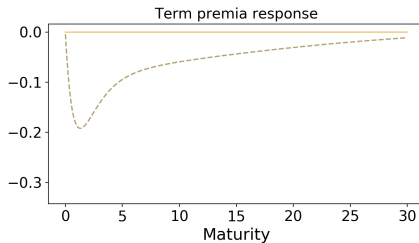
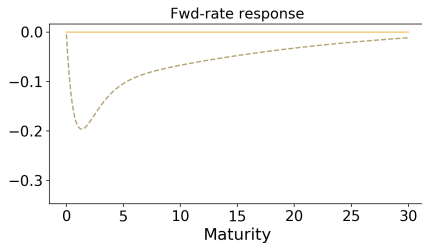
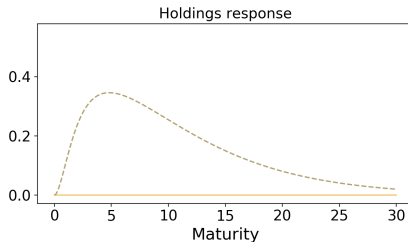
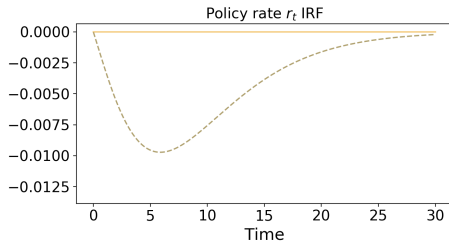
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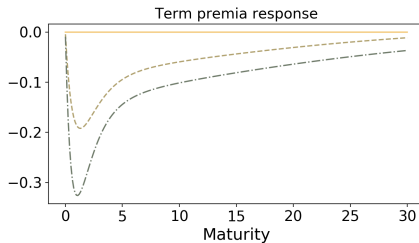
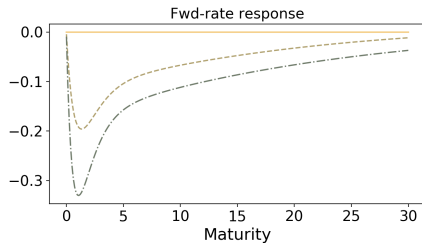
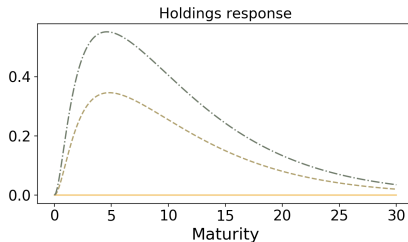
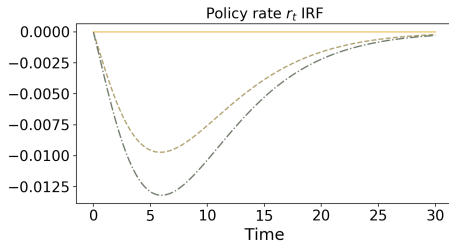
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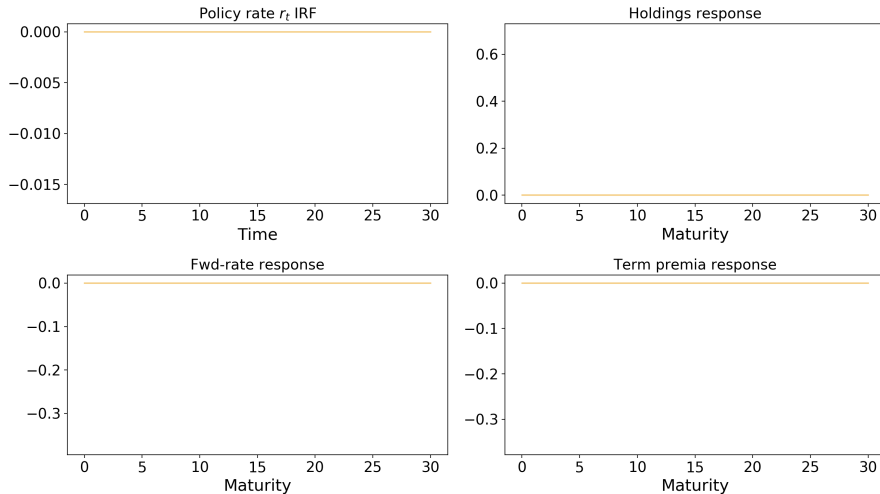


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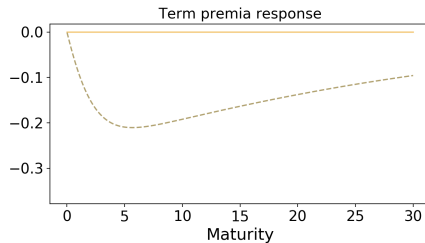
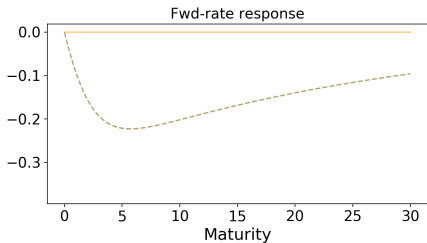
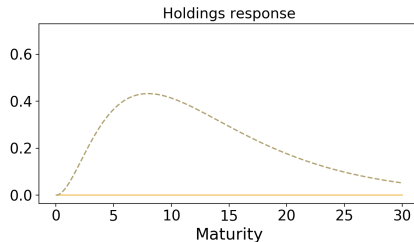
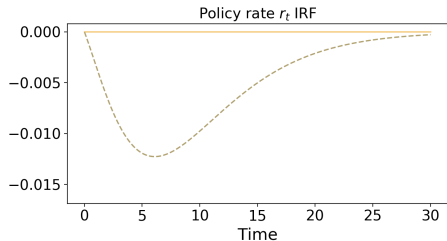




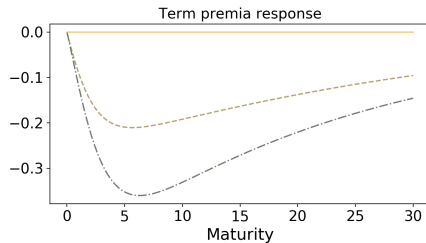
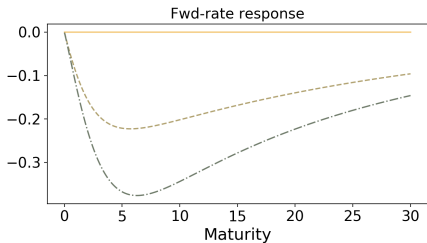
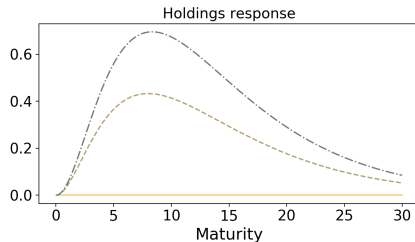
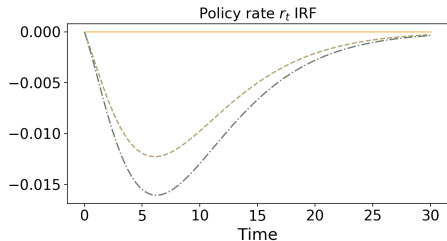
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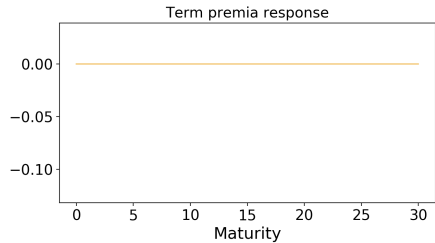
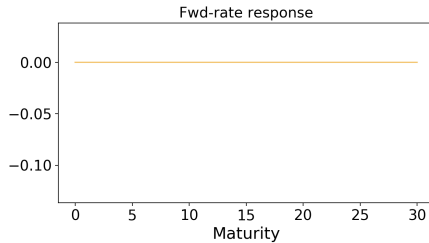
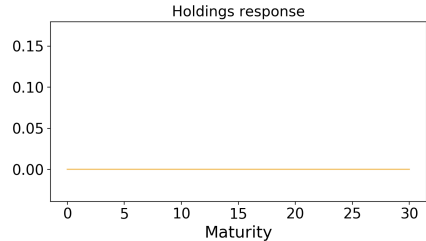
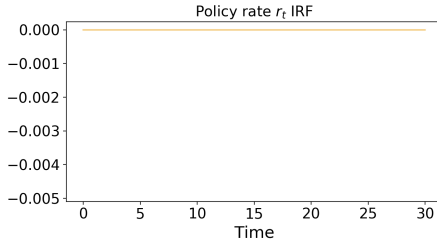
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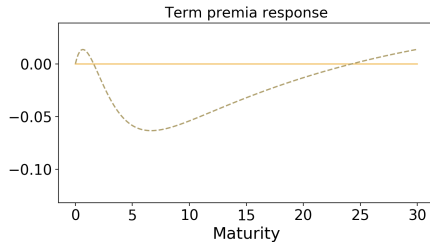
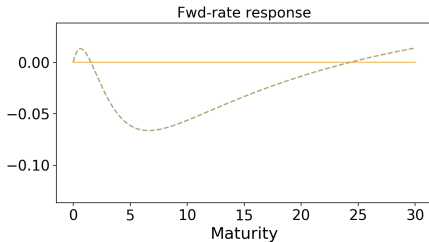
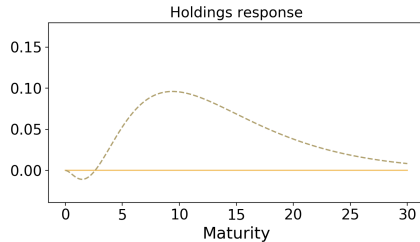
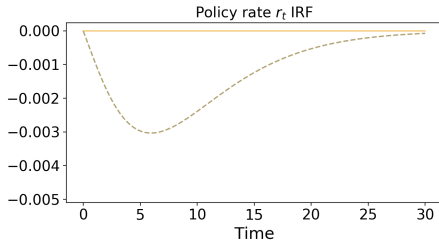
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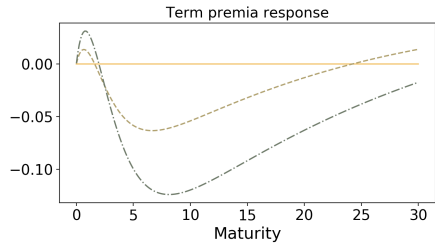
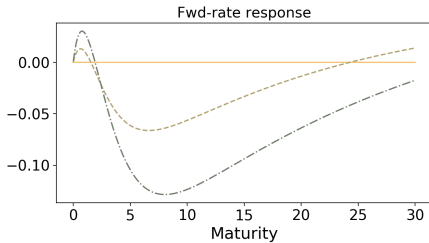
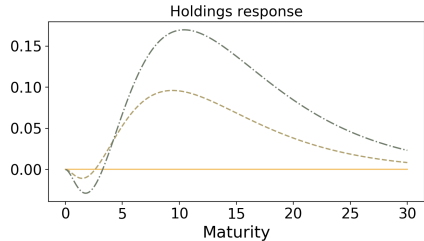
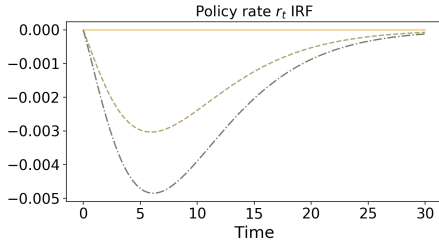
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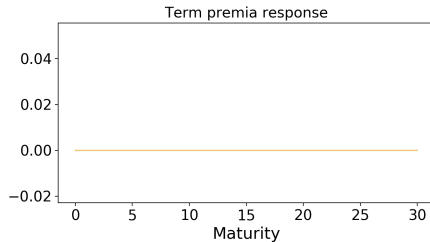
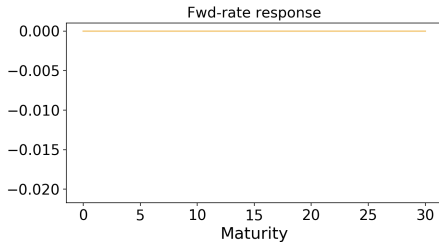
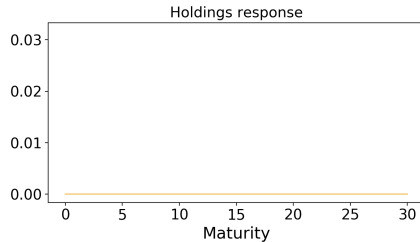
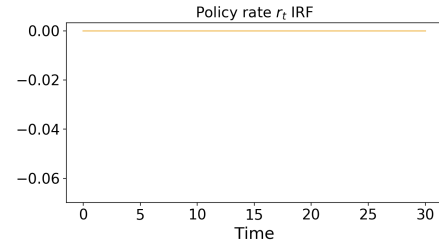
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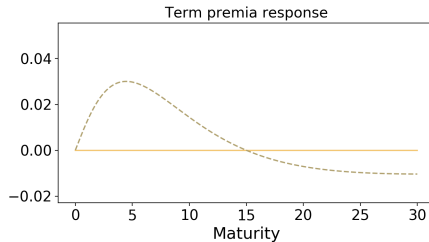
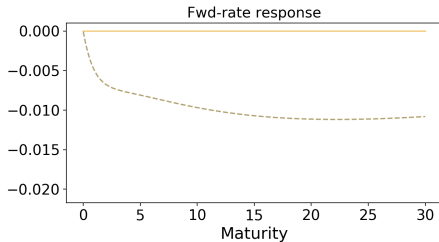
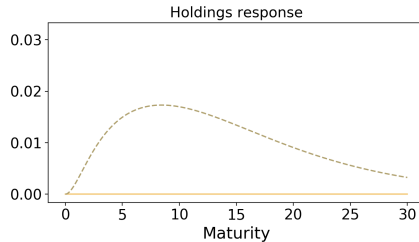
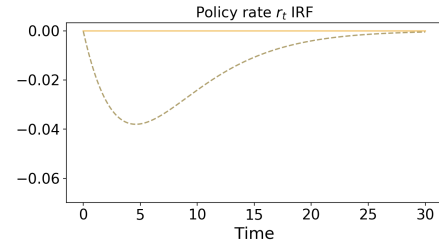
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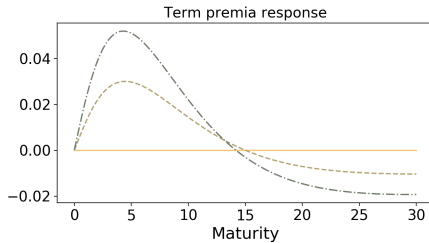
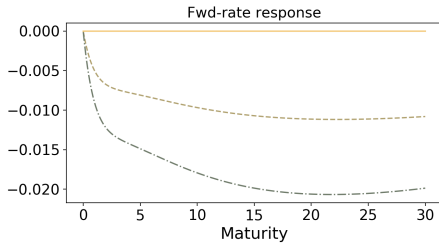
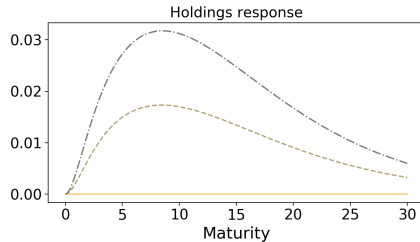
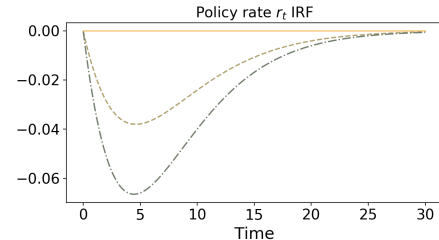


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  - ▶ Use *change* in uncertainty, to guard against unobserved secular shifts
- Perceived vs. risk-adjusted uncertainty?
  - ▶ Market-based measures may reflect *risk-adjusted* dynamics
  - ▶ Compare with other measures (surveys, realized...)

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  - ▶ Use *change* in uncertainty, to guard against unobserved secular shifts
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  - ▶ Market-based measures may reflect *risk-adjusted* dynamics
  - ▶ Compare with other measures (surveys, realized...)
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# Suggestions

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  - ▶ Compare with other measures (surveys, realized...)
- Other ways to rule out alternative hypotheses
  - ▶ Response of *entire* term structure is informative
  - ▶ Corporate debt, equities, foreign bonds, exchange rates... [Greenwood, Hanson, Stein, Sunderam (2019) or Gourinchas, Ray, Vayanos (2019)]
  - ▶ Institutional investors [Greenwood, Vissing-Jorgensen (2018)]
  - ▶ Response at higher vs. lower frequency [Hanson, Lucca, Wright (2018)]