Discussion
Monetary Policy Slope and the Stock Market

Brent Bundick

Federal Reserve Bank of Kansas City

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I thank Trenton Herriford & A. Lee Smith for helpful discussions.

I suggest reading this well-executed and concise paper

Paper seems to be documenting a robust empirical fact

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Outline of Discussion

1. Provide simple theoretical framework to motivate empirical work

2. Review empirical evidence

3. Suggest an alternative interpretation without investor inattention
   Standard model can generally reproduce empirical evidence

Simple Model of Representative Household

Household features log utility over lifetime consumption C_t

Economy features two assets

- 1-period bond which pays risk-free real interest rate R_t^R
- Equity with price P_t^E which pays dividend D_t^E each period

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Household optimization implies following first-order conditions

$$1 = \mathsf{E}_t \left\{ \left(\beta \frac{C_t}{C_{t+1}} \right) R_t^R \right\}$$

$$P_t^E = \mathsf{E}_t \left\{ \left(\beta \frac{C_t}{C_{t+1}} \right) \left(D_{t+1}^E + P_{t+1}^E \right) \right\}$$

Equity Prices & the Path of Real Interest Rates

Two assumptions for analytical tractability

Equity pays unit of consumption $D_t^E = C_t$ & $\beta = 1$

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Take first-order approximation

$$c_t = \mathsf{E}_t\, c_{t+1} - \left(r_t^r - r^r\right) \tag{1}$$

$$p_t^e - c_t = \beta\, \mathsf{E}_t \left\{p_{t+1}^e - c_{t+1}\right\} \tag{2}$$

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Substitute & solve forward

$$p_t^e = -\sum_{s=0}^{\infty} \mathsf{E}_t \left\{ r_{t+s}^r \right\}$$

$\Rightarrow$ **Equity prices depend on sum of all future short rates**

Generating Ex-Post Excess Equity Returns

$$p^e_{t+1} - p^e_t - r^r_t = -\left(\sum_{s=1}^{\infty} \mathsf{E}_{t+1}\, r^r_{t+s} - \sum_{s=1}^{\infty} \mathsf{E}_t\, r^r_{t+s} \right)$$

Ex-post returns generated by changes in expected path of rates

Upward revision to slope generates negative excess returns

Review of Empirical Evidence & Conclusions

Increase in weekly slope factor

$\Rightarrow$ Positive equity returns during the same week

Only significant finding during FOMC weeks

$\Rightarrow$ Robustly negative returns in following weeks

Results persist even outside of FOMC weeks

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Conclusions of the paper

Consistent with delay market reaction due to investor inattention

Could Standard Model Reproduce These Effects?

Use rational expectations model from Bundick & Smith (2017)

Similar to Christiano, Eichenbaum, & Evans (2005)

Estimated model of forward guidance shocks

Matches movements in futures rates around FOMC meetings

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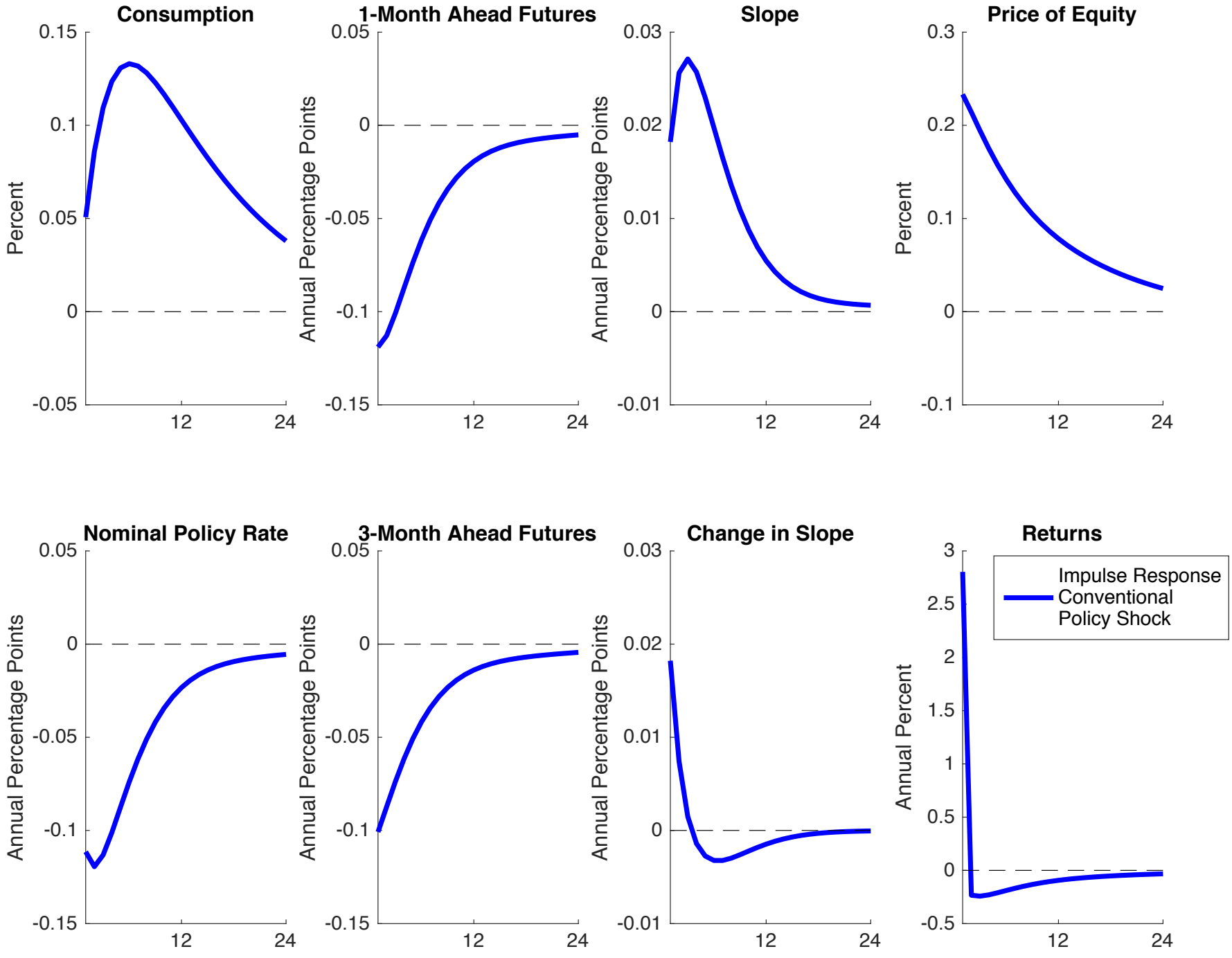
For this discussion, simulate conventional policy shock in model

- Incorporate equity prices (consumption claim)
- Examine futures-implied slope factor & equity prices


Consumption
Percent
0.15
0.1
0.05
0
-0.05
12
24
1-Month Ahead Futures
Annual Percentage Points
0.05
0
-0.05
-0.1
-0.15
12
24
Slope
Annual Percentage Points
0.03
0.02
0.01
0
-0.01
12
24
Price of Equity
Percent
0.3
0.2
0.1
0
-0.1
12
24
Nominal Policy Rate
Annual Percentage Points
0.05
0
-0.05
-0.1
-0.15
12
24
3-Month Ahead Futures
Annual Percentage Points
0.05
0
-0.05
-0.1
-0.15
12
24
Change in Slope
Annual Percentage Points
0.03
0.02
0.01
0
-0.01
12
24
Returns
Annual Percent
3
2.5
2
1.5
1
0.5
0
-0.5
12
24
Impulse Response
Conventional
Policy Shock

Summary

Paper seems to document robust empirical fact

Illustrates equity price dynamics to monetary policy shocks

- Suggests mean reversion in equity prices

Can possibly explain results without relying on investor inattention