Remarks on Optimal Monetary Policy

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International Monetary Fund

Boston Fed, September 7, 2018
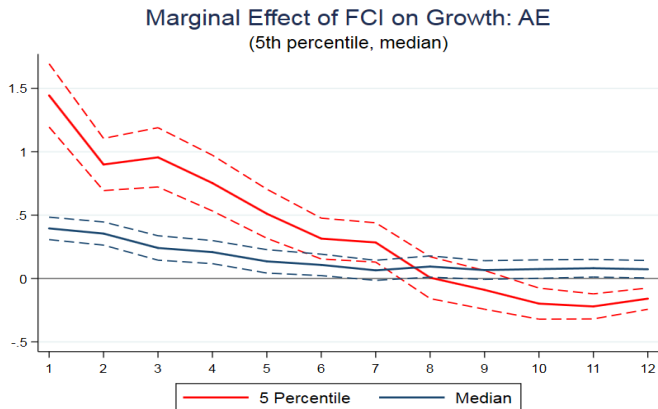
Three Questions

- Should financial conditions matter for monetary policy?

- Should hysteresis matter for monetary policy?

- Does monetary policy impact r*?

Financial Conditions Generate a Financial Cycle

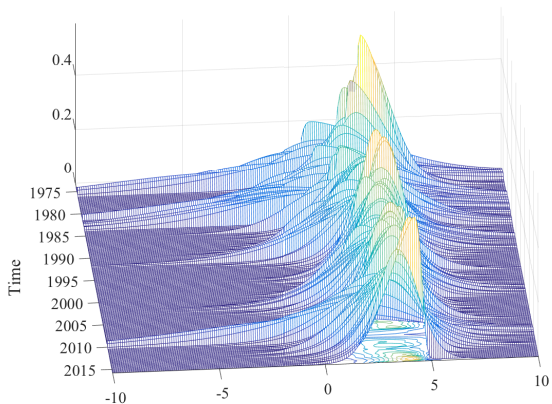# Financial Conditions Generate a Financial Cycle

Marginal Effect of FCI on Growth: AE
(5th percentile, median)

Adrian, Grinberg, Liang, Malik, 2018, The Term Structure of Growth at Risk

The Term Structure of Growth at Risk

Term structures of GaR by initial FCI, AE
(quantile, credit boom, in percent)
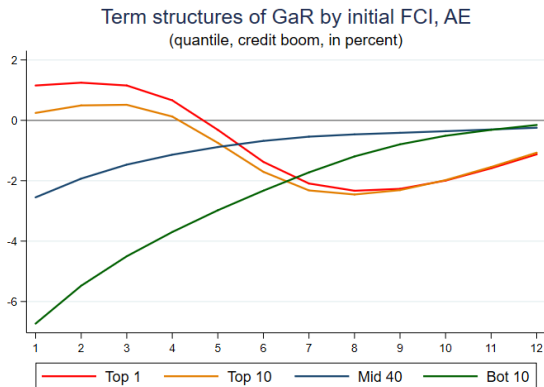
Adrian, Grinberg, Liang, Malik, 2018, The Term Structure of Growth at Risk

The GDP Density if Highly Skewed

Adrian, Boyarchenko, Giannone, 2018, Vulnerable Growth

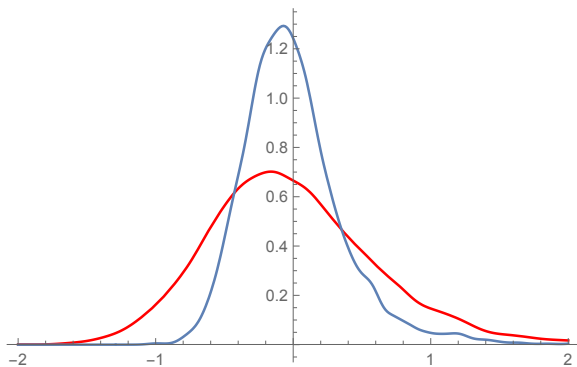# A Reduced Form NK Model with Financial Conditions

$$y_t = E_t[y_{t+1}] + \sigma(i_t - E_t[\pi_{t+1}] - r*) + \eta_t \epsilon_t$$

$$\eta_t = \omega + \rho \eta_{t-1} + \theta E_t[y_{t+1}] + u_t$$

$$\pi_t = \delta E_t[\pi_{t+1}] + \gamma E_t[y_{t+1}]$$

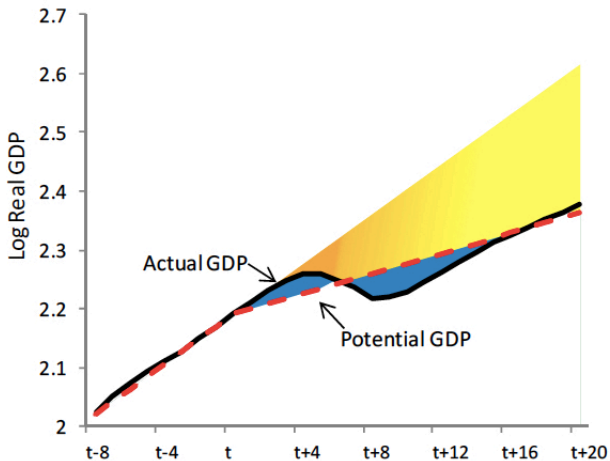Adrian, Duarte, 2018, Financial Vulnerability and Monetary Policy

Optimal Monetary Policy with Financial Conditions

Adrian, Duarte, 2018, Financial Vulnerability and Monetary Policy
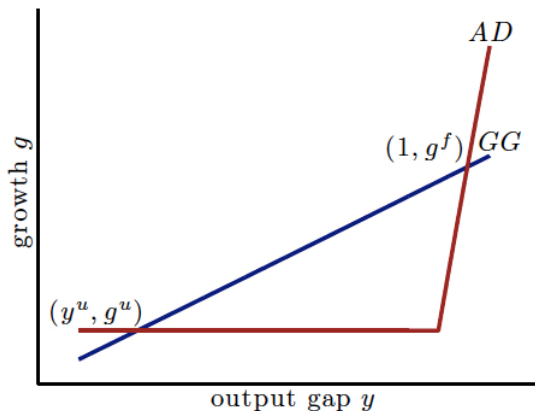
Recessions Trigger Hysterisis of Output

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Blanchard, Cerutti, Summers, 2015, Inflation and Activity

NK Model with Endogenous Growth Generates Hysterisis

Benigno, Fornaro, 2018, Stagnation Traps

Optimal Monetary Policy with Hysterisis

▶ Monetary policy needs to take hysteresis bias into account

▶ The ZLB worsens hysteresis bias

Garga, Singh, 2018, Output Hysterisis and Optimal Monetary Policy

Acharya, Bengui, Dogra, Wee, 2018, Monetary Policy in a Time of Hysteresis

Global r* 1961-2018

Global r* 1961-2018

Holston, Laubach, Williams, 2017, Measuring the Natural Rate of Interest

Two concepts of r*

- ▶ Natural rate: defined relative to the flexible price equilibrium r^*
- ▶ Efficient rate: defined relative to the efficient equilibrium r^e

- ▶ To maximize welfare, r^e is the right concept

What Determines r^e

- ▶ Demographics

- ▶ Productivity

- ▶ Financial frictions that interact with supply

Hysteresis, r^e, and Financial Frictions

$$r_t^e = \alpha + \alpha_1 E_t\left[g_{t+1}\right] + \alpha_2 Var_t\left[g_{t+1}\right] + h.o.t.$$

▶ What is optimal policy when hysteresis and financial friction interact?

Monetary Policy and r^e

- Optimal monetary policy generally depends on r^e

- Conceptually, r^e does not depend on monetary policy

Three Questions

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- Should financial conditions matter for monetary policy?
  Optimal monetary policy should take financial conditions into account

- Should hysteresis matter for monetary policy?
  Optimal monetary policy should take hysteresis into account

- Does monetary policy impact r^e?
  No