Remarks on Optimal Monetary Policy

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The views expressed here are those of the author and do not necessarily reflect those of the International Monetary Fund
Three Questions

▶ Should financial conditions matter for monetary policy?
▶ Should hysteresis matter for monetary policy?
▶ Does monetary policy impact r*?
Financial Conditions and Monetary Policy

Financial Conditions Generate a Financial Cycle

Note: The figures plot the estimated coefficients on the financial conditions index (FCI) from panel quantile regressions for the median and the 5th percentile (GaR) for one to twelve quarters into the future. Higher FCI represents looser financial conditions. Estimates are based on local projection estimation methods, and standard errors are from bootstrapping techniques; bands represent plus and minus one standard deviation.

Advanced economies (AEs) include 11 countries with data for most from 1973 to 2017. Our interpretation of these coefficients is that changes in the distribution of GDP growth reflect changes in the price of risk as measured by financial conditions. Changes in the price of risk can arise from financial frictions, such as regulatory capital constraints or VaR models, which tie together the price of risk and volatility via the credit supply of intermediaries (Adrian and Shin, 2014; He and Krishnamurthy, 2012, 2013). When financial conditions loosen and asset prices rise, constraints become less binding, and GDP growth increases and its distribution tightens. However, the lower price of risk and lower volatility can contribute to an increase in vulnerabilities, such as credit, which would amplify an adverse shock and lead to a sharper rise in volatility, referred to as the volatility paradox (Brunnermeier and Sannikov, 2014).
Financial Conditions and Monetary Policy

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

Figure 5. Term structures of GaR by initial FCI groups and differences

Note. Figures plot the GaR (expected growth at the 5th percentile) at an annual rate. The GaR projections are grouped on initial FCI levels by the top 1 percent, top decile, bottom decile, and a middle range (Mid 40). Higher values of FCI represent looser financial conditions. Estimates are based on quantile regressions with local projection estimation methods, and standard errors are from bootstrapping techniques. Advanced economies include 11 countries with data for most from 1973 to 2017.

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

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

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

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

Adrian, Duarte, 2018, Financial Vulnerability and Monetary Policy
Optimal Monetary Policy with Financial Conditions

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

Blanchard, Cerutti, Summers, 2015, Inflation and Activity
NK Model with Endogenous Growth Generates Hysteresis

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
Does Monetary Policy Impact $r^*$?

What Determines $r^e$

- Demographics
- Productivity
- Financial frictions that interact with supply
Hysteresis, $r^e$, and Financial Frictions

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

- 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

▶ 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 $r$?
No.
Three Questions

- 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