MONETARY ECONOMICS

ECON 260A
Empirical Evidence: Preliminary

• Several decades of research on the relationship among money, prices, GDP, etc.

• Quantity Theory of Money in the background

• Correlation/Causation
Empirical Evidence: Preliminary

• Relationship between Money Growth and Inflation
• Correlation in the long-run with a coefficient close to 1.
Empirical Evidence: Preliminary

- Relationship between Money Growth and Output Growth
- Correlation is close to 0.
Empirical Evidence: Preliminary

- In the short-run?
- Cross-correlations: money lead changes in real economic activity
- Role of money for business cycles (Friedman-Schwartz)
- Spurious? [Reverse causation]
Empirical Evidence: Preliminary

- Other studies
- Granger causality between money and income
- VAR (Vector Autoregression) studies
Readings

• Read also *Handbook of Monetary Economics* chapter on the empirical role of money
Empirical Evidence on the Effects of Monetary Policy

• How can we measure monetary policy?

• What are the effects of monetary policy on output, inflation, interest rates, etc.?

• How large is the contribution of monetary policy to business cycle fluctuations?

• Criticism and new issues
Empirical Evidence on the Effects of Monetary Policy

• Read: Christiano, Eichenbaum, and Evans (1999), Monetary Policy Shocks: What Have We Learned, and To What End
Empirical Evidence on the Effects of Monetary Policy

• What happens after an exogenous shock to monetary policy?

• Exogenous?
Empirical Evidence on the Effects of Monetary Policy

• What are monetary policy shocks?
• Possible interpretations
Empirical Evidence on the Effects of Monetary Policy

- VARs
- Assumptions
  - Fed’s feedback rule is linear
  - Recursiveness
Empirical Evidence on the Effects of Monetary Policy

• Controversy on identification
• But agreement on qualitative effects
CEE: Response to a MP shock

Figure 1. Estimated Dynamic Response to a Monetary Policy Shock

- Federal funds rate
- GDP
- GDP deflator
- M2
Other Approaches

• VARs without recursiveness assumption
• E.g.: equations for banking reserves
• Romer&Romer’s Narrative Approach (Fed’s record of policy actions)
• Sign restrictions
• Large information set
R&R Narrative Approach

What are the Effects of Monetary Policy Shocks?

Figure: Effect of MP Shocks.

a. New Measure of Monetary Policy Shocks

b. Change in the Actual Federal Funds Rate

c. Effect on the Price Level

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Empirical Evidence on the Effects of Monetary Policy

- Contractionary MP shocks lead to a reduction in inflation (possibly with initial increase, price puzzle)
- Contractionary MP shocks lead to hump-shaped response in output
- Sluggish response of macroeconomic variables to MP shocks (peak after 1-2 years)
- Small overall contribution of MP shocks on BC fluctuations (5-30%)
- [Systematic vs. non-systematic MP]
Price Puzzle

- Ways to solve the puzzle (e.g., large information set, commodity prices)
- Cost channel
Empirical Evidence on the Effects of Monetary Policy

• Have the Effects of Monetary Policy Changed Over Time?
• Criticism of VAR approach
• Residuals as MP shocks
• Cochrane (1998), *What do the VARs mean? Measuring the output effects of monetary policy*, JME
Figure 3: Output effects of two monetary experiments, under various assumptions about the effects of anticipated vs. unanticipated money. Calculated from M2 VAR.
Figure 6: Output effects of two monetary experiments, under various assumptions about the effects of anticipated vs. unanticipated money. Calculated from federal funds VAR.
FIGURE 1
25-Basis Point Decline in Fed Funds Rate
No Quarterly Dependence. 1966:Q1 to 2002:Q4

Response of GDP

Response of PGDP

Response of FFR
VAR with QUARTER DEPENDENCE
Olivei-Tenreyro

• Timing of the shocks matter

• Q1, Q2: Response is quick, large, and it dissipates quickly
• Q3, Q4: Almost no response

• Why?
Olivei-Tenreyro (2008)

• International Evidence

• Heterogeneity in wage-setting conventions

• Shunto in Japan (Feb-May)

• Uniform + Multiple years in Germany
Japan

25-Basis-Point Decline in Call Rate in Q1 Quarterly Dependence. 1963:Q1 to 1995:Q2

Response of Industrial Production

Response of Consumer Price Index

Response of Interest Rate

Japan

25-Basis-Point Decline in Call Rate in Q3 Quarterly Dependence. 1963:Q1 to 1995:Q2

Response of Industrial Production

Response of Consumer Price Index

Response of Interest Rate

Japan

25-Basis-Point Decline in Call Rate in Q4 Quarterly Dependence. 1963:Q1 to 1995:Q2

Response of Industrial Production

Response of Consumer Price Index

Response of Interest Rate

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• Extensions?