# Money and The Economy

## Stylized Facts and VAR Evidence

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# From RBC to New Keynesian Models - the Role of Money

- RBC model are methodologically interesting but not interesting to policy makers
- Why? Real dichotomy exclude any role for policy
- Reality - very different
- Both Fiscal and Monetary policy are very important

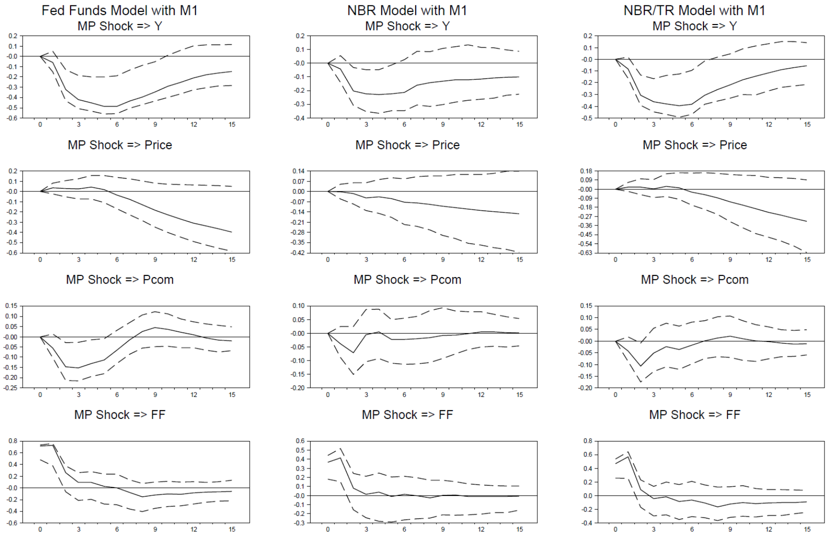
# The Evidence

Readings

- Walsh (1999) Monetary Theory and Policy, Chapter 1
- Sims (1972) "Money, Income and Causality" - The Introduction to VAR
- Romer, Christina D., and David H. Romer (1990): "New Evidence on the Monetary Transmission Mechanism," Narrative Approach
- Leeper, Eric M., Christopher A. Sims, and Tao Zha (1996): "What Does Monetary Policy Do?" Brookings Papers on Economic Activity 2: 1-63 - Data for replication on the website
- Christiano, L.J., Eichenbaum, M. and Evans, C.L., 1999. Monetary policy shocks: What have we learned and to what end?. Handbook of macroeconomics, 1, pp.65-148. Data and Code for Replication on the Website

# Stylized Facts: The Basics

- The correlation between long run inflation and money growth is almost one across countries
- The correlation between short run inflation and money growth is more uncertain
- There is no clear long run correlation between inflation and the growth of real output or between money growth and the growth of real output
- Money stock innovations and output innovations are correlated. Money stock changes seem to lead output changes
- Most contracts are written in nominal terms and prices are typically changed very seldom - even at fairly high inflation rates. This seems to change as we move into very high inflation rates.
- Sharp exogenous monetary contractions seems to have an effect on output and employment which may last for years


Fed Funds Model with M1
NBR Model with M1
NBR/TR Model with M1
MP Shock => Y
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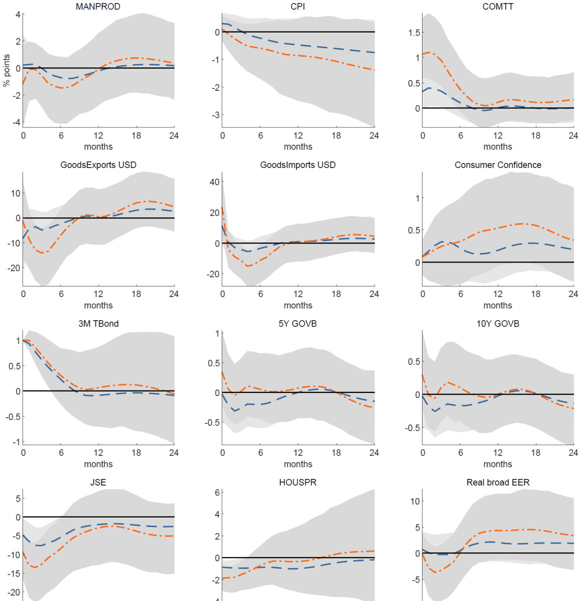
# Stylized Facts: Dynamic Response to Monetary Shocks

(Pirozkova et al 2020 for South Africa)



# Stylized Facts : Emerging Countries

Aguiar, M., & Gopinath, G. (2007). Emerging market business cycles: The cycle is the trend. Journal of political Economy, 115(1), 69-102.

In emerging countries supply shocks and regime changes dominates the aggregate dynamics

TABLE 1

EMERGING VS. DEVELOPED MARKETS (Averages)

| | Emerging Markets | Developed Markets |
|---|---|---|
| $\sigma(Y)$ | 2.74 (.12) | 1.34 (.05) |
| $\sigma(\Delta Y)$ | 1.87 (.09) | .95 (.04) |
| $\rho(Y)$ | .76 (.02) | .75 (.03) |
| $\rho(\Delta Y)$ | .23 (.04) | .09 (.03) |
| $\sigma(C)/\sigma(Y)$ | 1.45 (.02) | .94 (.04) |
| $\sigma(I)/\sigma(Y)$ | 3.91 (.01) | 3.41 (.01) |
| $\sigma(TB/Y)$ | 3.22 (.17) | 1.02 (.03) |
| $\rho(TB/Y, Y)$ | −.51 (.04) | −.17 (.04) |
| $\rho(C, Y)$ | .72 (.04) | .66 (.04) |
| $\rho(I, Y)$ | .77 (.04) | .67 (.04) |

NOTE.—This table lists average values of the moments for the group of emerging (13) and developed (13) economies. The values for each country separately are reported in table 2. Data are Hodrick-Prescott filtered using a smoothing parameter of 1,600. The standard deviations are in percentages. The standard errors for the averages were computed assuming independence across countries. The definition of an emerging market follows the classification in Standard & Poor's (2000).

# Time Series Analysis - VAR

- Whatever model we develop should be consistent with those correlations
- Correlations is not causality and the magnitude (and lenght) of the effect matters.
- The Var (Vector Auto Regression) gives some indication of magnitude and lenght

Problem - Identification in Macro is hard
(Nakamura and Steinsson 2018 - Identification in macroeconomics - Journal of Economic Perspectives)