Monetary Economics

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Money

- Origin and Use of Money
- Adam Smith, *Wealth of Nations*, 1776, Chapter 4.

One man, we shall suppose, has more of a certain commodity than he himself has occasion for, while another has less. The former consequently would be glad to dispose of, and the latter to purchase, a part of this superfluity. But if this latter should chance to have nothing that the former stands in need of, no exchange can be made between them. The butcher has more meat in his shop than he himself can consume, and the brewer and the baker would each of them be willing to purchase a part of it. But they have nothing to offer in exchange, except the different productions of their respective trades, and the butcher is already provided with all the bread and beer which he has immediate occasion for... In order to avoid the inconveniency of such situations, every prudent man in every period of society...must naturally have endeavoured to manage his affairs in such a manner as to have at all times by him, besides the peculiar produce of his own industry, a certain quantity of some one commodity or other, such as he imagined few people would be likely to refuse in exchange for the produce of their industry.

Money

- Cattles, salt, shells, cod, tobacco, sugar,...
- Metals (iron, copper, gold, silver)
- Coins

Money

- Keynes
- Store of value (wrt to means of payment)

"Why should anyone outside a lunatic asylum wish to use money as a store of wealth?"
"partly on reasonable and partly on instinctive grounds, our desire to hold money as a store of wealth is a barometer of the degree of our distrust of our own calculations and conventions concerning the future. . . . The possession of actual money lulls our disquietude; and the premium we require to make us part with money is a measure of the degree of our disquietude."

Why Money?

- Read, if interested, **Kiyotaki-Moore, Clarendon Lectures**

  http://econ.lse.ac.uk/staff/kiyotaki/Evilistherootofallmoney.pdf
  http://econ.lse.ac.uk/staff/kiyotaki/ClarendonLec2.pdf

  "Money is strange stuff. Take these Scottish pound notes. They are useless: they have no intrinsic value. So why should anyone be willing to hold them?"

Why Money?

- Kiyotaki-Moore
- "Evil is the Root of all Money" (Lack of Trust)
- Lack of Trust
- (or absence of commitment)

Why Money?

- Kocherlakota, "Money is Memory"

  From the abstract: **Memory** *is defined as knowledge on the part of an agent of the full histories of all agents with whom he has had direct or indirect contact in the past.* **Money** *is defined as an object that does not enter utility or production functions, and is available in fixed supply. The main proposition is that any allocation that is feasible in an environment with money is also feasible in the same environment with memory. Depending on the environment, the converse may or may not be true. Hence, from a technological point of view,* **money is equivalent to a primitive form of memory**.

Money

- In our economic models, money is not needed (money has no value)
- Lack of coincidence of wants
- But people don't trade in pairs in our models
- Perfect competition, marketplace, auctioneer (everybody trades with the auctioneer); no frictions

Money

- Role of money is imposed
- Wallace Dictum: money should not be a primitive in our theories

Money

- Attitudes:
  1. Money doesn't matter: "just plumbing"
  2. Role of money assumed (or assumed away). Study stabilization policy, effects of policy decisions, BC fluctuations
  3. Search models

How is Money Usually Introduced in Macro Models?

- **Money-in-the-Utility function (MIU)**

$$Max \sum_{i=0}^{\infty} u(c_{t+i}, \frac{M_{t+i}}{P_{t+i}})$$

$$s.t. \quad c_t = Y_t + TR_t + \frac{M_{t-1}}{P_t} - \frac{M_t}{P_t} + \frac{B_{t-1}}{P_t} - \frac{1}{1+i_t}\frac{B_t}{P_t}$$

- **Cash-in-Advance constraint (CIA)**

$$Max \sum_{i=0}^{\infty} u(c_{t+i})$$

$$s.t. \quad c_t = Y_t + TR_t + \frac{M_{t-1}}{P_t} - \frac{M_t}{P_t} + \frac{B_{t-1}}{P_t} - \frac{1}{1+i_t}\frac{B_t}{P_t}$$

$$c_t \leq \frac{M_{t-1}}{P_t} + TR_t$$

- **(Search Models)**: you have another course on this.

How is Money Usually Introduced in Macro Models?

- Monetary models without money (**Cashless Economy**): there are no monetary frictions.

  Wicksell (1898)'s "pure credit economy": *A state of affairs in which money does not actually circulate at all, neither in the form of coin (except perhaps as small change) nor in the form of notes, but where all domestic payments are effected by means of...bookkeeping transfers.*

How is Money Usually Introduced in Macro Models?

- Woodford's Cashless limit
- LM

The New-Keynesian Framework

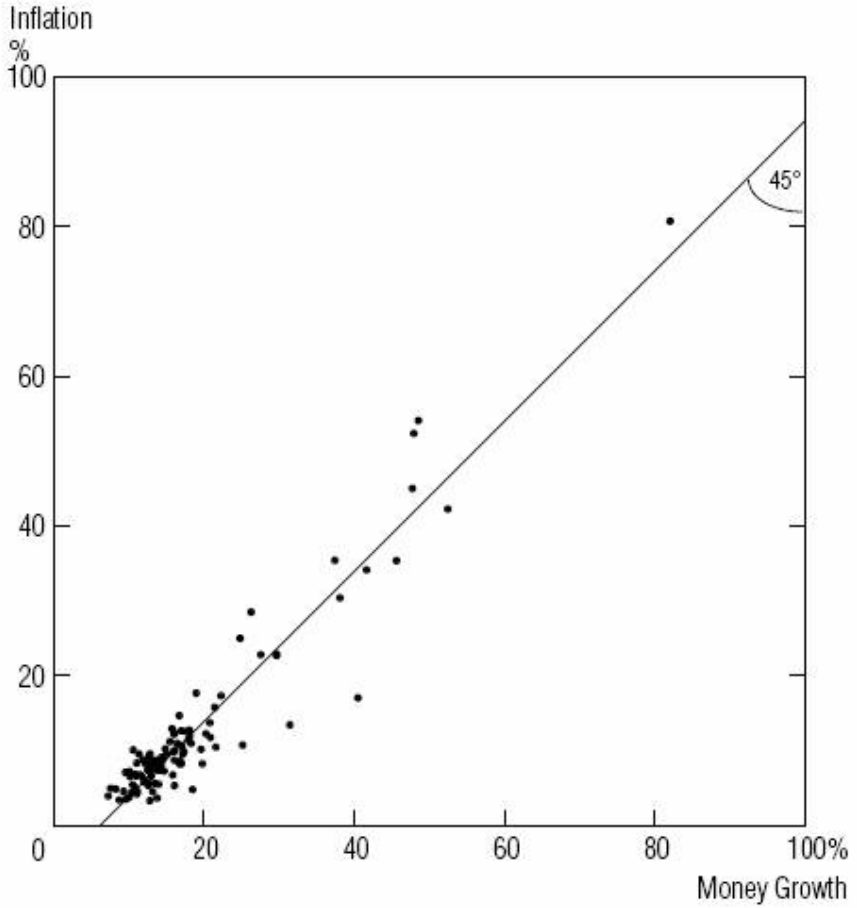
- Macroeconomic model with microfoundations (important for policy analysis)
- Consumers $\Rightarrow$ Aggregate Demand
- Firms $\Rightarrow$ Aggregate Supply
- Monetary/Fiscal Authority

Empirical Evidence on the Effects of Money

Chart 1

Money Growth and Inflation:
A High, Positive Correlation

Average Annual Rates of Growth in M2 and in Consumer Prices
During 1960–90 in 110 Countries

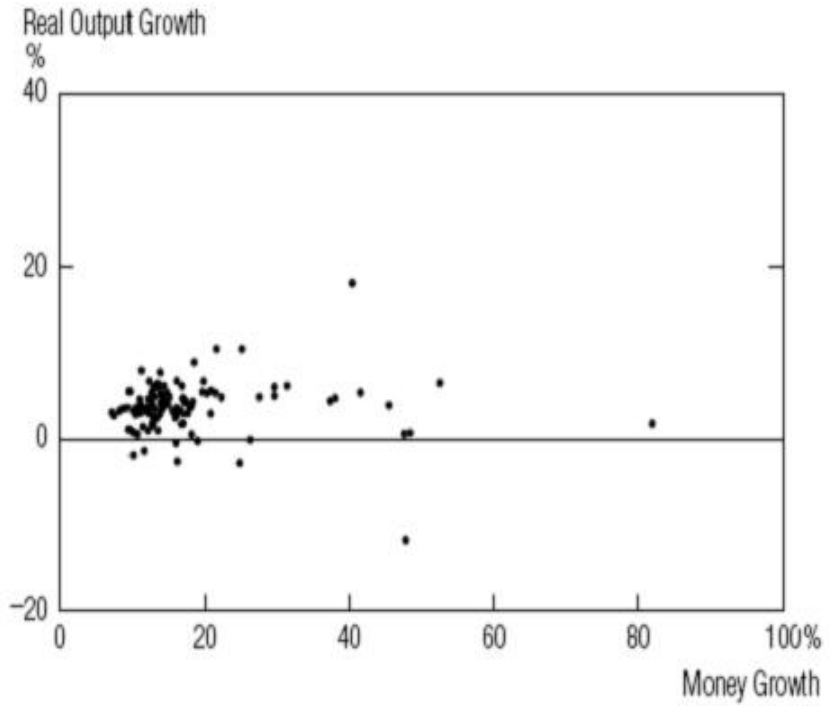


Empirical Evidence on the Effects of Money

Chart 2

Money and Real Output Growth:
No Correlation in the Full Sample . . .

Average Annual Rates of Growth in M2
and in Nominal Gross Domestic Product, Deflated by Consumer Prices
During 1960–90 in 110 Countries



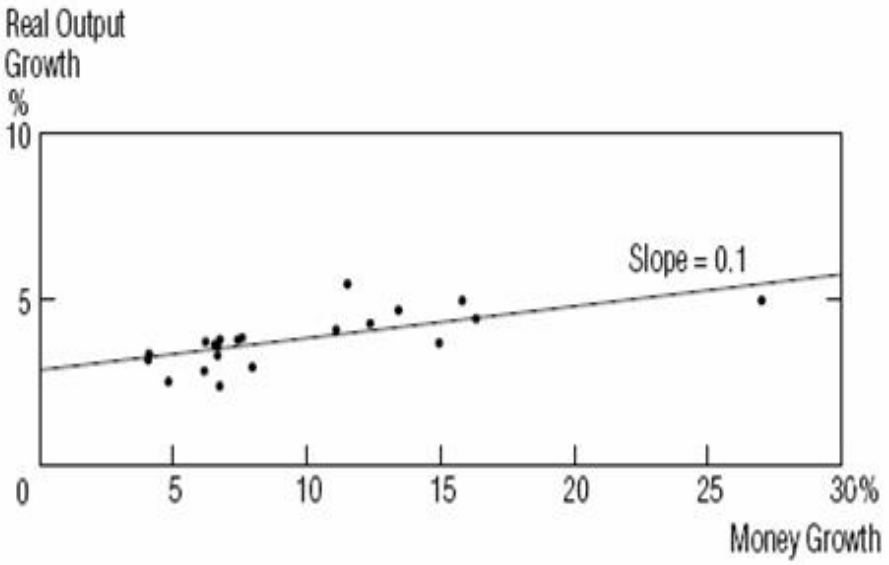
Source: International Monetary Fund

Empirical Evidence on the Effects of Money

Chart 3

. . . But a Positive Correlation in the OECD Subsample

Average Annual Rates of Growth in M0
and in Nominal Gross Domestic Product, Deflated by Consumer Prices
During 1960–90 in 21 Countries



Source: International Monetary Fund

What are the Effects of Monetary Policy Shocks?

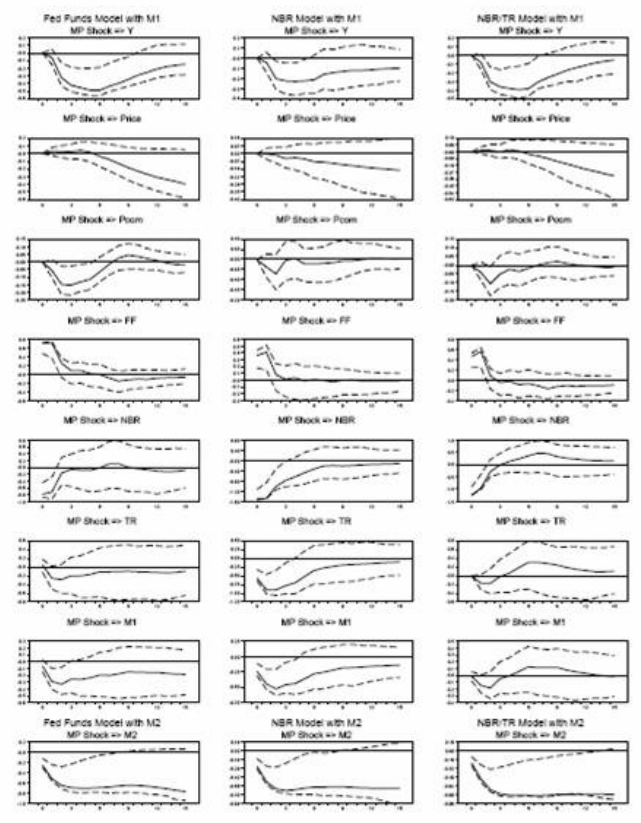


Figure: Effect of MP Shocks.

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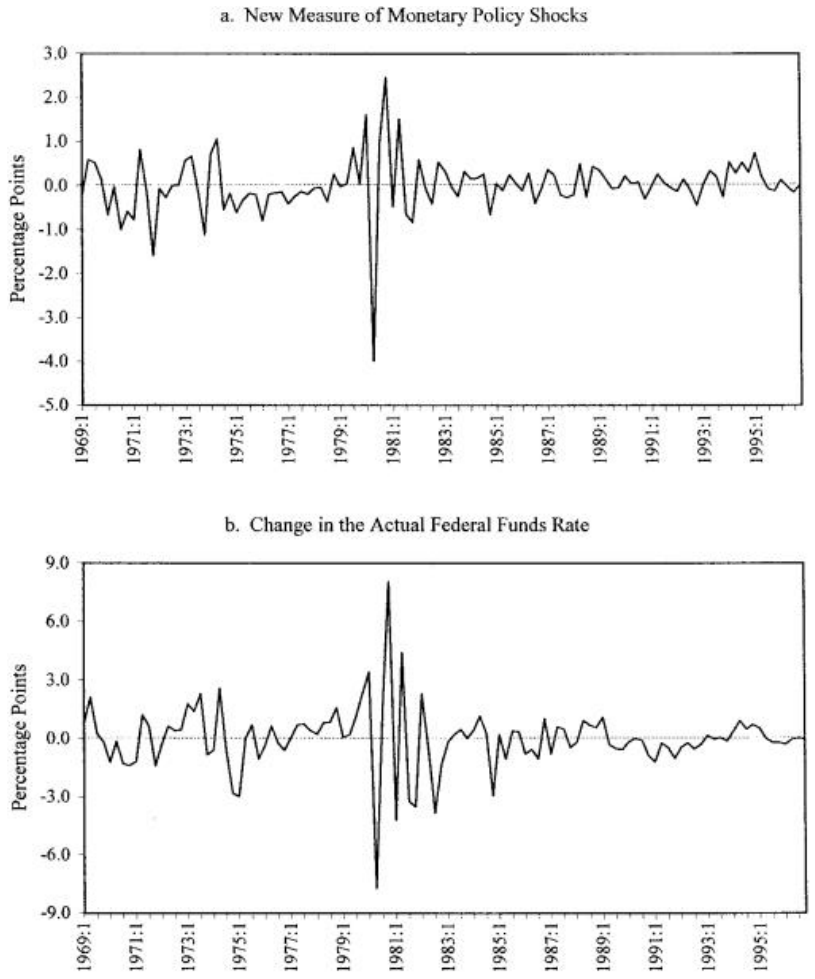

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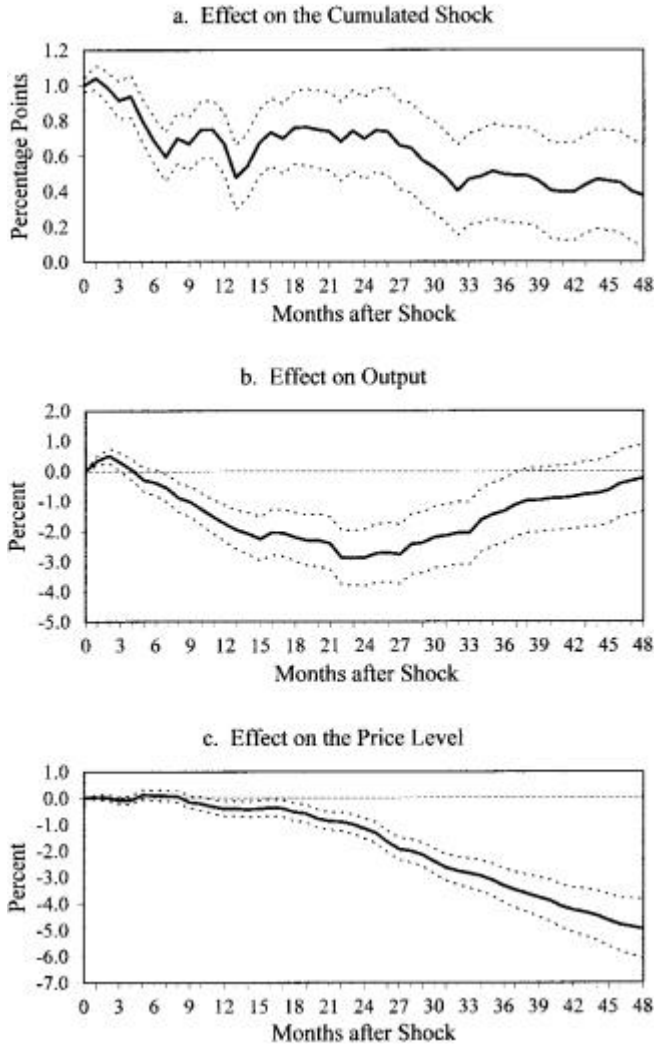

Figure: Effect of MP Shocks.

Stylized Facts

- 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