Money and Macroeconomics

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What is the difference between macroeconomics & microeconomics?
Money & monetary systems
Figure 1. The financial market – state dynamic governing the evolution of money and the monetary system.
Lessons from the history of money & the monetary system
Money & the structure of macroeconomics
Figure 2. A simplified representation of the macro economy.
Endogenous credit money: a missing step in the Keynesian revolution
Keynesian monetary theory reconsidered
Figure 3. Keynes’ *General Theory* model of interest rate determination.

(1) $M^s = M/P$  
(2) $M^d = M(i, y, X)$  
(3) $M^s = M^d$  
$M^s$, $M$ = real money supply, exogenous nominal money supply, general price level, real money demand, nominal interest rate on bonds, real income, state of bearishness.

$M^s = real~money~supply,~M = exogenous~nominal~money~supply,~P = general~price~level,~M^d = real~money~demand,~i = nominal~interest~rate~on~bonds,~y = real~income,~X = state~of~bearishness.$
Figure 4. The neo-Keynesian model of the money supply process.

\[ M_s = m(i, k)H_s/P \]

Nominal interest rate on bonds, \( i \)

Money supply, \( M \)

\( M^s = m(i, k)H^s/P \)

\( M^d = M(i, y, X) \)

\( M^s = M^d \quad m_i > 0, \quad m_k < 0, \quad M_i < 0, \quad M_y > 0, \quad M_X > 0. \)

\( H^s \) = real supply of outside money (liabilities of the central bank), \( H \) = exogenous nominal outside money supply, \( m(.) \) = money multiplier, \( k \) = reserve requirement ratio for inside money (bank deposits).
Figure 5. The neo-Keynesian model of the money supply process with interest rate targeting by the central bank.
Against monetarism: the origins of PK endogenous money theory
Figure 6. Competing approaches in the Post Keynesian theory of endogenous money supply.

- Post Keynesian theory of endogenous money
  - Acommodationists/Horizontalists
    - Early horizontalism (Moore, 1988)
      - Later horizontalism (Lavoie, 1996, 2006)
  - Structuralists
Figure 7. The horizontalist model of the money supply process.

\[ M = \frac{L}{1-k} \]

\[ H = kM \]

\[ i_L = (1+m)i_F \]

Money market and loan interest rates

Monetary base

Bank loans

Money supply

\[ H_0 \]

\[ L_0 \]

\[ M_0 \]
Structuralism
Figure 8. The structuralist model of determination of the money supply, bank lending, and interest rates.

High-powered money, \( h \)

Loan rate, \( i_L \)

Deposit rate, \( i_M \)

Money market rate, \( i_F \)

\[ i_L = [1+m(L)]i_F + c \]

\[ M = [L(.) - B]/[1-k] \]

\[ H^d = k[L(.) - B]/[1-k] \]

Loans, \( L \)

Deposits, \( M \)

Bond rate, \( i_B \)
Refining the structuralist model

• [A] Make loan demand a positive function of the bond rate.
• [B] Credit rationing.
• [C] Endogenize the target interest rate.
Reconstructing the LM schedule
Figure 9. The LM schedule in an endogenous money system.

Case 1: loan demand more income elastic than money demand.

Case 2: loan demand less income elastic than money demand.
Monetary policy

• (1) Short term interest rate policy (NW quadrant in Figure 8).
• (2) Managing the credit market and money creation (NE quadrant).
• (3) Long term interest rate policy (SE quadrant).
• That is a very different description of monetary policy than the neo-Keynesian model with interest rate targeting.
Figure 10. The “corridor” model of short-term interest rate management.

Central bank short-term interest rates

\[ H^d = kM \]
Long-term interest rate management: permanent QE
Credit markets and Asset Based Reserve Requirements (ABRR)

• (1) What are ABRR?
• (2) ABRR would improve the conduct of monetary policy.
• (3) Other benefits of ABRR.
• (4) ABRR provide a superior exit strategy from QE