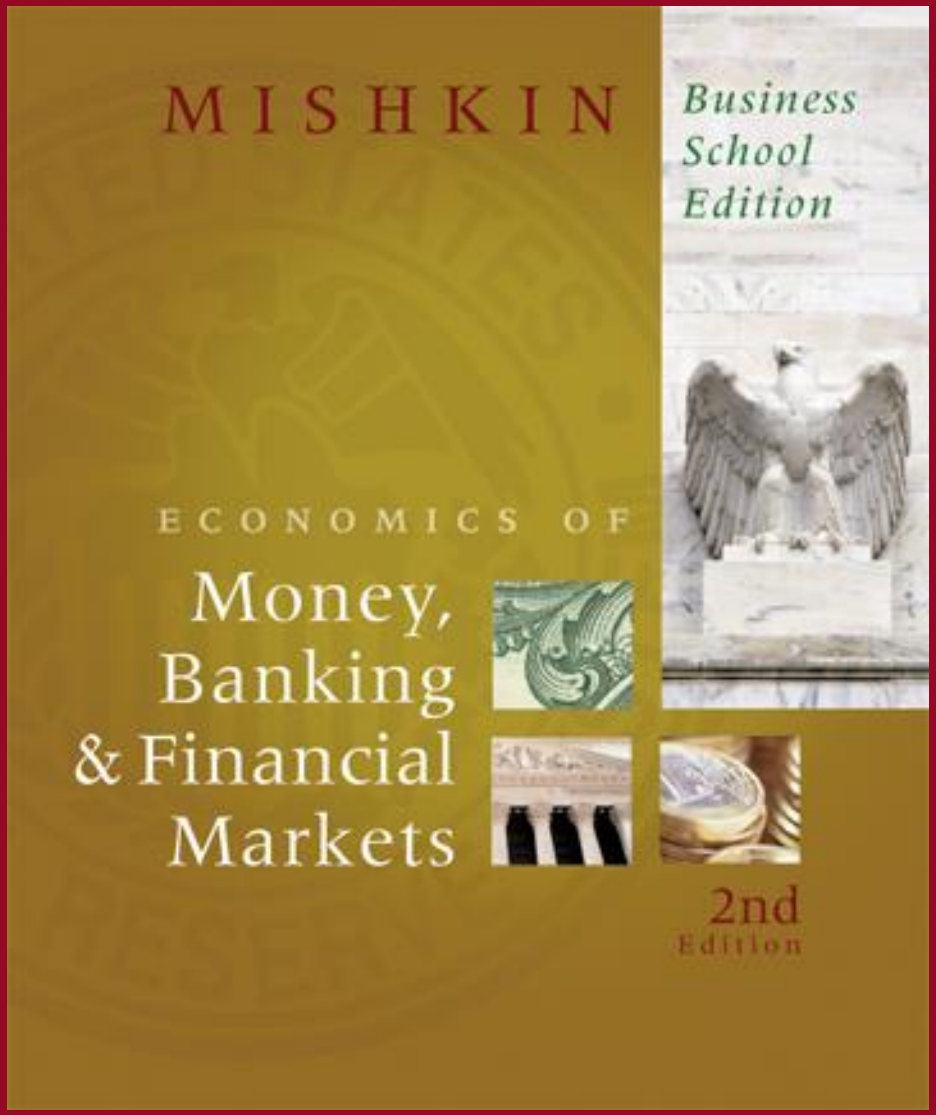
Chapter 3

What Is Money?

Mishkin notes with edits by L. Tesfatsion (Iowa State University)

Last Revised:
31 January 2011



Addison-Wesley is an imprint of PEARSON

Topics

- Definition of money
- Functions of money
- Alternative types of payment systems
- Evolution of forms of money
- Measurement of the money supply
- Money supply and monetary policy

Definition of Money

- What is it?
  - ***Money*** is anything that is generally accepted in payment for goods or services or in the repayment of debts.
- A rather broad definition
  - "Money" is defined in terms of function, not form
  - "Money" is a social construction (i.e., it is dependent on social acceptance)

What Money is Not !

- Money is DISTINCT from:
  - ***Wealth (or "Net Worth"):*** current value of all assets owned by an entity (person, agency, nation,…) net of all liabilities owed by the entity
    - ***Example:*** His wealth is $10,000 (value amount)
  - ***Income:*** the flow of earnings of an entity per unit of time
    - ***Example:*** His income is $10,000 per year (flow of value)

Functions of Money

Medium of Exchange (Means of Payment):

- Eliminates the need to have a "double coincidence of wants" (reduces transaction costs)
- Promotes specialization & division of labor

A medium of exchange must

- be easily standardized
- be widely accepted
- be divisible
- be easy to carry
- not deteriorate quickly

Functions of Money…Continued

Unit of Account:

- used to measure value in the economy
- reduces transaction costs

Store of Value:

- used to save purchasing power over time.
- other assets also serve this function
- Money is the most liquid of all assets but loses value during inflation

Alternative Payment Systems

- **Autarky:** Group distribution rules for sharing and gift giving. No trade takes place, and no use of money.
- **Barter:** Trade takes place, but no use of money ***Example:*** Incas of Peru, 12th-15th c. AD
- **Monetary:** People trade goods and services in exchange for money

Problems with Barter Exchange

- No Medium of Exchange
  - Lack of double coincidence of wants
  - Discourages people from specializing in types of production they do best
- Need for Many Prices
  - N(N-1)/2 prices given N distinct goods/services
- No Common Unit of Account
- No Common Store of Value

Evolution of Forms of Money

- **Commodity money** (~ 9000 BC)
- **Token Money (No Intrinsic Use-Value)** (~9000BC)
- **Checks** (Medieval Italy & Catalonia, 5th-15th c. AD)
- **Backed Paper** (China~960AD, British colonies 1690-1776)
- **Unbacked Paper** (China ~618–960AD; US 1862,1973→)
- **Fiat Money** (China ~1300 AD; first U.S. use 1862)
- **Electronic money** (first U.S. use in 1990's)

Forms of Money …

- ***Traditional Definition of a Commodity***
  - —Something with intrinsic use value (e.g., bread)
- ***Modern Definition of Commodity***
  - —Anything of value available for purchase and sale in standardized form (e.g., cell phone minutes)
- ***Commodity Money***
  - —Commodity also used as money
  - —Commodities used as monies in past tended to be most valuable, easily standardized & divisible
  - —***Examples:*** Shells, precious metals, cigarettes…

Forms of Money … Continued

- **Token Money**
  - Face value > intrinsic use value
  - ***Examples:*** Marked stones, many modern coins (e.g., post-1982 U.S. zinc penny issues, see http://www.coinflation.com/)
- **Checks**
  - An instruction to your bank (in paper form) to transfer money from your account

Forms of Money ... Continued

- **Backed Paper Money**
  - Collateralized by some commodity
  - ***Example:*** Tobacco in warehouse used as collateral backing for issued paper monies
- **Unbacked Paper Money**
  - No legal requirement that it be collateralized by any commodity
- **Fiat Money:** ***Unbacked paper money*** decreed by a government to be ***legal tender***, meaning that – by law - it must be accepted for debt payments.

Forms of Money...Continued

- **Electronic Money**
  - Debit card
  - "Mobile money" (cell phone networks permitting cell phones to act as debit cards)
  - Stored-value cards
  - Electronic cash and checks – used on Internet

Measuring Monetary Aggregates: An Empirical Approach

Use *whatever* measure works best for the control of key macro variables such as GDP, the general price level, etc.

- **PROBLEMS:**
  - Different measures work best for different variables
  - Usefulness of any one measure for prediction of any one variable varies over time

Measuring Monetary Aggregates: Two Theoretical Approaches

1 Measure as "money" only those assets that are most liquid, hence that function best as a medium of exchange.

(Appropriate cut-off not clear)

2 Include all financial assets in the measure of money, but weight them in proportion to their liquidity.

Example:

$$M = .8 \times [\$ \text{ bills}] + .1 \times [\text{Treasury Bills}] + \ldots.$$

(Appropriate weights not clear)

Measuring Monetary Aggregates via Liquidity

- Actual practice in U.S.
- U.S. uses nested family of money measures constructed on basis of decreasing liquidity

M1 = Most Narrow Measure (Most Liquid)

M1 = currency+traveler's checks+demand deposits + other checkable deposits

Measuring Money via Liquidity…

- **M2 = M1 + Less Liquid Assets**

M2 = M1 + small denomination time deposits
+ savings deposits
+ money market deposit accounts
+ money market mutual fund shares

- **M3 = M2 + Less Liquid Assets**

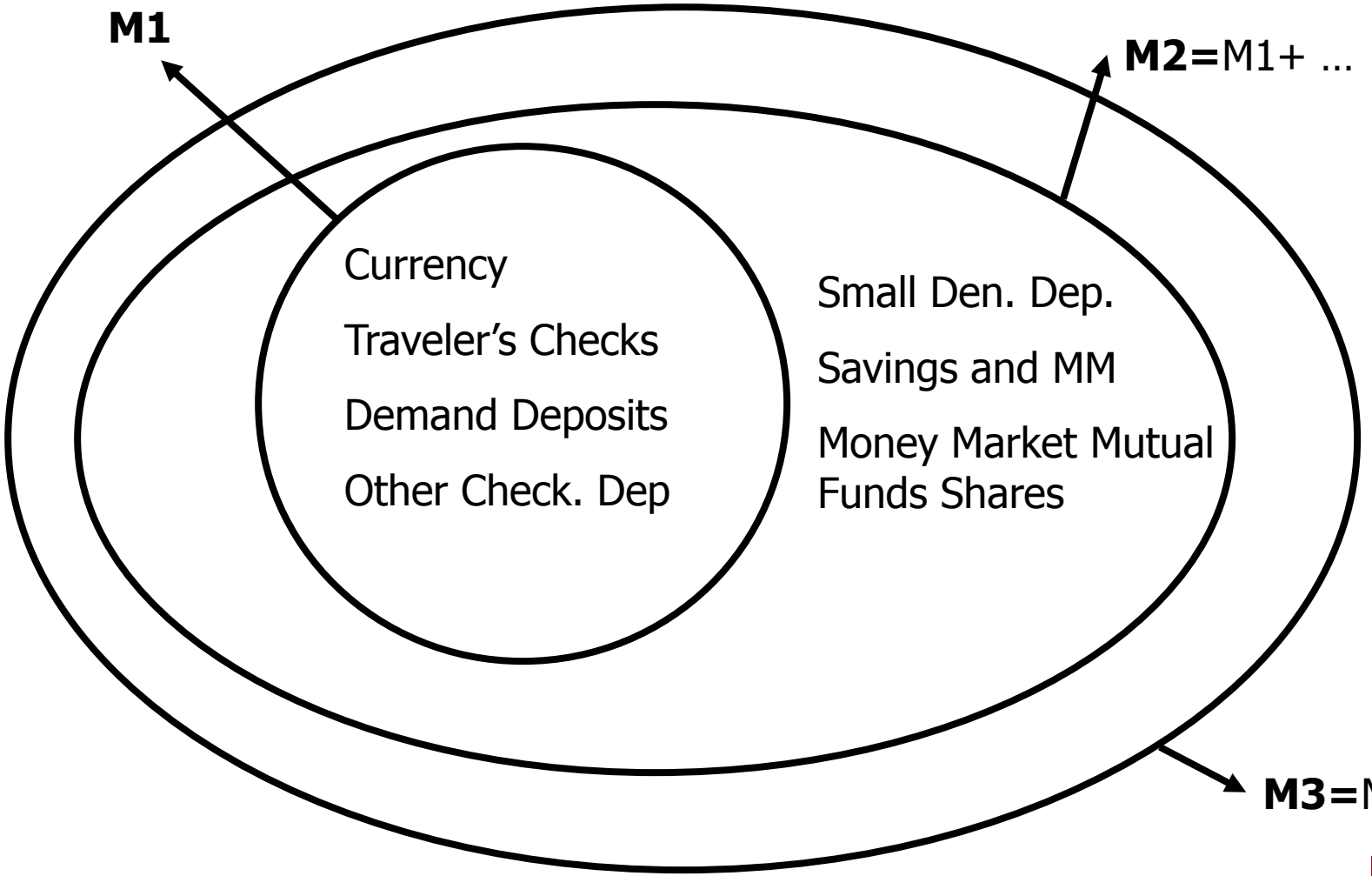
- **L = M3 + Less Liquid Assets**

Table 1 Measures of the Monetary Aggregates

	Value as of November 2008 ($ billions)
M1 = Currency	804.9
+ Traveler's checks	5.6
+ Demand deposits	405.9
+ Other checkable deposits	306.1
Total M1	1,522.5
M2 = M1	
+ Small-denomination time deposits	1,351.0
+ Savings deposits and money market deposit accounts	4,007.1
+ Money market mutual fund shares (retail)	1,053.9
Total M2	6,412.0

Source: www.federalreserve.gov/releases/h6/hist.

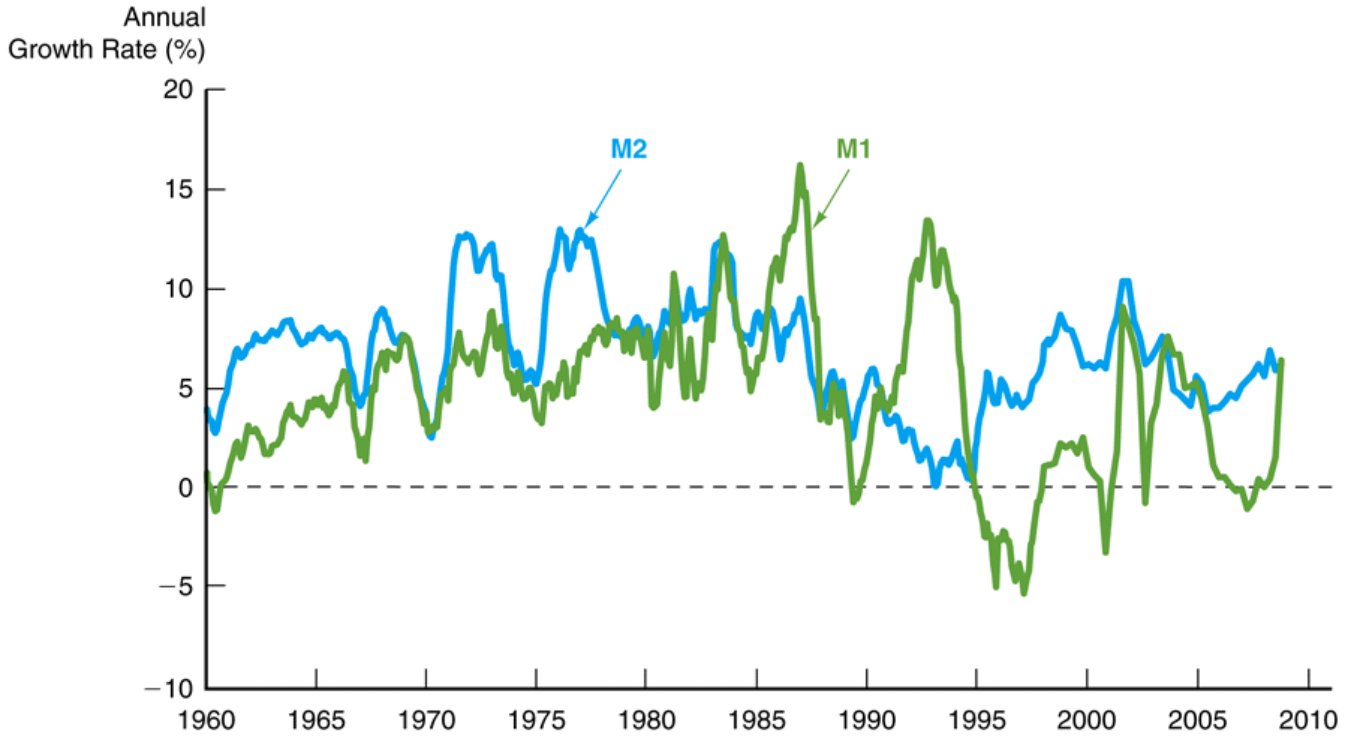
Monetary Aggregates



M1 vs. M2

- Does it matter which measure of money is considered?
  - M1 and M2 can move in different directions in the short run (see the figure on the next slide).
  - ***Conclusion:*** the choice of monetary aggregate is important for policymakers.

FIGURE 1 Growth Rates of the M1 and M2 Aggregates, 1960–2008



Sources: **Federal Reserve *Bulletin*, p. A4, Table 1.10, various issues; Citibase databank; www.federalreserve.gov/releases/h6/hist/h6hist1.txt.**

How Reliable are Money Data?

- Revisions of money measures are routinely made after initial release:
  - Small depository institutions report infrequently
  - Adjustments must be made for seasonal variation
- We probably should not pay much attention to short-run movements in money measures
- We should be concerned only with longer-run movements

Table 2 Growth Rate of M2: Initial and Revised Series, 2008 (percent, compounded annual rate)

Period		Initial Rate	Revised Rate	Difference Revised Rate − Initial Rate
July	2007	4.1	4	−0.1
August	2007	10.6	8.2	−2.4
September	2007	5.2	6.2	1
October	2007	4.4	4	−0.4
November	2007	5.4	6.4	1
December	2007	5.9	5.9	0
January	2008	9.6	9.6	0
February	2008	19.9	19.7	−0.2
March	2008	14.7	13.4	−1.3
April	2008	3.7	3.3	−0.4
May	2008	2.3	2.4	0.1
June	2008	−3.7	−3.9	−0.2
Average		6.8	6.6	−0.2

Source: Federal Reserve Bulletin, various issues, Table 1.7, line 6; www.federalreserve.gov/pubs/supplement/default.htm.

Averages are close

Direct Effects of M → PQ?

- Let M = Money supply during year T
- Q = Real GDP for year T
- P = GDP Deflator for year T
- P·Q = (Nominal) GDP for year T

DEFINE:

V = GDP/M = "Velocity of Money"

= Number of times on average that each dollar was used in trades during year T

Direct Effects of M → PQ … ?

- Note that the velocity of money definition

  $$V = GDP/M$$

  implies

  $$M = (1/V) \cdot GDP$$

- Thus, **if V were constant over time**, then by controlling M the Fed could also directly control the level of GDP!

Changes in the Velocity of Money Over Time

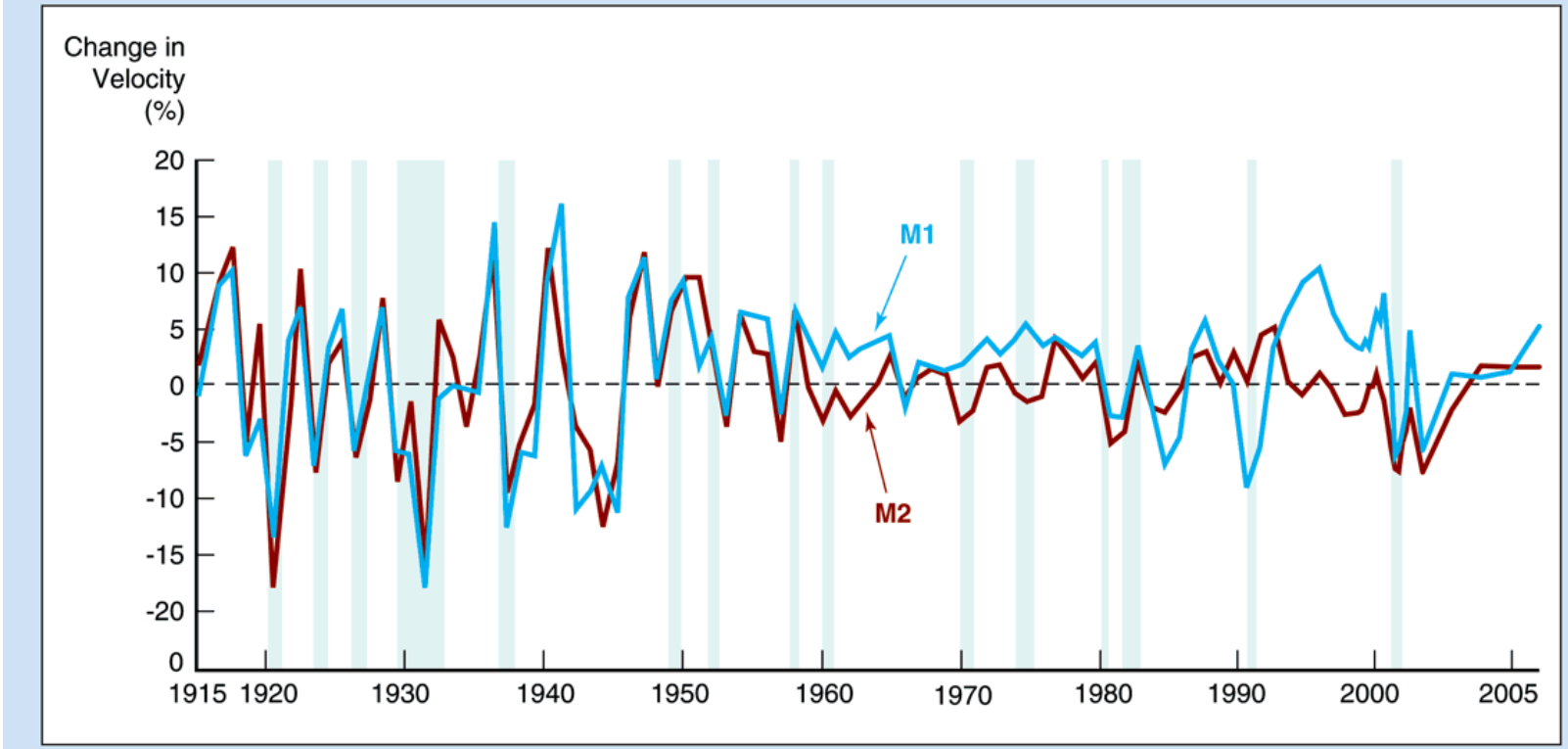


FIGURE 1 **Change in the Velocity of M1 and M2 from Year to Year, 1915–2005**

Sources: Economic Report of the President; Banking and Monetary Statistics; www.federalreserve.gov/releases/h6/.