

Lecture Notes on

**MONEY, BANKING,
AND FINANCIAL MARKETS**

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Chapter 3: What Is Money?

1. Meaning of Money

2. Functions of Money

Medium of Exchange

Unit of Account

Store of Value

3. Measuring Money

Theoretical Measures

Empirical Measures

Federal Reserve's Monetary Aggregates

This chapter begins by defining money in basic terms.

It then discusses the various functions of money in the economy as a whole.

Finally, it considers how economists and the Federal Reserve measure money in the US economy.

1 Meaning of Money

Money = anything that is generally accepted in payment for goods and services or in the repayment of debts.

Objects that qualify as money under this definition:

Currency (dollar bills and coins).

Checking account deposits.

Perhaps even savings deposits.

This concept of money must be distinguished from two other terms:

Wealth = value of all property or assets, including currency and bank deposits, but also including stocks, real estate, etc.

Income = flow of earnings per unit of time.

2 Functions of Money

Three principal functions of money:

Medium of Exchange

Unit of Account

Store of Value

2.1 Medium of Exchange

Money serves as a medium of exchange: it is used to pay for goods and services.

By serving as a medium of exchange, money promotes economic efficiency by reducing transaction costs: the time and effort spent in exchange.

Without money, trade must take place through barter.

But barter can be quite costly, it can take time for you to find someone who both:

Has the good that you want.

Wants the good that you have.

This is the problem of finding a “double coincidence of wants.”

Money can solve this problem, since everyone will accept it.

2.2 Unit of Account

Money serves as a unit of account: values of goods and services can be measured in terms of money.

As serving as a unit of account, money reduces transaction costs by allowing all prices to be stated in common terms.

With barter, you must keep track of each good’s price in terms of every other good.

But with money, you only need to keep track of each good's price in terms of one good: money.

2.3 Store of Value

Money serves as a store of value: it serves as a way of storing wealth.

Other assets also serve as a store of value: stocks, bonds, real estate, etc.

But money is unique in terms of its liquidity.

Liquidity = the ease and speed with which an asset can be converted into a medium of exchange.

By definition, money is the most liquid store of value.

On the other hand, money's usefulness as a store of value is eroded by inflation, a general rise in the prices of all goods.

If, through inflation, all prices double, then the value of money has been cut in half.

Under conditions of hyperinflation, where the inflation rate exceeds 50% per month, consumers have sometimes abandoned the use of money altogether and resorted to barter.

3 Measuring Money

3.1 Theoretical Measures

Some economists prefer to measure money on theoretical grounds, including only those assets that clearly serve as a medium of exchange: currency, checking account deposits, traveler's checks.

The problem with this way of measuring money is that it is not clear-cut.

There are some assets, like money market mutual fund shares, that provide limited check-writing privileges: should these be including in the measure of money?

3.2 Empirical Measures

Given the ambiguities associated with the theoretical approach, other economists take an empirical, or data-based, approach to measuring money.

These economists suggest that the correct measure of money is one that is most closely linked to the behavior of inflation and output.

The problem with this definition is that historically, measures of money that work well in predicting inflation and output in one period do not work as well during other periods.

3.3 Federal Reserve's Monetary Aggregates

Given the problems associated with both theoretical and empirical measures of money, the Federal Reserve provides data on several measures of money, called monetary aggregates.

M1 = assets that are clearly used as a medium of exchange:

- Currency.

- Traveler's checks.

- Demand deposits = checking accounts that pay no interest.

- Other checkable deposits = checking accounts that pay interest, including negotiable order of withdrawal (NOW) accounts.

M2 = M1 + other assets that provide limited check-writing privileges or are extremely liquid:

- Small denomination (under \$100,000) time deposits (CDs) and repurchase agreements (RPs).

- Savings deposits.

- Money market deposit accounts (MMDAs) = high-yielding bank deposits that offer limited check-writing privileges.

 - Like money market mutual fund shares, but:

 - Are issued by banks.

 - Are insured by the Federal Deposit Insurance Corporation (FDIC).

- Retail or noninstitutional money market mutual fund (MMMMF) shares owned by individuals.

M3 = M2 + other liquid assets:

- Large denomination (over \$100,000) time deposits (CDs).

- Institutional money market mutual fund (MMMMF) shares owned by businesses.

Large denomination (over \$100,000) repurchase agreements (RPs).
Eurodollar deposits.

Mishkin's Table 1 shows the value of M1, M2, and M3 and their various components as of December 2002:

M1	= Currency	\$626.5 billion
	+ Traveler's checks	\$7.7
	+ Demand deposits	\$290.7
	+ Other checkable deposits	\$281.2
	Total M1	\$1206.1 billion
M2	= M1	
	+ Small time deposits and RPs	\$1332.3 billion
	+ Savings deposits and MMDAs	\$2340.4
	+ Noninstitutional MMMF shares	\$923.7
	Total M2	\$5802.5 billion
M3	= M2	
	+ Large time deposits	\$1105.2 billion
	+ Institutional MMMF shares	\$767.7
	+ Large repurchase agreements	\$511.7
	+ Eurodollar deposits	\$341.1
	Total M3	\$8528.2 billion

Observations:

M3 is always bigger than M2, and M2 is always bigger than M1.

These relationships must always hold, of course, because M3 includes everything in M2, and M2 includes everything in M1.

In December 2002, the total US population, ages 16 and over, was about 220 million.

Take \$626.5 billion = \$626,500 million in currency and divide by 220 million people to calculate

$$\text{Currency per capita} = \frac{\$626,500 \text{ million in total currency}}{220 \text{ million people}} = \$2,847.73$$

A large fraction of this currency must be held by foreigners as a store of value and by people engaged in criminal activities!

Mishkin's Figure 1 (p.54) plots the growth rates of M1, M2, and M3 from 1960 through 2002:

The monetary aggregates show some tendency to move together, but often grow at different rates.

This fact highlights the difficulty of using the monetary aggregates to forecast inflation and output.

The figure on the next page plots 10-year averages of Core Consumer Price Inflation and M2 growth in the US, 1969-2003:

M2 growth and inflation share similar long-run trends throughout most of the period.

Both rise during the 1970s and fall during the 1980s and early-to-mid-1990s.

Beginning in the late 1990s, however, the two series diverge: M2 growth begins to rise, but inflation continues to fall.

Either M2 growth is no longer useful in explaining long-run movements in inflation, or inflation is due to rise.

Again, these observations highlight the difficult in finding relationships between inflation, output, and measures of money.

4 Conclusion

This chapter has shown that it is fairly easy:

To provide a basic definition of money.

To identify the functions performed by money in the economy as a whole.

But, this chapter has also shown that it is more difficult in practice to decide exactly which assets qualify as money and which do not.

For this reason, the Federal Reserve provides several measures of money, or monetary aggregates.

Often these measures of money move together, but sometimes they do not.

Often these measures of money help predict movements in inflation and output, but sometimes they do not.

Hence, Federal Reserve economists and financial market participants spend a lot of time and effort trying to determine what is going on with the money supply and what it means for the economy as a whole.

M2 Growth and Core CPI Inflation 10-Year Averages, 1969-2003

