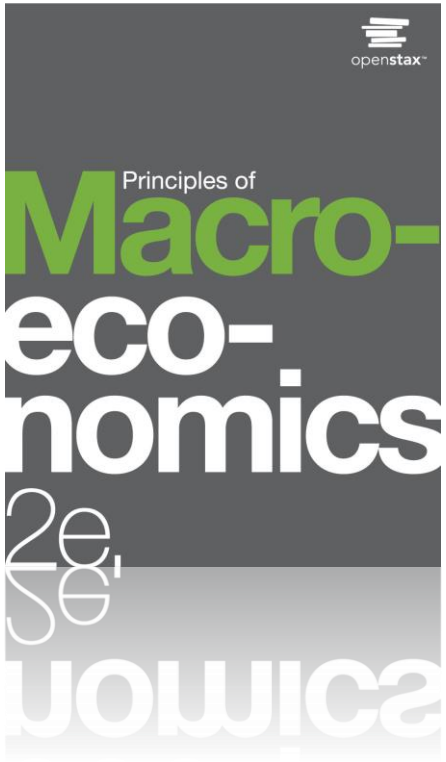
PRINCIPLES OF MACROECONOMICS 2e

Chapter 14 Money and Banking

PowerPoint Image Slideshow



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CH.14 OUTLINE

Cowrie Shell or Money?

- Is this an image of a cowrie shell or money?
- The answer is: Both.
- For centuries, people used the extremely durable cowrie shell as a medium of exchange in various parts of the world.

(Credit: modification of work by “prilfish”/Flickr Creative Commons)

14.1 Defining Money by Its Functions

- What the world would be like without money?

- **Barter** - trading one good or service for another, without using money.

- **Double coincidence of wants** - a situation in which two people each want some good or service that the other person can provide.

Functions for Money

- **Money** - whatever serves society in four functions:
  - **Medium of exchange** - whatever is widely accepted as a method of payment.
  - **Store of value** - something that serves as a way of preserving economic value that one can spend or consume in the future.
  - **Unit of account** - the common way in which we measure market values in an economy.
  - **Standard of deferred payment** - money must also be acceptable to make purchases today that will be paid in the future.

Commodity versus Fiat Money

- **Commodity money** - an item that is used as money, but which also has value from its use as something other than money.
- **Commodity-backed currencies** - dollar bills or other currencies with values backed up by gold or another commodity.
- During much of its history, gold and silver backed the money supply in the United States.

Commodity versus Fiat Money, Continued

- Now, by government decree, if you owe a debt, then legally speaking, you can pay that debt with the U.S. currency, even though it is not backed by a commodity.

- **Fiat money** - has no intrinsic value, but is declared by a government to be the country's legal tender.

- The only backing of our money is universal faith and trust that the currency has value, and nothing more.

A Silver Certificate and a Modern U.S. Bill

- Until 1958, silver certificates were commodity-backed money - backed by silver, as indicated by the words “Silver Certificate” printed on the bill, pictured at bottom.
- Today, The Federal Reserve backs U.S. bills, but as fiat money (inconvertible paper money made legal tender by a government decree). (Credit: “The.Comedian”/Flickr Creative Commons)

14.2 Measuring Money: Currency, M1, and M2

- The Federal Reserve Bank:
  - The central bank of the United States,
  - Bank regulator and responsible for monetary policy,
  - Defines money according to its liquidity.

- The Federal Reserve Bank has two definitions of money:
  - **M1 money supply** - a narrow definition of the money supply that includes currency and checking accounts in banks, and to a lesser degree, traveler's checks.

  - **M2 money supply** - a definition of the money supply that includes everything in M1, but also adds savings deposits, money market funds, and certificates of deposit.

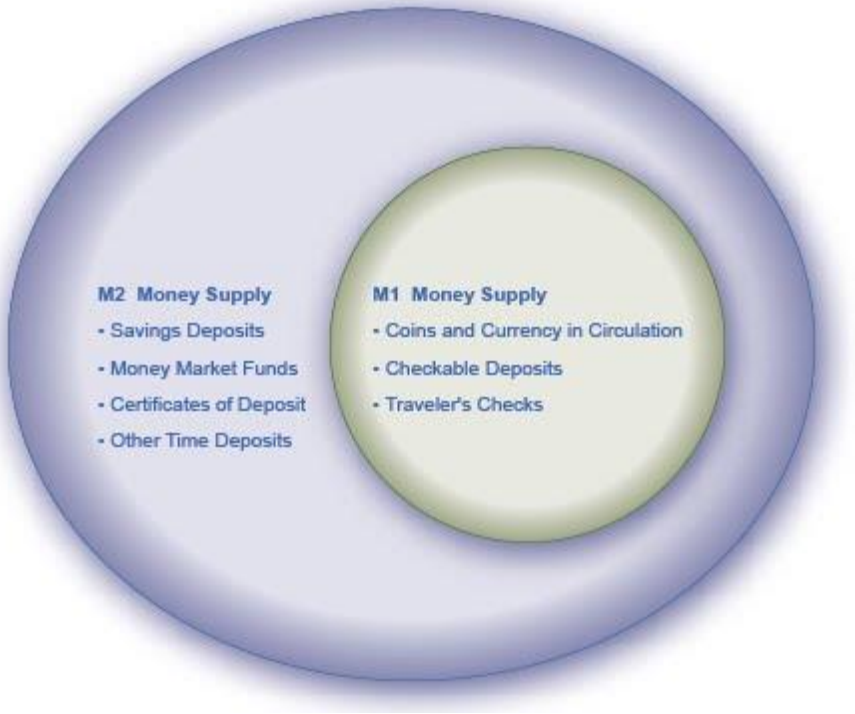
M1 Money

- M1 money supply includes:
  - **Coins and currency in circulation** - the coins and bills that circulate in an economy that are not held by the U.S Treasury, at the Federal Reserve Bank, or in bank vaults.
  - **Checkable (demand) deposits** - checkable deposit in banks that is available by making a cash withdrawal or writing a check.
  - Traveler's checks

M2 Money

- M2 money supply includes:
  - All M1 types
  - **Savings deposits** - bank account where you cannot withdraw money by writing a check, but can withdraw the money at a bank - or can transfer it easily to a checking account.
  - **Money market fund** - the deposits of many investors are pooled together and invested in a safe way like short-term government bonds.
  - **Certificates of Deposit (CD's) and other time deposits** - account that the depositor has committed to leaving in the bank for a certain period of time, in exchange for a higher rate of interest.

The Relationship between M1 and M2 Money



- M1 and M2 money have several definitions, ranging from narrow to broad.
- M1 = coins and currency in circulation + checkable (demand) deposits + traveler's checks.
- M2 = M1 + savings deposits + money market funds + certificates of deposit + other time deposits.

Where Does "Plastic Money" Fit In?

- **Debit card** - like a check, is an instruction to the user's bank to transfer money directly and immediately from your bank account to the seller.

- **Credit card** - immediately transfers money from the credit card company's checking account to the seller, and at the end of the month the user owes the money to the credit card company.
  - A credit card is a short-term loan.
  - Not considered money.

- **Smart card** - stores a certain value of money on a card and then one can use the card to make purchases.
  - Examples: long-distance phone calls or making purchases at a campus bookstore and cafeteria

- Credit cards, debit cards, and smart cards are different ways to move money when you make a purchase.

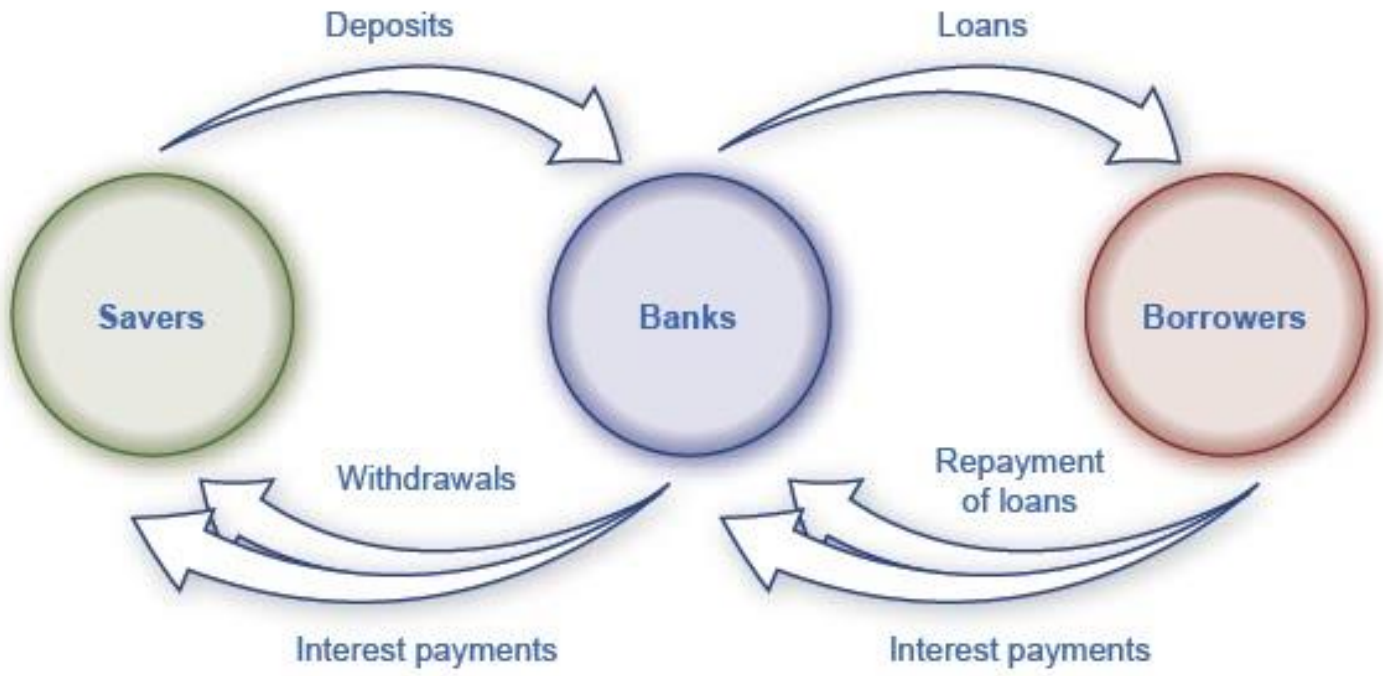
Banks as Financial Intermediaries

Financial intermediary - an institution that operates between a saver with financial assets to invest and an entity who will borrow those assets and pay a rate of return.

Depository institution - institution that accepts money deposits and then uses these to make loans.

- Discussion Question: How do banks make a **profit**? What does a bank's balance sheet look like?

Banks as Financial Intermediaries, Illustrated



- Banks act as financial intermediaries because they stand between savers and borrowers.
- Savers place deposits with banks, and then receive interest payments and withdraw money.
- Borrowers receive loans from banks and repay the loans with interest.
- In turn, banks return money to savers in the form of withdrawals, which also include interest payments from banks to savers.

A Bank's Balance Sheet

- **Balance sheet** - an accounting tool that lists assets and liabilities.
- **Asset** - item of value that a firm or an individual owns.
- **Liability** - any amount or debt that a firm or an individual owes.
- **Net worth** - the excess of the asset value over and above the amount of the liability; total assets minus total liabilities.
- **Bank capital** - a bank's net worth.

A Bank's Balance Sheet

Assets		Liabilities + Net Worth	
Loans	$5 million	Deposits	$10 million
U.S. Government Securities (USGS)	$4 million		
Reserves	$2 million	Net Worth	$1 million

- This figure shows a hypothetical and simplified balance sheet for the Safe and Secure Bank.

- **T-account** - a balance sheet with a two-column format, with the T-shape formed by the vertical line down the middle and the horizontal line under the column headings for "Assets" and "Liabilities".

- The "T" in a T-account has:
  - the assets of a firm, on the left
  - its liabilities, on the right.

Reserves and Bankruptcy

- **Reserves** - funds that a bank keeps on hand and that it does not loan out or invest in bonds.

- The Federal Reserve requires that banks keep a certain percentage of depositors' money on "reserve".

- We define net worth of a bank as its total assets minus its total liabilities.
  - For a financially healthy bank, the net worth will be positive.
  - If a bank has negative net worth and depositors tried to withdraw their money, the bank would not be able to give all depositors their money.

How Banks Go Bankrupt

- Potential problems for a bank:
  - High rate of loan defaults
  - **Asset-liability time mismatch** - the ability for customers to withdraw bank's liabilities in the short term while customers repay its assets in the long term.

- Strategies to reduce risk:
  - **Diversify** - making loans or investments with a variety of firms, to reduce the risk of being adversely affected by events at one or a few firms.
  - Sell some of the loans they make in the secondary loan market.
  - Hold a greater share of assets (government bonds or reserves).

14.4 How Banks Create Money, Part 1

- The banking system can create money through the process of making loans.

Singelton Bank Balance Sheet

Assets		Liabilities + Net Worth	
Reserves	$10 million	Deposits	$10 million

- In the T-account balance sheet above, Singelton Bank is simply storing money for depositors, and not making loans.
  - It cannot earn any interest income and cannot pay its depositors an interest rate.

Singelton Bank Balance Sheet

Assets		Liabilities + Net Worth	
Reserves	$1 million	Deposits	$10 million
Loan to Hank's Auto Supply	$9 million		

- Now, by loaning out $9 million and charging interest, it will be able to make interest payments to depositors.
- This alters Singelton Bank's balance sheet:
  - It now has $1 million in (required 10%) reserves and a loan to Hank's Auto Supply of $9 million.

How Banks Create Money, Part 2

First National Balance Sheet

Assets		Liabilities + Net Worth	
Reserves	+ $9 million	Deposits	+ $9 million

- Singelton Bank issues Hank's Auto Supply a cashier's check for the $9 million.
- Hank deposits the loan in his regular checking account with First National Bank.
- The deposits at First National Bank rise by $9 million and its reserves also rise by $9 million.
- Bank lending has expanded the money supply by *$9 million*.

First National Balance Sheet

Assets		Liabilities + Net Worth	
Reserves	$90,000	Deposits	+ $9 million
Loans	$8.1 million		

- Now, First National Bank must hold some required reserves ($900,000) but can lend out the other amount ($8.1 million) in a loan to Jack's Chevy Dealership.

How Banks Create Money, Part 3

Second National Balance Sheet

Assets		Liabilities + Net Worth	
Reserves	+ $8.1 million	Deposits	+ $8.1 million

- If Jack's Chevy Dealership deposits the loan in its checking account at Second National, the money supply just increased by an *additional $8.1 million*.

- Making loans that are then deposited into a demand deposit account increases the M1 money supply.

- This money creation is possible because there are multiple banks in the financial system.
  - They are required to hold only a fraction of their deposits,
  - loans end up deposited in other banks,
  - which increases deposits and the money supply.

The Money Multiplier and a Multi-Bank System

- If all banks loan out their excess reserves, the money supply will expand.
- In a multi-bank system, institutions determine the amount of money that the system can create by using the money multiplier.
- The **money multiplier formula** = 1 / Reserve Requirement
- By multiplying the *money multiplier* by the *excess reserves*, we can determine the total amount of M1 money supply created in the banking system.
- Discussion Question: If the reserve requirement is 10%, and a bank's excess reserves are $9 million, what is the change in the M1 money supply?

Cautions about the Money Multiplier

- The quantity of money in an economy is closely linked to the quantity of lending or credit in the economy.
- All the money in the economy, except for the original reserves, is a result of bank loans that institutions repeatedly re-deposit and loan.
- A bank can also choose to hold extra reserves, *above* the required amount.
- Banks may decide to vary how much they hold in reserves for two reasons:
  - macroeconomic conditions
  - government rules

Cautions about the Money Multiplier, Continued

- In a recession, banks are likely to hold a higher proportion of reserves due to fear that customers are less likely to repay loans.
- The Federal Reserve may also raise or lower the required reserves held by banks as a policy move to affect the quantity of money in an economy.
- Additionally, if people do not deposit cash, banks cannot recirculate the money in the form of loans.