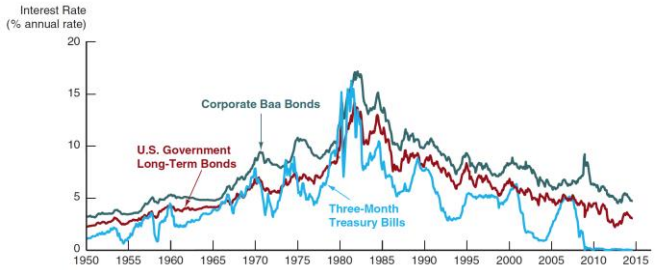
2004

Ch1 Why study Money, Banking, and FMs

Financial markets: markets in which finds are transferred from people and firms who have an excess of available funds to people and firms who have a need of funds

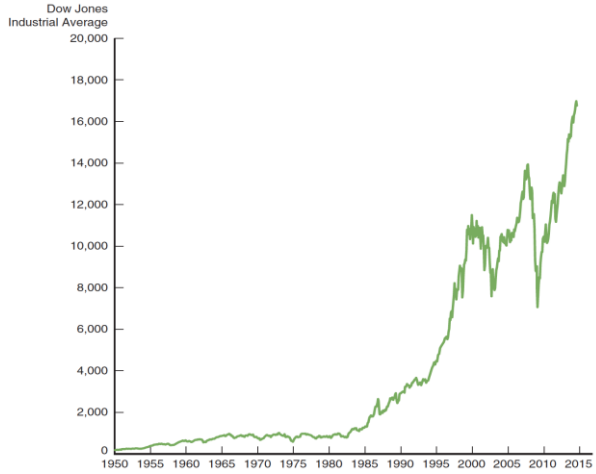
The Bond Market:

- A **security** (financial instrument) is a claim on the issuer's future income or assets
- A **bond** is a debt security that promises to make payments periodically for a specified period of time. Principal is returned to lender at maturity
- A **bond market** enables corporations and governments to borrow money to finance their activities and because it is where interest rates are determined
- An **interest rate** is the cost of borrowing or the price of credit
  (price paid for the rental of funds)
- Affect concumers' willingness to spend or save, and business investment decisions
- Eg. High i: high cost of financing which decreases consumption, but more interest income is earned by save more
- Eg. High i: causing a corporation to postpone building a new plant that would provide more jobs



The Stock Market:

- A common **stock** represents a share of ownership in a corporation
- A share of stock is a claim on the residual earnings and assets of the corporation
- Issuing stock and selling it to the public is a way for corporations to raise funds to finance their activities
- A place where people can get rich/poor very quickly
- A factor in business investment decisions: the price of shares affects the amount of funds that can be raised by selling newly issued stock to finance investment spending
- Eg. A higher price fro a firm's shares means that the firm can raise a larger amount of funds which can use to buy production facilities and equipment
- Stock prices are extremely volatile. Rising steasily during 1980s and expereicned the greatest rises from 1990-2000, then drops in 2002 & 2007



Banks and financail institutions are what make financial markets work

Financial intermediaries:

- institutions that borrow funds from people (households and firms) who have saved and that in turn make loans to other people
- **Banks**: accept/issue deposits and make loans
- Others: insurnace companies, pension funds, mutual funds and investment companies

Financial innovation:

- the development of new financial products and services
- can be an important force for good by making the financail system more efficient (eg. e-finance)

Financial crises:

- major disruptions in financial markets that are characterized by sharp declines in asset prices and failures (or government rescues) of many financail and nonfinancial firms

Money (Money Supply):

- anything that is generally accepted as payment for goods or services or in the repayment of debts
- evidence suggests that variations in the stock of money plays an important role in generating business cycles
- **Business cycles**: upward and downward movement of aggregate output produced in the economy
- **Recessions** (unemployment) and expansions affect all of us
- **Monetary theory**: ties changes in the money supply (ie. Stock of money) to changes in interest rates and asset prices and this aggragate economic activity and the price level
- **Aggregate price level** is the average price of goods & services in an economy
- A continual rise in the price level (**inflation**) affects all economic agents
- Inflation rate: the rate of change of the price level
- A positive association exists between inflation and the growth rate of Ms

Ch 4 The meaning of interest rates

Present value:
A dollar paid to you one year from now is less valuable than a dollar paid to you today

Simple loan:

$$i = \frac{interest\ payment}{amount\ of\ loan}$$

Let i = .10

In one year: \$100 X (1+ 0.10) = \$110

In two years: \$110 X (1 + 0.10) = \$121

or \$100 X $(1 + 0.10)^2$

In three years: \$121 X (1 + 0.10) = \$133

or \$100 X $(1 + 0.10)^3$

In n years

\$100 X $(1 + i)^n$

Simple present value:
- Calculating today's value of dollars received in the future
- To compare 2 or more instruments that have very different timing of payments

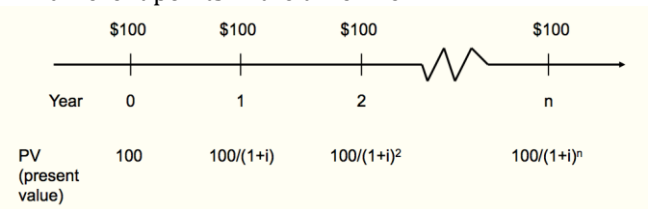
PV = today's (present) value

CF = future cash flow (payment)

i = the interest rate

$$PV = \frac{CF}{(1+i)^n}$$

- cannot directly compare payments scheduled in different points in the time line



Four types of credit-market instruments:
- **Simple loan**
  - The lender provides borrower with an amt of funds that must be repaid at the maturity date, along with an additional payment for the interest
- **Fixed-payment loan**
  - Borrower repays the same payment to the bank every period until the loan will be completely paid off at the maturity date
- **Coupon bond**
  - Pays the owner of the bond a fixed interest payment every year until the maturity date, when a specified final amount (face value) is paid
  - Coupon rate: yearly coupon payment \$100 and a face value of \$1000, \$100/1000 = 0.1
  - E.g. capital market instruments: US Treasury Bond and corporate bonds
- **Discount bond** (zero-coupon bond)
  - Is bought at a price below its face value and just the face value is repaid at the maturity date

Yield to maturity:
- The interest rate that equates the present value of the total cash flow payments received from a debt instrument with its value today.

Yield to maturity on a simple loan:

PV = amount borrowed = \$100

CF = cash flow in one year = \$110

n = number of years = 1

$$\$100 = \frac{\$110}{(1+i)^1}$$

$$(1+i)\ \$100 = \$110$$

$$(1+i) = \frac{\$110}{\$100}$$

$$i = 0.10 = 10\%$$

For simple loans, the simple interest rate equals the yield to maturity

Yield to maturity & the yearly payment on fixed-payment loan:

The same cash flow payment every period throughout the life of the loan

LV = loan value

FP = fixed yearly payment

n = number of years until maturity

$$LV = \frac{FP}{1+i} + \frac{FP}{(1+i)^2} + \frac{FP}{(1+i)^3} + \ldots + \frac{FP}{(1+i)^n}$$

Yield to maturity & Bond price for a Coupon Bond:

Using the same strategy used for the fixed-payment loan:

P = price of coupon bond

C = yearly coupon payment

F = face value of the bond

n = years to maturity date

$$P = \frac{C}{1+i} + \frac{C}{(1+i)^2} + \frac{C}{(1+i)^3} + \ldots + \frac{C}{(1+i)^n} + \frac{F}{(1+i)^n}$$

- When the coupon bond is priced at its face value, the yield to maturity equals the coupon rate.
- The price of a coupon bond and the yield to maturity are negatively related.

Ch23 Aggregate Demand and Supply Analysis

Aggregate Demand:

- Describe the relationship between the quantity of aggregate output demanded & the inflation rate when all other variables are held constant
- Made up of four component parts:
- **Consumption expenditure**: the total demand for consumer goods and services
- **Planned investment spending**: the total planned spending by business firms on new machines, factories, and other capital goods, plus planned spending on new homes
- **Government purchases**: spending by all levels of government (federal, state, and local) on goods and services
- **Net exports**: the net foreign spending on domestic goods and services
- $$Y^{ad} = C + I + G + NX$$

The aggregate demand curve is downward sloping beca

$$P \downarrow \Rightarrow M/P \uparrow \Rightarrow i \downarrow \Rightarrow I \uparrow \Rightarrow Y^{ad} \uparrow$$

and

$$P \downarrow \Rightarrow M/P \uparrow \Rightarrow i \downarrow \Rightarrow E \downarrow \Rightarrow NX \uparrow \Rightarrow Y^{ad} \uparrow$$

and also because *C*, like *I*, is interest-elastic

Deriving the AD curve:

- When inflation rate rises, the monetary authorities react by raising the real interest rate
- The effects of the higher r on individual components of AD:
- When r is higher, the cost of financing purchases of new physical capital become higher, making I less profitable & causing planned investment spending & AD to fall
- Since a higher r leads to a lower level of quantity of aggregate output demanded, the AD curve is downward-sloping
- The fact that the AD curve is downward sloping can also be derived from the quantity-theory-of-money analysis
- If velocity stays constant, a constant money supply implies constant nominal (and real) aggregate spending. And, when *both M* and V are constant, a fall in the price level gives rise to an increase in real aggregate demand
- This is because the volume of goods and services that can be purchased with the same stock of money has gone up. The *P* decline has raised *M/P* and hence AD

Figure 1. Leftward Shift in the AD Curve:

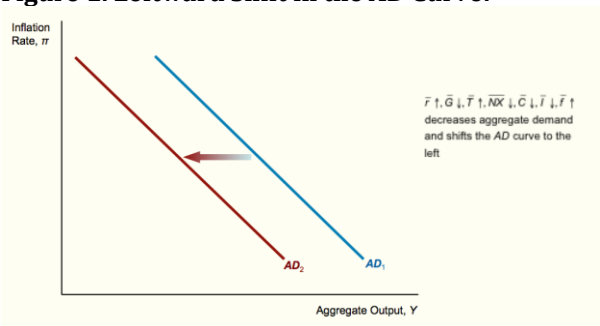
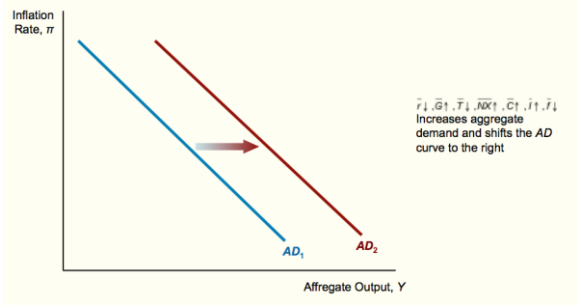


Figure 2. Rightward Shift in the AD Curve:

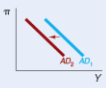
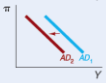
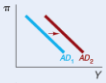


Factors (Demand Shocks) that Shift the Aggregate Demand Curve:

- *Autonomous monetary policy*: when inflation rises, CB raise autonomous r to control inflation, higher cost for investment, planned investment spending & quantity of AD decrease
- An increase in the *money supply* shifts AD to the right: holding velocity constant, an increase in the money supply increases the quantity of aggregate demand at each price level.
- An increase in spending from any of the components *C, I, G, and NX,* and an increase in *autonomous r* (higher inflation rate) will also shift AD to the right
- An increase in *taxes* lowers disposable income, leads to lower consumption expenditure & AD at any given inflation rate

SUMMARY TABLE 1

Factors That Shift the Aggregate Demand Curve

Factor	Change	Shift in Aggregate Demand Curve
Autonomous monetary policy, $\bar{r}$	↑	
Government purchases, $\bar{G}$	↑	
Taxes, $\bar{T}$	↑	
Autonomous net exports, $\overline{NX}$	↑	
Autonomous consumption expenditure, $\bar{C}$	↑	
Autonomous investment, $\bar{I}$	↑	
Financial frictions, $\bar{f}$	↑	

Note: Only increases (↑) in the factors are shown. The effect of decreases in the factors would be the opposite of those indicated in the "Shift" column.

Aggregate Supply:

- Relationship between the quantity of output supplied & the inflation rate
- Since prices & wages take time to adjust in LR levels, the AD curve differs in SR & LR

Long-run aggregate supply curve: