AP Macroeconomics
Chapter One p. 3-10

Economics: social science concerned with the efficient use of limited or scarce resources to achieve maximum satisfaction of human material wants.

• **Economic perspective**: an unique way of thinking about economic issues
√ Scarcity and Choice √ Rational Behavior √ Marginal Thinking: Costs and Benefits

• **Why Study Economics?**
"The ideas of economists and political philosophers, both when they are right and when they are wrong, are more powerful than is commonly understood. Indeed the world is ruled by little else. Practical men, who believe themselves to be quite exempt from any intellectual influences, are usually the slaves of some defunct economist."
John Maynard Keynes (1883-1946)
√ **Economics for Citizenship**
Well informed citizens will vote intelligently
Well informed politicians will choose wisely among alternatives
√ **Professional and Personal Application**
Businessmen need an understanding of economy
Problems are examined from social rather than personal viewpoint

Principles Are Derived At Two Levels:
Macroeconomics: economy as a whole and its basic subdivisions such as government, business and households. Macro looks at totals or aggregates to examine the "big picture".
Microeconomics: looks at specific units or segments of the economy, a particular firm or household. Micro looks at the "trees not the forest".

ECONOMIC GOALS
• **POSITIVE** economics collects and presents facts. It avoids value judgments—"just the facts, madam"! Positive economics concerns **WHAT IS**—what the economy is really like.

• **NORMATIVE** economics involves value judgments about what the economy should be like or which policies are best. Normative economics embodies subjective feelings about **WHAT OUGHT TO BE**—examining the desirability of certain conditions or aspects of the economy.

• **GOALS** are general objectives that we try to achieve. The nation's policy makers use these goals so that they can make better use of scarce resources. Goals make it easier to determine the tradeoffs involved in each choice.
√ Economic Growth—increase in the production capacity of the economy to increase the standard of living
√ Full Employment—provide suitable jobs for all citizens willing and able to work
√ Economic Efficiency—maximum satisfaction of wants with the available but scarce resources
√ Price-level Stability—stable price level avoiding inflation and deflation
√ Economic Security—providing for those unable to earn an income
√ Economic Freedom—guarantee that consumers, workers and business owners have freedom in economic activity
√ Equitable Distribution of Income—ensure that no citizen faces stark poverty while others enjoy extreme luxury
√ Balance of trade—seek a reasonable balance of trade with the world

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Foundation of Economics:
• Social Science concerned with how resources are used to satisfy wants—the economizing problem.
• Study of how people and countries use their resources to produce, distribute and consume goods and services.
• An examination of behavior related to how goods and services are acquired.
• A study of how people decide who will get the goods and services.
Scarcity:
• Society's material wants are unlimited and unsatiable; economic resources are limited or scarce.
√ Demand for goods and services exceeds the supply
• Material wants means that consumers want to obtain products that provide utility.
√ Necessity vs. wants √ Wants multiply over time with new products and incomes
√ Human wants tend to be unlimited, but human, natural, and capital resources are limited
• Resources are materials from which goods and services are produced. Four types of resources are:

√ **Land** —All Natural Resources
• Fields
• Forests
• Sea
• Mineral deposits
• Gifts of nature

√ **Labor**— Human Resources
• Manual
• Clerical
• Technical
• Professional
• Managerial

√ **Capital**—Means of production
• factories
• office buildings
• machinery
• tools and equipment
• use of technology
• use of available information

√ **Entrepreneurship**— a particular type of human resource
• business innovator
• sees opportunity to make profit
• uses unexploited raw materials
• takes risk with new product or process
• brings together land, labor, capital

• **Resource Payments—**note the special terms used
Land-Rent **Labor**-wages and salaries **Capital**-Interest **Entrepreneurship**-Profit

Economic Efficiency—Using limited resources to derive the maximum satisfaction and usefulness
• Full employment and full production must be realized to achieve this goal

Full Employment
√ All available resources used
√ Employment for all willing and able
√ No idle capital
√ No idle arable land

Full Production
√ Resources used to maximize satisfaction
√ Allocative Efficiency–resources used to produce society's most wanted goods & services.
√ Productive Efficiency–goods & services are produced in least costly ways.

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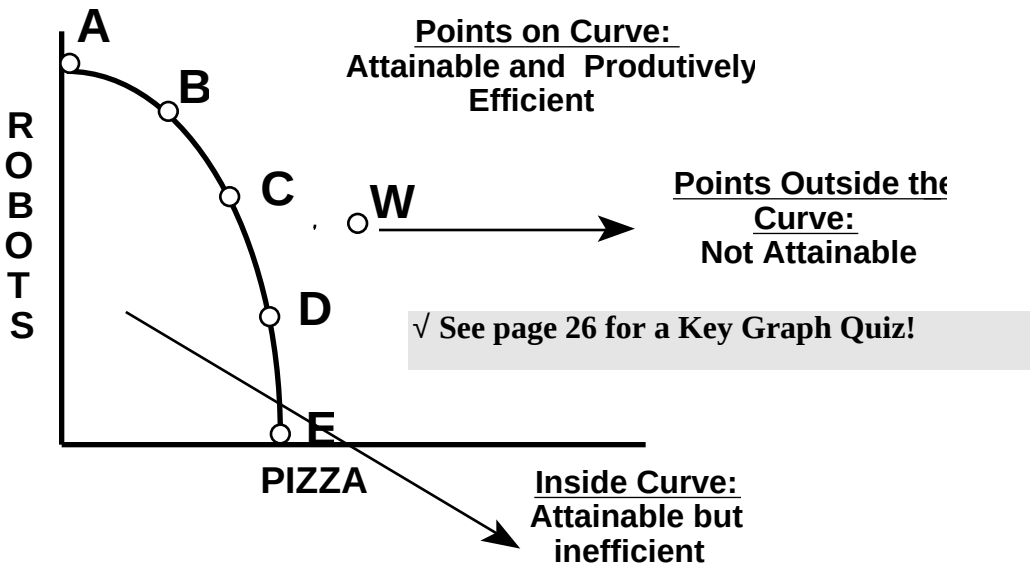
Production Possibility Tables and Curves

• **PPC is a economic model to demonstrate opportunity costs and tradeoffs**. The curve diagrams the various combinations of goods/services an economy can produce when all productive resources are employed. • There are 4 assumptions regarding the model:

√ Efficiency: full employment and productive efficiency
√ Fixed Resources: no more available, but they are shiftable
√ Fixed Technology: state of technology does not change in the period
√ Two Products: producing just two products (hypothetical, of course)

• Necessity of Choice is created. Limited Resources means a Limited Output.

TABLE:	A	B	C	D	E
PIZZA (000,000)	0	1	2	3	4
ROBOTS (000)	10	9	7	4	0



√ See page 26 for a Key Graph Quiz!

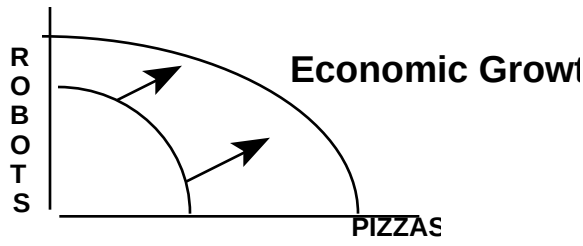
• **Each point on the curve represents some maximum output of any two products**. Limited resources (or supplies of the specific resource to produce the goods shown) will make any combination lying outside of the curve unattainable.

• **Choice** is reflected in the need for society to **select among the various attainable combinations** lying on the curve.

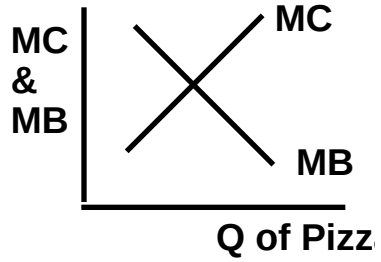
• **The concave shape of the curve implies the notion of opportunity costs, defined as** some amount of one good must be sacrificed to obtain more of the other. The amount of robots which must be foregone or given up to get another unit of pizza is the opportunity cost of that unit. the slope of the PPC curves becomes steeper as we move from A to E. The reason lies in the fact that economic resources are not completely adaptable. This curved line shows the adaptability and increasing opportunity cost. A straight line would mean constant opportunity cost.

• Points inside the curve may signal unemployment or underemployment of labor and other resources.

• **Economic growth (and a movement outward of the curve**) occurs because of expanding resource supplies, improved resource quality, and technological advances. These stimuli might include new discoveries of raw materials (diamonds in Australia, or oil on the North Slope of Alaska), improving the educational level or training of labor (Job Corps or company-sponsored job training), and new technology (robots in factories or the microchip).



• **Allocative Efficiency** (or determining the best or optimal output-mix) will relate to the concept of Marginal Cost versus Marginal Benefit.



The point where MC=MB is allocative efficiency since neither underallocation or overallocation of resources occurs.

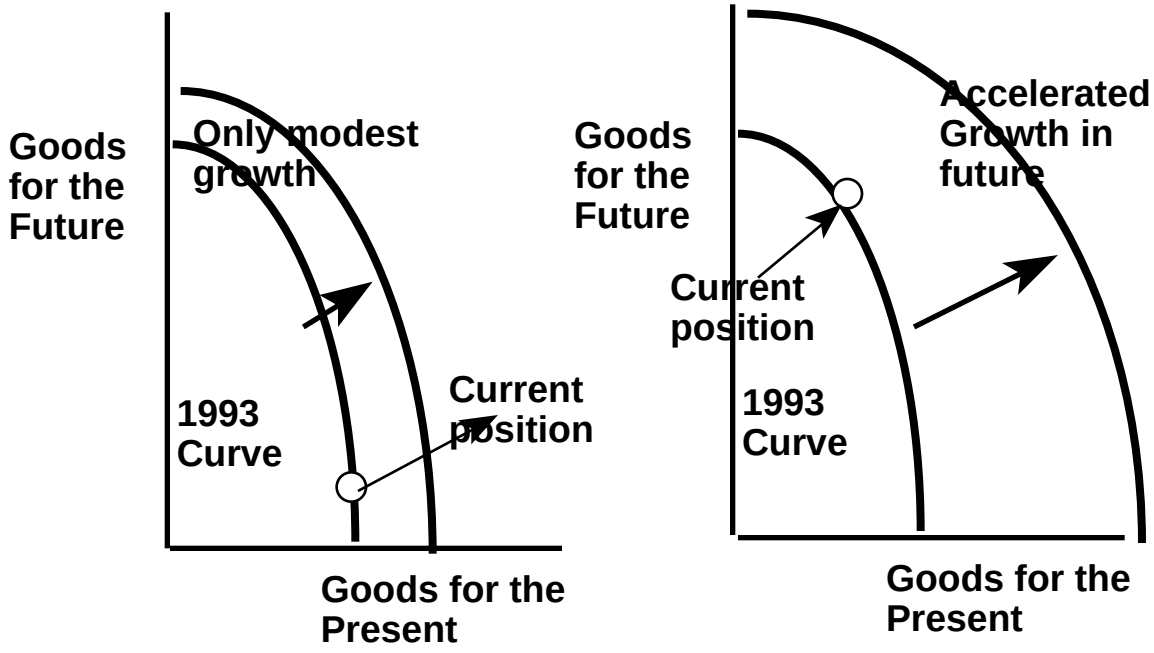
• **Consumer Goods vs. Capital Goods:**

Consumer goods directly satisfy our wants, while capital goods satisfy indirectly since they permit more efficient production of consumer goods.

√ Think about what a nation must sacrifice in terms of its consumer good consumption (opportunity costs) in order to be able to add to its capacity (by currently producing capital goods) in the future.

• A current choice **favoring more consumer goods** will result in only a **modest** movement to the right in the future.

• A current choice **to produce a greater portion of capital goods** with the available resources can result in a **greater rightward** movement in the future.



Think About This!

Explain the effects on the PPC from these situations:

a. standardized test scores of high school students decline greatly
b. unemployment falls from 9 to 6 % of the labor force
c. Defense spending is reduced to allow government to spend more on health care
d. Society decides it wants compact discs rather than new tools for factories
e. A new technique improves the efficiency of extracting copper from ore
f. A new baby boom increases the size of the nation's workforce

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Economic Systems

TRADITIONAL

…decisions based on the past

• tied to methods of trial and error
• same products and production methods used as in the past
• jobs passed down through generations
• questions answered by custom, habit, religion or law
• change comes slowly, often with opposition
• war, climate, or outside force can cause change
• choices are limited, people do things "the way they were done in the past"
• people find it hard to believe other methods exist
• family is important social structure

Examples: (though slowly changing) North American Eskimos, Navajo Indians

COMMAND

… central planners answer the basic questions

• planners have power to make decisions for society as a whole
• decisions are answered by planners' needs and wishes
• planners decide how many workers, who gets what job, and production goals
• wages and distribution system are determined by planners
• poor planning can cause shortages and surpluses; choice is often limited
• punishment and reward are the incentives to workers
• change can be quick without little opposition
• poor worker morale though fear is a motivator
• right to make decisions is based on political power

Examples: North Korea and Cuba

MARKET

… basic questions answered by the exchanges of buyers and sellers

• interaction of demand and supply determines the what? how ? for whom?
• no real overall central planning
• self-interest is guiding principle
• no single person or group determines what is best for society
• "an invisible hand" directs that the best interests of society are met when people compete to achieve individual self-interest
• profit motive determines producer behavior
• capitalism is a type of market system in which private individuals and firms own the resources
• components are: private property, freedom of exchange, competition and profit motive.

Example: USA (though it really is a mixed market system)

MIXED SYSTEMS

… elements of market, command and traditional are used in various economic activities

• government acts as stabilizer of economic activity and provider of goods and services
• large unions and large corporations can manipulate the market
• authoritarian capitalism mixed high government control and private property in Nazi Germany
• Market socialism of China mixes extensive government ownership of resources and capital but reliance on free markets for distribution
• Sweden's mixed market allows for government redistribution of income through high tax rates.
• Japanese economy relies on cooperation and coordination between government and businesses.

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The Circular Flow Model

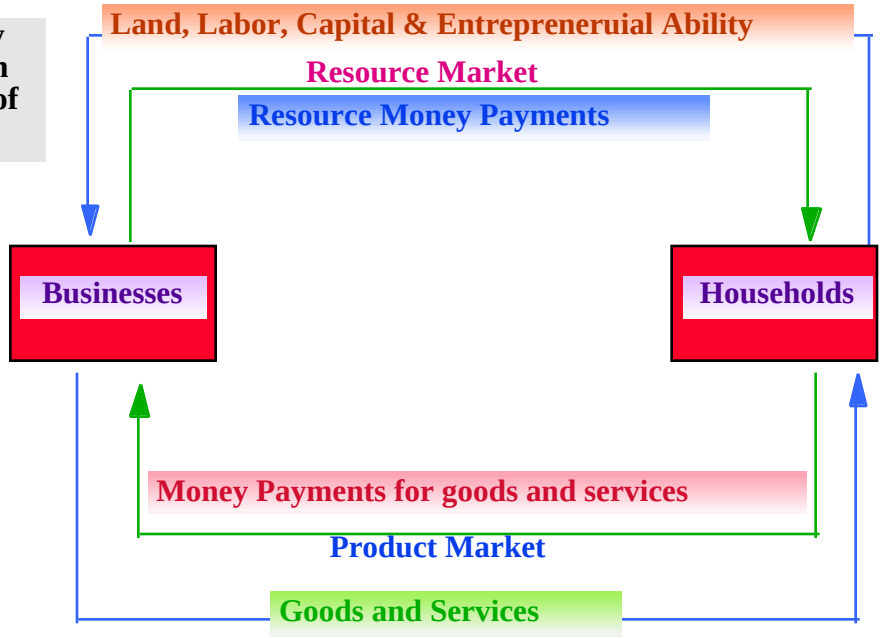
• **Economists use the circular flow diagram to show the high degree of economic interdependence in our economy.** Money flows in one direction while goods, services, and the factors of production flow in the opposite direction.

• This simple circular flow model shows **two groups of decisionmakers—households (or individuals) and businesses**. (Later government will be added). The coordinating mechanism which brings together these decisions is the market system.

• **Resource (or factor) markets** operate as the points of exchange when individuals sell their resources (land, labor, capital, and entrepreneurial ability) to businesses in exchange for money incomes. Businesses will demand these resources to produce goods and services. Prices paid for the use of resources are determined in this market, and will create the flow of rent, wages, interest and profit income to the households. Examples are hiring of workers by a business firm, savings and investments in stocks and bonds. Here the money incomes would be interest and dividends.

• **Product markets** operate as the points of exchange between consumers who use money incomes to buy these goods and services produced by businesses. Money income itself does not have value, since money must be used in exchange for the goods and services that satisfy our wants.

See Key graph on page 36 of text.



• **Households create the demand** for goods and services, while **businesses can fill the demand with the supply** that they produce with the resources sold. The **interaction** of demand for goods and services with the supply of available products **determines the price for the products**. The flow of consumer expenditures represent the sales revenues or receipts of the businesses. Examples are the retail stores and other outlets for products.

• **Individuals or households function as both providers of resources and as consumers of finished products.** Businesses function as buyers of resources and sellers of finished products. Each group of economic units both buys and sells.

• **Scarcity plays a role in this model** because households will only possess a limited amounts of resources to supply to businesses, and hence, their money incomes will be limited. This limits their demand for goods and services. Because resource are scarce, the output of finished goods and services is also necessarily limited.

• **Limitations to this model include:**

√ Intrahousehold and Intrabusiness transactions are ignored. √ Government and the financial markets are ignored. √ The model implies constant flow of output and income; the fact is that these flows are unstable over time. √ Production expends resources and human energy and can cause environmental pollution.

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Markets and Prices

Product Markets:

√ A product market is the different transactions through which finished goods and services are exchanged for consumption expenditures.

√ In the circular flow diagram, the flow of products from businesses to consumers constitutes the product market.

√ Businesses are the suppliers of the products and households are the demanders for the products. Sellers of consumer goods and services meet those who want to buy finished goods and services.

Factor Markets:

√ A factor market involves businesses and the resources they need to purchase to produce goods and services.

√ In the consumer flow diagram, the resources owned by households are exchanged with businesses for income.

√ Businesses are the demanders of the resources and households are the suppliers of the resources. The sellers of land, labor, capital and entrepreneurship meet the people who need their resources.

In both markets, buyers and sellers determine certain price and certain quantity that are mutually acceptable.

DEMAND

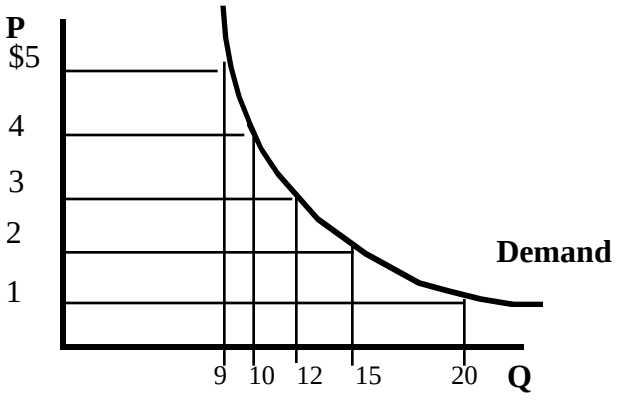
√ **Demand is one side of a product or factor market.**

√ The buyers (business in factor, households in product) exhibit both willingness and ability to purchase goods and services. Their willingness and ability to purchase vary in response to price.

√ **Demand is a record of how people's buying habits change in response to price. It is a whole series of quantities that consumers will buy at the different prices level at which they will make these purchases.**

√ Hence, a demand schedule:

PRICE	QUANTITY
$ 5	9
4	10
3	12
2	15
1	20



Next, **a demand curve can be derived.** The axes of the graph are price (vertical) and quantity (horizontal). Each price and quantity pair becomes a pair of coordinates for a demand curve.

Foundation of the Law of Demand

√ For most goods and services, demand tendencies are predictable**. As the price goes down, quantity goes up.** This inverse relationship is called the **law of downward -sloping demand**.

√ Three arguments to apply for the reasoning behind this law are:

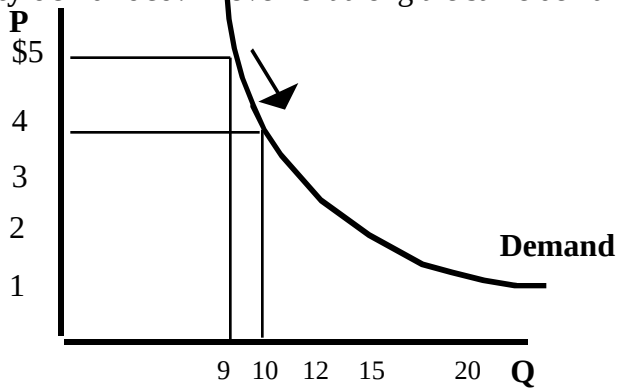
• Price is an obstacle to most and it makes sense to buy less at higher prices. The fact of "sales" is the key.

• In any time period, consumer will derive less satisfaction (utility) from each successive unit of a good consumed. This is Diminishing Marginal Utility. Marginally, that is, each successive unit brings less utility and consumer will only buy more at lower prices.

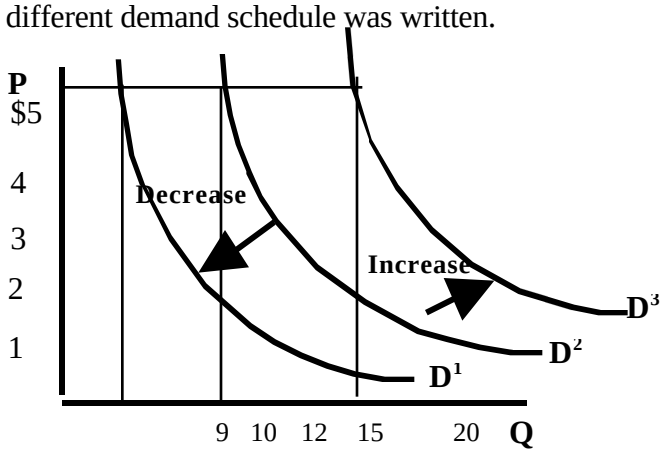
• At higher prices, consumers are more willing and able to look for substitutes. The substitution effect suggests that at a lower price, consumers have the incentive to substitute the cheaper good for the more expensive.

• A decline in the price of a good will give more purchasing power to the consumer and he can buy more now with the same amount of income. This is the income effect.

Changes in Quantity demanded: Movement along the same demand curve caused by a change in Price!



Change in Demand: The introduction of new price-quantity pairs on a demand schedule caused by a change in one or several demand determinants. The entire demand curve moves(left or right) to a new position because a different demand schedule was written.



What causes these changes:

Non-price determinants of demand are:

1) Income--having more or less to spend affects individual demand schedules. For normal goods, an increase in income leads to a rightward shift in the demand curve. For inferior goods, an increase in income leads to a leftward shift since these are usually low-quality items that people will avoid when they have more to spend.

2) Utility (taste)--the use that a good or service provides can easily change and affect demand. What was once perceived as useful or useless, stylish or ugly, healthy or dangerous now can become its opposite.

3) Complementary goods--the linkage of products' demand because they "work" with each other can affect demand for each

4) Substitutes--when the prices of or preference for a substitute changes, demand for both products will change.

5) Number of buyers --demand depends on the size of the market.

6) **Price Expectations of Buyers—**purchases may be postponed or rushed dependent on the expectations of future price changes

SUPPLY

√ **Supply is also one side of a product or factor market.**

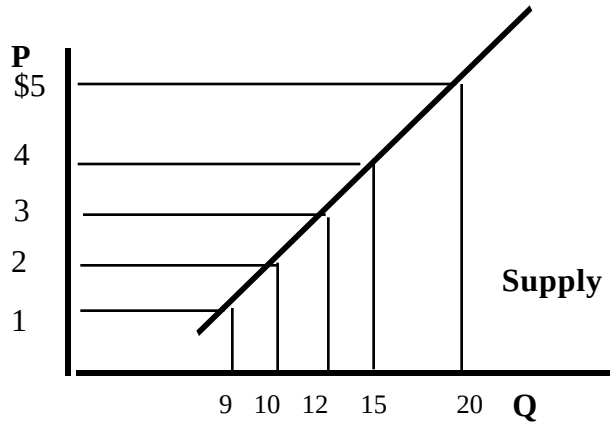
√ The sellers (business in product, households in factor) are selling finished goods or resources.

√ **Supply as the amount of goods and services that businesses are willing and able to produce at different prices during a certain period of time. Supply is a record of how business's production habits change in response to price. It is a whole series of quantities that businesses will offer at the different prices levels.**

√ **Hence, a supply schedule:**

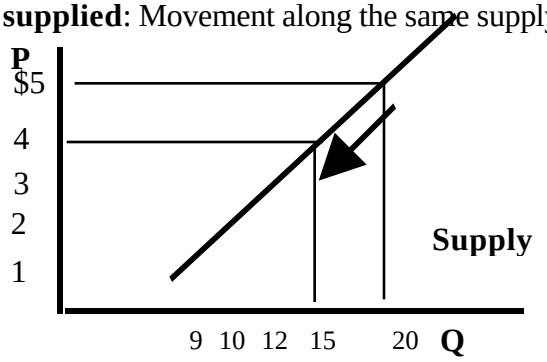
PRICE	QUANTITY
$ 5	20
4	15
3	12
2	10
1	9

Next, **a supply curve can be derived**. The axes of the graph are price (vertical) and quantity(horizontal). Each price and quantity pair becomes a pair of coordinates for a supply curve.

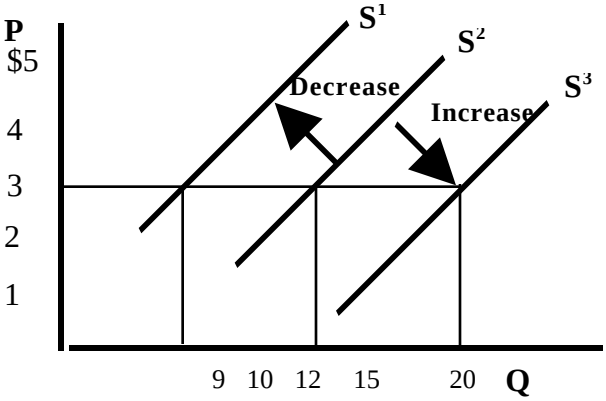


√ For most goods and services, supply tendencies are predictable**. As the price goes down, quantity offered decreases.** From a business perspective, profit-seeking activities by businesses are logical. Hence, sellers will pull back from a market where prices are low. **This direct relationship is called the law of upward-sloping supply.**

Changes in Quantity supplied: Movement along the same supply curve caused by a change in Price!



Change in Supply: The introduction of new price-quantity pairs on a supply schedule caused by a change in one or several supply determinants. The entire supply curve moves(left or right) to a new position because a different supply schedule was written.

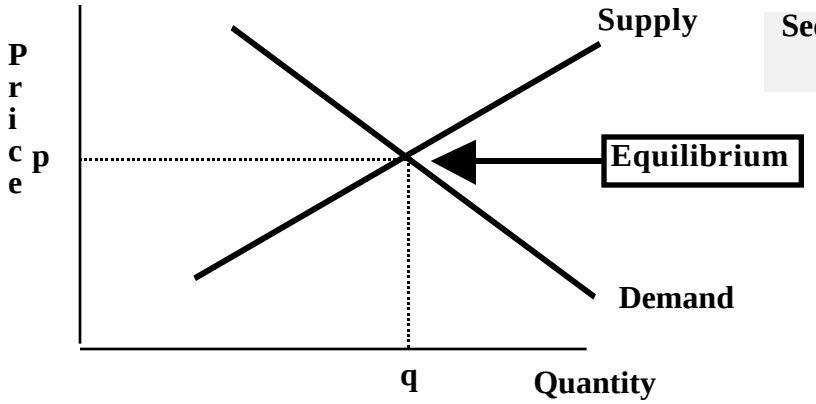


What causes these changes:
The non-price determinants of supply are:

1) Production Costs--most important and most typical reason for change. The price of ingredients and other capital goods, rent or labor could rise of all. New technology could make productions more or less expensive. The law could relate to minimum wage or taxes.
2) Prices of Goods that use same Resources—a demand for a specific resource is increased when other producers bid up the price in response to increased demand for their product
3) Change in Technology—new innovations in capital resources can change the average cost of production.
4) Taxes and Subsidies—taxes increase costs; subsidies lower costs.
5) Future Price Expectations--producers' confidence in the future, difficult to quantify or justify
6) Number of Sellers--businesses enter and exit a market regularly based on a variety of reasons. More or less producers will affect the supply of the product.
7) Time needed for Production—in market period, no additional product can be produced quickly; in short run, only variable costs can be changed to produce more; in long run all costs are variable and any amount of new resources can be added.

ACHIEVING EQUILIBRIUM

The prices at which both demand and supply curves intersect is the **equilibrium price**.



See Key Graph p. 54 in text.

√ **Equilibrium** is the price toward which market activity moves.

√ If the market price is below equilibrium, the individual decisions of buyers and sellers will eventually push it upward. If the market price is above equilibrium, the opposite will tend to happen.

√ Depending on market conditions, immediately or in the future, price and quantity will move toward equilibrium as **buyers and sellers intuitively and logically carry out the laws of demand and supply.**

• The ability of the competitive forces of demand and supply to establish a price at which selling and buying decisions are consistent is called the **Rationing Function of Prices.**

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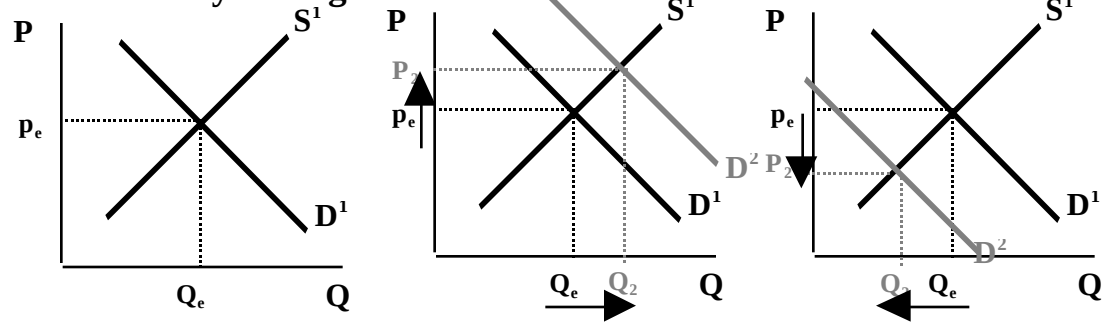
Changes in Supply, Demand and Equilibrium

Demand Only Changes

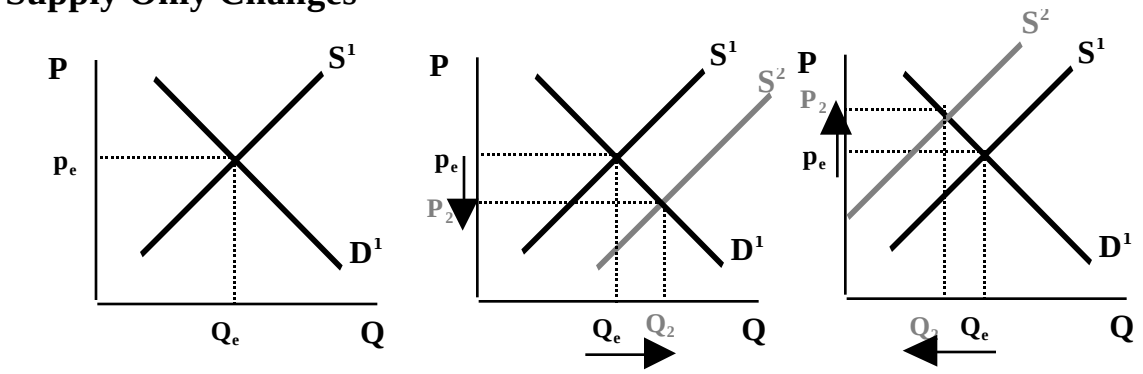


Equilibrium
$P = P_e$
$Q = Q_e$

Demand Increases
Supply Constant
√ P increases
√ Q increases

Demand Decreases
Supply Constant
√ P decreases
√ Q decreases

Supply Only Changes

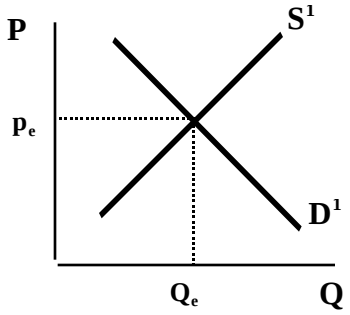


Equilibrium
$P = P_e$
$Q = Q_e$

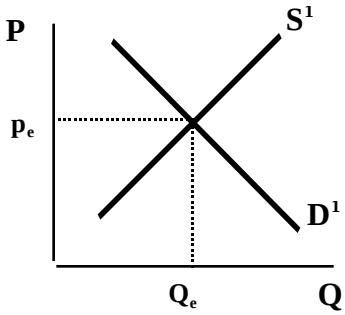
Supply Increases
Demand Constant
√ P decreases
√ Q increases

Supply Decreases
Demand Constant
√ P increases
√ Q decreases

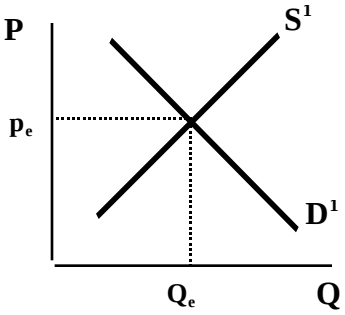
Complex Cases— you draw the scenarios given and show the effect on P and Q! Be careful to change D and S by the same distance—remember this is the theory!



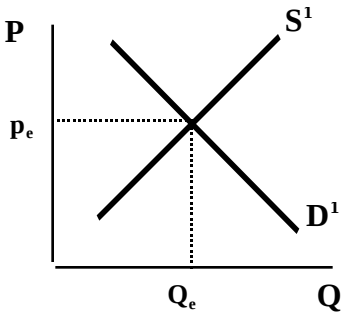
Equilibrium
$P = P_e$
$Q = Q_e$



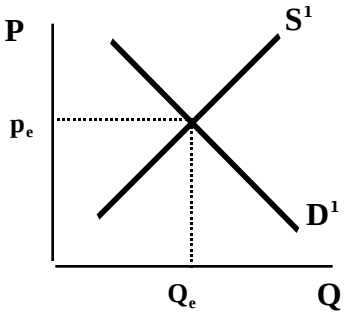
Demand Increases
Supply Increases
P _____
Q _____



Demand Decreases
Supply Decreases
P _____
Q _____



Demand Decreases
Supply Increases
P _____
Q _____



Demand Increases
Supply Decreases
P _____
Q _____

This chart will summarize the effects on P_e and Q_e

Change in Supply	Change in Demand	Effect on P_e	Effect on Qe
Increase	Increase		
Decrease	Decrease		
Increase	Decrease		
Decrease	Increase		

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√ Importance of National Income Accounting:

- Economic Pulse of Nation
- Long Run course comparison
- Basis for formulation and application of public policies

Gross DomesticProduct –GDP

Market Value of the total goods and services produced within the boundaries of the US whether by Americans or foreigners in one year

√ use monetary measure

√ avoid multilple counting: use market value of FINAL goods and services and ignore transactions involving intermediate goods.

√ exclude nonproduction transactions:

1 Public Transfer Payments
- √ SS, welfare, veterans

2 Private transfer payments
- √ gifts, transfers from parent to child

3 Secondhand Sales
- √ resale of goods already counted when new

4 Security Transactions
- √ broker's service is counted

Expenditure Approach to GDP

Sum of the **total spending** for goods and services produced within the US in a period of time which includes **personal consumption, investment, government and net foreign investment.** It is meant to be a measure of production of goods and services within the economy.

GDP = C + G + Ig + Xn

C = Consumption (65% of total GDP)
- 35% non durables (less than 3 yrs use)
- 14% durables (more than 3 yrs use)
- 50% services

G = Government Spending (20% of total GDP)
- 43% federal government spending
- 57% state and local government spending

Ig= Gross Domestic Investment (17%)
- 28% new residential construction
- 25% new commercial construction
- 46% tools and machines
- 1% change in business inventories

Xn= Net Foreign Investment (-2% of GDP)
- Imports minus exports (we currently import more than we export)

Income Approach to GDP

Sum of the **total income** earned by American resource suppliers and the addition of two **nonincome charges** (depreciation and indirect business taxes) and subtracting **net American income earned abroad**

Total income earned by American resource suppliers includes:
+Wages and salaries (labor)
+Rent (land)
+Interest (capital)
+Proprietor's income (form of profit earned by single owner and partnerships)
+Corporate income tax (profit paid as tax)
+Dividends (form of profit given to shareholders of stock)
+Undistributed corporate profits (retained profits)
Non Income Charges
+Depreciation: Consumption of Fixed Assets
+Indirect Business Taxes
Net American Income Earned Abroad
—Net Income produced by Americans abroad should be subtracted from other income items.

Other National Accounts

Net Domestic Product (NDP) equals **GDP** minus **Depreciation**

National Income (NI) equals
NDP plus **Net American Income Abroad** minus **Indirect Bs. Taxes**

Personal Income (PI) equals
NI minus **SS Contributions** minus **Corp Income Taxes** minus **Undistributed Corporate Profit** plus **Transfer Payments**

Disposable Income (DI) equals
PI minus **Personal**

Circular Flow Revisited

Examine Figure 7-3 on p. 137 to see how income and expenditure flows of GDP and NI are simultaneously shown, and demonstrate the repetitive process. The table inside the front and back cover of the text provide historical data related to national income accounts.

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Nominal VS Real GDP

Comparing GDP figures from year to year is complicated by the fact that some of the apparent gain or loss in GDP is really just reflective of higher or lower prices. Inflation or deflation complicates the measurement. **We can resolve this problem by deflating GDP for higher prices and inflating GDP for falling prices.**

• **Real GDP** measures the value of goods and services adjusted for change in the price level. It will reflect the real change in output. This measure is called the **Constant Dollar GDP** and indicates what the GDP would be if the purchasing power of the dollar has not changed from what it was in a base year. The government currently uses 1992 as its base year for GDP measurement.

• **Nominal GDP** reflects the current price level of goods and services and ignores the effect of inflation on the growth of GDP. **It is called Current Dollar.**

Measuring the Price Level

√ **Price Index**

• measures the combined price of a particular collection of goods and services called a "market basket" in a specific time period relative to the combined price of an identical or similar groups of goods and services in a reference period.

• This point of reference is called the "base year"

Price level in given year

$$\frac{\text{price of market basket in a specific year}}{\text{price of same market basket in the base year}} \times 100$$

√ **Consumer Price Index**

• Government measurement of prices of a fixed market basket of about 300 consumer goods and service purchased by a typical urban consumer. The relative importance—weights—remain fixed in reference to those of the base year.

• This figure is computed monthly and is widely reported.

√ **Measuring GDP Price Index**

• Includes not only prices of consumer goods and services, but also the prices of investment goods, goods and services purchased by the government and goods and services involved in world trade. Those items that are part of GDP counting.

• The GDP Price Index is an index used to account for inflation and deflation comparing GDP from one year to the next.

• The GDP Price Index uses the current composition of output to determine the relative importance of the items in the market basket for the base year.

GDP price index

$$\frac{\text{price of GDP market basket in specific year}}{\text{price of GDP market basket in base year}} \times 100$$

The **GDP price index or deflator** compares price of each year's output to the price of that same output in the base or reference year. As series of price indexes for various years enables us to compare price level among years. An increase in the GDP price index from one year to the next constitutes inflation; a decrease in the price index constitutes deflation.

Adjustment Process

Calculating Real GDP

Year	Unit of Output	Unit Price	Price Index year 1 = 100	Nominal GDP	Real GDP
1	5	$10	100	$ 50	$ 50
2	7	20	200	140	70
3	8	25	250	200	80
4	10	30	300	280	93.33
5	11	28	280	320	114.86

GDP Price Index method… measures the combined price of a particular collection of GDP goods and services, called "GDP market basket" in specific period relative to the combined price of an identical group of goods and services in a reference period.

Price Index — **Nominal price / Base year price**

Price Index in year **2** $\frac{\$20}{10} \times 100 = 200$

Price Index in year **3** $\frac{\$25}{10} \times 100 = 250$

Price Index in year **4** $\frac{\$30}{10} \times 100 = 300$

Price Index in year **5** $\frac{\$28}{10} \times 100 = 280$

Alternative Method… determine real GDP by breaking down GDP into physcial quantities of output and prices for each year, and then determining real GDP for each year's output as if it had been sold at base-year prices. The GDP price index then can be determined by dividing nominal GDP by Real GDP.

Real GDP equals — **Nominal GDP/Price Index (hundredths)**

Real GDP in year 1 $\frac{\$ 50}{1} = \$50$

Real GDP in year 2 $\frac{\$ 140}{2} = \$70$

Real GDP in year 3 $\frac{\$ 200}{2.5} = \$80$

Real GDP in year 4 $\frac{\$ 280}{3} = \$93.33$

Real GDP in year 5 $\frac{\$ 320}{2.8} = \$114.86$

Think About This!

Check Table 7-7 (p. 140) and test yourself by filling in the _____ spaces. Determine the price-index values for years 1970 and 1993, then determine real GDP for 1980 and 1995.

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GDP and Economic Well-being

GDP is only a measure of the volume of goods and services produced. There is thought to be a strong positive correlation between real GDP and economic well-being. **Greater production means "the good life". But… there are some shortcomings.**

1. **Non market transactions**—by not counting some kinds of production (homemaker, work done for oneself), we understate the well-being.
2. **Leisure**—the decline of the US workweek in terms of hours worked, and the additional of a range of fringe benefits are not accounted for and thus we understate our well-being. The "psychic income" of working is also ignored.
3. **Improved Product Quality**—GDP is a quantitative measure, not qualitative. Improvement in quality over time is not truly measured and well-being is understated, if we are really getting more for our money
4. **Composition and Distribution of Output**—GDP tells us nothing about who gets the goods and services produced, or the "goodness" of the goods and services. A shift to a more unequal distribution of income (rich are richer, poor are poorer) is not reflected in a rising GDP.
5. **Per Capita Output**—if GDP growth is less than population growth, the figures to not reflect a lower well-being.
6. **GDP and the Environment**—"gross domestic byproducts" accompany the growth of GDP. The costs of pollution reduce our well-being; these spillover costs are associated with production, but are not deducted from GDP, overstating our economic well-being.
7. **The Underground Economy**—both illegal activities and unreported activities are not reported. It is estimated to be between 7 to 12% of recorded GDP. In 1997, that would mean $566 to $970 Billion Dollars.
8. **Government transfer payments**—are not counted as part of GDP. These are the payments made for Social Security, Veterans, unemployment benefits, and welfare programs like AFDC and Food Stamps. The logic of this is that NO current production is generated. Yet…these sources of income are used to purchase goods and services and hence raise our overall well-being.

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Business Cycles

• The term **business cycle** refers to the recurrent ups and downs in the level of economic activity which extend over several years. Individual business cycles may vary greatly in duration and intensity. All display a set of phases.

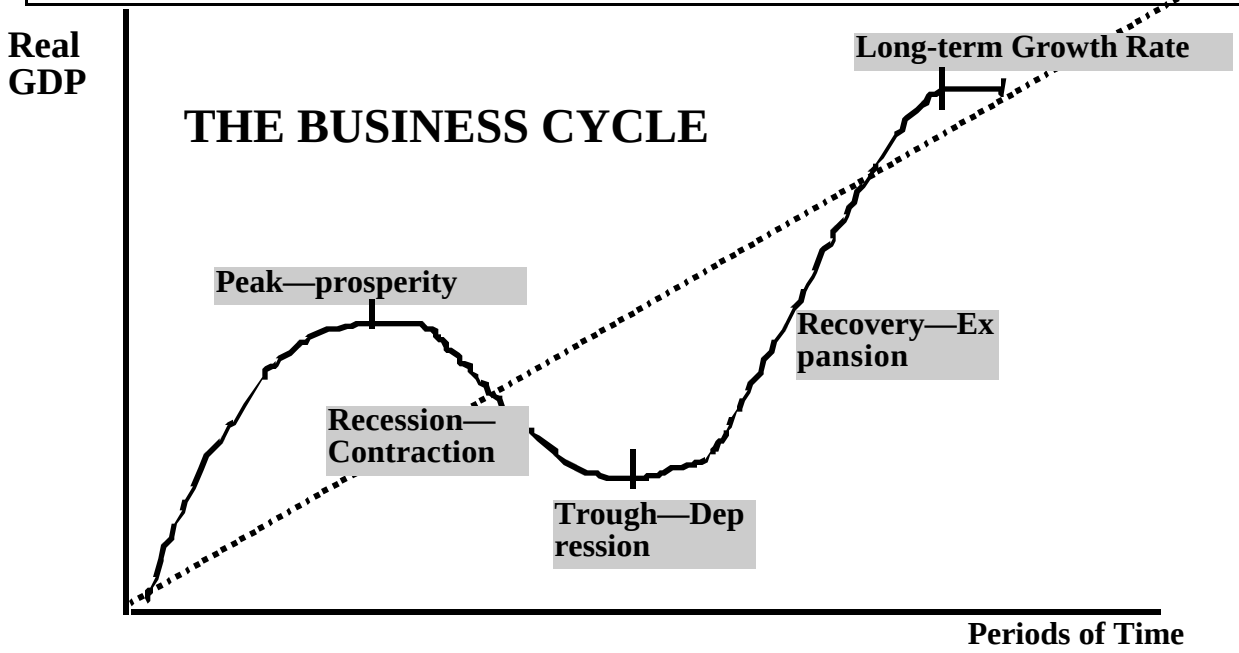
• The overhead (The Business Cycle) shows the four phases:

√ **Peak or prosperity phase**: real output in the economy is at a high level, unemployment is low and domestic output may be at its capacity. Inflation may be high.

√ **Contraction or recession phase**: real output is decreasing and the unemployment rate is rising. As contraction continues, inflation pressure fades. If the recession is prolonged, price may decline (deflation). The government determinant for a recession is two consecutive quarters of declining output.

√ **Trough or depression phase**: lowest point of real GDP; output and unemployment "bottom out". This phase may be short-lived or prolonged. There is no precise decline in output at which a serious recession becomes a depression.

√ **Expansionary or recovery** : real output in the economy is increasing and the unemployment rate is declining. It is the upswing part of the cycle.



• **Recessions since 1950** show that duration and depth are varied:

Period	Duration in months	Depth (decline in real GDP)
1953-54	10	— 3.0%
1957-58	8	— 3.5
1960-61	10	— 1.0
1969-70	11	— 1.1
1973-75	16	— 4.3
1980	6	— 3.4
1981-82	16	— 2.6
1990-91	8	— 2.6

• **Causes of Fluctuations** range from innovation to political and random events. Wars can be economically very disruptive—demand for war material can drive the economy to over full employment to be followed at war's end with an economic slowdown. Inflation can be a problem during war, and price controls and rationing are often needed to relieve it.

• **Most economists believe that the most immediate determinant of the levels of output and employment is the level of aggregate or total spending**. In a market economy, profit drives the producer, households sell their resources for this production and earn the income to purchase the output. When demand falls, producers are less willing to produce the goods and services. Income fall and purchasing power declines.

• **Seasonal and secular fluctuation occur as well**. There is also a cyclical impact in terms of durable goods and nondurables. Durable goods are said to be postponable; this is true for business capital goods. We can generally repair the old car, the old machine, remodel the house or the factory. Non durables, like food and clothing, are less likely to be postponed.

THE WAVES OF INNOVATION

Nikolai Kondratiov, a Soviet economist, published his essay "Long Economic Cycles" in 1922. This study of the business cycle in capitalist economies did not find favor with Kondratiov's superiors, and Kondratiov ended his life in Siberian exile. It was left to a luckier economist to rediscover Kondratiov's theory and add a new wrinkle of his own.

Joseph Schumpeter, Harvard professor and one-time Minister of Finance in a short-lived Austrian government, believed the driving force behind the Kondratiov waves was innovation, by which he meant not only new inventions, but any "change in the method of supplying commodities."

In his book "Business Cycles," published in 1939, Schumpeter associated each of Kondratiov's Long Waves with specific innovations in technology and commerce. While economists still debate the existence of long economic cycles like those described by Kondratiov and Schumpeter, the associated graph does demonstrate a striking interplay between prosperity and innovation.

Kondratiov's cycles are based on statistical profiles of three industrial societies - France, Britain and the United States - starting at the end of the eighteenth century. The vertical axis is an index of prosperity derived from wholesale prices, wages, the stock market, and the production of coal and steel. Contemporary economists have extended Kondratiov's graph into the more recent past, the present, and the future.

The first wave, starting at the time of the French Revolution and the beginning of constitutional government in the United States, corresponds with the Industrial Revolution and is marked by the exploitation of steam power and the development of the cotton textiles industry. This period peaks with the War of 1812 and the fall of Napoleon. Post-war recession is followed by a brief plateau of renewed prosperity before the economy plunges into depression.

A second wave, dominated by the new industries of steel and the railroad, peaks at the time of the U.S. Civil War and ends with the Panic of 1873.

Wave number three starts at the beginning of the twentieth century and is marked by the new technologies of electricity and the automobile. It ends with the Great Depression.

The rise of television and computers can be said to represent a **fourth wave of innovation** which may have peaked at the time of the Vietnam War.

Think About This!

If Kondratiov's cycles hold for the future we may be overdue for a steep slide into depression, which would yield in turn to the next wave of innovation. Time will tell.

√ **How would you complete the waves to the 21st Century?**

√ **What could be the next innovation(s) that send us to the next wave?**

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Employment and Unemployment

Employment is the state of having a job for which one receives money or other compensation; unemployment is the lack of such a job.

• **Most people must work** in order to support themselves and their dependents, governments strive to keep levels of unemployment low and usually measure unemployment rates carefully.

• **Official U.S. statistics** on employment and unemployment are derived from a monthly sample survey of households. The unemployment rate is the percentage of unemployed persons in the labor force, which is composed of adults who either have or are seeking jobs. (U.S. military personnel were included as part of the labor force beginning in 1983.) Persons who are not looking for work are not part of the labor force and are not counted as unemployed. Those not counted will include the institutionalized population, and those unable to work due to desire or disability. Students are not counted as part of the labor force. Another measurement, the employment ratio, is the percentage of the total working-age population--not just the labor force--who have jobs.

THE OCCUPATIONAL STRUCTURE

• **The types of activities** that occupy most workers vary, sometimes dramatically, from one country to another and from one time to another. In most developing countries (and in all countries prior to the 19th century) the vast majority of the labor force work in the agricultural, or primary, sector. Work is almost entirely manual, and most of the country's labor power is devoted to the basic task of feeding the population. Fully developed countries are able to divert far more of their productive resources into other pursuits. In the United States and Canada, for example, only 4 and 7 percent, respectively, of all employed persons work in agriculture, fishing, and mining, compared to more than 70 percent in India.

• **The manufacturing, or secondary, sector is the traditional backbone of a developed industrial economy.** In the United States and Western Europe, employment in this sector grew quickly with the rise of the factory system during the 19th century, before leveling off in the mid-20th century and declining gradually thereafter. In 1990 about one-fourth of all U.S. and Canadian jobs were in manufacturing, construction, and mining. With the advent of new technologies, employment in manufacturing has demanded greater technical skills. This has reduced unskilled labor's share of total employment.

• The most striking change in employment in the developed countries during recent years, however, has been the **rapid expansion of the service, or tertiary, sector.** This sector includes the service trades, teaching, much clerical work, research, medicine, and all other occupations not directly involved in the production of goods. About three-fourths of all employed persons in the United States, Canada, and other developed countries work in the tertiary sector. Work in the service sector, on the average, demands greater literacy and is more likely to be white collar than work in the other two sectors. The rapid expansion of this part of the economy has not, however, altered the character of employment as much as was once expected; the clerical work that forms a large part of this sector can be as repetitive and tedious as work in agriculture or manufacturing.

• Changes in the structure of employment in industrial countries have been accompanied by **changes in the composition of the labor force**. During the 20th century the percentage of women, especially of married women, in the total labor force has increased. In 1990, 45% of the U.S. labor force were women. The number of workers less than 20 or more than 65 years of age has declined with the spread of both protracted education and retirement.

UNEMPLOYMENT & UNDEREMPLOYMENT

• Although unemployment occurs among all social and occupational groups, it is especially **concentrated among the young, some racial and ethnic minorities, women, and those who live in declining urban areas.** In January 1990, for example, the U.S. unemployment rate was 5.2%. Blacks were unemployed at more than twice that rate: 11.5%. Teenage unemployment

was 15.5%; black teenagers, 26.7%. Lacking the opportunity to gain useful skills through experience, such persons may become chronically unemployed.

• Some unemployment is **cyclical**; that is, it varies with business conditions. Workers are laid off when business is bad and rehired when conditions improve.

•A third type of unemployment is known as **frictional.** It arises from the normal process of turnover in the labor market as new workers enter the market and search for work, and existing workers quit one job to look for a better one. **Seasonal** unemployment occurs in agriculture, construction, and other industries that are more active at some times of the year than at others.

• **Structu**ral unemployment, caused by imperfect labor-market adjustment, is the most intractable of the main types. Workers and resources do not move freely to places where they are needed, and long-term structural unemployment is often the result. Many workers who lost their jobs in the Appalachian coal industry during the 1950s and '60s, for example, or in the midwestern steel industry in the 1970s and '80s, lacked skills useful for other local industries. They did not migrate from the region, nor did new industries arrive that could employ them.

•A person whose productive capacities are not fully used is **underemployed.** A part-time worker seeking a full-time job or a skilled worker doing unskilled work for lack of a job in his or her own trade, for example, is underemployed. Underemployment occurs for the same reasons as unemployment, although it is more difficult to measure.

POLICIES TOWARD UNEMPLOYMENT

• Governments adopt various policies to restrain rates of unemployment and to train workers for more productive employment. **FISCAL POLICY and MONETARY POLICY** affect unemployment by stimulating or depressing business activity. Such policies, however, guide the economy as a whole; they are too broad to be aimed at specific industries or population groups that need special help. Programs to create **new jobs, to upgrade workers' skills, or to retrain workers** for new types of jobs are often adopted to fill these needs.

• Governments often **set a minimum wage** allowable by law to ensure that employed workers receive at least a subsistence income, although it is sometimes claimed that this practice increases unemployment among the young by raising the cost of hiring unskilled workers. • Governments may also provide **subsidies** to workers or industries to relocate, and they may direct resources into selected industries or sectors through ECONOMIC PLANNING.

• The U.S. government combats **DISCRIMINATION in hiring and promotion through EQUAL OPPORTUNITY and affirmative action laws and policies.**

• Finally, many governments seek to ameliorate the often devastating effects of long-term unemployment through **UNEMPLOYMENT INSURANCE** and social welfare programs.

Unemployment Rate =

$$\frac{\text{\# of Unemployed}}{\text{Labor Force}}$$

Jan 2000

Labor Force App. 138.5 million
Unemployment Rate 4.1%
Number of Unemployed 5.6785 M
Lowest Rate in 30 years!

Then Recession began in March 2001…

Jan 2002
Labor Force App. 142 million
Unemployment Rate 5.8%
Number of Unemployed 8.3 M

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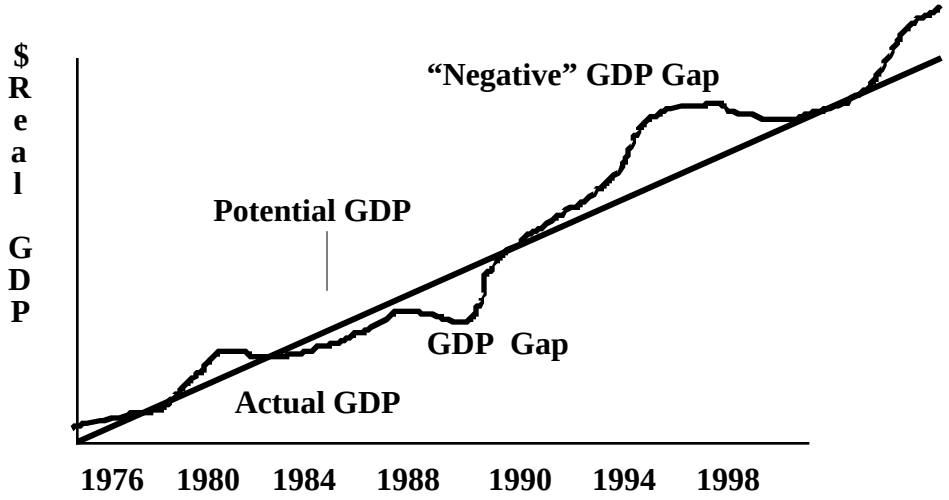
Economic Cost of Unemployment

GDP Gap and Okun's Law

• The **basic loss is forgone output**. This is a set of goods and services that is forever lost. We will be producing inside the PPC. We measure this as the **GDP Gap**.

• **Potential GDP** is the capacity of the economy assuming the Natural Rate of Unemployment. The growth of the Potential GDP assumes the normal growth rate of the real GDP.



• The GDP is related to unemployment. **The higher the unemployment rate the larger the GDP Gap. Okun's Law** based on the work of Arthur Okun indicates *that for every 1 percentage point which the actual unemployment rate exceeds the natural rate, a GDP gap of about 2 percent occurs*. So… if the rate of unemployment is 4.3% and we assume a natural unemployment rate of 4%, we can use Okun's Law to calculate a loss of $460 billion (.3 x 2 x $7.67 Trillion)

• Sometimes the economy's actual output will exceed its potential—"negative" GDP gap. This happens when the statistics don't agree with what' happening because some facts are lost or missed. Extra shifts of workers, capital equipment used beyond its design capacity, overtime work and moonlighting are common statistics that cannot be accurately counted. In 1988-89, an economic expansion caused actual GDP to exceed potential GDP. This condition eventually causes inflation and cannot be sustained.

Unequal burdens

Unemployment impacts groups and classes in differing ways. Examine this chart and draw some conclusions as to who bears the greatest burden.

Demographic Group	Unemployment Rate 1992	Unemployment Rate 1996	Unemployment Rate 1999
Overall	7.4%	5.4%	4.3%
Occupation:			
Blue Collar	9.3	7.1	
White Collar	4.6	3.4	
Age:			
16-19	20.2	18.1	15.5
Black 16-19	39.8	30.6	29.8
White 16-19	17.1	14.2	13.9
Male 20+	7.0	4.6	3.4
Female 20+	6.3	4.8	3.3
Race:			
Black	14.1	10.5	7.8
White	6.5	4.7	3.8
Hispanic			6.6
Gender:			
Female	6.9	5.4	
Male	7.8	5.4	
Education			
Less than HS	13.5	10.9	
High School only	7.7	5.5	
College Degree or more	2.9	2.2	
Duration			
15 weeks or more	2.6	1.7	Average 13.4 weeks

Non Economic Costs

• **Cyclical Unemployment,** when high, causes social problems. People out of work become depressed and crime rates rise. Violence in the home rises as well because of the frustration factor. Families suffer and often fall apart. Severe depression can cause major political and social change. The Great Depression programs of the New Deal changed American thinking about the role of government in aiding citizens when they are needy.

International Comparisons

• Examine the perspective on page 159 of text to view unemployment rates in five industrial nations. Historically the US has had higher rates of unemployment but the pattern has shifted since the 1980's. We now enjoy a better picture.

Think About This!

Since there are unemployment compensation programs for those of out work, why worry about unemployment ?

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Inflation

• Inflation is a rising general level of prices.

√ In short, **more money is required each year to buy a given amount of goods and services.** One can measure the **rate of inflation** as either the annual percentage rate of increase in the average price level or decrease in the value of money.

√ **Inflation properly refers only to episodes in which the rate of inflation is substantially positive over a considerable time period.** What is meant by substantially positive may depend on recent experiences. In the United States during the mid-1960s an inflation rate of 3% per year aroused great alarm, but some countries' governments have proclaimed victory over inflation by bringing the rate down from 50% or even 200% per year to only 10%.

• **A deflation is the opposite of an inflation**: a period of substantially falling prices and rising value of money.

• **Inflation is measured by use a price index number.** A price index measures the general level of prices in reference to a base period. The base year is set to 100 and as changes in prices occur they are reflected in the new index number. An index of 136 says that prices are 36% higher than the base year. To calculate the rate of inflation, subtract last year's price index from this year's price index and divide that difference by last year's index. Multiply by 100 to express as a percentage. The government now uses 1982-84 as the base period in their reporting of the CPI.

Example:
Base year 1982-84 100 1996 156.9 1997 160.5

$$\textbf{Rate of inflation} = \frac{160.5 - 156.9}{156.9} \text{ times } 100 = 2.3\%$$

• **Rule of 70** permits quick calculation of the number of years it takes the price level to double. Divide 70 by the annual rate of increase to determine the approximate number of years required to double prices.

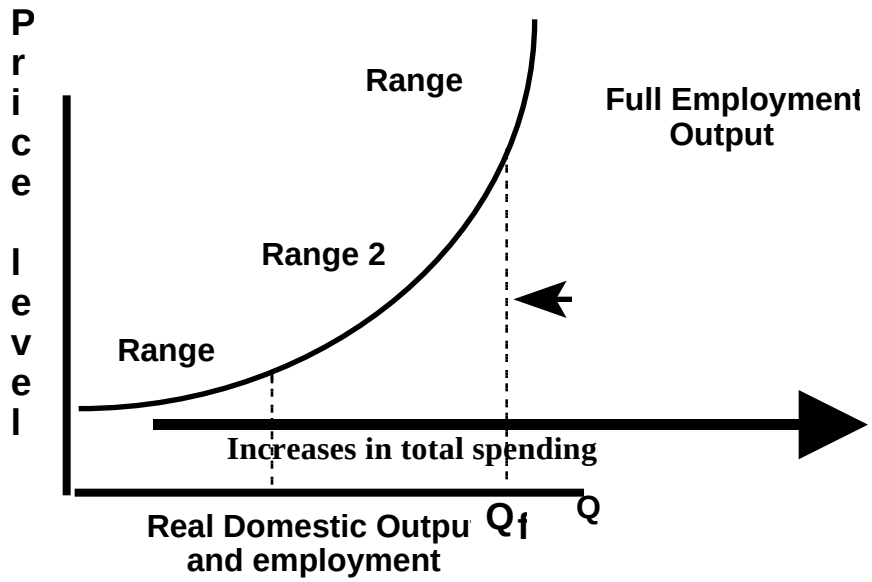
Causes: Theories of Inflation

• Demand Pull Inflation

√ Excess of total demand

√ prices are bid upward by the excess demand

√ economy is seeking a point beyond its PPC when full employment-full production is evident



Range 1	• Domestic output is far short of maximum full-employment level. • GDP gap exists. High Unemployment, idle capacity. • As you move up the curve, demand increases; real domestic output rises, unemployment will fall, but there is little pressure on prices since producers can move to produce more by using the idle labor and factory resources. • Workers and owners of resources are willing to work for "old" wages and returns because they want the work. • Nominal and Real GDP are identical when prices are stable
Range 2	• Approaching full employment and full production, the price level rises as less efficient resources are employed • Bottlenecks occur in some industries as the recovery is uneven. Prices are some resources may rise and some labor markets tighten. Their wages will rise, adding to cost forcing some pricing higher. This situation may cause premature inflation. • At full employment-full production, the pressure to produce more is too much and capacity is stretched now using the least efficient resources. • With Premature inflation, Nominal GDP is rising faster than Real GDP; we must "deflate" GDP figure
Range 3 .	• Full employment-full production occurs in all sectors of the economy. • Total demand in excess of the economy's capacity to produce pulls prices upward! • With pure inflation, nominal GDP is rising-perhaps rapidly, but real GDP is constant. No real gain!

• Cost Push Inflation

√ prices rising when output and employment are both declining

√ aggregate demand not excessive

√ Per unit production costs are rising due to raw materials, energy, labor, etc.

√ High per unit costs cause decline in profit; hence, the price level is "pushed up" by these costs

Sources:

√ Often **unions are accused of starting the cycle** that occurs when their wage hikes are taken as a model. Unless high productivity results from the higher wages, there

are still higher per unit costs which will force prices upward. This is call **the wage-push variant**. An upward shift in demand for the good or services produced can forestall the push.

√ **Rising production costs can sometimes be attributed to abrupt, unanticipated increases in the cost of raw materials or energy inputs.** Oil price increases of the 1970's and into the 1980's affected a wide range of product costs. **These are called supply shocks**.

Demand-pull inflation continues as long as there is excess total spending

Cost-push is self-limiting; it generates a recession and this inhibits additional cost increases.

Think about this!

A comedian once joked,

" Inflation? That means your money today won't buy as much as it would have during the depression when you didn't have any."

Is this definition correct? why?

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Redistribution Effects of Inflation

By **holding real output constant, and at full-employment,** we can assess the effect of inflation on the distribution of income. **Terms must be defined first:**

Real and Nominal Income

Nominal income … is the number of dollars earned as rent, wages, interest or profit.
Real income… measures the amount of goods and services nominal income can buy.
√ If nominal income rises faster than price level, real income will rise.
√ If the price level increases faster than nominal income, then real income will fall.
Your real income falls only when nominal income fails to keep up with inflation

Real and Nominal Interest Rates

√ Interest represents a payment in the future for a transfer of money in the past.
√ The **nominal interest rate** is the interest rate not corrected for inflation.
√ The **real interest rate** is the nominal interest rate that is corrected for inflation.
√ **Real interest rate = Nominal interest rate – Inflation**
Example:You borrowed $1,000 for one year.
Nominal interest rate was 15%.
During the year inflation was 10%.
Real interest rate = Nominal interest rate – Inflation
5% = 15% - 10%

Unanticipated Inflation:

√ **Inflation "taxes" those who receive relatively fixed incomes**—elderly, those on fixed pay scales, welfare recipients, workers in declining industries, or without strong unions— because it takes away purchasing power. They would need more dollars to pay for the same amount of goods and services**. Inflation "subsidizes" some people who have flexible incomes**. This group would include workers in expanding industries and union members.

√ **Savers are also hurt by inflation**. As prices rise, the real value or purchasing power declines. Further, most savers are investing funds and hope to earn interest. If the rate of interest on an investment is less than the rate of inflation, the value of the savings will decline. Savings accounts, insurance policies, annuities, and other fixed value paper assets are hurt by inflation.

√ **Creditors are losers** in inflation since they are "stuck" with dollars that have lower purchasing power than the money they lent. **Debtors are winners** in inflation at the expense of creditors. The borrower receives "dear" money at the time the loan is initiated and repays the loan with "cheap" dollars.

Anticipated Inflation:

√ Inflation is less severe if one can anticipate inflation or adjust income to reflect the price level changes.

√ Cost of living adjustments (COLA's) clauses in labor contracts give automatic wage increases when inflation occurs.

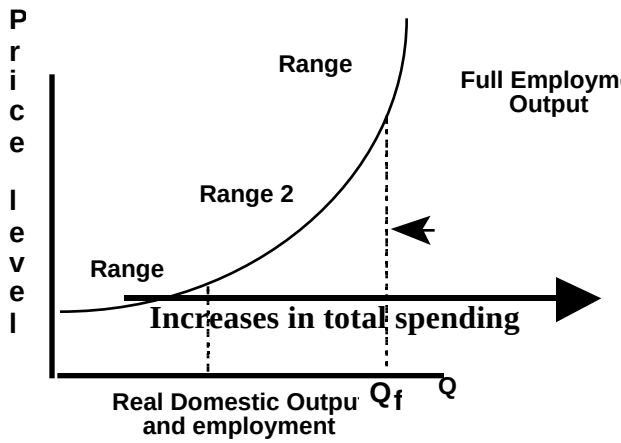
√ Lenders can charge higher interest on loans if they have high expectations for inflation over the life of the loan. This extra interest is called inflation premium.

Deflation…effects described above are now reversed. Fixed income earners, creditors, and savers will all be better off.
Mixed Results:… we gain and we lose since we all wear many hats—income earner, saver, creditor, debtor, etc.
Arbitrariness…effects of inflation occur regardless of society's goals and values.

Output Effects of Inflation

Does inflation have an effect on output? Three ideas emerge:

Stimulus of Demand-Pull Inflation



In **range 2** there is a tradeoff between output and employment and inflation. Some moderate amount of inflation must be accepted if we are to realize high levels of output and employment.

This does imply an inverse relationship between inflation rate and unemployment rate (referred to as the Phillips Curve described in Chapter 16)

Think About this!

Today we have high GDP, lower unemployment and low inflation which seems to disprove this idea.

Cost-Push Inflation and Unemployment

√ If cost-push inflation occurs in a full employment, price-stable economy, the existing level of total spending will buy less real output because of the higher price level.

√ Real output will fall and unemployment will rise.

√ The cost-push inflation of the 1970's was caused of the oil shocks throughout the decade.

Hyperinflation and Breakdown

√ Extremely rapid inflation that can devastate domestic output levels and employment. The article, Inflation: A Doomsday Scenario describes how this occurs.

√ Anticipation of future inflation catches hold of the thinking of consumers and firms who make buying and selling decisions in expectation of the coming inflation.

√ Labor will demand higher wages, and businesses not wanting to risk their prosperity will give in. But…they must raise prices to cover the new cost and the wage-price spiral whirls out of control. Creeping inflation becomes a runaway gallop.

√ Economic collapse results often since speculation is rampant. Hoarding and concentration of wealth in "real assets" like gold, jewels, and other metals replaces investment in new capital for businesses.

Think about this!

Read the examples on page 168 and reflect on the causes of hyperinflation. Does government action and the money supply have something to do with it?

AP Macreconomics
Chapter Nine, p. 172-74

Classical Theory
Say's Law of Markets

• Act of producing goods generates an income amount that is exactly equal to the value of the goods produced
• Hence, all markets are cleared
• **"Supply creates its own Demand"** *J.B. Say*
• Price system is capable of providing a full employment output
• Assume that the composition of output is in accord with consumer preference.

• **Underspending** (or spending less than enough to purchase a full-employment output) is unlikely to occur
• If underspending does occur**, price-wage—interest rate adjustments** will ensure continued full employment.
• **Price-Wage Flexibility**

√ **Deficient demand could also cause prices to fall and wages to fall until full-employment output was reached again.** Classical economists argued that workers would accept lower wages because of competition among unemployed workers. The equilibrium interest rate equates the amounts households and businesses planned to save and invest, guaranteeing full employment output
• Classical theory believed **in laissez-faire economic** policy because adjustments in interest rates, prices and wages would bring about full-employment equilibrium. They thought that government interference could only bring trouble.

√ The classical theory of employment is **grounded in Say's law, the classical interest rate mechanism, and downwardly flexible prices and wages.**

√ This theory held the belief that capitalism was a **self-regulating** economy in which full employment was the norm. Capitalism was capable of "running itself".

√ Adam Smith's idea of capitalism includes the **notion of "laissez faire"** government policy.

Keynesian Economics

General Theory of Employment, Interest and Money
John M. Keynes—1936

• Capitalism does not contain any mechanism capable of guaranteeing full employment. **It is not self-regulating.**
• Causes of unemployment and inflation are the result of the **lack of synchronization on economic decisions of households and businesses** in terms of saving and investing. Ups and downs in the economy should not be solely associated with war, drought, etc.
• Product prices and wages tend to be **downward inflexible**; long periods of recession will prevail before declines in prices and wages will been seen.
• **External forces** can contribute to economic instability.

Unlinking of Saving and Investment
• Businesses invest more when saving increased? **NO!** More savings means less consuming!
• Savers and investors are distinct groups:

√ Saving by households (from disposable income) and businesses (retained earnings)

√ Investing by business esp. corporation

• Savers and investors are differently motivated

√ Households:large purchases down payments, future needs, precautionary, emergency, institutionalized, contractual

√ Businesses invest for many reasons:

• Interest rate is high consideration in plans to purchase new capital goods

• Rate of return is also highly considered.

• In recession or depression, when profit is questionable, incentive to invest is lost even if rate of interest fall.

• Additional sources of funding (not seen in classical theory)

√ accumulated money balances held by households—some used for everyday expenses, but some held as a form of wealth which are offered to financial markets at times(this is in excess of current saving from DI

√ commercial bank lending power adds to the money supply and augments current saving as source of funds.

• Does all current saving go to investment?

√ some households add some of the current saving to their money balances rather than channel it into money markets.

√ some current saving is used to retire outstanding bank loans and these funds are lost to investment if these payments are not loaned again

• In summary, saving and Investment plans can be at odds and can result in fluctuations in total output, total income, employment and the price level.

Discrediting Price-Wage Flexibility

• Most Keynesians recognize that some prices and wages are downward flexible—Example in 1980's.

• Recall the **ratchet effect**—Monopolistic producers have ability and desire to resist falling prices as demand declines; strong labor unions are persistent in holding the line of wage cuts. Employers are wary of wage cuts, recognizing effect on morale and productivity; they see a "goodwill effect" of maintaining wages

• The volume of total money demand cannot remain constant as prices and wages decline. Lower prices and wages means lower nominal incomes, and this will mean reductions in total spending.

• A decline in wage rates for a single firm does not apply to the economy as a whole.

How are the levels of output and employment determined in modern capitalism?

The amount of goods and services produced and therefore the level of employment depend directly on the level of total or aggregate expenditures.

• **Businesses** will produce a level of output they can profitably sell.

• **Workers and Capital** are idled if there are not markets for the goods and service they can produce

• Total output and employment vary directly with aggregate expenditures.

Tools of Aggregate Expenditures Theory

There are four assumptions:

1. Closed Economy-no international trade transactions
2. Private Economy-Ignore government
3. All savings will be personal savings
4. Depreciation and net foreign factor income are zero.

Implications:

√ Consumption and Investment only

√ GDP=NI=PI=DI

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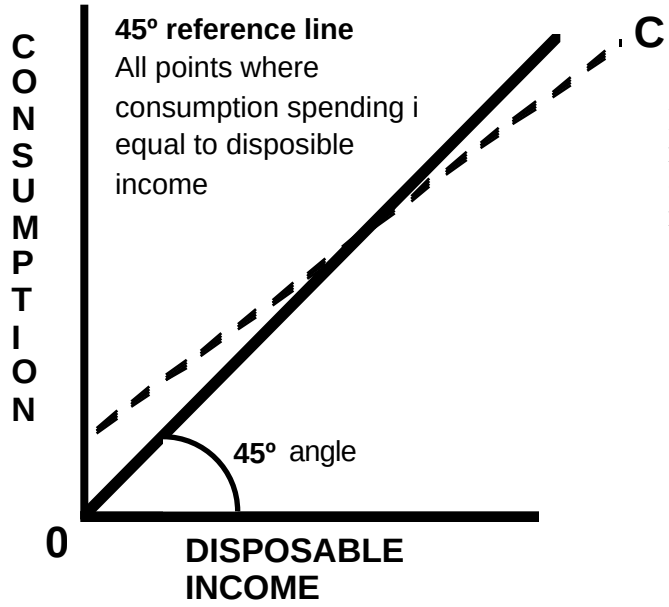
Consumption and Savings

- Consumption is the largest portion of aggregate spending.
- Personal Savings is the portion of Disposable Income not spent
- Disposable Income = Consumption + Savings
- Disposable Income is the most significant determinant of both consumption and saving



Here the C line generalizes on the relationship between consumption and disposable income. It indicates a direct relationship and that households consume the bulk of their incomes.

Is there a way to measure the amount of savings with this diagram?

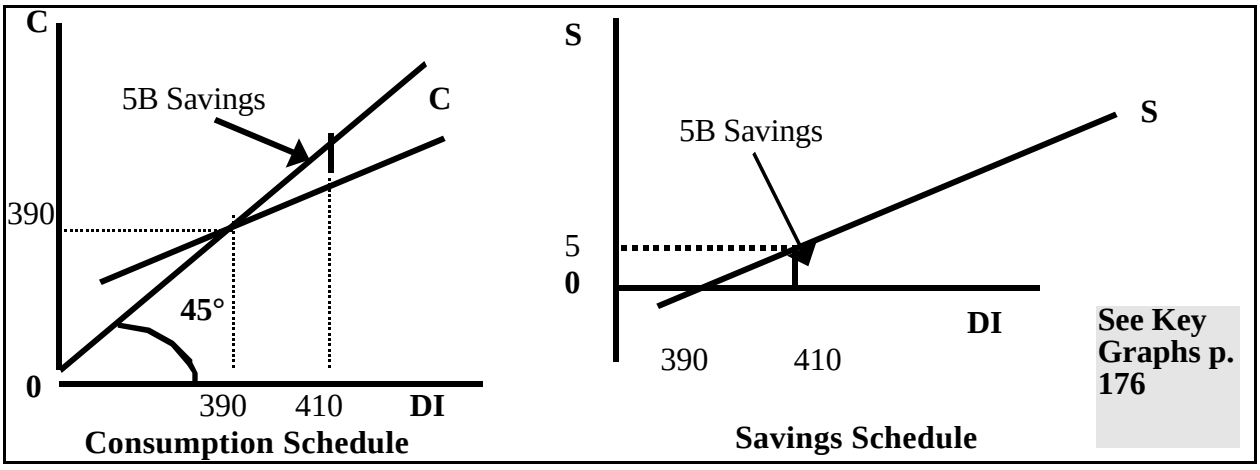
CONSUMPTION AND SAVING SCHEDULE (HYPOTHETICAL DATA)

Disposable Income	Consumption	Saving	APC	AP	MPC	MPS
370	375	-5	101%	-1%		
390	390	0	100%	0%	75%	25%
410	405	5	99%	1%	75%	25%
430	420	10	98%	2%	75%	25%
450	435	15	97%	3%	75%	25%
470	450	20	96%	4%	75%	25%
490	465	25	95%	5%	75%	25%
510	480	30	94%	6%	75%	25%
530	495	35	93%	7%	75%	25%
550	510	40	93%	7%	75%	25%

- **APC** Average propensity to consume (consumption/income)
- **APS** Average propensity to save (savings/income)
- **MPC** Marginal propensity to consumer (change in consumption/change in income)
- **MPS** Marginal propensity to save (change in saving/change in income)

√ **Note: APC + APS =1** **MPC + MPS = 1**

• **MPC** is the slope of the consumption schedule • **MPS** is the slope of the saving schedule.



See Key Graphs p. 176

Non-income Determinants of Consumption and Saving

Compare this idea to the determinants of demand (income, taste, expectations, etc.)that shift the demand curve

• **Wealth**: Increases in wealth shifts the consumption schedule up and saving schedule down, but since wealth does not change greatly from year to year it won't account for large shifts in schedule.

• **Price Level**: Decrease in price level shifts the consumption schedule up and the saving schedule down, but we usually assume constant price or real disposable income in our illustrations.

• **Expectations**: Expected inflation or shortages in future will shift current consumption schedule up

• **Consumer debt**: Lower debt level shifts consumption schedule up and saving schedule down

• **Taxation**: Lower taxes will shift both schedules up if they are originally plotted against before-tax income.

SHIFTS:

• Movement from one point to another on a given schedule is called **a change in amount consumed and is caused ONLY by a change in disposable income**; a shift in the schedule (C1 to C2)is called a **change in consumption schedule and is caused by the non-income determinants above. The same reasoning applies to saving schedules.**

• **Consumption and saving schedules will shift in opposite directions** unless caused by a tax change which causes the schedules to move in the same direction.

• Economists believe that consumption and saving schedules are generally stable unless deliberately shifted by government action.

Think About This!

Why does an upshift in the consumption schedule typically involve an equal downshift in the savings schedule. What are the exemptions to this relationship?

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Chapter 9, p. 181-188

Investment Spending

- Second component of private spending
- Expenditures on new plants, capital equipment, machines, etc.

Expected rate of net profit (rate of return) and the interest rate will be the determinants.

• **Expected rate of net profit** is found by **comparing the expected economic profit to investment cost** to get expected rate of return. It is **guided by profit motive**, businesses will purchase new capital goods only when it expects such additional capital to produce a profitable return.

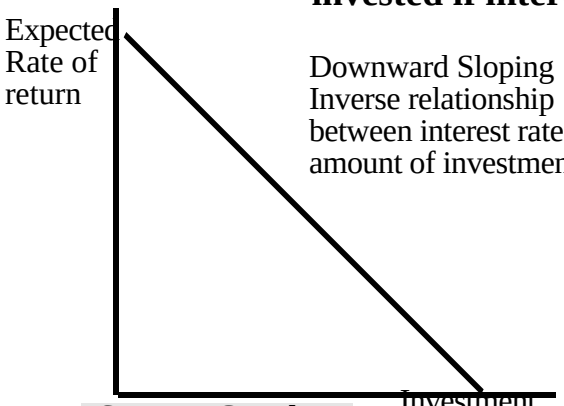
Rate = extra profit / cost of investment

• **The interest rate** is the **financial cost the firm must pay to borrow the money capital** required for purchase of real capital. In the same sense, if the firm used its **retained earnings** to make the purchase, it will incur an **opportunity cost** of using these funds. Real rate vs. nominal rate is also a consideration. Nominal interest is expressed in terms of dollars of current value, while real interest is expressed in terms of dollars that have been inflation-adjusted.

• **Investment-Demand Curve** can be determined by cumulating investment projects and arraying them in descending order according to their profitability and applying the rule that investment will be profitable up to the point at which the real interest rate equals the expected rate of return.

RULE: Invest up to the point at which the expected rate of net profit equals the interest rate (because cost should not exceed net profit)

• Fewer projects are expected to provide high net profit, so less will be invested if interest rates are high.



See Key Graph p. 183

Expected Rate of Return (r)	Cumulative Amt of investment have this % or higher ($B)
16%	$0
14	5
12	10
10	15
8	20
6	25
4	30
2	35
0	40

• Shifts in Investment Demand (Non interest-determinants)

√ **Any factor that increases the expected net profitability of investment** will shift the investment-demand curve to the right. Conversely, leftward shifts are caused by decreases in net profitability.

√ **Acquisition, Maintenance, and Operating Costs**—higher/lower costs will mean change in expected rate of return

√ **Business Taxes**— Look to profits after tax, higher taxes shift I-D curve to left; lower taxes shift to right.

√ **Technological change**—basic stimulus to investment; can lower production costs or create new products, or improve quality

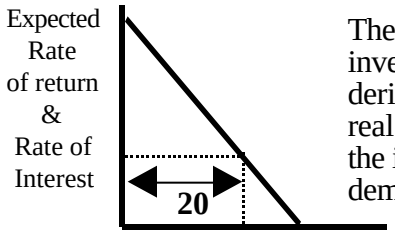
√ **The stock of capital goods on hand**—compare to consumer goods on hand; "well stocked" plants do not need more just for the sake of investment!

√ **Expectations**— capital goods are durable and have a predictable life; future sales and future demand are more difficult to predict. Business indicators (economy and industry) are good for forecasting; politics, foreign affairs, etc. are "wildcards"

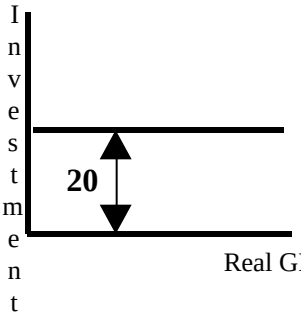
Investment and Income

Investment Schedule

The need to express investment in terms of GDP will mean we need to construct an Investment Schedule. This represents the investment plans of businesses in the same way the consumption and saving plans represent those of households.



The level of investment is derived from the real interest rate and the investment demand curve.



The investment schedule relates the amount of investment to various levels of GDP

• We make the **assumption** that the level of investment spending as determined by the current rate of interest and the investment-demand curve does not vary with the level of GDP. This is simplistic since we know that a higher level of economic activity may induce more investment if the outlook for further growth is good.

Instability of Investment

• There is **volatility of gross investment** over the years 1958 through 1998; plotted against GDP shows our assumption directly above is true. See figure 9-8 p. 187.

• **Factors that explain this instability** include:

√ **Durability of capital goods**, purchases are discretionary since equipment can be overhauled or upgraded.

√ **Irregularity of innovation**— new innovation does spur investment initially but it trails off when enough capital facilities have been created to meet the demand for production.

√ **Variability of Profits** change with the times, and American business tends to favor internal source of funds; recent history shows "junk bonds" caused disaster for the banking industry as well as some major producers.

√ **Variability of Expectations**

…are as predictable as the weather.

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Chapter 9, p. 188-195

Equilibrium Domestic Output… that level of output which once achieved will be sustained. It exists where flow of income created by production output gives rise to a level of total spending sufficient to clear the product market.

Expenditure—Output Approach

I. Assumptions: GDP = NI = DI
No depreciation, no net American income earned abroad, no government, no saving by business.
II. Data • Table 9-4 p. 189

Possible levels of employment	GDP=DI	Consumption C	Saving S	Investment I_g	$C+I_g$	Unintended Investment In Inventory	Tendency of Unemployment, output and Incomes
40M	$370B	$375B	$—5B	$20B	$395B	$—25B	Increase
45	390	390	0	20	410	—20	Increase
50	410	405	5	20	425	—15	Increase
55	430	420	10	20	440	—10	Increase
60	450	435	15	20	455	—5	Increase
65	**470**	**450**	**20**	**20**	**470**	**0**	**Equilibrium**
70	490	465	25	20	485	+5	Decrease
75	510	480	30	20	500	+10	Decrease
80	530	495	35	20	515	+15	Decrease
85	550	510	40	20	530	+20	Decrease

√ **Column 2: Domestic Output**—possible real GDP that producers will offer based on expectation of selling that amount
√ **Column 6: Aggregate Spending**—total spending including consumption and planned gross investment
• **Equilibrium Output where Column 2 = Column 6 or GDP = C + Ig.** The Equilibrium of GDP exists where the total output measured by the GDP and aggregate expenditures, C + Ig are equal.

• In the graphical analysis**, the 45 degree line now represents the graphical statement of equilibrium.** When we add **the Ig portion of spending to the C schedule we have a line called the aggregate expenditure schedule** that will intersect with the 45 degree line at equilibrium. The equilibrium level of GDP is that which corresponds to the intersection of the aggregate expenditures schedule and the 45 degree line.

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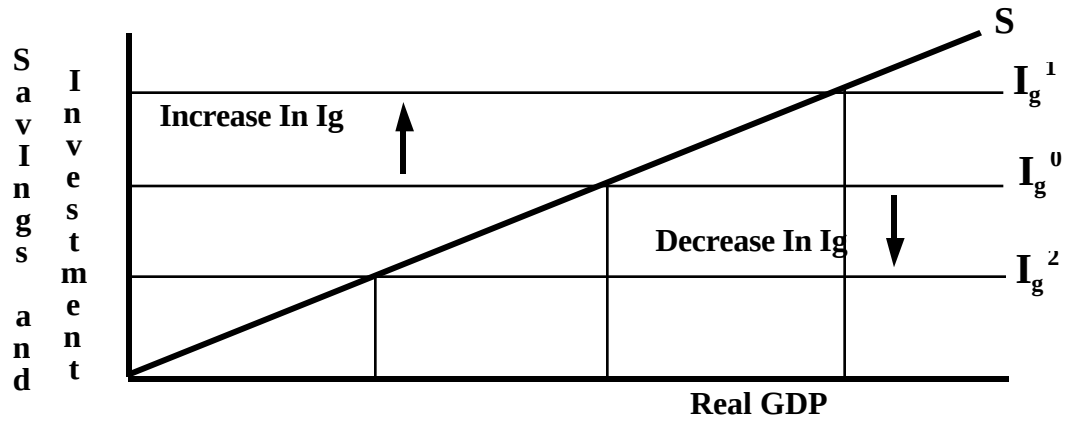
Chapter 10, p. 199-204

Changes in the Equilibrium GDP the Multiplier

The **equilibrium level of GDP will change in response to change in the investment schedule or the saving-consumption schedule**. Since investment is less stable than the other, we will assume that changes in the investment schedule will occur.

• As changes occur in the level of investment spending (due to changes in the interest rates) new levels of GDP are occurring. Further it changes the level of Aggregate Spending (C+Ig) and the level of output.



Change in Investment Schedule

• Note that a change of $5 in investment spending (either direction) causes a change in GDP of $20. **This is called the MULTIPLIER EFFECT**—any change in spending (consumption, investment or government) will cause a greater or multiple effects in the level of output.

Multiplier Effect:

• There is a repetitive continuous flow of expenditures and income since the consumption of one individual is reflected as the income of another. This change in income will cause both the Consumption and Saving schedules to vary in the same direction and by a fraction of the change in income. **The GDP and aggregate spending are increased by more than just the initial change in spending (investment, consumption or government).**

****Assume :MPC=.75, MPS=.25**	Change in Income	Change in Consumption	Change in Saving
Assumed increase in investment	$ 5.00	$ 3.75	$ 1.25
Second Round	$ 3.75	$ 2.81	$ 0.94
Third Round	$ 2.81	$ 2.11	$ 0.70
Fourth Round	$ 2.11	$ 1.58	$ 0.53
Fifth Round	$ 1.58	$ 1.19	$ 0.39
All Other Rounds	$ 4.75	$ 3.56	$ 1.19
Totals	$ 20.00	$ 15.00	$ 5.00

In this example, the income must increase by 4 times the initial excess of investment over savings because Households are saving 1/4 of any increase in income (MPS=.25).

• **The Multiplier Effect can be caused by changes in investment, consumption or government spending.** Investment fluctuates more than the others so we usually associated the multiplier with changes in investment spending.

• **The Multiplier Effect works both ways**—declines in spending causes multiplied lower levels of output and spending.

• The **size of the Multiplier is inversely related to the size of the MPS.**

• The **Multiplier is the reciprocal of MPS**.

• The **simple Multiplier** is: $\frac{1}{1-MPC}$ or $\frac{1}{MPS}$ Here savings is the only leakage from economy

If MPS = .25, Multiplier is 4 If MPS=.33, Multiplier is 3

• **The Multiplier magnifies fluctuations in business activity** initiated by changes in spending.

• **The larger the MPC, the greater the multiplier.**

• **Complex Multiplier** takes all "leakages" into account (savings, taxes, imports) The Council of Economic Advisors estimates the nation's complex multiplier to be 2.

Think About This!

T F 1. If real GDP were to decline by $40, consumers would reduce their consumption expenditures by an amount less than $40.

T F 2. The larger the marginal propensity to consume, the larger the size of the multiplier.

T F 3. The multiplier is based on the idea that any change in income will cause both consumption and saving to vary in the same direction as a change income and by a fraction of that change in income.

T F 4. The value of the complex multiplier will usually be greater than the value of the simple multiplier because there will be more injections into the economy.

_____ 5. If the value of the MPC is .6 and the real GDP falls by $25, this was caused by a decrease in the aggregate-expenditures schedule of
a. $10 b. $15 c. $16.66 d. $20.

_____6. If the MPC is .67 and if both the planned gross investment and the saving schedule increases by $25, real GDP will
a. increase by $75 b. not change c. decrease by $75 d. increase by $25

1. T
2. T
3. T
4. F
5. A
6. A

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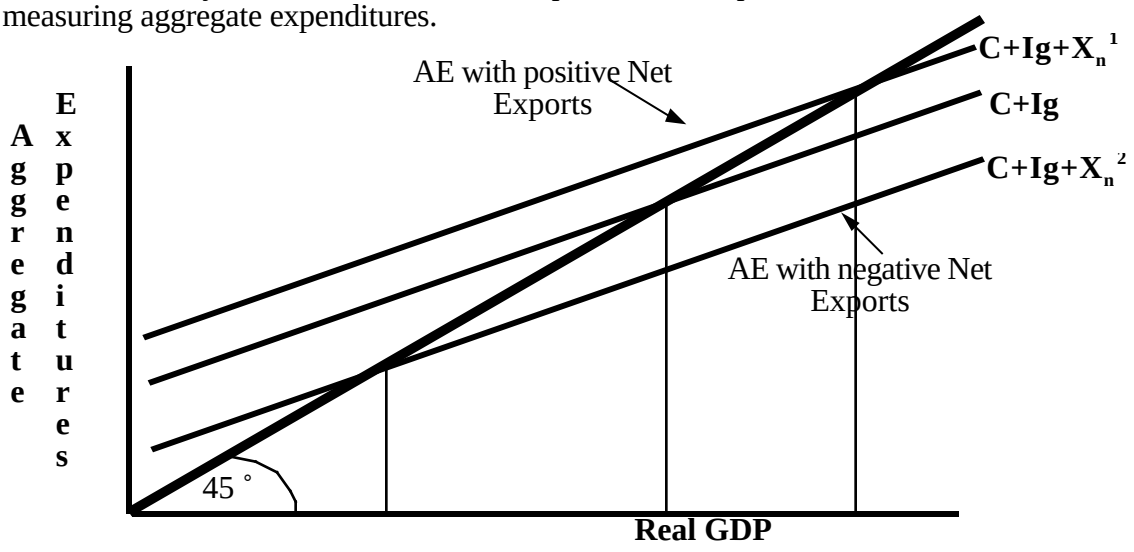
International Trade and Equilibrium Output

Net Exports (exports minus imports) may be either positive or negative. Exports expand aggregate spending; imports contract it.

• **Exports** act as an **injection** like investment. Government is also an injection since they create jobs and incomes in the US. Exports are a part of aggregate expenditures.

• **Imports** (goods produced outside the US) act as a **leakages** from the income stream since they would overstate domestic production. Imports are subtracted when measuring aggregate expenditures.



• Positive net exports increase aggregate expenditures on domestic output and increase equilibrium GDP

• Negative net exports decrease aggregate expenditures on domestic output and reduce equilibrium GDP.

Linkages:

√ **Prosperity aboard?**
Rising level of national income among our trading partners will enable us to sell more of our exports. (think of the situation in Asia today!)

√ **Tariffs?**
Tariffs on their side reduce export sales; retaliation is an issue. (think of Great Depression and Hoot-Smalley Tariff)

√ **Exchange Rates?**
Depreciation of $ will stimulate exports and lower imports expanding GDP. (What about Appreciation of the $???)

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Adding the Public Sector

Completing the Aggregate Expenditure Model by adding government will now create an **open, mixed economy with a public sector**.

• Government expenditures and taxes are submit to direct public control, but we can use these tools to manipulate the economy.

Assumptions:

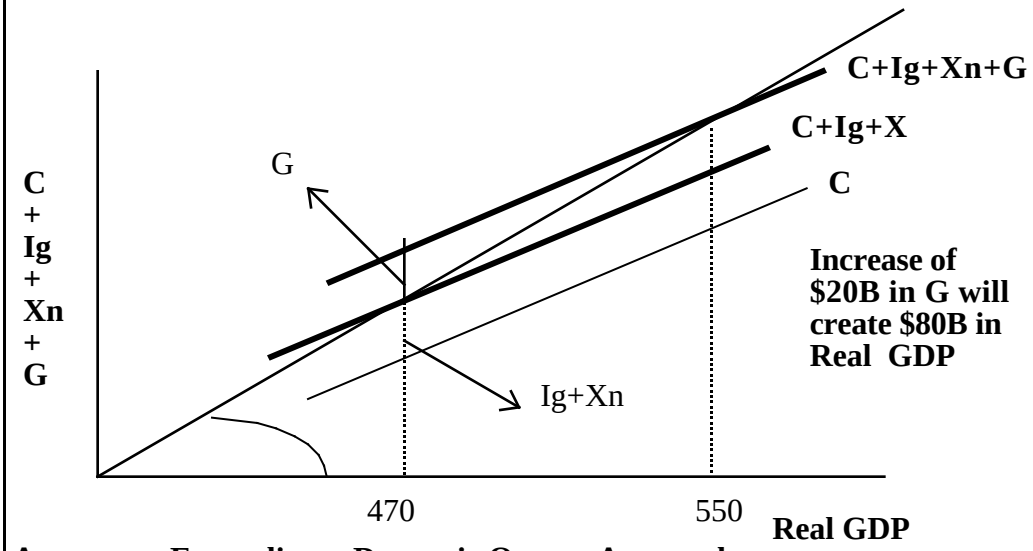
√ Investment and net exports are independent of the level of GDP
√ Government spending is not the cause of shifts in Consumption or Investment.
√ Taxes are Personal Taxes DI < PI by the amount of tax revenues; GDP, NI, and PI will be equal
√ Fixed amount of taxes regardless of level of GDP
√ Price level is constant

Most of these assumptions will be dropped in Chapter 12 when we discuss how government changes in its expenditures and taxes can alter equilibrium GDP and the rate of inflation

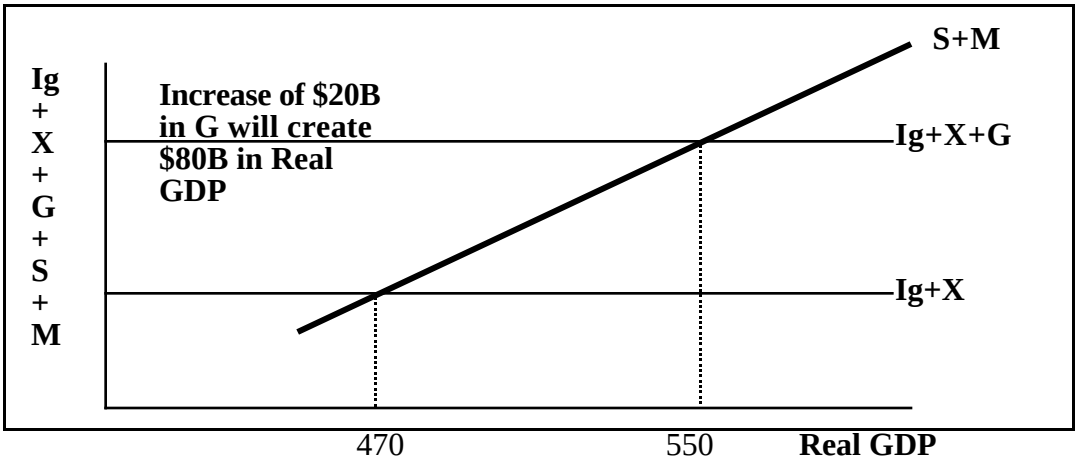
Government Purchases and Equilibrium GDP

Increases in public spending, like increases in private spending, will boost the aggregate expenditure schedule and result in high equilibrium GDP.

Use (Table 10-3 p. 208) for data.



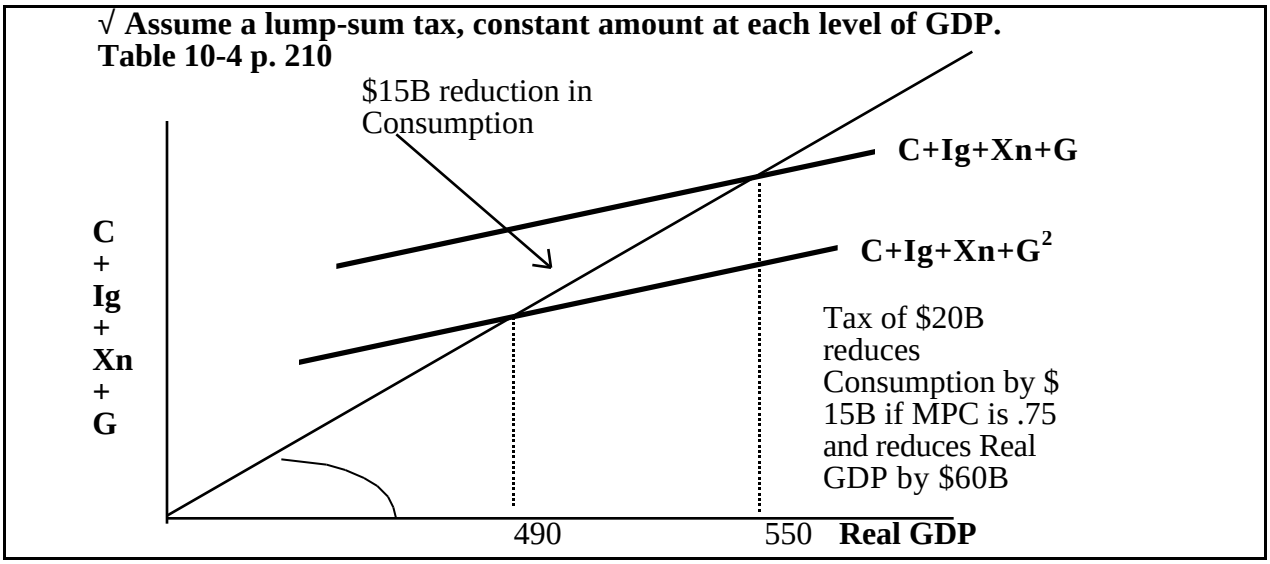
Aggregate Expenditure-Domestic Output Approach

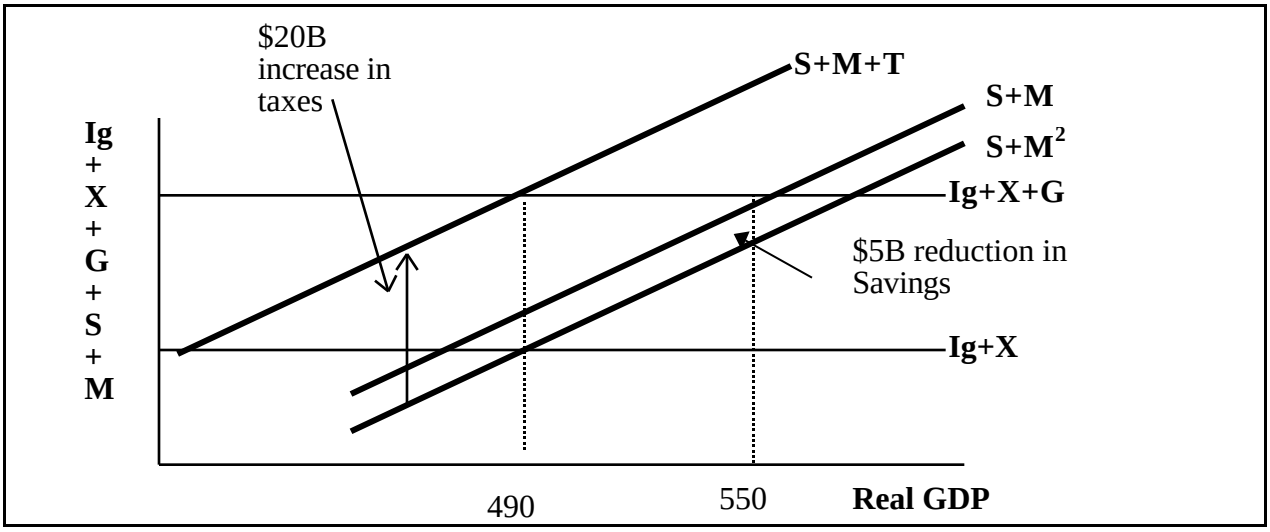


Leakages-Injections Approach

Taxation and Equilibrium

Taxes cause DI to fall short of GDP by the amount of the tax; reduces both consumption and saving at each level of GDP. The size is determined by the MPC and MPS.





Balanced Budget Multiplier

Defined as Equal Increases in Government Spending and Taxation increase the equilibrium GDP.

- If G and T are each increased by a particular amount, **the equilibrium level of real output will rise by that amount.** Why?
- **Government Spending is a direct impact on aggregate expenditures**. It is a component of GDP.
- **A change in taxation has an indirect impact by changing disposable income** and thereby changing consumption.
- The **overall result is a net upward shift of the aggregate expenditure schedule equal to the amount of the change in G and T.**
- So, for this reason**, the balance budget multiplier = 1.**

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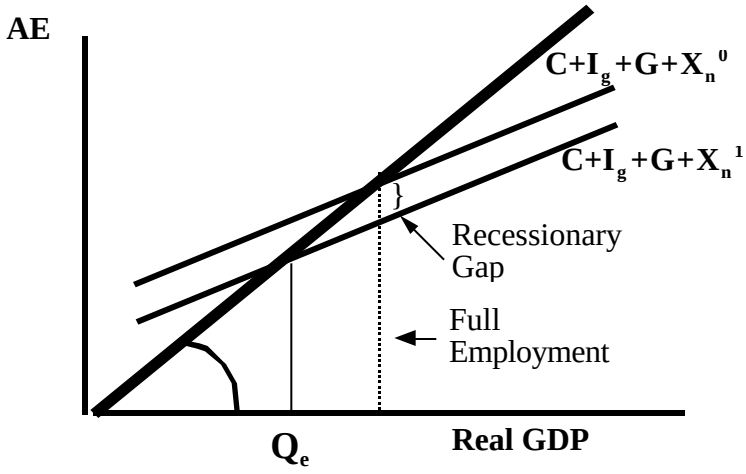
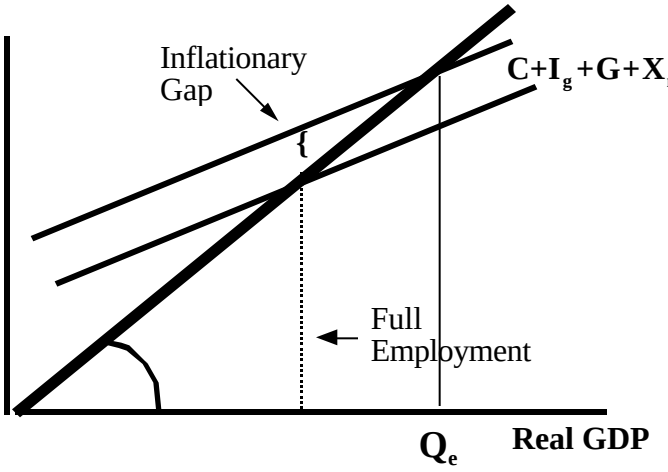
Equilibrium versus Full-Employment GDP

• **Equilibrium GDP** ($470 B in our example) **may or may not entail full employment**. Aggregate Expenditures may lie above or below that which would intersect with the 45 degree line at the full-employment noninflationary level of output.



Recessionary Gap is amount by which aggregate expenditures fall short of the non-inflationary full-employment GDP. It will cause a multiple decline in Real GDP.

See Key graphs p. 214



Inflationary Gap is amount by which aggregate expenditures exceed the non-inflationary full-employment GDP. This gap will cause demand-pull inflation.

Two historical examples:

Great Depression of 1930's: example of Recessionary gap

• Overcapacity and business indebtedness had resulted from excessive expansion by business in the 1920's during the period of prosperity. Expansion of the auto industry ended as the market became oversaturated and this affected related industries of petroleum, rubber, steel, glass and textiles.

• A decline in residential construction followed the boom of the 1020's which had resulted from population growth and the need for housing following WW I.

• In Oct. 1929, a dramatic crash in stock market values occurred, causing pessimism and highly unfavorable conditions for acquiring additional investment funds. Investment spending fell by 82% between 1929 and 1933.

• The nation's money supply fell as a result of FED monetary policies and other forces.

Vietnam War era: example of inflationary gap

• The policies of Kennedy and Johnson administration had called for fiscal incentives to increase aggregate demand.

• Unemployment levels had fallen from 5.2% in 1964 to 4.5% in 1965.

• The Vietnam War resulted in a 40% rise in government defense spending and a draft that removed young people from potential employment. The unemployment rate fell below 4% from 1966 to 1969.

• The boom in investment and government spending boosted the aggregate expenditure schedule upward and created a sizable inflationary gap.

The aggregate expenditure model has four limitations:

1. The model can account for demand-pull inflation, but does not indicate the extent of inflation when there is an inflationary gap.
2. It does not explain how inflation can occur before the economy reaches full employment.
3. It does not indicate how the economy could produce beyond full-employment for a time.
4. The model does not address the possibility of cost-push type of inflation.

Read the Last Word: Squaring the Economic Circle
Chapter 10, p. 216

Think About this!

T F 1. The equilibrium real GDP is the real GDP at which there is full employment in the economy.

T F 2. The existence of a recessionary gap in the economy is characterized by the full employment of labor.

3. What economic conditions are present in the economy when a recessionary gap or an inflationary gap exists?

1. F 2. F
3. Recessionary gap
   $Q^e < Q^f$
   Inflationary gap
   $Q^e > Q^f$

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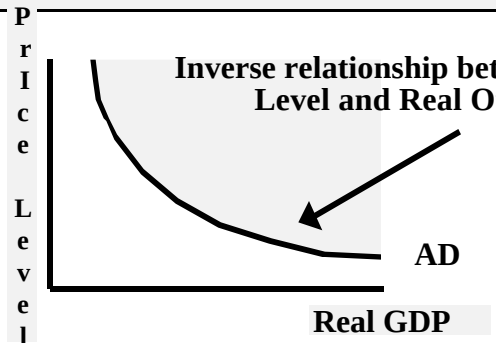
Chapter 11, p. 221-226

Aggregate Demand …

a schedule which shows the various amounts of goods and services (the Real GDP) which consumers, businesses and government will collectively desire to purchase at each possible price level.



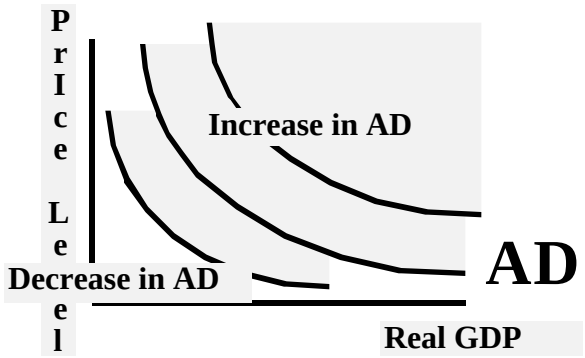
Shifts along the same AD are caused by the effects described below.

Interest-Rate Effect: as PL rises so will interest rates and rising interest rates will in turn cause a reduction in certain kinds of consumption and business spending AD assumes fixed money supply, so a higher price level will increase the demand for money, and the costs of borrowing will rise.

Wealth Effect: at higher price levels the real value or purchasing power of accumulated financial assets will diminish. Certain purchases will be delayed.

Foreign Purchases Effect: if the price level rises in the US relative to foreign currencies, American buyers will purchase more imports at the expense of American goods.

Shifts in Aggregate Demand…
caused by non-price-level factors

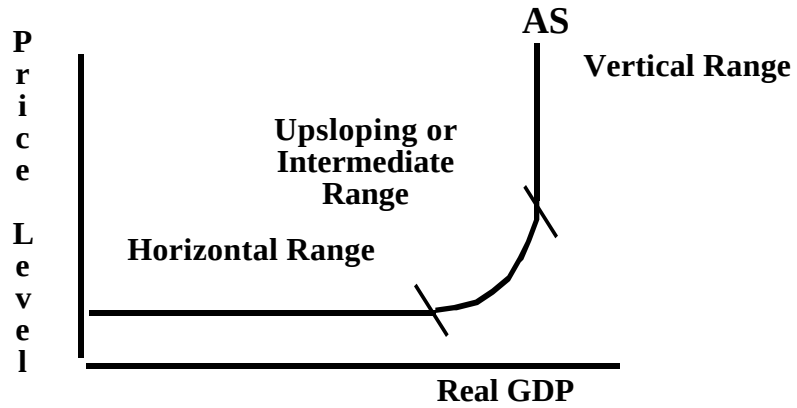


Non-Price Level Determinants of Aggregate Demand
Causing Aggregate Demand curve to shift

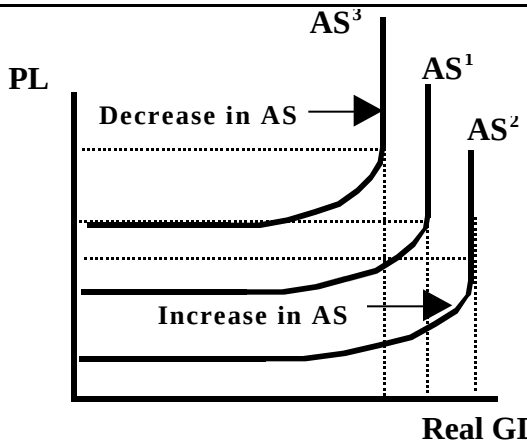
Change in Consumer Spending	Consumer Wealth Consumer Expectations Household Indebtedness Taxes
Change in Investment Spending	Interest Rates Profit expectations Business Taxes Technology Degree of excess capacity
Change in Government Spending	Desire to add or deduct from government supported programs

AP Macroeconomics
Chapter 11, p. 227-232

Aggregate Supply …
a schedule which indicates the real level of GDP which will be available at each possible price level



Keynesian or Horizontal Range: Real GDP are much less than Q_f ;High Unemployment and unused capacity. As movement to right occurs, there is a gain in Real GDP, but no Price Level Change. Production costs usually do not rise since resource are not yet scarce.
Intermediate Range: No simultaneous full-employment full-production in all firms; specific labor/resource shortages; per unit costs rise and firms must get higher prices to retain profit margins.
Classical or Vertical Range: Economy on PPC; Real GDP cannot grow; Firms will bid resources from other firms and resource prices will rise which causes some firms to exit industry. Product prices will rise but Real GDP will remain steady.



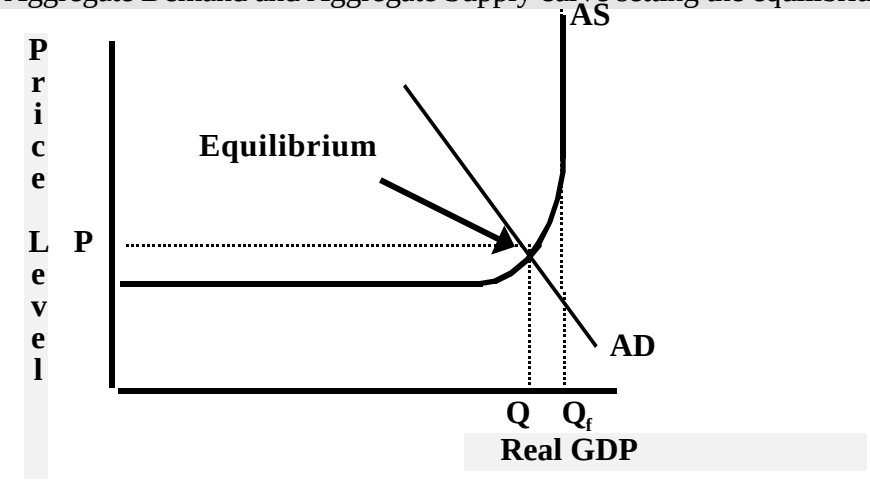
Shifts in the Aggregate Supply Curve are caused by non-price level determinants.

Non-Price Level Determinants of Aggregate Supply

Change in Input Prices	Domestic Resource Availability Prices of Imported Resources Market Power
Change in Productivity	Effect of Training Programs Technology Gains
Change in Legal-Institutional Environments	Business Taxes Business Subsidies Government Regulation

AP Macroeconomics
Chapter 11, p. 233-34

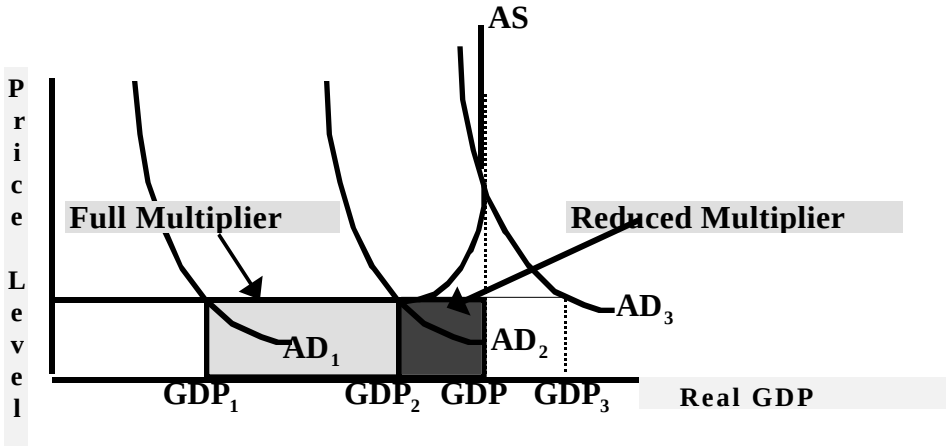
Equilibrium using Aggregate Demand and Supply … occurs at the intersection of the Aggregate Demand and Aggregate Supply curve setting the equilibrium price level and output



Multiplier with Price Level Changes…

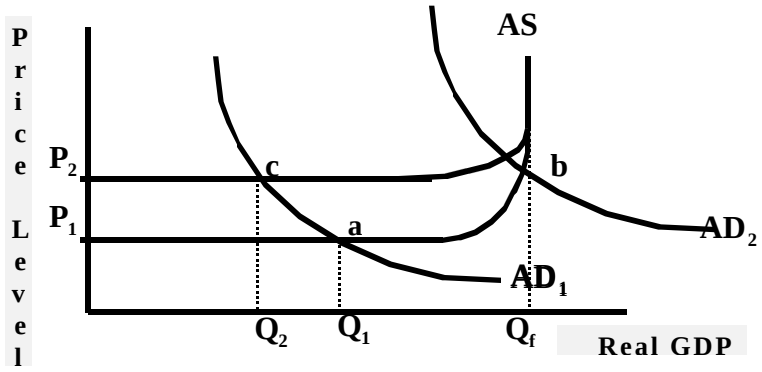
√ Price level increases occurring in the upsloping intermediate range of the aggregate supply curve weaken the multiplier.

√ The "full strength" effect of the multiplier is realized in the Keynesian range of the aggregate supply curve. Any change in aggregate demand is realized in the change in real GDP and employment while the price level is constant.



AP Macroeconomics
Chapter 11, p. 236-239

The Ratchet Effect **…**product and resource prices tend to be "sticky" or inflexible downward. This is the ratchet effect—price level does not operate downward.



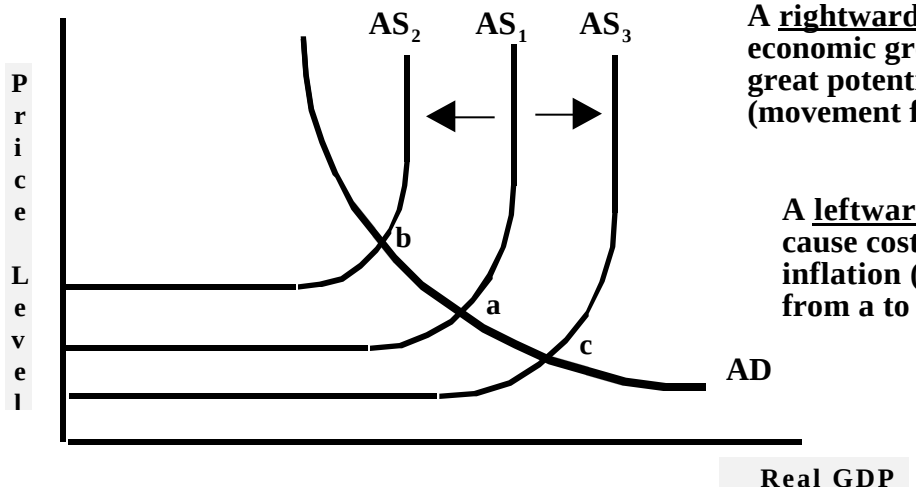
Causes:

• wage contracts, morale and productivity, training investments, minimum wage, and monopoly power.

Controversy:

• Some Economists do not accept this theory any longer; the 1981-82 recession showed that prices and wages were downward flexible.

Shifting Aggregate Supply



A <u>rightward shift</u> denotes economic growth and great potential to produce (movement from a to c)

A <u>leftward shift</u> will cause cost-push inflation (movement from a to b)

Think About This!

What is the relationship between the production possibilities curve discussed earlier and the aggregate supply curve?

AP Macroeconomics
Chapter 12 p. 253-258

Problems, Criticism & Complications

• Problems of Timing:

√ Recognition Lag— an awareness that the economy is changing; leading indicators my not be up-to-date; recessions often are not recognized for 6 months

√ Administrative Lag —wheels of government turn slowly; action taken may be wrong for the times

√ Operational Lag—time for spending to take effect may be slower than tax changes

• Political Problems:

√ Other Goals —Economic Stability + Providing Govt.' goods and services + Redistribution of Income

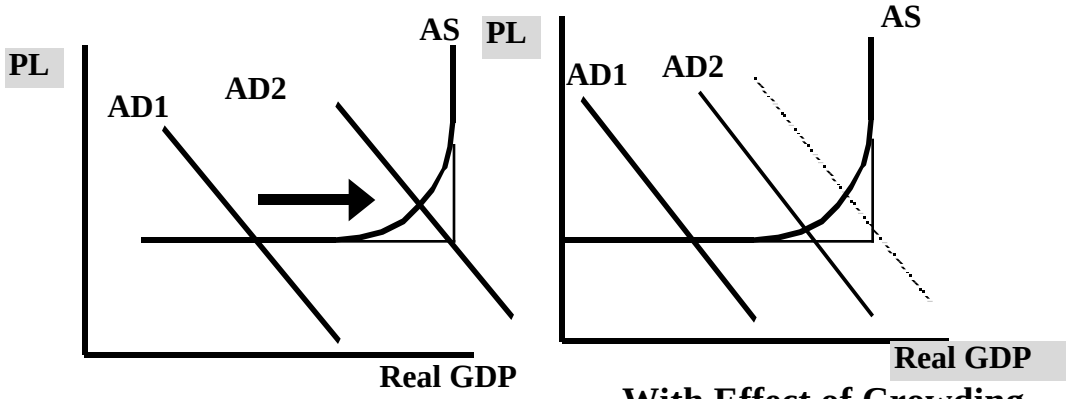
√ State and Local Finance— Requirements to balance budgets may prove to be counterproductive at times

√ Expansionary Bias—deficits may be politically attractive since spending on your home district and lowering taxes are well received; surpluses may be unattractive since cutting spending and raising taxes is not well received

√ Political Business Cycle—politicians' goal is to get reelected; assumption that voters take economic conditions into consideration when voting; Incumbents want to cut taxes and spend in their own districts; continued expansion of economy after the election may push us into inflationary territory; then the recession is a new starting point for reelection

• Crowding Out Effect:

√ Expansionary (deficit) fiscal policy will increase the interest rate and reduce investment spending, weakening or canceling the effect of fiscal policy.

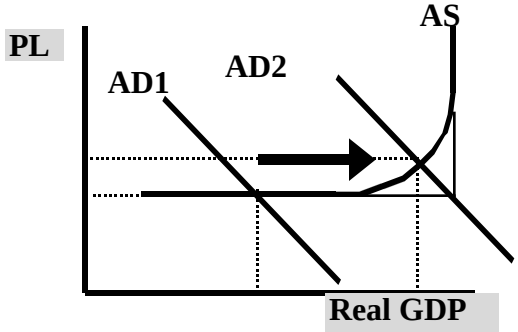


Without Effect of Crowding Out

With Effect of Crowding Out; smaller change in AD

Aggregate Supply, Fiscal Policy and Inflation

√ The upsloping range of aggregate supply curve means that part of an expansionary fiscal policy may be dissipated in inflation.



Pushing AD into the Intermediate range of AS **will result in a rise in the Price Level.**
Fiscal Policy does not escape the realities of the upsloping portion of the AS curve.

Fiscal Policy and Net Exports

√ Fiscal policy may be weakened by an accompanying **net export effect** which works through change in (a) interest rates (b) in international value of the dollar (c) exports and imports.

Expansionary Fiscal Policy tries to solve problem of Recession and slow growth, leading to higher domestic interest rates, increasing the foreign demand for dollars, which causes dollar to appreciate, which results in lower net exports and aggregate demand decreases to offset fiscal policy.

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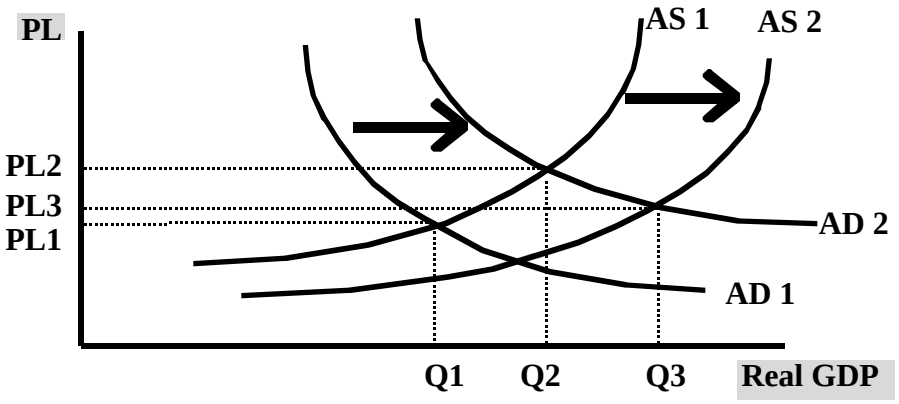
SUPPLY-SIDE ECONOMICS:

• Supply siders **manipulate aggregate supply** by enacting policies designed to stimulate incentives to work, to save and invest (including measures to encourage entrepreneurship). **These may include tax cuts which they feel will increase disposable incomes, thus increasing household saving and increase the profitability of investments by businesses.**



√ Tax cut stimulates more consumption, saving and investment to increase AD
√ Work incentives push more workers into employment and they spend and save
Low taxes act to push risk takers to move toward new production methods and new products.
√ The new equilibrium at PL3 and Q3 shows growth on lower relative inflation.

Mainstream Criticism

• Most economists feel that the incentives to work, spend and save are not as strong as the supply-siders believe; the rightward shifts in AS occur over a long time period while the effects on AD are much more immediate.

AP Macroeconomics
Chapter 12, p. 248-253

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√ **As GDP declines, tax receipts will fall.**

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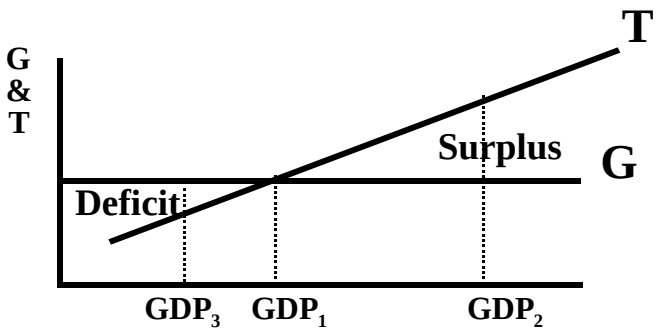

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Direct Relationship between tax revenues and GDP is shown by upslopoing line

√ **Taxes are leakages or withdrawals of potential purchasing power**.

√ Stability of the economy depends on **reducing the leakages**, or to reduce inflationary pressures

Built-In Stabilizers …is anything which tends to increase the government deficit (or reduce the surplus) during recession or to increase the surplus (or reduce the deficit) during inflation without requiring specific action by policy makers.

√ The size of the deficit or surplus and therefore **stability depends on the responsiveness of changes in taxes to changes in GDP**

√ If tax revenues change sharply as GDP changes, the slope of T will be steep and the vertical distance between T and G will be large.

√ If tax revenues change little when GDP changes, **the slope will be gentle and built-in stabilizer will be low.**

√ Steepness of T depends on the **type of tax system in place**. The more progressive the tax system, the greater is the built-in stability.

√ **1986 Tax Reform Act reduced the progressivity of income tax, but the 1993 changes increased progressivity.**

• Actual VS Full Employment Budget

√ Because of built-in stability, the actual budget deficit or surplus will vary with the size of GDP, therefore, actual budget varies with GDP.

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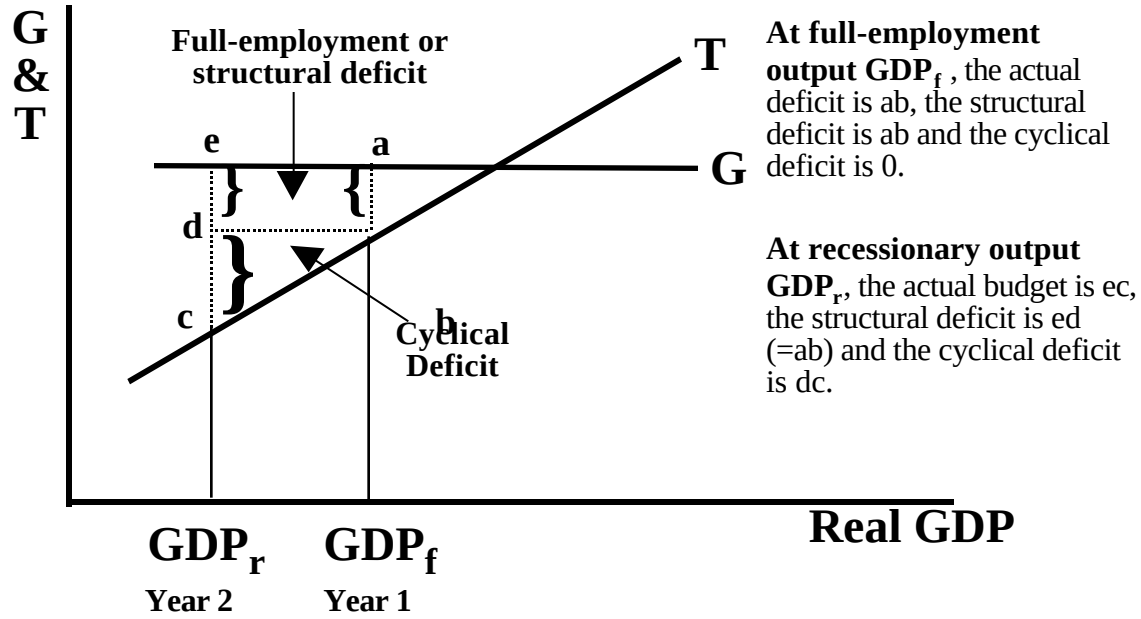

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• Calling for a balanced annual budget would eliminate discretionary fiscal policy as tool for stabilization. Government could not use deficit and surplus budgets to change the level of GDP.

• Government in recession would be forced to equalize spending and revenue by raising taxes and lowering spending at a time when this is counter productive. This is contractionary fiscal policy, and would certainly worsen the recession.

Think about This!

• Examine figure 12-5 on page 251 and note how full-employment deficits or surpluses are better indicators of whether government fiscal policy is expansionary, neutral or contractionary than are the changes in the actual budget deficits or surpluses.

• Large full-employment deficits began in the 1980's and persisted throughout most of the 1990's. Discretionary fiscal policy was largely abandoned in favor of the use of monetary policy as controlled by the Federal Reserve. Has it worked?

AP Macroeconomics
Chapter 12, p. 242-248

Assessing the Impact of Government on GDP and Aggregate Spending

Consumption and Investment decisions are based on self-interest; government is an instrument of the whole society. Government decisions with respect to spending and taxing are supposed to influence equilibrium GDP in terms of the general welfare. Fundamental function of government is to stabilize the economy through fiscal and monetary policy.

FISCAL POLICY… is the manipulation of the public budget process (spending and taxation) to achieve full employment, non-inflationary GDP levels.

√ Legislative Mandates include: Employment Act of 1946, Council of Economic Advisors, and Joint Economic Committee.

Discretionary Fiscal Policy:

√ Defined as **deliberate changes in government spending and taxation policies** by Congress to offset cyclical fluctuations in output and employment and to stimulate economic growth.

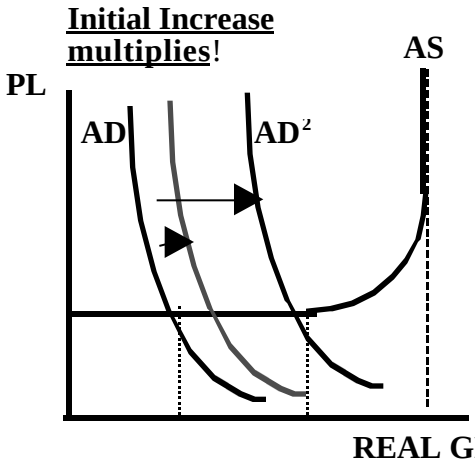
√ **Increases** in government spending will stimulate the multiplier effect (these are injections into income stream) and GDP will rise.

√ **Decreases** in government spending will retard the growth of the economy; the multiplier effect will cause even greater.

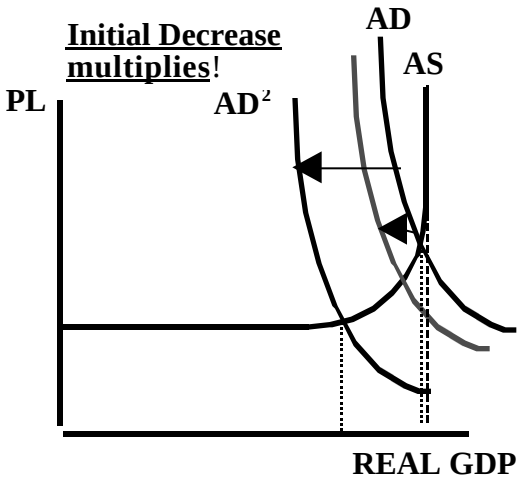
Fiscal Policy over the business cycle

√ Fiscal policy's goal is to eliminate unemployment or inflation

Expansionary fiscal policy used to reduce effects of recession
√ Increase government spending **and/or**
√ Decrease taxes



Contractionary fiscal policy used against demand-pull inflation
√ Decrease government spending **and/or**
√ Increase taxes



• Financing Deficits…Disposing of Surpluses

√ **Borrowing**: government competes with private borrowers for funds and could drive up interest rates; may "crowd out" private borrowing

√ **Money creation**: is more expansionary yet voids the "crowding out" effect

√ **Budget Surplus**: **debt reduction** (may reduce the anti-inflationary effects of the surplus since it causes interest rates to fall when the government buys back some of its bonds.) or **idle surplus** (more anti-inflationary effect since the government is withholding purchasing power from economy.

• **Policy Options**…Which is better? **G or T???**

√ Liberals Higher government spending??

√ Conservatives: Lower taxes???

Think About This!

What are the government's fiscal policy options for ending severe demand-pull inflation?

Which of these policies are supported by conservative economists over liberal ones?

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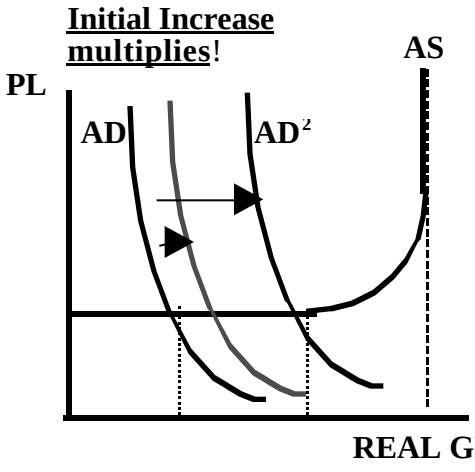

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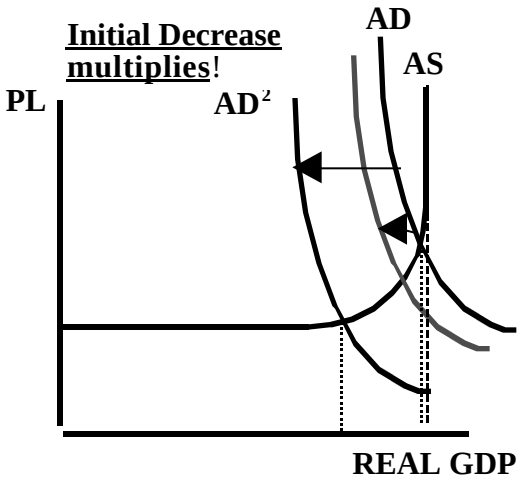

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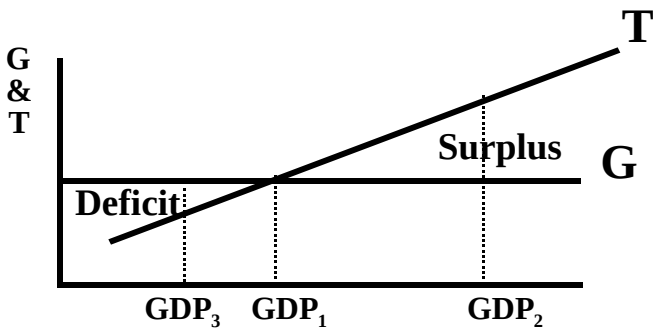

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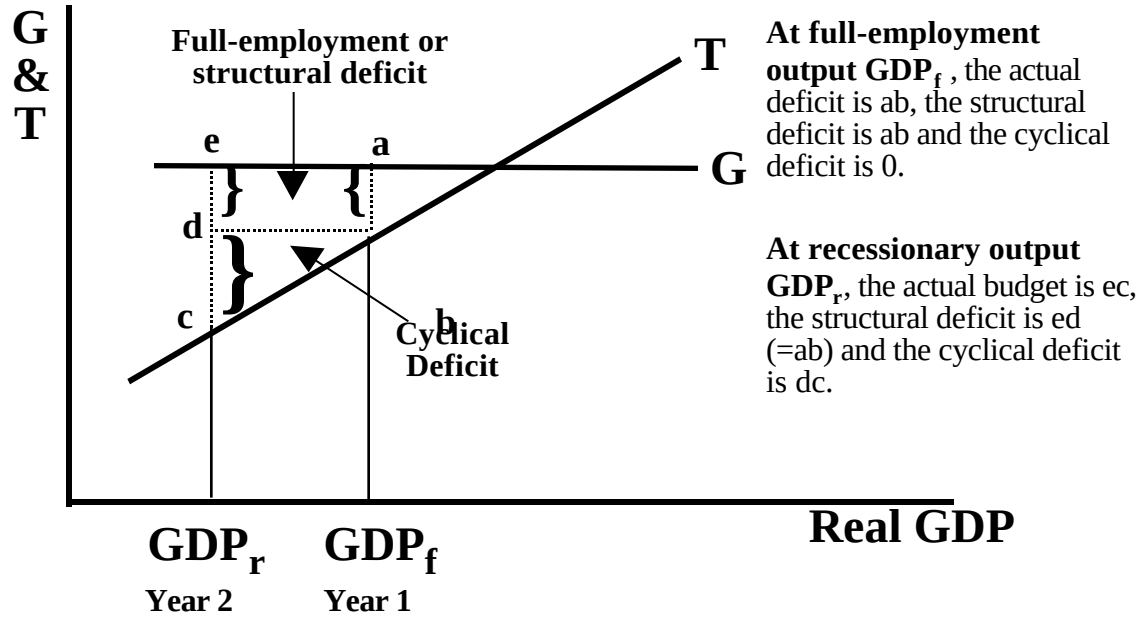

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AP Macroeconomics
Chapter 12 p. 253-258

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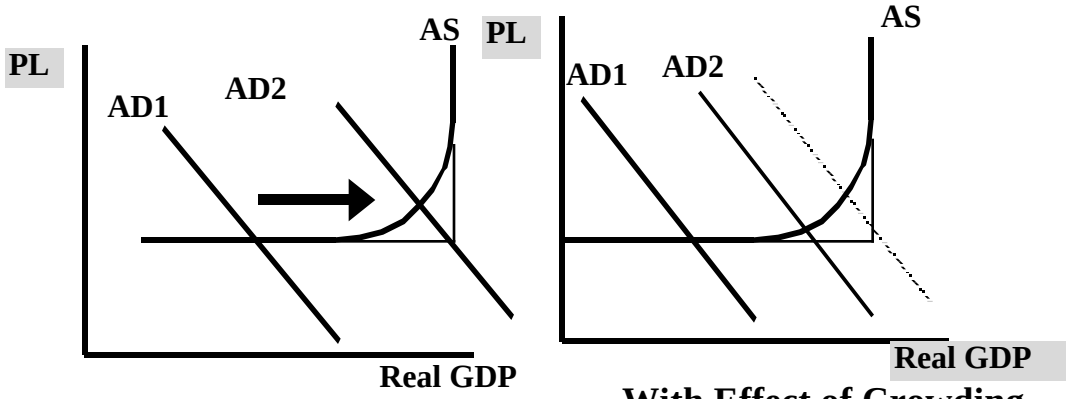

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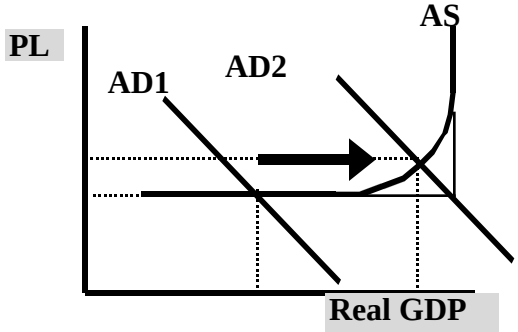

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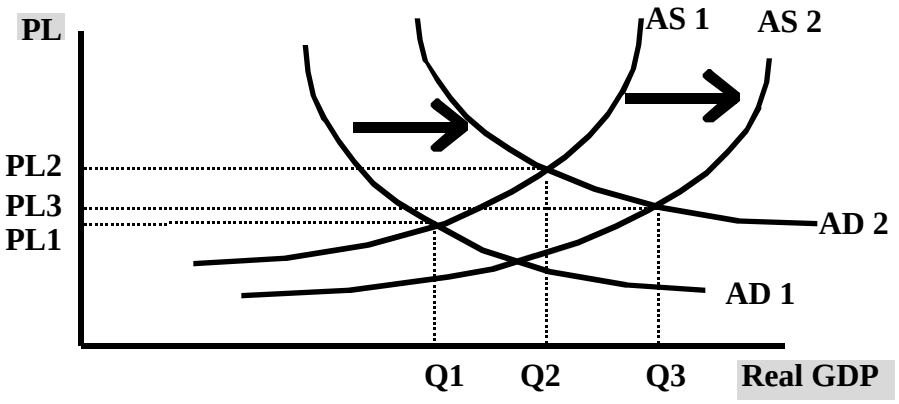

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AP Macroeconomics
Chapter 13, p. 264-268

Money and Banking

… Money is anything that is generally accepted in payment for goods and services.

Functions:

√ **Medium of Exchange**—convenient way to exchange for goods and services
√ **Unit of Measurement**—yardstick for measuring worth
√ **Store of value**—way to store wealth

Supply of Money:

• **Amount of money in circulation is constantly changing**. The amount depends on how much money is desired by individuals and businesses. In November and December, banks need more currency since people want it for shopping funds; supply of money automatically expands and contracts with the needs of business.

•M1 Money Supply… currency and checkable deposits

√ **Currency**—Coin is 2-3% of total M1 for convenience money; called token money (intrinsic value is less than the face value). Paper money is **28%** of total M1 in the form of Federal Reserve Notes (no longer tied to gold reserves) •••• Exclude currency held in the bank vault or deposited in Federal Reserve Banks or held by US Treasury

√ **Checkable Deposits**—checks are **70%** of total M1**, used for 90% of transactions (**offered by commercial banks, thrift institutions, and credit unions), called **demand deposits**, NOW accounts, Automatic Transfer Service and share draft accounts.

Near Monies… M2 and M3: highly liquid financial assets that do not directly function as medium of exchange but can be easily converted into currency or checkable deposits.

√ **M2**: M1 components + noncheckable savings accounts money market accounts, time deposits like CD's(less than $100,000),, money market mutual funds.

√ **M3**: M1 and M2 components + savings instruments greater than $100,000.

We do not include less liquid assets like Treasury Bills and US Savings Bonds.

• We will use M1 money supply as the definition of money in our discussion.

√ **Near monies** are **important** for several reasons:

1) spending habits: the greater the amount of financial wealth held as near money, the greater the willingness to spend out of current income;
2) stability: conversion from near money to M1 supply may force inflation to occur
3) policy: complicates actions to be taken.

• Credit Cards are NOT money, but rather a "bank loan". They do allow us to "economize" our use of money.

AP Macroeconomics
Chapter 13, 269-272

What "backs" Money Supply?

Money as Debt
… **Paper Money is the circulating debt of the Federal Reserve Banks**.
… **Checkable Deposits are the debts of commercial banks and thrift institutions.**
• It has no intrinsic value; it cannot be redeemed in gold or other "valued" item.

Value of Money
√ **Acceptability** : confident they are good for goods and services
√ **Legal tender**: matter of law (creditor must accept or forfeit right to sue or charge interest) and government will accept money in payment of taxes
√ **Fiat money:** paper dollars are accepted as money because the government says so and is willing to accept for payment of taxes
√ **Relative scarcity**: demand and supply relationship

Money and Prices
√ **Purchasing power of money is the real value.** The amount a dollar will buy varies inversely with the price level.

D = 1/P	**D=Value of the $** **P= Price level**

√ **Figure 13-1** shows this relationship.
√ **Inflation and Acceptability**:
• **Read text for example. p. 271**. Inflation is the result of a society's spending beyond its capacity to produce.
• **HH & BS are willing to accept currency and checkable deposits as long as they know it can be spent without a loss of purchasing power**.
• **In inflation**
… the **rapid loss of purchasing power will cause money to lose its function as a medium of exchange**.
… **Money will serve its function as a store of value as long as there is no unreasonable loss in value by storing it.**

Stabilization of Money's Value
√ **Major backing** for money is the government's ability to keep the value of money stable.
√ This means **appropriate fiscal policy** and wise management of the money supply through **sound monetary policy**.
√ In US, a **blend of legislation, government policy, and social practice** stops the unwise expansion of the money supply which could change money's value in exchange.

Think About This!

What "backs" the money supply of the US?
What determines its value?
Who is responsible for maintaining the value of money?
Why is it important to be able to alter the money supply?

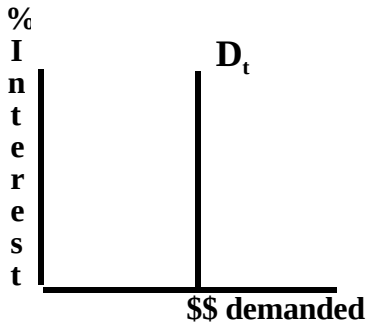
AP Macroeconomics
Chapter 13, p. 272-275

Demand for Money

Two reasons for demanding money:

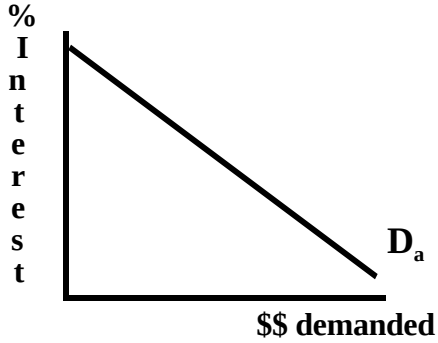
Transaction demand

√ Medium of exchange
√ varies directly with GDP



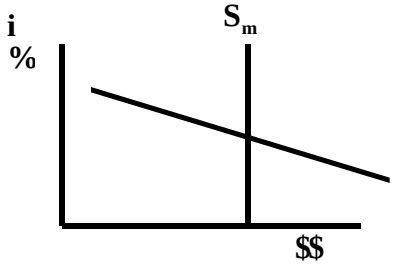
Asset demand

√ store of value
√ various inversely with GDP

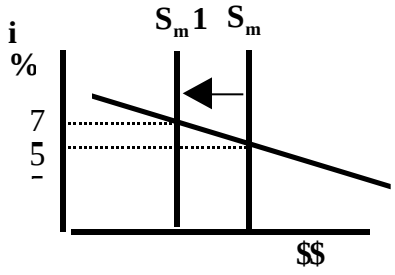


Total Demand D_m

√ **Combining** the two **creates the total demand for money** and portrays the money market and determines the equilibrium interest rate.

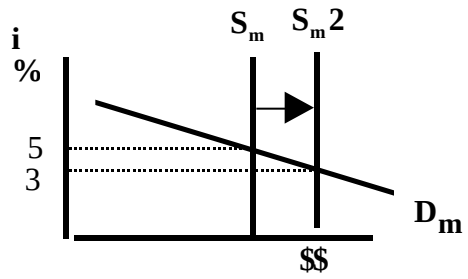


Money Market… supply of money is a vertical line since monetary authorities (FED) and financial institutions have provided the economy with a certain stock of money. The Price axis is the rate of interest and $$ is the amount of money demanded at that rate.



Response to a Shortage of Money…if the supply slips back to **S_m1,** people will adjust by selling some financial asset like bonds causing the price of bonds to fall since there will be a greater supply of bonds than demand. The supply of money does not change because one person will gain cash by the sale but another will lose to pay for the bond.

Lower bond prices are associated with higher interest rates…the yield of the bonds has risen when prices fall and this causes an increase in interest rates (5% to 7% on graph). A higher interest rate will raise the opportunity cost of holding money that firms and households want to hold. So the change in interest rates move upward along the D_m and reduces the $$ of money demanded. Equilibrium is restored.



Response to a Surplus of Money…if the supply pushes outward to **S_m2,** people will adjust by buying some financial asset like bonds causing the price of bonds to rise since there will be a greater demand for bonds than supply. The supply of money does not change because one person will lose cash by the sale but another will gain by selling his bond.

Higher bond prices are associated with lower interest rates…the yield of the bonds has fallen when prices rise and this causes an decrease in interest rates (5% to 3% on graph). A lower interest rate will lower the opportunity cost of holding money that firms and households want to hold. So the change in interest rates move downward along the D_m and increasing the $$ of money demanded. Equilibrium is restored.

Think About This!

How is the equilibrium interest rate in the money market determined?
How might each independently of these affect the transaction demand for money and the equilibrium interest rate
a. the expanded use of credit cards
b. a shortening of worker pay periods
c. an increase in nominal GDP

AP Macroeconomics
Chapter 13, p. 276-280

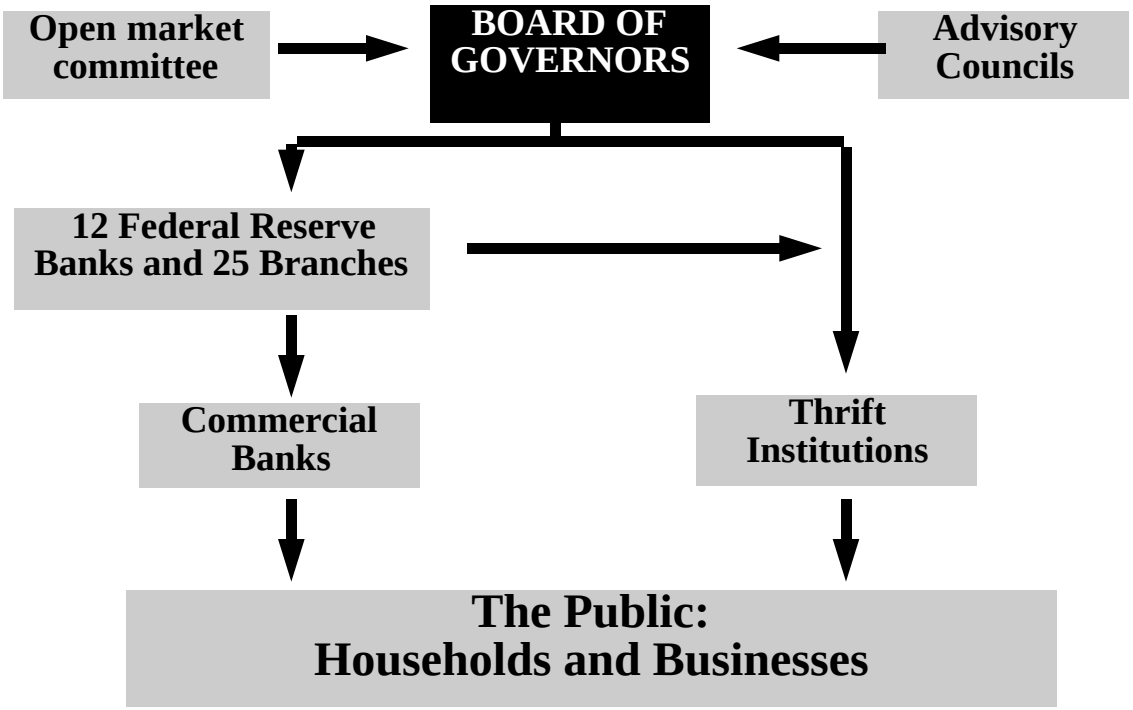
Federal Reserve System

Established by an Act of Congress in 1913. It is the system that coordinates commercial banking operations, regulates some aspects of all depository institutions and oversees the United Sates Money Supply.

The **Depository Institutions Deregulation and Monetary Control Act of 1980** expanded the ability of thrift institutions to create money as the commercial banks, but also put them under regulatory control of the FED.

The primary goal of the FED is to adjust the money supply to meet the needs of the economy. Through its control of the size of the money supply, the FED has the ability to influence the levels of employment and prices in the economy. It can also be part of policies which alleviate the problems of unemployment and inflation.

The organizational structure of the FED includes:



• **The Board of Governors** are seven members appointed by President, approved by Senate for 14-year terms. **Alan Greenspan** is current chairman. He acts as spokesman and is leader in setting pace of monetary policy for the economy. The Board **develops objectives and policies** that are consistent with the stated goals. The current goals include low interest rates that will stimulate investment spending and low rates of inflation to protect the value of the nation's income.

• The **Open Market Committee** includes Board members and 5 of the district bank presidents who authorize the buying and selling to government securities by the FED.

• The **Federal Advisory Council** include 12 commercial bank presidents from the 12 districts and offers advice on the nation's financial situation to the Board.

• The **12 Federal Reserve District Banks (and 25 branches)** are the central bank of the US and serve as "bankers' bank". They deal with commercial banks and thrifts; they enforce the Board policies, and operate as independent entities which are owned by their member banks.

• **Functions of the FED include:**

√ Provides banking services for financial institutions
- supplies currency from member bank accounts with FED
- processes checks through its check-clearing system
- holds member bank reserves and other deposits
- makes loans to financial institutions when necessary
- provides wire transfer services (ETS)

√ Banker to the Federal Government
- maintains the Treasury Department's checkbook
- issues and redeems government bonds and other securities

√ Supervises and regulates the nation's banking system
- establishes rule of behavior for banking system
- shares responsibility with Comptroller of the Currency and Office of Thrift Supervision

√ Manages the Supply of Money and Credit
- responsibility to see that money and credit supply are matched to demand
- uses three tools:
  Reserve requirement, Discount Rate and Open Market Operations

• **Federal Reserve Independence**

Pros	Cons
√ Needs to be free from political influence to be effective √ Cite other country's high rates of inflation as being related to their lack of independence √ Fear pressure on Congress if they had the power to regulate the money supply √ Few understand that the high rates are necessary at times to control inflation	√ Undemocratic not to elect members who have such power √ Legislative and Executive branches have the responsibility to promote growth and maintain stability…but not the tools. √ Voters try to blame Congress and the President though they have no control over FED action √ Some say that the FED policy is often in conflict with the fiscal policy of Congress.

• **Recent Developments**

√ **Many kinds** of financial institutions offer checkable deposits and banks and thrifts (traditional institutions) are losing market share. Table 13-2 on page 281 shows list.

√ **Expansion of services** has enlarged the market for these services—home equity loans, low-or-zero down payments, ATM machines, Internet banking and telephone banking are all new services of the 90's.

√ **Consolidation of the banking and thrift industry** through mergers are expected to continue. In 1999, there are 4500 fewer banks than in 1990.

√ The **recent repeal of the Glass-Steagal Banking Act** has changed the landscape of the financial services industry. Banks can merge with non-bank operations…but critics argue that this might cause problems in hard times.

√ **Innovations in computer and telecommunication** technology will mean a trend toward globalization of financial markets. Capital flows can happen in a nanosecond and cause a quick turn-around like in Asia in 1997-98.

√ **Electronic cash and "smart cards"** are the future. Banking services will be paperless and direct deposits of payments is already reality. You will find on your college compass next year that your ID can be "loaded" with cash and you can it at various locations. The worry is the amount of E-cash that is created by private firms and the fraud that might result.

AP Macroeconomics
Chapter 14 p. 287-288

Balance Sheet approach

A balance sheet is a statement of assets, liabilities and net worth. **Assets** are items of economic value; **liabilities** are debts or obligations, and **net worth** is the equity remaining.

A balance sheet must "balance". The Assets must be equal to the Liabilities plus the Owner's Equity.

Assets = Liabilities + Net Worth

How Banks Create Money!

• Bank Customers deposit money in their checking accounts. This transactions creates a LIABILITY for the bank since they have the obligation to repay the depositor his funds.

• **Fractional Reserve Banking System** … legally permits financial institutions to hold less than 100 percent of their deposits as currency in their vaults.

√ Goldsmiths in the Middle Ages were the first to use this method when they issued gold receipts when people stored gold with them. the receipts began to circulate and the goldsmiths began to issue more "money receipts" as interest-bearing loans to merchants as confidence grew.

√ Our system today has two characteristics:

• money creation and reserves: banks can create money but they are restrained by the FED's power to set reserve requirements.

• bank panics and runs: confidence is the key in our system since there is no gold or other metal that backs our currency. Prudent laws, good enforcement and FDIC insurance are ways that confidence is maintained.

• **Financial institutions are required to keep a fraction of their deposits on reserve** to cover withdrawals and to maintain a level of confidence in the monetary system. This fraction is set by Congress and regulated by the Federal Reserve System. This **legal reserve** is kept in the bank's vault or in the vault of the District FED bank. The Current legal reserve requirements and the Congressional statutory limits are listed in Table 14-1, p. 290.

Type of Deposit	Current Requirement	Statutory Limit
Checkable Deposits		
$ 0-49.3 M	3%	3%
Over $49.3 M	10%	8-14%
Noncheckable nonpersonal savings and time deposits	0	0-9%

• A bank can loan out its **excess reserves** to credit-worthy customers. This process will create an asset since customers must repay the loan according to the terms given.

• Usually a **bank does not loan out all of its excess reserves**—"good" customers or loan purposes are hard to find OR other investment opportunities may be more lucrative.

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Chapter 14 p.288-296

A SINGLE COMMERCIAL BANK

Transaction 1: Creating A Bank

New owners obtain a charter and sell capital stock in a new bank which raises cash to begin operations. The cash is an asset; the capital stock represents the stock holder's worth.

Balance Sheet of a Bank (partial)			
ASSETS	**=**	**LIABILITIES & NET WORTH**	
Cash	$250,000	Capital Stock	$250,000

Transaction 2: Acquiring Property and equipment

The Board of Directors of the new bank purchase a building and equipment needed to begin operations**.** The building and equip is an asset; the cash is reduced by the amount of the purchase

Balance Sheet of a Bank (partial)			
ASSETS	**=**	**LIABILITIES & NET WORTH**	
Cash	$ 10,000	Capital Stock	$250,000
Property	240,000		

Transaction 3: Accepting deposits

Customers begin to make deposits to checking accounts they have opened. These are called demand deposits since the bank must give the money to the customers when asked. Cash is increased by the amount of the deposit and a liability called Demand Deposits is created.

Balance Sheet of a Bank (partial)			
ASSETS	**=**	**LIABILITIES & NET WORTH**	
Cash	$ 110,000	Capital Stock	$ 250,000
Property	240,000	Demand Deposits	100,000

Up to this point, the money supply has remained the same since these transactions only affect the composition of the money supply. Cash held by customers has been exchanged for another "kind" of money—checking accounts. Currency held by the bank is not counted as part of the money supply.

Transaction 4: Separating Legal Reserves from Excess Reserves

The FED requires banks and thrift institutions to keep a legal reserve aside from the amount customers deposit. This legal reserve can be kept on deposit at the FED district bank in which this bank is located. For this example, 20% is the legal reserve requirement set by the FED. To facilitate this example, we will just have the bank divide its reserve into Required Reserve (20% of demand deposits) and Excess Reserves (available for loans and investment)

Balance Sheet of a Bank (partial)			
ASSETS	**=**	**LIABILITIES & NET WORTH**	
Cash	$ 10,000	Capital Stock	$ 250,000
Property	240,000	Demand Deposits	100,000
Legal Reserve	20,000		
Excess Reserves	80,000		

Transaction 5: Clearing a Check drawn on one of the bank's Demand Deposits.

Customers write checks to pay bills and make purchases. When the bank receives the check from a merchant or through the FED's check clearing service, the amount of Demand Deposits is decreased, and the legal reserve/excess reserve amounts will change as well. In the example, the amount of the check was $5,000. (legal reserve is reduced by $1,000—20% of $5,000; excess reserve is reduced by $4,000)

Balance Sheet of a Bank (partial)			
ASSETS	**=**	**LIABILITIES & NET WORTH**	
Cash	$ 10,000	Capital Stock	$ 250,000
Property	240,000	Demand Deposits	95,000
Legal Reserve	19,000		
Excess Reserves	76,000		

Up to this point, the money supply has remained the same since these transactions only affect the composition of the money supply. Cash held by customers has been exchanged for another "kind" of money—checking accounts. When they pay bills, they are moving money through the economy not creating any new money. Currency held by the bank is not counted as part of the money supply.

Money Creating Transaction of Commercial Banks

Transaction 6: Granting a Loan

Customers often want to borrow money to buy goods and services like cars and homes; businesses want to borrow to build new plant facilities or expand their business. Banks can loan out funds up to the amount of their excess reserves. They will judge each loan applicant on their previous financial record and their current ability to repay the loan in time. In our example, let's assume a loan of $76,000, the total of our current excess reserves. The loan customer receives the funds in the form of a new demand deposit. Demand deposits rise to $171,000 ($95,000 +$76,000), the bank has a new asset in the form of a Loan ($76,000) which will be repaid. Excess reserves are reduced by the amount of the loan ($76,000)

Balance Sheet of a Bank (partial)			
ASSETS	**=**	**LIABILITIES & NET WORTH**	
Cash	$ 10,000	Capital Stock	$ 250,000
Property	240,000	Demand Deposits	171,000
Legal Reserve	19,000		
Excess Reserves	0		
Loan	76,000		

The money supply has been increased since a new demand deposit has been created from the excess reserves held by the bank. The loanee's IOU has replaced the excess reserves and he will write checks to pay for a new car or whatever. As the checks covering the entire loan are cleared, the demand deposits will fall back to the pre-loan amount, but the new money has been used to purchase goods and services in the economy**—increased Money Supply**.

Balance Sheet of a Bank (partial)			
ASSETS	**=**	**LIABILITIES & NET WORTH**	
Cash	$ 10,000	Capital Stock	$ 250,000
Property	240,000	Demand Deposits	95,000
Legal Reserve	19,000		
Excess Reserves	0		
Loan	76,000		

The bank will need to wait for new demand deposits before it can make any more loans. It does not have any excess reserves.

Transaction 7: Repaying a Loan

When customers repay loans, the opposite happens—**money supply is decreased**. If the loan is repaid in a lump sum, the Loan asset account returns to zero, the demand deposit of the loanee (used to pay the debt) is reduced by the amount of the exchanged IOU. Money supply decreased because the loanee has given up money (from his checking account) but reclaiming his IOU which is not money. The new total for Demand Deposits will mean $ 3,800 in legal reserve and $ 15,200 in excess reserves.

Balance Sheet of a Bank (partial)			
ASSETS	**=**	**LIABILITIES & NET WORTH**	
Cash	$ 86,000	Capital Stock	$ 250,000
Property	240,000	Demand Deposits	19,000
Legal Reserve	3,800		
Excess Reserves	15,200		
Loan	0		

Transaction 8: Buying Government Securities

When a bank buys Government bonds from the public, the effect is the same as lending the money. Assume we have the data after Transaction 5, and the bank buys a government bond from a bond dealer. It gets an asset—Securities in the amount of $50,000. It gives the bond dealer $50,000 in a demand deposit, which rises to $145,000.

Balance Sheet of a Bank (partial)			
ASSETS	**=**	**LIABILITIES & NET WORTH**	
Cash	$ 10,000	Capital Stock	$ 250,000
Property	240,000	Demand Deposits	145,000
Legal Reserve	19,000		
Excess Reserves	76,000		
Securities	50,000		

As the checks drawn on the demand deposit of the bond dealer are cleared, the demand deposits will fall back to the pre-loan amount, but the new money has been used to obtain for the bank an asset**. Bond Purchases from the public (like a bond dealer) increase the money supply in the same way as lending to the public. Securities (not money) are exchanged for Demand Deposits (new money).**

Transaction 9: Selling Government Securities

When a bank sells government securities to the public, the money supply is decreased. The securities (not money) is exchanged for money coming out the economy, since buyers are writing checks or giving up their cash.

AP Macroeconomics
Chapter 14 p.296-301

The Banking System: Multiple Deposit Expansion

The commercial banking system can create money, by a multiple of its excess reserves. Multiple lending is possible even though each bank in the system is limited by the dollar amount of their own excess reserves.

Three assumptions in this discussion:

1. Reserve Ratio—20% 2. All banks "loaned out" 3. New loans are deposited in another bank.

Bank	Acquired Reserves and deposits	Required Reserves	Excess Reserves	New Money Created
Bank A	$100.00	$20.00	**$80.00**	$80.00
Bank B	80.00	16.00	64.00	64.00
Bank C	64.00	12.80	51.20	51.20
Bank D	51.20	10.24	40.96	40.96
Bank E	40.96	8.19	32.77	32.77
Bank F	32.77	6.55	26.22	26.22
Bank G	26.22	5.24	20.98	20.98
Bank H	20.98	4.20	16.78	16.78
Bank I	16.78	3.36	13.42	13.42
Bank J	13.42	2.68	10.74	10.74
Bank K	10.74	2.15	8.59	8.59
Bank L	8.59	1.72	6.87	6.87
Bank M	6.87	1.37	5.50	5.50
Bank N	5.50	1.10	4.40	4.40
Other Banks	21.97	4.40	17.57	17.57
Total Amount on Money Created				**$400.00**

The Money Multiplier

• **As an entire system, $400.00 of new money was created by the initial deposit of only $100.00, $80.00 of which was the excess reserve. The $400.00 is a multiple of the $80.00—5 times the initial excess reserve amount.**

• The **Money Multiplier** or demand-deposit multiplier exists because the reserves and deposits lost at one bank are received by another, magnifying excess reserves into a larger creation of demand-deposit money.

√ **m = 1/R** monetary multiplier equals the reciprocal of the Reserve Requirement

m = 1/R
m = 1/.20
m = 5

√ Finding the maximum amount of new demand deposit money (D) by using:

D = E x m maximum new money equals excess reserves multiplied by the money multiplier

D = E x m
D = $80 x 5
D = $400

• **Complications**:
Currency Drains—some borrowers want cash instead of DD
Excess Reserves—do banks fully loan out excess?

AP Macroeconomics
Chapter 15, p. 304-313

Objective Of Monetary Policy

• The fundamental **objective of monetary policy** as practiced by the Federal Reserve Banks… is **to assist the economy in achieving a full-employment, noninflationary level of total output.**

• The **FED uses its tools** to alter the economy's money supply to stabilize aggregate output, employment and the price level.

• **Monetary policy** entails increasing the money supply during a recession to stimulate spending, and to restrict it during inflation to constrain spending.

Tools of Monetary Policy

Open Market Operations

The FED acts as the buyer and seller of US government securities. It is the most important and most used tool of monetary policy.

Open Market Operations	Buying Securities		Selling Securities	
Commercial Banks	√ CB gives up part of its holdings of securities to FED	√ FED pays for these securities by increasing the reserves of CB	√ FED gives up securities to CB	√ CB reserves are reduced in their account with FED
The Public	√ Customer gives up security to FED and gets a check drawn on FED account; ; customer deposits check in CB	√ CB collects check from FED in form of increased reserves	√ FED sells securities to customer who pays with a check drawn on their account at CB	√ FED collects the check drawn on CB and reduces the reserves held.

Effects:

Buying Securities…FED is potentially increasing the money supply by providing more excess reserves for money creation. When the banks loan out their excess, they create new demand deposits

Selling Securities…FED is potentially decreasing the money supply by providing fewer excess reserves for money creation. Lower bank reserves means that the banking system is restricted in the amount of new money creation.

Bond Prices and Interest Rates…bond prices and interest rates are inversely related.

• When FED is buying bonds, the demand for them increases: **price of bonds rise and their interest rates fall.** Lower interest rates causes banks and other bond holders to sell them to the FED.

• When FED is selling bonds, the increase in the supply of bonds in the market, causes **price of bonds to fall and their interest rates to rise.** Higher interest rates causes banks and other bond holders to buy them from the FED since bonds are now a better investment.

The Reserve Ratio

The FED control the ratio of legal reserve to demand deposits. This tool aids in maintaining confidence in the "fractional" banking system .

Raising Reserve Ratio	Lowering Reserve Ratio
• Increases the amount of $ required to be withheld from loaning and investment activity.	• Decreases the amount of $ required to be withheld from loaning and investment activity.
• Diminishes the ability of a bank to make new loans and increase the money supply—lower excess reserves are now available.	• Increases the ability of a bank to make new loans and increase the money supply —greater excess reserves are now available
• Banks would need to receive new demand deposits or they may be forced to foreclose on loans to be compliant.	• Banks can issue more loans if they have customers willing and able; they may have new funds for investments

The Discount Rate

The FED can make short-term loans to its member banks. It will act as the "lender of last resort".

Raising the Discount Rate	Lowering the Discount Rate
• CB will be discouraged to borrow at higher rates	• CB will be encouraged to borrow at lower rates
• CB will not increase their excess reserves	• CB may choose to increase their excess reserves
• Money creation will be decreased because fewer new loans are given	• Money creation could be increased because more new loans are given

Easy Money policy:

Goal:	Cheap, available credit	Increase the money supply	
Actions:	:• FED will buy government bonds from banks and the public	• FED will lower the legal reserve ratio	• FED will lower the discount rate charged to member banks
Results:	√ Increase the bank excess reserves, and **banks can make more loans.**	An increase in the money supply will lower the interest rate, causing Investment to increase and **equilibrium GDP to rise.**	The amount of the change will be dependent on the size of the **Income Multiplier (1/MPS)**

Tight Money policy:

Goal:	Restriction of credit, higher costs	Decrease the money supply	
Actions:	:• FED will sell government bonds from banks and the public	• FED will raise the legal reserve ratio	• FED will raise the discount rate charged to member banks
Results:	Decrease the bank excess reserves, and **banks will refrain from making new loans** as old loans are repaid.	√ A decrease in the money supply will raise the interest rate, causing **investment to decrease**, with the resulting lower aggregate demand restraining demand-pull inflation	The amount of the change will be dependent on the size of the **Income Multiplier (1/MPS)**

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Relative Importance:

√ **Central bank borrowing by commercial banks at discount rate is very small**, mostly in response to open market operations involving buying and selling of bonds

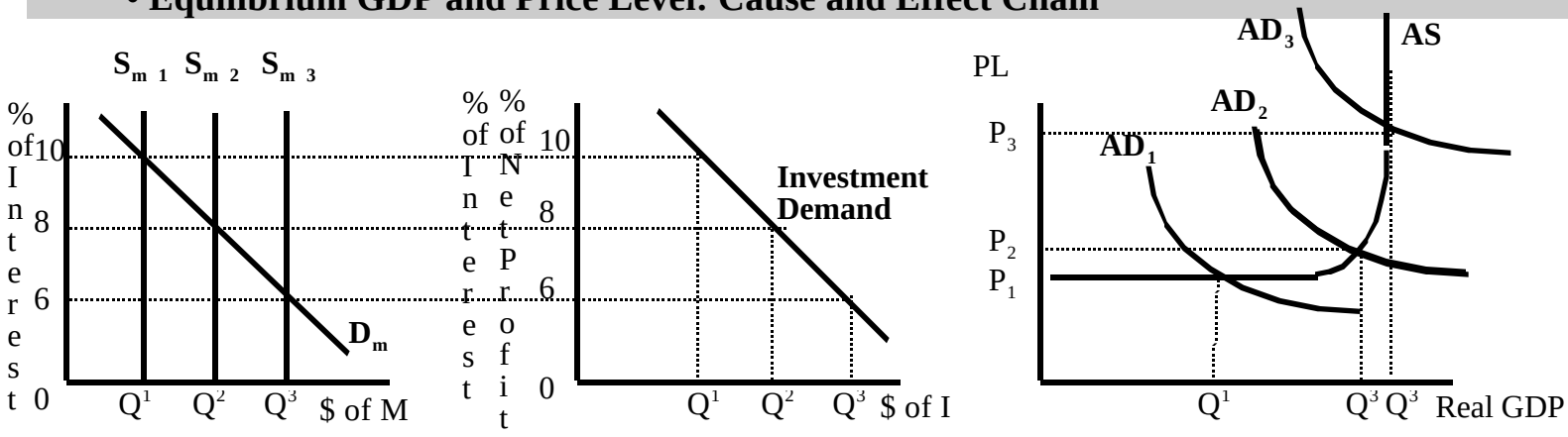
√ The **effectiveness** of the discount rate as a tool depends on the **initiative of the commercial banks to increase reserves and make loans**

√ **Changes in the reserve requirement is rare** since it has immediate effects on the cash balances held by the FED for commercial banks; this can lower profit if the rate is increased.

√ **The use of open market operations is the quicker tool to use and the method that has also immediate effect**. In today's money markets, the Federal Open Market Committee (FOMC) meets every 6 weeks to debate and set interest rates. They will often change the Federal Funds Rate which is an interbank overnight rate.

AP Macroeconomics
Chapter 15, p.313-318

• Equilibrium GDP and Price Level: Cause and Effect Chain



The Money Market **Investment Demand** **Equilibrium GDP and Price Level**

• The **Money Market** is where the demand for money and the supply of money are used to determine quantity of money and a % of interest stated as a real % of interest. In Chapter 10, we learned that real rates of interest is important in investment decisions.

√ Recall from Chapter 13 that the **total demand for money is related to transaction and asset demand**. The transaction demand is directly related to the level of GDP and the asset demand is related inversely to the interest rate since the rate is the opportunity cost of holding money. An increase in GDP will shift D^m to the right and a decline in GDP will shift to the left.

√ The **vertical S^m is some fixed amount of money determined by the FED**. The interest rate does not determine the location of S^m though the FED's monetary policy can have some effect.

• **Investment Demand** shows the inverse relationship between the interest rate and the $ of investment undertaken. We assume that investment decisions are more likely to the influenced by interest rates changes than consumption spending is influenced. As the rate changes, the $ amount of investment changes in the opposite direction.

• **Equilibrium GDP and the Price Level** shows that investment spending changes influence the position of the AD curve. Lower interest rates cause more investment spending which raise the AD since Investment is a component of the AD. Higher interest rates cause lower investment spending which lowers AD.

Monetary policies for Recession and Inflation

Easy Money Policy	Tight Money Policy
Problem: Unemployment and Recession	Problem: Inflation
↓	↓
FED buys bonds, lowers reserve requirement, or lowers the discount rate	FED sells bonds, raises reserve requirement, or raises the discount rate
↓	↓
Excess Reserves increase	Excess Reserves decrease
↓	↓
Money supply rises	Money supply falls
↓	↓
Interest Rate Falls	Interest Rate rises
↓	↓
Investment Spending increases	Investment Spending decreases
↓	↓
Aggregate Demand increases	Aggregate Demand decreases
↓	↓
Real GDP rises by a multiple of the increase in investment	Inflation decreases as the price level falls

Refinements and Feedback

• **Policy Effects:**

√ The **steeper the D^m** curve, the larger will be effect of any given change in the money supply upon the rate of interest.

√ Any given change in the interest rate will have a larger impact upon investment—and hence the equilibrium GDP—the **flatter the investment-demand curve**.

√ A specific change in monetary policy will be **most effective** when the demand curve for money and the investment demand curve is relatively flat.

• **Feedback Effects:**

√ **Interest rate**, working through the investment-demand curve, is an important determinant of equilibrium GDP.

√ The **level of GDP** is a determinant of the equilibrium interest rate.

√ This link is related to the transaction component of money-demand that depends directly on the level of nominal GDP.

√ Result: The increase in the GDP which an easy money policy brings about will in turn INCREASE the demand for money, tending to partially offset or blunt the interest-reducing effect. **OR**

√ Result: The tight money policy will tend to reduce the GDP, and this will DECREASE the demand for money and tend to dampen the initial interest-increasing effect of the tight money policy.

• **Monetary policy and Aggregate Supply**

√ The effect will depend on where initial and changed equilibrium points are located on the aggregate supply curve. **Movement within the horizontal range of AS will gain full benefit of multiplier without inflation.** If economy is at near or full employment, changes in AD will have a limited effect.

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• Strengths of Monetary Policy

√ Speed and flexibility (even on a daily basis with actions of the FOMC)
√ Isolation from political pressure (works more subtly, more politically palatable)
√ Successes of 80's and 90's:

1. monetary policy cure for 13.5% inflation in 1980 to 3.5% in 1983
2. monetary policy moves ended 1990-91 recession since huge budget deficitsnegated fiscal policy curves
3. current FED and FOMC policy to "foresee" inflation and use monetary policy as preventive instead of curative has given us the longest period of prosperity in our this century.

• Shortcomings and Problems

√ Less Control? The ease of money transfer, E cash and smart cards, and the flow of money through global markets can complicate monetary policy-making

√ Cyclical Asymmetry: Easy money policy is not as easy to affect! Banks are not forced to make loans when excess reserves rise. This may mean that moving the economy out of recession and low employment may be more difficult than "cooling off" the economy.

√ Changes in velocity: An easy money policy will increase velocity (turnovers) since the cost of holding money is lower. A tight money policy will work in the opposite direction.

√ Investment impact: Factors such as business conditions or other incentives play a part in where the investment-demand curve is set.

√ Interest as Income: interest is inversely related to interest-sensitive consumer goods and investment for capital goods, but households and businesses are also recipients of interest income which will influence spending.

• For those who pay interest as an expense, a rise in interest rates reduces spending and a fall in interest rates increases spending.

• For those who earn interest as income, a rise in interest rates increases spending, while decline will reduce spending.

Recent Focus: The Federal Funds Rate

The **Federal Funds Rate is the interest rate which banks charge one another on overnight loans.** The FOMC has recently used this rate to effect changes in monetary policy.

But…the FED does not set the Federal Funds rate or prime rate. Each is established by the **interaction of lenders and borrowers**. The FED can change the supply of excess reserves in the banking system and so it can obtain the market rates it wants.

• To **increase** the Federal Funds rate, the FED sells bonds, excess reserves are reduced, lessening the amount available for overnight loans. This rises the Federal Funds Rate. The lower excess reserves also means less borrowing and less growth in demand deposits. Other rates (prime for example) rise as well.

• To decrease the Federal Funds rate, the FED buys bonds, excess reserves are increased, increasing the amount available for overnight loans. This lowers the Federal Funds Rate. The higher excess reserves may mean more borrowing and growth in demand deposits. Other rates fall as well.

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Monetary Policy and International Trade

√ In chapter 12, we learned Fiscal Policy may be **weakened** by an accompanying **net export effect** which works through change in (a) interest rates (b) in international value of the dollar (c) exports and imports.

√ With Monetary Policy, the **net export effect** works to **strengthen** monetary policy actions. Exchange-rate changes which occur in response to interest-rate change act to increase the effect.

Monetary Policy and Net Export Effect

Easy Money Policy	Tight Money Policy
Problem: Unemployment and slow growth	Problem: Inflation
↓	↓
Easy money policy (lower interest rate)	Tight money policy higher interest rate)
↓	↓
Decreased foreign demand for dollars	Increased foreign demand for dollars
↓	↓
Dollar Depreciates	Dollar Appreciates
↓	↓
Net Exports Increase	Net Exports Decrease
↓	↓
Aggregate Demand Increases	Aggregate Demand Decreases
↓	↓
Effect: Strengthens Easy Money	Effect: Strengthens Tight Money

√ Monetary policy can also work to aid in **reducing trade deficits** since an easy money policy and lower interest rates causes net exports to increase and this aids in moving the trade balance closer to equality.

√ But…a tight money policy with higher interest rates causes net exports to decrease and this will push the trade deficit higher.

And so… Easy money Policy alleviates a trade deficit, but aggravates a trade surplus.

Tight money policy aggravates a trade deficit, but alleviates s a trade surplus.

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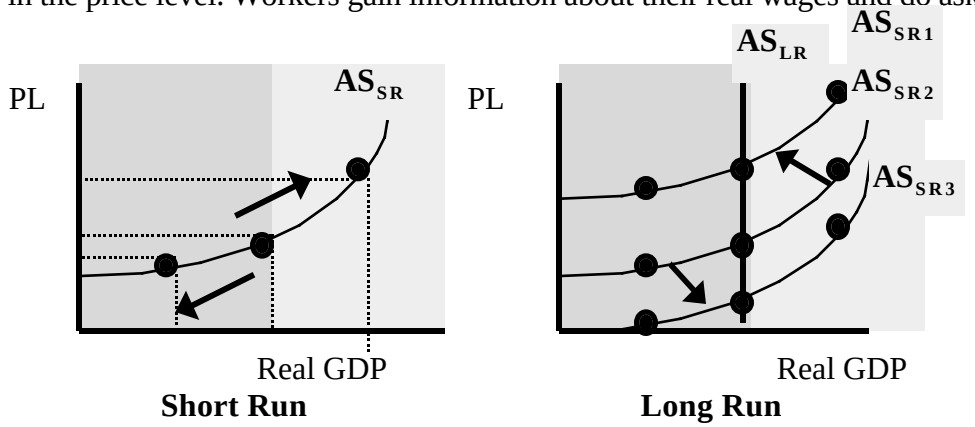
Extending Aggregate Supply Analysis

Short run : period in which nominal wages (and other input prices) remain fixed as the price level changes. In the short run, workers may not be aware that inflation has affected their real wages and they do not adjust their labor decisions. Long -term union contracts are also a cause of this short run occurrence.

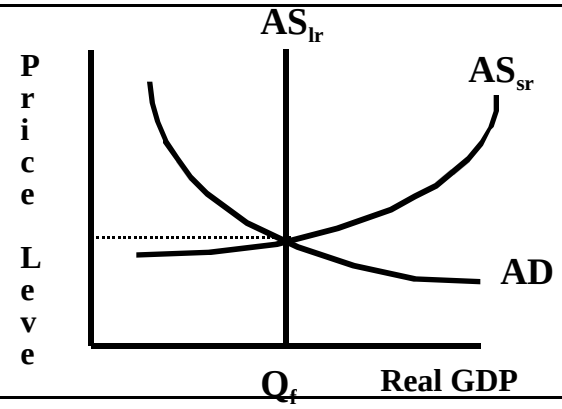
Long run : period in which nominal wages (and other input prices) are fully responsive to changes in the price level. Workers gain information about their real wages and do ask for higher wages to adjust.



Short Run **Long Run**

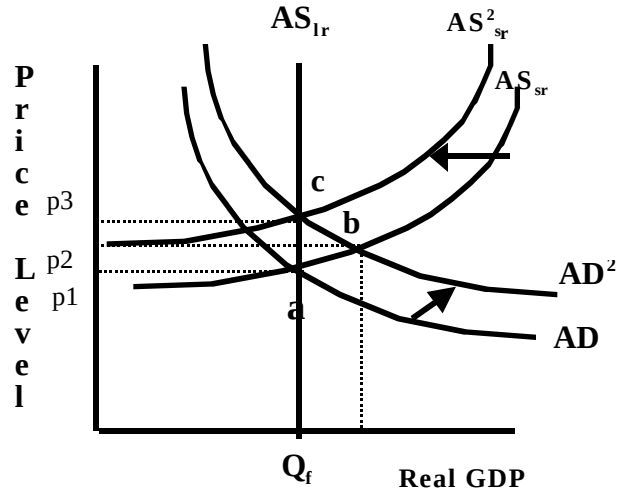
Short Run AS curve is positively sloped because nominal wages stay constant as PL changes. Increases in the price level will move along AS_{sr} and show changes in the Real GDP.

Long Run curve is vertical because nominal wages eventually change by the same amount as change in the PL. A price level change will move the AS curve leftward and a new equilibrium is established.
Connecting the dots will give us the vertical AS_{lr}



Equilibrium

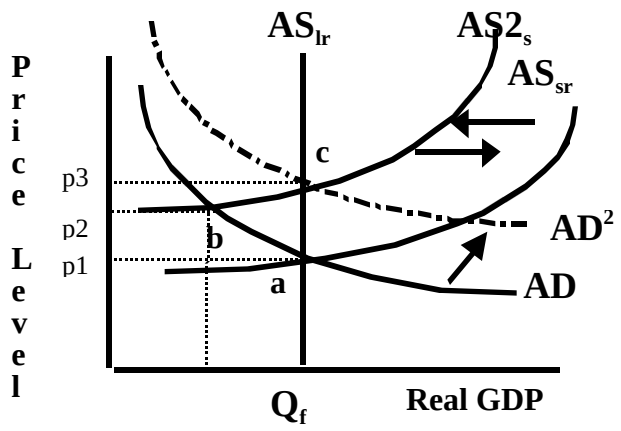
in the extended AD-AS model occurs at the intersection of AD and the long run AS and the Short AS. **Q_f is the amount of Real GDP.**



Demand Pull Inflation:

Short Run Increase in AD shows b as the new output and price level at p2

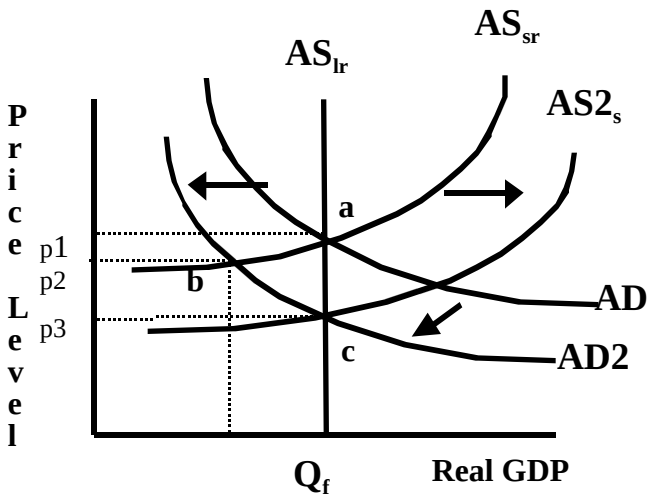
Long Run: Nominal Wages rise and AS moves to left and GDP returns to previous level, But…Pl rises even more to p3!



Cost Push Inflation:

Leftward Shift in AS_{sr} shows b as the new output and price level at p_2 caused by a change in input prices.

If government tries to push economy to full employment by pushing AD to dotted line, an inflationary spiral will occur…p_3 at Q_f.
If government lets the recession take its course, nominal wages will fall and return to a…p_1 at Q_f.



Recession

Leftward Shift in AD shows b as the new lower output and price level at p_2 caused by a lower level of spending.

This decline in the price level will eventually shift the AS_{sr} to $AS2_{sr}$. Price level declines to p_3 and Q return to Q_f at c.

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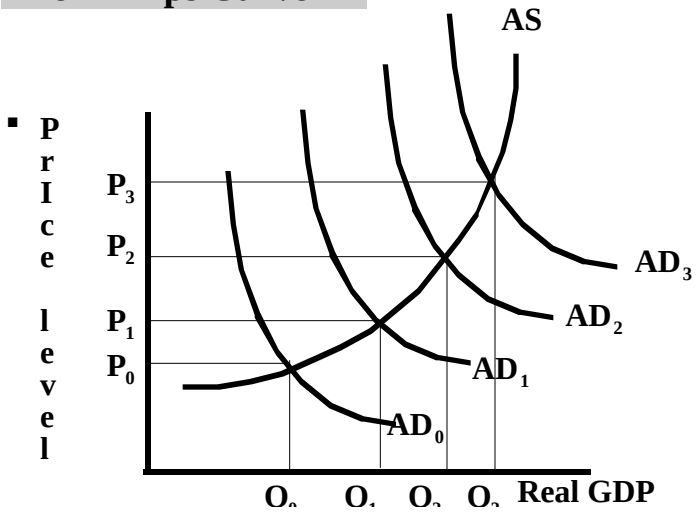
The Phillips Curve



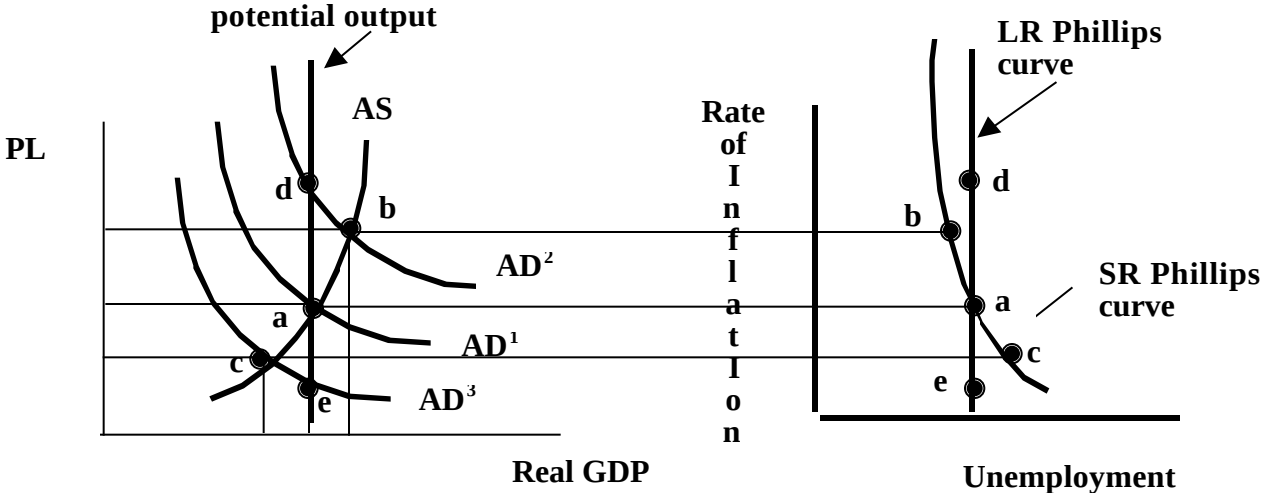
Basic Idea:

• Larger the increase in AD, the higher the rate of inflation and the greater the increase in Real GDP.

• Real GDP and unemployment rate are inversely related, so…

• the opportunity cost of reducing unemployment is higher inflation and the opportunity cost of reducing inflation is higher unemployment

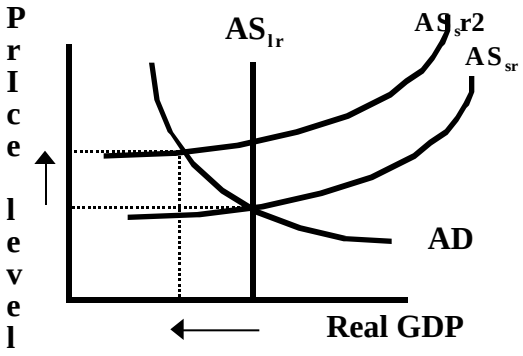
Given AS_{sr}, high rates of inflation should be accompanied by low rates of unemployment



- **In the short run**, changes in aggregate demand are movements along the short-run aggregate supply curve
  - If Aggregate Demand moves upward (point c to a), price level rises and Real GDP rises. This is reflected as a new point on the short-run Phillips curve showing higher rate of inflation and higher unemployment.
  - If AD moves down (point b to a), price level falls and Real GDP falls. This is reflected as a new point on the short-run Phillips curve showing lower rate of inflation and lower unemployment.
- **In the long run**, the actual price level equals the expected price level and output is at potential output with unemployment at its natural rate. This occurs at points a, d and e on the LR Phillips curve.
  - To compensate for a higher than expected price level, (expansionary gap) Labor shortages and dissatisfaction with lower REAL wages will lead to higher wages in the next round of negotiation. The SR AS curve will shift up (due to higher costs) to coincide with point d returning the economy to its potential output. The higher AD here will have no lasting effects since the price level increase is not matched by a decline in employment.
  - To compensate for lower than expected price level, (recessionary gap) Labor surpluses and firms gaining advantage in labor negotiations will force lower wage rates. The SR AS curve will shift right (due to lower costs) to coincide with point e returning the economy to its potential output. Both price level and unemployment fall.

Stagflation… suggests that the Phillips curve shifted to a less desirable position that negates the tradeoff between inflation and unemployment. Examine Figures 16-8 showing that in many years of 1970's and early 80's the economy experienced increasing inflation and rising unemployment

Aggregate Supply Shocks… may be one explanation. Rapid and significant increases in resource prices which push AS to the left. The OPEC-induced price increases for oil in the 1970's are an example. Agricultural problems, depreciated dollar, a rise in wages following the wage-price control of mid 70's combined with declining productivity also caused the situation.



A leftward shift of AS_{sr} will cause the price level to increase and decrease Real GDP causing unemployment.

In the later 80 and 90's, the effect of high unemployment and hence smaller increases in wages were coupled with foreign competition that held down prices and wage. This seemed to be the demise of stagflation. Deregulation and the decline of OPEC's power pushed the rates back closer to the earlier tradeoff picture. The **As_{sr}** shifted back to its old position and the **AS_{lr}** adjusted.

Natural Rate Hypothesis

This idea questions the inverse relationship between % of inflation and % of unemployment. The Natural Rate believers view that the economy is stable at the natural rate of unemployment. Recall that the rate of unemployment existing when cyclical unemployment is zero is the full-employment rate—the economy operates at its potential output. They feel that the incorrect Phillips Curve view led to misguided attempts by government to push the unemployment rate below its natural rate causing inflation.

• **Adaptive Expectations view:** their view will use a Long-Run Vertical Phillips curve. (Figure 16-9, p. 340) Expansionary monetary and fiscal policy may temporarily boost profits, output and employment. But nominal wages will rise, reducing profits and thereby negating the short run gain.

• **Rational Expectations Theory:** It contends that businesses, consumers, and workers understand how government policies will affect the economy and anticipate the impacts in their own decision making. Fiscal and monetary actions will quickly be read and businesses, consumers, and workers think rationally and caused the opposite effect intended.

Changing Interpretations

The Phillips curve relationship of the 1960's is in disfavor. Most economists today accept the idea of a short-run tradeoff perhaps lasting a few years. Most believe that adverse supply shocks can cause periods of rising unemployment and rising inflation.

The decade of the 1990's when the US enjoyed the greatest period of economic growth in its history, unemployment reached an 30-year low of 3.7%, well below that most economists judge as the natural rate. Inflation was tamed in the mid-decade period and remained low till the new century. Some suggest that the FED under the wisdom of Alan Greesnspan learned more about controlling inflation. Others suggest that the surplus budgets of the later 1990's coupled with the gains in productivity helped the economy to grow at low rates of inflation and higher rates of employment.

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Supply-Side Economics

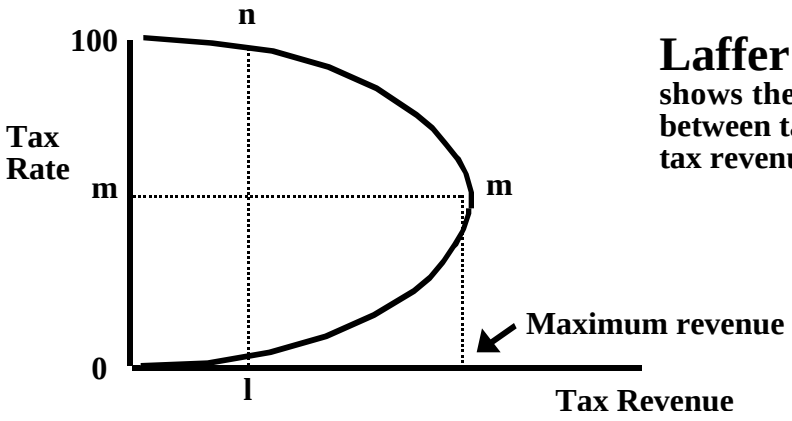
• Supply siders manipulate aggregate supply by enacting policies designed to stimulate **incentives to work, to save and invest** (including measures to encourage entrepreneurship).

√ These may include **tax cuts** which they feel will increase disposable incomes, thus increasing household saving and increase the profitability of investments by businesses.

√ **Marginal tax rates** are most relevant to decisions to undertake additional work; after-tax earnings are the incentive. Lower marginal tax rates will induce more work and this will increase productive effort.

√ **Too many transfer disincentives erode incentives to work**. Unemployment and welfare programs are cushioning the effect of these troubles and act as disincentive.

Recently legislation has changed the face of the welfare programs across the states.



Laffer Curve…
shows the relationship between tax rates and tax revenues

Up to point m, **higher tax rates will result in larger tax revenues**. But still higher tax rates **will adversely affect incentives to work and produce**, reducing the size of the tax base and reducing tax revenues. Lower tax rates will lessen tax evasion and avoidance, and reduce government transfer payments.

BUT…

—**some people will work more** if taxes are lowered

—**demand-pull inflation likely** since tax cuts will stimulate AD and overwhelm effect on AS

—Laffer assumed we were **at point n** (above the ideal); **others disagree** where the economy; in 1993 the increases in marginal tax have generated large increases in tax revenues.

Overregulation

Government regulation is target of supply-siders; it adversely affects productivity and As_{lr}

√ **Industrial regulation**—gives firms monopoly power and keeps costs higher

√ **Social regulation**—pollution, product safety, worker health, equal access to opportunity will cost more

Reagonomics

• **Substantial deregulation, a 25% tax cut over 3 yrs** (lowered rate from 50% to 28%)

• Large decline in inflation and interest rates, long peacetime expansion, surge in entrepreneurship

BUT…**little evidence that program led to positive impacts on savings and investments**; savings rate dropped and productivity did not rise after 1983. Laffer curve predictions did not occur; high deficit spending for defense caused the crowding out effect.

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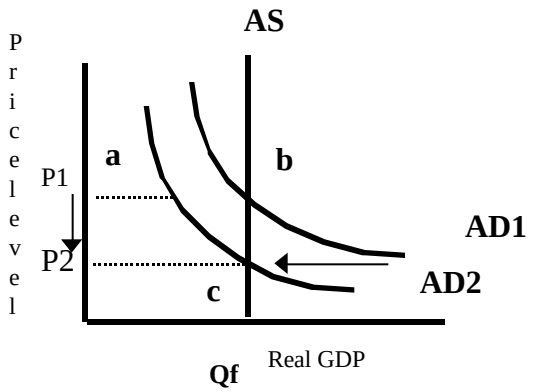
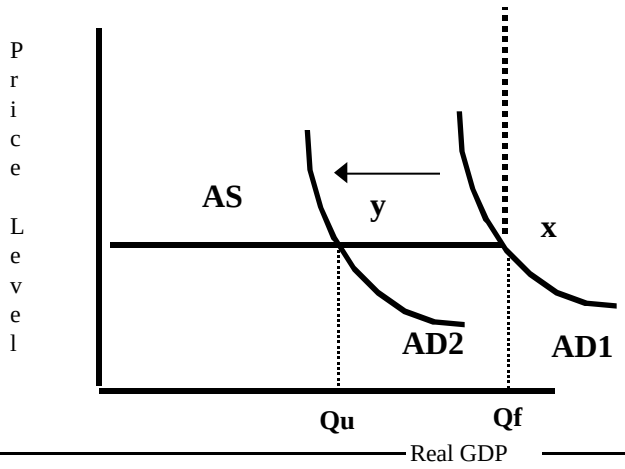
Disputes in Macro Theory and Policy

Classical View:
- AS is vertical and determines the output at Q_f
- AD is stable and determines the price level as long money supply is stable
- If AD is unstable, prices and wages adjust
- Here the shift to AD^2 shows that the price level declines



Keynesian View:
- Product prices and wages are downward inflexible
- AS is horizontal up to Qf then becomes vertical
- AD is unstable; changes in AD will have no effect on PL
- Movement from AD^1 to AD^2 reduces the Real GDP but the PL remains constant.



What causes Macro Instability?

Mainstream View: Keynesian Based
- Changes in Investment spending which changes in AD and/or Supply shocks which change AS
- Aggregate Expenditures: C+G+Ig+Xn = GDP
- Investment spending subject to "booms and busts" and the effect of the multiplier cause AD to swell and can lead to demand-pull inflation
- External events or artificial supply restrictions boost prices of key imported resources and raise per unit cost. AS decreases and destabilizes the economy and causes cost-push inflation.
- Changes in the money supply will affect the supply of money changing interest rates, changing investment undertaken, affecting GDP and AD. Keynesians view monetary policy as a stabilizing factor.

Monetarist View: New Classical
- Focus on money supply; markets are competitive; market system gives a high degree of macro stability.
- Accept classical view of flexible prices and wages AND no government interference.
- Claim that government has caused the instability—minimum wage laws, pro-union legislation, farm price supports, and pro-business monopoly legislation—most limiting competition.
- **Equation of Exchange: MV = PQ**
  - MV represents total amount spent (M is money supply; V is velocity)
  - PQ represents total amount received by sellers (P is price level, Q is physical volume)

The dollar value of total spending has to equal the dollar value of total output.

• Velocity is stable—the factors altering it change gradually and predictably. People have a stable desire to hold money relative to other financial assets, holding real assets or buying current output. The factors depend on the level of nominal GDP**. GDP/M = V.**

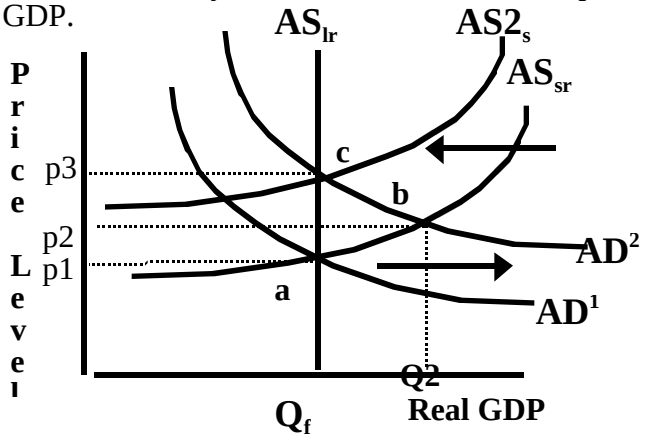
• If V is stable, changes in M directly lead to change in nominal GDP (PxQ). When M rises, and V is stable, then people use the additional M to buy the current output stimulating directly GDP.

• Inappropriate monetary policy is the single most important cause of macroeconomic instability. A change in the money supply directly affects AD, causing demand-pull inflation or deflation.

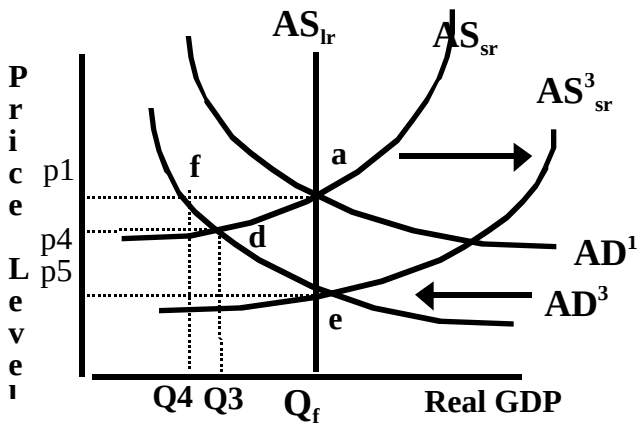
Self Correcting Economy

New Classical View—Adaptive and Rational Expectations

Economy self corrects when unanticipated events divert it from its full-employment level of Real GDP.



Effect of an increase in AD-Expansionary Gap Movement from AD1 to AD2 first moves economy from a to b. Price level rises and then self-correction to c by shifting left to AS2.



Effect of an decrease in AD—Recessionary Gap Movement from AD1 to AD3 first moves economy from a to d. Price level falls and Then self-correction to e by shifting right to AS3.

Rational Expectation Theory (RET) believes that unanticipated price-level changes cause change in real output in the short run but not in the long run. Market participants immediately change their actions in response to anticipated price level change such that no change in real output occurs.

Mainstream economic view of Self-correction

Mainstream economists accept some ideas of new classicals, but <u>they maintain that wages and prices are downward inflexible</u>. There is ample evidence that this is true especially for long periods. It may take the economy years to move from recession back to full-employment output. They believe it will take fiscal and monetary help..

• In **the second diagram**, when AD shifts to AD3 (caused by, they say, a change in investment). The Price Level is stable at P1 so the economy will not move to e as the RET says. Mainstream believe it will move as if on a <u>horizontal AS curve</u> and move to f. Real output will decline to a recessionary level of Q4.

• **Downward inflexible wages** are caused by wage contracts and minimum wage laws. Firms do not wish to reduce wages and risk low morale, or losing a skilled worker to another firm.

√ **Efficiency Wage theory** is another idea here. Greater work effort, lower supervision costs, reduced in job turnover are the benefits of paying higher wages for the firm.

√ **Insider-Outsider relationships** may also keep wages up. Insiders (those not losing work because of recession) would resent the outsiders (those losing work during recession) who might be induced to return to work for lower wages. Harassment and lack of cooperation might result.

• **Self-correction might occur** but it will take much longer than RET.

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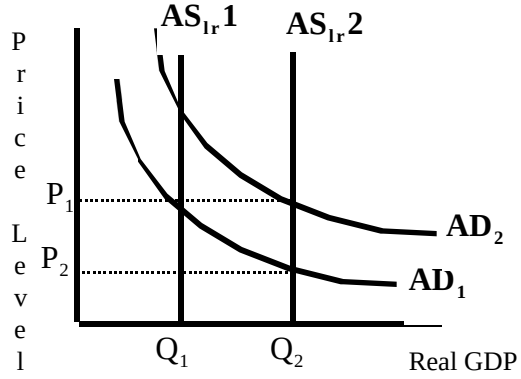
Policy rules or Discretionary fiscal and Monetary Policy?

Policy rules: supported by Monetarists and Rational Expectationists

- **Policy Rules** will reduce instability; preventing government from "managing" AD.
- **Monetary rule:** direct the Fed to expand the money supply each year at the same annual rate as the typical growth of the economy's productive capacity. The FED would use its tools to ensure that the nation's money supply grows steadily by some percent each year.



An increase in the money supply to match the increase in potential GDP would shift **AD rightward to AD_2** at the same pace as the shift in long-run **AS to $As_{lr}2$. Thus the economy would experience growth without** inflation or deflation.

- **Other points of discussion for policy vs. fiscal or monetary include**:
  - √ Changes in Money supply directly change AD according to monetarists.
  - √ RET says that monetary or fiscal policy is "read" by the public and they react to cause the opposite effect with instantaneous market adjustments. They want balanced budgets.
  - √ Government should be passive not intentionally running deficits or surpluses.
  - √ Monetarists oppose deficits and feel crowding out effect is the result of such. Printing money to finance expansion (like a change in Money Supply) is only temporary and a boost in wages would soon follow to combat the inflation.

In Defense of Discretionary Stabilization Policy

Mainstream Economists **oppose** a monetary rule and a balanced-budget amendment. They believe that fiscal and monetary policy are tools for achieving and maintaining full employment, price stability and economic growth.

√ **Monetary rule is flawed** because velocity is not always stable as monetarists claim and a change in the MS in the quantity equation (MxV=PxQ) does not always make AD change is velocity could also be moving.

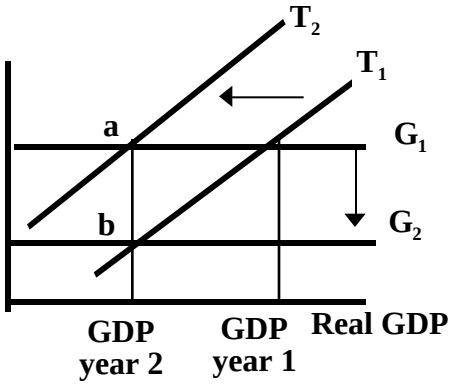
√ Mainstream feel that the FED's tight money policy can affect investment spending to put a stop to demand-pull inflation caused by an move in AD beyond the range of AS movement. An easy money can expand the economy in the same way.

√ Mainstream uses fiscal policy to keep recessions from deepening and inflation from expanding. Crowding out in their view is not a serious problem. It should be held in reserve and used if monetary policy is not effective.

√ The effects of **a requirement to balance the budget** during a recession are shown here. A decline in Real GDP will automatically create a budget deficit of ab. If required to balance the budget the government must do one of the following:

- shift the tax line upward to T_2 so that it intersects at a
- shift the government spending line downward to G_2 to intersect at b
- enact a combination of tax increases and spending cutsso that the new lines intersect at GDP year 2.

Each of these measures is contractionary and will further reduce Real GDP.



Success with monetary and fiscal policy actions are:

- Tight money policy dropped inflation from 13.5% in 1980 to 3.2% in 1983.
- Expansionary fiscal policy reduced unemployment from 9.7% in 1982 to 5.5 in 1988.
- Easy money policy help the economy recover from 1990-91 recession.
- The prosperous mid 1990's have been in part attributable to good policy management. The FED has been diligent in watching for signs of inflation yet keeping the economy on the long-term growth path.

Summary of Alternative views

		New Classical Economics		
Issue	**Keynesian Based**	**Monetarism**	**Rational expectations**	**Supply-side Economics**
View of the private economy	Potentially unstable	Stable in long run at natural rate of unemployment	Stable in long run at natural rate of unemployment	May stagnate without work, saving and investment incentives
Cause of observed stability of private economy	Investment does not equal saving causing changes in AD; AS shocks	Inappropriate monetary policy	Unanticipated AD and AS shocks in the short run	Changes in AS
Appropriate macro policy	Active fiscal and monetary	Monetary rule	Monetary rule	Policies to increase AS
How changes in money supply affect the economy	By changing interest rates, changing investment and real GDP	By directly changing AD which changes GDP	No effect on output because price-level changes are anticipated	By influencing investment and thus AS
View of velocity of money	Unstable	Stable	No consensus	No consensus
How fiscal policy affects the economy	Changes AD and GDP via the multiplier	No effect unless money supply changes	No effect on output because price-level changes are anticipated	Affects GDP and price level via changes in AS
View of Cost push inflation	Possible (wage-push, AS shock)	Impossible in long run in absence of excessive money supply growth	Impossible in long run in absence of excessive money supply growth	Possible (tax-transfer disincentives, higher costs due to regulation)

Think About This!

Explain the difference between "active" discretionary fiscal policy advocated by mainstream economists and "passive" fiscal policy advocated by new classical economists.

Explain " The problem with a balanced-budget amendment is that it would, in a sense, require active fiscal policy—but in the wrong direction—as the economy slides into recession.

AP Macroeconomics
Chapter 19, p. 387-388

Deficits and Debt: Definitions

A **budget deficit** is the amount by which the government expenditure and the government revenue in a particular year.

The **National or Public Debt** is the accumulated deficits and surpluses of the government over time. This is only debt of the US government, as most state and local governments by law must balance their budgets.

Budget Philosophies

In Chapter 12, we learned that discretionary fiscal policy is a tool of economic stabilization. Is it good to incur deficits? surpluses? or must we balance the budget each year.

• **Annually balanced budget**…is not economically neutral. It is pro-cyclical.

√ Think what would happen to the power of Congress to stabilize the economy in a period of recession. Running a deficit can aid the economy by adding to AD raising the level of Real GDP. Losing the boost of a deficit budget could deepen a recession or make it longer.

√ In a period of inflation, a surplus budget could alleviate some pressure on the price level as the level of government spending and/or the rise in tax rates would reduce AD and lower the level of Real GDP. An annually balanced budget would make inflation worse since government spending or tax rates would not change.

√ Some may argue that this type of budget would be good because deficits are politically motivated. In election years, every candidate wants to win votes and is unlikely to think of the fiscal irresponsibility. They do not want voters to realize that "enjoy now, pay later" is the strategy. Some think that deficit spending is out of control. There has been support for the Balanced Budget amendment mostly from "uninformed" politicians.

• **Cyclically balanced budget**…balances the budget not over 12 months, but over the business cycle. This would be counter-cyclical.

√ In the recessionary phase, government would lower taxes and increase spending, incurring a deficit.

√ At the peak where inflation might be present, government would raise taxes and reduce spending, and use the surplus to retire the debt incurred in the previous recessionary cycle.

√ The problem is that the business cycle phases are not of equal duration or magnitude. The need for deficit may be greater than the need for surplus. The business cycle is not really predictable.

• **Functional Finance**…a balanced budget is not as important as the purpose of Federal Finance—to provide for noninflationary full employment.

√ The focus of concern is the devastating effects of recession and inflation. Deficits and surpluses are not important, and if they happen so what?

√ The best way to finance government spending depends on economic conditions. The goal is to achieve macroeconomic stability and growth.

• **Worries about Functional Finance**…**overcome!**

√ US tax system is based on personal and corporate income tax which automatically rises when the economy expands. A deficit that succeeds in raising GDP will be self-liquidating.

√ Taxing power of Congress and the FED ability to increase the money supply can finance any deficit.

√ A large Federal debt is less burdensome that some think.

Public Debt: Facts and Figures

• **Table 19-1**, p. 388 shows the numbers! By 1997, the Federal National Debt was $5.4 Trillion. GDP for that year was $8.1 Trillion. (in current dollars)

• **Why so large?**

√ Wars—In WW2, most of the war bills were paid by selling bonds to the public. This also diverted some of the earned income from spending and held down the price level and aided in allocating resources to war goods.

√ Recessions—the built-in stabilizer function of the federal budget causes tax collections to fall in times of recession. If spending is not cut, deficits occur. The Great Depression was such a time. If the funding for the New Deal had not been assigned, the misery level probably would have gone even lower.

√ Tax cuts—the Economic Recovery Tax Act of 1981 under the Reagan Administration did not make offsetting reductions in spending. This condition caused a structural deficit. When the tax cuts took effect, the recession of 1980-82 generated rapidly increasing annual deficits. As spending rose, the tax revenue did not reach the amount needed even when the economy was close to full employment. Later, huge sums were needed to bail out the failed savings and loan associations.

√ Lack of political will—politicians find it hard to cut programs like entitlements. Differing views of various constituent groups make it hard to convince anyone that tax increases are needed to fund the programs everyone wants. The Deficit-reduction Act passed in 1993 shows that some ideas can work. With its passage, the US has enjoyed two years of surplus. But now, the argument centers over what to "fund now with our new available funds"!

• **Why no fear?**

√ Debt and GDP—Though the debt has increased, the relative size of the debt to GDP is much less in 1997 than in 1950. The absolute growth figure (doubled in 10 years) ignores the growth in wealth and productivity of US economy.

√ International Comparison—US is good compared to others in terms of % of GDP.

√ Interest Charges—interest is now fourth largest items in Federal Budget, and it fluctuates with interest rates. Taxes equal to 3.0% of GDP are used to pay interest on national debt.

√ Ownership—Figure 19-1, p. 391 shows that less than 2/3 of public debt is held outside the Federal government; more than 1/3 is held internally by Federal agencies and FED. Foreigners hold 23%.

√ Accounting and Inflation — numbers are not really what they appear! Use of a capital budget accounting plan would reduce the size of the deficit, counting infrastructure spending as growth in capital. Use of depreciation counting methods would also change the numbers. Inflation benefits debtors. A rising price level reduces real values and creates an "inflationary tax" to reduce deficits and public debt.

• **Why be fearful?**

√ Interest rates are a key determinant of Investment and are critical to economic growth.

√ When the federal government deficit spends and adds to the national debt, they must finance this activity by selling government bonds. These bonds are attractive to investors since the US government supports them – they compete for savings dollars and hence fewer dollars reach the financial market for investment loans. This will raise interest rates in the loanable funds market and have a negative effect on investment spending which can lower Real GDP. This is called **CROWDING OUT**.

√ In the early 1980's, when huge deficit spending needed to be financed, the US Treasury sold many bonds, raising market interest rates. Foreigners wanting to gain the advantage of the higher interest rates, exchanged their currency for dollars causing the US currency to appreciate. That makes it more expensive for foreigners to buy our exports, but cheaper for our citizens to buy imports. This caused a huge negative Trade Deficit—Net exports were negative. Foreign investment in the US increased and we "surrendered" some control of our economy to foreigners. Further, return on foreign investment in US flows back abroad.

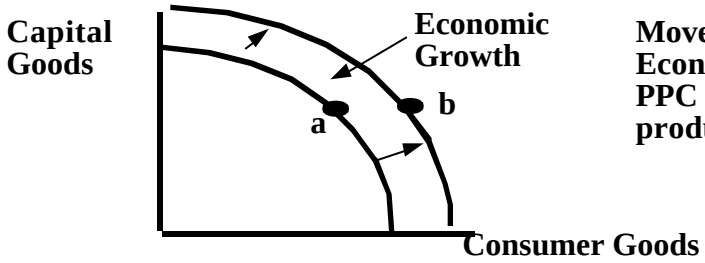
Think About It

Does it matter if the US government uses deficit spending to finance improvement in our infrastructure or to pay for items of current consumption like farm supports or retirement benefits?

AP Macroeconomics
Chapter 18, p. 368-382

Economic Growth

- **Growth Economics** examines factors which expand an economy's productive capacity over time.
- **Economic growth is defined and measured in two related ways:**
  1. the increase in real GDP which occurs over a period of time
  2. the increase in real GDP per capita which occurs over time
- Usually calculated in terms of annual percentage rates of growth, economic growth is widely accepted **economic goal**. A growing economy is in a superior position to meet new needs and resolve socioeconomic problems both domestically and internationally. Growth lessens the burden of scarcity. We can consume more while still increasing our capacity with new capital investment if the strategy is to encourage growth.
- Growth can be modeled using the **Production Possibility Curve**.

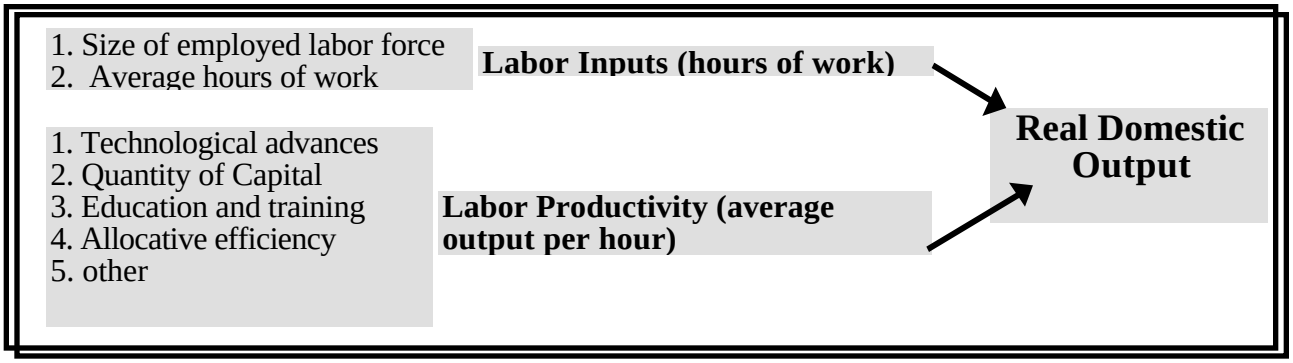


Movement from a to b shows Economic growth—a shift of the PPC reflected as a change in productivity.

• Ingredients of Growth

Supply factors:	quality and quantity of natural resources
	increases in quality and quantity of human resources
	increases in the stock of capital goods
	improvements in technology
Demand factor:	Full employment of resources which require a growing level of AD
Efficiency factor:	Productive Efficiency (least costly way)
	Allocative efficiency (society's optimal mix of products)

• Real GDP viewed as product of quantity of labor inputs multiplied by labor productivity.



Dennison Study

- Edward Denison examined sources of growth in US real national income, 1929—1982. This data is updated to 1997.

Sources of growth		Percent of total growth
(1) Increase in quantity of labor		33
(2) Increase in labor productivity		67
Technological advance	28	
Quantity of capital	20	
Education and training	12	
Economies of scale	8	
Improved resource allocation	8	
Legal-human environment & other	—9	

• The most evident conclusion from the data is **that <u>productivity growth</u>** has been **the most important force** underlying the growth of real domestic output and national income. Increases in the quantity of labor account for only about one-third of the increase in real national income over this period; the remaining two thirds is attributable to rising labor productivity. Here, again, technological advance is more the 40% of the gain.

• Over the last 130 years labor productivity has grown an average of 2.1% per year. Output per hour of work is about 15 times greater today than in 1870. Research like the Dennison study suggest that the quality of labor and capital is much more important than the quantity of these resources. Rates jumped after World War II continuing to about 1973. Growth was slow in the decade of the 1980's averaging less than 2% per year. But beginning in the mid 1990's, rates of growth rose as shown in this table.

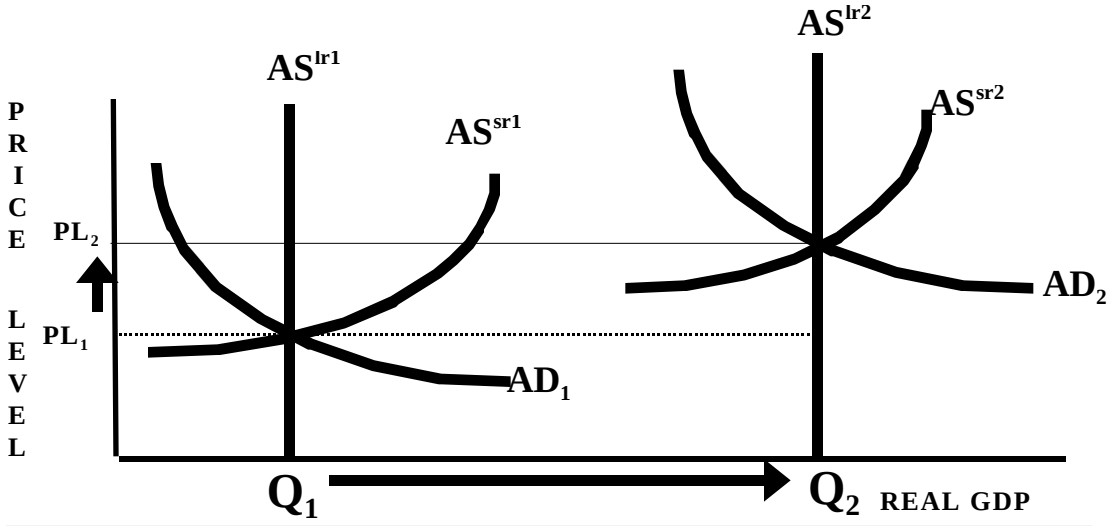
Years	Avg. Growth in Productivity	Annual Real GDP Growth
1973-81	0.7%	1.1%
1981-90	1.3%	1.8%
1990-96	1.2%	1.3%
1996	2.0%	
1997	1.9%	3.4%
1998	2.7%	6.1%
1999	2.5%	4.1%
2000	3.4%	4.1%
2001	2.0%*	0.3%*

* only 3 quarters

A "New Economy"?

Boosts in productivity rates rose based on innovations in computers and communications coupled with global capitalism. Stable energy pricing, increased research and development budgets, downsizing of corporate workforces, higher wages for college grads, baby boomers are more productive, expanding export markets are all reasons cited for the growth of the mid 90's period. Some economists like Paul Romer suggest a new model of growth emerging. Think back to the Waves of Innovation materials in Chapter 8. Has growth been spurred before by some new idea? Is there a New Economy as some has dubbed it? Only time will tell! **Maybe you will be the future economist that wins the Nobel Prize for explaining the New Economy Theory!**

Extending the AD-AS Model to Growth



Economic Growth in the Extended AD-AS model
Long run and short run Aggregate Supply has increased over time (AS^{LR1} to AS^{LR2} and AS^{SR1} to AS^{SR2}), while Aggregate Demand has shifted rightward. **These combined shifts show Economic Growth—increase in Real GDP to Q_2 accompanied by some degree of inflation to PL_2**

Growth in the US

- Growth in the US has been at the **annual average rate of 3.1%** since 1948.
- Real per capita GDP gain has been **nearly 2% annually** since then.
- The numbers **hide these facts**:
  - √ Improved products and services—a measure of improved well-being
  - √ Added Leisure time—average work week has been reduced from 50 hours per week to 40 or so.
  - √ Environmental effects—adverse effects on the quality of life may be the price we pay for economic growth
  - √ International Comparisons—US does not grow as faster as others, but we are already much bigger.

Growth Policies

- Demand Side—**fiscal and monetary policies** directed to insure full production and capital accumulation
- Supply Side—**education and training policies, tax policies, and other pro-growth initiatives** to raise productivity over time.
- Examples:
  - √ FED's monetary policy that has given the US low interest rates, low inflation, high employment and balance surplus government budgets
  - √ retraining of workers who have lost to foreign competition
  - √ tuition credits for college students—Hope Scholarship
  - √ IRA's and tax policies to encourage savings and investment
  - √ government spending for infrastructure and research
  - √ trade agreements which foster specialization and comparative advantage to expand trade

AP Macroeconomics
Chapter 37, p. 764-771

Facts of International Trade

• The US enjoys an increasing amount of trade. Exports in 2000 were 12% of GDP at about $1.1T; Imports in 2000 were about $1.4T. The US has had in the past 20 years a trade imbalance or deficit ($375 B in 2000). The US dollar is strong against many foreign currencies making it cheap for American citizens to buy foreign goods.
• The US is dependent on the world economy for a number of items, yet the world is as well dependent on the US. (p. 698)
• International trade is a substitute for the international mobility of resources.
• International trade is subject to political interference and controls.

Basis Of Trade

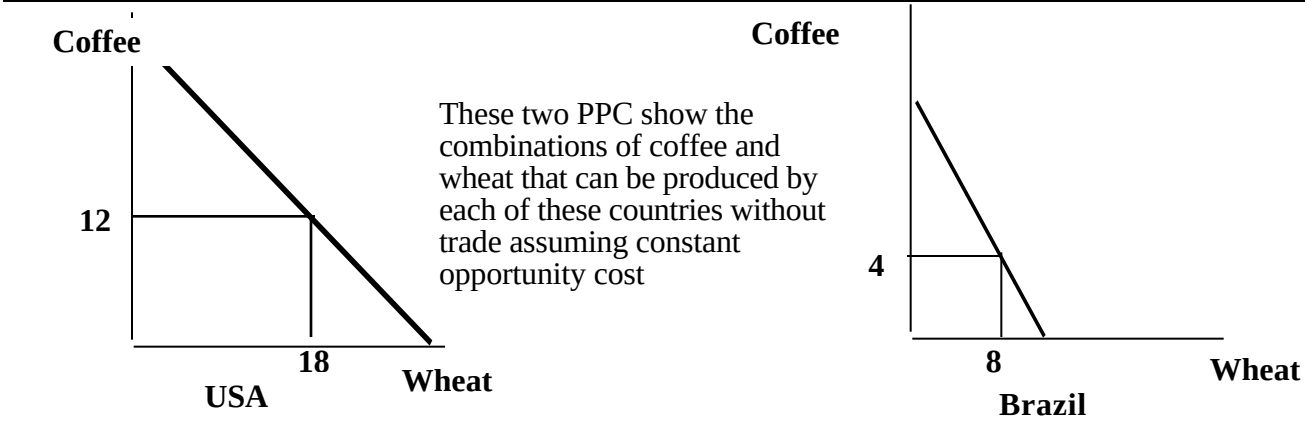
• Why nations trade is related to two points:
√ Distribution of economic resources is uneven.
√ Efficient production requires different technologies and combinations of resources
√ Capital intensive vs. labor intensive vs. land intensive?

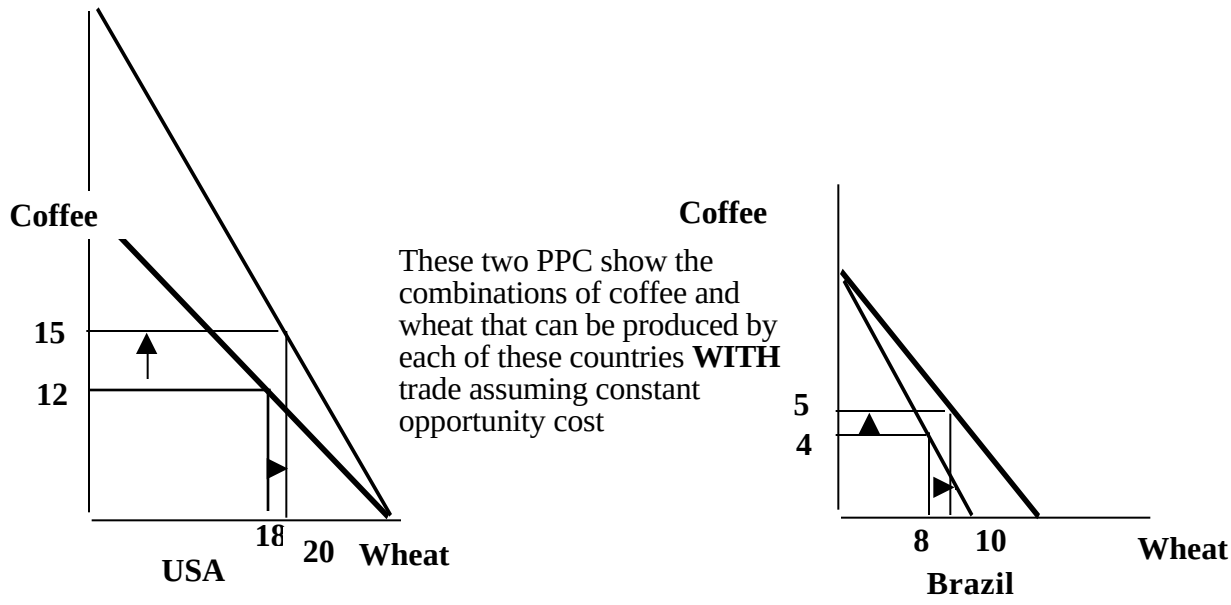
• Specialization And Comparative Advantage

√ **Total output would be greatest when each good is produced by the nation which has the lower opportunity cost.**
√ **Specialization** can be profitable in terms of output. It results in **more efficient allocation** of world resources.
√ **Comparative Advantage is the ability to produce an item at a lower opportunity cost.** Resources are scarce, so that one can only produce more of one product by taking the resources away from another. It means that total world output will be greatest when each good is produced by the nation which has the lowest domestic opportunity cost.
√ As a result of trade, countries that trade products based on their own specialization will have more of **BOTH** products (produced and traded for)

Graphical analysis:

Country	Outputs before Specialization	Outputs after Specialization	Amt exported (—) or imported (+)	Outputs available after trade	Gains from Trade
Country A	18 wheat	30 wheat	—10 wheat	20 wheat	2 wheat
	12 coffee	0 coffee	+ 15 coffee	15 coffee	3 coffee
Country B	8 wheat	0 wheat	+ 10 wheat	10 wheat	2 wheat
	4 coffee	20 coffee	—15 coffee	5 coffee	1 coffee





√ **Terms of Trade**…the exchange ratio between goods traded. This ratio explains how the gains from international specialization and trade are divided among the trading nations; it depends on the world supply and demand for the two products. Because the US in this example wants both coffee and wheat, it must get more than a unit of coffee for each unit of wheat or it will not benefit since 1W=1C. Brazil must get one unit of wheat by exporting some amount less than two units of coffee since 1W=2C.

1W=1C in USA and 1W=2C in Brazil are the cost conditions

Let's say that world supply and demand for the products sets terms of trade at 1W=1.5C. The USA exports 10 units of wheat to Brazil and in return Brazil exports 15 tons of wheat to USA. Will the countries trade at that exchange ratio?

Note in the graphs above, USA gained 3 coffee and 2 wheat with trade; Brazil gained 1 coffee and 2 wheat. Is this better than when they ignored each other and produced only domestically? Check the table!

Note that each country has expanded its production possibility frontier with trade. This is the equivalent of having more and better resources or discovering new production methods.

Who Benefits and Who Is Hurt By Foreign Trade

BENEFITS

Consumer Benefits

• Consumers benefit from foreign trade by being able to consume products that would not be available without trade.

• Consumer benefit by being able to purchase many products at lower cost than if they were no foreign trade both because of the lower prices of imported goods and because of competition from imports holds down the prices of domestic goods.

Producer and worker benefits

• Domestic industries that use imported inputs benefit.

• Export industries, their workers, and their suppliers benefit from the sales to markets abroad.

LOSSES

Import-competing firms' and workers' losses

• Competition from imports can be costly to the domestic firms and their workers in lost sales and lower prices.

• These costs are similar to the costs of competition from new domestic producers or from new substitute products.

Mobility of capital and labor

• The costs of free trade to import-competing firms and workers can be minimized by mobility of capital and labor to alternative employments.

Domestic consumers of export industries

The export of part of the output of an industry tends to raise the price of the good to domestic consumers.

AP Macroeconomics
Chapter 37, p. 775-783

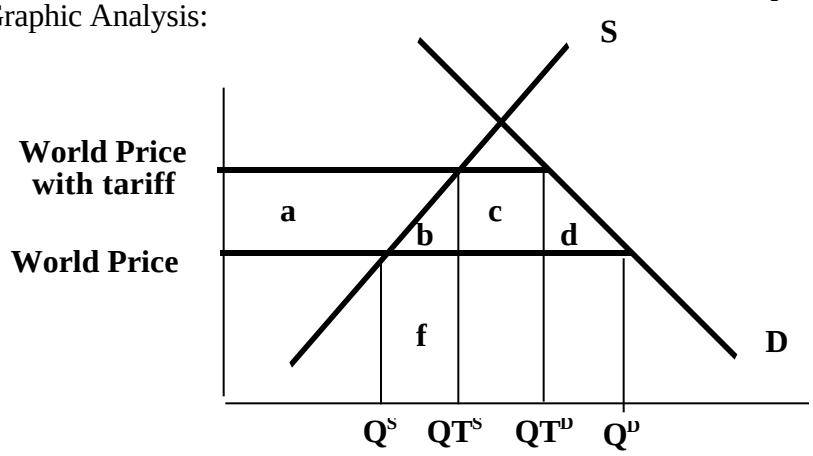
Trade Barriers

Revenue Tariffs	taxes placed on imported goods not produced domestically
Protective Tariffs	taxes placed on imported goods to shield domestic producers from foreign competition
Import Quotas	quantity restrictions on imported goods
Voluntary Trade Restraint	quotas that an exporting country places on its own products
Government Subsidy	payments to domestic companies which allow for production at lower cost
Non-Tariff Barriers:	
Product Standards and Regulations	health and safety rules to guarantee minimum standard of quality which are often disguising an import quota
Red Tape	bureaucracy involved in exporting products to a particular country; licensing is an example
Dumping	charging a price for exported good that is below the actual cost of production to undercut the competition

Economic Impact of Tariffs

• Direct Effects:
√ decline in consumption since the price is higher with less competition
√ increased domestic production spurred by higher price in the market
√ decline in imports caused by lower consumption of foreign good
√ government gains portion of what consumers lose by paying more for the good
• Indirect Effect:
√ promote the expansion of inefficient industries which do have the comparative advantage and cause the contraction of those industries which do have the comparative advantage.

Graphic Analysis:



a—increase in producer surplus
b&f—increase in producer revenue just offset by increased cost of production
c—gov't revenue from the tariff
d—loss of consumer surplus
b—higher marginal cost
b& d—net welfare loss to society

Economic Impact of Quotas

• An import quota is a legal limit on the quantity of a particular commodity that can be imported.
• Same effect as tariffs except that the revenue is not gained by the domestic government but rather is a gain for the foreign producer.
• Generally, an import quota will shift the supply curve to the left causing a higher price than the world price.

CASE FOR PROTECTIONISM	
√ Military self sufficiency	√ Increase Domestic employment
√ Diversification for stability	√ Infant-Industry Argument
√ Protection against "dumping"	√ Cheap Foreign Labor

INTERNATIONAL TRADE POLICIES	
√ Reciprocal Trade Act of 1934	√ General Agreement on Tariffs and Trade (GATT)
√ European Economic Community(EU)	√ North American Free Trade Zone (NAFTA)

World Trade Organization now provides the legal and institutional foundation for the multilateral trading system. It offers the platform for trade relations between member countries through collective debate. It handles disputes involving dumping and export subsidies between trading partners.

AP Macroeconomics
Chapter 38, p. 789-794

Balance of Payments and Foreign Exchange

• A **nation's balance of payments** records all the transactions that take place between its residents and the residents of a foreign nation. These include: merchandise exports and imports, tourist spending, purchases and sales of shipping and insurance services, interest and dividend payments received, purchases and sales of financial or real assets, and so on.

A simplified balance sheet for the US might look like this:
Figures shown in billion (1996)

Current Account				
US goods export	$+612			
US goods imports	—803			
Balance of Trade in Merchandise		$—191		
US exports of services	+237			
US imports of services	—157			
Balance of Trade in Services		+80		
Balance on goods and services			$—111	
Net Investment income	+3			
Net Transfers	—40			
Balance of Current Account				**$ —148**
Capital Account				
Foreign purchases of Assets in the US	+157			
US purchases of Assets Abroad	—376			
Balance of Capital Account				**+141**
Official Reserves Account				**+ 7**
				$ 0

The current account includes:
• Balance Of Trade in merchandise exports and imports ($—191)
• Balance Of Trade in services exports and imports ($+80)
• Net Investment income is the difference between dividend and interest payments coming into and going out of the US ($+3)
• Net transfers reflects net aid and grants both public and private between the US and the rest of the world. This would include foreign aid given to foreign nations by US and pensions paid to people living abroad. ($—40)

The capital account includes:
• Real investments are direct purchases of real estate and businesses.
• Financial investments are direct investments like stocks and bonds that reflect indirect claims on physical assets.
• Purchases of US assets would create a demand for dollars and would be a positive entry in the capital account.($+157)
• Purchases of foreign assets by Americans would create a supply of dollars in exchange for foreign currency and would be a negative entry in the capital account. (—$376).

The official reserve account represents:
• the exchange of foreign exchange reserves when the balance on the capital account does not offset the balance on the current account.
• A positive number indicates an export of foreign exchange reserves which represents a decrease in US official holdings of foreign exchange. (+$7)

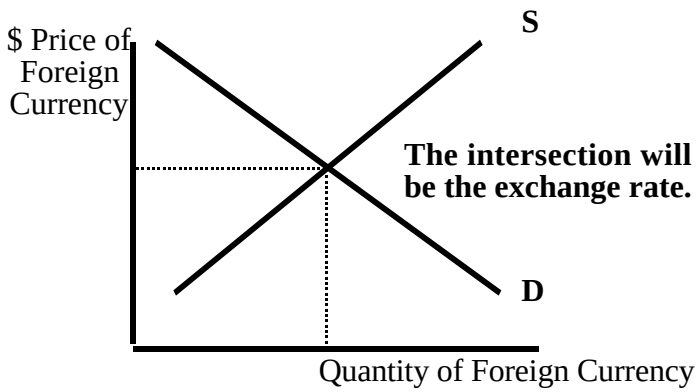
Balance of Payments:
• A **deficit** occurs when the sum of the balances of the current and capital accounts is **negative**
• A **surplus** occurs when the sum of the balances of the current and capital accounts is **positive**
• Persistent deficit balance of payments are trouble since reserves were be depleted in time. Some policies to correct the problem are: currency depreciation, trade barriers, reduction of budget deficits to lower interest rates, easy money policy by the FED and others.

AP Macroeconomics
Chapter 38, p. 794-801

Foreign exchange is foreign currency needed to carry out international transactions. The exchange rate is the price of one currency measured in terms of another currency. Rates are determined by the interaction of the households, firms, private financial institutions, government and central banks that buy and sell foreign exchange.

Freely floating (flexible) exchange rates

The **demand** for any currency is downsloping because as the currency becomes less expensive to obtain, people will be able to buy more of that nation's Goods & Services and therefore need more of that currency.
The **supply** is upsloping because as its price rises, holders obtain more of their currencies more cheaply and will want to buy more important goods and therefore give up more of their currency to obtain other currencies.

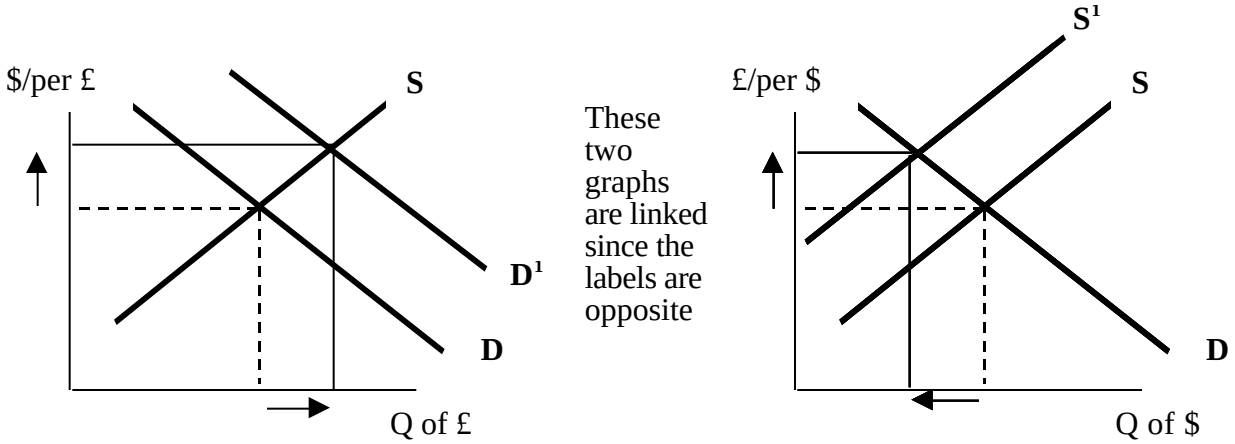


- **Depreciation**—value of currency has fallen; it takes more units of that country's currency to buy another's currency. Example: If the Rate had been $2 for 1 £ but now the rate is $3 for 1£, the dollar has depreciated.

- **Appreciation—** value of currency has risen; it takes fewer units of that country's currency to buy another's currency. Example: If the Rate had been $2 for 1 £ but now the rate is $1 for 1£, the dollar has appreciated.

Determinants of exchange rates:	Example	Depreciates	Appreciates
Changes in tastes	Japanese autos decline in popularity in US	Japanese Yen	Dollar
	German tourists flock to US	German mark	Dollar
Changes in relative incomes	England is in recession; its imports decline while the US is growing increasing US imports	Dollar	Br. Pound
Changes in relative prices	Germany experiences a 3% inflation rate compared to US 10% inflation rate	Dollar	German Mark
Changes in relative interest rates	FED raises interest rates while Bank of England does not	Br. Pound	Dollar
Speculation	Currency traders believe France will have more rapid inflation than US	French Franc	Dollar
	Currency traders think that German interest rates will plummet relative to US. rates	German mark	Dollar

Graphic analysis:

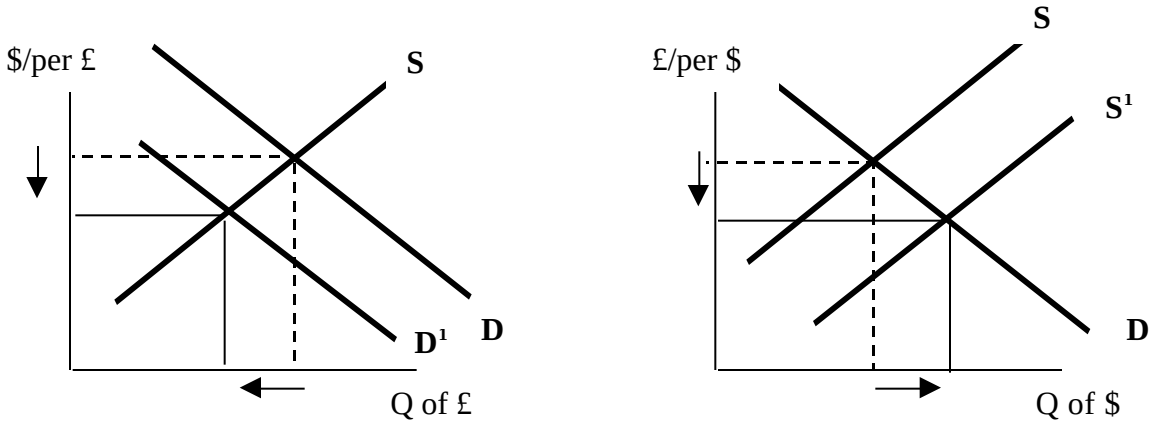


• England is in recession; its imports decline while the US is growing increasing US imports.

• The DEMAND for £ increases, causing the $/per £ to rise and Q of £ to increase showing that the dollar has depreciated.

• The SUPPLY for $ decreases, causing the £/per $ to rise and Q of $ to decrease showing that the dollar has depreciated.

Any <u>increase in the demand</u> for foreign exchange or any <u>decrease in its supply</u>, other things constant, causes an increase in the number of dollars required to purchase one unit of foreign exchange, which is a <u>depreciation</u> of the dollar.



• FED raises interest rates while Bank of England does not.

The DEMAND for £ will decrease causing the $/per £ to fall and Q of £ to fall showing an appreciation of the dollar.

The SUPPLY for $ will increase causing the £/per $ to fall and Q of $ to rise showing an appreciation of the dollar.

Any <u>decrease in the demand</u> for foreign exchange or any <u>increase in its supply</u>, other things constant, causes a reduction in the number of dollars required to purchase one unit of foreign exchange, which is a <u>appreciation</u> of the dollar.

- **Appreciating (Strong) Dollar**—dollar is currently exchanging for more foreign currency.
  √ Imports are cheaper for Americans √ Exports are more expensive for foreigners

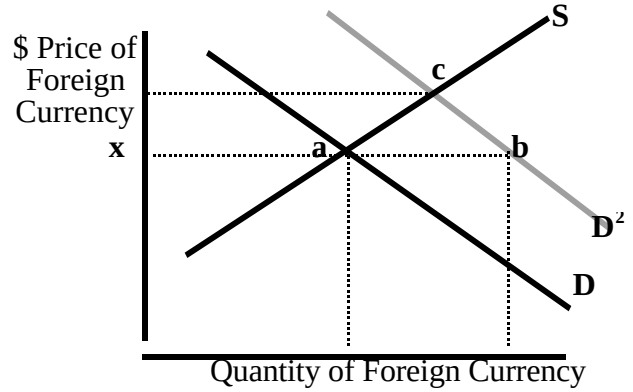
- **Depreciating (Weak) Dollar**—dollar is currently exchanging for less foreign currency.
  √ Imports are more expensive for Americans √ Exports are cheaper for foreigners

- **Strong dollar helps**: Businesses who import foreign goods for resale and American tourists and business people in foreign countries
- **Strong dollar hurts** : Business who export foreign goods for resale and American tourists and business people in foreign countries
- **Strong dollar makes the trade deficit worse since imports grow and exports decline.**

Flexible rates have the ability to automatically correct the imbalance in the balance of payments.
If there is a deficit in the balance of payments, this means that there is a surplus of that currency and its value will depreciate. As depreciation occurs, prices for goods and services from that country become more attractive and the demand for them will rise. At the same time, imports become more costly as it takes more currency to buy foreign goods and services. With rising exports and falling imports, the deficit is eventually corrected.

Using a Flexible Rate Exchange System

A shift in D to D^2 would cause a US balance of payments **deficit ab**; it would be corrected by a change in exchange rate noted at **c** which is higher than x



Disadvantages of Flexible Rate Exchange

1. Uncertainty and Diminished trade results if traders cannot count on future prices of exchange rates
2. Terms of trade may be worsened by a decline in the value of a nation's currency
3. Unstable exchange rates can destabilize an economy especially if exports and imports are a large part of the GDP.

Fixed Exchange Rates

- Rates that are pegged to some set value like gold or the US dollar.
- Official reserves are used to alleviate imbalance in balance of payments since exchange rates cannot fluctuate
- Trade policies must be used directly to control the amount of trade and finance
- Exchange controls and rationing of currency are bad for 4 reasons:
  1. distorts trade patterns,
  2. involves discrimination among importers,
  3. reduces freedom of choice by consumers,
  4. black market rates develop unless policed.
- Domestic macroeconomic adjustments are more difficult until fixed exchange. A persistent trade deficit may call for tight monetary policy and fiscal policies to reduce prices, which raises exports and reduces imports, but this can also cause recession and unemployment.