Notes for International Economy Midterm:

**Hubbard Chapter 1: Economics, Foundations and Models**

* Scarcity: The situation in which unlimited wants exceed the limited resources available to fulfill those wants.
* Economics: the study of the choices people make to attain their goals, given their scarce resources.
* Three important economic ideas:

1. People are rational. (Rational individuals weigh the benefits and costs of each action and they choose an action only if the benefits outweigh the costs.
2. People respond to incentives.
3. Optimal decisions are made at the margin. (Most decisions are not all or nothing. Marginal: an extra or additional benefit or cost of a decision. Economists reason that the optimal decision is to continue any activity up to the point where the marginal benefit equals the marginal cost MB=MC.) Marginal Analysis: Analysis that involves comparing marginal benefits and marginal costs.

* Three fundamental questions that every economy must answer.

1. What goods and services will be produced?
2. How will the goods and services be produced?
3. Who will receive the goods and services?

* Economic models: Simplified versions of reality used to analyze real-world economic situations.
* Market: A group of buyers and sellers of a good or service and the institution or arrangement by which they come together to trade.
* Trade-off: The idea that because of scarcity, producing more of one good or service means producing less of another good or service.
* Trade-offs force society to make choices like *What goods and services will be produced, How will they be produced, and Who will receive them*.
* The answer to the question of what will be produced is determined by the choices made by consumers, firms, and the government.
* In determining how to produce the goods and services, firms face a trade-off between using more workers or using more machines.
* Individuals with the highest income can afford to buy more goods and services. Should the government interfere to redistribute unequal incomes?
* To decide what, how, and who, societies organize their economies in two main ways:

1. Centrally Planned Economy: An economy in which the government decides how economic resources will be allocated.
2. Market Economy: An economy in which the decisions of households and firms interacting in markets allocate economic resources.

* Centrally planned economies are not successful in producing low-cost, high-quality goods and services. As a result, the standard of living is usually low, and they have always been dictatorships.
* Most Western economies are Mixed Economies: Most economic decisions result from the interaction of buyers and sellers in markets, but in which the government plays a significant role in the allocation of resources.
* Market economies tend to be more efficient than centrally planned economies.
* Productive efficiency: The situation in which a good or service is produced at the **lowest possible cost**. Results from competition among firms in markets.
* Allocative efficiency: when production reflects consumer preferences; every good or service is produced up to the point where the last unit provides a marginal benefit to consumers equal to the marginal cost of producing it. Results from competition and voluntary exchange so that firms produce the goods and services consumers want.
* Markets tend to be efficient because they promote competition and facilitate voluntary exchange.
* Voluntary exchange: The situation in a market when both the buyer and the seller of a product are made better off by the transaction.
* Competition will force firms to continue producing and selling goods and services as long as the additional benefit to consumers is greater than the additional cost of production.
* Some people do not think things should always be efficient if some people are always at a loss.
* Equity has to do with the fair distribution of economic benefits.
* There is often a trade-off between efficiency and equity.
* Economic models make economic ideas sufficiently explicit and concrete to be used for decision making by individuals, firms, and governments.
* Any model is based on making assumptions because models have to be simplified to be useful.
* Economic Variable: something measurable that can have different values, such as the wages of software programmers.
* Positive analysis: Analysis concerned with what is.
* Normative analysis: Analysis concerned with what ought to be.
* Microeconomics: the study of how households and firms make choices, how they interact in markets, and how the government attempts to influence their choices.
* Macroeconomics: The study of the economy as a whole, including topics such as inflation, unemployment, and economic growth.
* Invention versus innovation: An invention is the development of a new good or a new process for making a good. An innovation is the practical application of an invention (any significant improvement in a good or in the means of producing a good).
* A firm is an organization that produces a good or service for a profit.
* Revenue: Price per unit times the number of units sold.
* Profit: the difference between its revenue and its costs

**Chapter 2: Trade-offs, Comparative Advantage, and the Market System**

* Scarcity requires trade-offs. Goods and services and factors of production are scarce.
* People raise their standard of living through trade.
* A Production Possibilities Frontier is a simple economic model to measure firms’ trade-offs
* Production Possibilities Frontier: A curve showing the maximum attainable combinations of two products that may be produced with available resources
* All combinations on or inside the curve are attainable. Points inside the curve are inefficient, because they are not using all the available resources. Points on the curve are efficient, and points outside the curve are unattainable with the available resources.
* If we are on the PPF, moving up and down requires us to produce more of one thing and less of another.
* Opportunity Cost: The highest valued alternative that must be given up to engage in an activity.
* Most PPFs are curved. This is because as we move up or down the PPF, there are increasing marginal opportunity costs.
* This is because: the more resources devoted to any activity, the smaller the payoff to devoting additional resources to that activity.
* An increase in the available labor force and capital stock can shift the PPF outward for the economy.
* In addition, a technological advance in one field, such as auto building, can bow the curve out toward that product, while leaving the other product on the PPF the same.
* **Shifts in the PPF represent an economic growth because they allow the economy to increase the production of goods and services, which ultimately raises the standard of living.**
* Economic Growth: The ability of the economy to produce increasing amounts of goods and services.
* Trade: the act of buying and selling.
* Ultimately, we trade our services (our labor) for other goods and services.
* Trade makes it possible for people to become better off by increasing both their production and consumption.
* Absolute Advantage: The ability of an individual, firm, or country to produce more of a good or service than competitors using the same amount of resources.
* Even if your neighbor has an absolute advantage in producing everything, it is good for her to trade with you if you have a comparative advantage in something (it is a cheaper opportunity cost for you).
* It is worth trading when your neighbor has a different PPF slope/curve than you in different products.
* Comparative Advantage: The ability of an individual, firm or country to produce a good or service at a lower opportunity cost than other producers.
* The basis for trade is comparative advantages, not absolute advantages.
* Households and firms interact in two types of markets: product markets and factor markets.
* Product Markets: Markets for goods and services where firms are the suppliers and households are the consumers.
* Factor Markets: Markets for the factors of production (such as labor, capital, and natural resources). Households are the suppliers and firms are the demanders.
* In the **Circular Flow of** **Income**, there are two participating groups. Households, who use the income they receive from selling the factors of production to purchase the goods and services supplied by firms. Firms use the funds they receive from selling goods and services to buy the factors of production needed to make the goods and services.
* The Circular-flow Diagram shows the circular shape of the interaction of households and firms in factor and product markets. This model is simplified reality because it leaves other things out like government intervention, imports, and lenders from the financial system.
* Free Market: A market with few government restrictions on how a good or service can be produced or sold, or on how a factor of production can be employed.
* Adam Smith, 1776 author of An Inquiry into the Nature and Causes of the Wealth of Nations: argued for free markets in times of guilds who controlled the price and quantity of different goods (like shoes) allowed in the country at one time (protected them from lots of competition). Smith argues that people act in a rational, self-interested way with their money. He argued that consumer demand would control the market without guilds. Firms would be led by an “invisible hand” to supply the goods that consumers desired.
* Entrepreneur: Someone who operates a business, bringing together factors of production to produce goods and services. Also a risk taker and often innovator.
* Government has to provide secure rights to private property for a market system to work at all.
* Government can aid the working of the market by enforcing contracts between private individuals through an independent court system.
* Government provides legal environment for market system to succeed
* Property Rights: The rights individuals or firms have to the exclusive use of their property, including the right to buy or sell it.
* Intellectual property protected with patents. Books, films, and software receive copyrights.
* In many developing countries, the court systems lack this independence and will not provide a remedy if the government violates private property rights or if a person with powerful political connections decides to violate a business contract.
* If property rights are not protected, the production of goods and services will be reduced.
* The key role of markets is to facilitate trade.

**Chapter 3: The Interaction of Supply and Demand**

* The main factor in consumer demand is price.
* Quantity Demanded: The amount of a good or service that a consumer is willing and able to purchase at a given price.
* Demand Schedule: A table showing the relationship between the price of a product and the quantity of the product demanded.
* Demand curve: A curve that shows the relationship between the price of a product and the quantity of the product demanded.
* Demand curves always have downward slope
* Market demand: The demand by all the consumers of a given good or service during a certain period of time.
* Law of Demand: Holding everything else constant, when the price of a product falls, the quantity demanded of the product will increase, and when the price of a product rises, the quantity demanded of the product will decrease.
* Substitution Effect: The change in the quantity demanded of a good that results from a change in price making the good more or less expensive relative to other goods that are substitutes.
* The Income Effect: The change in the quantity demanded of a good that results from the effect of a change in the good’s price on consumer purchasing power.
* Purchasing Power: The quantity of goods that can be bought with a fixed income.
* Ceteris Paribus: The requirement that when analyzing the relationship between two variables-such as price and quantity demanded- other variables must be held constant.
* A shift of a demand curve is an increase or decrease in demand. A movement along the demand curve is an increase or decrease in quantity demanded.
* Variables that shift Market Demand:

1. Prices of related goods such as complements and substitutes
2. Income
3. Taste
4. Population and demographics
5. Expected future prices

* Substitutes: Goods and services that can be used for the same purpose
* Complements: Goods that are used together
* Normal Good: A good for which the demand increases as income rises and decreases as income falls.
* Inferior Good: A good for which the demand increases as income falls, and decreases as income rises.
* Trends and advertisements are two factors that can influence tastes.
* Demographics: The characteristics of a population with respect to age, race, and gender
* Consumers choose when to buy their products too if they expect different future prices.
* Quantity Supplied: The amount of a good or service that a firm is willing and able to supply at a given price.
* Supply Schedule: A table that shows the relationship between the price of a product and the quantity of the product supplied.
* Supply Curve: A curve that shows the relationship between the price of a product and the quantity of the product supplied.
* Supply curves are upward sloping.
* Law of Supply: Holding everything else constant, increases in price cause increases in the quantity supplied, and decreases in price cause decreases in the quantity supplied.
* Variables that shift supply:

1. Prices of inputs
2. Technological change
3. Prices of substitutes in production
4. Expected future prices
5. Number of firms in market.

* Input: Anything used in the production of a good or service.
* Technological Change: A positive or negative change in the ability of a firm to produce a given level of output with a given amount of inputs.
* Positive technological change occurs whenever a firm is able to produce more output using the same amount of inputs. This will happen when the productivity of workers or machines increases.
* Alternative products that a firm could produce are called substitutes in production.
* An increase in the price of a substitute in production will cause a decrease in production of the current good.
* Market Equilibrium: A situation in which quantity demanded equals quantity supplied.
* Competitive Market Equilibrium: market equilibrium with many buyers and many suppliers.
* If there is not market equilibrium, there will be a shortage or a surplus of goods.
* Surplus: A situation in which the quantity supplied is greater than the quantity demanded.
* Shortage: a situation in which the quantity demanded is greater than the quantity supplied.
* When there is a surplus, firms have unsold goods piling up, which gives them an incentive to increase their sales, by cutting prices. Cutting prices will increase quantity demanded.
* When there is a shortage, some consumers will be unable to obtain the product and will have an incentive to offer to buy the product at a higher price. A higher price will increase quantity supplied and decrease quantity demanded.
* In competitive market equilibrium, there will be no reason for the price to change unless either the demand curve or the supply curve shifts.
* It is the interaction of demand and supply that determines the equilibrium price, not firms or consumers.
* When demand shifts to the right more than supply, the equilibrium price rises. When supply shifts more than the demand curve, the equilibrium price falls.
* In a competitive market equilibrium, all consumers willing to pay the market price will be able to buy as much of the good as they want, and all firms willing to accept the market price will be able to sell as much of the product as they want.

**Chapter 4: Economic Efficiency, Government Price Setting and Taxes**

* Price Ceiling: A legally determined maximum price that sellers may charge. Rent control
* Price Floor: A legally determined minimum price that sellers may receive. Minimum wage
* Whenever the government intervenes, there are negative consequences, the economic surplus is reduced
* Marginal Benefit: The additional benefit to a consumer from consuming one more unit of a good or surplus **CHECK THIS IDEA**
* Consumer Surplus: The difference between the highest price a consumer is willing to pay and the price the consumer actually pays.
* The total amount of consumer surplus in a market is equal to the area below the demand curve and above the market price.
* Firms will supply an additional unit of a product only if they receive a price equal to the additional cost of producing that unit.
* Marginal Cost: The additional cost to a firm of producing one more unit of a good or service
* Producer Surplus: The difference between the lowest price a firm would have been willing to accept and the price it actually receives.
* A firm will receive a producer surplus up to the last unit, which costs the same as making it…so no surplus.
* The total amount of producer surplus in a market is equal to the area above the market supply curve and below the market price.
* Consumer surplus in a market is equal to the total benefit received by consumers minus the total amount they must pay to buy the good. Net benefit.
* In a competitive market, the demand curve is the marginal benefit curve to consumers, and the supply curve is the marginal cost curve to the firms.
* To achieve economic efficiency, the marginal benefit from the last unit sold should equal the marginal cost of production. (Equilibrium)
* **Equilibrium in a competitive market results in the economically efficient level of output, where marginal benefit =marginal cost.**
* Economic Surplus: The sum of consumer surplus and producer surplus. In a competitive market, economic surplus is at a maximum when the market is in equilibrium.
* Deadweight Loss: The reduction in economic surplus resulting from a market not being in competitive equilibrium.
* Economic surplus is the best measure we have of the benefit to society from the production of a particular good or service.
* **Equilibrium in a competitive market results in the greatest amount of economic surplus.**
* Economic Efficiency: A market outcome in which the marginal benefit to consumers of the last unit produced is equal to its marginal cost of production, and in which the sum of consumer surplus and producer surplus is at a maximum.
* **See chart 4-2 on minimum wage.**
* Minimum wage alternative....reduce taxes paid by low-income workers…*earned income tax credit*
* Black Market: Buying and selling at prices that violate government price regulations.
* If there is a black market, price ceilings may leave renters as a whole, worse off.
* When governments impose price ceilings and floors, three things happen: some people win, some people lose, and there is a drop in economic surplus and efficiency.
* Taxes cause decline in economic efficiency also.
* Whenever a government taxes a good, less of that good or service will be produced.
* Excess Burden of Tax: the deadweight loss caused by a tax
* Tax incidence: The actual division of the burden of a tax between buyers and sellers in a market.
* In a tax, if the supply shifts up, then the tax was put on the producer.
* If the demand curve shifts down, then the tax was put on the consumers.
* Switch these two if we are talking about the factor market, where the firms are the consumers and the households are the producers.

**Chapter 5: Externalities, Environmental Policy, and Public Goods**

* Externality: A benefit or cost that affects someone who is not directly involved in the production or consumption of a good or service.
* Negative externality/ social cost: Pollution, thinning of ozone
* Positive Externality/social benefit: college education
* When there are externalities, government intervention may actually increase economic efficiency.
* An externality causes a difference between the private cost/benefit and the social cost/benefit.
* Private cost: The costs borne by the producer
* Social Cost: The total cost of producing a good, including both the private cost and any external cost
* Private benefit: The benefit received by the consumer
* Social benefit: The total benefit from consuming a good, including both the private benefit and the external benefit.
* Unless there is no externality, the private and social costs/benefits will be the same.
* When there is a negative externality in producing a good or service, too much of the good or service will be produced at market equilibrium.
* When there is a positive externality in consuming a good or service, too little of the good or service will be produced at market equilibrium.
* Market Failures: Situations in which the market fails to produce the efficient level of output.
* *Externalities and market failures result from incomplete property rights or from the difficulty of enforcing property rights in certain situations.*
* Coase argued that under some circumstances, private solutions to the problem of externalities will occur.
* The optimal decision is to continue any activity up to the point where marginal benefit equals marginal cost.
* The net benefit to society from reducing pollution is equal to the difference between the benefit of reducing pollution and the cost.
* Pollution should be reduced up the point where the marginal benefit is equal to the marginal cost.
* If the marginal benefit of reducing sulfur dioxide emissions is greater than the marginal cost, further reductions will make society better off. But it the costs are greater than the benefits, the reductions will make society worse off.
* Transaction Costs: The costs in time and other resources that parties incur in negotiating a process.
* If there are many people involved, the transaction costs are often higher than the net benefit from reducing the externality.
* In this case, a private solution is not feasible.
* Coase Theorem: If transaction costs are low, private bargaining will result in an efficient solution to the problem of externalities.
* The government can help fix a negative externality by taxing the firm, to force it to internalize the cost…resulting in lower price and quantity
* This tax should be equal to the externality, and then the supply curve will shift up and be the same as the social cost curve…increased price and decreased quantity
* The government can fix the problem of a positive externality by providing subsidies to college students, which causes them to internalize the benefit equal to the social benefit. Equals a shift downward shift in demand, lower price and lower quantity.
* Called Pigovian taxes and subsidies
* Command and control approach: when the government sets quantitative limits on a firm instead of taxing it
* The government can set limits for each firm, or they can set an overall limit that allows firms to cooperate with pollution “allowances” that allow them to come to more economically feasible approaches.
* Rivalry: when one person consumes the good, no one else can (mine not yours)
* Excludability: anyone who does not pay for it can not use it
* Private good: rival and excludable, big mac
* Natural Monopoly: excludable but not rival, cable television
* Common Resources: Rival but non-excludable, forest land
* Public Good: non rival and non excludable, national defense...usually supplied by government…Free riding: benefitting from a good without paying for it
* To find the demand curve for a private good, we add the **quantity** demanded of a good at each price. Becomes more horizontal
* To find the demand curve for a public good, we add the **price** each consumer is willing to pay at each quantity demanded. Becomes more vertical
* Tragedy of the Commons: The tendency for a common resource to be overused. Public forests negative externality…Problem of clearly defined property rights…turn it into private property
* Each individual tree cutter ignores the external costs, so the quantity demanded will be more than economically efficient

**Chapter 6: Elasticity:**

* How much will the quantity demanded change as a result of a price increase or decrease?
* Elasticity: A measure of how much one economic variable responds to changes in another economic variable
* Price Elasticity of demand: The responsive of the quantity demanded to a change in price, measured by dividing the percentage change in the quantity demanded of a product by the percentage change in the product’s price.
* Knowing the price elasticity of demand allows you to compute the effect of a price change on the quantity demanded.
* Because demand curve is negative, the price elasticity is always negative.
* Economists use percentage changes when measuring the price elasticity of demand.
* The price elasticity of demand is not the same as the slope of the demand curve.
* The price elasticity of demand is always negative, so to compare elasticities, drop the minus sign and compare the absolute values
* Elastic demand: Demand is elastic when the percentage change is quantity demanded is greater than the percentage change is price, so the price elasticity is greater than 1 in absolute value. (very responsive to change)
* Inelastic demand: demand is inelastic when the percentage change in quantity demanded is less than the percentage change in price, so the price elasticity is less than 1 in absolute value. (NOT responsive to change)
* Unit-elastic demand: Demand is unit-elastic when the percentage change in quantity demanded is equal to the percentage change in price, so the price elasticity is equal to -1. (1 in absolute value)
* Don’t need to know midpoint formula.
* The flatter the demand curve, the more elastic the price elasticity of demand.
* The more steep the demand curve, the more inelastic the price elasticity of demand.
* Perfectly inelastic demand: Demand is perfectly inelastic when a change in price results in no change in quantity demanded. (vertical)
* Perfectly elastic demand: Demand is perfectly elastic when a change in price results in an infinite change in quantity demanded. (horizontal)
* Summary see pg 171
* What determines the price elasticity of demand for a product?

1. Availability of close substitutes: If a product has more substitutes available, it will have more elastic demand. If a product has fewer substitutes available, it will have less elastic demand (like gasoline).
2. Passage of time: The more time that passes, the more elastic the demand for a product becomes, because consumers have had time to adjust their buying habits.
3. Necessity versus luxury: The demand curve for a luxury is more elastic than the demand curve for a necessity.
4. Definition of the market: The more narrowly we define the market, the more elastic demand will be. Ex: the elasticity for Raisin Bran will be more than the elasticity for cereal altogether.
5. Share of the good in the consumer’s budget: Not important to Hillebrand, but: the demand for a good will be less elastic the smaller the share of the good in the average consumer’s budget.

* Total revenue: The total amount of funds received by a seller of a good or service, calculated by multiplying price per unit by the number of units sold.
* The relationship between price elasticity and total revenue: When demand is inelastic, an increase in price raises the total revenue, and a decrease in price will decrease the total revenue. When demand is elastic, a decrease in price will increase the total revenue, and an increase in price will decrease the total revenue. (p. 175)
* On a linear demand curve, when the price is high and the quantity demanded is low, demand is elastic. But as you move down the demand curve, the elasticity becomes unit-elastic, and then inelastic at lower prices with higher demand. Higher the demand the less elasticity of demand??
* To estimate the price elasticity of demand, economists must experiment to find out the demand curve for a product.
* Cross-price elasticity of demand: The percentage change in quantity demanded of one good divided by the percentage change in the price of another good. An increase in the price of a substitute will lead to an increase in quantity demanded, so the cross-price elasticity of demand will be positive. An increase in the price of a complement will lead to a decrease in the quantity demanded, so the cross-price elasticity of demand will be negative. If the two products are unrelated, the cross-price elasticity of demand will be zero.
* Income elasticity of demand: A measure of the responsiveness of quantity demanded to changes in income, measured by the percentage change in quantity demanded divided by the percentage change in income. If the quantity demanded of a good increases as income increases, then the good is a normal good (luxury or necessity?). A good is a luxury if the quantity demanded is very responsive (positive and greater than one), like caviar. A good is a necessity if the quantity demanded is not very responsive to changes in income (positive and lower than one). A good is inferior if the quantity demanded falls when income increases (negative elasticity), such as high-fat meat.
* Price elasticity of supply: The responsiveness of the quantity supplied to a change in price, measured by dividing the percentage change in the quantity supplied of a product by the percentage change in the product’s price. Because supply curves are upward sloping, the price elasticity of supply will be a positive number. If the price elasticity of supply is less than one, then supply is inelastic. If the price elasticity of supply is greater than 1, then supply is elastic. If the price elasticity of supply is equal to 1, then supply is unit-elastic.
* Because firms have difficulty increasing their supplies immediately (need more workers and more equipment), the supply curve for most products will be inelastic over a short period of time, but increasingly elastic the longer the period of time of measurement.
* If the price elasticity of demand is inelastic, and the price elasticity of supply is inelastic, changes in supply will result in big changes in prices (like oil on p 184).
* If a supply curve is a vertical line, it is perfectly inelastic, and the quantity supplied is completely unresponsive to price (like with a parking lot that only has a few spaces).
* If a supply curve is a horizontal line, it is perfectly elastic, and the quantity supplied is infinitely responsive to price (price elasticity of supply equals infinity).
* Even if demand is elastic, an inelastic supply curve will result in large shifts in price, even with only small shifts in quantity supplied.
* Knowing the price elasticity of supply makes it possible to predict more accurately how much price will change following an increase or decrease in demand.
* See p 189 for summary of chapter.

**Chapter 7/ Firms, the Stock Market, and Corporate Governance:**

* Firms are the vehicles entrepreneurs use to earn profits by responding to consumer wants as expressed in the market.
* Three Legal Categories of Firms in the U.S.:

1. Sole Proprietorship: A firms owned by a single individual and not organized as a corporation.
2. Partnership: A firm owned jointly by two or more persons and not organized as a corporation.
3. Corporation: A legal form of business that provides the owners with limited liability.

* Owners of sole proprietorships and partnerships have unlimited liability.
* Unlimited liability means there is no legal distinction between the personal assets of the owners of the firm and the assets of the firm.
* Asset: Anything of value owned by a person or a firm.
* General incorporation law allowed firms to be organized as corporations.
* Limited Liability: The legal provision that shields owners of a corporation from losing more than they have invested in the firm.
* Under the corporate form of business, the owners of a firm have limited liability, which means that if the firm fails, the owners can never lose more than the amount they had invested in the firm.
* A corporation is a legal “person” separate from its owners.
* Corporate profits are taxed twice: once at the corporate level and again when investors receive a share of corporate profits.
* Review chart on advantages and disadvantages of three types of firms on page 201.
* P 202 chart shows that only 20% of firms are corporations (because they are hard to organize and to manage), but corporations account for a majority of the total revenue and profits earned by all firms.
* Corporate Governance: The way in which a corporation is structured and the impact a corporation’s structure has on the firm’s behavior.
* Corporations are legally owned by their shareholders. The owners of the corporation’s stock.
* Unlike other firms though the owners, or shareholders, do not run the corporation.
* The shareholders elect a board of directors, who appoint a chief executive officer (CEO) to manage the day to day operations.
* Members of management serving on the board of directors are referred to as inside directors.
* Members of the board of directors who do not have a direct management role in the firm are referred to as outside directors.
* Separation of ownership from control: In many large corporations the top management, rather than the shareholders, control day to day operations
* Because top managers do not own the firm, they have an incentive to spend money in ways that benefits them, and not the profits of the company.
* Principal-agent problem: A problem caused by an agent pursuing his own interest rather than the interest of the principal who hired him.
* For this reason, many board of directors started tying the salaries of top managers to the profits of the firm or to the price of the firm’s stock.
* Firms obtain the funds for expansion in three ways:

1. If you are making a profit, you could reinvest the profits back into your firm. Profits that are reinvested in a firm, rather than taken out of a firm and paid to the firm’s owners, are retained earnings.
2. You could also obtain funds by taking on one or more partners who would invest in the firm. This arrangement would increase the firm’s financial capital.
3. Finally, you could borrow the funds from relatives, friends, or a bank.

* Unless they use their retained earnings, the firm will have to obtain external funding from one of two ways:

1. Indirect finance: A flow of funds from savers to borrowers through financial intermediaries such as banks. Intermediaries raise funds from savers to lend to firms (and other borrowers).
2. Direct Finance: A flow of funds from savers to firms through financial markets. Direct finance usually takes the form of the borrower selling the lender a financial security.

* Financial Security: a document, sometimes in electronic form, that states the terms under which the funds have passed from the buyer of the security, who is lending funds, to the borrower. Two main types of financial securities:

1. Bonds: A financial security that represents a promise to repay a fixed amount of funds.

* A bond promises the purchaser of the bond an interest payment (or coupon rate) each year for the term of the bond, as well as a final payment of the amount of the loan, or the principal, at the end of the term (or maturity).

1. Stocks: A financial security that represents partial ownership of a firm.

* It is doing the same thing the owner of a small business does when she takes on a new partner: The firm is increasing its financial capital by bringing additional owners into the firm.
* A shareholder is entitled to a share of the corporation’s profits, if any. So after retained earnings are kept, dividends are paid to the shareholders.
* Unlike bonds, stocks do not have a maturity date, so the firm is not obliged to return the investor’s funds at any particular date.
* The buyers and sellers of stocks and bonds together make up the stock and bond markets.
* Some trading of stocks and bonds takes place in buildings known as exchanges, such as the New York Stock Exchange or the Tokyo Stock Exchange.
* The most important of the over the counter markets is the National Association of Securities
* If you hold a bond with a coupon of $80 per year and newly issued bonds have coupons of $100 per year, the price of your bond will fall because it is less attractive to investors.
* Primary markets are those in which newly issued claims are sold to initial buyers by the issuer.
* In secondary markets, claims that have already been issued are sold by one investor to another. The company does not receive any money from secondary market sells. However, the price of their financial securities in the secondary markets is a good indicator to corporations of their success and their ability to expand.
* See page 207-208 on how to read the financial pages for the stock and bond markets.
* Before a firm can sell new issues of stock or bonds, it must first provide investors and financial regulators with information about its finances.
* Private firms may collect information on business borrowers and sell the information to lenders and investors.
* Managers and investors find all the essential financial information in the firm’s financial statements, principally its **income statement and balance sheet.**
* Income statement: A financial statement that sums up a firm’s revenues, costs, and profit over a period of time.
* Accounting profit: A firm’s net income measured by revenue less operating expenses and taxes paid.
* Explicit cost: A cost that involves spending money
* Implicit cost: A nonmonetary opportunity cost
* Economic profit: a firm’s revenues minus all of its costs, implicit and explicit
* Because accounting profit excludes some implicit costs, it will be larger than economic profit.
* Balance Sheet: A financial statement that sums up a firm’s financial position on a particular day, usually the end of a quarter or a year.
* Subtracting the value of a firm’s liabilities from the value of its assets leaves its net worth. We can think of the net worth as what the firm’s owners would be left with if the firm was closed, its assets were sold, and its liabilities were paid off.
* An investor is more likely to buy a firm’s stock if the firm’s income statement shows a large after-tax profit and if its balance sheet shows a large net worth.
* Top managers have an incentive to maximize the profits reported on the income statement and the net worth reported on the balance sheet.
* To guard against future financial scandals, like Enron in 2001, the Sarbanes-Oxley Act of 2002 was enacted.
* The Sarbanes-Oxley Act of 2002 requires that corporate directors have a certain level of expertise with financial information and mandates that chief executive officers personally certify the accuracy of financial statements. The Act promotes management accountability by specifying the responsibilities of corporate officers and by increasing penalties for managers who do not meet their responsibilities.
* See present value on page 220 and on midterm.

**Chapter 8/ Comparative Advantage and the Gains from International Trade:**

* The increase in international trade over the past 50 years is the result of the falling costs of shipping products around the world, the spread of cheap and reliable communications, and changes in government policies.
* Tariff: A tax imposed by a government on imports.
* Imports: goods and services bought domestically but produced in other countries.
* Exports: Goods and services produced domestically but sold to other countries.
* Since 1950, both exports and imports have been steadily increasing as a fraction of U.S. GDP
* Exports are a little more than 10% and imports 15% of total GDP.
* The U.S. (or Germany) is the largest exporter in the world (11% of total world exports).
* International trade remains less important to the U.S. than to most other countries.
* Imports and exports remain smaller fractions of GDP in the US than in other countries, except Japan.
* Outsourcing occurs when a domestic firm uses workers in a foreign country to produce a good or service that is then sold to domestic consumers.
* Insourcing: working for a foreign owned firm within your country.
* The lower prices that outsourcing makes possible are spread widely among consumers, but the costs of outsourcing are concentrated among workers who lose their jobs.
* Comparative Advantage: The ability of a producer to produce a good or service at a lower opportunity cost than other producers.
* Opportunity Cost: The highest values alternative that must be given up in order to engage in an activity.
* Comparative advantage explains why different countries produce different goods and services. Countries are better off if they specialize in producing the goods for which they have a comparative advantage.
* Autarky: A situation in which a country does not trade with other countries.
* The terms of trade: the ratio at which a country can trade its exports for imports from other countries.
* See pp 236-240 to be able to set up a comparative advantage problem. (Japan versus US)
* We do not see complete specialization in the real world for three main reasons:

1. Not all goods and services are traded internationally: like haircuts

2. Production of most goods involves increasing opportunity costs

3. Tastes for products differ: especially because most products are differentiated for different populations’ tastes.

* When countries participate in trade, they make their consumers better off by increasing the quantity of goods and services available to them. However, the losers from trade are the workers who have lost their jobs because their companies are less efficient than foreign companies.
* **What are the main sources of Comparative Advantage?:**

1. Climate and natural geography

2. Relative abundance of labor and capital: Because the US has an abundance of skilled workers and equipment, we have a better comparative advantage in producing goods that require skilled workers

3. Technology: product technologies involves the ability to develop new products / process technologies involves the ability to improve the processes used to make existing products

4. External economies: Reductions in a firm’s costs that result from an expansion in the size of an industry. Advantages include the availability of skilled workers, the opportunity to interact with other firms in the same industry, and being close to suppliers.

* Once a country has lost its comparative advantage in producing a good, its income will be higher and its economy will be more efficient if it switches from producing the good to importing it.
* Free Trade: trade between countries that are without government restrictions and makes consumers better off.
* See pp 243-244 for autarky to trade charts.
* We can conclude that international trade helps consumers, but hurts firms that are less efficient than foreign competitors. As a result, these firms and their workers are often strong supporters of government policies that restrict trade.
* These policies usually take one of two forms: **Tariffs or quotas**
* The most common interferences with trade are tariffs, which are taxes imposed by a government on goods imported into a country.
* A tariff will increase the cost of selling a good = more domestic supply, less demand.
* See p 245 for drawing tariff effects.
* A tariff succeeds in helping US producers, but hurts U.S. consumers and the efficiency of the U.S. economy.
* Quota: A numerical limit imposed by the government on the quantity of a good that can be imported into a country.
* A quota is imposed by the government of the importing country.
* Voluntary export restraint: An agreement negotiated between two countries that places a numerical limit on the quantity of a good that can be imported by one country from the other country.
* The main purpose of most tariffs and quotas is to reduce the foreign competition faced by domestic firms.
* See p 246 for how to draw a quota’s effects.
* At least in a tariff, the government gets tariff revenue. In a quota, the foreign government gets that money.
* See page 248 to be able to label the different parts of a quota.
* Whenever one industry receives tariff or quota protection, jobs will be lost in other domestic industries.
* The U.S. economy would gain from the elimination of tariffs and quotas, even if other countries do not reduce their tariffs and quotas.
* Other barriers to trade include health and safety requirements and imports against national security.
* In the Great Depression (1930s), the U.S. and other countries attempted to help domestic firms by raising tariffs on foreign imports. The U.S. started the process by passing the Smoot-Hawley Tariff in 1930, and, as other countries retaliated, international trade collapsed. By the end of WWII in 1945, countries were looking to open up trade again. They set up the GATT (General Agreement on Tariffs and Trade) in 1948. Countries that joined the GATT agreed not to impose new tariffs or import quotas. In addition, a series of trade rounds (multilateral negotiations) took place, in which countries agreed to reduce tariffs from the very high levels of the 1930s. In 1995, the World Trade Organization (WTO) was founded to replace the GATT and to protect intellectual property and services, as well as goods. More than 130 countries are now members of the WTO.
* World Trade Organization: An international organization that enforces international trade agreements.
* Globalization: The process of countries becoming more open to foreign trade and investment.
* Many developing countries had erected high tariffs and restricted investment by foreign countries up until the 1980s because they feared their colonists.
* By the 1980s many of these countries had opened up to globalization, but by the 1990s there were many protests to globalization.
* Anti-Globalization Arguments:

1. Free trade and foreign investment destroy the distinctive cultures of many countries.
2. Arguments against child labor.
3. Developing countries should receive the same wages and safety regulations as developed countries.

* High income countries argue that their countries went through periods of low wages and safety regulations, and that’s just part of developing.
* Another argument against free trade is protectionism and has been around for centuries.
* Protectionism: The use of trade barriers to shield domestic firms from foreign competition.
* Protectionism causes losses to consumers and eliminates jobs in the domestic industries that use the protected product.
* Also, by reducing the ability of countries to produce according to comparative advantage, protectionism reduces incomes.
* Protectionism is usually justified with one of the following arguments:

1. Saving Jobs: free trade reduces employment by driving domestic firms out of business. No evidence for this.
2. Protecting High Wages: firms in the high-income countries will have to start paying much lower wages to compete with firms in the developing countries. Wrong: Free trade actually raises living standards by increasing economic efficiency.
3. Protecting Infant Industries: As the firms in the “infant industry” gain experience, their costs will fall and they will be able to compete successfully with foreign producers. Under free trade, though, they might be driven out by more mature firms before they get a chance. Some support: Gilpin, first article of year. Problem with this argument: Tariffs used to protect an infant industry eliminate the need for the firms in the industry to become productive enough to compete with foreign firms.
4. Protecting national security: A country should not rely on other countries for goods that are critical to its military defense. However, this is a slippery slope on which items are critical for national security.

* Some people argued against NAFTA, North American Free Trade Agreement, in the early 1990s because they thought it would suck manual jobs out of the U.S. to Mexico. However, evidence shows that expanding trade increased consumption in all three countries. It also led to a net increase in jobs in the U.S., and helped the economy to become more efficient.
* Dumping: selling a product for a price below its cost of production.
* The WTO allows governments to set up tariffs when they suspect other governments of dumping, determined if a product is exported for a lower price than it sells for on the home market. However, it is legal to do this domestically, why not internationally (p 254).
* Whether increasing the profits of U.S. sugar companies and the number of workers they employ justifies the costs imposed on consumers and the reduction in economic efficiency is a normative question.
* Two factors are involved in the ability of firms to get the government to impose tariffs and quotas.

1. The costs tariffs and quotas impose on consumers are large in total but relatively small per person.
2. The jobs lost to foreign competition are easy to identify, but the jobs created by foreign trade are less easy to identify.

* This concentration of benefits and widely spread burdens makes it easy to understand why members of Congress receive strong pressure from some industries to enact tariffs and quotas and relatively little pressure from the general public to reduce them.

**Koop Chapter 1:**

* Econometrics: the name given to the study of quantitative tools for analyzing economic data.
* If Y depends on X, then it is written Y=f(X)

**Koop Chapter 2:**

* Types of economic data:

1. Time Series Data: collected at specific points in time, ordered by time, what we are measuring is a variable, observed at many frequencies (annual, weekly, etc.)
2. Cross-sectional data: data is characterized by units (such as people, companies, etc.), ordering of the data typically does not matter
3. Quantitative: numbered
4. Qualitative: often when choices are involved
5. Qualitative usually converted to quantitative for graphing
6. Binary variables, when variables can take only the values 0 or 1
7. Panel Data: has both time series and cross sectional data. (GDP for different countries for a particular year).

* Percentage change: (second observation minus first observation)/first observation \* 100
* Real GDP is nominal GDP (the value of all good s produced in an economy)/ GDP deflator (a price index)
* Time series graphs
* Histograms: construct class intervals, bins, that divide the countries into groups based on the variable; The number of countries lying one class interval is referred to as the frequency; the frequency table indicates the number of countries belonging to each class interval
* Put bin intervals at bottom, and frequencies on vertical axis
* XY-plots: relationship between two variables.
* Price Index: When finding a price index, find the year that the two sets of data have in common, then. For all the old values, multiply it by the second value of the common year, and then divide by the old common value.

**Koop, Chapter 3: Correlation:**

* Correlation is a numerical quantifier of the relationship between two variables.
* Correlation denoted by r
* R is always between 1 and -1
* Closer to 1 or -1 means stronger correlation.
* Correlation means that there is a general tendency between two variables.
* Direct versus indirect causality
* Correlation does not necessarily imply causality between two variables.

**Chapter 4: Simple Regression:**

* Good for understanding relationships between several variables.
* Regression Line: Y=a + Bx where B equals slope and a is y intercept
* The linear regression model will always be only an approximation of the true relationship
* Most probable source of error is missing variables.
* Y is the dependent value, X is the explanatory variable and B is the coefficient
* A and B in the linear regression model are only educated guesses at the true A and B
* B, or the slope of the best fitting line, is the marginal effect of X on Y, or a measure of how much X influences Y. B is how much Y tends to change when X is changed by one unit.
* The r squared measures the proportion of total variance of Y that can be explained by X
* R squared will be between 0 and 1
* No line will fit perfectly through all points, so the difference is called the residual
* A regression line should make the SSR or sum of squared residuals as small as possible. If SSR= 0 then r squared will be 1
* High r squared is a good fit, low r squared is a bad fit.
* For OLS, or ordinary least squares, we choose A and B to minimize the SSR.

**Chapter 5: Statistical Aspects of Regression:**

* B is a guess at the true B, and the confidence interval allows us to show our uncertainty of that guess
* Small confidence values indicate greater accuracy, while a larger interval indicates less certainty
* More data points will make your guess more accurate and your interval smaller
* The more confident you wish to be about your interval, the larger the interval needs to be
* The value of B lies in the interval [x,y] with 95% confidence level.
* We are x% confident that B lies between x and y
* If b=0 then x fails to provide any explanatory power for y
* Large values of t mean that b does not equal zero
* If p is less than .05, then b does not equal 0…does have significant explanatory power
* The confidence interval should not have 0 in it, if it does then that means that x may have no effect on y
* T, p and confidence interval talk about B
* Significance F means if Sig. F is greater than .05, then R squared is =0 at a 95% confidence, for smaller, make the .05 smaller
* If sig. f is smaller than .05, we say that the r squares is significant and has explanatory power
* R squared: such percent explains the variability in such
* If the t-stat is less than 1.96, then B is considered =0, x has little effect on y, at the 5% level of significance

**Hubbard Chapter 19/ Measuring Total Production and Income:**

* Microeconomics: The study of how households and firms make choices, how they interact in markets, and how the government attempts to influence their choices.
* Macroeconomics: The study of the economy as a whole, including topics such as inflation unemployment, and economic growth.
* The business cycle is an important issue in macroeconomics.
* Business cycle: Alternating periods of economic expansion and economic recession (dating back at least to the 1800’s.
* Expansion: The period of a business cycle during which total production and total employment are increasing.
* Recession: The period of a business cycle during which total production and total employment are decreasing.
* Economic growth: The ability of an economy to produce increasing quantities of goods and services.
* An economy that grows too slowly fails to raise living standards.
* Macroeconomics analyzes both what determines the rate of economic growth within a country and the reasons why growth rates differ so greatly across countries.
* Inflation rate: The percentage increase in the price level from one year to the next. Affected by the business cycle and other long-run factors.
* Macroeconomic analysis provides information that consumers and firms need in order to understand current economic conditions and to help predict future conditions. It also aids the federal government in designing policies that help the U.S. economy perform more efficiently.
* GDP (Gross Domestic Product: The market value of all final goods and services produced in a country during a period of time.
* In the U.S., the Bureau of Economic Analysis or the BEA, in the Department of Commerce compiles the data needed to calculate the GDP. Issues reports on the GDP every three months.
* *Unlike microeconomics, which is measured in the quantity of different goods, GDP is measured using market values, not quantities*.
* *GDP includes only the market value of final goods.*
* Final good or service: A good or service purchased by a final user, and is not included in the production of any other good or service (a hamburger).
* Intermediate good or service: A good or service that is an input into another good or service, such as a tire on a truck. To include the value of intermediate goods in GDP would be double counting.
* *GDP includes only current production.*
* GDP does not include the value of used goods.
* *When we add up the value of every good and service sold in the economy (total production), we must get a total that is exactly equal to the value of all of the income in the economy (except any sales tax that will go to the government).*
* Firms sell goods and services to three groups: domestic households, foreign firms and households (exports), and the government.
* We can measure GDP by adding up the total expenditures of these three groups on goods and services.
* Income is divided into four categories: wages, interest, rent, and profit. Firms pay wages to households in exchange for labor services, interest for the use of capital, and rent for natural resources…profit is the return to entrepreneurs for organizing the other factors of production and for bearing the risk of production.
* Transfer payment: Payments by the government to individuals for which the government does not receive a good or service in return (Social Security payments to retired/unemployment).
* Transfer payments not included in the GDP because they are not received in exchange for production of a new good or service.
* Banks and stocks and bonds markets make up the financial system.
* Flow of funds from households into the financial system makes it possible for the government and firms to borrow.
* No country without a well-developed financial system has been able to sustain high levels of economic growth.
* The circular flow diagram shows that we can measure GDP either by calculating the total value of expenditures on final goods and services or by calculating the value of total income.
* The BEA divided its statistics on GDP into four major categories of expenditures, and economists use these categories to understand why GDP fluctuates and to forecast future GDP.
* **Personal Consumption Expenditures (Consumption):** spending by households on goods and services, not including spending on new houses. Divided into spending on services, durable goods and nondurable goods.
* **Gross Private Domestic Investment (Investment):** Divided into three categories:

1. *Business fixed investment* is spending by firms on new factories, office buildings, and machinery used to produce other goods.
2. *Residential investment* is spending by households on new housing.
3. *Changes in business inventories* are goods that have been produced, but not yet sold. I.E.: if a comp. has 200 million in inventories at begin. of the year, and 300 at end of the year, then the comp. invested 100 million into inventories in the year.

* **Government Consumption and Gross Investment (Government Purchases):** Spending by federal, state, and local governments on goods and services such as highways or aircraft carriers. Government spending on transfer payments in not included in government purchases because it does not result in the production of new goods and services.
* **Net Exports of Goods and Services (Net Exports):** Exports minus imports. Exports are goods and services produced in the U.S., but purchased by foreign firms, households, and governments. We add exports to our other categories of expenditures because otherwise we would not be including all spending on new goods and services produced in the U.S.We subtract imports from total expenditures, because otherwise we would be including spending that does not result in production of new goods and services in the U.S.
* **Equation to sum up the components of GDP: Y= C + I + G + NX**
* Consumption is usually the largest component of GDP.
* Consumer spending on services is greater than the sum of spending on durable and nondurable goods (trend of high-income countries away from production of goods toward services).
* Business fixed investment is the largest component of investment.
* Purchases made by state and local governments are greater than purchases made by the federal government, because basic government activities occur largely at the state and local levels (education and law enforcement).
* If imports are larger than exports, then net exports are negative, which reduces GDP.
* **Value added** refers to the additional market value a firm gives to a product and is equal to the difference between the price the firm sells a good for and the price it paid other firms for intermediate goods.
* A good’s price is exactly equal to the sum of the value added by each firm involved in the production of the shirt.
* Therefore, we can calculate GDP by adding up the market value of every final good and service produced during a particular period, or we can arrive at the same value for GDP by adding up the value added of every firm involved in producing those final goods and services.
* **Shortcomings of GDP as a measure of total production:** When the BEA calculates GDP, it does not include two types of production: household production and production in the underground economy.
* Household production: The U.S. Commerce does not attempt to estimate the value of goods and services that are not bought and sold in markets. Household production refers to goods and services people produce for themselves. Big Example: the services of a homemaker (cleaning, cooking, babysitting) do not count toward GDP unless they are sold to the market, but production has not changed.
* The Underground Economy: When individuals conceal what they buy or sell, their production won’t count toward GDP. This might be because they are dealing in illegal goods or services, they want to avoid paying taxes on the income they earn, or they want to avoid government regulations. In the U.S. the underground economy may be as much as 10% of the GDP. It is higher in poorer countries.
* Economists say it is not a problem to ignore these two types of production because GDP measures the change in the economy over a short period of time. Omitting household and underground production won’t have much affect because they don’t really change from year to year. It might be more important, though, when measuring the changes over a long period of time because women have joined the U.S. labor force more in the last 30 to 40 years (change in household production).
* In some poor countries, the underground economy (or the informal sector), maybe be more than 50% of the GDP. This may be caused by poor government policies that retard economic growth. The informal sector is large in some developing economies because taxes are high and government regulations are extensive. Bringing firms into the formal sector from the informal sector may require reductions in government spending and taxes.
* **Shortcomings of GDP as a measure of well-being:** Although increases in GDP often do lead to increases in the well-being of the population, it is important to be aware that GDP is not a perfect measure of well-being for several reasons.

1. The value of leisure is not included in GDP: a country may have a higher GDP, but its citizens may prefer to work less and enjoy life more.
2. GDP is not adjusted for pollution or other negative effects of production: I.E.: the value of cigarettes produced is included in GDP with no adjustment made for the costs of the lung cancer that some smokers develop. Increasing GDP often leads countries to devote more resources to pollution reduction.
3. GDP is not adjusted for changes in crime and other social problems: An increase in crime will reduce well-being but may lead to higher GDP if it results in greater spending on police, alarm systems, etc.

* A person’s well-being depends on many factors that are not taken into account in calculating GDP.
* Some people argue that WWII was a time of great prosperity, but economist Robert Higgs says: between 1939 and 1944, production of consumption goods per person increased only about 2 percent, leaving the quantity of consumption goods available for the typical person in 1944 still below what it had been in 1929. At the end of the warm true prosperity did return to the U.S. economy, and by 1946 production of consumption goods per person had rose by more than 25 percent from what it had been in 1929.
* When GDP increases from one year to the next, the increase is due partly to increases in production of goods and services and partly to increases in prices. Thus, we need a way to separate the price change from the quantity change.
* The BEA separates price changes from quantity changes by calculating a measure of production called real GDP.
* Real GDP: The value of final goods and services evaluated at base year prices.
* Nominal GDP: The value of final goods and services evaluated at current year prices.
* By keeping prices constant, we know that changes in real GDP represent changes in the quantity of goods and services produced in the economy.
* To calculate real GDP: If you have the quantities and prices from two different years for specific products, calculate real GDP change by making one of the years the base year. Then, take that base year’s prices and multiply them by the quantities of the other year(s).
* The further away the current year is from the base year, the worse distortions of real GDP will be. To make the calculations more accurate, the BEA uses the chain-weighted prices to calculate real GDP.
* Holding prices constant means that the purchasing power of the dollar remains the same from one year to the next.Ordinarily, the purchasing power of the dollar falls every year as price increases reduce the amount of goods and services that a dollar can buy.
* Real GDP holds prices constant, which makes it a better measure than nominal GDP of changes in the production of goods and services form one year to the next.
* Real GDP is measured in “base year dollars.”
* Because, on average, prices rise from one year to the next, real GDP is greater than nominal GDP in years before the base year and less than nominal GDP for years after the base year.After the base year, nominal prices are usually higher than the real GDP prices.
* Price level: measures the average price of goods and services in the economy. A goal of economic policy is a stable price level.
* One measure of the price level is the **GDP deflator.**
* **GDP deflator: Nominal GDP/ Real GDP x 100**
* Both prices and production increase each year, but the more prices increase relative to the increase in production, the more nominal GDP increases relative to real GDP and the higher the value for the GDP deflator.
* In the base year, nominal GDP is equal to real GDP, so the value of the GDP price deflator will always be 100 in the base year. To find the difference in price levels between two years, find the GDP deflator for both years, and then do the difference of firsts (2-1/1 x 100) for the two deflators.
* **Other Measures of Total Production and Total Income:**
* National income accounting refers to the methods the BEA uses to keep track of total production and total income in the economy.The statistical tables containing this information are called the National Income and Product Accounts (NIPA).Every quarter, the BEA releases NIPA tables containing data on several measures of total production and total income.
* *Gross National Product (GNP):* GNP is the value of final goods and services produced by residents of the U.S., even if the production takes place outside the U.S. In many countries other than the U.S., a significant fraction of domestic production takes place in foreign-owned facilities. For these countries, GDP (the value of goods produced within the U.S.) will be much higher than GNP, and is a more accurate level of production within the country’s borders. (Advantage of GDP over GNP)
* *Net National Product (NNP):* The GNP- the value of depreciated products. Depreciation is referred to as the consumption of fixed capital, in the NIPA tables.
* *National Income:* NNP- sales tax (which goes to the government, not to income). In NIPA tables, the sales tax is referred to as indirect business taxes. If we measure the value of total production by GDP, and the value of income by National Income, then GDP will be higher than national income because sales tax was taken out.
* *Personal Income:* To calculate person income, we must subtract the earnings that corporations retain rather than pay to shareholders in the form of dividends. We must also add in transfer payments and interest on government bonds.
* *Disposable Personal Income:* Personal income minus personal tax payments.

**Hubbard Chapter 20/ Unemployment and Inflation:**

* Misery Index: The sum of the inflation rate and the unemployment rate to give a rough measure of the state of the economy.
* Although inflation and unemployment are important problems, the long-run success of an economy is best judged by its ability to generate high levels of real GDP per person.
* The U.S. Dept. of Labor releases the figures on unemployment once a month.
* How is unemployment data calculated? Each month the U.S. Bureau of the Census conducts the Current Population Survey (a.k.a.: the Household Survey) to collect data needed to compute the unemployment rate. Surveys 60,000 households about the employment status of everyone over the age of 16 in the house.
* People are considered employed if they worked during the week before the survey or if they were temporarily away because of illness, vacation, etc.
* People are considered unemployed if they did not work in the previous week, but were available for work and had actively looked for work at some time during the previous four weeks.
* The labor force is the sum of the unemployed and the employed.
* The unemployment rate is the percentage of the labor force that is unemployed.
* There are some people who are not in the labor force because they are not actively looking for a job (in full-time school, military, etc.)
* Discouraged workers are people who are available for work but have not looked for a job during the previous four weeks because they believe no jobs are available for them.
* To calculate the unemployment rate: number of unemployed/ labor force x 100
* To calculate the labor force participation rate: labor force/ working-age population x 100 (measures the percentage of the working-age population that is in the labor force.)
* Problems with Measuring the Unemployment Rate: Not counting discouraged workers as unemployed and counting people as employed who are working part time, although they would prefer to be working full time has a substantial effect on the measured unemployment rate. Although the unemployment rate provides some useful information about the employment situation in the country, it is far from an exact measure of joblessness in the economy.
* The higher the labor force participation rate, the more labor will be available and the higher a country’s levels of GDP and GDP per person. BLS= Bureau of Labor Statistics
* Two trends of labor force participation since 1950: 1) Rising labor force participation rate of adult women and 2) The falling labor force participation rate of adult men.
* Some men who in the past might have been working or actively looking for work are now being supported by disability payments and are not in the labor force. Most nonworking men appear to rely on their parents, wives or other relatives for food, clothing and money.
* Demographic groups unemployment rates: From most employed to least employed: white adults, Hispanic adults, black adults, white teenagers, Hispanic teenagers, and then black teenagers.
* Except in severe recessions, the typical person who loses a job finds another one or is recalled to a precious job within a few months.
* In addition to the Household Survey, the BLS uses the establishment survey (a.k.a. the payroll survey) to measure total employment in the economy. Samples about 300,000 businesses monthly. Negatives: 1) no info on self-employed 2) fail to count newly employed 3) provides no info on the unemployed Positive: Determined by actual payrolls, rather than by unverified answers, as in the case of household surveys.
* The creation and the destruction of jobs results from changes in consumer tastes, technological progress, and the success and failures of entrepreneurs in responding to the opportunities and challenges of shifting consumer tastes and technological change.
* When the BLS announces each month the increases or decreases in the number of persons employed and unemployed, these are net figures (jobs created- jobs destroyed).
* The unemployment rate follows the business cycle, rising during recessions and falling during expansions. The unemployment rate never falls to zero. Why?
* Frictional Unemployment: Short-term unemployment arising from the process of matching workers with jobs. The process of job search takes time, so there will always be some workers who are frictionally unemployed because they are between jobs and in the process of searching for new ones.
* Seasonal unemployment refers to unemployment due to factors such as weather, variations in tourism, and other calendar-related events. Economists should rely on seasonally adjusted data as a more accurate measure of the current state of the labor market.
* Frictional unemployment is good because by devoting time to job search, workers end up with jobs they find satisfying and in which they can be productive. Having more productive, satisfied workers is better for the firms.
* Structural Unemployment: arises from a persistent mismatch between the skills and characteristics of workers and the requirements of jobs. While frictional unemployment is short term, structural unemployment can last for longer periods because workers need time to learn new skills.
* Cyclical Unemployment: Unemployment caused by a business cycle recession.
* Though cyclical unemployment can drop to zero in the expansion period, the unemployment rate will never be zero, because frictional and structural unemployment.
* The economy is said to be at full employment when the only remaining unemployment is structural and frictional unemployment.
* Natural rate of Unemployment: The normal rate of unemployment, consisting of structural unemployment plus frictional unemployment (a.k.a. : full-employment rate of unemployment).
* See section 20-2 to distinguish the 3 different types of unemployment.
* Government policies can help unemployment, for example, by offering assistance for skill training programs (to ease structural unemployment).
* The government can also increase unemployment:

1. Unemployment Insurance: Though unemployment payment are good for workers and for the economy (because the unemployed are still spending money), it can be bad if the insurance is given for too long of time. This makes the opportunity cost of finding a job lower, which may leave people in unemployment longer.
2. Many European countries have laws that make it harder to fire workers, which creates a disincentive for firms to hire workers, which contributes to a higher unemployment rate.
3. Some feel that if the minimum wage is set above the equilibrium market wage, the quantity of labor supplied will be higher than the quantity of labor demanded. As a result, the unemployment will be higher than it would be without a minimum wage.

* Labor unions are organizations or workers that bargain with employers for higher wages and better working conditions for their members. Though unions cause higher unemployment for their industries, they do not affect the overall unemployment much because workers who can’t find jobs in unionized industries can find jobs in other industries.
* Efficiency wage: A higher than market wage paid by a firm to increase worker productivity. By paying a wage above the market wage, the firm raises the costs to workers of losing their jobs because most alternative jobs will pay only the market wage. The increased productivity can usually more than offset the increased wages. Because there will be more demand than supply with efficiency wages, they often lead to higher unemployment.
* The GDP deflator is not the best measure for the impact of inflation on the typical household because it includes the prices of products such as large electric generators (not purchased by typical household).
* Instead, we should measure the inflation rate by changes in the consumer price index because changes in this index come closest to measuring changes in the cost of living as experiences by the typical household.
* Consumer Price Index (CPI): An average of the prices of the goods and services purchased by the typical urban family of four (including housing, transportation, food and beverage, recreation, etc.)
* Because the CPI measures the cost to the typical family to buy a representative basket of goods and services, it is sometimes referred to as the cost-of-living index.
* The CPI is an index number and we measure the inflation rate as the percentage increase in the CPI from one year to the next. Take one year’s prices and quantity as the base year. (The following years quantity are irrelevant because we are assuming that the same number of those goods are bought every year). Calculate the other years prices x the base year quantities and sum up. To find CPI, expenditures in the current year/ expenditures in the base year x 100. This number should be higher/lower than the base year. Then find the inflation/deflation rate by -doing a difference of firsts (2-1/1 x 100)
* The CPI is the most widely used measure of inflation.
* There are four biases that make changes in the CPI overstate the true inflation rate:

1. Substitution Bias: the BLS assumes that consumers purchase the same number of goods despite price natural price levels. However, consumers will more likely buy a substitute good when the price of a good rises.
2. Increase in quality bias: The price of products rises because of inflation but also because the quality of products increases over time. The CPI does not account for this alternative reason of price increase.
3. New Product Bias: The prices of many products such as cell phones, DVD players, and computers decrease in the years immediately after they are introduced. Unless the market basket is updated frequently, these price decreases will not be included in the CPI.
4. Outlet bias: The BLS collects price statistics from traditional full-price retail stores, which may not reflect what the consumer actually pays at stores like Sam’s Club.

* Economists take measures to reduce the biased CPI inflation rate (which can be half a point too high).
* Producer Price Index (PPI): An average of the prices received by producers of goods and services at all stages of the production process (including the intermediate goods).
* If the price of these goods rise, the cost to firms of producing final goods and services will rise, which may lead firms to increase the prices of goods and services purchased by consumers.
* Changes in the producer price index therefore can give an early warning of future movements in the consumer price index.
* Price indexes, such as the CPI, give us a way of adjusting for the effects of inflation so that we can compare dollar values from different years.
* To inflate a salary of x dollars in 1980 to its value in current purchasing power:

Value in 2004 dollars= value in 1980 dollars x (CPI in 2004/CPI in 1980)

* Economic variables that are calculated in current year prices are referred to as nominal variables. The above calculation was using a price index to adjust a nominal variable for the effects of inflation.
* To obtain a real variable, to correct for the effects of inflation we can divide the nominal variable by a price index and multiply by 100.
* To calculate real average hourly earnings for certain years, divide nominal average hourly earnings by the CPI, and multiply by 100. Then, to find the decrease or increase between two years, do the difference of firsts. This may show that although nominal average hourly earnings may increase, real average hourly earnings may decline.
* In a multiyear wage contract, a union knows that unless it is able to negotiate increases in nominal wages that are greater than the expected inflation rate, real wages will fall.
* The states interest rate on a loan is the nominal interest rate.
* The real interest rate corrects the nominal interest rate for the effect of inflation and is equal to the nominal interest rate minus the inflation rate.
* Holding the nominal interest rate constant, the higher the inflation rate, the lower the real interest rate.
* If the inflation rate is high, there is a large gap between the nominal and the real inflation rate.
* This shows that it is impossible to know whether a particular nominal interest rate is “high” or “low”.
* The real interest rate provides a better measure of the true cost of borrowing and the true return to lending than does the nominal interest rate.
* The nominal interest rate is less than the real interest rate only when the inflation rate is negative.
* Deflation: a negative inflation rate because of a decline in the price level.
* Nominal incomes generally increase with inflation.
* Inflation can change the distribution of income in a way that strikes many people as being unfair.
* Some people’s income will rise faster than the inflation, and other’s will rise slower than the inflation rate.
* Inflation particularly hurts those people that are on a fixed income, such as retired people.
* The extent to which inflation changes the distribution of income depends on if the inflation was anticipated or not.
* Menu costs are the costs to firms of changing prices.
* At moderate levels of anticipated inflation menu costs are relatively small, at very high levels of inflation, menu costs and the costs from paper money losing value can become substantial.
* Unfortunately for investors, the government taxes the nominal payment on bonds with no adjustment for inflation.
* By raising the after-tax payment reward to investors, lower inflation rates will increase the incentive for investors to lend funds to firms.
* When people borrow money or banks lend money, they must forecast the inflation rate so they can calculate the real rate of interest on a loan.
* When the actual inflation rate turns out to be very different from the expected inflation rate, some people gain and other people lose. This is a key reason why people dislike unanticipated inflation.

**Hubbard, Chapter 21/ Economic Growth, the Financial System, and Business Cycles**

* Ford still earns the fourth highest revenues of U.S. firms in 2004
* A key measure of the success of any economy is its ability to increase production of goods and services faster than the growth in population. This is the only way that the standard of living of the average person in a country can increase.
* One key determinant of economic growth is the ability of firms to expand their operations through additional investments, labor, and technology. To be able to afford this, the firms must acquire funds from savers directly through financial markets (selling stocks and bonds) or indirectly through financial intermediaries (banks). Financial markets and intermediaries together comprise the financial system.
* Business cycle: Alternating periods of economic expansion and economic recession.
* Long-run economic growth: The process by which rising productivity increases the average standard of living.
* The best measure of the standard of living is real GDP per person, which is usually referred to as real GDP per capita.
* Although the level of pollution, the level of crime, spiritual well-being, etc. are not included in calculating GDP. Still, economists rely heavily on comparisons of real GDP per capita because it is the best means of comparing the performance of one economy over time or the performance of different economies at any particular time.
* Many economists believe that there is a link between health and economic growth: In the U.S. and Western Europe during the 1800s, improvements in agricultural technology and rising incomes led to dramatic improvements in the nutrition of the average person. Better nutrition = more productivity. Economists studying economic development have put increasing emphasis on the need for low-income countries to reduce disease and increase nutrition if they are to experience economic growth.
* Many researchers believe that the state of human physiology will continue to improve as technology advances > higher life expectancy.
* Not only will technology and economic growth allow people in the near future to live longer lives, but a much smaller fraction of those lives will need to be spent at paid work.
* Calculate GDP growth by measure the difference of firsts for the real GDP between two years. To find the average annual growth rate, take all the growth rates, and divide by number of years (find the mean).
* We can judge how rapidly an economic variable is growing by calculating the number of years it would take to double. One easy way to calculate approximately how many years it will take real GDP per capita to double is to use the rule of 70.
* The formula for the rule of 70 is: Number of years to double= 70/ growth rate
* For example, if real GDP is growing at a rate of 5 percent per year, it will double in 70/5=14 years.
* Small differences in growth rates can have large effects on how rapidly the standard of living in a country increases.
* Increases in real GDP per capita depend on increases in labor productivity
* Labor productivity: The quantity of goods and services that can be produced by one worker or by one hour of work.
* If the quantity of goods and services consumed by the average person is to increase, the quantity of goods and services produced per hour of work must also increase.
* If increases in labor productivity are the key to long-run economic growth, what causes labor productivity to increase?
* Labor productivity is determined by two factors: the quantity of capital per hour worked and the level of technology.
* Increases in Capital Per Hour Worked:
* Capital is manufactured goods that are used to produce other goods and services, such as computers, machine tools, trucks, etc.
* The total amount of physical capital available in a country is known as the country’s capital stock.
* As the capital stock per hour worked increases, worker productivity increases (move from a typewriter to a computer).
* Human capital refers to the accumulated knowledge and skills workers acquire from education and training or from their life experiences. >particularly important in stimulating economic growth.
* Technological Change: Economic growth depends MORE on TECHNOLOGICAL CHANGE than on increases in capital per hour worked.
* Technological change is an increase in the quantity of output firms can produce using a given quantity of inputs.
* Technological change is usually embodied in new machinery, equipment and software, but can come from a firm’s manager rearranging the layout of the firm to make it more productive.
* Just accumulating more inputs will not ensure economic growth, unless it Is accompanied by technological growth (Soviet Union in Cold War increased the quantity of capital available per hour worked, but little technological change.)
* Entrepreneurs are crucial in implementing technological change because they make the decision to introduce new technology to produce better or lower-cost products.
* Increases in capital per hour worked cannot sustain high rates of economic growth, unless accompanied by technological change.
* An additional requirement for economic growth is that the government provides secure rights to private property, and by establishing an independent court system that enforces contracts between private individuals.
* Also, the government has a role in facilitating the development of an efficient financial system, as well as systems of education, transportation, and communication.
* Without supportive government policies, long-run economic growth is unlikely.
* Botswana had strong annual average growth rates in real GDP per capita between 1960 and 2000 because of their government’s policies of: protecting private property, avoiding political instability and corruption, and allowing press freedom and democracy.
* Potential GDP is the level of GDP attained when all firms are producing at capacity.
* The capacity of a firm is not the maximum output the firm is capable of producing. The capacity is measured by its production when operating on normal hours, using a normal workforce.
* When all firms are operating at capacity, the level of total production of final goods and services equals potential GDP.
* GDP potential grows as labor force, capital, and technology grow over time.
* Potential GDP usually grows at about 3.5% per year.
* Firms acquire funds to finance rapid expansion through retained earnings (profits reinvested in the firm instead of paid to its owners) and through the financial system (financial markets and intermediaries). Without a well-functioning financial system, economic growth is impossible because firms will be unable to expand and adopt new technologies.
* The financial system channels funds from savers to borrowers and channels returns on the borrowed funds back to the savers.
* A financial security is a document-sometimes in electronic form- that states the terms under which funds pass from the buyer of the security-who is lending the funds-to the seller.
* Stocks are financial securities that represent partial ownership of a firm.
* Bonds are financial securities that represent promises to repay a fixed amount of funds.
* The intermediaries pay interest to savers in exchange for the use of savers’ funds and earn a profit by lending money to borrowers and charging borrowers a higher rate of interest on the loans.
* Mutual funds sell shares to savers and then use the funds to buy a portfolio of stocks, bonds, mortgages, and other financial securities. Mutual funds are either closed or open end funds.
* Besides matching households that have excess funds with firms that want to borrow funds, the financial system provides three key services for savers and borrowers: risk sharing, liquidity, and information.

1. The financial system provides risk sharing by allowing savers to spread their money among many financial investments.
2. Liquidity is the ease with which a financial security can be exchanged for money. The financial system provides the service of liquidity by providing savers with markets in which they can sell their holdings of financial securities.
3. The financial system provides savers the service of collecting and communicating information or facts about borrowers and expectations about returns on financial securities.

* When firms use funds to purchase machinery, factories, and office buildings, they are engaging in investment.
* The total value of saving in the economy must equal the total value of investment.
* Y= C+I+G+NX where Y=GDP and C=consumption, G=government, and NX= net exports
* Developing the relationship between saving and investment for a closed economy.

1. In a closed economy, net exports are zero. So Y= C+G+I
2. By rearranging this equation, we see that I=Y-C-G, or that investment spending is equal to total income minus consumption spending and minus government purchases.
3. Private saving= Income + Transfer payments - Consumption - Taxes ( S= I+TR-C-T)
4. Public saving equals the amount of tax revenue the government retains after paying for government purchases and making transfer payments to households: (S= T-G-TR)
5. Total saving in the economy is equal to the sum of private saving and public saving:

Stotal= Sprivate + Spublic

6. or S= (Y+TR-C-T) + (T-G-TR)

So S= Y-C-G

So S= I

* When the government spends the same amount that it collects in taxes, there is a balanced budget.
* When the government spends more than it collects in taxes, there is a budget deficit.
* Negative saving is also known as dissaving.
* Public saving is negative when there is a budget deficit
* When there is less saving, investment is also lower.
* So, there is a lower level of investment spending in the economy when there is a budget deficit than when there is a balanced budget.
* When the government spends less than it collects in taxes, there is a budget surplus which increases public saving and the total level of saving in the economy. So, there is a higher level of investment spending in the economy when there is a budget surplus than when there is a balanced budget.
* The financial system is comprised of many markets through which funds flow from lenders to borrowers: such as the market for stocks, the market for bonds, the market for cds, etc.
* We combine these markets into a single market for loanable funds.
* The market for loanable funds: The interaction of borrowers and lenders that determines the market interest rate and the quantity of loanable funds exchanged. For the following examples, assume that there are no interactions across countries between savers and borrowers.
* Demand for loanable funds is determined by firms’ willingness to borrow money to invest in new projects. They must compare the return they expect to make on an investment with the interest rate they must pay to borrow necessary funds. The demand for loanable funds is downward sloping because the lower the interest rate, the more investment projects firms can profitably undertake, and the greater the quantity of loanable funds they will demand.
* The supply of loanable funds is determined by the willingness of households and the government to save/dissave.
* Household’s willingness to save rather than consume their incomes will be determined in part by the interest rate they receive when they lend their savings. The higher the interest rate, the greater the reward to saving and larger the amount of funds households will save. Therefore the supply curve is upward sloping.
* The nominal interest rate is the stated interest rate on a loan. The real interest rate corrects the nominal interest rate for the impact of inflation and is equal to the nominal interest rate minus the inflation rate.
* Ebenezer Scrooge: Savers provide the funds that are indispensable for the investment spending that economic growth requires, and the only way to save is not to consume.
* Explaining Movements in Saving, Investment, and Interest Rates: An increase in the profitability of a new investment due to technological change will shift the demand curve for loanable funds to the right (increase demand).
* An increase in the demand of quantity of loanable funds means that both the quantity of saving by households and the quantity of investment by firms have increased.
* Increasing investment increases the capital stock and the quantity of capital per hour worked, helping to increase economic growth.
* Increased demand for loanable funds increases the real interest rate and the quantity of the funds.
* When the government runs a budget deficit, it reduces the total amount of saving in the economy. This makes the supply curve of loanable funds shift to the left.
* A decrease in supply means an increase in interest rates and a decrease in the total quantity of loanable funds.
* So, running a deficit has reduced the level of total saving in the economy and, by increasing the interest rate, has also reduced the level of investment spending by firms.
* By borrowing to finance its budget deficit, the government will have crowded out some firms that would otherwise have been able to borrow to finance investment.
* Lower investment spending means that the capital stock and the quantity of capital per hour worked will not increase as much.
* A budget surplus increases the total amount of saving in the economy, shifting the supply of loanable funds to the right. In the new equilibrium, the interest rate will be lower and the quantity of loanable funds will be higher. We can conclude that a budget surplus increases the level of saving and investment.
* In practice, however, the impact of government budget deficits and surpluses on the equilibrium interest rate is relatively small, because of the larger impact of global saving.
* Some economists suggest that the U.S. switch from an income tax to a consumption tax. Under the income tax, households pay taxes on all income earned. Under a consumption tax. Households pay taxes only on the income they spend. We conclude that moving from an income tax to a consumption tax would increase the return to saving, causing the supply of loanable funds to increase.
* On a graph: the supply curve for loanable funds will shift to the right as the after-tax return to saving increases under the consumption tax. The equilibrium interest rate will fall, and the levels of saving and investment will both increase. Because investment increases, the capital stock and the quantity of capital per hour worked will grow, and the rate of economic growth should increase. In real life, though, the effects would be much less.
* The Business Cycle:
* Dating back at least to the early 1800s, the U.S. economy has experienced a business cycle, consisting of alternating periods of expanding and contracting economic activity. Because real GDP is our best measure of economic activity, the business cycle is usually illustrated using movements in real GDP.
* During the expansion phase, production, employment, and income are increasing. The period of expansion ends with a business cycle peak.
* Following the business cycle peak, production, employment, and income decline as the economy enters into the recession phase of the cycle. The recession comes to an end with a business cycle trough, after which another period of expansion begins.
* The last recession was in 2001. We have been in an expansion ever since.
* The Business Cycle Dating Committee of the National Bureau of Economic Research (NBER), a private research group in Massachusetts, decides if the economy is in a recession. NBER definition of recession: A recession is a significant decline in activity spread across the economy, lasting more than a few months, visible in industrial production, employment, real income, and wholesale-retail trade.
* Because of extensive research, it takes a long time for the National Bureau of Economic Research to announce if we are in an expansion/ recession.
* What Happens in a Business Cycle: As the economy nears the end of an expansion, interest rates usually are rising, and the wages of workers usually are rising faster than prices. As a result of rising interest rates and rising wages, the profits of firms will be falling. Typically, toward the end of an expansion both households and firms will have substantially increased their debts. These debts are the result of the borrowing firms and households undertake to help finance their spending during the expansion.
* A recession will often begin with a decline in spending by firms on capital goods (machinery, etc.) or by households on consumer durables (or houses). As spending declines, firms selling capital goods and consumer durables will find their sales declining. As sales decline, firms cut back on production and begin to lay off workers. Rising unemployment and falling profits reduce income, which leads to further declines in spending.
* As the recession continues, economic conditions begin to improve. The declines in spending eventually come to an end; households and firms begin to reduce their debt, thereby increasing their ability to spend; and interest rates decline, making it more likely that households and firms will borrow to finance new spending. Firms begin to increase their spending on capital goods as they anticipate the need for additional production during the next expansion. Increased spending by households on consumer durables and by businesses on capital goods will finally bring the recession to an end and begin the next expansion.
* Durables are goods that are expected to last for three or more years, such as furniture and appliances.
* Consumer durables are affected more by the business cycle than are nondurable goods (clothes and food or services such as haircuts).
* Because people can continue to use their existing durables, they are most likely to postpone spending on durables than spending on other goods (esp. with automobiles).
* The price level measures the average prices of goods and services in the economy.
* The inflation rate is the percentage increase of the price level from one year to the next.
* During economic expansions the inflation rate usually increases, particularly near the end of the expansion, and during recessions the inflation rate usually decreases.
* Reasoning: During a business cycle expansion, spending by businesses and households is strong and producers of goods and services find it easier to raise prices. As spending declines during a recession, firms have a more difficult time selling their goods and services, and are likely to increase prices less than they otherwise might have.
* The consumer price index is a measure of the price level, not of the inflation rate. We can measure the inflation rate as the percentage change in the consumer price index from one year to the next.
* Recessions cause the inflation rate to fall, but (Philips Curve) they cause the unemployment rate to increase. As firms see their sales decline, they begin to reduce production and lay off workers. Firms continue to operate well below their capacity even after a recession has ended and production has begun to increase.
* As a result, firms may not hire back all of the workers they have laid off and may even continue to lay off more workers for a while.
* Recessions have been milder and the economy has been more stable since 1950.
* Not as many serious fluctuations in GDP as seen in the 1930s.
* After 1950, the length of expansions has greatly increased and the length of recessions has fallen.
* Why is the economy more stable? (Shorter recessions, longer expansions, and less severe fluctuations in real GDP)

1. The increasing importance of services and declining importance of goods as a portion of the GDP. Manufacturing production, particularly production of durable goods (cars) fluctuates more than the production of services.
2. The establishment of unemployment insurance and other government transfer programs that provide funds to the unemployed. These programs did not exist before the 1930’s, and since they allow people to continue to spend money during recessions, they may help shorten recessions.
3. Active federal government policies to stabilize the economy. 1946 Employment Act meant to promote maximum employment, production, and purchasing power after the Great Depression. Government policies now actively try to end and shorten recessions.

**Chapter 22 : Long-Run Economic Growth: Sources and Policies**

* Sustained economic growth first began with the Industrial Revolution in England in the late 1700s. From there, economic growth spread to the U.S., Canada and Western Europe.
* Following WWII, rapid economic growth also began in Japan, but the economies of most other countries stagnated, leaving their people mired in poverty.
* Following Mao’s death, the Deng reforms moved China away from a centrally planned economy to a market-oriented economy 1979 to 1995.
* Growth has been strong ever since, but it is questionable if this growth can remain without political liberalization.
* Real GDP per capita is the best measure we have of a country’s standard of living because GDP measures a country’s total income.
* This chapter develops a model of economic growth that should help to understand why different economies grow at different speeds.
* With economic growth, an economy produces increasing quantities of goods and services and better goods and services. It is only through economic growth that living standards can increase, but through most of human history no economic growth took place.
* ECONOMIC GROWTH FROM 1,000,000 B.C. TO THE PRESENT:
* No sustained economic growth occurred between 1,000,000 B.C. and 1300 A.D. GDP per capita was about 123$ per year in 2004 dollars, which was the bare amount necessary to sustain life. The typical person had the bare minimum of food, clothing, and shelter necessary to sustain life.
* There was slow growth from the 1300s to the 1800s.
* Significant economic growth did not begin until the Industrial Revolution, which started in England around the year 1750. Steam engine powered machinery marked the beginning of the Industrial Revolution, and it greatly increased the productivity of animals/humans at that time.
* After the Industrial Revolution, economic growth was rapid and sustained.
* Douglass North argued that institutions in England differed significantly from those in other countries in ways that greatly aided economic growth. After the Glorious Revolution of 1688, the British government was able credibly to commit to upholding private property rights, protecting wealth, and eliminating arbitrary increases in taxes. Without the institutional changes, entrepreneurs would have been reluctant to risk having their property seized or their wealth confiscated by the government. Other economists have noted that the efficiency of markets in England was significantly greater than the efficiency of markets elsewhere in Europe and in China.
* Small differences in growth rates can have a large impact over a long period of time. Compounding magnifies even small differences in interest rates over long periods of time.
* In the long run, small differences in economic growth rates result in big differences in living standards.
* When economists talk about growth rates over a period of more than one year, the numbers are always average annual percentage changes and not total percentage changes.
* Growth rates matter because an economy that grows too slowly fails to raise living standards.
* i.e.: many African and Asian countries have experienced little economic growth in the last 50 years, so many people remain in severe poverty.
* Only by sustaining high rates of economic growth over many years will the currently low-income countries be able to attain the high standards of living enjoyed today by people in high-income countries.
* The world’s economies can be divided into two groups: the high income countries (the industrialized countries of U.S., Canada, W. E., Japan) and the poorer countries (the developing countries of Africa, L.A., Asia). In the 1980’s and the 1990’s, a small group of countries, mostly East Asian such as South Korea, Taiwan, and Singapore experienced high rates of growth and are sometimes referred to as newly industrialized countries (Asian tigers).
* An economic growth model is a model that explains changes in real GDP per capita in the long run.
* Labor productivity is the quantity of goods and services that can be produced by one worker or by one hour of work.
* The economic growth model focuses on the causes of long-run increases in labor productivity.
* Two key factors determine labor productivity: the quantity of capital per hour worked and the level of technology.
* Three main sources of technological change:
* 1) Better machinery and equipment: beginning with the steam engine, machines, like computers, contribute to increases in labor productivity.
* 2) Increases in human capital: As workers increase their human capital through education or on-the-job training, their productivity will also increase.
* 3) Better means of organizing and managing production: Labor productivity will increase if managers can do a better job of organizing production, such as Toyota’s “just-in-time.”
* Per-worker production function: The relationship between real GDP, or output, per hour worked and capital per hour worked, holding the level of technology constant.
* Let K stand for capital, L stand for labor, and Y stand for real GDP, real GDP per hour worked is Y/L and capital per hour worked is K/L. Capital per hour worked is on the x axis and real GDP per hour worked is on the y axis.
* Increases in the quantity of capital per hour worked result in movements up the per-worker production function, increasing the quantity of output each worker produces. When holding technology constant, however, equal increases in the amount of capital per hour worked lead to diminishing increases in output per hour worked. (Law of diminishing returns between two economic variables).
* Technological change helps economies avoid diminishing returns to capital. The replacement of existing capital with more productive capital is an example of technological change.
* Technological change shifts up the per-worker production function and allows an economy to produce more real GDP per hour worked with the same quantity of capital per hour worked.
* Further increases in technology that shift the economy to higher production functions result in further increases in real GDP per hour worked.
* In the long run, a country will experience an increasing standard of living only if it experiences continuing technological change.
* Why did the Soviet Union fail to implement new technologies at the same rate as the U.S.? In a centrally planned economy the persons in charge of running most businesses were government employees and not entrepreneurs or independent business people, as in the case in market economies.
* Entrepreneurs and managers of firms in the U.S., by contrast, are under intense competitive pressure from other firms to develop new technologies and gain a competitive edge.
* The economic growth model we have been using so far (neoclassical growth model?) was first developed in the 1950s by Robert Solow. According to this model, productivity growth is the key factor in explaining long-run growth in real GDP per capita.
* In recent years, some economists have become dissatisfied with this model (neoclassical growth model??) because it does not explain the factors that determine productivity growth.
* Endogenous Growth Theory: sometimes called the new growth theory, was developed by Paul Romer to provide a better explanation of the sources of productivity change.
* Romer argues that the rate of technological change is influenced by economic incentives, and so is endogenous, or determined by the working of the market system, rather than exogenous, or determined outside of the market system.
* Exogenous technological change is unexplained or attributed to factors such as chance scientific discoveries.
* Romer argues that the accumulation of knowledge capital (contributed by r and d) is a key determinant of economic growth.
* At the firm level, knowledge capital is subject to diminishing returns, but not at the economy level (where it is subject to increasing returns because once discovered, knowledge is nonrival, nonexcludable, and available to everyone as long as it is not patented).
* Government policy can help increase the accumulation of knowledge capital in three ways:
* 1)Protecting intellectual property with patents and copyrights. A patent gives a firm the exclusive legal right to a new product for a period of 20 years. The profits earned during the period the patent is in force would provide an incentive for undertaking the r and d. Some companies may fear getting ripped off by other companies, so they may not patent (which requires telling the government how to make it) their invention and just keep it a trade secret (Coca Cola).
* Just as a new product or a new method of making a product receives patent protection, books, films, and software receive copyright protection.
* 2) Subsidizing research and development: or the government can provide tax benefits to firms that invest in research and development.
* 3) Subsidizing education: If the government subsidizes education, it can increase the number of workers with technical training.
* Joseph Schumpeter of the 1930’s developed a growth model that emphasized his view that new products unleash a “gale of creative destruction” in which older products, and often the firms that produced them, are driven out of the market. The entrepreneur is central to economic growth, by searching for new goods and services to better meet consumer needs, in the hope of profit.
* Growth was strong in the U.S. from 1800 to 1970s, but slowed from 1973 to 1995. Economists give different explanations for the slowdown in GDP per hour worked. 1) There were measurement problems due to the increased output of services versus goods. 2) High oil prices raised the price of capital labor (running machines, cars, etc.) 3) Declining quality of labor due to deteriorating U.S. education system.
* The U.S. was not alone in experiencing this productivity slowdown, so any explanation that only counts factors within the U.S. is likely to be wrong or missing additional causes.
* Some economists argue that the higher productivity growth that began in the mid-1990s reflects the development of a “New Economy” based on information technology. The spread of ever faster and ever cheaper computers has made communication and data processing easier and faster than ever before.
* Many economists believe that these developments (Internet, cell phones, laptops) have significantly increased labor productivity.
* Growth in the U.S. has been higher since 1995 than in the other G-7 countries (the other leading industrial countries). Many economists believe there are two main explanations: 1) the greater flexibility of U.S. labor markets and 2) the greater efficiency of the U.S. financial system.
* U.S. labor markets are more flexible because: 1) in many European countries, governments make it difficult for firms to fire workers. The U.S.’ better job mobility ensures a better match of the worker with the job. 2) Many European countries also have restrictive work rules that limit the flexibility of firms to implement new technologies (because of labor unions). 3) Longer periods allowed for unemployment insurance in Europe.
* Many firms that are established to bring new technologies to market obtain funds from venture capital firms (who raise money from institutional investors, such as pension funds, or from wealthy individuals). The ability of venture capital firms to finance technology-driven start-up firms may be giving the U.S. an advantage in bringing new products and new processes to market.
* The economic growth model predicts that poor countries will grow faster than rich countries because using additional capital and better technology gives greater profitability in a developing country than in a high income country.
* Has the catch-up or convergence actually occurred? Paradox: The lower-income industrial countries have been catching up to the higher income industrial countries, but the developing countries as a group have not been catching up to the industrial countries as a group.
* According to the economic growth model, countries that start with lower levels of GDP per capita should grow faster (points near the top of the line) than countries that start with higher levels of GDP per capita (points near the bottom of the line). This is on a graph with (growth in real GDP per capita) on the y axis and (initial level of real GDP per capita) on the x axis. But looking at all countries shows that the catch-up only occurred for some industrialized countries. Other countries experiences negative growth, no growth, and low growth.
* There has been catch-up among the industrial countries, but there has not been catch-up if we include all of the countries of the world in the analysis.
* So why are many low-income countries growing slowly or not at all?
* 1) Failure to enforce the rule of law: the government must enforce the laws of the country, particularly protecting individual property rights (for entrepreneurs to feel secure in investing) and using an independent court system to enforce contracts. Real GDP per capita in the 20 countries with the strongest rule of law grew more than 6 times faster during the 1990s than in the 20 countries with the weakest rule of law.
* 2) Wars and Revolutions: These wars make it impossible for countries to accumulate capital or adopt new technologies.
* 3) Poor Public Education and Health: Many low-income countries have weak public school systems, so many workers are unable to read and write, and thus to acquire the necessary skills to use the latest technology. People who are sick work less and are less productive when they do work. Poor health has a significant negative impact on the human capital of workers in developing countries.
* 4) Low rates of saving and investment: Because households have low incomes, they save very little. Because households save very little, few funds are available for firms to borrow. Lacking funds, firms do not invest in the new factories, machinery, and equipment needed for economic growth. Because the economy does not grow, household incomes remain low, as do their savings, and so on.
* One way for a developing country to break out of the vicious cycle of low saving and investment and low growth is through foreign investment.
* Foreign direct investment (FDI): occurs when corporations build or purchase facilities in foreign countries.
* Foreign Portfolio Investment (FPI): occurs when an individual or firm buys stock or bonds issued in another country.
* FDI and FPI can give a low-income country access to funds and technology that otherwise would not be available.
* From 1940 through 1970s, many developing countries discouraged or prohibited foreign investment because of the tariffs associated with the Great Depression and because many newly independent countries were afraid to interact with their colonizers.
* Globalization refers to the process of countries becoming more open to foreign trade and investment.
* Developing countries that were more globalized grew faster during the 1990s than developing countries that were less globalized, because they benefitted from investment funds and technology. (NBER report)
* Countries where corruption is most widespread grow much more slowly than countries where corruption is less of a problem. Political reform movements and crusading newspapers helped to reduce corruption in the U.S. to relatively low levels by the 1920s.
* Increased political stability is a necessary prerequisite to economic growth for many countries.
* The rising incomes that result from economic growth can help developing countries deal with the brain drain, which refers to the highly educated and successful individuals leaving developing countries for high-income countries.
* We see in the economic growth model that technological change is more important to long run growth than capital increases. The easiest way for developing countries to gain access to technology is through FDI in which foreign firms are allowed to build new facilities or to buy domestic firms (Zambia). In the high-income countries, government policies can aid the growth of technology by subsidizing research and development and giving tax breaks to firms undertaking r and d.
* Government policies that increase incentives to save and invest will increase the equilibrium level of loanable funds and may increase the level of real GDP per capita.
* Some people worry that economic growth may be contributing to global warming, deforestation, and other environmental problems.
* Some people feel that globalization undermines distinctive cultures of many countries and that foreign firms fail to pay the same and follow the same safety and environmental regulations they are required to follow in high-income countries.
* **The keys to higher living standards seem straightforward: Establish the rule of law, provide basic education and healthcare for the population, increase the amount of capital per hour worked, adopt the best technology, and participate in the global economy. However, these policies prove to be very difficult to implement for many countries. (Hubbard)**
* **See pp. 783-785 for Keynesian Revolution, Monetarist model, New Classical Model, the Real Business Cycle Model, and Karl Marx.**

**Chapter 25/ Money, Banks, and the Federal Reserve System:**

* A franchise is a business with the legal right to sell a good or service in a particular area. When a firm uses franchises, local entrepreneurs are able to buy and run the stores in their area.
* Money: Any asset that people are generally willing to accept in exchange for goods and services or for payment of debts.
* An asset is anything of value owned by a person or a firm.
* Different kinds of money: In West Africa, cowrie shells and in WWII pow camps cigarettes
* Barter economies: economies where goods and services are traded directly for other goods and services.
* For a barter trade to take place between two people, each person must want what the other one has, double coincidence of wants.
* The problems with barter provide an incentive to identify a product that most people will accept in exchange for what they have to trade.
* Commodity Money: A good used as money that also has value independent of its use as money.
* Trading goods and services is much easier once money becomes available.
* Families will be less likely to produce everything or nearly everything they need themselves and more likely to specialize.
* People become much more productive by specializing because they can pursue their comparative advantage.
* By making exchange easier, money allows for specialization and higher productivity.
* The Functions of Money:
* Medium of Exchange: Money serves as a medium of exchange when sellers are willing to accept it in exchange for goods and services. An economy is more efficient when a single good is recognized as a medium of exchange.
* Unit of Account: Instead of having to quote the price of a single good in terms of many other goods, each good has a single price quoted in terms of the medium of exchange. This function gives buyers and sellers a unit of account, a way of measuring value in the economy in terms of money (or a certain number of dollars in the U.S.).
* Store of Value: If you do not use all your accumulated dollars to buy goods and services today, you can hold the rest to use in the future. The acceptability of money in future transactions depends on its not losing value over time. Money is not the only store of value. Financial assets (bonds, real estate, etc.) offer an important benefit relative to holding money because they generally pay a higher rate of interest or offer the prospect of gains in value. Other assets may provide a service, like a house as shelter. When money is the medium of exchange, it is the most liquid asset. You incur costs when you exchange other assets for money. To avoid such costs, people are willing to hold some of their wealth in the form of money, even though other assets offer a greater return as a store of value.
* Standard of Deferred Payment: example: A furniture maker may be willing to sell a chair to a boat builder now in exchange for money in the future.
* What can serve as money? Which assets should be used as the medium of exchange?

1. The good must be acceptable to (that is usable by) most traders.
2. It should be of standardized quality so that any two units are identical.
3. It should be durable so that value is not lost by spoilage.
4. It should be valuable relative to its weight so that amounts large enough to be useful in trade can be easily transported.
5. The medium of exchange should be divisible because different goods are valued differently.

* You value something as money only if you believe that others will accept it from you as payment.
* Commodity Money: Commodity money has a problem: its value depends on its purity (gold).
* Fiat Money: Money, such as paper currency, that is authorized by a central bank or the governmental body and that does not have to be exchanged by the central bank for gold or some other commodity money.
* Fiat money has no value except as money.
* If paper currency has no value except as money, why do they serve as a medium of exchange? Households and firms have confidence that if they accept paper dollars in exchange for goods and services, the dollars will not lose much value during the time they hold them. 2) A Federal Reserve Currency (a dollar bill) is legal tender in the U.S., which means the federal government requires that it be accepted in payment of debts and requires that cash or checks denominated in dollars be used in payment of taxes.
* Anything can be used as money as long as people are willing to accept it in exchange for goods and services.
* Economists have developed several different definitions of the money supply. Each definition includes a different group of assets. The definitions range from narrow to broad and are based on how liquid the assets are.
* The narrowest definition of the money supply is M1. It includes: 1) all the paper money and coins that are in circulation (and not held by banks or the government. 2) the value of all checking account balances at banks. 3) the value of traveler’s checks
* The value of paper money and coins is called currency.
* Although currency and checking account balances are roughly equal in value, checking account balances are used more than currency in making payments (80% of the time).
* About 60% of U.S. currency is actually outside the borders of the U.S, held mostly by households that do not have much confidence in the local currency. If enough people are willing to accept the dollar, it may become a second currency for the country.
* M2: A broader definition of the money supply: M1 plus savings account balances, small denomination time deposits (like CDs), and non-institutional money market fund shares.
* M3: M1, M2, plus large denomination time deposits and institutional money market mutual fund balances.
* Important: Because balances in checking accounts are included in the money supply, banks play an important role in the process by which the money supply increases and decreases.
* A person’s wealth is equal to the value of his assets minus the value of any debts he has.
* A person’s income is equal to his earnings during the year.
* His money is just equal to what he has in currency and in his checking accounts.
* Wealth that is invested in stocks and bonds is not included in the definition of money.
* Credit cards are not included in definitions of the money supply, because you are in effect taking out a loan from the bank that issued the credit card.
* How do banks create money? Banks are profit-making private businesses. The key role that banks play in the economy is to accept deposits and make loans.
* Bank Balance Sheets: On a bank’s balance sheet, a firm’s assets are listed on the left and its liabilities and stockholders’ equity are listed on the right. Stockholders’ equity is the difference between the total value of assets and the total value of liabilities, (or the value of the firm if it had to be closed…net worth). The left side of the balance sheet always equals the right side.
* The key assets on a bank’s balance sheet are its reserves, loans (biggest), and holdings of securities, such as U.S. Treasury bills.
* Reserves: Deposits that a bank keeps as cash in its vault or on deposit with the Federal Reserve.
* Required Reserves: Reserves that a bank is legally required to hold, based on its checking account deposits.
* Required Reserve Ratio (RR): The minimum fraction of deposits banks are required by law to keep as reserves.
* Excess Reserves: Reserves that banks hold over and above the legal requirement (usually 10%).
* Banks make consumer loans to households and commercial loans to businesses.
* A loan is an asset to a bank because it represents a promise by the person taking out the loan to make certain specified payments to the bank. A bank’s reserves and its holdings of securities are also assets because they are things of value owned by the bank.
* Most banks largest liability are their deposits, such as checking accounts, savings accounts, and CDs (the owner can ask for their money back at any time).
* Using T-Accounts to Show How a Bank Can Create Money: a t-account is a stripped down version of a balance sheet that shows only how a transaction changes a bank’s balance sheet.
* If Person A deposits 1000 dollars in a bank, the t-account will show an increase of 1000 in reserves (assets) , and 1000 in deposits (liabilities).
* The bank will hold 10% for RR, and then loan out the other 90%. The loan will be under assets, and also under liabilities (as someone elses money in a checking account).
* By making this 900 dollar loan, Wachovia has increased the money supply by $900. This is how the bank can create money…by loaning deposits out to other people.
* Any money taken out of the bank will go out of the reserves on the right and the deposits on the left.
* The Simple Deposit Multiplier: The ratio of the amount of deposits created by banks to the amount of new reserves.
* Simple deposit multiplier= 1 / RR when RR is in a percent (.10 for example)
* The higher the RR, the smaller the simple deposit multiplier.
* We can use this formula to calculate the total increase in checking account deposits from an increase in bank reserves due to currency being deposited in a bank.
* Change in checking account deposits=change in bank reserves x 1/RR , for example if $100,000 in currency is deposited in a bank and the RR is 10%, then the change will be to 1,000,000.
* Change in the money supply from bank transactions = increase in checking account deposits – decline in currency in circulation (See pp 800-802 for example).
* In reality, certain factors reduce the deposit multiplier to about 2.5
* The most important part of the money supply is the checking account balance component. When banks make loans, they increase checking account balances, and the money supply expands.
* Whenever banks gain reserves, they make new loans and the money supply expands.
* Whenever banks lose reserves, they reduce their loans and the money supply contracts.
* The Federal Reserve System: The U.S., like most other countries, has a fractional reserve banking system.
* Fractional Reserve Banking System: A banking system in which banks keep less than 100 percent of deposits as reserves.
* It is not usually a problem, and if a small amount more is withdrawn than deposited, banks can cover the difference from their excess reserves or by borrowing from other banks.
* Bank Run: Many depositors simultaneously decide to withdraw money from a bank.
* Bank Panic: Many banks experiencing runs at the same time.
* A central bank, like the Federal Reserve in the U.S., can help stop a bank panic by acting as a lender of last resort.
* The bank can use these loans to pay off depositors. When the panic ends and the depositors put their money back in their accounts, the bank can repay the loan to the central bank.
* In 2001, Argentina had a bank panic. By 2000, many people doubted that Argentina could maintain a one to one exchange ratio with the U.S. dollar. Most banks experienced runs, and the government first reduced the money people could withdraw to 1000 per month, and then had to drop the one to one ratio.
* With an intention of putting an end to banking panics, in 1913 Congress passed the Federal Reserve Act setting up the Federal Reserve System.
* The Federal Reserve, aka the Fed, is the central bank of the U.S. and is the lender of last resort to banks, as well as taking action to control money supply.
* Congress divided the country into 12 Federal Reserve Districts with a branch in each district.
* There are 7 members of the Board of Governors who run the Fed in Washington D.C. They all are appointed by the President to 14 year, nonrenewable terms.
* One of the seven board members is appointed chairman for a four-year, renewable term.
* Managing the money supply is part of monetary policy, which the Fed undertakes to pursue economic objectives. To manage the money supply, the Fed uses three monetary policy tools:

1. Open market operations: Federal Open Market Committee (FOMC): the Federal Reserve committee responsible for open market operations and managing the money supply. FOMC has 12 members including the Board of Governors, and meets 8 times a year in D.C. To increase the money supply, the FOMC directs the trading desk, located at the Federal Reserve Bank in New York to buy U.S. Treasury securities from the public. When the sellers of the Treasury securities deposit the funds in their banks, the reserves of banks will rise. This increase in reserves will start the process of increasing loans and checking account deposits that increases the money supply. To decrease the money supply, the FOMC directs the trading desk to sell Treasury securities. When the buyers of the Treasury securities pay for them with checks, the reserves of their banks will fall. This decrease in reserves starts a contraction of loans and checking account deposits that reduces the money supply.

Open Market Operations: The buying and selling of Treasury securities by the Federal Reserve in order to control the money supply.

1. Discount Policy: The loans the Fed makes to banks are called discount loans, and the interest rate it charges on the loans is called the discount rate. When a bank receives a loan from the Fed, its reserves increase by the amount of the loan. By lowering the discount rate, the Fed can encourage banks to take additional loans and thereby to increase their reserves. With more reserves, banks will make more loans to households and firms, which will increase checking account deposits and the money supply. Raising the discount rate will have the reverse affect. In practice, the Fed prefers to limit discount loans to helping banks that experience temporary problems with deposit withdrawals, rather than to use them to increase or decrease the money supply. In 1933, Congress set up the FDIC, or Federal Deposit Insurance Corporation to insure deposits in banks. FDIC has largely stopped bank panics because it has reassured depositors that their deposits are safe even if their bank goes out of business.
2. Reserve requirements: When the Fed reduces the required reserve ratio, it converts required reserves into excess reserves, and therefore makes more money available for banks to loan out and increase the money supply. If the Fed raises the RR from 10% to 12%, it would have the opposite effect. The Fed changes reserve requirements much more rarely than it conducts open market operations or changes the discount rate, because it can be disruptive to banks and to the economy.

* All three of the Fed’s policy tools are aimed at affecting the reserves of banks as a means of changing the volume of checking account balances.
* Using its three tools, open market operations, discount policy, and reserve requirements, the Fed has substantial influence over the money supply. Two other actors also influence the money supply: the nonbank public (who decide to save or not) and banks (who decide to lend or not).
* In the early 1900s, Irving Fisher formalized the connection between money and prices using the quantity equation: M x V = P x Y or money supply times the velocity of money equals the price level times real output.
* Velocity of Money: The average number of times each dollar in the money supply is used to purchase goods and services included in GDP.
* The Quantity Theory of Money: A theory of the connection between money and prices that assumes that the velocity of money is constant.
* The Quantity Theory Explanation of Inflation: We can change the quantity equation M x V = P x Y to: Growth rate of the money supply + growth rate of velocity = growth rate of the price level (inflation rate) + growth rate of real output.
* If we assume that velocity of money is constant, then the growth rate is 0, and the equation can be simplified to: Inflation rate = growth rate of the money supply - growth rate of real output
* This equation leads to the following conclusions:

1. If the money supply grows at a faster rate than real GDP, there will be inflation.
2. If the money supply grows slower than real GDP, there will be deflation (or a decline in the price level).
3. If the money supply grows at the same rate as real GDP, the price level will be stable, and there will be neither inflation nor deflation.

* Turns out that velocity change of money is not 0 and fluctuates every year. The quantity theory of money is still helpful in providing insight into the long-run relationship between the money supply and inflation: In the long run, inflation results from the money supply growing at a faster rate than real GDP.
* Very high rates of inflation are known as hyperinflation. Hyperinflation is caused by central banks increasing the money supply at a rate far in excess of the growth rate of real GDP. Developing countries often can’t avoid hyperinflation because their governments often want to spend more than they are able to raise through taxes. If they are unable to sell bonds to the public in order to raise money, governments in developing countries will force their central banks to purchase them. When a central bank buys bonds, the money supply will increase.
* Hyperinflation often goes hand in hand with severe recession and very slow growth.
* Money plays a key role in the functioning of an economy by facilitating trade in goods and services and by making specialization possible. Without specialization, no advanced economy can prosper.

**Chapter 26/ Monetary Policy:**

* The Fed has four policy goals: 1) price stability 2) high employment 3) economic growth 4) stability of financial markets and institutions
* Congress created the Federal Reserve System in 1914 with the main responsibility of providing discount loans to banks suffering from runs. After the Great Depression of the 1930s, Congress expanded the Fed’s responsibility’s to include: “so as to promote effectively the goals of maximum employment, stable prices, and moderate long-term interest rates.”
* Since WWII, the Fed has carried out an active **monetary policy: which refers to the actions the Fed takes to manage the money supply and interests rates to pursue its economic objectives.**
* Fed’s four monetary policy goals:
* 1) Price stability: Rising prices erode the value of money as a medium of exchange and a store of value. Previous Chairmen of the Fed’s Board of Governor’s Volcker, Greenspan, and Bernanke argued that if inflation is low over the long run, the Fed will have the flexibility it needs to lessen the impact of recessions.
* 2) High Employment: Unemployed workers and underused factories and office buildings reduce GDP below its potential level.
* 3) Economic Growth: Policy can spur economic growth by providing incentives for saving to ensure a large pool of investment funds, as well as by providing direct incentives for business investment. Policymakers aim to encourage stable economic growth because stable growth allows households and firms to plan accurately and encourages the long-run investment that is needed to sustain growth.
* 4) Stability of Financial Markets and Institutions: The Fed promotes the stability of financial markets and institutions so that an efficient flow of funds from savers to borrowers will occur. The Fed’s response to problems in financial markets has averted financial panics, such as its willingness to rapidly increase the volume of discount loans reassures financial markets and promotes financial stability.
* During most periods the most important goals of monetary policy have been **price stability** and **high employment**. This chapter focuses on these two goals.
* In the last 50 years, inflation was the highest during the 1970’s and peaked from 1979 to 1981 when it averaged more than 10%.
* Recall that the Fed’s policy tools are open market operations, discount policy, and reserve requirements.
* A policy that is intended to achieve one monetary policy goal, such as lower inflation, may have an adverse effect on another policy goal, such as economic growth.
* The Fed tries to keep both the unemployment and inflation rates low, but it can’t affect either of these economic variables directly. Instead, the Fed uses variables, called **monetary policy targets**, which it can affect directly and that, in turn, affect variables that are closely related to the Fed’s policy goals, such as real GDP and the price level. **The two main monetary policy targets are the money supply and the interest rate**, which is used more of the two.
* The Demand for Money: The Demand Curve for money (M1- currency and checking accounts that earn little or no interest) has the interest rate on the vertical axis and the quantity of money demanded on the horizontal axis. The Demand Curve for money is downward sloping because as interest rates increase, the opportunity of holding money that is not able to earn returns from these higher interest rates is high, therefore the demand for money (M1) is decreasing and the demand for other financial assets (such as U.S. Treasury Bills) that earn high returns from the interest rates increases. The interest rate is the opportunity cost of holding money. When interest rates for Treasury bills and other financial assets are low, the opportunity cost of holding money is low, so the quantity of money demanded will be high. The money demand curve slopes downward because lower interest rates cause households and firms to switch from financial assets like U.S. Treasury bills to money.
* The Money Supply curve is drawn holding all other variables except the interest rate equal.
* Other variables that can shift the demand curve are **real GDP** and the **price level**.
* An increase in real GDP means that the amount of buying and selling of goods and services will increase. This additional buying and selling increases the demand for money as a medium of exchange, so the quantity of money households and firms want to hold increases at each interest rate. A higher price level increase the quantity of money required for a given amount of buying and selling. So, an increase in GDP or price level will shift the demand curve for money to the right, and a decrease in GDP or price level will shift the demand curve for money to the left.
* How the Fed Manages the Money Supply: A Quick Review: 8 times a year the FOMC meets in D.C. to make decisions about the money supply. If the FOMC decides to increase the money supply, it orders the trading desk of the Federal Reserve Bank of New York to buy U.S. Treasury securities (this puts money into the market). The sellers of these Treasury securities deposit the funds they receive from the Fed in banks, which increases bank reserves, and allows them to loan out money, thereby increasing the money supply. If the FOMC decides to decrease the money supply, it will order the trading desk to sell U.S. Treasury securities to soak up money from the economy, and decreases the money supply.
* Equilibrium in the Money Market: (page 824) For simplicity, we assume that the Fed can completely control the money supply (despite the nonbank public and banks decisions), and that the money supply curve is vertical, and that changes in the interest rates have no effect on the quantity of money supplied.
* If the Fed increases the money supply, the vertical MS will shift to the right, lowering the equilibrium intersection with the demand curve, and the equilibrium interest rate falls.
* When the Fed increases the money supply by 50 million dollars, initially households and firms will have more M1 money than they want to hold at the initial interest rate. So, everyone will invest in short term financial assets, such as Treasury bills. The more demand to buy securities, the price will rise, and the interest rates will go down (as a balance to the demand). The interest rates will finally drop so low that people just assume to hold the extra money, and households and firms will move down the demand curve for money. The money market, thus, works its way back to equilibrium. When the Fed increases the money supply, the short term interest rates will fall until it reaches a level at which households and firms are willing to hold onto the extra money.
* If the Fed decreases the money supply, households and firms will be holding less money than they would like of the interest rate. To increase their money holdings, they will sell their Treasury bills and other financial assets. The increased supply of Treasury bills will make their prices lower, and their interest rates raise. Rising short term interest rates will increase the opportunity cost of holding money, causing households and firms to move up the demand curve until the interest rate is higher.
* Question: What is the interest rate of a Treasury bill that pays $1,000 in one year, if its interest rate is 4%? What is the price of the Treasury bill if its interest rate is 5%?
* How to find the answer: Divide the payoff (1000) by the interest rate (1.04 or 1.05) to get the price. Example: 1000/1.04=962 and 1000/1.05 = 952, so the interest rates and prices on financial assets move in opposite directions.
* The interest rate on a financial asset is called the yield.
* Why do we need two models of interest rates? The answer is that the loanable funds model is concerned with the long-term real rate of interest, and the money-market model is concerned with the short-term nominal rate of interest.
* The long-term real rate of interest is the interest rate that is most relevant when savers consider purchasing a long-term investment such as a corporate bond. It is also most relevant to firms who are borrowing to finance long-term investment projects (like buying new factories) or for households who are taking out a mortgage loan for a new home.
* The short-term nominal interest rate is the most relevant interest rate for monetary policy because it is the interest rate most affected by increases and decreases in the money supply.
* There is often a close connection between movements in the short-term nominal interest rate and movements in the long-term real interest rate.
* The Fed has generally focused more on the interest rate than on the money supply, because the definition of the money supply is constantly evolving.
* There are many different interest rates in the economy. For purposes of monetary policy, the Fed has targeted the interest rate known as the federal funds rate.
* The Importance of the Federal Funds Rate: Banks that need additional reserves can borrow in the federal funds market from other banks that have reserves available. The federal funds rate is the interest rate banks charge on loans in the federal funds market. The loans in the federal funds market are usually very short term, often just overnight. The rate is not set by the Fed, instead by the supply of reserves relative to the demand for them. Because the Fed can increase and decrease bank reserves through open market operations, it can set a target for the federal funds rate and come very close to hitting it. Changes in the federal funds rate usually will result in changes in both interest rates on other short-term financial assets and interest rates on long-term financial assets, such as mortgages.
* How Interest Rates Affect Aggregate Demand: Changes in interest rates affect aggregate demand, which is the total level of spending in the economy. Aggregate demand has four components: consumption, investment, government purchases, and net exports. Changes in interest rates affect all of these components of aggregate demand except government purchases. INTEREST RATES ON TAKING OUT LOANS.
* 1) Consumption: Lower interest rates cause increased spending on durables because they lower the total cost of these goods (such as a car) to consumers by lowering the interest payments on loans.
* 2) Investment: Higher interest rates on corporate bonds or on bank loans make it more expensive for firms to borrow, so they will undertake fewer investment projects. Lower interest rates make it less expensive for firms to borrow, so they will undertake more investment projects. Lower interest rates can also increase investment through their impact on stock prices. Spending by households on new homes is also part of investment. When interest rates on mortgage loans rise, the cost of buying new homes rises, and fewer new homes will be purchased.
* 3) Net Exports: **If interest rates in the U.S. rise relative to interest rates in other countries, investing in U.S. financial assets (Treasury bonds) becomes more desirable, causing foreign investors to increase their demand for dollars, which increases the value of the dollar. As the value of the dollar increases, net exports will fall because exports are more expensive to foreign countries and imports are relatively cheaper to U.S. citizens. If interest rates in the U.S. decline relative to interest rates in other countries, the value of the dollar will fall and net exports will rise.**
* A stock market “bubble” occurs when the prices of stocks, or some asset, rise above levels that can be justified by the profitability of the firms issuing the stock. There are two main explanations: 1) The investor may be caught up in the enthusiasm of the moment, and fail to estimate the true value correctly 2) The investor may expect to profit from buying stock at inflated prices if the investor can sell the stock at an even higher price before the bubble bursts.
* The aggregate demand and aggregate supply (AD-AS) model illustrates how monetary policy affects real GDP and the price level. Over time, the U.S. labor force, U.S. capital stock and technology will increase. The result will be an increase in potential real GDP, which we show by the long-run aggregate supply curve (LRAS) shifting to the right. More labor, capital, and technology means that the short-run aggregate supply curve will shift to the right too. As population and incomes rise, consumption (aggregate demand ) will shift to the right as well.
* During certain periods, however, AD does not increase enough during the year to keep the economy at potential GDP. When there is a gap between the real GDP and the potential real GDP, some firms are operating at less than their normal capacity. Incomes and profits will fall, firms will begin to lay off workers, and the unemployment rate will rise.
* When economists at the Federal Reserve anticipate that aggregate demand is not growing fast enough to allow the economy to remain at full unemployment, they present their findings to the FOMC, which decides whether circumstances require a change in monetary policy.
* **Expansionary (Stimulatory) Monetary Policy:** When the Fed increases the money supply and decreases interest rates (on loans) to increase real GDP. Expansionary monetary policy causes inflation to rise.
* Discount loans remain an effective way for the Fed to make funds quickly available to banks in an emergency. Although the modern Fed concentrates on its objectives for inflation and economic growth, which it implements through open market operations, it still retains its original purpose of dealing with potential financial panics. For this purpose, discount loans are an effective tool.
* The Fed can shorten recessions and make them milder, but it cannot stop them altogether.
* When stock prices fall, wealth of households decline and, thus, consumption declines.
* If growth is slow and inflation is low, the FOMC can decrease the federal funds target rate, in order to promote growth.
* Although the Fed was able to use expansionary monetary policy successfully to reduce the severity of the 2001 recession, it was unable to entirely eliminate it.
* Since the 1990s, Japan has experienced deflation, or a falling price level. Deflation can contribute to slow growth by raising real interest rates, increasing the real value of debts, and causing consumers to postpone purchases in the hope of experiencing even lower prices in the future**.**
* Some economists have suggested that the Japanese Central Bank should increase the money supply enough to cause inflation to be higher than the nominal interest rate, so that the real interest rate is below zero and will cause greater investment and spending.
* If the aggregate demand increases more quickly than the potential GDP forecast, then the inflation rate will begin to accelerate.
* When the Fed acts as it did in 2000, adjusting the money supply to increase interest rates to reduce inflation, it is engaging in contractionary monetary policy. A contractionary monetary policy is also known as a tight monetary policy. An expansionary policy is also known as a loose monetary policy.
* (836**) To implement an expansionary policy, the trading desk needs to buy Treasury bills. Buying Treasury bills will increase reserves in the banking system. Banks will increase their loans, which will increase the money supply and lower the interest rate.**
* See page 837 to be able to draw an expansionary/contractionary policy effects.
* Potential Real GDP is LRAS, real GDP is the x axis.
* The Fed is unable to use monetary policy to keep real GDP exactly at its potential level.
* A contractionary monetary policy DOES NOT cause the price level to fall. It causes the price level to rise by less than what it would have without the policy.
* Pg 838 **If FOMC orders an expansionary policy > the money supply increases and interest rates fall > investment, consumption, and net exports all increase > the AD curve shifts to the right > real GDP and the price level rise.**
* **If FOMC orders a contractionary policy > the money supply decreases and interest rates rise > investment, consumption, and net exports all decrease, the AD curve shifts to the left, real GDP and the price level fall.**
* **Stock prices tend to rise when investors expect that the Fed will be lowering interest rates (Stimulatory policy) to stimulate the economy (because when real GDP is increasing, the profitability of many firms will also be increasing).** When investors expect that the Fed will be raising interest rates to slow down an economy at risk of rising inflation, stock prices tend to fall.
* When the interest rates (on CDs, Treasury bills, and corporate bonds) are low, investing in stocks will look like a better option, and will therefore go up.
* When the interest rates are high, investing in stocks will go down.
* When the Fed increases the money supply by buying Treasury bills, the money supply is not larger. But, that does not affect people’s spending because no one’s income has increased just yet.
* Lowering interest rates, however, increases spending because it is cheaper to by items like cars and houses when interest rates are lower. **So it is interest rates, not money supply that is more effective and important for increased spending.**
* The Fed has to get the timing right on monetary policies, or else it might actually destabilize the economy. For example, the long-run trend in real GDP is an upward sloping, straight line with Real GDP on the y axis and time on the x axis. However, the actual real GDP path fluctuates as the business cycle fluctuates. If FOMC enacts an expansionary policy in the trough of a recession, or at the end of the recession, it will actually push the aggregate demand beyond potential GDP.
* The Fed will inadvertently engage in a procyclical policy: one that increases the severity of the business cycle.
* **Countercyclical Policy: one that is meant to reduce the severity of the business cycle.**
* NBER announces the recessions and expansions.
* Some economists have argued that rather than using an interest rate as its monetary policy target, the Fed should use the money supply.
* **Monetarism**, led by Milton Friedman (1970s), has long been critical of the Fed’s ability to correctly time changes in monetary policy. Monetarists favor replacing monetary policy with a monetary growth rule. A monetary growth rule is a plan for increasing the money supply at a constant rate that does not change in response to economic conditions, like recessions. They proposed a monetary growth rule of increasing the money supply every year at a rate equal to the long-run growth rate of real GDP, which is 3.5 percent.Friedman believed that active monetary policy destabilizes the economy, increasing the number of recessions and their severity.
* Monetarism has pretty much dwindled away since the 1970s because the growth rate between the money supply and the real GDP have fluctuated since the 70’s, showing little connection.
* The Fed cannot target both the money supply and the interest rates, because only the combinations of the interest rates and the money supply that represent equilibrium in the money market are possible (pg 841). For most of history since WWII, the Fed has chosen to target interest rates.
* **How does the Fed choose a target for the federal funds rate?**
* **Taylor Rule: A rule developed by John Taylor that links the Fed’s target for the federal funds rate to economic variables.**
* Taylor Rule Formula: Federal funds target rate= Current inflation gap + real equilibrium federal funds rate/ real interest rate + (1/2) x inflation gap ( actual-target) + (1/2) x output gap (current- target)
* Lowering the federal funds rate increases growth and inflation. Raising the federal funds rate lowers inflation as well as GDP. (see homework) Not perfect, but convenient rule for analyzing the federal funds rate.
* Inflation targeting: Conducting monetary policy so as to commit the central bank to achieving a publicly announced level of inflation.
* Arguments for targeting inflation: 1) easier for households and firms to plan for future inflation 2) help stabilize U.S. monetary policy through changes in FOMC leadership
* Arguments against it: 1) reduces the flexibility of monetary policy to address other policy goals 2) assumes the Fed can accurately forecast future inflation rates, which is not always true 3) take focus away from other important policy goals
* Because the Board of Governors serve 14-year, nonrenewable terms, they are insulated from political pressure. The FOMC determines the monetary policy of the U.S. without the input of Congress or the president.
* The Fed’s political independence is reinforced by its financial independence, because it does not request funding from Congress (it receives interest from the Treasury securities is sells.)
* It is not completely independent: Congress and the president are free at any time to pass new legislation to reorganize the Fed or even abolish it. So it is unlikely that the Fed would pursue a monetary policy that was strongly opposed by the president or by Congress.
* It is better for the Fed, or the Central Bank, to be independent from political pressures. 1) Without independence, a government will try to cover its deficit by forcing the central bank to buy bonds, which will increase the money supply and **increase inflation**. 2) If the government controls the central bank it may use that control to further its political interests, such as increasing the money supply and lowering interest rates right before a reelection (even if this is bad for the economy in the long run).
* Countries with highly independent central banks had lower inflation rates than those whose central banks had little independence.
* Some people would argue that because those deciding monetary policy do not have to run for election, they are not accountable for their actions to the ultimate authorities in the democracy: voters.
* On balance though, the U.S. economy has performed well during the past 25 years, which has greatly reduced discontent with the Fed’s structure.

**Chapter 27: Fiscal Policy:**

* As we saw in the last chapter, FOMC meets to decide whether to change monetary policy.
* Less frequently than eight times a year, Congress and the president also make changes in taxes and government purchases to achieve macroeconomic policy objectives, such as high employment, price stability, and high rates of economic growth.
* Fiscal Policy: Changes in federal taxes and purchases that are intended to achieve macroeconomic policy objectives.
* Economists restrict the term fiscal policy to refer only to the actions of the federal government, not state or local government because these do not change the national economy.
* Not all actions or expenditures are fiscal policies. They may be environmental policy or security.
* Automatic Stabilizers: Government spending and taxes that automatically increase or decrease along with the business cycles: such as lowering taxes or raising unemployment insurance during recessions.
* Discretionary Fiscal Policies: intentional actions by the government to change spending or taxes.
* Before 1930’s, the majority of government spending took place at the local and state levels. Since then, 2/3 to ¾ of government spending has been federal government spending.
* Government purchases are when the government purchases an aircraft carrier or pays for the services of the FBI (when it receives something in return).
* Government expenditures include purchases and all other things the government spends money on.
* Purchases have been declining as a fraction of government expenditures since the 1950s. Purchases are divided into defense spending and everything else.
* In addition to purchases, there are three other categories of federal government expenditures: 1) interest on the national debt = payments to bond holders issued by the federal government in order to borrow money

2) grants to state and local governments = like paying for police forces

3) transfer payments = the largest and fastest growing of the federal expenditures about 45% (social security, unemployment insurance and medicare)

* The future of Social Security and Medicare programs is controversial, because the population is aging and having fewer and fewer children. This means there are fewer current workers to support the retired population, and there may be no social security for future generations. Some economists have suggested increasing taxes or pushing back the age for retirement.
* The majority of the government’s federal revenue comes from individual income taxes and social insurance taxes.
* **The Fed carriers out stabilization policy through changes in the money supply and interest rates.**
* **The government, that is Congress and the president, carry out stabilization policies through changes in government purchases and taxes.**
* Because changes in government purchases and taxes lead to changes in aggregate demand, they can affect the level of real GDP, employment, and the price level.
* **Expansionary Fiscal Policy:** involves increasing government purchases or decreasing taxes. An increase in government purchases will increase aggregate demand directly. A cut in taxes has an indirect effect on aggregate demand. If the individual income tax is cut, household disposable income will rise, and so should consumption spending.
* The goal of both expansionary monetary and fiscal policy is to increase aggregate demand relative to what it would have been without the policy.
* Again, if there is a gap between aggregate demand and potential GDP (LRAS) between two years, firms will not operate at full capacity. Incomes and profits will be falling, firms will begin to lay off workers, and the unemployment rate will rise.
* The price level will be higher *than it would have been without the expansionary fiscal policy.*
* **Contractionary Fiscal Policy:** involves decreasing government purchases or increasing taxes. Policymakers use contractionary fiscal policy to reduce increases in aggregate demand that seem likely to lead to inflation.
* **Countercyclical Fiscal Policy:**
* In a recession, Congress will use expansionary policies of increasing government spending or cutting taxes. As a result, the real GDP and the price level will rise.
* When inflation is rising, Congress and the president will use contractionary fiscal policy, like decreasing government spending or raising taxes. As a result, real GDP and the price level will fall.
* Again, a contractionary fiscal policy does not cause the price level to fall. It just causes it to rise less than what it would have been without the policy. >>Slows down inflation and shifts aggregate demand back down to close gap between AD and GDP potential.
* In a recession, the problem is not a lack of money but a lack of SPENDING.
* **The purpose of both expansionary monetary policy and expansionary fiscal policy is to increase aggregate demand in order to increase spending.**
* Expansionary monetary policy lowers interest rates, which in turn increase aggregate demand.
* Expansionary fiscal policy increases aggregate demand either directly through government spending or indirectly through lowering taxes, and thus raising disposable income.
* Fiscal policy and monetary policy do not affect each other.
* Same goals but different methods.
* Government Purchases and Tax Multipliers:
* Economists refer to the initial increase in government purchases as **autonomous spending** because it does not depend on the level of real GDP. The increases in consumption spending are induced by the initial increase in autonomous spending. Economists refer to the series of induced increases in consumption spending that result from an initial increase in autonomous expenditures as the **multiplier effect**.
* The AD curve will shift to the right twice, once from the initial expenditure, and then again from the increase in incomes and spending from the initial spending.
* On an Aggregate Demand/ Aggregate Supply Curve, real GDP is on the x axis and price level is on the y axis.
* The ratio of the change in equilibrium real GDP to the initial change in government purchases is known as the government purchases multiplier:
* Government purchases multiplier = change in equilibrium real GDP / change in government purchases
* **Economists have estimated that the government purchases multiplier has a value of about 2. Therefore, an increase in government purchases of 100 billion dollars should increase equilibrium real GDP by 2 x 100 billion dollars = 200 billion dollars**
* Tax cuts also have a multiplier effect, because when household disposable income rises, so will consumption spending. These increases in consumption spending will set off further increases in real GDP and income, just as increases in government purchases do.
* Tax Multiplier = change in equilibrium real GDP / change in taxes (tax cut)
* **The tax multiplier is negative because changes in taxes and changes in real GDP move in opposite directions.**
* For example, if the tax multiplier is -1.6, a 100 billion dollar cut in taxes will increase real GDP by -1.6 x -100 billion = 160 billion.
* **The tax multiplier is smaller in absolute value than the government multiplier, because while the whole of the government spending results in an increase in aggregate demand, a fraction of the tax cut that is saved or spent on imports will not increase aggregate demand.**
* A cut in tax RATES, not a fixed amount of a tax cut, effects equilibrium real GDP through two channels: 1) A cut in tax rates increases the disposable income of households, which leads them to increase their consumption spending and 2) a cut in tax rates increases the size of the government multiplier effect (pg 863).
* The simple multiplier effect assumes that the price level remains the same as aggregate demand increases from government purchases and tax cuts.
* However, when the SRAS curve is upward sloping, as the AD shifts to the right, the price level will rise. As a result of the rise in the price level, equilibrium real GDP will not increase by the full amount the multiplier effect indicates.
* (pg 864) because the price level will follow the SRAS curve upward, the price level will be higher and the quantity (real GDP) will be less than if the aggregate demand shift to the right could have had an equilibrium on a horizontal line to the initial equilibrium (see graph)
* We can conclude that the actual change in real GDP resulting from an increase in government purchases or a cut in taxes will be less than indicated by the simple multiplier effect with a constant price level.
* Decreases in government purchases and increases in taxes will have a negative multiplier effect on equilibrium real GDP.
* If there is a 300 billion dollar gap between the real GDP and the potential GDP, the government could increase spending by 150 billion dollars (including the 2 x multiplier effect) or could cut taxes by 187.5 billion (taking into consideration the -1.6 tax multiplier).
* **Fiscal policy, like monetary policy, can do harm instead of good if it is timed wrong. It is more difficult to time fiscal policy right because it takes longer for Congress and the president to pass fiscal legislation than the FOMC to change monetary policy.** For example, government spending to build a subway system will take several months to years to plan out.
* Tax cuts can help recessions be shorter and milder if they are passed quickly enough.
* **Congress and the president use fiscal policy relatively infrequently because they are well aware of the timing problem.**
* **The Fed plays a larger role in stabilizing the economy because it can quickly change monetary policy in response to changing economic conditions.**
* **Crowding out:** A decline in private expenditures as a result of an increase in government purchases. **Can’t use government spending for extended periods of time. Crowds out private growth.**
* Crowding Out in the Short Run: As government spending takes place, real GDP and income will rise. At higher levels of GDP and income, households and firms demand more money, causing interest rates to raise. Higher interest rates will result in a decline in each component of private expenditures. Consumption, investment, and net exports will decrease at higher interest rates.
* Crowding out may prevent an expansionary fiscal policy from meeting its goal of keeping the economy at potential GDP (pg 868).
* Crowding out in the long run: In the short run, government spending results in partial crowding out. The long run effect of a permanent increase in government spending will be complete crowding out. **Any permanent increase in government purchases must come at the expense of private expenditures.**
* Japan had great growth 1950-1990, (second to the U.S.) but slow growth in the 1990s to now.
* Budget Deficit: The situation in which the government’s spending is greater than its tax revenue. The government finances that spending by selling securities to foreign governments (Saudi Arabia and China).
* Budget Surplus: The situation in which the government’s expenditures are less than its tax revenue.
* **The government tends to run a budget deficit during major wars (like WWI and WWI) and during recessions (when transfer payments increase and taxes decrease). From 1970 to 1997, the government had a budget deficit. From 1998 to 2001, the government had a budget surplus. Then the 2001 recession plus Iraq and Afghan wars put the U.S. in a big budget deficit. Now, plus the bail out for banking and mortgage industry has increased the deficit.**
* **Discretionary increases in spending or cuts in taxes to increase aggregate demand during a recession will increase the budget deficit.**
* Most of the increase in the federal budget deficit during recessions takes place without discretionary policy by Congress and the president because of the effects of automatic stabilizers.
* Deficits occur automatically during recessions for two reasons: 1) wages and profits fall, thus taxes fall 2) the government spends more on transfer payments to support the public
* Cyclically adjusted budget deficit or surplus: measures what the deficit or surplus would be if the economy were at potential GDP.
* These automatic budget surpluses and deficits can help to stabilize the economy. For example: **tax cuts and government spending on transfer payments allow people to continue spending money during recessions. This keeps the recessions from being severe.**
* In an expansion, higher taxes and lower transfer payments cause total spending to rise by less than it otherwise would have, which helps reduce the chance that the economy will experience higher inflation.
* Modern macroeconomics began during the 1930s with the publication of The General Theory of Employment, Interest, and Money by John Maynard Keynes.
* Many economists read Keynes book and felt that the government should use expansionary fiscal policy to pull the U.S. out of the Great Depression. Roosevelt did propose many government spending programs, but he ran a budget surplus, not the necessary deficit to help expand spending and investing.
* If the government takes action to raise taxes or cut spending, the federal budget deficit will decline. But the deficit will also decline automatically when GDP increases, even if the government takes no action. If GDP rises, then automatic stabilizers will occur like increased taxes and less government spending, so the government may not have done anything at all.
* To balance the budget every year, the government might have to take actions that would destabilize the economy in the direction of the business cycle fluctuation.
* **Every time the federal government runs a budget deficit, the Treasury must borrow funds from investors by selling Treasury securities. When the federal government runs a budget surplus, the Treasury pays off some existing bonds. The total value of U.S. Treasury bonds outstanding is referred to as the federal government debt or, sometimes, as the national debt. Each year the federal government is in deficit, the federal government debt grows. Each year the federal budget is in surplus, the debt shrinks.**
* The federal government is in **no danger of defaulting on its debt**. Ultimately, the government can raise the funds it needs through taxes to make the interest payments on the debt. If the debt becomes very large relative to the economy, however, the government may have to **raise taxes** to high levels or **cut back on other types of spending** to make the interest payments on the debt. In the long run, a debt that increases in size relative to GDP can cause crowding out of investment spending, and thus decrease growth.
* Tax wedge: The difference the pre-tax and post-tax return to an economic activity. In general, economists believe that the smaller the tax wedge for any economic activity, the more of that economic activity will occur. A reduction in the income tax would increase the after-tax return to saving, causing an increase in the supply of loanable funds, a lower equilibrium interest rate, and an increase in investment spending.
* The effects on aggregate supply of cutting each of the following types of taxes:

1. Individual Income Tax: reducing the individual income tax will increase the quantity of labor supplied, encourage the opening of new businesses, and increase the return to saving.
2. Corporate Income Tax: Cutting the marginal corporate income tax rate would encourage investment spending by increasing the return corporations receive from new investments in equipment, factories, and office buildings. Because innovations are often embodied in new investment goods, cutting the corporate income tax potentially can increase the pace of technological change.
3. Taxes on dividends and capital gains: Individuals and corporations end up paying taxes twice for dividends and capital gains. Lowering the tax rates on dividends (to reduce double taxation) and capital gains increases the supply of loanable funds from households to firms, increasing saving and investment and lowering the equilibrium real interest rate.

* Tax Simplification: If the tax code were greatly simplified, the economic resources currently used by the tax preparation industry would be available to produce other goods and services.
* Proponents of a flat tax have focused on the reduction in paperwork and compliance cost and the potential increases in labor supply, saving, and investment that would result from a lower marginal tax rate. Opponents of the flat tax say that many of the “complications” of the progressive tax are meant to pursue policy goals (like giving a tax break on hybrid cars to encourage environment policy). Second, opponents of the flat tax believe that it would make the distribution of income more unequal be reducing the marginal tax rate on high-income taxpayers.
* In modeling tax simplification on the AD-AS model, we see that the LRAS will move to the right twice (once from normal growth and then again from tax reductions and simplifications). Since AD stays constant, and we ignore SRAS, we see that tax simplification causes a decrease in price and an increase in real GDP.
* How large are the supply side effects? Most economists would agree that there are supply-side effects to reducing taxes: such as increasing the quantity of labor supplied and increasing investment spending. Economists are also skeptical of the magnitude of supply-side effects and believe that tax cuts have their greatest impact on aggregate demand, rather than on aggregate supply.

**Chapter 28/ Inflation, Unemployment, and Federal Reserve Policy:**

* In the short run there can be a tradeoff between unemployment and inflation: lower unemployment rates can result in higher inflation rates. In the long run, however, this trade off disappears and the unemployment rate is independent of the inflation rate.
* When aggregate demand decreases, unemployment will rise and inflation will fall.
* As a result, there is a short-run tradeoff between unemployment and inflation. The period may be as long as several years, but it disappears in the long run.
* This tradeoff was not widely recognized until the late 1950s. In 1957, the New Zealand economist A.W. Philips plotted unemployment versus inflation.
* Phillips Curve: A curve showing the short-run, inverse relationship between the unemployment rate and the inflation rate.
* The AD-AS model indicates that slow growth in aggregate demand leads to both higher unemployment and lower inflation.
* On the AD-AS model, If AD shifts to the right by the same amount as the LRAS, then the inflation rate and the unemployment rate will stay the same. However, if AD does not shift as much as LRAS, then there will be a gap between actual and potential GDP. This means that firms will not be operating at full capacity. Wages and profits will fall, unemployment will rise, but price level and, thus, inflation will fall.
* If AD shifts to the right more than LRAS, then inflation will rise, but unemployment will fall.
* During the 1960s, economists believed that the Phillips Curve represented a structural relationship, with a permanent tradeoff between unemployment and inflation.
* Structural Relationship: A relationship that depends on the basic behavior of consumers and firms and remains unchanged over long periods of time.
* If the Phillips Curve were a structural relationship, it would present policymakers with a reliable menu of combinations of unemployment and inflation, and policymakers could simply adjust the economy with expansionary or contractionary monetary and fiscal policies.
* In 1968, Milton Friedman argued that the long-run aggregate supply curve was vertical, and, therefore, the Phillips curve could not be downward sloping in the long run. There is no trade-off between unemployment and inflation in the long run.
* In the long run, a higher or lower price level has no effect on real GDP because real GDP is always at its potential level in the long run. In the same way, in the long run a higher or lower inflation rate will have no effect on the unemployment rate because the unemployment rate is always equal to the natural rate in the long run.
* Friedman’s conclusion is that the long-run aggregate supply curve is a vertical line at the potential real GDP, and the long-run Phillips curve is a vertical line at the natural rate of unemployment (or around 5%)
* Natural rate of Unemployment: The unemployment rate that exists when the economy is at potential GDP.
* If the long-run Phillips curve is a vertical line, no trade-off exists between unemployment and inflation in the long run. This conclusion seemed to contradict the experience of the 1950s and 1960s, which showed a stable trade-off between unemployment and inflation. Friedman argued that the statistics from those years actually showed only a short-run trade-off.
* The short-run trade-off existed, but only because workers and firms sometimes expected the inflation rate to be either higher or lower than it actually was. Differences between the expected inflation rate and the actual inflation rate could lead the unemployment rate to rise above or dip below the natural rate.
* Real wage = nominal wage/ price level x 100
* If actual inflation is higher than expected inflation, actual real wages in the economy will be less than expected real wages, and many firms will hire more workers than they had originally planned, and the unemployment rate will fall.
* If actual inflation is lower than expected inflation, than real wages will be higher than firms had expected, and they will hire fewer workers than planned. Unemployment will rise from lower inflation expectations.
* An increase in the inflation rate decreases unemployment only if the increase in the inflation rate is unexpected.
* The temporary tradeoff comes not from inflation, but unanticipated inflation.
* If workers fail to understand that rising inflation leads over time to comparable increases in wages, then when inflation increases, in the short run firms can increase wages by less than inflation without worrying about workers quitting or their morale falling.
* The Short-Run and Long-Run Phillips Curve: the new, higher expected inflation rate can become embedded in the economy, meaning that workers, firms, consumers, and the government all take the inflation rate into account when making decisions. The short-run trade-off between unemployment and inflation now takes place from this higher, less favorable level (pg 903).
* When graphing the short-run Phillips Curves with the Long-Run Phillips Curves, 1) inflation rate is the y axis and Unemployment rate is the x axis 2) the long-run Phillips Curve is a vertical line at 5%, or the natural rate of unemployment 3) The short-run Phillips Curves intersect the long run Phillips Curve at the expected inflation rates.
* So, we start off where the lowest short-run Phillips Curve intersects the LRPC. This is at the expected inflation rate, with a natural rate of unemployment of 5%. Then, we move up that SRPC as people expect the inflation rate to rise to a higher percent. Unemployment will fall temporarily, as firms can hire more workers with higher inflation. Eventually, people will get used to the inflation at this new level, and the unemployment rate will return back to 5%, but at a higher inflation rate. This process will keep happening, as the SRPCs keep shifting up, and as inflation grows in the long run, while unemployment stays relatively the same (5% in the long run).
* By the 1970s, most economists accepted that the LRPC was vertical, and that the view from the 1960s was wrong: It was not possible to buy a permanently lower unemployment rate at the cost of a permanently higher inflation rate. In the long run, the unemployment rate always returns to the natural rate, no matter what the inflation rate is.
* The inflation rate is stable only when the unemployment rate is equal to the natural rate. If the unemployment rate is below the natural rate, the inflation rate increases, and, eventually the SRPC shifts up. If the unemployment rate is above the natural rate, the inflation rate decreases, and, eventually, the SRPC shifts down.
* As a result, the natural rate of unemployment is sometimes called the nonaccelerating inflation rate of unemployment (NAIRU).
* We can conclude that in the long run, the Federal Reserve System can affect the inflation rate, but not the unemployment rate.
* It would be easier for the Fed if it knew exactly the unchanging rate of natural unemployment. However, the natural rate does change over time, because frictional and structural unemployment change.
* Causes: 1) Demographic changes (the younger the population the less skilled the workforce and the higher the unemployment rate), 2) Labor Market institutions: (the more unemployment insurance offered by the country, and the more unions and legal barriers to firing workers, the higher the rate of unemployment 3) Past high rates of unemployment: if high rates of unemployment persists for a period of years, the natural rate of unemployment may increase.
* Attempting to permanently keep the unemployment rate at very low levels leads to a rising inflation rate, which is what happened in the late 1960s and early 1970s.
* How long economies remain on the SRPC depends on how quickly workers and firms adjust their expectations.
* Low Inflation: When the inflation rate is low, as in the 1950s, 1990s and early 2000s, workers/ firms tend to ignore it. For example, if the inflation rate is low, a restaurant may not want to pay for printing new menus that would show slightly higher prices.
* Moderate, stable inflation: If rates are high enough to require attention, but stable from year to year, worker/firms will not ignore it. Instead, they have adaptive expectations of inflation if they assume that future rates of inflation will follow the pattern of rates of inflation in the recent past.
* High and Unstable inflation: 1973 to 1982, Workers and firms that failed to correctly anticipate the fluctuations in inflation during these years could experience substantial declines in real wages and profits. Therefore, people should use all available information when forming their expectations of future inflation. Rational Expectations: Expectations formed by using all available information about an economic variable.
* Some economists argued that, if workers and firms used rational expectations, they would make use of all available information, including knowledge of the policy being used by the Federal Reserve. They will forecast better, and the actual inflation rate will equal the expected inflation rate, the actual real wage will equal the expected real wage, and the unemployment rate will not fall below the natural rate.
* Instead of going through the process of moving up the SRPC with a smaller unemployment rate, and then shifting up altogether, the unemployment rate would never change. Firms/workers would be prepared, and it would simply be a quick transition to a higher inflation rate. The short run Phillips Curve would then be vertical, atop the LRPS, if people had rational expectations.
* Many economists are skeptical that the SRPC is vertical, because 1) workers and firms actually may not have rational expectations, and 2) the rapid adjustment of wages and prices needed for the SRPC to be vertical will not actually take place (sometimes workers are signed into a contract).
* Some economists argued (1980s) that fluctuations in “real” factors, particularly technology shocks (that make it possible to produce more or less output with the same input) explained deviations of real GDP from its potential level. Because these models focus on real factors, rather than on changes in the money supply to explain fluctuations in the real GDP, they are known as real business cycle models.
* Like the classical economists, the new classical macroeconomists believe that the economy will normally be at its potential level.
* Other economists are skeptical of these models because they explain recessions as being caused by negative technology shocks, which are uncommon apart from the oil price increase of the 1970s.
* In the 1970s, high OPEC oil prices caused higher levels of inflation and unemployment in the economy. This was because OPEC cut temporary supply of oil, causing the SRAS to shift to the LEFT. This made the price level higher and the real GDP lower. When real GDP lowers, unemployment goes up, because firms are not operating at full capacity.
* This put the Federal Reserve in an awkward position: if they used expansionary monetary policy to fight the unemployment, inflation would worsen. If they used contractionary monetary policy, the unemployment would worsen, but inflation would lower. In the end, the Fed used expansionary monetary policy, at the cost of higher inflation.
* By the 1970s, inflation was very high, and Paul Volcker, Chairman of the Board of Governors under Jimmy Carter, used contractionary policy to cut the inflation.
* A significant reduction in the inflation rate is called disinflation.
* This episode was successful and is often referred to as Volcker’s disinflation. It came at a high cost though of the highest unemployment since the Great Depression. Eventually, though, the unemployment returned to the natural rate.
* Disinflation refers to a decline in inflation rate. Deflation refers to a drop in the price level.
* Followers of the new classical macroeconomics approach, like Robert Lucas, believe that the economies SRPC is vertical like the LRPC, and that people will rational expect announced monetary policy actions. Thus, inflation may change, but unemployment will not shift much.
* How do you reduce inflation with monetary policies when the economy is currently at the natural rate of unemployment? To reduce the inflation rate significantly, the Fed will have to raise the target for the federal funds rate. Higher interest rates will reduce aggregate demand, raise unemployment, and move the economy’s equilibrium down the SRPC (see homework). Once the SRPC has shifted down, the Fed can push the economy back to the natural rate of unemployment with an expansionary monetary policy.
* Alan Greenspan succeeded Paul Volcker, appointed by Ronald Reagan in 1987.
* Greenspan and Volcker wanted to keep the inflation rate low.
* In Paul Volcker’s and Alan Greenspan’s terms, the Fed announced that it would no longer try to set targets for the money supply.
* Instead, the FOMC has relied on setting targets for the federal funds rate to meet its goals of price stability and high employment.
* Volcker and Greenspan (experienced only two brief recessions and no periods of high inflation) did a good job of giving the Fed credibility among citizens.
* It is important to maintain credibility so that people will believe, and, therefore, accurately forecast inflation rates for the future.
* Debate continues over policies to increase the Fed’s credibility.
* Some economists/ policymakers feel that central banks are more credible if they adopt and follow rules. A rules strategy for monetary policy involves the central bank’s following specific and publicly announced guidelines for policy. When the Central Bank chooses a rule, this strategy requires that it follow the rule, whatever the state of the economy. The rule should also apply to variables that are able to be significantly controlled by the Fed (not promising about the GDP)
* Economists and policymakers who oppose the rules strategy support a discretion strategy for monetary policy. With a discretion strategy, the central bank should adjust monetary policy as it sees fit to achieve its policy goals, such as price stability and high employment.
* In practice, the Fed has generally followed a discretionary strategy.
* Most economists believe there is a middle road between the rules and discretionary strategies. The Taylor Rule fits in here.
* The same lack of flexibility that can make a rule credible can also limit the central bank’s ability to respond during a financial crisis, such as a stock market crash.
* Although deflation was not the only reason economic growth in Japan was so weak, failing to end deflation made other problems, such as reform of the banking system, harder to manage. The Bank of Japan’s failure of credibility helps to explain its weak performance compared with the performance of the Federal Reserve during the same time period.
* During a business cycle recession, consumers often reduce expenditures on new homes and on durable goods, such as household appliances. However, expansionary monetary policy, like reducing interest rates, can directly affect consumer spending, and cushion the economy.

**Chapter 29/ Macroeconomics in an Open Economy:**

* Countries are linked by trade in goods and services and by flows of financial investment.
* Open economies: An economy that has interactions in trade or finance with other economies.
* Nearly all economies are open economies these days.
* Closed economy: An economy that has no interactions in trade or finance with other economies.
* No economy today is completely closed, even North Korea trades with some people.
* Balance of Payments: The record of a country’s trade with other countries in goods, services, and assets.
* U.S. Dept. of Commerce is responsible for collecting data on the balance of payments.
* The balance of payments contains three accounts: the current account, the financial account, and the capital account.
* The Current Account: records current, or short-term, flows of funds into and out of a country. The current account for the U.S. includes net exports (exports minus imports of goods and services), net investment income (income received by the U.S. residents from investments in other countries minus income paid on investments in the U.S. owned by residents in other countries), and net transfers (the difference between transfers made to residents of other countries and transfers received by U.S. residents from other countries).
* The largest item of the current account is the balance of trade: the difference between the value of the goods a country exports and the value of the goods a country imports.
* If a country exports more than it imports, it has a trade surplus.
* If it exports less than it imports, it has a trade deficit.
* The U.S. usually imports more than it exports.
* Net exports equal the sum of the balance of trade and the balance of services, which is the difference between the value of the services a country exports and the value of the services a country imports.
* The Financial Account: records long-term flows of funds into and out of a country. The part of the balance of payments that records purchases of assets a country has made abroad and foreign purchases of assets in the country.
* There is a capital outflow from the U.S. when an investor in the U.S. buys a bond issued by a foreign company or government or when a U.S. firm builds a factory in another country.
* There is a capital inflow into the U.S. when a foreign investor buys a bond issued by a U.S. firm or by the government or when a foreign firm builds a factory in the U.S.
* Capital refers to financial (shares of stock), as well as physical (factories) assets.
* Foreign Direct Investment: when firms build or buy facilities in foreign countries.
* Foreign Portfolio Investment: when investors by stock or bonds issued in another country.
* The balance on the financial account can be measured by net capital flows (the difference between capital inflows and capital outflows).
* Net Foreign Investment: equal to net foreign direct investment plus net foreign portfolio investment
* Since net foreign investment is the opposite of net capital flows in process, they will be the same except with opposite signs.
* The Capital Account: the least important of the three parts of the balance of payments. The part of the balance of payments that records relatively minor transactions, such as migrants’ transfers (such as when they are leaving or entering a country), and sales and purchases of nonproduced, nonfinancial assets (such as a patent or a copyright).
* The capital account is so small that it can be ignored for the rest of the chapter.
* The balance of payments is always zero.
* To make the balance on the current account equal the balance on the financial account, the balance of payments includes an entry called the statistical discrepancy, which includes the capital account balance.
* It is an *official reserve transaction* when foreigners add more of the dollar to foreign holdings.
* Foreign investment in the U.S. or additions to foreign holdings of dollars both show up as positive entries in the U.S. financial account. Therefore, a current account deficit must be exactly offset by a financial account surplus, leaving the balance of payments equal to zero.
* The statistical discrepancy is included in the balance of payments to compensate for these uncounted transactions.
* If a country runs a current account surplus, then they must run a financial account deficit, and vice versa.
* The balance of trade includes only the value of goods, not services.
* When firms make extensive use of foreign currencies, they must deal with fluctuations in the exchange rate.
* The nominal exchange rate: is the value of one country’s currency in terms of another country’s currency. The nominal exchange rate determines how many units of a foreign currency you can purchase with one dollar.
* Rather than exchanging large amounts of paper currency, they buy and sell deposits in banks.
* Real Exchange Rate: Corrects the nominal exchange rate for changes in prices of goods and services.
* Banks make a profit by buying foreign currency for less than they sell it.
* There are three sources of foreign currency demand for the U.S. dollar:

1. Foreign firms and consumers who want to buy goods and services produced in the U.S.
2. Foreign firms and consumers who want to invest in the U.S. either through foreign direct investment or foreign portfolio investment.
3. Currency traders who believe that the value of the dollar in the future will be greater than its value today.

* When the value of the dollar is high, the quantity of dollars demanded will be low. For example, a Japanese firm will want to buy a U.S. Treasury bond when the dollar is weak compared to the yen so it takes less yen to buy more dollars.
* When the value of the dollar is high, the quantity supplied will be high because a U.S. investor will want to buy financial securities in other countries when it takes less dollars to buy more of the foreign currency.
* Currency appreciation: Occurs when the market value of a currency rises relative to another currency.
* Currency depreciation: occurs when the market value of a currency falls relative to another currency.
* Three main factors cause the demand and supply curves in the foreign exchange market to shift:

1. Changes in the demand for U.S. produced goods and services and changes in the demand for foreign produced goods and services.
2. Changes in the desire to invest in the U.S. and changes in the desire to invest in foreign countries.
3. Changes in the expectations of currency traders about the likely future value of the dollar and the likely future of foreign currencies.

* The demand curve for dollars shifts to the right when incomes in Japan rise, when interest rates in the U.S. rise, or when speculators decided that the value of the dollar will rise relative to the value of the yen. And vice versa
* Speculator: Currency traders who buy and sell foreign exchange in an attempt to profit by changes in exchange rates.
* The supply curve will shift to the right in an expansion in the U.S., when interest rates in Japan are higher and thus investments in Japan will look more attractive, causing the supply curve of dollars to shift to the right. Lastly, if speculators become convinced that the future value of the yen will be higher relative to the dollar than it is today, the supply curve of dollars will shift to the right as traders attempt to exchange dollars for yen.
* If the demand curve for dollars in exchange for Japanese yen shifts to the right by more than the supply curve does, the equilibrium exchange rate will increase.
* Some exchange rates are not determined by the market. Some currencies have fixed exchange rate that do not change over long periods.
* For example, China fixed their yuan to the dollar for several years.
* When it takes more dollars to buy a euro, the dollar has depreciated against the euro and the euro has appreciated against the euro.
* To generalize, we can conclude that depreciation in the domestic currency will increase exports and decrease imports, thereby increasing net exports.
* If the economy is currently below potential GDP, the, holding all other factors constant, a depreciation in the domestic currency should increase net exports, aggregate demand, and real GDP.
* An appreciation in the domestic currency should have the opposite effect: Exports should fall and imports should rise, which will reduce net exports, aggregate demand, and real GDP.
* An important factor in determining the level of a country’s exports to and imports from another country is the relative prices of each country’s goods.
* The relative prices of two countries goods are determined by two factors: 1) the relative price level in the two countries and 2) the nominal exchange rate in currencies.
* Real Exchange Rate: is the price of domestic goods in terms of foreign goods.
* Real Exchange rate: nominal exchange rate x (domestic price level / foreign price level) where the nominal exchange rate is in terms of foreign per dollar so the currencies cancel out
* Real exchange rates are reported as index numbers with one year chosen as the base year.
* The real exchange rates’ value is in tracking changes over time, in particular the changes in the relative prices of domestic goods in terms of foreign goods.
* Imports and exports are a much larger fraction of GDP today than they were before 1970 (now about 10% - 15% of GDP).
* Imports have increased faster than exports, which has made net exports negative every year since 1975.
* When a country imports more than it exports, the country must finance the difference by selling assets or by borrowing.
* For any country, a current account deficit must be exactly offset by a financial account surplus (capital inflow is greater than outflows, or net capital inflow).
* When imports are greater than exports, net exports are negative and there will be a net capital inflow as people in the U.S. sell assets and borrow to pay for the surplus of imports over exports.
* Because net exports are usually negative for the U.S., in most years, the U.S. must be a net borrower from abroad and U.S. net foreign investment will be negative.
* Net exports will be approximately the same as net foreign investment (sign too).
* Countries that export more than they import must lend abroad more than they borrow from abroad.
* The total saving in any economy is equal to saving by the private sector plus saving by the government sector, which is called public saving.
* Budget surplus= saving, budget deficit = negative saving, or dissaving
* See pg. 938-939 to derive saving and investment equation.
* Saving and investment equation: An equation showing that national saving is equal to domestic investment plus net foreign investment.
* National saving (S) = domestic investment (I) + net foreign investment (NFI)
* Sprivate = Y- C – T
* Spublic = T- G
* Y = C + I +G + NX
* NX = NFI
* If net foreign investment is negative (more investing in your country than from your country elsewhere), domestic investment must be greater than national savings.
* Japan needs a high level of net exports to help offset a low level of domestic investment. When exports of a product begin to decline and imports begin to increase, governments are very tempted to impose tariffs or quotas to reduce imports.
* Twin deficit: when a government has a budget deficit and also a current account deficit
* Why is the U.S. called the world’s largest debtor? U.S. net foreign investment is negative, meaning more firms/consumers invest into the U.S. than Americans invest abroad. This is good though because it shows that the world has a strong confidence in the American economy. Since private saving in the U.S. is low, it is the large net foreign investment that keeps the U.S. economy growing.
* Economists refer to the ways in which monetary and fiscal policy affect the domestic economy as policy channels.
* An open economy has more policy channels than does a closed economy.
* Monetary policy has a greater impact on aggregate demand in an open economy than in a closed economy. Example: When the Fed uses expansionary or contractionary monetary policy, it affects the interest rates, which affect domestic investment and foreign investment inversely. An open economy has the foreign investment as an additional policy channel to affect aggregate demand.
* Fiscal policy has a smaller impact on aggregate demand in an open economy than in a closed economy.
* **Chapter 30 / The International Financial System:**
* Floating Currency: The outcome of a country allowing its currency’s exchange rate to be determined by demand and supply.
* Exchange rate system: An agreement among countries on how exchange rates should be determined.
* Managed float exchange rate system: the current exchange rate system under which the value of most currencies is determined by demand and supply, with occasional government intervention. (most countries have this)
* Fixed exchange rate system: A system under which countries agree to keep the exchange rates among their currencies fixed.
* Historically, the two most important alternatives to the managed float exchange rate system were the gold standard and the Bretton Woods System.
* The gold standard, paper currency that the government was committed to redeem for gold, was a fixed exchange rate system that lasted from the nineteenth century until the 1930s.
* The size of a country’s money supply was determined by how much gold they had in storage.
* By the 1930’s, most countries, including the U.S., abandoned the gold standard because during the Great Depression and times of war, countries had to be able to expand the money supply past the gold capacity.
* Under the Bretton Woods System, the U.S. pledged to buy or sell gold at a fixed price of 35$ per ounce. The central banks of all the other members of the system then pledged to buy and sell their currencies at a fixed rate against the dollar, which fixed the exchange rate among their currencies as well.
* The U.S. would redeem dollars for gold only if they were presented by a foreign central bank, not to domestic citizens though.
* Fixed exchange rates soon became too difficult to manage and the Bretton Woods System ended by the 1970s.
* The link between gold and money that existed for centuries has been broken in the modern economy. The Treasury still owns billions of dollars of gold in Fort Knox, Kentucky, but it is in no way connected to the amount of paper money in the money supply.
* The Current Exchange Rate System has three important aspects:

1. The U.S. allows the dollar to float against other major currencies.
2. Most countries in Western Europe have adopted a single currency, the euro.
3. Some developing countries have attempted to keep their currencies’ exchange rates fixed against the dollar or another major currency.

* In the short run, the two most important causes of exchange rate movements are 1) changes in interest rates, which cause investors to change their views of which countries’ financial investments will yield the highest returns and 2) changes in investors’ expectations about the future values of currencies.
* The Theory of Purchasing Power Parity: The theory that in the long run exchange rates move to equalize the purchasing power of different currencies.
* If exchange rates are not at the values indicated by purchasing power parity, it appears that there are opportunities to make profits.
* In practice, though, as people attempted to make these profits by exchanging currencies, they would in essence close off their opportunity.
* Three real-world complications keep purchasing power parity from being a complete explanation of exchange rates:

1. Not all products can be traded internationally: when goods/services are not traded internationally, their prices will not be the same in every country (such as dentistry)
2. Products and consumer preferences are different across countries, and therefore may be priced differently
3. Countries impose barriers to trade: Most countries, including the U.S., impose tariffs and quotas on imported goods (i.e.: on imports of sugar).

* Tariff: A tax imposed by a government on imports.
* Quota: A limit on the quantity of a good that can be imported.
* The Four Determinants of Exchange Rates in the Long Run:

1. Relative price levels: In the long run, the most important determinant of exchange rates between two countries’ currencies is their relative price levels. If the prices of goods and services rise faster in Canada than in the U.S., the value of the Canadian dollar has to decline to maintain demand for Canadian products.
2. Relative Rates of Productivity Growth: If the average productivity of Japanese firms increases faster than the average productivity of U.S. firms, Japanese products will have relatively lower prices than U.S. products, which increases the quantity demanded of Japanese products relative to U.S. products. As a result, the value of the yen should rise against the dollar.
3. Preferences for Domestic and Foreign Goods: If consumers in Canada increase their preferences for U.S. products, the demand for U.S. dollars will increase relative to the demand for Canadian dollars, and the U.S. dollar will increase in value relative to the Canadian dollar.
4. Tariffs and Quotas: Quotas and tariffs forces firms to buy more expensive, domestic products instead of cheaper, foreign products. The quota increases the demand for dollars relative to the currencies of foreign producers, and leads to a higher exchange rate.

* The ECB (European Central Bank) represents a unique experiment in allowing a multinational organization to control the domestic monetary policies of independent countries. Having a common currency, the euro, makes it easier for consumers and firms to buy and sell across borders. However, the participating countries are no longer able to run independent monetary policies.
* In 2002, people in the underground economy with large quantities of cash had to find a way to exchange all their countries’ cash for euros, as their currencies changed over to the euro.
* Another key aspect of the current exchange rate system is that some developing countries have attempted to keep their exchange rates fixed against the dollar or another major currency. 1) When the exchange rate is fixed business planning (trading) becomes easier. 2) A dramatic shift in the exchange rate, in which the dollar grows dramatically stronger compared to the local currency, could create a crushing debt for local firms that have taken loans out in dollars. 3) inflation issues
* Pegging: The decision by a country to keep the exchange rate fixed between its currency and another currency.
* It is the developing country’s responsibility to keep its currency pegged to the major currency.
* A currency pegged at a value below the market equilibrium exchange rate is said to be *overvalued*.
* A currency pegged at a value above the market equilibrium exchange rate is said to be *undervalued*.
* The East Asian Exchange Rate Crisis of the Late 1990s: Because Thailand had pegged their baht too high above the equilibrium exchange rate, there was a surplus of the baht on the foreign market. The Thailand Central Bank was forced to try to buy up these baht with their dollar reserves, but they soon drained their reserves. To continue supporting their pegged exchange rate, Thailand borrowed additional dollars from the IMF. It also raised interest rates to attract foreign investors. The higher interest rates killed domestic spending and investment, which pushed Thailand into a recession. Investors saw the situation and began destabilizing speculation against the baht (in which they tried to sell the baht to make a profit later when the baht fell off the peg). This capital flight forced the Bank of Thailand to quickly run through their reserves and the IMF loans. Thailand had to abandon the pegged exchange rate, and as the baht depreciated against the dollar, many Thai firms became bankrupt, and the economy went into a deep recession. Currency traders expected other East Asian countries to have to abandon the peg, and began a speculative attack on the local currencies. This forced the countries’ central banks to quickly run through their dollar reserves. Within a few months, South Korea, Indonesia, the Philippines, and Malaysia abandoned their pegged currencies, and plunged into recession.
* Overall the trend (since the East Asian financial crisis) has been toward replacing pegged exchange rates with managed floating exchange rates.
* In 2005, the Chinese central bank moved from pegging their yuan with the dollar, to pegging it to the average value of a basket of currencies that would include the dollar. The immediate effect was a very slight increase in the yuan versus the dollar, and it remains to be seen the future effects.
* South Korea bounced back more quickly from the East Asian crisis because 1)they received a large loan from the IMF, 2) the South Korean labor markets were flexible enough to allow wage reductions, which helped cushion the blows to firms profits.
* Before 1980, most U.S. corporations raised funds only in U.S. stock and bond markets or from U.S. banks. U.S. investors rarely invested in foreign capital markets. In the 1980s and 1990s European countries removed many of their restrictions on their financial markets, which aiding in the globalization of the financial markets.
* Foreign portfolio investments in U.S. stocks and bonds are about ¼ Japanese and ¼ United Kingdom
* The globalization of financial markets has helped increase growth and efficiency in the world economy. Now it is possible for the savings of households around the world to be channeled to the best investments available. It is also possible for firms in nearly every country to tap the savings of foreign households to gain the funds needed for expansion. No longer are firms forced to rely only on the savings of domestic households to finance investment.
* **The Gold Standard:** Great Britain adopted the gold standard, (gold coins and paper currency that could be redeemed for gold), in 1816. Great Britain’s strong economy motivated other European countries to adopt the gold standard. By the early 1900’s most of Western Europe was on the gold standard.
* The greatest drawback to the gold standard was that the central bank lacked control of the money supply, as the gold supply fluctuated with new discoveries.
* The Great Depression and WWI And WWII forced the countries to abandon the gold standard so that the governments could pursue an active monetary policy and expand the money supply. Great Britain was the first to abandon the gold standard in 1931, and the later countries stayed with the gold standard, the harsher the affects of the Great Depression on their economies.
* **The Bretton Woods System:** An exchange rate system that lasted from 1944 to 1971, under which countries pledged to buy and sell their currencies at a fixed rate against the dollar.
* Each central bank was required to have dollar reserves, and if the central bank ran out of dollar reserves, it could borrow them from the newly created IMF.
* International Monetary Fund: An international organization that provides foreign currency loans to central banks and oversees the operation of the international monetary system.
* A persistent shortage or surplus of a currency under the Bretton Woods System was seen as evidence of a fundamental disequilibrium in a country’s exchange rate.
* Devaluation: A reduction in a fixed exchange rate
* Revaluation: An increase in a fixed exchange rate
* Devaluations occur when a currency is overvalued, and revaluation occurs when a currency is undervalued against the dollar.
* By the late 1960s, the Bretton Woods System faced collapse for two reasons:

1) The gap between the dollars held by foreign central banks and the gold reserves of the U.S. grew larger and larger, the credibility of the U.S. promise to redeem dollars for gold was called into question.

2) Many countries with undervalued currencies, like Germany, were unwilling to revalue their currency for fear of increasing the price of their exports.

* Capital Controls: limits on the flow of foreign exchange and financial investment across countries
* By 1973 the Bretton Woods System was dead.
* See page 976-980 for explanation on gold standard and Bretton Woods System, know Bretton Woods System, WB, and IMF