Macroeconomics

Avery Karlin

Fall 2015

Contents

Main Textbook: Krugman's Economics for AP
Secondary Textbook: CORE Project Economics
Teacher: Schweitzer

1 CORE Chapter 1

1.1 National Differences

1. In the 1300s, most of the world was fairly equal in the general amount of wealth of the population, even if there were large differences between the rich and poor, often depending on parental status
   (a) Gross domestic product per capita, or average living standards, has raised in the last 700 years, but caused differences by country, due to having a sudden rise at different times, leading to different standards
   (b) Often, independence from colonial rule or European interference caused the sudden economic growth, but Latin America did not have the growth
2. The ratio scale has the GDP y-axis go up by some multiple, used to compare growth rate, or $(\Delta GDP)/(GDPstart)$, such that 100% means it doubles if ratio of 2
   (a) The ratio scale thus has the slope of the graph as the growth rate
   (b) Thus, the GDP per capita appears as a hockey stick curve, remaining without much growth, before a kink, leading to a sudden rise
3. Adam Smith argued that coordination of all the aspects of an economic culture from different parts of the world, would be created on its own based on self-interest, rather than made by the government
   (a) He did believe there was ethical beliefs guiding behavior, and feared monopolies, especially government protected
   (b) He approved of government investment in education and public works, as well as justice and foreign policy through the government

1.2 Average Living Standards

1. GDP per capita is different from average disposable income, which is close to average living standards, but ignores some aspects of happiness
   (a) Disposable income is the total income from factor markets, tranfer payments from both government, and from others, minus any governemtn taxes
   (b) Quality of social and physical environment, government services, and goods produced within a household, are important to well-being, but ignored by disposable income
   (c) Average disposable income also ignores distribution, due to extra income affecting the rich less than lack of affects the poor
   (d) People are also less happy based on how their income is related to others within the population, even if they have enough income to not be in poverty
2. GDP is better when evalutating government services, but can only be measured easily through cost to produce, rather than selling value

1.3 The Modern World

1.

1.4 Environmental Impact

1. As production increased, environemtnal damage, especially climate change due to burning of fossil fuels (gas, oil, or coal) increasing CO_2 emissions
    (a) While temperature has always fluctuated due to volcanic events, such as the 1815 Mount Tambora eruption in Indonesia, lowering temperature in 1816, but has drastically risen over the last century
    (b) This can lead to rising sea levels, climate changes destroying farming, and polar ice cap melting, as well as cause respiratory issues and illnesses in cities
2. The economy is a portion of society, which is within the overall biosphere, such that it can affect the other aspects
3. Overuse of local resources is also a possible environmental issue, caused along with climate change by economic expansion and organization (resources valued and conserved)
    (a) While the permanent technological revolution gave fossil fuel dependence, but has also permitted vastly more electricity for fewer resources, permitting the development of alternate sources, which may change it

1.5 Capitalism

1. An economic system is the organization of the production and distribution of products in an economy
2. Capitalism is the economic system made up of institutions, or sets of laws and social customs regulating the economy, of private property, markets, and firms
    (a) In prior economies, families typically were the third major institution, or the economy was regulated by a centralized government
    (b) Private property is possessions purely controlled and owned by an entity, able to control use or give ownership
    (c) Markets facilitate the transfer of goods in a reciprocal, voluntary trade
    (d) Firms are the main organization of production, owning the capital goods (which diffrentiates it from other economic organizations and systems), paying wages, managing employees, such that the products are private property of the owner, to make a profit
        i. Firms are the main organization, with others being families, unions, government agencies, and non-profits
        ii. Firms utilize the labor market, unlike other organizations, such that firms can be created, destroyed, expand, or contract extremely quickly
3. Capitalism both centralizes power in the hands of firm owners, and decentralizes from the government and other outside influences, creating power and cooperation inside, but competition outside
4. Defintions are used, not to set a specific rule, but to set general catagories which something can fall within to different degrees

2 CORE Chapter 14 - Monetary Policy

2.1 Inflation vs Unemployment

1. While unemployment has a more direct effect, since inflation goes up as unemployment goes down, it is generally considered more important to force down
   (a) Inflation targeting through monetary policy from the central bank resulted from stagflation in the 1990s, working to control the supply economy as much as demand
   (b) Fixed nominal income, such as pensioners, are hurt by inflation, even when indexation increases it by the previous years inflation, such that if inflation goes up further, more is lost
   (c) High inflation creates volitile rates, making the economy work less effectively by creating uncertainty, by making it difficult to determine scarcity of resources relatively rather than price changes
   (d) Deflation prevents spending on the other hand, leading to a drop in aggregate demand and activity
   (e) As a result of the relationship, during an expansion, if not controlled properly, the interest rate can increase too high for stability
2. The Phillips curve can either be drawn with less inflation as higher on the y-axis, or more inflation, such that it is a decreasing concave up, tolerating less additional inflation when high even as employment increases or vice versa
   (a) They can also be drawn with more inflation higher on the y-axis, adjusted similarly
   (b) Unemployment is always at the lower values of the x-axis
   (c) Inflation occurs in an attempt to divide up a specific amount of goods, until the bargaining power makes it proportional
   (d) As employment is high (tighter labor market), wages are forced up in an increasing concave up as bargaining power goes up, while as employment rises, prices are forced up to compensate similarly
   (e) In addition, as production capacity use rises, investment spending tends to increase to expand production, temporarily having capacity constrained until further machines are created
   (f) As a result, since there is less competition to fully sell goods, the price level is able to rise in a concave increasing curve related to it
   (g) This can be viewed as the bargaining power of both firms and workers simultaneously rising, such that they both try take a larger portion of real wage, until price level increases
3. Indifference curves are curves which give the same levels of satisfaction, with the opposite concavity to the Phillips, but going in the same direction, throughout the graph
   (a) Policymaker indifference curves are such that they ideally want the point on the curve with the lowest general unemployment and inflation, but which also must intersect with the Phillips curve
   (b) Policymakers who are unemployment-averse have indifference curves toward low unemployment, while inflation-averse is vice versa, based on personal and constituent interests

2.2 Monetary Policy

1. Central banks use changes in the nominal policy interest rate to stabilize the economy by a desired real interest rate, leading to a desired demand shock
2. Policy interest rate directly changes market interest rates, asset prices, expectations and confidence (consistant, transparent policy and good communications can lead to proper expectations in the economy and spending, encouraging the desired direction)
    (a) These all change investment spending, shifting up the aggregate expenditure function
    (b) Commercial banks set market rates for loans, though central bank determination results in a similar change in market rate
    (c) Central banks set the rate by making a goal for aggregate demand, finding the real interest rate that will produce the goal demand by the aggregate expenditure function, using it to find the market interest rate to produce that, then the policy rate
    (d) Lowering of the policy interest rate causes general interest rates to go down, such that the price of assets with fixed rates (such as bonds) go up (new assets produced provide less return from interest over time), making people feel wealthier
3. Monetary policy is extremely flexible, more so than fiscal policy, but there is a zero lower bound on the policy rate, but in extreme recessions, it may not be low enough
    (a) Qualitative easing is the policy of the central bank buying bonds and financial assets, moving up the price, reducing the interest rate yield of the assets, such that while the market interest rate may not be low enough, other asset rates are low to compensate
    (b) This serves to drive down consumption spending, by reducing the difficulty of borrowing and the return of saving
4. Monetary policy is also limited in a common currency area, such as the Eurozone, where a single bank sets the policy for many countries, which may not be applicable for all
5. Policy interest rate also has the ability to influence the exchange rate, especially in smaller nations, due to currency acting similarly to bonds in other countries, since currency acts as the method of purchasing government bonds, reducing demand for the currency as well
    (a) On the foreign exchange market, demand decreases as rate decreases, such that supply and price/exchange rate decreases as a result, causing deprication, or vice versa
    (b) As a result, exports become cheaper for foreigners, and imports become more expensive as interest rate falls, increasing net exports, and thus aggregate expenditures and income

2.3 Demand and Supply Shocks

1. After the tech bubble in the early 2000s, as a result of the negative demand shock, the Fed had to drop nominal interest rate from 3.9% to 1.1% to help investment recover
    (a) Expansionary fiscal policy had to be used during while waiting for investment to recover until 2003, when it became positive again, by tax cuts and increased spending
    (b) Inflation and GDP growth was fixed rapidly, though unemployment was slower as usual, and never fully reached its old level, possibly due to above capacity economic status before

(c) This shifted to a better indifference curve, with slightly higher inflation, but lower unemployment than after the shock

2. The oil price jumps from 1973-74, 79-80, and 2002-08 caused large negative supply shocks

3 Chapter 1

3.1 Study of Economics

1. Economics is the study of scarcity and choice, mainly individual choice, as well as the economy, or the system which coordinates choices about production and consumption, and distributes products

   (a) Market economies, like the US, is where productive and consumption are made by decentralized decisions of many people

   (b) Command economies are those where industry is publically owned with a central authority for production and consumption, typically failing due to lack of resources or being told to make unneeded products, not gathering information as well, better for incentivizing needs, not complete control

2. Economies rely on incentives, punishment or reward, for particular choices, such as higher prices for needed products, causing more to be made

   (a) Property rights give ownership and allow trading, creating incentives to use resources for value

   (b) Marginal decisions balance cost-benefit, looked at by marginal analysis

   (c) Resources, which can be used to make something else, are scarce, or less than society desires, as incentives

3. Factors of production, or resources, are divided into land, labor, capital (all manufactured goods to make other goods, which are not used up in production), and entrepreneurship (firm ownership, not dependent on risk)

   (a) In a market economy, use of resources is based on the sum of individual decisions, though sometimes, when there is no incentive, community decisions must interfere with the market for the general good

   (b) Opportunity costs are factors given up for a specific choice, such as time, money, or future prospects

4. Macroeconomics are the study of the overall economy, mainly economic aggregates, or measures such as GDP, unemployment, or inflation

   (a) Macroeconomics runs on the basis that the sum is greater than its parts, due to the overall dynamics, mattering more than microfoundations

   (b) Microeconomics are the study of individual decisions of people, firms, or markets/industries

5. Positive economics is definite factual questions about how the world actually works, rather than normative, or uncertain questions about how it should work

   (a) The former deals with both economic forecasts, or predictions based on current conditions, and hypotheses of predictions in different ones

(b) Economic models are used to give simplified representations of reality, used for both types of positive analysis

(c) Normative creates value judgements, up to opinion, unless there is a clear beneficial advantage of one, often based on opportunity costs, not using models, but rather prior ideas and models for other measures

6. Disagreements can be created by differences in values, or on the model of reality, exacerbated by political interests

3.2 Intro to Macro

1. The business cycle is the alternating cycle of down and upturns

   (a) Depressions are a very deep, long downturn with product output and employment falling, while shorter downturns are called recessions

   (b) Expansions and recoveries are the opposite periods of upturn, typically lasting almost 5 years (57 months), rather than 10 months of recessions

2. Macroeconomic analysis is used to minimize the fluctuations of the economy

   (a) Unemployment is the number of people looking for work actively, who are not working, while the labor force is the unemployed + employed, and the unemployment rate is the percentage of the force unemployed

   (b) Unemployment rate is a good economic indicator, though even during an expansion, there is a small unemployment rate

3. Aggregate output, or the total amount of goods and services produced in a given amount of time, is another economic indicator

4. Inflation is a rise in the overall price level, while deflation is the opposite, the former discouraging saving, and eventually making money worthless

   (a) Deflation encourages saving, instead of reinvesting to allow the economy to regrow, with price stability being the most desirable

5. Economic growth, or an increase in the maximum possible output, is an overall sustained rise over a long period of time, outside the business cycle, allowing higher wages and standard of living

   (a) On the other hand, economic growth can be bad for stability of the business cycle, and vice versa

6. Models are a simplified version of reality, studying economies in a smaller setting, such as a WWII prison for cigarettes, or on a computer simulation

   (a) The other things equal (ceteris paribus) assumption is used to only study one change, by making all other factors constant

   (b) Thought experiments, or simple, hypothetical scenarios, are another effective way of modeling, as well as graphing

3.3 Production Possibility Curve Model

1. Trade-offs are when something is giving up the opportunity costs of something for that of another option, analyzed by the PPC

   (a) The PPC model assumes only two goods produced, such that points within are feasible, but not optimal/efficient, while points on are both

   (b) The slope determines if the trade-off is constant, called a constant opportunity cost, often not true, due to having to use less suited resources as the production increases, thus getting less and losing more

   (c) Input problems find the trade-offs to gain the same output of different products, while output find for the same input for different products

2. Efficiency in production is the lack of missed opportunities, or optimal improvement to one's self, without hurting others, exampled by unemployment of those who want work

   (a) Efficiency in allocation is the maximization of consumer happiness by the optimal production of the correct goods

   (b) Overall efficiency requires both in allocation and production

3. Economic growth can also be defined as the expansion of production possibilities, shifting the curve outward, since products made shift

   (a) This is typically caused by increase in resources or technology, the technical means of production of products

   (b) Since only one product on the curve may shift, there is a chance production may not rise, even as there is growth

3.4 Comparative Advantage and Trade

1. Trade is the division of tasks, such that people trade goods and services for those they want

   (a) Gains from trade are caused by specialization, due to engaging in a specific task allowing the production of more of the good

   (b) This is due to the time required for skill development in a field

   (c) This also results from comparative advantage, or the idea that some people are better at certain actions than others, resulting in a lower opportunity cost for production

   (d) People will only accept deals that cost less than their personal opportunity cost for production (terms of trade)

2. Absolute advantage is the general ability to produce more, under any relative distribution of resources

   (a) Comparative advantage creates the mutual benefits of trade, not absolute advantage

4 Chapter 2 - Supply and Demand

4.1 Intro to Demand

1. Competitive markets are a market with many buyers and sellers of the same products, where a market is a group of consumers and producers exchanging products for payment
    (a) Thus, individual actions must not have a noticable effect on the price, such that in non-fully competitive markets, it doesn't apply completely
    (b) It is described by the demand and supply curves, sets of factors which cause each to shift, market equilibrium, and how market equilibrium changes when the curve shifts
2. The demand for any good depends on the price, making a demand curve of the quantity demanded vs price, first making a demand schedule table of points
    (a) The quantity demanded is the amount consumers are willing to buy at a particular price
    (b) Demand curves typically have a downward slope, not always constant, such that the law of demand states that as price decreases, demand increases, and vice versa
    (c) Due to all other things equal, the curve does not account for changes in the world, such that changes in taste, income, related prices, number of consumers, or expectations (either in income or price) can shift the curve outward
        i. Changes in demand are at the same price, while a movement on the curve are at a different price
        ii. Related good price changes are in goods which are substitutes, such that people are more willing to buy the other if price rises, or complements, which are goods that people are more willing if the price of the other falls
        iii. Normal goods are those where demand increases as income does, unlike inferior goods, typically those with better, more expensive alternatives
        iv. Number of consumers can change due to population, such that the individual demand curve (demand curve for a single person, such that the market curve is the horizontal sum) may not shift, but the market curve does
        v. One exception is conspicuous consumption, or goods which people purely buy due to high price to gain social status, or goods so cheap they can no longer be considering the same product

4.2 Supply and Equilibrium

1. The quantity supplied when offered a specific price also varies with price, such that a schedule, and curve can be produced, forming a law of supply, where if price rises, supply will as well
2. Changes in supply can be caused by changes in input (items needed to produce the product) prices, related goods price, technology (methods used for production), expectations, and number of producers
    (a) Often, several related products are produced by the same producer, such that as the price of one good rises, the others (substitutes in production) are produced less
    (b) Biproducts of the same process are compliments in production, and will be made more

3. The interaction of supply and demand creates equilibrium where supply is the same as demand, at the equilibrium/market-clearing price and quantity

   (a) On the same graph, the equilibrium point is the intersection of the two curves

   (b) In all established, ongoing markets, people converge toward a single market price, which is most beneficial to all parties involved, and the price moves to prevent surpluses or shortages

4.3 Changes in Equilibrium

1. Changes in equilibrium cause the shift of either the supply curve, the demand curve, or both simultaneously

2. When demand increases, the equilibrium price and quantity increase, and vice versa, such that the curve moves rightward and the intersection moves up-right

3. When supply increases, the equilibrium price decreases, but the quantity increases, such that the curve moves rightward and the intersection moves down-left

4. Simultaneous shifts depend on the relative shifts to determine in which way the equilibrium moves, such that one direction can be determined, but the other is ambiguous

5. Events in the short term can only change either supply or demand, not both, though in the long run, it moves toward equilibrium, causing a change

5 Chapter 3 - Economic Performance Measurement

5.1 Circular Flow and GDP

1. The national income and product accounts, or national accounts, keep track of the flow of money from consumers to producers, as well as business investment, or government purchases

   (a) Accuracy of national accounts is an indication of how economically advanced a country is

2. The circular flow diagram represents the flow of money in the economy, with money flowing from a household, or group of people sharing an income, for goods and services (spending)

   (a) The money can then flow from the market for goods and services to the firms (revenue), or organizations that employ households and make products, in exchange for products

   (b) Money then goes from the firms to the factor markets (costs), which give money in exchange for factors of production, especially labor from households (income)

   (c) Thus, the idea is that the money flowing into or out of each market or organization is equal to the money flowing out

   (d) All factors are assumed to be rented from the factor market from households, due to household ownership of firms, within the simplified model

   (e) This model assumes lack of saving, no surplus outputs, and no alternate sources of leakages (money flowing outside the simple circular flow model)

3. This can be extended into a more complex model, adding the government, foreign nations, and the financial market, such that the flow from households to product market is consumer spending
    (a) In addition to selling labor, households use stocks, or firm shared ownership, and bonds, or loans to firms with interest, from the financial market to firms, which eventually goes back into the factor market to households in profits and interest
    (b) Rent is also given by households to the firms in exchange for land resources, through the factor market
    (c) While people spend most disposable income in the product market, some of total income is lost through taxes, while some can be gained through government tranfers, such as unemployment payment, given without a reciprocal service
    (d) Some disposable income is lost as private savings in the financial market, which, in addition to providing money to firms allows government borrowing
    (e) Government funds is also used for government purchases
    (f) Goods sold to other countries are exports, while those purchased are imports, as part of the product market, and foreign nations also participate in borrowing and investing in the financial market
    (g) Finally, firms also purchase products from the product market through investment spending, adding to their inventories, or raw materials and capital used for production
4. Gross domestic product (GDP) is thus the sum of government purchases, investment, and consumer spending, minus imports, or the total of final goods and services produced during a period
    (a) Final products are those sold to the final user, while intermediate products are those that are inputs into the production of the final product, such that capital is final, while resources are intermediate
5. GDP can be measured by adding the total value of production of final products (or sum of value added of all products), aggregate spending on domestically producted final products, or total factor income earned by households from domestic firms
    (a) Intermediate products are ignored for total value of production due to their value being added to that of the final product, such that they would be summed multiple times otherwise
    (b) Each product has value added of interest, rent, profit (both employee profits, and those paid to shareholders as dividends), and wages on that product, combined with the price of all intermediate products for the total value
    (c) Total factor income is found by the sum of each type of factor payment, such that it is the sum of total wages, interest, rent, and profits from each product, including intermediate
    (d) GDP by aggregate spending = consumer + investment + governemnt + exports - imports, where exports - imports can also be called net exports
    (e) Stocks and bonds are not counted due to not representing the sale of final goods or the direct production of final goods
6. GDP can be calculated practically through the sum of aggregate spending or the value added by each sector of the economy (business, household labor, and government services)

7. Capital goods are eventually used up, such that it is accounted for by depreciation, such that net domestic product is GDP - depreciation
    (a) It can also be done by replacing investment spending with net investment, or investment - depreciation
    (b) Depreciation is the cost of the capital, divided by the number of years it was used for
8. Products from the underground economy are not counted in the GDP, and those who work in the markets are counted as unemployed

5.2 Real GDP

1. Stock variables are those measured at a specific point in time, such as nominal capital stock (value of all national assets at one time) while fluid variables are those measured over a period of time, such as nominal GDP
2. GDP describes the size of the economy, but measures the price of total products produced, rather than the amount of output, such that real GDP adjusts for price changes to describe aggregate output (the quantity of final products produced)
    (a) This prevents inflation or rise of prices from causing the increase in GDP, without increased aggregate output
    (b) Real GDP is calculated as the GDP if the price had remained constant from some base year, such that it is the total value of final products, assuming that price level
    (c) Nominal GDP is another term for non-real GDP
    (d) Since Real GDP can be calulated from a late or early base year, gaining different results, chain-linking measures the average of the two values, expressed in chain dollars
3. Real GDP comparisons assume equal population, such that GDP (or real GDP) per capita (divided by the size of the population) can be used to account for that
    (a) Real GDP per capita compares labor productivity, but it is not a complete measure of living standards, but rather of potential living standards
    (b) It can also be difficult to determine who counts for population purposes
    (c) High living standards requires health, education, and good quality of life spending, rather than expenditures on negatives such as natural disasters or disease
    (d) Real GDP per capita also does not include other components to high standard of life, which are non-monetary, such as nature or leisure, distribution, and workplace health and safety

5.3 Unemployment

1. Unemployed are only those able to and actively (in the last 4 weeks) looking for work, such that retired or disabled people
2. Labor force participation rate is the percentage of the population ≥ 16 in the labor force (employed for pay or looking for work actively)
3. The US Census Bureau takes a Current Population Survey of 60k families, asking if they qualify as unemployed, to estimate the total unemployment rate

4. Unemployment rate can overstate the level of unemployment, such that those who are not working, but will easily be able to get a job, simply due to taking a few weeks to get a job, increase the rate and make sure it is never 0%

5. It may also understate unemployment, due to marginally attached workers, who want a job and have looked for work in the past, but not currently due to some temporary, unexpected issue

   (a) Discouraged workers, who don't feel they will be able to find a job, and thus don't search, having been employed for a long time

   (b) Underemployed are those working part-time, due to lack of full-time work, not included in the unemployment rate, which may make it further understate it

   (c) The Bureau of Labor Statistics also makes measures of labor underutilization, the most broad of which is U6 including marginally attached and underemployed

   (d) U6, while far higher, typically mirrors movement of the standard unemployment rate

6. Unemployment rate ignores demographic differences, due to it being far easier for experienced workers in the field, and prime working years workers (25-54 years old) to find jobs, while blacks have a more difficult time than most groups

   (a) Even when the unemployment rate is low, it may be higher than normal for certain groups

7. During recessions, the unemployment rate always rises, while the opposite is often true during expansions, though not always, due to discouraged workers reentering the labor force

   (a) Generally though, above average increase in Real GDP resulted in decrease in unemployment rate

   (b) Periods when unemployment is rising during an expansion is during a growth recession

   (c) Thus, it can be used as an indicator for the quantity of those in the labor market for hiring, the likelihood of being fired, and the ease of finding a new job

5.4 Causes and Catagories of Unemployment

1. Even in low unemployment time periods, there are still amounts of job creation and seperations (quitting or firings), due to the structural change in the economy as change in supply due to taste or technology

   (a) Individual companies also create job loss due poor management or luck

2. Those engaged in the job search typically don't take the first job, rather looking for one that suits their skills and pays properly, creating fractional unemployment

   (a) In addition, new people entering the labor market results in further fractional unemployment, including re-entrants, or those who entered after leaving

   (b) Small numbers ensure people are in jobs matched to their skills, and people tend to remain unemployed for a short period of time when fractional, though the time is increased by large benefits

3. Structural unemployment is when the supply of workers is greater than the demand at the current wage price, due to the wage not decreasing as it should, creating a persistant surplus

   (a) This can be caused by minimum wage laws (though some argue that low-skill employers restrict highering to keep wages low, such that higher wages won't decrease jobs, explaining why many countries with higher minimum wages have low unemploymnet), or unemployment benefits (which are worth more than lower wages)

   (b) Labor unions, and threating strikes, can lead to higher wages (and benefits, which add to the wages)

   (c) Firms can also give efficiency wages for increased performance (labor extraction) above equlibrium, due to fear of firing and losing the higher wages, creating structural unemployment

   (d) Skills mismatch, or geographic immobility, also create rigidities which keep structural employment up

   (e) Structural also includes changes in an industry for any unknown reason

4. Natural unemployment rate is fractional and structural unemployment, or the normal value, though it can be changed over time and effected by policy

   (a) Changes in the labor force, such as increased numbers of young workers (who are inexperienced and keep jobs for a shorter time, and who have less incentive to find jobs), can change the natural rate

   (b) Changes in labor market institutions, such as temp agencies (which help workers find jobs) or job-search websites, as well as technology changes (increasing demand for workers skilled in the new technology) can cause changes

   (c) Policy changes such as job-training programs to increase skills, or employment subsidies (payments to workers or employers for giving/taking jobs) can change it

   (d) Labor-saving tech can also allow the increase in production, with the increase in unemployment rate, which in turn reduces incentive for labor saving tehcnological change

5. Cyclical unemployment is the deviation from the natural unemploymnet, resulting from the business cycle, and can overlap with frictional somewhat

   (a) Labor hoarding theory states it doesn't fluctuate as much, due to firms keeping people to save on hiring costs, especially high value workers

5.5 Inflation

1. Inflation does not make people richer or poorer, due to real wage/income, or the wage/income divided by price level, remains constant, due to the value of money changing overall

2. Inflation rate, or the overall increase in prices, is the change in price divided by the original price * 100%, such that inflation rate may decrease, but price level will rise as long as it is positive

   (a) Higher inflation rate typically goes along with unstable inflation rate

3. Shoe leather costs are the increased cost of financial transactions due to inflation

(a) This is due to inflation discouraging holding money in wallets or checking accounts, due to the purchasing power decreasing, leading to mass banking transactions, growing the banking industry rapidly, to try and protect assets

4. Menu costs are the cost of changing the price of a good in the system, such that rapid price changes from inflation causes high menu costs

5. Unit of account costs are due to the use of money as a unit-of-account, signifying payment in contracts, such that if it is unstable, it cannot be used as easily

   (a) Thus, the gains over a year may be purely due to price changes, such that the value of assets didn't increase, called phantom gains, which are then taxed

6. Nominal interest rate is the rate paid on a loan, while the real interest rate is nominal adjusted for inflation, subtracting the inflation rate from the nominal

   (a) If real interest rate is lower than expected, the money paid back will be worth less than expected, such that unstable currency results in unwillingness to enter contracts

7. Disinflation, or the lowering of the inflation rate, is difficult once the rate is high, due to requiring a recession to depress the economy, increasing unemployment, such that government must stop inflation before the rate rises

5.6 Measuring Inflation

1. Aggregate price level is the measurement of the overall price level of all products in an economy

2. The consumption bundle is the group of specific quantities of goods and services purchased in a time period, such that a market basket is the consumption bundle used to measure price changes

   (a) Price index is an aggregate price level, measured by some base year, such that it is the price of the market based divided by the price in a base year * 100%

3. Consumer Price Index is an aggregate of the typical market baset for a family of 4 in a city, taken by surveying market prices for those goods, with a 1982-1984 base period

   (a) It is typically put on a logarithmic scale to show the percent-increase over time

   (b) On the other hand, this tends to overstate the cost of living, as people change their personal goods purchased as prices rise, to cheaper goods, such that the market basket may not be the same as in the 1980s

   (c) In addition, there is more variety in goods, especially technology, due to innovation, increasing consumer choices, causing the drop in cost of living

   (d) Most countries calculate CPI, based on their own expected market basket

4. Producer/Wholesale Price Index measured the cost of a market basket of raw non-capital commodities, purchased by producers

   (a) Commodity producers are quicker than other producers to raise prices as a result of increased demand, such that it often reacts faster than CPI, but fluctuates more than other measures

5. GDP Deflator is the 100% * (nominal GDP/real GDP) in terms of some given base year, not technically a price index, but used to measure approximate changes in price level

6. These aggregate price index measurements tend to move mostly in unison, such that they all result in similar changes

6 Chapter 4 - National Income and Price Determination

6.1 Income and Expenditure

1. For aggregate spending change modeling, it must be assumed the interest rate is constant, and government spending, taxes, imports, and exports are zero

   (a) It is also assumed that producers will supply extra output at a fixed price, such that increase in demand will increase output without an increase in prices, true only in short-term

2. Thus, if investment/consumer (antonomous change in aggregate spending) spending increases, both aggregate output and income would increase by that much, leading to increased consumer spending, and thus output

   (a) Maginal propensity to consume (MPC) is the rate of change of consumer spending as disposable income rises, while marginal propensity to save is the remaining amount of money (1 - MPC)

   (b) Thus, spending compounds the increase, such that total increase is the original amount, times the $(1+MPC+MPC^2+MPC^3+...)*$ original increase in spending, or (1/(1-MPC) * increase) = (increase/MPS) = (increase * multiplier)

3. Consumer spending is a majority of spending, such the consumption function shows that as disposable income rises, consumption also does, or $c = a + MPC * y$, where c is single household spending, y is income, and a is the amount that would be spent if income was 0, or autonomous consumer spending, often through loans or savings

   (a) Aggregate consumption function is the same equation, and can be thought of as the horizontal sum of the individual functions

   (b) Consumption function can be shifted by change in expected future disposable income, such that autonomous spending changes, shifting the curve up/down

   (c) Thus, those with higher income often expect it to fall, and vice versa, saving a higher percentage, but during economic expansion, but during economic expansion, since future and current rise together, it is difficult to predict

   (d) Based on this, the permanent income hypothesis states spending is based on the long term expected income, rather than current

   (e) Aggregate wealth can also affect it, such that an increase in net worth can cause the curve to rise, and can also affect it by the life cycle hypothesis (specifically stating that people save more in assets until after peak working years)

   (f) Price levels are an exogenous variable on the other hand, such that it changes unaffected by disposable income

4. The Keynesian cross states that in an economy, total income (or supply due to GDP being total paid through the factor market) and total expenditure (or demand) must be equal, such that the intersection of that line and the consumption curve is the equilibrium

    (a) When not at equilibrium, unplanned investment spending compensates for the difference, quickly moving back to equilibirum

5. Investment spending is a smaller amount, but often far more dramatic in changes, causing the business cycle, unaffected by disposable income changes

    (a) Planned investment spending, or the expected amount in a year, depends on interest rate (even if retained earnings, or past profits, are used, due to the same trade-off through lending the earnings to gain interest)

    (b) It also depends on expected future GDP (expected sale growth causes investment spending growth) and production capacity (excess capcity decreases investment spending, due to lack of need)

    (c) Actual investment spending is made up of planned, and unplanned inventory spending (due to trying to keep a proper inventory size, such that excess inventory remains as unplanned positive investment)

6. Aggregate expenditures is the total spending on GDP, modeled by the aggregate expenditures function combined with additional spending on investment, government, and net export spending (aggregate autonomous spending)

    (a) Aggregate demand can be thought to be the aggregate expenditures, taking into account a range of prices

6.2 Aggregate Demand and Determinants

1. Positive or negative demand shock is the shifting of the aggregate demand curve of an economy, or the relationship between aggregate price level and aggregate output demanded (Real GDP), depicted similarly to a market demand curve

    (a) The downward slope is not due to the law of demand, since that assumes ceteris paribus, while aggregate demand assumes a simultaneous price change in all final products

    (b) The wealth/real balances/real assets effect of change in aggregate price level is the change in consumer spending, due to the decrease in value of assets during inflation

    (c) The interest rate effect in aggregate price level is the result of the attempt to borrow enough money to possess the same purchasing power, selling assets or borrowing, where the surge of loans drives interest rates up, preventing consumer and investment spending (especially the latter)

    (d) The foreign purchases effect in aggregate price level states that as national prices fall relative to other nations, the demand for nationally-produced goods will increase foreignly

2. Shifting of the demand curve (demand shock), due to changing Real GDP, causes the multiplier process, caused by change in income expectations, wealth, fiscal and monetary politcy, and size of existing stock of physical capital

(a) Increase in quantity of money in circulation by the central bank (monetary policy) causes an increase in consumer and investment spending, drives the interest rate down, leading to an increase in aggregate demand

(b) Increase in wealth (real value of household assets, such as stocks or real estate) causes the increase in aggregate demand

(c) Fiscal policy (use of government spending or taxation, responding to inflation by reducing spending or increasing taxes) can decrease aggregate demand (directly through less spending, indirectly by increased taxation, lowering disposable income and spending)

(d) Planned investment spending decreases as the size of existing physical capital increases, such as residential or capital investment spending

6.3 Aggregate Supply and Determinants

1. In the short-run (short term economy), there is a positive relationship between aggregate output supplied and aggregate price

   (a) Profit per unit is the price minus the production costs per unit, where most production costs are fixed in the short-run, mainly wages (all workers compensation)

   (b) Nominal wages are fixed in the short-run by contract or informal aggreement, such that companies don't want to change it, to try and prevent resentment or constant wage increase demands, creating sticky wages, which hardly fall or rise due to the business cycle, but which change in the long-run

2. In perfectly competitive markets, producers use the price given, while in imperfectly, they are able to somewhat choose the prices

   (a) Thus, in perfectly competitive, profits, and thus supply decreases as aggregate price decreases, while in an imperfectly, as demand increases, prices and output may both increase, and vice versa, in an attempt to maximize profit or limit losses

3. Wage production cost is generally fixed in the short-term, but change in commodity (standard input bought/sold in bulk) prices, nominal wages, or productivity can shift the curve (supply shock)

   (a) Commodity prices are not included in the curve, real GDP, or the aggregate price level, due to not being considered a final good

   (b) Cost of living allowances in contracts, resulting in higher nominal wages when price level rises, can cause this to occur in drastic aggregate price changes

4. Due to flexible wages/costs in the long run, aggregate price level has no effect on aggregate supply, since as as prices change, wages eventually change to compensate

   (a) The long-run aggregate supply curve would thus have the prices have no effect, such that the value is the potential output, around which output fluctuates

   (b) The curve generally shifts constantly right due to increase in quantity or quality of resorches (such as better educated workforce), or technological progress

   (c) If the supply level is not on the long-run curve, eventually the shift in nominal wages (due to a labor shortage/surplus causing the different in potential and actual GDP) will move the curve such that they coincide

6.4 Equilibrium in the AD-AS Model

1. Short-run macroeconomic equilibrium is the intersection of the demand and short-run supply curve, giving the equilibrium aggregate price level and output
   (a) This functions similar to microeconomic to prevent shortages or surplus
   (b) Generally, there is an upward trend of aggregate output and price levels, such that changes in the variable mean in terms of the expected rise
   (c) Negative supply shock leads to decreased GDP with increased prices, or stagflation, creating national pessimism overall due to the dual issues, or vice versa, though they cannot be controlled by the government as much as demand shocks
2. Long-run macroeconomic equilibrium is the intersection of the three curves
   (a) During a demand shock, a curve shifts, creating an inflationary or recessionary gap between the potential output and real output
   (b) Due to the general movement back to the long-run curve, the economy is considered self-correcting, restoring to a specific GDP in the long term, regardless of short-term events
   (c) Output gap $= \frac{\text{Actual - Potential}}{\text{Potential}} * 100$, such that it is the percentage difference

6.5 Economic Policy and the AD-AS Model

1. While the economy is self-correcting, it can take over a decade, leading to the argument in favor of stabalization fiscal policy
   (a) Negative demand shocks can be shortened considerably by being anticipated and accounted for with policy, to create price stability and prevent unemployment
   (b) Positive demand shocks must also be prevented due to inflationary gaps typically leading to an eventual move in the other direction, leading to a recessionary gap
   (c) On the other hand, there is a risk of long term negative effects when offsetting demand shocks
   (d) Supply side negative shocks has no simple fiscal remedy, due to either demand shock hurting on measurement to aid the other
2. The government is able to influence consumer spending (by taxes and transfers) and government spending (by purchases), and investment spending (by taxes and transfers), creating demand modulation
   (a) Taxes are payments to the government, federally mainly through personal and corporate income taxes, and social insurance taxes, state/locally through sales, property, income, and other taxes
   (b) Government purchases is mainly through defense and education, as well as state/local services, such as infrastructure, police, or firefighters
   (c) Government transfers mainly include medicare (for seniors), medicaid (for low income), and social security (income to elderly, disabled, and families of deceased recipients), paid for by the social insurance taxes

3. Expansionary fiscal policy causes a positive demand shock to remove a recessionary gap, while contractionary policy does the opposite

4. There is a danger of overactive fiscal policy making the economy less stable, due to time lags between the time it takes to observe the gap, make a fiscal plan, and spend the money, especially since larger spending in projects is typically further on, making analysis difficult

6.6 Fiscal Policy and the Multiplier

1. The multiplier is used to estimate the amount of shift due to fiscal policy, such that increases government spending directly causes the effect

2. Taxes and government transfers on the other hand, due to giving directly to the people, result in only the amount*MPC, leading to that being the initial increase in spending

   (a) On the other hand, taxes typically don't lower a specific amount (lump-sum taxes), but rather depend on income/real GDP

   (b) In addition, the specific group benefited changes the amount saved, due to different groups having different MPC (such as unemployed having higher MPC than shareholders)

3. Income, sales, and corporate taxes take a some portion of the real GDP as each round of the multiplier effect occurs, lowering the effect

   (a) This works during a recessionary gap, lowering taxes as real GDP falls, reducing demand shocks automatically, and vice versa, called an automatic stabilizers

4. Some transfers work as automatic stabilizers, such as unemployment benefits, Medicaid, or food stamps, reducing the change in disposable income, and thus the multiplier effect

5. Discretionary fiscal policy is due to deliberate action, but due to time lags, is used only in emergencies