AP Macroeconomics Final Study Guide

May 2016

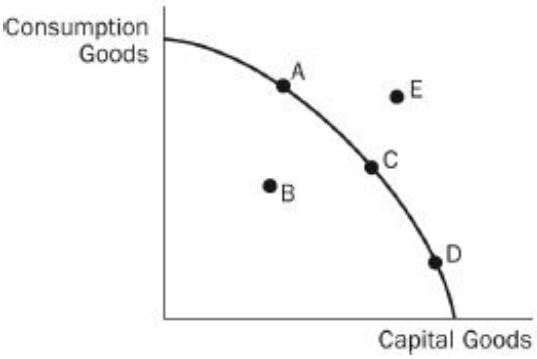
Unit 1

- Macroeconomics: Study of nations economy as a whole. Focuses on issues of inflation, unemployment, and economic growth.
- Microeconomics: Study of choices made by households, firms, and the government.
- Resources: Anything used to produce a good or service.

Factors of Production

Factor	**Income**
Land/Natural resources	Rent
Labor	Salary/Wages
Physical Capital	Interest
Entrepreneurship	Profit

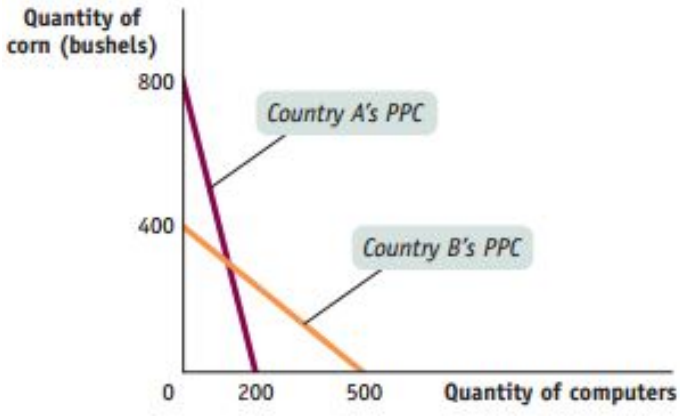
- Scarcity: Basic economic problem in society, leads to trade-offs, must give something up.
- Opportunity cost: Next best alternative when you make a decision. To get more of one thing you forego the opportunity of getting something else.
- Normative economics: How economy should work, involves a judgment or opinion.
- Positive economics: Supported by facts & data. About the way the world actually works.
- Gains from trade: People get more of a good or service through trade than they could if they were self-sufficient, due to specialization.
- Absolute advantage: Ability to produce more of a good or service than another with a given amount of resources.
- Comparative advantage: Having a lower opportunity cost to produce a good or service.
- Production possibilities curve: Shows max. quantity of one good that can be produced for each possibly quantity of another. Illustrates concept of opportunity cost.



- A, C and D represent efficient production. No way to make someone better off without making someone else worse off. All resources used.
- B is inefficient production. There's unemployment of resources.
- E is unobtainable without better technology or more resources.

- Constant opportunity cost, curve is linear. Increasing opportunity cost, curve is bowed outward. Decreasing opportunity cost, curve is bowed inward.
- Market economy: Production and consumption are a result of decentralized decisions by firms and individuals.
- Command economy: Industry is publicly owned. Central authority makes decisions about production and consumption.

Unit 1 Cont.



Opportunity Cost to Produce...

	Country A	Country B
One Corn	1/4 Computer	5/4 Computer
One Computer	4 Corn	4/5 Corn

Unit 2 - Supply & Demand

- Competitive market: Market in which there are many buyers and sellers of the same good or service, none of whom can influence the price at which a good or service is sold.
- Law of demand: Increase in price, causes a decrease in "quantity demanded", and vice versa.
- Factors leading to a change in demand:
  - Change in population (Directly related)
  - Change in consumer tastes (Directly related)
  - Change in future selling prices expectations (Directly related)
  - Change in price of complementary goods in consumption (Increase in price of one complement decreases demand for the other complement)
  - Change in price of substitute goods in consumption (Increase in price of one substitute increases demand for the other substitute)
  - Change in consumer income (If good is a normal good, increase in income, increases demand, vice versa if the good is an inferior good)
- Input: Anything used to produce a good or service.
- Law of supply: Increase in price, increases the "quantity supplied", and vice versa.
- Factors leading to a change in demand:
  - Change in no. of producers (Directly related)
  - Change in technology (Directly related)
  - Change in future selling prices expectations (Increase in future selling price, current supply decreases)
  - Change in price of complementary goods in production (Increase in selling price of complement, increases supply of other complement)
  - Change in price of substitute goods in production (Decrease in selling price of substitute, increases supply of other complement)
  - Change in input prices (Decrease in cost of input, increases supply)
  - Change in government policies (Increase in taxes, tariffs or quotas, decrease supply)
- Surplus: Quantity supplied exceeds quantity demanded. Shortage is the opposite.
- Market-clearing price: Equilibrium price.
- Price floor: A government set minimum price. Must be above equilibrium price to be effective, otherwise there's no impact. Ex. Minimum wage
- Price ceiling: A government set maximum price, must be below equilibrium price to be effective.

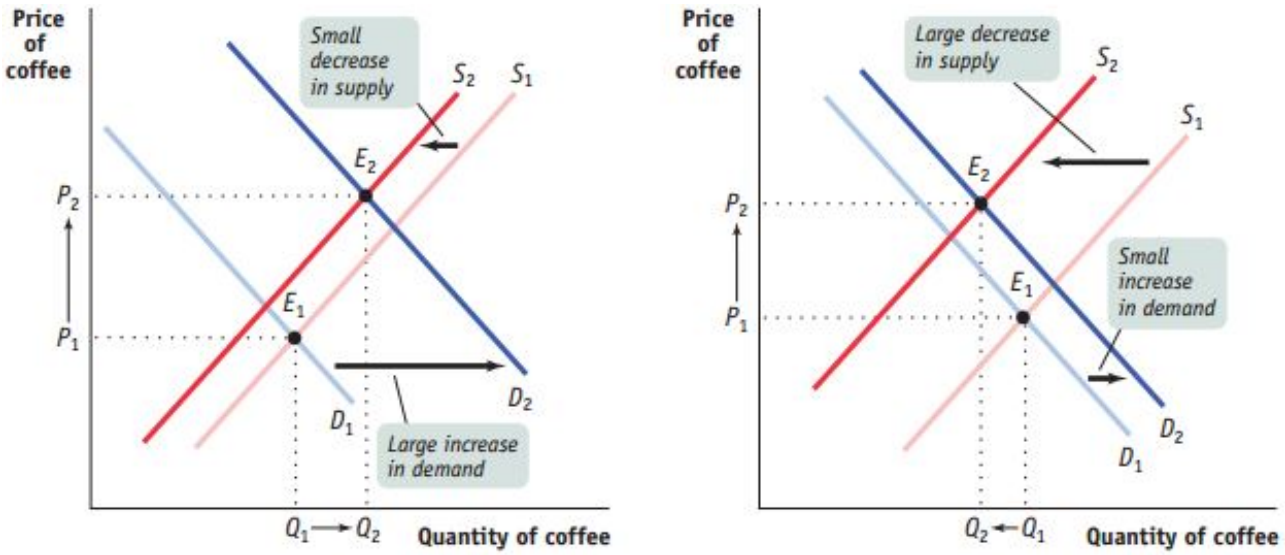


Figure 1: Sample simultaneous supply and demand curve shifts.

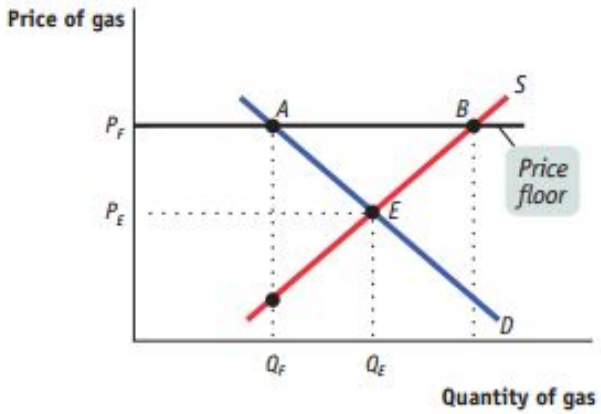


Figure 2: Sample of a price floor.

Unit 3 - GDP, Inflation, & Unemployment

- GDP: Total market value of all the final goods and services produced within a country in one year. GDP $= \frac{\text{Production}}{\text{Output}}$ = Spending on goods + services = Income from factors $= C + I + G + N_X$.

Counted In GDP
- Additions to inventory (I)
- New construction (I)
- Spending of physical capital goods. (I)

Excluded from GDP
- Intermediate goods & services
- Used goods, foreign produced goods
- Financial assets
- Transfer payments
- All non-market transactions

- Real GDP: Current yr. output × Base yr. selling prices. Primarily comprised of C.
- Base year: Year against which all other years are compared.
- Real GDP/capita: Best measure of how an economy is doing. Equals $\frac{\text{Real GDP}}{\text{Population}}$.
- Product markets: Where goods and services are bought and sold.

- Factor markets: Where resources, notably capital and labor, are bought and sold.
- Disposable income: Equal to income plus government transfers minus taxes.
- Private savings: Equal to disposable income minus consumer spending.
- Flaws of Consumer Price Index (CPI): Doesn't count quality. Doesn't count discounts. Doesn't take into consideration changing purchase patterns.

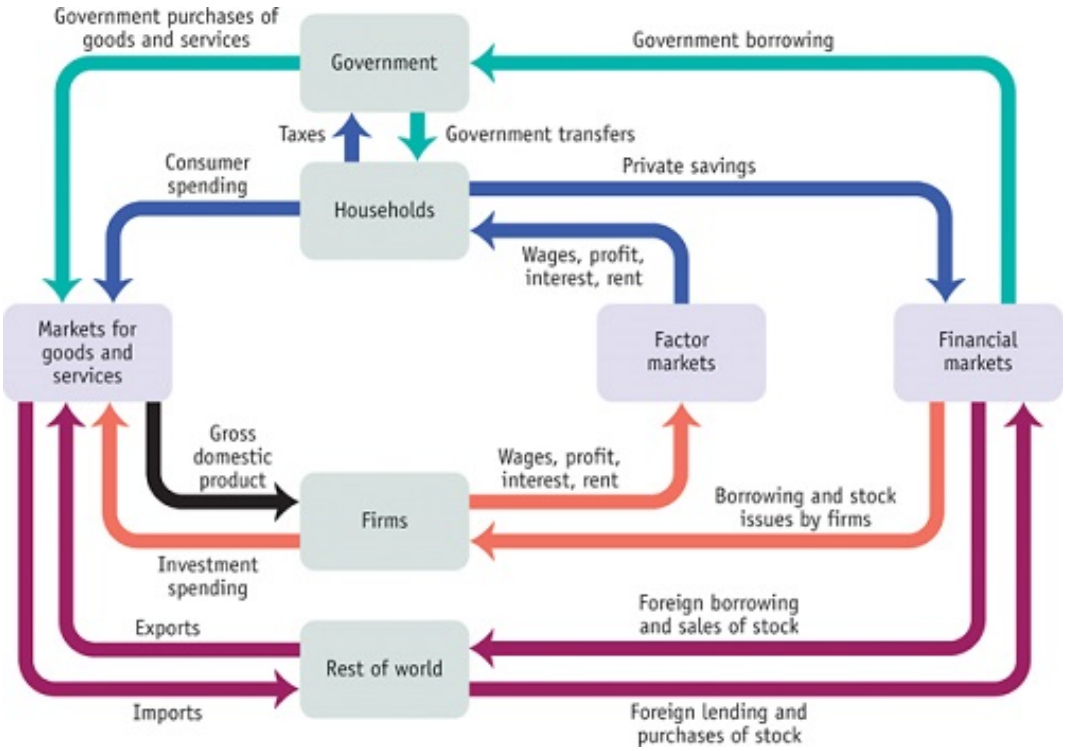


Figure 3: Circular flow diagram.

- Inflation: Increase in the general level of prices from year to year.
- Inflation rate $= \frac{\text{Price index in yr. 2 - Price index in yr. 1}}{\text{Price index in yr. 1}}$
- Price index $= \frac{\text{Cost of market basket in given year}}{\text{Cost of market basket in base year}} \times 100$
- GDP deflator: Equal to 100 times the ratio of nominal GDP to real GDP in a given year.
- Nominal wage: Current value of wages.
- Real wage: Nominal wages adjusted for inflation or purchasing power of nominal wages.
- Nominal interest rate: Interest rate on a loan.
- Real interest rate: Nominal interest rate - inflation rate.
- Disinflation: Process of reducing inflation.
- Shoe-leather costs: Increased costs of transactions due to inflation.
- Menu costs: Cost of changing a listed price.
- Unit of account cost: Cost arising from the way inflation makes money a less reliable unit of measurement.

Impacts of Inflation
- Decreases purchasing power of wages.
- Increases value of assets.
- Social & Political ramifications
- Borrowers, Lenders, & Investors.

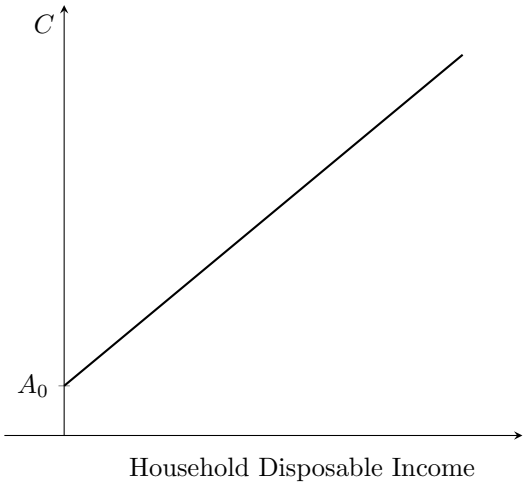
Winners from Inflation
- People with nominal incomes rising at a rate greater than the rate of inflation.
- Owners of assets than appreciate in value.
- People who borrow money and pay a nominal interest rate less than that of inflation.
- People who lend money and charge a nominal interest rate greater than that of inflation.
- Investors whose interest rate grows faster than that of inflation.

- Employed: Anyone currently hold a full or part-time job.
- Unemployed: Anyone actively seeking work.
- Labor force: Population age 16 or older, working or actively seeking work. Employed + unemployed.
- Labor force participation rate = $\frac{\text{Labor force}}{\text{Pop. age} \geq 16} \times 100$.
- Unemployment rate = $\frac{\text{No. of unemployed}}{\text{Labor force}} \times 100$.
- Discouraged worker: Nonworking people, capable of work, but have given up looking due to state of jobs market.
- Underemployed: People who work part time, because they can't find full-time work.
- Cyclical unemployment: Temporary unemployment due to a recession.
- Frictional unemployment: People voluntarily unemployed (College students, stay-at-home parents, etc).
- Structural unemployment: Occurs when there are more people seeking jobs than are available at current wages. Causes:
  - Efficiency wages (Wages above equilibrium designed to reduce turnover).
  - Outsourcing
  - Technology replaces work or workers skills are inefficient.
  - Permanent loss of demand for a good or service.
  - Minimum wage loss
  - Labor unions
  - Public policy
- Natural rate of unemployment (Full employment rate): Frictional + structural. Equilibrium.
- Actual unemployment: Natural + cyclical. If cyclical = 0%, natural = actual.

Unit 4 - Aggregate Supply, Demand, & Consumption

- Marginal Propensity to Consume: % of disposable income that is spent on goods and services. $\frac{\Delta C}{\Delta Y_d}$.
- Marginal Propensity to Save: % of disposable income that is saved. $\frac{\Delta S}{\Delta Y_d} = 1 - MPC$.
- Autonomous Spending (A): Amount of money a household would spend if it had no disposable income.
- Consumption function: Equation showing how individual household's consumer spending varies with the household's current disposable income. $C = A + MPC \times Y_d$.
- Factors that shift the consumption function: i. Change in expected future income (Increase, shifts curve up). ii. Change in consumer wealth (Increase, shifts curve up).

Aggregate Consumption Function



Assumptions

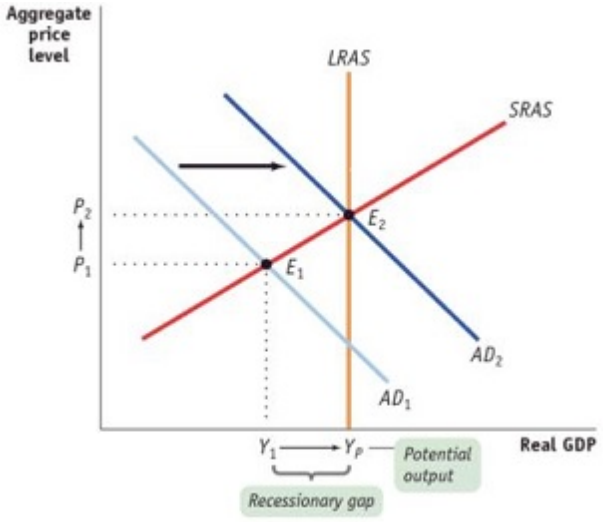
- Fixed interest rates
- Selling prices fixed
- No net exports
- No government & no taxes
- Changes in spending result in changes in aggregate output.

Note: Slope = MPC.

- Spending Multiplier: Ratio of total change in real GDP, caused by an initial change in spending, to the size of that initial change in spending. Impact decreased by taxes.
  $M = \frac{1}{1 - MPC} = \frac{1}{MPS}$
- Inventory investment: Value of change in total inventories held in the economy during a given period.
- Unplanned inventory investment: Occurs when sales > business expected, leading to unplanned increases in inventories, and vice versa.
- Actual investment spending: $I = I_{unplanned} + I_{planned}$.
- Aggregate demand curve: Shows relationship between aggregate price level and quantity of aggregate output demanded.
  - Wealth effect: Increase in price level, decreases purchasing power, which decreases wealth.
  - Interest rate effect: Increase in price level, increases borrowing, increasing interest rates, which decreases C and I.
- Shifts in aggregate demand curve:
  - Changes in confidence: Increase in optimism, increase AD.
  - Changes in wealth: Increase in wealth, increases AD.
  - Size of existing stock of physical capital: Relatively small stock, increases AD.
  - Fiscal policy: Increases in G or cuts in taxes, increase AD.
  - Monetary policy: Increases in quantity of money, increase AD.
- Expansionary fiscal policy: Decrease taxes, increase government spending or transfer payments. Shifts AD curve to the right, eliminates recessionary gap and bad unemployment. Leads to borrowing.
- Recessionary fiscal policy: Opposite of expansionary fiscal policy.
- Fiscal policy lag: *Recognition lag*: Government has to realize recessionary gap exists. *Decision lag*: Government has to develop a spending plan. *Implementation lag*: Time it takes to spend money.
- Aggregate supply curve: Shows relationship between aggregate price level and quantity of goods and services supplied.
- Profit/unit of output = Selling price/unit - Cost/unit.
- Sticky wages: Nominal wages are slow to rise during a labor shortage, and vice versa. In the long run, wages become flexible.
- Factors that shift short run aggregate supply:
  - Change in nominal wages: Increase wages, decrease SRAS.

  - Change in commodity prices: Increase costs, decrease SRAS.
  - Worker productivity: Increase productivity (technology, motivation, or better skills), increase SRAS.

- Potential output: Level of real GDP that an economy will produce when all prices are flexible.
- Long run aggregate supply curve: Shows relationship between prices and output when all prices, specifically nominal wages, are flexible. It's vertical because a change in price level, has no effect on output in the long run.
- Factors that shift long run aggregate supply:
  - More resources
  - Better technology
  - Better quality of resources
- Long run equilibrium: Point on a graph at which SR equilibrium and LR equilibrium intersect. Economy will always end up here, regardless of whether government gets involved.
- Recessionary gap: Caused by negative AD shock.
- Expansionary gap: Caused by positive AD shock.



Achieving Equilibrium

- $Y_1 < Y_P$
- High unemployment
- Decrease in nominal wages
- Positive supply shock
- SRAS shifts right
- $Y_2 = Y_P$ (Equilibrium)

- Lump sum taxes: Don't depend on income. Progressive taxes: Tax rate increase, when income increases.
- Discretionary fiscal policy: Result of deliberate actions by policy makers, rather than rules. Ex. Spending on military, food stamp spending.
- Automatic stabilizers (Non-discretionary fiscal policy): Government spending and taxation rules that cause fiscal policy to be automatically expansionary during a recession, and automatically recessionary during an expansion. Limits impact of recessions/expansions on spending. Ex. During recessions, income increases, which decreases taxes and increases government transfers.

Unit 5 - Banking & the Federal Reserve

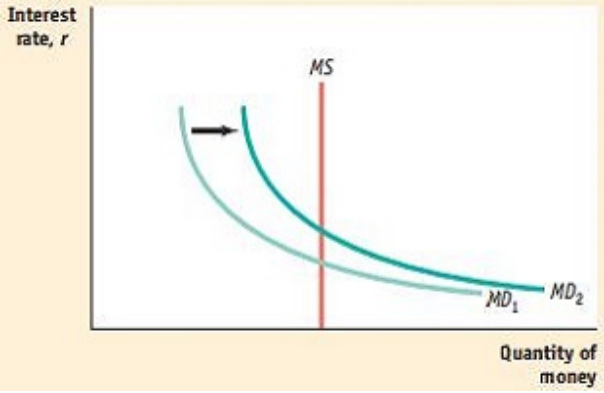
- Goals of financial system: Reduce transaction costs, reduce risk, provide liquidity.
- Budget Balance: Taxes - Government spending. Capital inflows: Total inflow of foreign funds - Total outflow of domestic funds (Always opposite of net exports). $I = S + BB + CI$.
- Three types of money: Commodity money (gold/silver coins), commodity-backed money (gold standard), fiat money.

- Three functions of money: *Medium of exchange*: Item buyers give to sellers when purchasing G&S. *Unit of account*: Standard unit in which prices can be stated and the value of G&S can be compared. *Store of value*: Property of money that it holds its value until it's used in an exchange.
- M1 - Very liquid (Cash, Demand deposits, Traveler's checks). M2 - Less liquid (M1 plus savings accts., CDs, and money market accts).
- Money supply: Checking acct. deposits + currency. Monetary base: Bank's reserves + currency.
- Reserve ratio: % of bank deposits that a bank holds in its reserves. Required reserves: Amount of reserves a bank is required to hold. Excess reserves: Bank reserves over the required reserves.

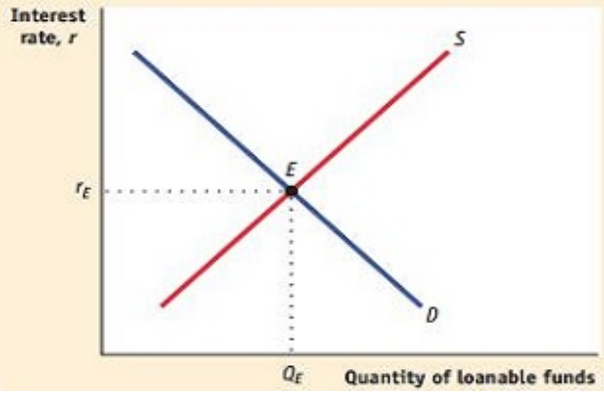
Assets	Liabilities
- Physical capital	- Loans
- Money	- Insurance

Table 1: T account

- Federal Reserve conducting monetary policy: *Reserve ratio*: Increase in rr, forces banks to hold more deposits in reserve (decrease money supply). *Discount rate* (Interest the Fed. charges banks): Increase in rate, deters banks from borrowing, and fewer loans are made (decrease money supply). *Open market operations*: Fed. buys or sells T-bills (Selling decreases money supply).
- Federal funds rate: Interest rate charged between banks.
- Money market curve: Graphs nominal interest rate vs. quantity of money. Negatively sloped because an increase in interest rate decreases money demanded.Shifts in curve: Change in aggregate price level (increase in price, increase money demanded). Changes in real GDP (increase in GDP increases money demanded). Changes in technology (better technology, decreases money demanded).
- Rate of return = (Project revenue − cost of project)/cost of project × 100.
- Factors that shift demand for loanable funds: Change in expected business opportunities. Change in government borrowing. Factors that shift supply: Change in saving behavior of businesses/HH. Change in capital inflows.
- Fisher effect: Nominal interest rates are pushed up due to expected inflation, but there's no change in quantity of loanable funds.
- In the short run, if Fed. ↑ money supply, interest rates ↓, which leads to an ↑ in AD. After AD shifts right, GDP ↑, which ↑ income, ↑ savings, ↑ supply of loanable funds. In the long run, ↑ in AD, ↑ demand for money, which shifts interest rates back to equilibrium which ↓ C and I, which ↓ GDP, ↓ savings, ↓ supply of loanable funds.



(a) Money Market Curve



(b) Loanable Funds Curve

Unit 6 - Inflation, Unemployment & Stabilization Policies

- Implicit Liabilities: Promises to spend by our government that are effectively debt but often not included in debt statistics.
- Seignorage: The revenue generated when a government prints money.
- Inflation Tax: The reduction in the value of money held on by the public caused by inflation.
- Classical Model: Wages and prices are never sticky, theyre always flexible.
- Causes of Inflation:
  - Demand Pull: Inflation caused by an increase in AD.
  - Cost Push Inflation: Inflation caused by a negative supply shock.
- Neutrality of Money: In the long run, the only effect of the Fed. increasing the money supply is to raise aggregate price level by an equal amount.
- Short Run Phillips Curve: Shows trade-off in short run between inflation & unemployment.
- Two factors that shift SRPC:
  - Supply Shocks: Negative supply shock shifts SRPC up. At every level of unemployment the inflation rate changes.
  - Change in expected inflation: Increase in expected inflation shifts SRPC up, as the actual rate of inflation at any given unemployment is higher and vice versa.
- Long Run Phillips Curve: Shows no trade-off between unemployment and inflation. Intersects SRPC where actual inflation equals expected.
- The unemployment rate at which the inflation rate doesnt change over time unless a demand shock hits is called the non-accelerating inflation rate of unemployment, also known as natural unemployment rate. Rate where actual inflation equals expected.
- In the long run, if Congress or the Fed. attempts to lower unemployment below NAIRU, it leads to accelerated inflation, shifting SRPC up.

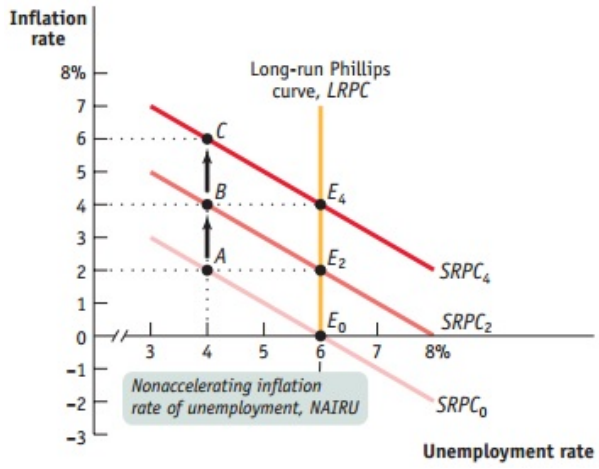


Figure 4: Phillips Curve

- Debt Deflation: When consumers and businesses borrow less money due to deflation, decreasing spending/GDP and increasing unemployment.
- Zero Bound Interest Rates: Nominal interest rates are approaching 0 and they cannot be lowered further.
- Liquidity Trap: Nominal interest rates are approaching 0 and the Fed. cannot lower interest rate further to increase borrowing.

Cyclically Adjusted Budget Balance: