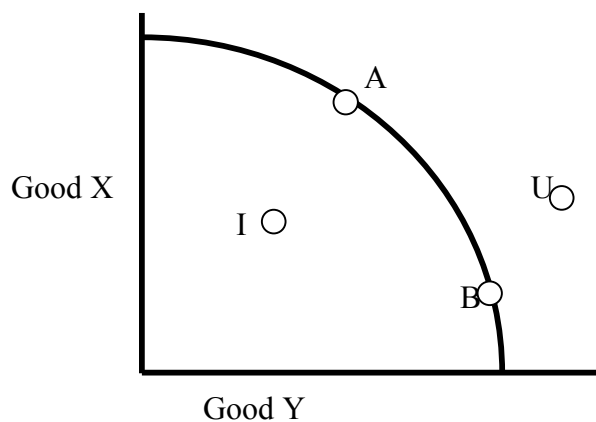


AP Macroeconomics - Mega Review Guide

Production Possibilities Curve/Frontier



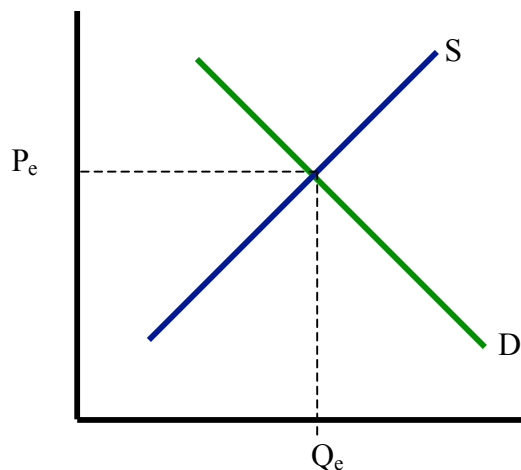
Concepts:

- Points on the curve—Efficiency
- Points inside—inefficient
- Points outside the curve—unattainable with available resources
- Outward shift can occur with new resources or technology
- Inward shifts can occur due to war, plagues
- Demonstrates Opportunity Cost
- Related to LRAS

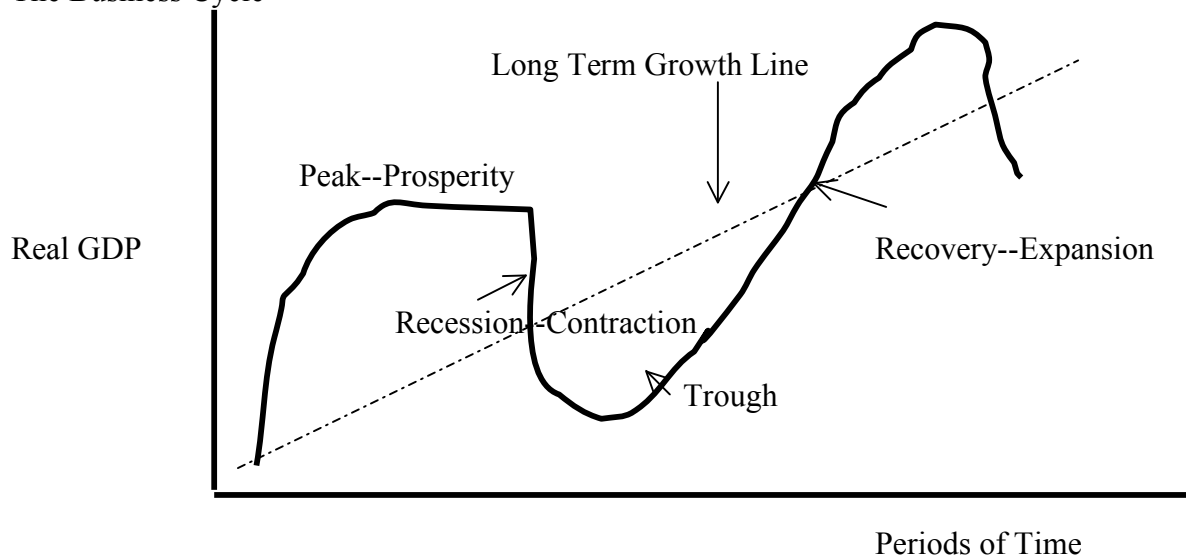
Demand and Supply

Variations:

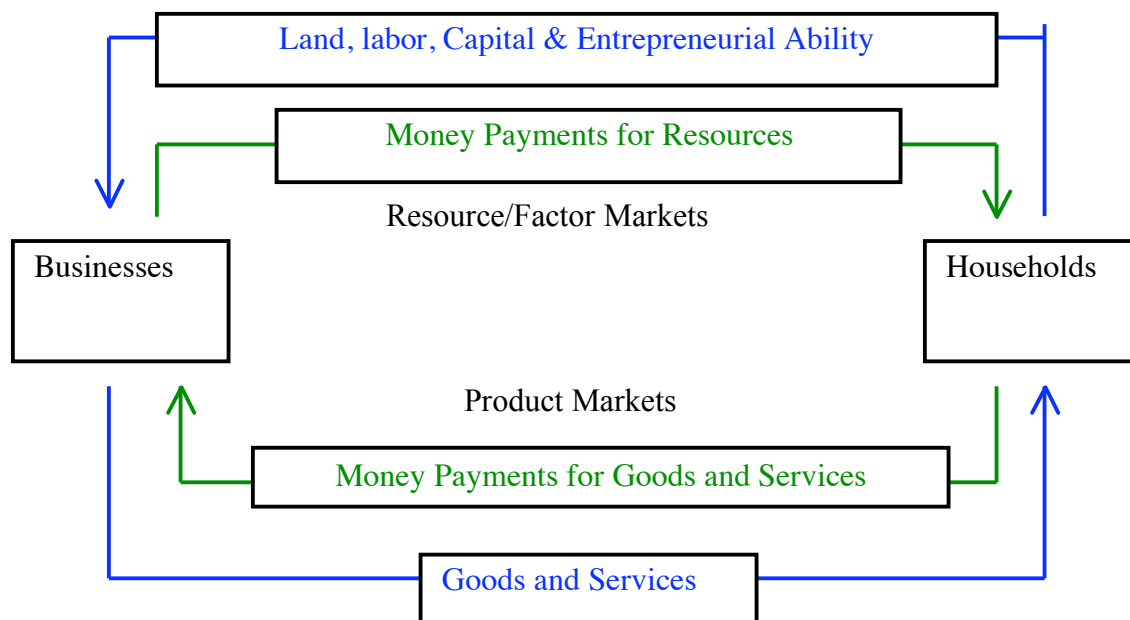
- Shifts in demand and supply caused by changes in determinants
- Market clearing price and equilibrium
- Know the difference between change in supply or demand, and change in quantity demanded or supplies



The Business Cycle



Circular Flow Model



- The inner flow (green) is the flow of dollars in the economy
- The outer flow (blue) is the flow of inputs and outputs

Aggregate Demand

AD = qty demanded of all goods and services at different price levels

There is an inverse relationship between price level and output

The AD curve slopes downward for three reasons:

- Real Balance Effect—*price level falls* → purchasing power rises → monetary wealth rises → *buy more g/s* and vice versa
- Interest Rate Effect-- *price level falls* → purchasing power rises → monetary wealth rises and less money is needed to buy g/s → excess money is saved, supply of credit (Loanable funds) rises → interest rates decrease → consumers, businesses borrow more money → *buy more g/s* and vice versa
- International Trade Effect-- price level falls, relative to foreign countries → U.S. goods cheaper relative to foreign goods → Americans and foreigners buy more U.S. goods
- Changes in AD (shifts of the entire curve) result from changes in C, I G, or NX

Four Factors Can Change AD

- Consumption
 1. Wealth
 2. Expectations of future prices, income (consumer confidence)
 3. Interest Rates
 4. Income Taxes

- Investment
 1. Interest Rates
 2. Expectations about future sales (business confidence)
 3. Business Taxes

- Government
 1. Expenditures--Government Spending
 2. Revenues--Government Taxes

- NX (Ex-Im)
 1. Foreign real national Income
 2. Exchange Rates

Aggregate Supply—Short Run and Long Run

Short Run AS (SRAS)

SRAS is the qty of all goods and services at different price levels

As the Price level goes up, SRAS goes up

There are four explanations for the upward slope of the SRAS curve:

- Sticky-Wages
- Sticky Prices
- Producer Misperceptions
- Worker-Misperceptions

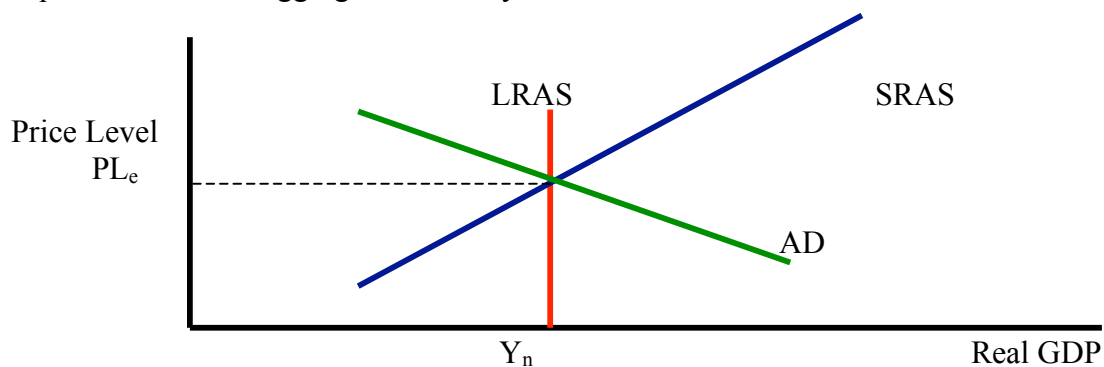
SRAS curve can be changed (shifted) by wages, price of non-labor inputs, productivity, and beneficial/adverse supply shocks

When the economy no longer has issues related to sticky or prices, producer or worker misperceptions it is said to have moved into the Long Run

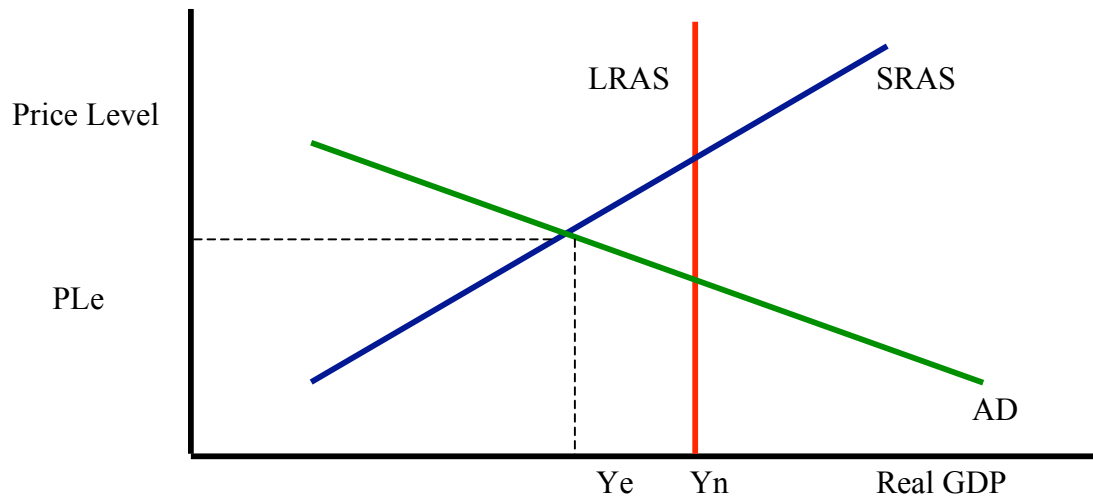
The LRAS can be changed (shifted) by technology and resources

Y_n is the Natural Rate of GDP, or where GDP is when all resources are fully utilized

Equilibrium in the Aggregate Economy



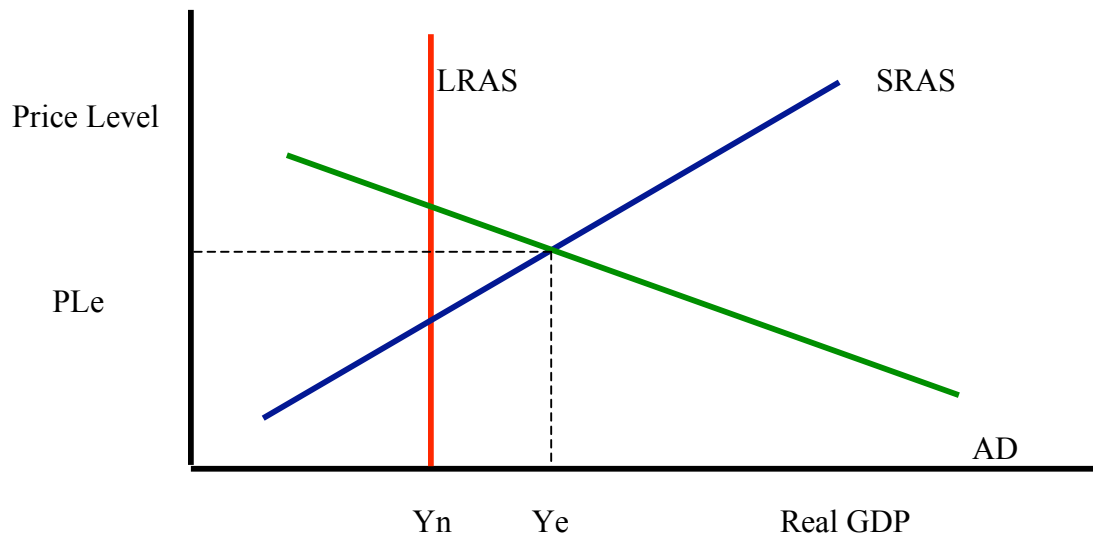
A Recessionary Gap



A Recessionary Gap

- During a recessionary gap, an economy is in short run equilibrium
- The recessionary gap ($Y_n - Y_e$) indicates that there is unemployment because the economy is not producing at its Natural Rate of GDP
- Resources are inefficiently utilized or under utilized

An Inflationary Gap



An Inflationary Gap

- During an inflationary gap, an economy is in short run equilibrium
- The inflationary gap ($Y_e - Y_n$) indicates that there is overproduction because the economy is producing beyond its Natural Rate of GDP
- Resources are over utilized and will wear down

Different Views of the Economy

Classical, Neo-Classical, and Monetarists View

- Say's Law: supply creates its own demand
- The economy is self-regulating
- When it is out of equilibrium, if it is left alone, it will fix itself
- This is because prices and wages are flexible and will adjust
- This adjustment will shift SRAS
- The amount of savings in an economy equals the amount of investment $S=I$
- Policy Implications=*laissez-faire*

Keynesian View

- S does not = I because of leakages
- Wages and prices are downwardly inflexible
- Prices are hard to lower due to menu costs
- Wages are hard to lower because workers will not consent
- Consumption (C) depends on Disposable Income (DI)
- $APC = C/DI$ $APS = S/DI$
- $MPC = \Delta C / \Delta DI$ $MPS = \Delta S / \Delta DI$
- Multiplier = $1/MPS$
- Autonomous consumption = consumption that is not related to DI
- Policy Implications = government intervention

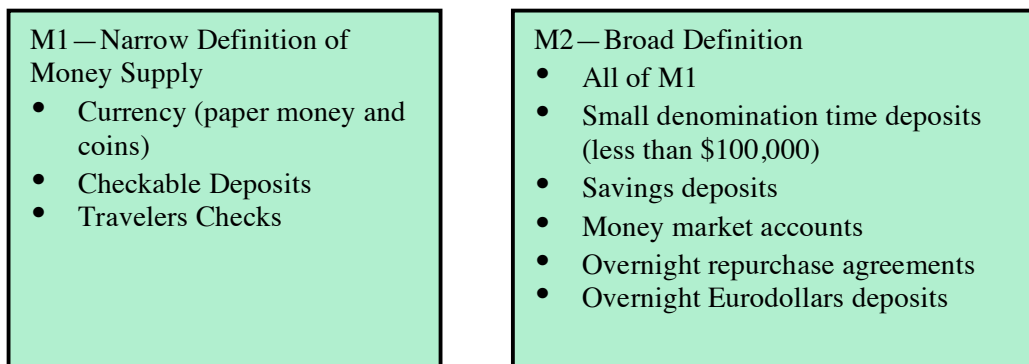
Fiscal Policy

- Fiscal Policy: changes in government expenditures and taxes, intending to shift (primarily) the AD curve to stabilize the economy
- Expansionary Policy—increase spending and/or reduce taxes to close a recessionary gap
- Contractionary Policy—decrease spending and/or increase taxes to close an inflationary gap
- Automatic Stabilizers—changes in fiscal policy that occur automatically, built in to the system, and requiring no Congressional/Presidential action, as example's unemployment insurance and a progressive tax system
- Discretionary Stabilizers—changes in fiscal policy that require Congressional/Presidential action
- Crowding Out—what occurs when increased government (public) spending results in decreased private spending. The danger of crowding out occurring is when the government has a budget deficit and must borrow money to increase its spending. This borrowing is done in the Loanable Funds market, and when the government demands more credit (Loanable funds), it shifts the D curve to the right, causing an increase in interest rates. This increased interest rate dampens consumer and business borrowing, resulting in lower AD.
- Data Lag—lack of awareness of economic changes by policy makers
- Legislative Lag—the time it takes for policy makers to enact a fiscal policy remedy
- Transmission Lag—the time it takes for an enacted fiscal policy measure to be implemented
- Effectiveness Lag—the time it takes for an implemented fiscal policy to take effect

Government Deficits and Debt

- A Budget Deficit occurs when expenditures are greater than revenues in a given year
- A Budget Surplus occurs when revenues are greater than expenditures in a given year
- If the government increases spending while it has a deficit, it can cause crowding out
- The Debt (also called the public debt or the federal or national debt is the total amount the government owes its creditors

Money, Banking and Monetary Policy

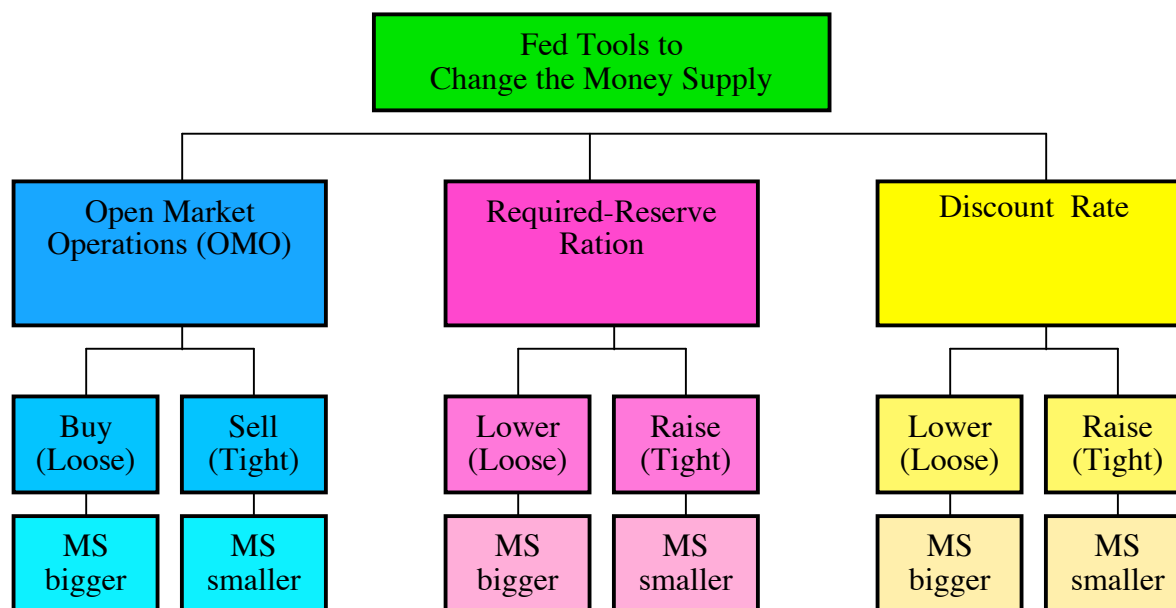


The Federal Reserve

- The Federal Reserve or the FED is the central bank of the U.S.
- It has three ways that it can affect the money supply
 - Change the required-reserve ratio
 - Change the discount rate
 - Open Market Operations--Buy/Sell U.S. Securities

Monetary Policy

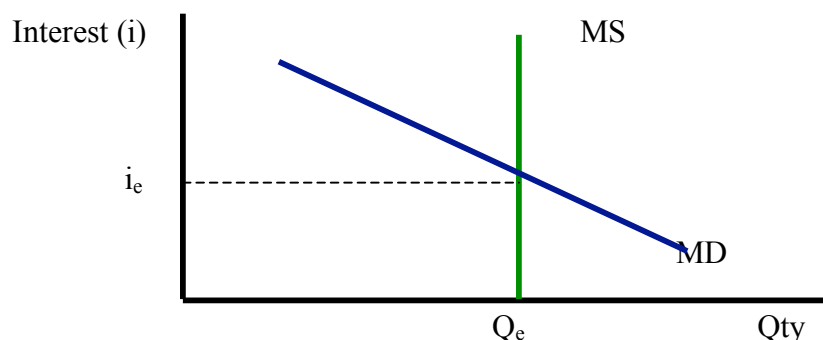
- Monetary Policy can be loose (expansionary) during a recession or tight (contractionary) during inflation
- Tight policy will reduce the money supply
- Loose policy will expand the supply



- Monetary policy is (generally) quicker than fiscal policy, although (somewhat) less direct than fiscal policy

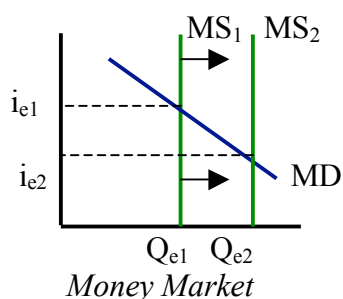
- Once a policy is implemented, changes first occur in the money market, followed by corresponding changes in the AS-AD market

Money Market Graph



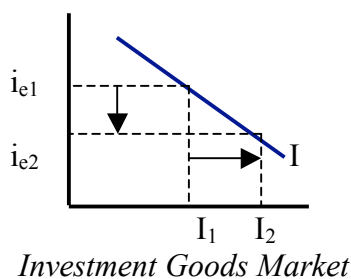
One way that Monetary Policy can change the economy:

1.



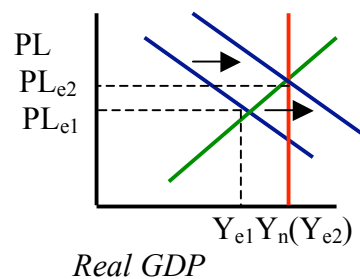
A loose (expansionary) policy will raise the MS, resulting in lower interest rates (undertaken during a recession)

2.



This lower interest rate results in increased investment, as well as more consumer borrowing

3.



This increased borrowing affects AD, shifting it to the right, bringing the economy into equilibrium

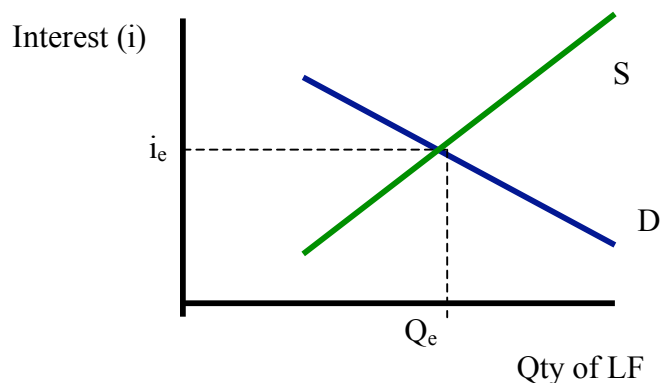
Money Market

- Supply of money must be drawn as a vertical line because this is determined by the Fed
- On the y or price axis is the Price of money, or Interest
- Be able to determine what happens to interest rates when either of the curves shift
- Changes in interest rates cause changes in investment and interest-rate driven consumption which affects AD, SRAS, PL, and Real GDP**

Loanable Funds

Loanable Funds

- When people save more, the *supply* of credit increases, lowering interest rates and stimulating investment borrowing and consumer

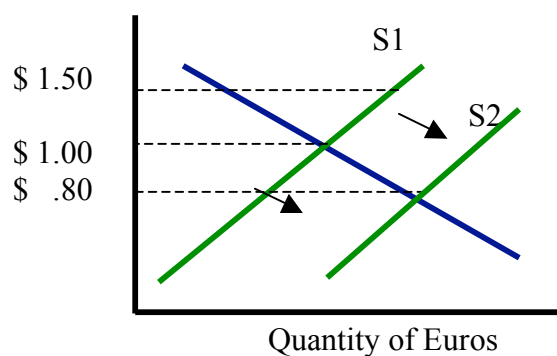


Foreign Exchange Market

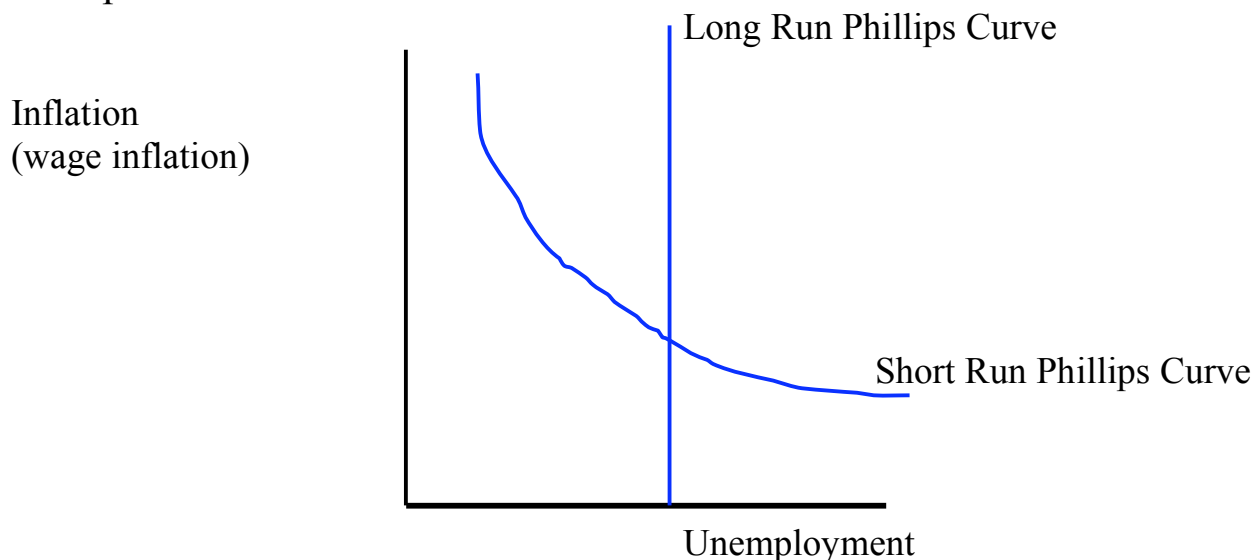
Exchange Rates

- The intersection of the two curves is the exchange rate
- Note that a shortage will exist at any price below equilibrium and a surplus will exist at any price above equilibrium
- Appreciation is an increase in the value of one currency *relative* to another
- Depreciation is a decrease in the value of one currency *relative* to another
- In the graph at right, if the supply of Euros was to increase as shown, the exchange rate would go from \$1.00 to .80 per Euro, the dollar has appreciated relative to the Euro, and the Euro has depreciated relative to the dollar
- In other words, whereas before \$1 purchased 1 Euro, now .80 cents purchases that same 1 Euro
- A flexible exchange rate is one in which the market determines value
- A fixed exchange rate is one in which the value is not allowed to fluctuate

\$ Price
Per Euro



Phillips Curve



The Short Run Phillips Curve shows the theoretical trade-off between inflation and unemployment. This curve is downward sloping, indicating that the relationship between unemployment and inflation is an inverse one. In other words, when inflation rises, unemployment declines and vice versa. This theory was useful in the 1950's through the 1960's when the inverse relationship seemed to hold true. However, after the 1970's this relationship was not always found to be true. In other words, an economy could suffer from both high inflation and high unemployment (called stagflation). The Long Run Phillips curve shows that there is no trade-off between inflation and unemployment.

Economic Growth

- Real Economic Growth refers to an increase in Real GDP from one period to the next
- Factors that are related to Economic Growth include natural resources, labor, capital, technological advances, property rights, and economic freedom
- Improving any of the above can result in Economic Growth

Formulas and Terms

- **GDP**=total value of all final goods and services produced by an economy in a given year
- $GDP = C + I + G + NX (Ex-Im)$
- Not counted in GDP are illegal activities, government transfer payments (social security, welfare, veterans benefits, etc.), sale of used goods, financial payments (bonds, stocks)
- GDP is also referred to as Output, or Y
- $GDP \text{ Per Capita} = GDP/Population$
- Real (inflation adjusted) vs. Nominal GDP
- $Real\ GDP = \left[\frac{Nominal\ GDP \times 100}{Price\ Index} \right]$
- Real GDP can be calculated using any price index (i.e. CPI, GDP Deflator)
- $Output\ Growth = \left[\frac{Real\ GDP_{later\ year} - Real\ GDP_{earlier\ year}}{Real\ GDP_{earlier\ year}} \times 100 \right]$
- **Price Indexes and Inflation**
- Inflation is an increase in overall prices and is measured by price indexes
- CPI is based on a fixed market basket of goods, the base year is 100
- $CPI = \left[\frac{total\ value\ of\ market\ basket,\ current\ year \times 100}{total\ value\ of\ market\ basket,\ base\ year} \right]$
- GDP Deflator is another Price Index, it is a broader measure than the CPI of prices in the economy
- $Price\ Change = \left[\frac{CPI_{later\ year} - CPI_{earlier\ year}}{CPI_{earlier\ year}} \times 100 \right]$
- **Employment, Unemployment**
- $Civilian\ Labor\ Force = Unemployed + Employed$
- $Labor\ Force\ Participation\ Rate = \frac{Civilian\ Labor\ Force}{Civilian\ Non-institutional\ Population}$
- $Unemployment\ Rate\ (U) = \frac{\#\ of\ Unemployed}{Civilian\ Labor\ Force}$
- $Employment\ Rate\ (E) = \frac{\#\ of\ Employed}{Civilian\ Non-institutional\ Population}$
- Note that the U and E have different denominators and therefore cannot be added together with the expectation of getting 100 percent.
- The Civilian Non-institutionalized Population is everyone over the age of 16, not in the military or other institution (such as prison or mental hospital)
- To be considered unemployed a person must be actively looking for work in the past four weeks

- Cyclical U—due to a recession, downturn in the economy
- Structural U—skills of worker does not match needs of the economy
- Frictional U—voluntarily between jobs, looking for first job
- Discouraged Workers
- Natural Unemployment Rate varies over time and is the amount of unemployment due to structural and frictional
- Full Employment is when the economy is operating at its natural rate of unemployment, but never 100 percent

- **Comparative Advantage**
- Comparative advantage occurs when a country can produce a good for a lower opportunity cost
- Outputs (finished products such as food, clothing, machinery):
 - Opportunity Cost of 1 additional unit of x = y/x
 - Opportunity Cost of 1 additional unit of y = x/y

- Inputs (such as labor hours):
 - Opportunity Cost of 1 additional unit of x = x/y
 - Opportunity Cost of 1 additional unit of y = y/x
- Tariffs--tax on imports
- Subsidies—monetary payment by the government to a producer of a good or service
- Quotas—legal limit on how much of a good can be imported

- **Other Formulas**
- $APC = C/DI$ $APS = S/DI$ $APS + APC = 1$
Average Propensity to Consume (one's total income)

- $MPC = \Delta C / \Delta DI$ $MPS = \Delta S / \Delta DI$ $MPS + MPC = 1$
Marginal Propensity to Consume (one's additional income)

- Government and Investment Multiplier = $1/MPS$
- Tax Multiplier = $- MPC/MPS$

- $\Delta GDP = \Delta \text{Change in Spending} \times \text{Multiplier}$
-
- Money Multiplier = $1/\text{required-reserve ratio}$
- **Maximum Δ in Checkable Deposits =** $\frac{1}{\text{Required-Reserve Ratio}} \times \Delta \text{ Reserves}$
- Maximum Δ in Checkable Deposit = $1 \left[\frac{\Delta \text{Excess Reserves}}{\text{Required-Reserve Ratio}} \right]$
(brought about by banking system)