2.1 Gross Domestic Product

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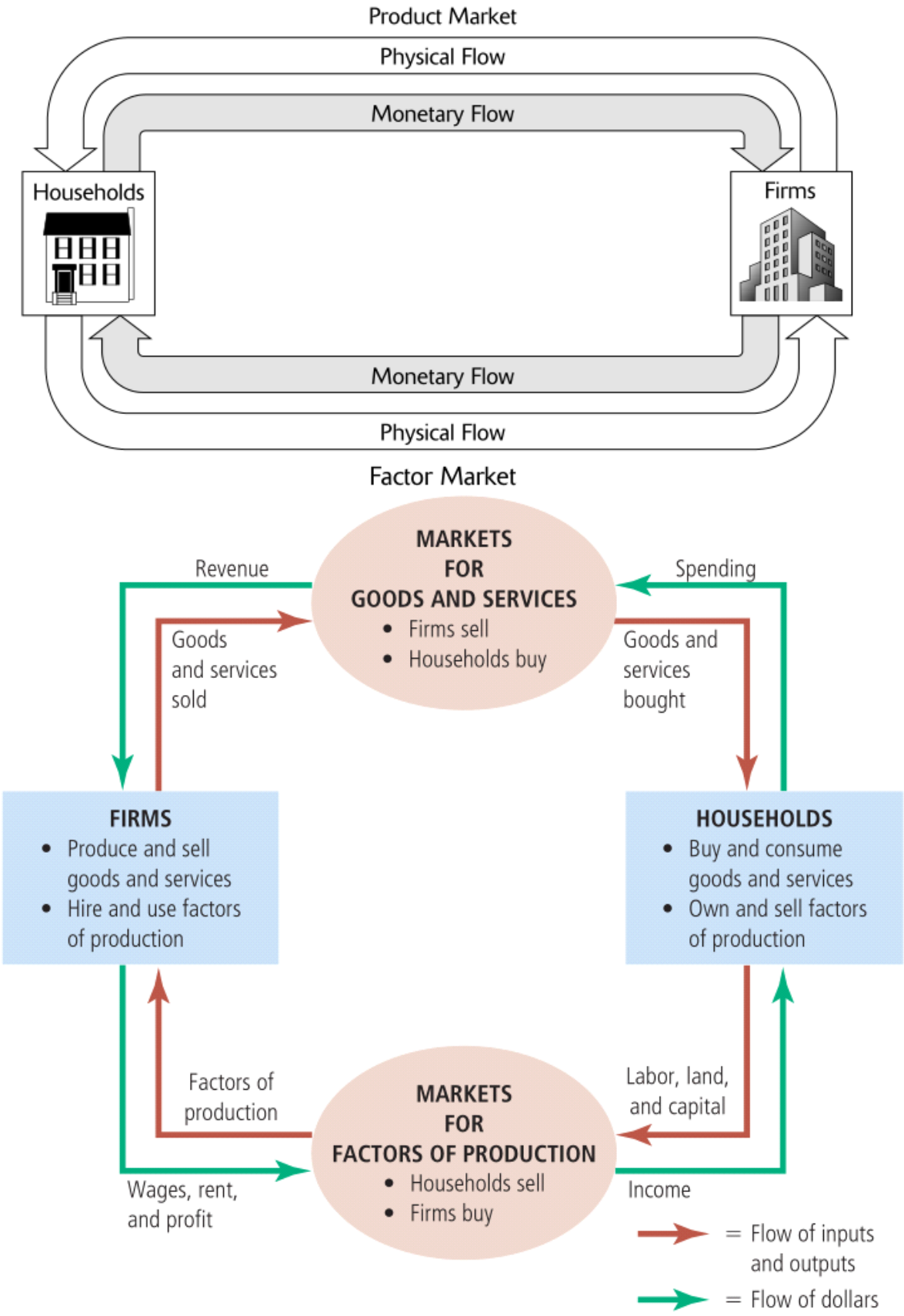
National Accounts

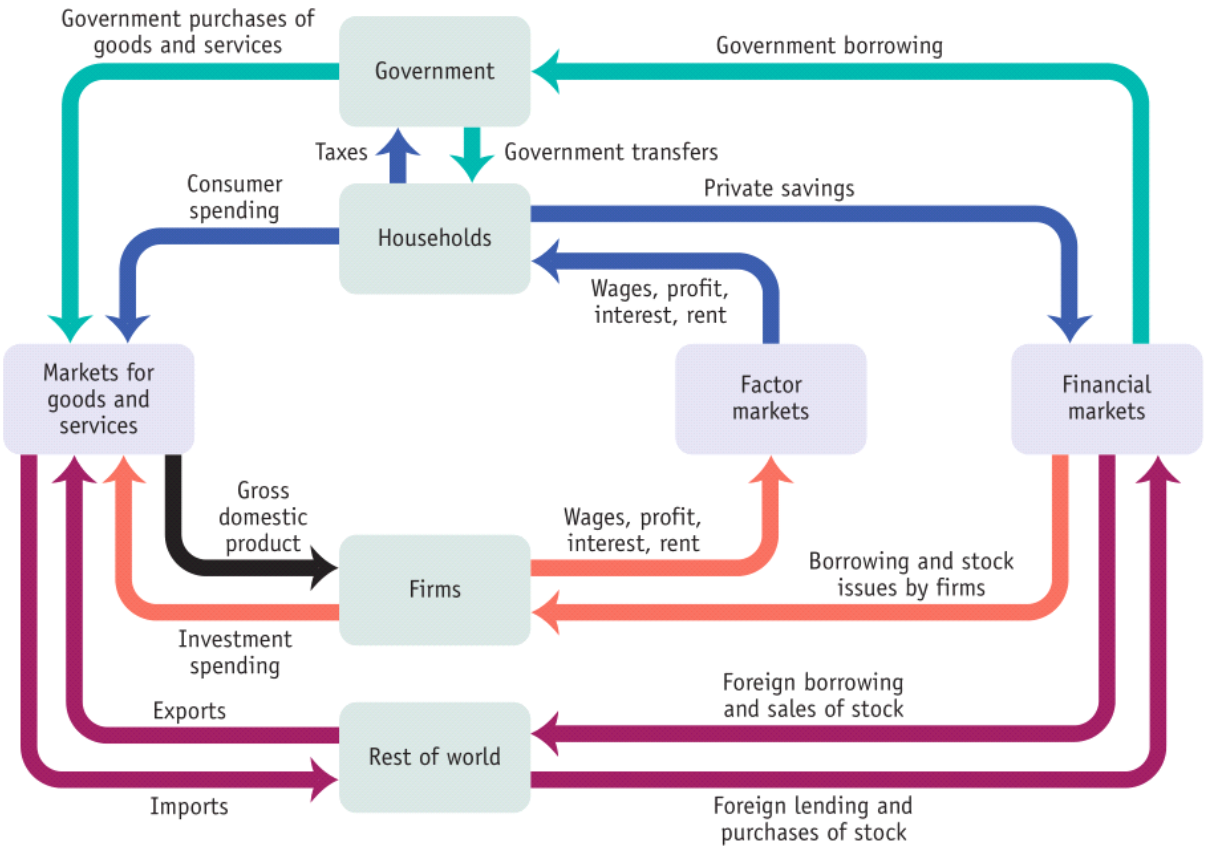
- **National income** and **product accounts**, or national accounts refers to how the Department of Commerce tracks spending in the aggregate
- Macroeconomic equation
  - **Y = C + I + G + (NX)**
  - Y: GDP = **Aggregate Demand**
  - C: **Consumer** expenditures (or **spending**)
  - I: **Investment** spending by businesses
  - G: **Government** purchases of goods & services
  - NX: Net Exports = **Exports - Imports**
- GNP vs. GDP
  - GDP: within the country's **borders**
  - GNP: with **nationality**

Circular Flow of the Economy

- **Simplistic representation** of a complex macroeconomy
- Household
  - person or group of people who **own** the **factors** of **production**
- Firms
  - businesses that **produce goods** and **services** (resource processors)
- Product Market
  - **Place** in which **goods** and **services** are **bought and sold**
- Factor Market
  - **Market** in which **land**, **labor** & **capital** are **bought and sold**
- Circular-Flow Diagram

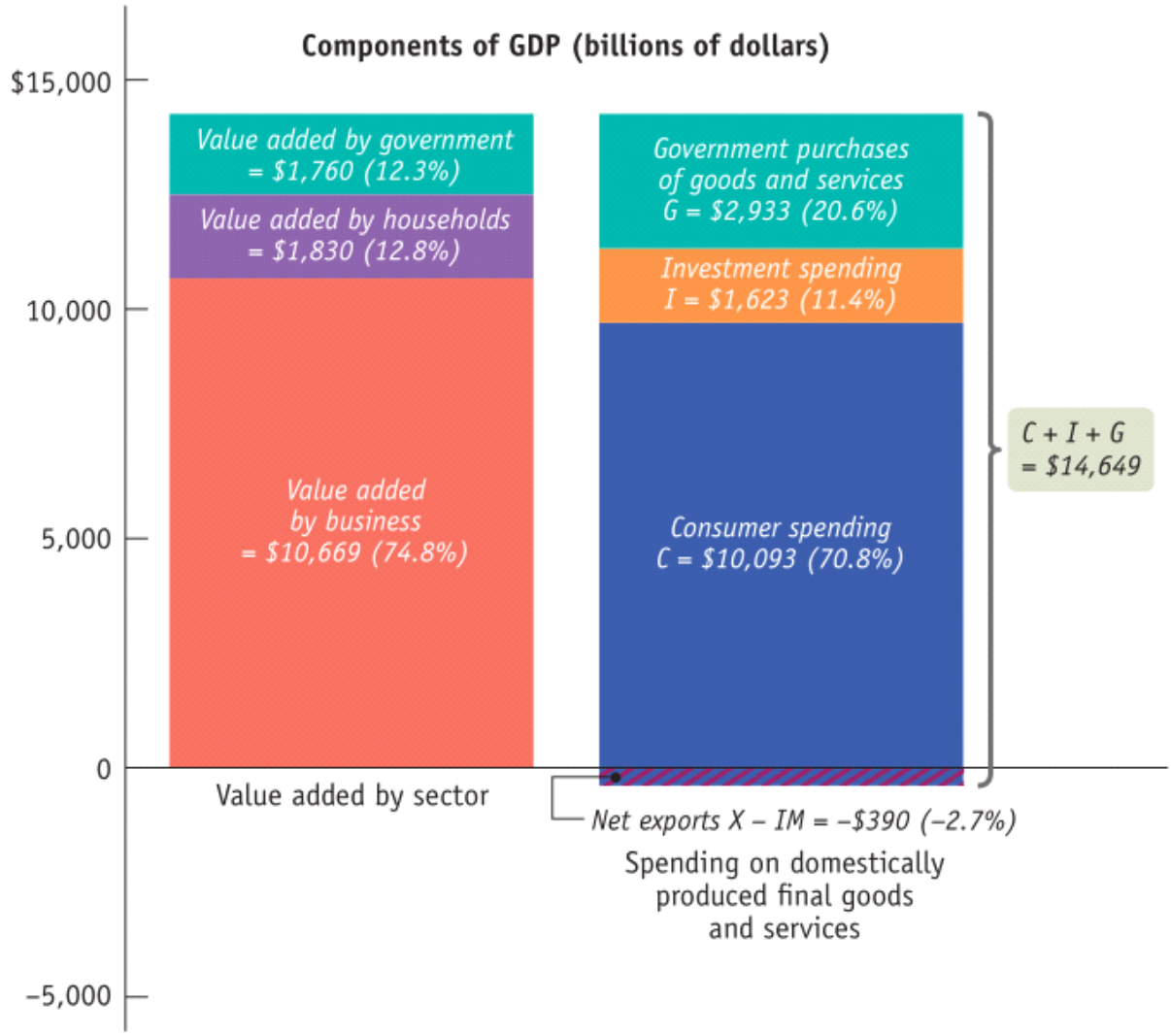


- Expanded Circular-Flow Diagram



GDP Explained

- Gross Domestic Product
  - Total value of all final goods and services produced in an economy in a given year
- Approaches to GDP
  - First method of calculating is by surveying firms and adding up the total value of their **production** of final goods and services (Intermediate goods not counted)
  - Second method adds up aggregate **spending** on domestically produced final goods and services
  - Third method adds up all **factor income** (wages, interest, rent, profit) made **from sales**



Real vs. Nominal GDP

- Nominal GDP
  - total value of all final goods and services produced in the economy using the **current year's prices**
- Real GDP
  - total value of all final goods and services in the economy using the **base year's prices**.
- **Real GDP** accounts for **inflation** whereas nominal GDP does not!
- **Real GDP** is a **more accurate** measure of economic growth than is Nominal GDP
- Which measure is a more accurate means of measuring economic growth
  - You have to keep it real!
- Calculation

$$GDP\ Deflator = \frac{Nominal\ GDP}{Real\ GDP} \times 100$$

$$Real\ GDP = \frac{Nominal\ GDP}{GDP\ Deflator} \times 100$$

Prices and Quantities

Year	Price of Hot Dogs	Quantity of Hot Dogs	Price of Hamburgers	Quantity of Hamburgers
2010	$1	100	$2	50
2011	$2	150	$3	100
2012	$3	200	$4	150

Calculating Nominal GDP

2010	($1 per hot dog × 100 hot dogs) + ($2 per hamburger × 50 hamburgers) = $200
2011	($2 per hot dog × 150 hot dogs) + ($3 per hamburger × 100 hamburgers) = $600
2012	($3 per hot dog × 200 hot dogs) + ($4 per hamburger × 150 hamburgers) = $1,200

Calculating Real GDP (base year 2010)

2010	($1 per hot dog × 100 hot dogs) + ($2 per hamburger × 50 hamburgers) = $200
2011	($1 per hot dog × 150 hot dogs) + ($2 per hamburger × 100 hamburgers) = $350
2012	($1 per hot dog × 200 hot dogs) + ($2 per hamburger × 150 hamburgers) = $500

Calculating the GDP Deflator

2010	($200 / $200) × 100 = 100
2011	($600 / $350) × 100 = 171
2012	($1,200 / $500) × 100 = 240

Real GDP Per Capita

- Definition
    - **GDP divided** by the size of the **population**, equivalent to the average GDP **per person**
- Imperfect measure but generally the best measure of **standard of living**
- Real GDP per capita is a measure of an economy's **average aggregate output per person**—and so of what it can do.

2.2 Unemployment

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Unemployment Measures

- Am I unemployed?

Shiloh, a 2 year old, who spends his day playing with toy cars, train sets, and bobbleheads?

NO!

Peter, a 70 year old who has retired after working over 45 years in sales?

NO!

Grace, a 35 year old housewife, who chooses not to work, despite having graduated from Stanford University, in order to take care of her two kids, Jinhee and Stone?

NO!

- Employed
  - people currently **holding a job** in the economy (either full-time or part-time)
- Unemployed
  - people who are **actively looking for** work but have **not found** a job
- Labor Force
  - sum of **employed** and **unemployed**
- Labor Force Participation
  - **percentage** of the population 16 or older that is in the labor force

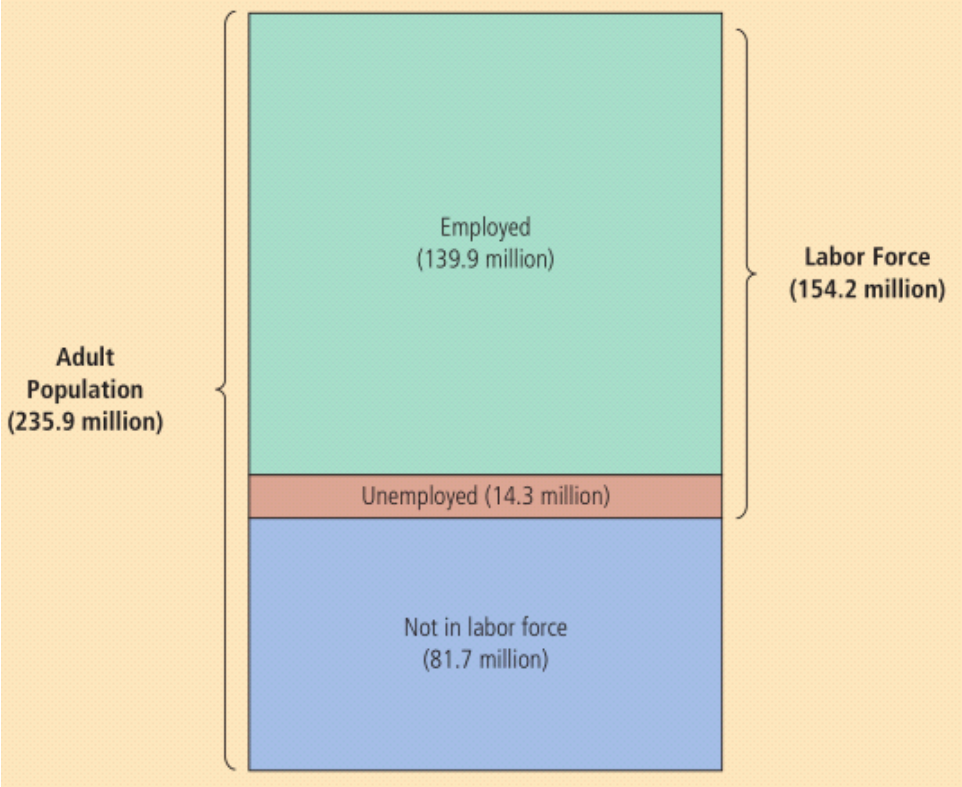
$$\text{Labor force participation rate} = \frac{\text{Labor force}}{\text{Population age 16 and older}} \times 100$$

- Unemployment rate
  - defined as the **percentage** of total number of people in the **labor force**

(employed + unemployed) who are **unemployed**

$$\text{Unemployment rate} = \frac{\text{Number of unemployed workers}}{\text{Labor force}} \times 100$$

- Example



  - Unemployment rate = (14.3 / 154.2) × 100 = 9.3 percent
  - Labor-force participation rate = (154.2 / 235.9) × 100 = 65.4 percent
- Is it possible for the unemployment rate to increase and yet be a positive sign for the economy? Explain
  - Increase in unemployment could be a positive sign for the economy
  - The number of employed labor also depends on the Labor Force Participation Rate

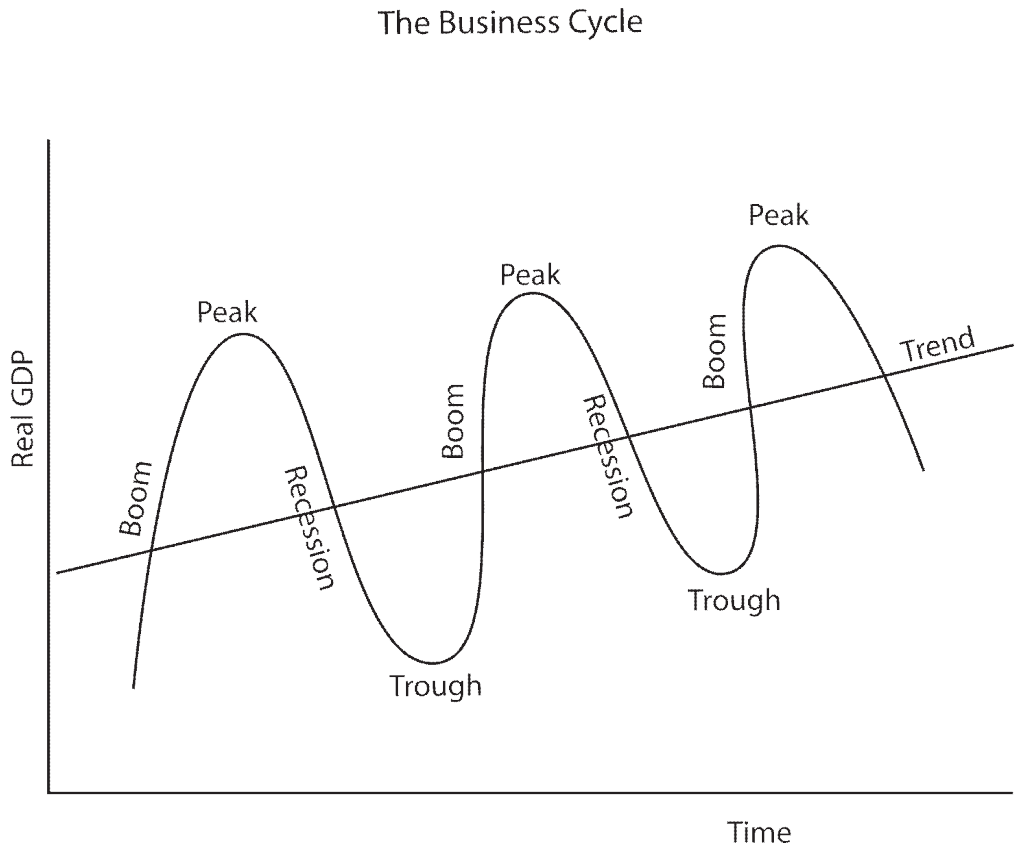
Limitation of the Unemployment Rate

- Unemployment tends to **understate** the employment situation because you are unemployed only if you have been **actively looking for** labor
- Marginally attached to labor force
  - Not in labor force, wanted and were available for work in prior 12 months but had **not searched for work** in the 4 weeks preceding BLS survey
- Discouraged worker

    - part of marginally attached workers who **give up** because they **believe no jobs** are available for them
- Underemployed
    - workers who **would** like **full-time** jobs **but** are working **part-time** or someone who is **overqualified** for his job position

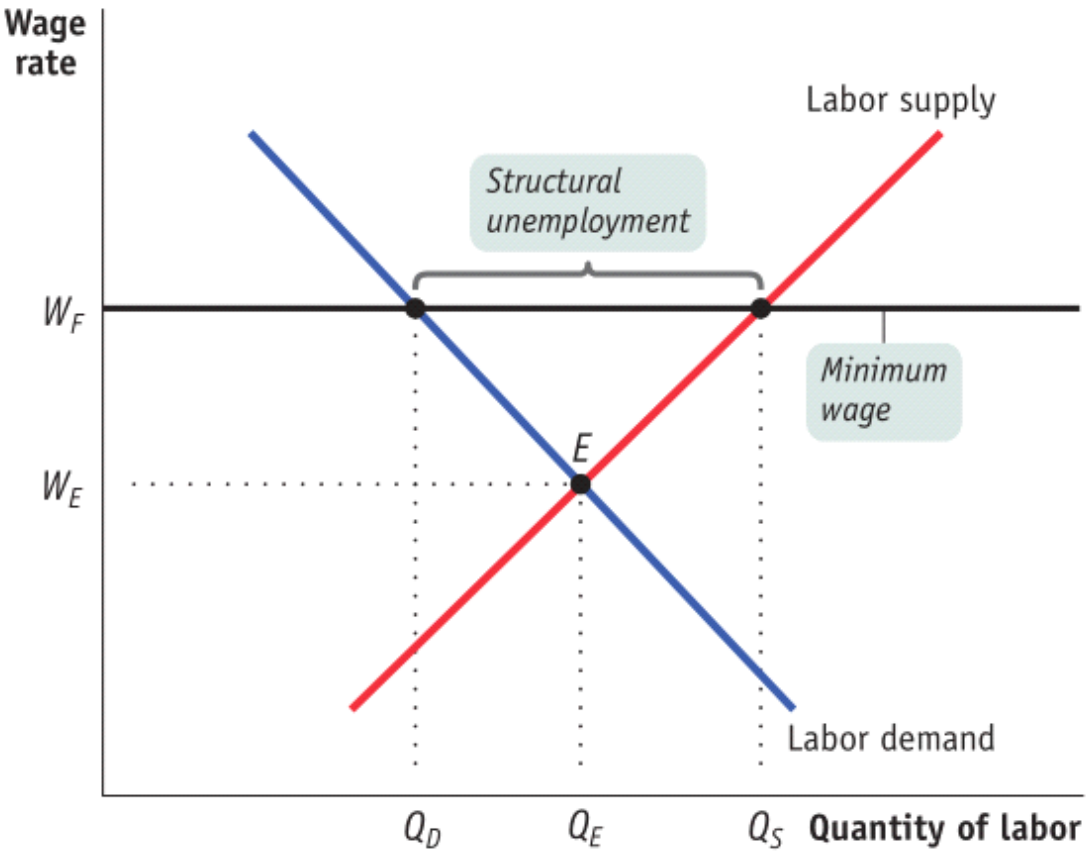
Types of Unemployment

- Frictional unemployment
    - part of the "**natural**" job process in which a worker spends to **find a job**
    - ie. a college graduate entering the labor force or someone who has voluntarily quit his job
- Structural unemployment
    - exists when the quantity of labor **supplied exceeds** the quantity of labor **demanded**, usually because workers **lack** the **skills demanded** for the jobs available
- Cyclical unemployment
    - share of unemployment that occurs as a result of the **business cycle** or **deviation** of the **actual rate** of unemployment from a **natural rate**



- Examples
  - A person who moves to a new city to find a new job experiences
    - voluntary situation
    - natural "normal" process
    - Frictional unemployment
  - What type of unemployment is created by a recession
    - Cyclical unemployment

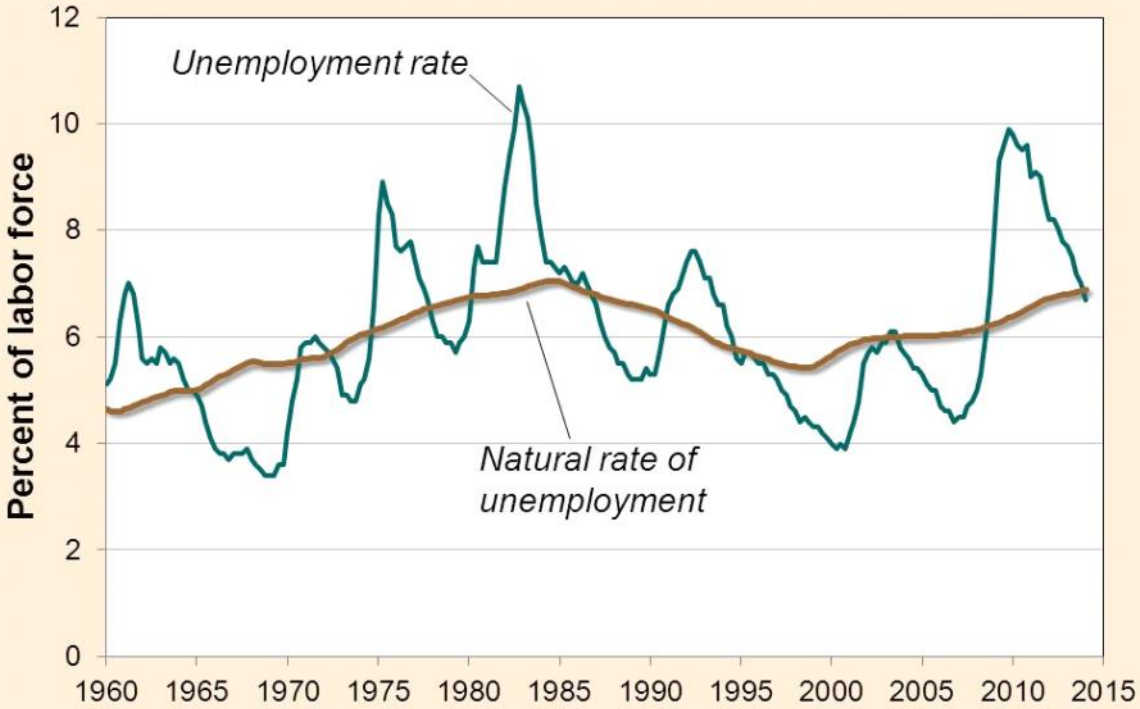
Effect of Minimum Wage on Labor Market



Natural Unemployment Rate

- Because friction unemployment is considered to be "**normal**" and some structural unemployment is seen to be as **unavoidable** in some economies, economists have coined the term "natural unemployment rate"
- **Natural unemployment = Frictional unemployment + Structural unemployment**
- **Actual unemployment = Natural unemployment + Cyclical unemployment**
- **Full time employment** is a situation in which there exists **no cyclical unemployment**

Actual and natural rates of unemployment, U.S., 1960–2014



2.3 Inflation

Monday, January 23, 2017 10:45 PM

What is Inflation

- General increase in prices, or more precise, the **purchasing power** of your money **decreases**
- Inflations isn't when only one particular product's price increases but when **all prices increases**
- In the late 1970s, Fed Chairman Paul Volcker made **taming inflation** his top priority
- By **increasing interest rates**, the Fed was able to tame inflation but, in the process, essentially created a **recession**

Costs of Inflation

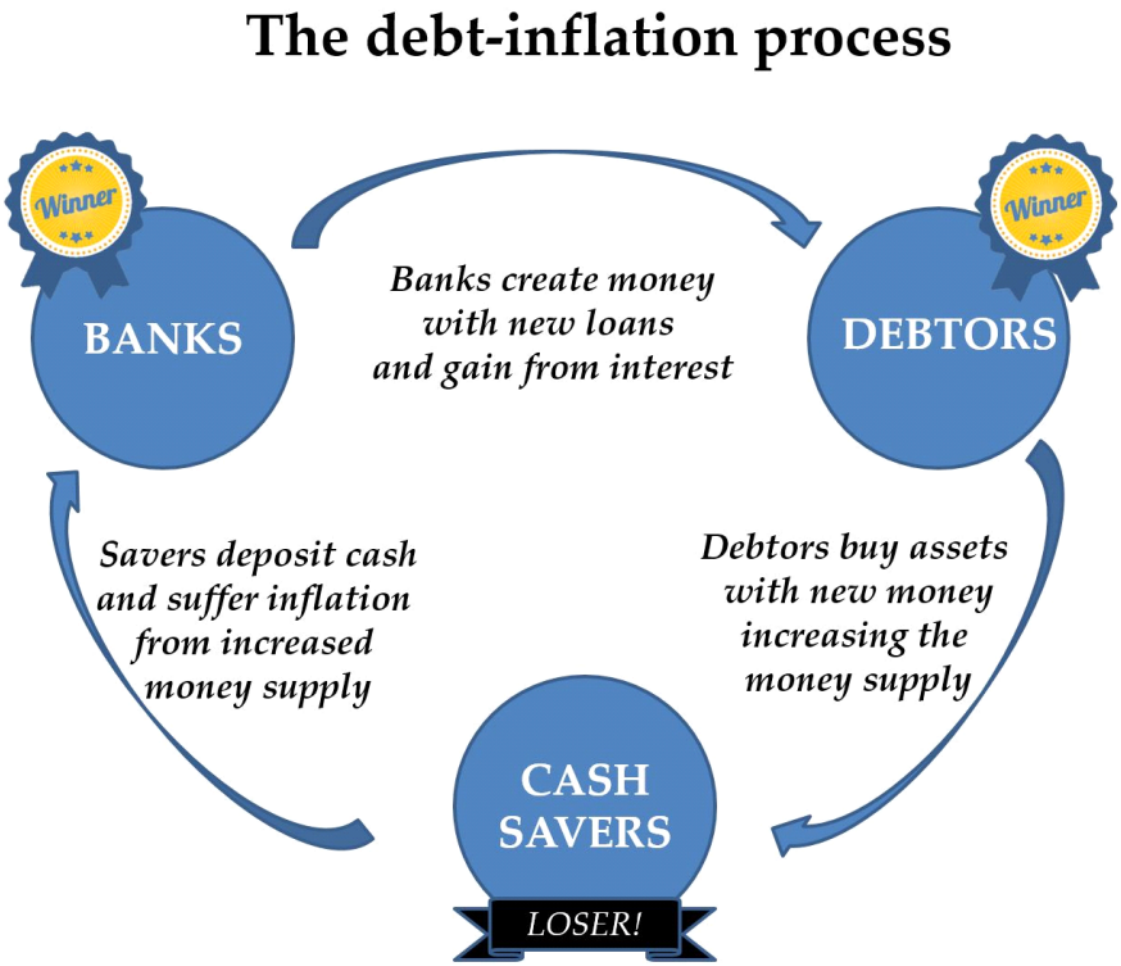
- Shoe-Leather Costs
  - the **increased costs** of **transactions** due to inflation
  - Since people **avoid holding** onto **money** during periods of inflation, people waste time and energy **marking transactions** to avoid sitting on cash.
  - Banking sector increases
- Menu Costs
  - real **costs** of **changing** listed **prices**
  - In hyperinflation, countries will avoid changing prices.
- Unit-of-Account Costs
  - Money becomes a less reliable unit of measurement
  - "Profit" due to inflation is still taxed and therefore investment is discouraged
  - This role of the dollar as a basis for contracts and calculation is called the unit-of-

    accountrole of money.

Winners & Losers from Inflation

- Nominal interest rate

    - the **actual interest** that is paid on a loan
- Real interest rate
    - **Nominal interest** rate **- Expected inflation** rate
- Nominal vs. Real
    - The **nominal** interest rate is the rate **actually** paid.
    - The **real** interest rate is actual return the lender receives **net of inflation**
- **Borrowers win** with inflation because they pay back in nominal dollars.
- **Savers** and **lenders lose** because the amount of money they receive is **worth less**.
- Countries with **uncertain** levels of inflation generally **won't issue long-term** loans



Wage-Price Spiral

- Combination of **"cost-push"** and **"demand-pull"** inflation leads to a wage-price spiral
- When there is **too much money** chasing too few goods, the price of products

will tend to increase which leads to "**demand-pull**" inflation

- When workers demand **higher wages** as a result of inflated prices, prices of products consequently go up as well, leading to this "**wage-price**" spiral
- **Increased price of products leads to higher wages leads to increased price of products and so on**
- Keynesians tend to favor this model of how inflation works and that they prices are sticky downward or downward inflexible

Monetarist View of Inflation

- Milton Friedman viewed inflation as simply an issue of **money supply**
- The quantity theory of money is quite simple: an **increase** in the **supply** of money will correspondingly **increase inflation**
- The Austrian view argues that using the **Consumer Price Index** (or CPI) to measure inflation is **inaccurate** because inflation in **unevenly spread** through different goods and services
- Paul Krugman, a Nobel Prize winning, "Keynesian" economist, rejects this Austrian view of inflation stating that the **monetary base tripled** in 2011 and yet there was **no widespread inflation**

Measurement and Calculation of Inflation

- Aggregate Price Level
  - measure of the **overall prices** in the economy
- Market Basket
  - hypothetical set of **consumer purchases** of goods and services
- Price Index
  - measures the **cost of purchasing** a given market basket in a given year
  - (index value is set to 100 in the base year)

$$\text{Price index in a given year} = \frac{\text{Cost of market basket in a given year}}{\text{Cost of market basket in base year}} \times 100$$

$$\text{Inflation rate} = \frac{\text{Price index in year 2} - \text{Price index in year 1}}{\text{Price index in year 1}} \times 100$$

CPI, PPI & GDP Deflator

- Consumer Price Index (CPI)
  - **most commonly** used measure of inflation, market basket of a typical urban American family
  - The Bureau of Labor Statistics sends employees out to **survey prices** on a **multitude** of **items** in food, apparel, recreation, medical care, transportation and other categories
  - CPI tends to **overstate** inflation (**substitution bias** and **technological advances**)
- Producer Price Index (PPI)
  - measures the cost of typical basket of goods and services that **producers purchase**
  - Tends to be used as the "**early warning signal**" of changes in the inflation rate
- GDP Deflator

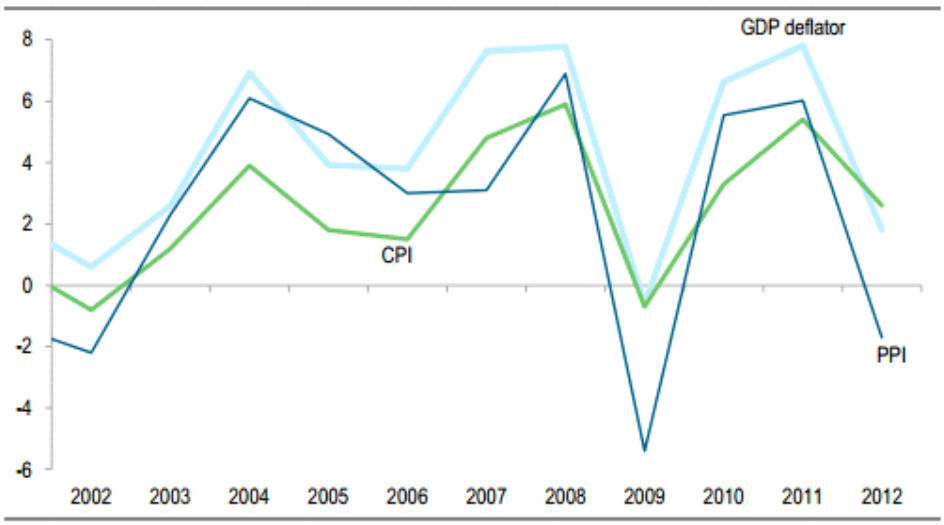
$$GDP\ Deflator = \frac{Nominal\ GDP}{Real\ GDP} \times 100$$

$$Real\ GDP = \frac{Nominal\ GDP}{GDP\ Deflator} \times 100$$

- Not exactly a price index but serves to show how much the **aggregate price level** has **increased**
- Unlike the CPI, GDP is **not** based on a **fixed basket** of goods and services.
- It's allowed to change with people's **consumption** and **investment patterns**
- The default "basket" in each year is the set of **all goods** that were produced in the country in that particular year.
- CPI, PPI, and GDP Deflator tend to move, generally, in the **same direction**

Figure 2: Three measures of inflation; we prefer the GDP deflator

% y/y



Sources: CEIC, Standard Chartered Research

- Comparison
  - equation

The GDP deflator is :

$$GDP\ deflator = \frac{Nominal\ GDP}{Real\ GDP} = \frac{\left(P_{apples} \times Q_{apples}\right) + \left(P_{oranges} \times Q_{oranges}\right)}{\left(P^{92}_{apples} \times Q_{apples}\right) + \left(P^{92}_{oranges} \times Q_{oranges}\right)}$$

$$The\ CPI\ or\ RPI\ is: \quad \frac{CPI}{RPI} = \frac{\left(P_{apples} \times Q^{92}_{apples}\right) + \left(P_{oranges} \times Q^{92}_{oranges}\right)}{\left(P^{92}_{apples} \times Q^{92}_{apples}\right) + \left(P^{92}_{oranges} \times Q^{92}_{oranges}\right)}$$

  - prices of capital good
    - included in GPD deflator (if produced domestically)
    - excluded from CPI

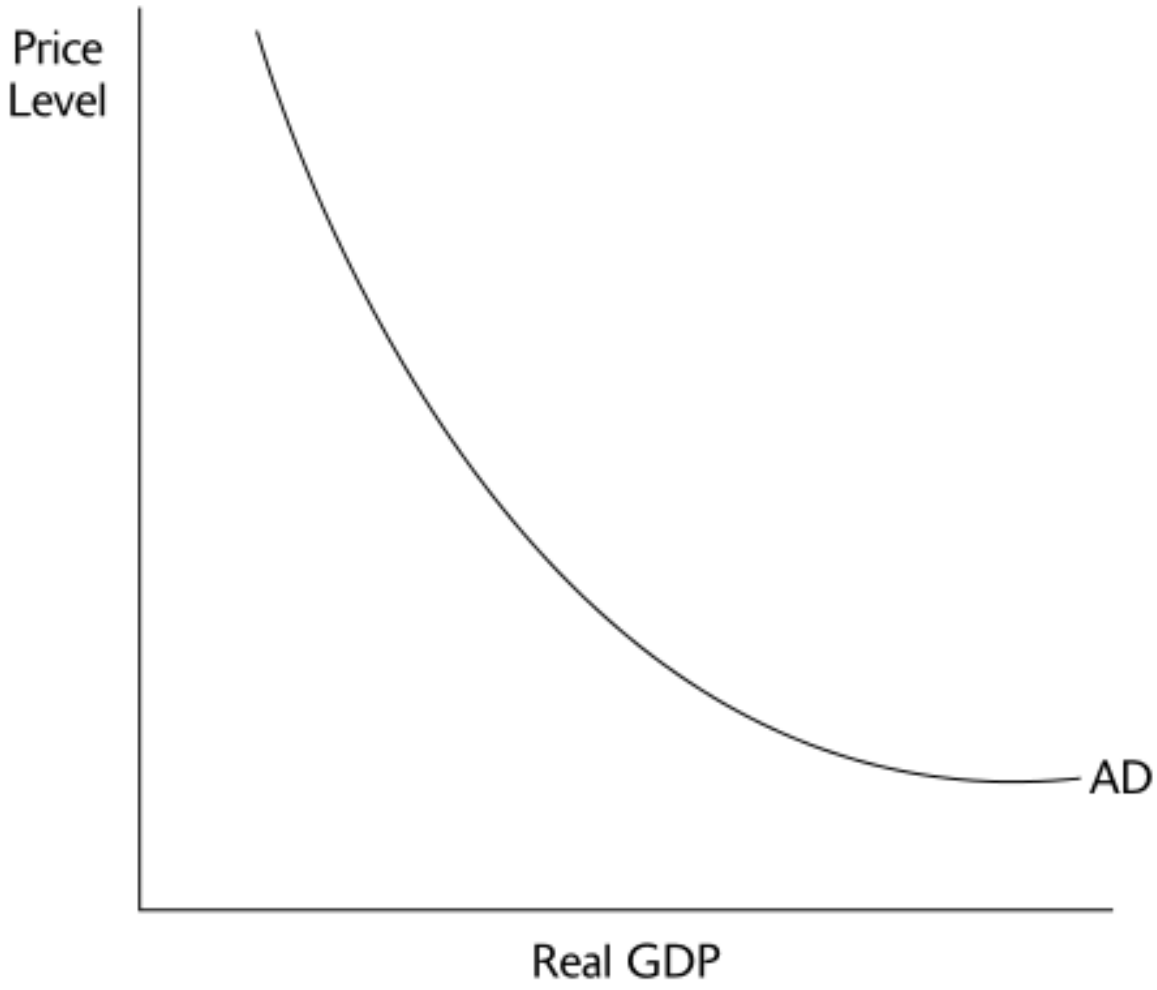
- prices of imported consumer goods
  - included in CPI
  - excluded from GDP deflator
- the basket of goods
  - CPI: fixed
  - GDP Deflator: changes every year

3.1 Aggregate Demand

Tuesday, January 24, 2017 9:33 AM

What is Aggregate Demand

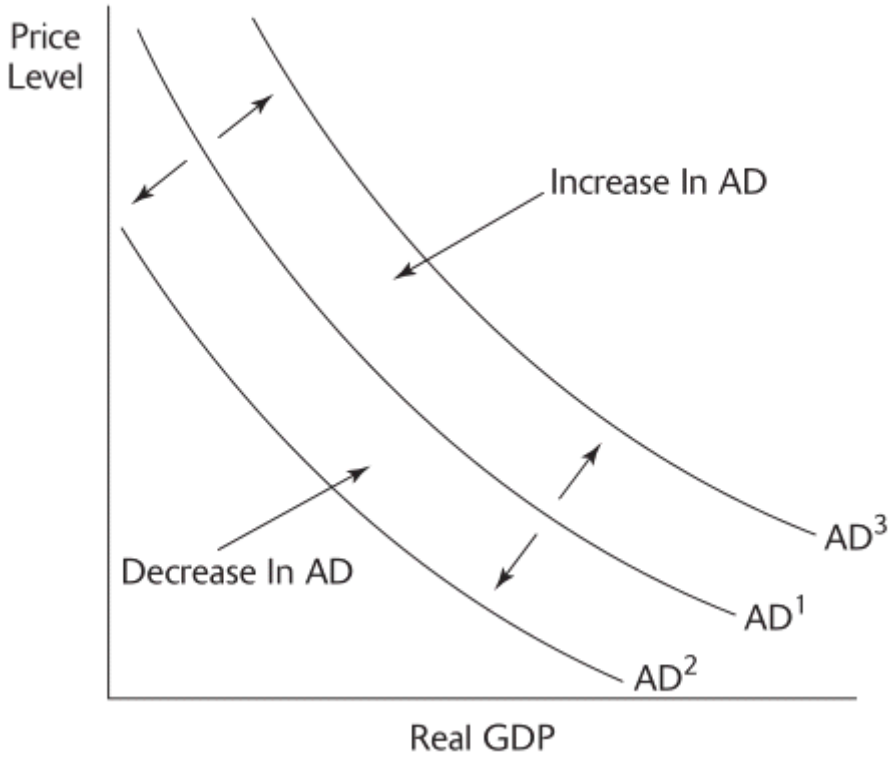
- The aggregate demand curve shows the relationship between the **aggregate price level** and the **quantity of aggregate output** demanded by households, business, the government and the rest of the world
- **Aggregate output** and **real GDP** can be used interchangeably
- All things equal, a movement **down** the AD curve leads to a **lower aggregate price** level and **higher aggregate output**, and vice versa
- Recall the basic equation of national income accounting
    - **Y = C + I + G + NX**



Why is the AD Downward Sloping?

- Demand Curve vs. Aggregate Demand Curve
    - If the demand for one product is downward sloping, wouldn’ t the aggregate demand also do the same?
    - The **demand curve** for an individual good assumes that you **hold price of other goods constant**
    - For the **aggregate demand**, there is a **simultaneous change** in the price of **all final goods** and **services**!
    - If the price of gas goes up, and people buy more econ textbooks, it **doesn't necessarily change** anything at all.
    - So then, why does a rise in the aggregate price level lead to a fell in the quantity of all domestically produced final goods and services produces?
- Wealth Effect
    - change in **consumer spending** caused by the altered **purchasing power** of consumer's assets
    - An **increase** in the **aggregate price level** means people are relatively **poorer**, and vice versa
    - Thus, consumer spending or C, changes and you move up and down the AD curve
- Interest Rate Effect
    - change in **investment** and **consumer spending** caused by **interest rates** that result from changes in **demand for money**
    - With a **higher aggregate price level**, causes an **increase** in **money** holdings which **reduces funds** available for **borrowing**
    - **Interest rate increase** and consumer spending, **C**, and investment spending, **I decreases**

Shift in the Aggregate Demand Curve



- Changes in Expectations
  - Consumers base spending on **future income**
  - If the Conference Board, or Michigan Consumer Sentiment Index reports an **increase** in **consumer confidence**, **AD** has **increased**
- Changes in Wealth
  - People with **more wealth** will tend to **spend more**
  - If the stock market **crashes** or real estate **values plummet**, the **AD** shifts to the **left**
- Size of the Existing Stock of Physical Capital
  - If the **inventory** of housing is **high**, the **AD** will shift **left**
  - If **inventory** is **low**, then **AD** will shift to the **right**
- Fiscal Policy (use of **taxes** and **government spending**)
  - Expansionary fiscal policy
    - **Increase** in **Government spending** or **decrease** in **taxes** will shift **AD** to the **right**
  - Contractionary fiscal policy
    - **Decrease** in **Government spending** or **increase** in taxes will shift **AD** to the **left**

- Monetary Policy (central bank's or Fed's use of changes in **quantity of money** or **interest rates**)
    - Expansionary monetary policy
        - If the Fed **increase** the **money supply** (**lowered interest rates**), then **AD increases**
    - Contractionary monetary policy
        - If the Fed **decrease** the **money supply** (**higher interest rates**), then **AD decreases**

Factors That Shift the Aggregate Demand Curve

Changes in expectations		
	If consumers and firms become more optimistic, . . .	. . . aggregate demand increases.
	If consumers and firms become more pessimistic, . . .	. . . aggregate demand decreases.
Changes in wealth		
	If the real value of household assets rises, . . .	. . . aggregate demand increases.
	If the real value of household assets falls, . . .	. . . aggregate demand decreases.
Size of the existing stock of physical capital		
	If the existing stock of physical capital is relatively small, . . .	. . . aggregate demand increases.
	If the existing stock of physical capital is relatively large, . . .	. . . aggregate demand decreases.
Fiscal policy		
	If the government increases spending or cuts taxes, . . .	. . . aggregate demand increases.
	If the government reduces spending or raises taxes, . . .	. . . aggregate demand decreases.
Monetary policy		
	If the central bank increases the quantity of money, . . .	. . . aggregate demand increases.
	If the central bank reduces the quantity of money, . . .	. . . aggregate demand decreases.

3.2 Aggregate Supply

Tuesday, January 24, 2017 10:19 AM

What is Short-Run Aggregate Supply?

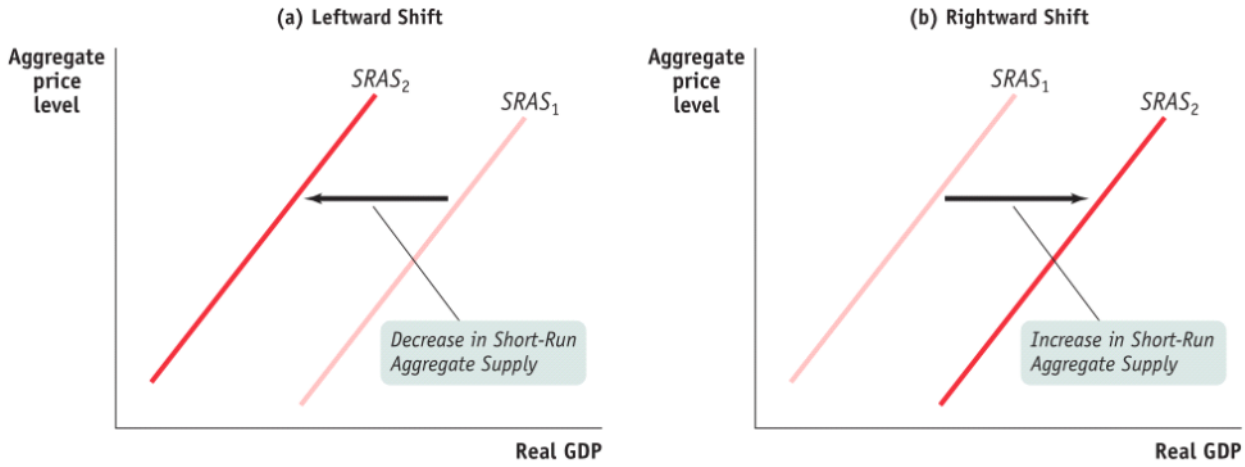
- Shows the relationship between the **aggregate price level** and the quantity of **aggregate output supplied** in the economy
- As the **aggregate price level increases**, the **aggregate output increases**
- **Profit per unit of output = Price per unit of output - Production cost per unit of output**
- As the **price level increases**, producers are collectively going to **produce more** goods and services
- This is all in the **short-run**

Nominal Wages and Sticky Wages

- The largest source of **inflexible production cost** is **wages** paid to workers (all forms of compensation)
- Typically, **wages** paid to workers are paid as **nominal wages** and **not real wages**

    - We think in nominal terms, not in real terms
    - Wages are **not** necessarily **responsive** to **current economic conditions**
    - Wages, therefore, are considered **sticky**
- Sticky wages are nominal wages that are **slow to fall** in **unemployment** and **slow to rise** in labor **shortages**

Shifts in the Aggregate Supply Curve

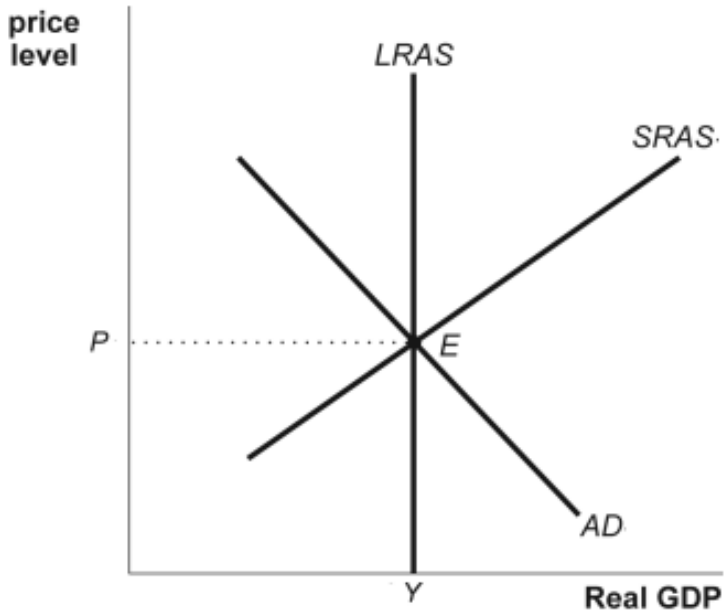


- Changes in Commodity Prices
    - **Increase** in the price of **oil raises production costs** and shifts **AS** to the **left**
    - **Decrease** in the price of **oil lowers production costs** and shifts **AS** to the **right**
- Changes in Nominal Wages
    - A **fall** in nominal **wages** shifts the **AS** to the **right**
    - An **increase** in **money** paid to **workers** (cost of living increases) shifts the **AS** to the **left**
- Changes in Productivity
    - **Technology** improvements will cause workers to **increase productivity**. **AS** shifts **right**
    - New worker **regulations** has the opposite effect. **AS** shifts to the **left**

Factors that Shift the Short-Run Aggregate Supply Curve

Changes in commodity prices		
	If commodity prices fall, . . .	. . . short-run aggregate supply increases.
	If commodity prices rise, . . .	. . . short-run aggregate supply decreases.
Changes in nominal wages		
	If nominal wages fall, . . .	. . . short-run aggregate supply increases.
	If nominal wages rise, . . .	. . . short-run aggregate supply decreases.
Changes in productivity		
	If workers become more productive, . . .	. . . short-run aggregate supply increases.
	If workers become less productive, . . .	. . . short-run aggregate supply decreases.

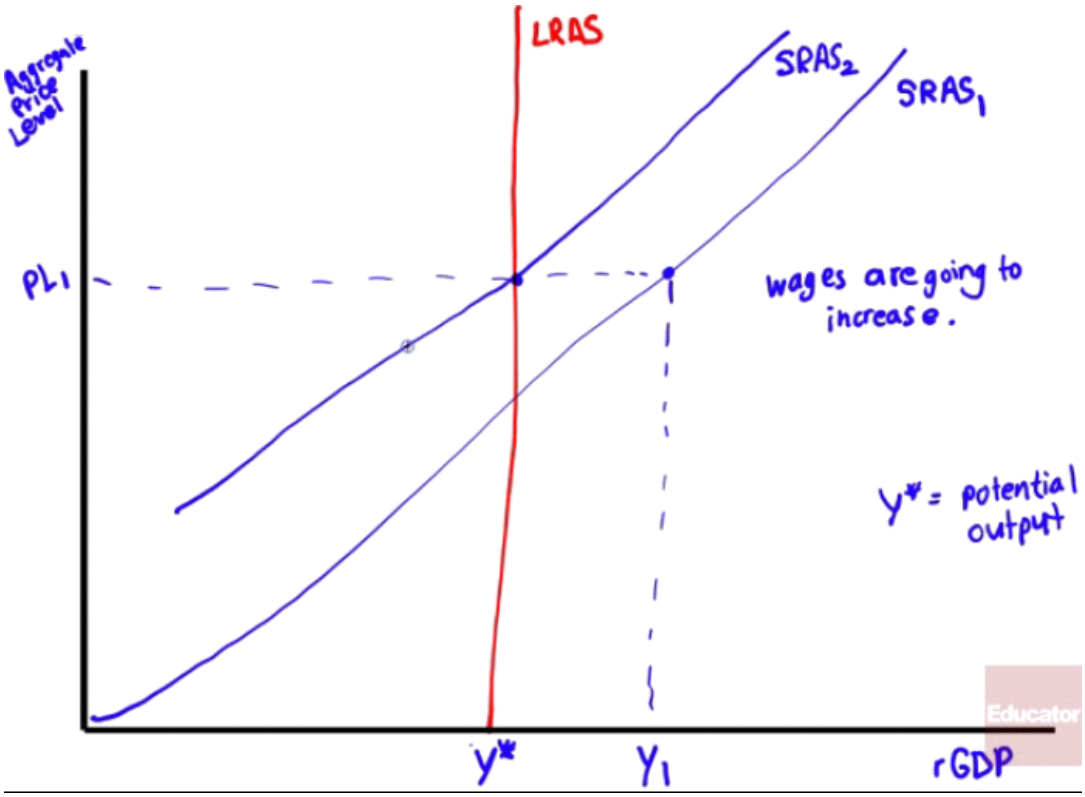
Long-Run Aggregate Supply Curve



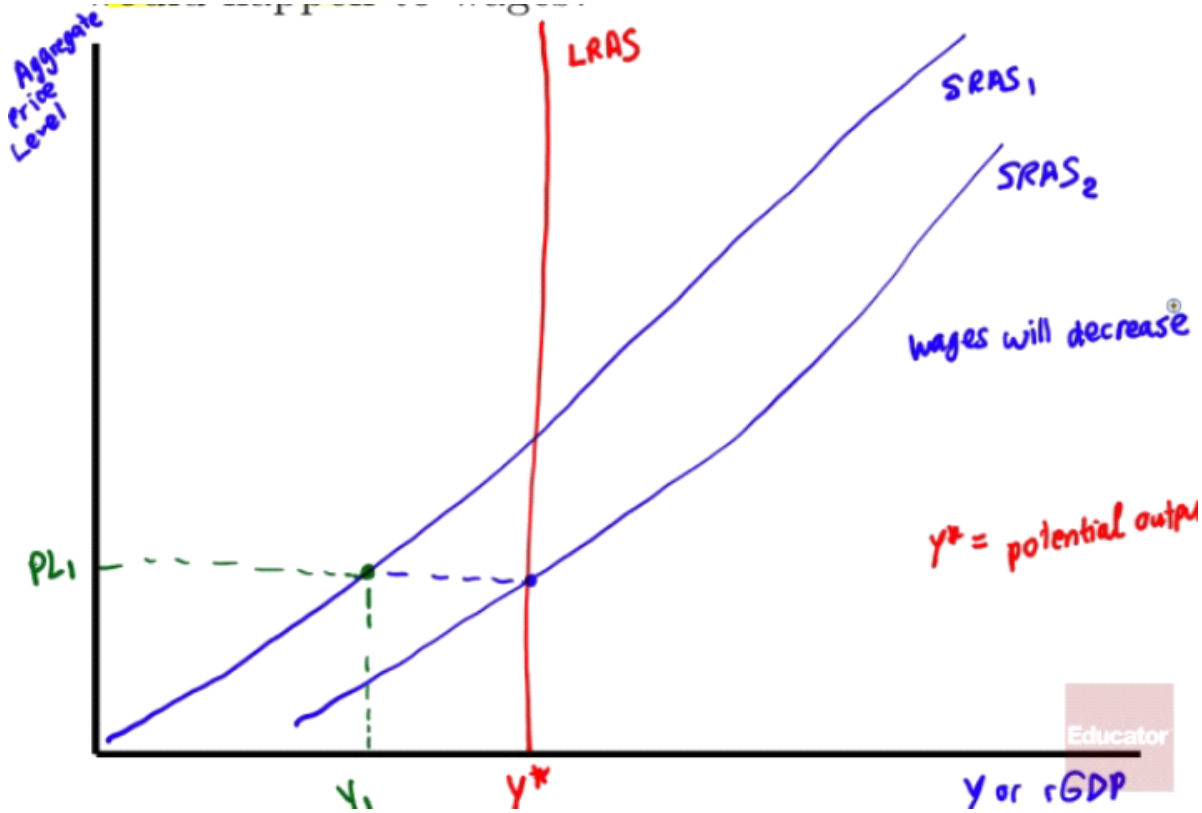
- Shows the relationship between the **aggregate price level** and the **quantity** of **aggregate output supplied** that would exist if all prices, including nominal wages were **fully flexible**
- Potential output
    - level of **real GDP** the economy would produce if all prices, including nominal wages **adjusted properly**
- What would shift the LRAS?
    - Increases in **resources** (land, labor, capital)
    - Increases in the **quality** of **resources** (more educated workforce)
    - **Technological** progress

Examples

- If the aggregate output exceeded potential output, what would happen to the SRAS? What would happen to wages?



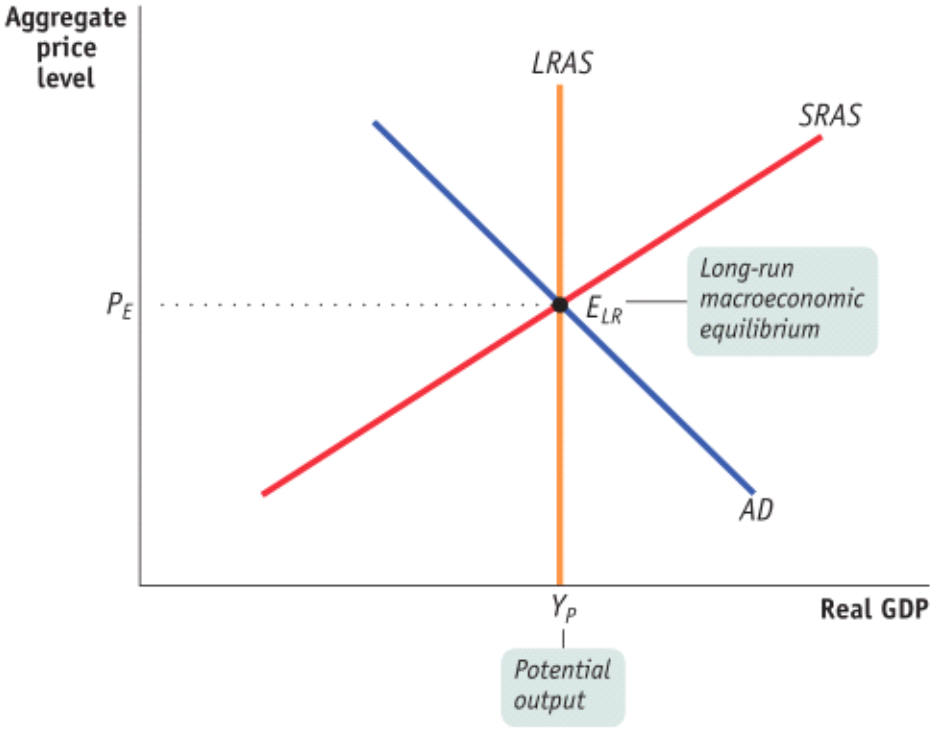
- If the aggregate output fell short of potential output, what would happen to the SRAS? What would happen to wages



3.3 Aggregate Supply & Demand

Tuesday, January 24, 2017 12:48 PM

The AD-AS Model



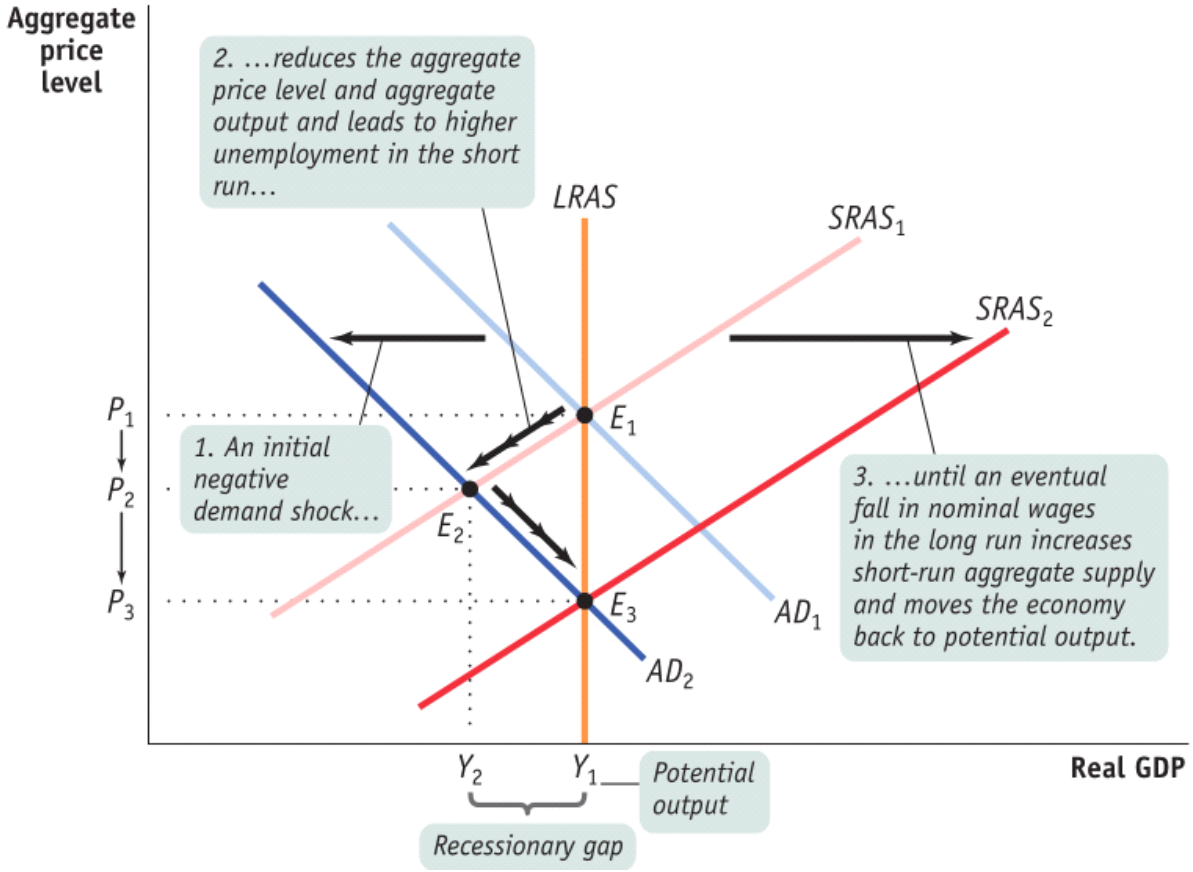
- **Short-run macroeconomic equilibrium** occurs when the quantity of aggregate output supplied equals the quantity demand (**AD = SRAS**)
- **Long-run macroeconomic equilibrium** occurs when the point of short-run macroeconomic equilibrium is on the long-run aggregate supply curve (**AD = SRAS = LRAS**)
- At the **LRAS**, the economy is functioning at the **Potential Output**, or Y_p
- If the **aggregate output in the short-term** is **below** the potential output, the economy faces a **recessionary** gap
- If the **aggregate output in the short-term** is **above** the potential output, the economy faces an **inflationary** gap

The Long-Run Approach

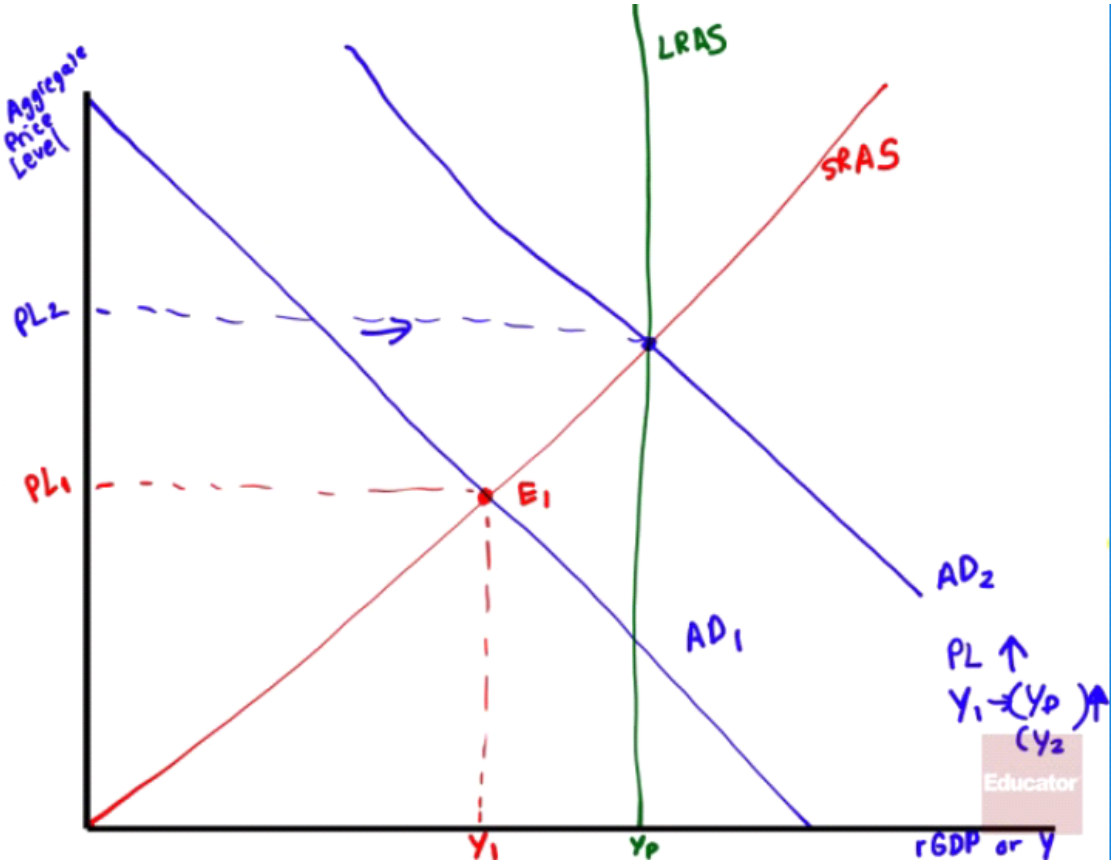
- In a **recessionary gap**, the following occurs
  - An initial **negative demand shock** (**stock market crashes**)
  - **AD** shifts to the **left**, and so the aggregate price level and aggregate output

reduce, which leads to **higher unemployment** in the short-run

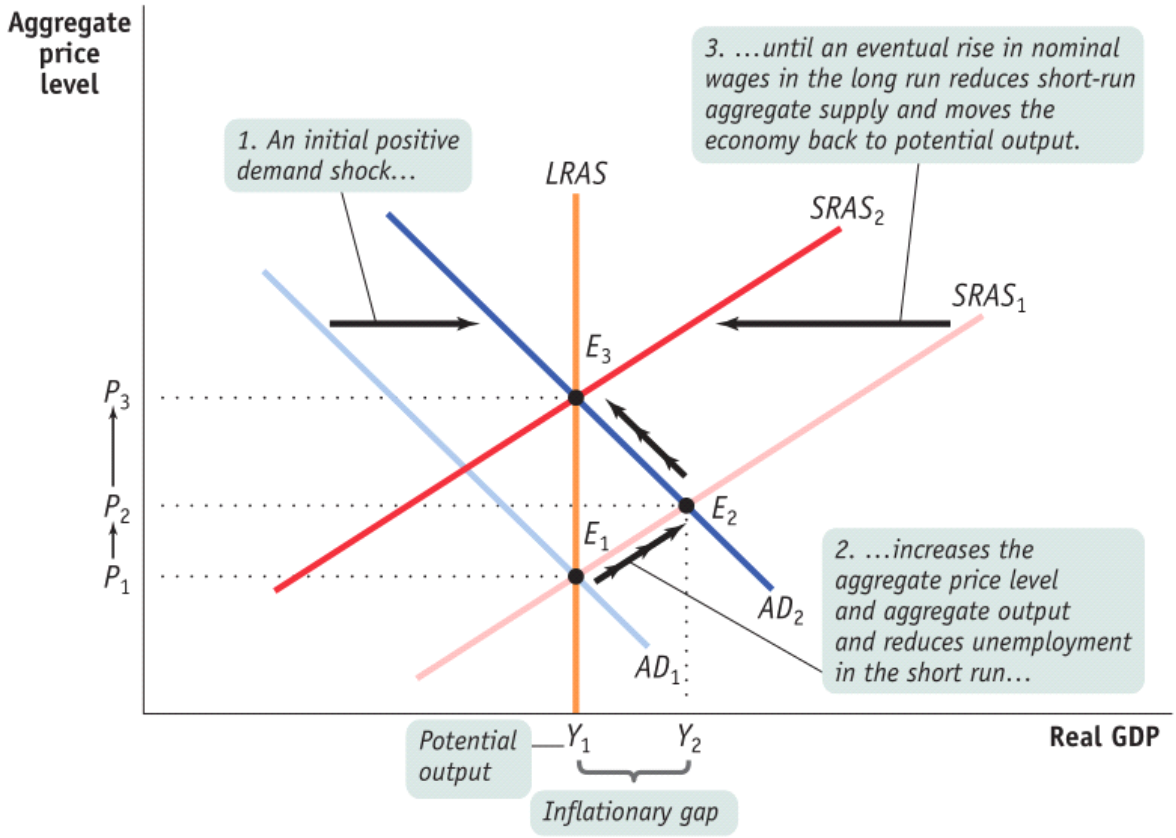
- Eventually, a fall in nominal wages in the long run **increases** the **SRAS** and moves the economy **back to potential output**



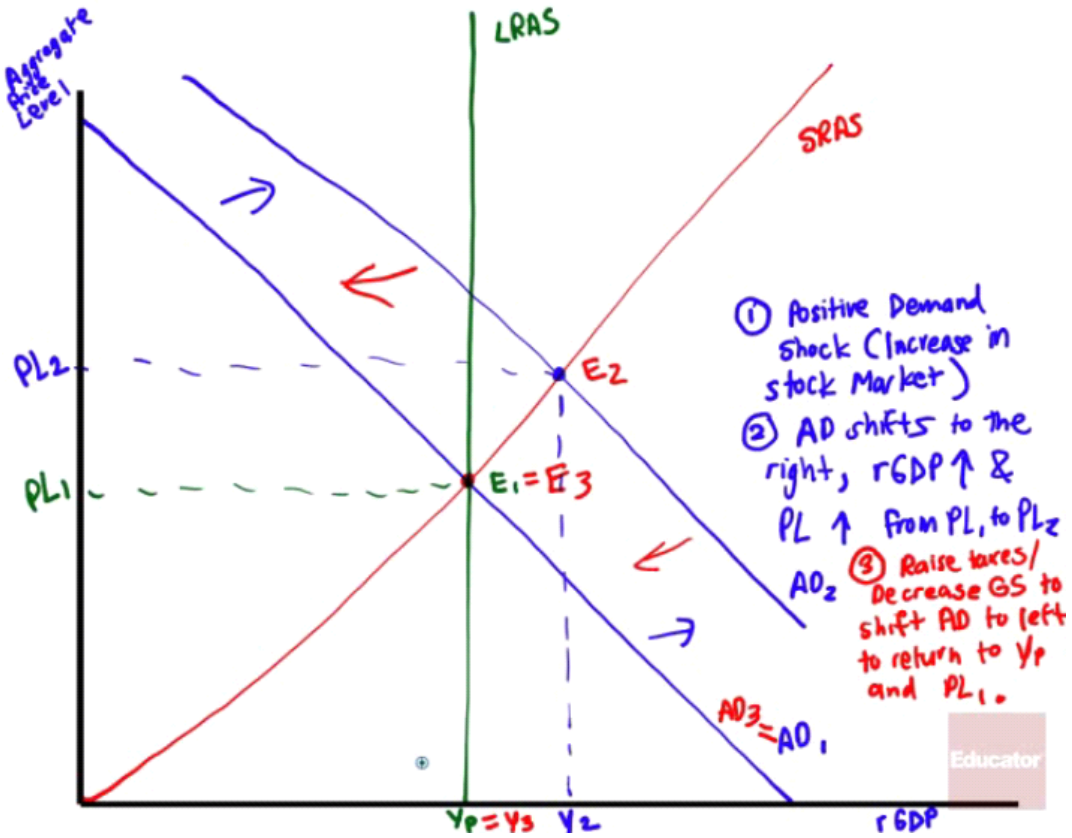
- Expansionary Fiscal Policy
  - "In the long-run, we are all dead." John Maynard Keynes.
  - Use expansionary fiscal policy to **boost aggregate demand** in order to get the economy **back** to its **potential output**
    - Increase government spending (direct approach)
    - Decrease taxes
    - Increase in government transfers
  - Graph



- In a **inflationary** gap, the following occurs
    - An initial **positive demand shock** (**real estate market booms**)
    - **AD** shifts to the **right**, and so the aggregate price level and aggregate output increase, which leads to **higher inflation** in the short-run and **reduces unemployment**
    - Eventually, an **increase** in nominal **wages** in the long run **decreases** the **SRAS** and **moves** the economy **back to potential output**

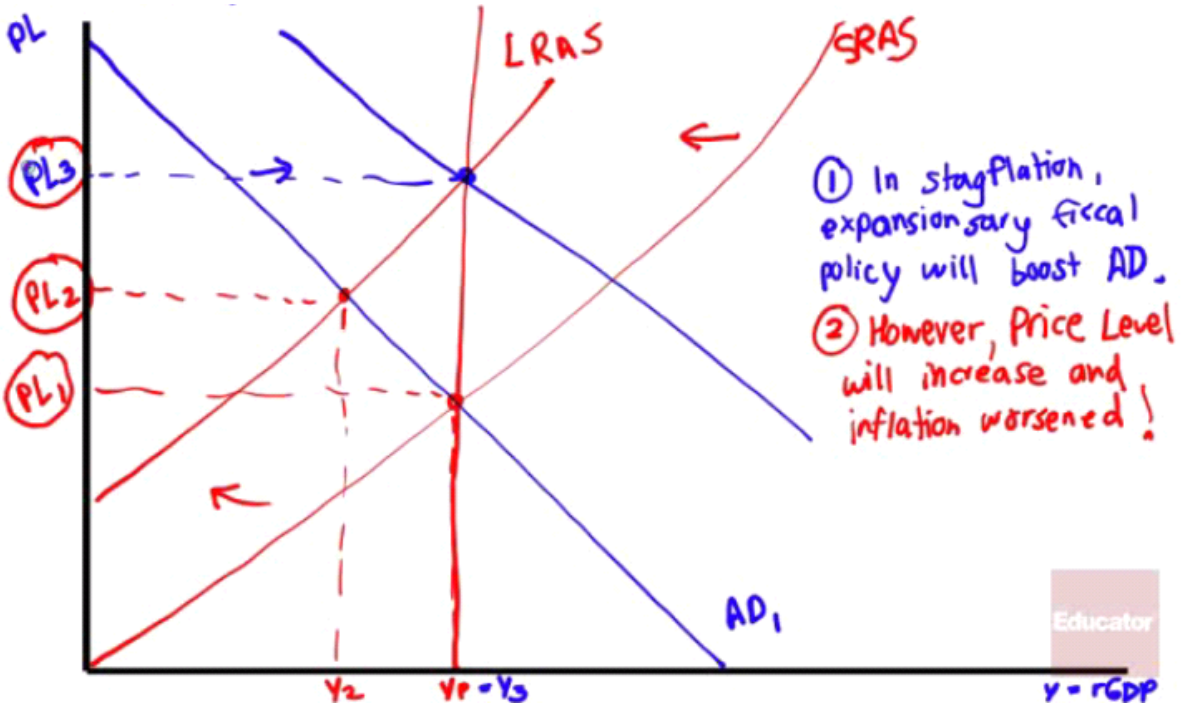


- Contractionary Fiscal Policy
  - In 1968, President Lyndon Johnson imposed a temporary 10% hike on income taxes to stop inflation
  - Use **contractionary** fiscal policy to **decrease aggregate demand** in order to get the economy **back to** its **potential output**
    - Decrease government spending (direct impact)
    - Increase taxes
    - Decrease in government transfers
  - Graph

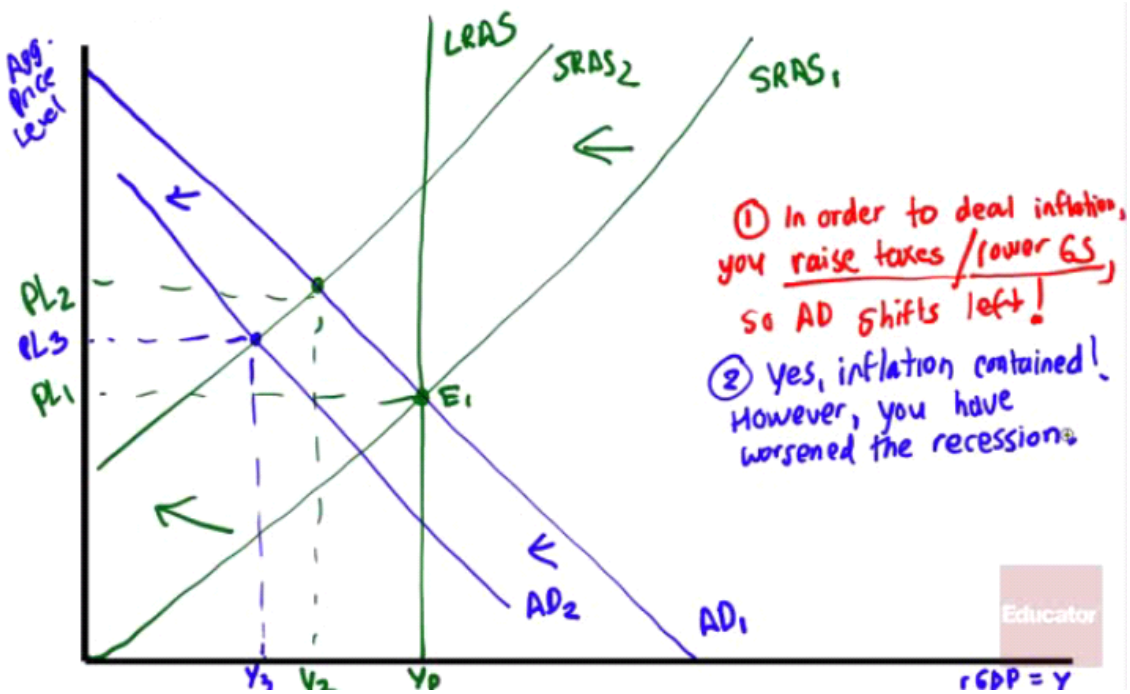


Stabilization Policy

- Use of government policy to **reduce** the **severity** of recessions and **rein** in excessively strong **expansions**
- Should the government use **fiscal** (or **monetary**) **policy** in order to **reduce** the **severity** of negative demand shocks?
- What should the government do in the face of a negative supply shock (or stagflation)
    - If you **boost** AD, you make **inflation worse**
    - If you **decrease** AD, you create **more unemployment**
- Examples
    - Assume the price of oil increases and the government attempts to combat this by **lowering taxes** and **increasing government spending**. What happens?



- Assume the price of oil increases and the government attempts to combat this by **raising taxes** and **reducing government spending**. What happens?



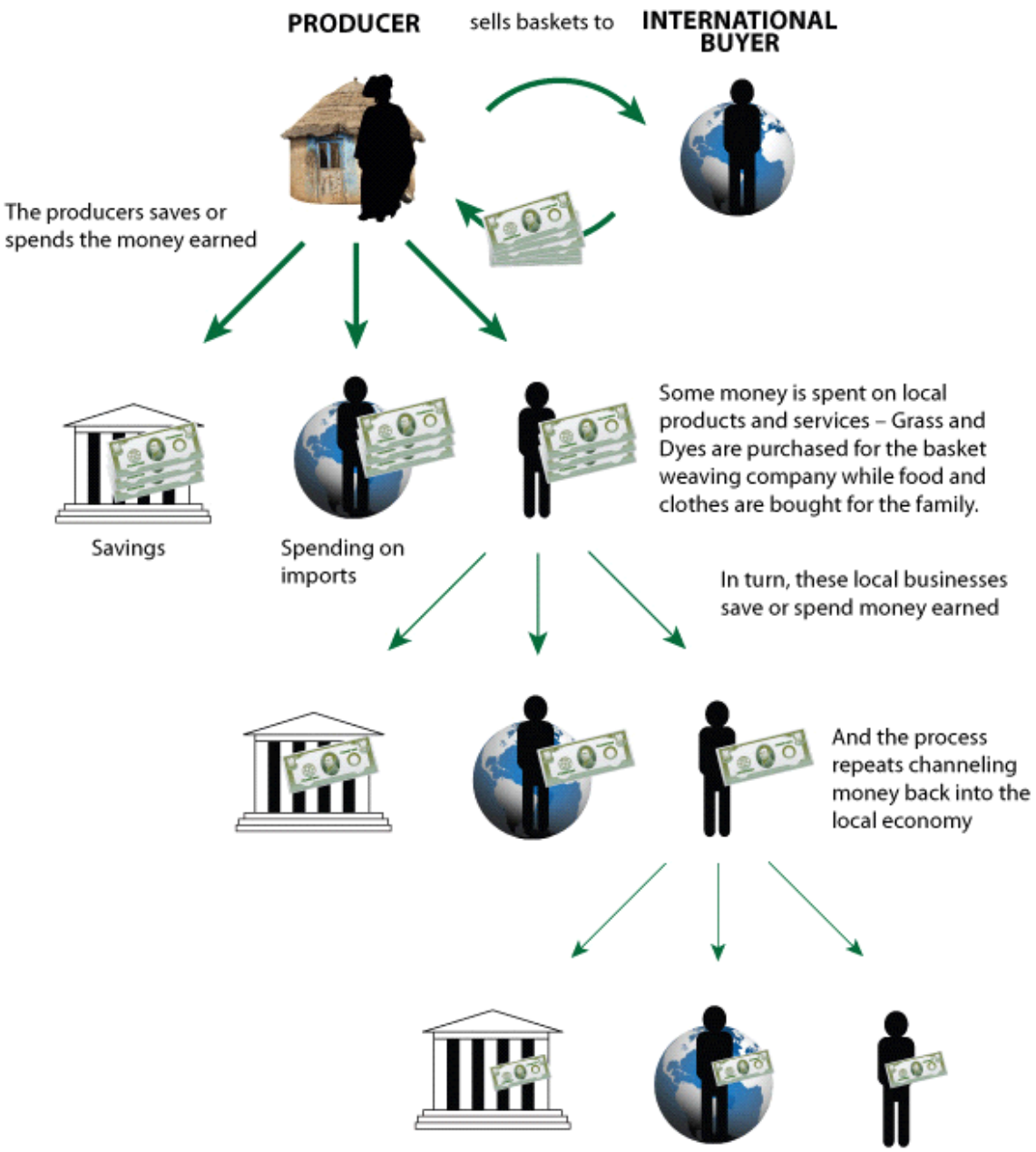
3.4 Fiscal Policy & The Multiplier

Tuesday, January 24, 2017 2:13 PM

The MPC and MPS

- Intro
  - When **investment spending increases**, there will be an **increase** in the **income** and the value of **aggregate output** by the same amount
  - An increase in aggregate output leads to an **increase** in **disposable income** and to more consumer spending, which leads to **increased output**
  - How large is the total effect on aggregate output if we **sum up all** the rounds of spending increases
  - It depends on what economists called the **marginal propensity to consume** (MPC) or the **marginal propensity to save** (MPS)
  - $$\text{MPS} = \frac{\text{Change in savings}}{\text{Change in income}}$$
  - $$\text{MPC} = \frac{\text{Change in consumption}}{\text{Change in income}}$$
  - MPC + MPS = 1
- The marginal Propensity to Consume
  - The MPC is a number between 0 and 1
  - If consumers **save all** their money, the number would be **0**
  - If consumers **spend all** their money, the number would be **1**
  - Usually, the number is between 0 and 1 with **industrialized countries** having a **higher** number and **developing countries** with **lower** numbers
  - If the MPC is 0.8, what's the impact on the total aggregate spending if there's an increase of 50 million in spending?
    - Total Increase = Spending Multiplier * Initial Increase = 1/(1-0.8) * 50 = 250

The Multiplier Effect



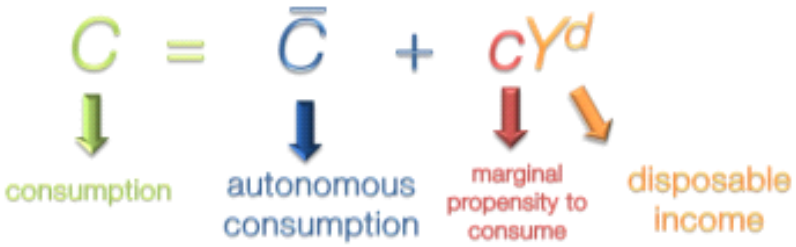
- **Autonomous** change in aggregate spending
    - an **initial rise** or **fall** in aggregate spending that is the **cause**, not the result, **of** a **series of income** and **spending changes**
- Multiplier
    - **ratio** of the **total change** in **real GDP** caused by an autonomous change in aggregate spending to the size of that **autonomous change**

$$\text{Spending Multiplier} \quad \frac{1}{\text{MPS}} \quad \text{OR} \quad \frac{1}{1 - \text{MPC}}$$

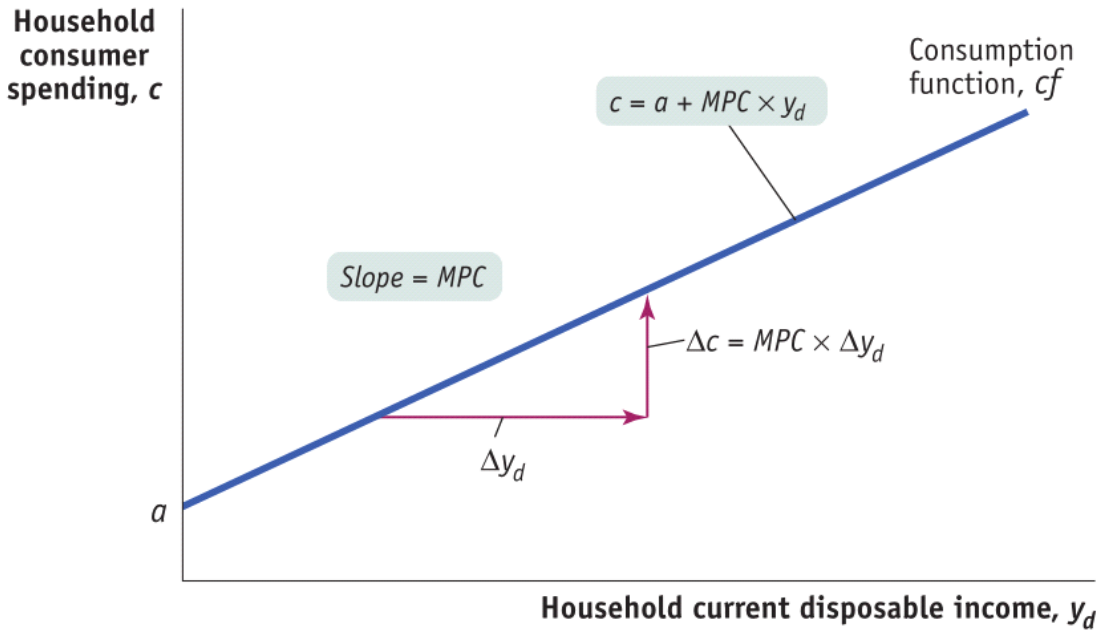
- The size of the multiplier depends on the MPC

- The higher the MPC, the more disposable income get recycled back into consumer spending
- The lower the MPC, the more disposable income "leak out" into savings

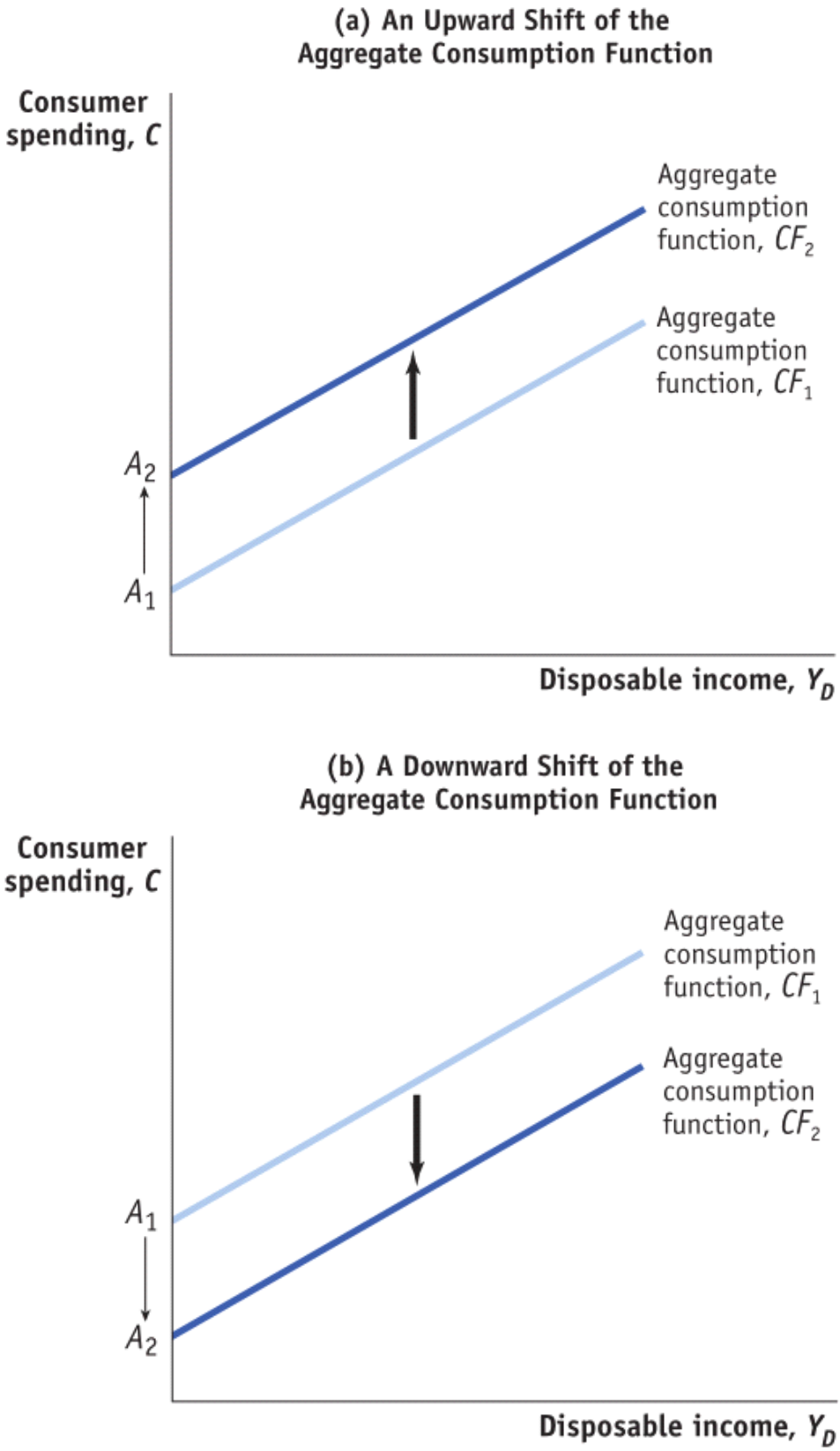
Consumption Function

- Consumption function is an **equation** showing how an individual household's **consumer spending changes** with **disposable income**
- **Autonomous consumer spending** would be the amount spent **regardless of income**
- 

- $c = a + MPC \times y_d$
- Let's assume that a equals $20,000 and the MPC equals 0.6. What would the consumption be if the income is $100,000? $200,000?
  - c = a + MPC * y_d = 20,000 + 0.6 * 100,000 = 80,000
  - c = a + MPC * y_d = 20,000 + 0.6 * 200,000 = 140,000
- Graph



Shift of the Aggregate Consumption Function



- Changes in Expected Future Disposable Income
    - If you land a **higher-paying job**, you will tend to **consume more** money now **even** though your current **income** is the **same**

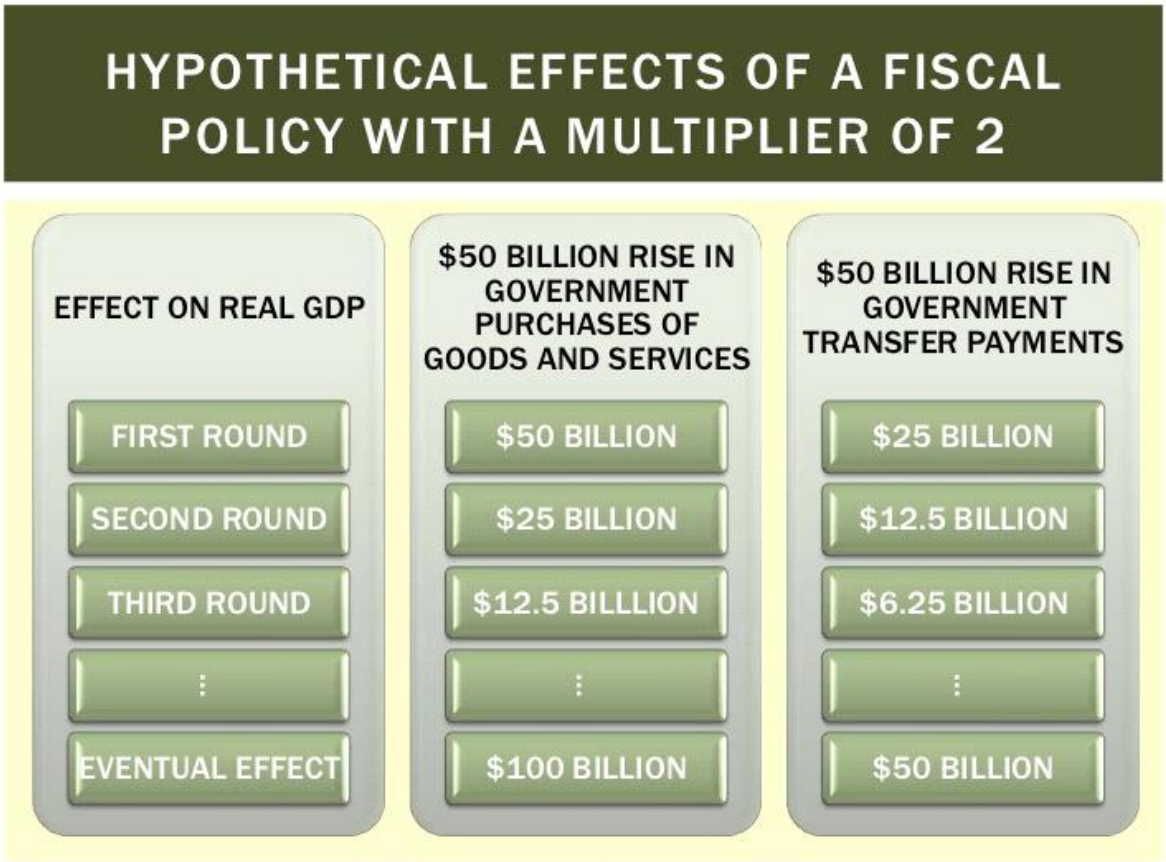
    - Conversely, if you are worried about a job **layoff**, you will probably **decrease** your current **expense**.
- Changes in Aggregate Wealth
    - A booming stock market will tend to **increase** an **individual's wealth**, and therefore, his **consumption**
    - A fall in housing prices, conversely, will tend to **decrease** an **individual's net worth**, and therefore her **consumption**

Investment Spending

- **Planned investment spending** is the investment spending that businesses **intend** to undertake during a given time period
- If **interest rates** goes **up**, **less investment** spending occurs.
- If **interest rates** go **down**, there is **more investment** spending
- **High expected** future growth rate of GDP **increases investment**
- **Low expected** future growth rate **decreases investment**
- $I = I_{Unplanned} + I_{Planned}$
- **Positive unplanned inventory investment** occurs when **sales** are **less** than business **expects**. **Excess sales** leads to **negative unplanned inventory investment**
- Rising **inventory** indicates **slowing economy**

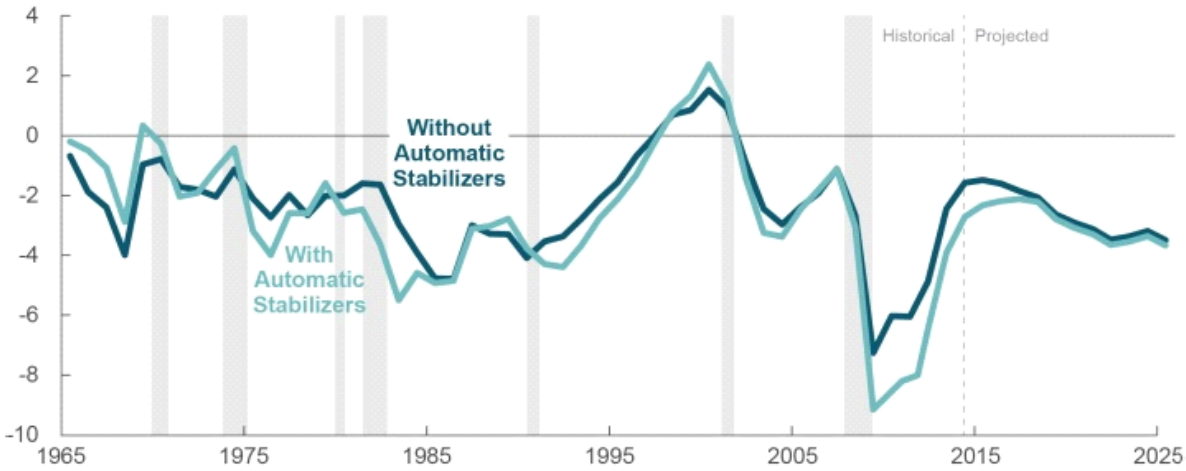
Tax (or Government Transfer) Multiplier

- **Changes in taxes** (or increase in **transfer payment**) shifts the aggregate demand curve by **less** than an equal-sized change in **government purchases**
- The presence of taxed **decrease** the **multiplier**



Automatic Stabilizers

- **Government spending** and **taxation** rules that cause fiscal policy to be **automatically expansionary** when the economy **contracts** and **automatically contractionary** when the economy **expands**
- As the economy **expands**, the multiplier **reduces** because the increase in income is **siphoned off**
- As the economy **contracts**, the multiplier **increase** because the government is collecting **less** in **taxes** (a de facto expansionary policy in the face of a recession)



4.1 Saving, Investment & the Financial System

Tuesday, January 24, 2017 10:20 PM

Saving-Investment Spending Identity

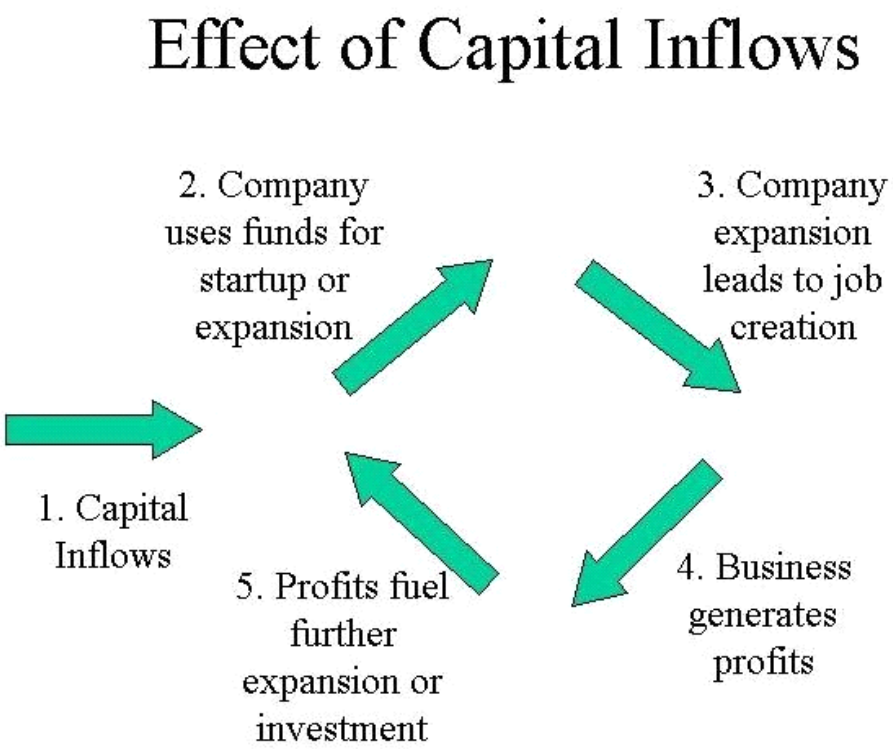
- Saving-investment spending identity
  - Fact of accounting is that they are always **equal** for the economy **as a whole**
- Imagine a country with **no government** and **no trade**
  - Y = C + I
  - Total Income = Total Spending
  - Total Income = Consumer spending + Savings
  - Total spending = Consumer spending + investment spending
  - Therefore **Savings = Investment spending**

Budget Surplus and Deficit

- Sometimes, the government will "**save**" money and in other years, it will **spend more** than its revenue collected in taxes
- Budget **surplus**
  - occurs when government **revenue exceeds** government **spending**
- Budget **deficit**
  - occurs when government **spending exceeds** government **revenue**
- Budget **balance**
  - **difference** between government spending and revenue (either deficit or surplus)
- National savings
  - **private savings + budget balance**

Capital Inflows and Outflows

- Countries receive **inflows** of funds and also generate **outflows** of funds
- Capital inflow
  - **net inflow** of funds into the country



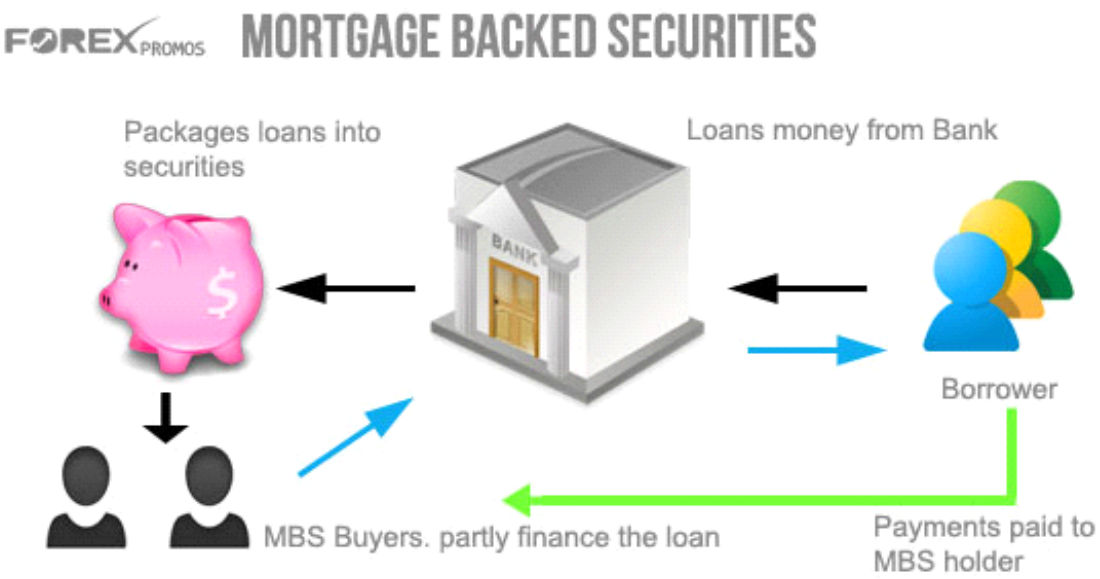
- In 2008, the United States had capital inflows totaling $707 billion, meaning the US is an attractive place to save money
    - Total investment spending = $ 2,632 billion
    - Private savings = $2,506.9 billion
    - Budget deficit = $683 billion
    - Capital inflows = $707 billion
    - National Savings = Private Saving - Budget Deficit
    - National Savings + Capital Inflow = $2,530.9
    - Statistical discrepancy = Investment - Savings = $101.1 billion

Tasks of a Financial System

- Reduce Transaction Costs
    - Companies will **get loans** from banks or **issue bonds** to **raise money**
    - To get a comparable amount form **individuals** would be logistically **difficult** if not impossible
- Reduce Risk
    - People have various levels of **risk tolerance**, so financial systems **reduce risk** through **diversification**
    - **Sole ownership** of a $1 billion company would be **risky**

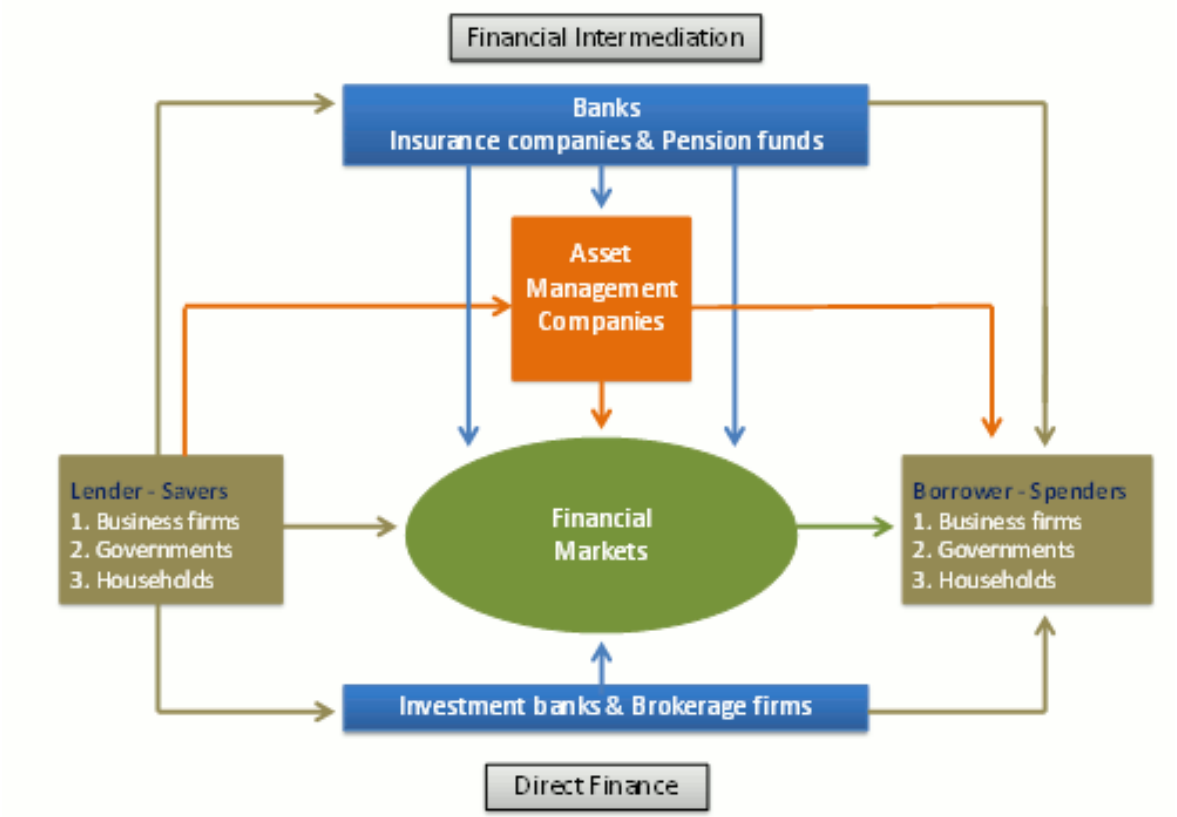
- Provide Liquidity
    - Having access to **cash** is critical
    - **Liquid assets** are generally preferred to **illiquid assets**

Types of Financial Assets



- Bonds
    - An IOU issued by the borrower with the seller of the bond paying a **fixed** yearly **interest** and **principal** at the **end of the term** of the loan
    - The **higher** the default **risk**, the **higher** the interest **rate**
- Loan-backed securities
    - Loans that are **packaged together** & **sold** as **assets**
    - Financial crisis of 2008, in part, because high rate of mortgage-backed securities defaulted
- Stocks
    - **Direct ownership** in a company
    - Owning one share of Apple (AAPL) means you own 1/900,000,000 of the company

Financial Intermediary



- Institutions that **transforms funds** gathered from **many individuals** into **financial assets**
    - Mutual Funds
    - Pension Funds
    - Life Insurance Companies
    - Banks
- About 75% of wealth in the United States is held through these four types of financial intermediaries rather than directly through cash
- Mutual Funds
    - Financial intermediary that creates a **portfolio of stocks** and/or bonds and then sells **shares** to **individual investors**
    - Major benefit includes **diversification** of investments rather than owing one single stock
    - Major downside would be the **inability** to hit a "**homerun**" with one single stock
    - In the United States, households own over $10 trillion in mutual funds
    - Fidelity Investments (2013) had ~$1.8 trillion in assets under management

- Pension Funds
    - Pension funds are **mutual funds** that hold assets for its members to provide **retirement income**
    - Two of the largest pension funds in the United States are CalSTRS and CalPERS
    - California teachers opt out of Social Security (6.2%) and pay into CalSTRS (8%)
- Life Insurance Companies
    - Life insurance companies take in **premiums** from **policyholders** and make payments to **beneficiaries** upon **death** of insured
    - Term, ROP Term, Universal, Whole
    - Life insurance companies pool together individual premiums, make various **investments** and do their best to **avoid making payouts**
- Banks
    - Banks **accept funds** from **depositors**
    - Banks keep only **a fraction** of a customers' deposits in the form of **cash**
        - Most deposits **are lent** out to businesses, home buyer and other borrowers
        - Banks lends for **long period** of times but subject to the condition that its **depositors could demand funds** at any time
    - The Federal Deposit Insurance Corporation (FDIC) insures up to $250,000 for each account

Practice Questions

- Reducing which of the following is a task of the financial system
    a. Transaction costs
    b. Risk
    c. Liquidity

    Answer: a & b
- Which of the following is NOT a type of financial asset
    a. Loan-Backed Securities
    b. Bonds
    c. Bank Deposits

d. Stocks

e. Car

Answer: e

- The federal government is considered to be "saving" money when

a. There is a budget deficit

b. There is a budget surplus

c. There is no budget surplus or deficit

d. Saving does not equal investment spending

e. National savings equals private savings

Answer: b

- A nonprofit institution collects the saving of its members and invest those funds in a variety of assets so that it can provide retirement income to its members is called which of the following?

a. Mutual Fund

b. Life Insurance Company

c. Pension Fund

d. Credit Union

e. Bank

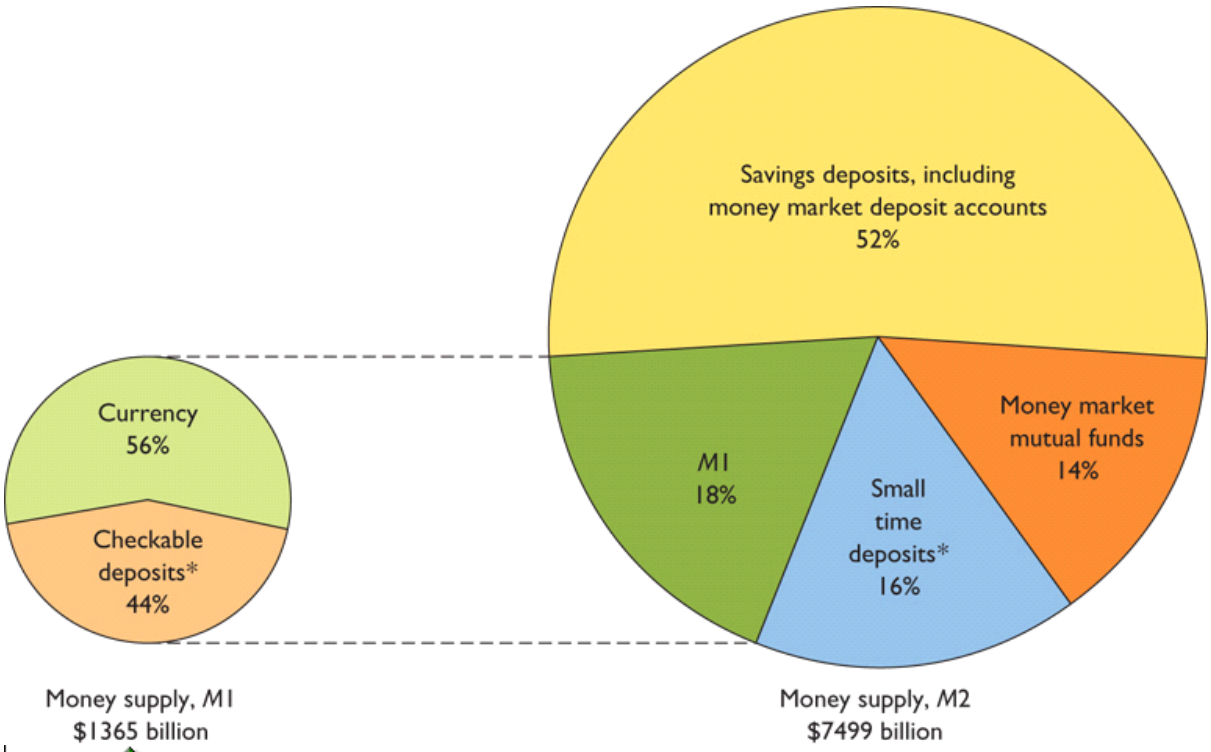
Answer: c

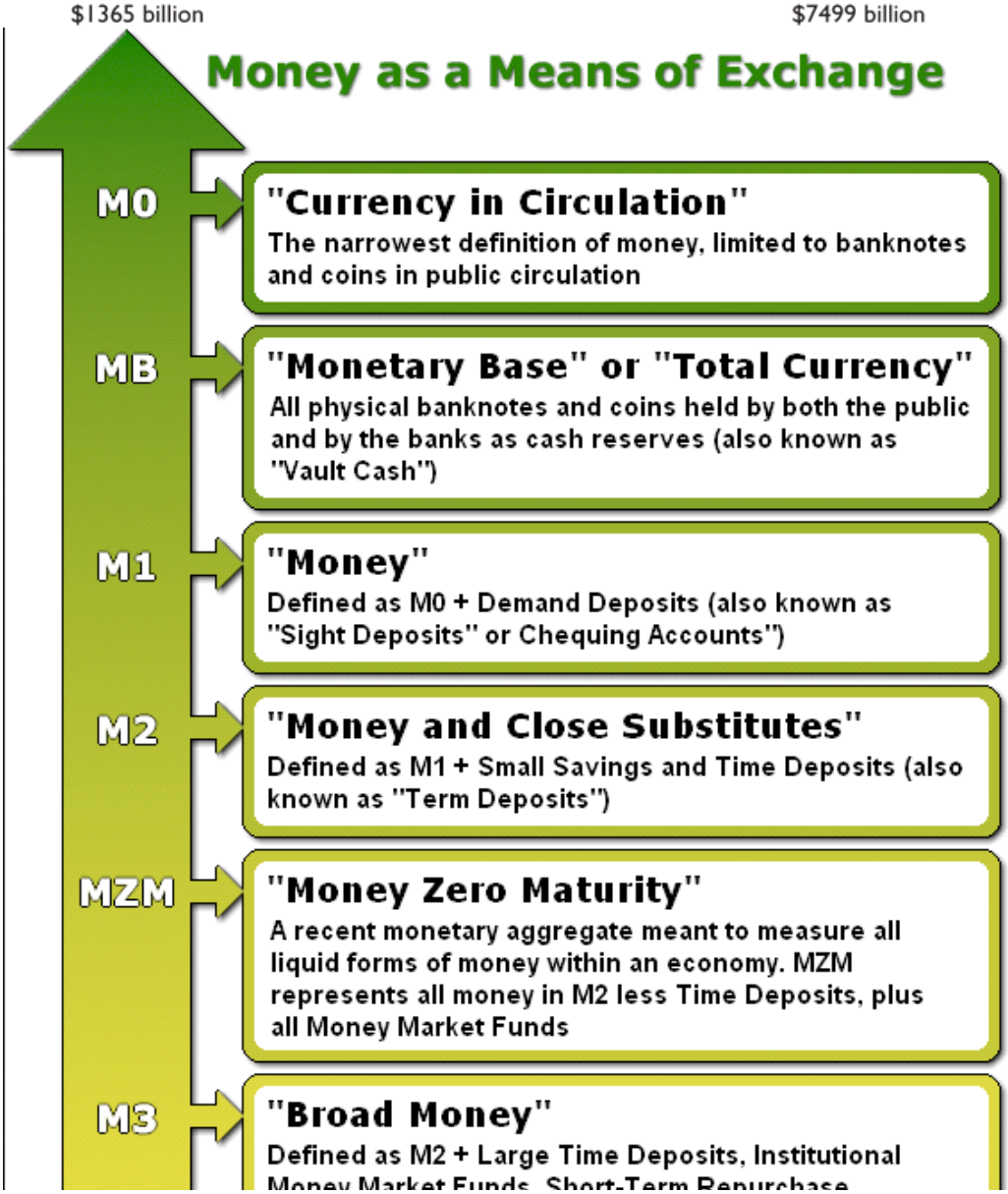
4.2 The Definition & Time Value of Money

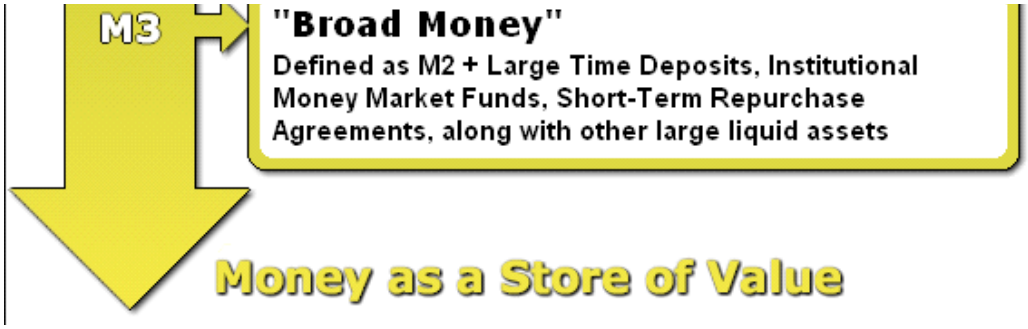
Wednesday, January 25, 2017 5:36 PM

What is Money?

- There are **two** types of Money (M1), or assets that can be easily used to **purchase goods** and **services**.
    - **Currency** in circulation is all the money held by the population
    - **Checkable bank deposits** are all the funds held in bank accounts in which individuals can write checks off of
    - Traveler's checks
- Another type of money that is "almost" checkable would be **money** in **saving accounts**, CDs or money market accounts
- Without money, we would **barter** and there would have to be a "**double coincidence of wants**" in order for exchange to take place
- M1
    - Cash
    - Money in checking accounts
    - Traveler's checks
- M2
    - All money in M1 plus "near-moneys"
    - Saving accounts
    - Certificate of Deposits
    - Money Market Funds


Savings deposits, including
money market deposit accounts
52%
Currency
56%
Checkable
deposits*
44%
M1
18%
Small
time
deposits*
16%
Money market
mutual funds
14%
Money supply, M1
$1365 billion
Money supply, M2
$7499 billion


Money as a Means of Exchange
M0
"Currency in Circulation"
The narrowest definition of money, limited to banknotes and coins in public circulation
MB
"Monetary Base" or "Total Currency"
All physical banknotes and coins held by both the public and by the banks as cash reserves (also known as "Vault Cash")
M1
"Money"
Defined as M0 + Demand Deposits (also known as "Sight Deposits" or Chequing Accounts")
M2
"Money and Close Substitutes"
Defined as M1 + Small Savings and Time Deposits (also known as "Term Deposits")
MZM
"Money Zero Maturity"
A recent monetary aggregate meant to measure all liquid forms of money within an economy. MZM represents all money in M2 less Time Deposits, plus all Money Market Funds
M3
"Broad Money"
Defined as M2 + Large Time Deposits, Institutional



Roles of Money

- Medium of Exchange
  - Money is used as a **medium** of exchange **rather than consumption**
  - Germany, in 1923, used eggs and lumps of coal as its medium of exchange during hyperinflation
- Store of Value
  - Means of **holding purchasing power** over time
  - Burgers, while delicious, would make terrible money because it's not a good store of value
- Unit of Account
  - Measure used to **set prices** and make **economic calculations**
  - Easier to measure value with money than through barter

Types of Money

- Commodity Money

    - Good that is used as a **medium of exchange** that **has intrinsic value**, like silver, gold or cigarettes
- Commodity-Backed money
    - Paper money that has **no intrinsic value** but is **backed by** a **commodity**, usually gold or silver
- Fiat Money
    - Money that's used which has **no intrinsic value**
    - Governments have the power to **create money** out of thin air and cause **inflation**
    - e.g. Federal Reserve notes
    - In 2009, Zimbabwe abandoned the Zimbabwean dollor - foreign currencies are used
    - Inflation in 2007 - 66,212.3%
    - Inflation in 2008 - 231,150,888.87% (1 month)

Preset vs. Future Value

- Future Value is the amount a **lump-sum of money** is worth after **a specified time** in the **future**
- Formula

$$FV = PV \times (1 + r)^n$$

$$PV = Present\ Value$$
$$r = rate\ of\ return$$
$$n = number\ of\ periods$$

4.3 Banking & Money Creation

Wednesday, January 25, 2017 6:33 PM

What Do Banks Do?

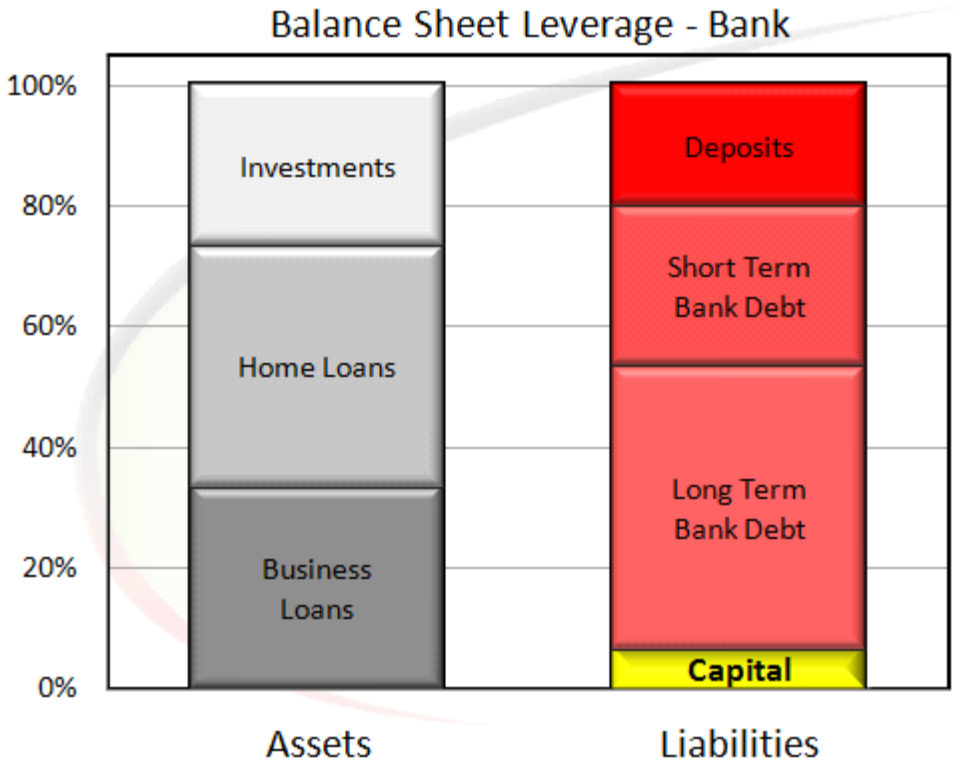
- Banks are **financial intermediaries** that use **liquid assets** in the form of **bank deposits** to finance **illiquid** investment of **borrowers**
- Banks have restrictions on how much they allowed to lend out
- Currency in bank vaults and deposits held at the Federal Reserve are called **bank reserves** (not part of currency in circulation)

T-chart

- If Park's Place Bank has **loans** of $1,000,000 and **reserves** of $100,000 with **deposits** of $1,000,000, then how would the t-chart look like?

Assets		Liabilities	
Loans	$1,000,000	Deposits	$1,000,000
Reserves	$100,000		

- Another example



The Problem of Bank Runs

- Banks have no problems on most days because only a **fraction** of its **depositors** want their funds disbursed in cash
- But what if **all depositors** tried to withdraw their **money all** at once? What would happen?
- If there's a rumor about financial trouble with a particular bank, depositors might **leisurely withdraw** their funds. At first.
- More depositors will **follow suit** and then it creates a **panic** because the thought of other depositors panicking actually does **lead to** a **panic**
- **A self-fulfilling prophecy**

Bank Regulation

- Deposit Insurance
    - Currently, the Federal Deposit Insurance Corporation (FDIC) **insures** your deposits of up to $250,000
- Capital Requirement
    - To avoid a "moral hazard," banks are **required** to have **capital** worth at least 7% of its assets
- Reserve Requirement
    - The Required Reserve Ratio (RRR) stipulates that banks must **keep** a **certain percentage** of its check deposits as cash
    - Currently, it's at 10% or 0.10
- In emergency situation like 9/11, the Fed will lend directly to banks through the **discount window**

Money Creation

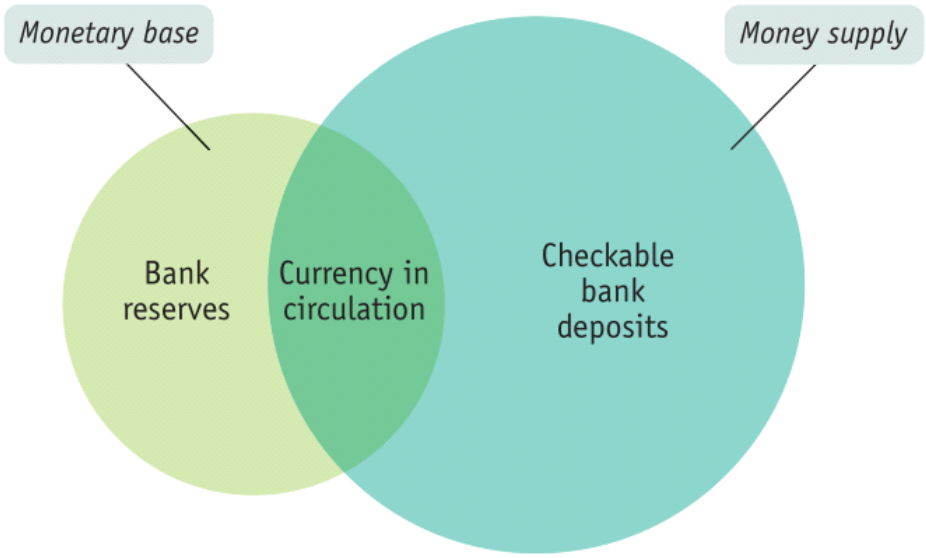
- Money Creation Process

table **25.1**

How Banks Create Money

	Currency in circulation	Checkable bank deposits	Money supply
First stage: Silas keeps his cash under his bed.	$1,000	$0	$1,000
Second stage: Silas deposits cash in First Street Bank, which lends out $900 to Mary, who then pays it to Anne Acme.	900	1,000	1,900
Third stage: Anne Acme deposits $900 in Second Street Bank, which lends out $810 to another borrower.	810	1,900	2,710

- Money Multiplier Formula
  - **Excess reserves** are a bank's reserves that's above and **beyond** the Required Reserve Ratio (**RRR**)
  - If the RRR is **10%** with a **$1 million** in checking deposits, the **excess reserves initially** would be **$900,000**
  - Assume **no** "**leaks**" and that bank lend out **all excess reserves**, how much would a $1 million deposit **increase** the **money supply** by?
  - Initial Deposit * 1/RRR = Increase in Money Supply
  - $1 million * 1/0.10 = $10 million increase
- Real World Money Multiplier
  - **Not all people** will **deposit money** in the banking system; some will **hold** onto **cash**
  - Difference between **Monetary Base** and **Money Supply**
  - **Monetary Base = Currency in Circulation + Bank Reserves**
  - The Federal Reserve controls the monetary base
  - **Money Supply = Currency in Circulation + Checkable Bank Deposits**



- **Money multiplier** is the ratio of the **money supply** to the **monetary base**
- In normal times, the money multiplier is ~1.9
- In 2008, the money multiplier was smaller at ~0.8
- Banks lent out even **less money**, thus more money "**leaked**" **out of the system**

Practice Questions

- The amount of money that banks hold onto that's not part of the Required Reserve Ration, or RRR, is called which of the following?
  a. Surplus reserves
  b. Excess reserves
  c. Reserve requirement
  d. Monetary base
  e. Money supply

  Answer: b
- How will each of the following affect the money supply through the money multiplier process?
  - People hold less cash
    - More money for banks
    - Increase in money supply
  - Banks hold more excess reserves
    - Less money let out

        - Decrease in money supply
    - The Federal reserves decreases the Required Reserve Ratio (RRR)
        - Initial Deposit / RRR = Increase in Money Supply
        - Increase in money supply

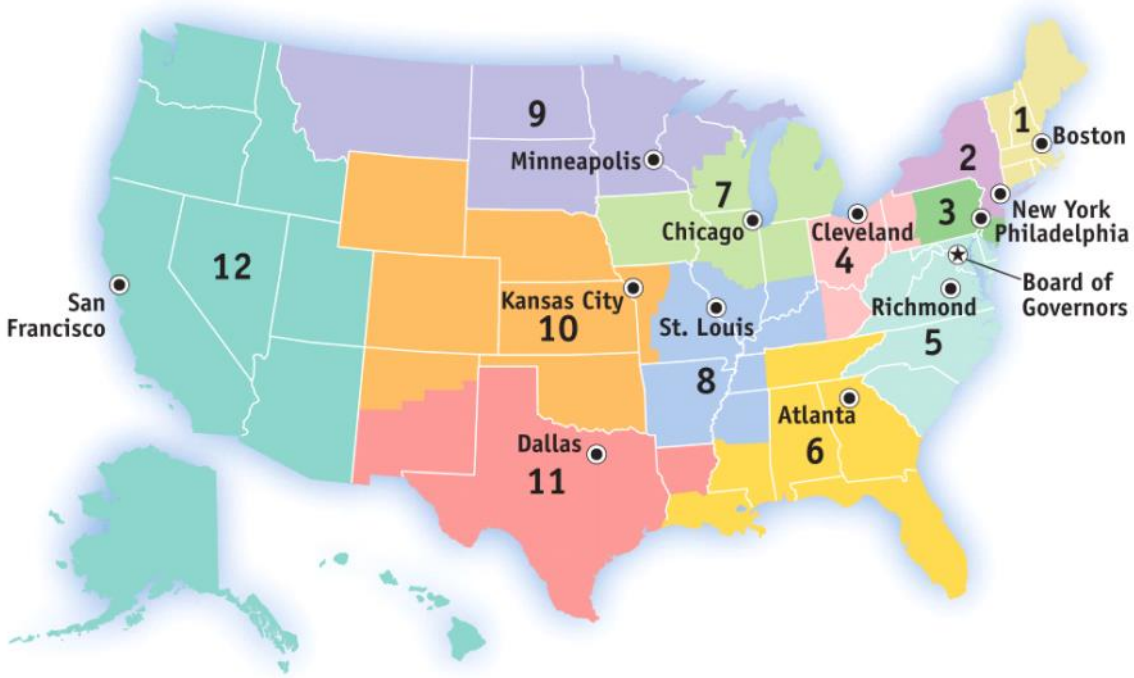
4.4 The Federal Reserve & Monetary Policy

Wednesday, January 25, 2017 10:51 PM

History of the Federal Reserve

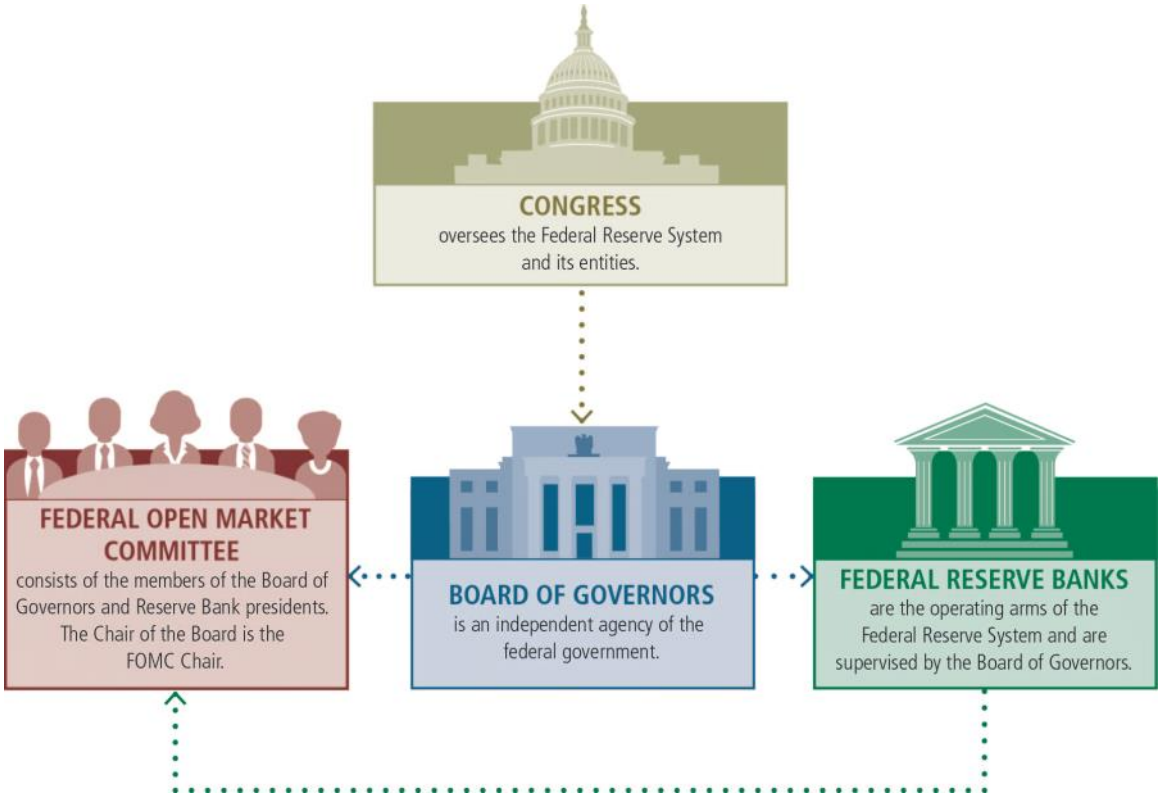
- In 1913, the Federal Reserve System was established
- The fed has a monopoly of money supply in the United States
- The Fed is a private institution with a public component
- The Board of Governors oversees the system
    - 7 members who are appointed 14 year terms by the president and approved by the Senate
    - Chairs are appointed to renewable 4-year terms

The Federal Reserve Structure



- 12 Federal Reserve Banks each in charge of their district
    - **Audit books of private-sector banks** to ensure banks are financially sound
    - New York Fed plays the special role of carrying out **open-market operations**
- Federal Open Market Committee (FOMC) makes decisions about monetary policy
    - Board of Governors plus the New York Fed Presidents and 4 rotating Bank

Presidents of the other 11 Districts



Function of the Federal Reserve

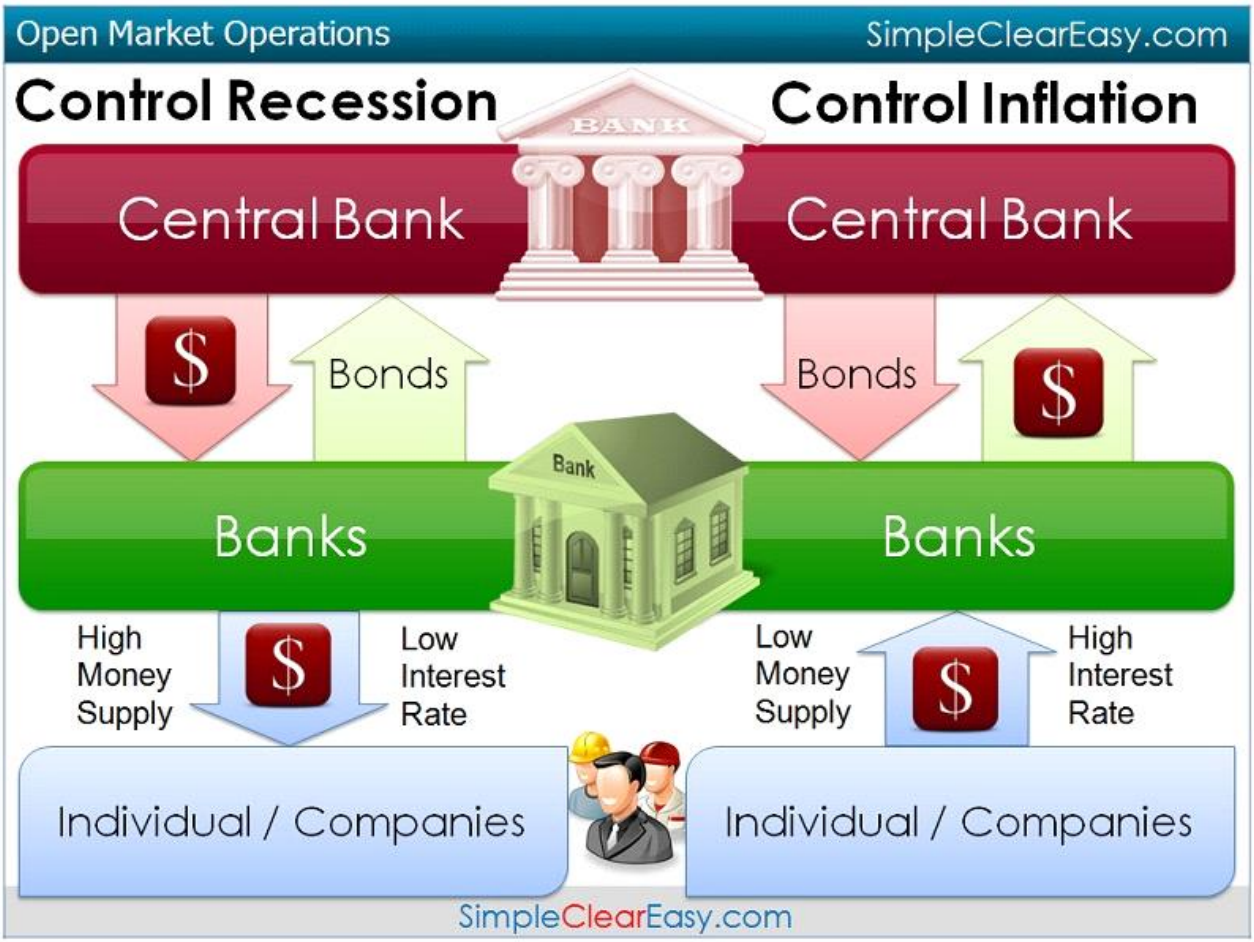
- Provide Financial Services
  - Serve as the "**banker's bank**" as well as the **bank for the United States**
  - The government has a **checking account** with the Fed through the **U.S. Treasury**
- Supervise and Regulate Banking Institutions
  - Charged with **ensuring** the **soundness** of the nation's **banking** and **financial system**
  - Both the **District Banks** and **Board of Governors examine** and **regulate commercial banks**
- Maintain the Stability of Financial System
  - Provide **liquidity** to financial institutions
  - Provided a "**discount window**" for banks after the evens of 9/11
- Conduct Monetary Policy
  - Chief function of the Federal Reserve
  - Board of Governors use **monetary policy** tools to address the

macroeconomic fluctuations that occur in the economy

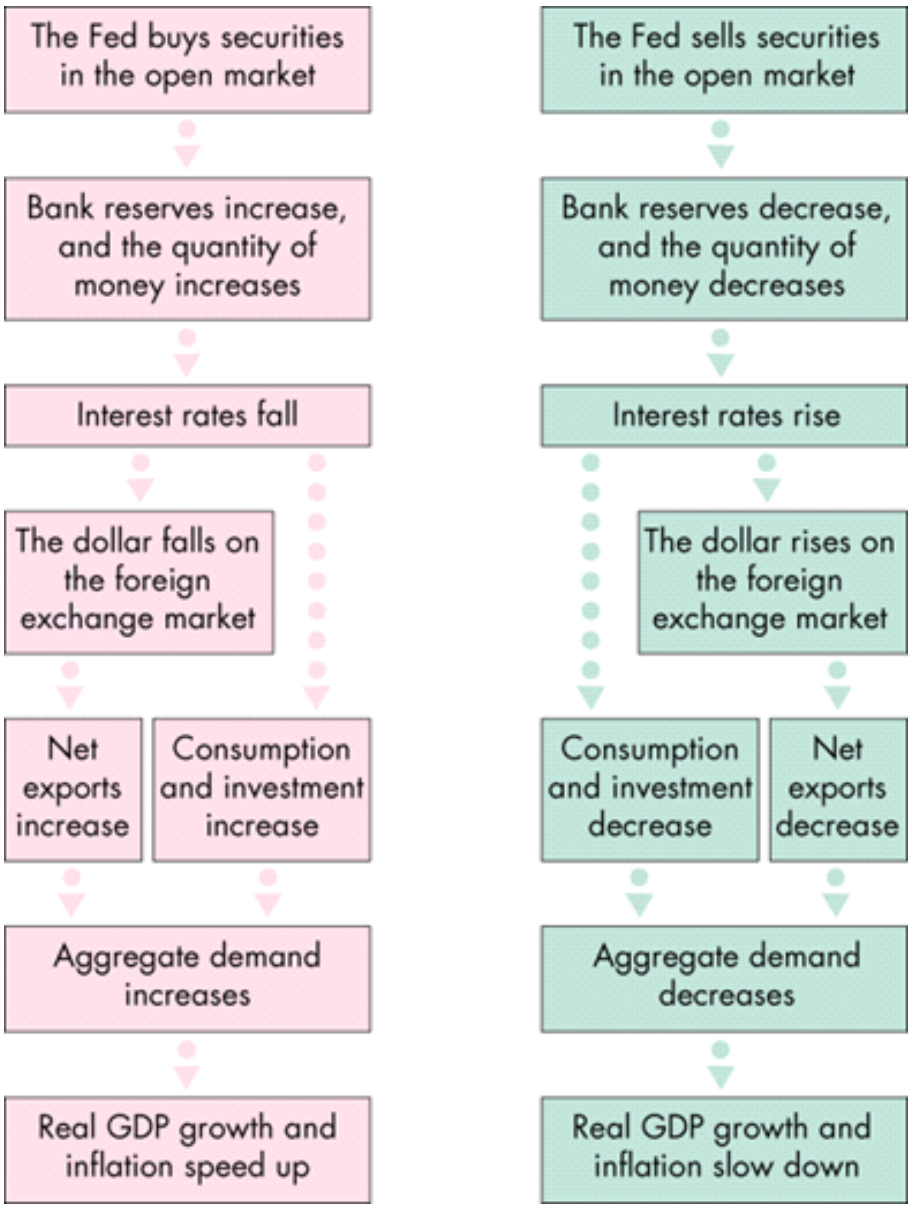
Reserve Requirement and Discount Rate

- Reserve Requirement
  - Banks are required to hold on to **10%** of its **checkable bank deposits**
  - The Fed will **rarely change** this rate. Last change occurred in 1992
  - If money falls below, then banks will **borrow** from other banks through the federal funds markets
  - **Interest** rate that **banks** borrow from other banks rate is the **federal fund rate**
  - If **RRR increase**, the **money supply decreases**
  - If **RRR decrease**, the **money supply increase**
- Discount rate
  - Interest rate the **Fed** charges **directly**
  - **Rarely** used to actively manage money supply

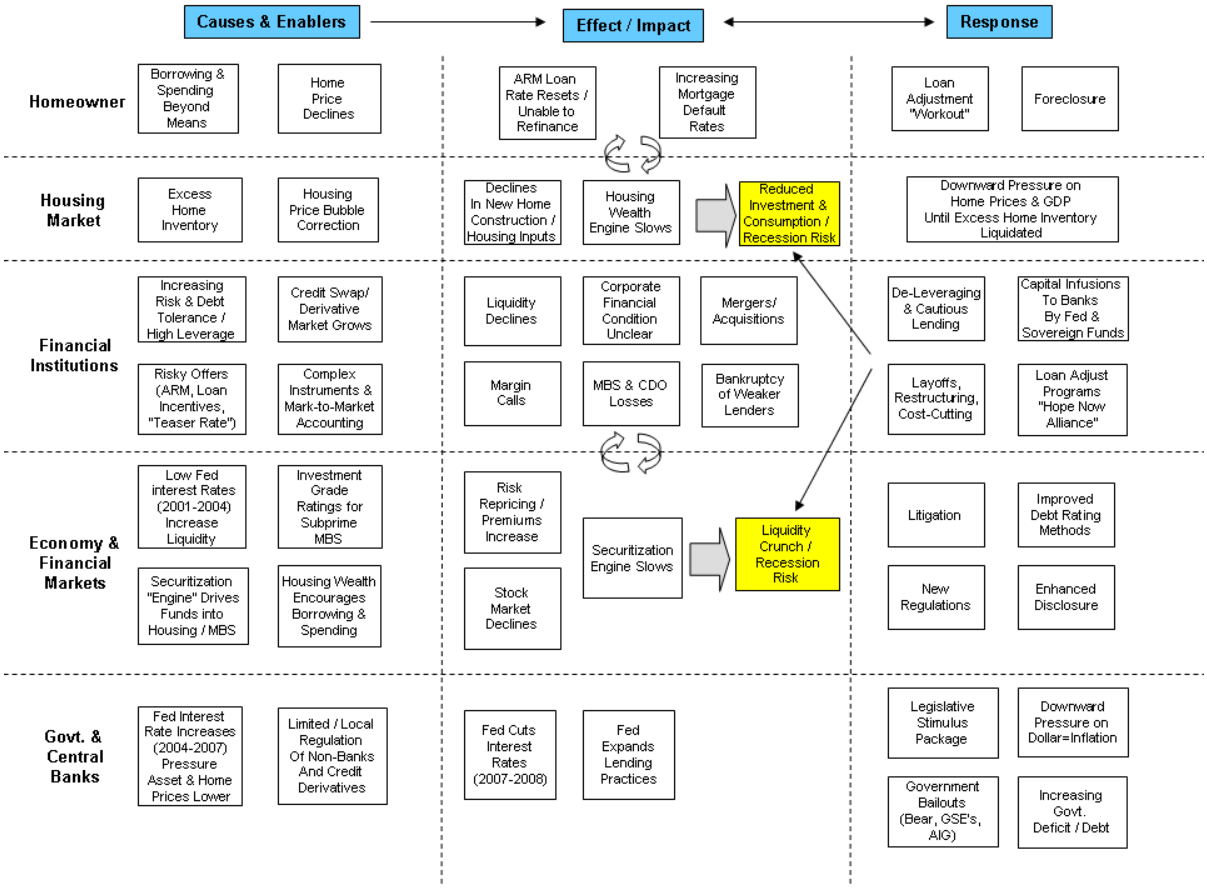
Open Market Operations



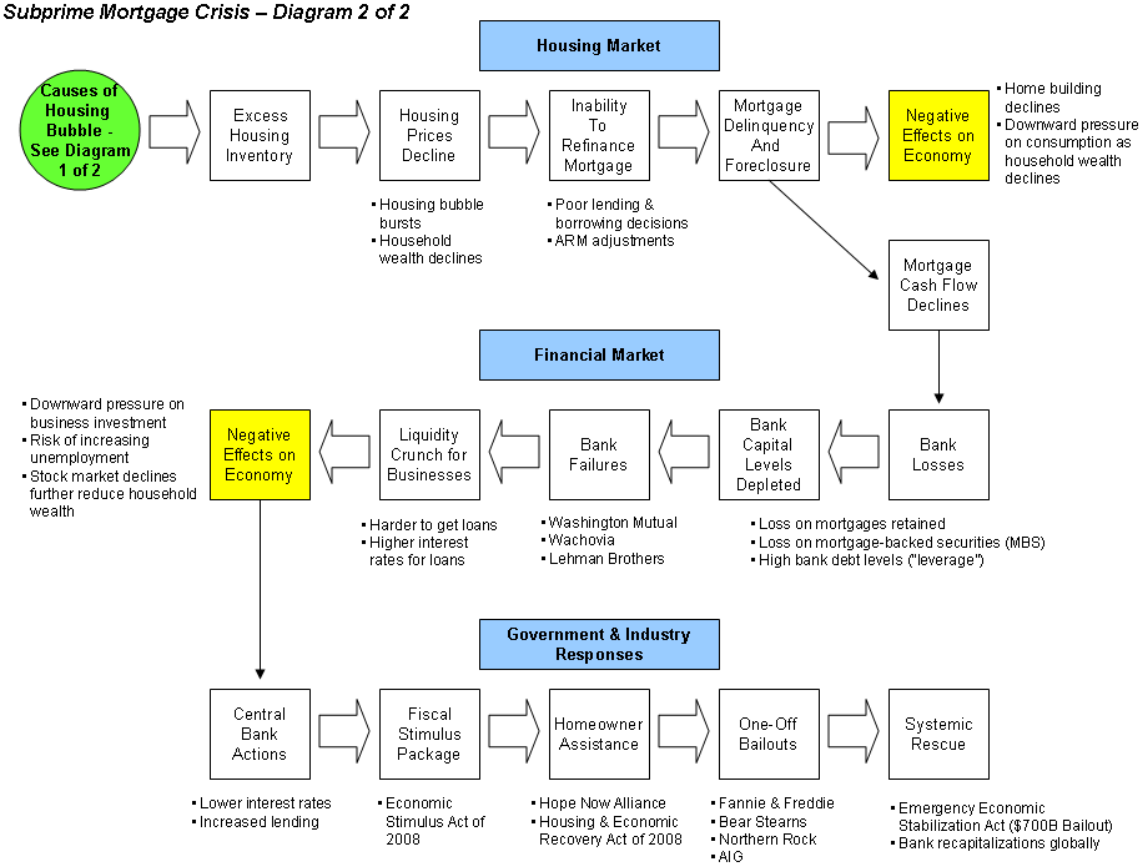
- The Fed will buy or sell U.S. Treasury bills through a commercial bank
    - When the Fed **buys** bonds, the **money supply increases**
    - **Buying** bonds will "**bloat**" the money supply
    - When the Fed **sells** bonds, the **money supply decreases**
    - **Selling** bonds will "**shrink**" the money supply
- How does the Fed purchase U.S. Treasury bills from banks?
    - Fed will create money that heretofore **never existed** into **existence**
    - Remember, we have **a fiat currency**
    - Money supply increases via the monetary base



The Financial Crisis of 2008



Subprime Mortgage Crisis – Diagram 2 of 2



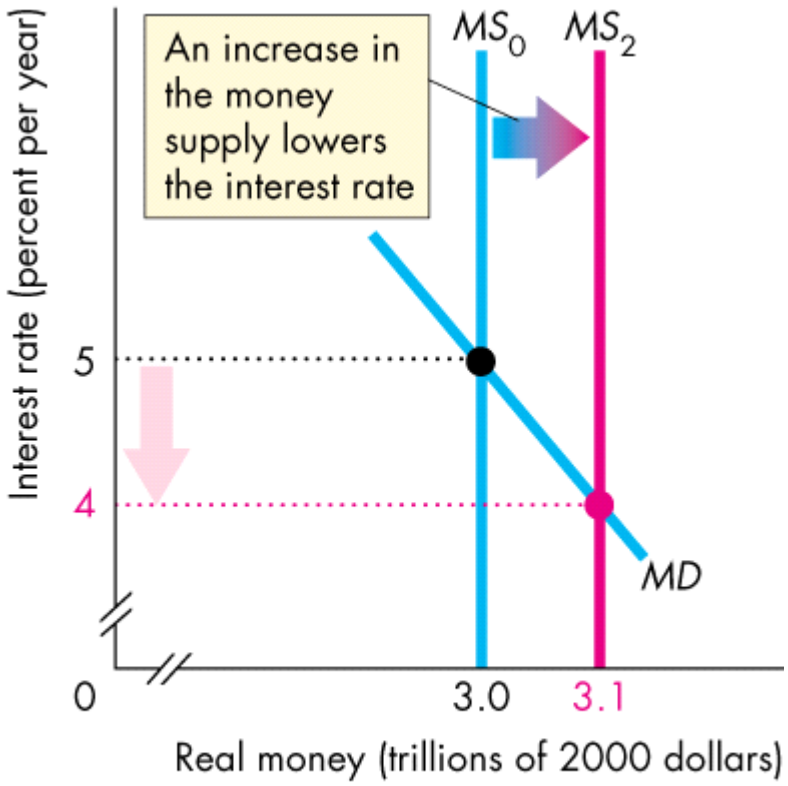
Practice Questions

- Which of the following is NOT a role of the Federal Reserve System?
    a. Controlling monetary policy
    b. Controlling fiscal policy
    c. Setting a target federal funds rate
    d. Supervising and regulating banks
    e. Determining the Required Reserve Ratio

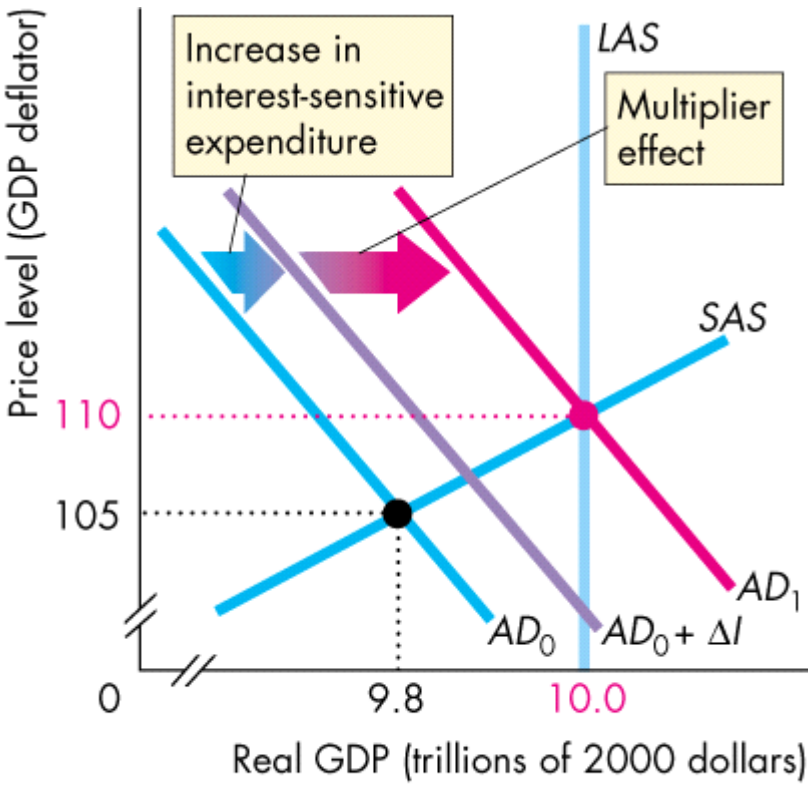
    Answer: b
- When the Fed makes a loan to a commercial bank, it charges
    a. No interest
    b. The federal funds rate
    c. The discount rate
    d. The prime rate
    e. A fixed interest rate of 10%

    Answer: c
- If the Fed purchases U.S. Treasury bills from a commercial bank, what happens to bank reserves and the money supply?
    a. Both increase
    b. Both decrease
    c. Bank reserves increase, money supply decreases
    d. Bank reserves decrease, money supply increases
    e. Bank reserves increases, no change in money supply

    Answer: a



(a) Money market



(c) Real GDP and the price level

- What are the three traditional tools of monetary policy used by the Fed? Which method is preferred?

- Discount Rate
  - rate that banks are charge directly by the Fed
  - ↑ Discount Rate, ↓ money supply
  - ↓ Discount Rate, ↑ money supply
- Required Reserve Ration (RRR)
  - ↑ RRR, ↓ money supply
  - ↓ RRR, ↑ money supply
- Open-Market Operation (Preferred method)
  - Buy government securities will increases money supply (BUY=BLOAT)
  - Sell government securities will decrease money supply (SELL=SHRINK)

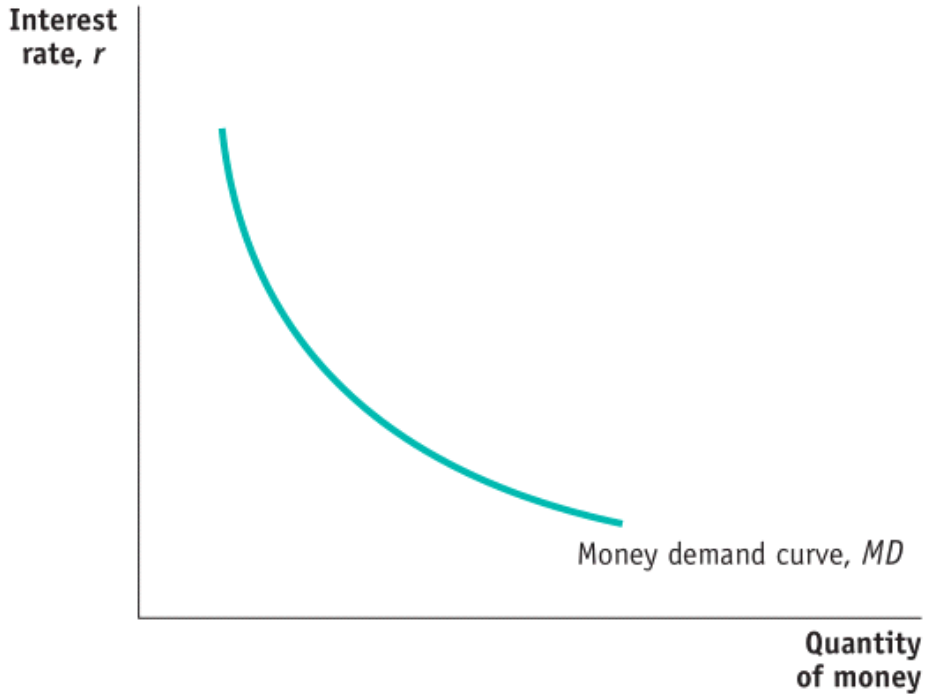
4.5 The Money Market

Thursday, January 26, 2017 12:10 AM

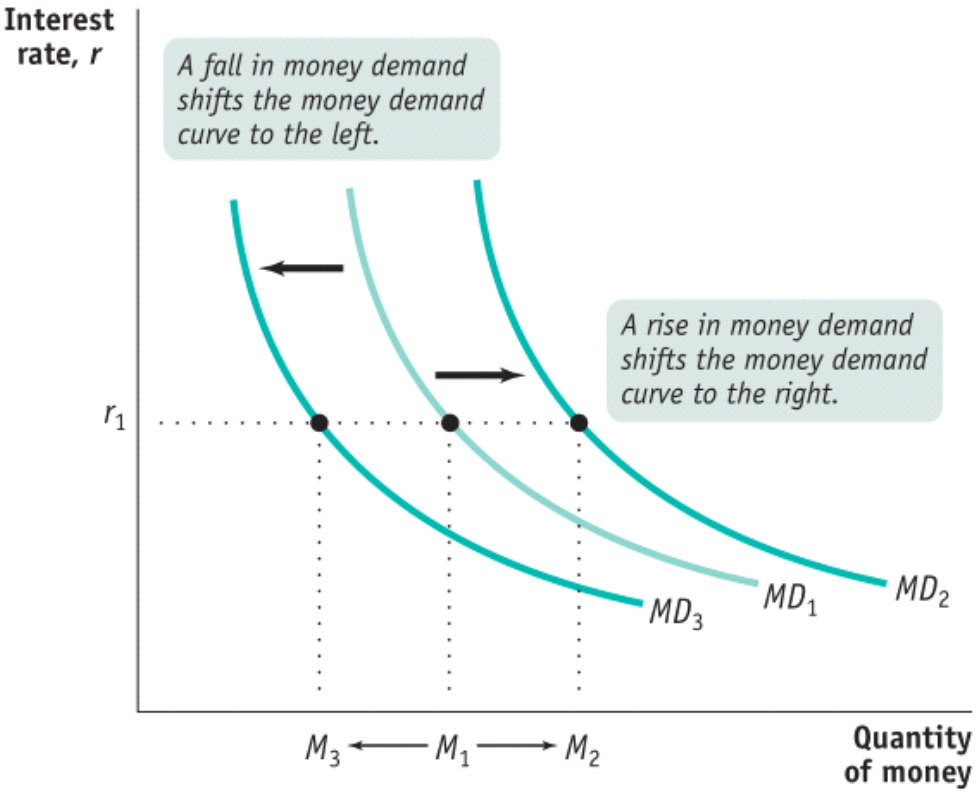
Opportunity Cost of Holding Money

- The decision to **hold onto cash** has an **opportunity cost**. It's money that **can't be used to invest** in other assets
- In June 2007, the federal funds rate was 5.25%
- In June 2008, the federal funds rate dropped to 2.00%
- In June 2009, the federal funds rate set to 0.0 - 0.25%
- **Interest rate** you get on **cash** is **0.0%**
- The opportunity of cost of money has **decreased** over that two-year time span

The Money Demand Curve



Shifts of the Money Demand Curve



- Changes in the Aggregate Price Level
  - **Higher prices** have led to an **increase** in the **demand** for **money**
  - Demand for money is **proportional** to the **price level**.
  - If prices rise by 10%, demand increases by the same amount
- Changes in Real GDP
  - As real GDP increases, the **larger quantity** of **money** that households and firms will hold
- Changes in Technology
  - **Availability of ATMs** and widespread acceptance of **credit purchases** decreases money demand
- Changes in Institutions
  - Regulation Q barred interest-bearing checking.
  - When eliminated in 1980, MD shifted to the right

Money and Interest Rates

- The Federal Open Market Committee (**FOMC**) is in charge of setting the target **federal funds rate**
  - The Federal Reserve **doesn't** actually set the federal funds rate **by fiat**

    - The Open Market Desk at the New York Fed **buys (or sells) bonds** in order to achieve the target
- When the Fed **lowers** the **federal funds rate**, other **short-term interest rates** (CD rates) **fall** in a corresponding matter
- In an era of a **0% federal funds rate**, the opportunity cost of holding onto money is about as **low** as you can get

Liquidity Preference Model

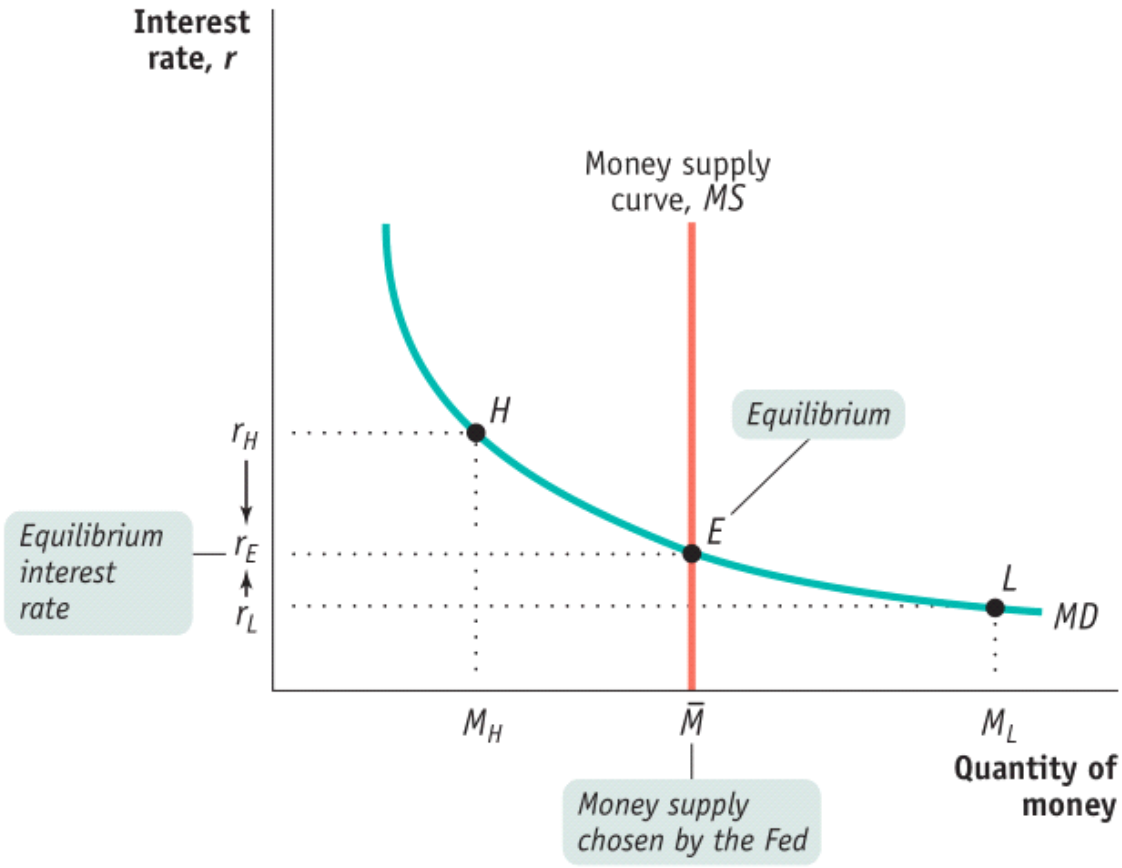
- Liquidity Preference Model of the Interest Rate
    - **Interest rate** in money market is determined by the **supply** and **demand** for **money**
    - Combine the **MD**, which is downward sloping with the **MS**, which is the quantity of **money supplied** by the Federal Reserve
- The Fed can either **increase** or **decrease** the **money supply** using one of its **three monetary policy tools**
    - Open Market Operations
    - Changing Reserve Requirements
    - Lending through the Discount Window

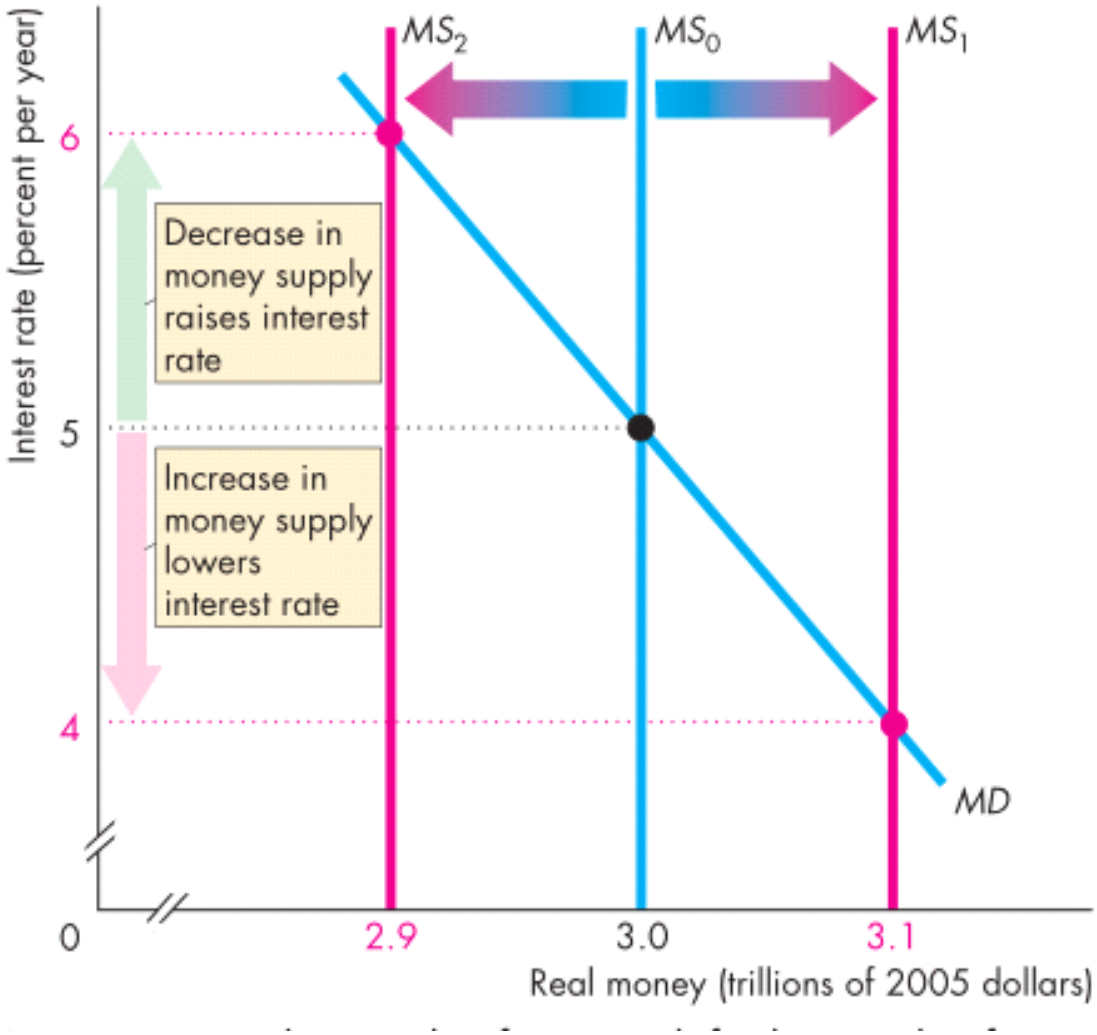
Discount Rate	***Effect***	***Reason***
Raise	Less money	Banks borrow less money because of higher interest.
Lower	More money	Banks have more money in reserves.

Reserve Requirement	***Effect***	***Reason***
Raise	Less money	Banks are required to keep more and lend less to borrowers.
Lower	More money	Banks keep less in vaults and lend more to borrowers.

Open Market Operations	***Effect***	***Reason***
Buying	More money	The Fed gives money to banks in exchange for bonds.
Selling	Less money	The Fed takes money from banks in exchange for bonds.

- Equilibrium in the Money Market


Interest rate, r
Money supply curve, MS
H
Equilibrium
E
L
MD
r_H
r_E
r_L
Equilibrium interest rate
M_H
$\bar{M}$
M_L
Money supply chosen by the Fed
Quantity of money

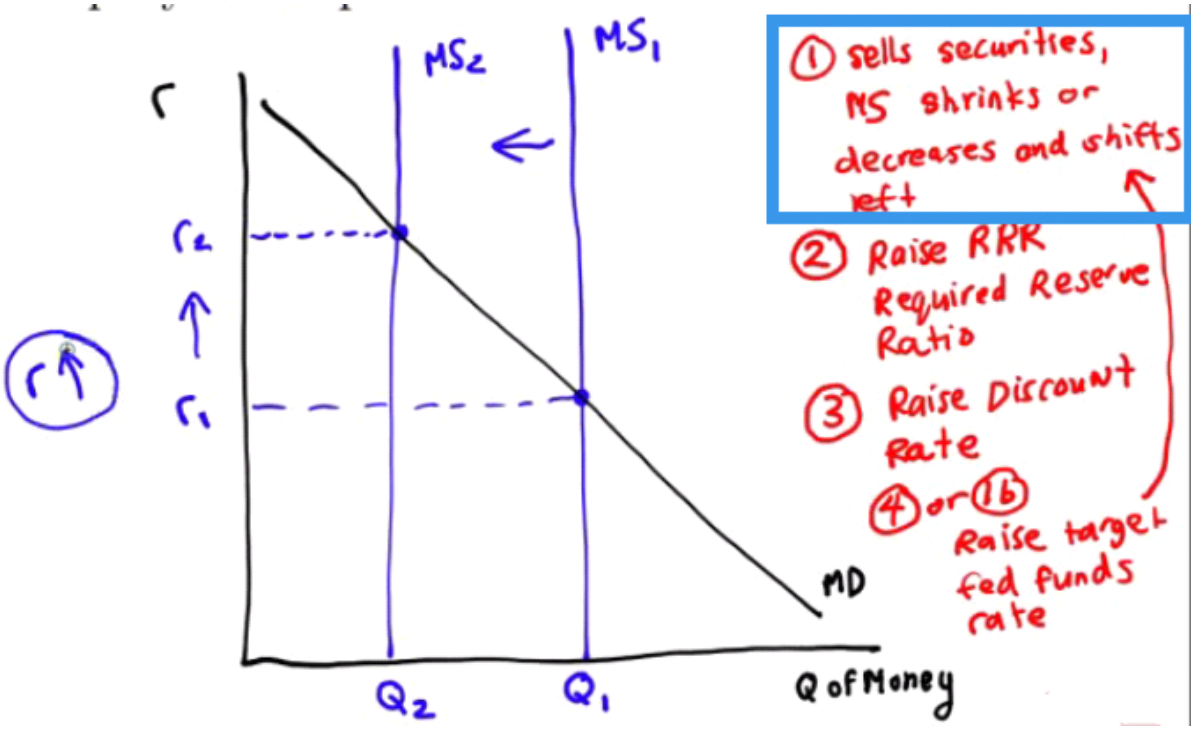


Practice Questions

- Which of the following will decrease the demand for money?
    a. An increase in interest rates
    b. A rising level of inflation
    c. An increase in GDP
    d. An increase in the availability of ATMs
    e. A decrease in interest rates

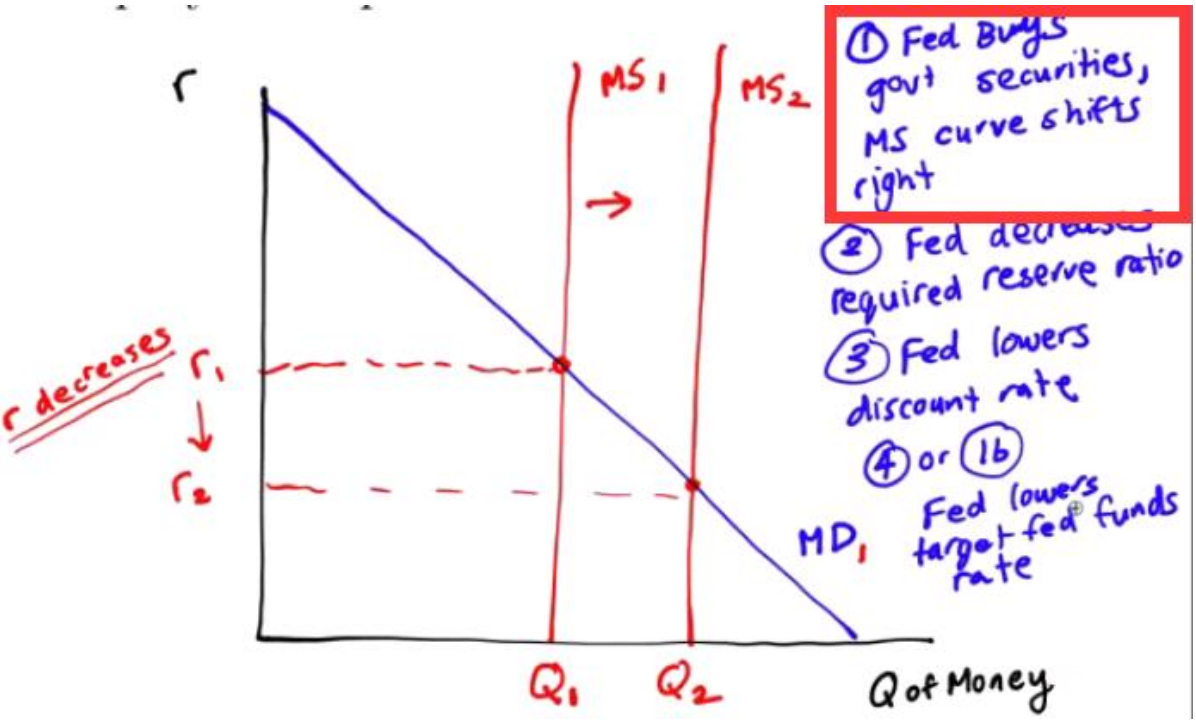
    Answer: d

    Option a is change the quantity demanded, not the demand itself
- If the Fed sells Treasury securities, what happens to the money supply and the equilibrium interest rate? Graph your response



- SELL = SHRINK

- If the Fed buys Treasury securities, what happens to the money supply and the equilibrium interest rate? Graph your response



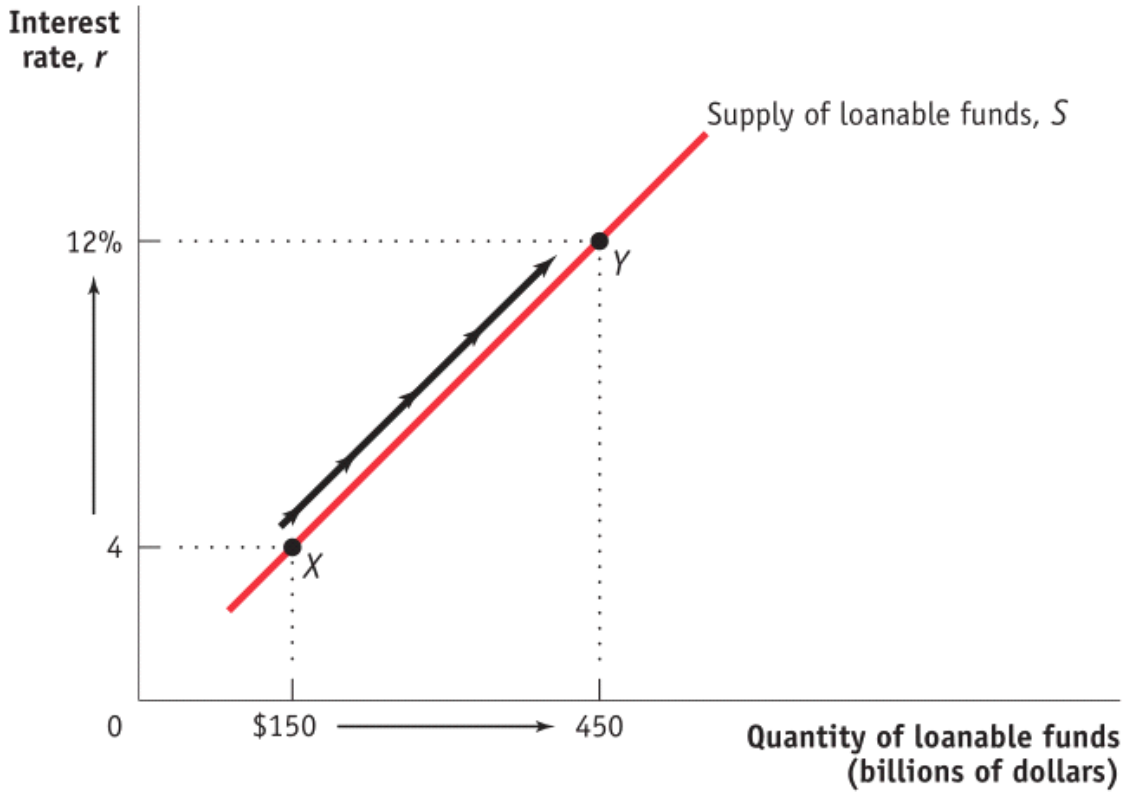
- BUY = BLOAT

4.6 The Market for Loanable Funds

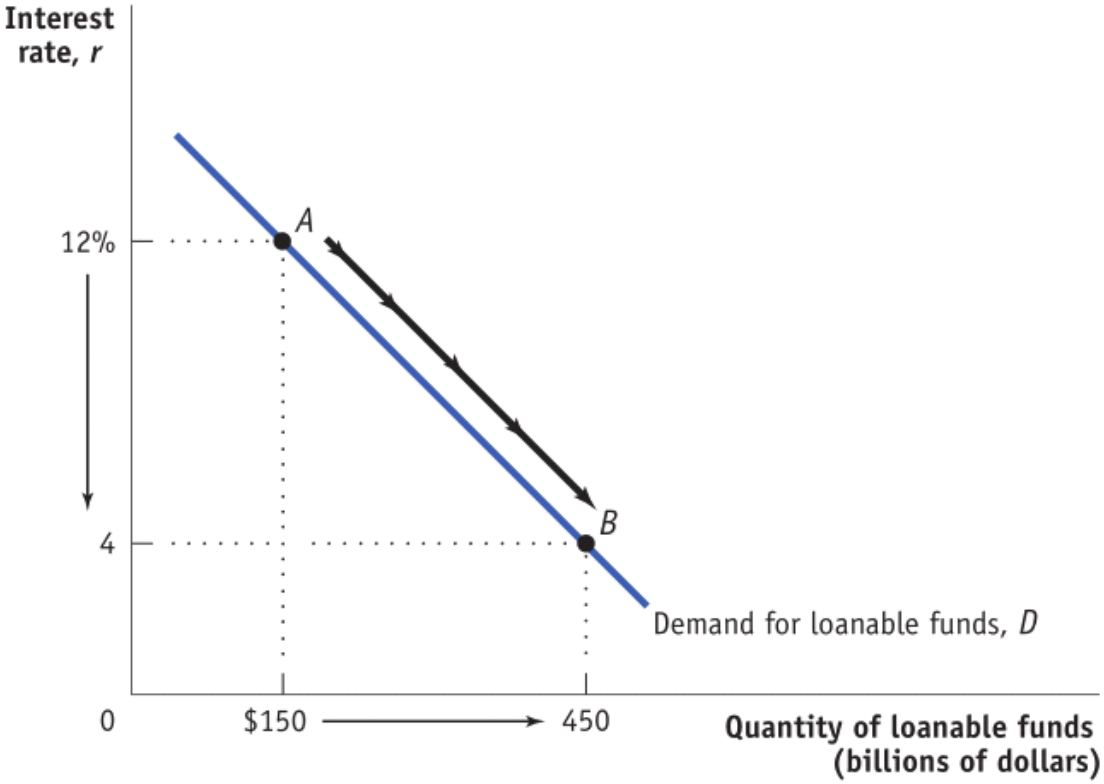
Thursday, January 26, 2017 12:59 AM

Loanable Funds Market

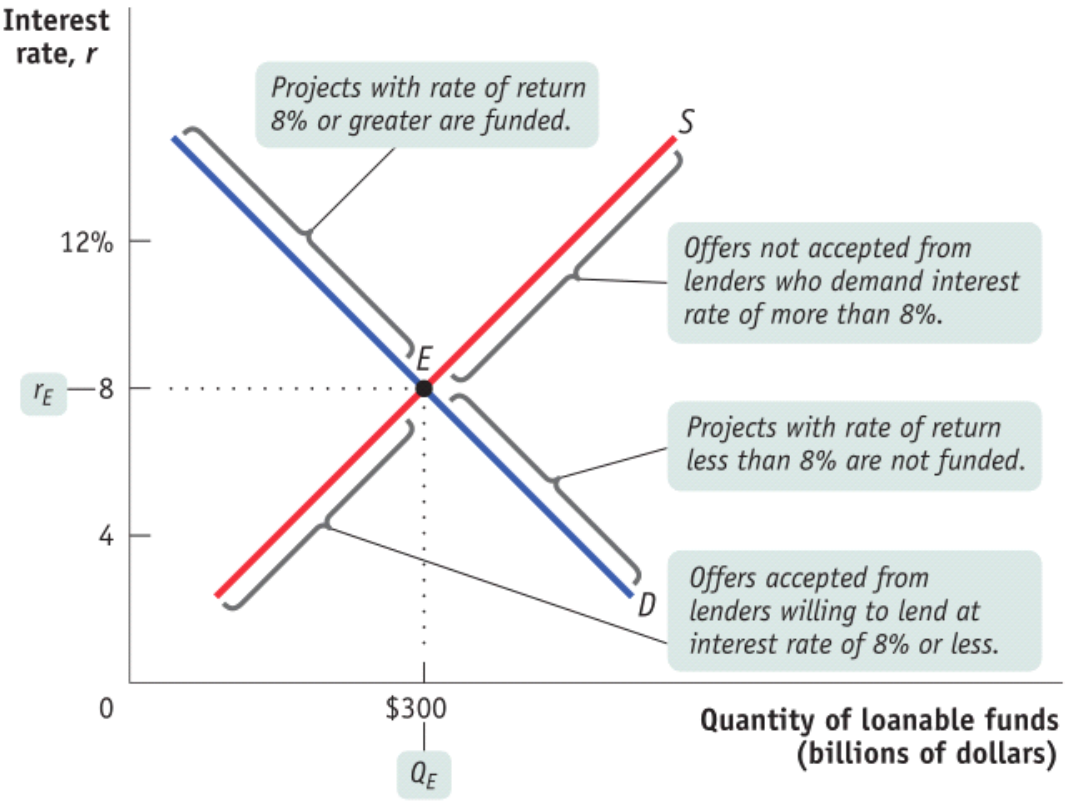
- Loanable funds market
    - **hypothetical market** that illustrates the market outcome of the **demand** for **funds** generated by **borrowers** and the **supply** of **funds** provided by **lenders**
- **Savers** are the ones who **save** the money and thus are more willing to lend out at **higher rates** of return



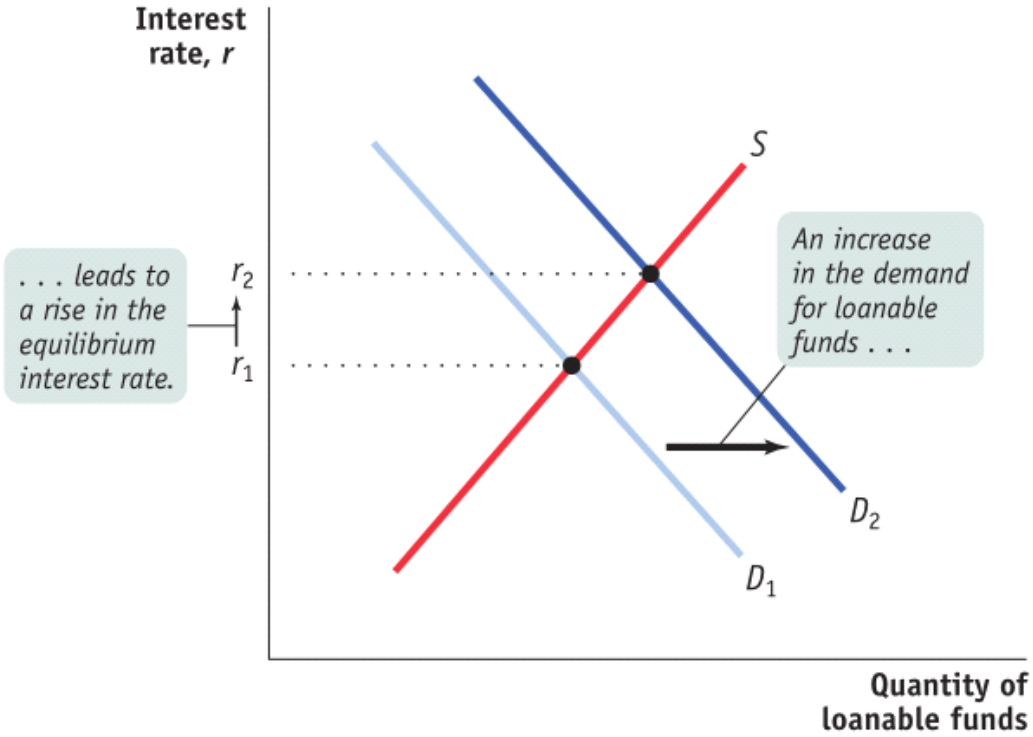
- **Borrowers** (ie. firms with investment spending projects) prefer **lower interest rates**



- Equilibrium in the Loanable Funds Market
  - **quantity** of funds that **savers** want to **lend** equals the **quantity** of funds that **businesses** want to **borrow**

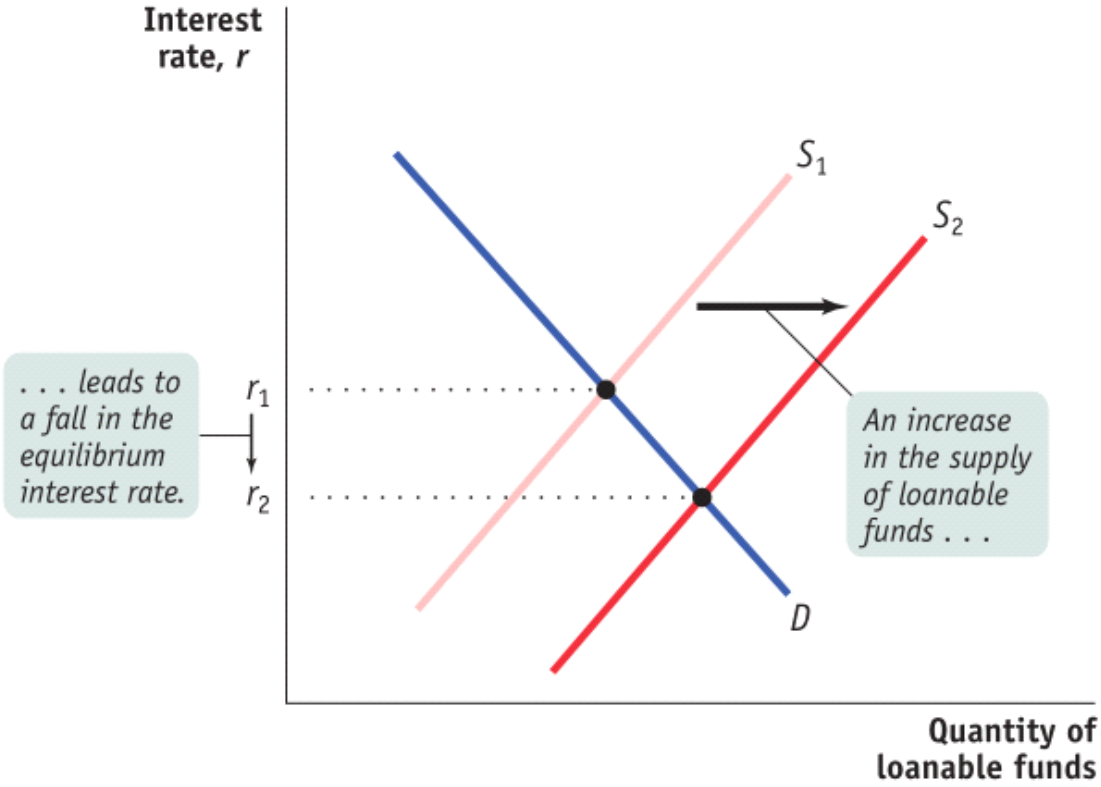


Shift of Demand for Loanable Funds



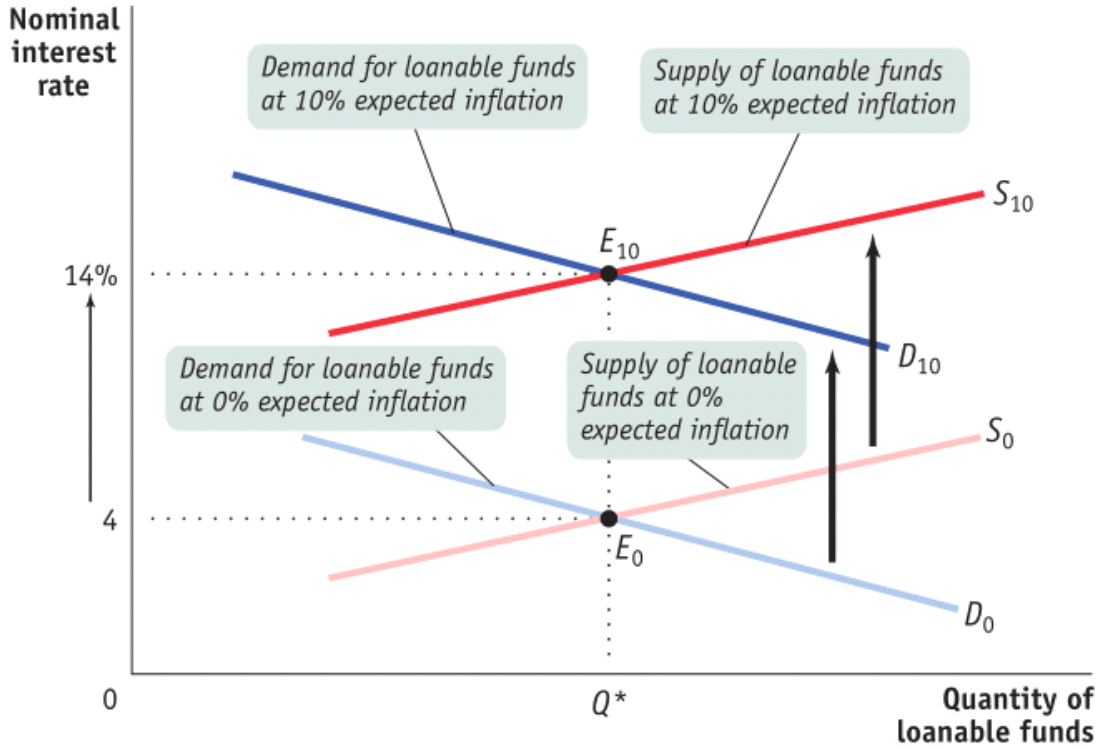
- Changes in **perceived** business **opportunities**
  - If businesses see **opportunities** of **higher return**, the demand for loanable funds will **increase**
  - In the late 1990s with the dot com boom, firms were excited about any possible internet company out there and the demand for loanable funds increased to right
- Changes in the government's borrowing
  - When governments **incur** a **deficit**, the demand for loanable funds will **increase**
  - **Crowding out** occurs when interest rates **increase** and therefore, businesses will **invest less**. Thus, the crowding out effect

Shift of Supply for Loanable Funds



- Changes in private saving behavior
  - Between 2000 and 2006, rising home prices caused people to "**feel richer**" and therefore **spend more** and **save less**
  - The **supply** of loanable funds, therefore, would shift to the **left** as a result
- Changes in capital inflows
  - With a large **inflow** of **capital funds**, the supply of loanable funds shifts to the **right**
  - Conversely, when **international investors flee** (like in Argentina), the supply of loanable funds shift to the **left**

Inflation and Interest Rates

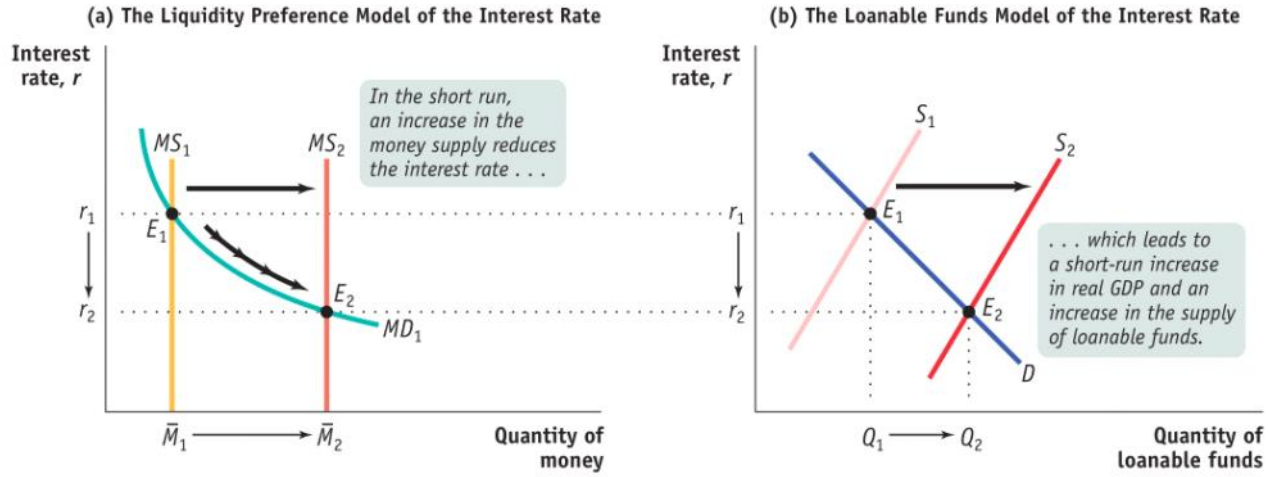


- **Inflation** will tend to **help borrowers** and **hurt savers**
- In the late 1970s and early 1980s, homeowners "won" with inflation and banks "lost" with inflation
- **Real interest rate = Nominal interest rate - inflation rate**
- The **true cost** of borrowing is the **real**, not nominal, interest rate!
- A good "hedge" against inflation would be to **buy** a **house** and take on a low-interest rate mortgage and invest in **other assets**, perhaps the stock market
- Fisher effect
    - The expected real interest rate is **unaffected** by the change in **expected future inflation**.
    - Borrowers and lenders base decisions on the **expected real interest rate** not the nominal

Interest Rate in the Short Run

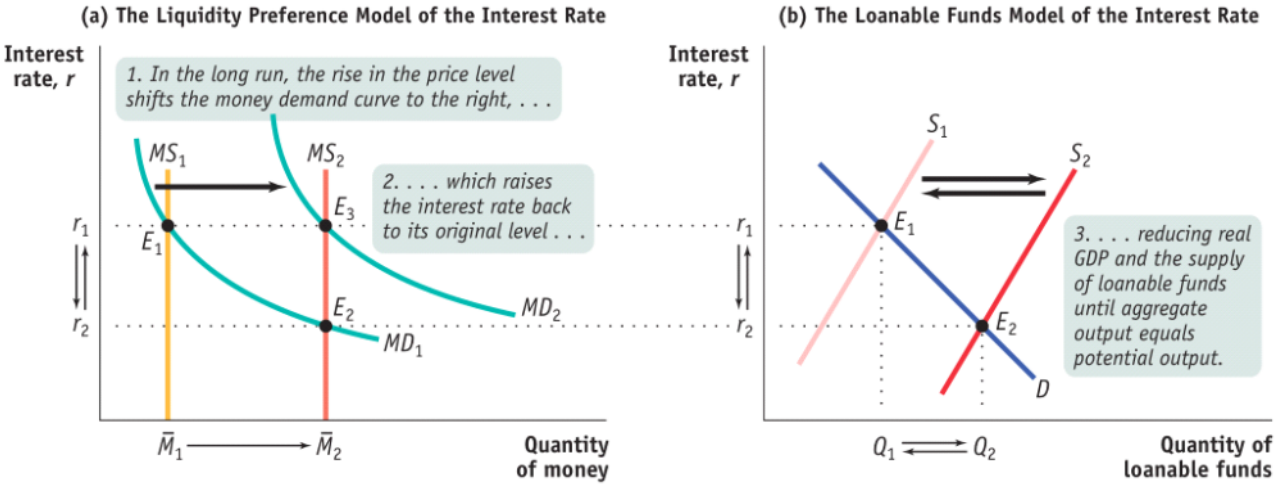
- A **fall** in the **interest rates** leads to a **rise** in **investment spending**, which leads to a **rise** in **GDP**, which leads to a **rise** in **savings**
- In the money market, an **increase** in the **money market** shift the **MS** to the **right**, **lowering r**
- In the short run, the **loanable funs market follows** the lead of the **money market**.

- The change in GDP **increase** savings(investment) and **shifts** supply of loanable funds to the right



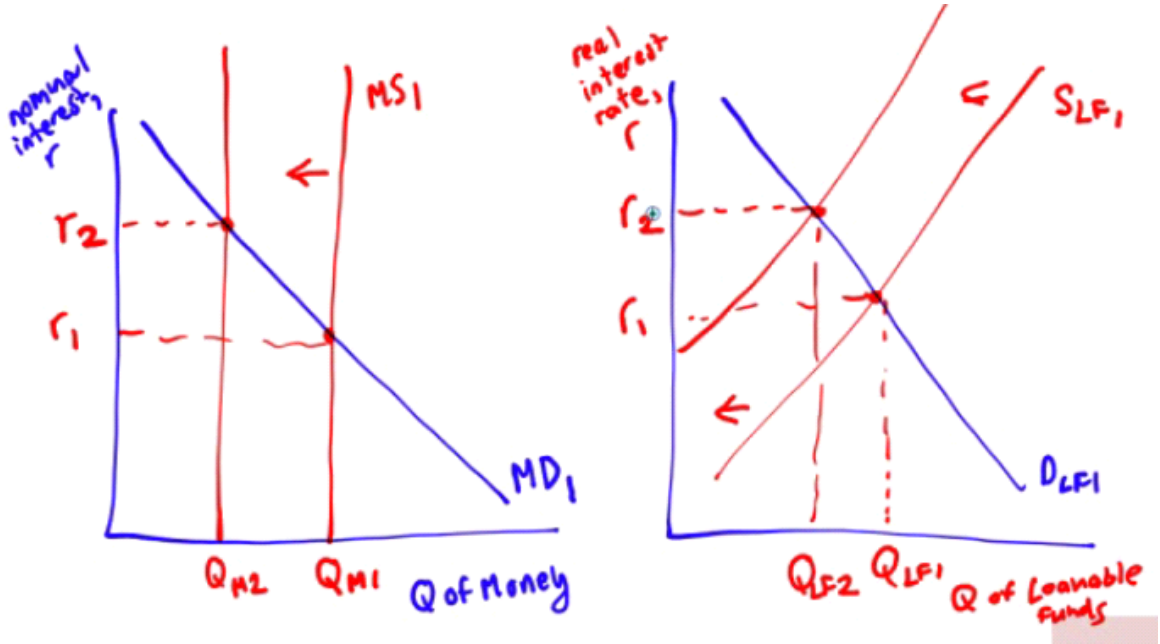
Interest Rate in the Long Run

- In the long run, however, when the **money supply increases**, the **aggregate price level increase** and therefore the **money demand increase** in the same proportion
- So, MS1 shifts to MS2, but MD1 shifts to MD2, which raises the interest **back** to its **original level**
- As a result, the supply of loanable funds which originally shifted to the right, shifts back to the left, **back** to its **original level**!
- **In the long run, money doesn't matter!**
- The **supply** and **demand** for **loanable** funds **determines** the interest in the **long run**

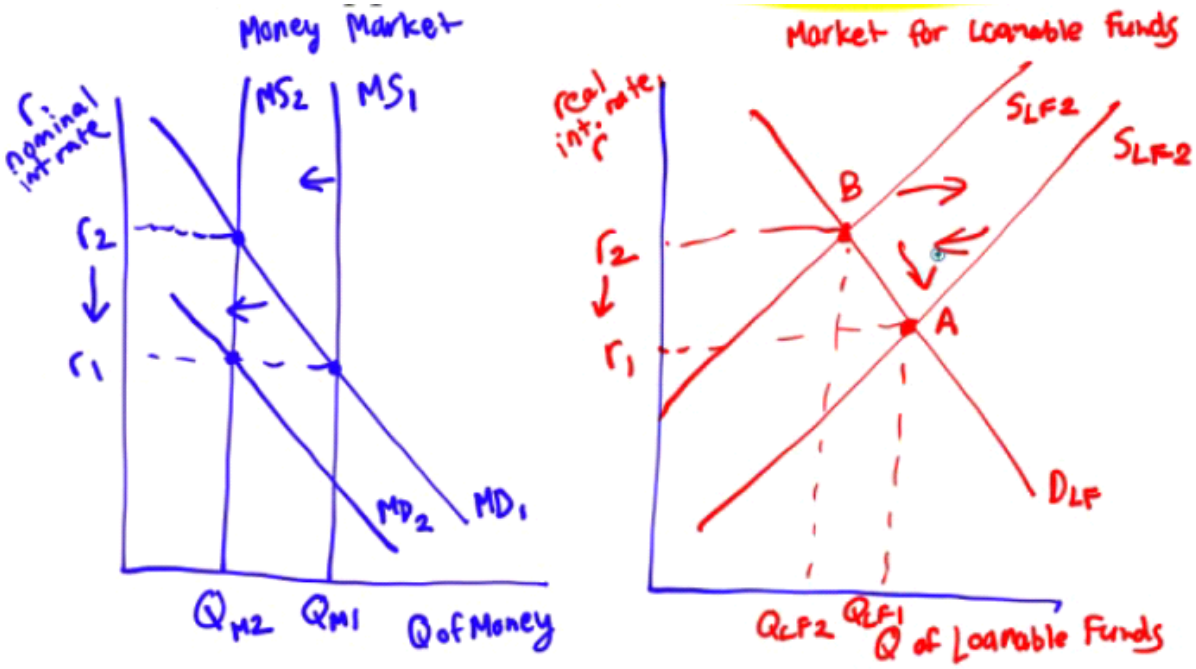


Practice Question

- If the Fed sells government securities, what happens in the money market? What will happen in the loanable funds market in the short-run?



- In the long-run, if the Fed sells government securities, what happens in the money market? What will happen in the loanable funds market?



- Does each of the following affect either the supply or demand for loanable funds, and if so, does the affected curve shift to the right or shift to the left
    - Decreases in capital inflow into the economy

      ↓ Supply of Loanable Funds, Shift Left
    - Business are optimistic about future business conditions

      ↑ Demand for Loanable Funds, Shift Right
    - The government decreases borrowing

↓ Demand for Loanable Funds, Shift Left

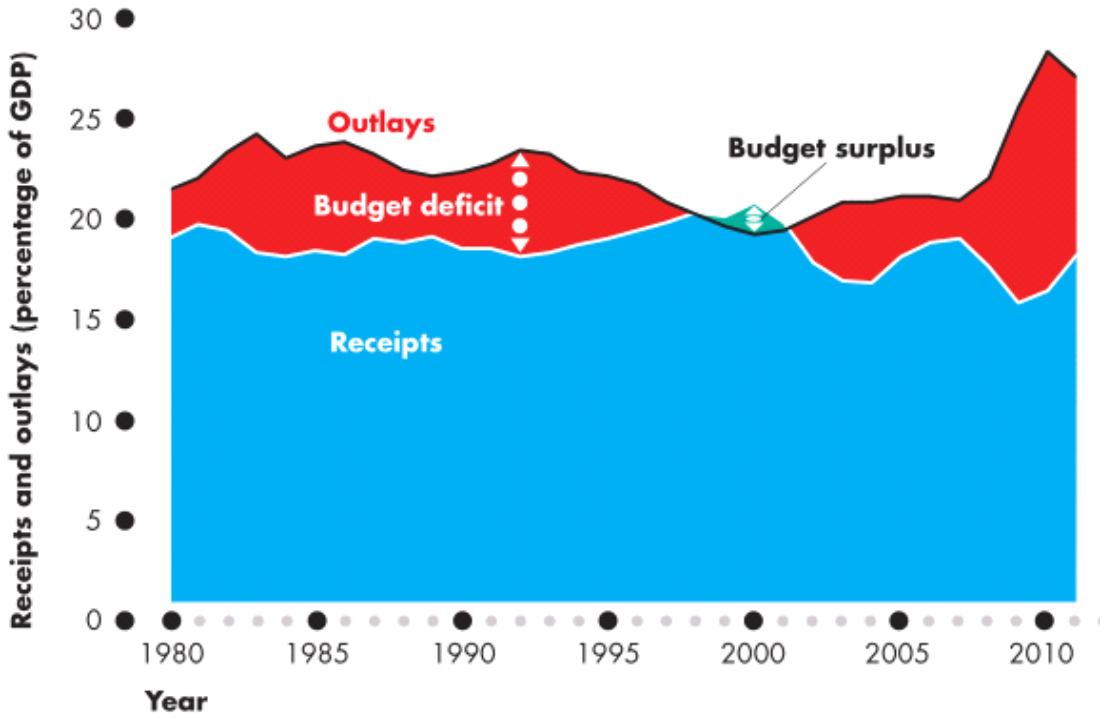
- The private savings rate increases

  ↑ Supply of Loanable Funds, Shift Right

5.1 Budget Deficits & the National Debt

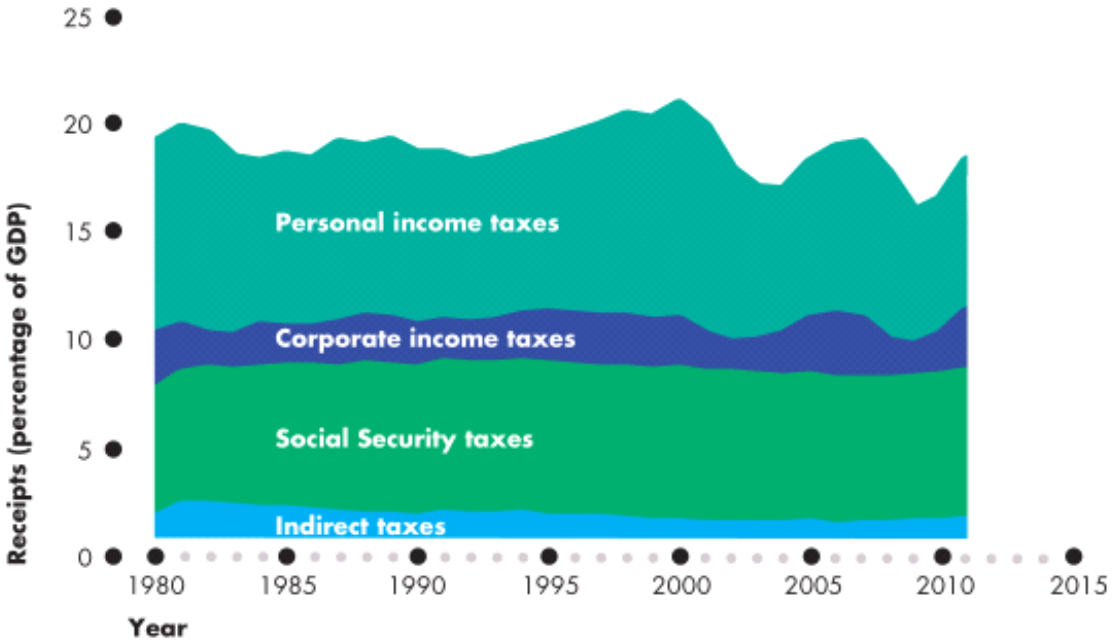
Thursday, January 26, 2017 1:52 PM

The Budget Balance

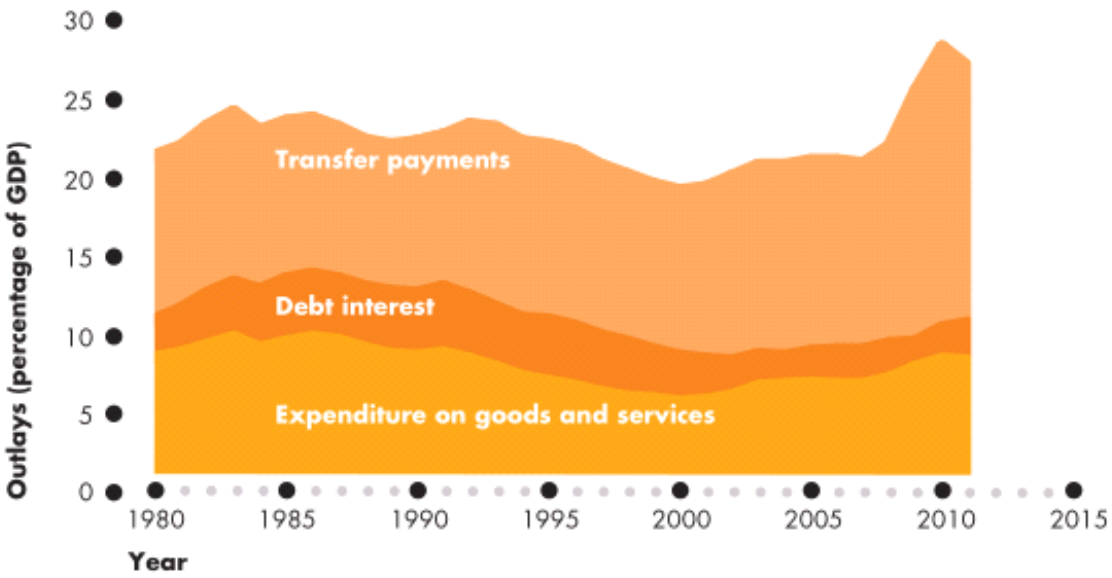


- **Government savings** is defined by the following equation:
  - $S_{Government} = T - G - TR$
  - T: Tax Revenues
  - G: Government purchases of goods & services
  - TR: Government transfers
- As a rule of thumb, **expansionary** fiscal policies server to **reduce** the **budget balance** (ie. decrease budget surplus or increases budget deficit)
  - increase government spending
  - decrease taxes
  - increase transfer payments
- Generally, **contractionary** fiscal policies will **increase** the **budget balance** (ie. increase budget surplus or decrease budget deficit)
  - decrease government spending
  - increase taxes

- increase taxes
- decrease transfer payments



(a) Receipts

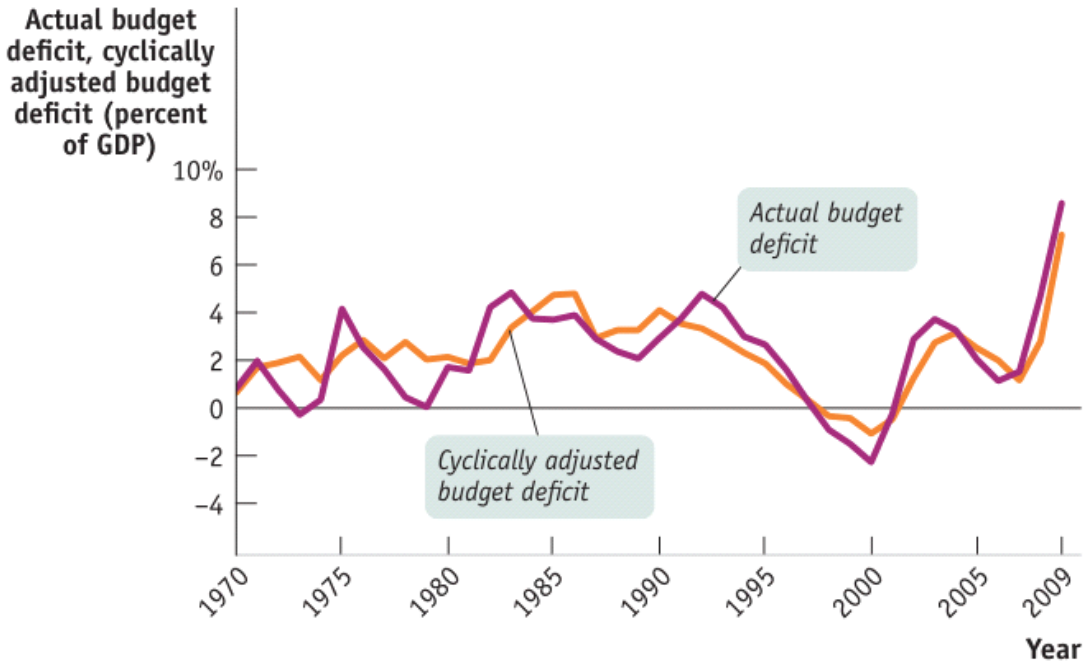


(b) Outlays

Cyclically Adjusted Budget Balance

- An estimate of what the budget balance would be if real **GDP** were exactly **equal to potential output**
- Government **tax** revenue tends to **rise** and **government transfers fall** during **economic expansions**. **Budget** tend towards a **surplus**

- Conversely, **tax** receipts **decrease** and **government transfers** increase during **contractions**. **Budget** tend towards a **deficit**



Should the Budget Be Balanced

- This is a **normative** question!
- A **balanced budget amendment nearly passed** through Congress to be sent to the states for ratification in 1994, falling 4 votes short of the 2/3rd Senators necessary (63-67)
- A good number of economists would argue against an amendment as that would **restrict** a country's **ability** to run a **budget deficit** during recessions. **Recessions** would be **worsened**!
- However, when large **deficits persist** year after year, the **national debt grows** and grows and grows and grows...
- The National Debt in February 2014 ~$17.3 trillion

Problems of a Rising Government Debt

- "Crowding out" effect
- When the **government borrows funds** in the financial markets, it competes with **private firms** and "**crowds out**" **private spending** by **raising interests rates** and **reducing** long-run **economic growth**
- Today's deficits increase the public debt and so puts financial strains on **future budgets**

- Like a consumer maxed out on credit cards, a government with rising amount of debt may eventually **default on payment**
- In 2001, Argentia **defaulted** on its payments and caused **havoc** in the country's economy and a **serve recession**
- So why not print money to pay off the debt??
- Inflation!!!

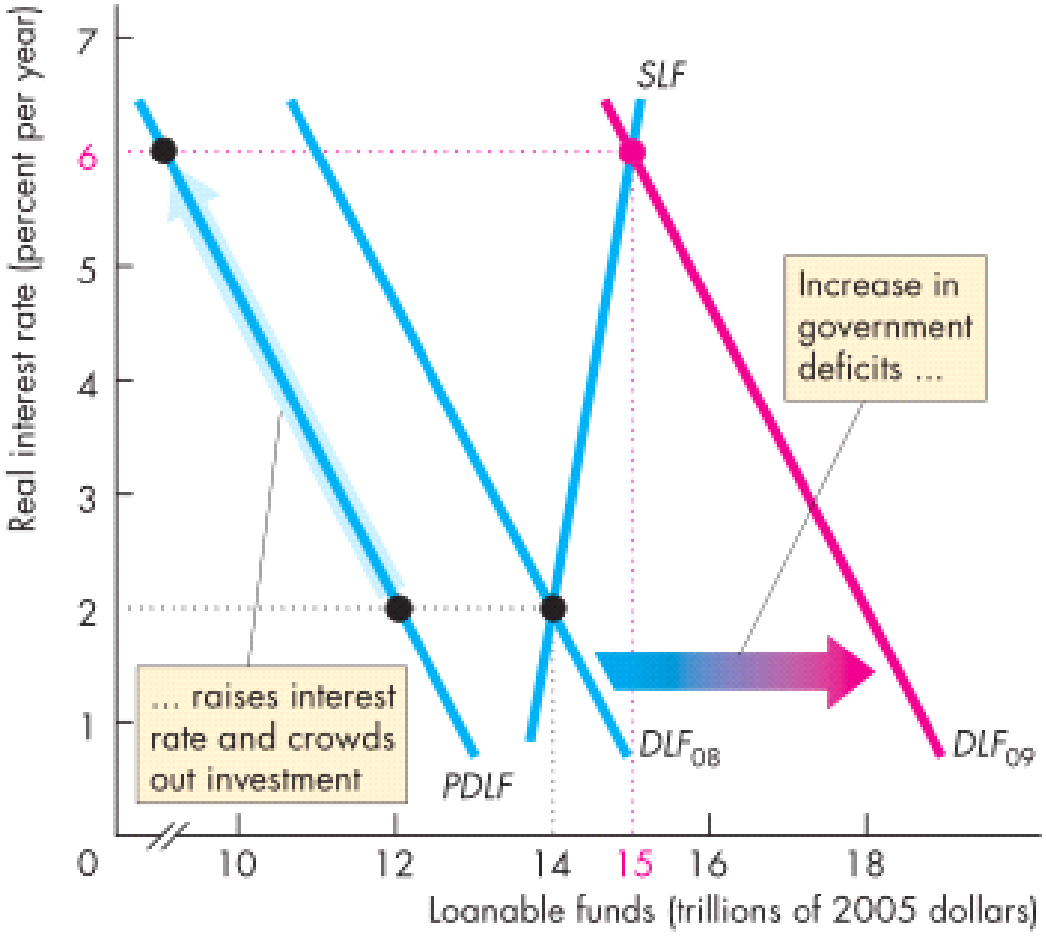
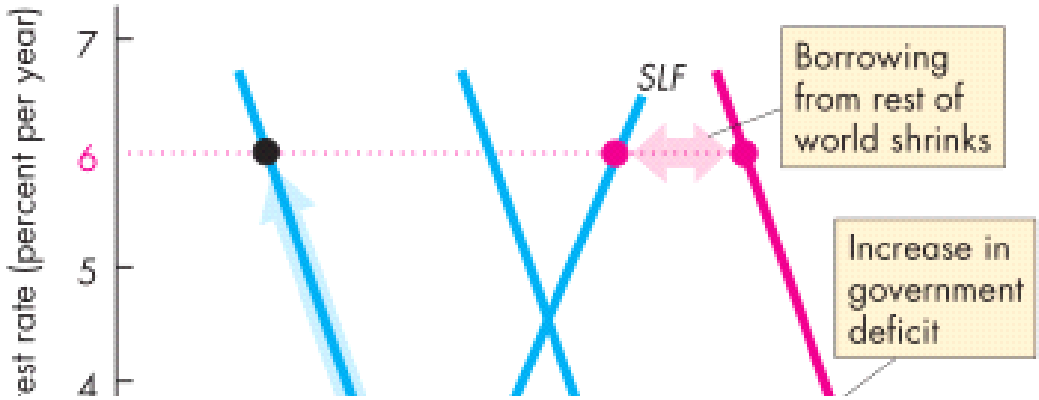


Figure 1 The global loanable funds market



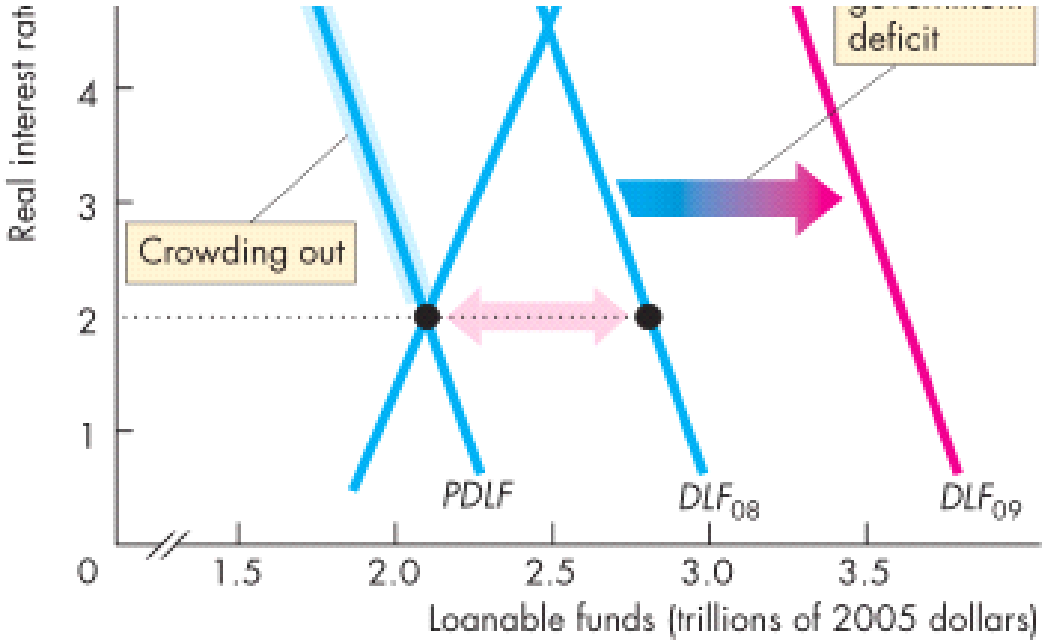
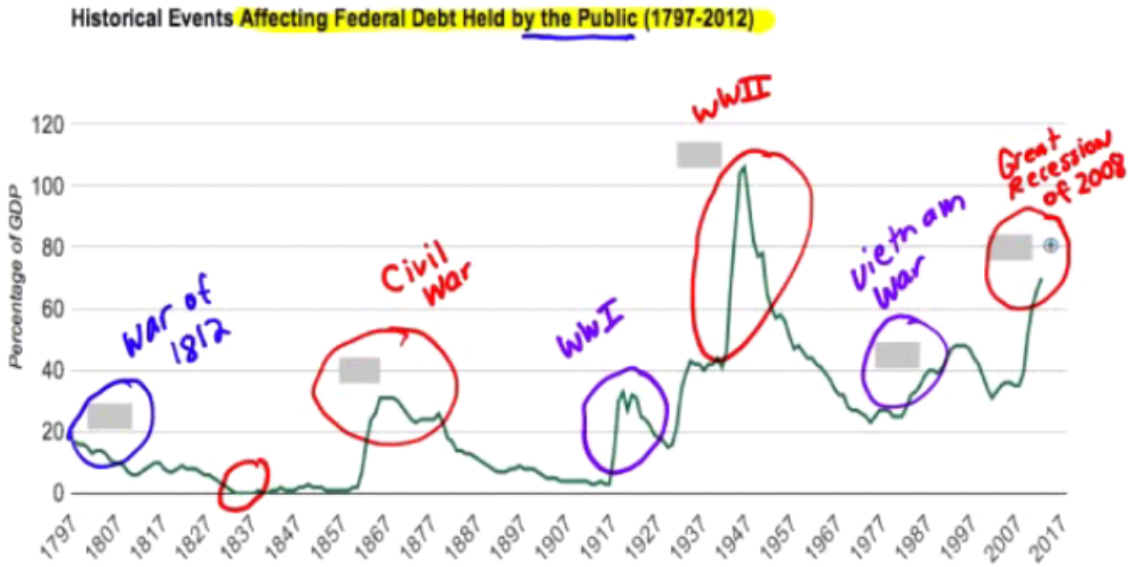


Figure 2 The U.S. loanable funds market

Trends in Debt-GDP Ratio

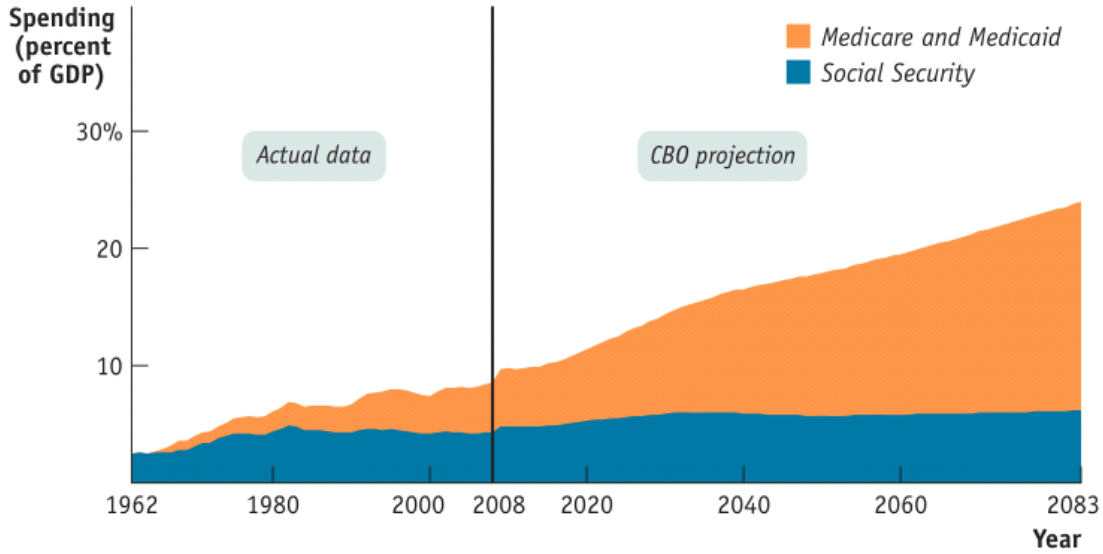


- During times of **war**, the US has trended towards runing a budget **deficit**
- During **World War II**, the government ran up a **huge deficit**, and so the US Debt-GDP ratio was **over 100%** at its peak
- In 2012, during "relative" peace, the US Total Debt-GDP ratio exceeded 100%
- With projected **budget deficits** to **continue**, the debt will continue to get **larger** and **larger**
- Some troubled countries in 2013
    - Greece 173% Debt-GDP ratio

- Greece 173% Debt-GDP ratio
- Japan 140% Debt-GDP ratio

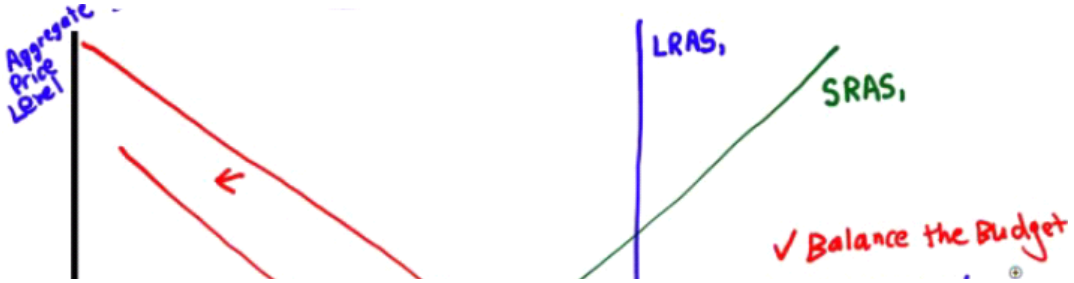
Implicit Liabilities

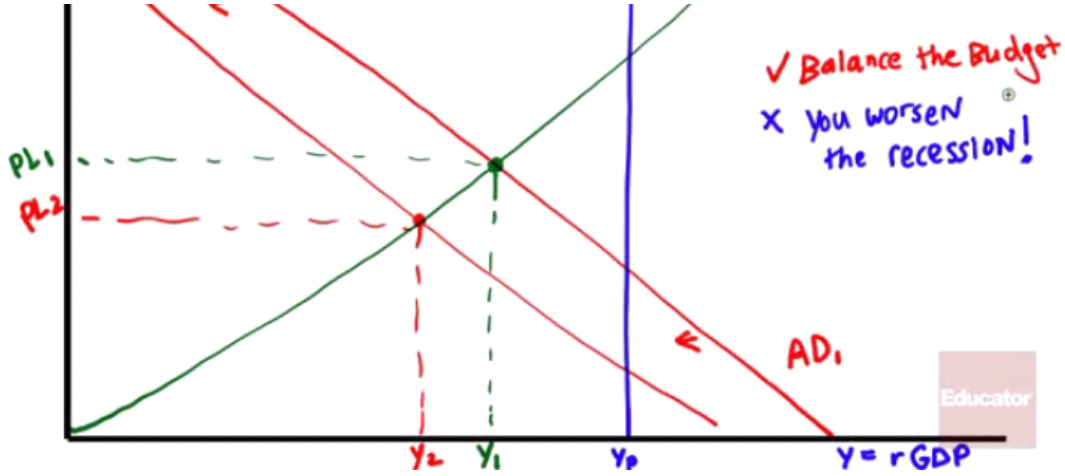
- **Spending promises** made by the government but **not included** in the **actual debt totals**
- Three largest implicit liabilities of the American Government
  - Social Security
  - Medicare
  - Medicaid
- **If included** in the national debt, the $17.3 trillion figure (Feb 2014) would actually **much higher**
- If the government prepared its financial reports the way private companies do, the net present value of all debt would be closer to $100 trillion!



Practice Questions

- Drawn an AD-AS graph an economy in a recession. What will happen if the government increase taxes and decreases spending to reduce the deficit and lower the national debt?





- If government spending exceeds tax revenues which of the following is necessarily true?
    a. Positive budget balance
    b. Budget deficit
    c. Recession

    Answer: b
- Which of the following fiscal policies is contractionary
    a. Increasing taxes by $100 billion and increasing spending by $100 billion
    b. Decreasing taxes by $100 billion and Decreasing spending by $100 billion
    c. Increasing taxes by $100 billion and decreasing spending by $100 billion
    d. Decreasing taxes by $100 billion and increasing spending by $100 billion
    e. None of the above

    Answer: c
- Which of the following is reason to be concerned about perpetural beget deficits?
    a. Crowding out
    b. Government default
    c. The opportunity cost of future interest payments
    d. Higher interest rates leading to decrease long-run growth
    e. All the above

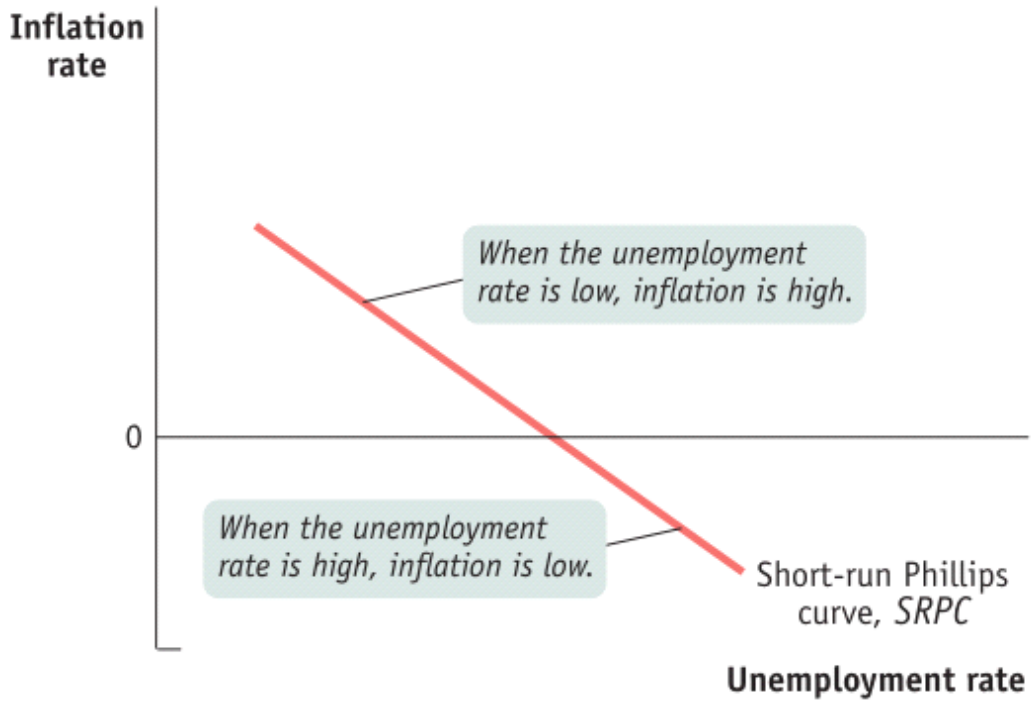
    Answer: e

5.2 Inflation & Unemployment

Thursday, January 26, 2017 2:46 PM

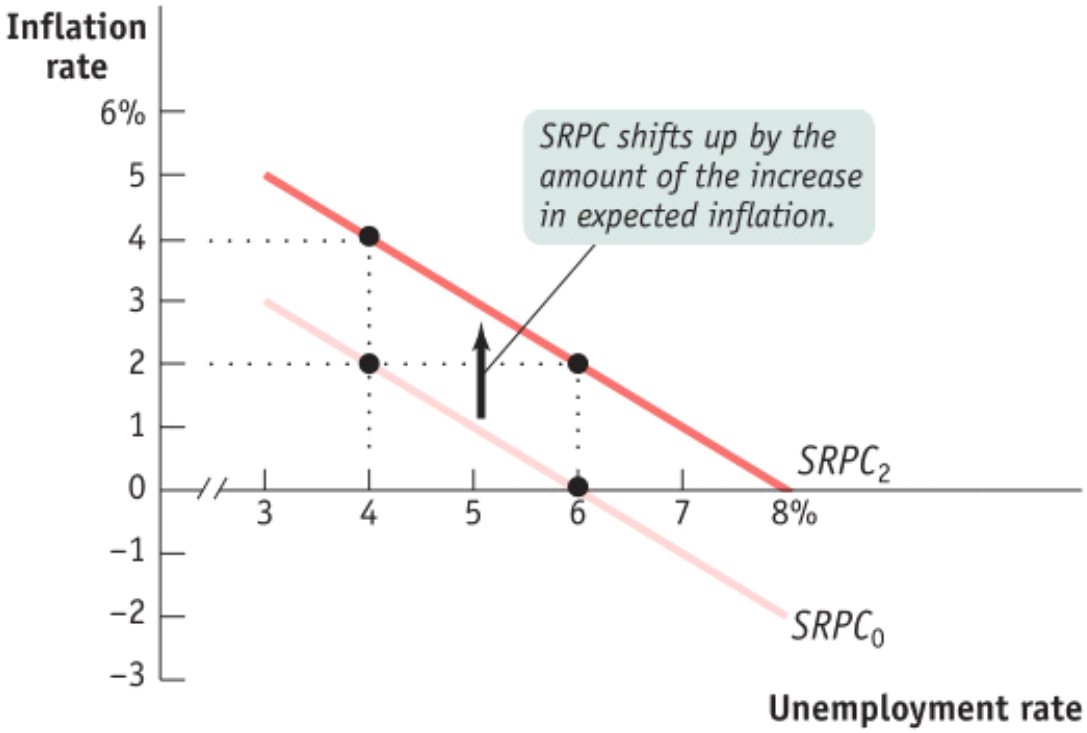
The Short-Run Phillips Curve

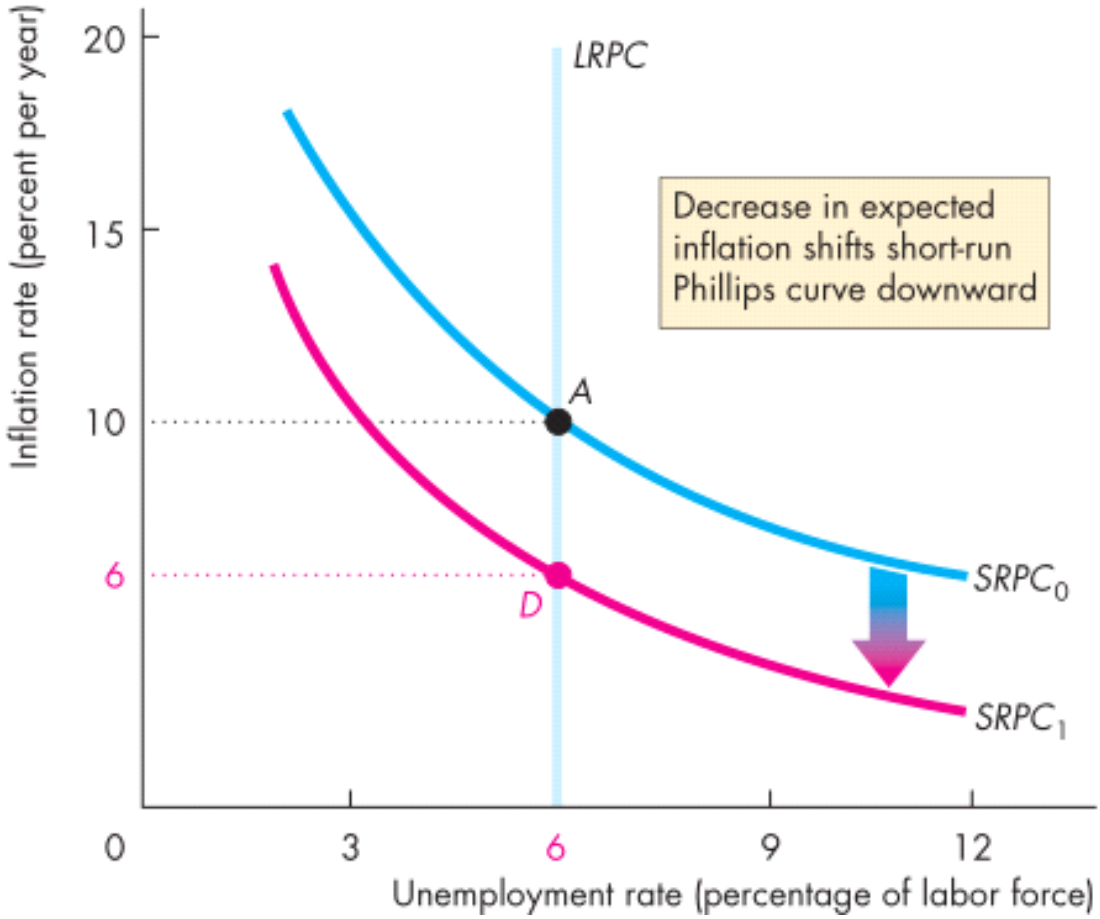
- In 1958, New Zealand-born economist Alban W.H. Phillips found that when the **unemployment rate** was **high**, **wage rates** tended to **fall**
- Conversely, when the **unemployment rate** was **low**, **wage rates** tended to **rise**
- Using data in the 1950s and the 1960s, the simple negative relationship between inflation and unemployment generally held true
- Graph



Inflation Expectations

- Changes in **expected inflation** will affect the Short-Run Phillips Curve (**SRPC**)
- An **increase** in **expected inflation** shifts the short-run Phillips curve **upward**
- People will tend to base their expectations of inflation based on their experiences
- When people were accustomed to **low inflation** rates, the correctly reasoned (at the time) that **future inflation rates** would also be **low**

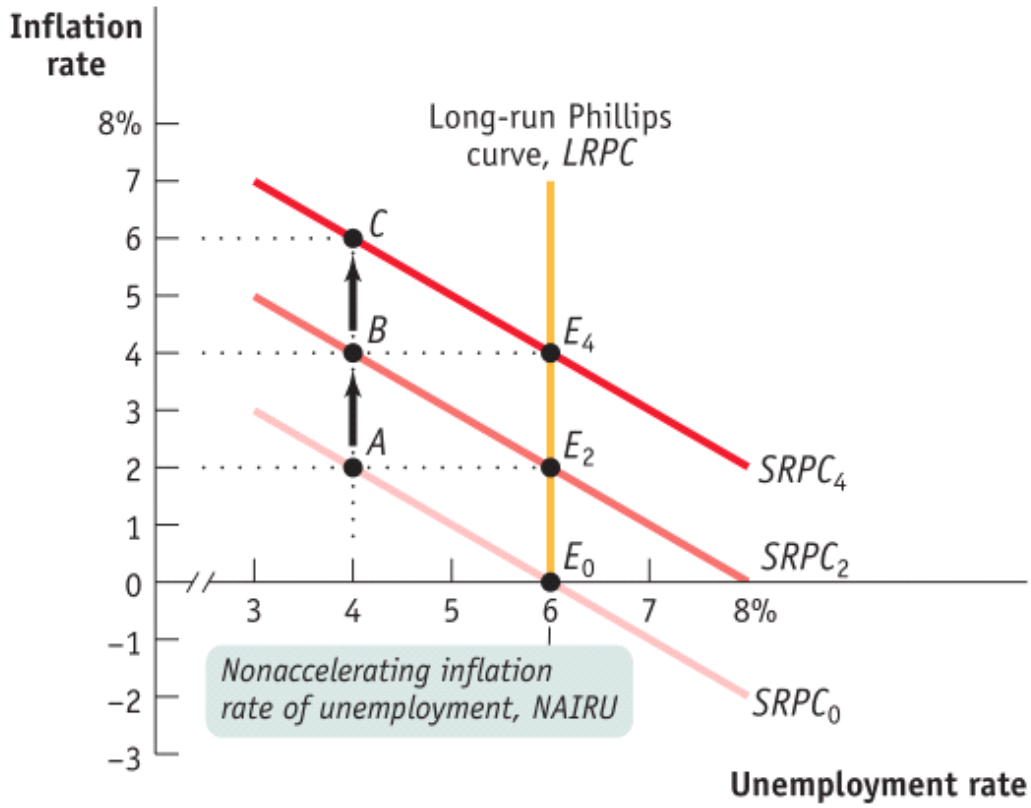




Inflation and Unemployment in the Long Run

- Most economists believe that in the **long-run**, there is **no trade-off** between unemployment and inflation

- To **avoid accelerating inflation** overtime, the **unemployment** rate must be **high enough** that the **actual rate** of inflation **matches** the **expected rate** of inflation
- The **unemployment rate** at which inflation does **not change** over time is known as the **nonaccelerating inflation rate of unemployment**, or **NAIRU**
- The Long-Run Phillips Curve (**LRPC**) is the relationship between **unemployment** and **inflation after expectations** of unemployment have had **time to adjust** over time
- Graph



The Costs of Disinflation

- Generally, politicians and economists have found that bringing **inflation down** is much **harder** than **increasing** it
- In the early 1980s, the United States used **contractionary policies** which brought about **disinflation**
- Policy makers reasoned that the long-term benefit of controlling **double-digit inflation** was **worth** the short-term **pain** that totaled an equivalent of nearly $2.6 trillion (2010 dollars)
- A **clear policy** of announcing of policy of **disinflation**, some economists argue, helped in **easing** the **pain**

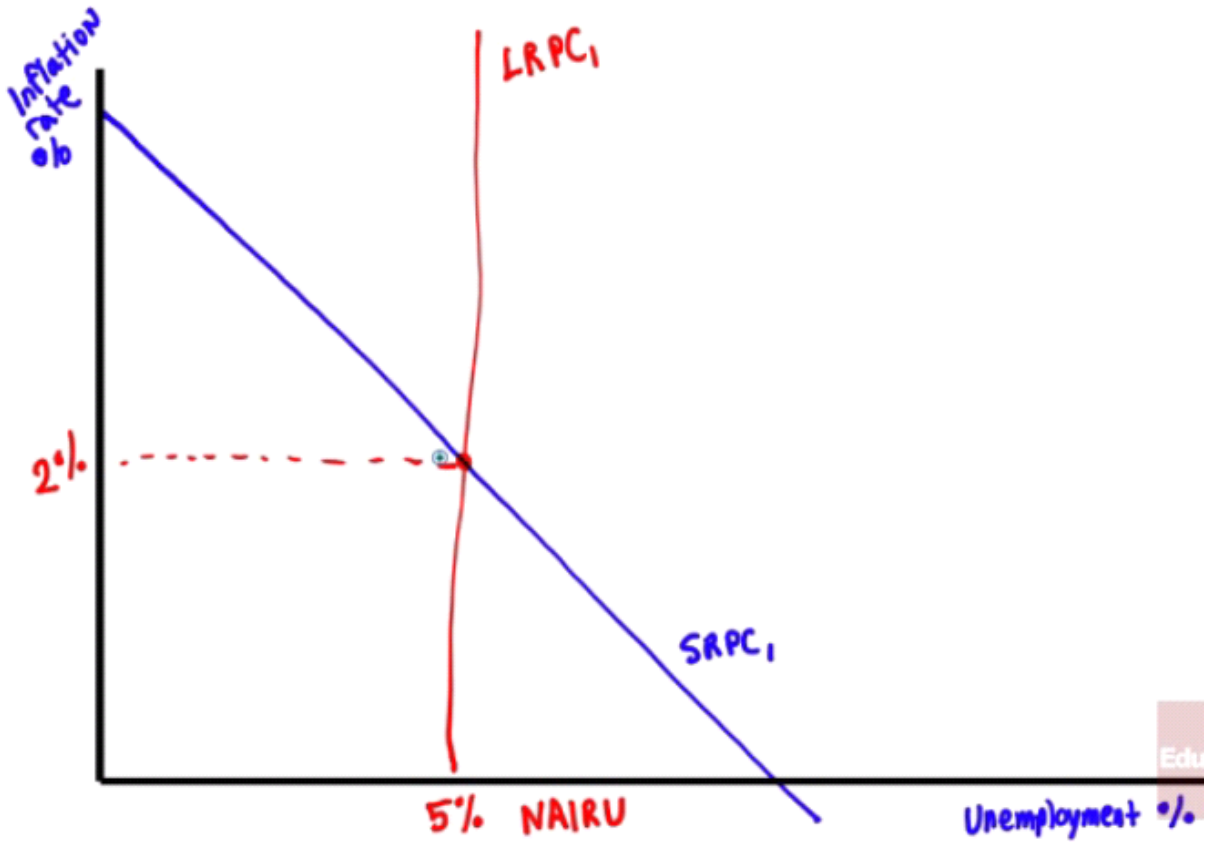
The Costs of Deflation

- **Deflation** is the **fall** in the aggregate price level, which was a common occurrence before World War II in the United States
- After WWII, inflation became the norm. But, in the 1990s, deflation reemerged in Japan
- Why is deflation bad? Aren't lower prices good?
- In deflation, **lenders gain** and **borrowers lose** since a **dollar** has **more purchasing power** in the **future**
- The effect of deflation, ultimately, leads to a **reduction** of **aggregate demand** which, many economists will argue, played a significant role in the **Great Depression**

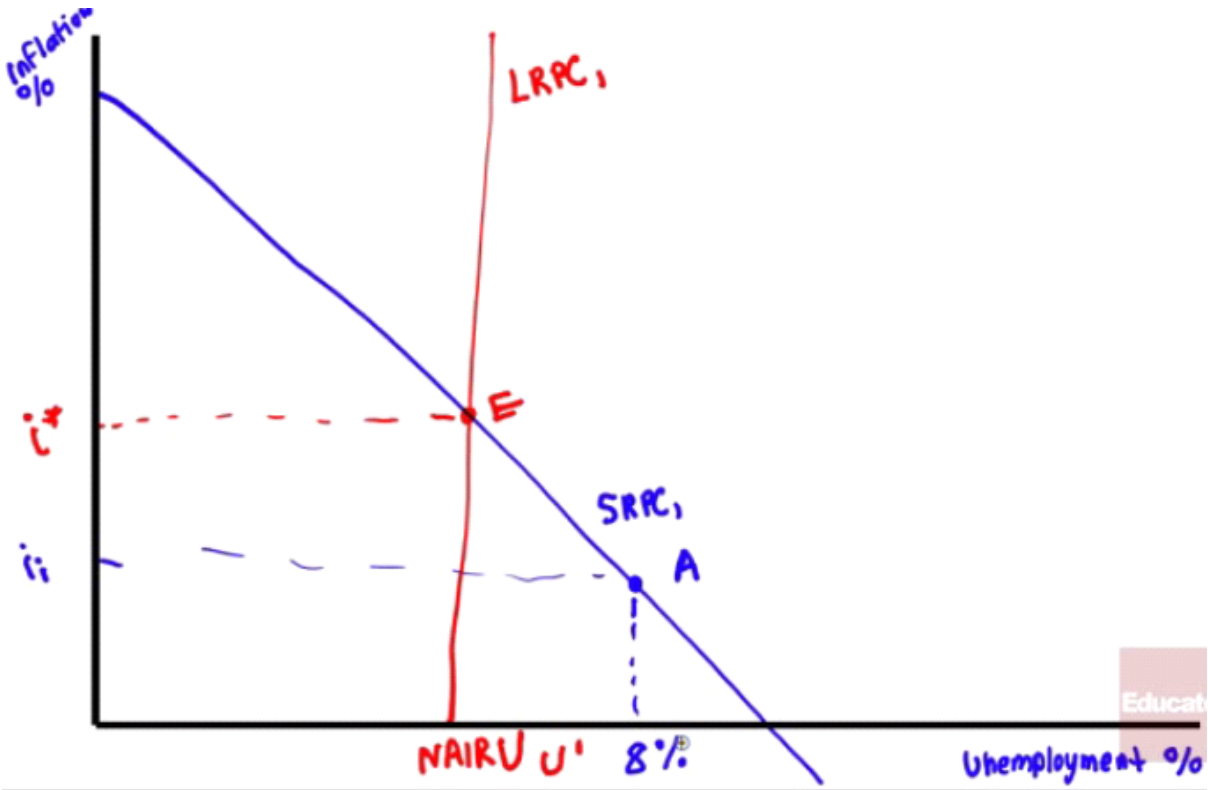
Practice Questions

- An increase in expected inflation will do which of the following?
    a. Shift the SRPC downward
    b. Shift the SRPC upward
    c. Shift the LRPC upward
    d. Shift the LRPC downward
    e. None of the above

    Answer: b
- Draw a correctly labeled graph showing a SRPC with an inflation rate of 2% and the NAIRU at 5%



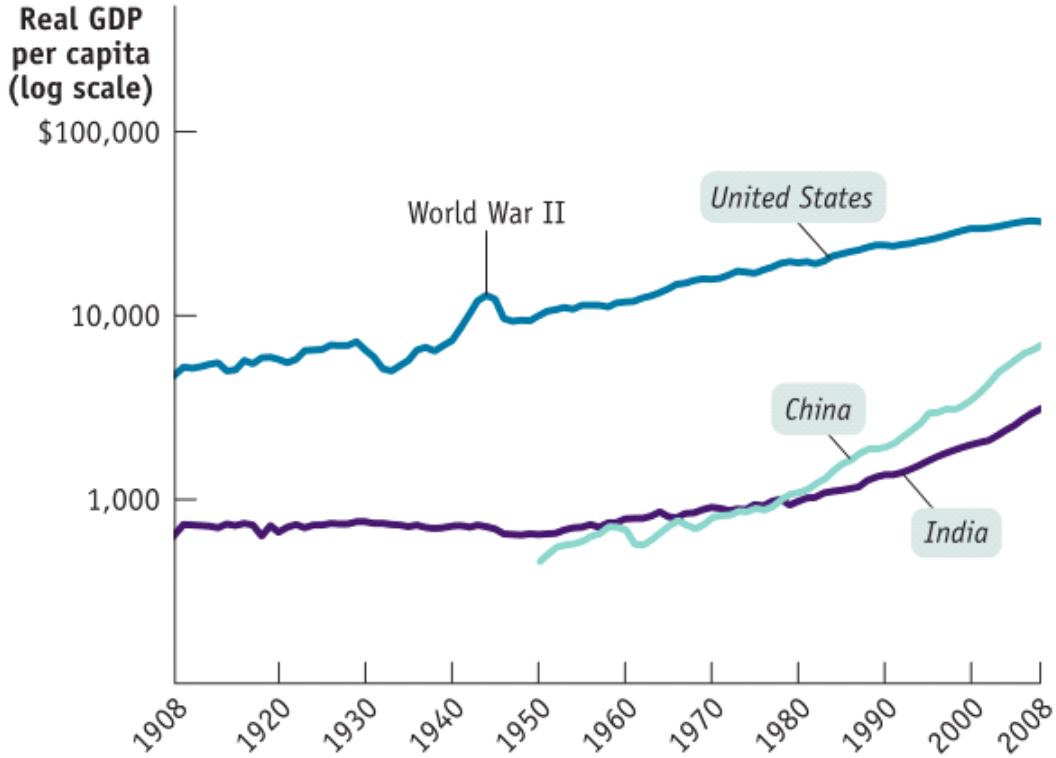
- Assume an economy is in a recession. Draw a correctly labeled graph showing the following (SRPC, LRPC, and point A, which represents the current state of recession)



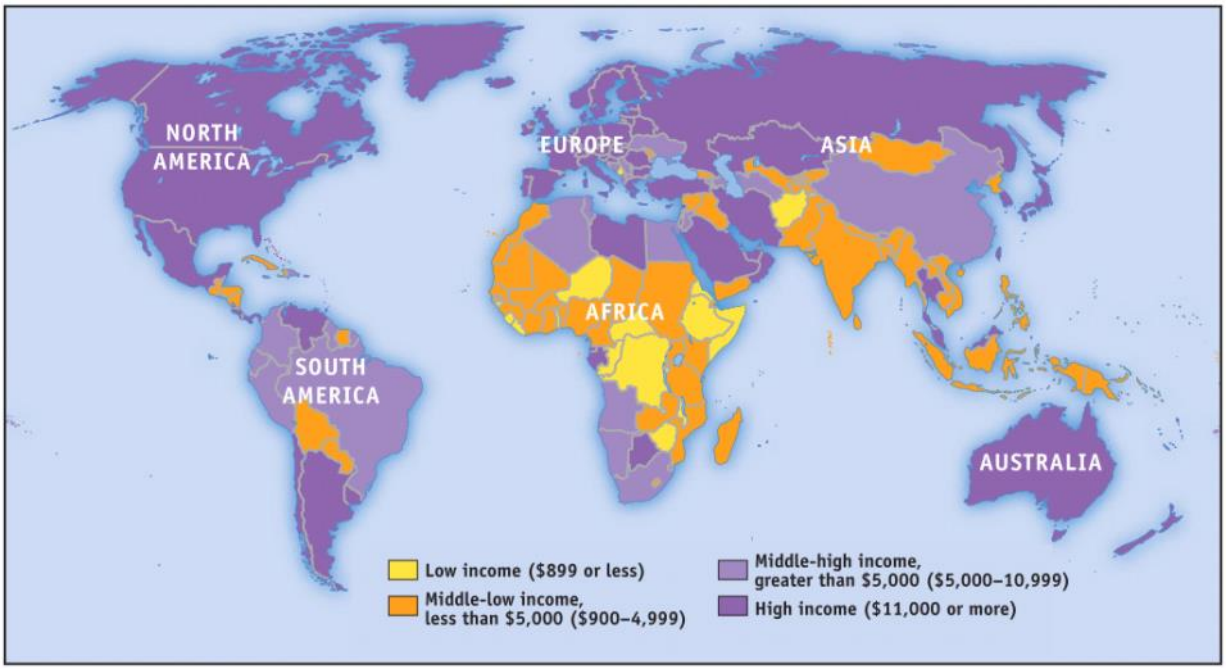
6.1 Economic Growth

Thursday, January 26, 2017 3:23 PM

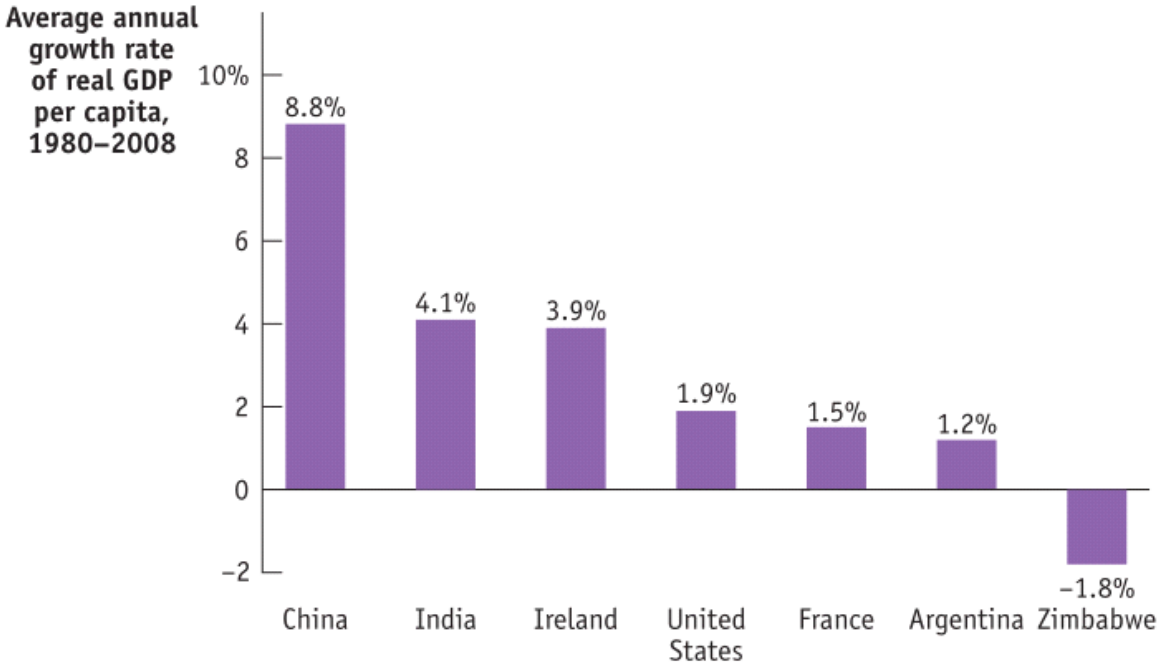
Real GDP Per Capita



- Key statistic used to measure **economic growth** and **standard** of **living real GDP per capita**
    - Real GDP divided by the population
    - Not a policy goal itself, but a **useful summary** that measures a nation's **economic progress**
- In 2008, the median household income in the United States was ~$50,000
- In 1908, it was about 15% of that, or ~$8,000 in today's dollars
- In many countries today, the standard of living is less than it was in the United States over 100 years ago!
- Why is that?



Long Run Economic Growth



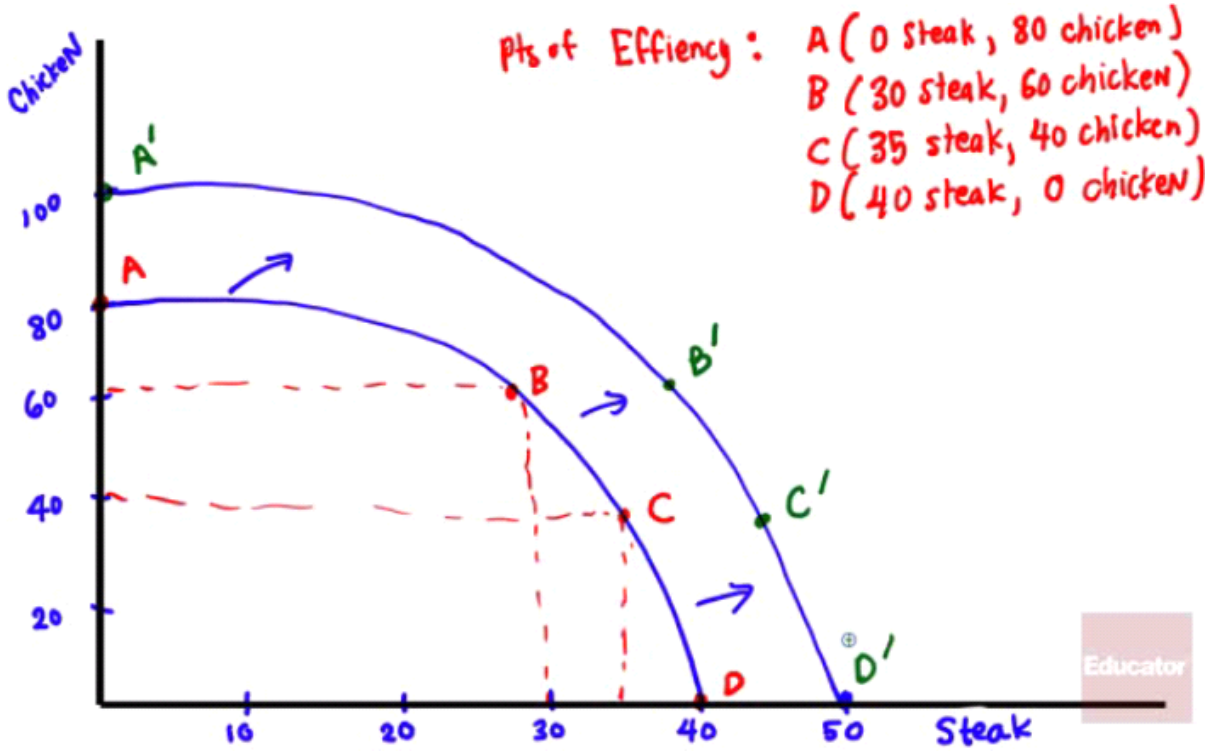
- Gradual progress of the real GDP per capita in the US increased by 1.9% every year
- Sources of Growth
    - Physical Capital
        - **Building** and **machines** today make the average worker much more **productive**
    - Human Capital
        - Improvement in **labor** created by **education** and **knowledge** in the

workforce

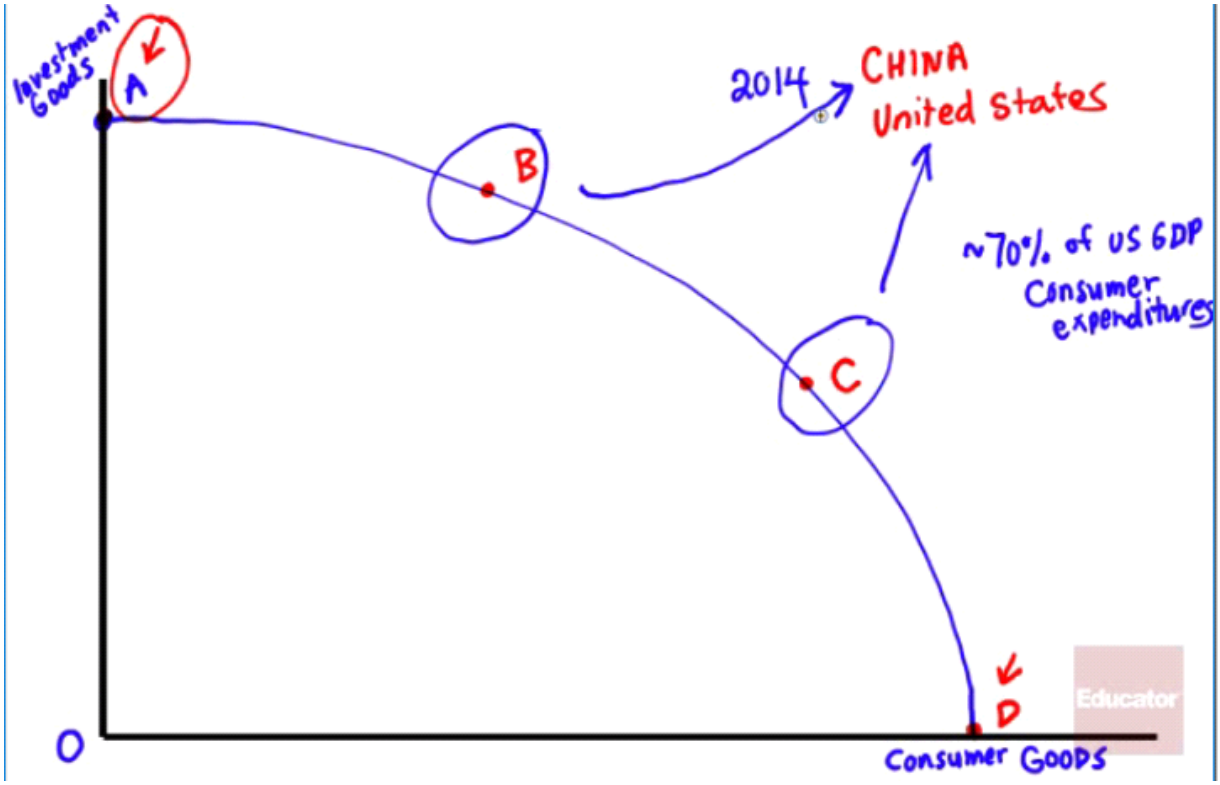
- Technology
  - **Technical means** for the production of goods and services

Economic Growth on Graph

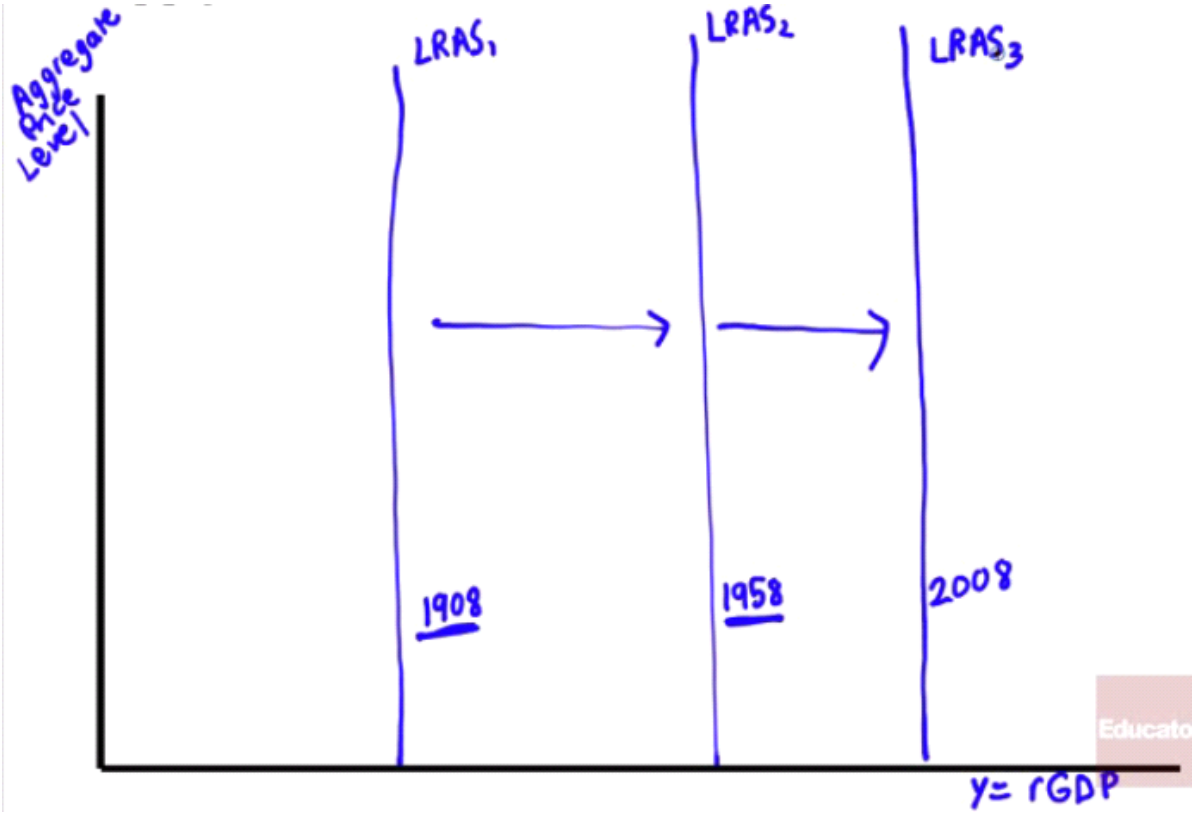
- PPF Graph
  - **Economic growth** results in an **outward shift** of the production possibilities curve.



  - In Parkland, point A (y-axis) represents all investment goods and point D represents all consumer goods (x-axis) with B and C in between

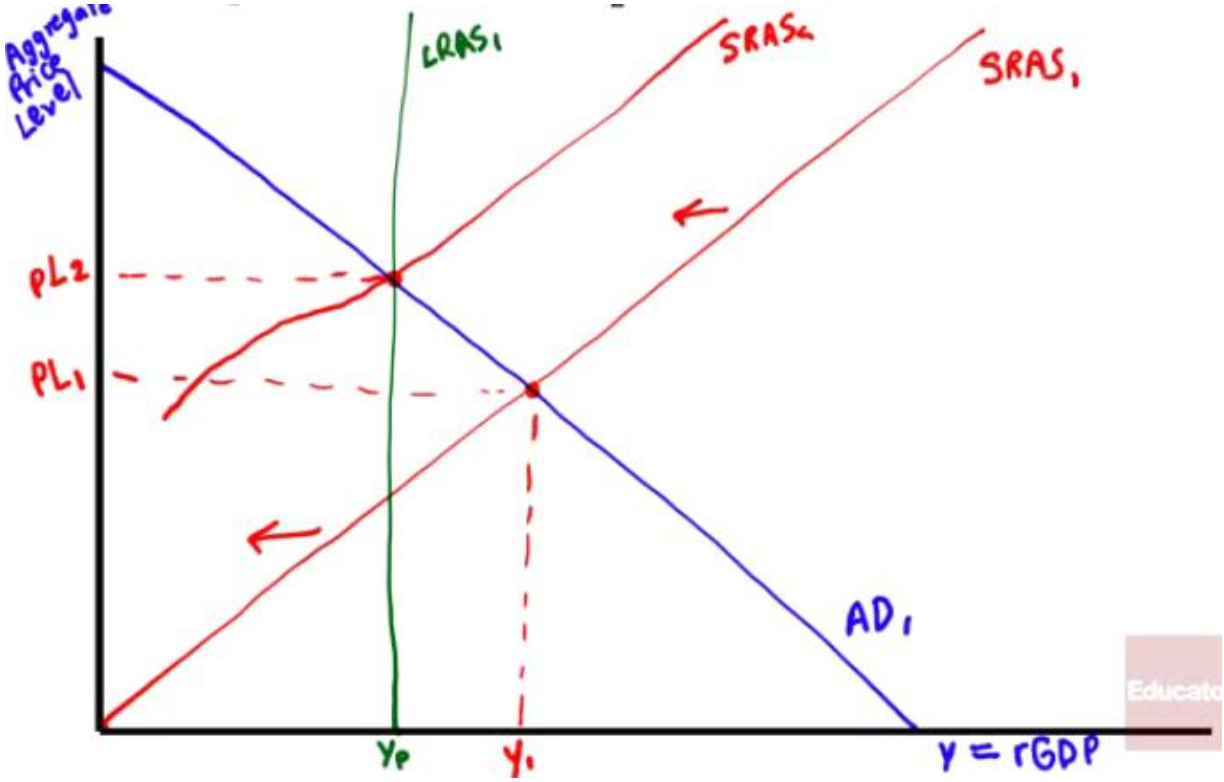


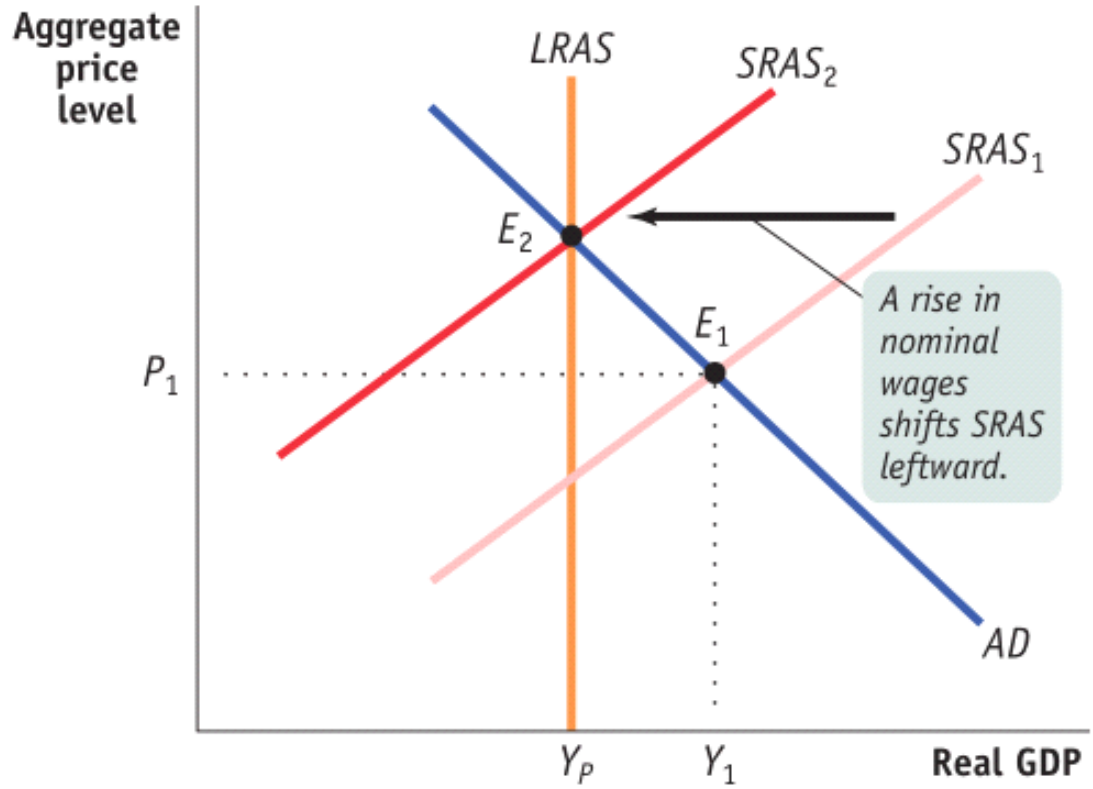
- LRAS Curve
    - The growth in potential output over time can be shown as a **rightward shift** of the long-run aggregate supply curve



- SRAS curve
    - Short-Run to Long-Run: $Y_1 > Y_P$

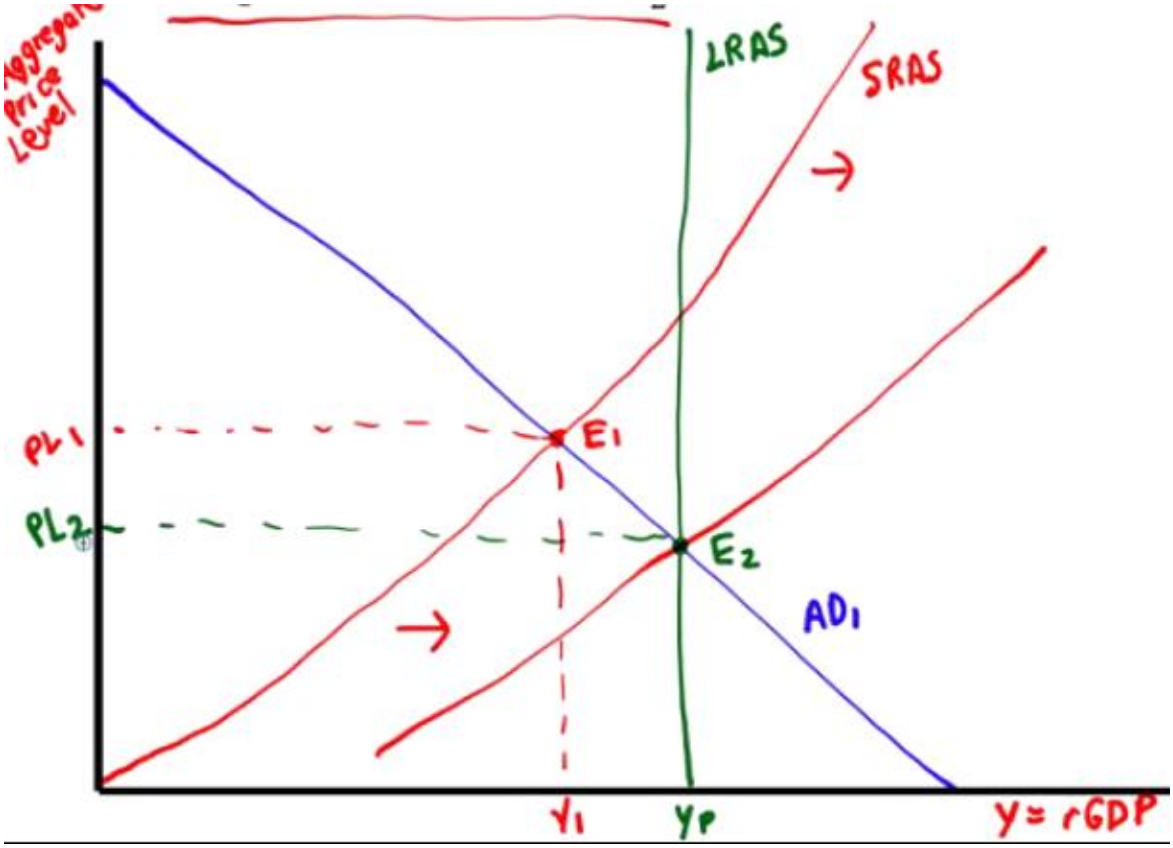
- Initial equilibrium is E_1. Eventually, **low unemployment** will cause **nominal wages** to **rise** and leads to a **leftward** shift of the **SRAS curve**, so the new equilibrium is at E_2

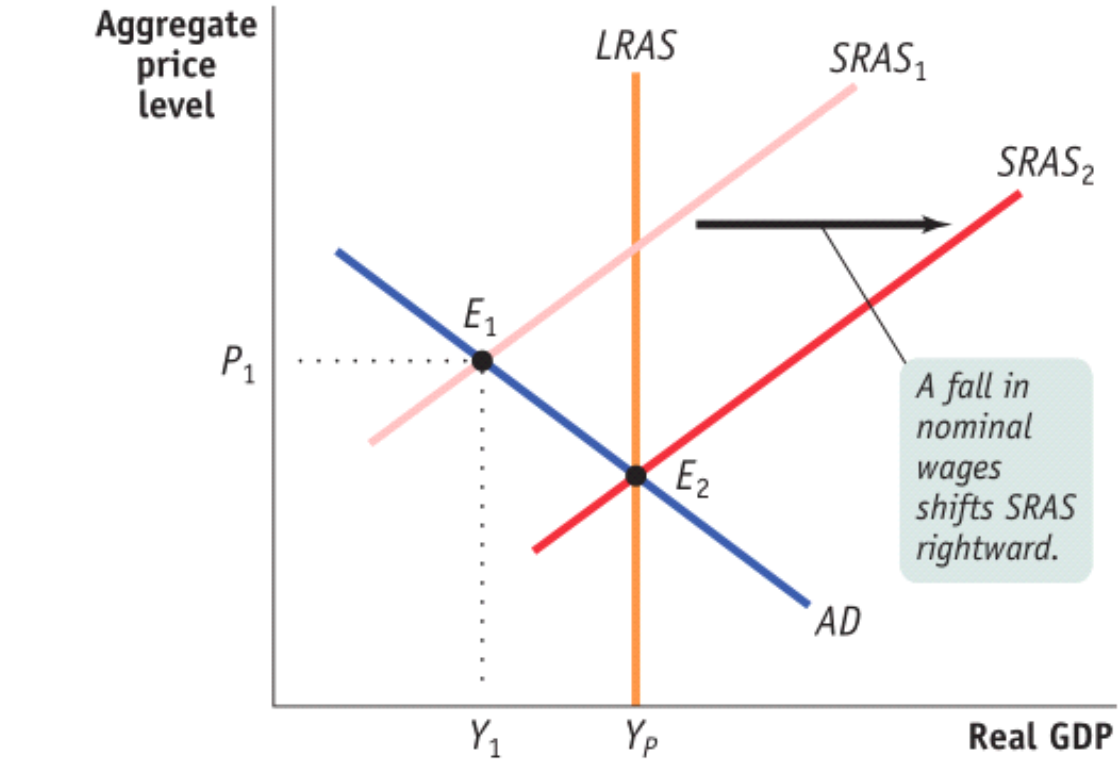




- Short-Run to Long-Run: $Y_1 < Y_P$
- Initial equilibrium is E_1. Eventually, **high unemployment** will cause **nominal wages** to **fall** and leads to a **rightward** shift of the **SRAS curve**, so the new

equilibrium is at E_2





Practice Questions

- Long-run economic growth depends almost entirely on
    a. Technological change

b. Rising productivity

c. Increased labor force participation

d. Rising real GDP per capita

e. Population growth

Answer: b

- In the AD-AS model, long-run economic growth is shown by a

a. Leftward shift of the AD curve

b. Rightward shift of the AD curve

c. Rightward shift of the LRAS curve

d. Rightward shift of the SRAS curve

e. Leftward shift of the SRAS curve

Answer: c

- Which of the following is listed among the key sources of growth in potential output

a. Expansionary fiscal policy

b. Expansionary monetary policy

c. A rightward shift of the short-run aggregate supply curve

d. Investment in human capital

e. All of the above

Answer: d

6.2 Balance of Payments

Thursday, January 26, 2017 9:10 PM

Current Account

- Balance of payments on **goods** and **services** plus **net international transfer payments** and **factor income**
- **Sales and purchases of goods and services**
  - Payments from foreigners: $2,000,000
  - Payments to foreigners: $2,500,000
  - Net: -$500,000
- **Factor Income**
  - Payments from foreigners: $800,000
  - Payments to foreigners: $600,000
  - Net: $200,000
- **International Transfers**
  - funds sent by residents of one country to residents of another
  - Net: -$100,000
- **Current Account (CA) = Net foreign sales of goods and services + net factor income + net international transfer** = -500,000 + 200,000 - 100,000 = -400,000
- Current account deficit: CA < 0
- Current account surplus: CA > 0
- Another Example

Current account	Billions of dollars
Exports of goods and services	+1,754
Imports of goods and services	–2,215
Net interest income	+167
Net transfers	–142
Current account balance	–436

Financial Account

- The difference between a country's **sale of assets to foreigners** and **purchases of assets from foreigners** during a given period
- **Official asset sales and purchases**
    - Payment from foreigners: $500,000
    - Payment to foreigners: $600,000
    - Net -$100,000
- **Private sale and purchases of assets**
    - Payment from foreigners: $600,000
    - Payment to foreigners: $100,000
    - Net: $500,000
- Financial Account
    - FA = -$100,000 + $500,000 = $400,000
- Another Example

Capital and financial account

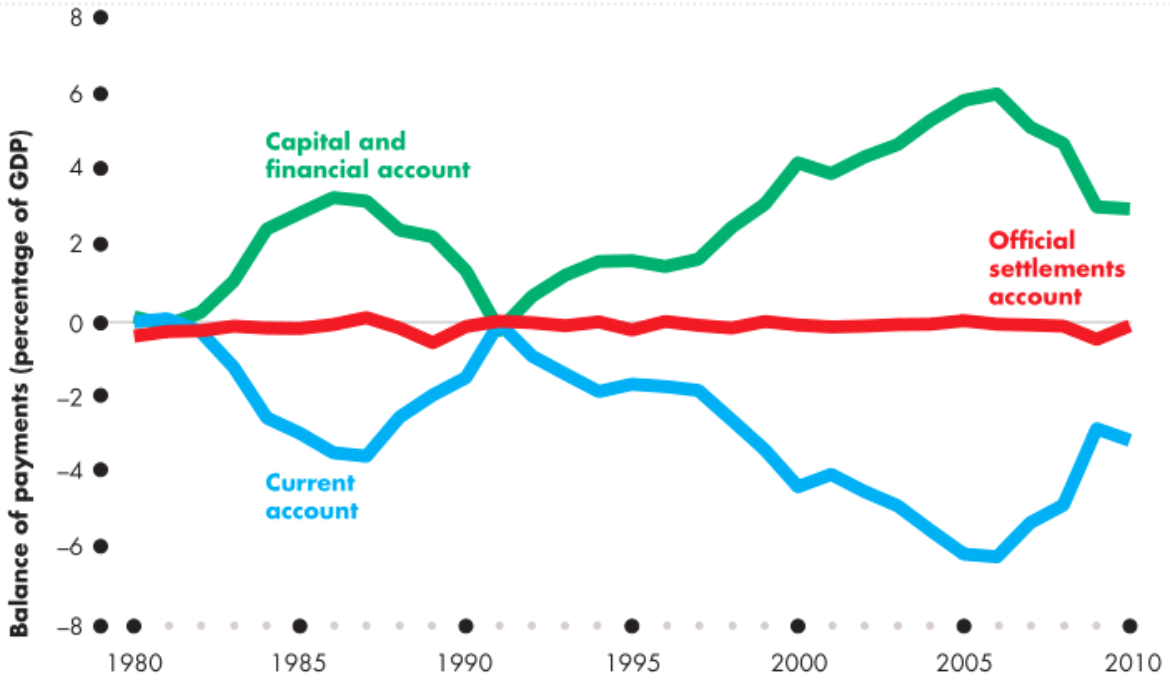
Foreign investment in the United States	+1,408
U.S. investment abroad	–1,200
Statistical discrepancy	231
Capital and financial account balance	+439

Balance of Payments Account

- Summary of a country's transactions with another country

The U.S. Balance of Payments in 2008 (billions of dollars)

		Payments from foreigners	Payments to foreigners	Net
1	Sales and purchases of goods and services	$1,827	$2,523	–$696
2	Factor income	765	646	119
3	Transfers	—	—	–128
	Current account (1 + 2 + 3)			–705
4	Official asset sales and purchases	487	530	–43
5	Private sales and purchases of assets	47	–534	581
	Financial account (4 + 5)			538
	Total	—	—	–167

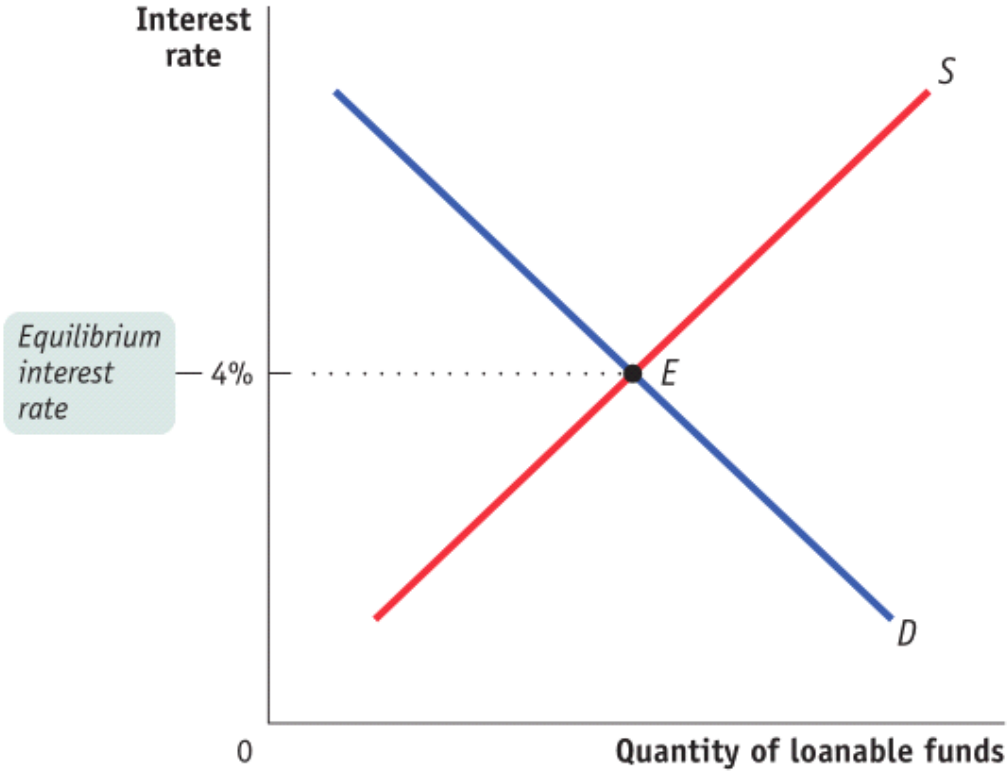


- **Current Account (CA) + Financial Account (FA) = 0**
- Or, **CA = -FA**
- Payment to the US for goods and services, factor income, and transfers + Payments to the United States for assets = - (Payments to the rest of the world for goods and services, factor income, and transfers + Payments to the rest of the world for assets)
- A country's financial account measures its **net sales of assets**, such as currencies, securities and factories, **to foreigners**
    - These assets are **exchanged** for **financial capital**

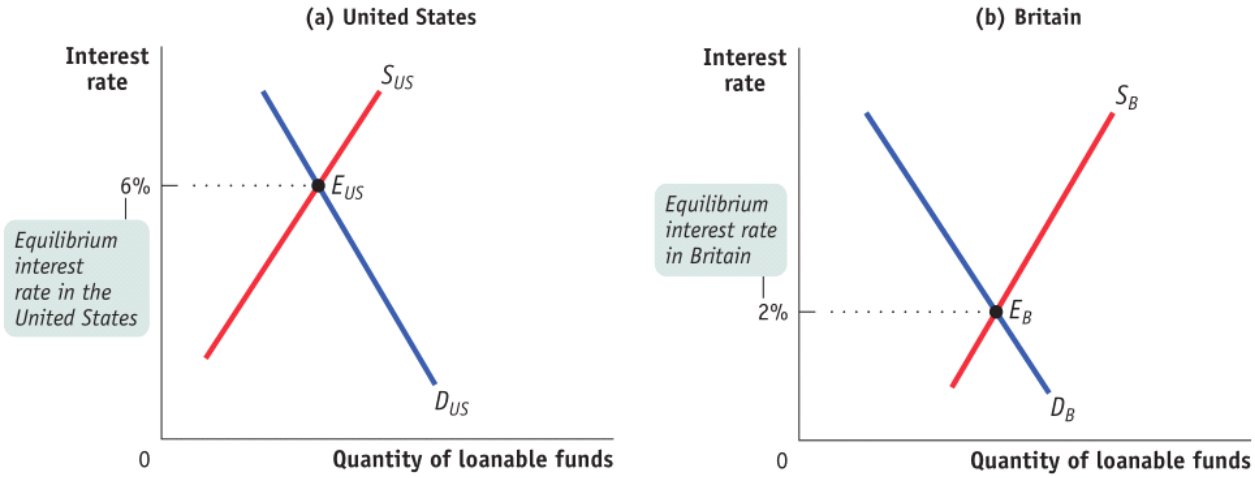
- Measure of **capital inflows** in the form of **foreign saving** that become available to finance **domoestic investment** spending

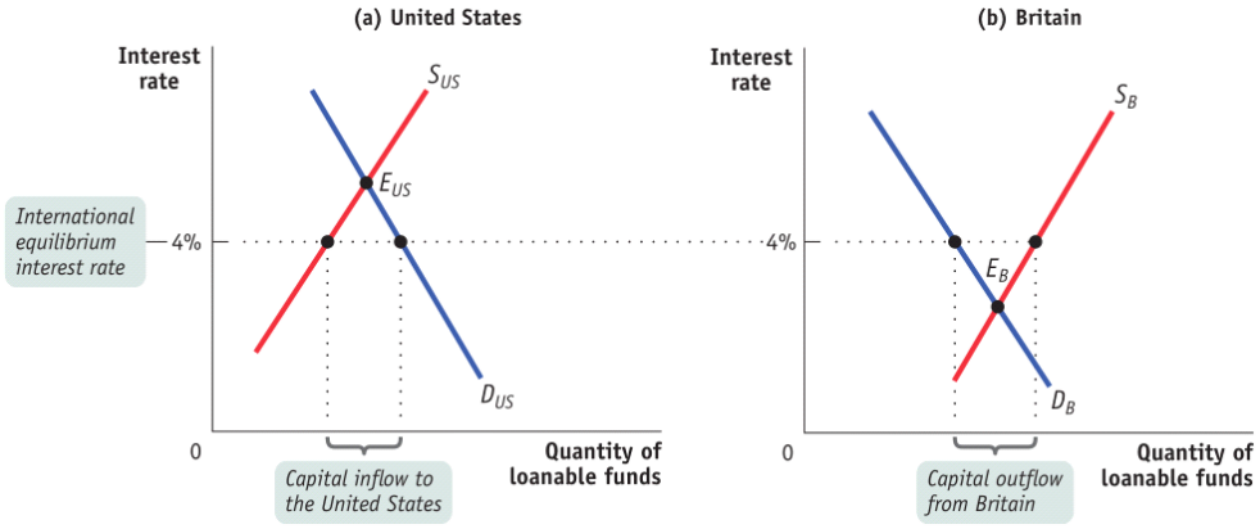
Financial Account and Loanable Supplies

- Foreign Direct Investment
  - Assume **all flows come** in the form of **loans**
  - Purchases of stock in foreign companies and real estate as well as foreign direct investment, in which companies build factories or acquire other assets **directly**
- Exchange Rates
  - We'll **ignore** the effects of **expected changes** in the **exchange rate** for now
- Assume that the equilibrium interest rate in The Loanable Funds Model is 4%



- Assume that the equilibrium interest rate in the US is 6% and that in Britain it is 2%. What will happen?
    - Capital **inflow** to the United States and Capital **outflow** from Britain
    - Investors **prefer higher real interest rates** to lower real interest rates





GDP, GNP, and the Current Account

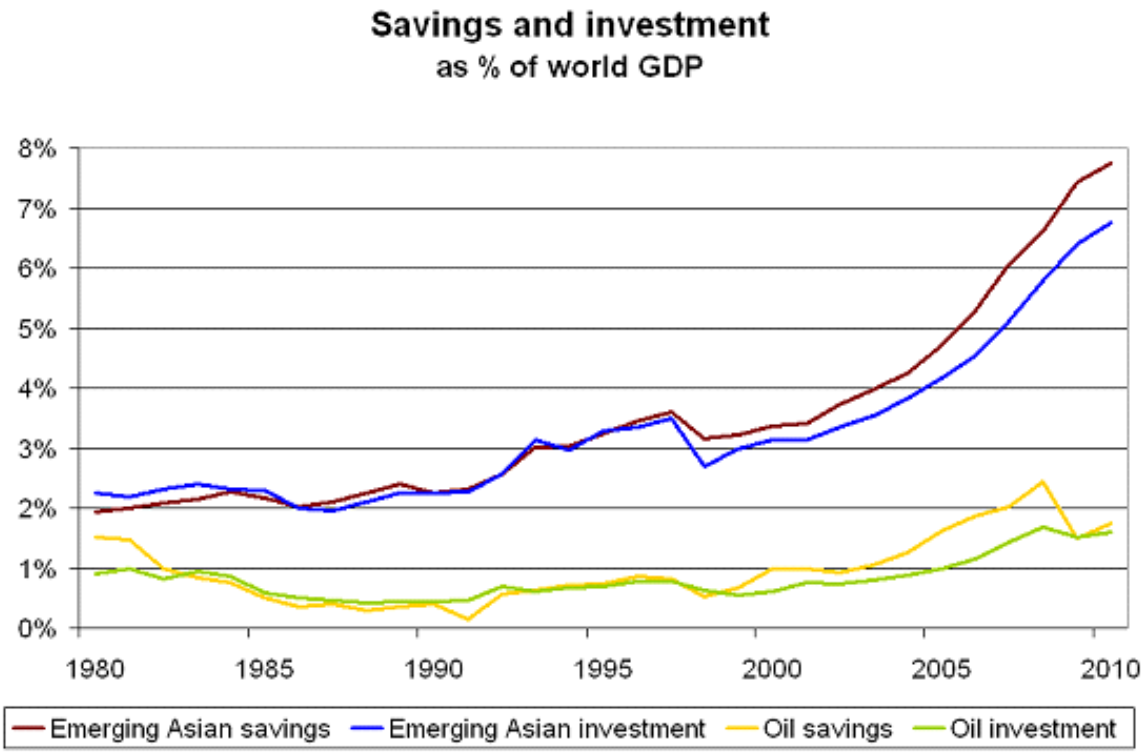
- The basic equation for national income accounting
  - **Y = C + I + G + NX**
  - **Y = C + I + G + X - IM**
  - (NX = X - IM)
- Why doesn't the national income equation use the current account as a whole?
  - GDP it the value of goods and service produced **in a country**
  - It does **not include international factor income** and **international transfers**
- **GNP**, or Gross National Product, does **include international factor income**
- Why do we use GDP and not GNP?
  - The intent was to **track production** not income
  - Data on **international factor income** and **transfer payments** generally considered **unreliable**

Global Saving Glut

- In the early 21st century, the **United States** entered into a **massive current account deficit**
  - The US **imports more than** it **exports** in a given year
  - US takes in a lot of **capital inflow** form the rest of the world, most notably China
- How did this happen?
  - Former Fed Chairman Ben Bernanke in 2005 (a Fed Governor at the time) said

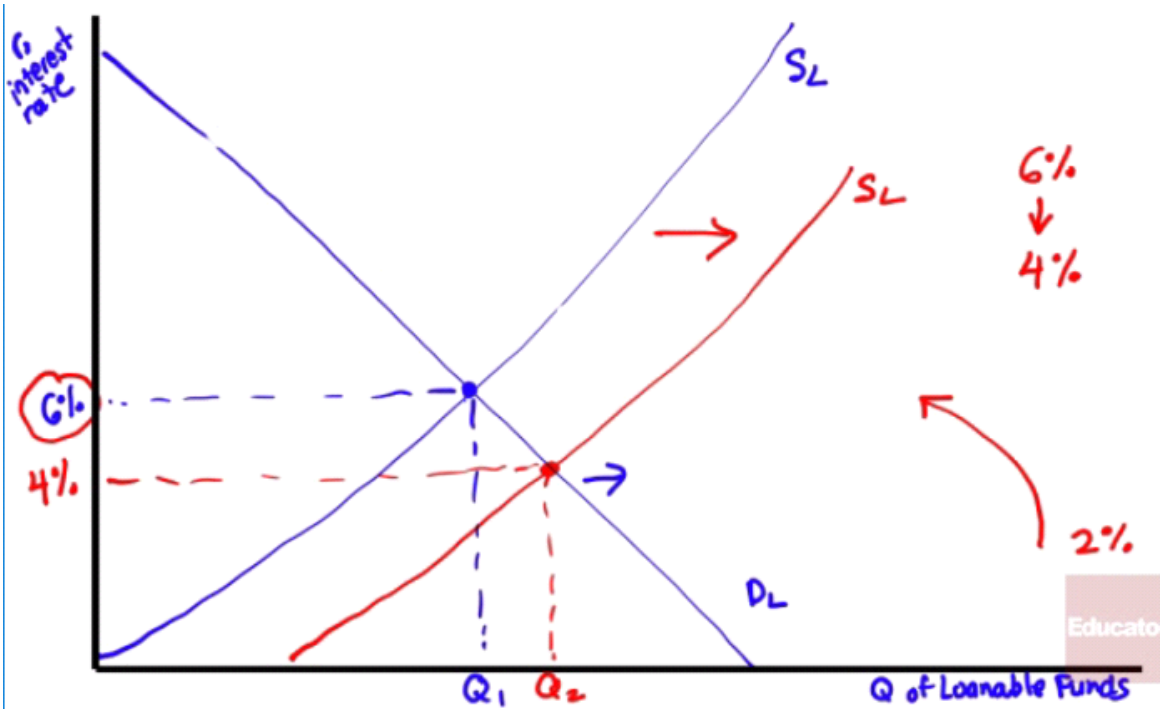
that this "global saving glut" led to **excess investment spending** in the US

- Because of the **financial crises** in the late 20th century, other countries found the US as an **attractive destination despite low interest rates**



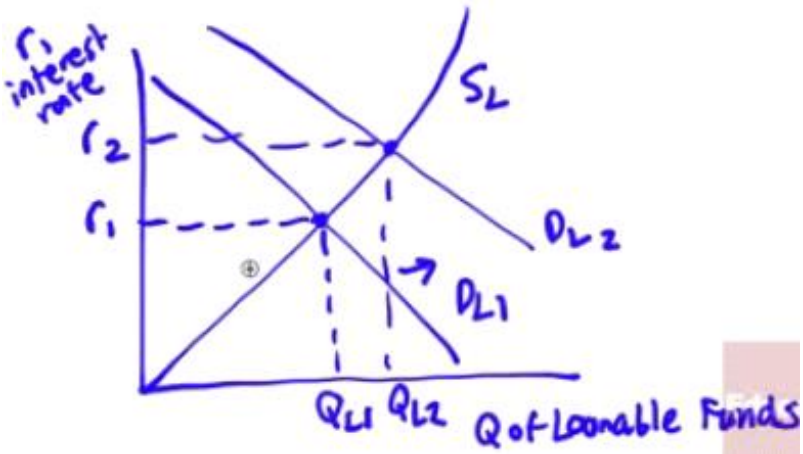
Practice Questions

- On a Loanable Funds graph, show what would happen if there are capital inflows to a country with a 6% interest rate? When supply increased, what happened to the interest rate?



- Which of the following will increase the demand for loanable fund in a country
  a. Government budget surplus
  b. Decreased private saving rate
  c. A recession
  d. Decreased investment opportunities
  e. Economic growth

  Answer: e



- Suppose China decides to start a huge program of infrastructure spending, which it will finance by borrowing. How will this program affect the US Balance of Payments
  a. CA increases, FA increases
  b. CA decreases, FA decreases

c. CA decreases, FA increases

d. CA increases, FA decreases

e. None of the above

Answer: d

CA = - FA

7.1 Foreign Exchange Market

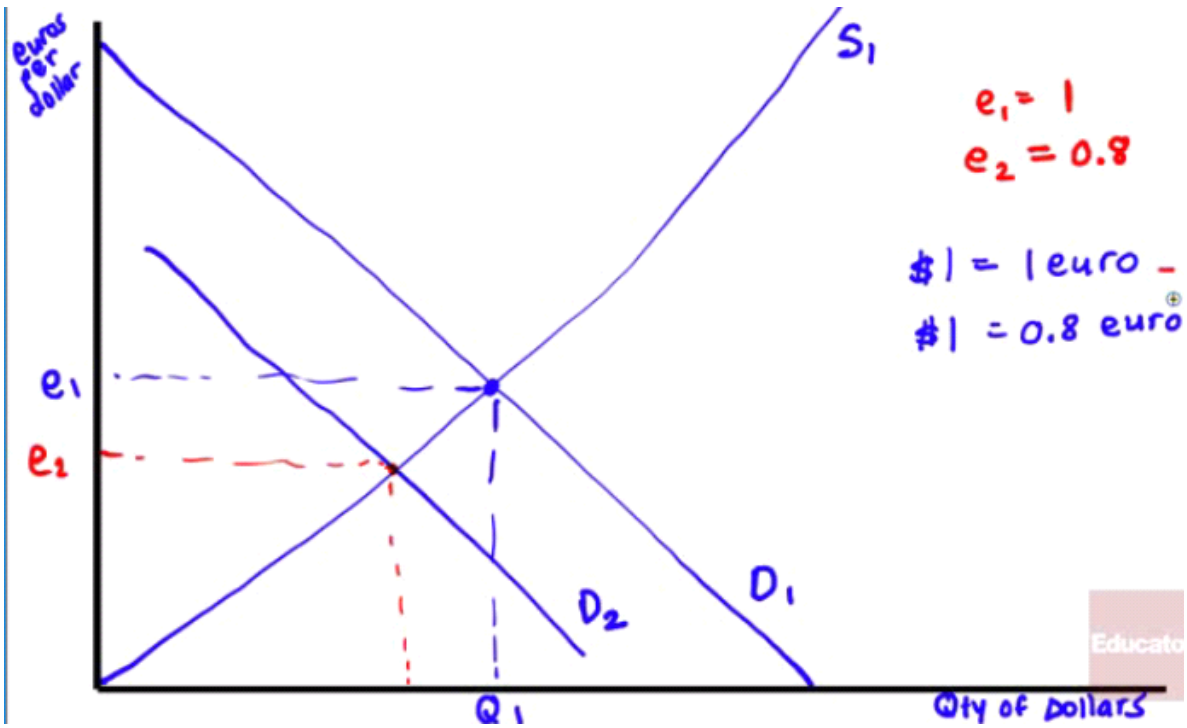
Thursday, January 26, 2017 9:45 PM

Understanding Exchange Rates

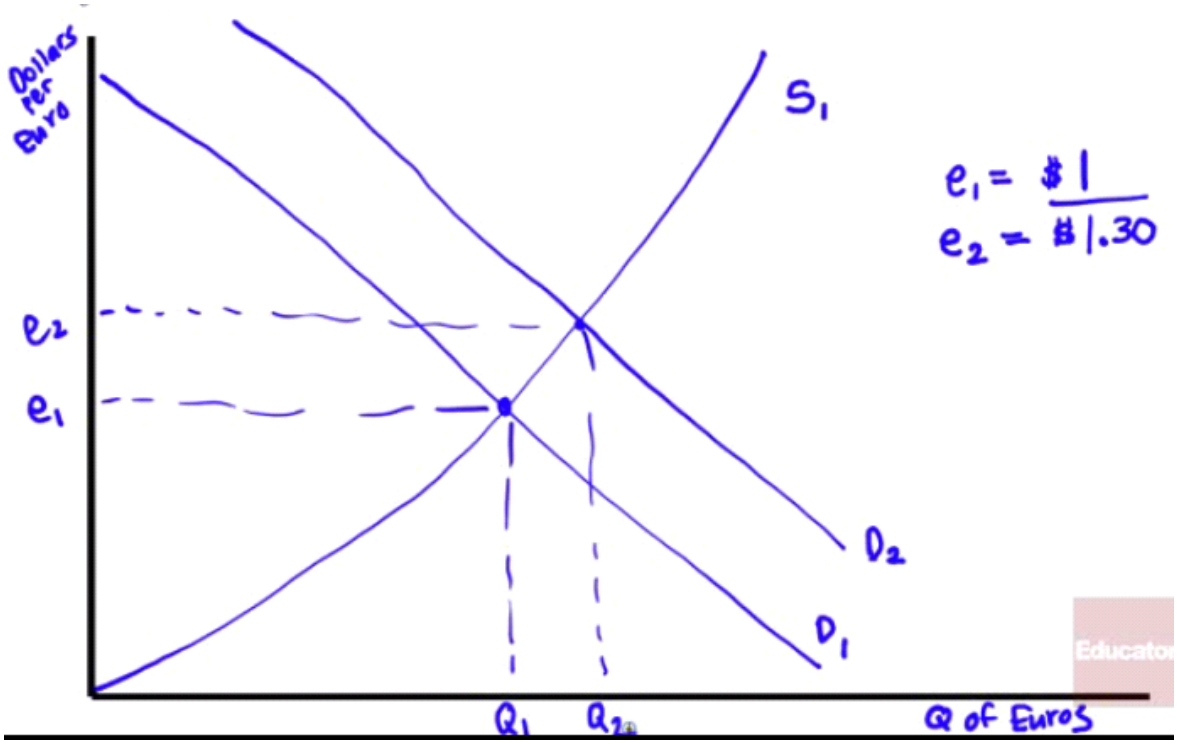
- In general, **stuff produced** in a country will be paid for that **country's currency**
  - US pruducts will be paid in dollars
  - Japanese products will be paid in yen
  - European products will be paid in euros
  - British products will be paid in pounds
- Foreign exchange markets
  - **market** in which **currencies** are **exchanged** for each other in which exchange rates are determined

The Foreign Exchange Market

- When the Euro was first introduced, 1 Dollar = ~1 Euro. What has happened since?
- Show using quantity of US Dollars on the x-axis, and euros per dollar on the y-axis
  - Dollar has **depreciated**
  - **Bad** for **US travelers** to Europe
  - **Good** for **US business**

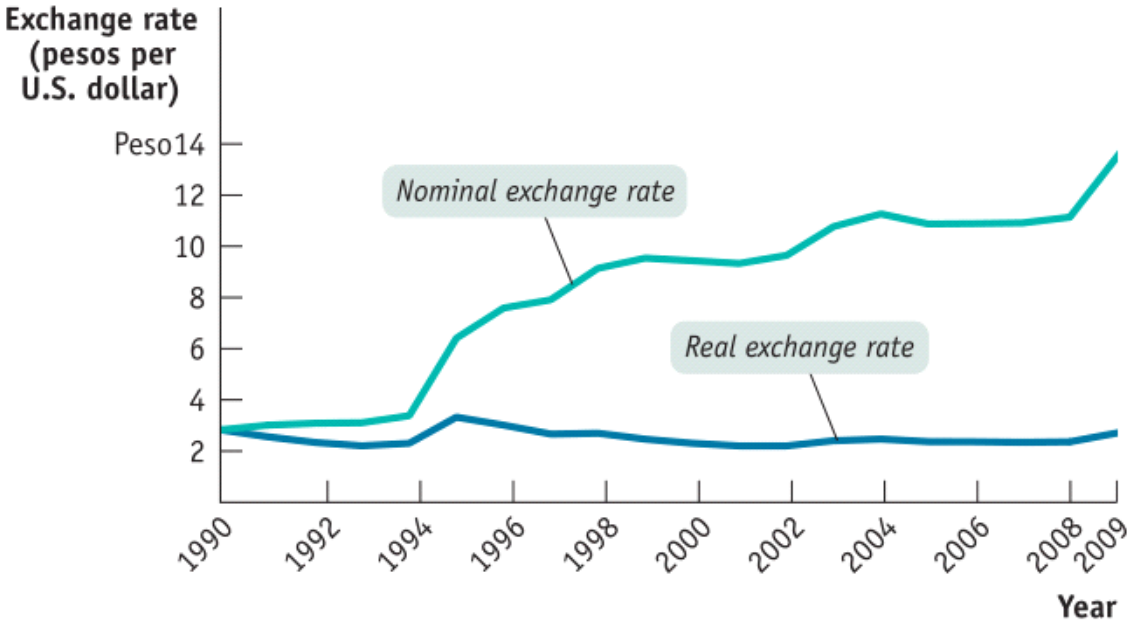


- When the Euro was first introduced, 1 Euro = ~1 Dollar. What has happened since? Show using quantity of Euros on the x-axis, and Dollars per Euro on the y-axis
    - Euro has **appreciated**
    - **Europeans travelers** to the US can **purchase more** stuff
    - **European business** now will **export less**, because their products are **more expensive**, relative to US business



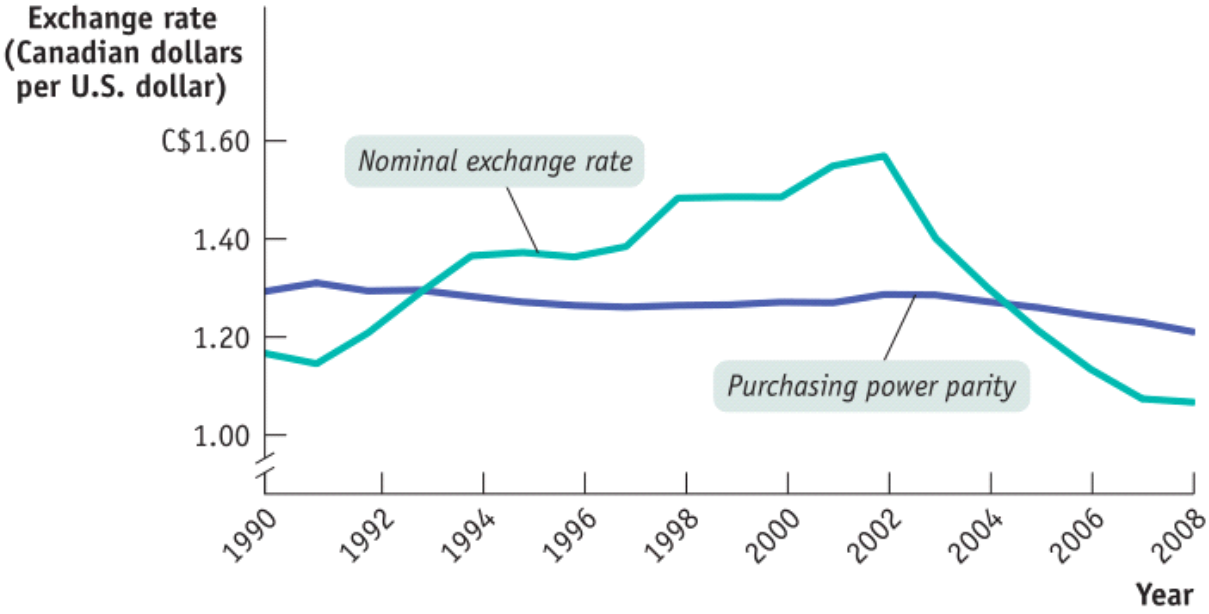
Inflation and Real Exchange Rates

- In 1990, 1 US Dollar = 2.8 Mexican Pesos
- In 2010, 1 US Dollar = 12.8 Mexican Pesos
- Why?
- Inflation in Mexico was much higher than US inflation
- **Real exchange rates** take into account the **impact of inflation** in both countries
- $$\text{Real exchange rate} = \text{Mexican pesos per U.S. dollar} \times \frac{P_{US}}{P_{Mex}}$$
- The **current account** responds only to changes in the **real exchange**, not the nominal exchange rate!
- It still makes sense, however, to **hold** onto the **currency with lesser inflation**



Purchasing Power Parity (PPP)

- Useful tool for **analyzing interest rates** is a concept known as **purchasing power parity**
- The purchasing power parity or PPP between two countries' currencies is the **nominal exchange rate** at which a given **baskets of goods and services** would cost the **same amount in each country**
- In theory, you "should" be able to buy $100 worth of stuff in any country
- For example, if 1 pound = 2 dollar, then $100 in the US should buy the same amount of stuff that 50 pounds would get you in the UK
- Over the **long run**, purchasing power parities do a good job of **predicating** the **nominal exchange rates**



Burgernomics

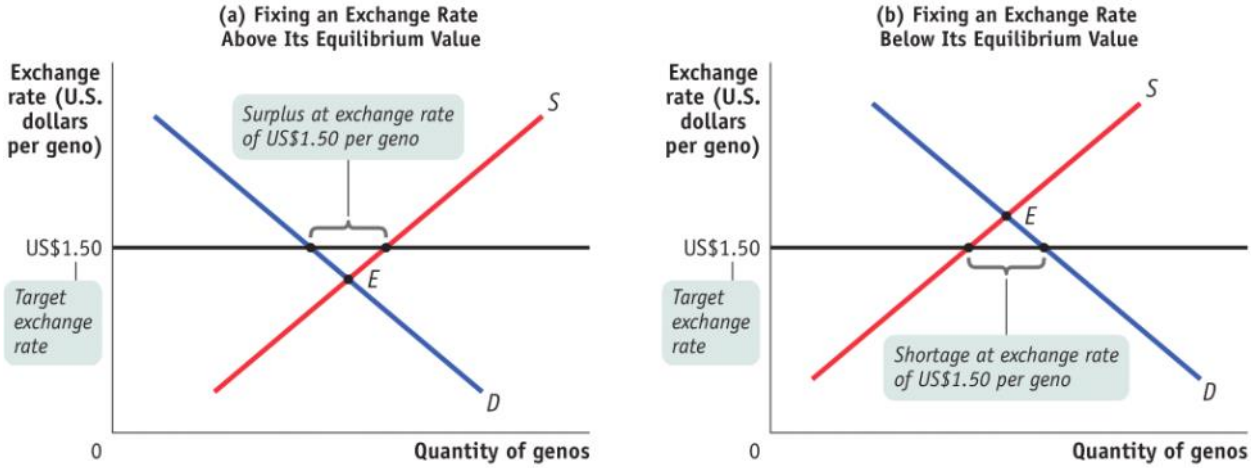
- The Big Mac index was first published in 1986 as an example of PPP, using the **Big Mac** as the **benchmark**
- **Not** the **best measure**, as Argentina is not included because it did not want to be part of the 100+ countries on the list
- In India, the $1.54 Big Mac is a Big Mac made of chicken, so is it really a Big Mac?
- In 2014, a Big Mac in the US sells for $4.62 which is remarkably close to what it costs in the United Kingdom at $4.63
- Overvalued Big Macs: Norway, Sweden, Denmark, Brazil, Switzerland
- Undervalued Big Macs: Chinese yuan, Russia ruble, South African rand, Mexican peso, Indian rupee

Floating vs. Fixed Exchange Rate Regime

- Fixed exchange rate
  - When the government keeps the exchange rate **against** some other currency at or near a **particular target**
  - Hong Kong sets an exchange rate of 7.80 HK Dollars to 1 US Dollars
  - Through **manipulation of supply** and **demand**, countries can
  - If the equilibrium is **lower** than the target rate, the government will **buy** currency to prop it up

- If the equilibrium is **higher** than the target rate, the government will **sell** the currency to keep it from rising

- Floating exchange rate
  - The exchange rate **goes** where the **market takes** it (ie. United States, UK, Canada)

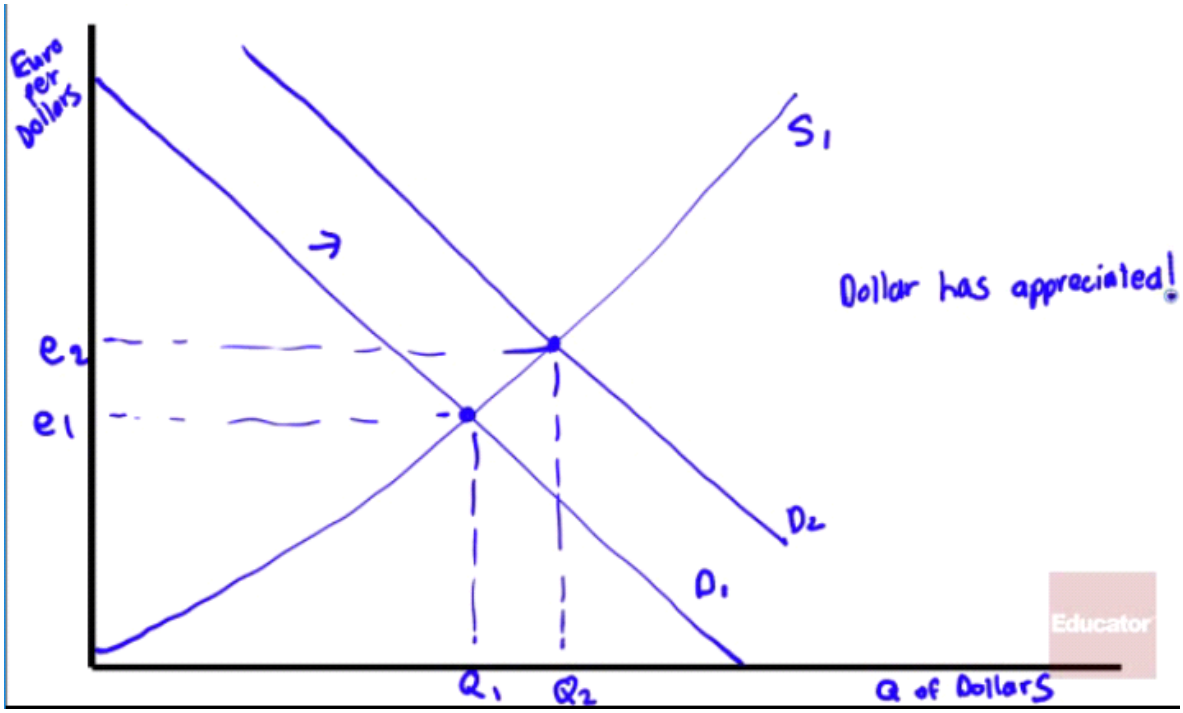


Exchange Rate Dilemma

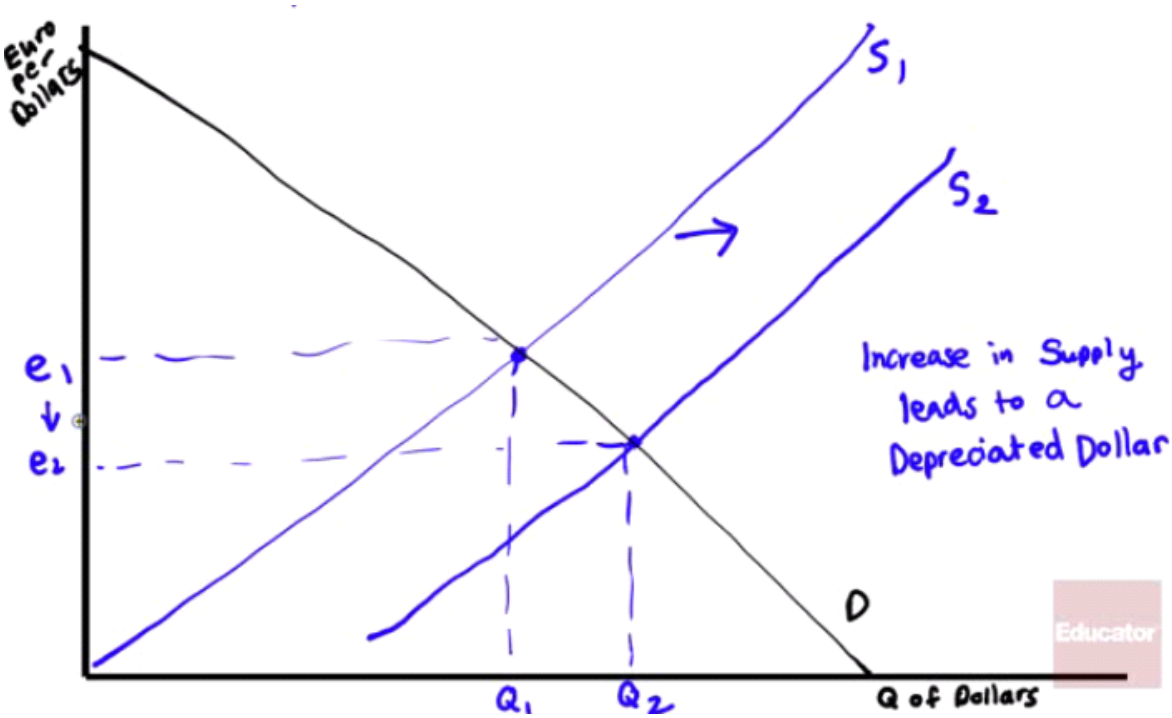
- Fixed rate regimes give **predictability** to **trade partners** as business with the United States operates as such, as do **European countries** adopting the **Euro** (ie. Italy, France, Germany)
- Every choice has a cost!
  - Countries keep large quantities of foreign currency on hand **at low return**
  - **Monetary policy** is diverted to maintaining exchange rates
  - You **give up** use of **monetary policy** (as European countries did in adopting the Euro)

Practice Questions

- On a Foreign Exchange Market Graph, what happens if capital flows from Europe to the United States has increased? Has the dollar appreciated or depreciated?



- On a Foreign Exchange Market Graph, what would happen if there was an increase in US demand for imports from Europe? Has the dollar appreciated or depreciated?



- Which of the following is a benefit of a fixed exchange rate regime?
  a. Certainty about the value of domestic currency
  b. Commitment to inflationary policies
  c. No need for foreign exchange reserves
  d. Allows unrestricted use of monetary policy
  e. All of the above

Answer: a

8.1 Major Graphs Review

Friday, February 3, 2017 9:23 AM

The Scenario

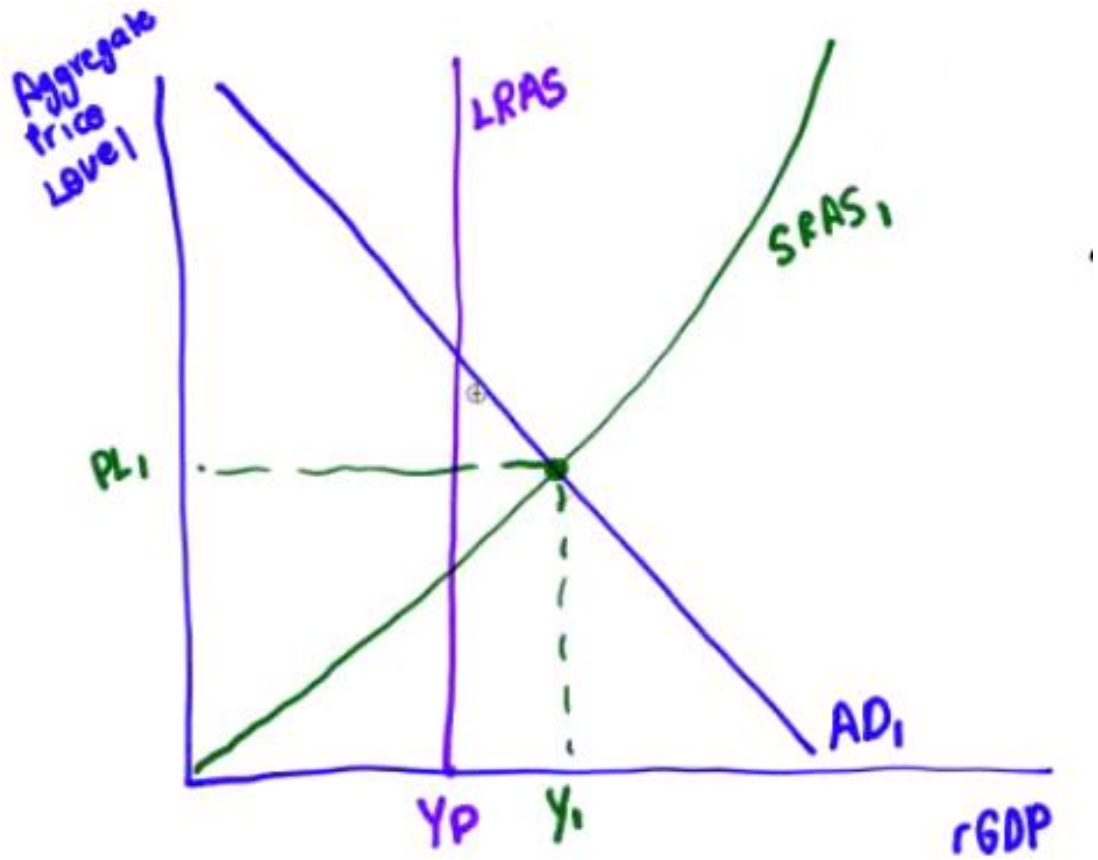
- Assume the US economy is operating at an aggregate output level **above potential output**.
- Draw a graph showing **AD**, **SRAS**, **LRAS**, **equilibrium output** & **aggregate price level**.
- Now assume the Fed uses **contractionary** monetary policy.
- Identify the **open-market operation** the Fed would use and draw a **money market graph** to show the effect of monetary policy on the **nominal interest rate**.
- Show how the Fed's actions will affect equilibrium in the **aggregate demand** and **supply** graph you drew previously and the new **aggregate price level**.
- Draw a graph of the **foreign exchange market** for the US dollar relative to the Euro
- How will the Fed's contractionary monetary policy affect the real **interest rate** in the US?

The Inflationary Gap

- Aggregate output level **above potential** output: **inflationary** gap
- Axes
  - x-axis: Y = **rGDP** (real GDP)
  - y-axis: **Aggregate Price Level**
- Aggregate Demand
  - Consumer Expenditures + Business Investment + Government Expenditures + Net Exports
  - Y = C + I +G + NX
- SRAS
  - Up-ward sloping curve
- Equilibrium output & aggregate price level
  - The intersection of AD and SRAS
- LRAS
  - To the **left** of the equilibrium

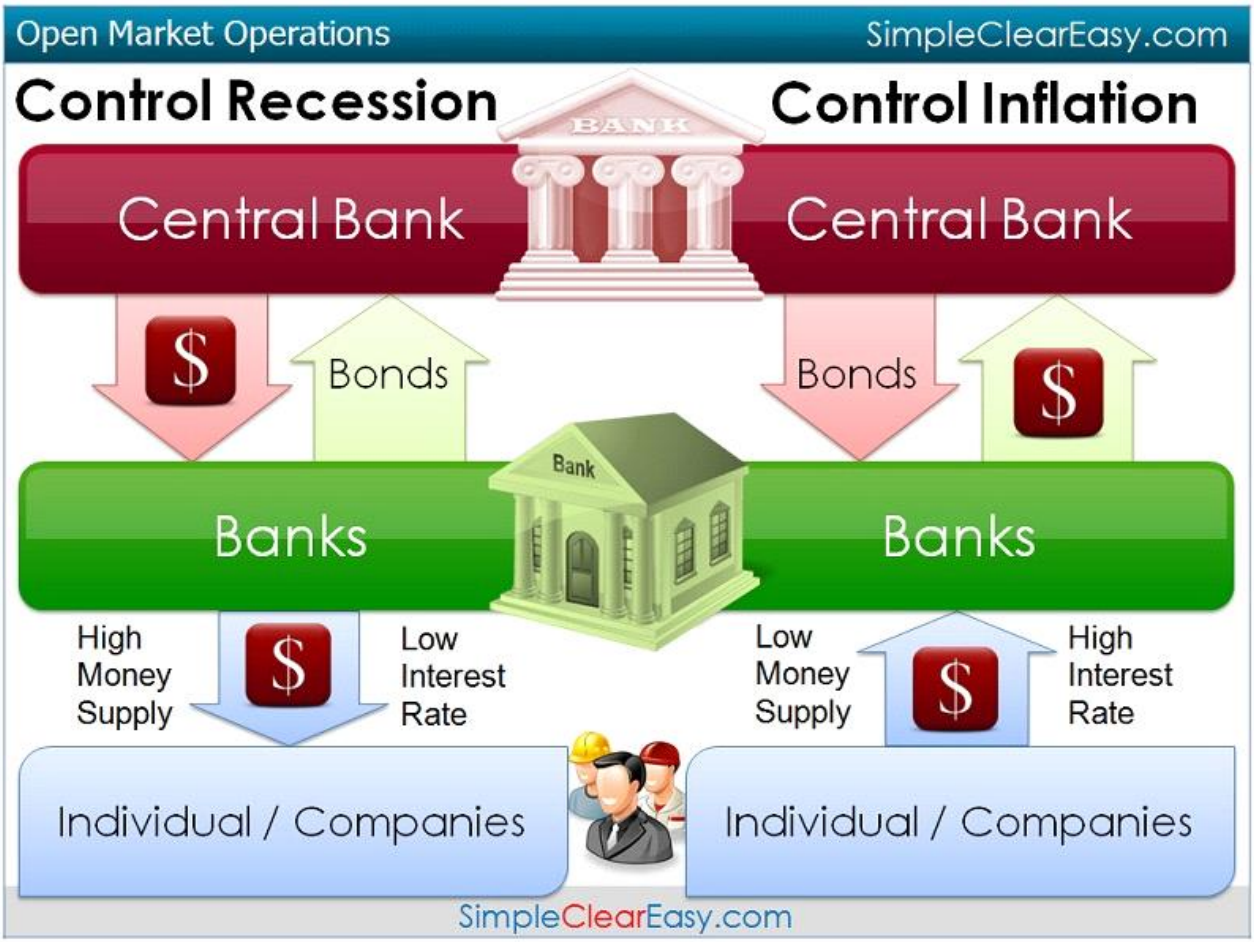
- Aggregate output level is **above** the potential output

- Potential output (Y_p)
  - The intersection of LRAS and x-axis

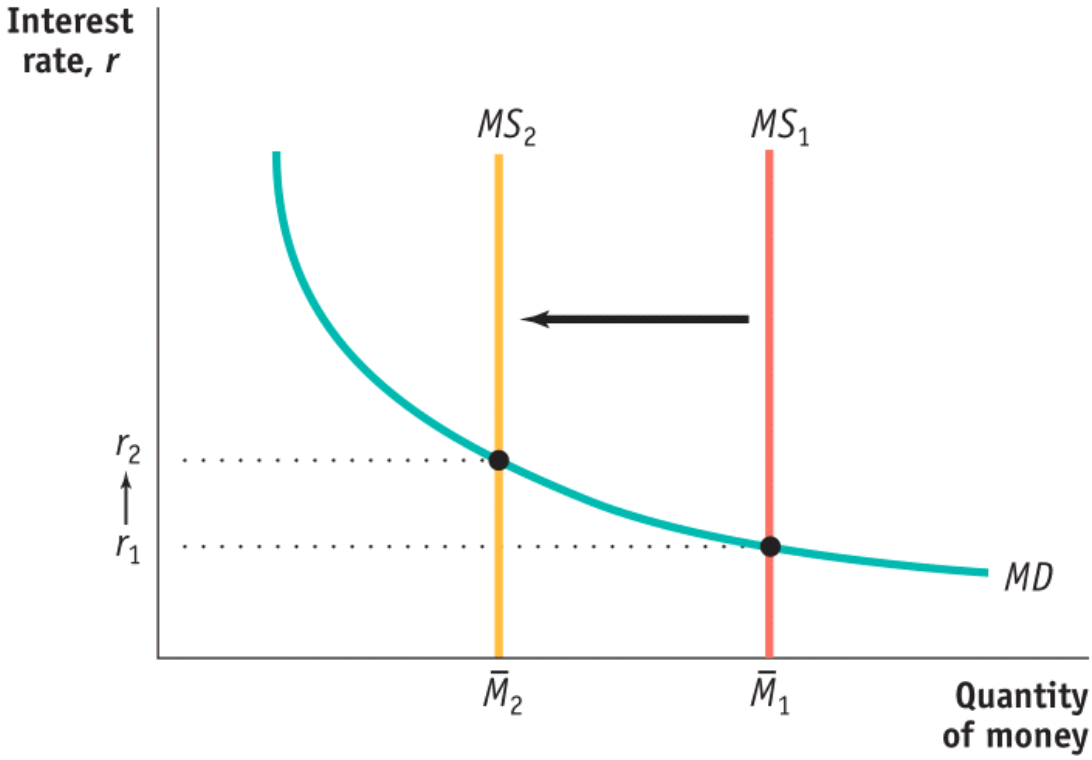


Money Market

Expansionary Monetary Policy	Contractionary Money Policy
• Lower Discount Rate	• Raise Discount Rate
• Lower RRR	• Raise RRR
• Buy Government Securities After Lowering Target Fed Funds Rate (**Open Market Operation**)	• Sell Government Securities After Raising of Target Fed Funds Rate (**Open Market Operation**)

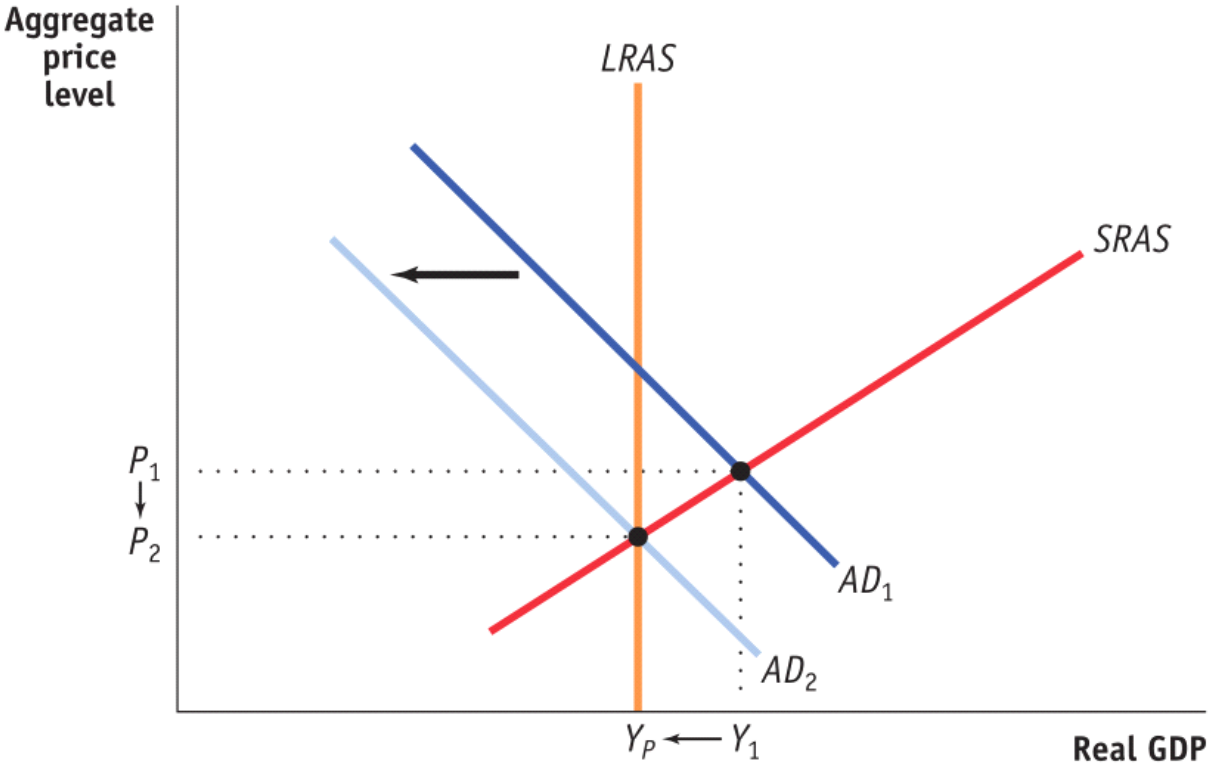


- Axes
  - x-axis: **Quantity of Money**
  - y-axis: **Nominal Interest Rate** (r)
- Money Demand
  - Downward sloping curve
- Money Supply
  - **Straight Vertical Line**, since the Fed control the money supply
  - **Expansionary**: MS **shifts** to the **right**, **lowing** the nominal interest rate
  - **Contractionary**: MS **shifts** to the **left**, **raising** the nominal interest rate



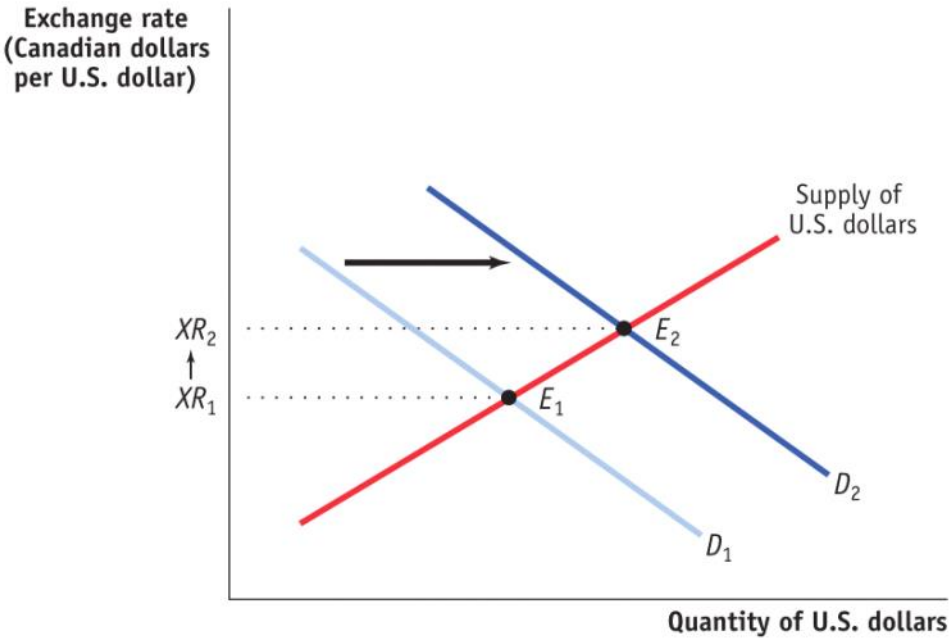
New Equilibrium

- **Higher interest rate = Decreased investment**
- When interest rates go up, both consumption and investment **decrease**.
- Y↓ = C↓ + I↓ + G +NX
- **Aggregate Demand**↓
- Aggregate Price ↓ as a result of **contractionary** monetary policy



Exchange Market

- Axes
  - x-axis: **Quantity of Dollars**
  - y-axis: **Euros per Dollar**
- No effect in the long-run.
- Since **money** is **neutral**, monetary has a **short-run** but not a long-run impact
- Price level↓ Demand for US dollar↑
- Dollar has **appreciated**, because **demand** for US dollars has **increased**



Major Factors that Shift Curves in Each Model

Aggregate Demand and Aggregate Supply		
Aggregate Demand Curve	**Short-run Aggregate Supply Curve**	**Long-run Aggregate Supply Curve**
Expectations	Commodity prices	Productivity
Wealth	Nominal wages	Physical capital
Size of existing capital stock	Productivity	Human capital
Fiscal and monetary policy	Business taxes	Technology
Net Exports		Quantity of resources
Interest rates		
Investment spending		

Supply and Demand	
Demand Curve	**Supply Curve**
Income	Input prices
Prices of substitutes and complements	Prices of substitutes and complements in production
Tastes	Technology
Consumer expectations	Producer expectations
Number of consumers	Number of producers

Loanable Funds Market	
Demand Curve	**Supply Curve**
Investment opportunities	Private saving behavior
Government borrowing	Capital inflows

Money Market	
Demand Curve	**Supply Curve**
Aggregate price level	Set by the Federal Reserve
Real GDP	
Technology (related to money market)	
Institutions (related to money market)	
Foreign Exchange Market	
Demand	**Supply**
Foreigners' purchases of domestic	Domestic residents' purchases of foreign
Goods	Goods
Services	Services
Assets	Assets

Sample Questions

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Question 1

- **Labor-hours is the input NOT the output**

Labor-hours	Fish	Wheat
Country A	10	20
Country B	20	60

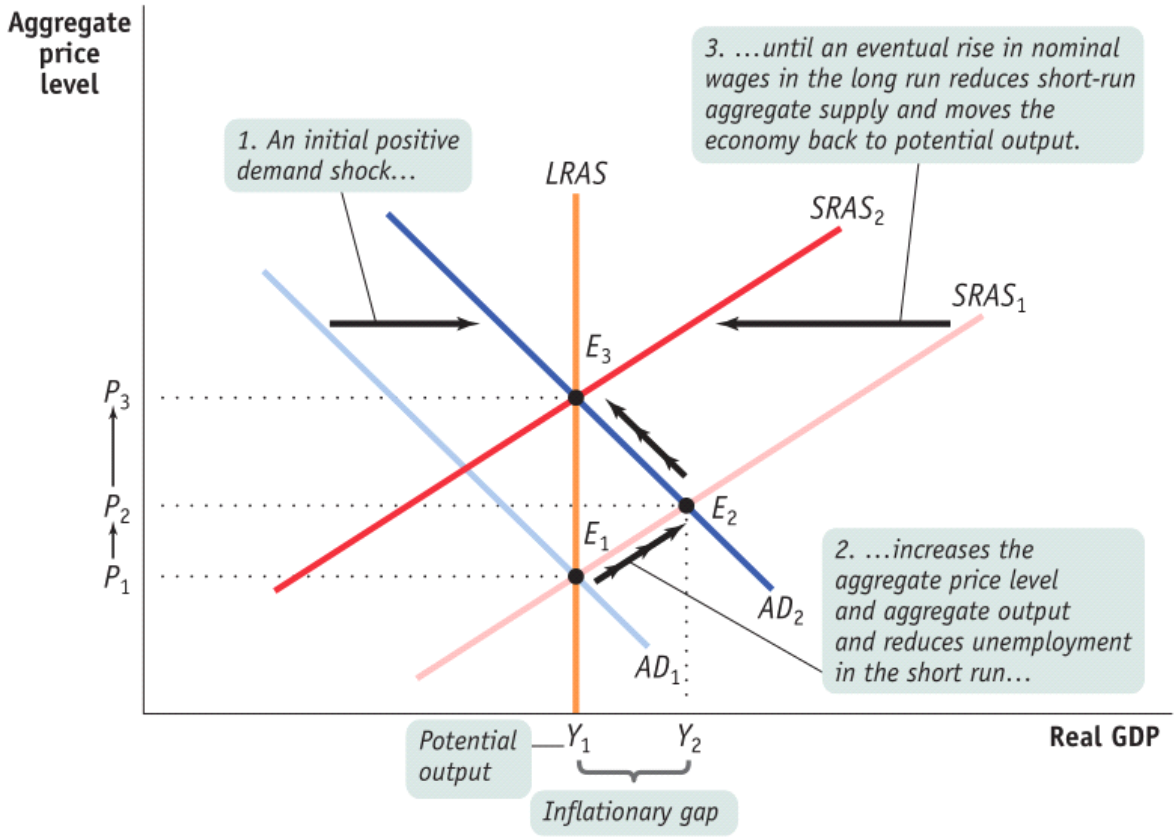
- Convert to the **quantity of outputs**, assuming the labor-hours is 60

Quantity	Fish	Wheat
Country A	6	3
Country B	3	1

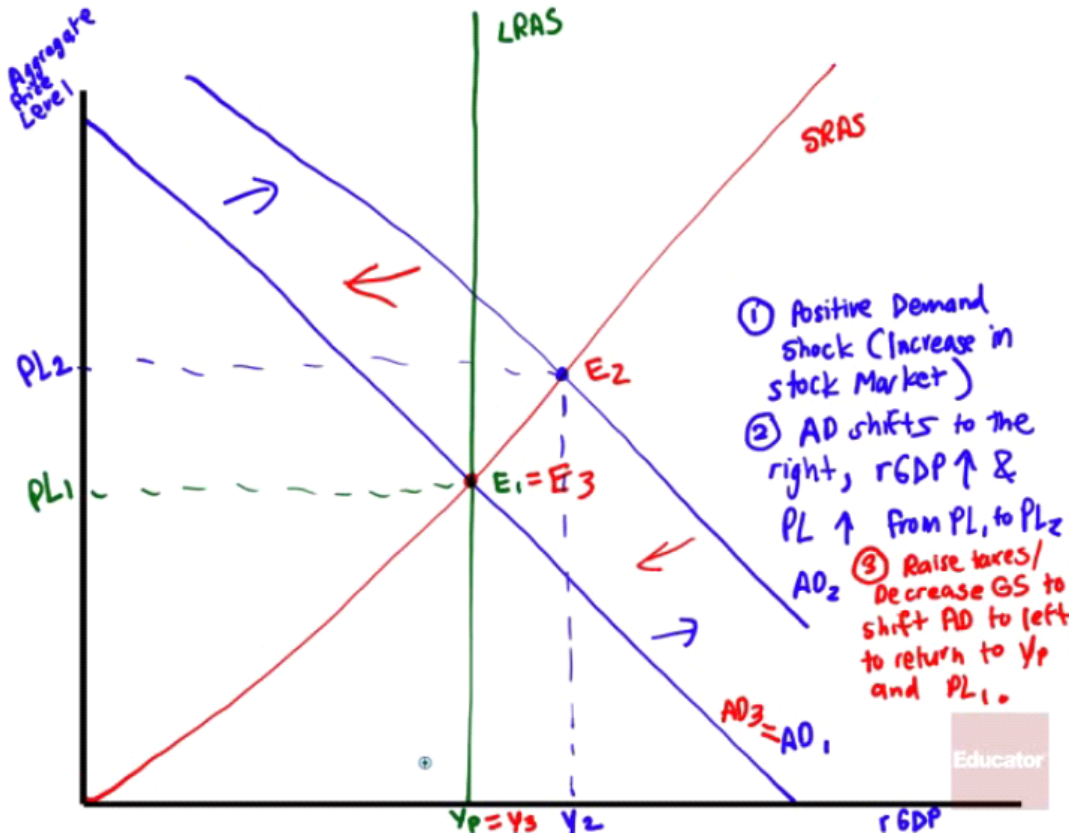
- Country A has CA in wheat
- Country B has CA in fish

Question 3

- In a **inflationary** gap, the following occurs
    - An initial **positive demand shock** (**real estate market booms**)
    - **AD** shifts to the **right**, and so the aggregate price level and aggregate output increase, which leads to **higher inflation** in the short-run and **reduces unemployment**
    - Eventually, an **increase** in nominal **wages** in the long run **decreases** the **SRAS** and **moves** the economy **back to potential output**

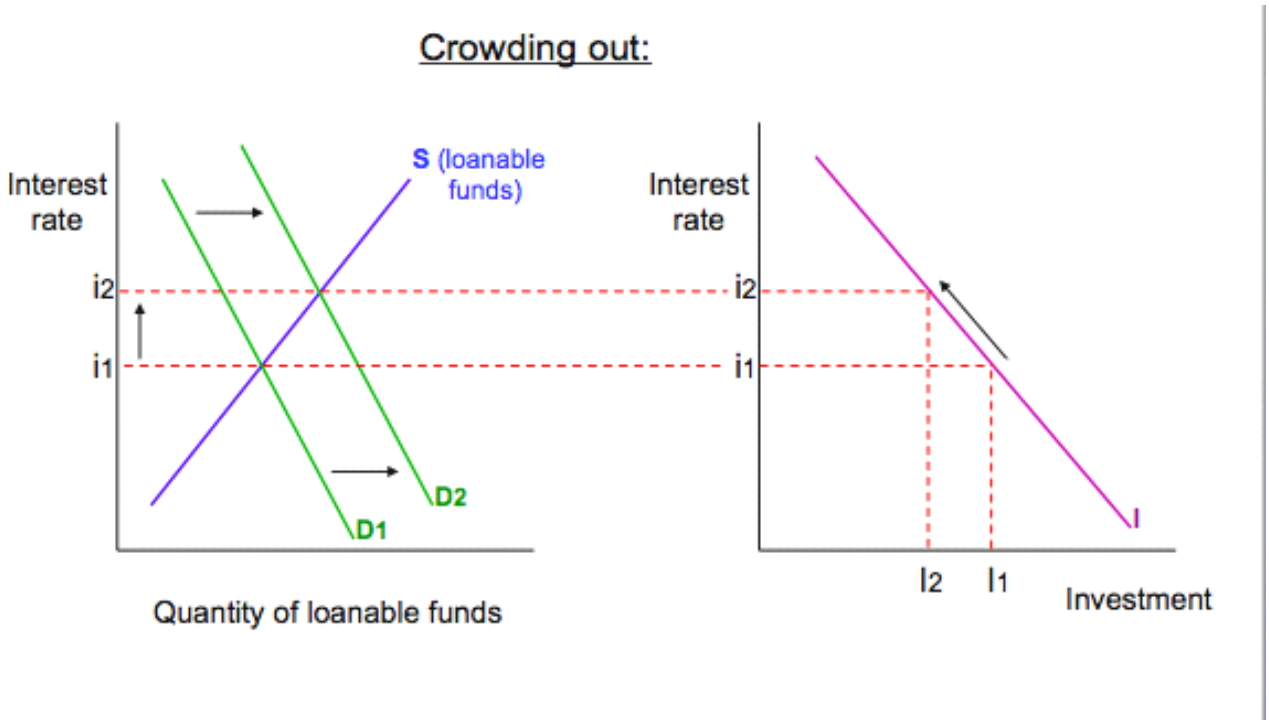


- **Contractionary Fiscal Policy**
  - Use **contractionary** fiscal policy to **decrease aggregate demand** in order to get the economy **back to** its **potential output**
    - Decrease government spending (direct impact)
    - Increase taxes
    - Decrease in government transfers
  - Graph



Question 4

- Crowding-out effect
    - When the **government borrows funds** in the financial markets, it competes with **private firms** and "**crowds out**" **private spending** by **raising interests rates** and **reducing** long-run **economic growth**



Question 5

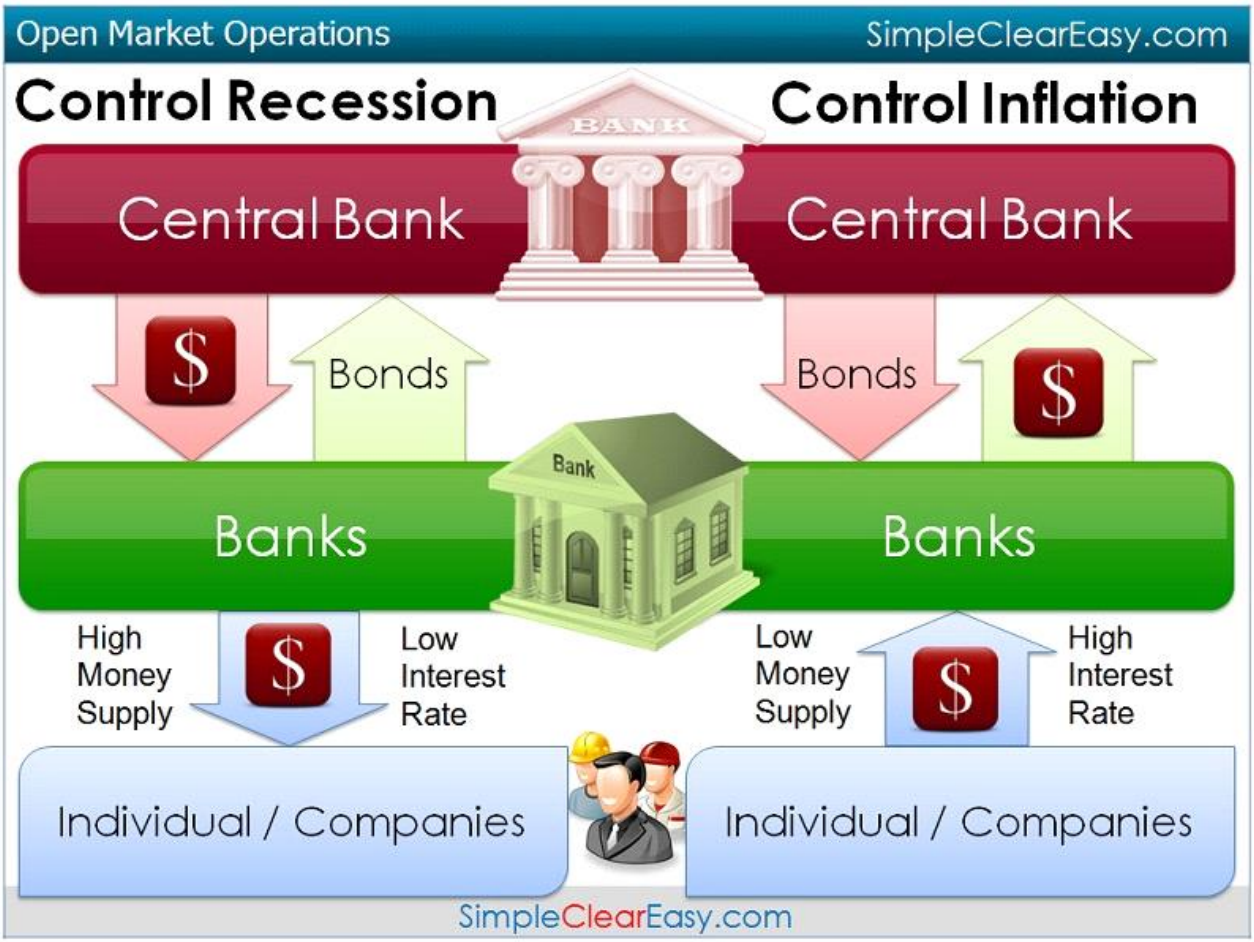
- $\text{MPS} = \dfrac{\text{Change in savings}}{\text{Change in income}}$
- $\text{MPC} = \dfrac{\text{Change in consumption}}{\text{Change in income}}$
- MPC + MPS = 1

Question 6

Government Spending	Money Multiplier	$\frac{1}{1-MPC}$
Taxes	Tax Multiplier	$\frac{-MPC}{1-MPC}$

- When raising government spending and the taxes by the same amount, the **impact** of **government spending** will be **greater** than that of taxes

Question 7

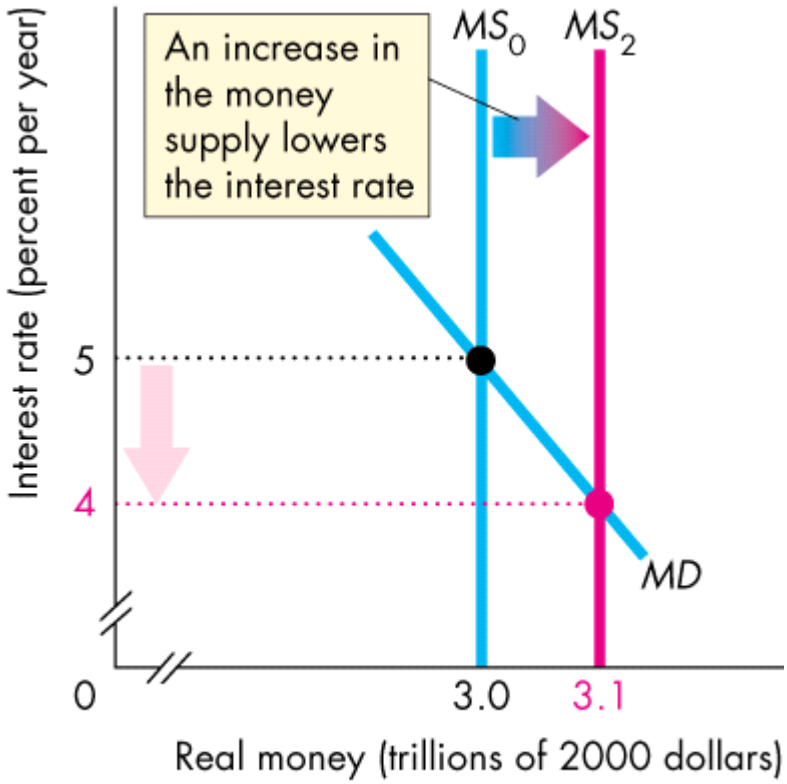


Expansionary Monetary Policy	Contractionary Money Policy

• **Lower Discount Rate**	• **Raise Discount Rate**
• **Lower RRR**	• **Raise RRR**
• **Buy/Bloat** Government Securities After Lowering Target Fed Funds Rate (**Open Market Operation**)	• **Sell/Shrink** Government Securities After Raising of Target Fed Funds Rate (**Open Market Operation**)

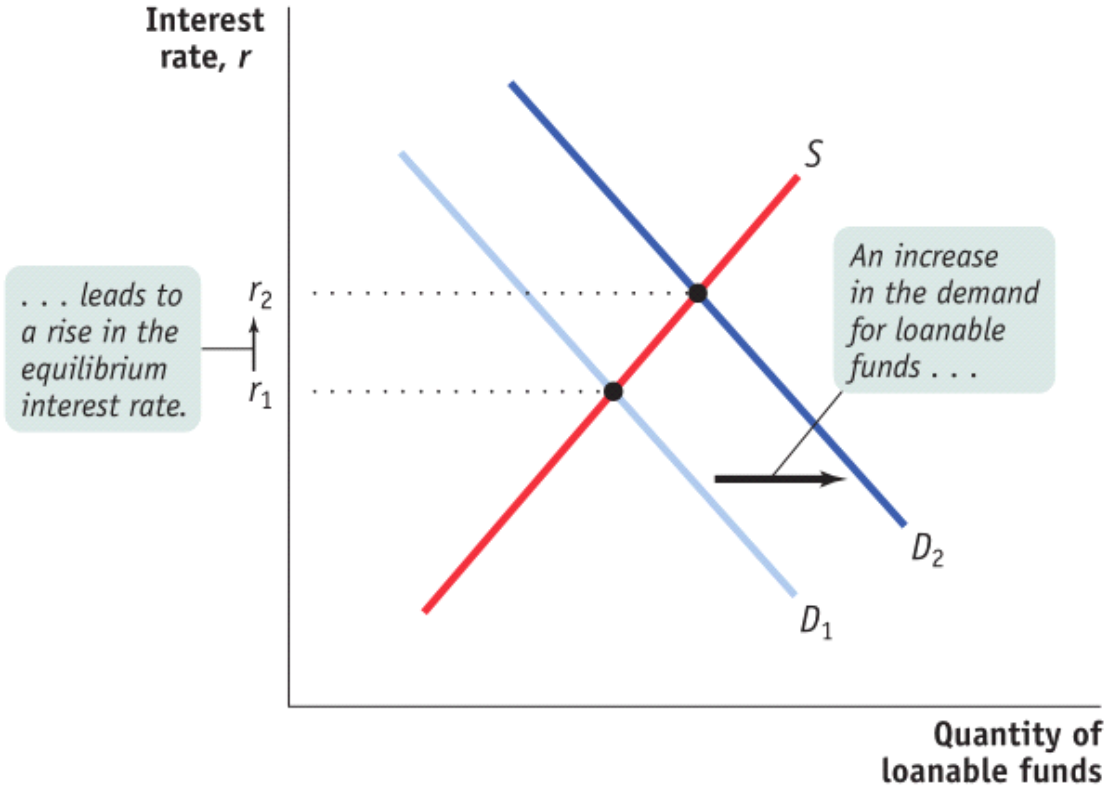
Question 9

- **Expansionary monetary policy → r↓**



(a) Money market

- **Expansionary Fiscal Policy → Spend more money → Crowding-out effect → r↑**



- Expansionary policy will **shift AD** to the **right**, **increase** the **GDP**, therefore **unemployment** will **decrease**

Question 10

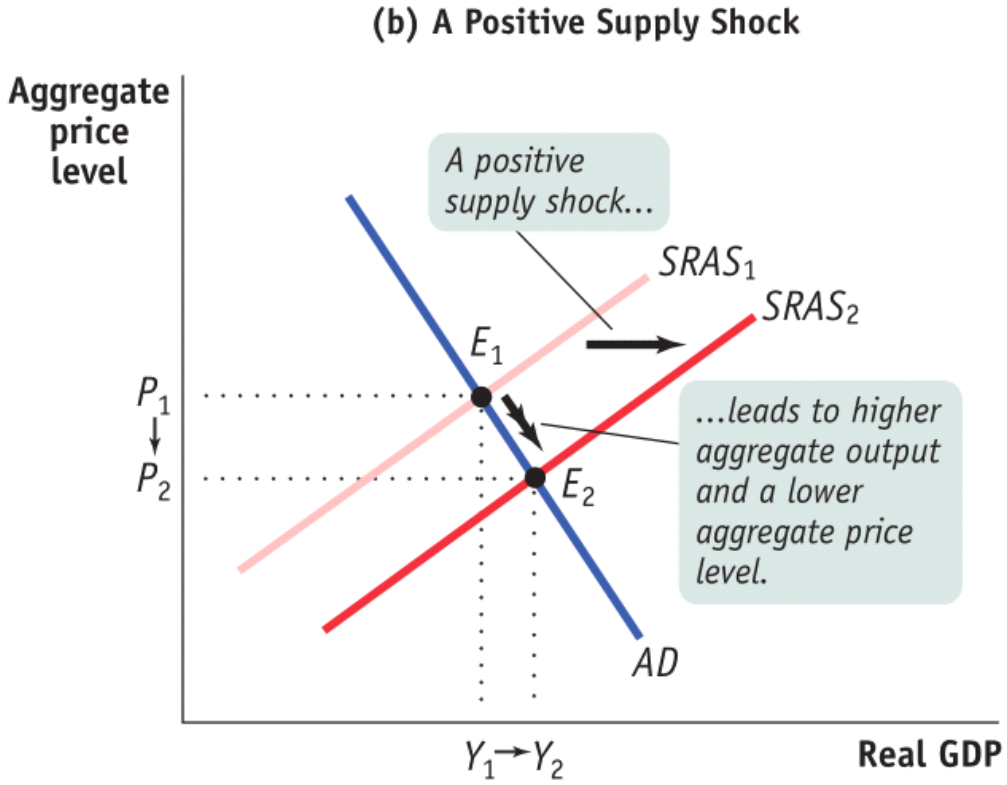
- **Sell securities = Shrink money supply = decrease total loans by banks**

Question 11

- If the **reserve ratio** is **low**, **more money** circulate, so Fed will have **more effect** on rGDP

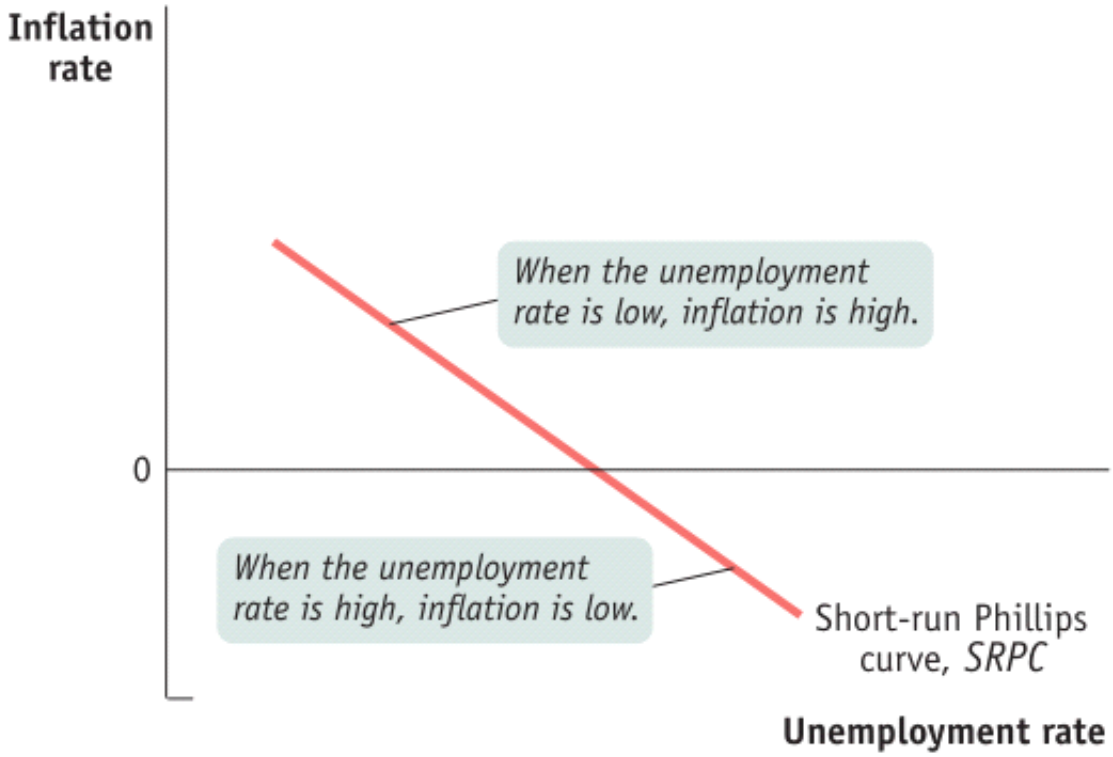
Question 12

- **Labor productivity↑ → AS↑ → Price Level↓ & rGDP↑**

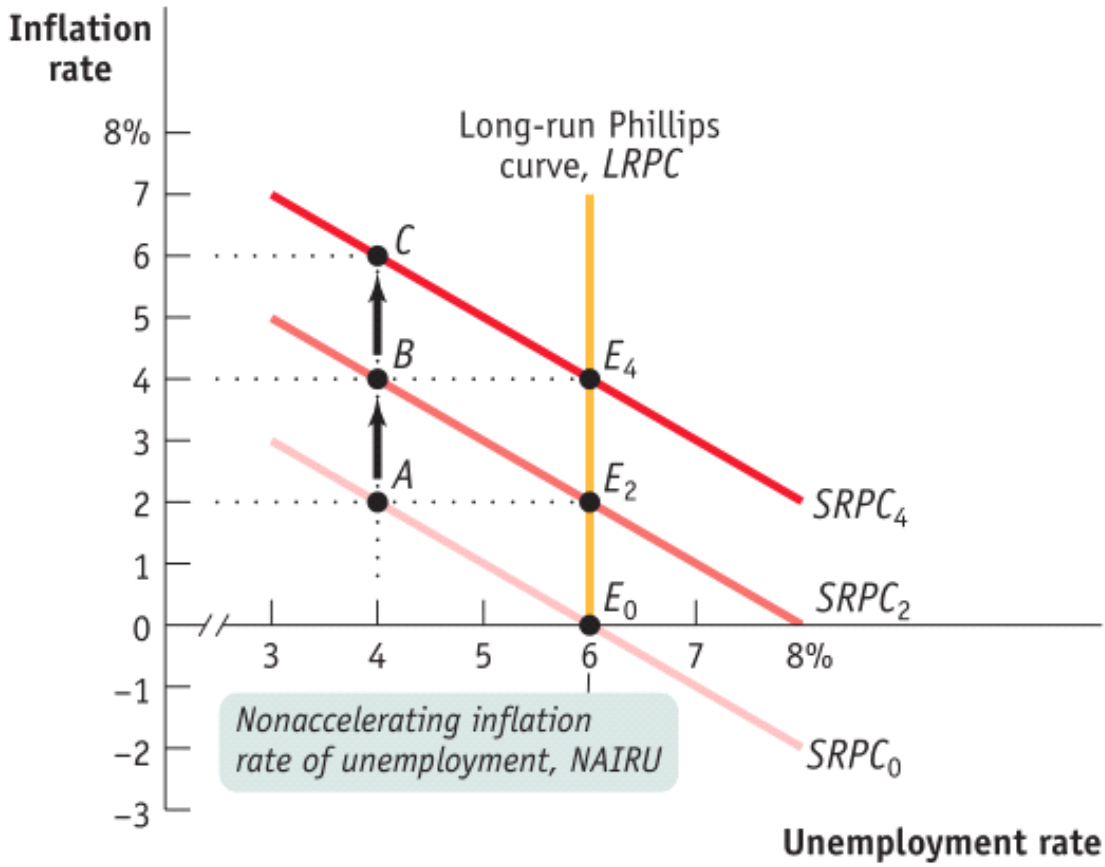


Question 14

- Phillips curve
  - x-axis: unemployment rate
  - y-axis: inflation rate
- Short-run Phillips curve



- Long-run Phillips curve



- In short-run
  - **High inflation rate, low unemployment rate**
  - **Low inflation rate, high unemployment rate**

Question 16

Factors that Shift the Short-Run Aggregate Supply Curve

Changes in commodity prices		
	If commodity prices fall, . . .	. . . short-run aggregate supply increases.
	If commodity prices rise, . . .	. . . short-run aggregate supply decreases.
Changes in nominal wages		
	If nominal wages fall, . . .	. . . short-run aggregate supply increases.
	If nominal wages rise, . . .	. . . short-run aggregate supply decreases.
Changes in productivity		
	If workers become more productive, . . .	. . . short-run aggregate supply increases.
	If workers become less productive, . . .	. . . short-run aggregate supply decreases.

Question 17

- The equation of exchange

    - **MV = PY**
    - **Expenditure = nominal GDP**
    - M: money supply
    - V: velocity of circulation
    - P: price level
    - Y: real GDP
- Velocity of circulation
    - the average number of times each dollar is spent on final goods and services

Question 18

	Expansionary fiscal policy	Contractionary monetary policy
GDP	↑	↓
Unemployment	↓	↑
Interest rate	↑	↑

Question 19

- **Supply of money ↑ = Value of money ↓ = Exports ↑**

Question 20

- $$\text{Inflation rate} = \frac{\text{Price index in year 2} - \text{Price index in year 1}}{\text{Price index in year 1}} \times 100$$
- Inflation rate > 0: inflation
- Inflation rate < 0: deflation

1995 Multiple Choice

Friday, February 3, 2017 2:30 PM

Question 2

- **Real GDP = Nominal GDP - Inflation**
- **Real interest rate = Nominal interest rate - Inflation rate**

Question 6

- AD↑ = Y↑ = C + I↑ + G + NX

Factors That Shift the Aggregate Demand Curve

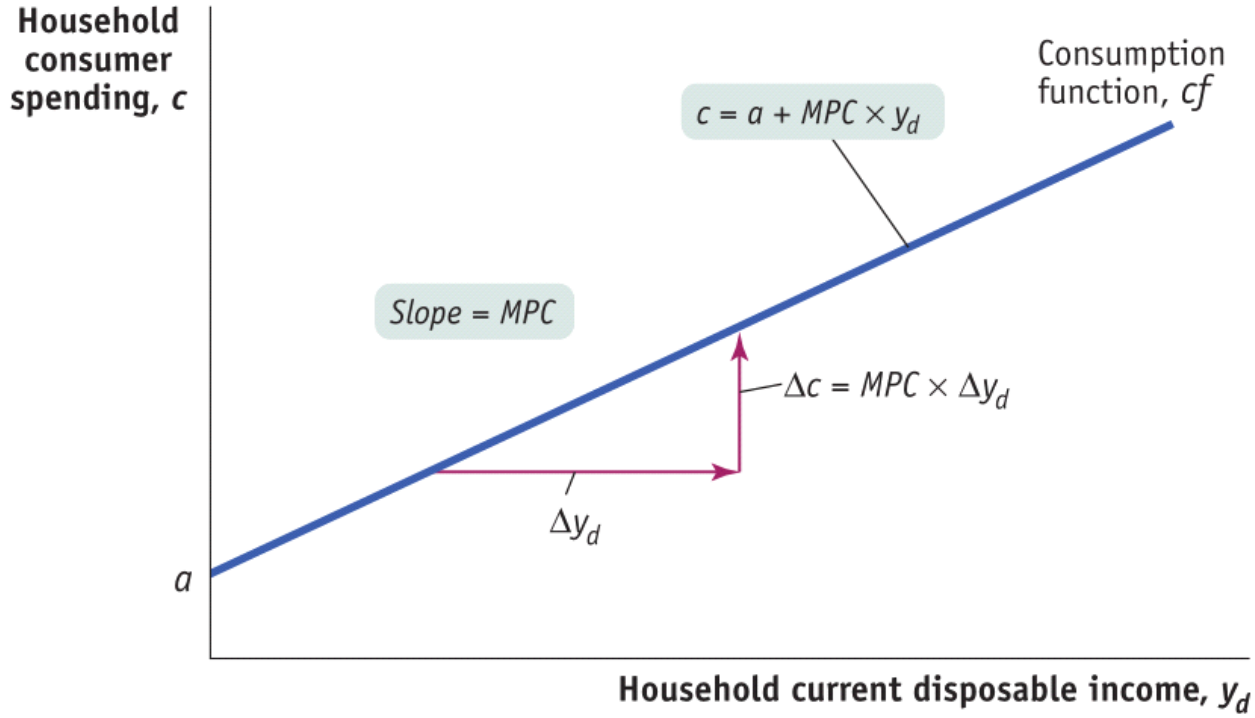
Changes in expectations		
	If consumers and firms become more optimistic, . . .	. . . aggregate demand increases.
	If consumers and firms become more pessimistic, . . .	. . . aggregate demand decreases.
Changes in wealth		
	If the real value of household assets rises, . . .	. . . aggregate demand increases.
	If the real value of household assets falls, . . .	. . . aggregate demand decreases.
Size of the existing stock of physical capital		
	If the existing stock of physical capital is relatively small, . . .	. . . aggregate demand increases.
	If the existing stock of physical capital is relatively large, . . .	. . . aggregate demand decreases.
Fiscal policy		
	If the government increases spending or cuts taxes, . . .	. . . aggregate demand increases.
	If the government reduces spending or raises taxes, . . .	. . . aggregate demand decreases.
Monetary policy		
	If the central bank increases the quantity of money, . . .	. . . aggregate demand increases.
	If the central bank reduces the quantity of money, . . .	. . . aggregate demand decreases.

Question 13

	Contractionary	Expansionary
Monetary	Discount Rate ↑ Federal Funds ↑ = Sell Government Security RRR↑	Discount Rate ↓ Federal Funds ↓ = Buy Government Security RRR↓
Fiscal	Taxes↑ Government Spending↓ Government Transfer↓	Taxes↓ Government Spending↑ Government Transfer↑

Question 21

- Consumption function



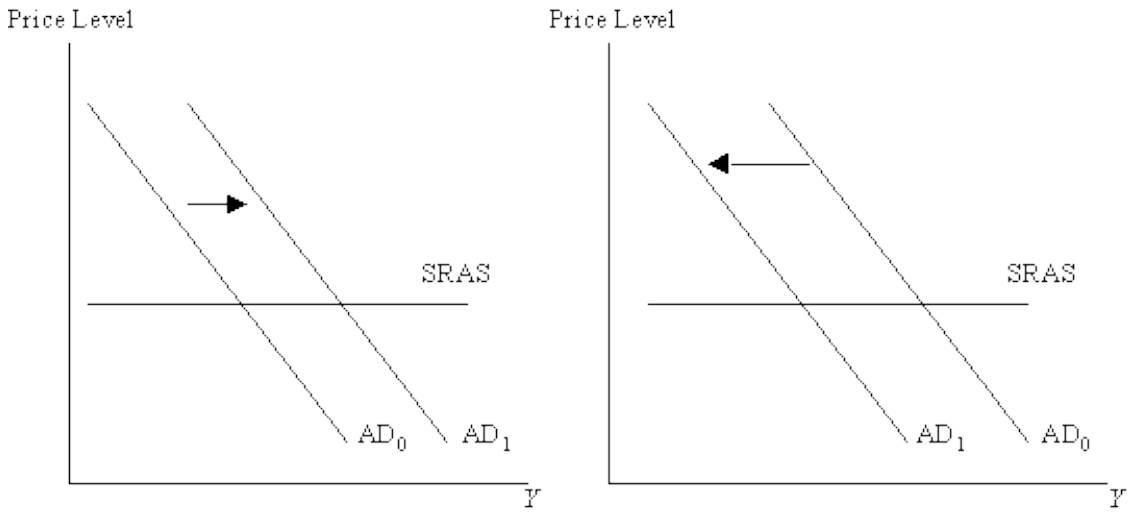
- **Increases** in **MPC** will **increase** the equilibrium level of both **income** and **consumption**

Question 24

- **National Income↑ → Spending on goods and services↑ → Demand for money↑**

Question 25

- The Keynesian **aggregate supply curve** is **horizontal**, indicating that firms will supply **whatever amount** of goods in demanded at the existing price level



Question 29

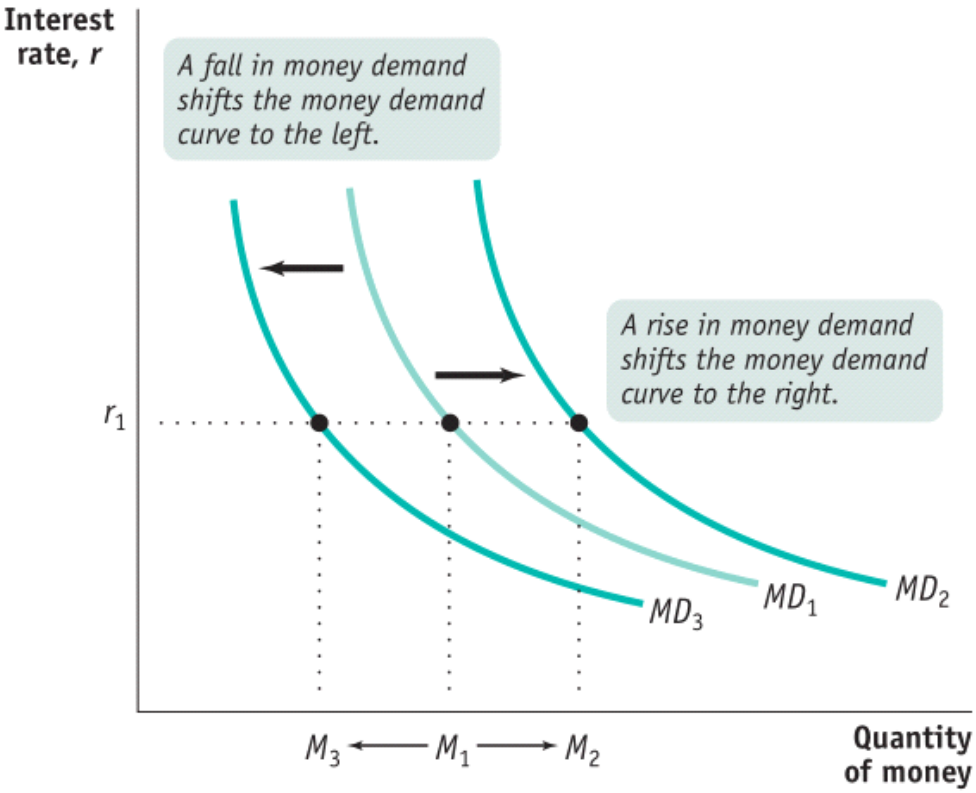
Question 34

- **Classical economics** (also known as **liberal economics**) asserts that markets function best with **minimal government interference**.
- Classical economists observe that **markets** generally **regulate themselves**, when free of coercion.

Question 36

- **Equilibrium output < Potential output: Recessionary gap**
- **Equilibrium output > Potential output: Inflationary gap**
- **Spending Multiplier = 1/(1-MPC)**
- **Tax Multiplier = -MPC/(1-MPC)**

Question 40



- If the public decides to **increase** its holdings of **currency**, the **interest rate** will **increase**

Question 41

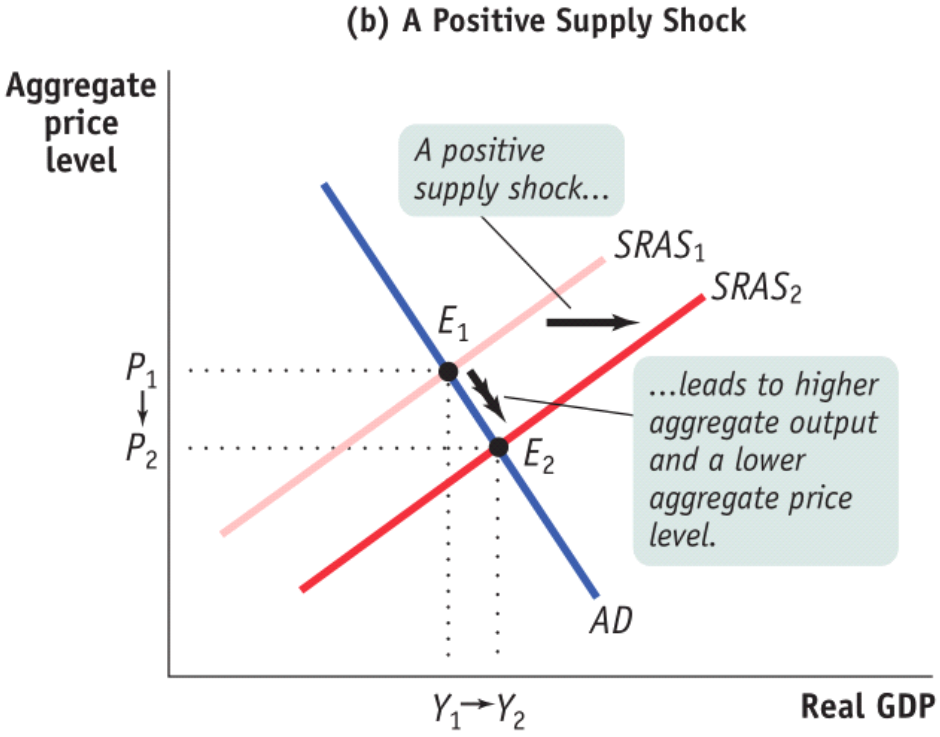
- An increase in **government expenditure** will **lower** the **interest rate**, causing **less investment** (Crowding-out effect)

Question 43

- **Supply shock**: Aggregate Supply Curve shifts to the **left**
- Supply shock will change both **relative** prices and the **general** price level

Question 44

- unemployment fell = rGDP increase
- inflation fell = Price level fell



Question 48

- An **increase** in the **labor foece participation rate** will make it **more diffficult** to **reduce unemployment**, since the number of labors has increased

Question 49

- British economist John Maynard **Keynes** spearheaded a revolution in economic thinking that **overturned** the then-prevailing idea that free markets would **automatically** provide **full employment**—that is, that everyone who wanted a job would have one as long as workers were flexible in their wage demands

Question 51

- The most important **determinant** of **saving and consumption** is the **level of income**

Question 52

- If the interest rate is already low, increasing money supply will not be effective as in the high interest reate.
- If the employment is already high, it's hard to improve it further to increase rGDP.
- **Nothing to improve = no effect on GDP**
- **A lot to improve = greatest effect on GDP**

Question 55

- Gold is not part of the money supply
- M1
    - Cash
    - Money in checking accounts
    - Traveler's checks
- M2
    - All money in M1 plus "near-moneys"
    - Saving accounts
    - Certificate of Deposits
    - Money Market Funds

2000 Multiple Choice

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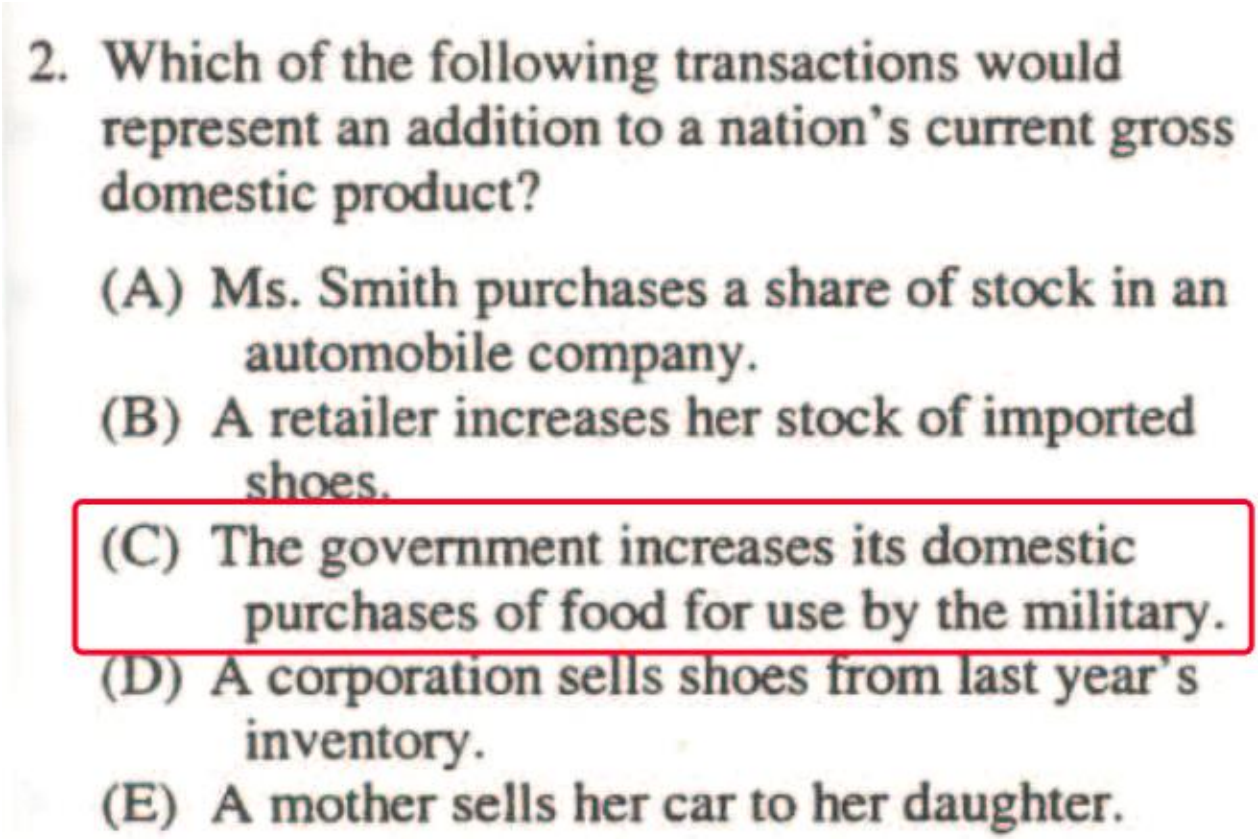
Question 2



2. Which of the following transactions would represent an addition to a nation's current gross domestic product?

(A) Ms. Smith purchases a share of stock in an automobile company.
(B) A retailer increases her stock of imported shoes.
(C) The government increases its domestic purchases of food for use by the military.
(D) A corporation sells shoes from last year's inventory.
(E) A mother sells her car to her daughter.

- A nation's current domestic product **includes final goods and services produced during that year**.
- It does **not include financial transactions** like the purchase of stock simply because that is just a transfer of ownership (nothing has been produced).
- **Second hand** sales also **aren't included** since the product was originally counted when it was first produced (nothing has been added to our economy).
- If a retailer increases her stock of imported shoes (she is buying goods not produced in the U.S. and, therefore, they aren't counted in GDP).
- If the **government** increases its **purchases**, GDP will increase since production has obviously increased.

Question 7

7. According to the Keynesian savings schedule, when aggregate income increases by a given amount, savings will

(A) remain the same
(B) decrease by the amount of the change in income
(C) increase by the amount of the change in income
(D) increase by less than the amount of the change in income
(E) increase by more than the amount of the change in income

- Remember, you can do two things with your income: **spend** or **save** it.
- Y = C + S.
- Thus, if income increases by a given amount, savings will increase, but not by the entire amount since you will consume some of that additional income.

Question 10

10. When consumers hold money rather than bonds because they expect the interest rate to increase in the future, they are holding money for which of the following purposes?

(A) Transactions
(B) Unforeseen expenditures
(C) Speculation
(D) Illiquidity
(E) Exchange

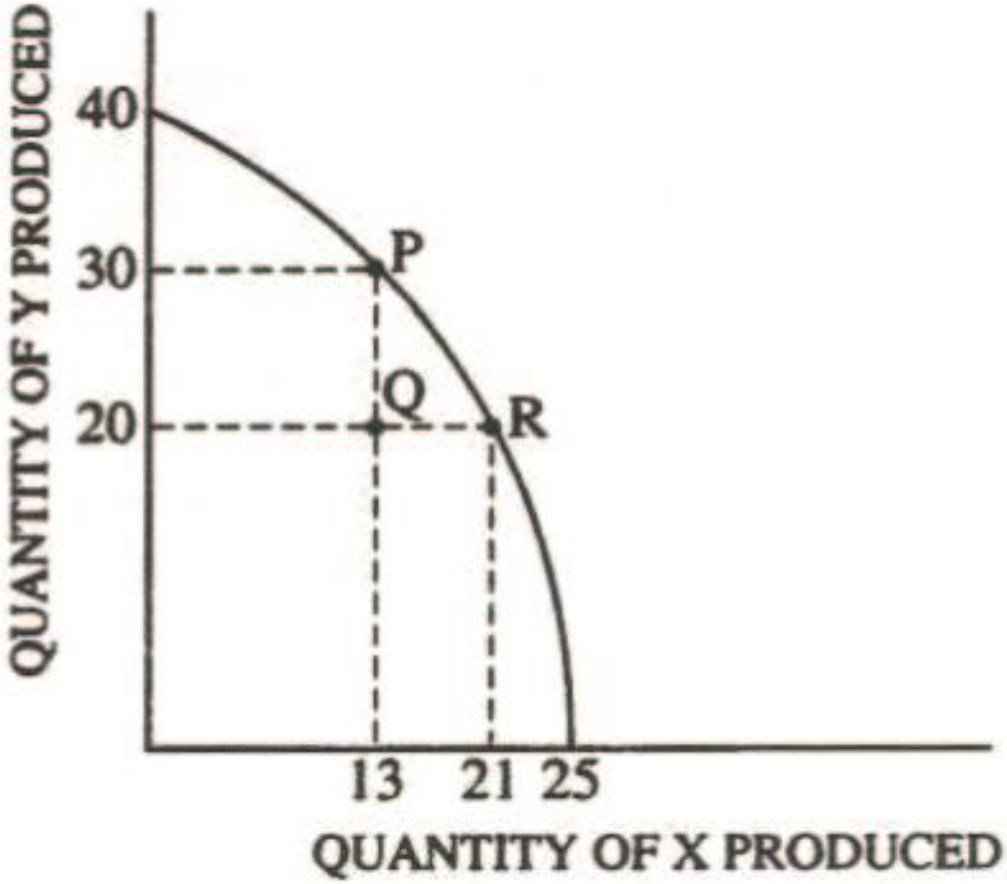
- If people hold money because they think interest rates are going to rise in the future, they are speculating that rates will increase so that they will benefit from holding the money. Thus, the purpose of money is that of speculation.

The Demand for Money

- Why would people want to hold money – that is, have a demand for money?
  - **Transactions demand:** for the purpose of making everyday market purchases.
  - **Precautionary demand:** for unexpected market transactions or for emergencies.

  ***Speculative demand:** to be able to take advantage of an investment opportunity in the near future.

Question 16



16. On the basis of the diagram above showing an economy's production possibilities curve for two goods, which of the following statements must be true?

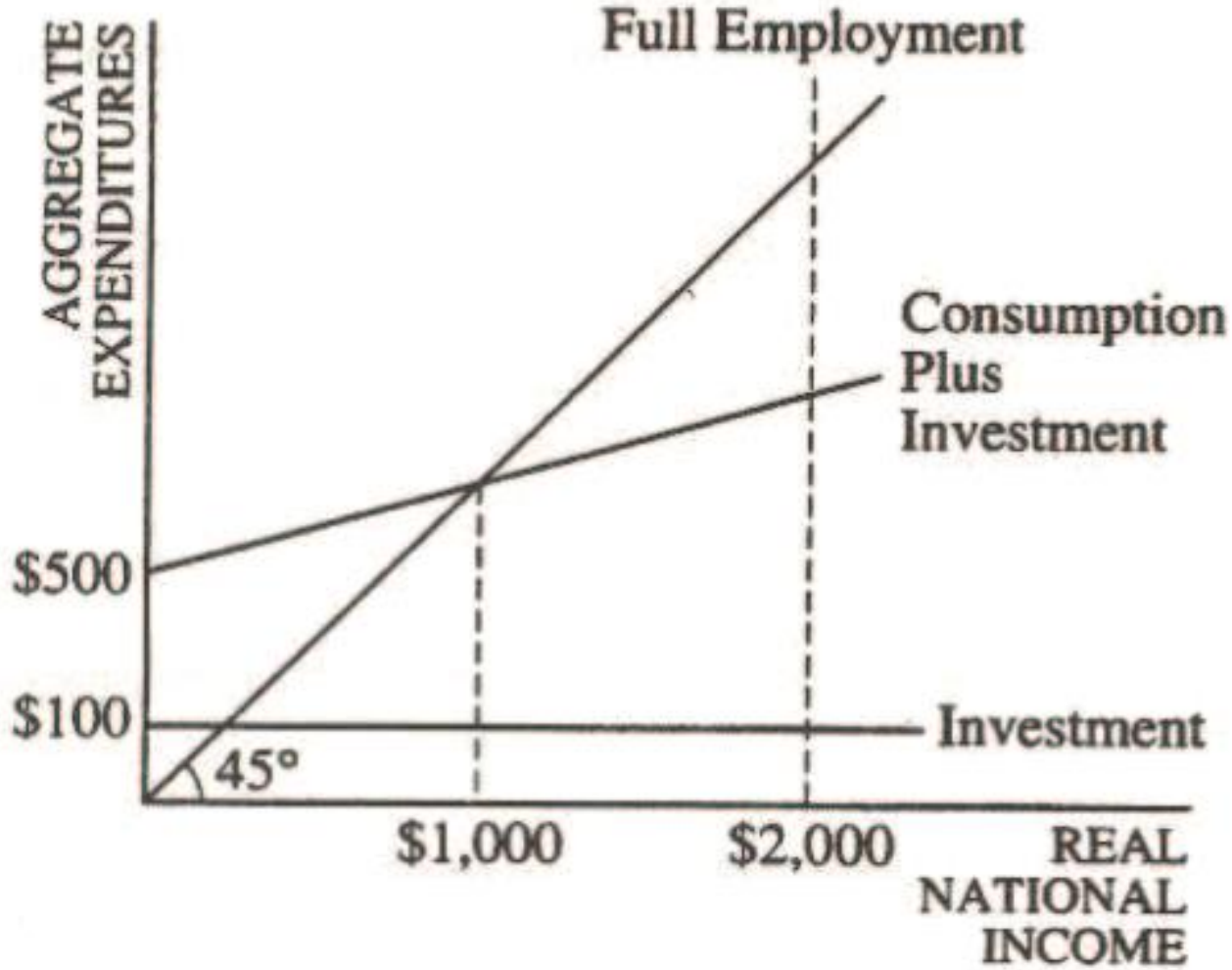
I. The opportunity cost of moving from point P to point R is 10 units of Y.
II. The opportunity cost of moving from point R to point P is 8 units of X.
III. The opportunity cost of moving from point Q to point R is 0 units of Y.

- Opportunity cost is a measure of what must be **forgone** in order to have more of something else.
- When moving from point P to R we must give up units of Y (10 units) to have more X, and when moving from point R to P we must give up units of X (8 units) to have more Y.

- The opportunity cost of moving from Q to R is **nothing** simply because at Q **some of our resources were underemployed**.
- This means that we **won't have to give up anything** to produce more of X or Y.

Question 21

Questions 19-21 refer to the graph below that shows an economy's aggregate expenditures, assuming no foreign sector and that government expenditures are initially zero.

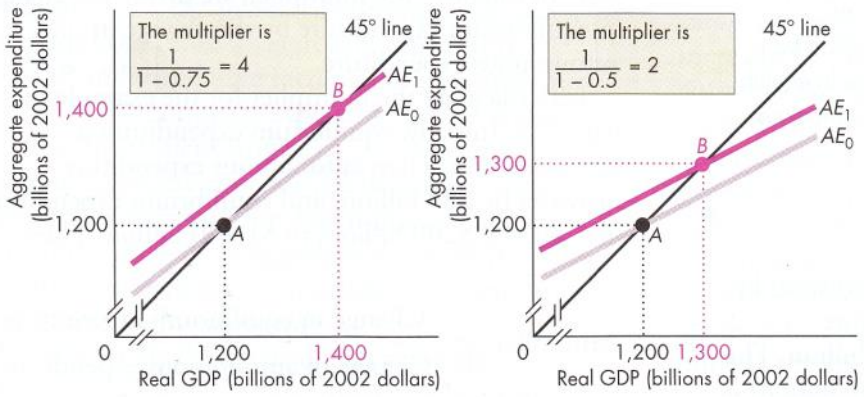


21. The minimum increase in government spending necessary to reach full employment is

(A) $2,000
(B) $1,000
(C) $500
(D) $200
(E) $100

- To determine the minimum increase in government spending necessary to reach full employment, we must first calculate the **spending multiplier**.
- The spending multiplier (m) = [1 / (1 – MPC)], where MPC is the marginal propensity to consume.
- **MPC** (b) is simply the **slope** of the expenditures function.
- The slope of the line above is (1000 – 500) / (1000 – 0) = 500/1000 = 1/2.
- Thus, the spending multiplier (m) = [1 / (1 – ½)] = [1 / (1/2)] = 2.
- Now that we know the multiplier and know that we want to increase income by 1000 (2000 –1000), we can simply solve for the change in government spending.
- 1000 = 2 x (Change in government spending). Therefore, the change in government spending to eliminate this recessionary gap must be 1000 / 2 = $500

FIGURE 27.6 The Multiplier and the Slope of the *AE* Curve



(a) Multiplier is 4 (b) Multiplier is 2

Imports and income taxes make the *AE* curve less steep and reduce the value of the multiplier. In part (a), with no imports and income taxes, the slope of the *AE* curve is 0.75 (the marginal propensity to consume) and the multiplier is 4. But with imports and income taxes, the slope of the *AE* curve is less than the marginal propensity to consume. In part (b), the slope of the *AE* curve is 0.5. In this case, the multiplier is 2.

Question 26

26. Which of the following constitutes the largest component of the United States money supply (M1) ?

(A) Silver certificates
(B) Checkable deposits (demand deposits)
(C) Currency (paper money)
(D) Coins
(E) Large certificates of deposit

- M1 consists of currency (coins and paper money) and checkable (demand) deposits.
- Out of these two components, **checkable (demand) deposits** constitute the **largest** component of the United States money supply.

Money Defined: M1

- ***M1*** is the narrowest definition of the U.S. money supply
- ***Consists of: Money, M1= Currency + Checkable Deposits***
- **Currency:** ***Coins*** and ***paper money*** (in the hands of the public)
  - **Token money**: All U.S. coins in circulation are considered token money. The intrinsic value, the actual value of the metal contained in the coin, is less than the face value of the coin (This prevents people from melting down the metal for its value)
  - **Paper money**: About 46 % of U.S. money supply (all of it in the form of Federal Reserve Notes). Issued by the Federal Reserve System (U.S. central banks)
- **Checkable deposits**: Deposits in commercial banks and thrift or savings institutions on which checks of any size can be drawn.
  - Largest component of the M1 money supply(52%) due to the safety and convenience checks allow.
  - Example: You don't mail currency to pay a bill, it is safer and convenient to send a check instead.

13-5

Question 30

30. Which of the following changes will occur to the demand for United States dollars and the international value of the dollar in the short run if investors in the United States and abroad increase their purchases of United States government bonds?

	Demand for Dollars	International Value of the Dollar
(A)	Decrease	Decrease
(B)	Decrease	Increase
(C)	Decrease	No change
(D)	Increase	Decrease
(E)	Increase	Increase

- If investors **increase** their **purchases** of United States government bonds, they are going to be **demanding more** dollars.
- As the demand for dollars increases (demand curves shifts to the right), the international **value** of the dollar also **increases**.

Question 31

31. As nations specialize in production and trade in international markets, they can expect which of the following domestic improvements?

I. Allocation of domestic resources
II. Standard of living
III. Self-sufficiency

- Trade results in **specialization** and, thus, an **improved allocation of domestic resources** and an **increased standard of living** (since more can be produced as a result of trade).
- Trade means that you are depending on someone else for a good or service. Therefore, trade does not result in self-sufficiency.

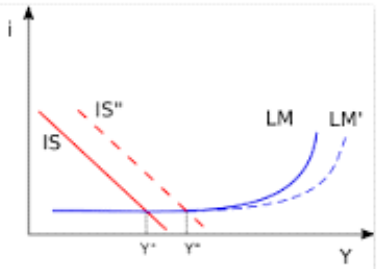
Question 35

35. In the simple Keynesian aggregate expenditure model of an economy, changes in investment or government spending will lead to a change in which of the following?

(A) The price level
(B) The level of output and employment
(C) Interest rates
(D) The aggregate supply curve
(E) The demand for money, unless the economy slips into the liquidity trap

- **Investment spending** is one of the components of **aggregate demand**.
- Thus, a change in investment will result in a **change** in the level of **output** and **employment** since the **AD curve will be shifting**.

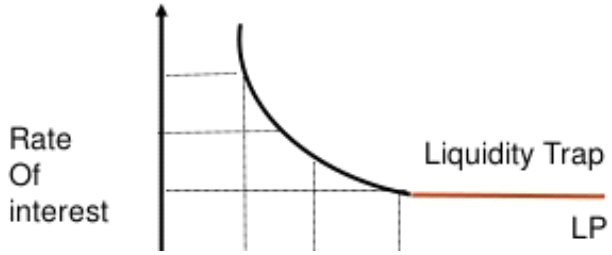
A **liquidity trap** is a situation, described in Keynesian Economics, in which injections of cash into the private banking system by a central bank fail to decrease interest rates and hence make monetary policy ineffective.



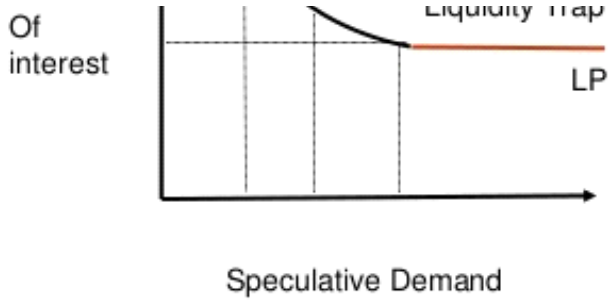
Liquidity trap - Wikipedia
https://en.wikipedia.org/wiki/Liquidity_trap

Liquidity Trap

- The demand for money is a decreasing function of the rate of interest
- Higher the rate of interest lower the demand for money for speculative motive and less money would be kept as inactive balance and vice versa.
- The LP curve becomes perfectly elastic at very low rate of interest



very low rate of interest



Question 40

40. If the money stock decreases but nominal gross domestic product remains constant, which of the following has occurred?

(A) Income velocity of money has increased.
(B) Income velocity of money has decreased.
(C) Price level has increased.
(D) Price level has decreased.
(E) Real output has decreased.

- **MV = PQ**.
- Since PQ does not change and M ↓, V must ↑ in order for the equation to remain balanced.

The Equation of Exchange or Quantity Theory of Money

MV x PQ was the **cornerstone** of **Classical theory**.

$ spent $ received

$$M \times V = P \times Q$$

1. **Velocity is stable.**
2. The amount of goods/services that can be produced is **fixed** in the short run.
3. If the **Fed increases the MS by 15%,** we will see a **proportional 15% increase in prices.**
4. **V and Q aren't in the equation & a change in MS will result in a change in P.**

Monetarism

$$\uparrow\ \ \uparrow$$
$$M\bar{V} = \bar{P}Q$$

With this "Monetarist Rule" in effect (2 or 3%) and a constanct V, the rate of inflation would be zero.

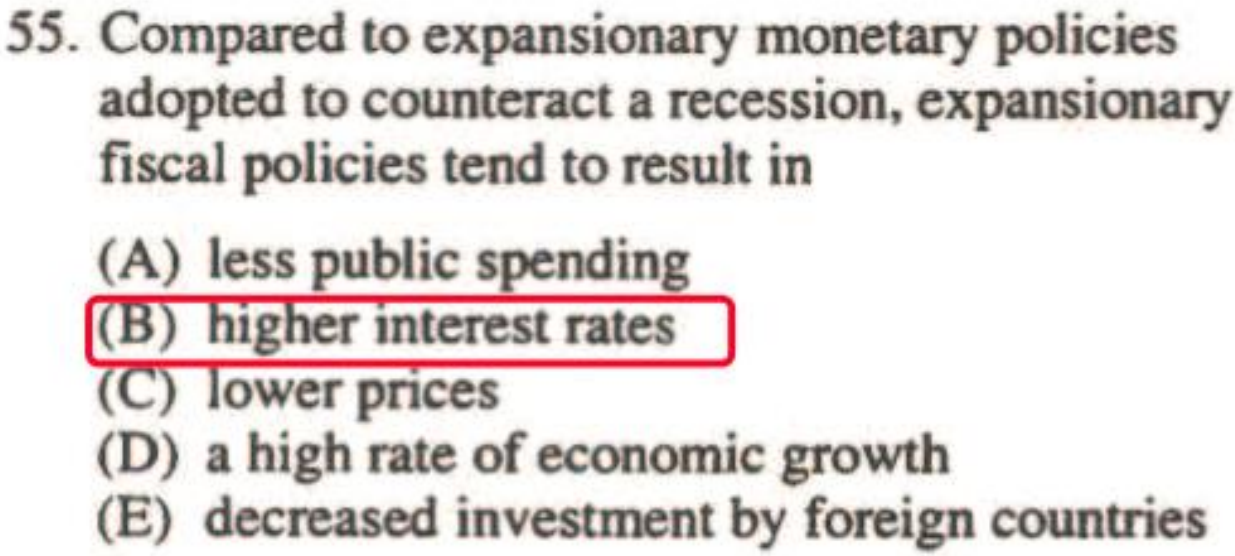
Question 44

44. Policymakers concerned about fostering long-run growth in an economy that is currently in a recession would most likely recommend which of the following combinations of monetary and fiscal policy actions?

	Monetary Policy	Fiscal Policy
(A)	Sell bonds	Reduce taxes
(B)	Sell bonds	Raise taxes
(C)	No change	Raise taxes
(D)	Buy bonds	Reduce spending
(E)	Buy bonds	No change

- If we are in a recession, we are going to want to implement **expansionary** policies.
- Thus, we would want to **buy bonds** and **do nothing** with regards to fiscal policy.
- The effects of expansionary fiscal policy are partially negated due to the crowding-out effect.
- In addition, since fiscal policy results in higher interest rates, our long-run growth would actually be slowed since investment would decrease.

Question 55



55. Compared to expansionary monetary policies adopted to counteract a recession, expansionary fiscal policies tend to result in

(A) less public spending
(B) higher interest rates
(C) lower prices
(D) a high rate of economic growth
(E) decreased investment by foreign countries

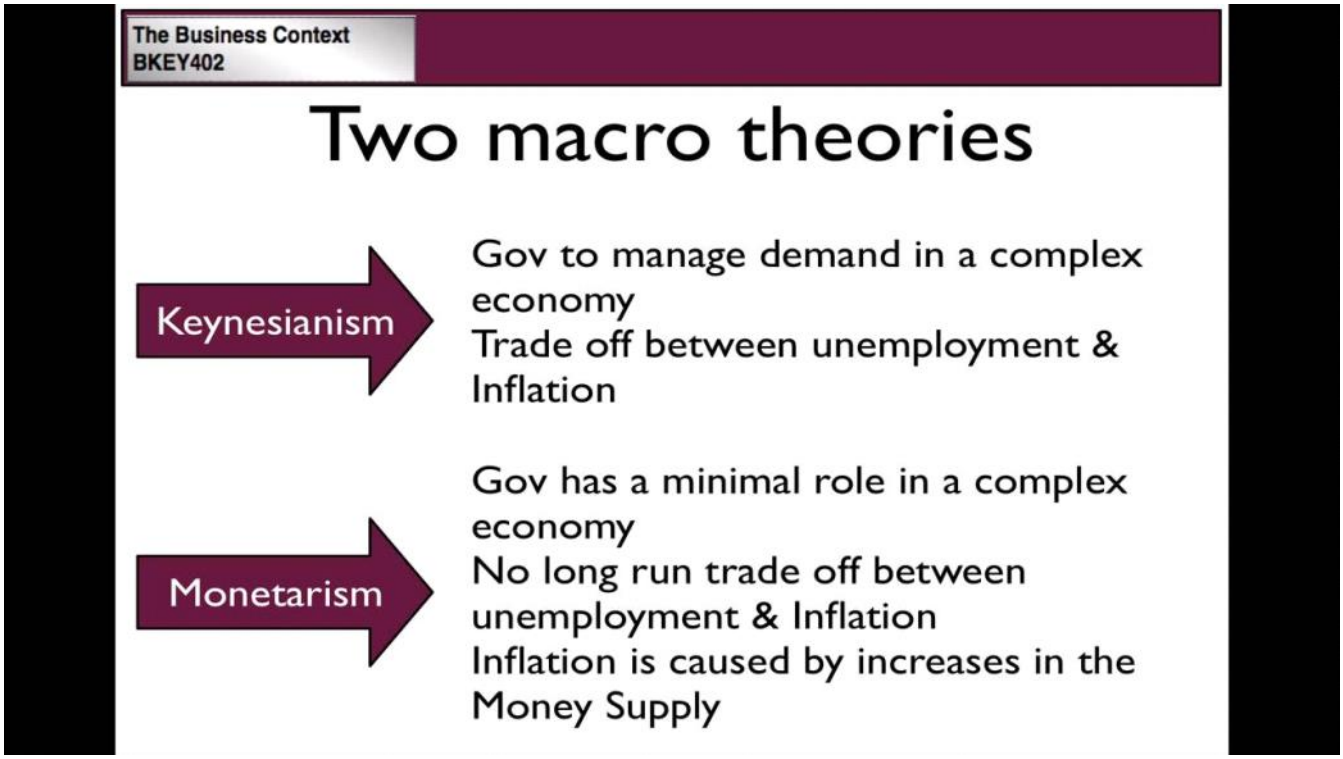
- Expansionary **fiscal policies** result in the government running on a budget deficit since G > T.
- As the government borrows money to finance their budget, the demand for loanable funds increases (shift to the right).
- This increased demand causes **interest rates** to **rise** (thereby crowding out some private investors).
- So, while expansionary **monetary policy** results in **lower interest rates** due to an increase in the money supply, expansionary fiscal policy results in higher interest rates (thereby negating some of the intended effect of the policy).

Qusetion 56

56. According to the monetarists, which of the following is true of expansionary fiscal policy?

(A) It will cause interest rates to rise and crowd out private investment spending.
(B) It should not be used so long as there is a national debt.
(C) It should be used only when some resources are unemployed and the inflation rate is low.
(D) It will decrease aggregate income.
(E) It will increase aggregate income as long as the money supply is decreased at a slow, steady rate.

- **Monetarists dislike expansionary** fiscal policy because of crowding out.
- In addition, they **dislike fiscal policy** in general because it is too slow!



2005 Multiple Choice

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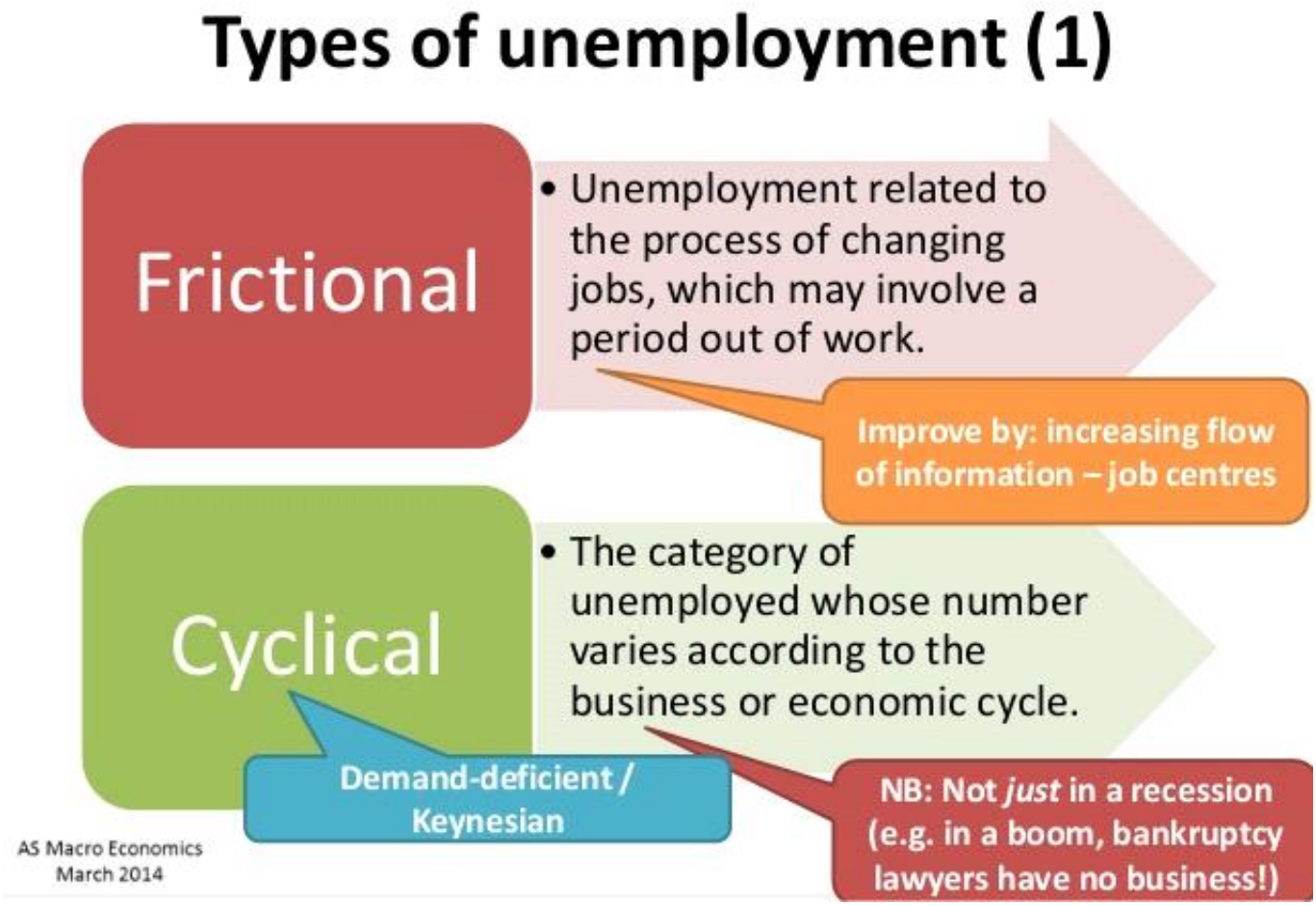
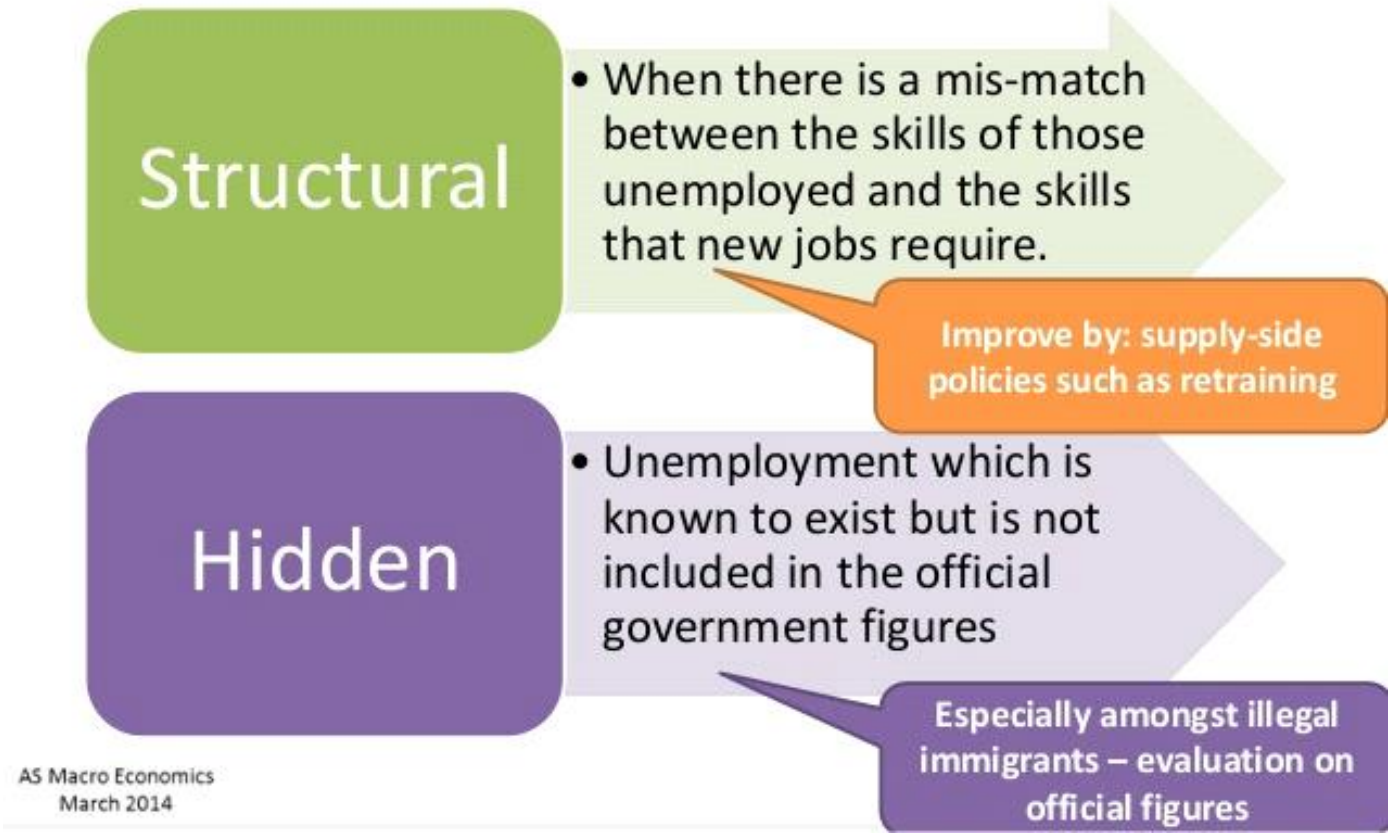
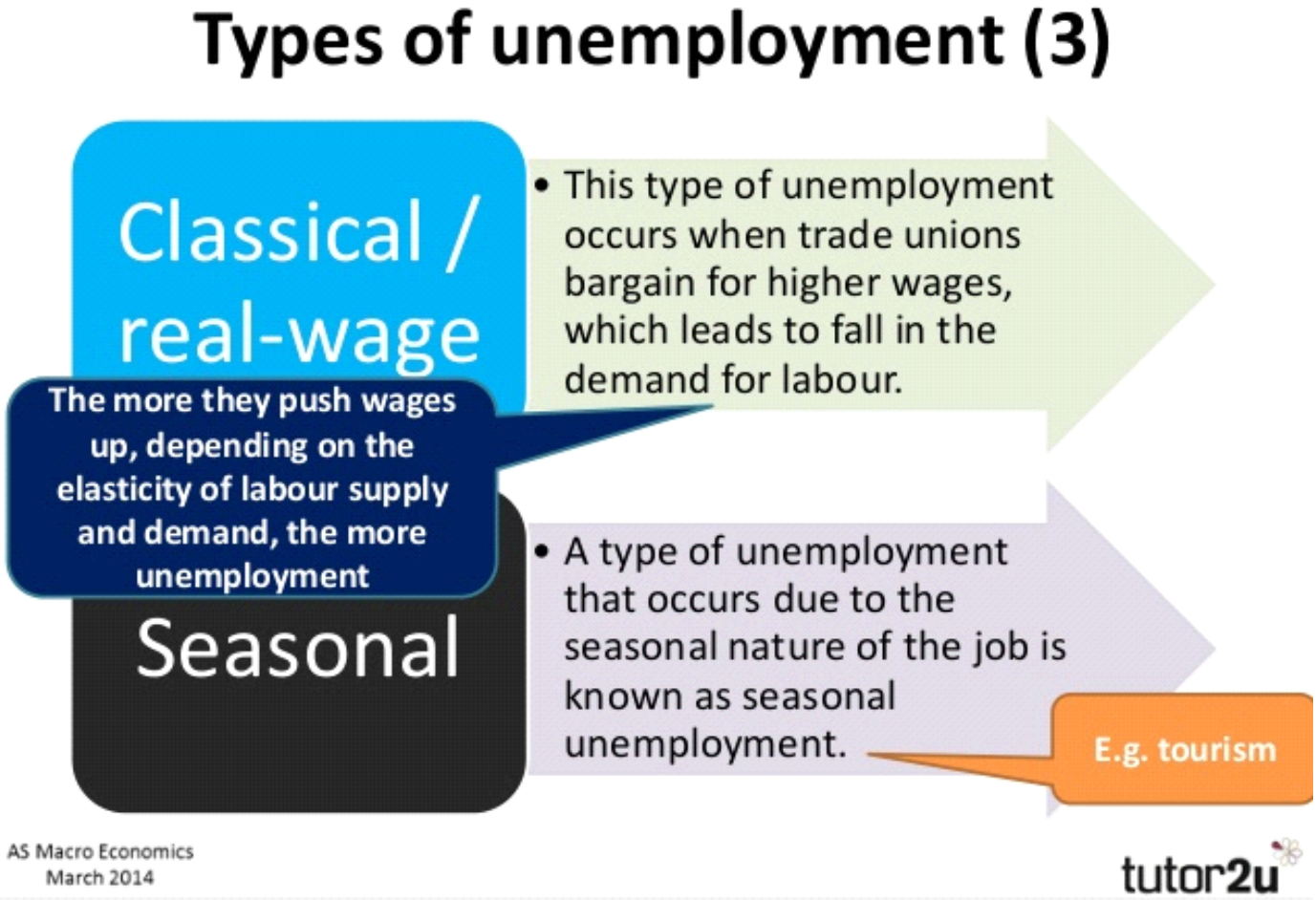
Question 3



Types of unemployment (2)





Question 18

$$\text{Unemployment rate} = \frac{\#\ of\ \textbf{unemployed}\ people}{total\ \textbf{labor force}}$$

Question 19

- Classical economists vs. Keynesian economists

Classical Economics

The market is perfect and self-sustaining

Government intervention can only be a detriment to the economy

David Ricardo

The market automatically adjusts to "booms" and busts

Supply = Demand

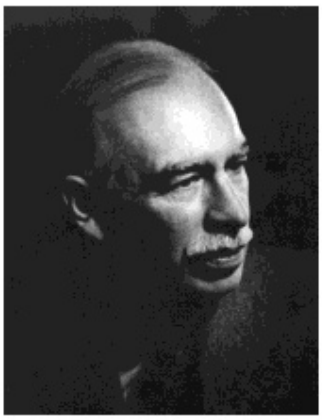
Historical Perspective: Classical economics came of age during and after industrialization.

Say's Law: Supply Creates its own demand. The economy is stimulated when more goods are produced.

Keynesian Economics

The market is imperfect and not self-sustaining

Equilibrium may include unemployment, negative growth



John Maynard Keynes

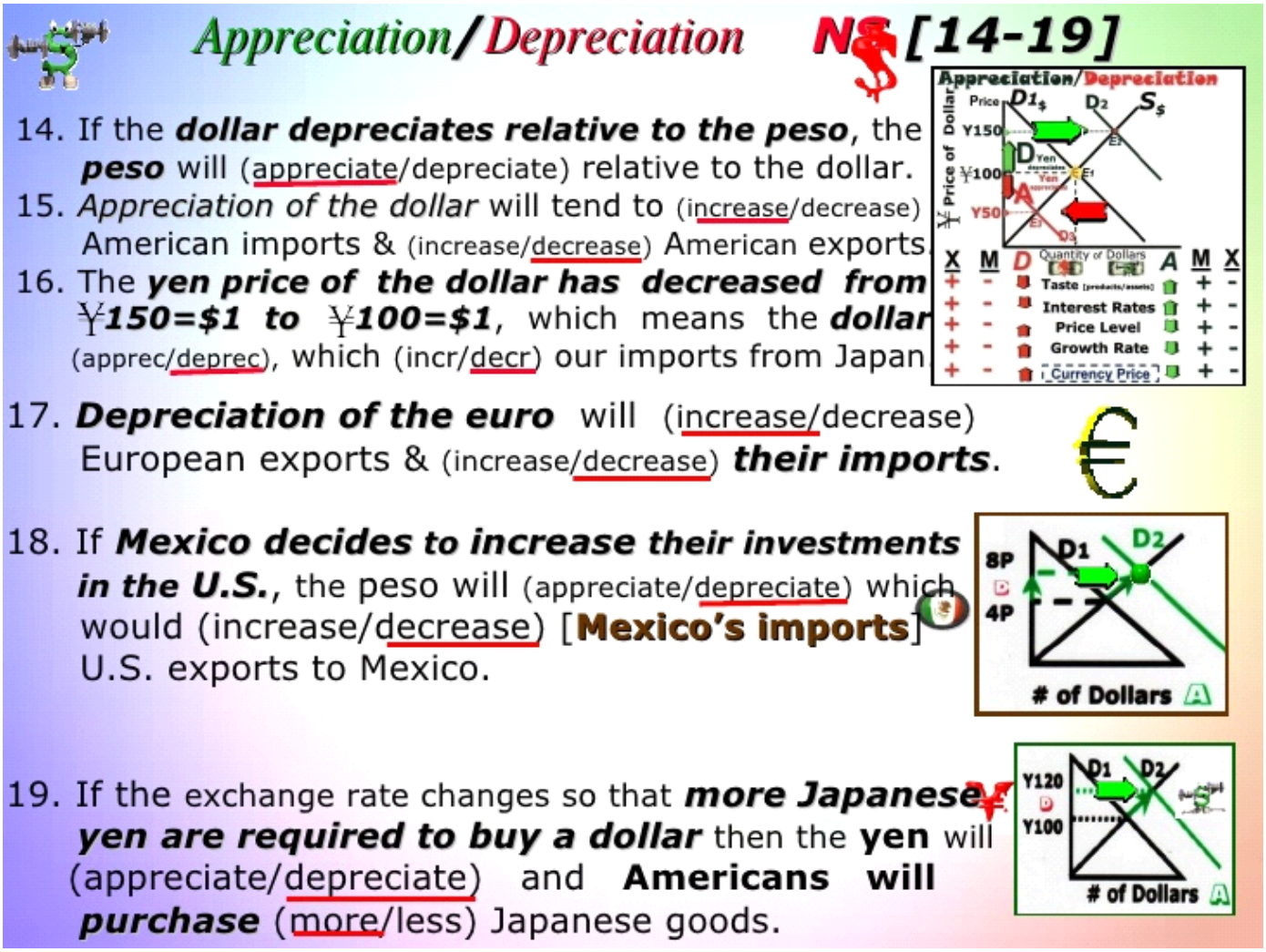
Consumer income stimulates demand, which causes economic growth.

When economic growth is lacking, the government should stimulate demand.

Historical Background: The Great Depression

Keynes	Hayek
Must pull economy out of bust **(short term focus)**	Must avoid boom-bust cycles **(long term focus)**
People have chaotic 'animal spirit'	People are rational
The economy can be steered	The economy must consist of free market forces
A 'circular flow of income' exists	Markets are not easily predictable
Economic regulation is good	Economic regulation is bad
Bail-outs good	Bail-outs bad
The short run is most important	The long run is most important
Pro-Government Govenrment acts in best interest of public	Anti-Government (causes malinvestment) People act in their own best interest
Savings should be spent now	Savings should be hoarded for future (classical view)
Kept bad businesses afloat to protect jobs	Liquidation of bad businesses necessary
Economy can settle at sub-optimal level without help	Economy will settle at optimal level unhindered
Respect for human suffering and job protection	Respect for entrepreneurship and economic stability

Question 22



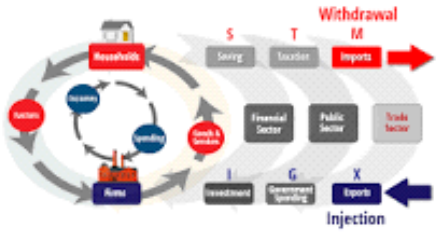
Question 26

- Stagflation is often caused by a **SUPPLY** side shock.

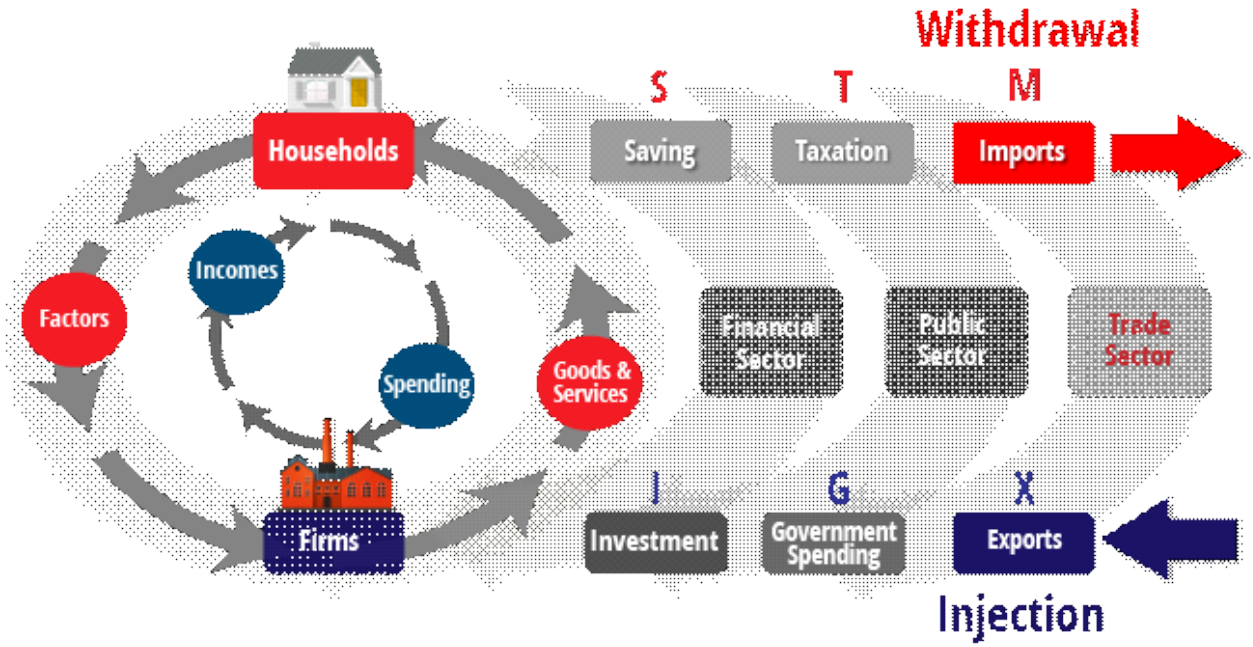
> **Stagflation** is often **caused** by a supply side shock. For example, rising commodity prices, such as oil prices, will **cause** a rise in business costs (transport more expensive) and short run aggregate supply will shift to the left. This **causes** a higher inflation rate and lower GDP. Nov 28, 2012
>
> Stagflation | Economics Help
> www.economicshelp.org/blog/glossary/stagflation/

Question 32

The **international sector**. The **international sector** includes exports (X), which add to to the value of aggregate demand, and are an injection into the circular flow of income, and imports (M), which reduce aggregate demand, and are a withdrawal from the circular flow.



International sector of the economy - Economics Online
www.economicsonline.co.uk/Managing_the_economy/The_international_sector.html



Question 36

36. According to the theory of rational expectations, a fully anticipated expansionary monetary policy will

(A) increase potential output
(B) increase unemployment
(C) have no impact on real output
(D) promote the production of consumer goods over capital goods
(E) result in deflation

The **rational expectations theory** is an economic idea that the people make choices based on their **rational** outlook, available information and past experiences. The **theory** suggests that the current **expectations** in the economy are equivalent to what people think the future state of the economy will become.

Rational Expectations Theory - Investopedia
www.investopedia.com/terms/r/rationaltheoryofexpectations.asp

Rational Expectation Theory

- **Rational expectations theory is based on three assumptions**
  - **Individuals and firms learn through experience to anticipate the consequences of changes in monetary and fiscal policy**
  - **They act instantaneously to protect their economic interest thus nullifying the intended effects**
  - **All resource and product markets are purely competitive**

Question 42

- Current account deficit = Capital account surplus
- Capital account surplus = Current account deficit

Question 44

(46%) 48. Assume that the **government implements a deficit-reduction policy** that results in changes in aggregate income and output. Then the Fed engages in **monetary policy actions** that **reverse the changes** in income and output caused by fiscal policy action. Which of the following sets of changes in **taxes**, **government spending**, the **RR**, and the **discount rate** is most consistent with these policies?

	Taxes	Government Spending	Required Reserve Ratio	Discount Rate
a.	Increase	Increase	Decrease	Increase
b.	Increase	Decrease	Decrease	No change

The G would increase T and decr G to reduce the deficit which would reduce AD. To reverse this & incr AD, the Fed would decr the RR & NC the DR to lower the I.R. [decreasing the Discount Rate would have been better but is not a choice here]

Question 46

prime rate

noun NORTH AMERICAN

the lowest rate of interest at which money may be borrowed commercially.

Translations, word origin, and more definitions

Question 47

47. Which of the following best explains why transfer payments are not included in the calculation of gross domestic product?

(A) Transfer payments are used to pay for intermediate goods, and intermediate goods are excluded from gross domestic product.

(B) Transfer payments are a government expenditure, and government expenditures are excluded from gross domestic product.

(C) Recipients of transfer payments have not produced or supplied goods and services in exchange for these payments.

(D) Recipients of transfer payments are usually children, and income earned by children is excluded in gross domestic product.

(E) Recipients of transfer payments are sometimes not citizens of the United States.

What are excluded in GDP?

1. Intermediate goods






Example of Intermediate Goods:

- Bricks and cement used in the construction of house
- Steel used in production of cars
- Wood used in furniture like sofa, dining table and so on.
- Glass used for making spectacles
- Vegetables used by restaurant owner
- Gold and silver used for making ornaments
- Cotton used for making clothes

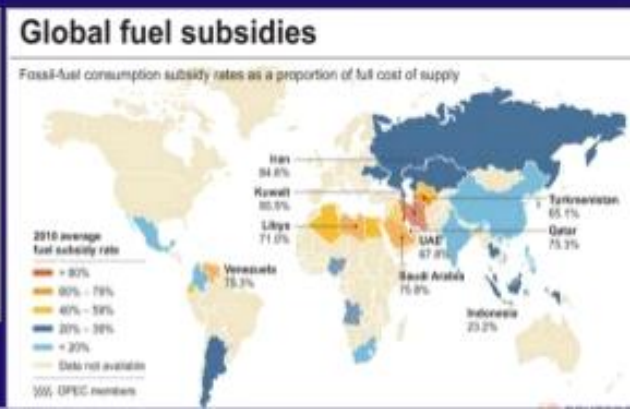
What are excluded in GDP?

1. Intermediate goods
2. Transfer payments

Examples of certain transfer payments include

- welfare (financial aid)
- social security
- government making subsidies for certain businesses (firms)

SOCIAL SECURITY SYSTEM



What are excluded in GDP?

1. Intermediate goods
2. Transfer payments
3. Home Production

What are excluded in GDP?

1. Intermediate goods
2. Transfer payments
3. Home Production
4. Pollution/ environmental damage

Question 51

51. An increase in which of the following will lead to lower inflation and lower unemployment?

(A) Exports
(B) Aggregate demand
(C) Labor productivity
(D) Government spending
(E) The international value of domestic currency

Question 52

52. An unanticipated decrease in aggregate demand when the economy is in equilibrium will result in

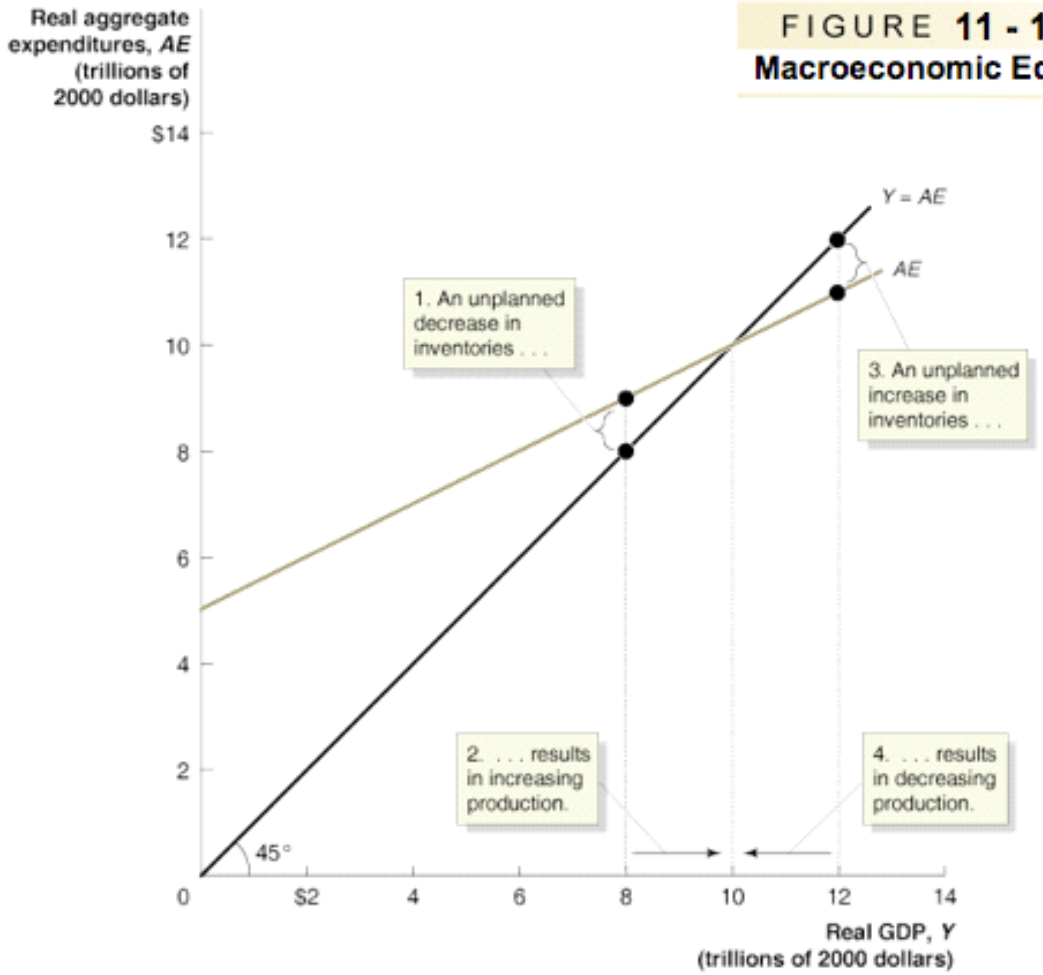
(A) a decrease in voluntary unemployment
(B) a decrease in the natural rate of unemployment
(C) a decrease in aggregate supply
(D) an increase in unplanned inventories
(E) an increase in the rate of inflation

EQUILIBRIUM EXPENDITURE

1. When aggregate planned expenditure exceeds real GDP, an unplanned decrease in inventories occurs.
2. When aggregate planned expenditure is less than real GDP, an unplanned increase in inventories occurs.
3. When aggregate planned expenditure equals real GDP, there are no unplanned inventories and real GDP remains at equilibrium expenditure

FIGURE **11 - 10**

Macroeconomic Equilibrium



2008 Free Response

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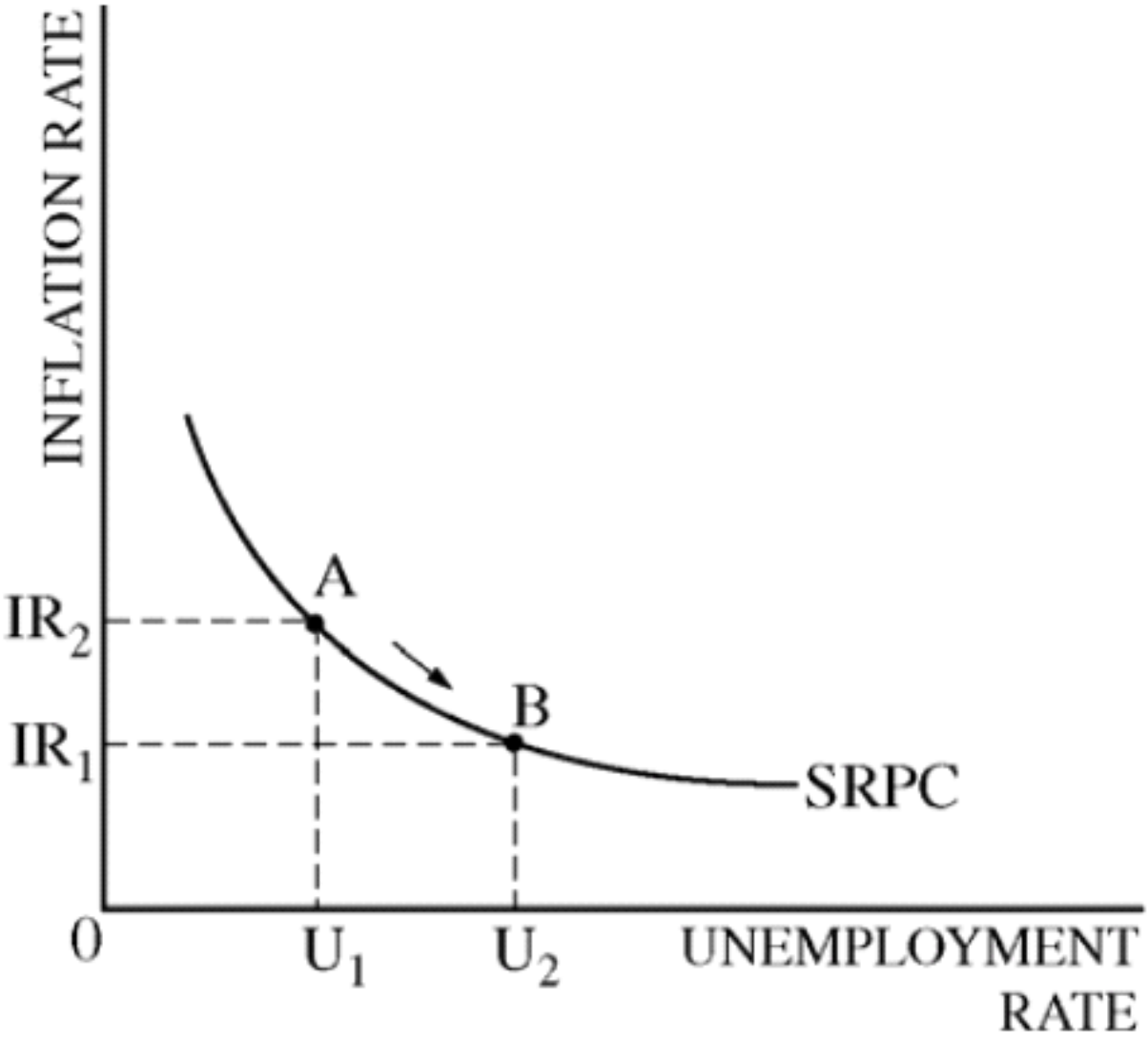
Question 1 (a)

- The effect of the decrease in consumption spending



Question 1 (e)

- As a result of the **increase** in **interest rate**, the **growth rate** will **fall**.
- The **investment spending decreases** and, as a result, **capital formation** will **decrease**.

Question 2 (a)

- Current account record:

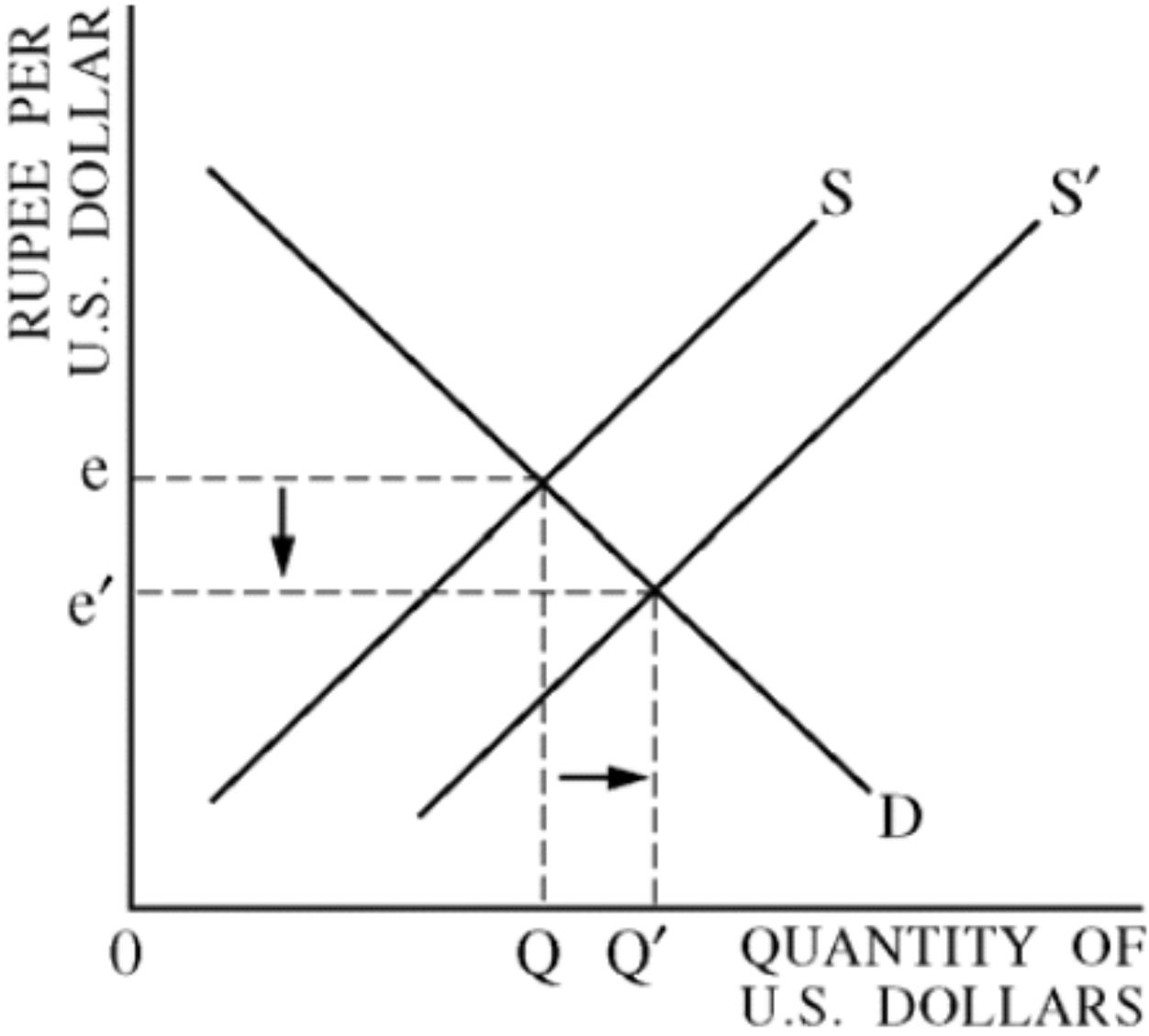
- A United States resident buys chocolate from Belgium
- A United States manufacturer buys computer equipment from Japan.

Question 2 (b)

- Increase in income causes imports to increase, therefore the current account balance will decrease or move toward a deficit.

Question 2 (c)

- The effect of an increase in United States firm's direct investment in India
  - X-axis: Quantity of US Dollars
  - Y-axis: Rupee per US Dollar



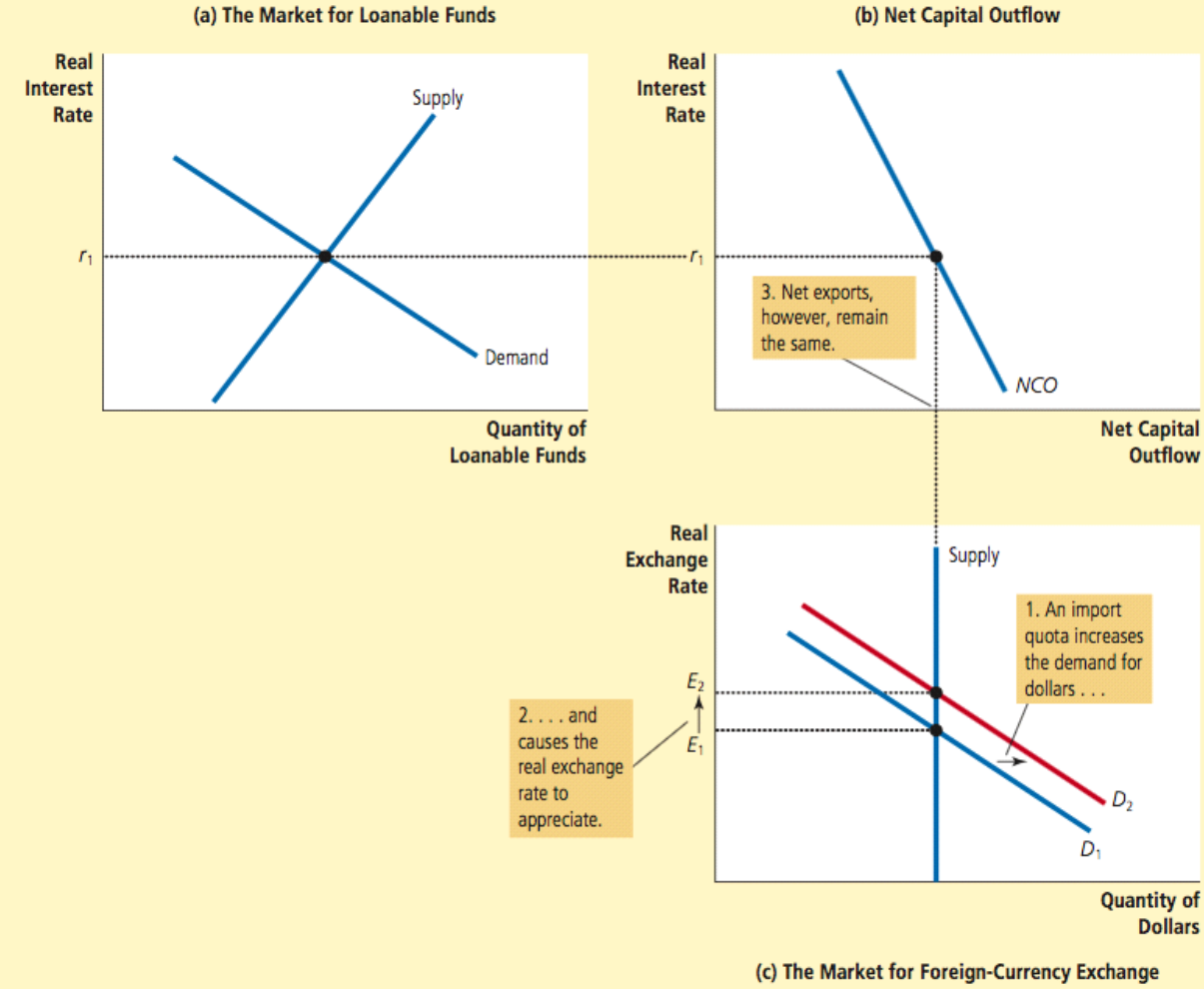
The Demand and Supply Line-ups in Foreign Exchange Markets

Demand for the U.S. Dollar Comes from…	**Supply of the U.S. Dollar Comes from…**
A U.S. exporting firm that earned foreign currency and is trying to pay U.S.-based expenses	A foreign firm that has sold imported goods in the United States, earned U.S. dollars, and is trying to pay expenses incurred in its home country
Foreign tourists visiting the United States	U.S. tourists leaving to visit other countries
Foreign investors who wish to make direct investments in the U.S. economy	U.S. investors who want to make foreign direct investments in other countries
Foreign investors who wish to make portfolio investments in the U.S. economy	U.S. investors who want to make portfolio investments in other countries

FIGURE 6

The Effects of an Import Quota

When the U.S. government imposes a quota on the import of Japanese cars, nothing happens in the market for loanable funds in panel (a) or to net capital outflow in panel (b). The only effect is a rise in net exports (exports minus imports) for any given real exchange rate. As a result, the demand for dollars in the market for foreign-currency exchange rises, as shown by the shift from D_1 to D_2 in panel (c). This increase in the demand for dollars causes the value of the dollar to appreciate from E_1 to E_2. This appreciation of the dollar tends to reduce net exports, offsetting the direct effect of the import quota on the trade balance.



2008 Free Response (Form B)

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Question 1 (d)

- The higher interest rate reduces the outflow of funds to countries that now have a relatively lower interest rate.

Question 2 (a)

- Reducing tariffs will cause the domestic price of automobile to fall in Mexico, lowering the production of cars in Mexico.

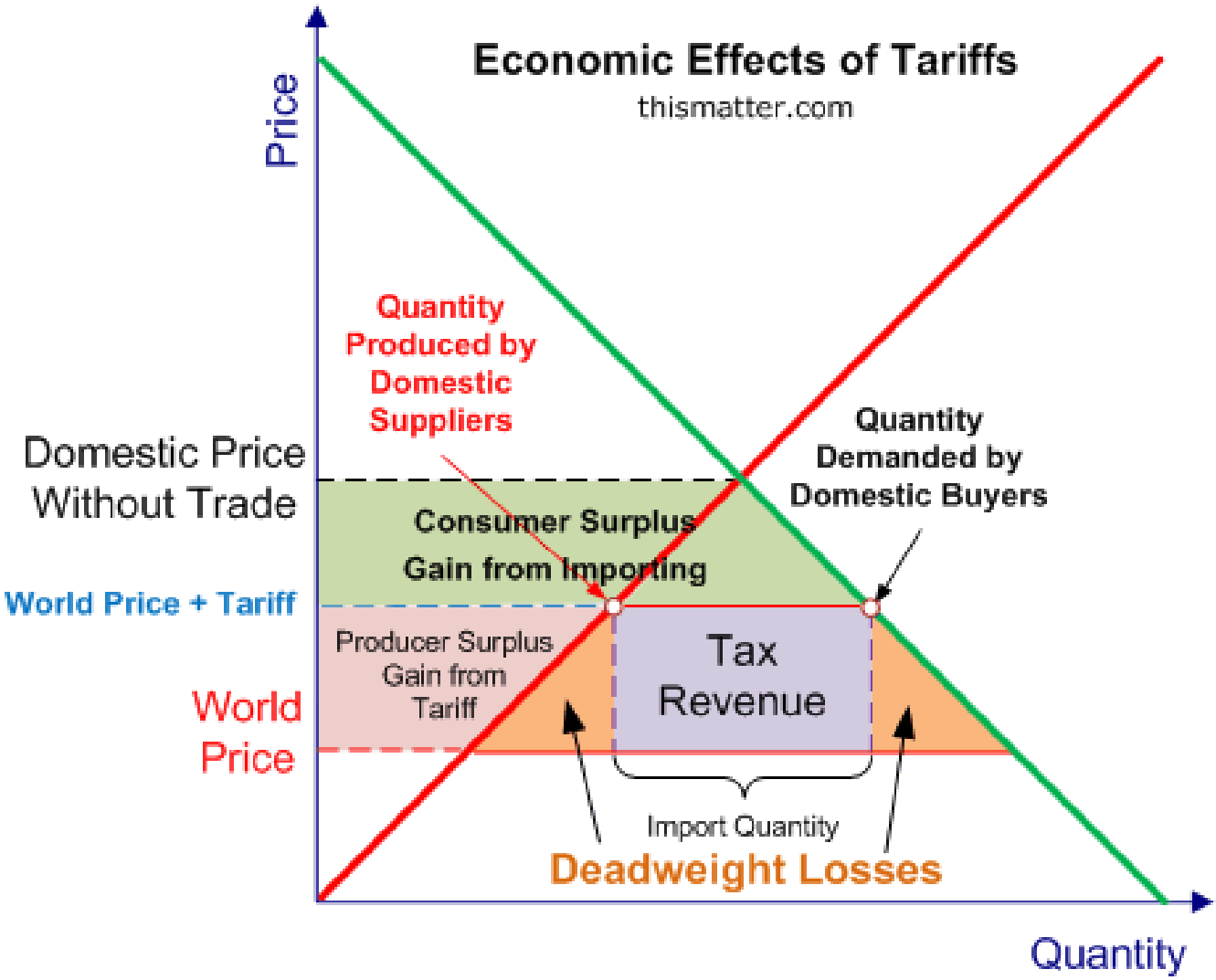
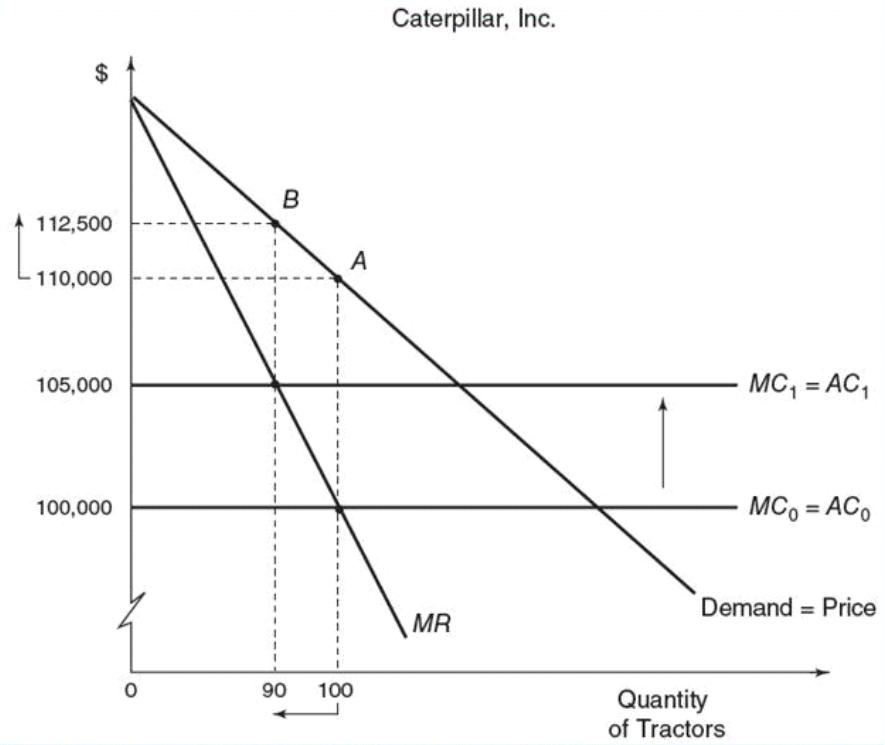


FIGURE 4.5 How an import tariff burdens domestic exporters



A tariff placed on imported steel increases the costs of a steel-using manufacturer. This increase leads to a higher price charged by the manufacturer and a loss of international competitiveness.

Question 2 (b)

- Current Account = Export - Import - Investment Income
- The reduction in tariff increases imports relative to exports

2009 Free Response

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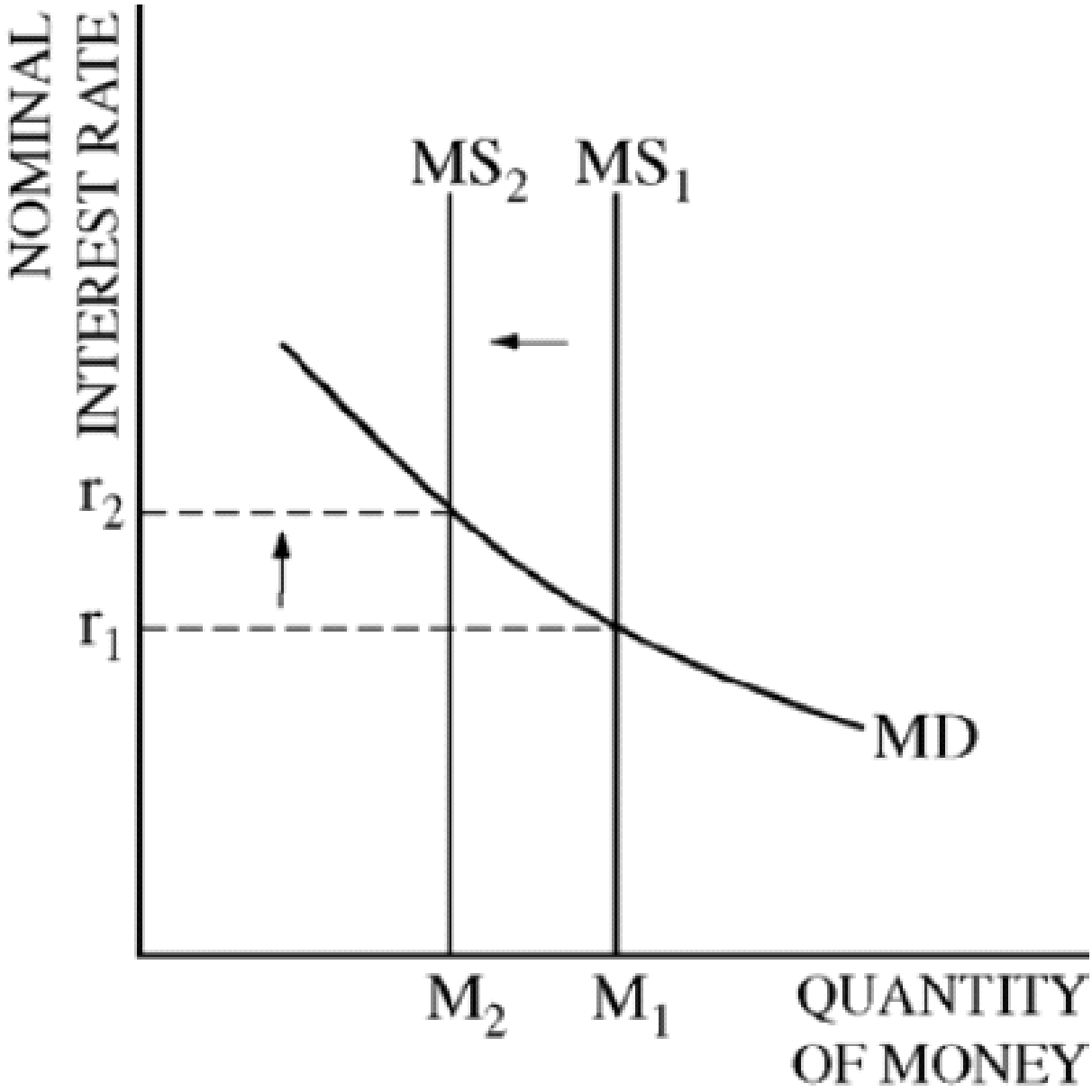
Question 1 (d)

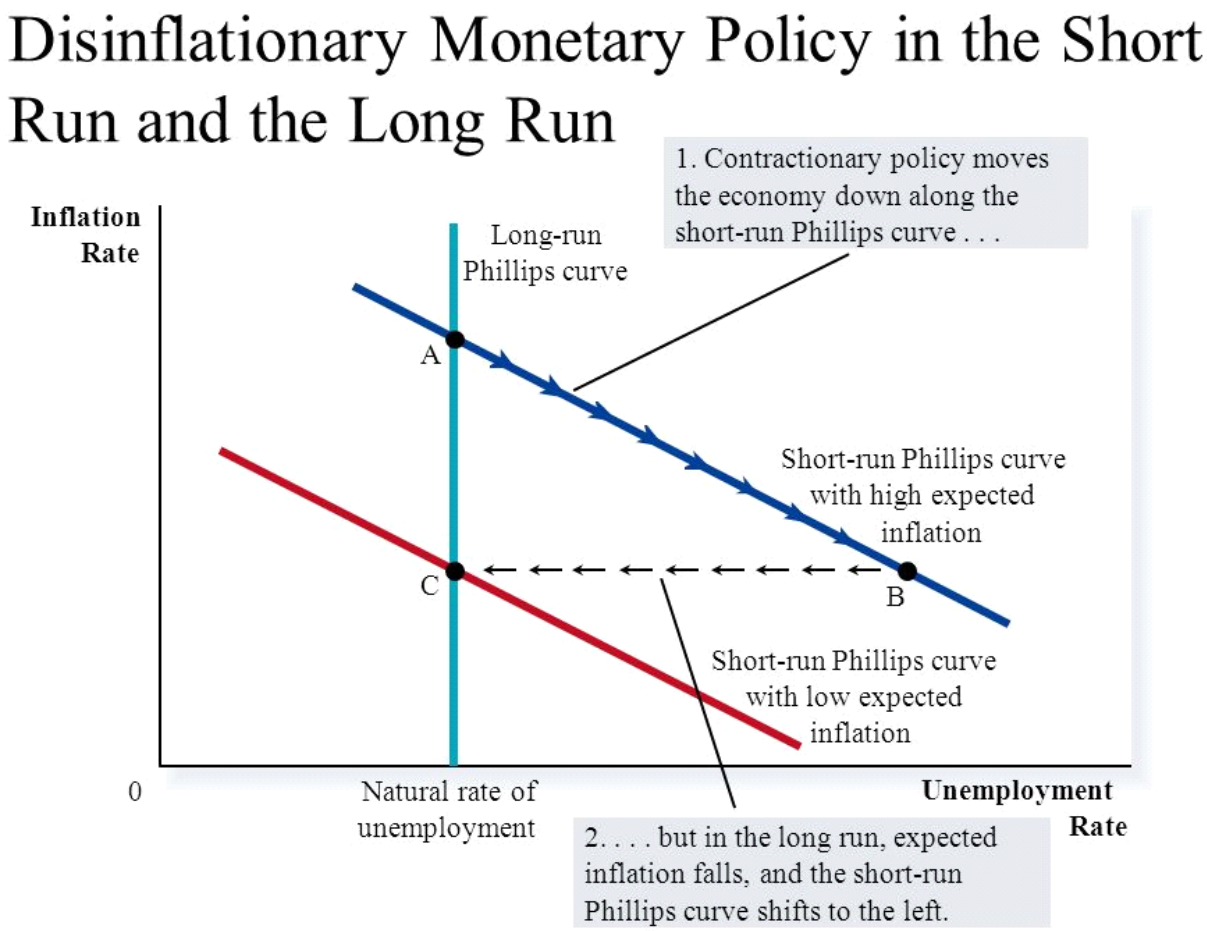
- Money Supply in the graph of the money market is vertical



Question 1 (e)

- Higher interest rate decreases investment and interest-sensitive consumption spending, and that both consumption and investment are components of aggregate demand.

Question 1 (f)



Question 2 (b)

26-3a Supply and Demand for Loanable Funds

The economy's market for loanable funds, like other markets in the economy, is governed by supply and demand. To understand how the market for loanable funds operates, therefore, we first look at the sources of supply and demand in that market.

The supply of loanable funds comes from people who have some extra income they want to save and lend out. This lending can occur directly, such as when a household buys a bond from a firm, or it can occur indirectly, such as when a household makes a deposit in a bank, which in turn uses the funds to make loans. In both cases, *saving is the source of the supply of loanable funds*.

The demand for loanable funds comes from households and firms who wish to borrow to make investments. This demand includes families taking out mortgages to buy new homes. It also includes firms borrowing to buy new equipment or build factories. In both cases, *investment is the source of the demand for loanable funds*.

Question 3 (a)

Assume that the reserve requirement is 20 percent and banks hold no excess reserves.

(a) Assume that Kim deposits $100 of cash from her pocket into her checking account. Calculate each of the following.

(i) The maximum dollar amount the commercial bank can initially lend

(ii) The maximum total change in demand deposits in the banking system

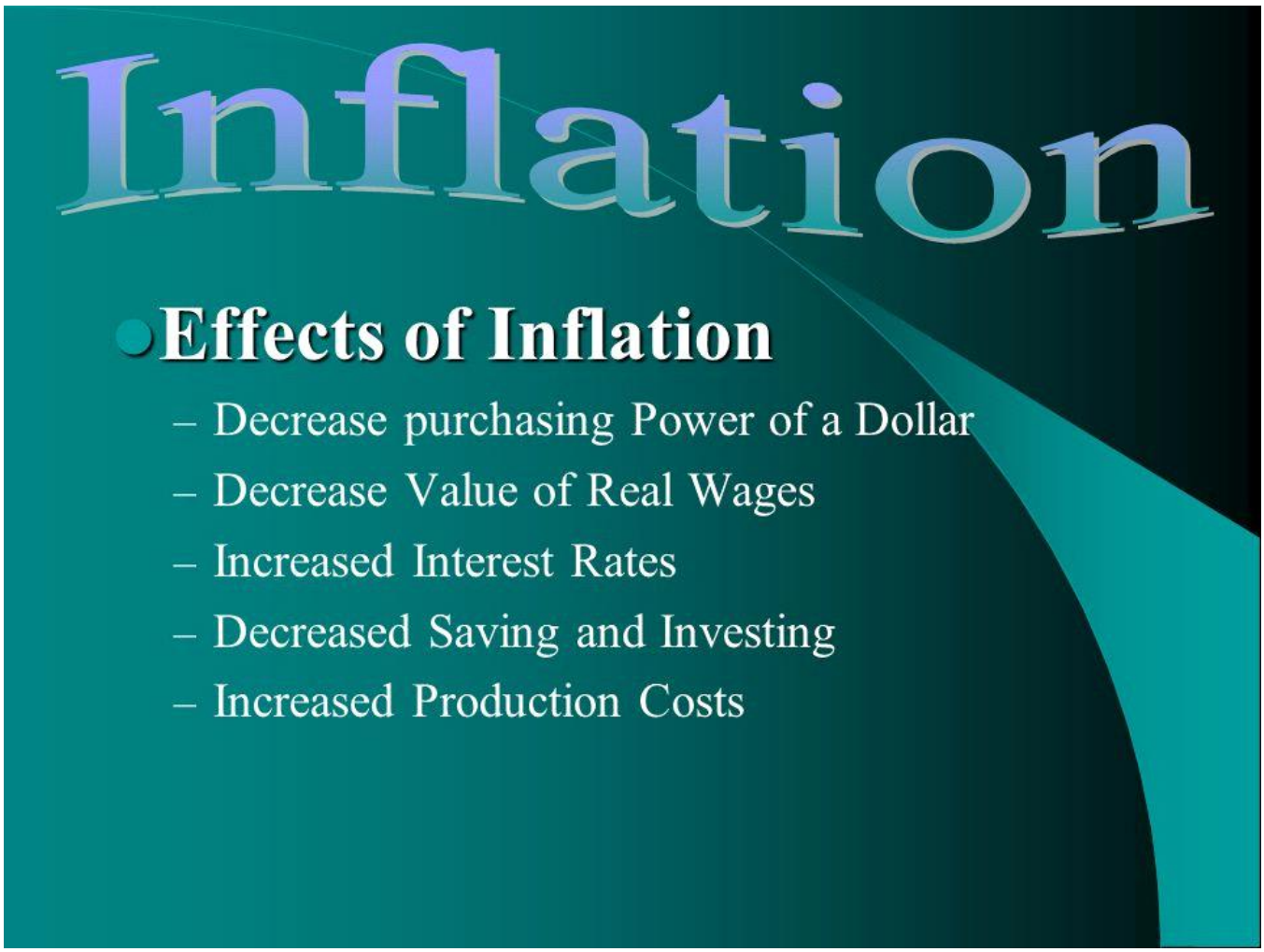
(iii) The maximum change in the money supply

- maximum dollar amount the bank can initially lend is $80.
- maximum change in demand deposits is $500.
- maximum change in the money supply is $400.

- Maximum change in money supply = Initial deposit / RRR - Initial deposit

Question 3 (c)

- Inflation will decrease the value of real wages.

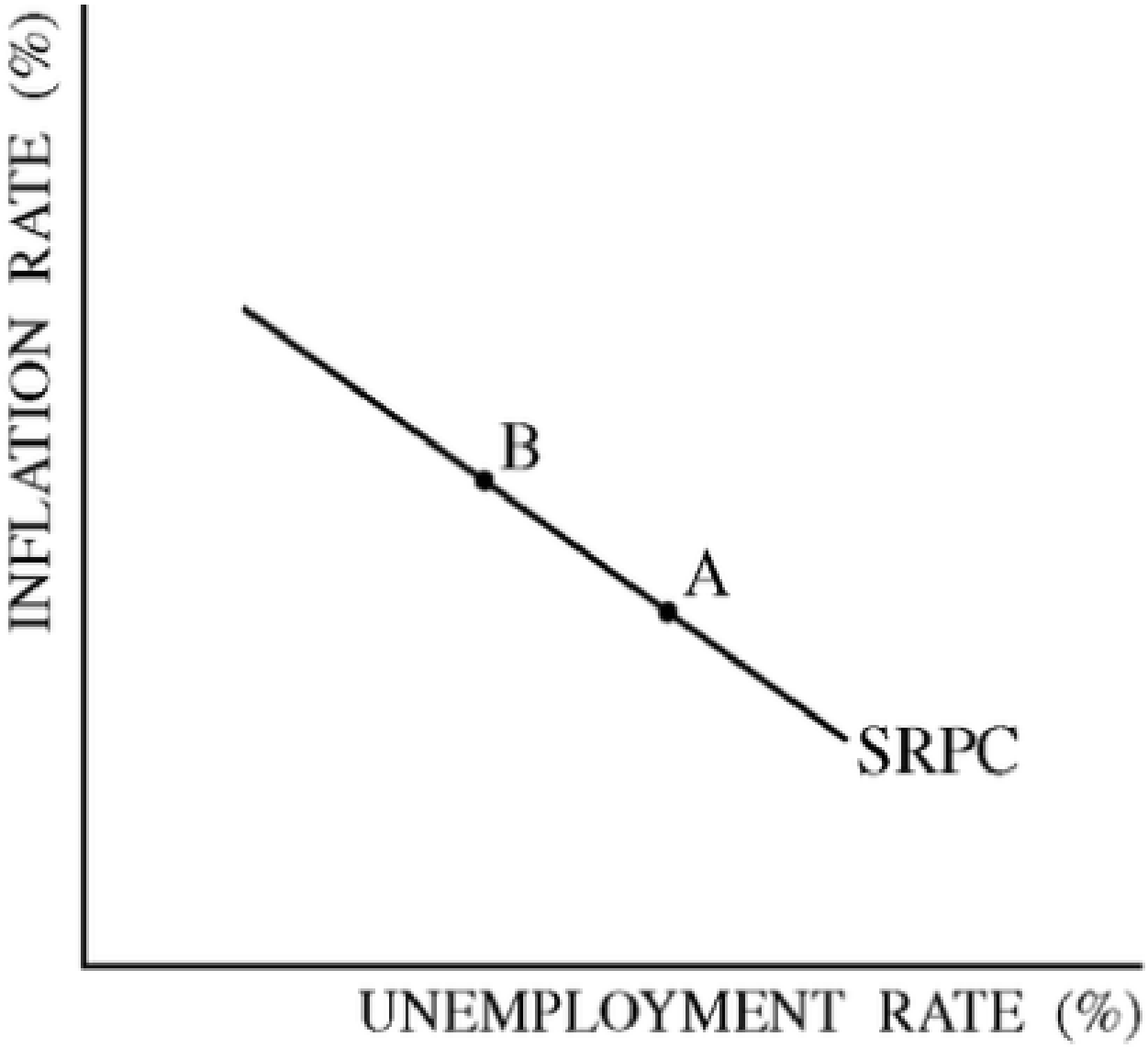


2009 Free Response (Form B)

2017年5月9日 星期二 下午5:16

Question 1 (b)

- **Decrease** in **taxes** raises **disposable income** and increases **consumption spending**
- The effect of decrease in taxes on the Phillips curve



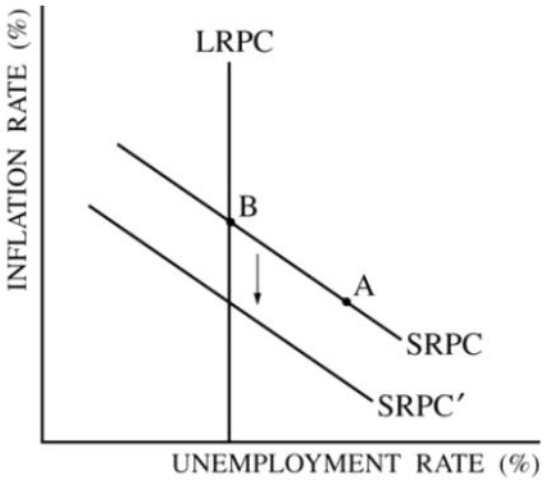
Question 1 (c)

(c) Raymond advises the president to take no policy action.

(i) What will happen to the short-run aggregate supply curve in the long run? Explain.

(ii) Using a new correctly labeled graph of the short-run Phillips curve, show the effect of the change in the short-run aggregate supply you identified in part (c)(i).

- One point is earned for stating that the short-run aggregate supply curve will shift to the right.
- One point is earned for explaining that wages will fall, businesses will hire more workers, and output will rise.
- One point is earned for showing a leftward shift of the short-run Phillips curve.

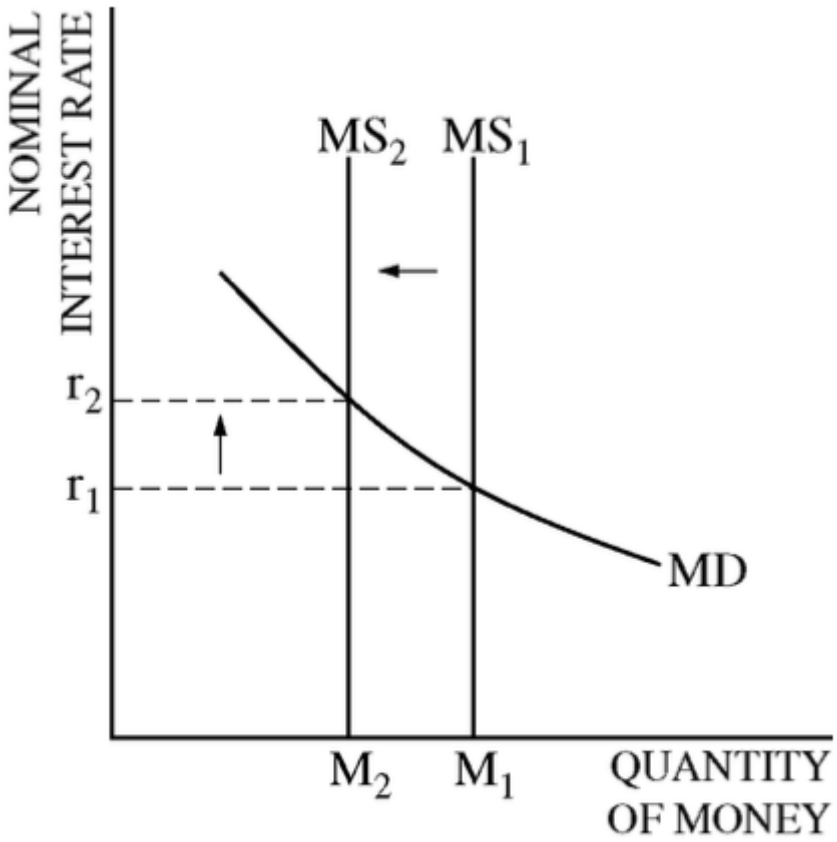


Question 2 (a)

- Total change in reserves = The change of government securities

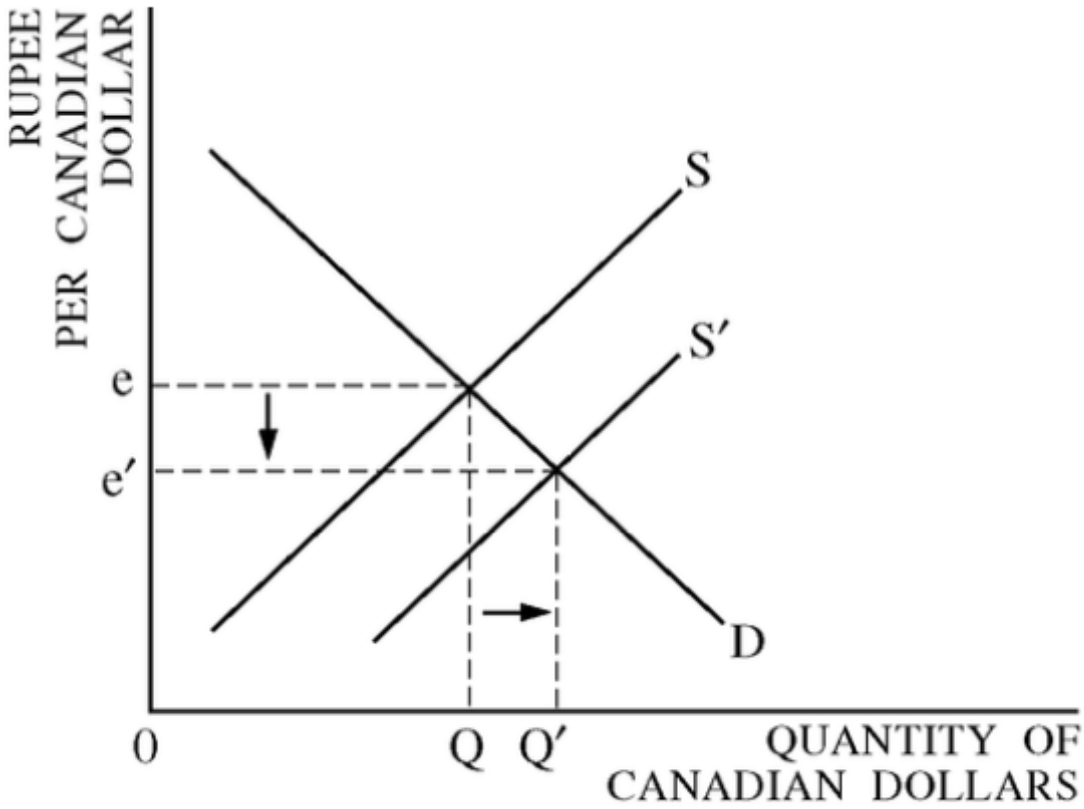
Question 2 (b)

- Money supply is vertical, since it is controlled by the federal bank



Question 3 (a)

3. Assume that the real interest rates in both Canada and India have been 5 percent. Now the real interest rate in India increases to 8 percent.



- The supply of Canadian dollars will increase, because Canadian investors will be attracted by the higher real interest rate in India and increase their purchase of Indian financial assets

The demand for currency

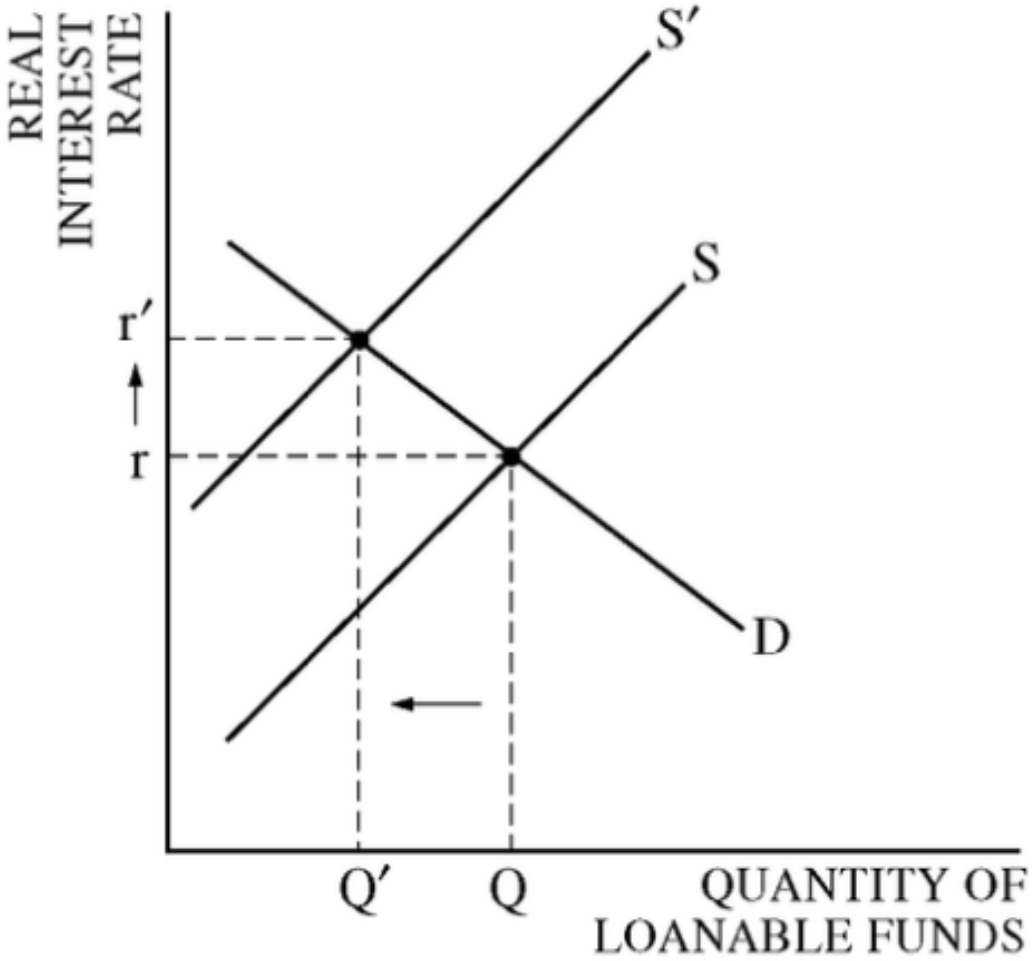
The demand for currencies is derived from the demand for a country's exports, and from speculators looking to make a profit on changes in currency values.

The supply of currency

The supply of a currency is determined by the domestic demand for imports from abroad. For example, when the UK imports cars from Japan it must pay in yen (¥), and to buy yen it must sell (supply) pounds. The more it imports the greater the supply of pounds onto the foreign exchange market. A large proportion of short-term trade in currencies is by dealers who work for financial institutions. The London foreign exchange market is the World's single largest international exchange market.

Question 3 (b)

(b) Using a correctly labeled graph of the loanable funds market in Canada, show how the increase in the real interest rate in India affects the real interest rate in Canada.


REAL INTEREST RATE
S′
S
r′
r
D
Q′
Q
QUANTITY OF LOANABLE FUNDS

2010 Multiple Choice

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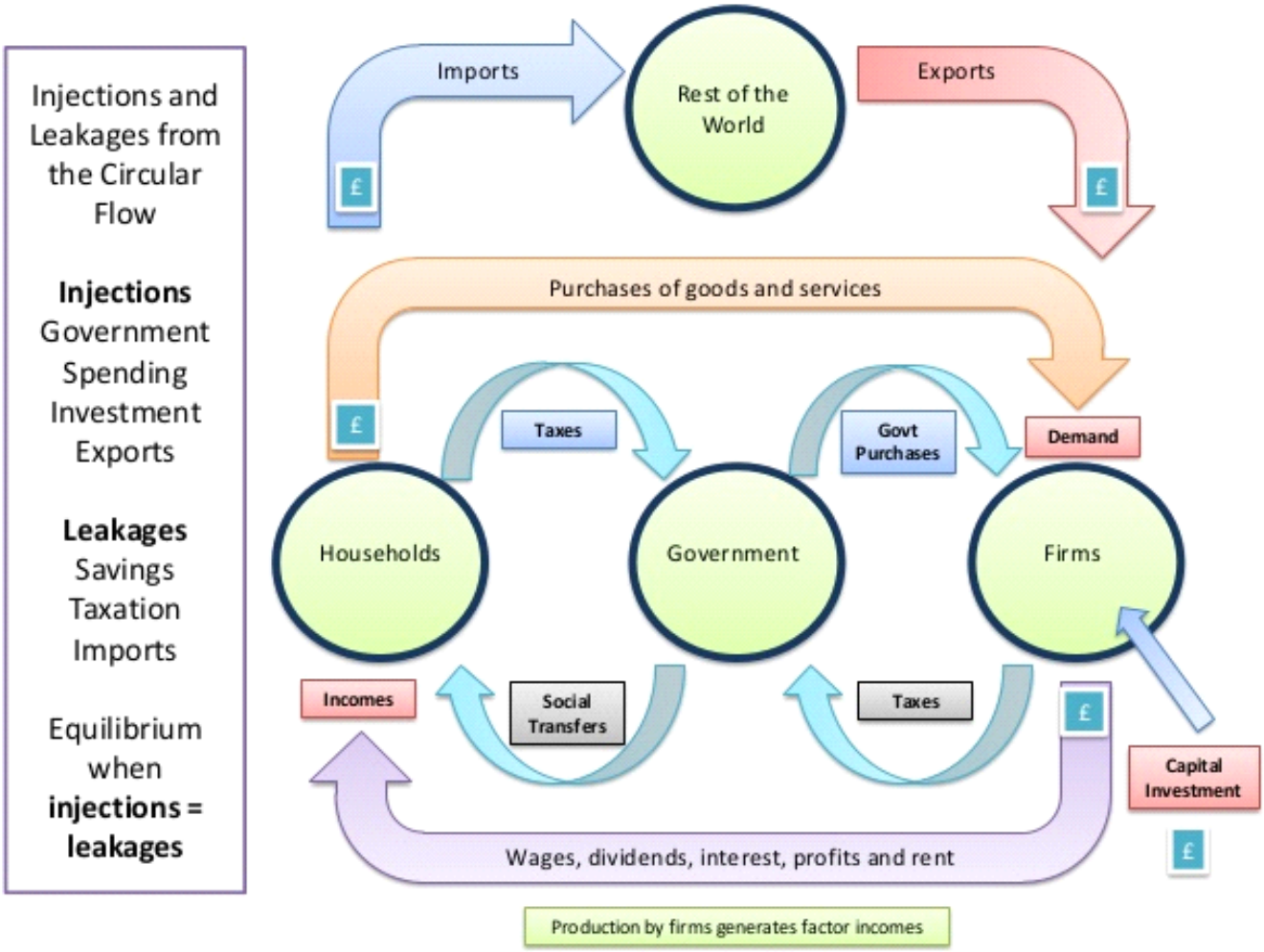
Question 25

- Leakage and injections of the circular flow



Question 29

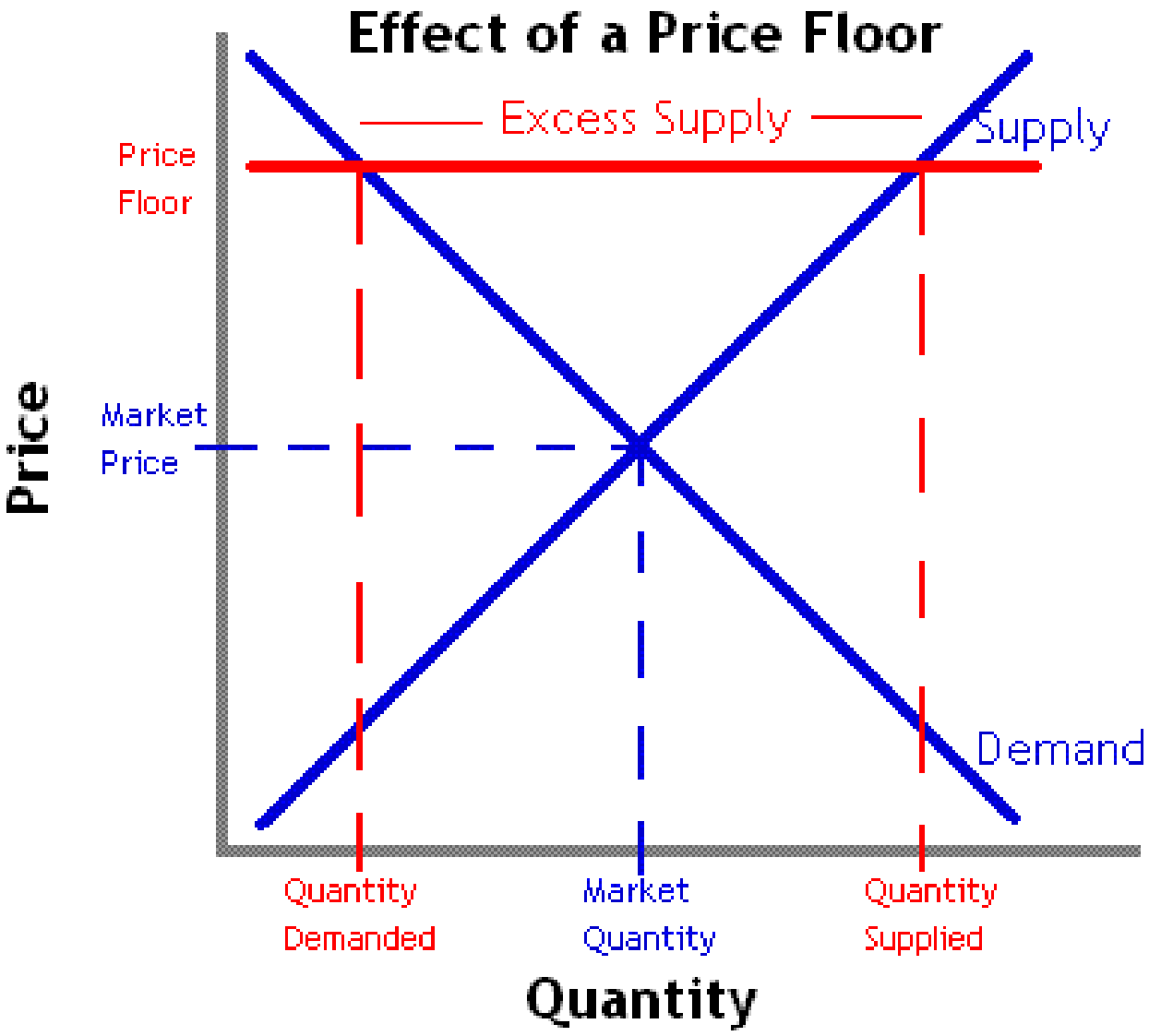
- Employed
  - people currently **holding a job** in the economy (either full-time or part-time)
- Unemployed
  - people who are **actively looking for** work but have **not found** a job
- Labor Force
  - sum of **employed** and **unemployed**

Question 30

30. If an effective price floor is removed from a

30. If an effective price floor is removed from a market for a good, then the price and quantity of the good sold will change in which of the following ways?

	Price	Quantity
(A)	Increase	Increase
(B)	Increase	Decrease
(C)	Decrease	Increase
(D)	Decrease	Decrease
(E)	No change	Increase

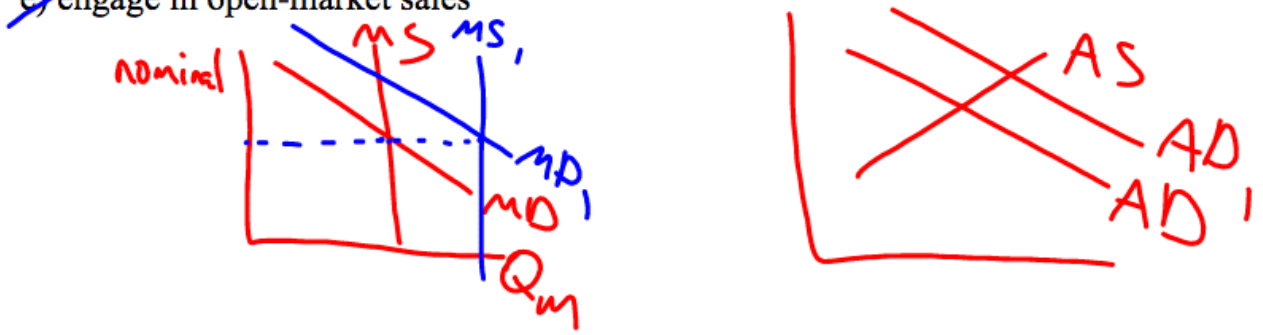


Question 34

2) Suppose the FED is committed to keeping the nominal interest rate fixed. To maintain the interest rate target in the face of an expansionary fiscal policy, the

2) Suppose the FED is committed to keeping the nominal interest rate fixed. To maintain the interest rate target in the face of an expansionary fiscal policy, the FED can do which of the following?

a) increase the prime rate
b) increase the discount rate
c) increase the federal funds rate
d) engage in open-market purchases
e) engage in open-market sales



Question 36

- Current account vs. Capital account

A: The current account records exports and imports of goods and services as well as unilateral transfers whereas the capital account records transactions of purchase and sale of foreign assets and liabilities during a particular year. The current account considers goods and services currently being produced. The credit and debit of foreign exchange due to these transactions are also recorded in the balance of current account. The capital account is concerned with payments of debts and claims, regardless of the time period. The balance of capital account includes all items reflecting changes in stocks.

The balance of payments contains two accounts: current and capital. The current account deals with short-term transactions known as actual transactions, as they have a real impact on income, output and employment levels of a country through the movement of goods and services in the economy. It is comprised of visible trade (export and import of goods), invisible trade (export and import of services), unilateral transfers and investment income (income from factors such as land or foreign shares). The resulting balance of the current account is approximated as the sum total of balance of trade.

The capital account is a record of the inflows and outflows of capital that directly affect a country's foreign assets and liabilities. It is concerned with all international trade transactions between citizens of a given country and citizens in other countries. The components of the capital account include foreign investment and loans, banking capital and other forms of capital, as well as monetary movements or changes in foreign exchange reserve. The capital account flow reflects factors such as commercial borrowings, banking, investments, loans and capital.

In economic terms, the current account deals with receipt and payment in cash as well as non-

factors such as commercial borrowings, banking, investments, loans and capital.

In economic terms, the current account deals with receipt and payment in cash as well as non-capital items, and the capital account reflects sources and utilization of capital. The sum of the current account and capital account as reflected in the balance of payments will always be zero; any surplus or deficit in the current account is matched and cancelled out by an equal surplus or deficit in the capital account.

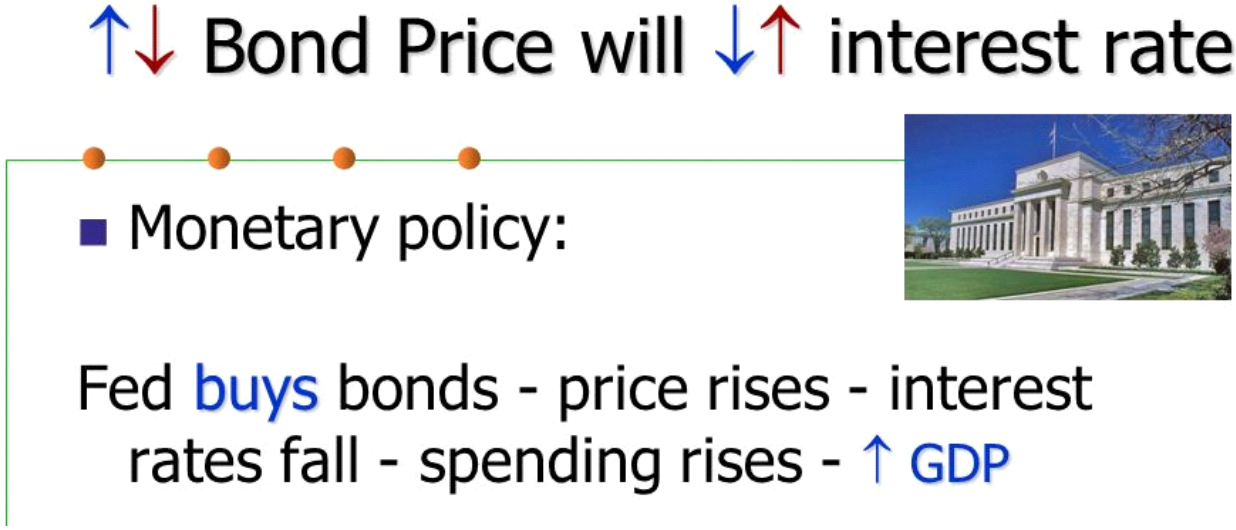
Question 41

41. If the economy was in a severe recession, the most expansionary fiscal policy would be to

(A) decrease both personal income taxes and government spending by equal amounts
(B) decrease both the reserve requirement and government spending by the same proportion
(C) decrease personal income taxes and increase government spending by equal amounts
(D) increase the money supply and increase government spending by the same proportion
(E) increase social security taxes and increase government spending by equal amounts

Question 43

- Bond Prices and Nominal Interest Rates go the opposite direction



rates fall - spending rises - ↑ GDP

Fed sells bonds - price falls - interest rates rise - spending falls - ↓ Inflation

Question 45

Supply and Demand and Exchange Rates

- If Americans want to buy foreign goods/services then they need the currency that the people in the foreign country use from day to day.
- If Foreigners want to buy American made goods/services, then they need the currency that people in the U.S. use from day to day.
  - This currency exchange MUST be made somewhere along the process of trade!!

Currency (money) is a commodity just like any other good/service – its value is determined by the forces of supply and demand – we can't escape it!!

The Demand and Supply Line-ups in Foreign Exchange Markets

Demand for the U.S. Dollar Comes from…	**Supply of the U.S. Dollar Comes from…**
A U.S. exporting firm that earned foreign currency and is trying to pay U.S.-based expenses	A foreign firm that has sold imported goods in the United States, earned U.S. dollars, and is trying to pay expenses incurred in its home country
Foreign tourists visiting the United	U.S. tourists leaving to visit other countries

The Demand and Supply Line-ups in Foreign Exchange Markets

Demand for the U.S. Dollar Comes from…	**Supply of the U.S. Dollar Comes from…**
A U.S. exporting firm that earned foreign currency and is trying to pay U.S.-based expenses	A foreign firm that has sold imported goods in the United States, earned U.S. dollars, and is trying to pay expenses incurred in its home country
Foreign tourists visiting the United States	U.S. tourists leaving to visit other countries
Foreign investors who wish to make direct investments in the U.S. economy	U.S. investors who want to make foreign direct investments in other countries
Foreign investors who wish to make portfolio investments in the U.S. economy	U.S. investors who want to make portfolio investments in other countries

Question 49

49. Which of the following best describes human capital?

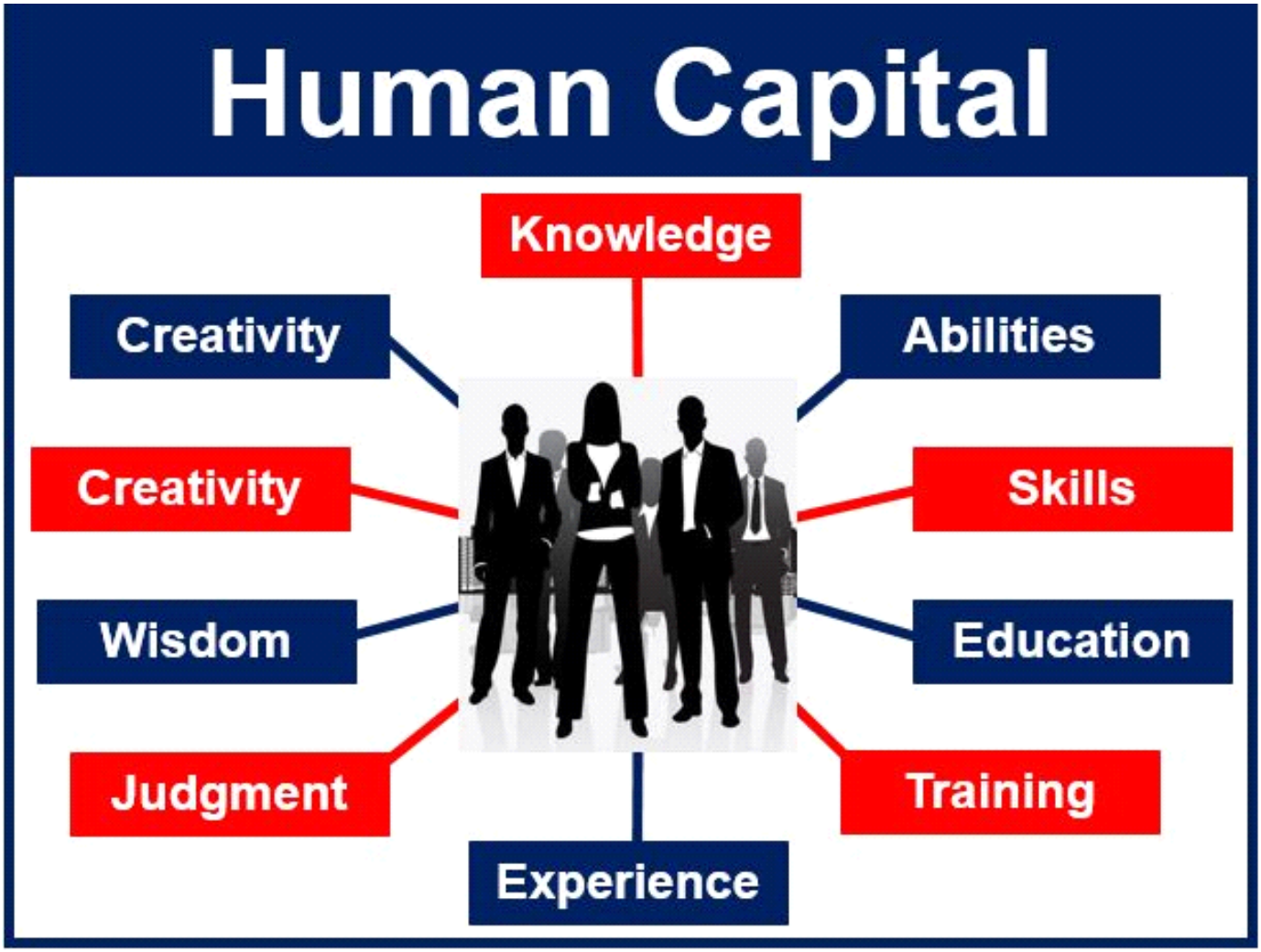
(A) The number of workers in the labor force
(B) The physical capital used by workers
(C) The financial assets owned by workers
(D) The training and education of workers
(E) The spending by business for worker recruitment

hu·man cap·i·tal

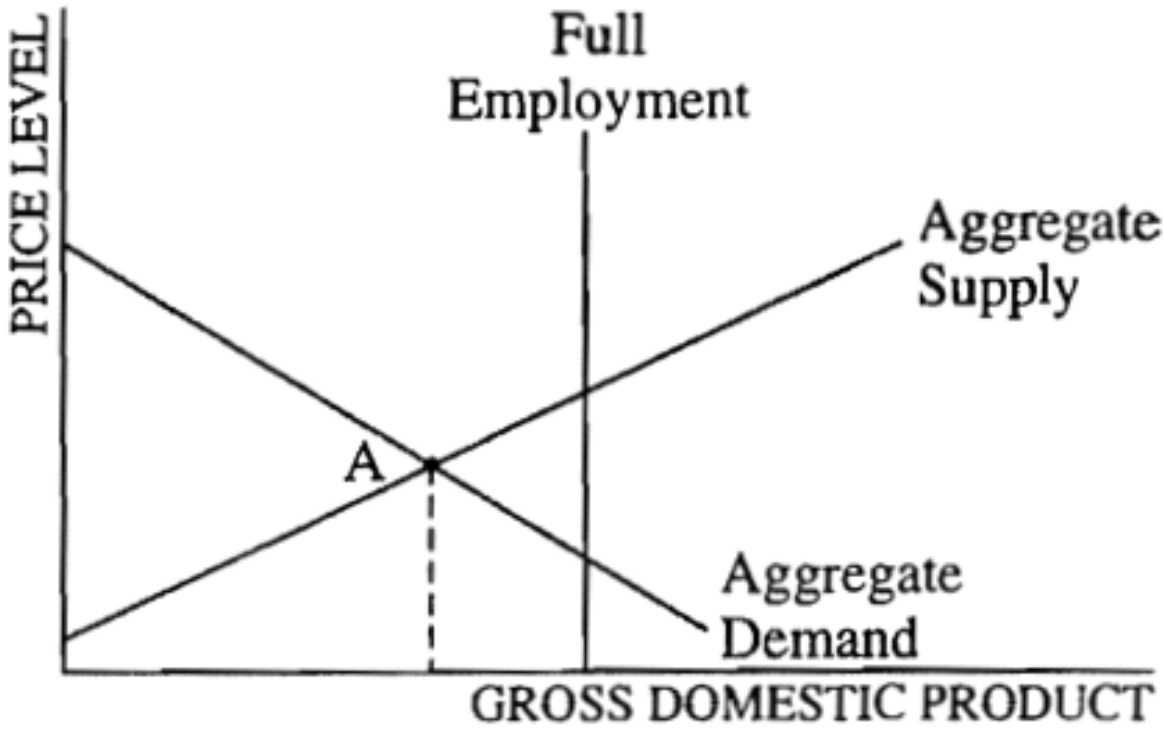
noun

the skills, knowledge, and experience possessed by an individual or population, viewed in terms of their value or cost to an organization or country.

Translations, word origin, and more definitions


Human Capital
Knowledge
Creativity
Abilities
Creativity
Skills
Wisdom
Education
Judgment
Training
Experience

Question 53


PRICE LEVEL
Full Employment
Aggregate Supply
A
Aggregate Demand
GROSS DOMESTIC PRODUCT

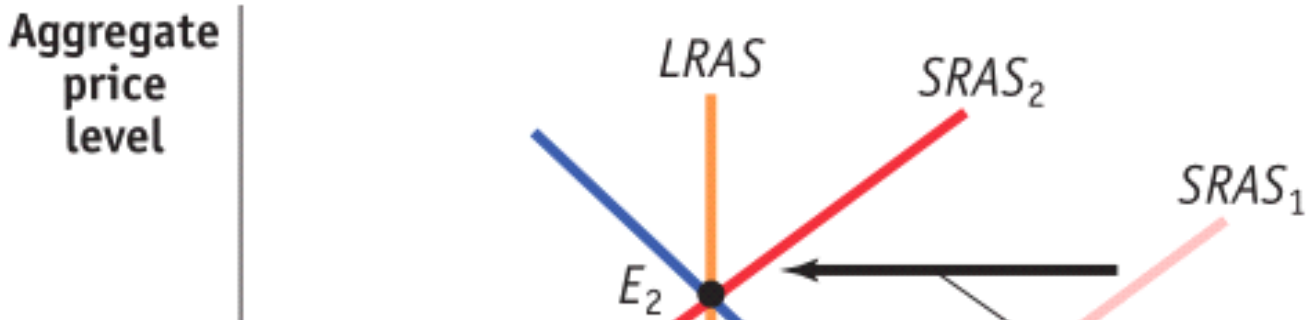
Demand

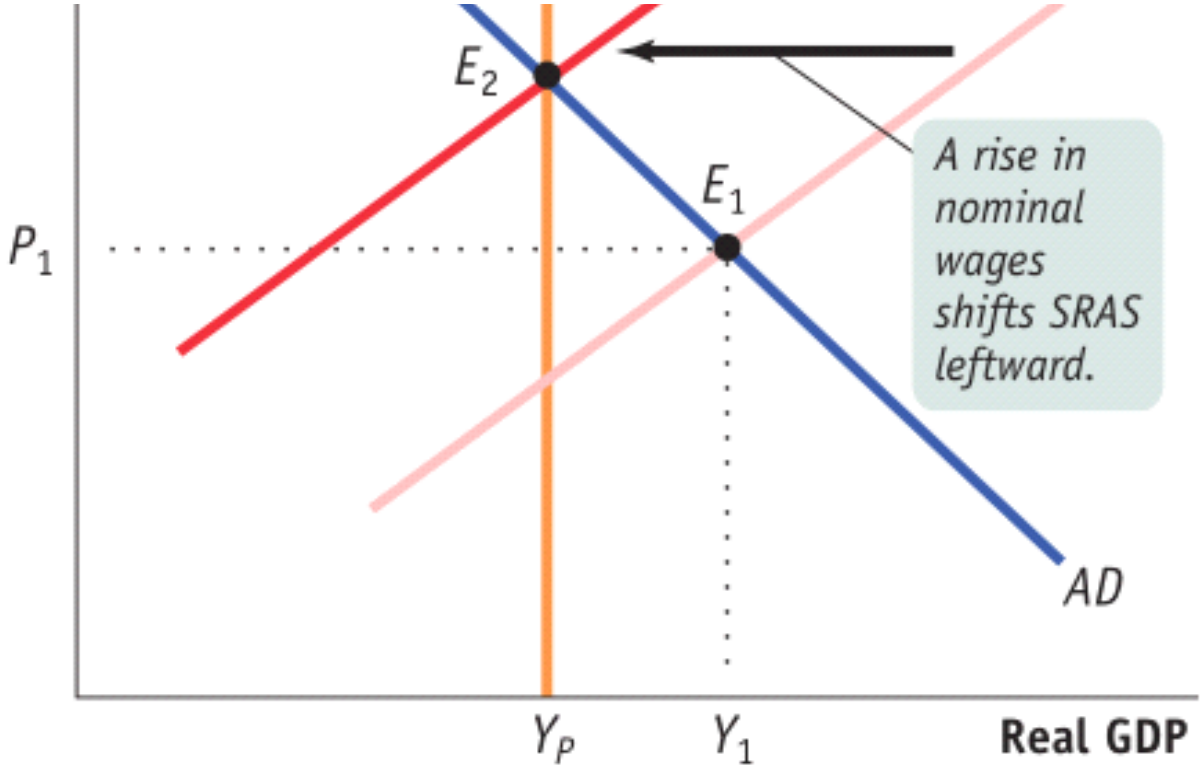
GROSS DOMESTIC PRODUCT

60. The economy of a country is currently in equilibrium at point A in the diagram above. If the government does nothing and wages are flexible, which of the following will most likely occur in the long run?

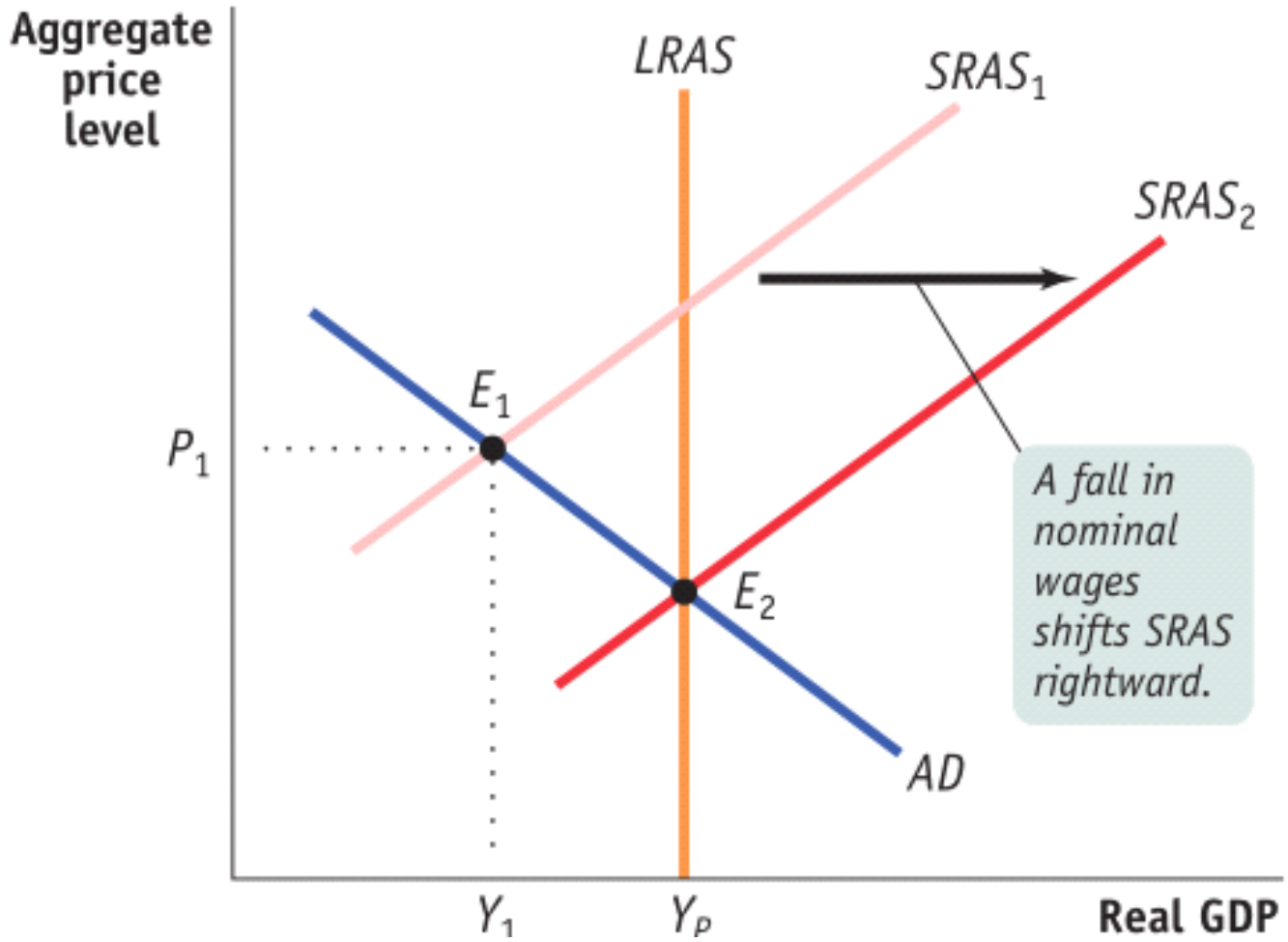
(A) Falling wages will shift the aggregate demand curve to the right, producing full employment.
(B) Rising wages will shift the aggregate demand curve to the right, producing full employment.
(C) The economy will remain at point A.
(D) Rising wages will shift the aggregate supply curve to the right, producing full employment.
(E) Falling wages will shift the aggregate supply curve to the right, producing full employment.

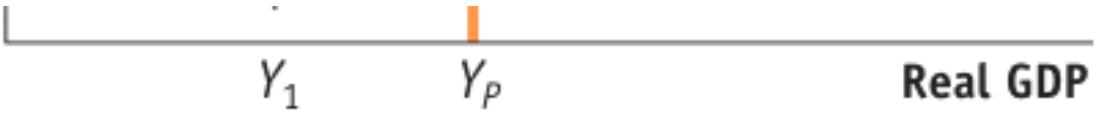
- Short-Run to Long-Run: $Y_1 > Y_P$
- Initial equilibrium is E_1. Eventually, **low unemployment** will cause **nominal wages** to **rise** and leads to a **leftward** shift of the **SRAS curve**, so the new equilibrium is at E_2





- Short-Run to Long-Run: $Y_1 < Y_P$
- Initial equilibrium is E_1. Eventually, **high unemployment** will cause **nominal wages** to **fall** and leads to a **rightward** shift of the **SRAS curve**, so the new equilibrium is at E_2




Y_1
Y_P
Real GDP

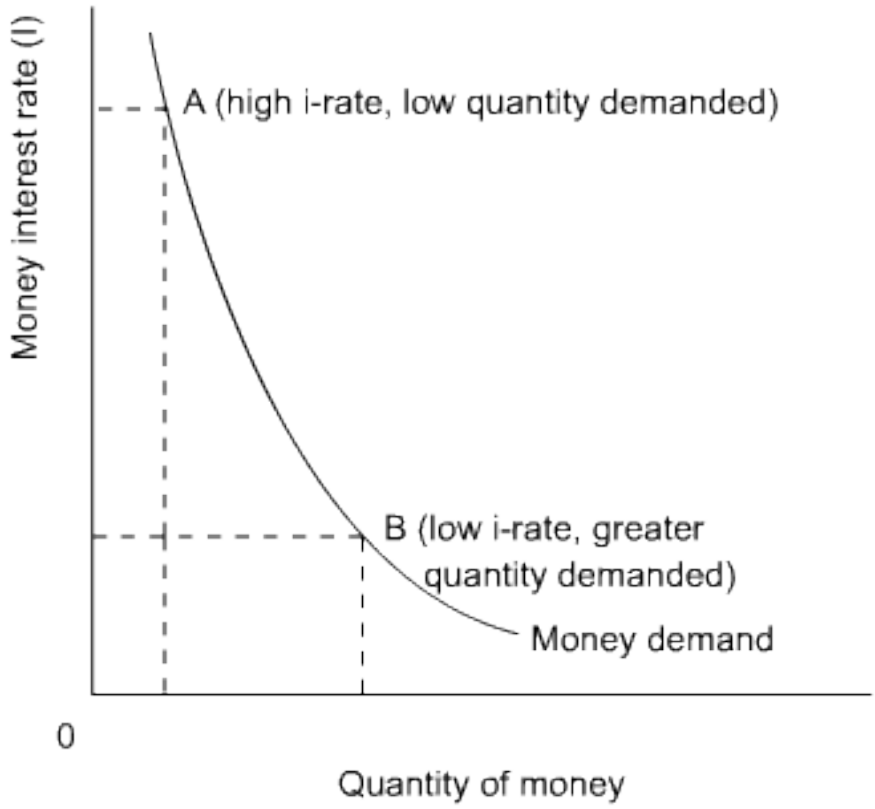
2012 Multiple Choice

Tuesday, April 4, 2017 10:14 PM

Question 9

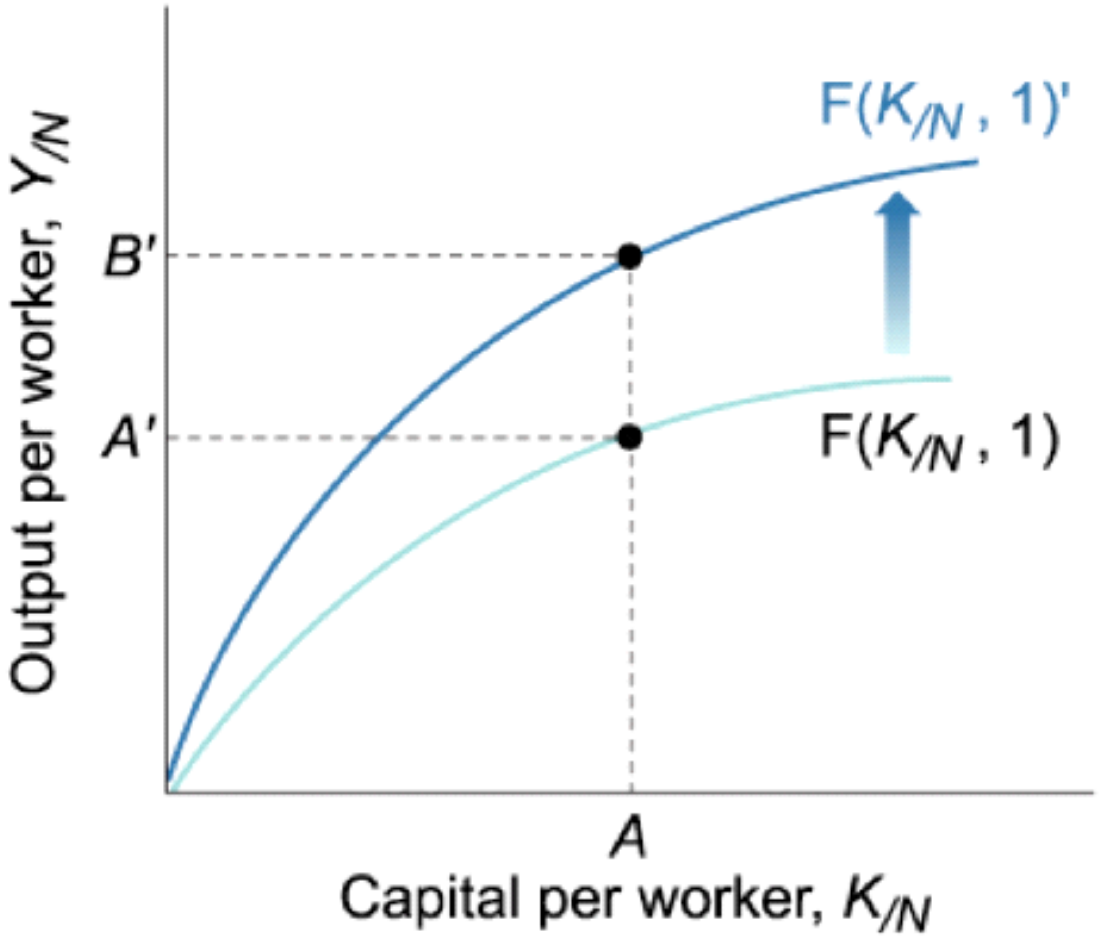
- The official unemployment rate understates the unemployment level in the economy because the official unemployment rate ignores underemployed and discouraged workers

Question 12

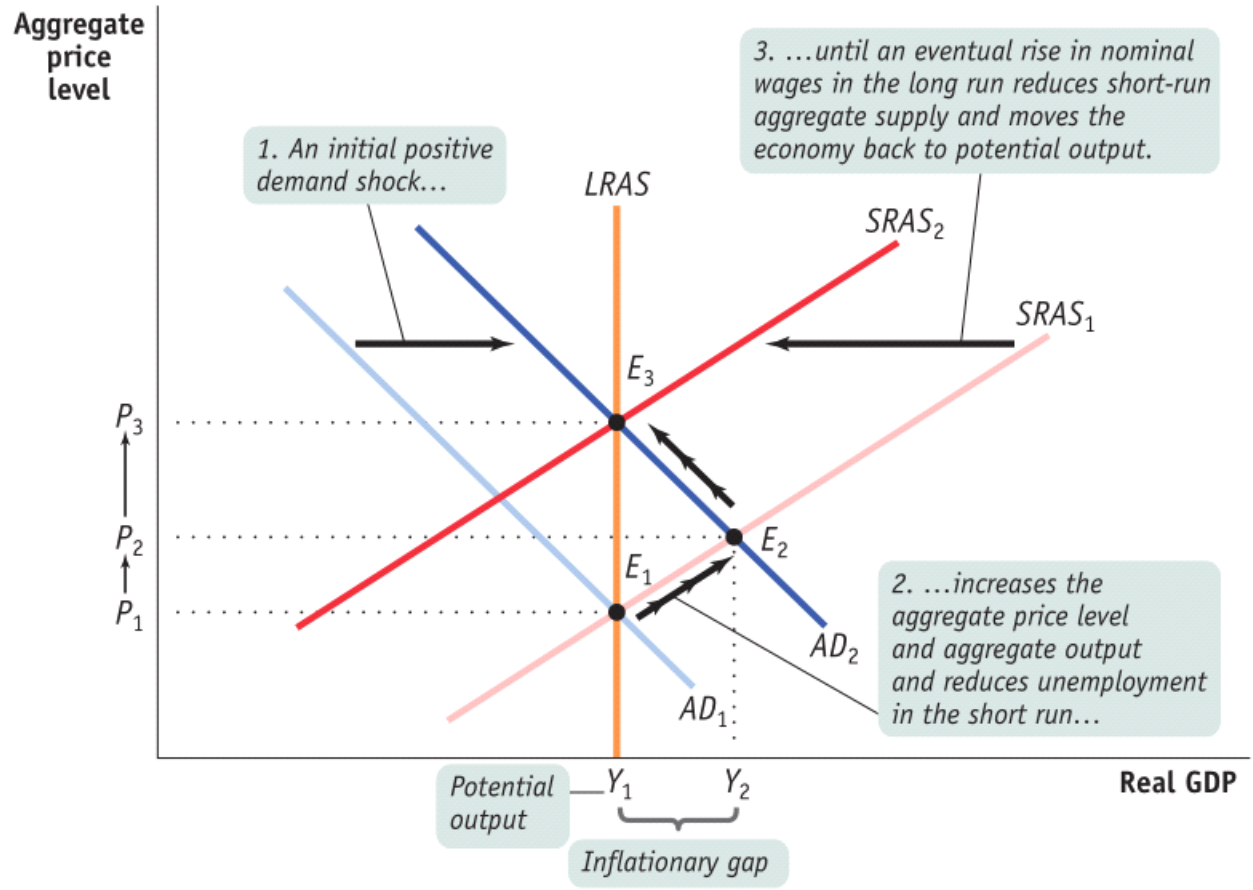


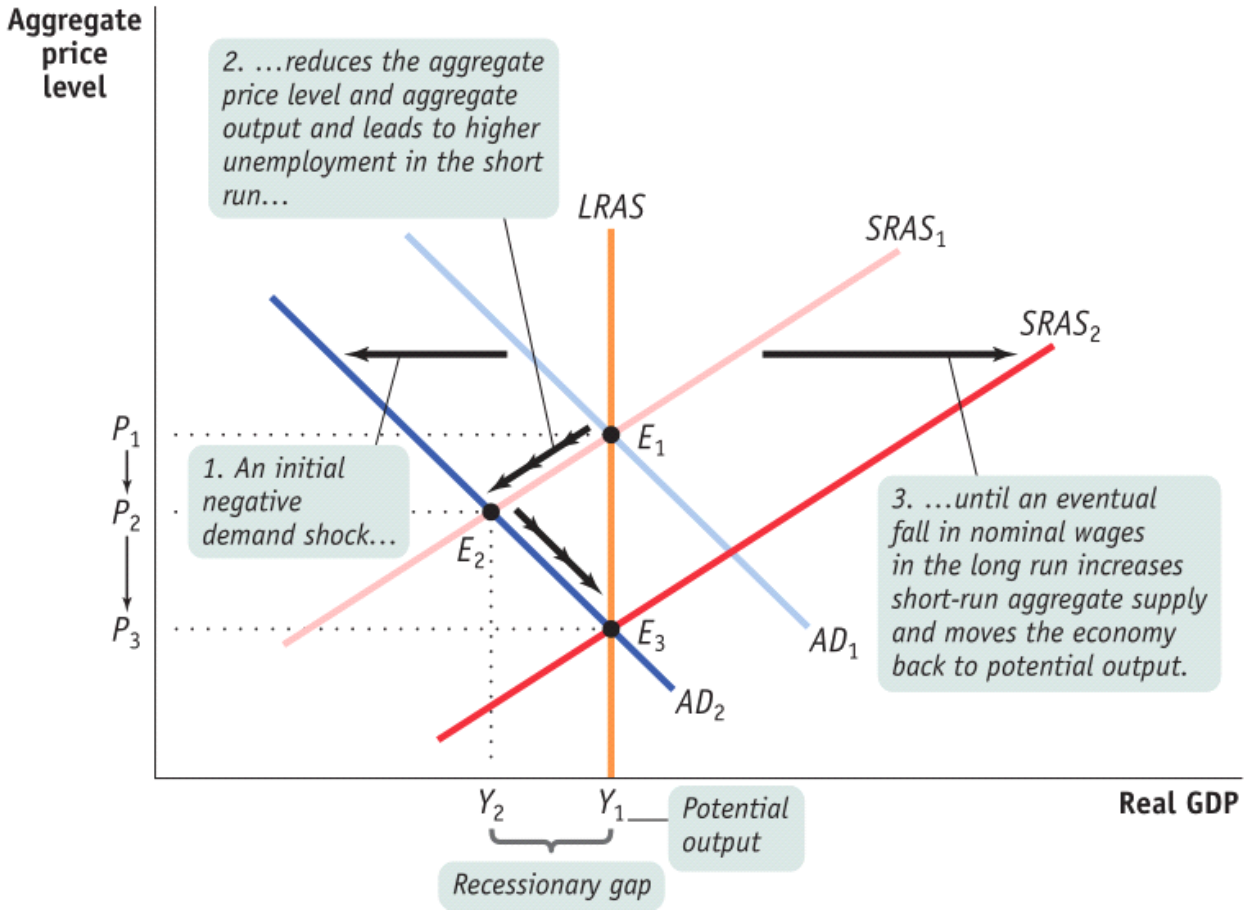
Question 28

- Technology in output per worker

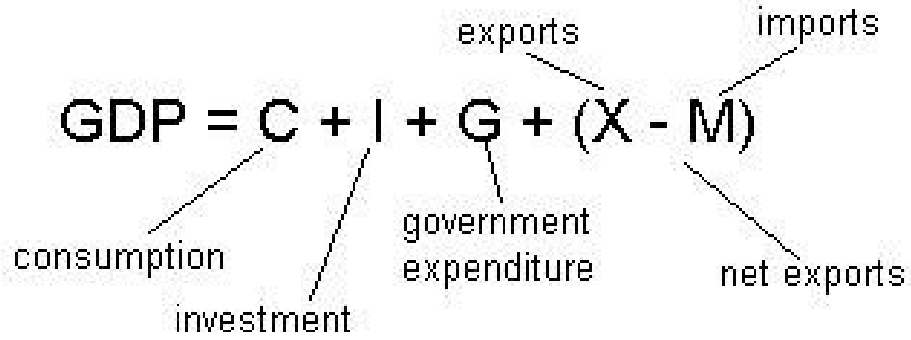


Question 30


Aggregate price level
3. ...until an eventual rise in nominal wages in the long run reduces short-run aggregate supply and moves the economy back to potential output.
1. An initial positive demand shock...
LRAS
SRAS2
SRAS1
E3
P3
P2
P1
E2
E1
2. ...increases the aggregate price level and aggregate output and reduces unemployment in the short run...
AD2
AD1
Potential output
Y1
Y2
Real GDP
Inflationary gap


Aggregate price level
2. ...reduces the aggregate price level and aggregate output and leads to higher unemployment in the short run...
LRAS
SRAS1
SRAS2
P1
E1
1. An initial negative demand shock...
P2
E2
P3
E3
3. ...until an eventual fall in nominal wages in the long run increases short-run aggregate supply and moves the economy back to potential output.
AD1
AD2
Y2
Y1
Potential output
Real GDP
Recessionary gap

Question 32



Question 33

Which of the following best explains the increase in national income that results from equal increases in government spending and taxes?

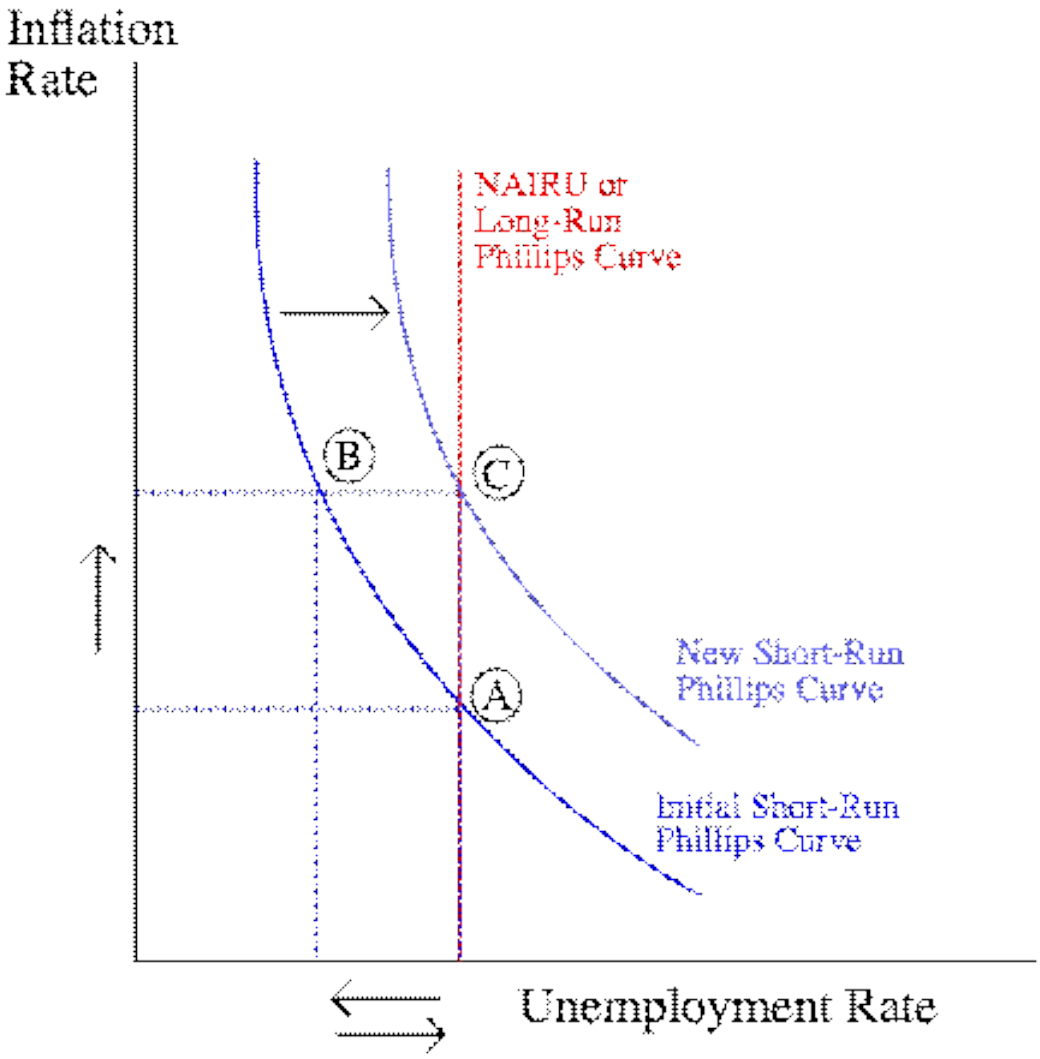
(A) Consumers do not reduce their spending by the full amount of the tax increase.

Question 34

- Unanticipated inflation increases the economic well-being of net debtors

Question 35

- Inflationary expectations --> inflation --> unemployment



Question 37

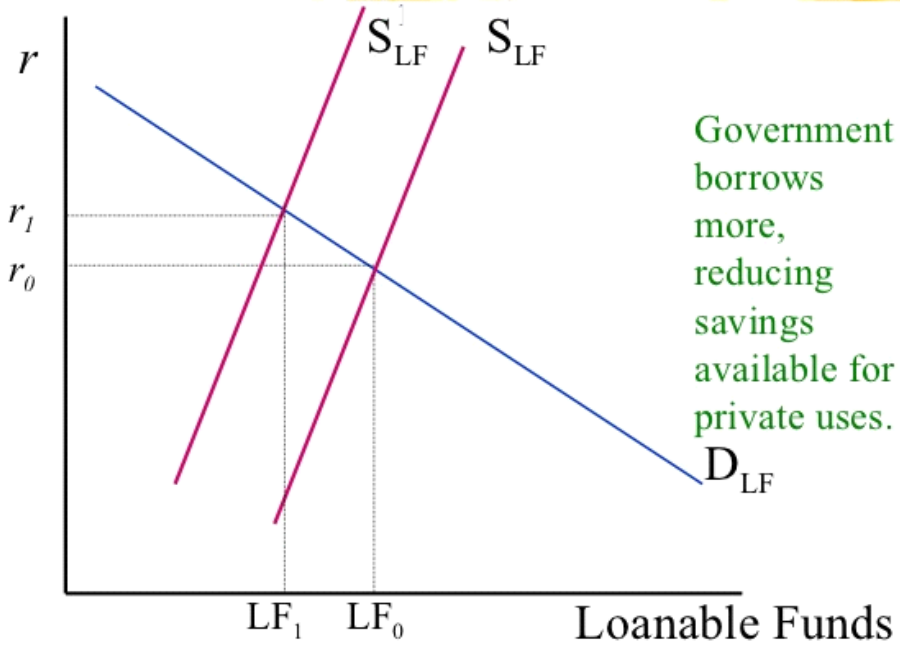
- Wage-Price Spiral: Combination of "**cost-push**" and "**demand-pull**" inflation leads to a wage-price spiral
- When there is **too much money** chasing too few goods, the price of products will tend to increase which leads to "**demand-pull**" inflation
- When workers demand **higher wages** as a result of inflated prices, prices of products consequently go up as well, leading to this "**wage-price**" spiral
- **Increased price of products leads to higher wages leads to increased price of products and so on**
- Keynesians tend to favor this model of how inflation works and that they prices are sticky downward or downward inflexible

Question 38

A **budget deficit** implies lower taxes and increased G, this will increase AD and this may cause higher Real GDP and inflation. If the govt sells more bonds this is likely to cause **interest rates** to increase. This is because they will need to increase **interest rates** in order to attract investors to buy the extra debt.

Economic Effects of a Budget Deficit | Economics Help
www.economicshelp.org/macroeconomics/fiscal-policy/effects-budget-deficit/

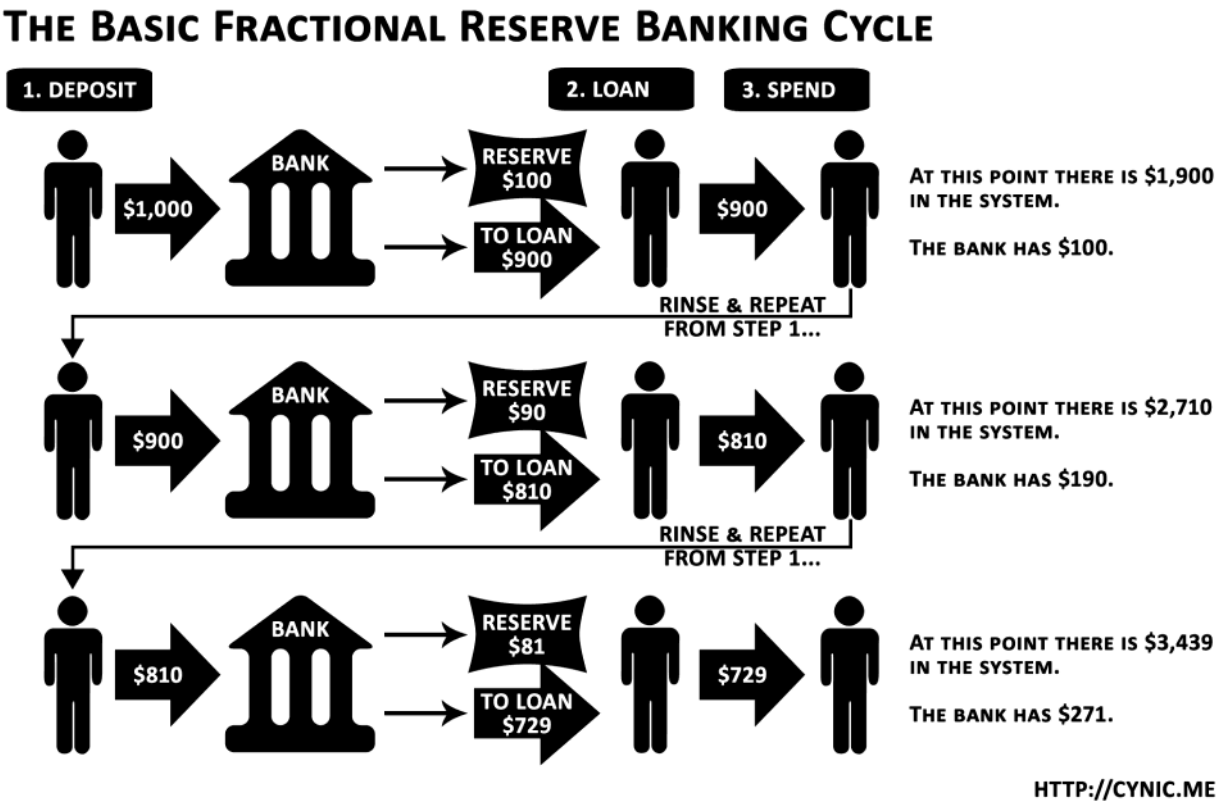
Increased Government Budget Deficit: Crowding Out



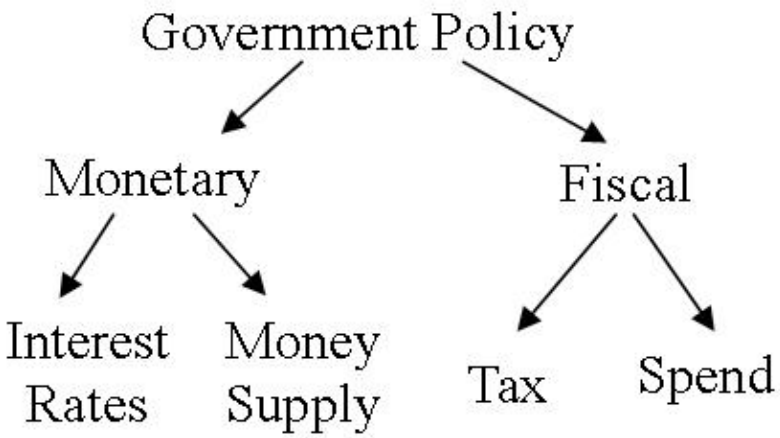
Question 40

Fractional-reserve banking is the practice whereby a **bank** accepts deposits, makes loans or investments, and holds **reserves** equal to a fraction of its deposit liabilities. **Reserves** are held as currency in the **bank**, or as balances in the **bank's** accounts at the central **bank**.

Fractional-reserve banking - Wikipedia
https://en.wikipedia.org/wiki/Fractional-reserve_banking

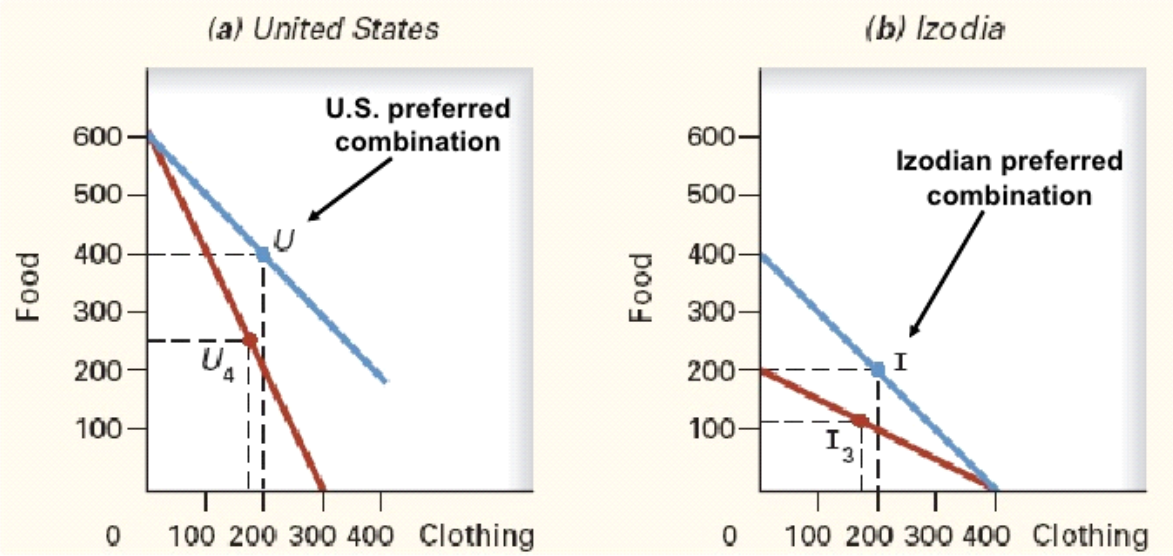


Question 49



Question 50

Exhibit 5: Production (and Consumption) Possibilities Frontiers with Trade



❖**The U.S. consumption possibilities frontier stops at 400 million units of clothing because that is the most that Izodians can produce**

❖**With production and specialization, the U.S. produces 600 units of food, consumes 400 units, and exchanges the rest for 200 million units of Izodian clothing.**

❖**Izodians produce 400 units of clothing, wear 200 million units, and exchange the rest for 200 million units of U.S. food**

Question 54

- An increase in the labor force would LEAST likely increase labor productivity.

Question 59

- Advocates of a monetary rule recommend increasing the money supply at a rate that is equal to the rate of increase in long-run real GDP

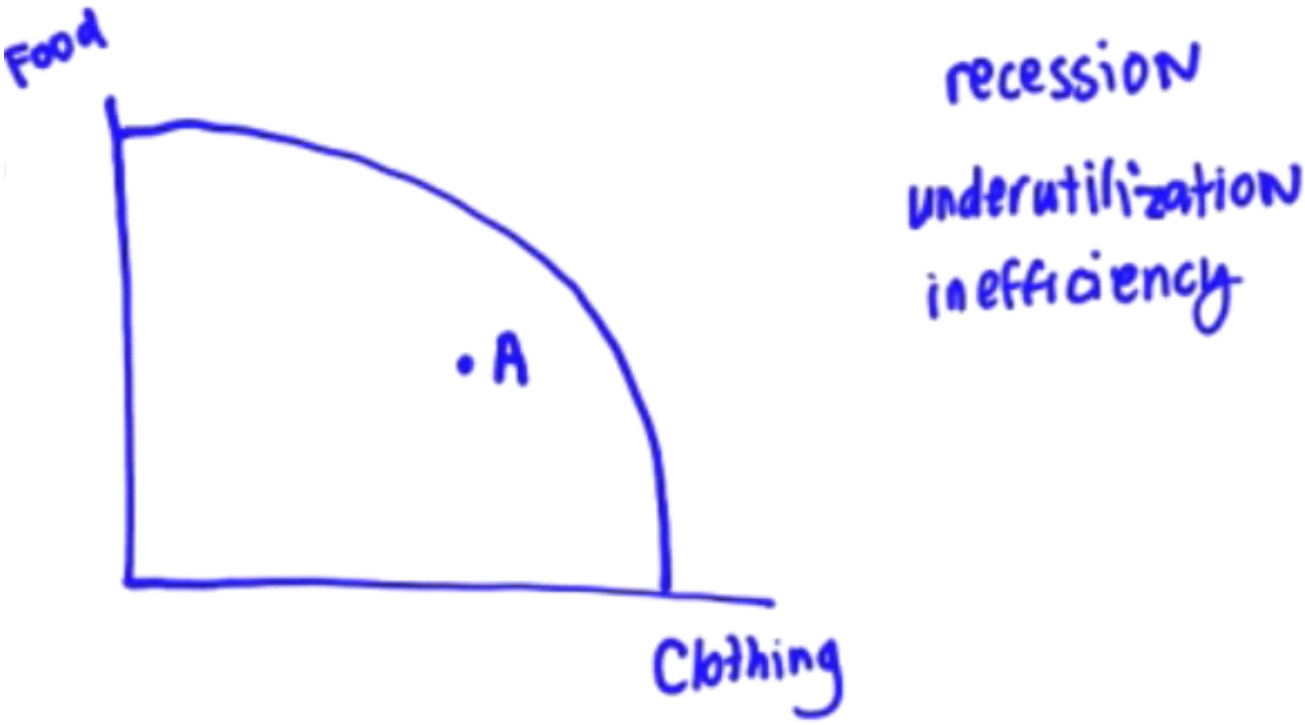
Question 60

- Most economists believe that in the **long-run**, there is **no trade-off** between unemployment and inflation
- To **avoid accelerating inflation** overtime, the **unemployment** rate must be **high enough** that the **actual rate** of inflation **matches** the **expected rate** of inflation
- The **unemployment rate** at which inflation does **not change** over time is known as the **nonaccelerating inflation rate of unemployment**, or **NAIRU**
- The Long-Run Phillips Curve (**LRPC**) is the relationship between **unemployment** and **inflation after expectations** of unemployment have had **time to adjust** over time

2012 Free Response

Thursday, April 13, 2017 9:29 PM

Question 1 (a)

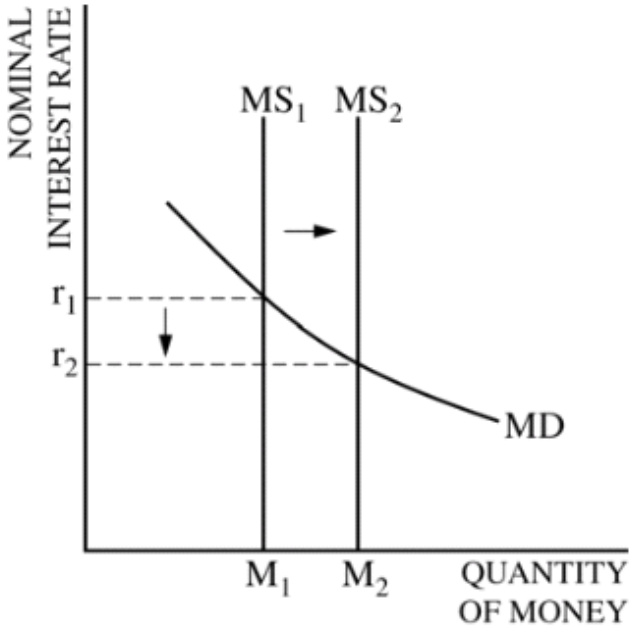


(a) 2 points:

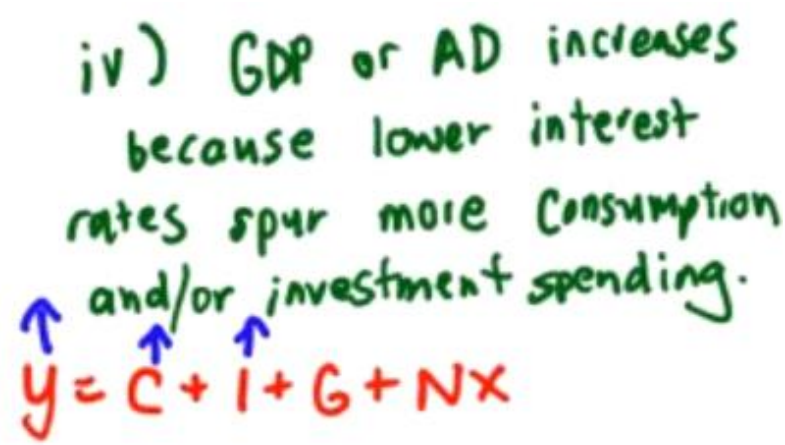
- One point is earned for a correctly labeled graph of the production possibilities curve (PPC).
- One point is earned for showing point A inside the PPC.

Question 1 (b)

- Label the x-axis as "Quantity of Money"
- Use MS, MD instead of S, D to represent money supply and money demand
- MD could be a straight line or a inside-curved line
- Label r1, r2 and M1, M2



- Real interest rate = nominal interest rate - inflation
- No change to the price level --> inflation = 0



Question 1 (c)

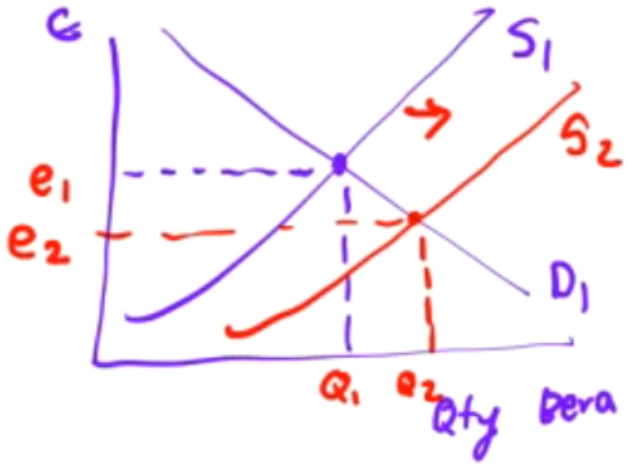
- Current Account
  - Balance of payments on **goods** and **services** plus **net international transfer payments** and **factor income**
  - **Sales and purchases of goods and services**
    - Payments from foreigners: $2,000,000
    - Payments to foreigners: $2,500,000
    - Net: -$500,000
  - **Factor Income**
    - Payments from foreigners: $800,000

        - Payments to foreigners: $600,000
        - Net: $200,000
    - **International Transfers**
        - funds sent by residents of one country to residents of another
        - Net: -$100,000
    - **Current Account (CA) = Net foreign sales of goods and services + net factor income + net international transfer** = -500,000 + 200,000 - 100,000 = -400,000
    - Current account deficit: CA < 0
    - Current account surplus: CA > 0
    - Another Example

Current account	Billions of dollars
Exports of goods and services	+1,754
Imports of goods and services	–2,215
Net interest income	+167
Net transfers	–142
Current account balance	–436

real GDP has increased → imports have increased
NX has decreased
current account deficit has increased
real income has increased as well

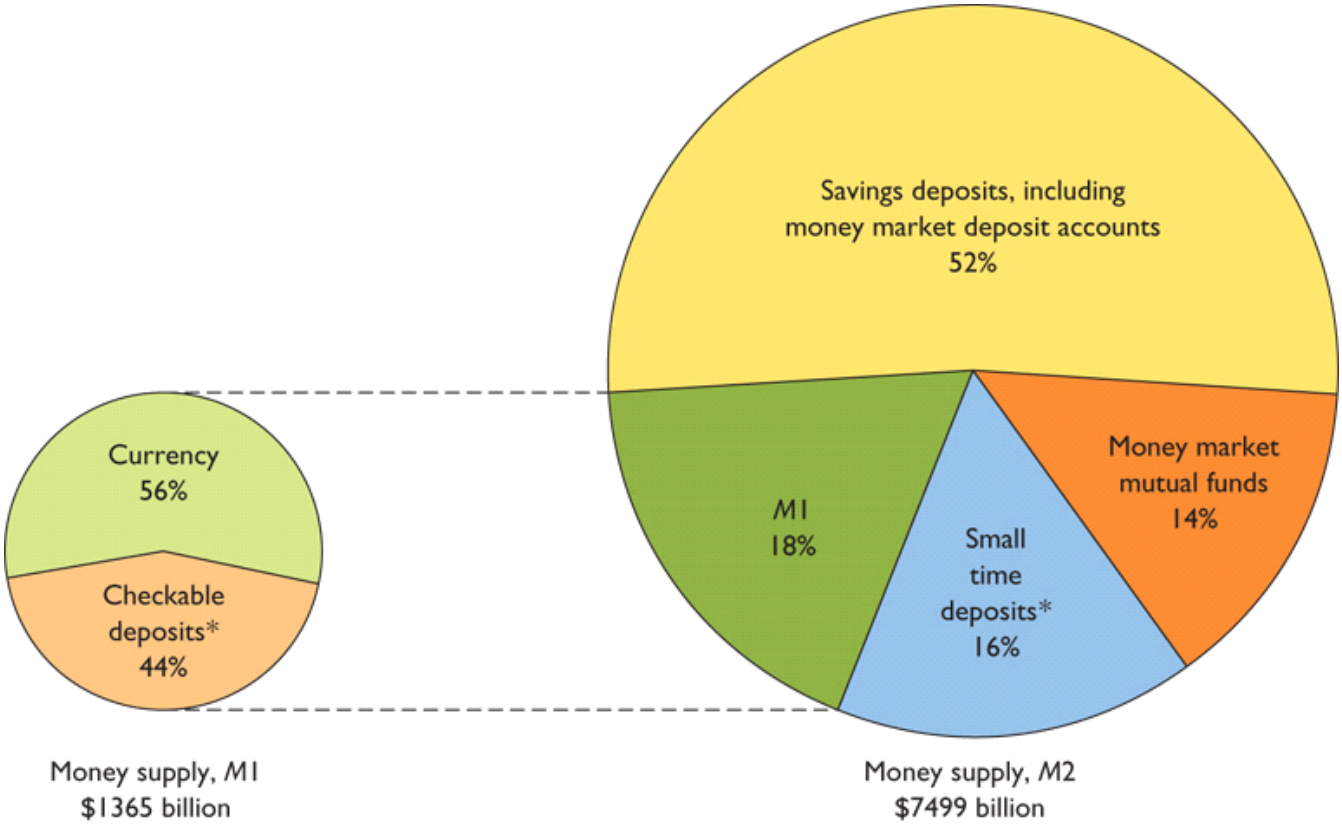
Increase in supply of the bera.



bera will depreciate because supply increases

Question 2 (b)

- M1 = Currency + Checkable deposits



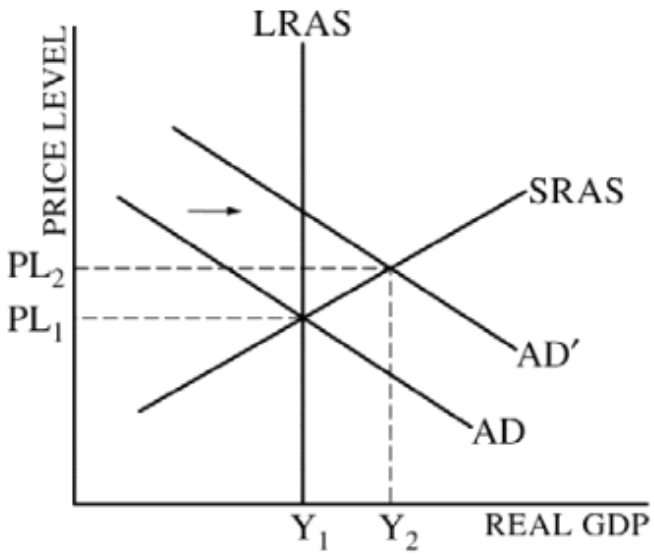
- Assets = Liabilities
- Withdrawal will change the required reserves, thus changing the excess reserves

Question 2 (c)

- Bank can borrow from the **Federal Reserve** or from **another bank** if it runs out of money

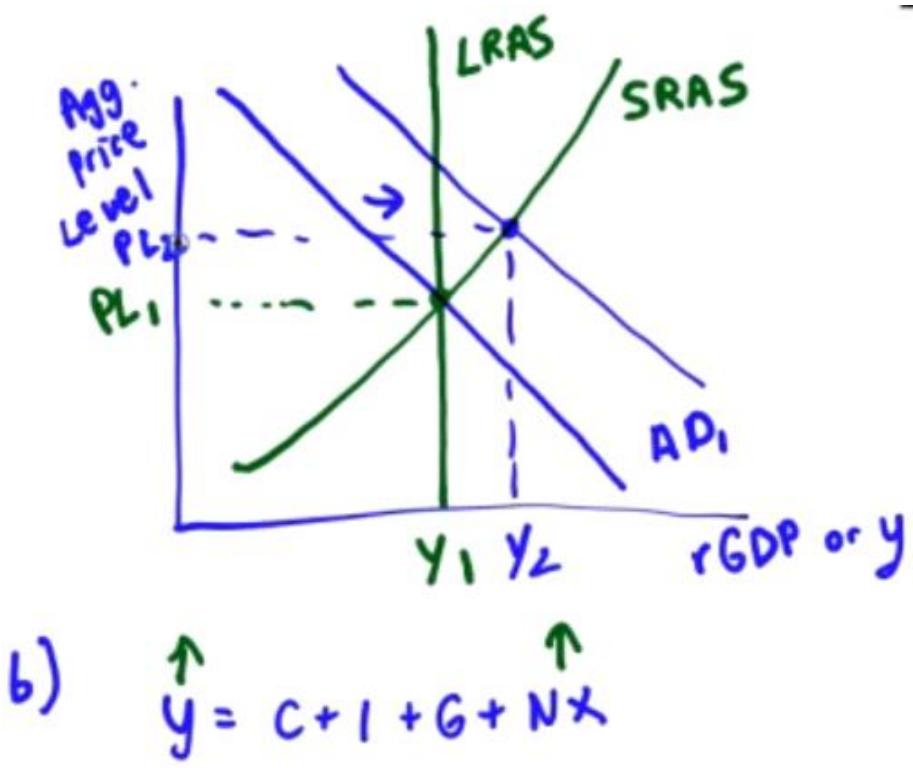
Question 3 (a)

- x-axis: Real GDP or Y
- y-axis: (Aggregated)Price Level

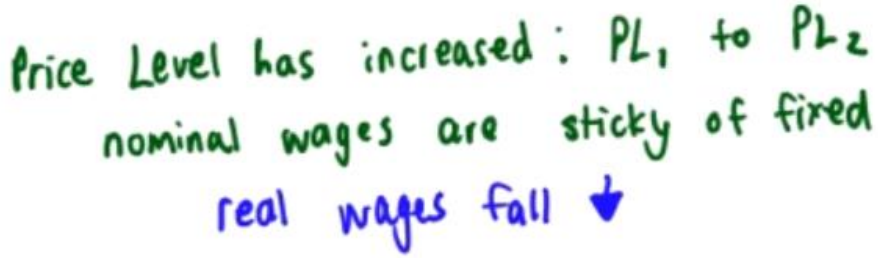


Question 3 (b)

- Increase in exports will shift the AD to the right



Question 3 (c)



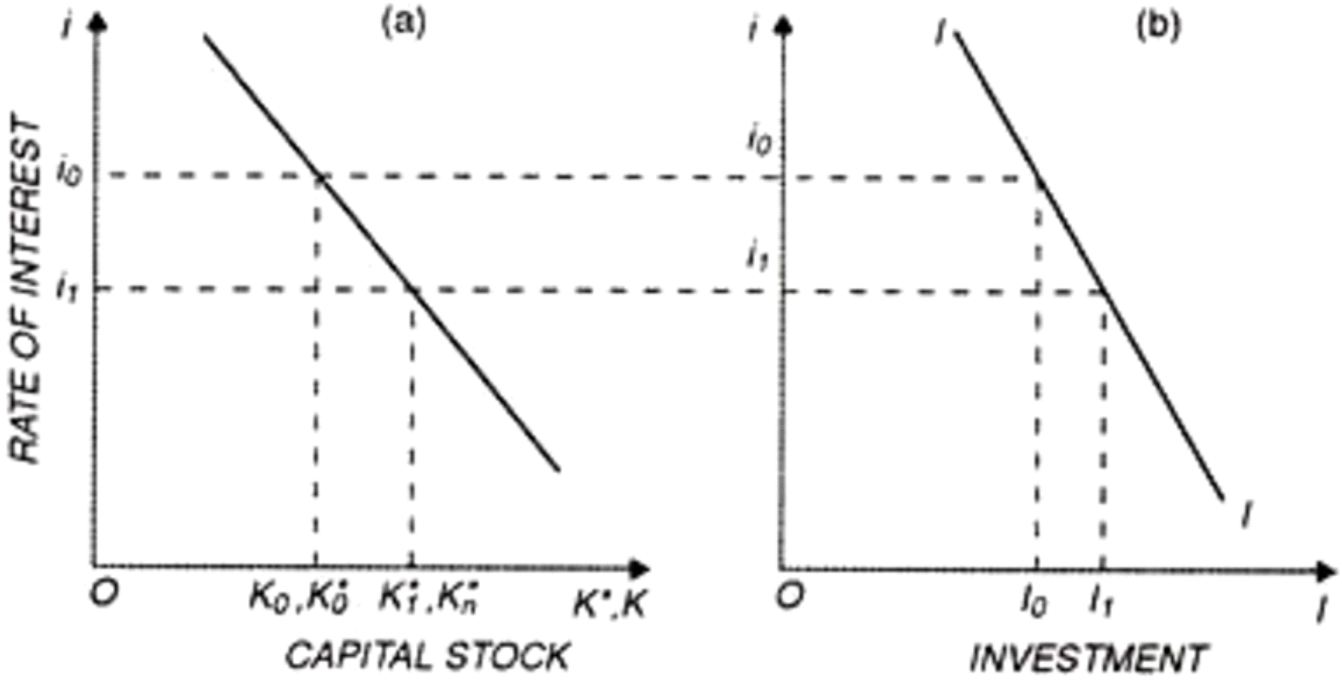
Question 3 (d)

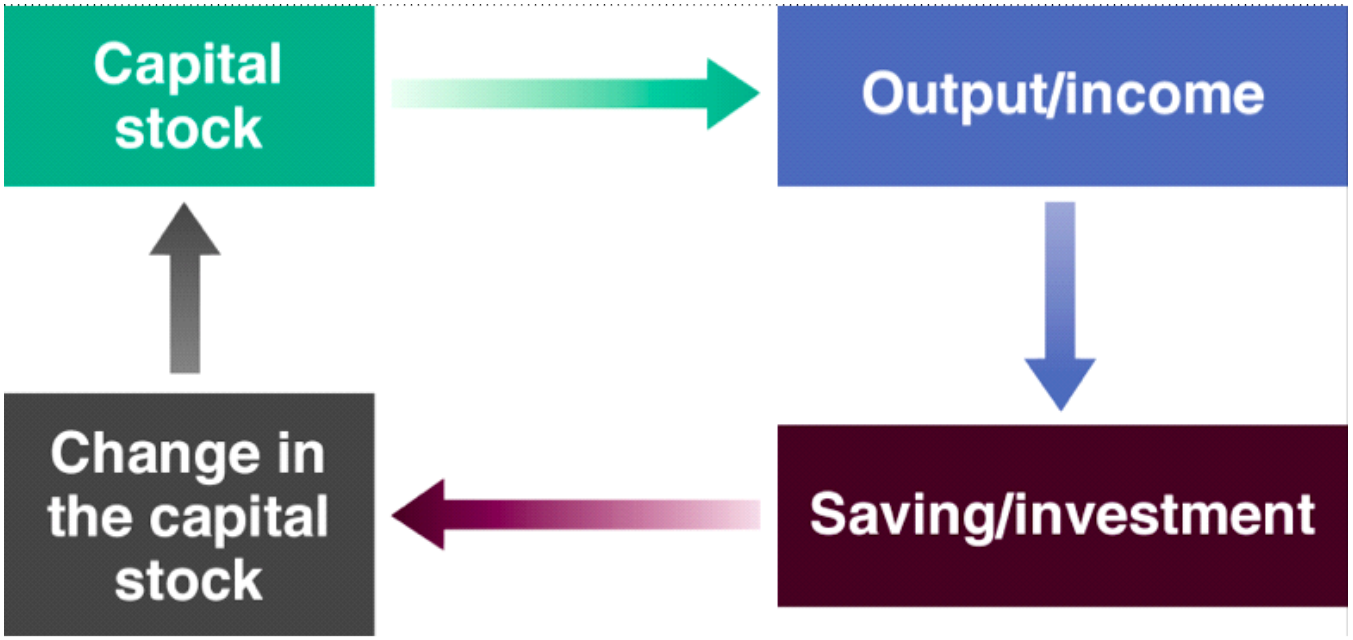
$y = c + \uparrow I + G + NX \rightarrow$ Investment increases

LRAS increases/shifts to the right because the capital stock has increased

a. **Capital** as a form of **investment** is defined as a factor of production in an economic process. ... This implies that the **capital stock** as a factor can be defined as **stock** of durable goods, tangible assets and reproducible assets in order to increase output.

estimation of the capital stock and investment matrix in ... - OECD
https://www.oecd.org/std/na/2666677.pdf



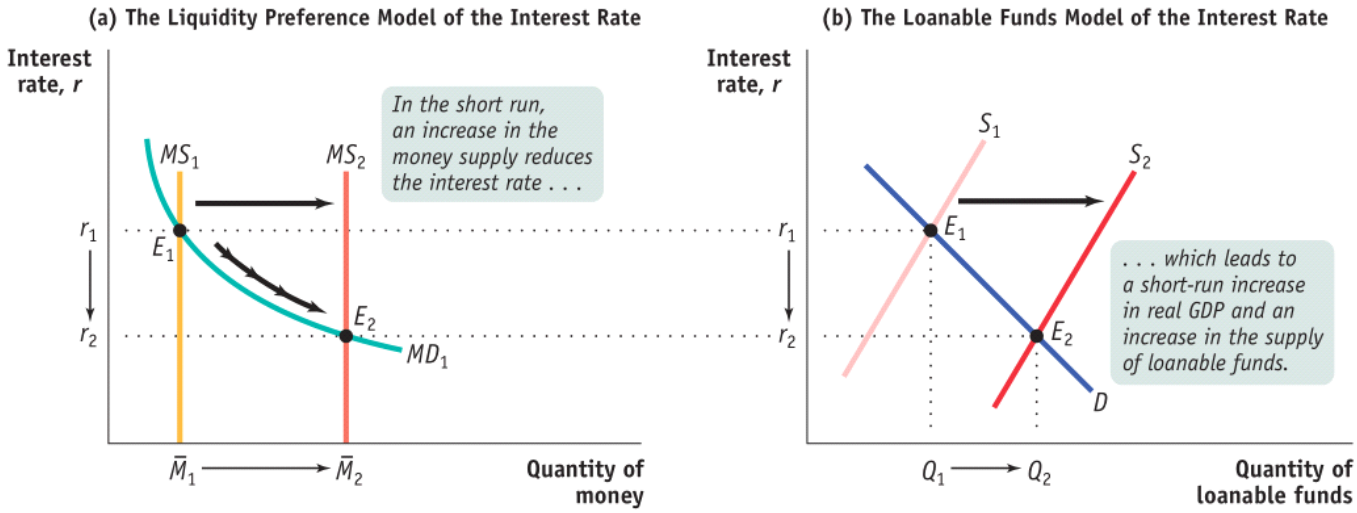

Capital stock
Output/income
Saving/investment
Change in the capital stock

2013 Free Response

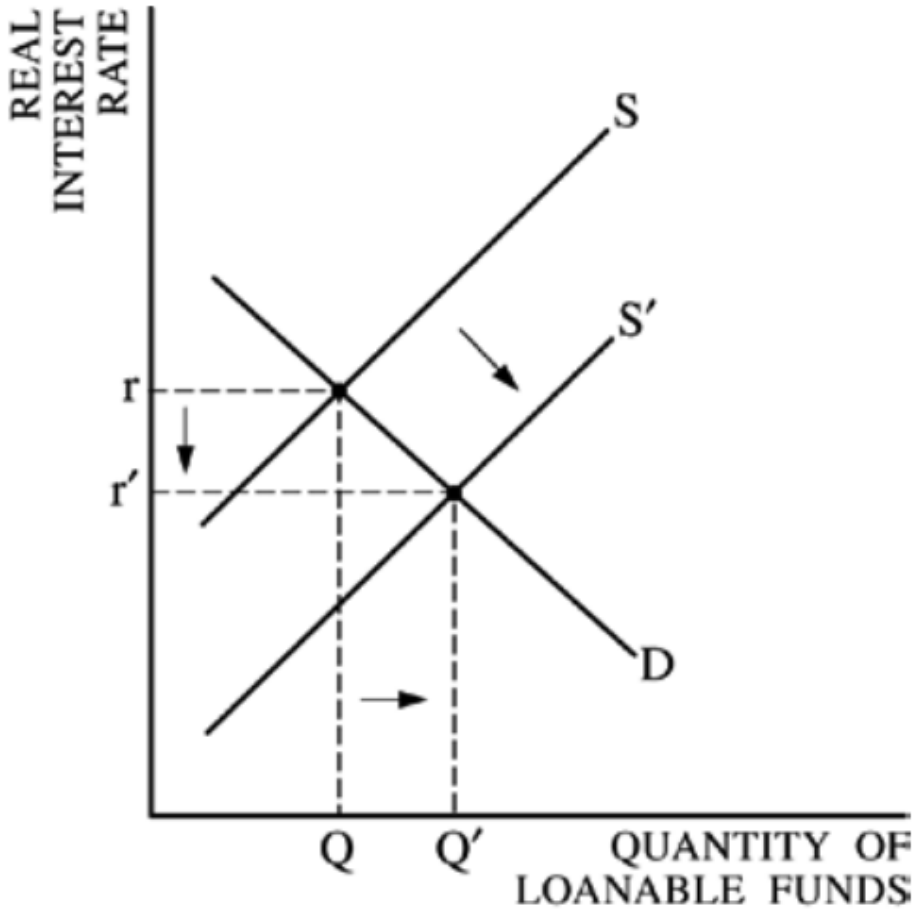
Thursday, April 13, 2017 10:04 PM

Question 1 (b)

- Graph of the money market vs Graph of the loanable funds market

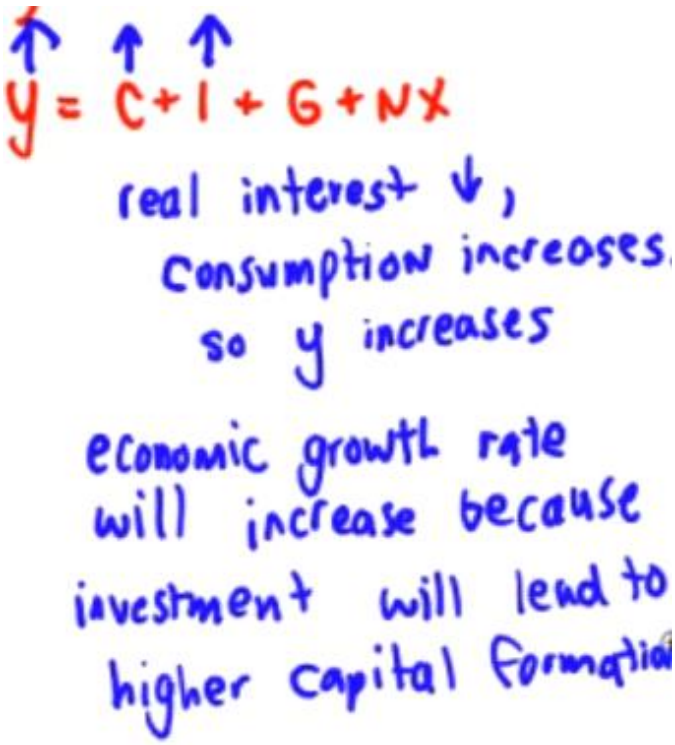


- Graph of the loanable funds market
- x-axis: Quantity of Loanable Funds
- y-axis: Real Interest Rate



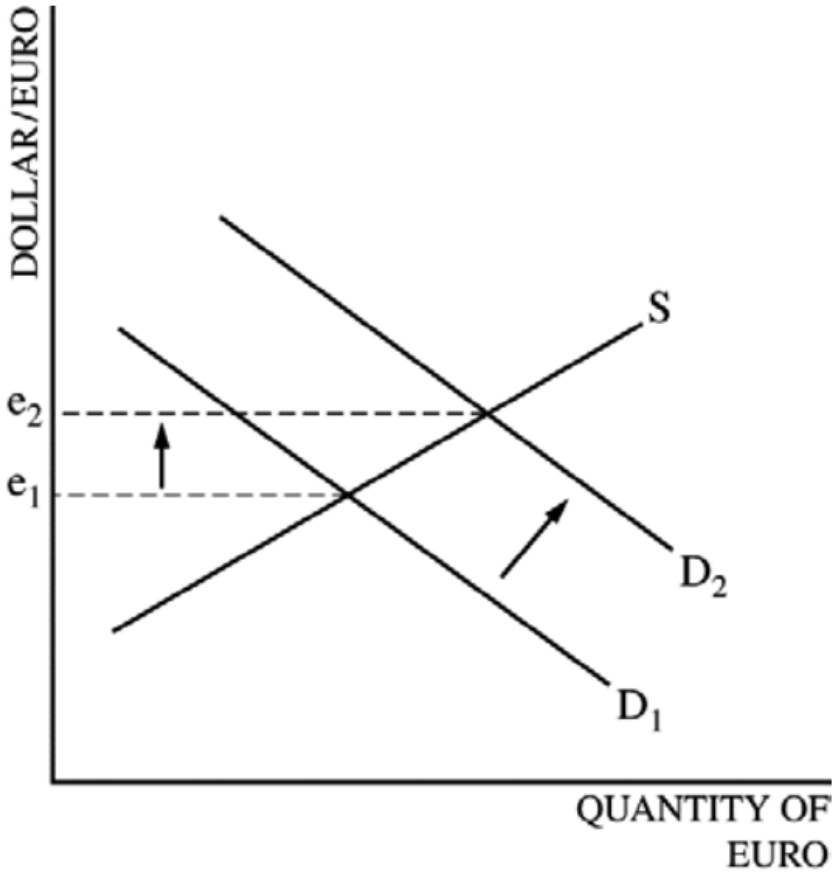
Question 1 (c)

- More investment, higher GDP growth rate



Question 1 (d)

- Foreign exchange market for the euro
- x-axis: Quantity of Euro
- y-axis: Dollar per Euro
- Label e on the y-axis as exchange rate



- The demand for the euro increases because the higher real interest rate in the euro zone leads to higher returns for financial **investments** in the euro zone, **attracting funds** from the United States to the euro zone.

Question 1 (e)

- Current Account
  - Depreciate = Deficit
  - Appreciate = Surplus

Impact on Currency

- **CA:** All the other factors constant, a deficit balance on a country's current account implies that there is excess supply of its currency in the foreign markets. Hence, its currency should depreciate.
- **KA:** All other factors constant, a surplus balance in a country's financial account implies that there is excess demand for assets denominated in its currency. Hence, its currency should appreciate.

11

Table 1 2015 balance of payments (billions of dollars)

Current account		
Gross exports (goods and services)	$2,375	
Gross imports (goods and services)	$2,007	
Net income	-$59	
New current transfers	-$16	
Current account balance		$293
Capital and financial account		
Capital account	$0	
Financial account, excluding net reserve assets	-$504	
Financial account, reserve assets	$343	
Financial account	-$161	
Capital and financial account balance		-$161
Net errors and omissions		-$132
Balance of payments (current account + capital and financial account + net errors and omissions)		$0

Sources: Wind, SAFE

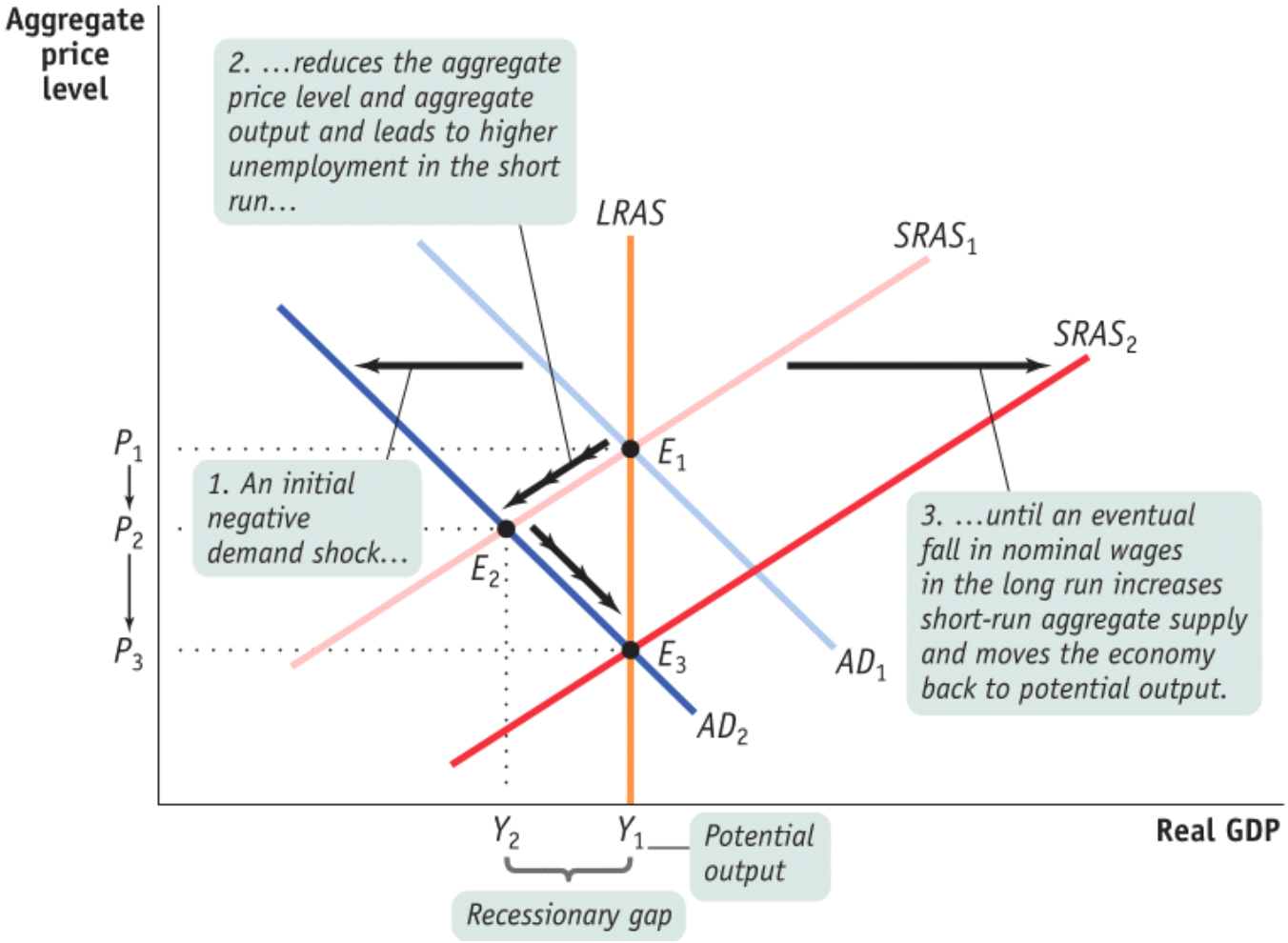
Political Stability and Economic Performance	Investors inevitably seek out stable countries with strong economic performance to invest capital
Inflation Differentials	Countries with lower inflation tend to have stronger currencies as purchasing power increases relative to other currencies
Interest Rate Differentials	Higher interest rates attract foreign capital and therefore cause currencies to appreciate
Current Account Balances	Countries with current account deficits tend to have weaker currencies
Public Debt Balances	Countries with large public debts are less attractive to foreign investors, large debt encourages inflation

Question 2 (e)

Non-mandatory changes in taxation, spending, or other **fiscal** activities by a government in response to economic events or changes in economic conditions. **Discretionary fiscal policy** implies government actions above and beyond existing **fiscal policies**, and often occurs in periods of recession or economic turbulence.

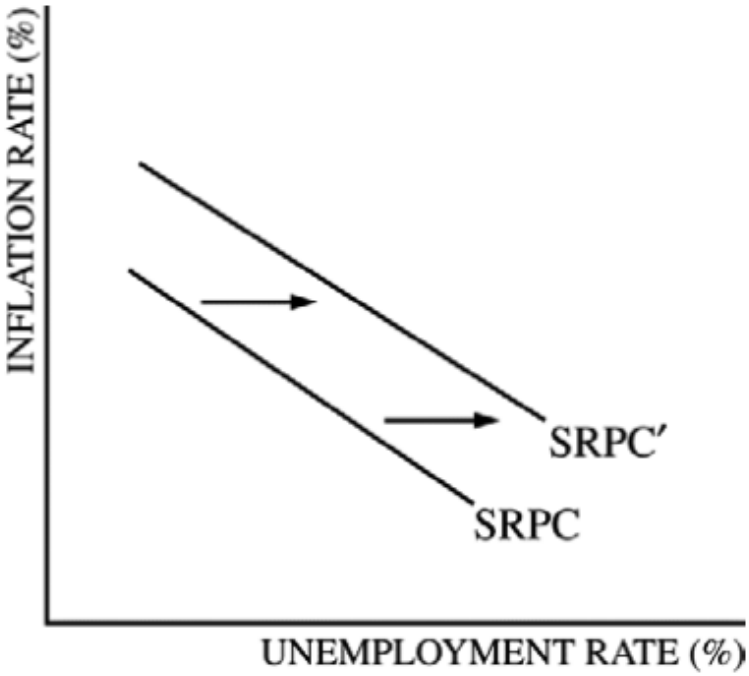
What is Discretionary Fiscal Policy? definition and meaning ...
www.businessdictionary.com/definition/Discretionary-Fiscal-Policy.html

- SRAS will increase because wages and some other production costs decrease during a recession



Question 3 (a)

- x-axis: Unemployment rate
- y-axis: Inflation rate



Question 3 (e)

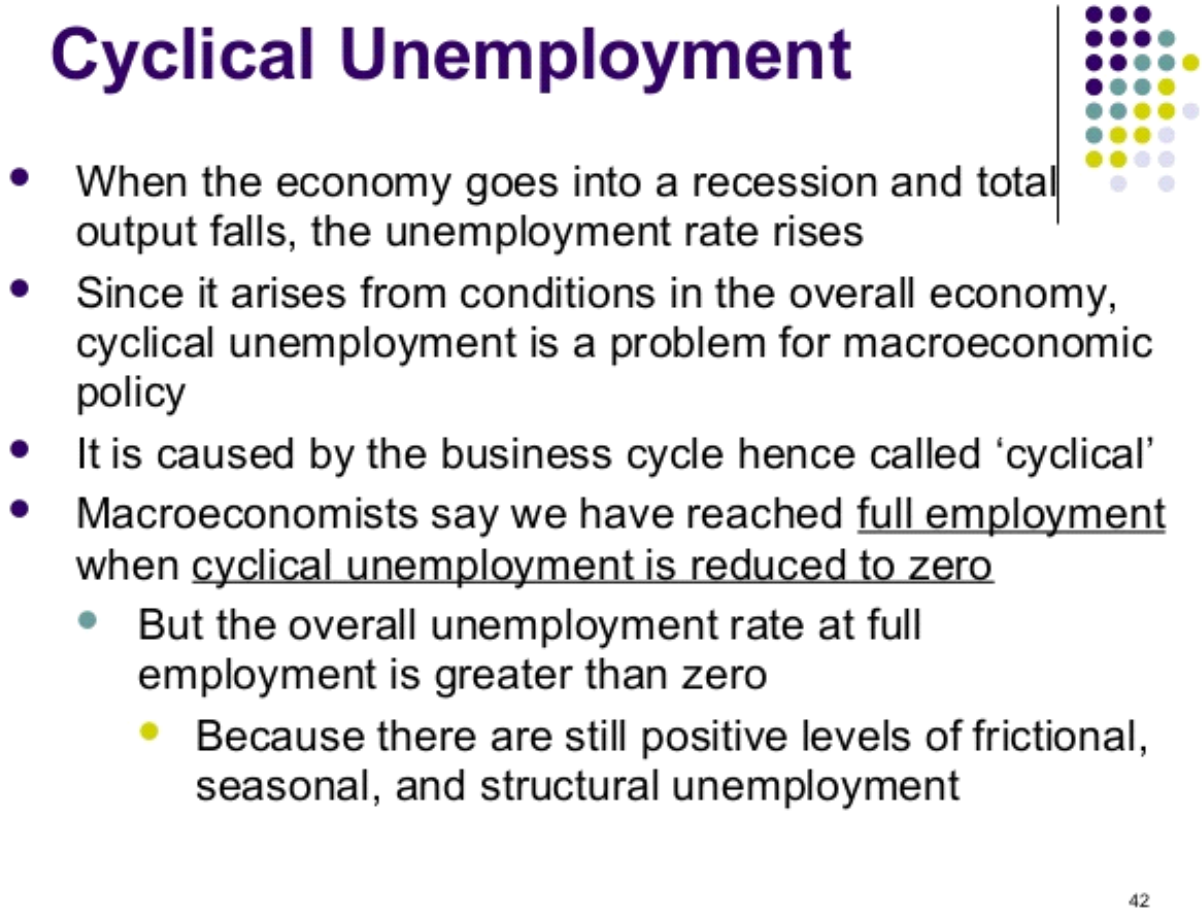
- Real Interest Rate = Nominal Interest Rate - **EXPECTED** Inflation Rate

2014 Free Response

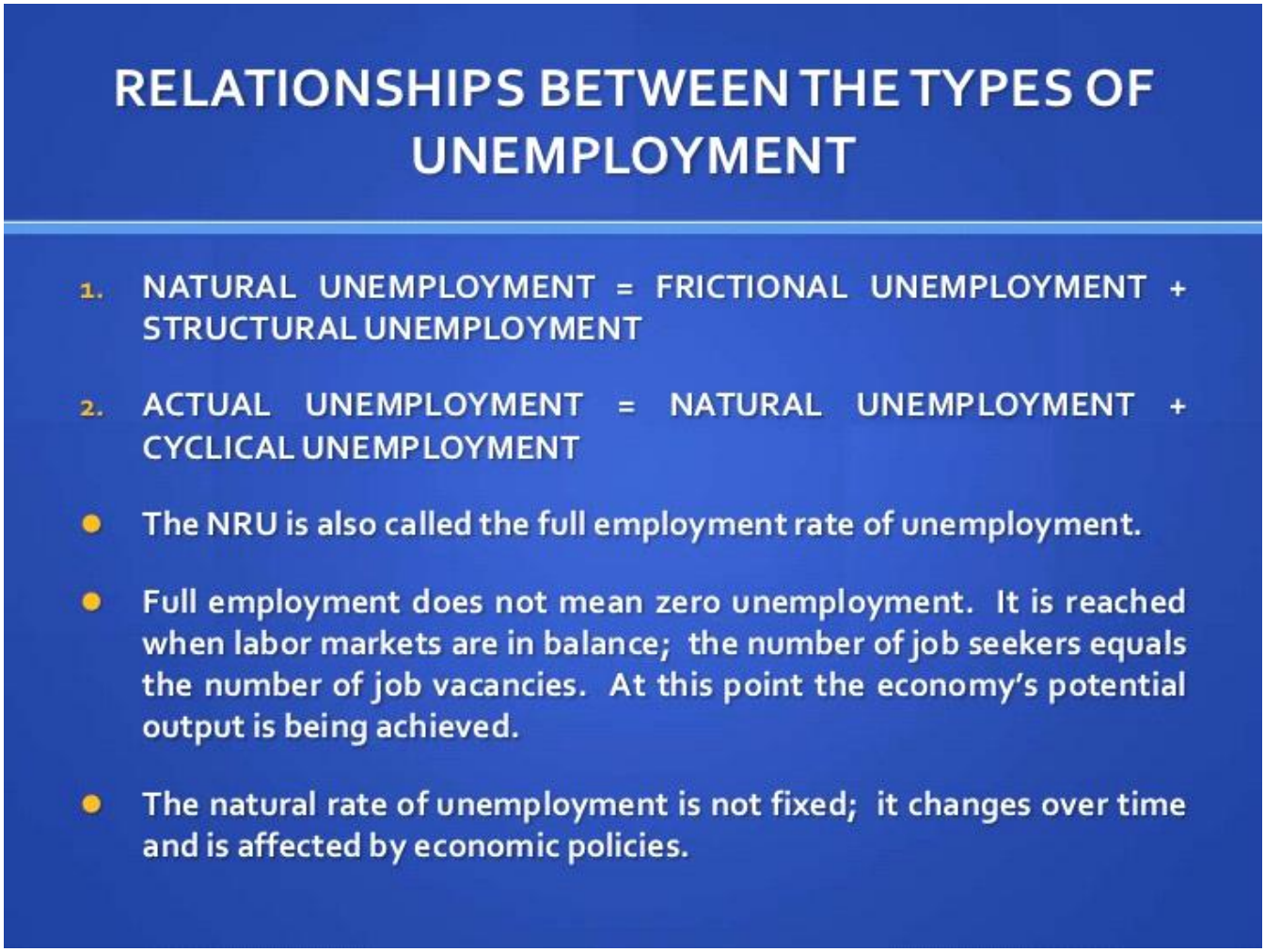
2017年4月24日 星期一 下午2:31

Question 1 (b)

- **Increase** in government **spending** will **reduce** the **Cyclical** Unemployment and have **no effect** on the **Natural Rate** of Unemployment
- Cyclical Unemployment

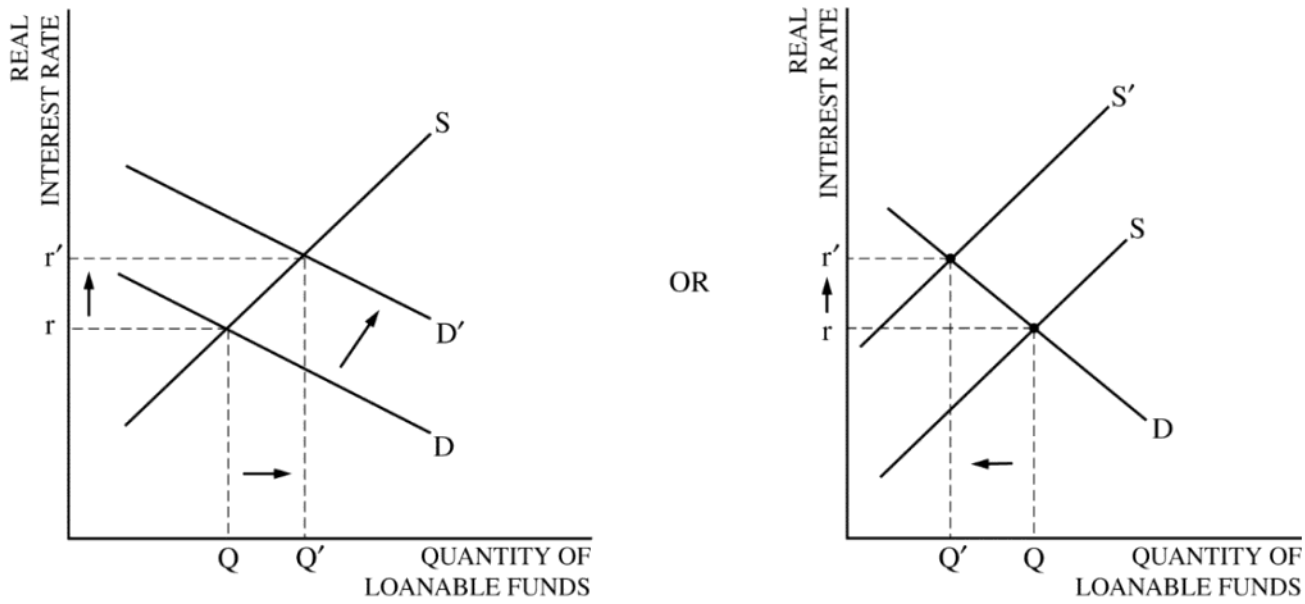


- Natural rate of unemployment



Question 1 (d)

- The effect of increase in government spending on the real interest rate
  - **Upward-sloping Supply**
  - Downward-sloping Demand
  - Increase in Demand ≈ Decrease in Supply

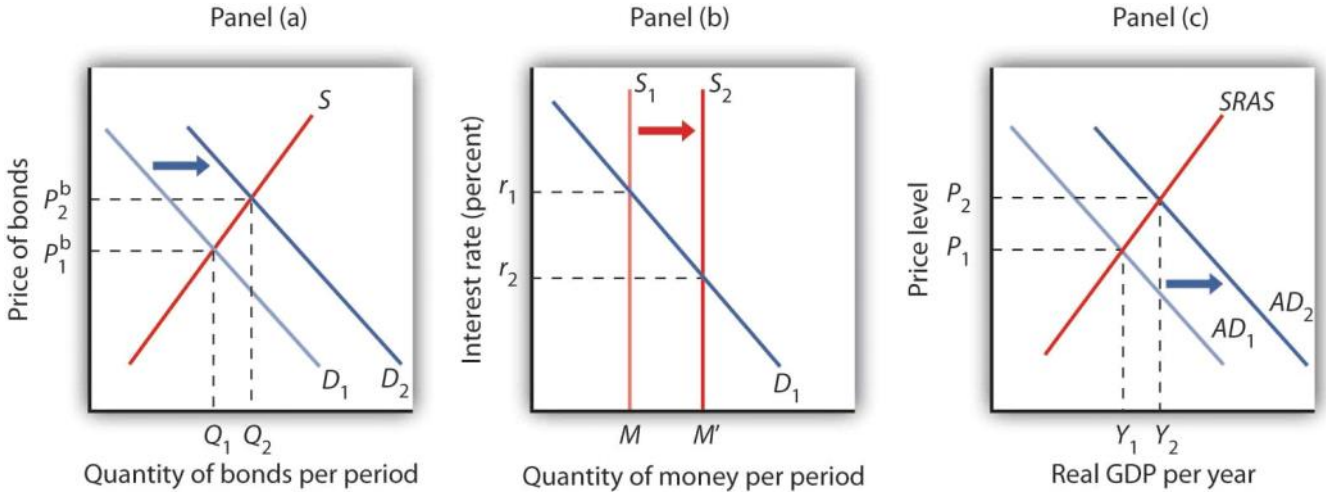


Question 1 (e)

- The economic growth rate will fall with higher interest rate, because it will **slow down capital formation**

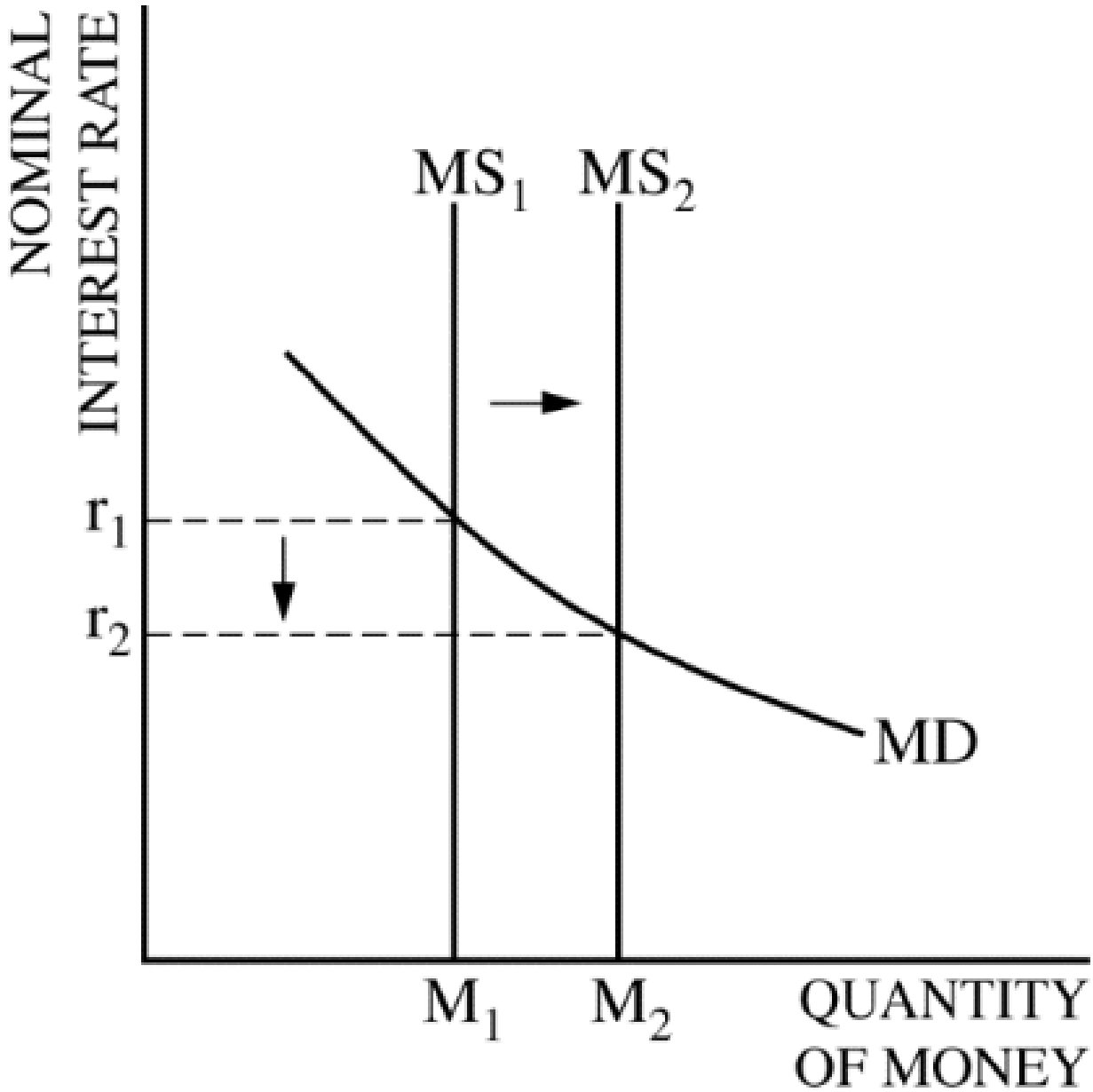
Question 2 (a)

- Buy bonds --> Shift demand of bonds to the right --> Increase the price of bonds



Question 2 (b)

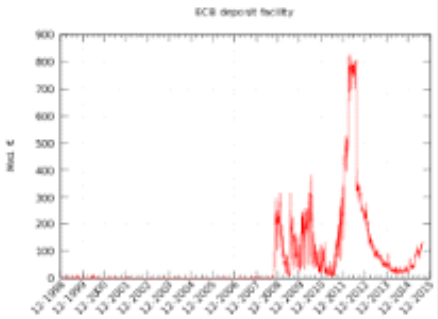
- Label MS and MD instead of S and D for graph of the money market
- **NOMINAL** interest rate at the y-axis



Question 2 (d)

- Discount rate
    - The interest rate that the Federal Reserve charges banks for borrowing from its discount window

The **discount window** is an instrument of monetary policy (usually controlled by central banks) that allows eligible institutions to borrow money from the central bank, usually on a short-term basis, to meet temporary shortages of liquidity caused by internal or external disruptions.



Discount window - Wikipedia
https://en.wikipedia.org/wiki/Discount_window

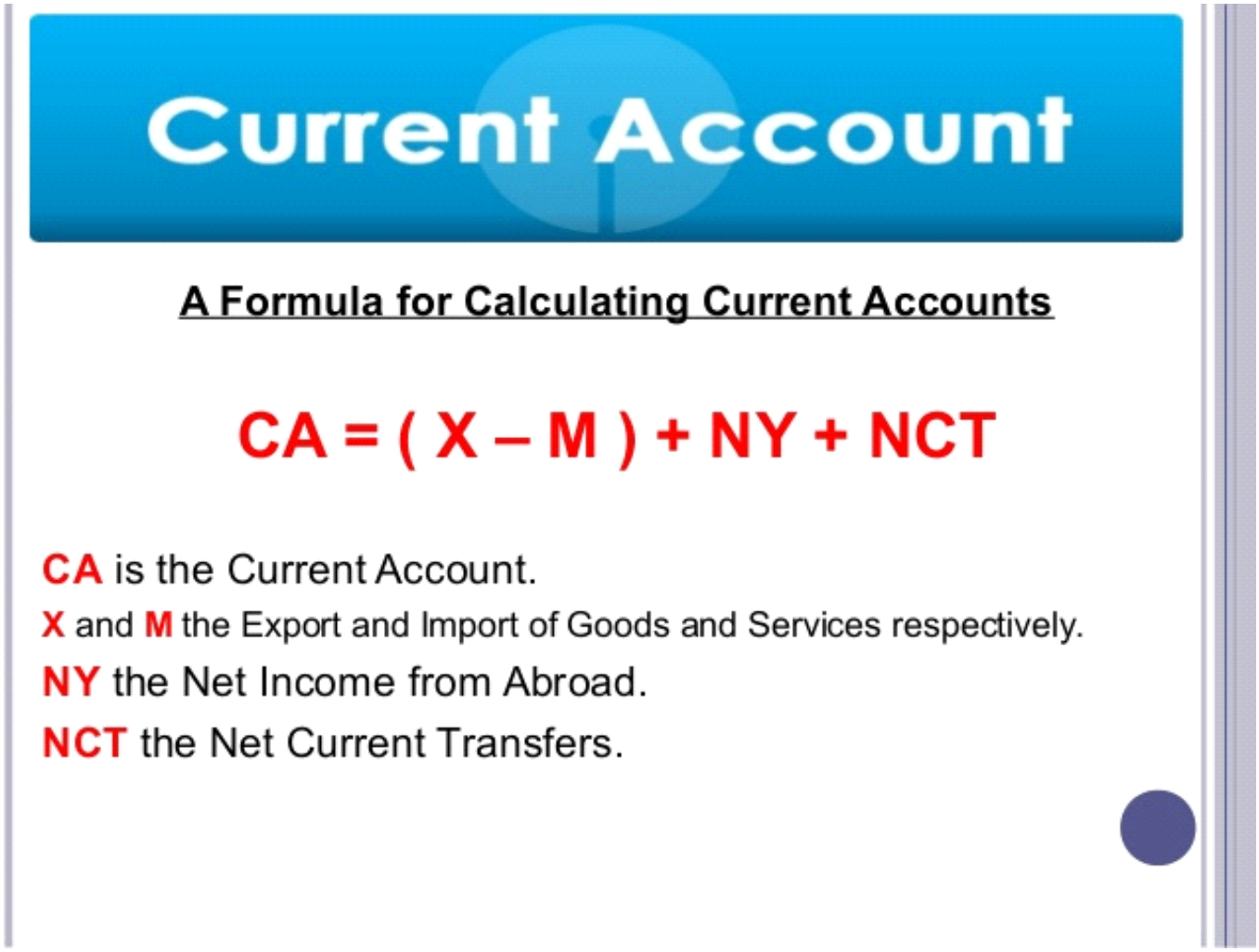
Question 3 (a)

- If inflation does fall then there will be other benefits from having a low inflation rate such as:
    - More competitive exports (UK goods rise less than other countries)
    - More certainty and less confusion encouraging investment
    - Lower menu costs (though quite insignificant at the moment)

Question 3 (b)

- Import > Export --> Current Account Deficit

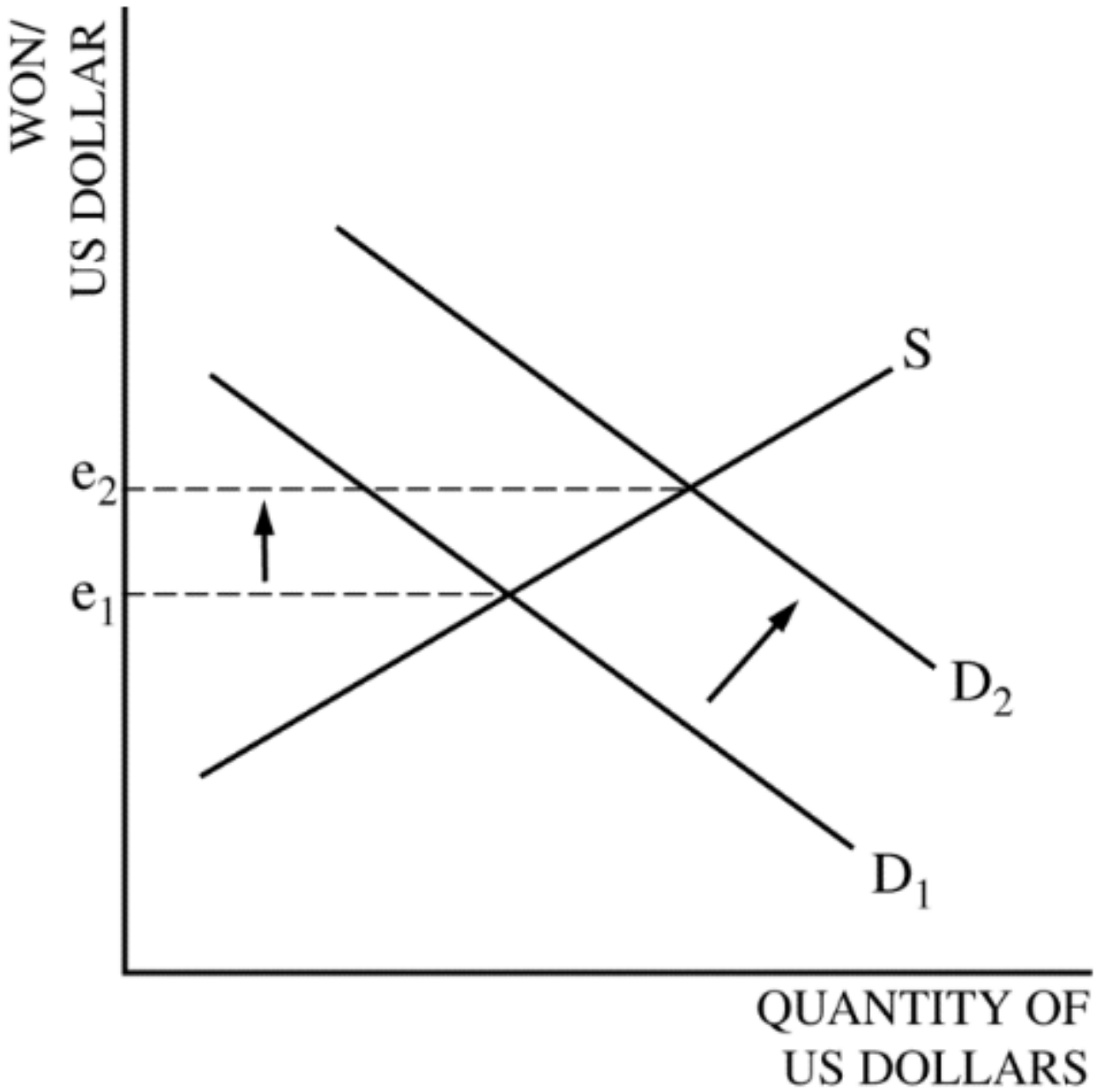
- Import < Export --> Current Account Surplus



- Y=C+I+G+NX
    - Higher US exports increased AD
    - Production increases to meet the increased export demand from other countries

Question 3 (c)

- Lower inflation rate for US dollar --> Higher demand for US dollar

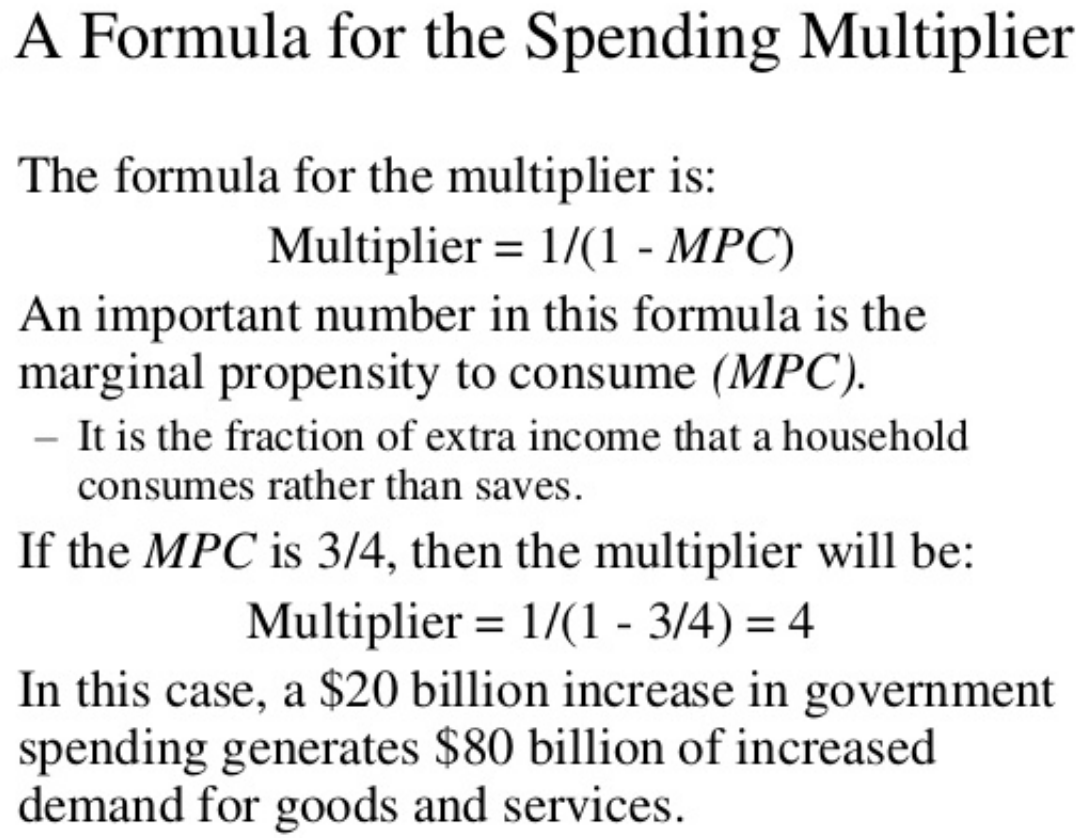

WON/
US DOLLAR
S
e_2
e_1
D_2
D_1
QUANTITY OF
US DOLLARS

2015 Free Response

2017年4月24日 星期一 下午2:31

Question 1 (d)

- Spending Multiplier
  - **Minimum required change in government spending = Value of recessionary gap / Spending Multiplier**



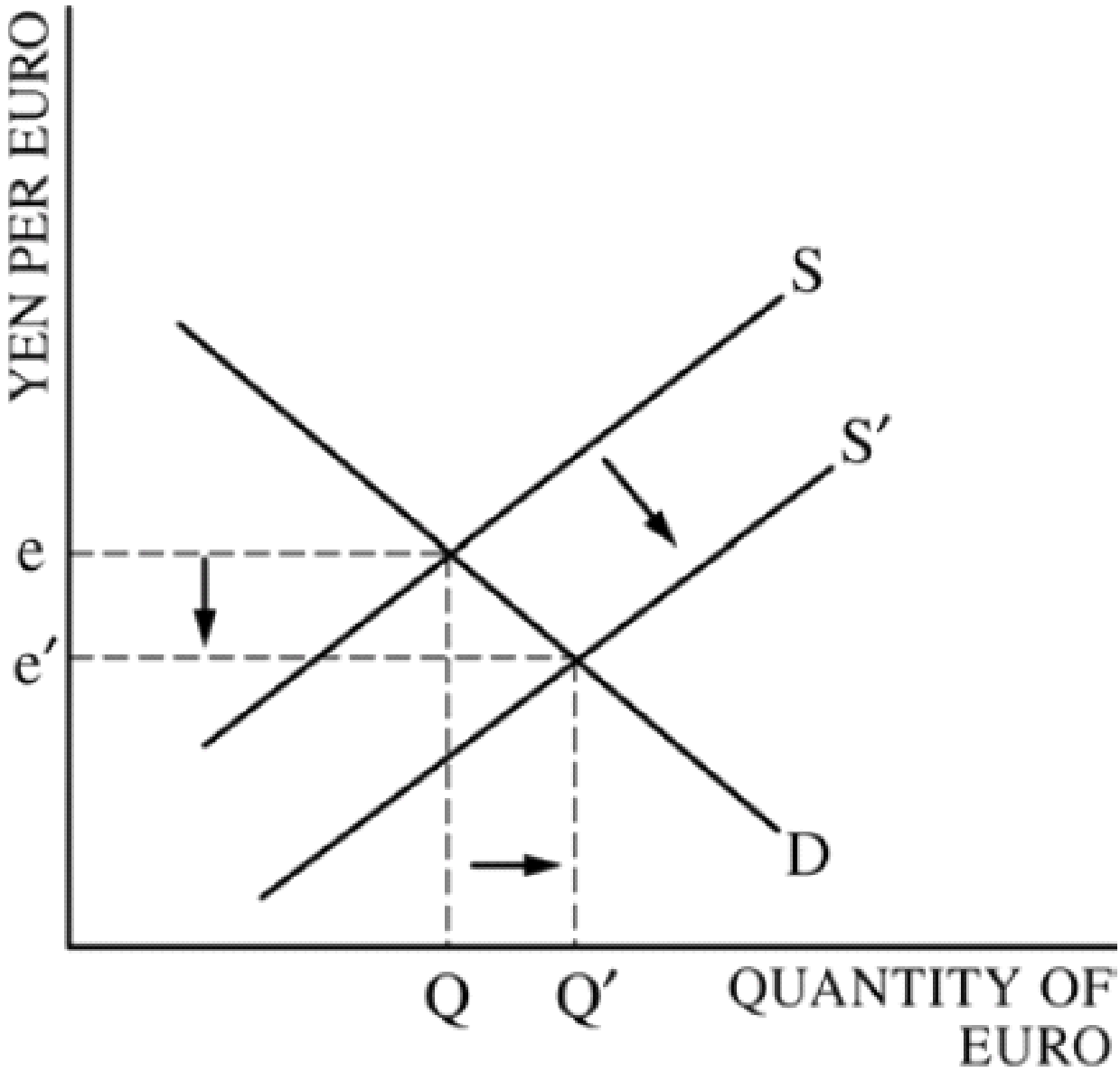
- The minimum required change in taxes will be greater than the minimum required change in government spending.
- The **tax multiplier** (mpc/mps = 0.8/0.2 = 4) is **smaller** than the government **spending multiplier** (1/mps = 1/0.2 = 5) because part of the initial increase in disposable income caused by the decrease in income tax will be saved rather than spent.

Question 1 (e)

- Lower income tax rate --> More **disposable income** --> More **consumption** and **investment** --> Increase in Aggregate Demand

Question 3 (a)

- Foreign exchange market for the euro



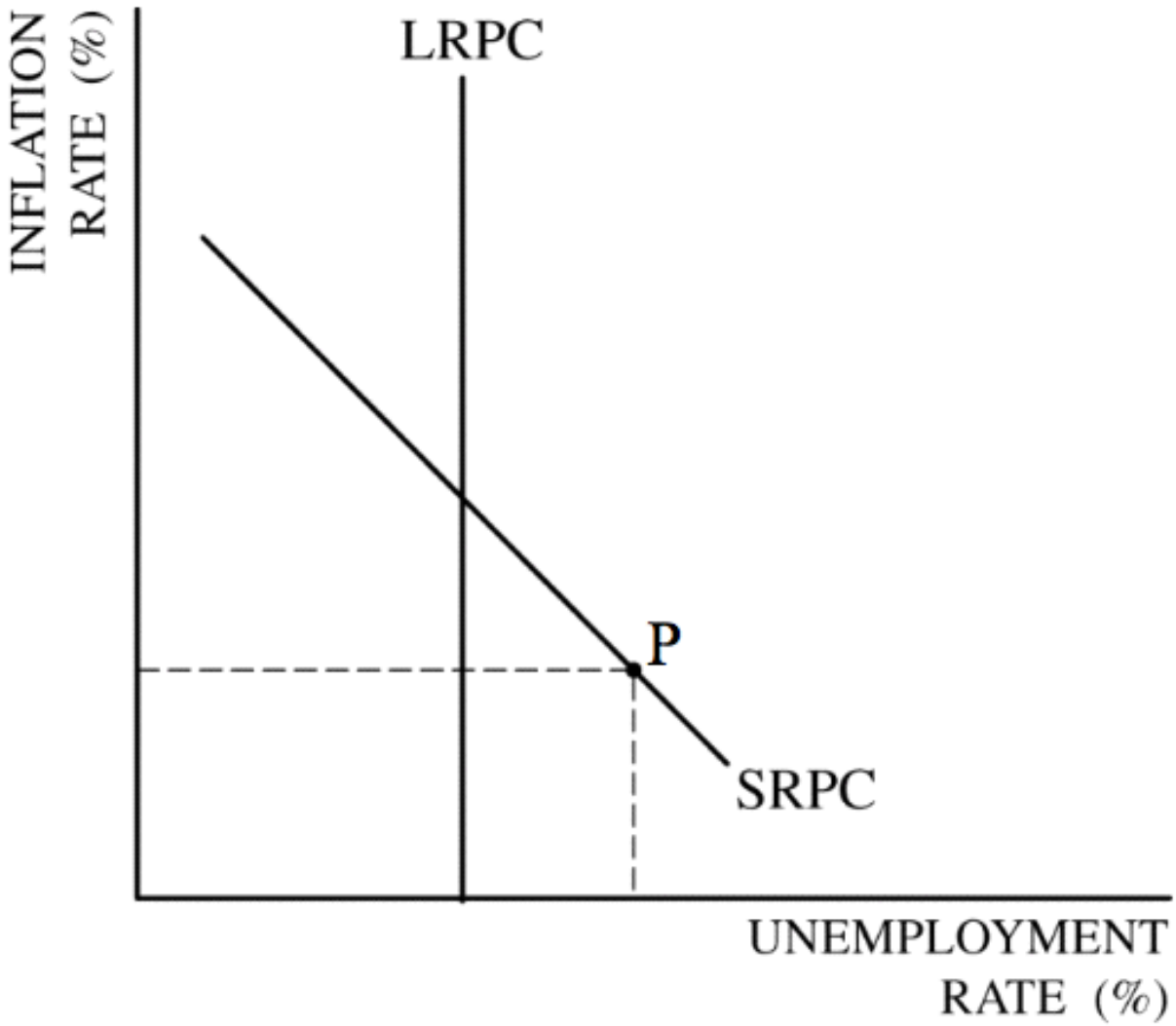
- The supply of Euro in the foreign exchange market will increase because when real interest rates in Japan increased, people with euros will want to **invest in Japan's financial assets** because they will see a **high return**.
- To purchase Japan's financial assets, they will demand yen from the foreign exchange market, leaving behind euro.

2016 Free Response

2017年4月24日 星期一 下午2:31

Question 1 (a)

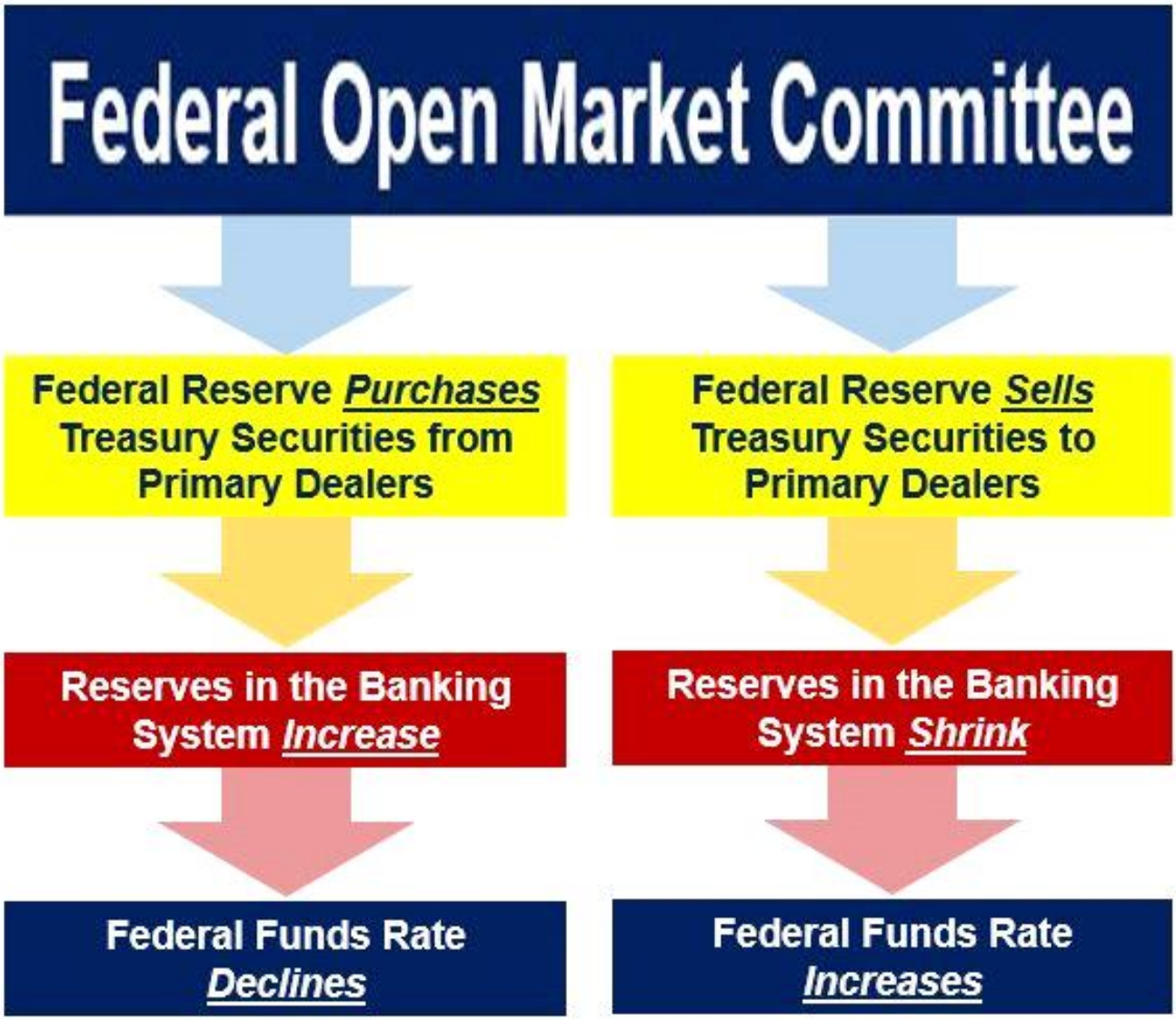
- Phillips Curve
  - x-axis: unemployment rate
  - y-axis: inflation rate (Since i**nflation rate could be negative**)
  - LRPC = NAIRU = Non-Accelerating Inflation Rate of Unemployment



Question 1 (d)

- Open Market Operation and Federal Funds Rate
  - To **Bloat** the economy --> **Buy** bonds --> Increase in Money Supply --> Increase reserve --> **Decrease** Federal Funds Rate

- To **Shrink** the economy --> **Sell** bonds --> Decrease in Money Supply --> Decrease reserve --> **Increase** Federal Funds Rate



How the FOMC Controls the Federal Funds Rate

Question 1 (e)

- The effect of expansionary monetary policy on GDP

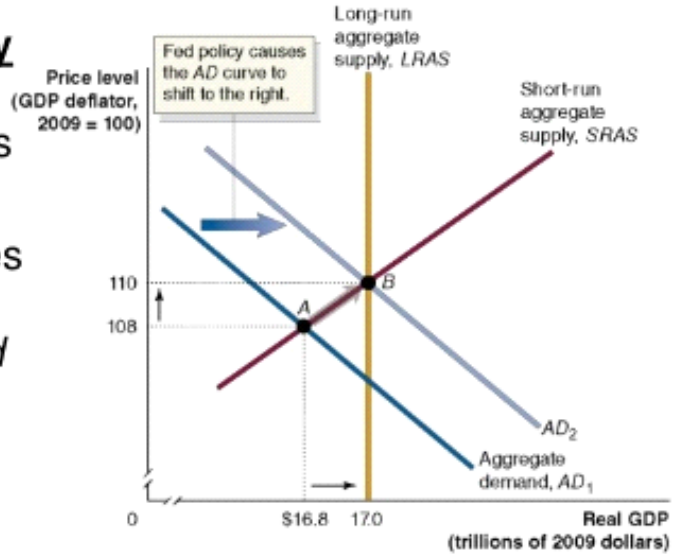
Figure 15.7 Monetary policy (1 of 2)

The Fed conducts **expansionary monetary policy** when it takes actions to decrease interest rates to increase real GDP.

- This works because decreases in interest rates raise consumption, investment, *and* net exports.

The Fed would take this action when short-run equilibrium real GDP was below potential real GDP.

- The increase in aggregate demand encourages increased employment, one of the Fed's primary goals.



(a) Expansionary monetary policy

(a) Expansionary monetary policy

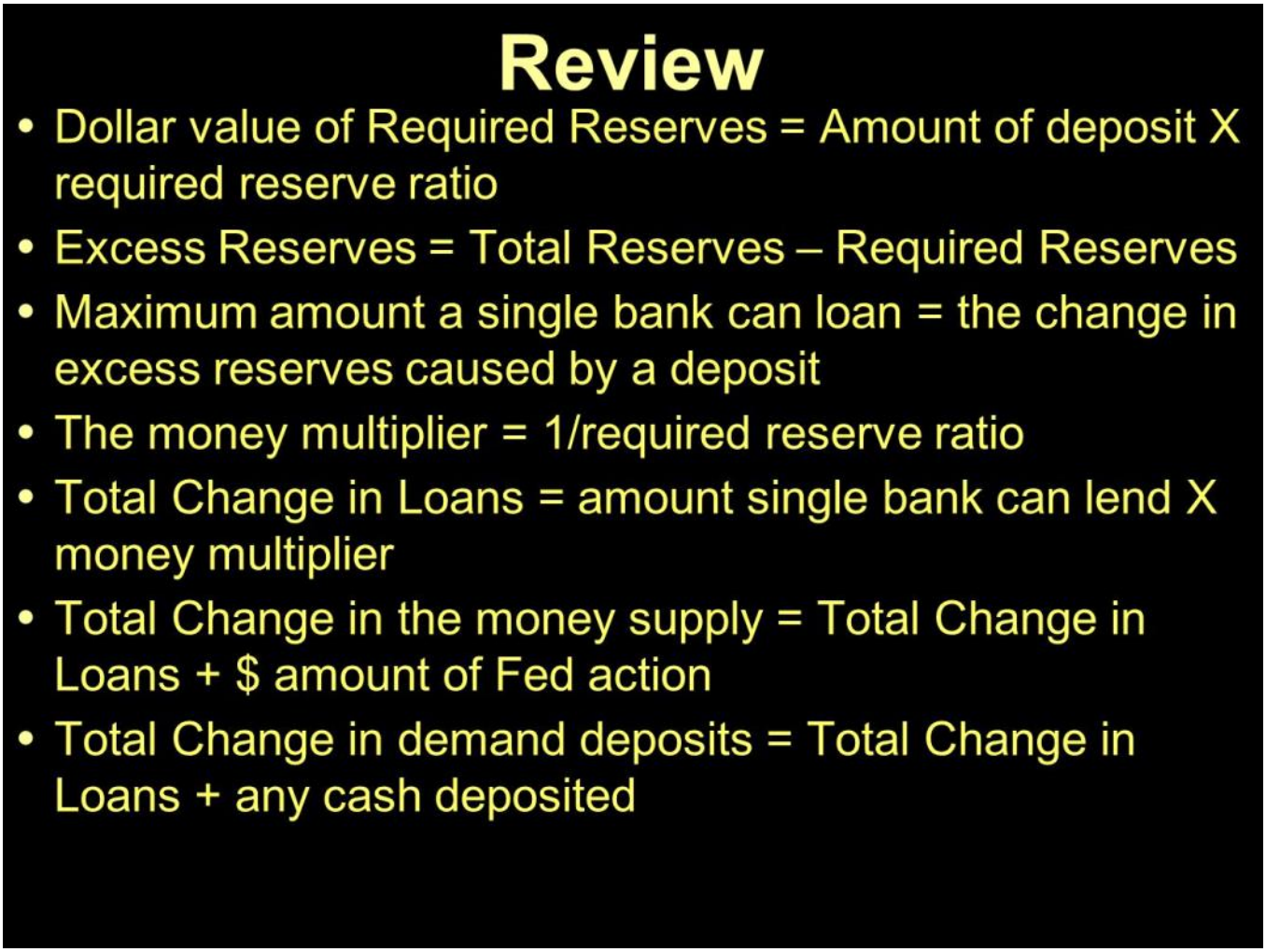
(b) Contractionary monetary policy

Question 1 (g)

- The effect of change in interest rate on foreign exchange market


INFORMEDTRADES.COM
Trading News and Education
How Interest Rates Affect Currencies
Interest Rates
=
Debt Investments Less Attractive
=
Less Foreign and Domestic Demand
=
Weaker Currency
www.informedtrades.com

Question 2 (c)



- If Mr. Smith deposits $100 in the bank and $10 is kept in reserves then $90 can be loaned out.
- If that $90 is deposited in another bank then 10% of the $90 or $9 must be kept in reserve and therefore $81 can then be loaned out in the next round and 10% of that must be kept in reserve and so on and so on and so on. Until all is loaned out.

Question 2 (d)

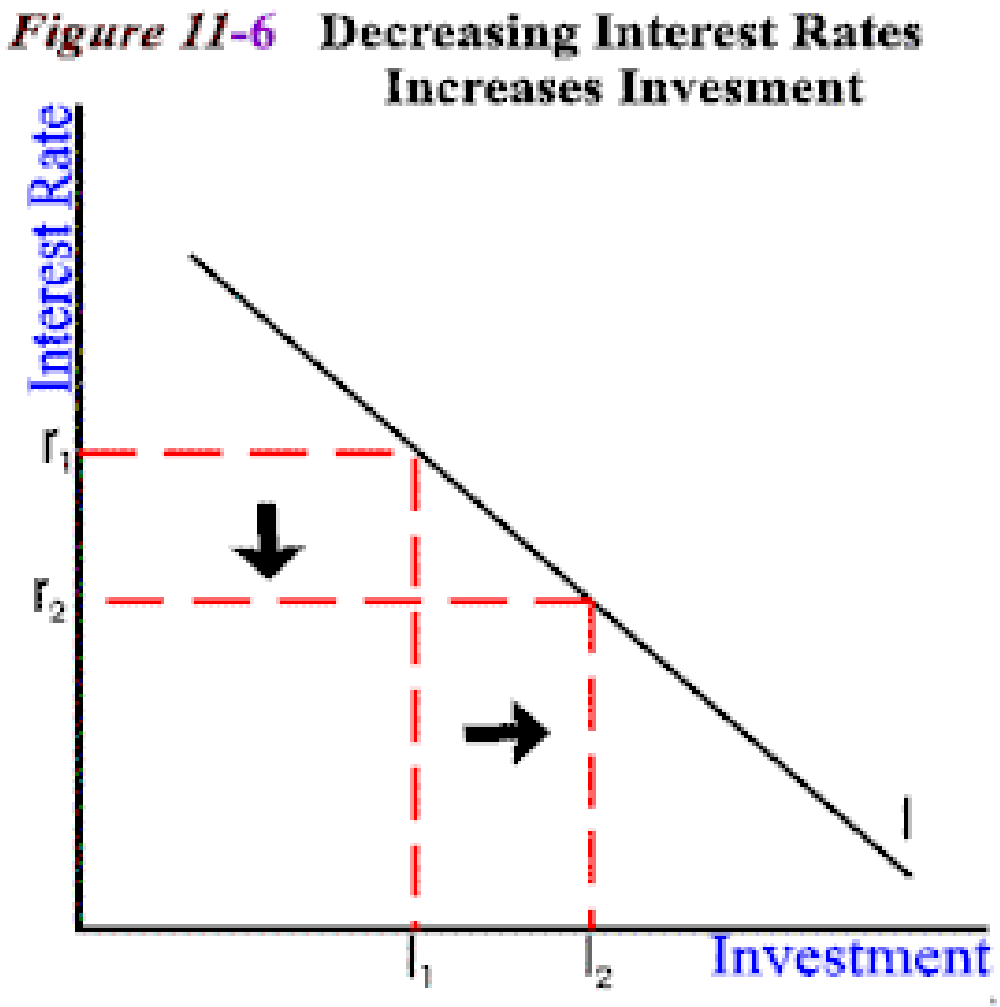
- The **original** $100 was already part of the money supply so you **can't include** that in the calculation.

Practice Exam Multiple Choice

Monday, April 10, 2017 11:23 PM

Question 6

- Purchase bond --> decrease the interest rate



- Purchase bond --> bloat the economy = increase the inflation rate --> promote the employment

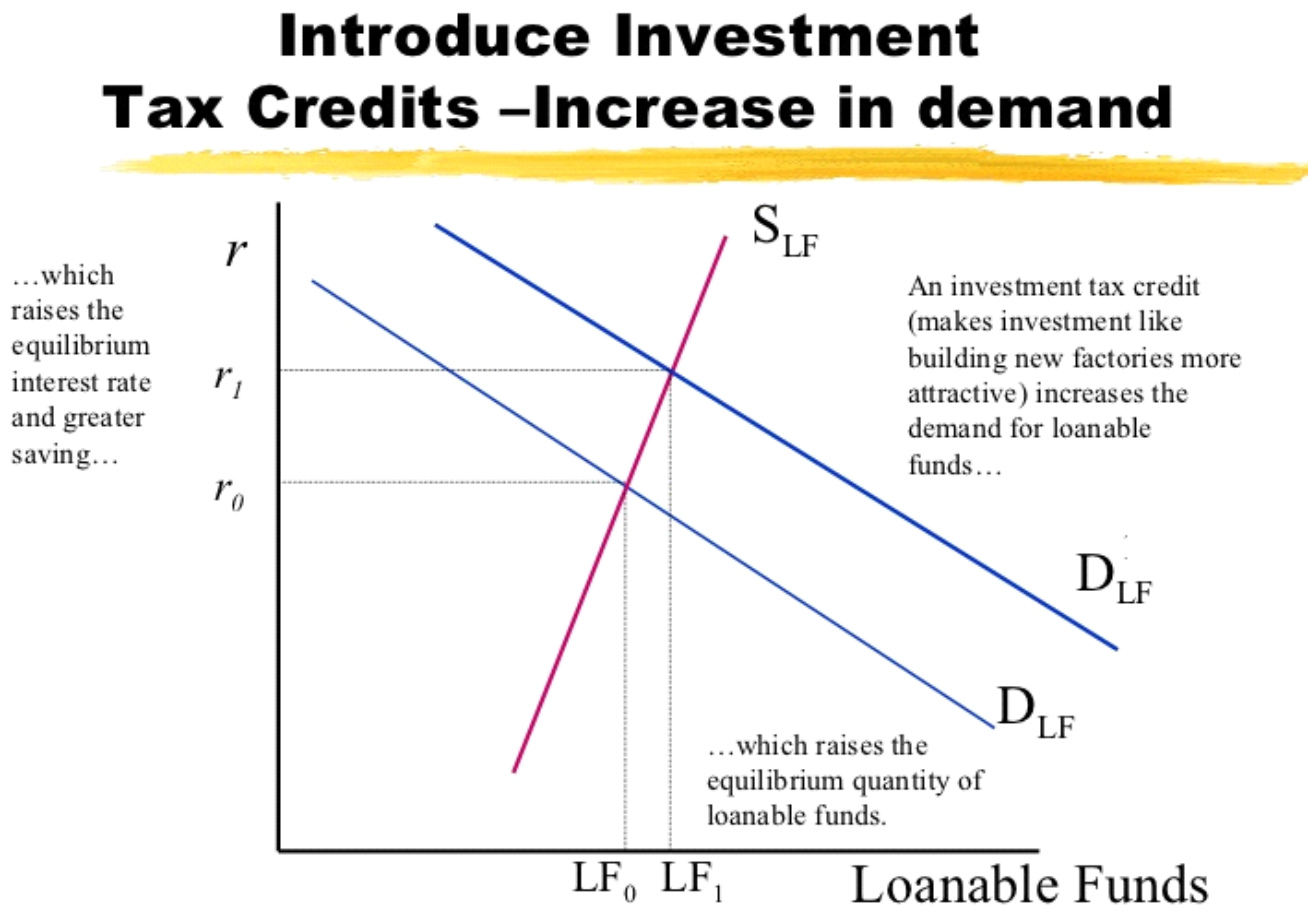
Question 7

- Investment tax credits

investment tax credit definition

An amount that businesses are allowed by law to deduct from their taxes, reflecting an amount they reinvest in themselves.

> ***Note*** : Investment tax credits are structured to reward and encourage economic growth.



Question 10

- Consumer Price Index and Inflation

A **consumer** facing **inflation** that occurs at the rate of 10% per year will able to buy 10% less goods at the end of the year if his or her income stays the same. **Inflation** can also be defined as a decline in the real purchasing power of the applicable currency. The **CPI** represents **prices** paid by **consumers** (or households).

The Consumer Price Index & Inflation - Investopedia
www.investopedia.com/exam-guide/cfa-level-1/.../consumer-price-index.asp

We can then use the monthly CPI published by the Bureau of Labor Statistics to determine differences between two points in time and calculate inflation for that period. For example, let's compare the CPI of January 2000 with that of January 2010.

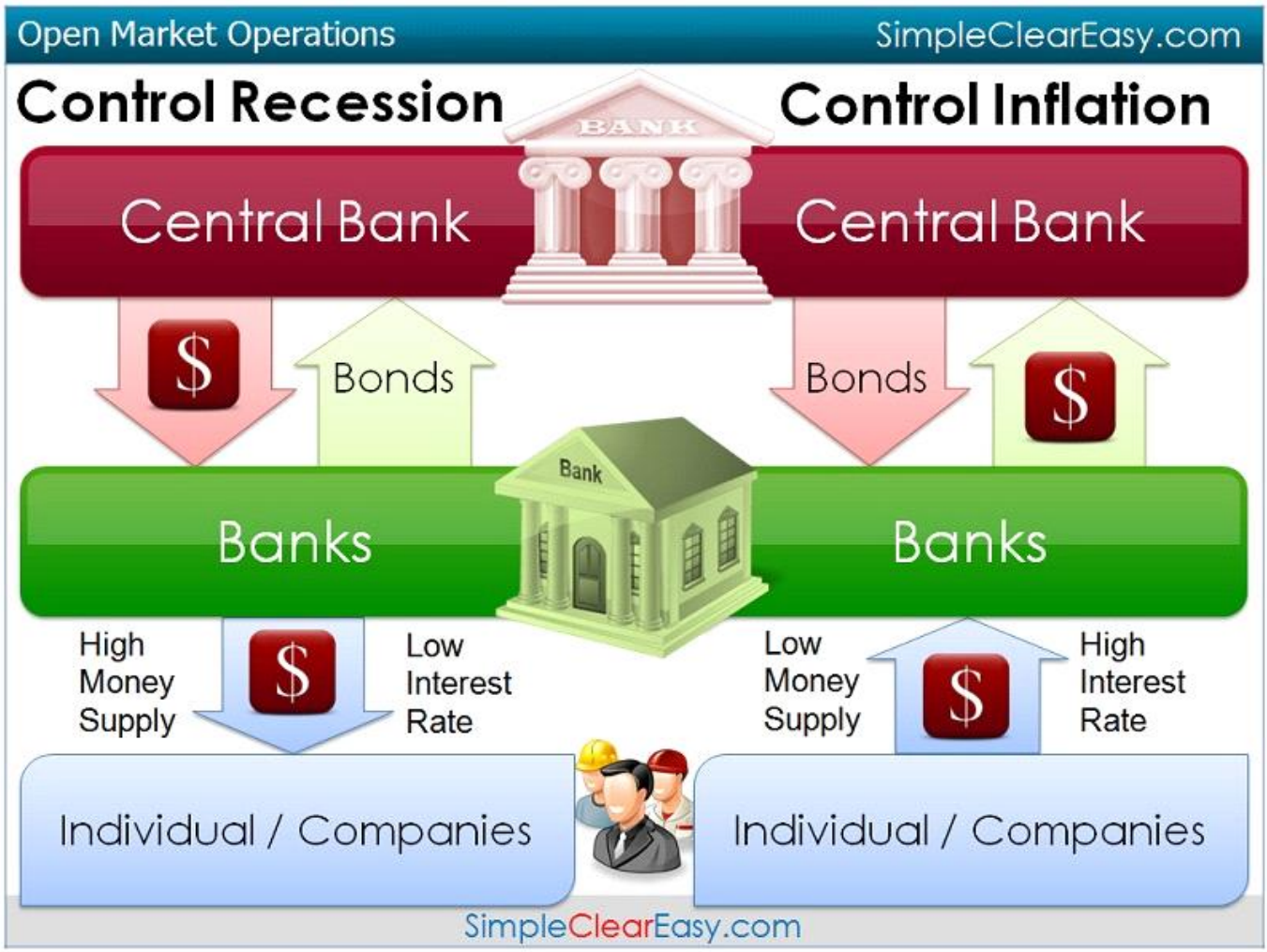
The CPI of January 2000 was 168.800 with the index for January 2010 listed as 216.687.

To make the calculations, we take the more recent CPI, subtract the oldest CPI, and then divide by the oldest CPI. Using our numbers shown above, it would be 216.687, minus 168.800, divided by 168.800. This equals .2837.

Inflation is always considered as a percentage, so we take that number and multiply it by 100 to get 28.37%. Thus, the inflation rate from January 2000 to January 2010 was 28.37%.

By looking at these calculations, it becomes easier to understand that the Consumer Price Index is a factor in determining inflation.

Question 12


Open Market Operations
SimpleClearEasy.com
Control Recession
Control Inflation
BANK
Central Bank
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High
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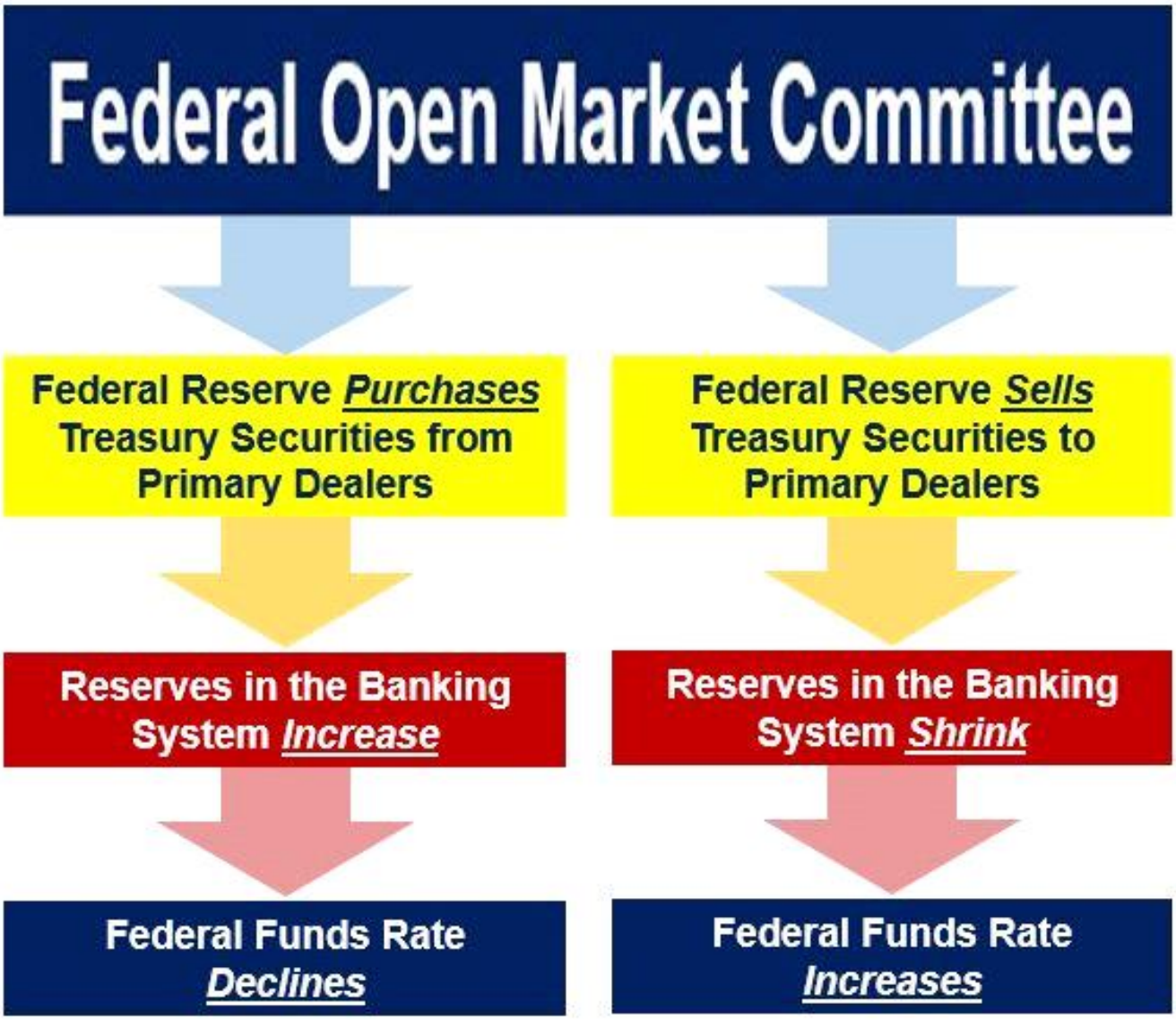
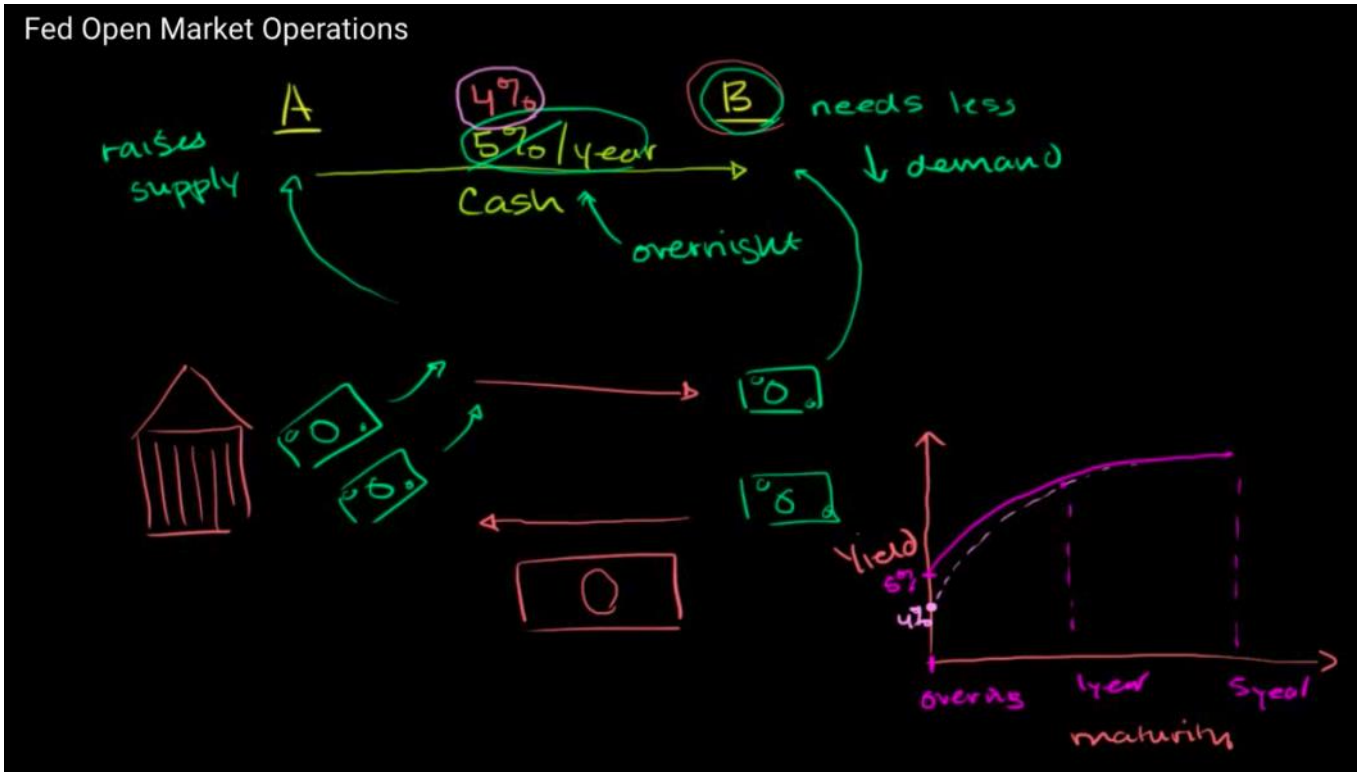
Individual / Companies
Individual / Companies
SimpleClearEasy.com



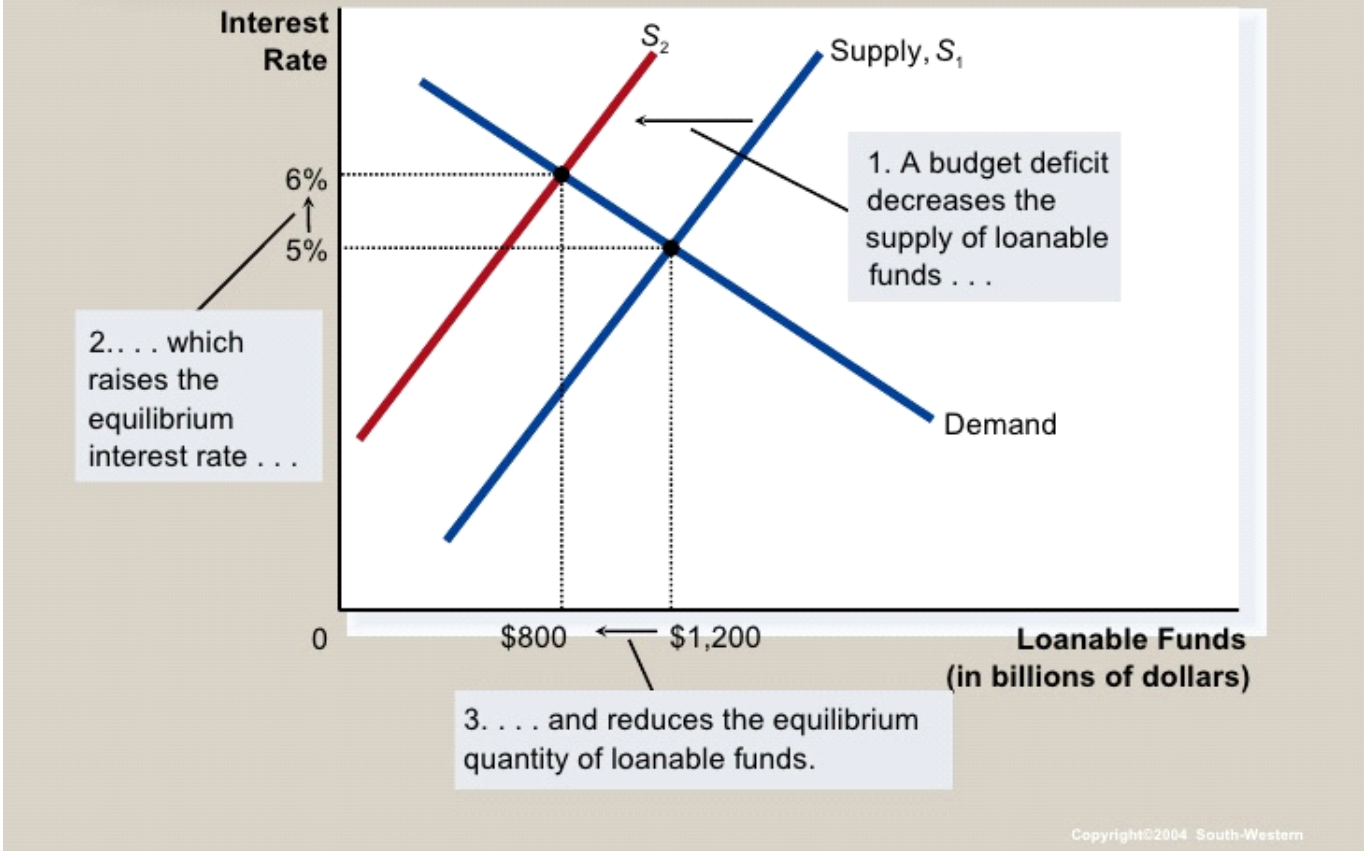
How the FOMC Controls the Federal Funds Rate



Question 25

- Budget deficit and interest rate

Figure 4: The Effect of a Government Budget Deficit



Budget Deficit

- In reality, government budget deficits affect the real interest rate.
- When the government reduces national savings by running a budget deficit, the interest rate rises, and investment falls.
- Because investment is important for long –run economic growth, government budget deficits reduce economy's growth rate.

Question 26

26. Which of the following will cause the United States dollar to depreciate relative to the euro?

(A) An increase in household income in the United States
(B) An increase in interest rates in the United States
(C) An increase in household income in Europe
(D) A decrease in interest rates in Europe
(E) A decrease in price level in the United States

- Increasing household income in the U.S. results in more demand for foreign goods which appreciates that currency and depreciates the dollar.

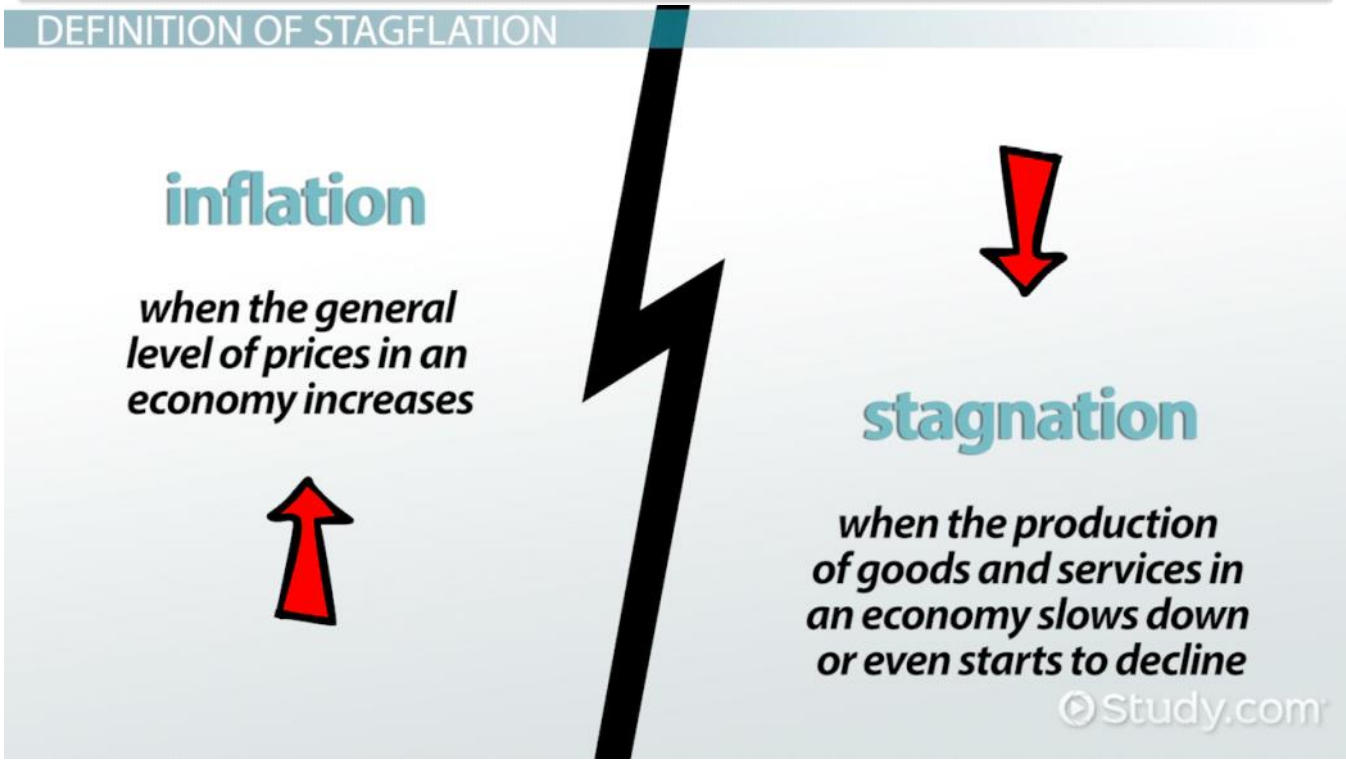
Question 27

- Causes of Stagflation

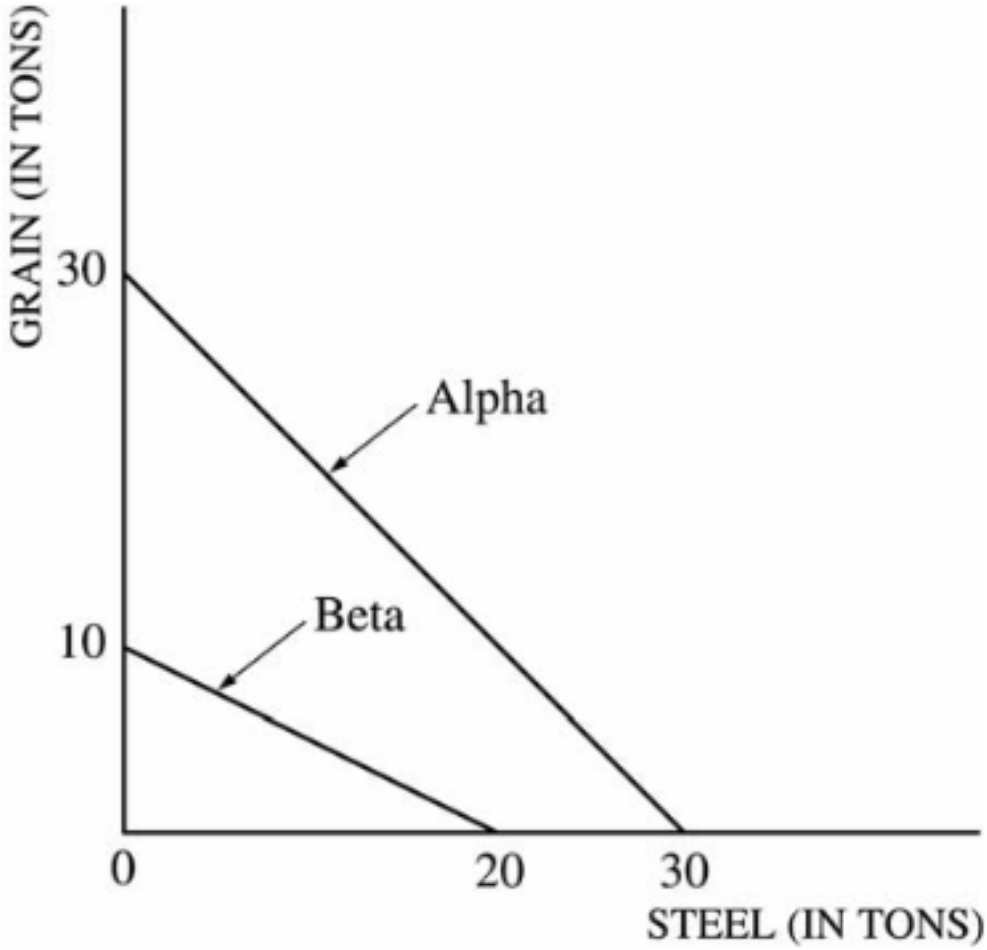
- If the prices of raw material and labour increases, it will increase the cost of production prices will rise and output will fall.
- Rapid rise in indirect taxes also increase the cost and price level. So output and employment falls.
- Shortage of labour also affects the output adversely.

Stagflation is often **caused** by a supply side shock. For example, rising commodity prices, such as oil prices, will **cause** a rise in business costs (transport more expensive) and short run aggregate supply will shift to the left. This **causes** a higher inflation rate and lower GDP. Nov 28, 2012

Stagflation | Economics Help
www.economicshelp.org/blog/glossary/stagflation/



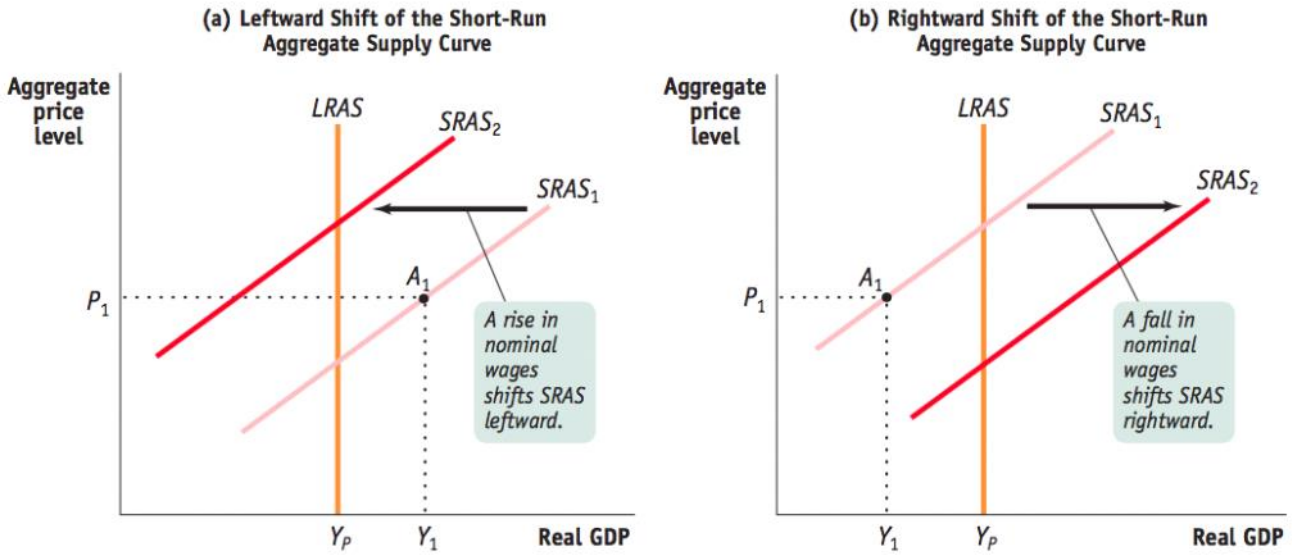
Question 34



- Alpha is getting 1 S domestically for their 1 G, but now they can trade their 1 G for 1.5 S.
- Beta is having to give up 2 S to get 1 G domestically, but if they trade they only have to give up 1.5 S to get 1 G.

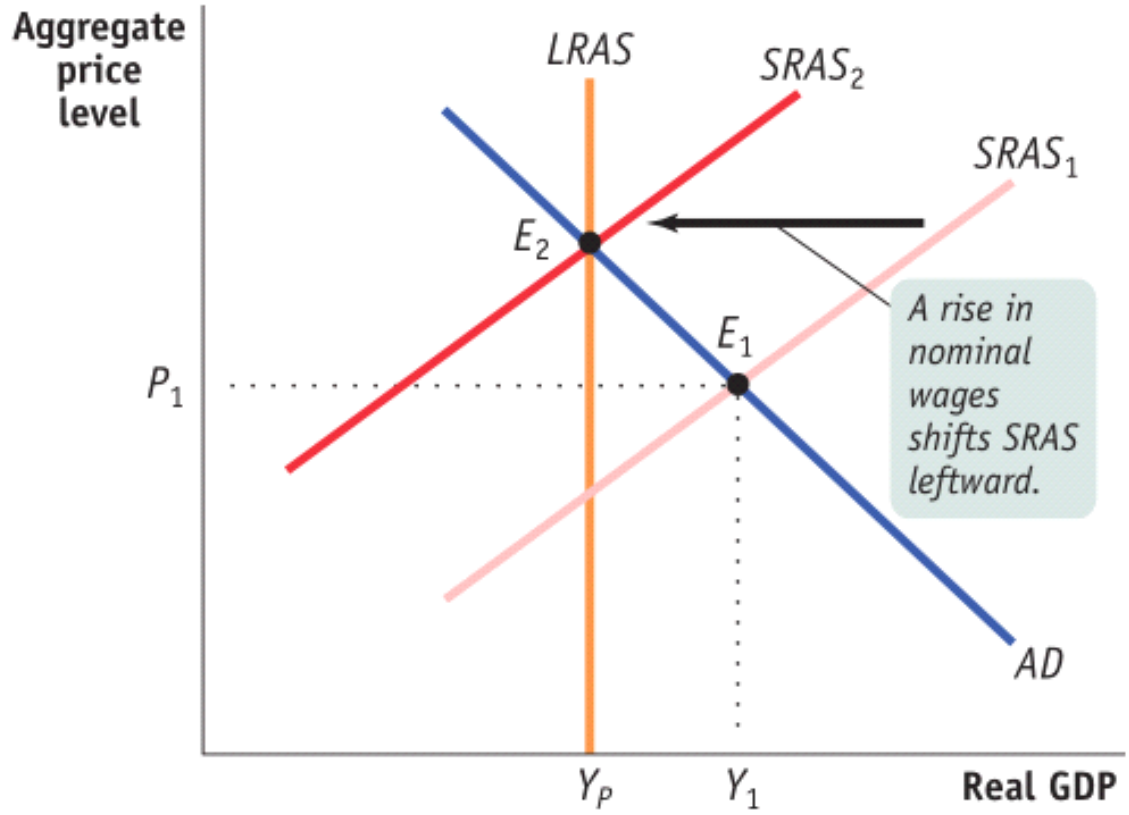
Question 35

figure 18.5 From the Short Run to the Long Run

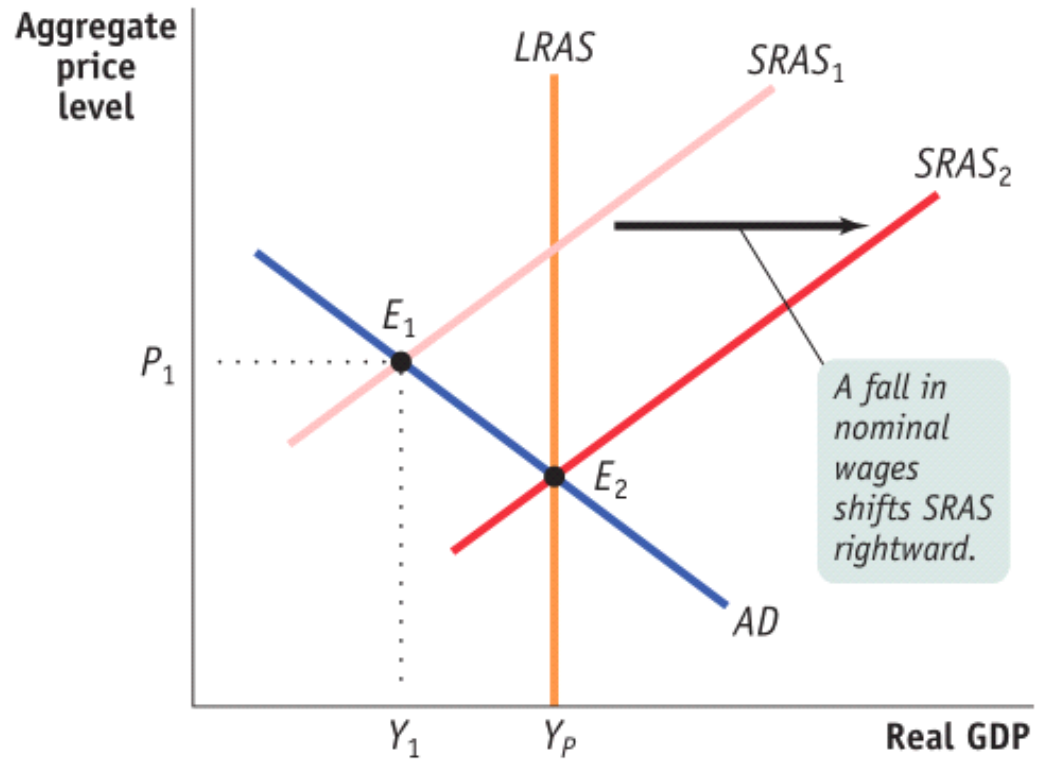


In panel (a), the initial short-run aggregate supply curve is $SRAS_1$. At the aggregate price level, P_1, the quantity of aggregate output supplied, Y_1, exceeds potential output, Y_P. Eventually, low unemployment will cause nominal wages to rise, leading to a leftward shift of the short-run aggregate supply curve from $SRAS_1$ to $SRAS_2$. In panel (b), the reverse happens: at the aggregate price level, P_1, the quantity of aggregate output supplied is less than potential output. High unemployment eventually leads to a fall in nominal wages over time and a rightward shift of the short-run aggregate supply curve.

- Short-Run to Long-Run: $Y_1 > Y_P$
    - Initial equilibrium is E_1. Eventually, **low unemployment** will cause **nominal wages** to **rise** and leads to a **leftward** shift of the **SRAS curve**, so the new equilibrium is at E_2

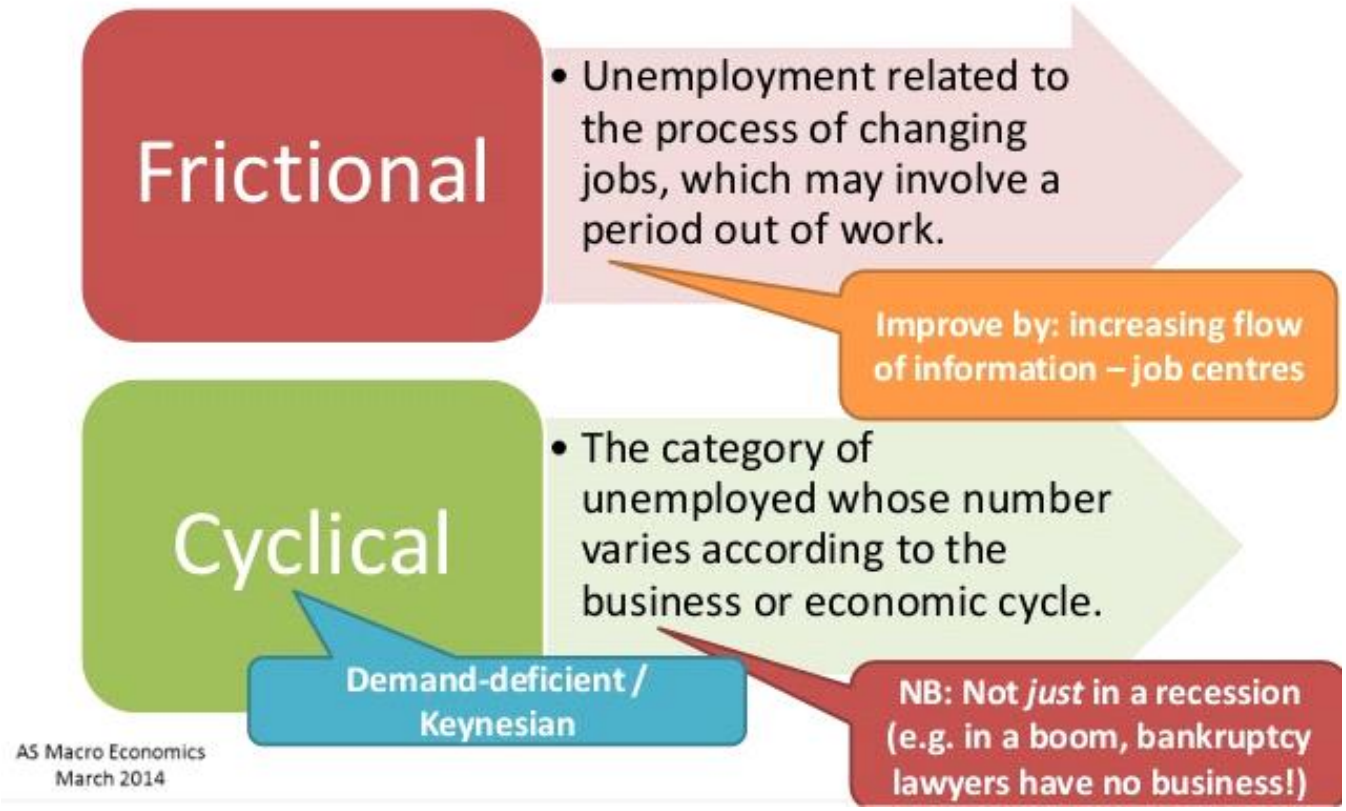


- Short-Run to Long-Run: $Y_1 < Y_P$
    - Initial equilibrium is E_1. Eventually, **high unemployment** will cause **nominal wages** to **fall** and leads to a **rightward** shift of the **SRAS curve**, so the new equilibrium is at E_2

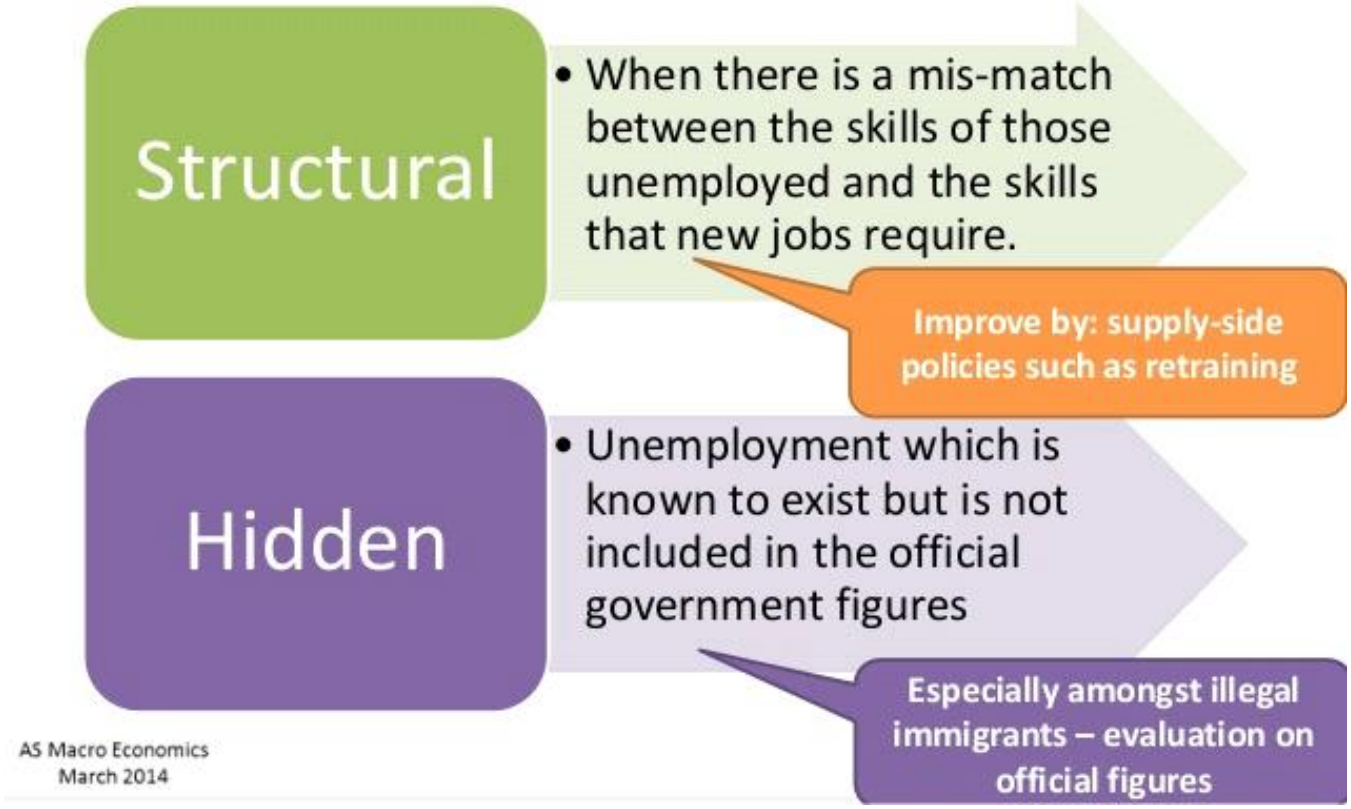


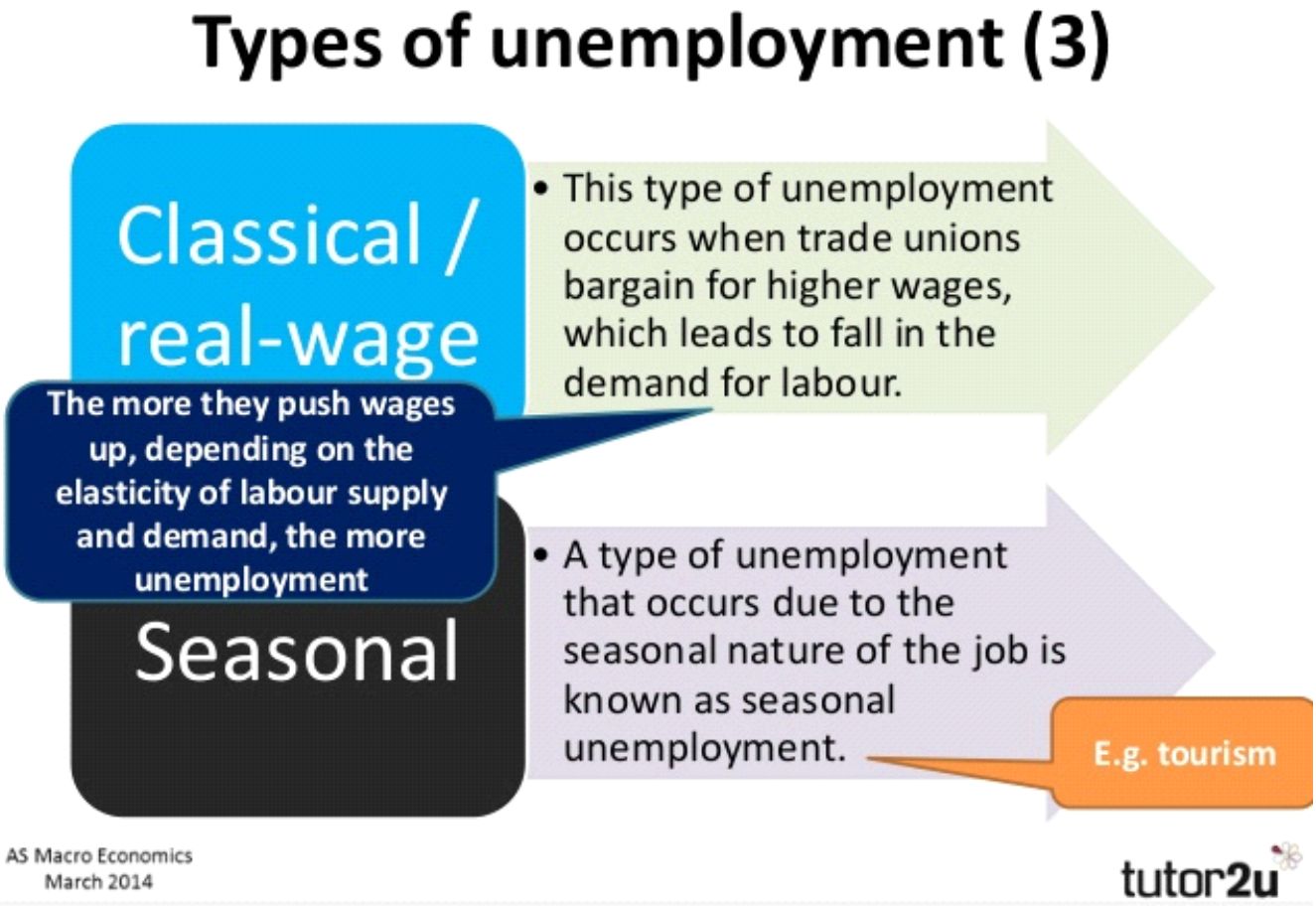
Question 37

Types of unemployment (1)



Types of unemployment (2)





Question 40

40. Assume that the economy is at full employment. Policymakers wish to maintain the price level but want to encourage greater investment. Which of the following combinations of monetary and fiscal policies would best achieve this goal?

- Expansionary monetary policy would result in lower interest rates, causing more investment in real capital.
- To keep prices from going up, policymakers could cut G or raise taxes [contractionary] to prevent this.

Question 42

- Lower production costs --> more profits + shifts the AS to the right --> lower price level + increase in real output

Question 43

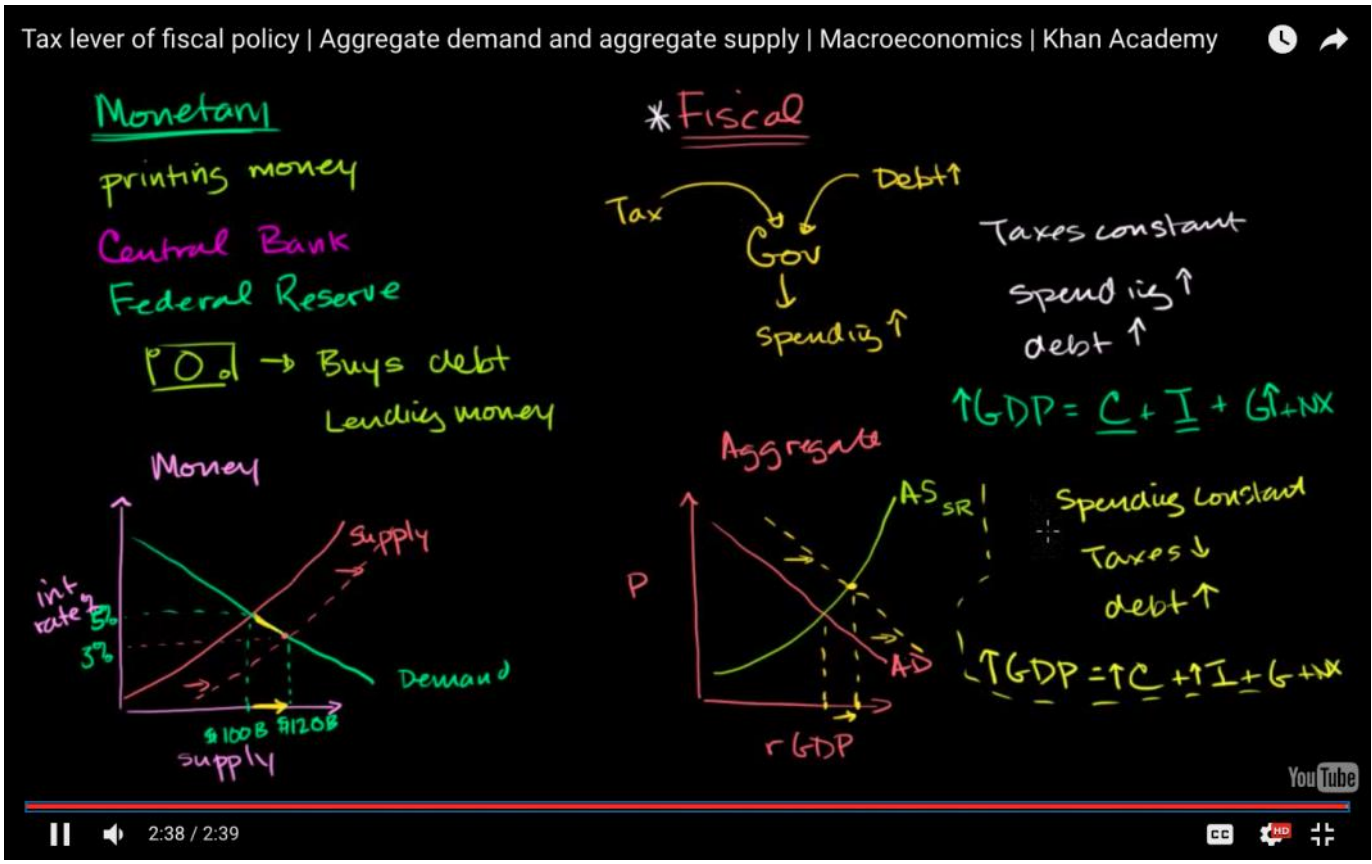
43. An economy is in a short-run equilibrium at a level of output that is less than full-employment output. If there were no fiscal or monetary policy interventions, which of the following changes in output and the price level would occur in the long run?

With no intervention in this recession, the surpluses would result in lower prices

- Workers would then accept lower wages. As more are hired back, output would increase.

Question 47

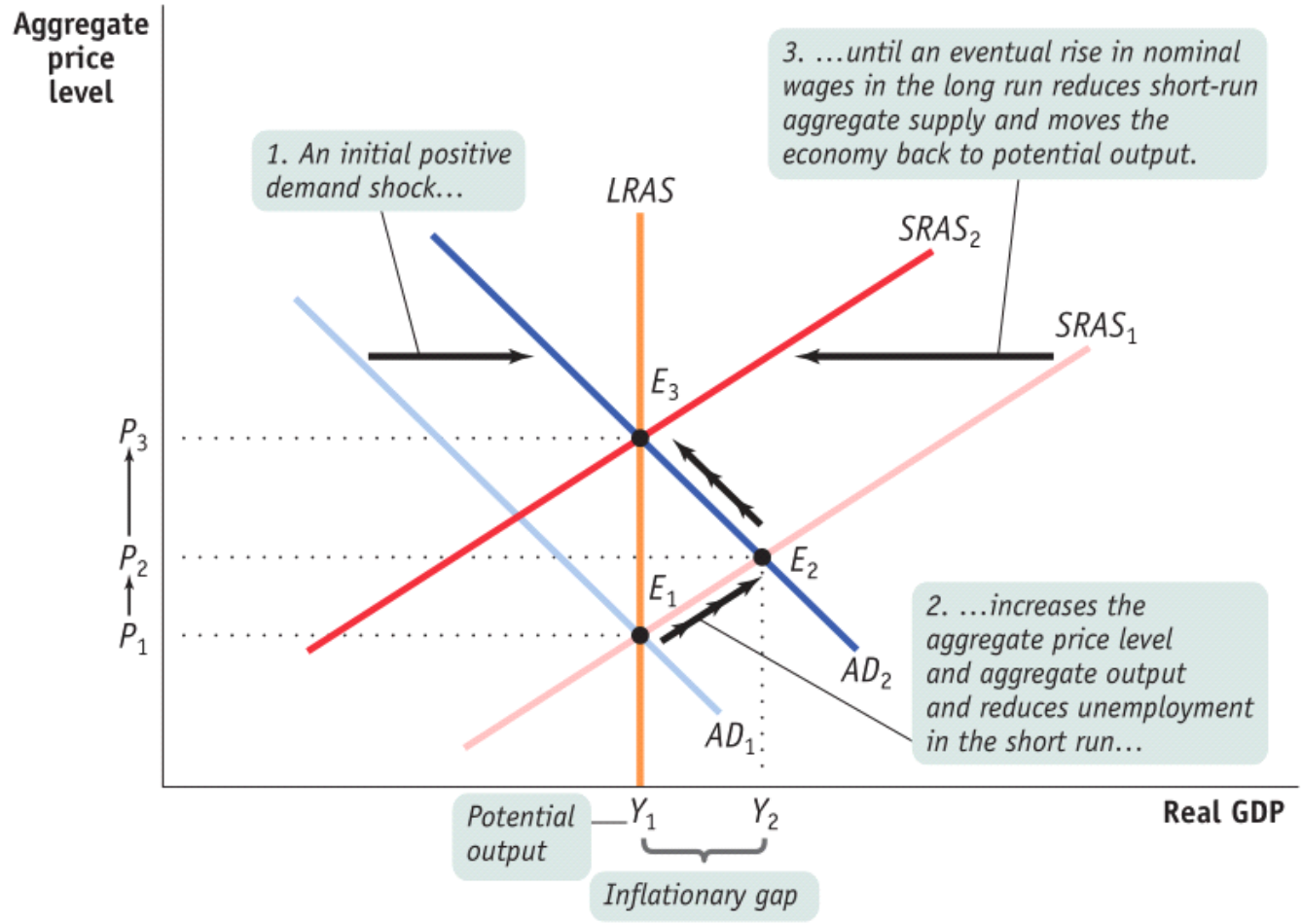
- Decreasing taxes would increase C, increase AD and real GDP. Assuming a balanced budget before the decrease in T means the G would have to borrow, pushing up interest rates.
- Decreasing the discount rate would also lead to more real GDP but would result in a lower interest rate.
- With interest rates moving in opposite directions with the two policies, this make them indeterminate.

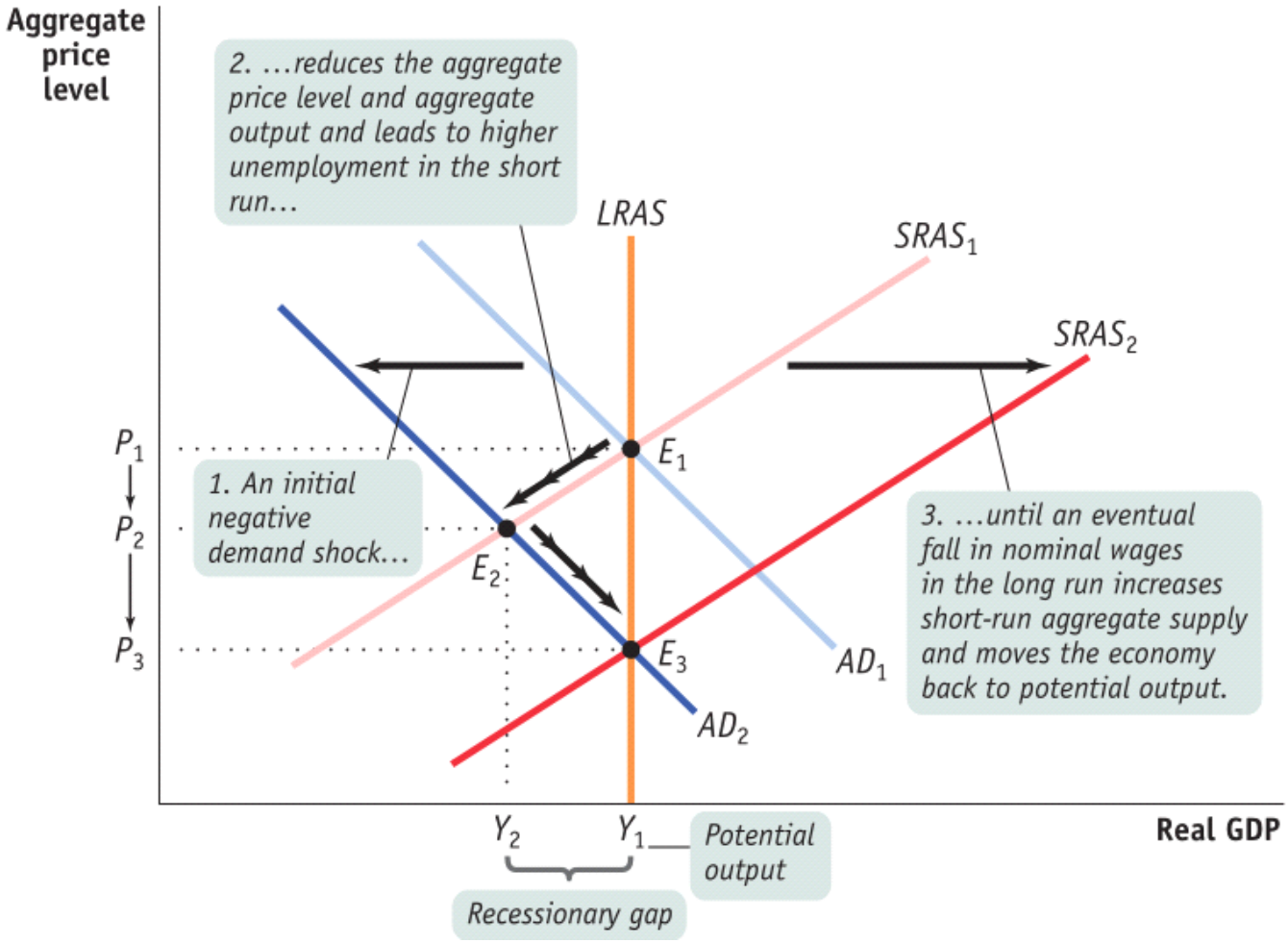


Question 53

53. In the long run, if aggregate demand decreases, real gross domestic product (GDP) and the price level will change in which of the following ways?

- The decrease in AD resulted in surpluses & caused prices to drop.
- Workers would now accept lower wage increases which moved the SRAS curve right, increasing real GDP.

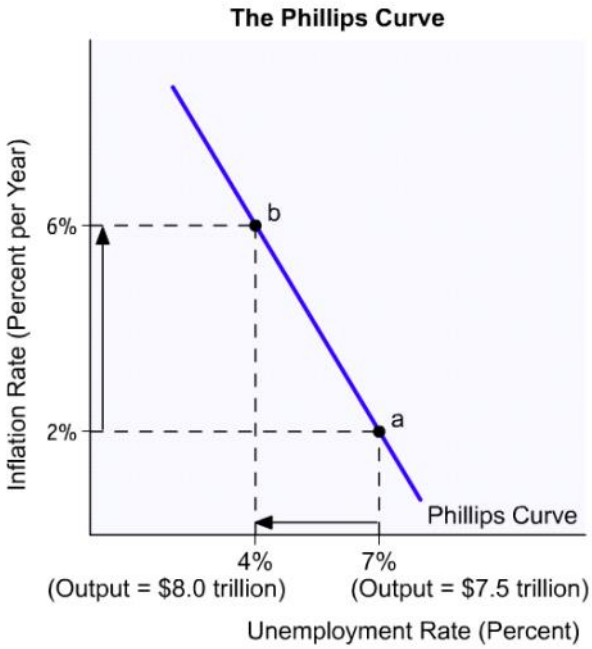


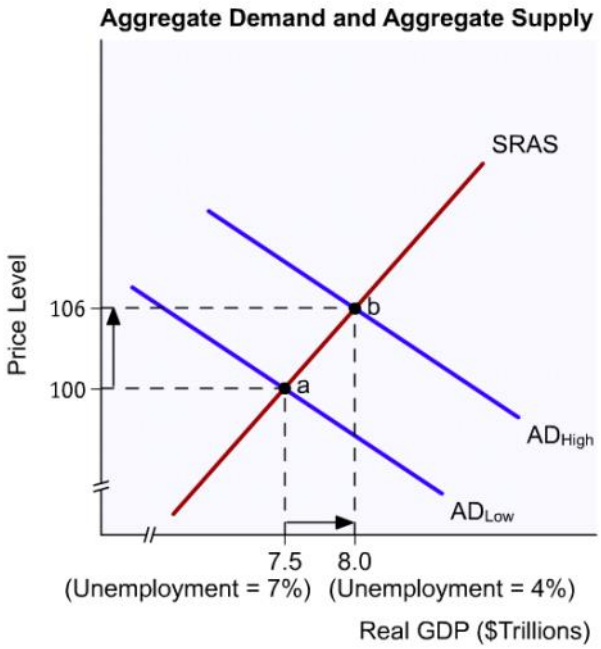

Aggregate price level
2. ...reduces the aggregate price level and aggregate output and leads to higher unemployment in the short run...
LRAS
SRAS1
SRAS2
P1
P2
P3
1. An initial negative demand shock...
E1
E2
E3
AD1
AD2
3. ...until an eventual fall in nominal wages in the long run increases short-run aggregate supply and moves the economy back to potential output.
Y2
Y1
Potential output
Recessionary gap
Real GDP

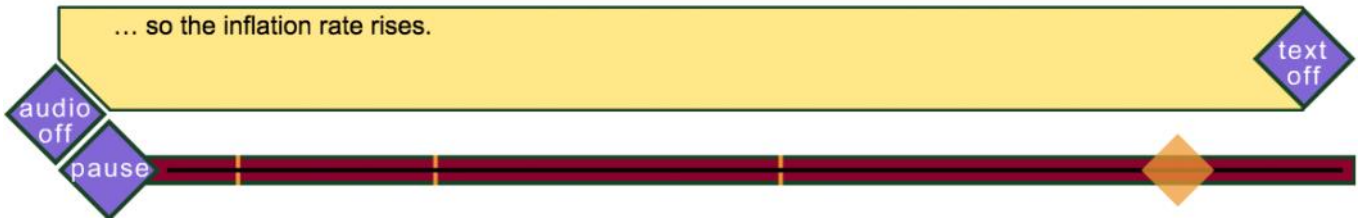
Question 56

Question 57

- The Relationship Between the Phillips Curve and AD


The Phillips Curve
Inflation Rate (Percent per Year)
6%
2%
b
a
Phillips Curve
4%
7%
(Output = $8.0 trillion)
(Output = $7.5 trillion)
Unemployment Rate (Percent)

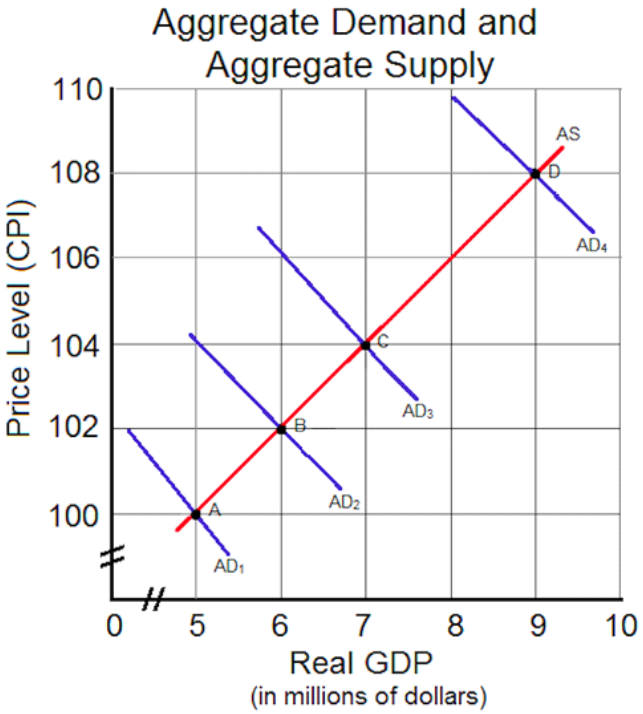

Aggregate Demand and Aggregate Supply
SRAS
Price Level
106
100
b
a
AD High
AD Low
7.5
8.0
(Unemployment = 7%)
(Unemployment = 4%)
Real GDP ($Trillions)

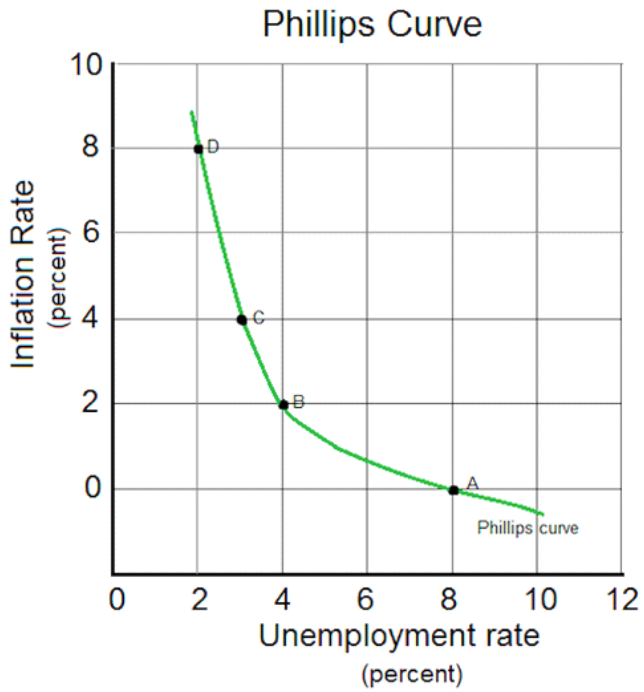

... so the inflation rate rises.
text off
audio off
pause

The Phillips curve shows the inverse trade-off between rates of inflation and rates of unemployment. If unemployment is high, inflation will be low; if unemployment is low, inflation will be high.

The Phillips curve and aggregate demand share similar components. The Phillips curve is the relationship between inflation, which affects the price level aspect of aggregate demand, and unemployment, which is dependent on the real output portion of aggregate demand. Consequently, it is not far-fetched to say that the Phillips curve and aggregate demand are actually closely related.

To see the connection more clearly, consider the example illustrated by . Let's assume that aggregate supply, AS, is stationary, and that aggregate demand starts with the curve, AD_1. There is an initial equilibrium price level and real GDP output at point A. Now, imagine there are increases in aggregate demand, causing the curve to shift right to curves AD_2 through AD4. As aggregate demand increases, unemployment decreases as more workers are hired, real GDP output increases, and the price level increases; this situation describes a demand-pull inflation scenario.





Question 59

- Business taxes are determinants of both AD and AS.
- The decrease in business taxes means they have more profits and will invest more, increasing AD.
- As far as the legal-institutional environment with the government, it is more favorably so that will result in an increase in AS

Question 60

- The budget deficit means the government is borrowing more, which pushes up the interest rate.
- The higher interest rate attracts more foreign investors, increasing demand for the dollar and appreciating the dollar.
- The stronger dollar makes our exports more expensive and imports cheaper, therefore increasing the trade deficit.