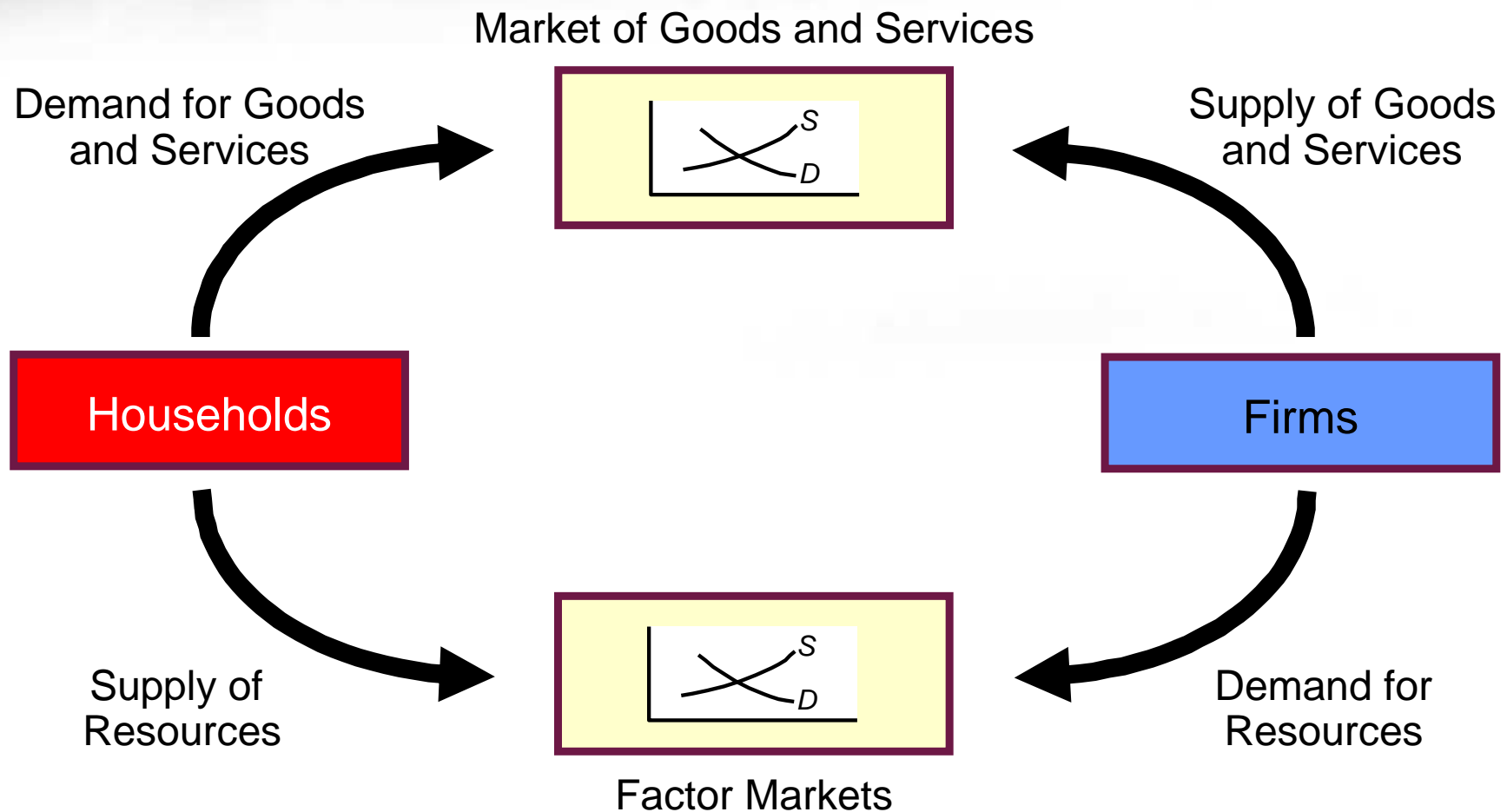




**Labor Market and Unemployment**  
**Ing. Mansoor Maitah Ph.D.**

# Product and Factor Markets





## Examining Unemployment

- The **unemployed** are those individuals who do not currently have a job but who are actively looking for work.
- The **employed** are individuals who currently have jobs.
- The employed plus the unemployed comprise the **labor force**.

labor force = employed + unemployed



## The Types of Unemployment

- **Cyclical unemployment** is the unemployment that accompanies fluctuations in real GDP.
  - Reflects business cycle conditions
  - When there is a general downturn in business activity, cyclical unemployment increases.
- **Frictional unemployment** is the unemployment that occurs naturally during the normal workings of an economy. It occurs because it simply takes time for people to find the right jobs and for employers to find the right people to hire.
  - Caused by *imperfect information*.
  - Occurs because:
    - employers are not aware of all available workers and their qualifications, and,
    - available workers are not fully aware of all the jobs being offered by employers.



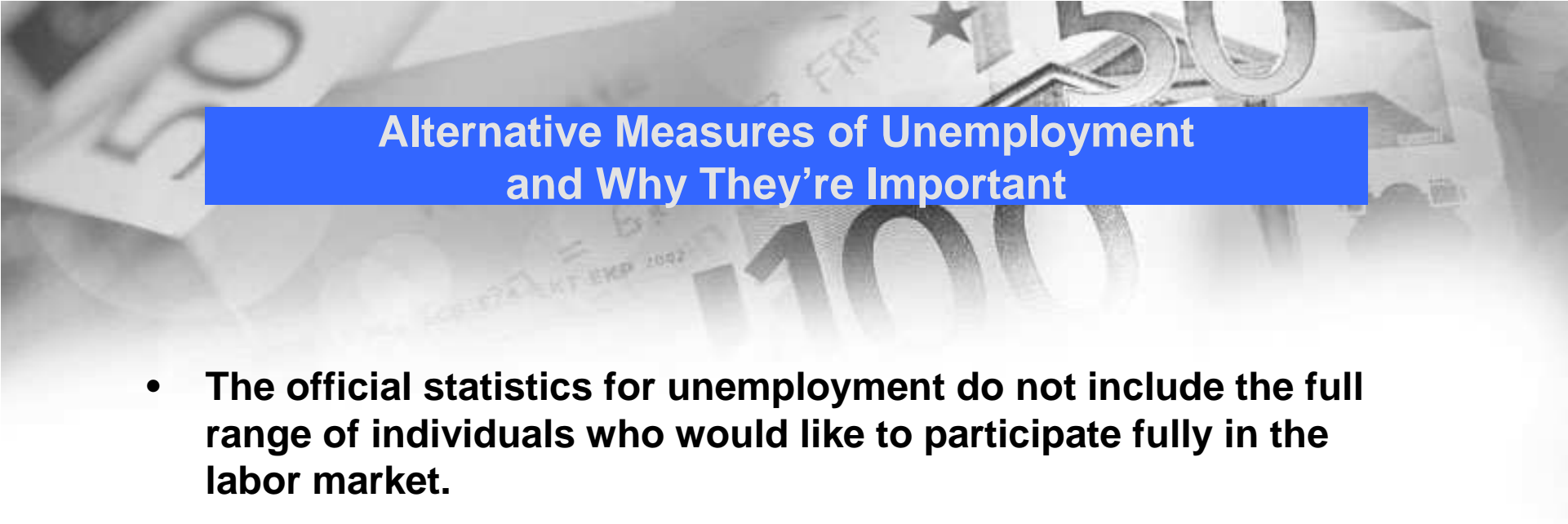
## The Types of Unemployment

### **Seasonal Unemployment:**

A product of regular, recurring changes in the hiring needs of certain industries on a monthly or seasonal basis.

### **Structural unemployment:**

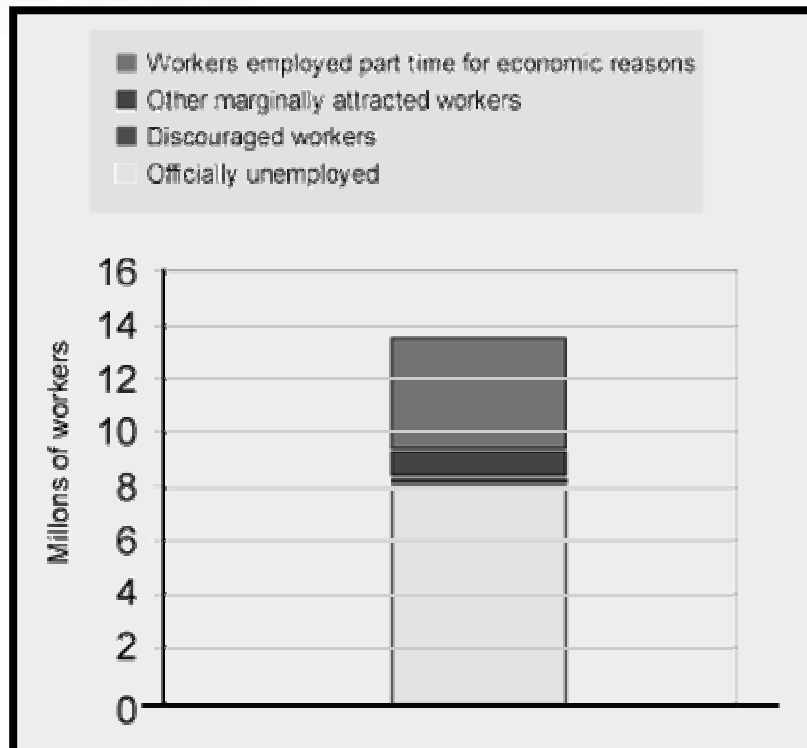
occurs when the economy evolves. It occurs when different sectors give way to other sectors or certain jobs are eliminated while new types of jobs are created.



## Alternative Measures of Unemployment and Why They're Important

- **The official statistics for unemployment do not include the full range of individuals who would like to participate fully in the labor market.**
  - Individuals who want to work, have searched for work in the prior year, but are not currently looking for work because they believe they won't be able to find a job are called discouraged workers.
  - Individuals who would like to work, have searched for work in the recent past, but have stopped looking for work for a variety of reasons are known as marginally attached workers.
  - Workers who would like to be employed full-time but hold part-time jobs are known as individuals working part time for economic reasons.

## Alternative Measures of Unemployment



- Including discouraged workers, marginally attached workers and individuals working part-time for economic reasons substantially increase measured unemployment.
- Depending on the statistic you want to emphasize, the unemployment rate could vary from the official 5.8% to as much as 9.4%.

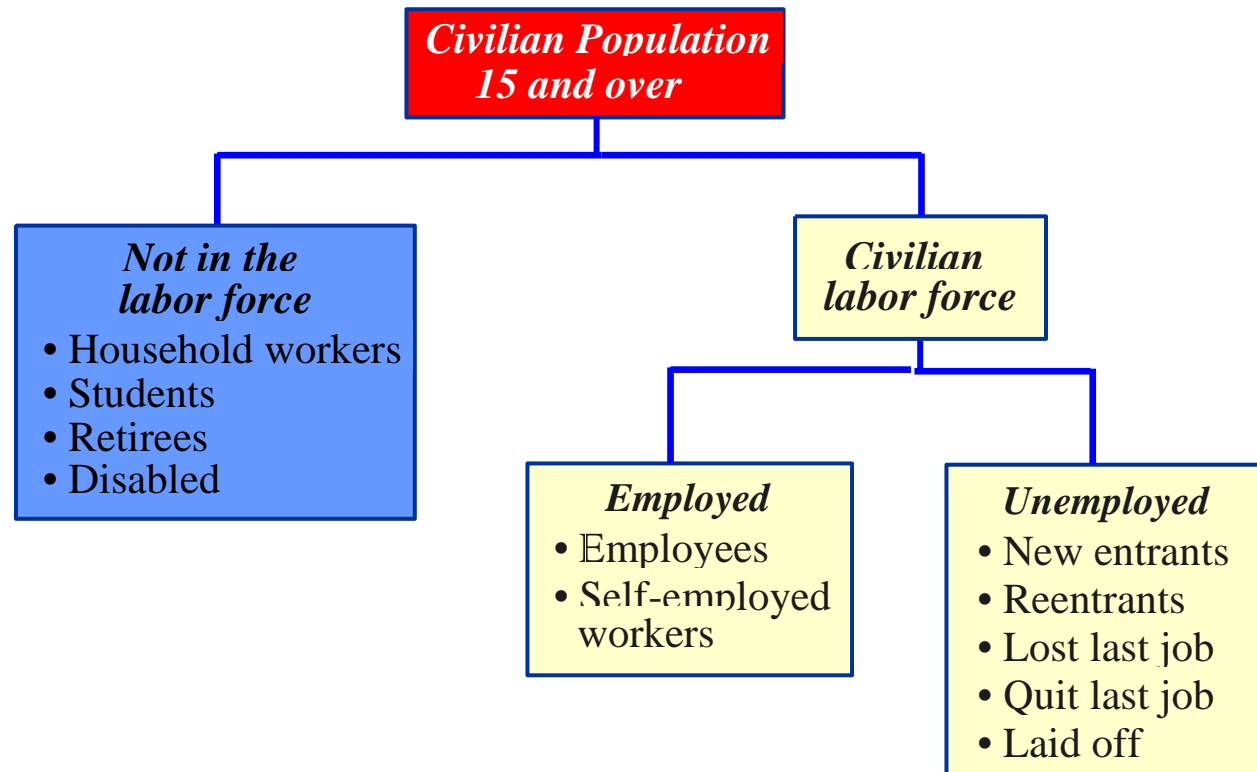


## Who Are the Unemployed?

- Different groups of people suffer more unemployment than other groups.
- Unemployment rates vary somewhat as GDP rises and falls.
- **Underemployment** is the employment of workers in jobs that do not utilize their productive skills.



# Czech Population, Employment, and Unemployment



## Examining Unemployment

- The **unemployment rate** is the percentage of labor force unemployed and looking for work.

$$\text{unemployment rate} = \frac{\text{unemployed}}{\text{labor force}}$$

- The **labor force participation rate** is the fraction of the population that is over 15 years of age that is in the labor force.

$$\text{labor force participation rate} = \frac{\text{labor force}}{\text{population 15 and over}}$$



## Natural Rate of Unemployment

- Natural Rate of Unemployment

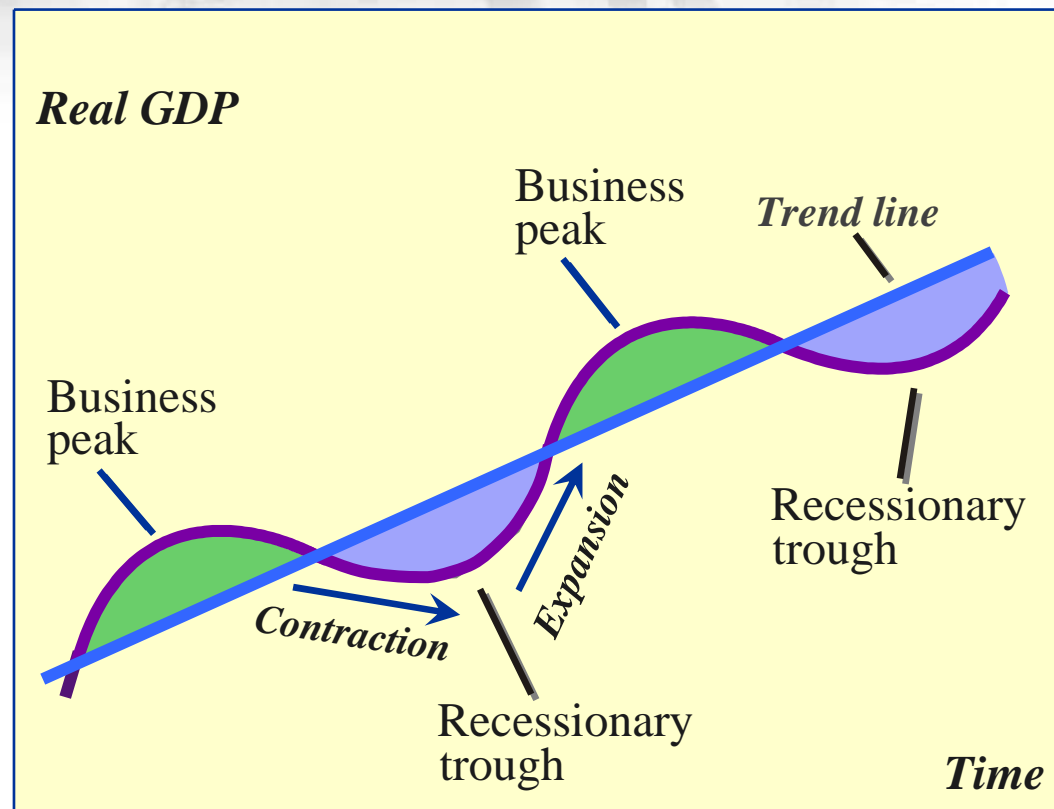
The level of unemployment that results when the rate of unemployment is normal, considering both frictional and structural factors. Also called the NAIRU (Nonaccelerating Inflation Rate of Unemployment)

- Potential Real GDP

The level of output produced when nonlabor resources are fully utilized and unemployment is at its natural rate.

- $\text{GDP gap} = \text{potential real GDP} - \text{actual GDP}$
- In the United States, economists estimate that the natural rate of unemployment is between 5.0% and 6.5%.

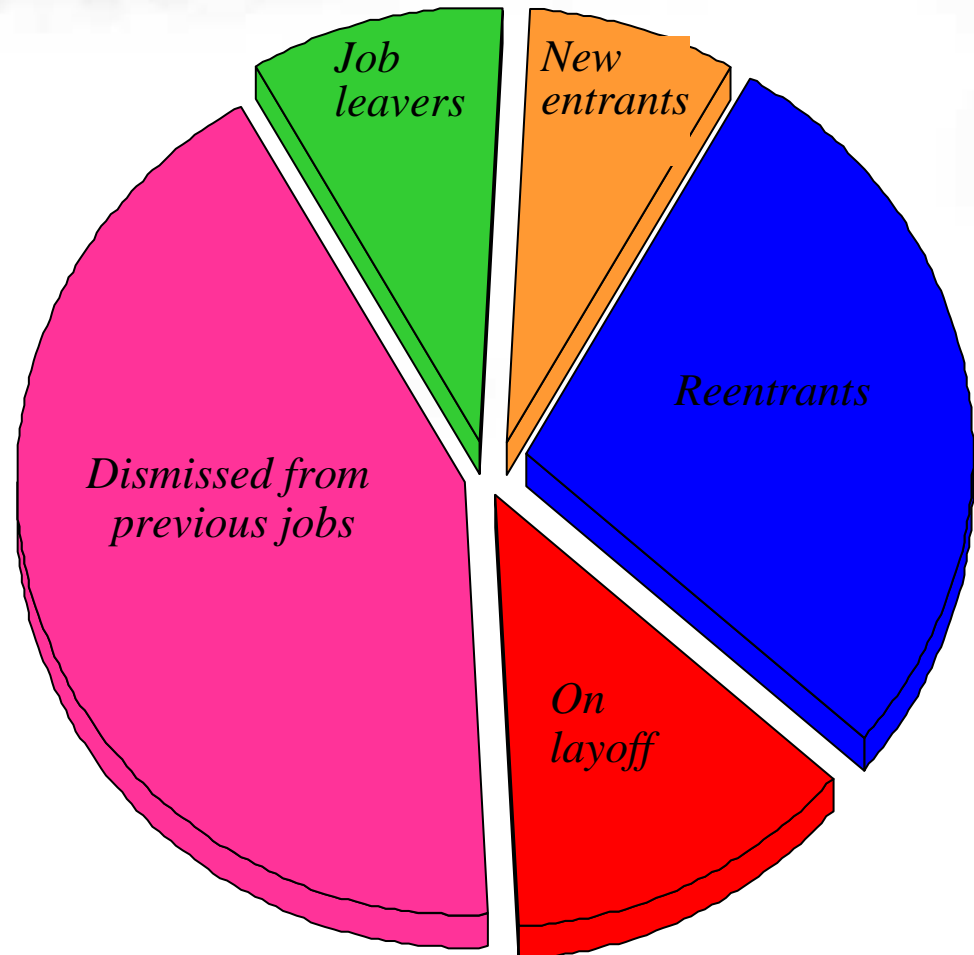
## The Labor Market: Basic Concepts



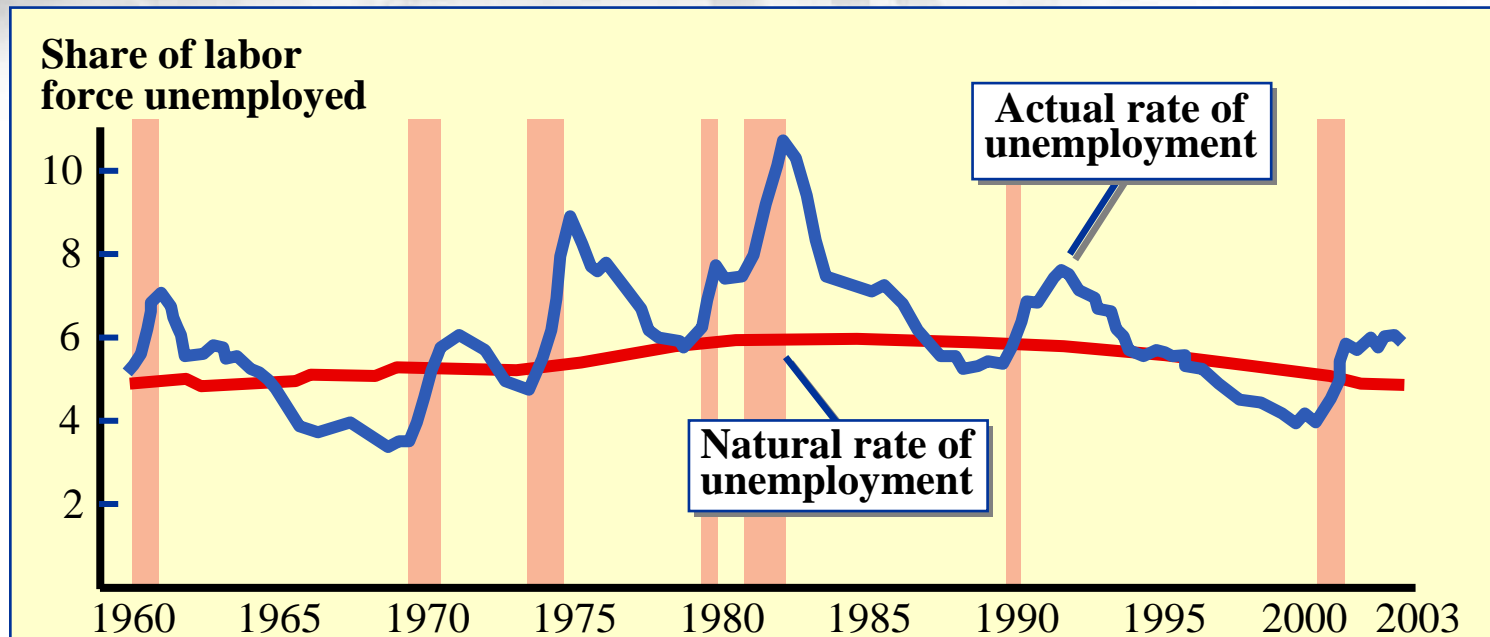
- Both demographic factors (e.g. young workers as a share of the labor force) and public policy (e.g. the level of unemployment benefits) influence the ***natural rate of unemployment***.

## Composition of the Unemployed by Reason

- There are various reasons why persons are unemployed.



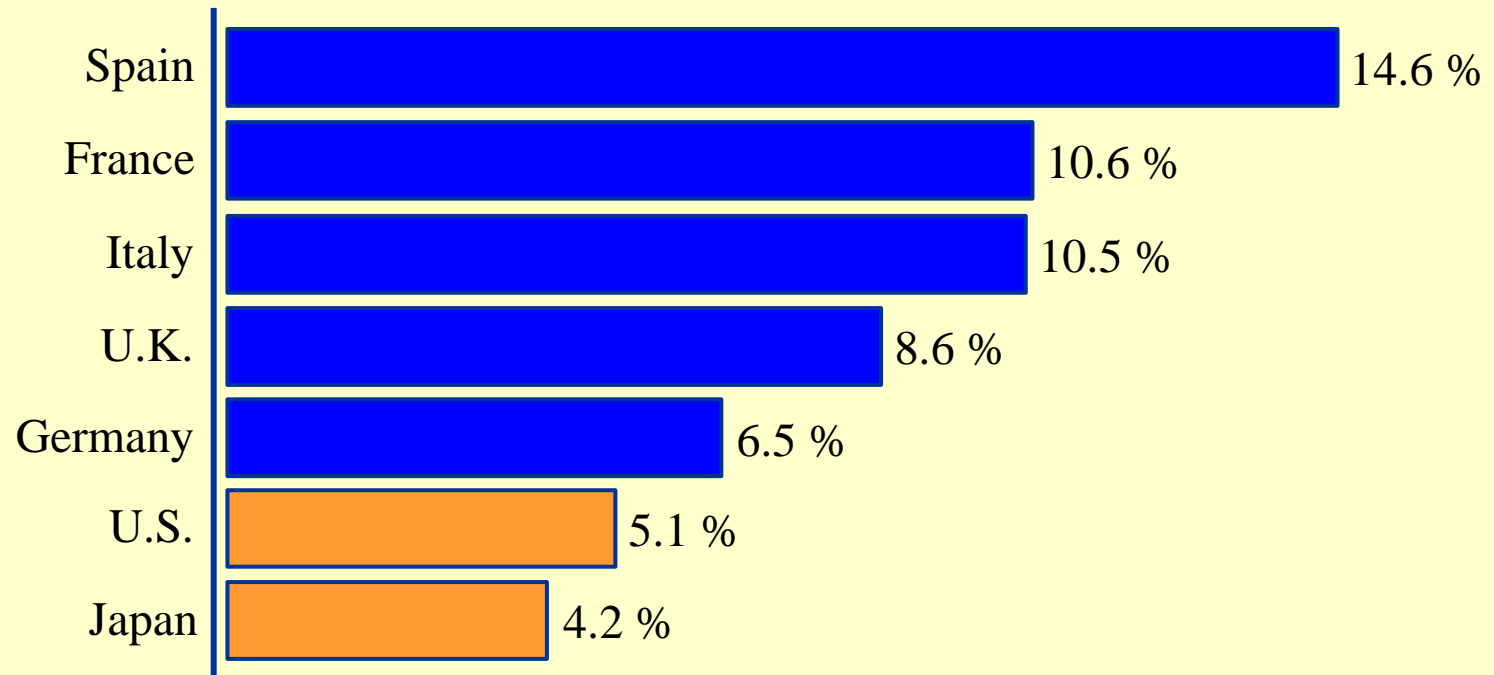
## Unemployment and Output Are Linked Over the Business Cycle



- Here we illustrate the unemployment rate from 1960-2003.
- As expected, unemployment rose rapidly during each of the seven recessions (*the shaded years indicate periods of recession*).
- In contrast, soon after each recession ended, the unemployment rate began to decline as the economy moved into an expansionary phase of the business cycle. Note that the actual rate of unemployment was greater than the natural rate during and immediately following each recession.

## Average Unemployment Rate

### *Average Unemployment Rate (1994-2003)*



- In recent years, the unemployment rate in the U.S. and Japan has been persistently lower than the comparable rate of major European economies. Most economists believe the higher unemployment benefits, less flexible collective bargaining, and more regulated labor markets of Europe explain this phenomenon.



## The Labor Market: Basic Concepts

- During periods of poor economic performance, such as economic recessions when real GDP declines, unemployment rises sharply and becomes a cause of public concern.
- During times of good economic performance and rapid economic growth, unemployment is reduced but does not disappear.





## The Classical View of the Labor Market

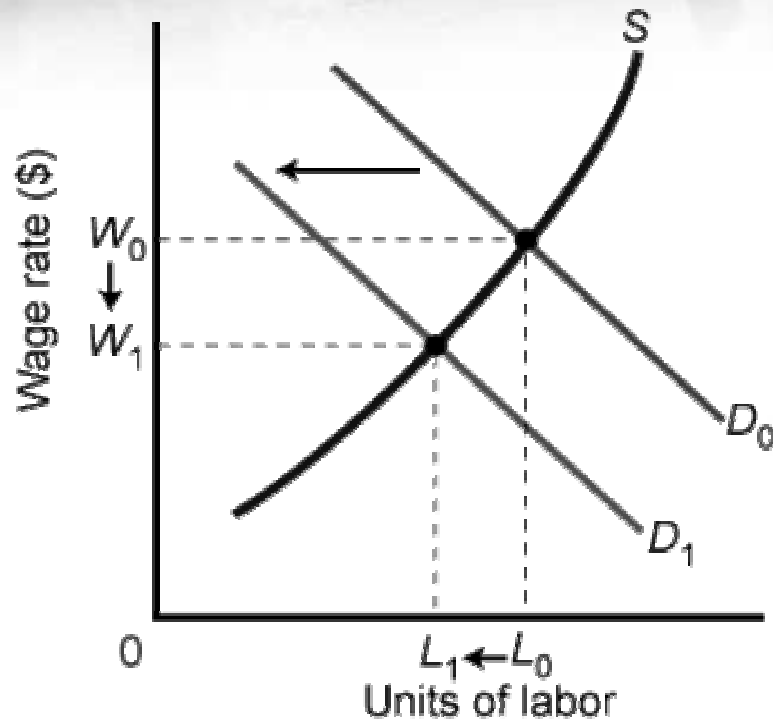
- According to classical economists, the quantity of labor demanded and supplied are brought into equilibrium by rising and falling wage rates. There should be no persistent unemployment above the frictional and structural amount.

## The Classical View of the Labor Market



- The **labor supply curve** illustrates the amount of labor that households want to supply at each given wage rate.
- The **labor demand curve** illustrates the amount of labor that firms want to employ at each given wage rate.

## The Classical View of the Labor Market



- Classical economists believe that the labor market always clears.
- If labor demand decreases, the equilibrium wage will fall.
- Anyone who wants a job at  $W_1$  will have one. There is always *full employment* in this sense.



## The Classical Labor Market and the Aggregate Supply Curve

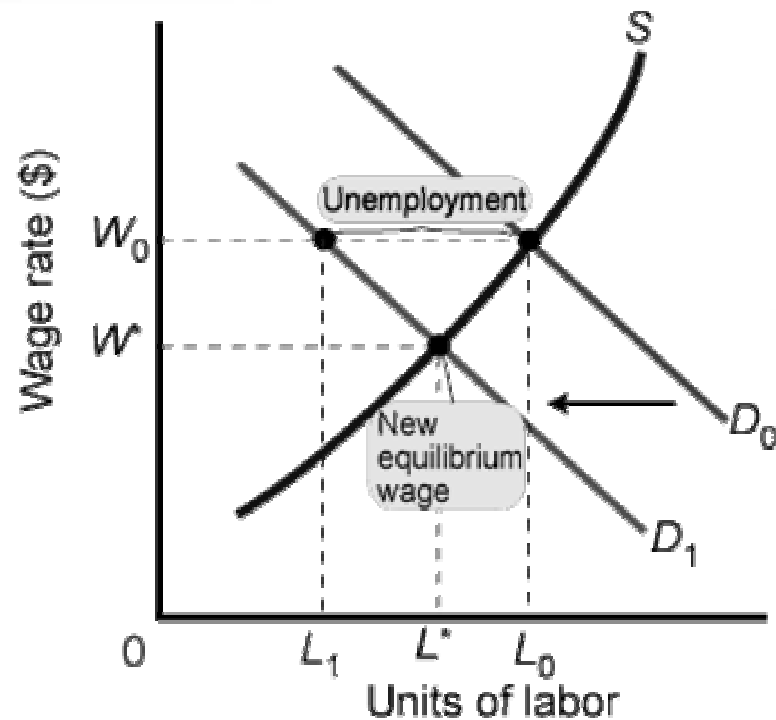
- The classical idea that wages adjust to clear the labor market is consistent with the view that wages respond quickly to price changes. This means that the *AS* curve is vertical.
- When the *AS* curve is vertical, monetary and fiscal policy cannot affect the level of output and employment in the economy.



## The Unemployment Rate and the Classical View

- The unemployment rate is not necessarily an accurate indicator of whether the labor market is working properly.
- The unemployment rate may sometimes seem high even though the labor market is working well.

## The Unemployment Rate and the Classical View



- If wages “stick” at  $W_0$  rather than fall to the new equilibrium wage of  $W^*$  following a shift of demand, the result will be unemployment equal to  $L_0 - L_1$ .



## Explaining the Existence of Unemployment

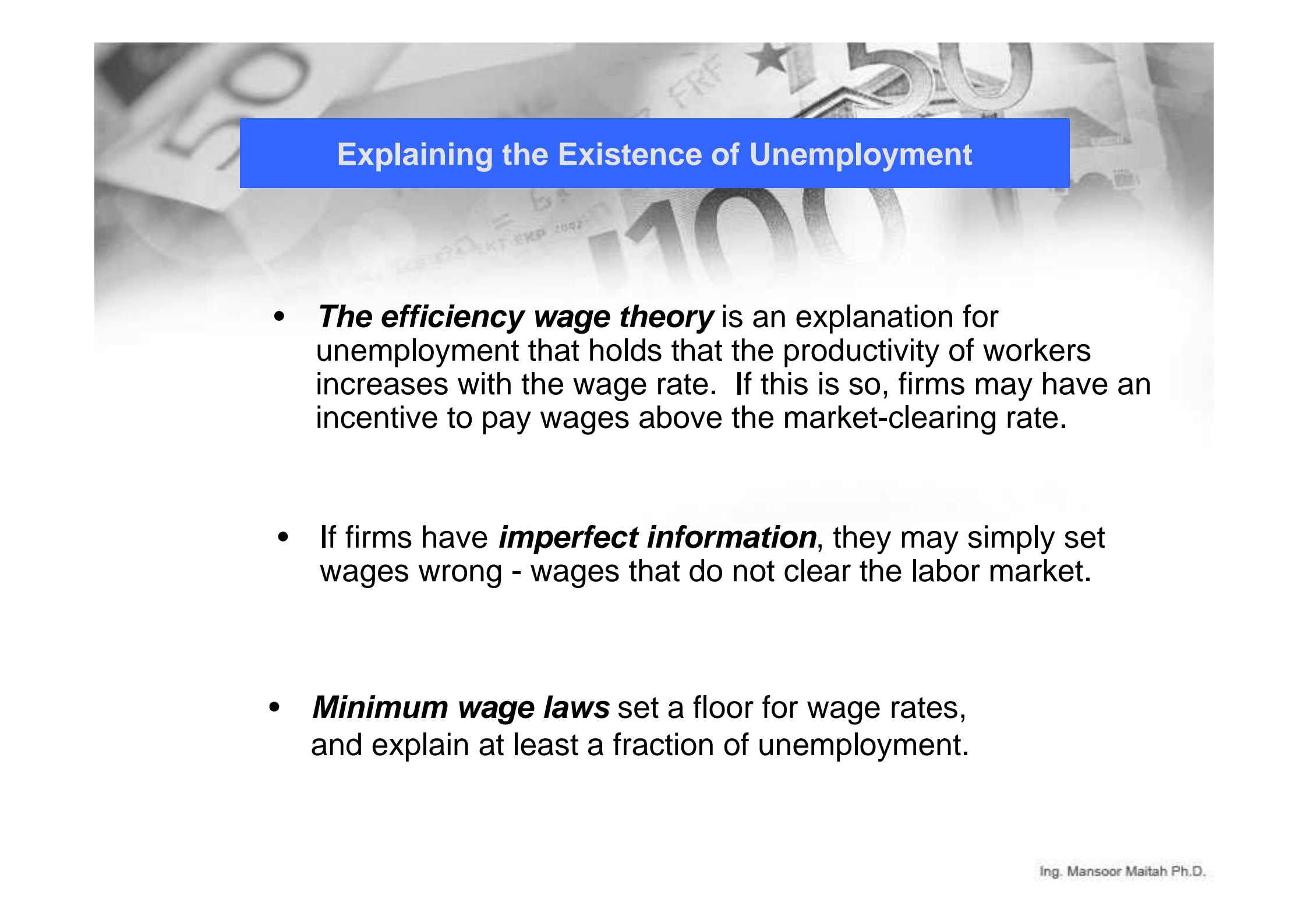
- One explanation for downwardly sticky wages is that firms enter into **social**, or **implicit, contracts**, these contracts are unspoken agreements between workers and firms that firms will not cut wages.
- The **relative-wage explanation of unemployment** holds that workers are concerned about their wages relative to the wages of other workers in other firms and industries.



## Explaining the Existence of Unemployment

- ***Explicit contracts*** are employment contracts that stipulate workers' wages, usually for a period of one to three years. Wages set in this way do not fluctuate with economic conditions.
- ***Cost of living adjustments (COLAs)*** are contract provisions that tie wages to changes in the cost of living. The greater the inflation rate, the more wages are raised.





## Explaining the Existence of Unemployment

- ***The efficiency wage theory*** is an explanation for unemployment that holds that the productivity of workers increases with the wage rate. If this is so, firms may have an incentive to pay wages above the market-clearing rate.
- If firms have ***imperfect information***, they may simply set wages wrong - wages that do not clear the labor market.
- ***Minimum wage laws*** set a floor for wage rates, and explain at least a fraction of unemployment.



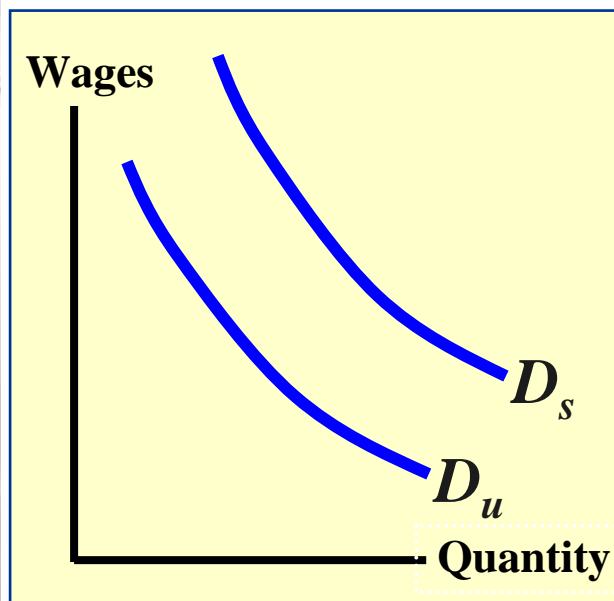
## Competitive Labor Markets and The Equilibrium Wage

- Wage rate determined like the price of other competitive markets:  
**Supply and demand**
- The labor demand curve in any labor market slopes downward because a rise in the wage rate
  - 1) **increases firms' costs, causing them to decrease production and employ fewer workers**
  - 2) **increases the relative cost of labor from that market, causing firms to substitute other inputs, such as capital or other types of labor**
- The labor supply curve in any labor market slopes upward because a rise in the wage rate
  - 1) **induces some of those not currently working to seek work**
  - 2) **attracts some of those who are currently working in other labor markets**
- The forces of supply and demand will drive a competitive labor market to its equilibrium point—the point where the labor supply and labor demand curves intersect

## Why Do Earnings Differ?

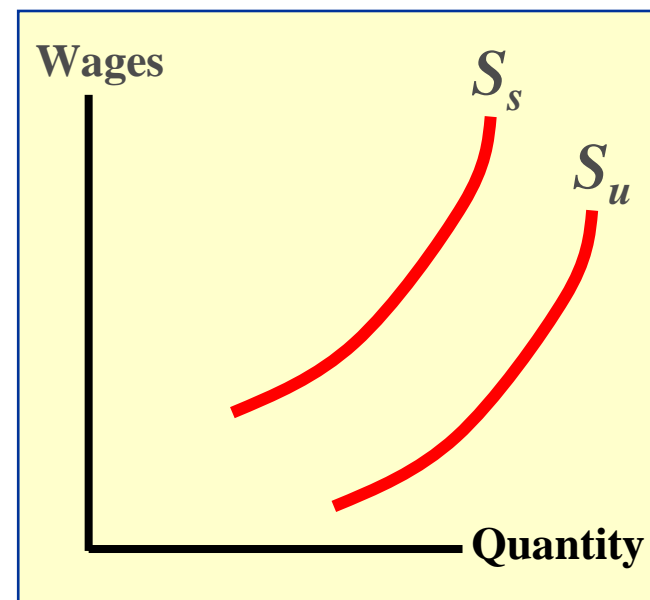
- **Earnings would be equal if:**
  - all individuals were identical
  - all jobs were equally attractive
  - workers were perfectly mobile among jobs

## Earnings Differences of Skilled and Unskilled Workers



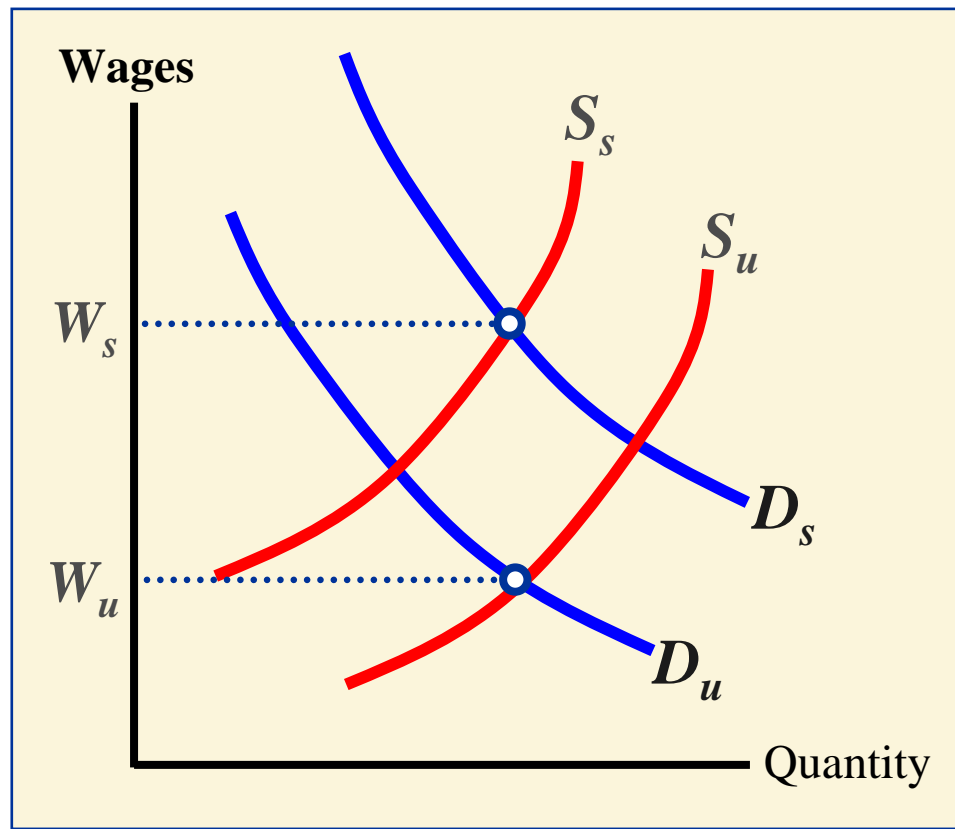
- The productivity and thus marginal product of skilled workers is greater than that of unskilled workers.
- Hence, the *demand* for skilled workers  $D_s$  exceeds the *demand* for unskilled workers  $D_u$ .

- Education and training generally enhance skill.
- Because it is costly to upgrade skills through investments in human capital, the *supply* of skilled workers  $S_s$  is smaller than the *supply* of unskilled workers  $S_u$ .



## Earnings Differences of Skilled and Unskilled Workers

- The wages of skilled workers are high relative to unskilled workers due to the strong *demand* and small *supply* of skilled workers relative to unskilled workers.

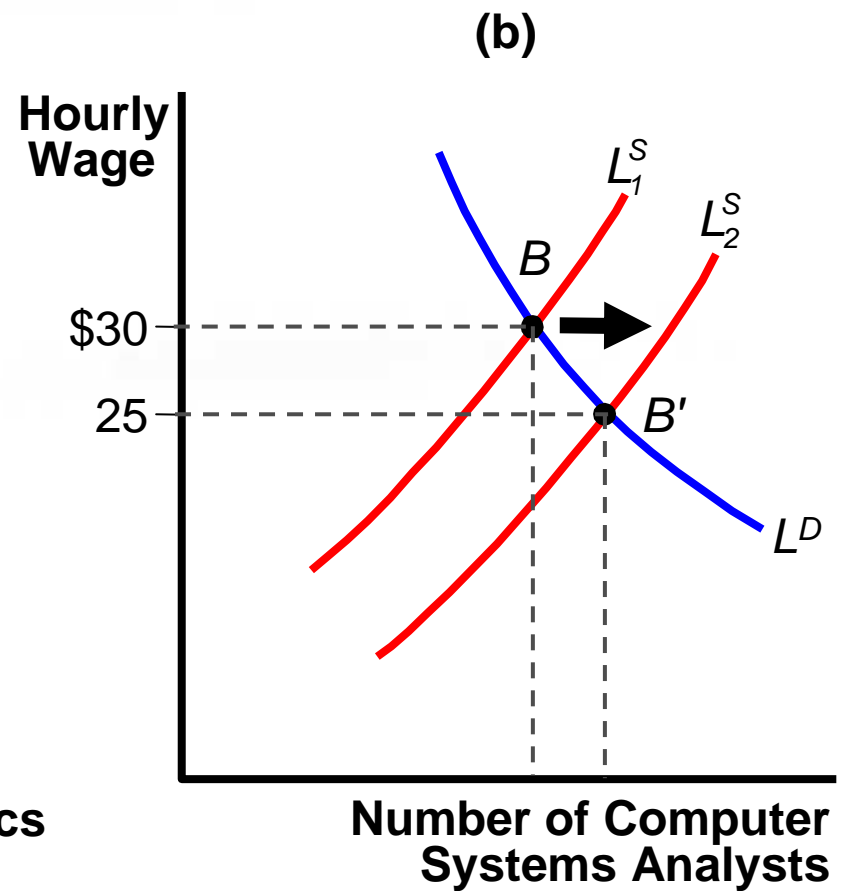
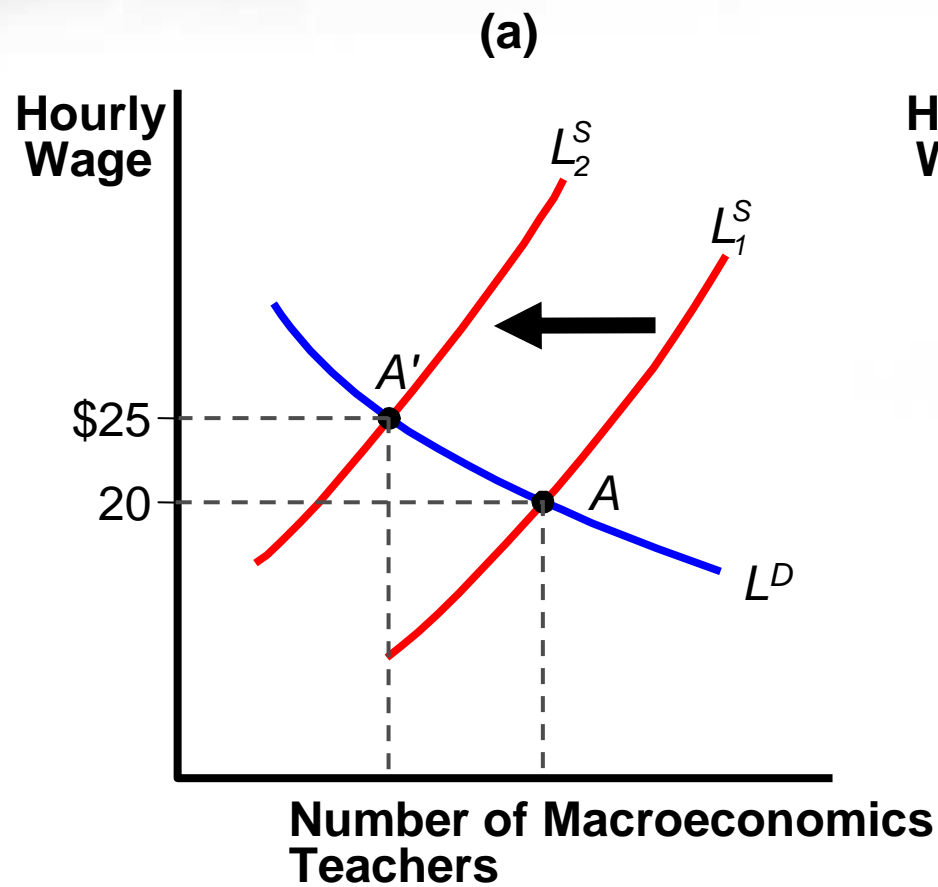




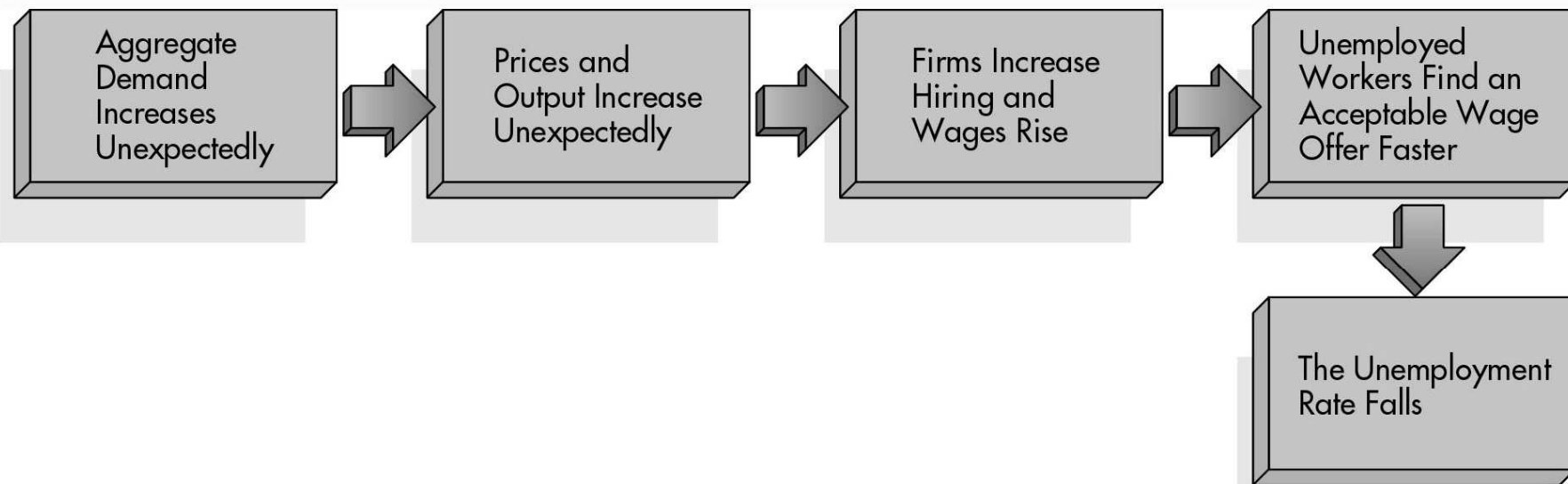
## Why Do Wages Differ?

- **Significant inequality exists in wage rates**
  - Among different occupations
  - Among and within occupations in Czech labor market
- **Wage inequality is persistent**
- **Both highest and lowest paid occupations have been so for decades**

# Disappearing Wage Differentials

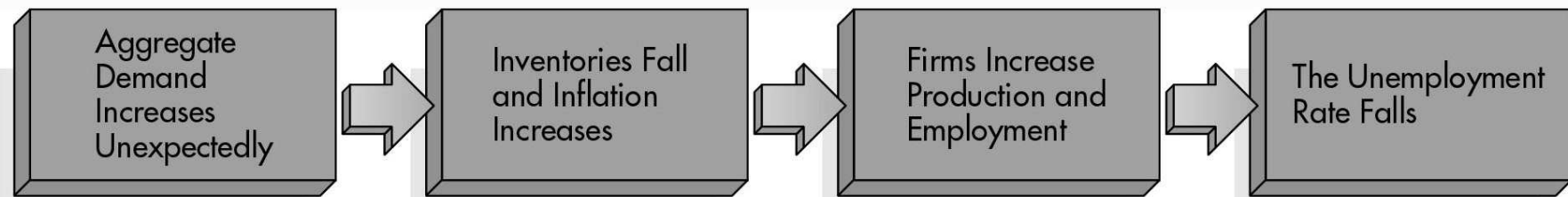


# Inflation, Unemployment, and Wage Expectations

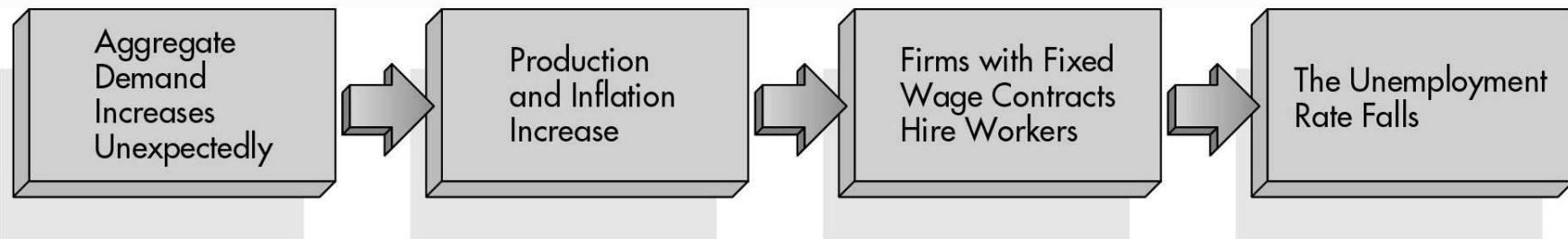




# Inflation, Unemployment, and Inventories




## Inflation, Unemployment, and Wage Controls





## The Costs of Unemployment

- Distinction between voluntary and involuntary unemployment
  - **Private costs of voluntary unemployment must be lower**
- Private Costs for the Involuntary Unemployed
  - **Loss of income – but many households have major spending commitments (mortgage, credit agreements etc.)**
  - **Fall in real living standards**
  - **Increased Health risks (particularly for long term unemployed)**
    - Stress
    - Reduction in quality of diet
    - Social exclusion because of loss of work and income
  - **Loss of marketable skills (human capital) and motivation**
    - The longer the duration of unemployment, the lower the chances of finding fresh employment - the unemployed become less attractive to potential employers (“outsiders in the labour market”



## Economic Consequences for Businesses

- Economic Consequences for Businesses
  - **Negative consequences**
    - Fall in demand for goods and services
    - Fall in demand for businesses further down the supply chain
    - Consider the negative multiplier effects from the closure of a major employer in a town or city
  - **Some positive consequences**
    - Bigger pool of surplus labour is available – but still a problem if there is plenty of structural unemployment
    - Less pressure to pay higher wages
    - Less risk of industrial / strike action – fear of job losses – leading to reduced trade union power



## Economic Consequences for Businesses

- **Consequences for the Government (Fiscal Policy)**
  - Increased spending on unemployment benefits and other income –related state welfare payments
  - Fall in revenue from income tax and taxes on consumer spending
  - Fall in profits – reduction in revenue from corporation tax
  - May lead to sharp rise in government borrowing (i.e. a budget deficit)
- **Consequences for the Economy as a whole**
  - Lost output (real GDP) from people being out of work – the economy will be operating well within its production frontier
  - Unemployment seen as an inefficient way of allocating resources – labour market failure?
  - Some of the long-term unemployed may leave the labour force permanently – fall in potential GDP
  - Increase in the inequality of income and wealth – rise in relative poverty



## Policies to Reduce Unemployment

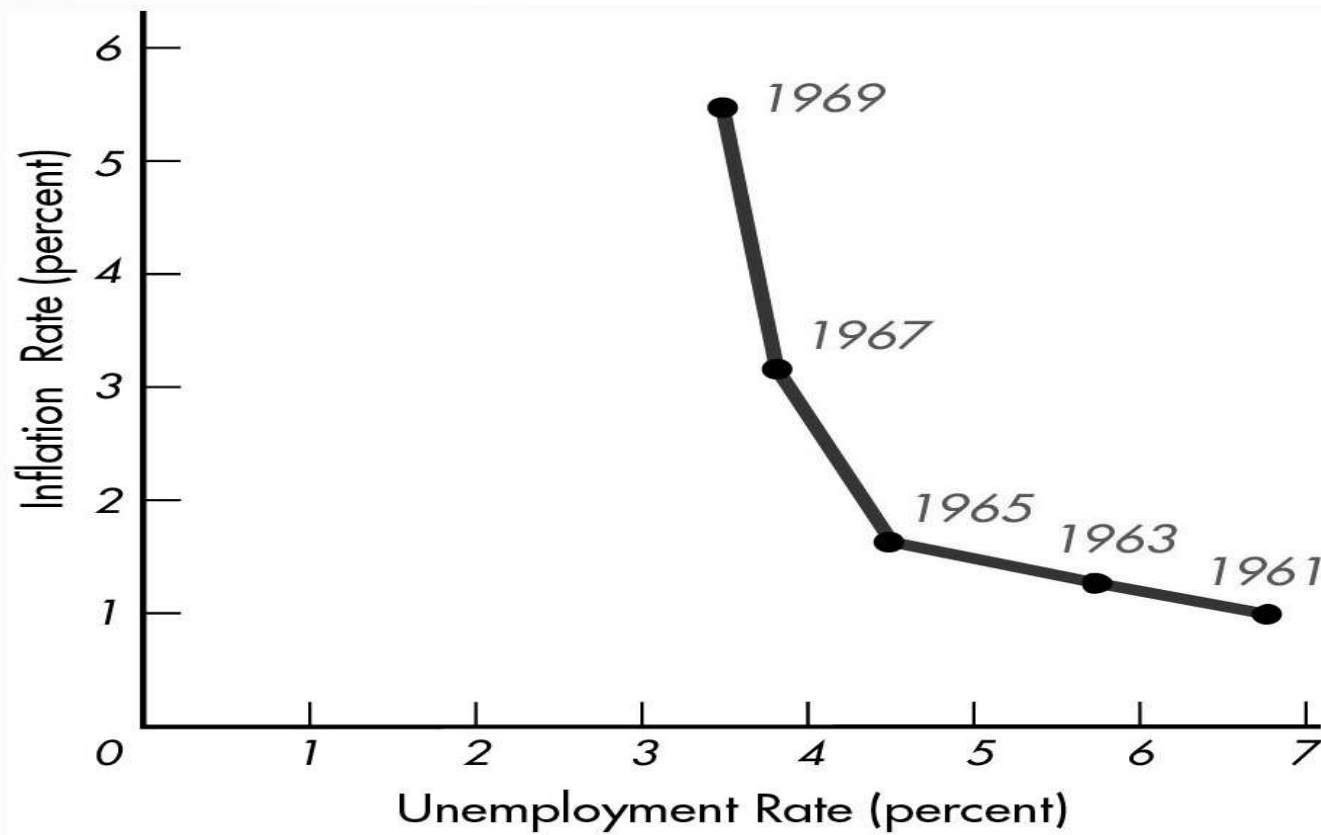
- Measures to boost labour demand (reduce cyclical unemp)
  - **Lower interest rates (monetary stimulus)**
  - **Lower direct taxes (fiscal stimulus)**
  - **Government spending on major projects (e.g. improving the transport infrastructure)**
  - **Employment subsidies (including the New Deal programme)**
  - **Incentives to encourage flows of foreign investment in the Czech Republic**
- Measures to improve labour supply (reduce frictional and structural unemployment)
  - **Increased spending on education & training including an emphasis on “lifetime-learning”)**
  - **Improved flows of information on job vacancies**
  - **Changes to income tax and benefits to improve incentives to find work**



## Phillips Curve

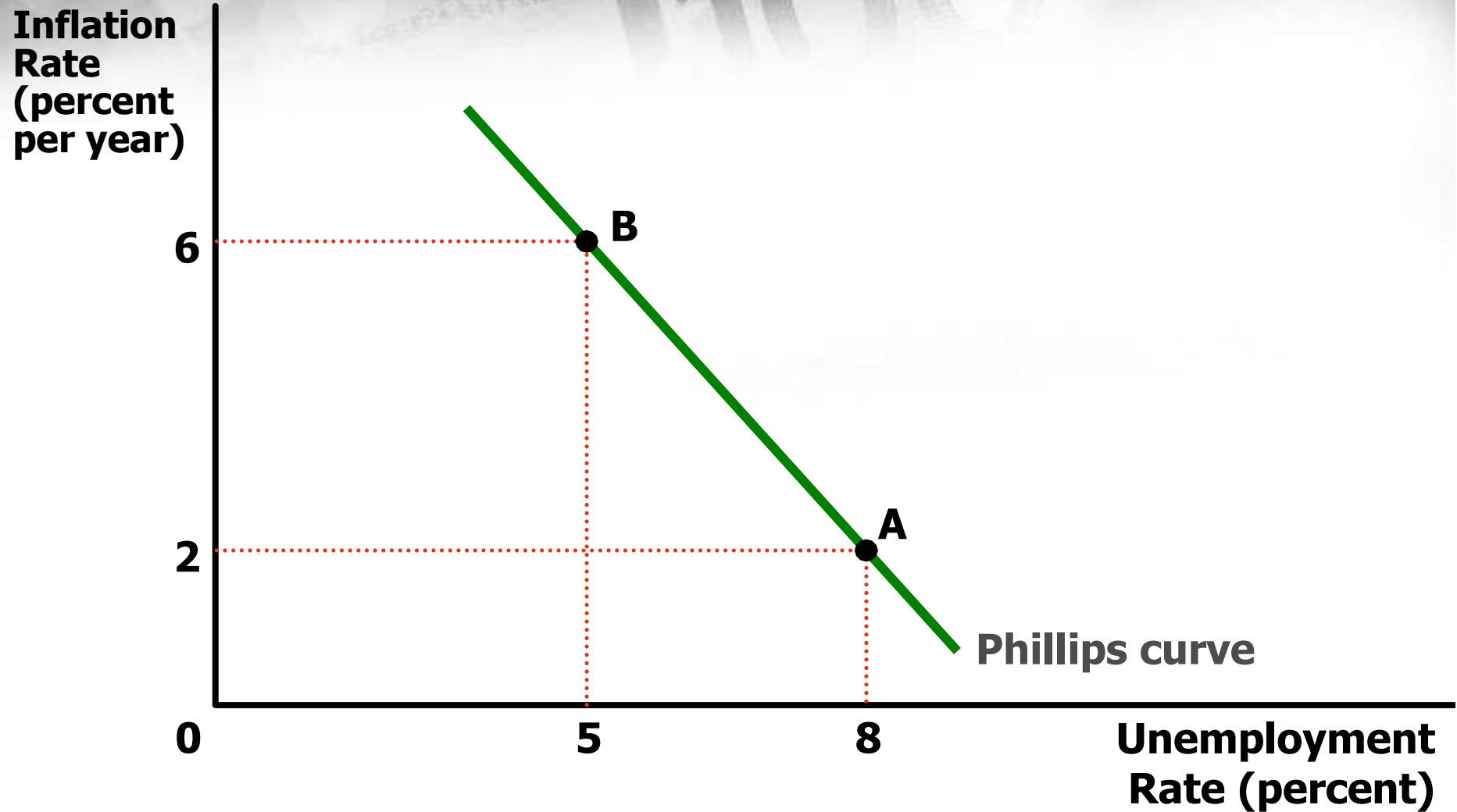
- **ALban William Phillips (1958) published a study of the relationship between the unemployment rate and wage inflation in England.**
  - The wage inflation rate rose with falling unemployment—there was an inverse relationship between inflation and unemployment.
  - In later studies by Paul Samuelson and Robert Solow, consumer price inflation was substituted for wage inflation.
  - This inverse relationship became known as the Phillips Curve.
  - The downward-sloping curve suggests a policy trade-off between unemployment and inflation.

## Phillips Curve, United States, 1961–1969





## Phillips Curve



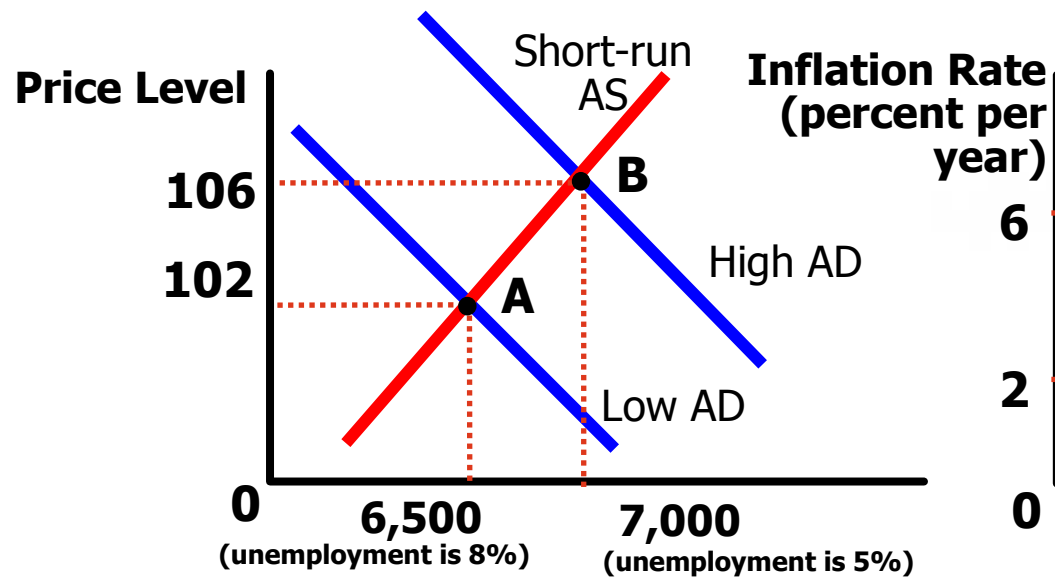


## Phillips Curve

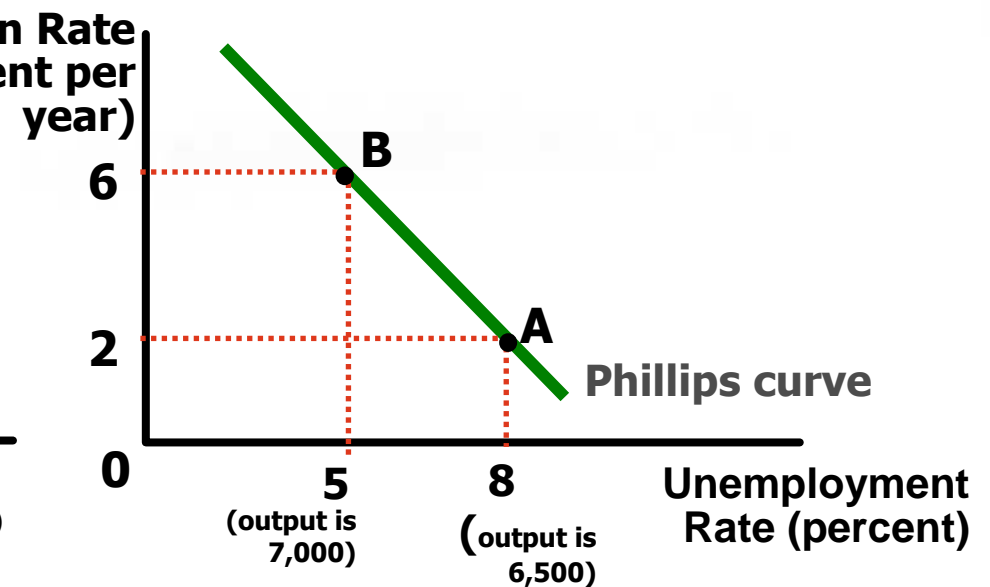
- ◆ The Phillips curve shows the short-run combinations of unemployment and inflation that arise as shifts in the aggregate demand curve move the economy along the short-run aggregate supply curve.
- ◆ The greater the aggregate demand for goods and services, the greater is the economy's output, and the higher is the overall price level.
- ◆ A higher level of output results in a lower level of unemployment.

## Aggregate Demand, Aggregate Supply, and the Phillips Curve

**(a) The Model of AD and AS**



**(b) The Phillips Curve**



The Phillips curve seems to offer policymakers a menu of possible inflation and unemployment outcomes.

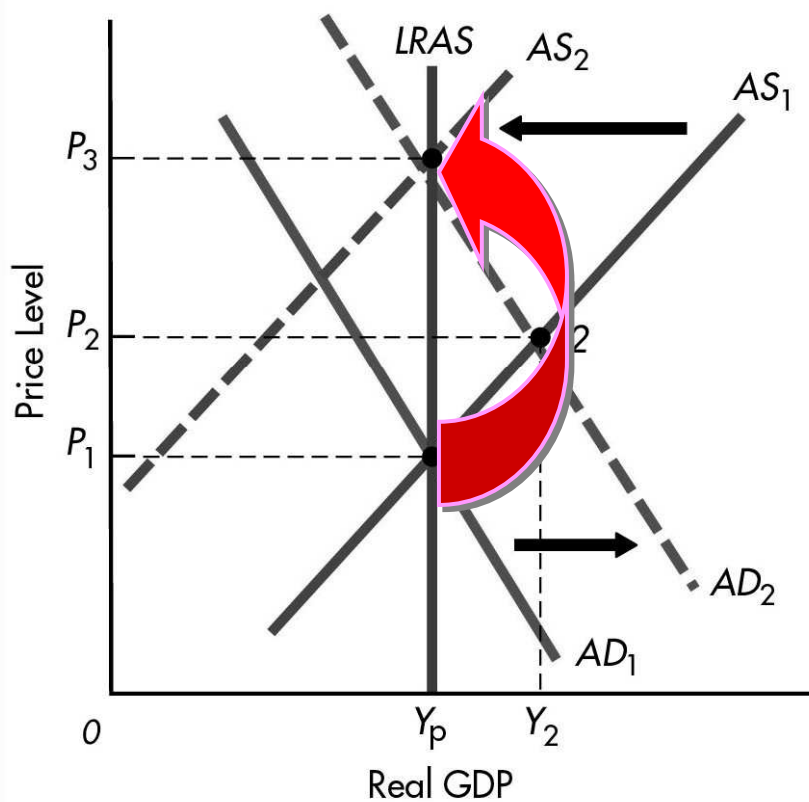


## The Long - Run Phillips Curve

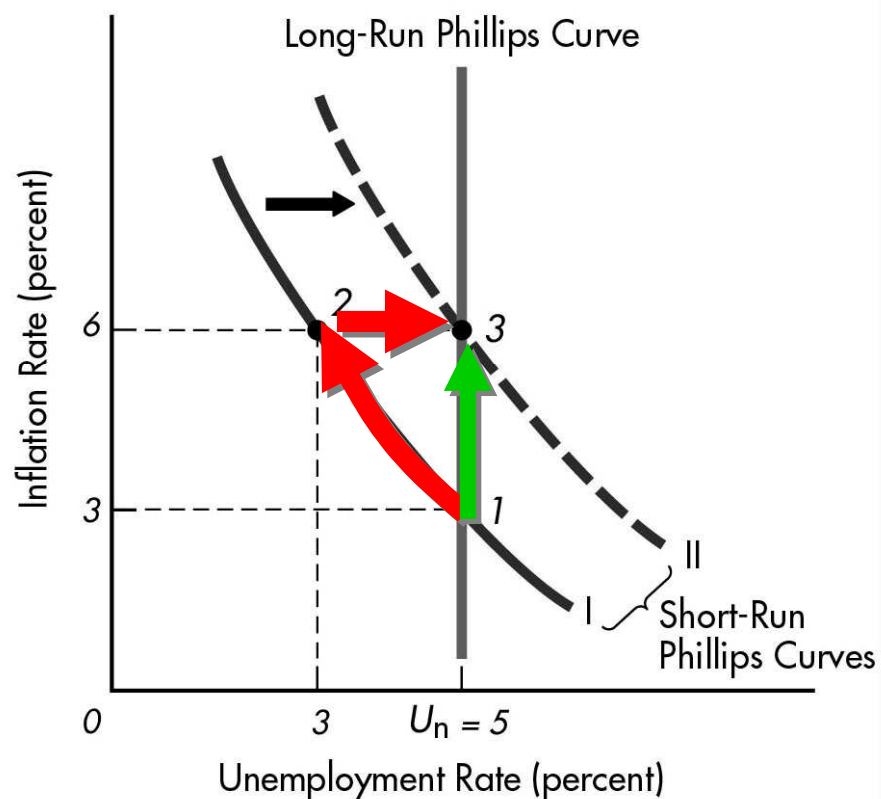
- ◆ In the 1960s, Friedman concluded that inflation and unemployment are unrelated in the long run.
- ◆ **As a result, the long-run Phillips curve is vertical at the natural rate of unemployment.**
- ◆ **Monetary policy could be effective in the short run but not in the long run.**

# The Long - Run Phillips Curve

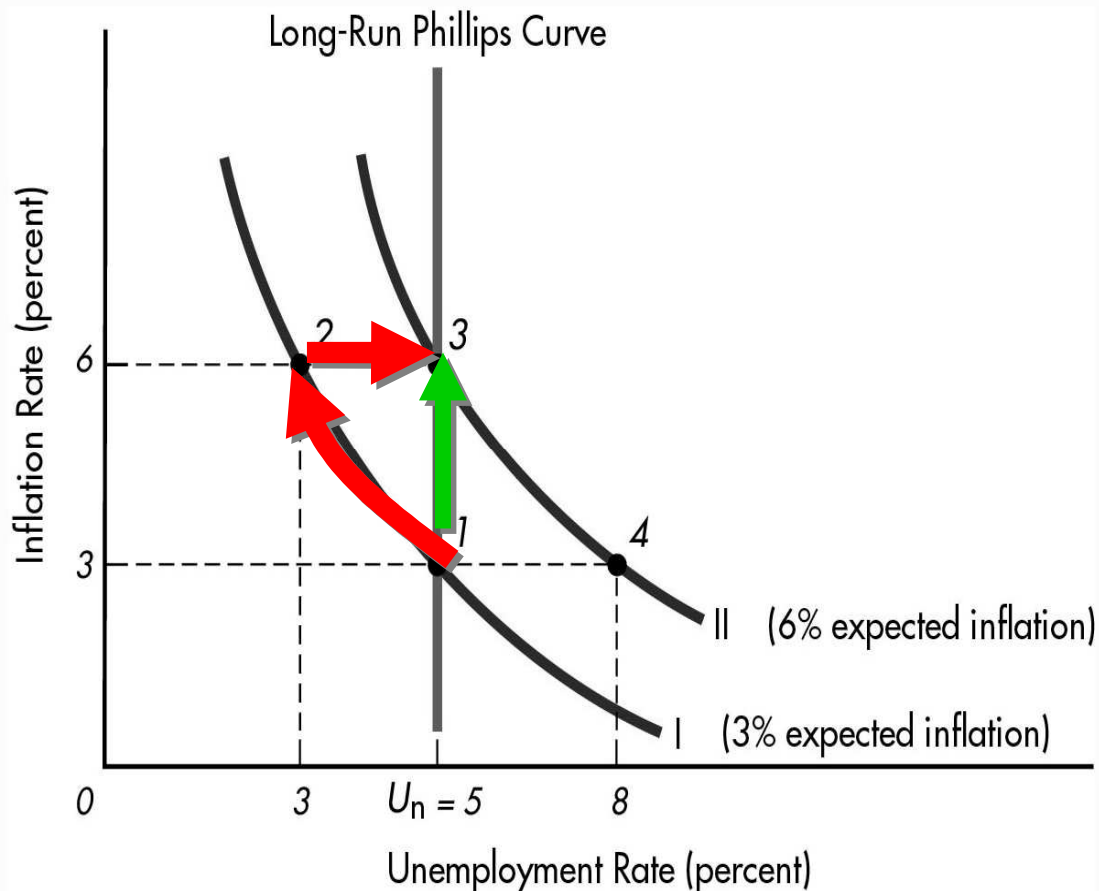
(a) Aggregate Demand and Supply



(b) Phillips Curve



## Expectations and the Phillips Curve

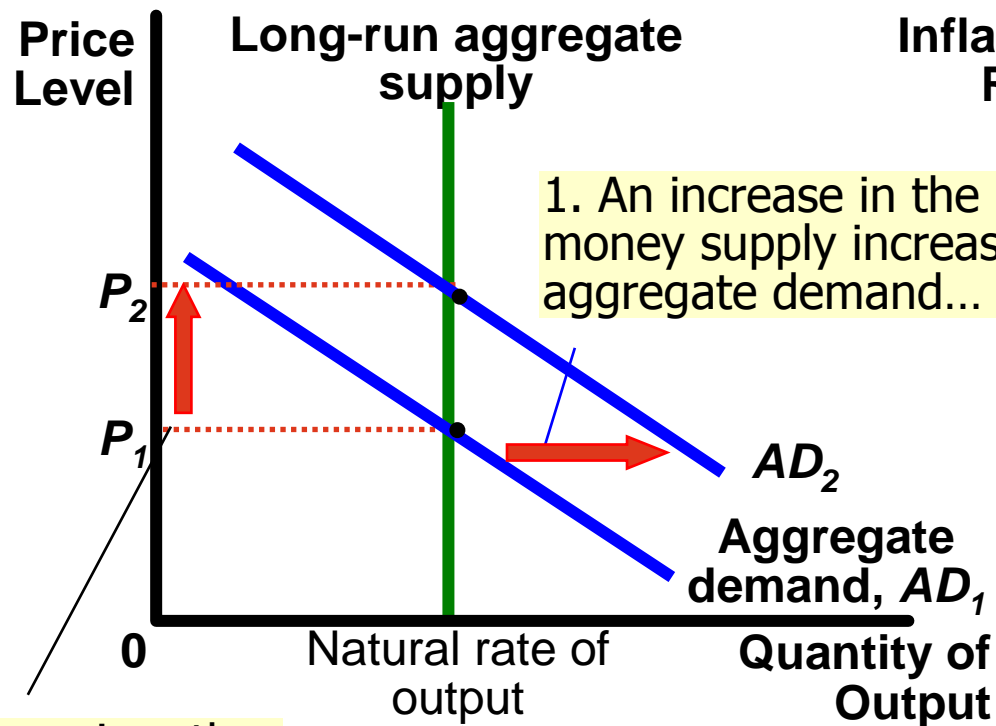


The economy begins at (1), with 5% unemployment and 3% inflation. Curve I represents the tradeoff as long as people believe that inflation will continue at 3%. Thus an increase in the inflation rate (as a result of Central Bank policy) to 6% would reduce unemployment to 3% at point (2).

If people then adjust their expectations to expect 6%, the economy would shift to point (3) and unemployment would return to 5%. If people adjusted their expectations instantly, perhaps anticipating the Central Bank's policy action, the economy would move directly from (1) to (3).

# Model of Aggregate Demand and Aggregate Supply...

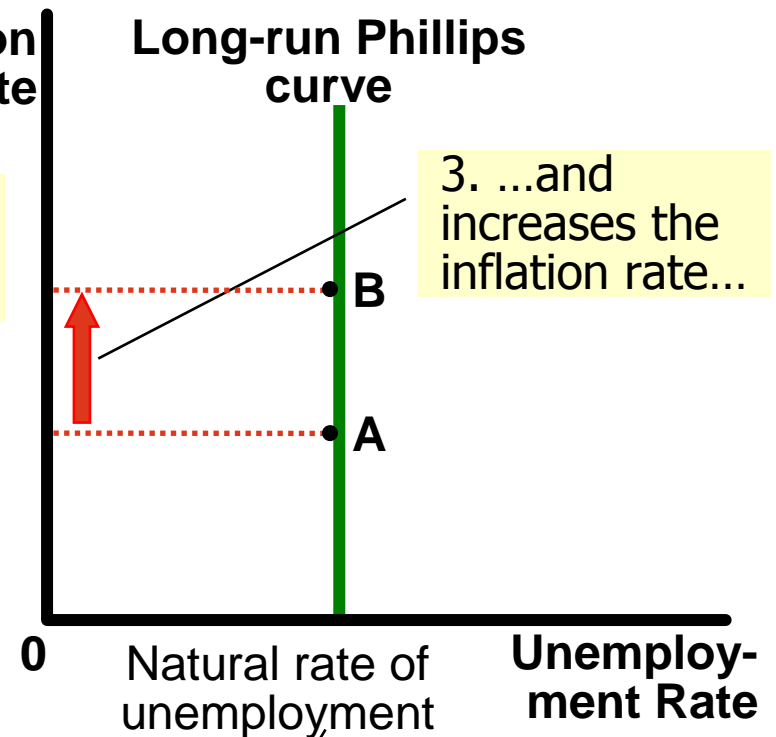
## (a) The Model of Aggregate Demand and Aggregate Supply



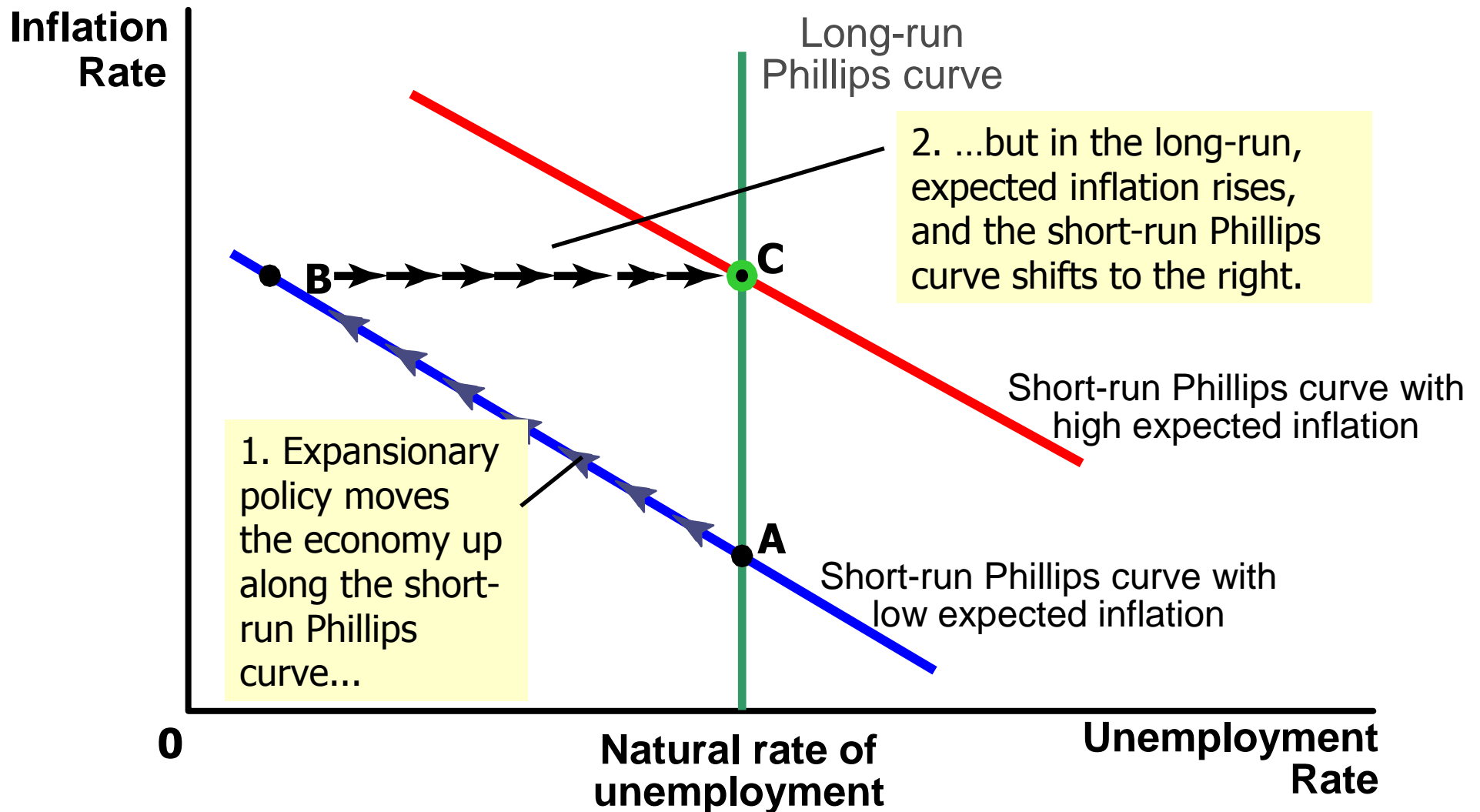
2. ...raises the price level...

4. ...but leaves output and unemployment at their natural rates.

## (b) The Phillips Curve



## How Expected Inflation Shifts the Short - Run Phillips Curve...





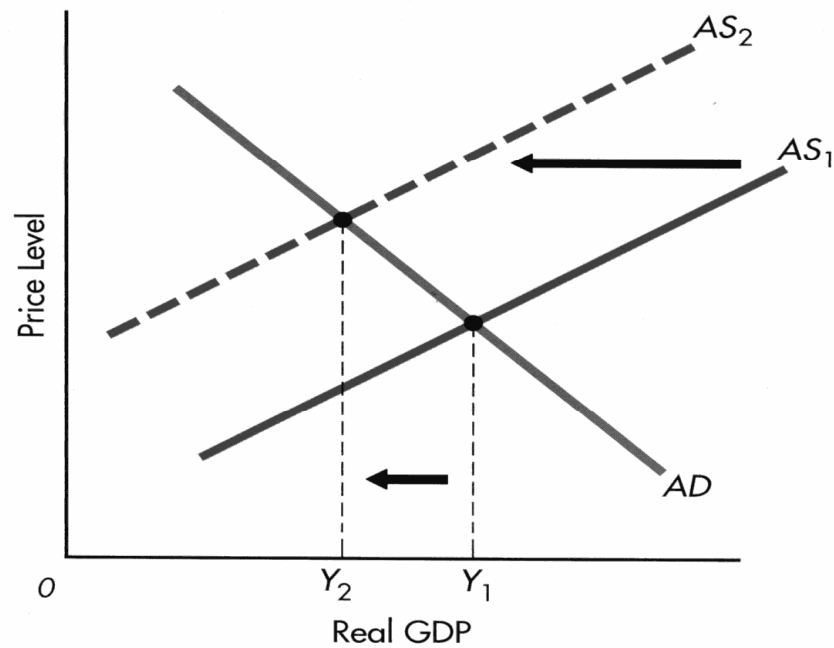


## Shifts in the Phillips Curve: The Role of Supply Shocks

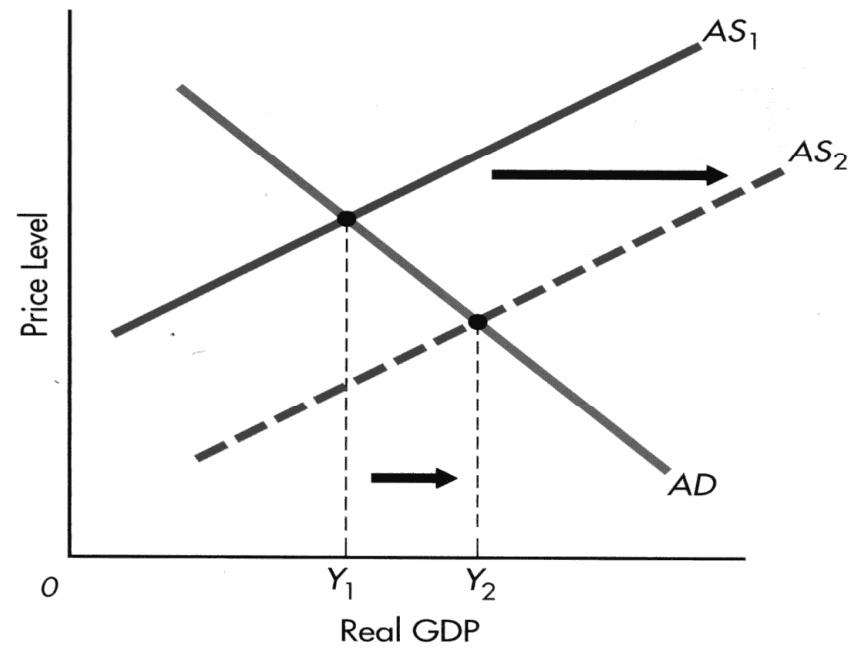
- ◆ **The short - run Phillips curve also shifts because of shocks to aggregate supply.**
  - ◆ Major adverse changes in aggregate supply can worsen the short-run tradeoff between unemployment and inflation.
  - ◆ An adverse supply shock gives policymakers a less favorable tradeoff between inflation and unemployment.

# Real Business Cycles

(a) A Labor Strike in the Steel Industry

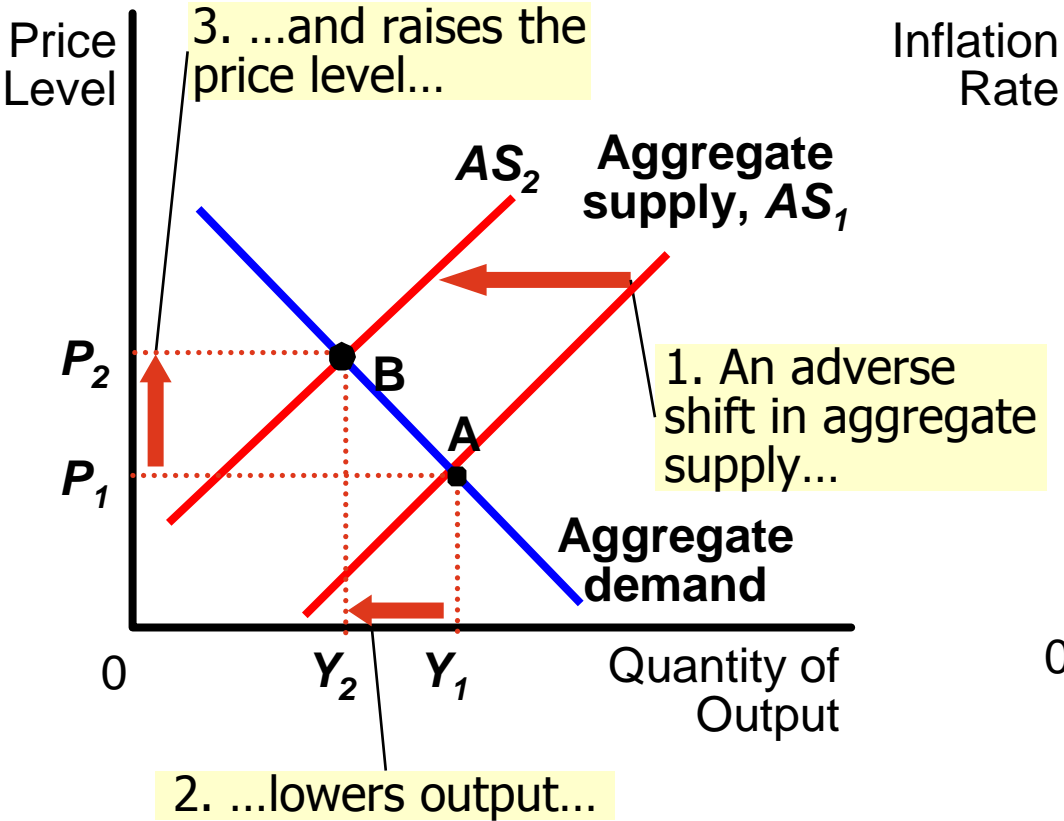


(b) A Surprisingly Large Agricultural Harvest

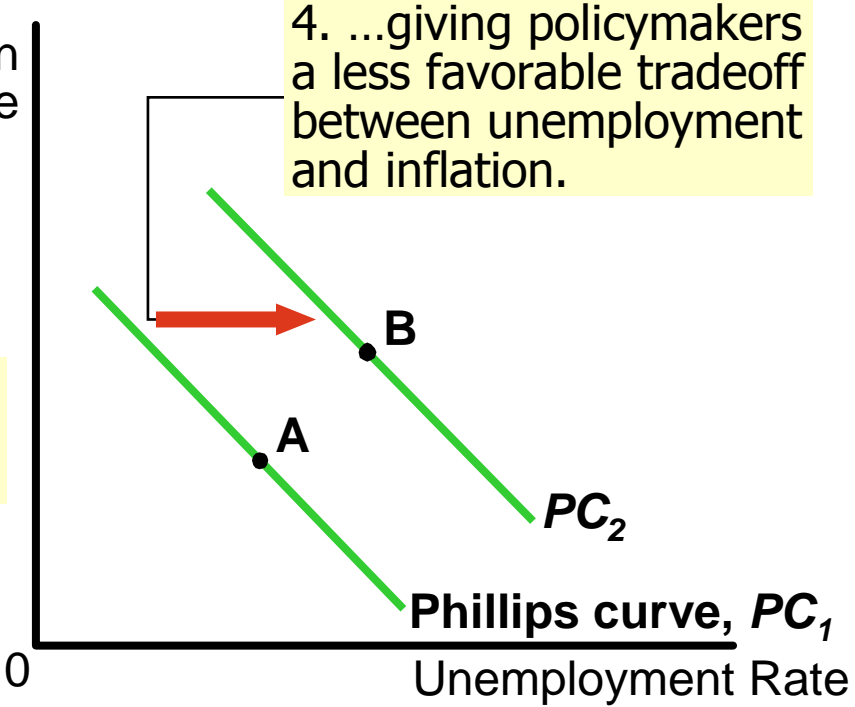


# An Adverse Shock to Aggregate Supply...

### (a) The Model of Aggregate Demand and Aggregate Supply



### (b) The Phillips Curve





## Inflation, Unemployment, and Wage Expectations

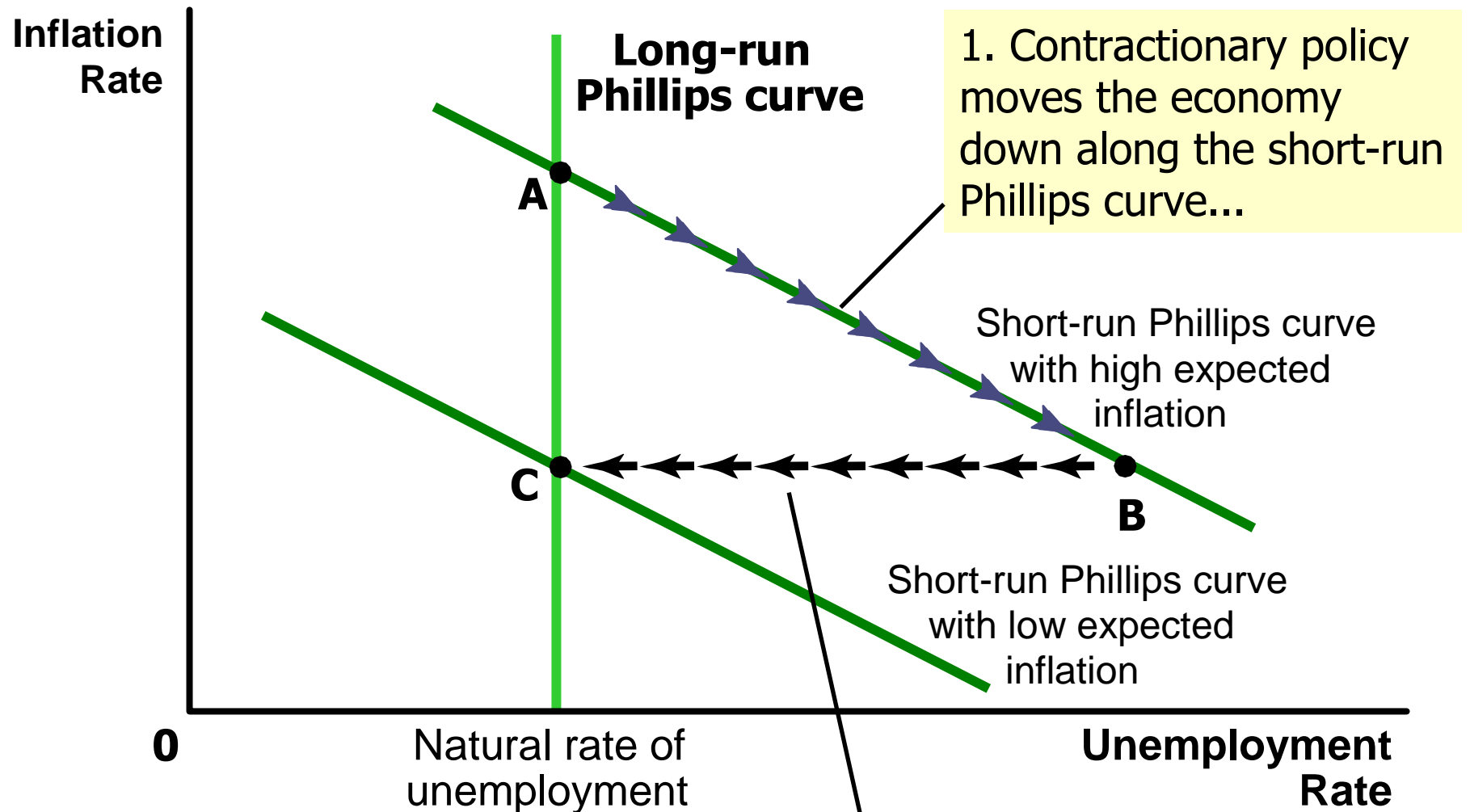
- ◆ In the 1970s, policymakers faced two choices when OPEC cut output and raised worldwide prices of petroleum.
  - ◆ **Fight the unemployment battle by expanding aggregate demand and accelerate inflation.**
  - ◆ **Fight inflation by contracting aggregate demand and endure even higher unemployment.**



## Inflation, Unemployment, and Wage Expectations

- ◆ To reduce inflation, the CB has to pursue contractionary monetary policy.
- ◆ When the CB slows the rate of money growth, it contracts aggregate demand.
- ◆ This reduces the quantity of goods and services that firms produce.
- ◆ This leads to a rise in unemployment.

## An Adverse Shock to Aggregate Supply...



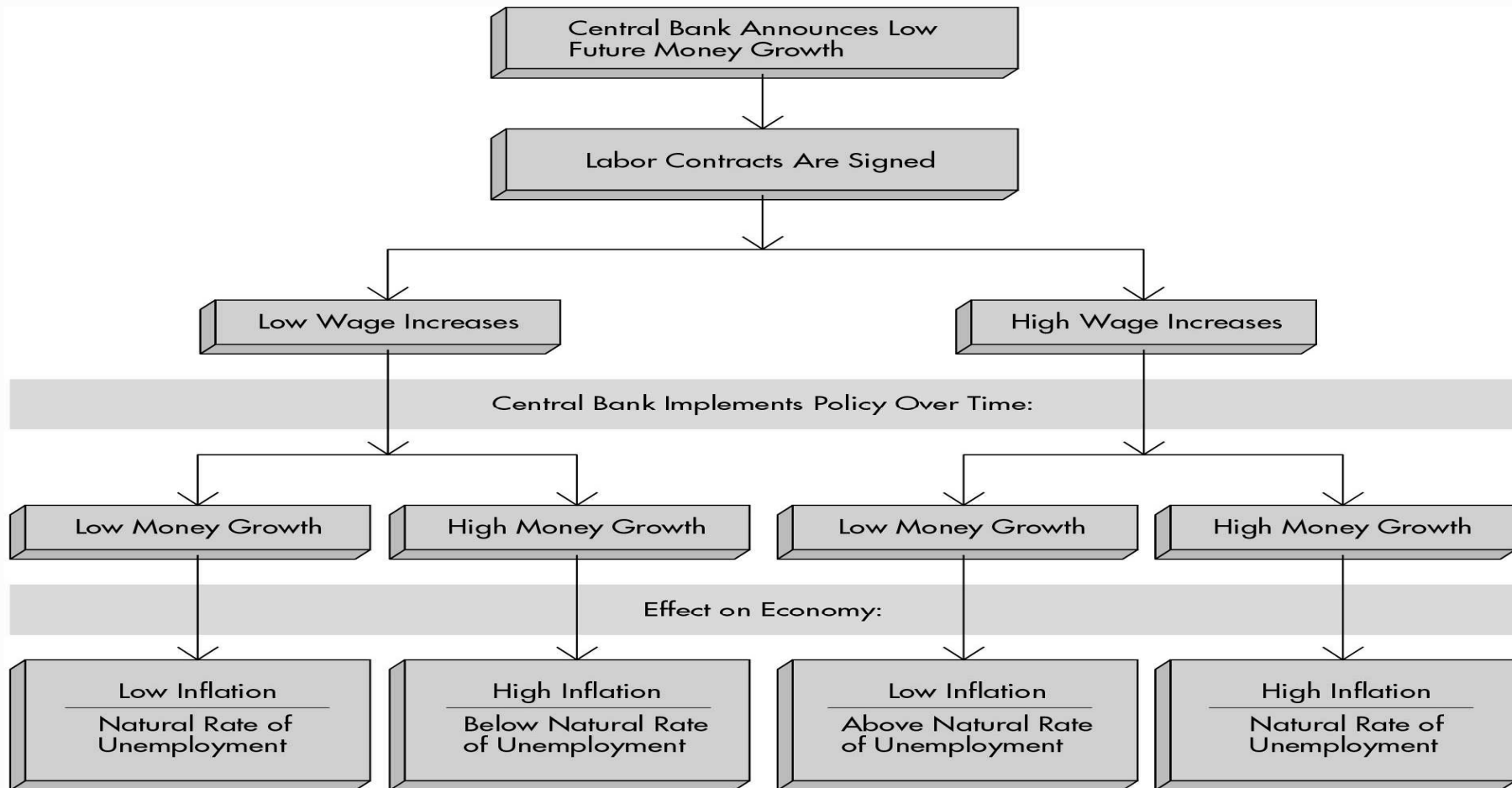
2. ... but in the long run, expected inflation falls and the short-run Phillips curve shifts to the left.



## The Cost of Reducing Inflation

- ◆ To reduce inflation, an economy must endure a period of high unemployment and low output.
- ◆ **When the CB combats inflation, the economy moves down the short - run Phillips curve.**
- ◆ **The economy experiences lower inflation but at the cost of higher unemployment.**

# Time Inconsistency: An Example







*Thank You for your Attention*





## Literature

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