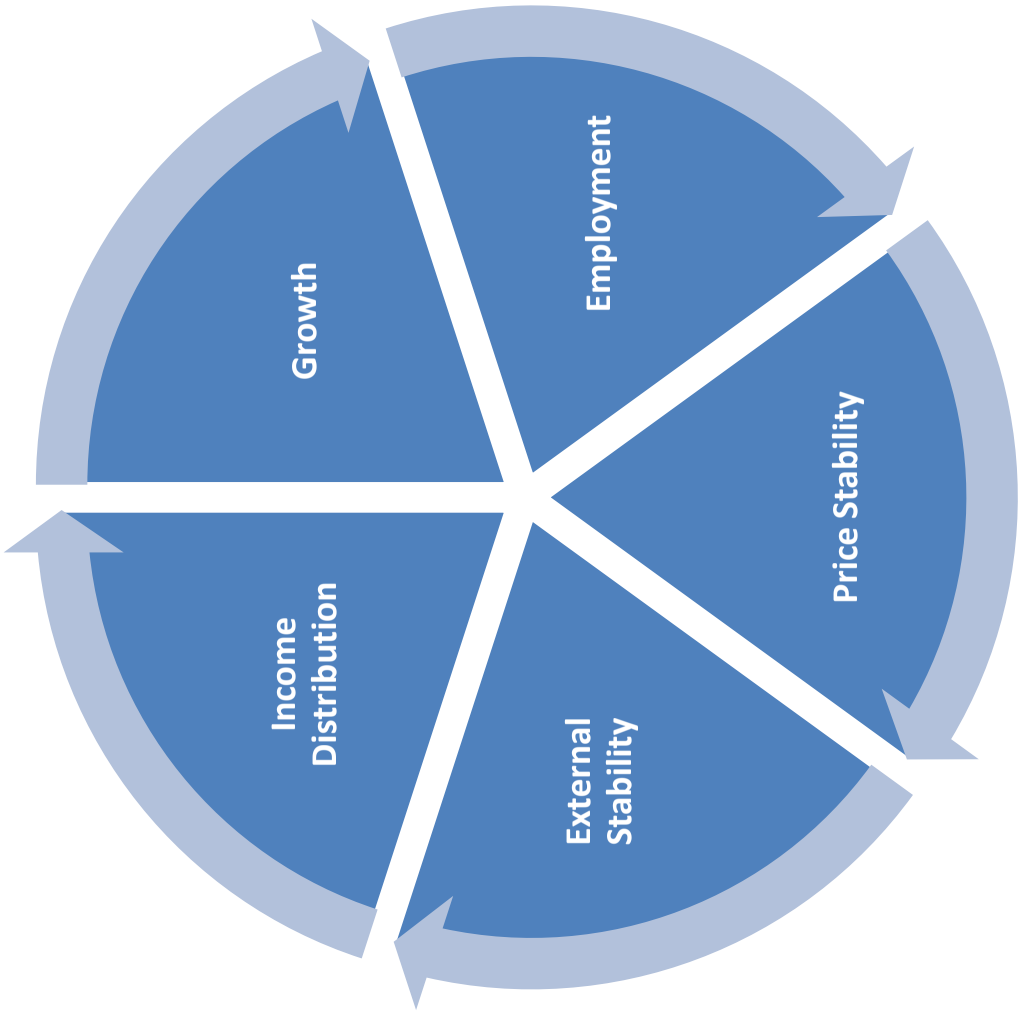
MacroEconomics

Diagrams and Definitions

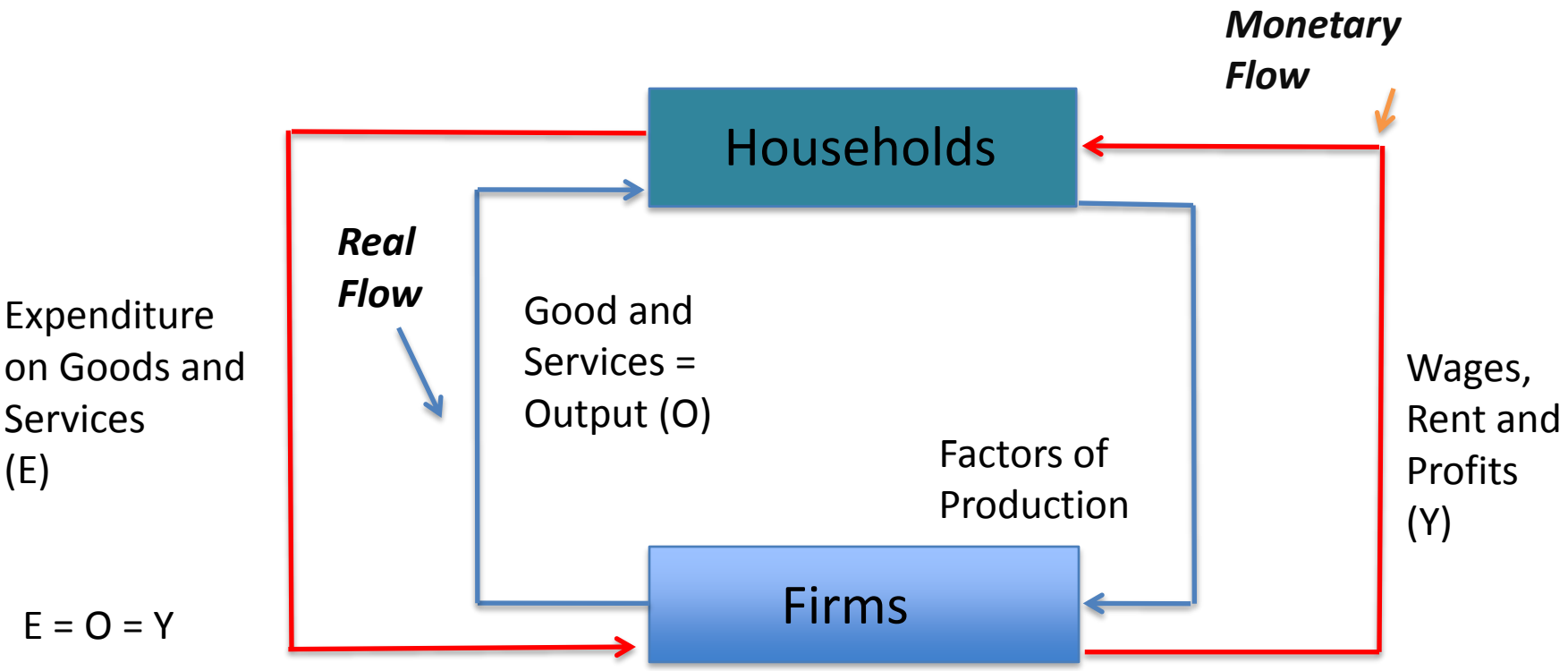
What is macroeconomics?

- Macroeconomics is the study of a national economy.

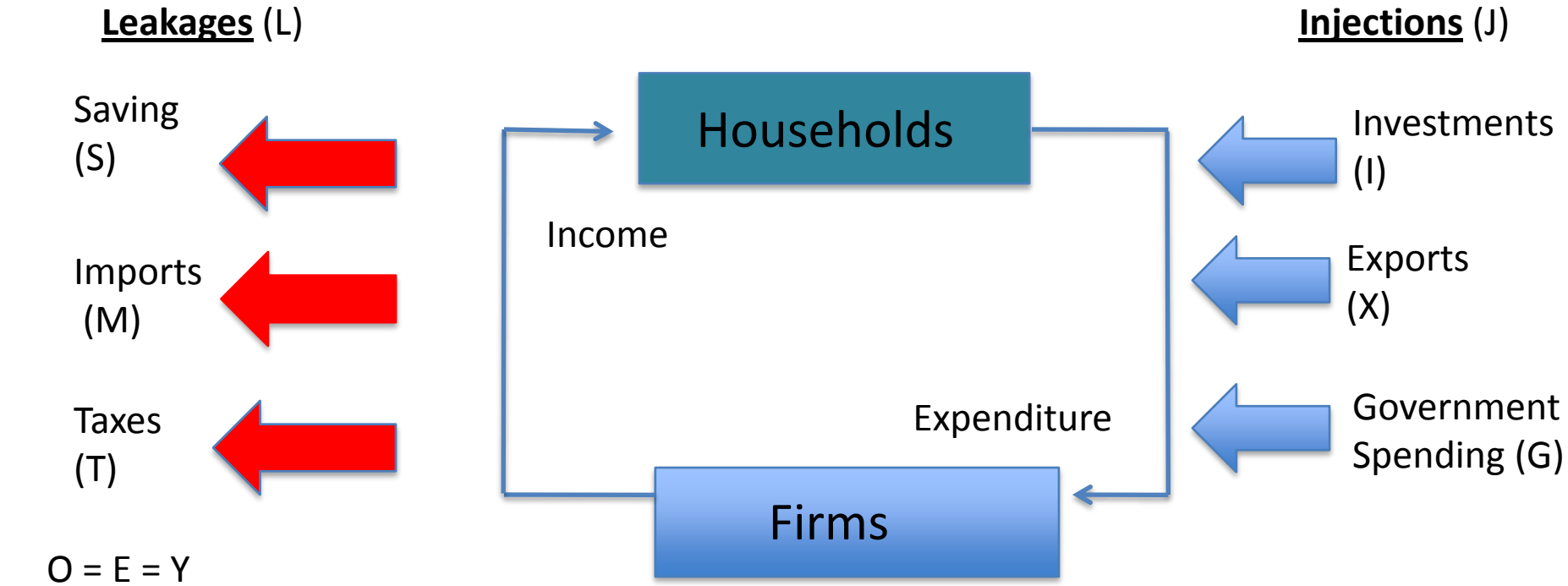
Macroeconomic Goals



Two Sector
Circular Flow of Income



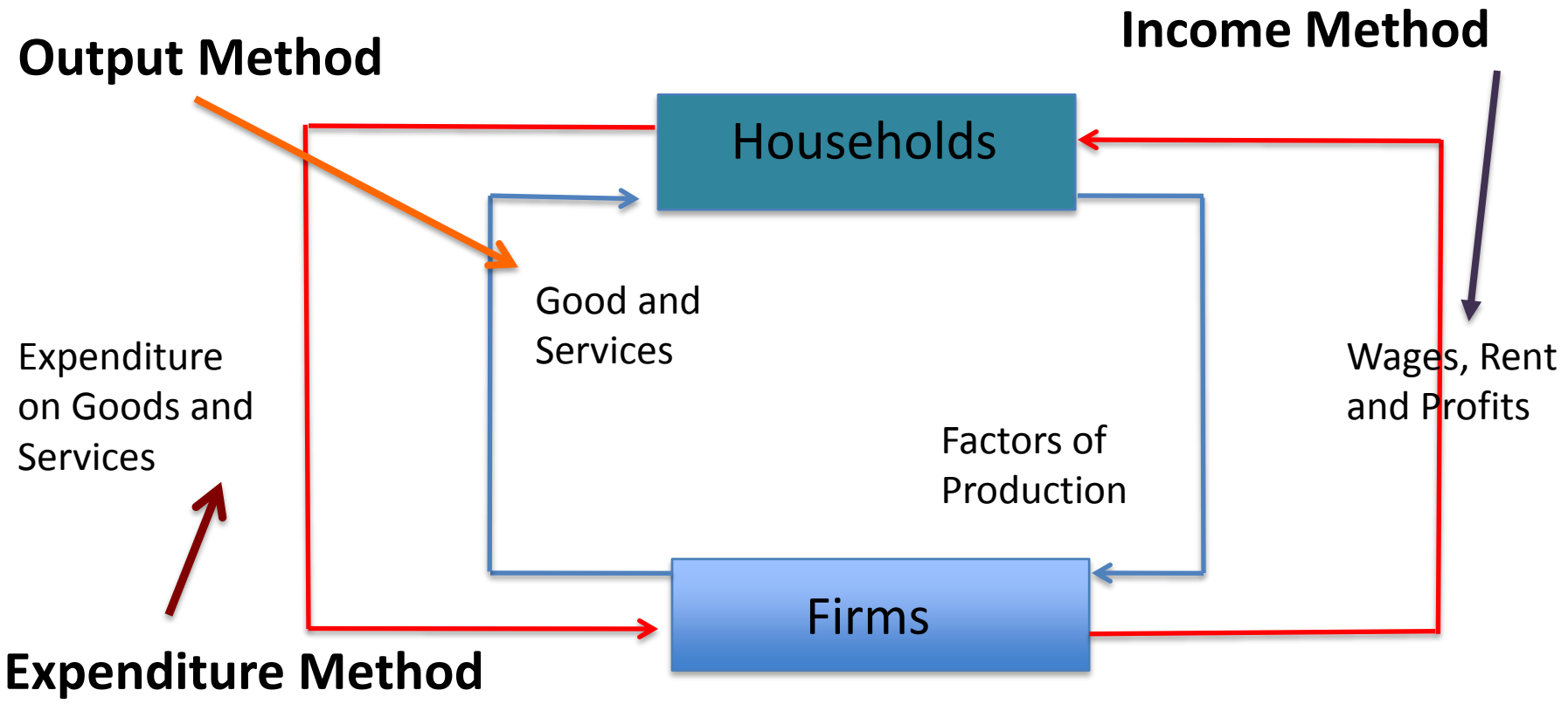
Four Sector
Circular Flow of Income



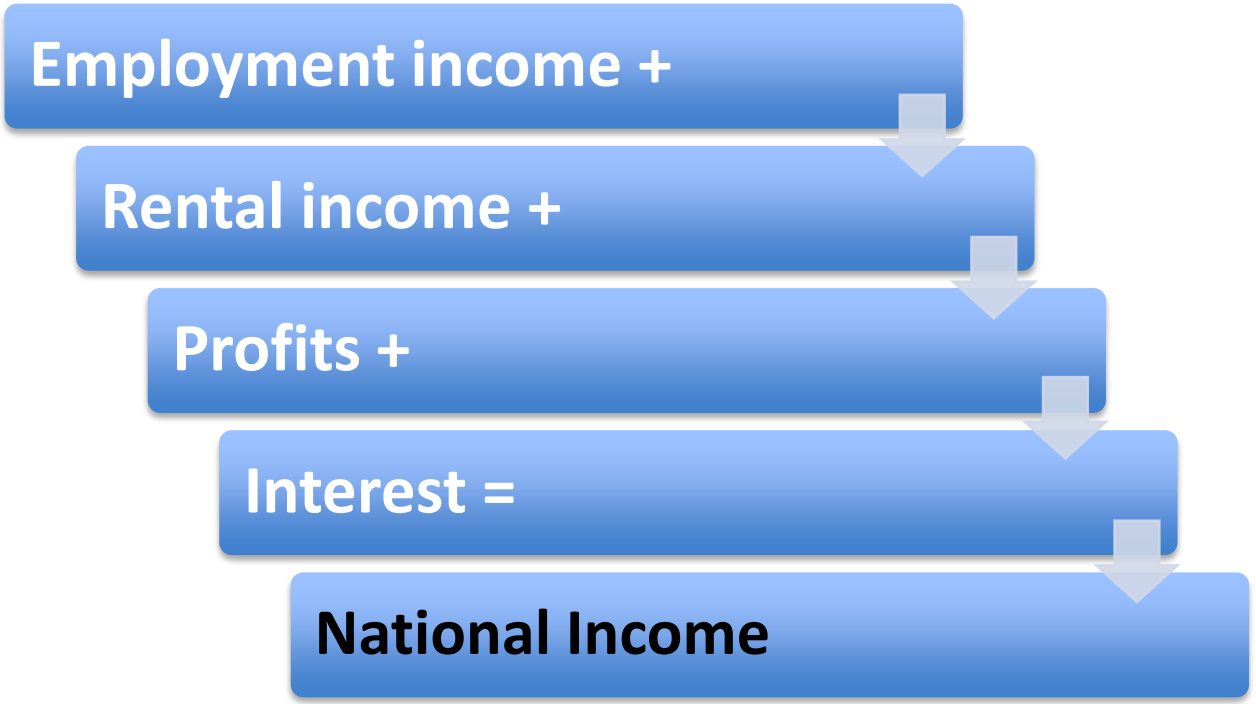
O = E = Y

Sum J = Sum L

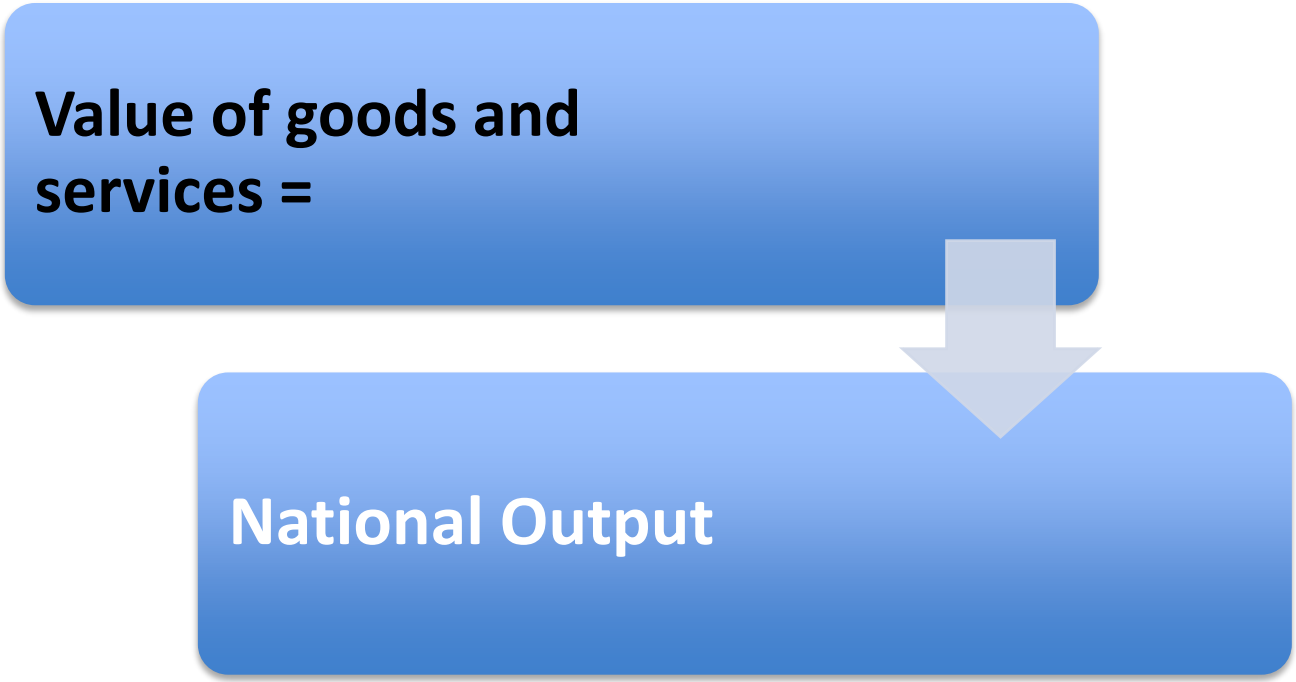
Measuring National Income



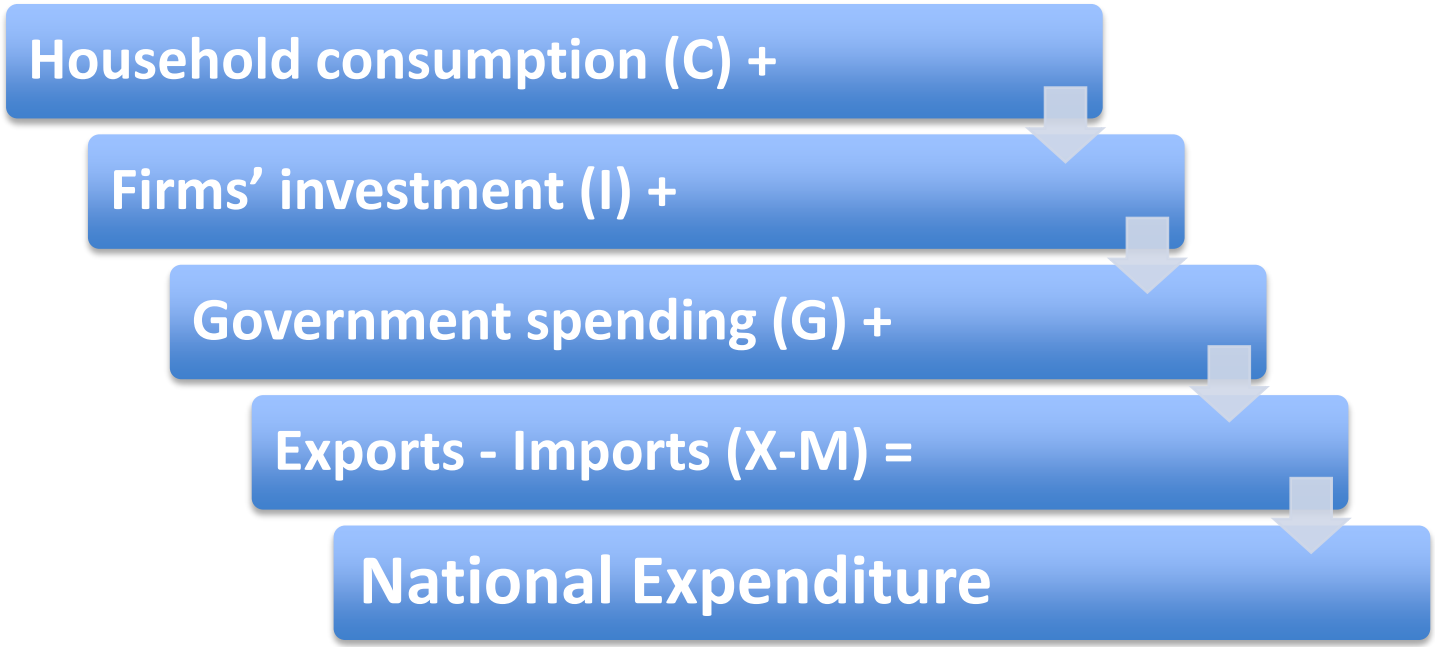
How is national income measured?



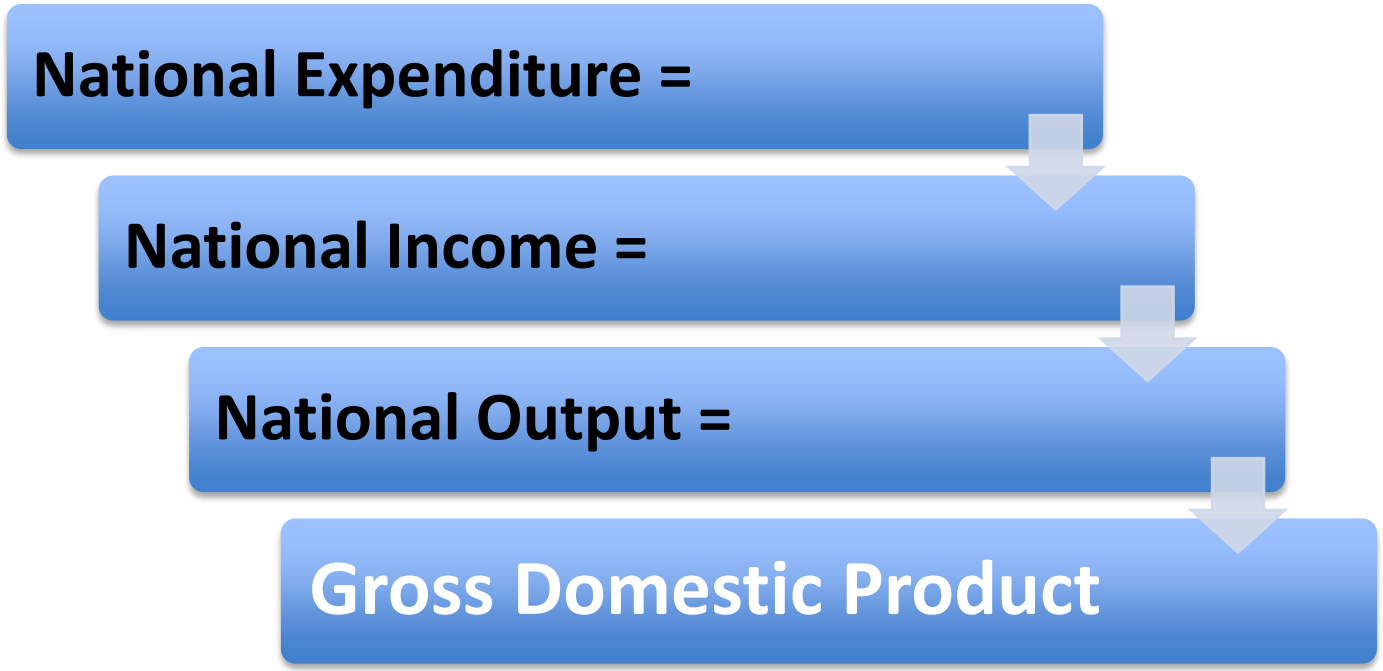
How is national output measured?



How is national expenditure measured?



What is GDP?


National Expenditure =
National Income =
National Output =
Gross Domestic Product

GDP

- GDP = Gross Domestic Product = Total Value of all Spending in an Economy = The Total Value of all final Goods and Services in an Economy regardless of who owns the productive assets.
- GDP = C + I + G + (X – M)

GNP

- GNP = Gross National Product = Total Income Earned by a nation's factors of production regardless of where the assets are located

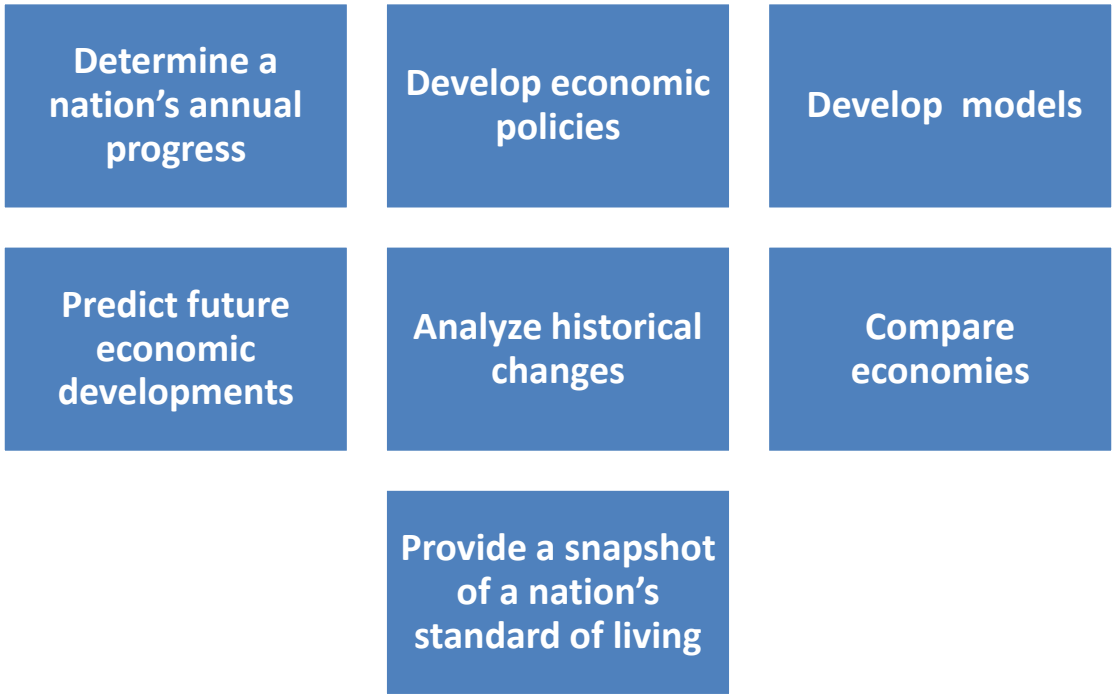
Real GDP

Real GDP = Nominal GDP adjusted for inflation

Calculating Real GDP

Real GDP = Nominal GDP of year measured

The Uses of National Statistics



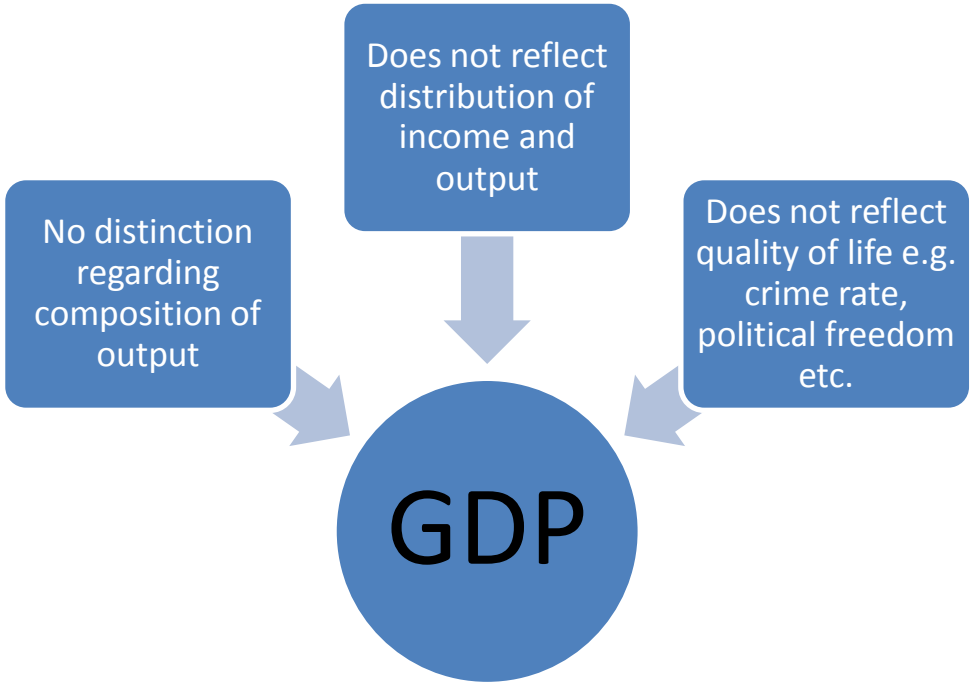
Limitations of the Data

- Inaccuracies distort data
- Unrecorded or under-recorded activity distort data
- Depletion of resources not considered
- Composition of Output not considered

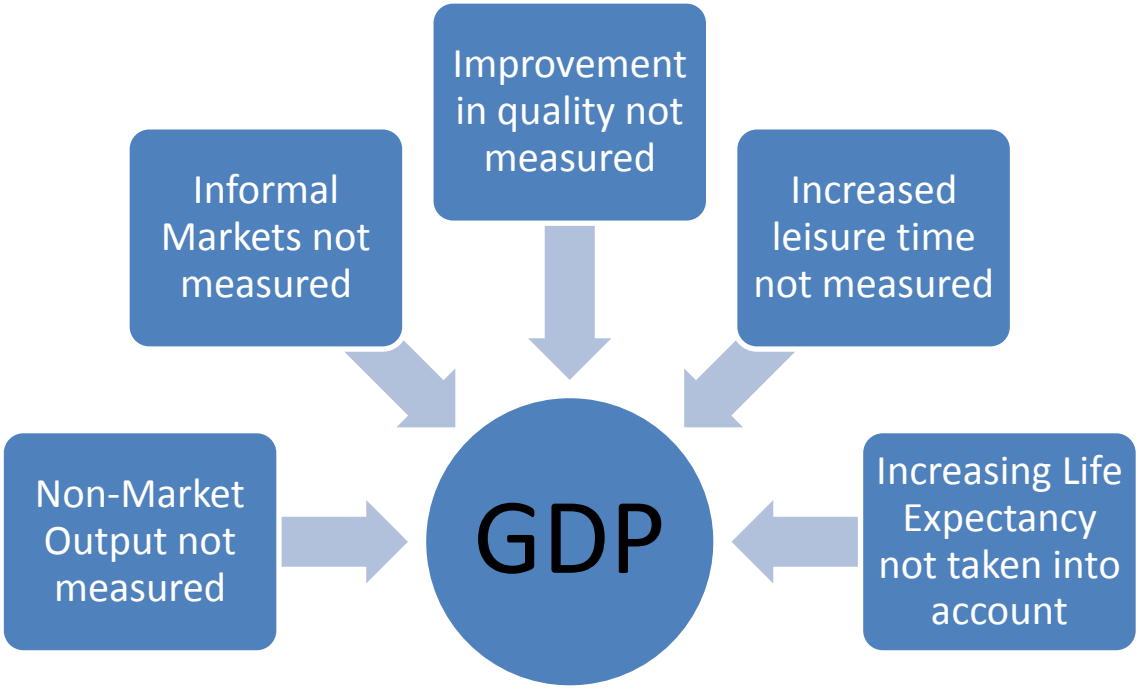
What is economic development?

- Economic Development is a multidimensional concept that includes poverty reduction, provision of education, health care and law and order, civil liberties and civic participation.

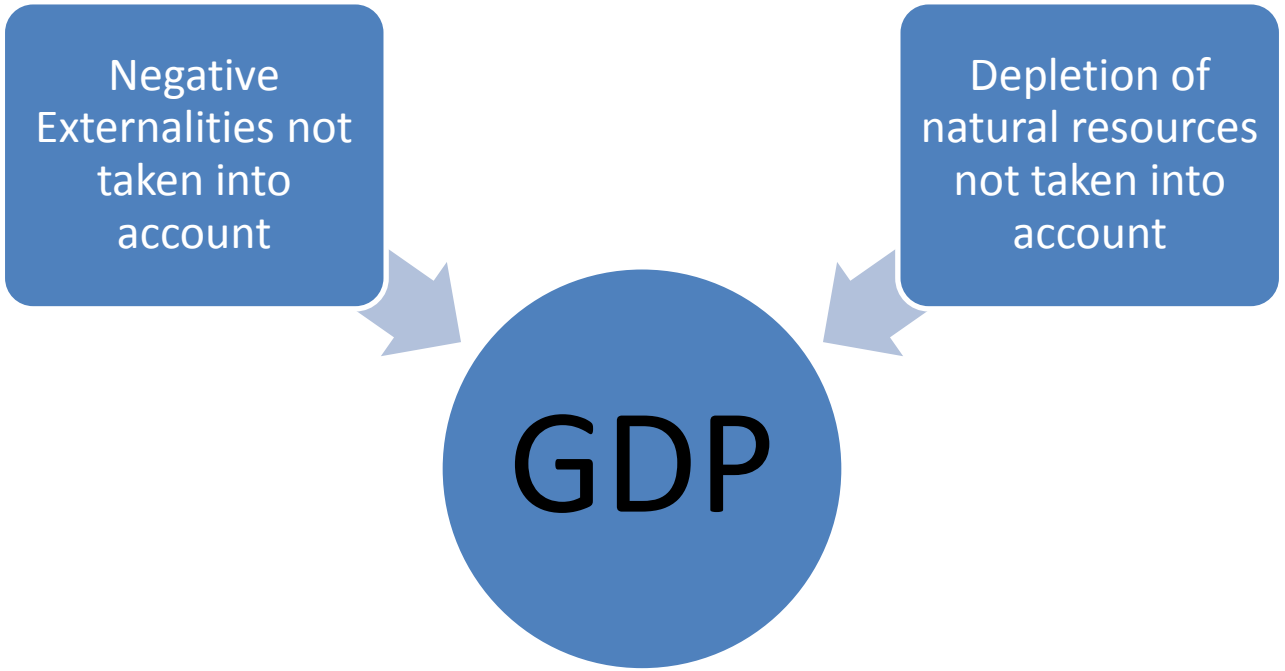
Why GDP fails to accurately measure welfare



Why GDP may understate improvements in welfare



Why GDP may overstate welfare

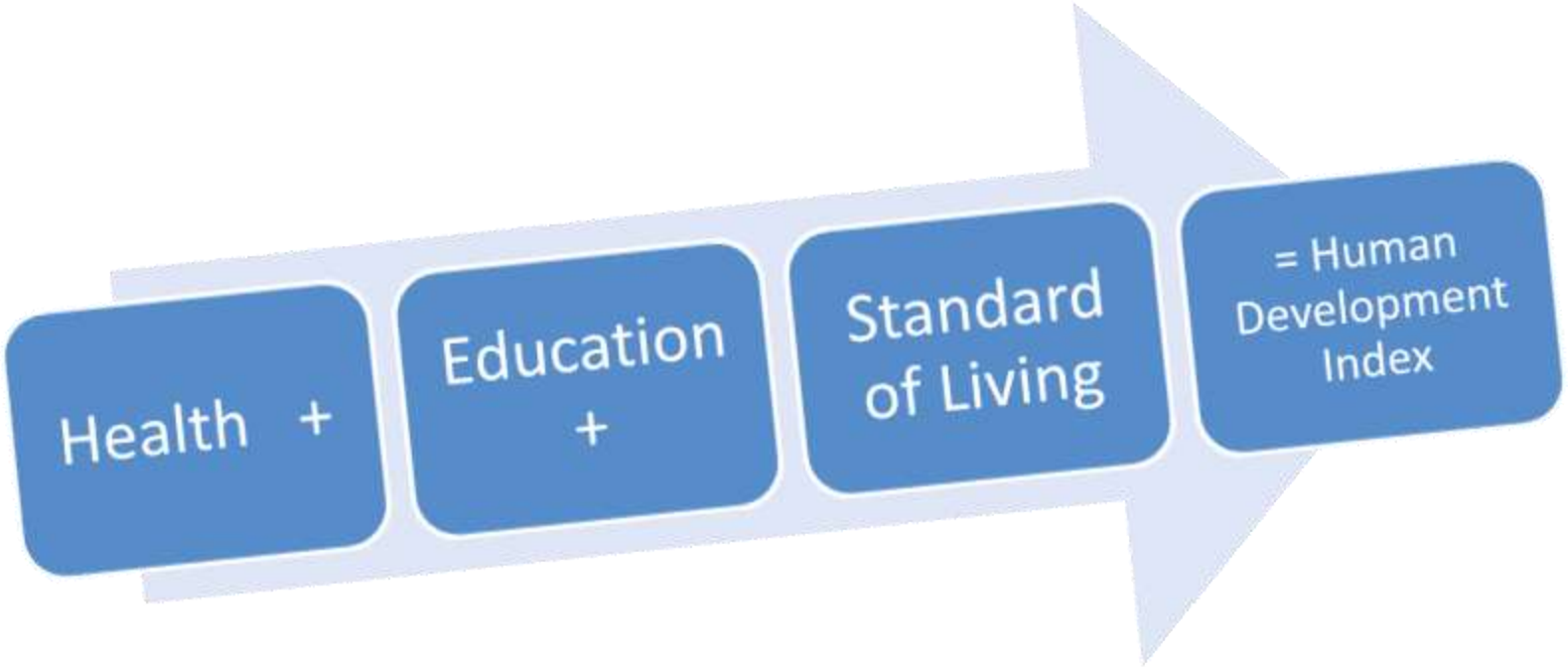


How can development be measured?

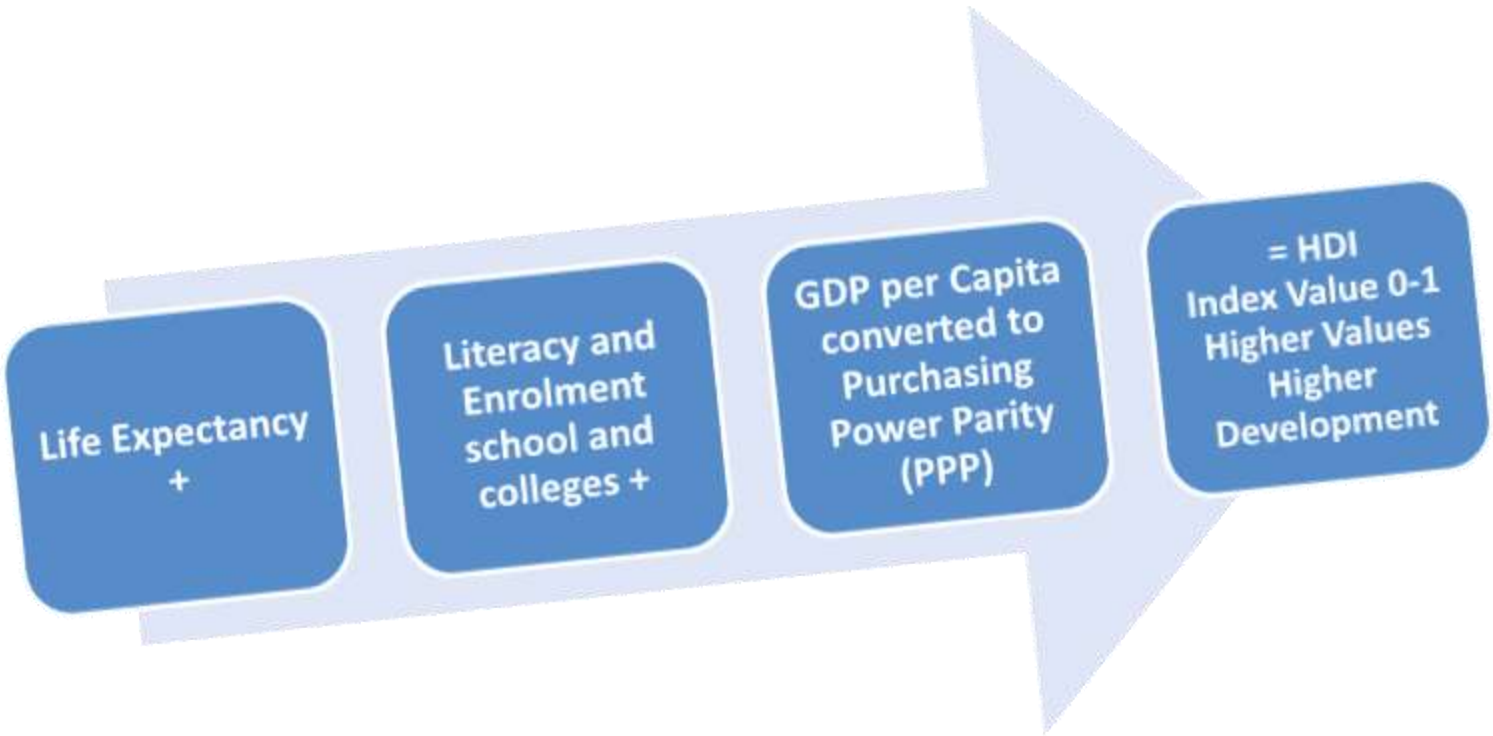
- GDP per capita
- Human Development Index

  Aims to stress the human dimension of economic growth

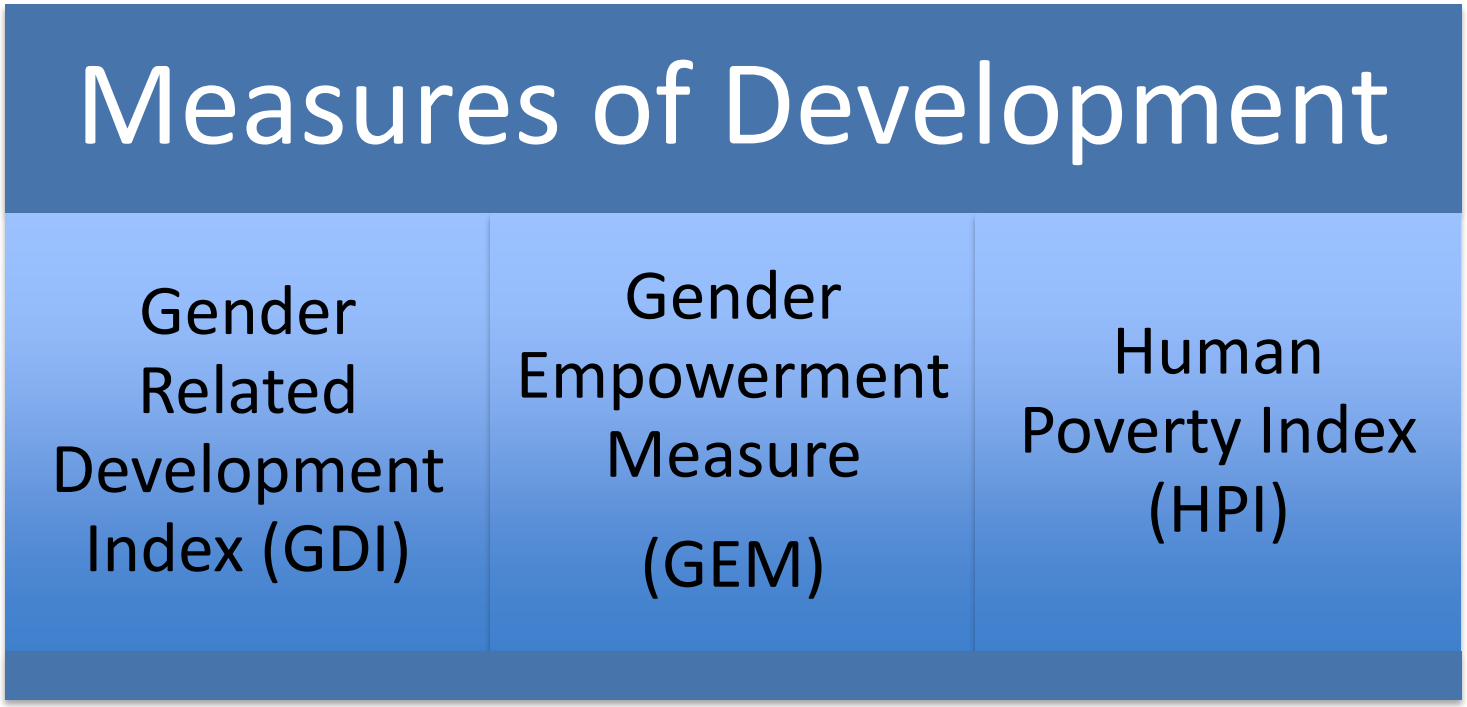
How can development be measured?



How is the HDI determined?



How can development be measured?



Developing and Developed

How can development be measured?

Important Indicators of development

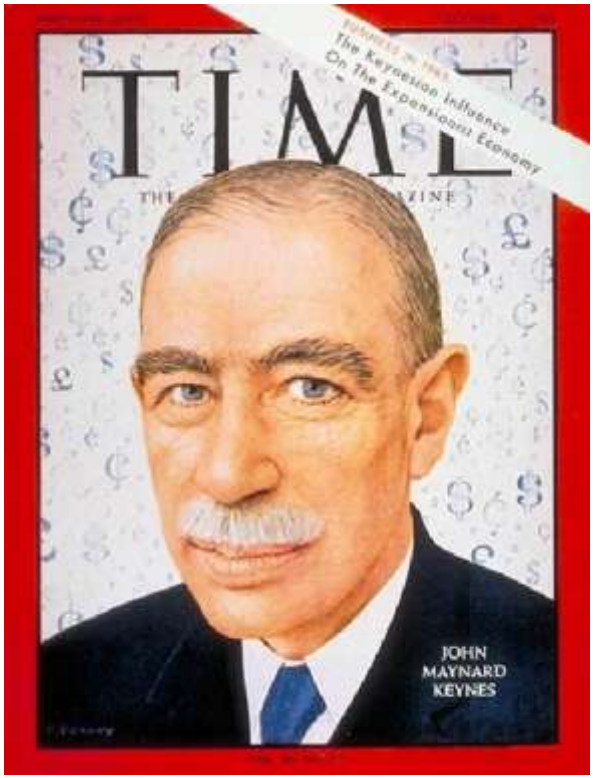
① Infant mortality rate

② Maternal mortality ratio

③ Enrolment in each level of education

④ Literacy

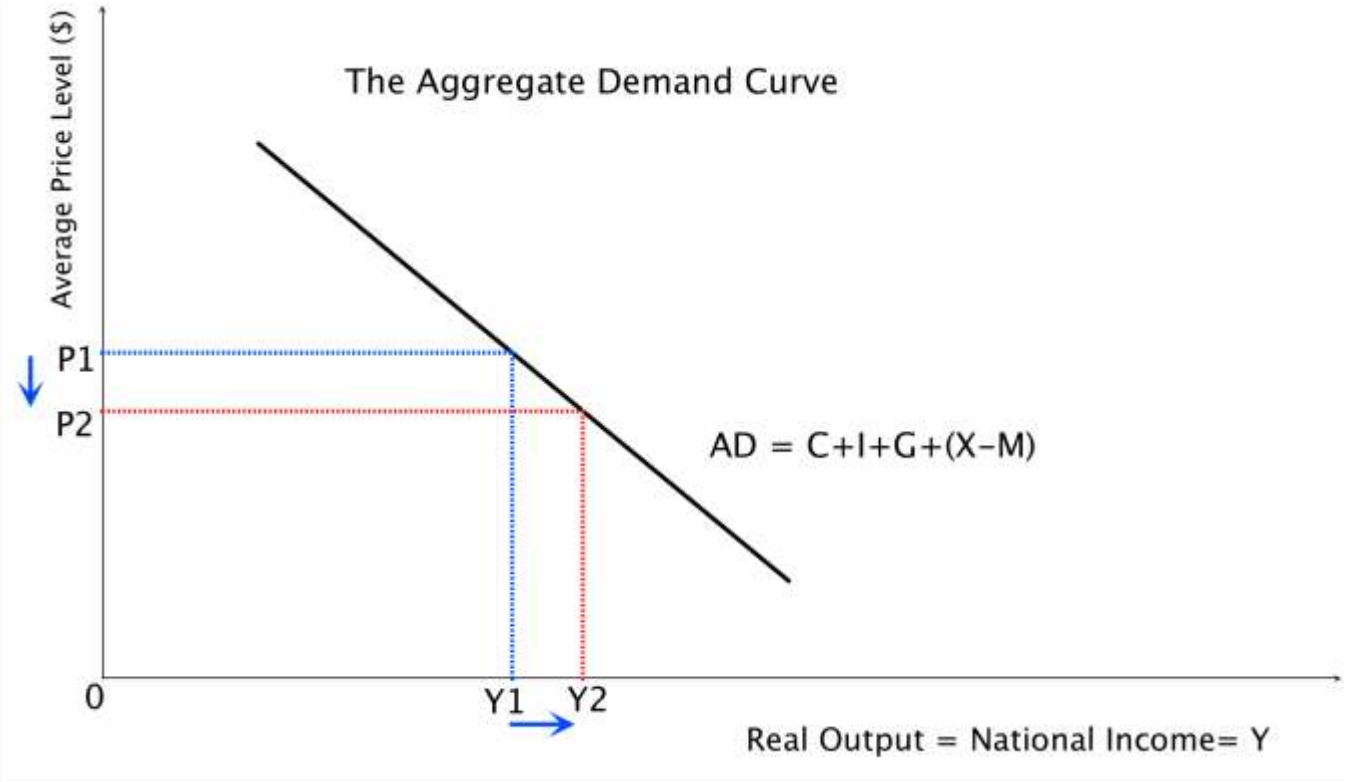
⑤ Internet users per 1000



Macroeconomic Models

What is aggregate demand (AD)?

- Aggregate Demand is the aggregate (total) spending on goods and service in a period of time at a given price level.


The Aggregate Demand Curve
Average Price Level ($)
P1
P2
AD = C+I+G+(X−M)
0
Y1
Y2
Real Output = National Income= Y

What are the components of AD?

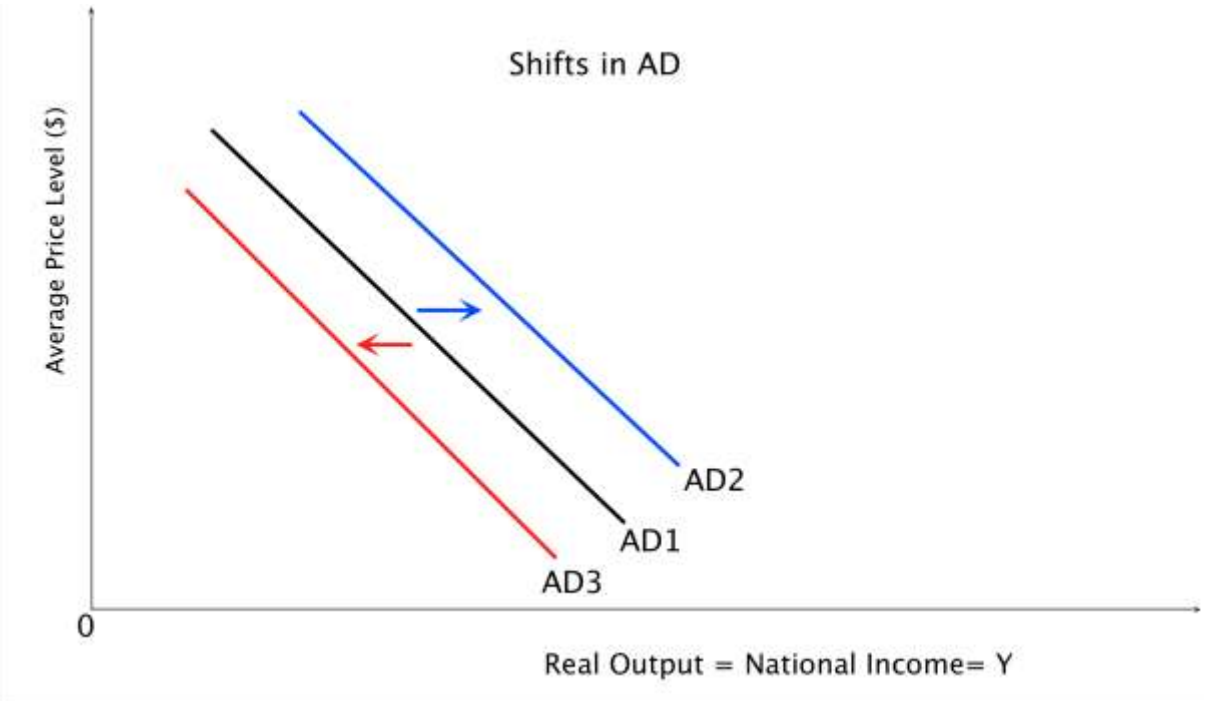
C = all household consumption on durables, non-durables and services

I = firm's replacement investment (spending on capital to maintain productivity) or induced investment to increase production

G = all government spending

X-M = spending by foreigners on exports less domestic spending on imports

What causes shifts in AD?



What causes Changes in Consumption?

AD

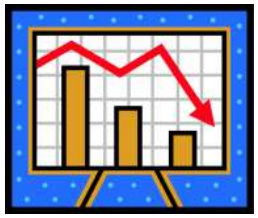
Rise in income

AD

Fall in income

AD

Lower Interest Rates



AD

Higher Interest Rates

What causes Changes in Consumption?

AD

Rise in house and share market values

AD

Fall in house and share market values

AD

Higher confidence

AD

Lower Confidence

What causes Changes in Consumption?

AD

Fall in personal taxes

AD

Lower debt

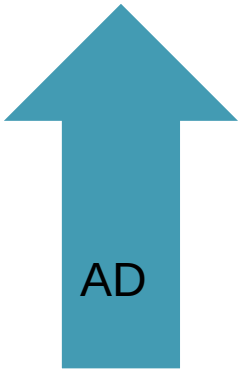
AD

Rise in personal taxes

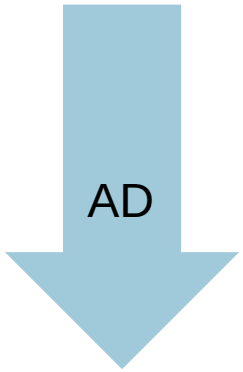
AD

Higher debt

What causes Changes in Investment?

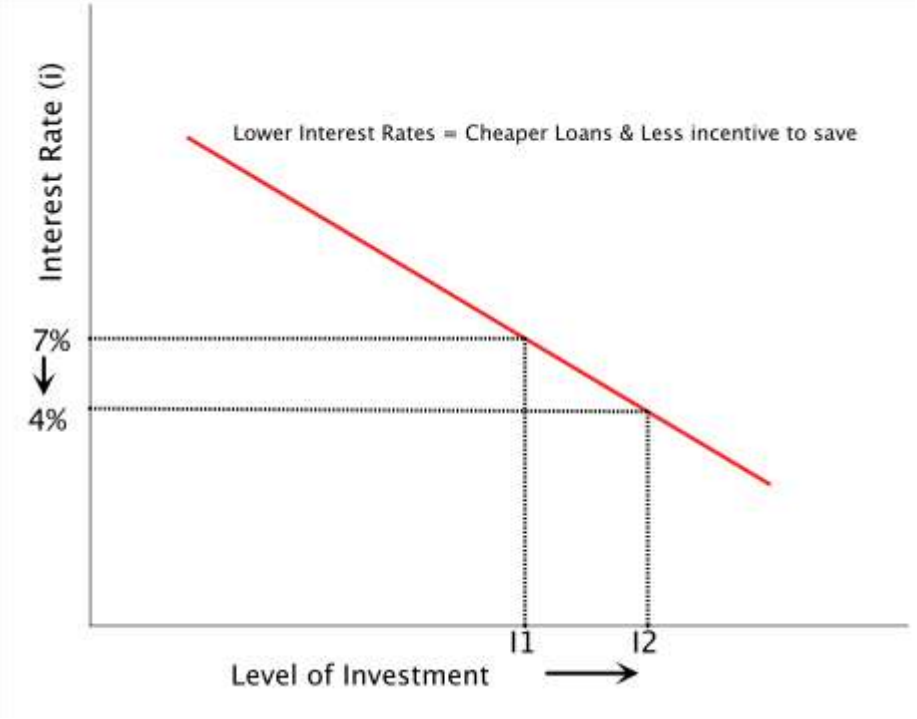


Fall in Interest Rates



Rise in Interest Rates

Demand for investment funds?



What causes Changes in Investment?

AD

Fall in Business taxes

AD

Rise in Business taxes

AD

Improved Technology

AD

Higher costs of Technology

What causes Changes in Investment?

AD

Rise in house and share market values

AD

Fall in house and share market values

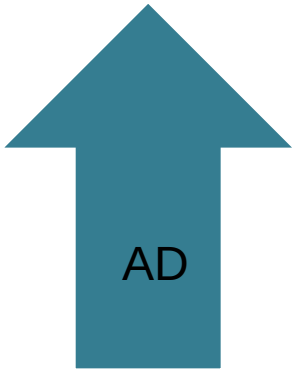
AD

Improved expectations about future sales

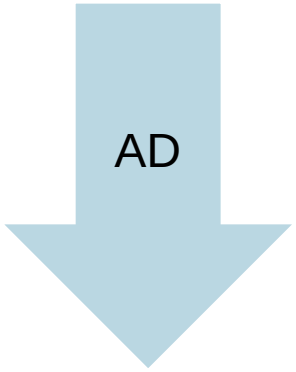
AD

Worsening expectations about future sales

What causes Changes in Investment?



Improved governance



Worsening governance

What causes Changes in Government Spending?

AD

Rise in spending on merit goods public goods etc.

AD

Fall in spending on merit goods public goods etc.

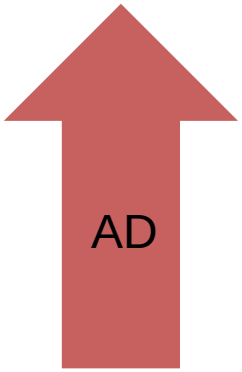
AD

Deliberate Decision to increase AD

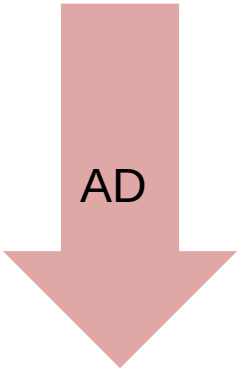
AD

Deliberate Decision to decrease AD

What causes Changes in EXport and iMport spending?

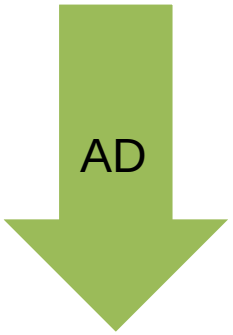


Trading partners demands more goods

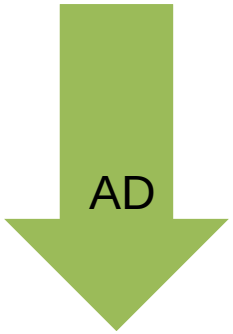


Trading partners demands less goods

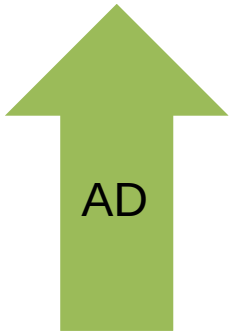
What causes Changes in E**X**port and i**M**port spending?



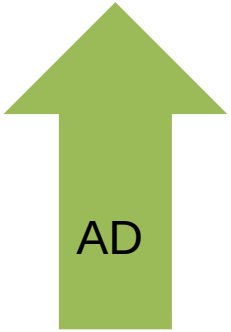
Imports cheaper, buy more



Exports more expensive for Trading Partners, buy less



Imports more expensive buy less

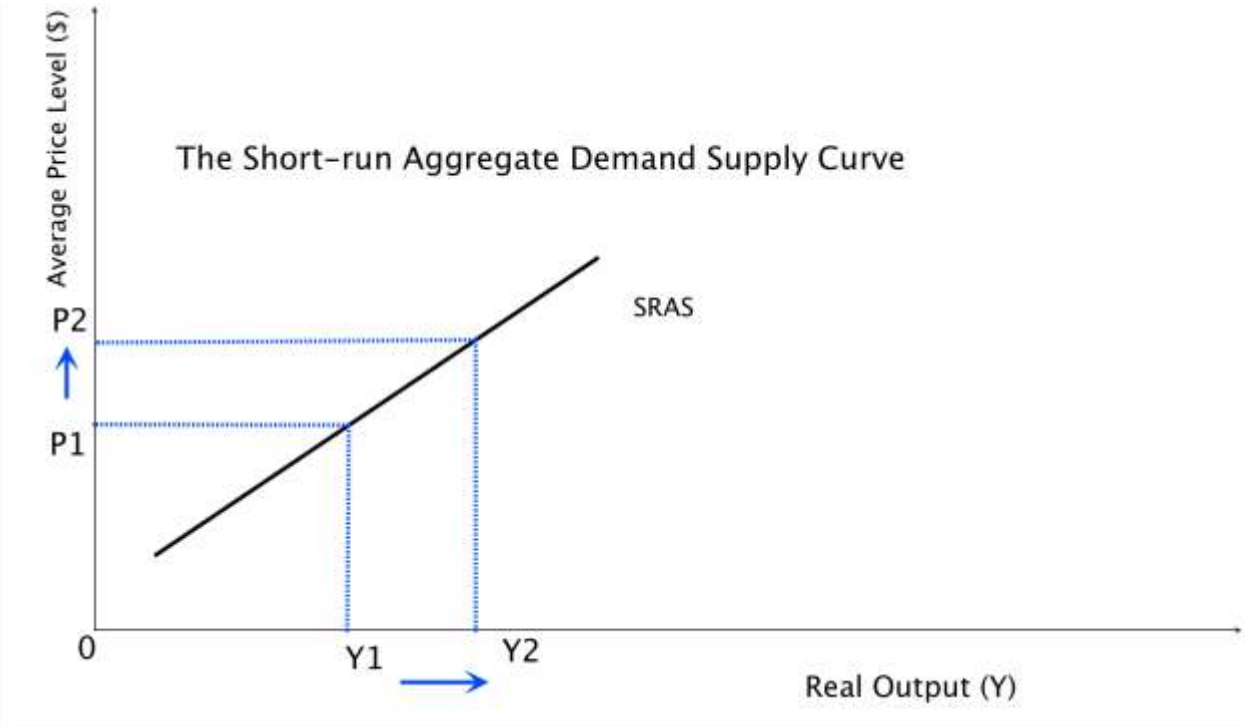


Exports less expensive trading partners buy more

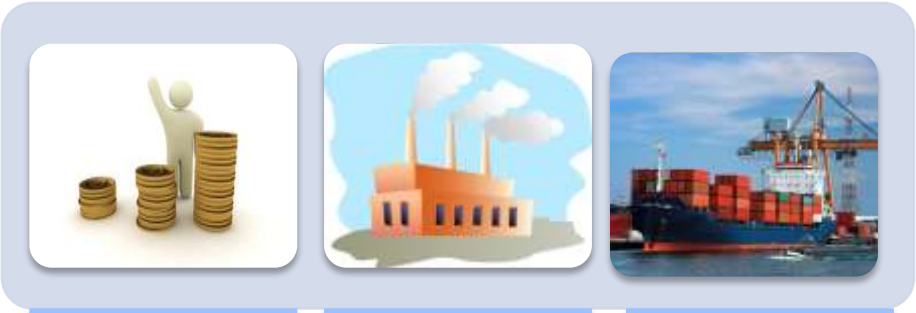
What is aggregate supply (AS)?

- Aggregate (total) Supply is amount of goods and services that all industries will produce at a given price level.

What is aggregate supply in the short run (SRAS)?



What are the components of AS?

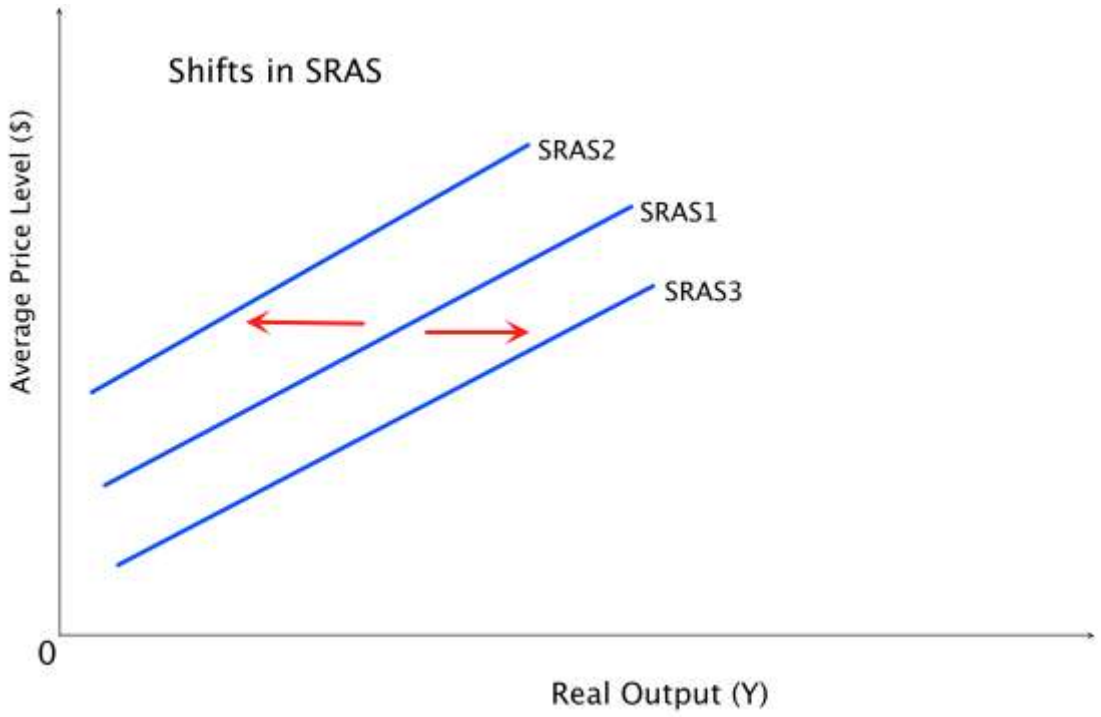


Wages

Domestic resources

Imported raw materials

What causes shifts in SRAS?



What causes shifts in SRAS?

AS

Wages decrease

AS

Wages increase

AS

Fall in prices of resources

AS

Rise in prices of resources

What causes shifts in SRAS?

AS

Lower Business Taxes

AS

Higher Business Taxes

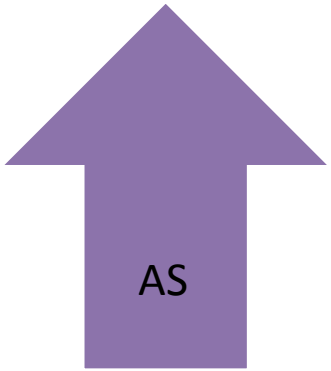
AS

Rise in subsidies

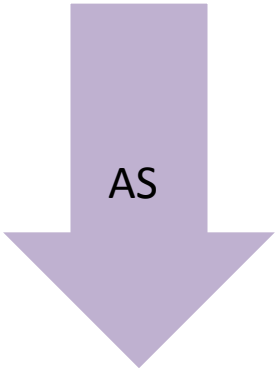
AS

Fall in subsidies

What causes supply shocks?

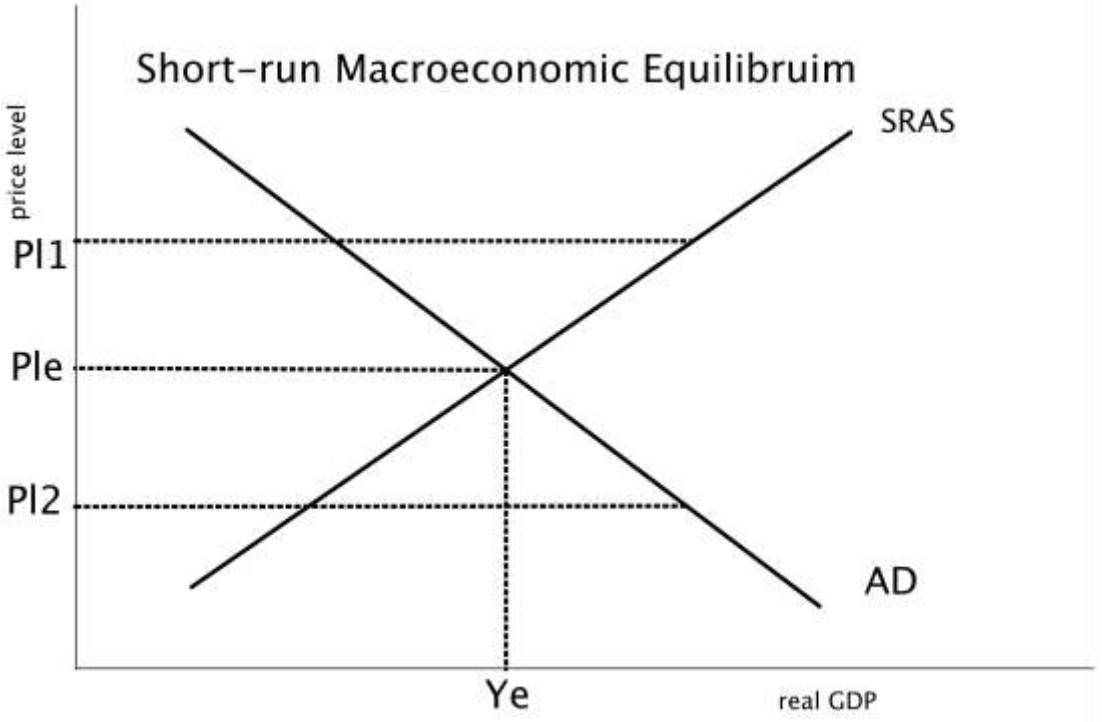


Sudden beneficial events e.g., oil discovery, good weather and harvest, technological breakthrough

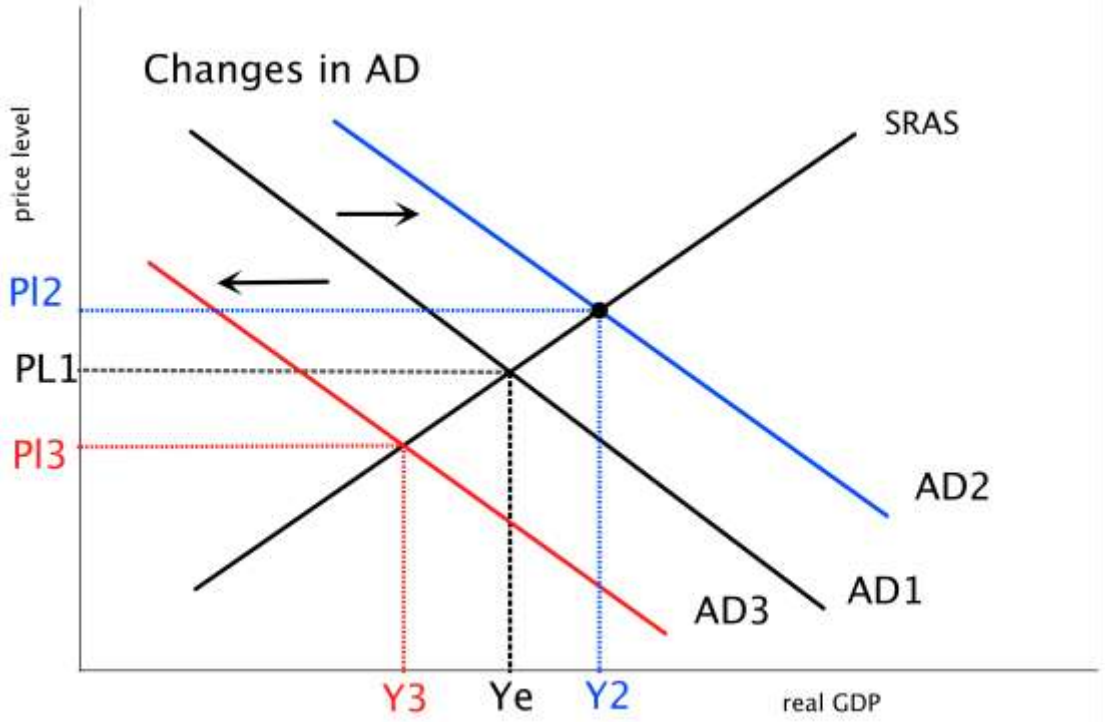


Sudden negative event e.g. war, natural disaster, oil price increase

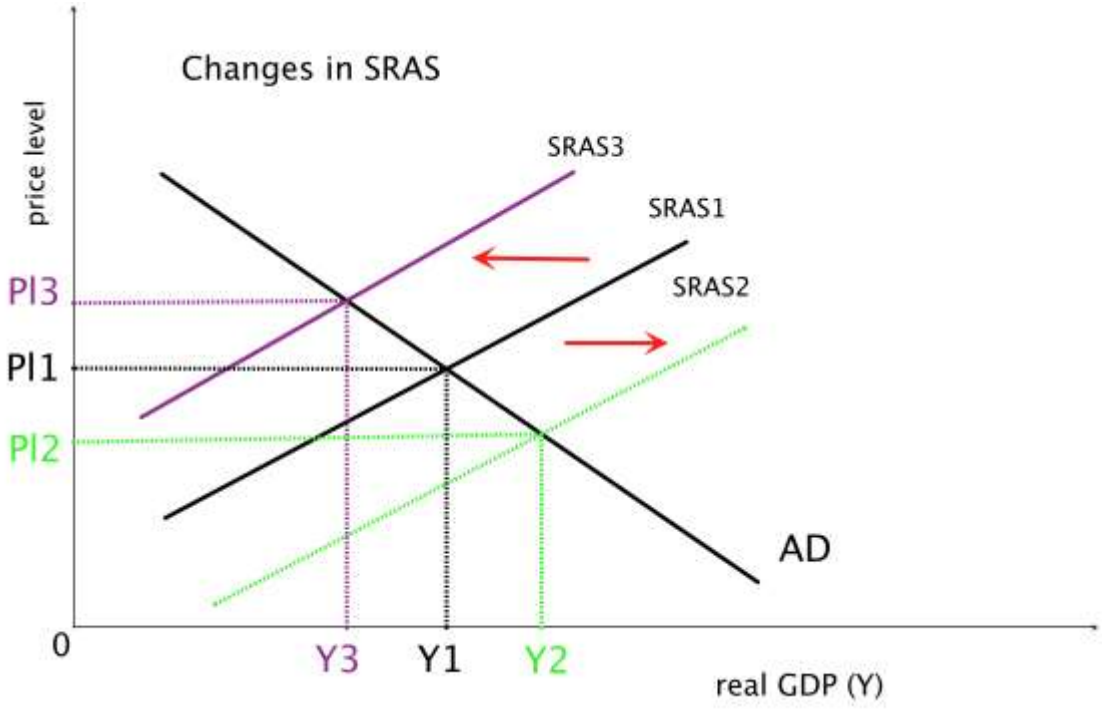
Macroeconomic Equilibrium



Shifts in AD


Changes in AD
price level
SRAS
Pl2
PL1
Pl3
AD2
AD1
AD3
Y3
Ye
Y2
real GDP

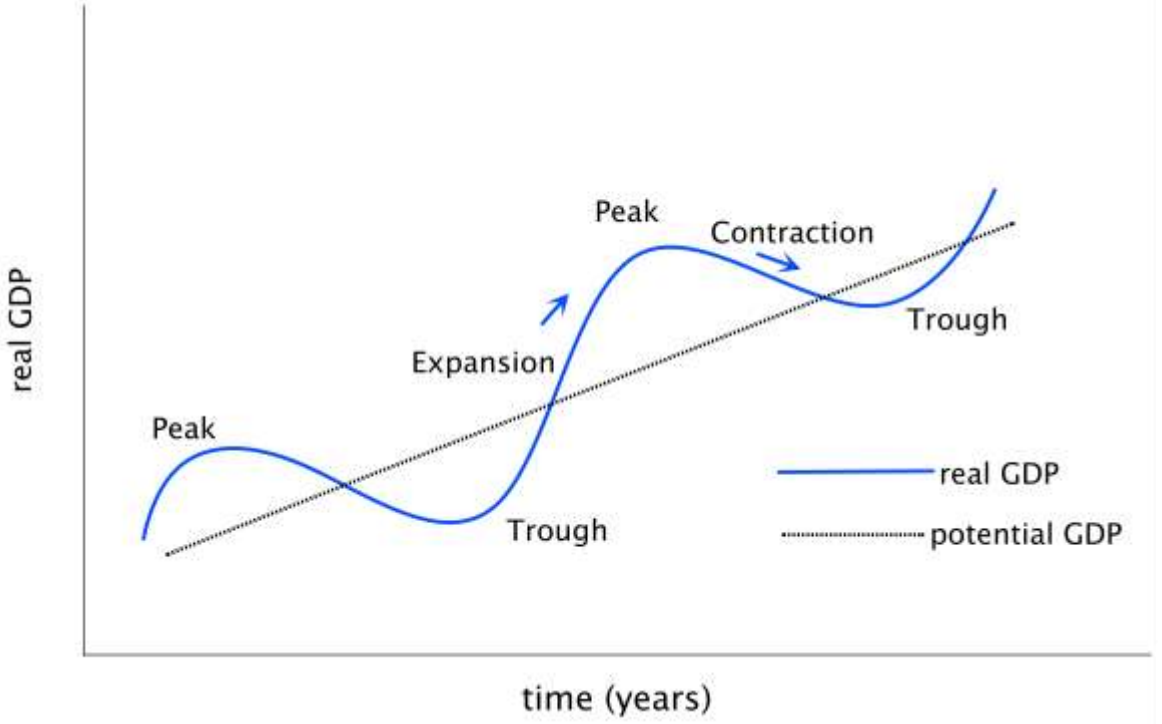
Shifts in SRAS



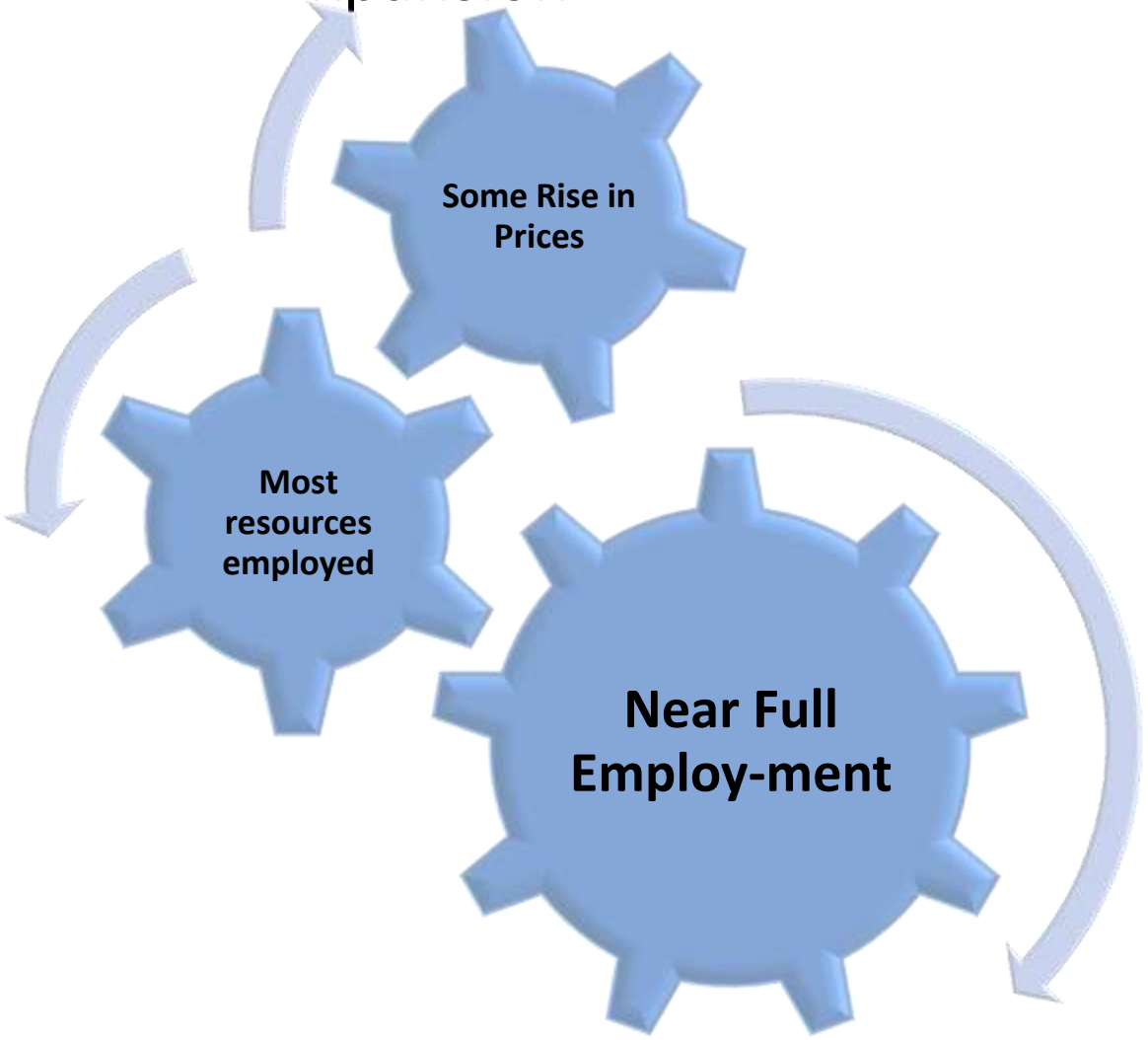
The Business Cycle

- Fluctuations in the growth of real output, consisting of periods of expansion and contraction called business cycles or trade cycles.

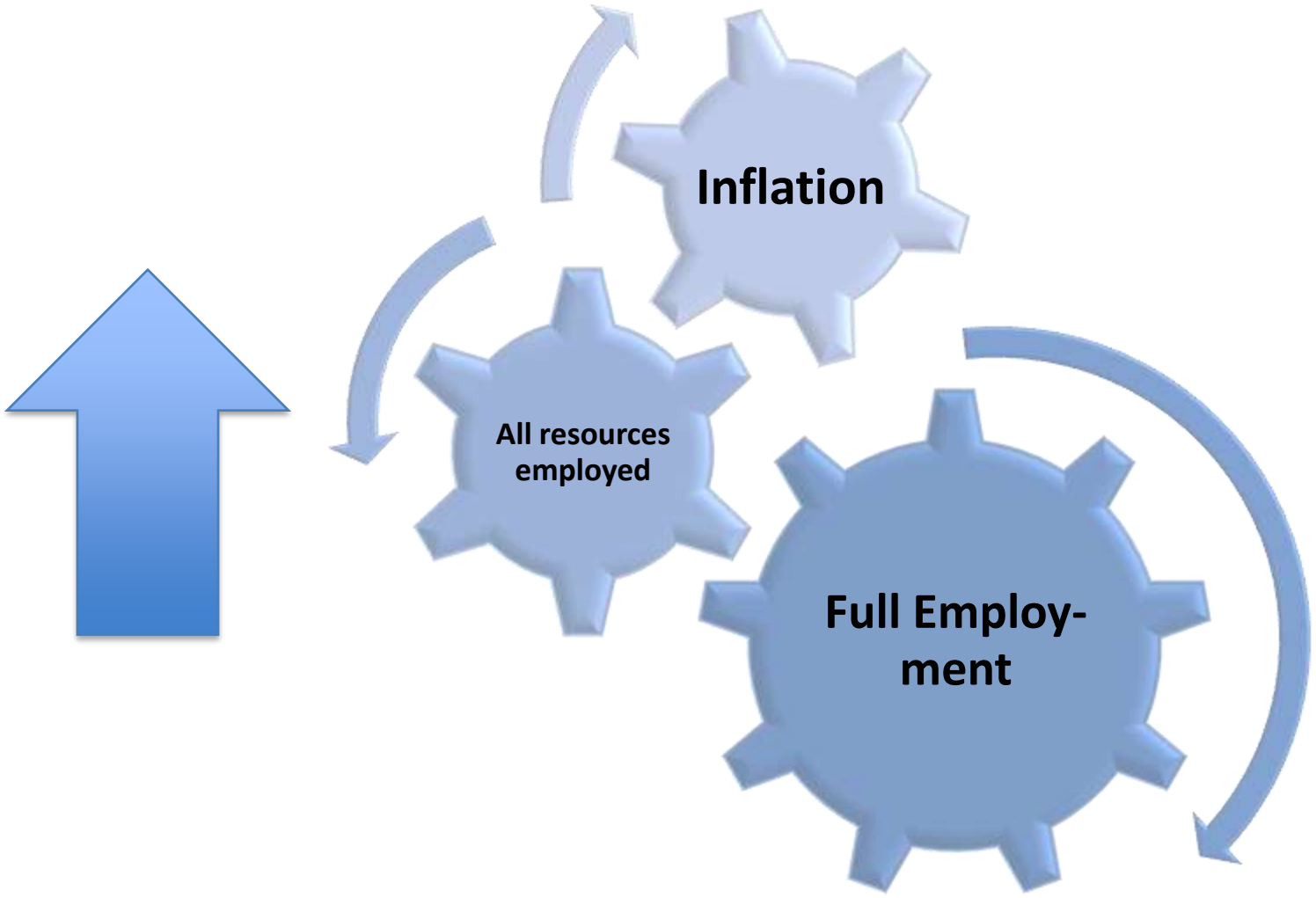
Business Cycle



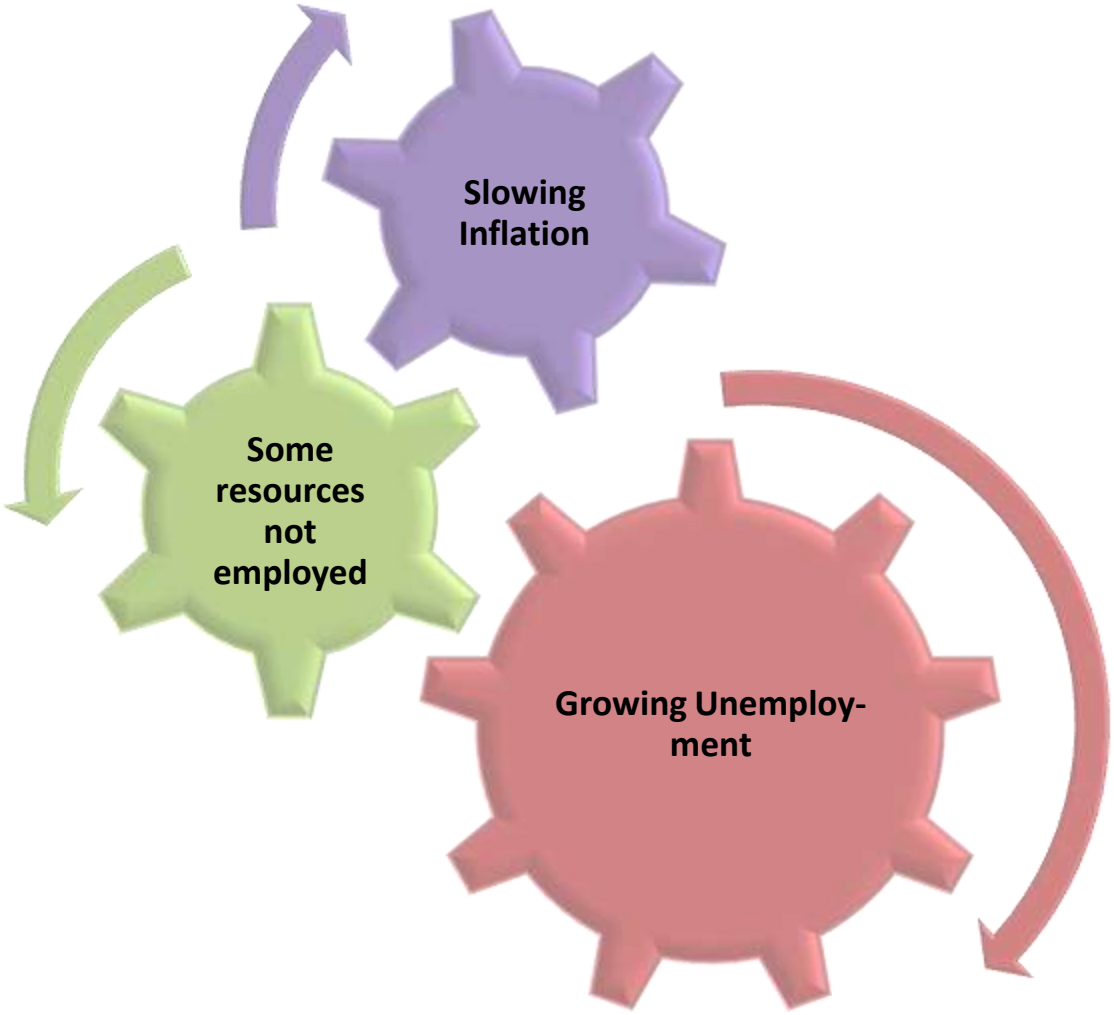
Business Cycle: Expansion



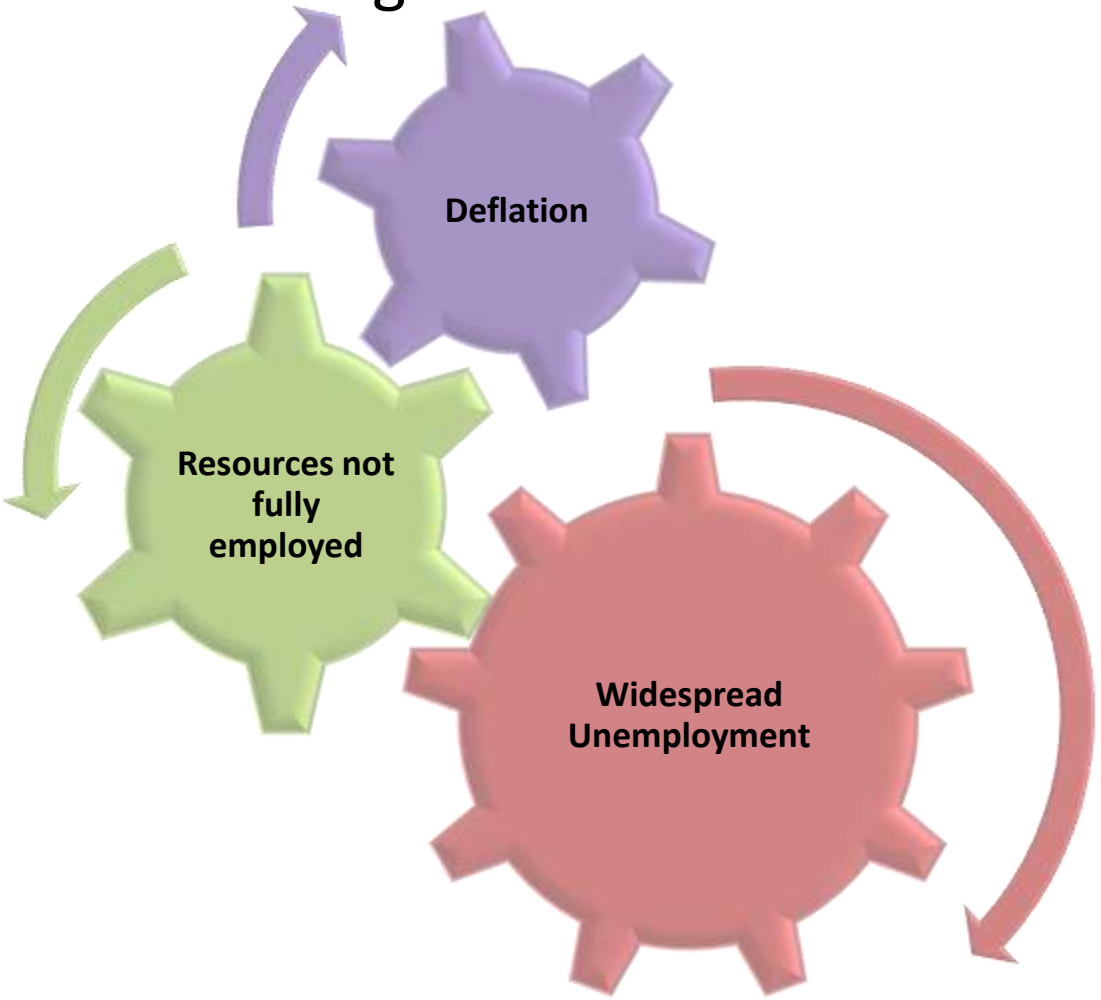
Business Cycle:
Peak



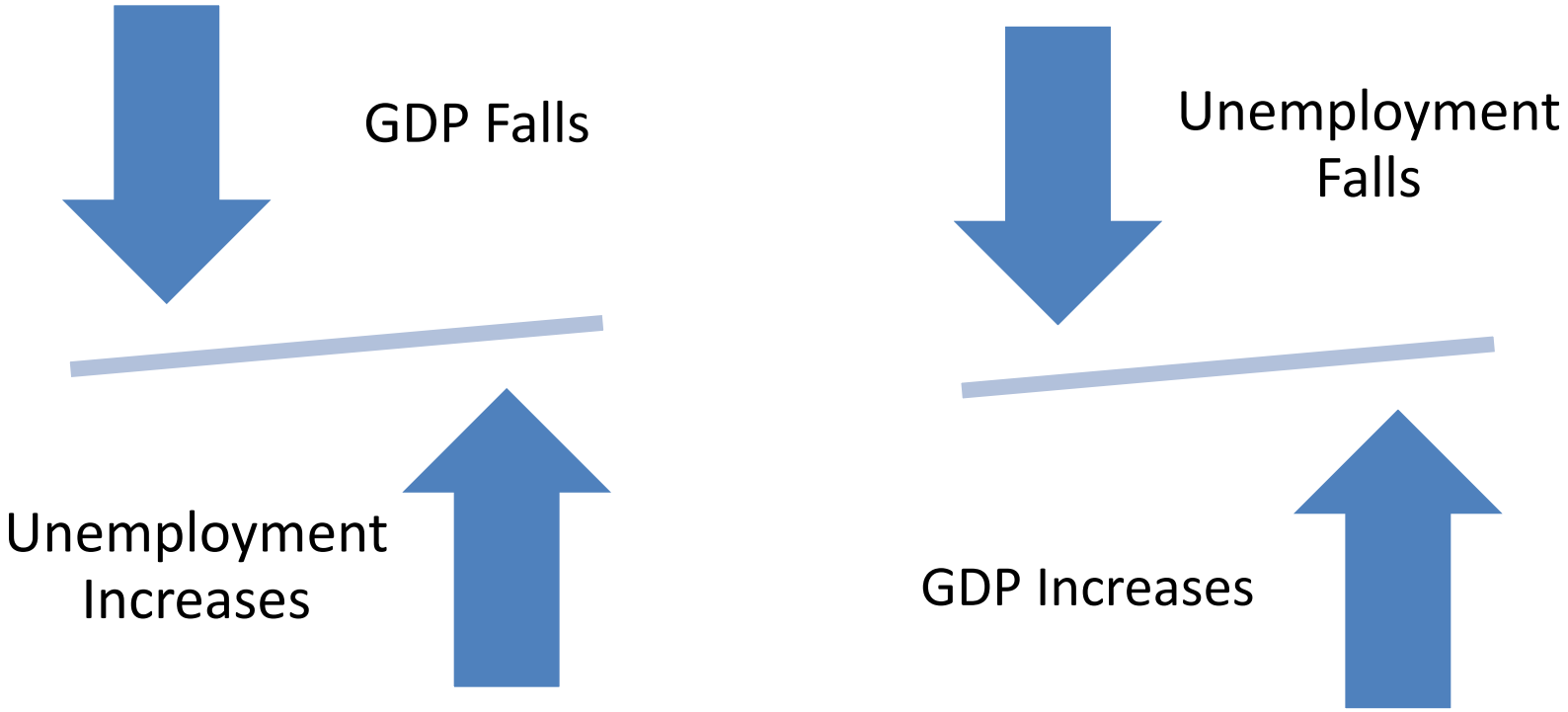
Business Cycle: Contraction



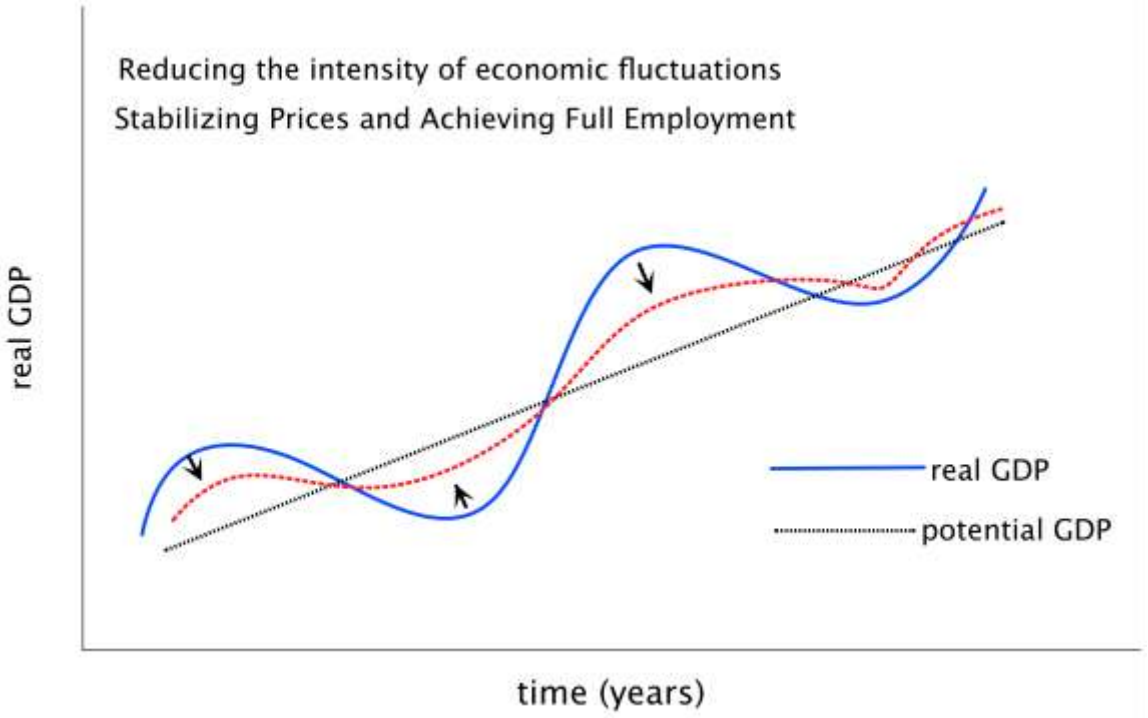
Business Cycle: Trough



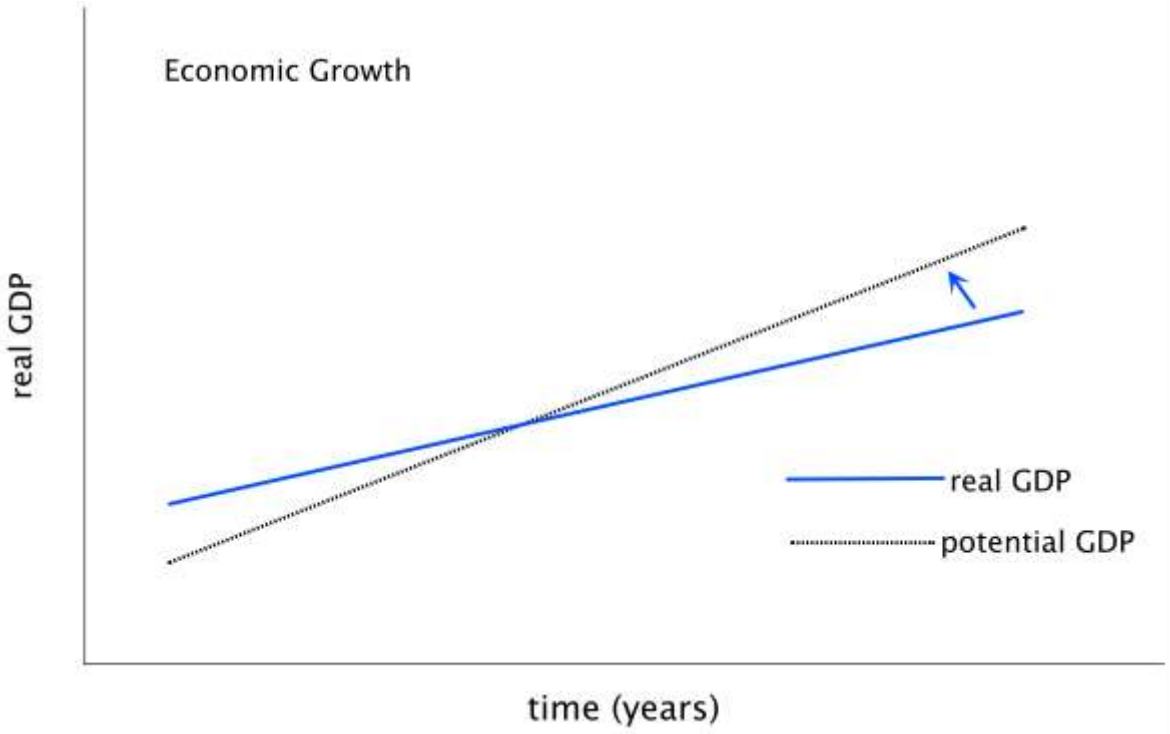
Relationship between real GDP and Employment



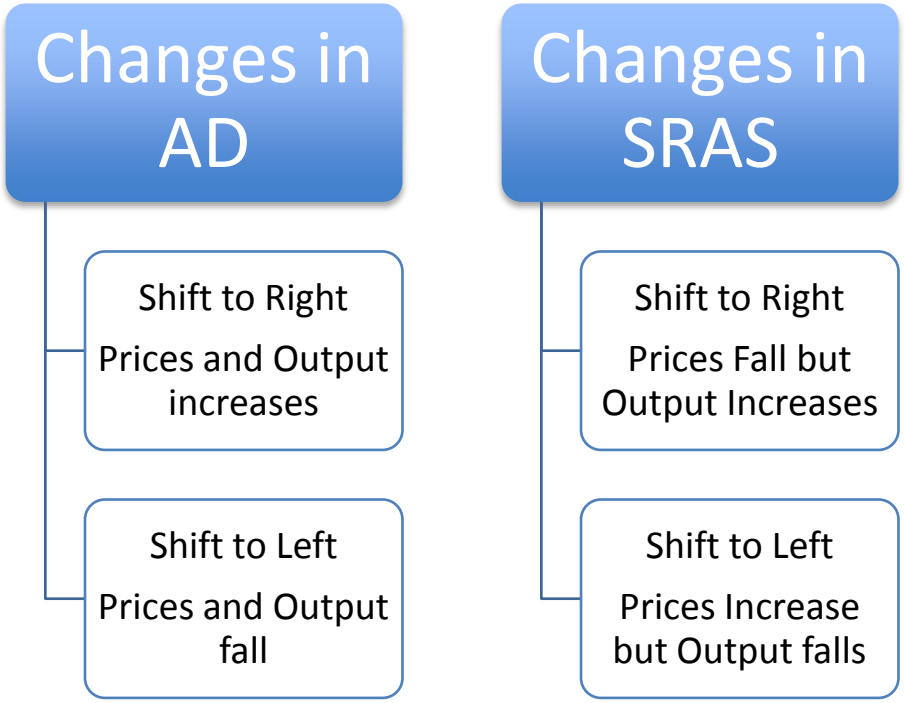
Using Diagrams to Illustrate Macroeconomic Goals



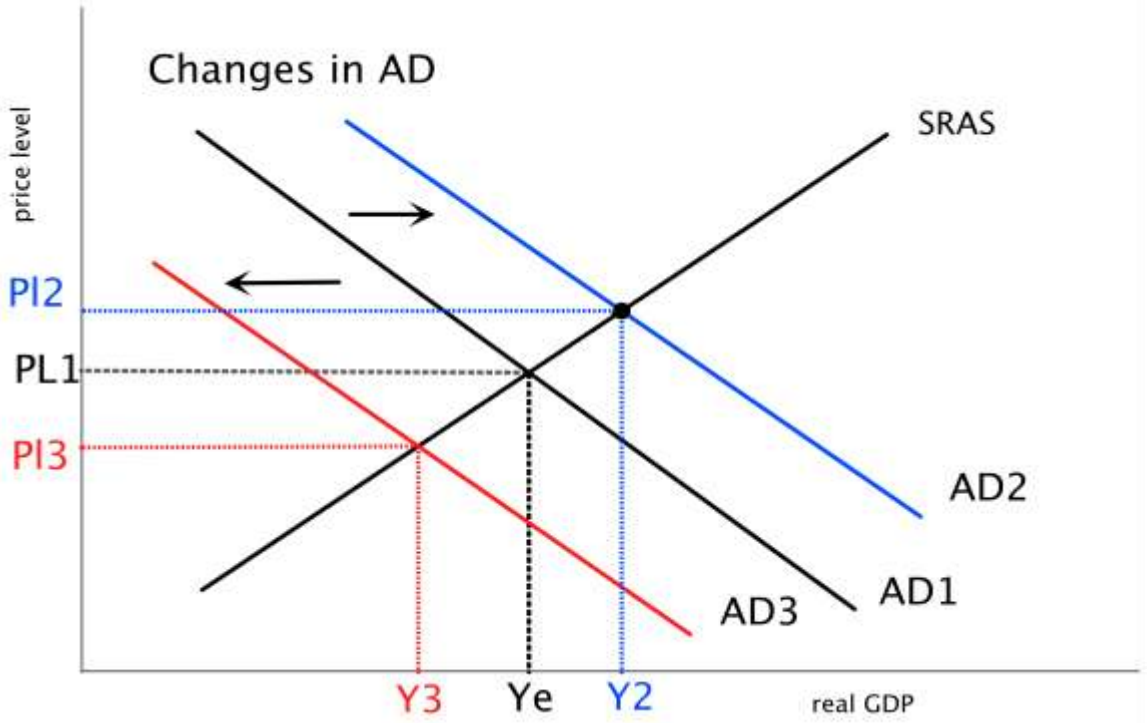
Using Diagrams to Illustrate Macroeconomic Goals



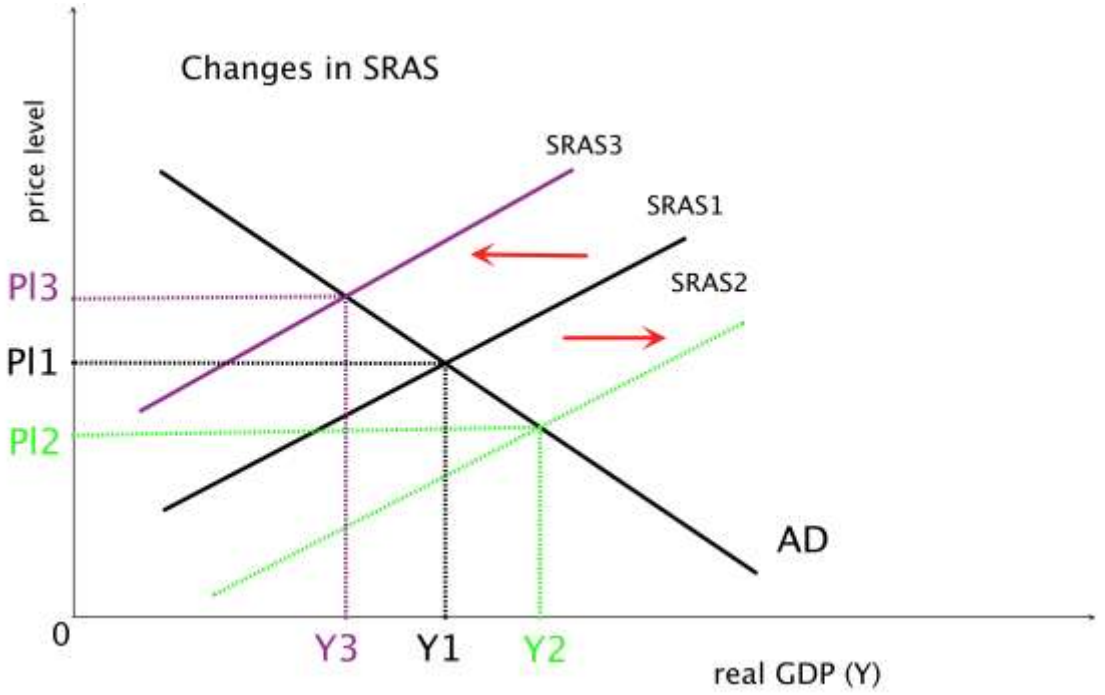
Changes in SR Equilibrium



Changes in AD

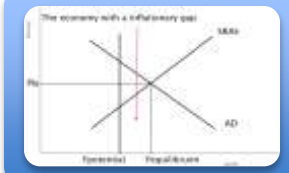


Changes in SRAS

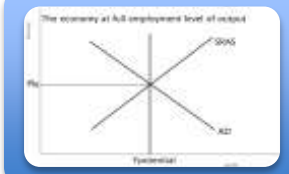


Economic Scenarios

An economy with a deflationary (recessionary) gap

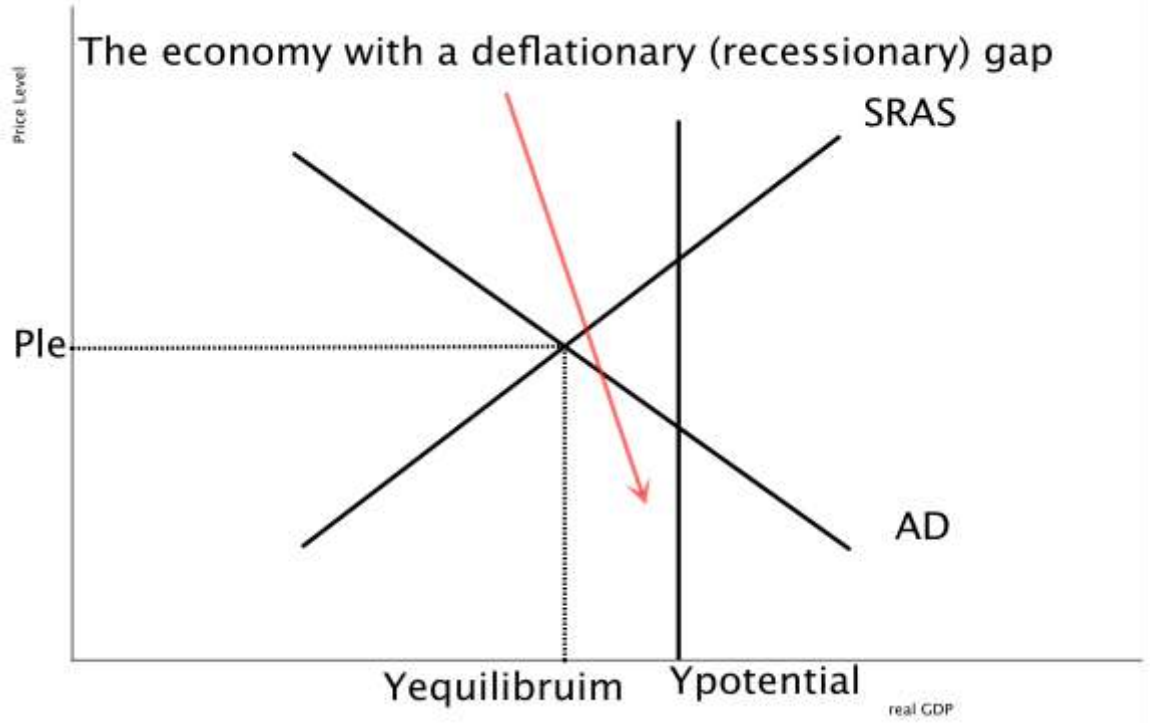


An economy with a inflationary gap



An economy at a full level of output

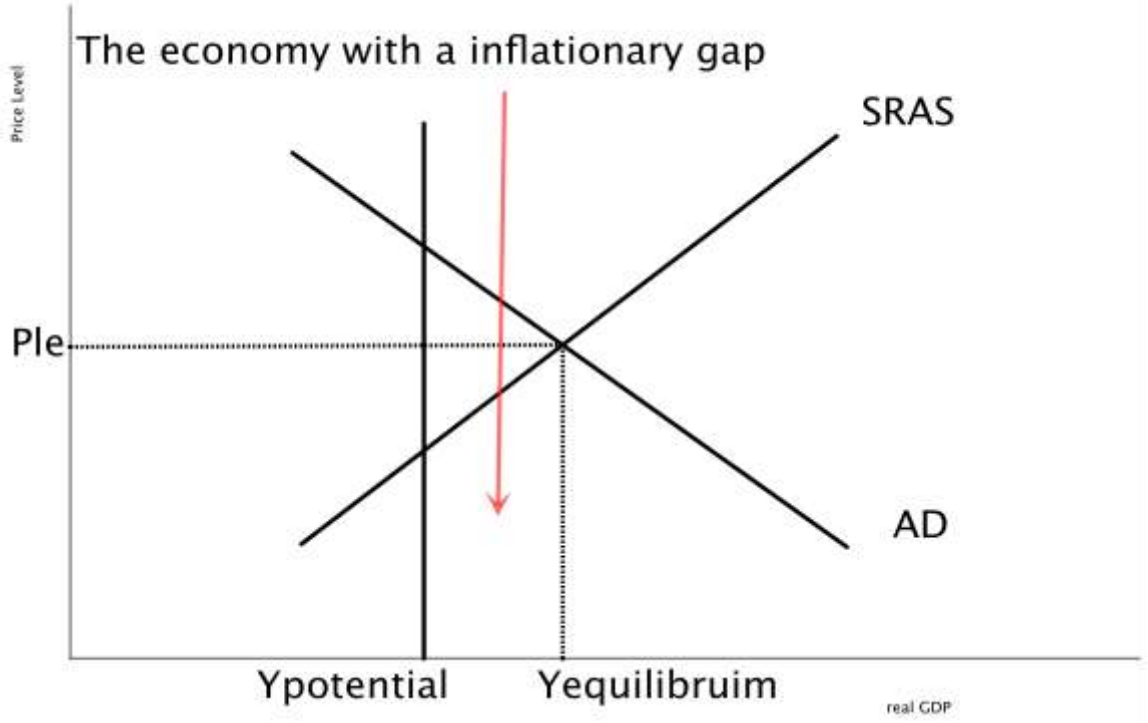
Deflationary (recessionary) gap



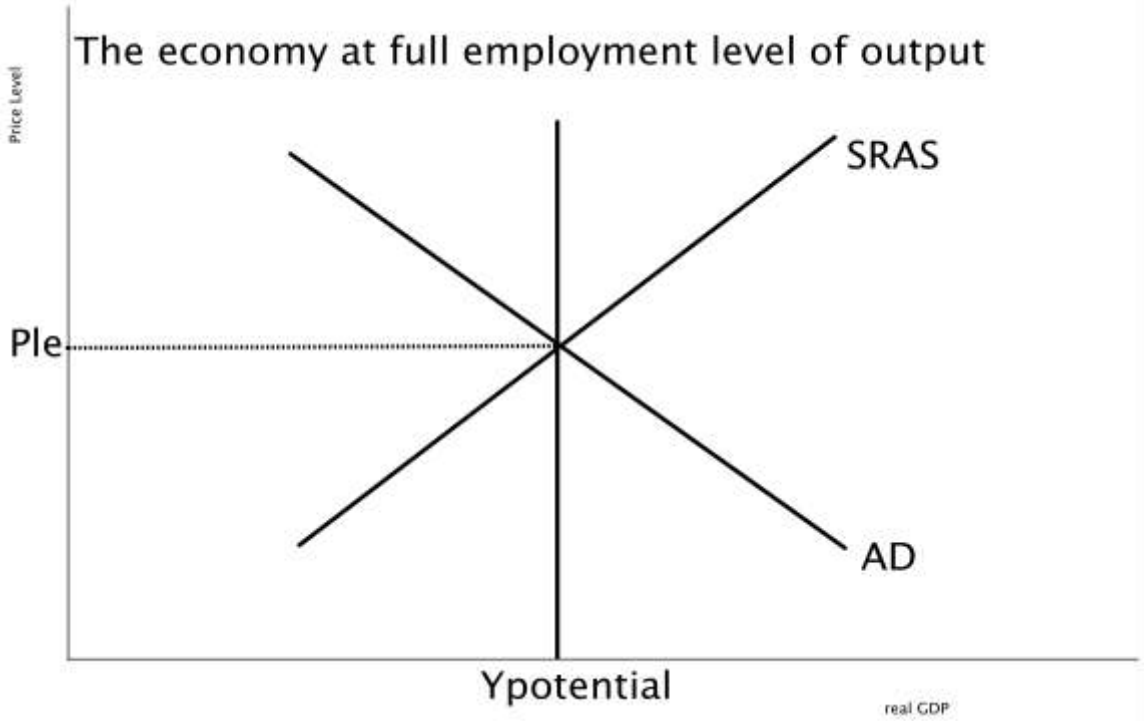
Recession

- A recession is when the economy experiences two consecutive quarters of falling GDP.

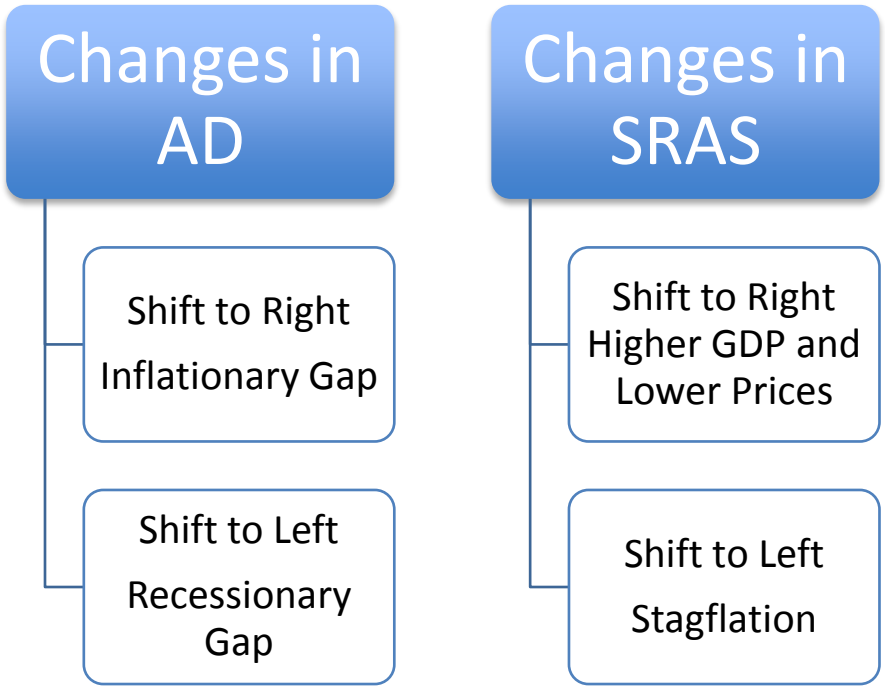
Inflationary gap



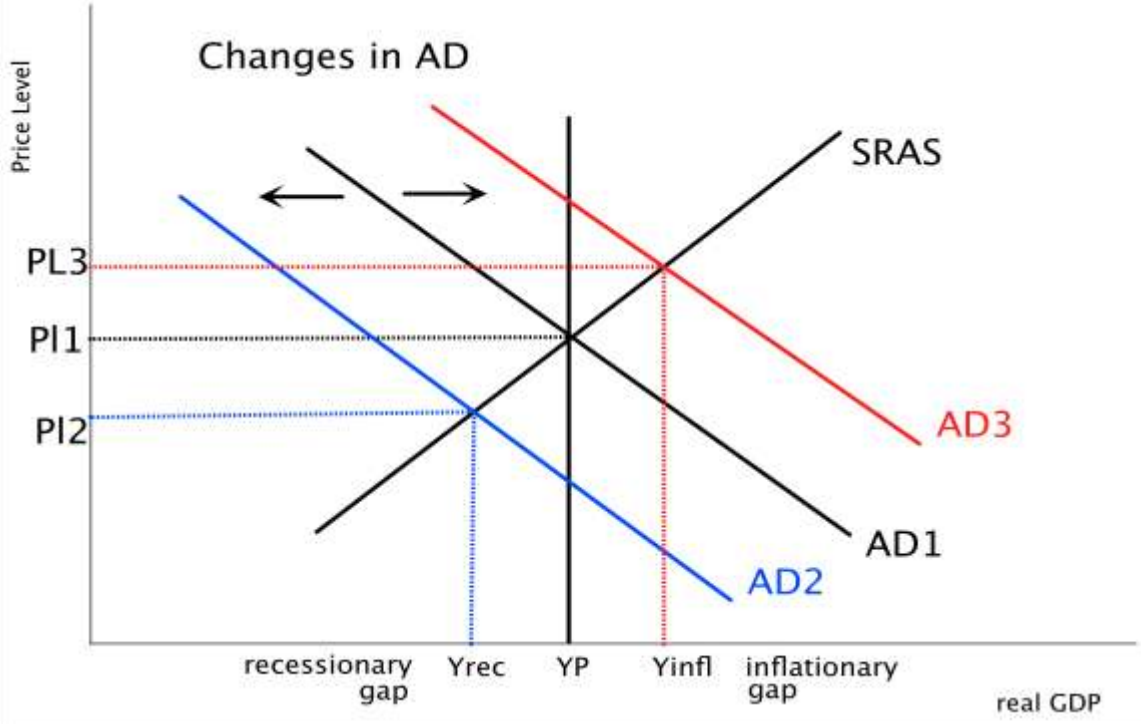
Full employment level of output



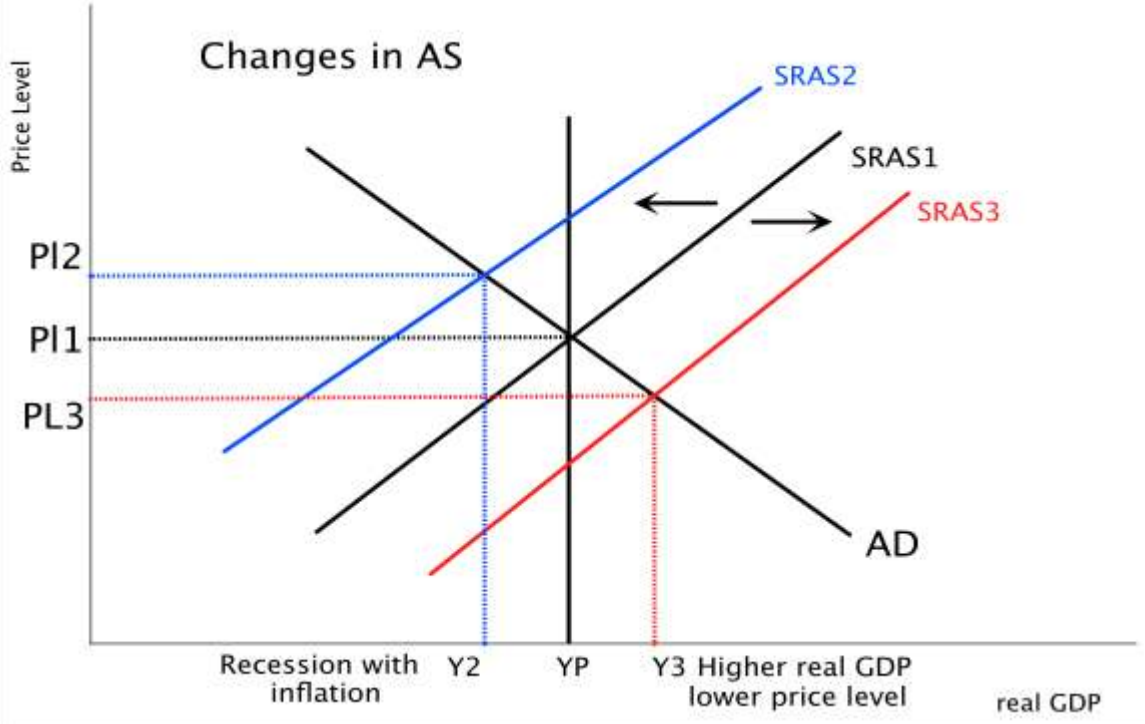
Causes of Business Cycle



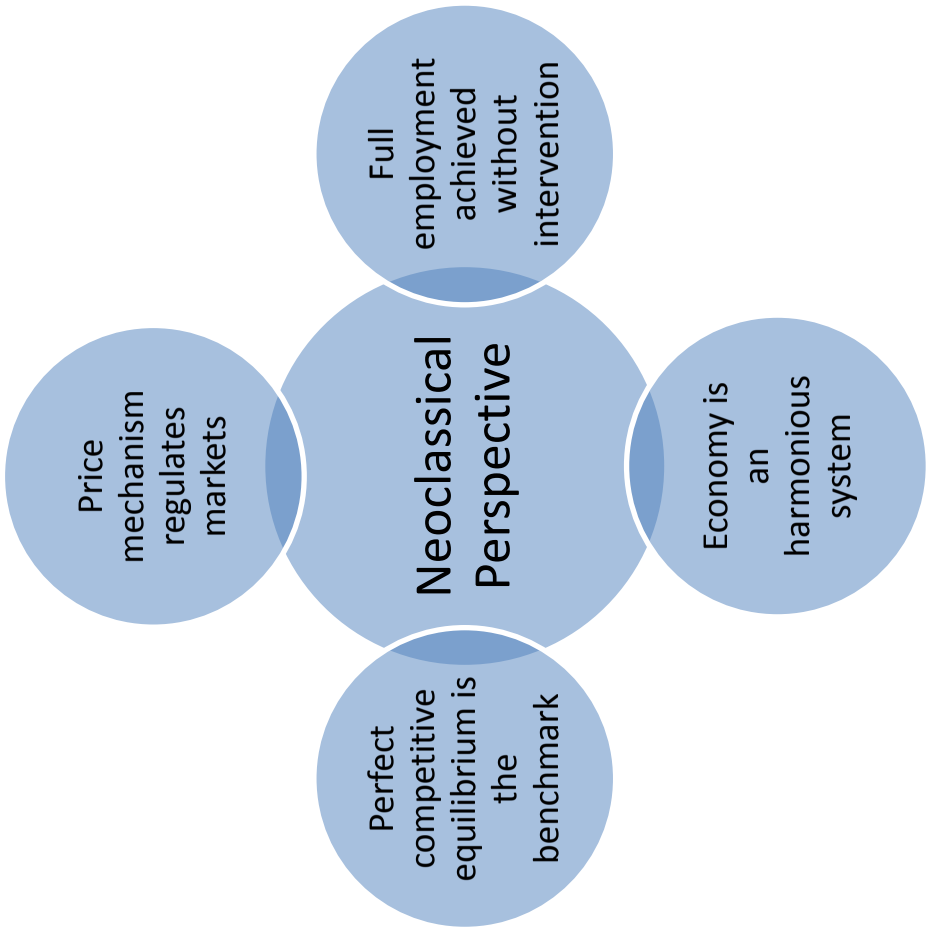
Changes in AD



Changes in AS



What is the neoclassical perspective?



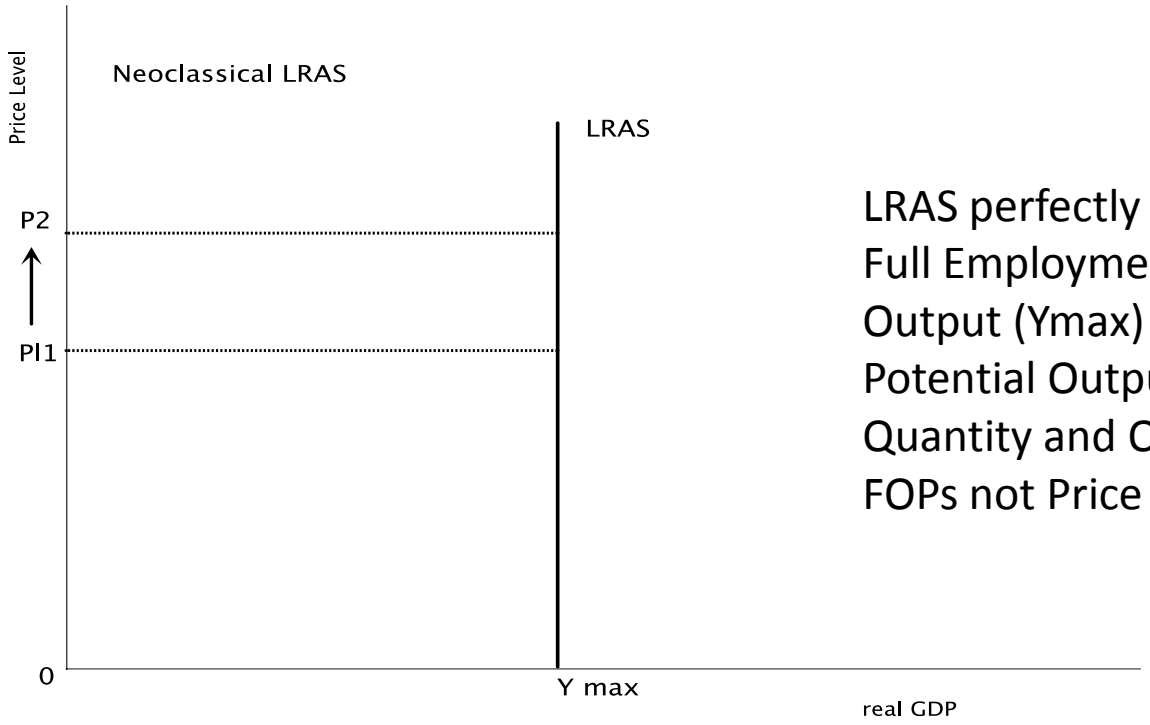
The Neoclassical LRAS

In the Long Run all resources including wages change to match changes in the price level

LRAS is vertical (perfectly inelastic) at potential GDP or full employment level of GDP

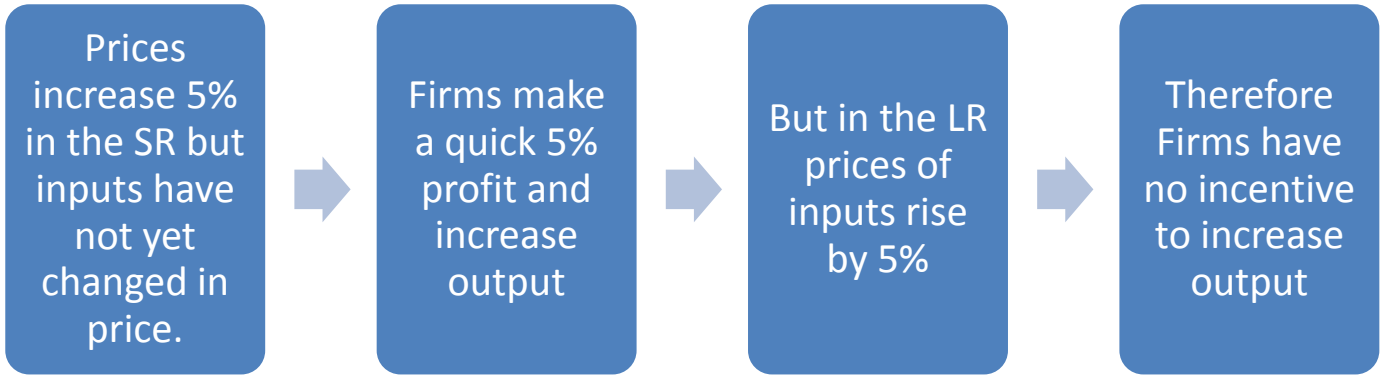
Potential GDP is independent of the price level

Neoclassical (Free Market) LRAS



LRAS perfectly inelastic at Full Employment Level of Output (Ymax)
Potential Output = Quantity and Quality of FOPs not Price

Why is the LRAS vertical?



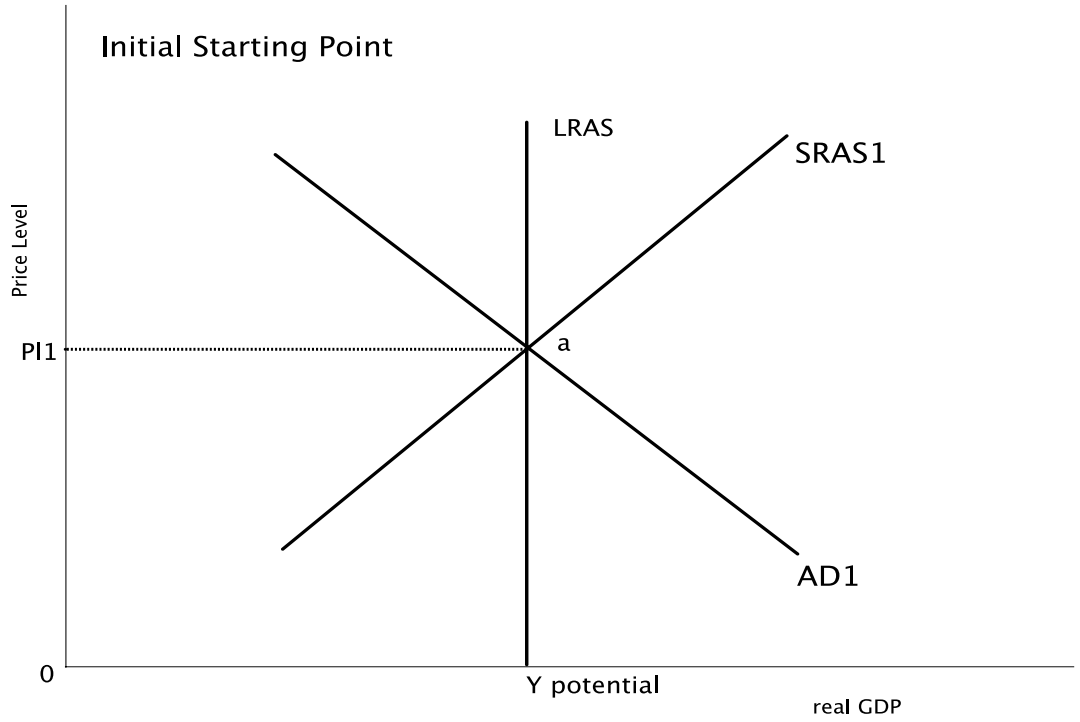
Implications of the neoclassical LRAS?

In time any inflationary or recessionary gap will disappear and the economy will move to full employment

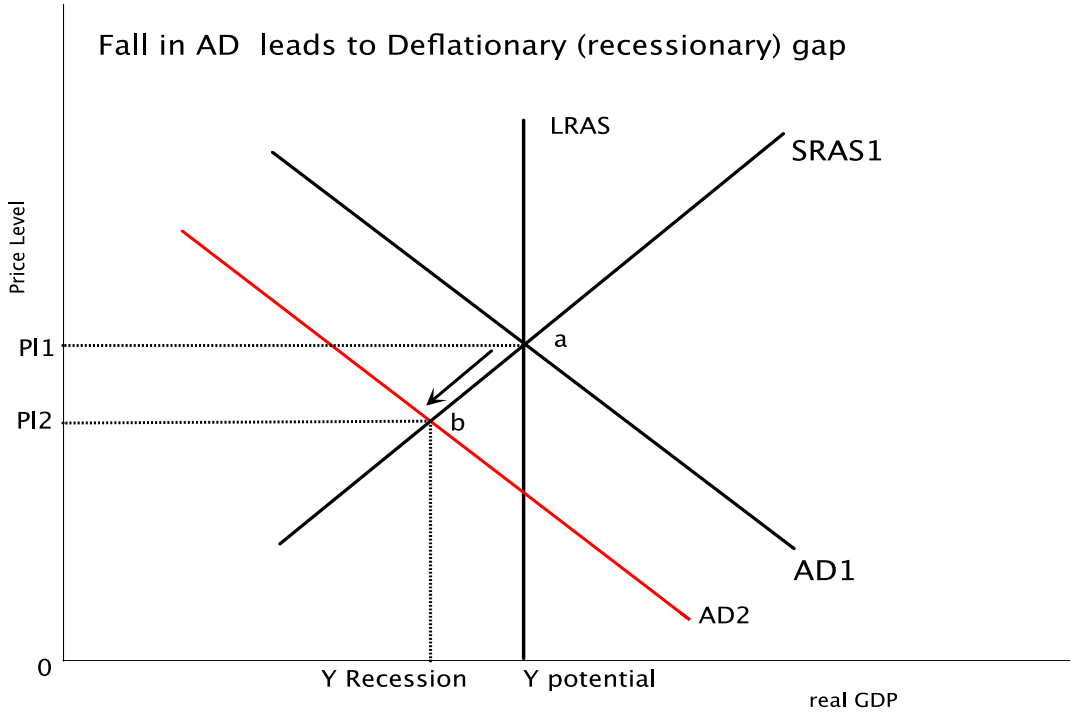
Governments do not need to intervene in the market

In the LR increases in AD will not impact real GDP but only bring about inflation

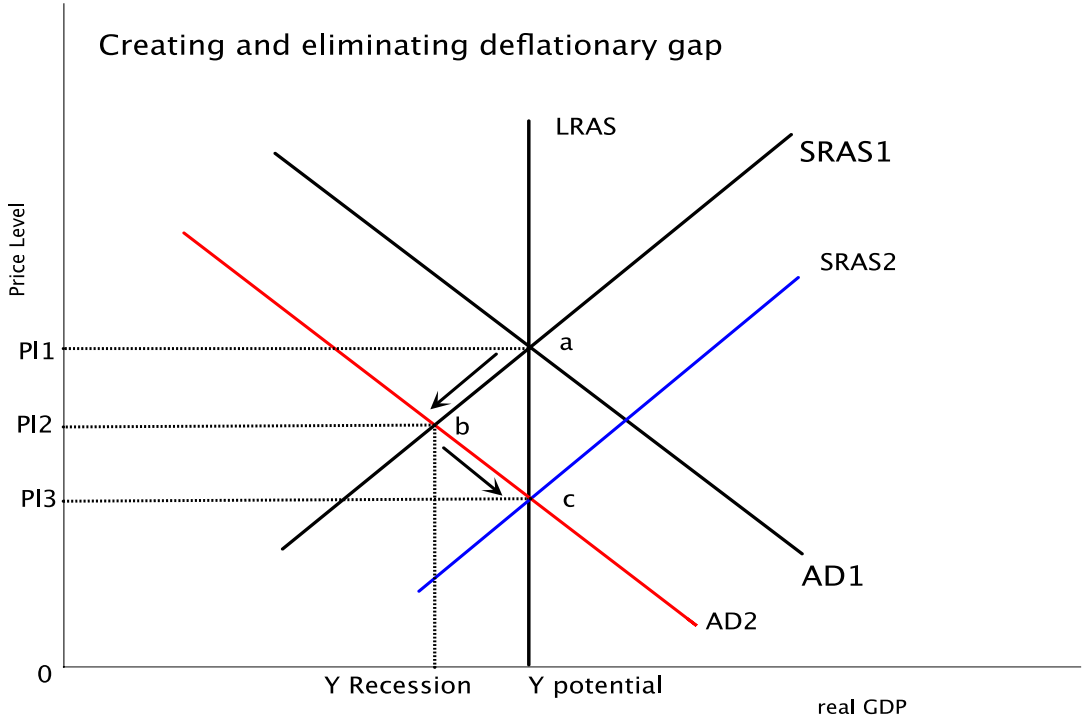
Long-run equilibrium



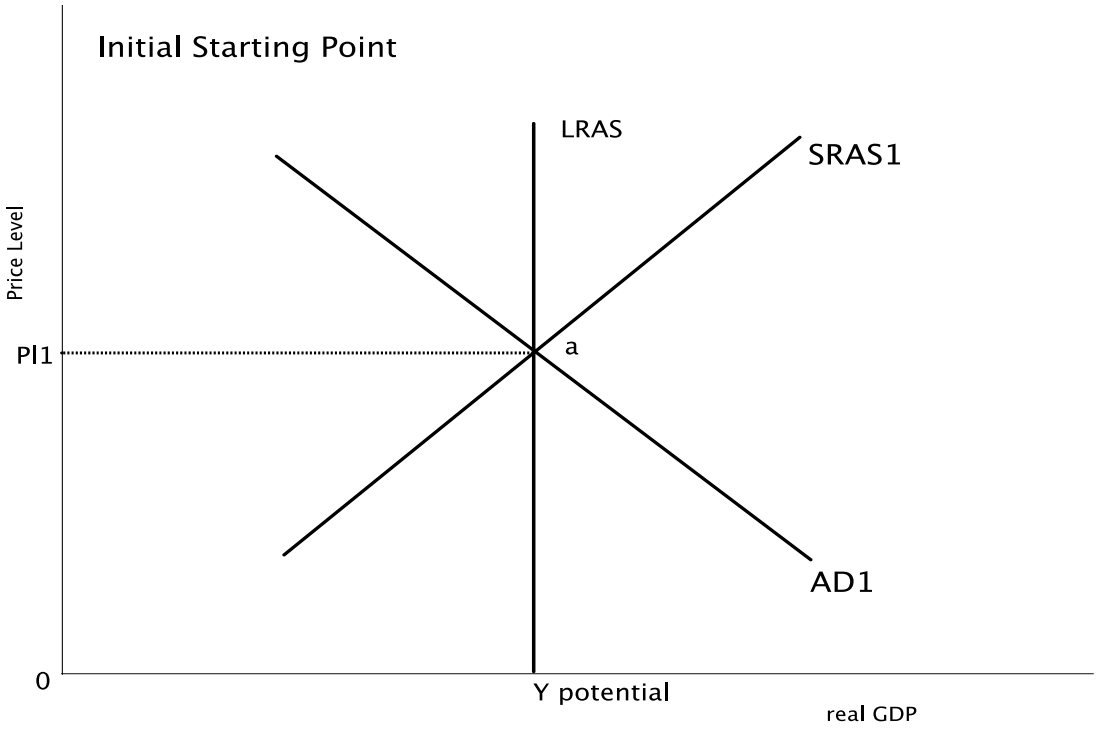
Long-run equilibrium and Decline in AD



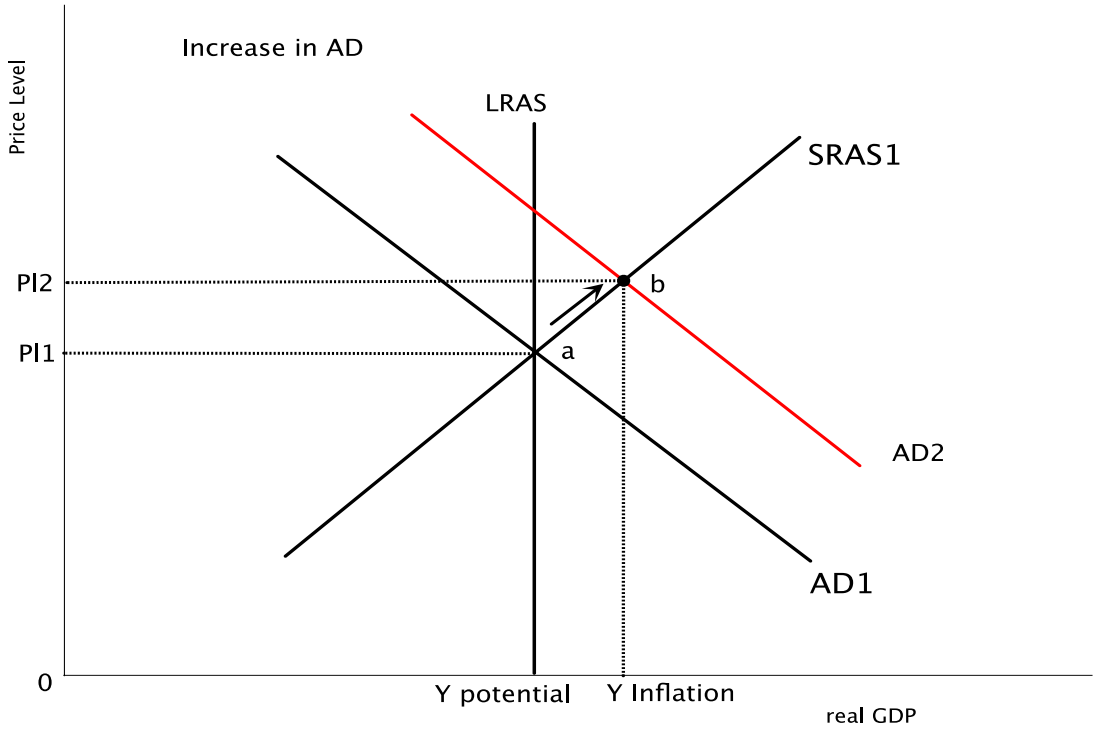
Return to Long-run equilibrium



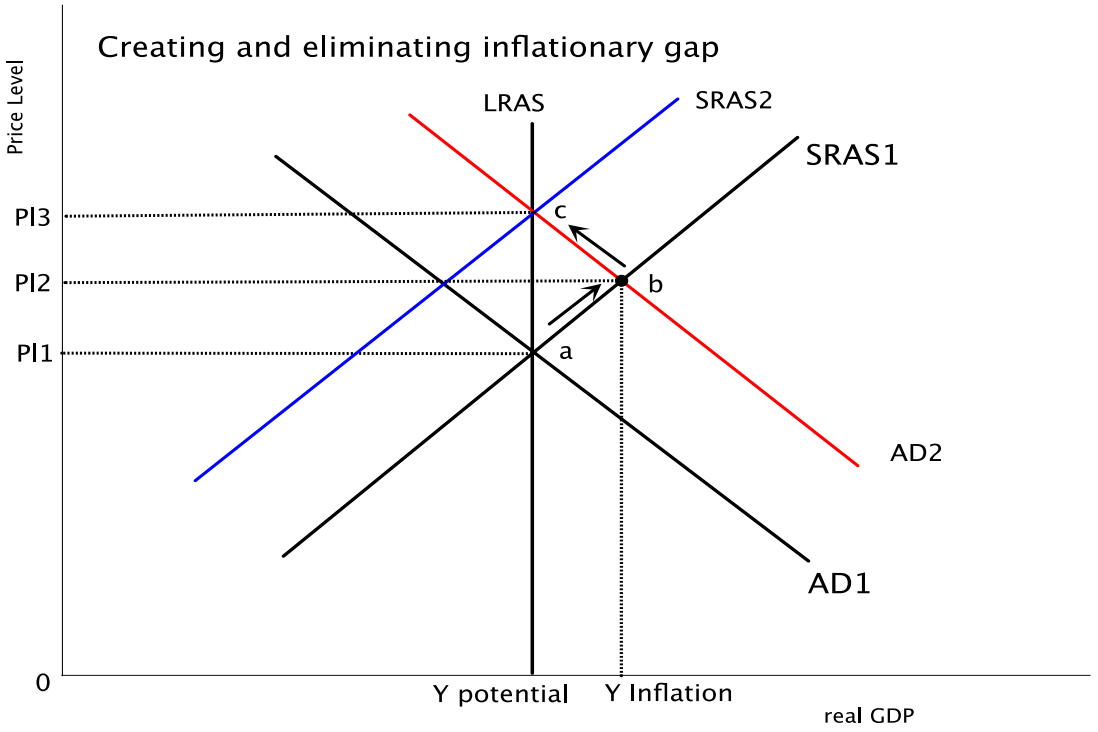
Long-run equilibrium



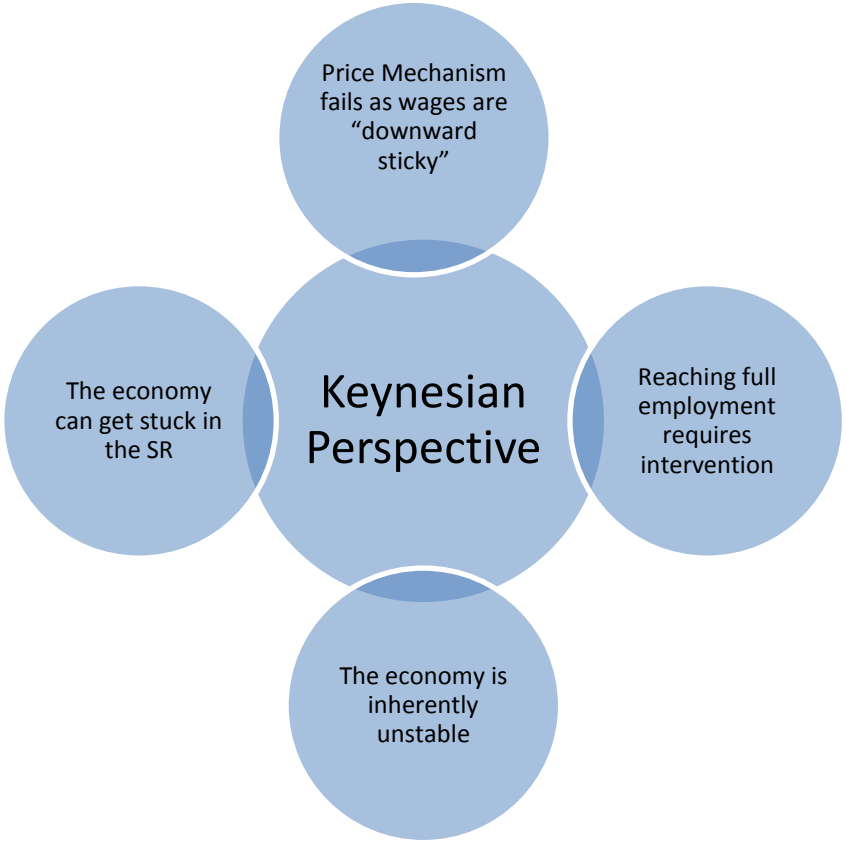
Long-run equilibrium and Increase in AD



Return to Long-run equilibrium



What is the Keynesian perspective?



The Keynesian SR/LRAS?

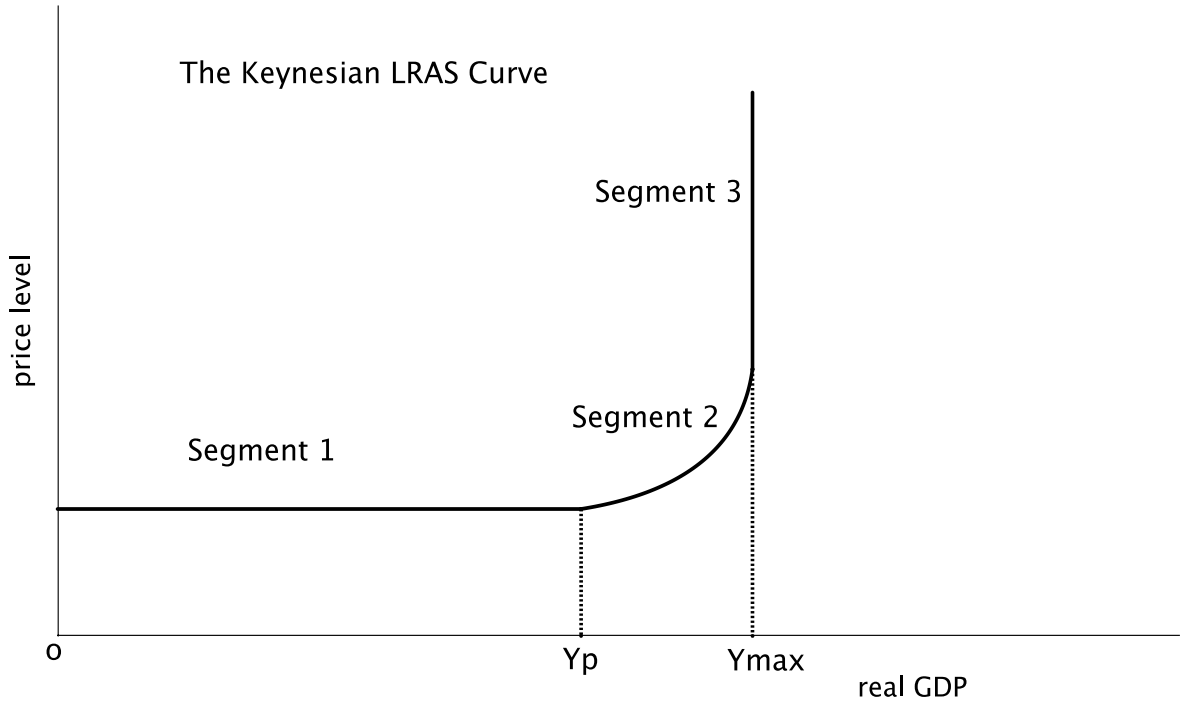
Wages and prices are unlikely to fall during periods of recession.

Wages and prices are "downward sticky".

Sticky prices are explained through the actions of oligopolies who fear a price rises and unions who resist wage cuts.

Potential GDP is dependent of the price level because inflexibility of wages and prices stops the economy moving into the LP.

Keynesian SR/LRAS



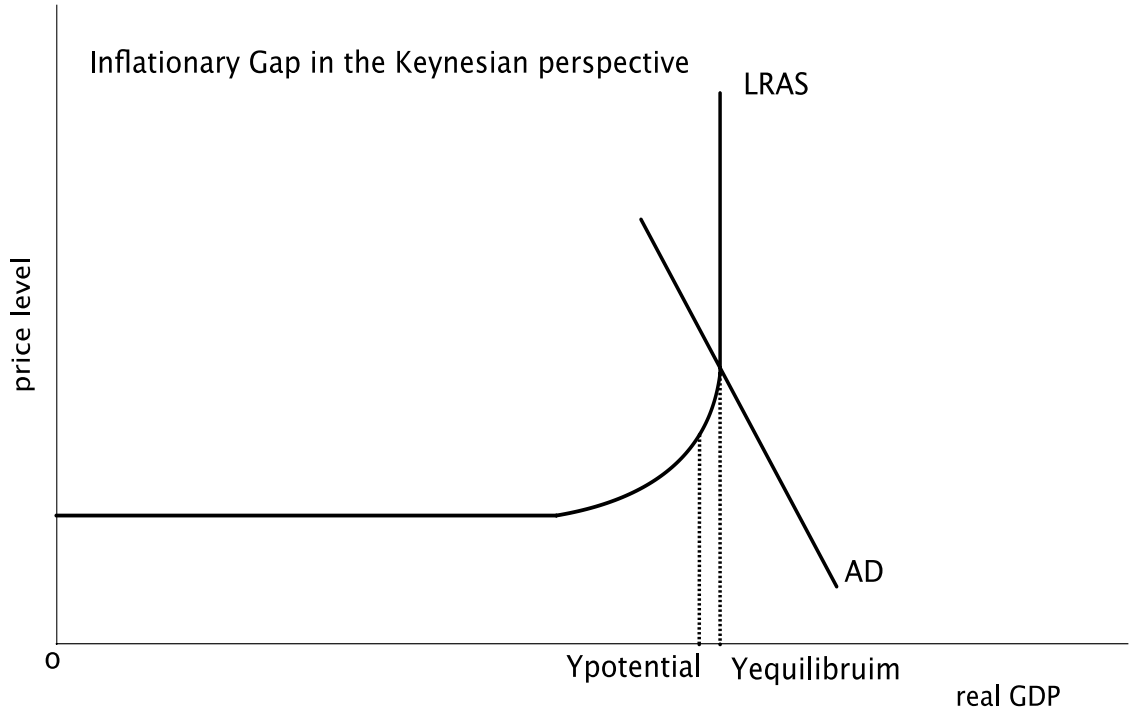
Keynesian SR/LRAS

- Keynes argued that as there is nothing inherent in the economy to move the SR into the LR, then SRAS = LRAS

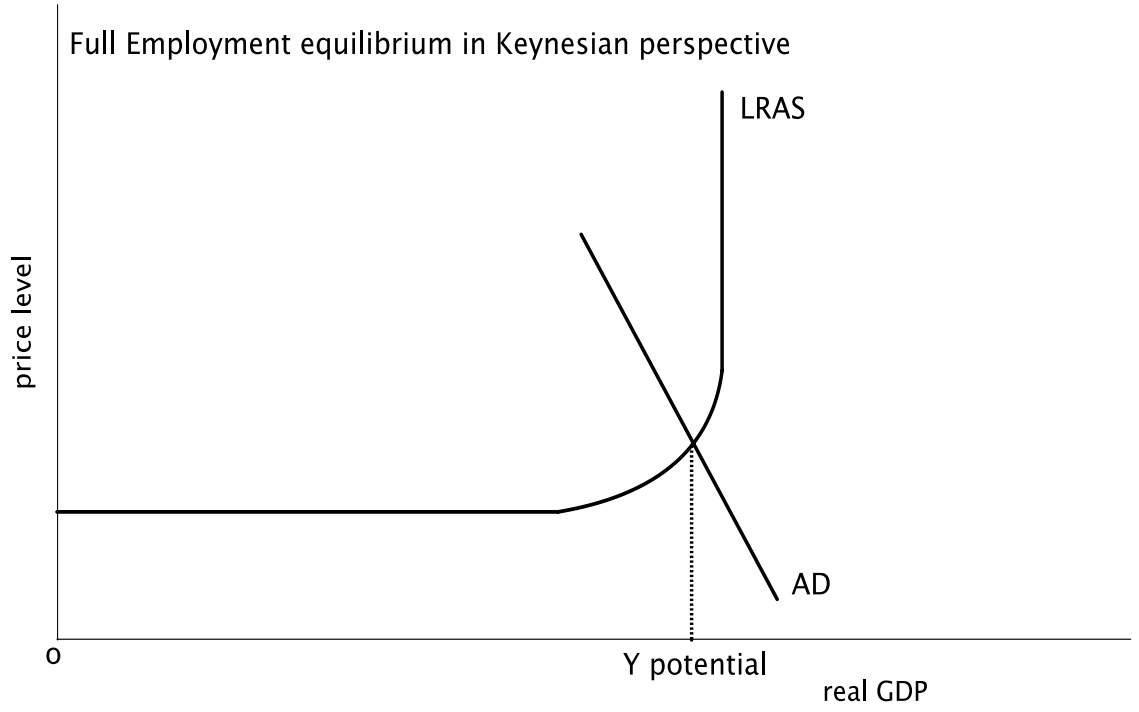
NB

In diagrams taking a Keynesian you may see the AS curve labeled Keynesian AS or simply LRAS as long as the diagram's title makes clear which perspective is being adopted

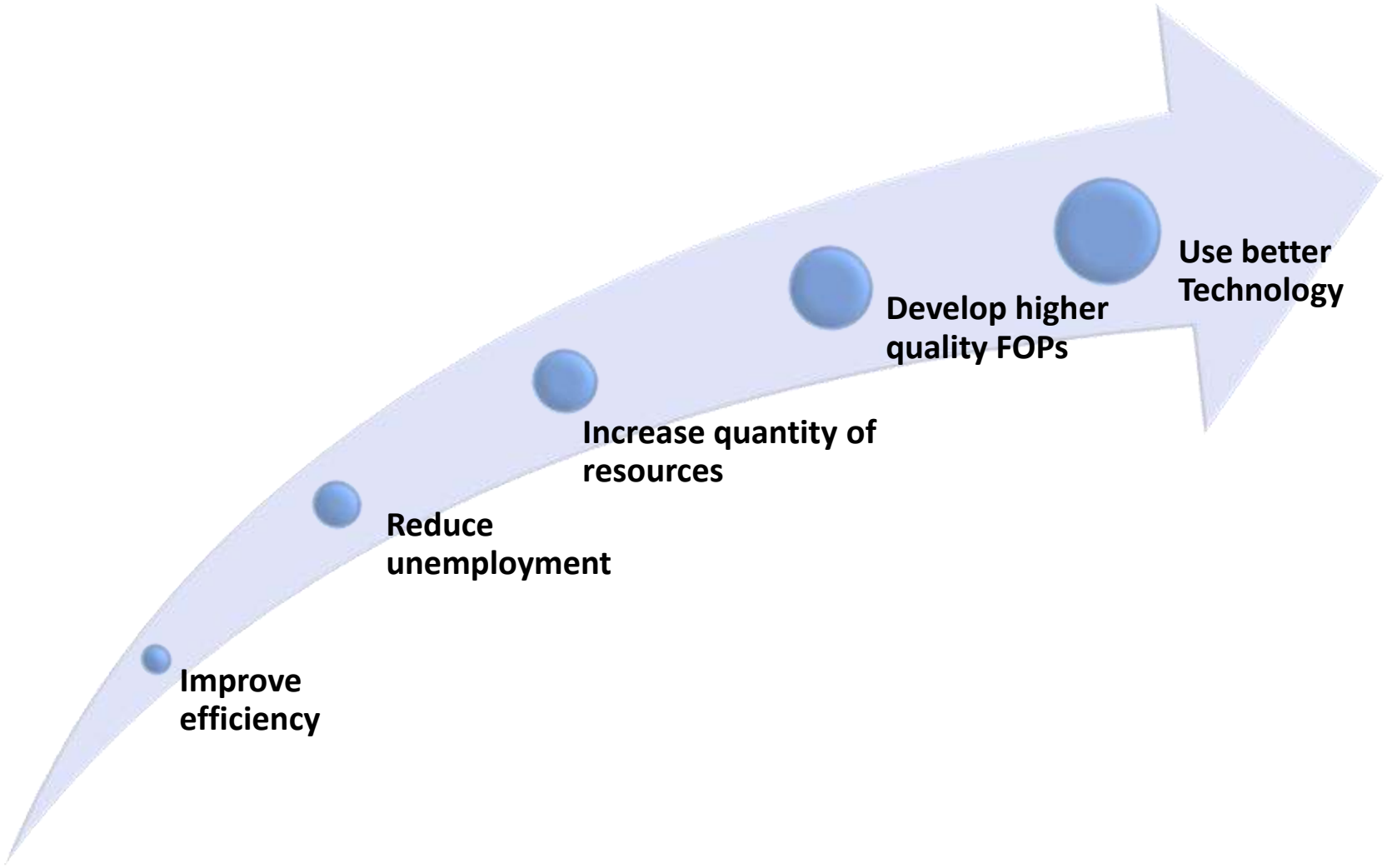
Inflationary Gap in the Keynesian Perspective



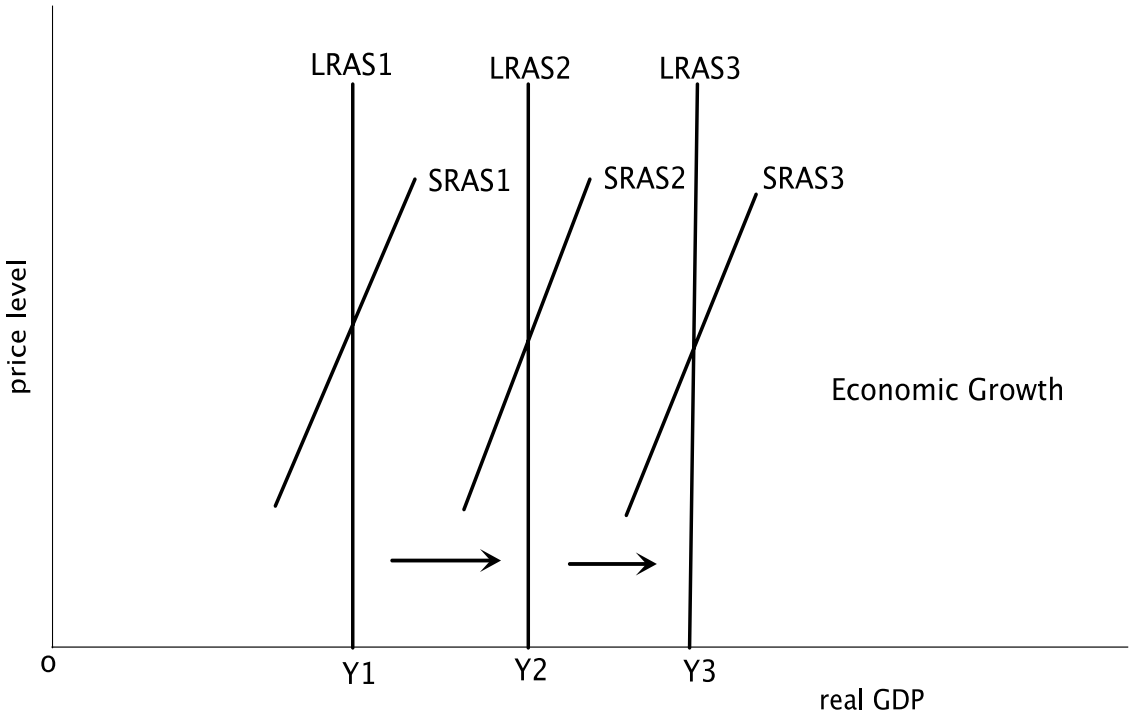
Full Employment Equilibrium in the Keynesian Perspective



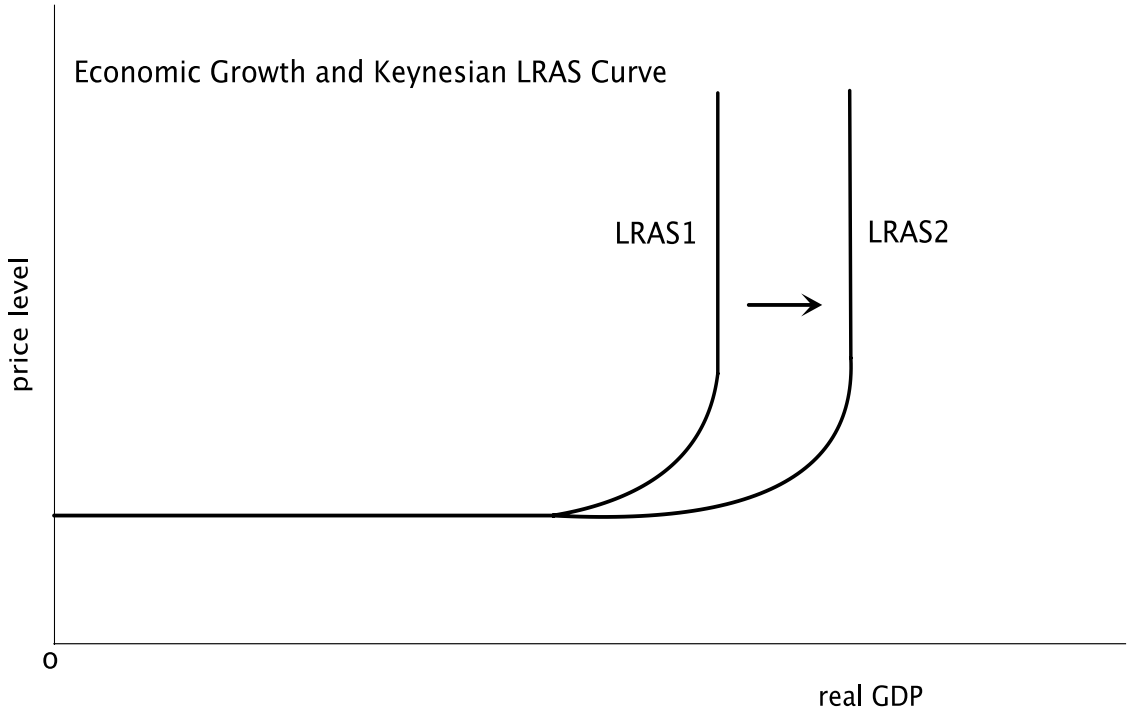
Economic Growth: Improved Quantity & Quality of FOPs



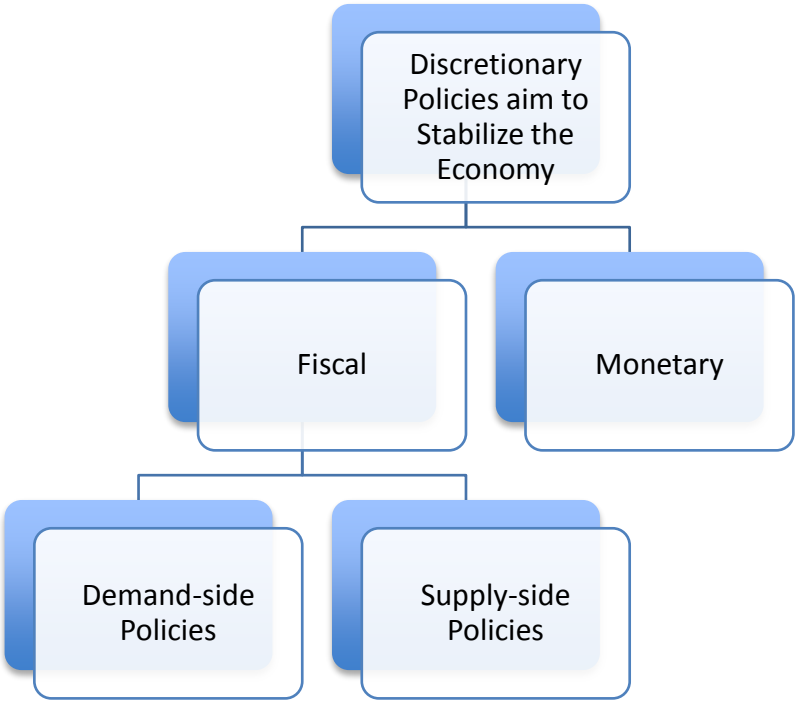
Economic Growth:
Neoclassical Perspective



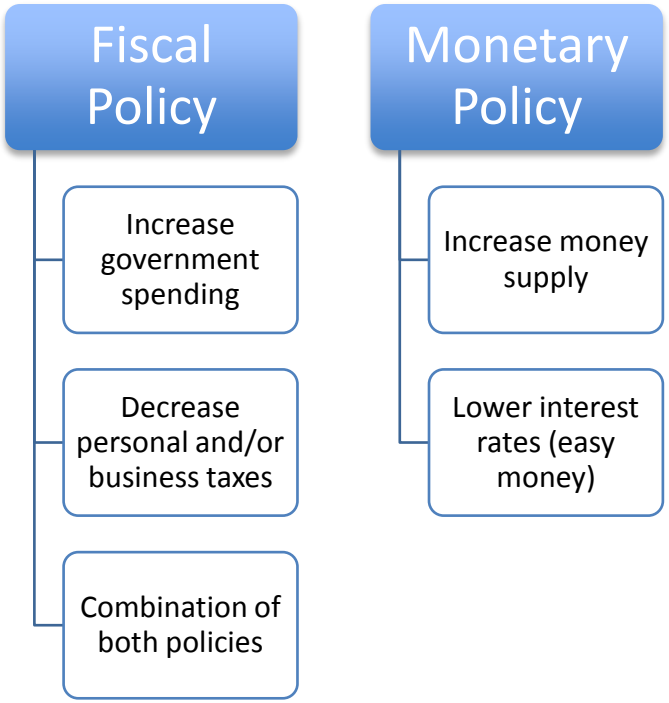
Economic Growth: Keynesian Perspective



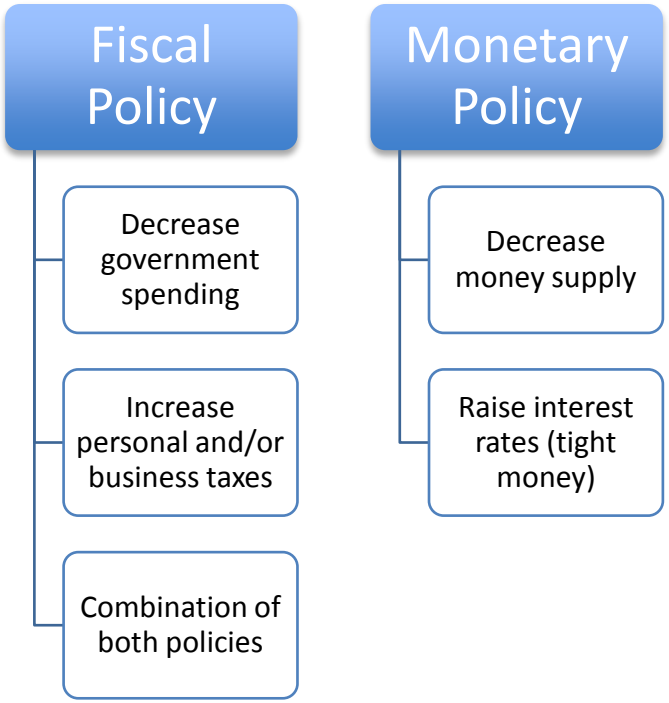
Policy Alternatives to Manage the Economy



Expansionary Policies (in recession)



Contractionary Policies (in inflation)



Strengths of Fiscal Policy

- Combats rapid and escalating inflation
- Opportunity to use spending to redistribute income
- Opportunity to use spending to provide public goods and services
- Combats a deep recession

Weaknesses of Fiscal Policy

- Time lags in recognizing the problem, determining and implementing policies
- Inadequate information
- Political constraints
- Crowding-out i.e. Government borrowing raises interest rates
- Tax cuts may be ineffective
- Unable to fine tune economy

Strengths of Monetary Policy

Quick implementation
No political constraints
Combats rapid and escalating inflation

No political constraints as Central Banks are independent bodies

No crowding-out

Better able to fine tune the economy

Weaknesses of Monetary Policy

- Time lags
- Inadequate information
- Possible ineffectiveness in the face of a deep recession

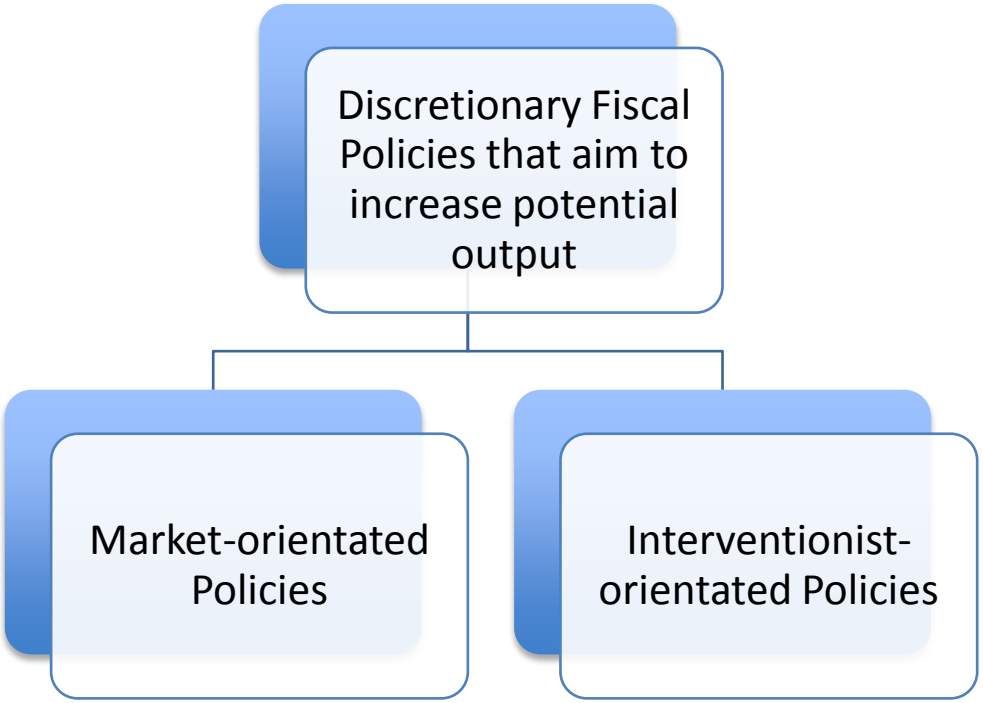
The Neoclassical/Monetarist Challenge

- Argument that discretionary fiscal polices that try to stabilize the economy are so flawed that they actually cause instability

Alternative policies

1. Ensure steady supply of money
2. Ensure price and wage flexibility
3. Focus on supply-side policies to achieve economic growth

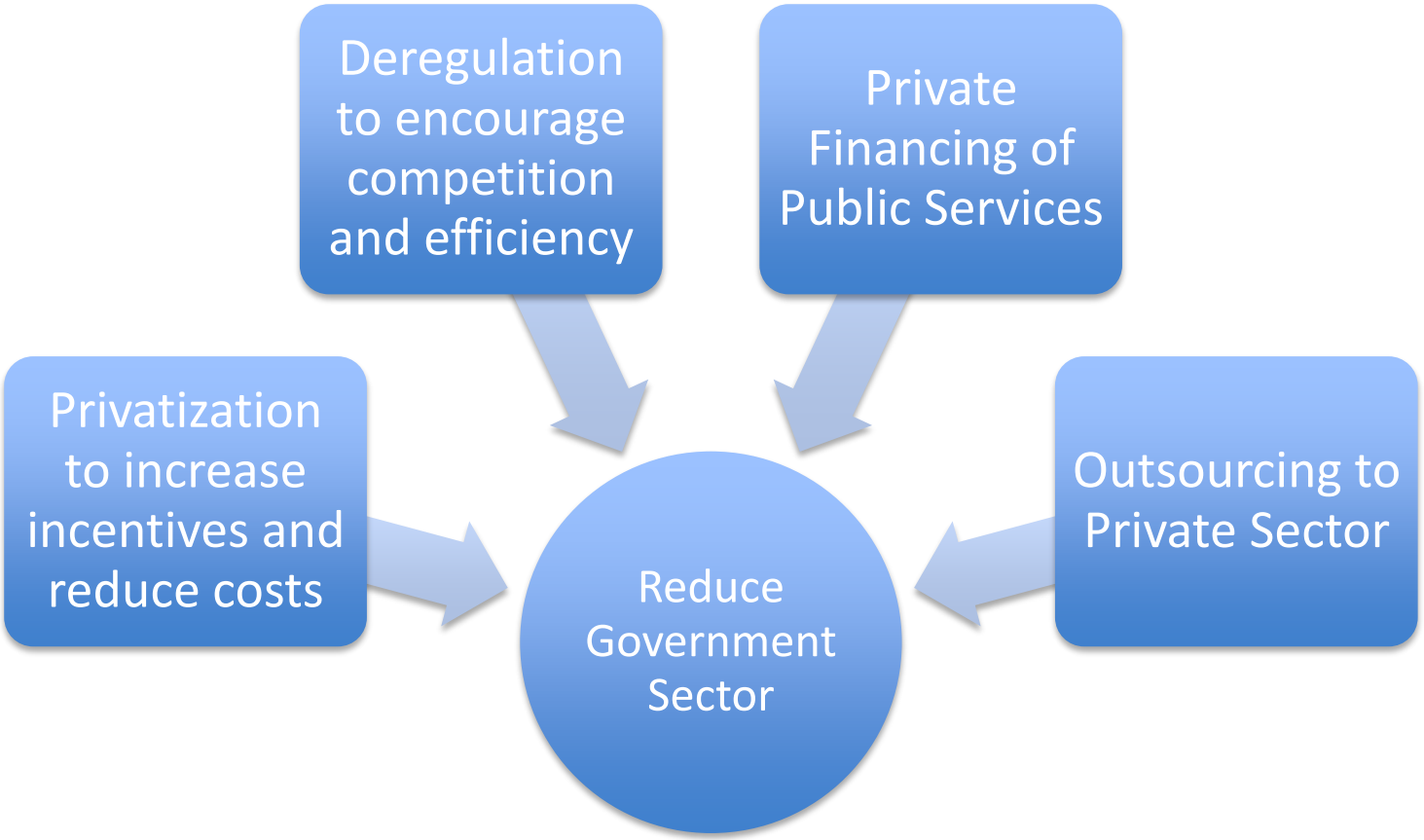
Supply-side Policies



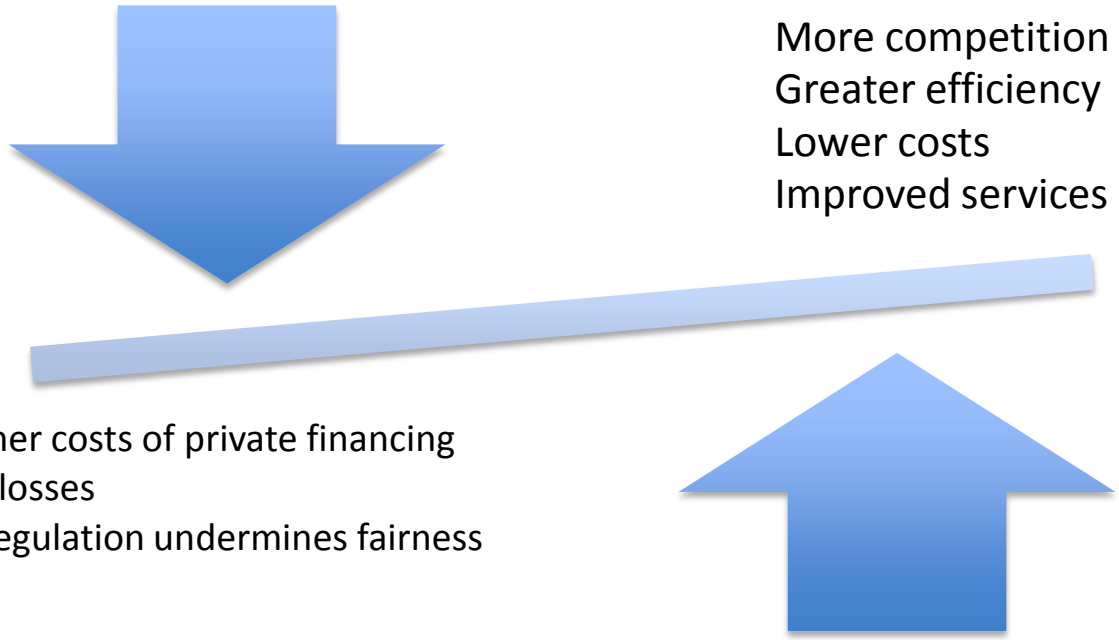
Market-orientated Policies

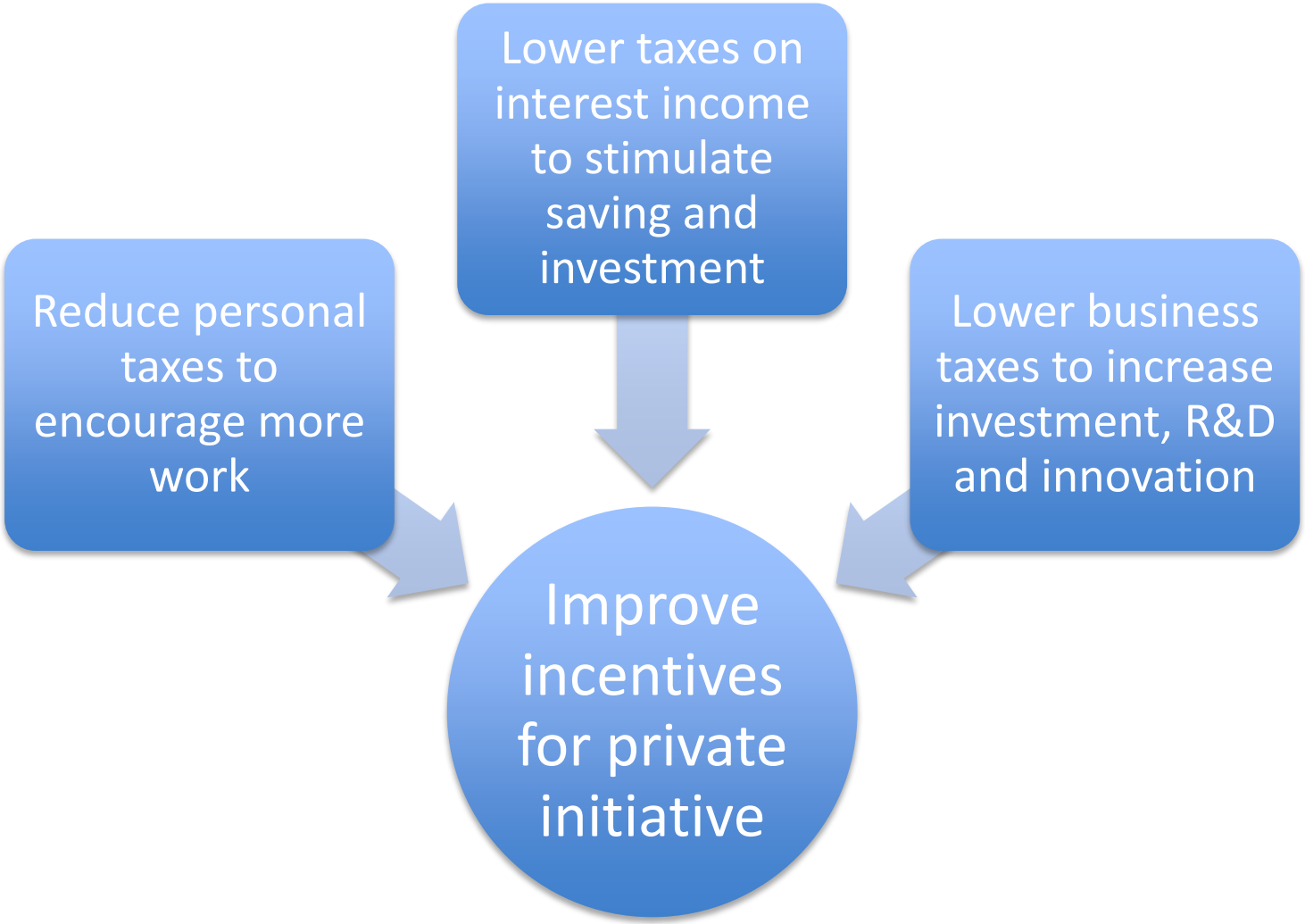
Market-orientated Supply-side Policies: Objectives

- Reduce Government Sector
- Improve incentives for private initiative
- Ensure the Labor market responds to supply and demand
- Free Trade (Discussed in Section 4)

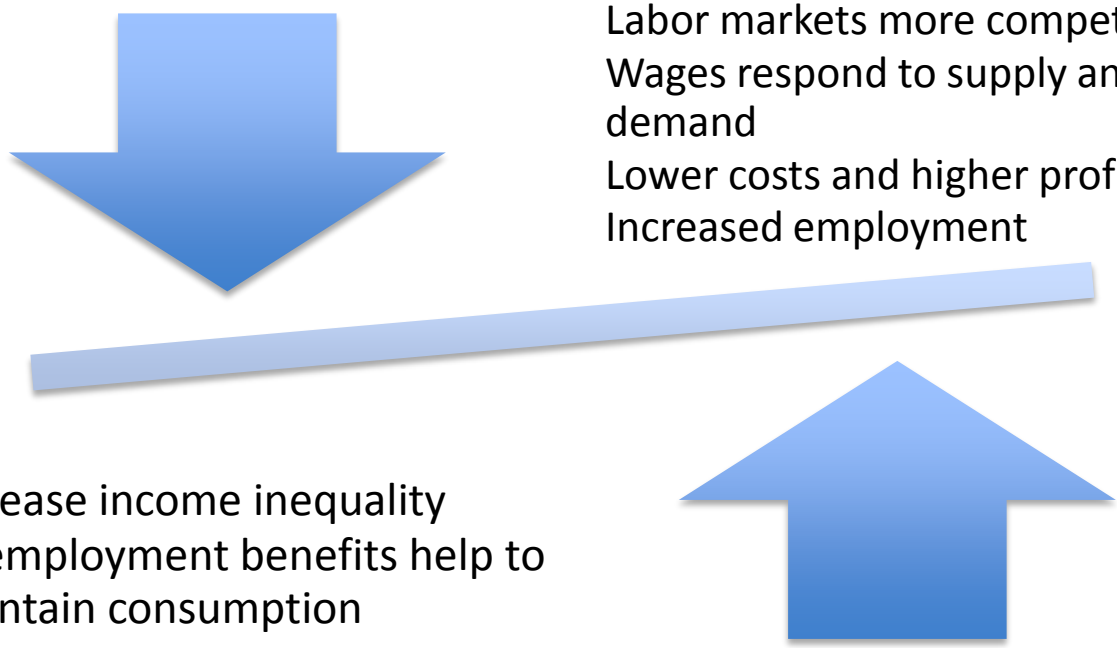

Deregulation to encourage competition and efficiency
Private Financing of Public Services
Privatization to increase incentives and reduce costs
Outsourcing to Private Sector
Reduce Government Sector

Reduce Government Sector: Pros and Cons



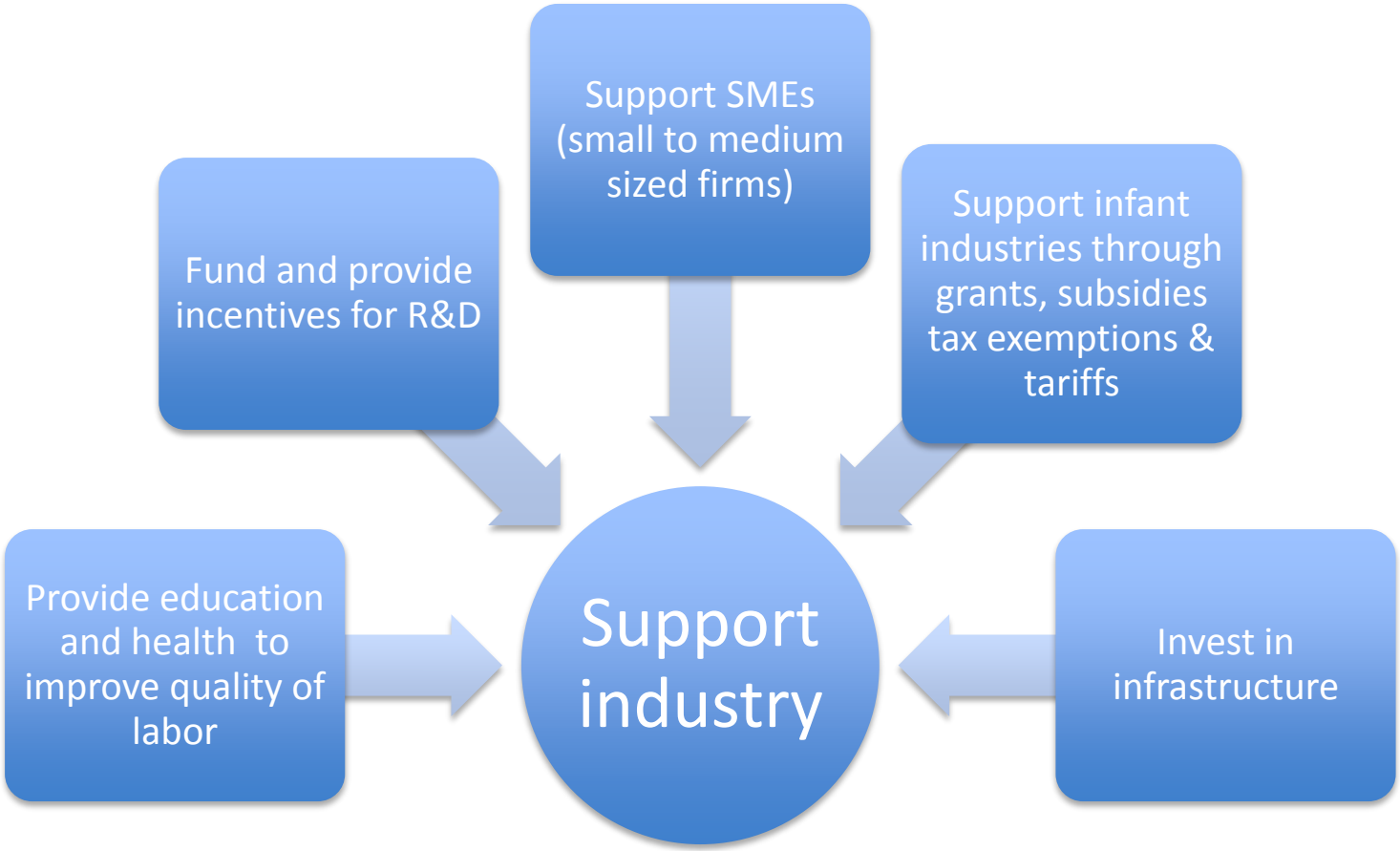

Lower taxes on interest income to stimulate saving and investment
Reduce personal taxes to encourage more work
Lower business taxes to increase investment, R&D and innovation
Improve incentives for private initiative

Make labor more responsive to supply and demand : Pros and Cons

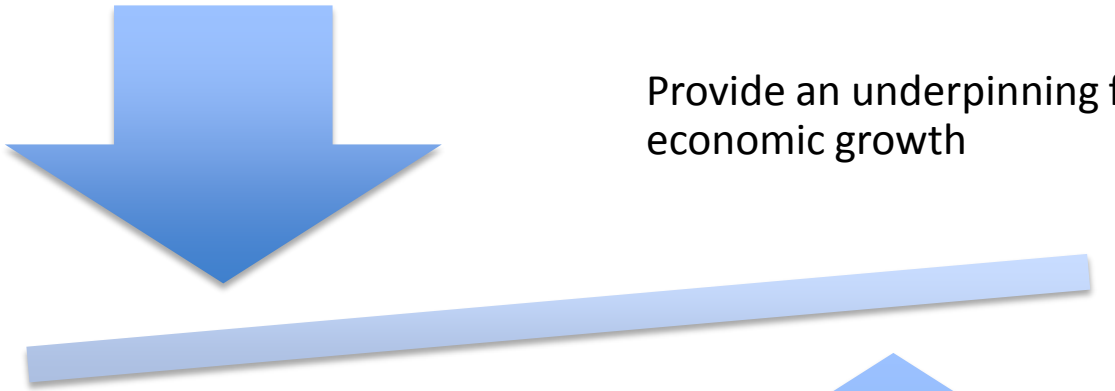


Labor markets more competitive
Wages respond to supply and demand
Lower costs and higher profits
Increased employment

Increase income inequality
Unemployment benefits help to maintain consumption


Support SMEs (small to medium sized firms)
Fund and provide incentives for R&D
Support infant industries through grants, subsidies tax exemptions & tariffs
Provide education and health to improve quality of labor
Support industry
Invest in infrastructure

Government policies to improve industry: Pros and Cons



Provide an underpinning for economic growth

Inefficiencies and resource misallocation

Opportunity costs

Increased taxes

Shifting the SRAS and the LRAS in the AS-AD Model

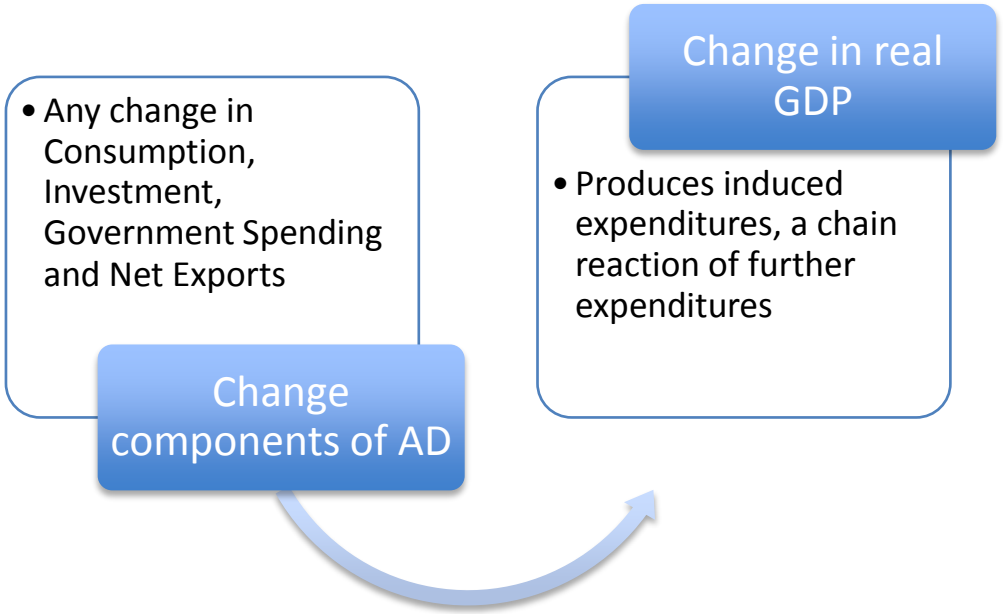
SR

- Focus on the price of labor, inputs and taxation and legislation

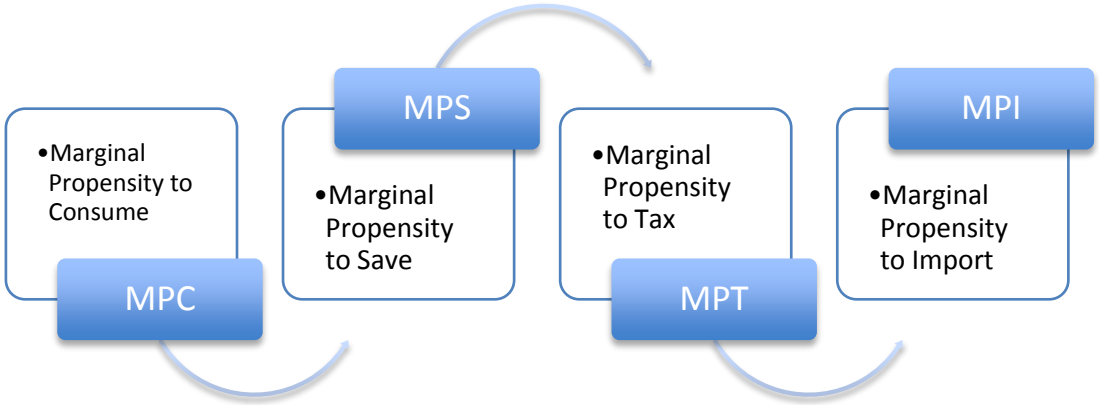
LR

- Focus on new technology, new production methods, quality and/or quantity of FOPs

The Multiplier Effect



Marginal Propensity



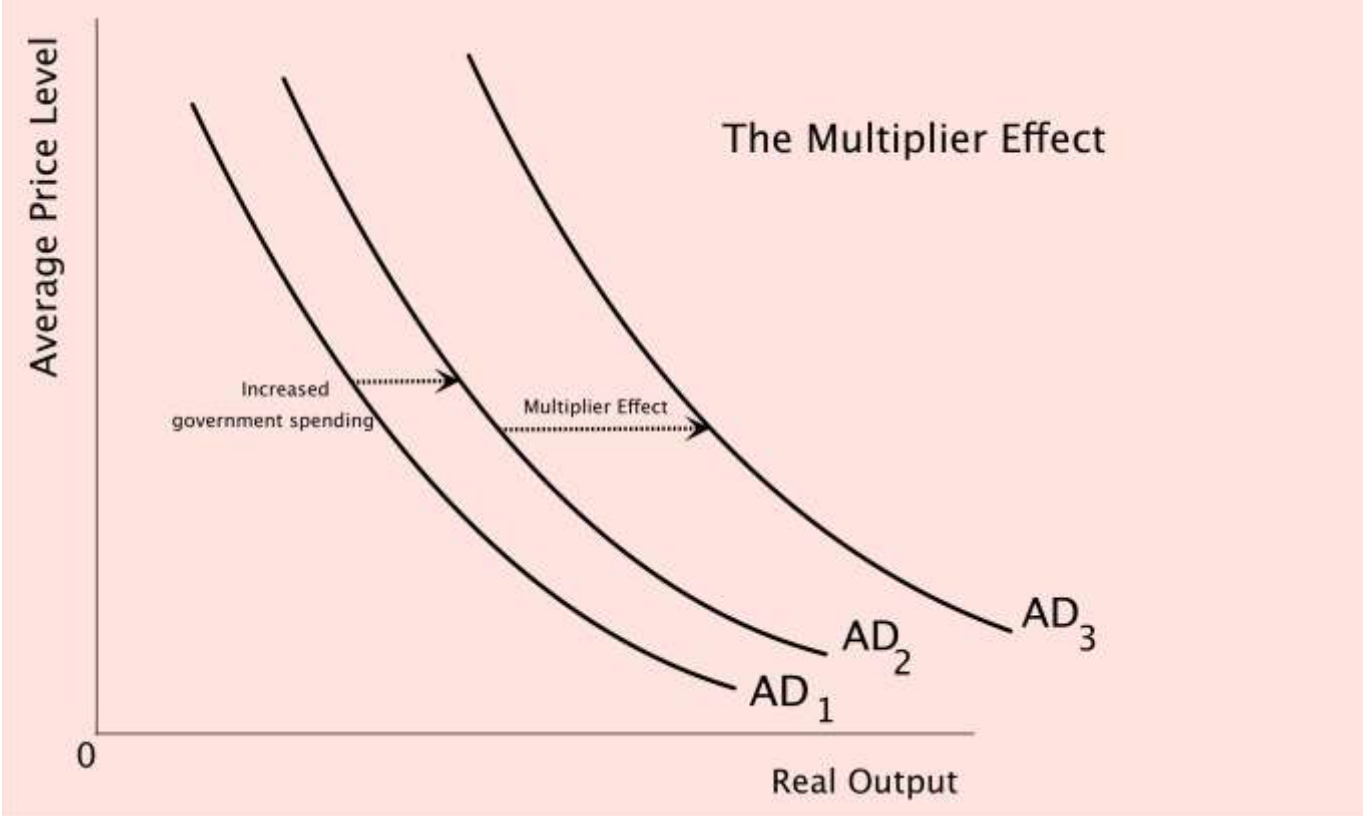
Example of the Multiplier in Effect

Initial Spending by government	$100m
2nd Round of Spending	$60m
3rd Round of Spending	$36m
4th Round of Spending	$21.6m
5th Round of Spending	$12.96m
And So On	
Last Round	$0.01m
Total Spending, including initial spending by government	$249.99m

Assumption 60% of additional income spent on Consumption (MPC = 0.6)

The Multiplier = 1/1-MPC

The Multiplier Effect

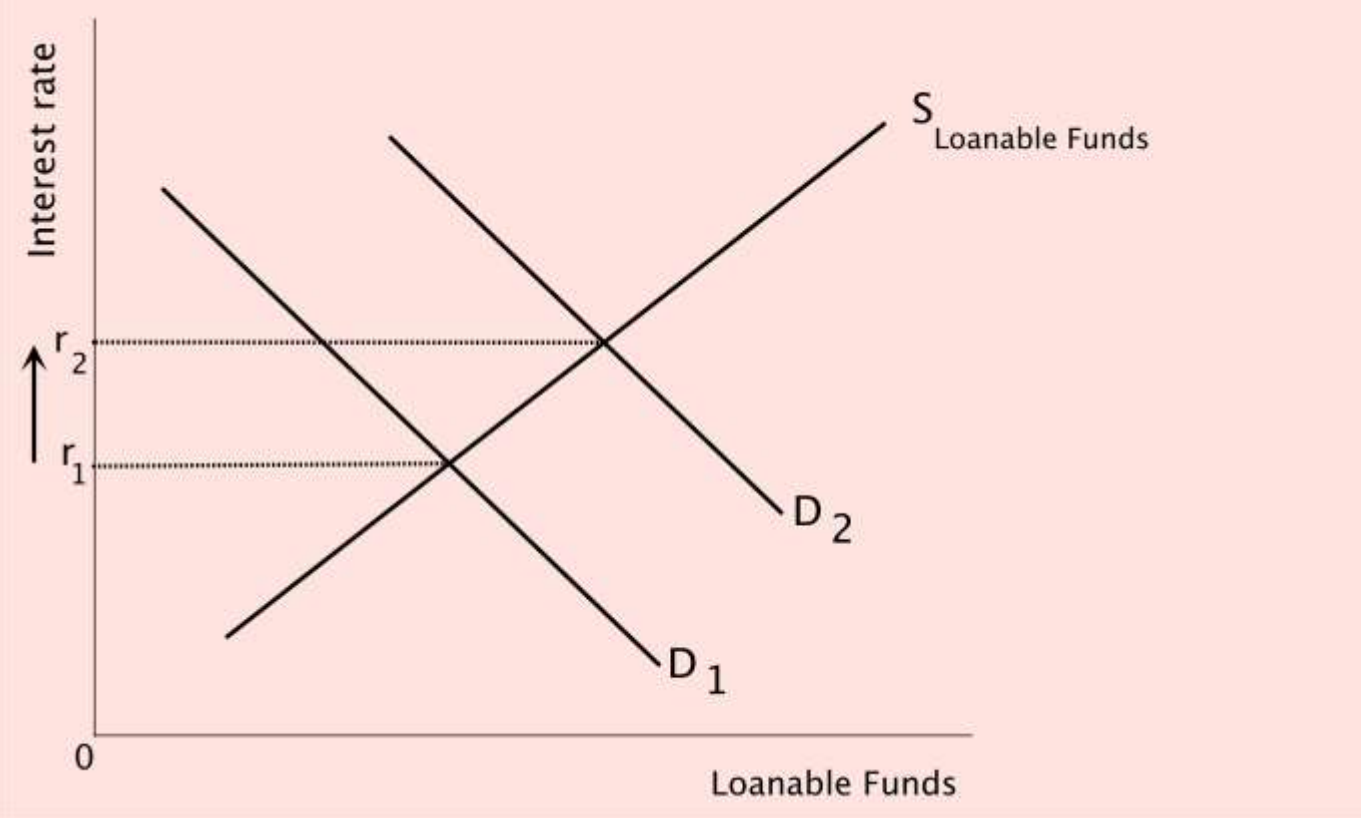


The Accelerator Theory & the Combined multiplier/accelerator effect

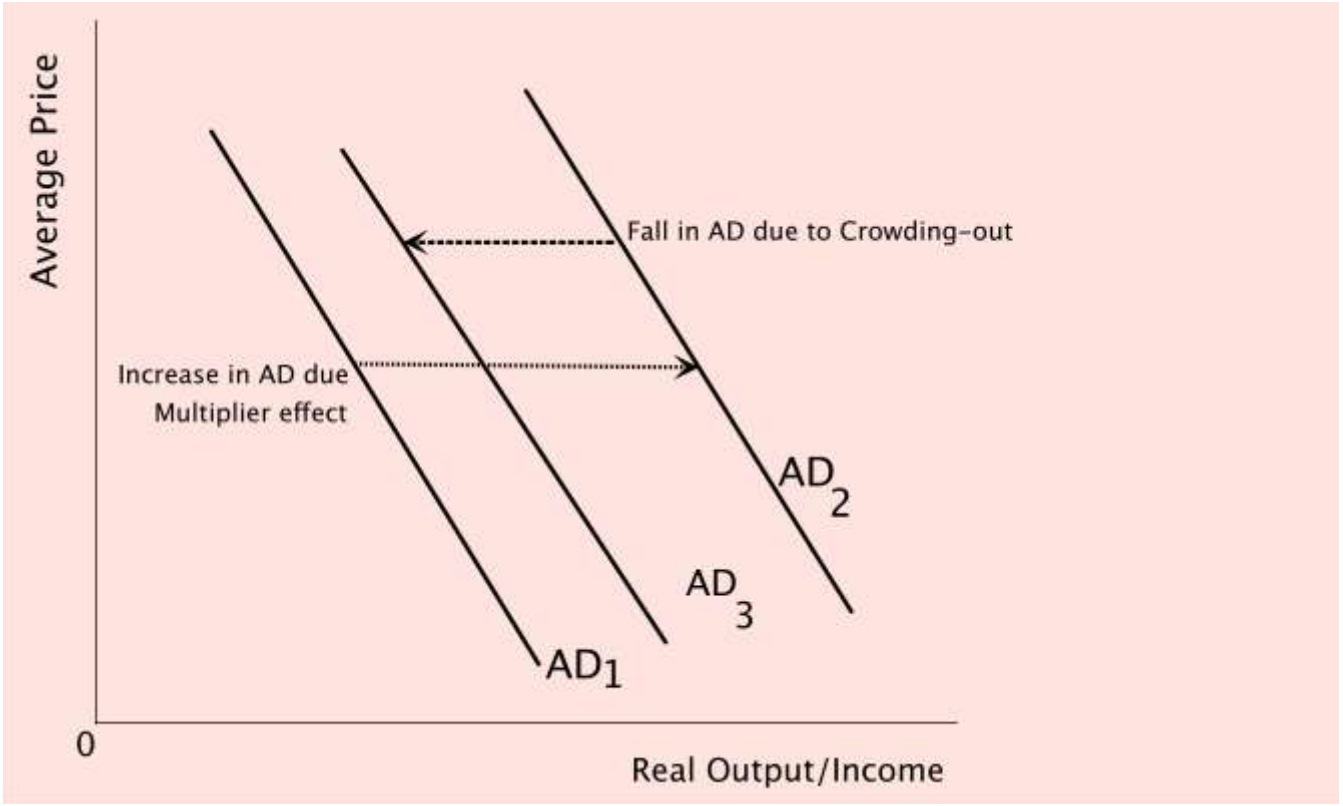
- Argues that small changes in GDP produces larger changes in investment spending.
- These fluctuations interact with the Multiplier effect to increase the momentum of business cycle.

Crowding-out Effect

Crowding-out Effect



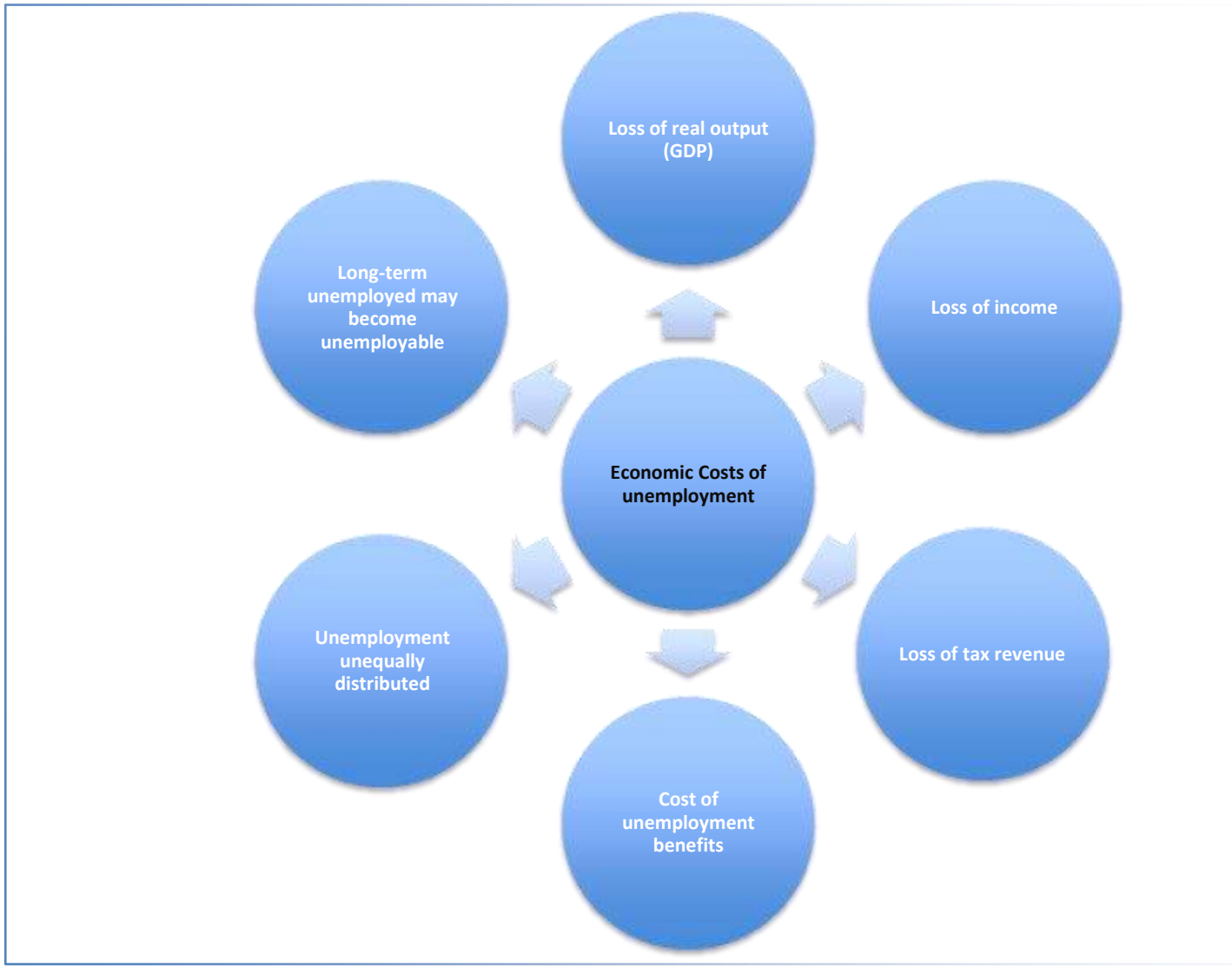
Crowding-out Effect



Unemployment and Inflation

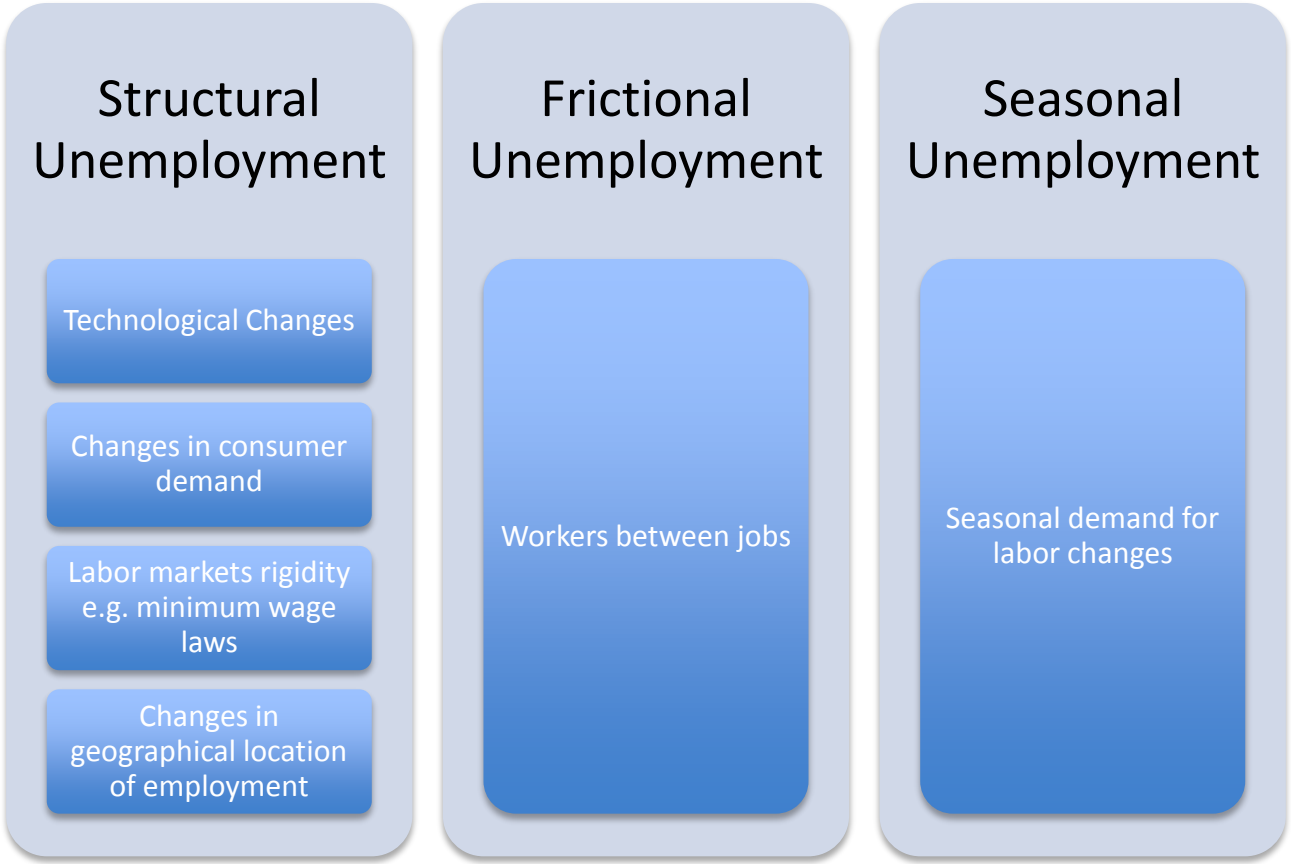
Unemployment

Unemployment	Underemployment	Unemployment Rate
• Number of adults who are not working but actively look for a job	• Number of adults who are working part-time but looking for full time work or people who are not fully using their skills.	• Number of unemployed as a percentage of the labor force

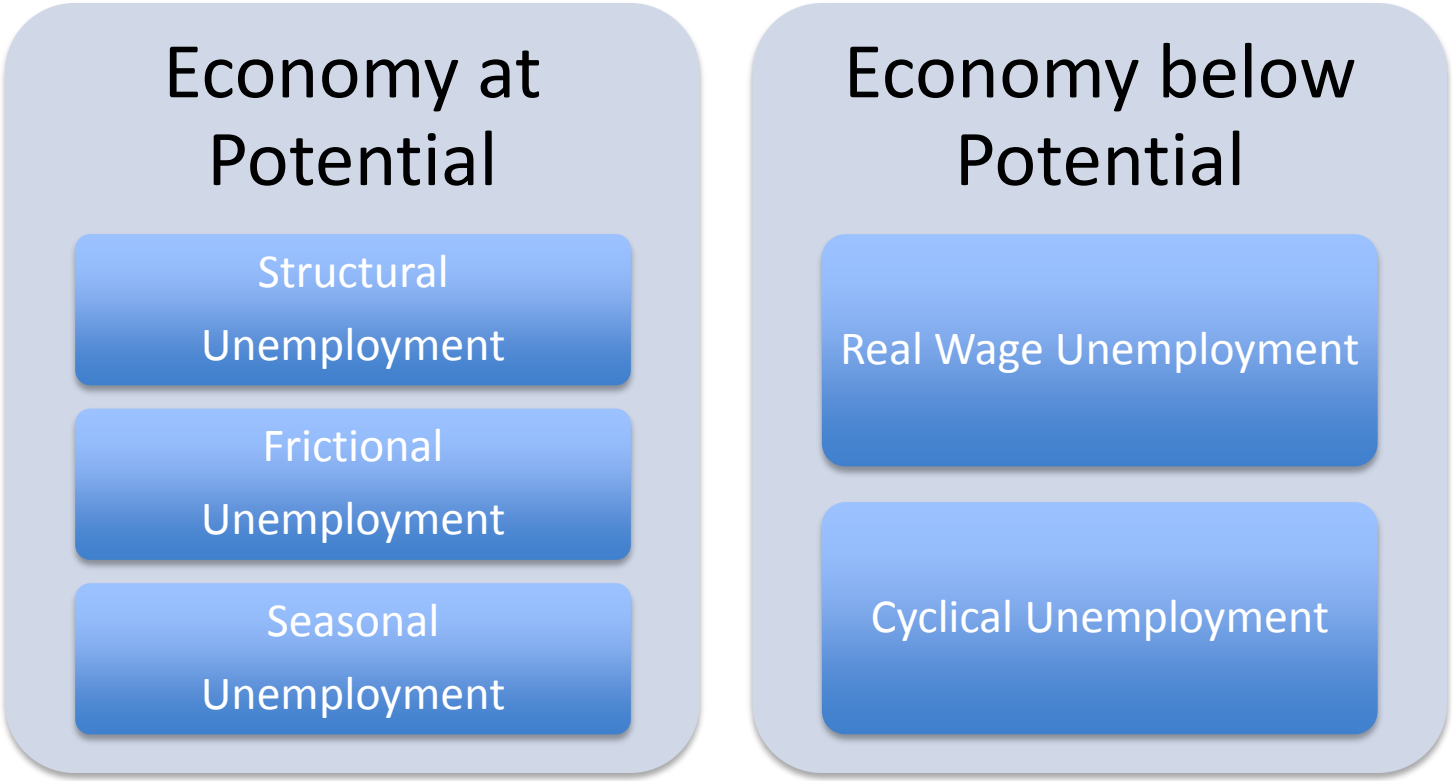

Loss of real output (GDP)
Loss of income
Loss of tax revenue
Cost of unemployment benefits
Unemployment unequally distributed
Long-term unemployed may become unemployable
Economic Costs of unemployment

Stress
Social Costs of unemployment
Social Problems

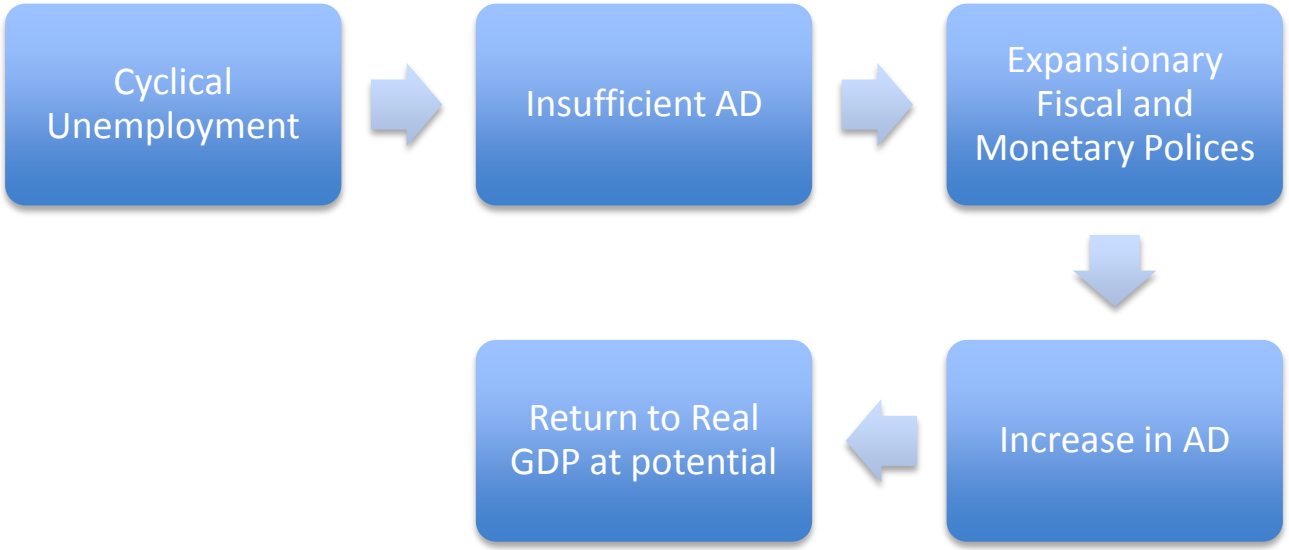
Economy at Potential



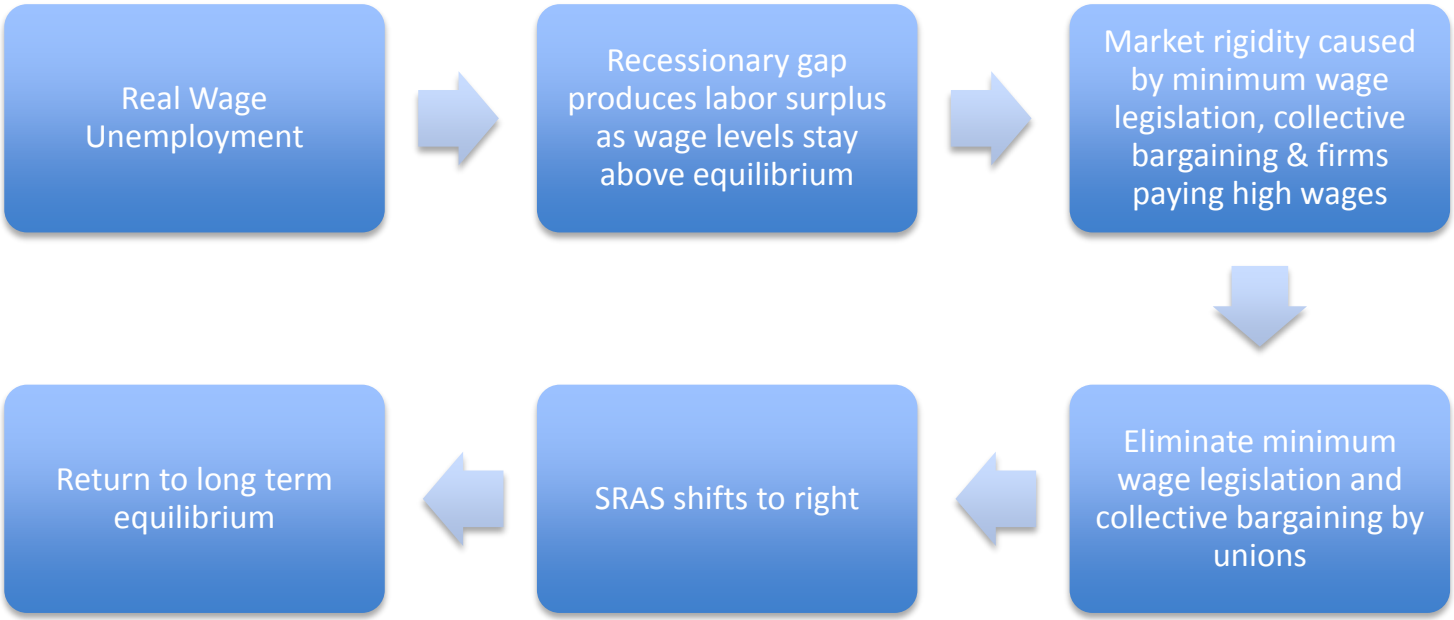
Types of Unemployment



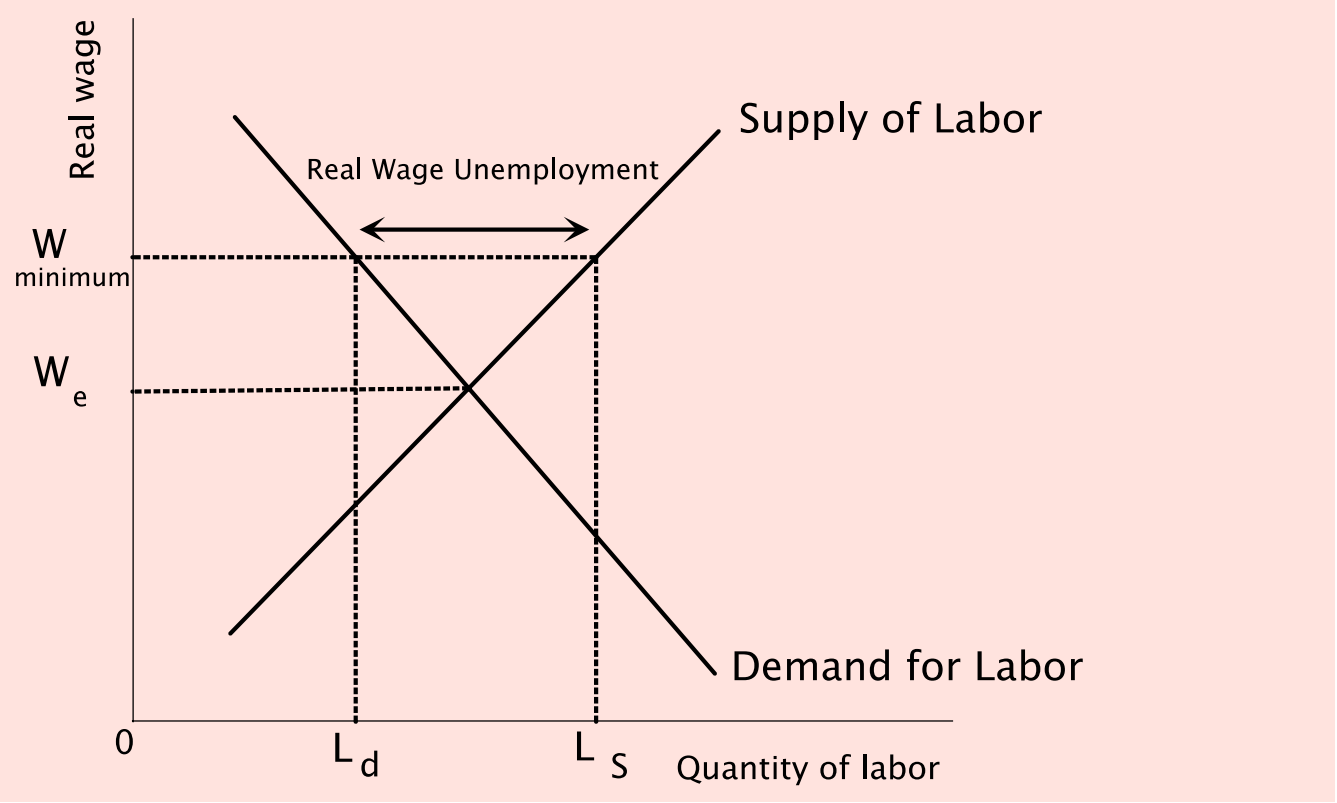
Keynesian Remedy for Unemployment During a Recession



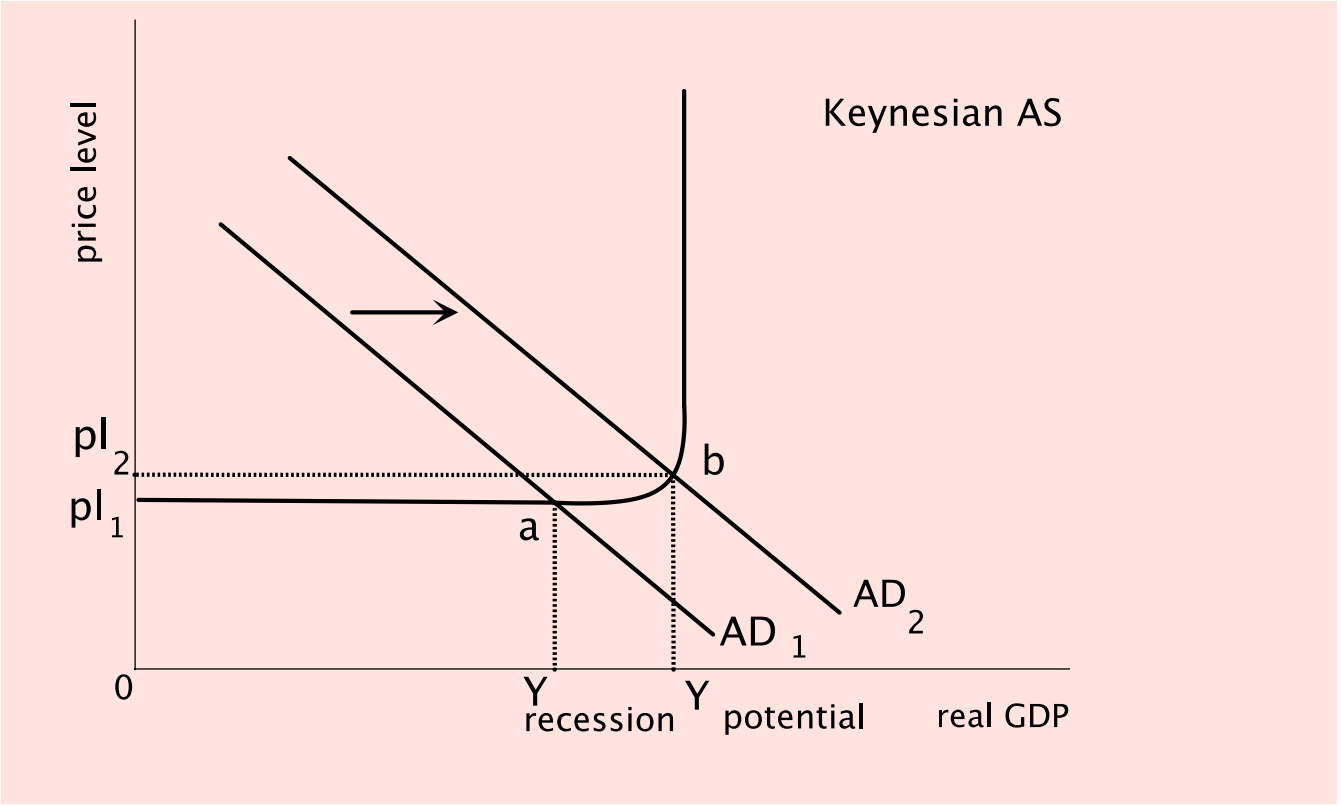
Neoclassical Remedy for Unemployment During a Recession



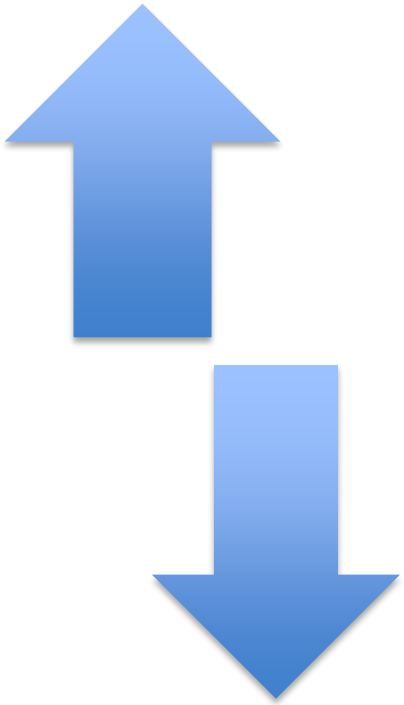
Real Wage Unemployment



Eliminating Cyclical (Demand-deficient) Unemployment



Inflation and Deflation



Inflation

- A continuing increase in the general price level of goods and service within the economy

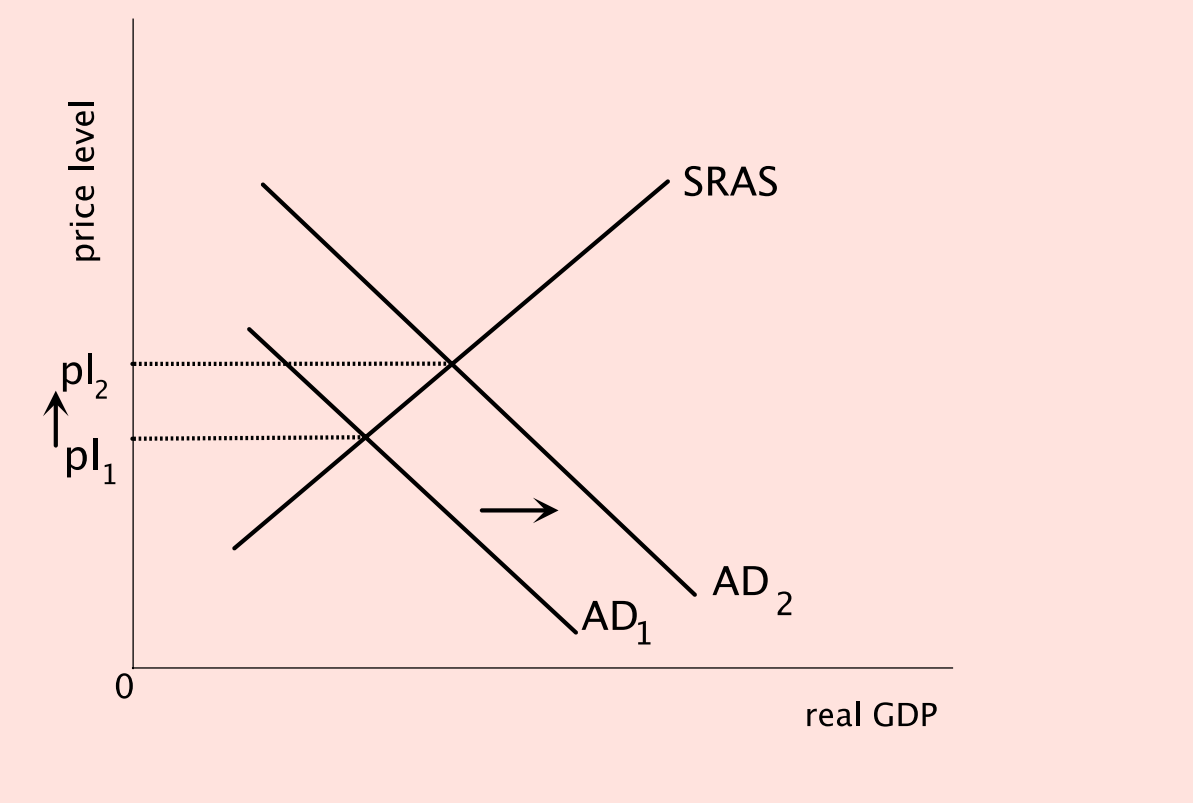
Deflation

- A continuing decrease in the general price level of goods and service within the economy

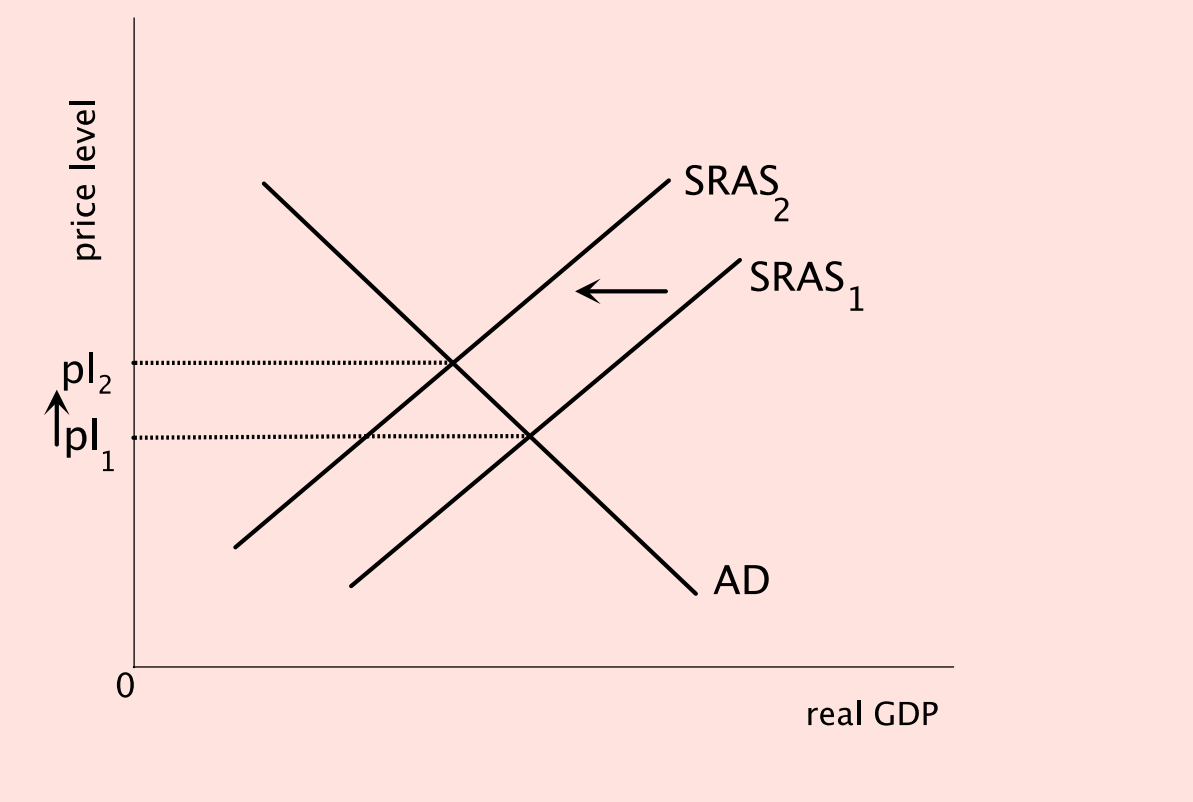
Inflation & Deflation

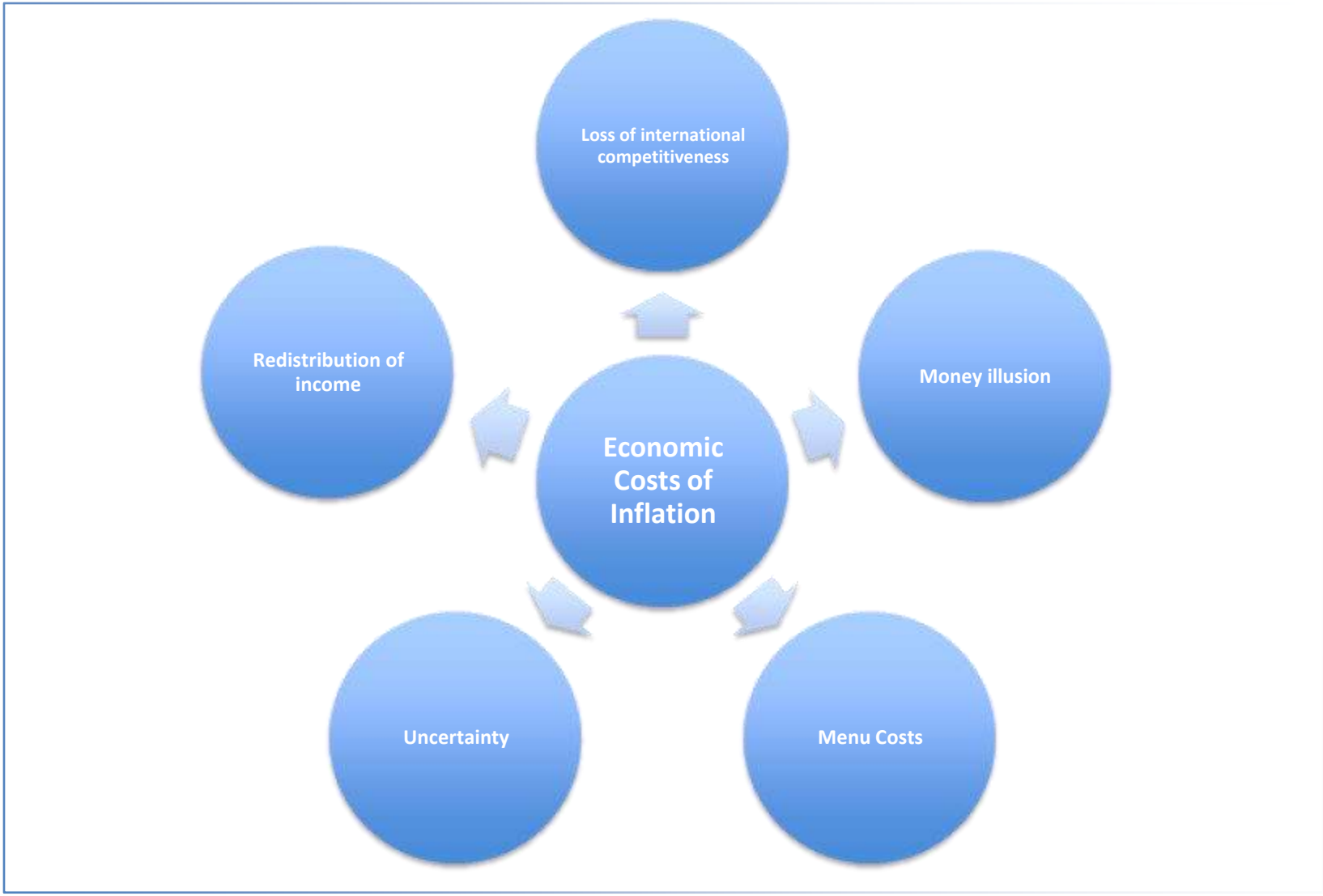
Demand-pull Inflation	Cost-push Inflation	Excessive Money Supply Induced Inflation	Deflation
• Increase in AD • Reduction in AD solution to this from of inflation	• Increase in the costs of production (supply-side shocks) produces fall in AS • Solutions tied to cause of the fall in AS and attempt to reduce the FOPs	• Increase of money supply	• Decease in AD • Increase in AS

Demand-pull Inflation

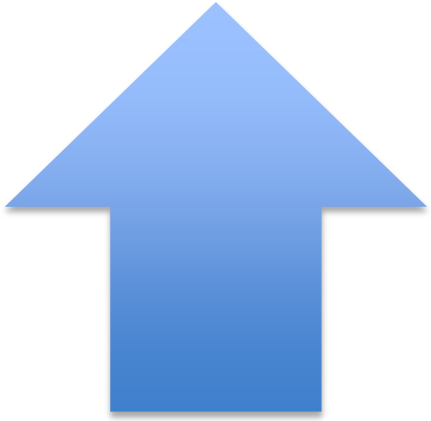


Cost-push Inflation




Loss of international competitiveness
Redistribution of income
Money illusion
Economic Costs of Inflation
Uncertainty
Menu Costs

Stakeholders and Inflation



Winners

Fixed income earners

Cash holders

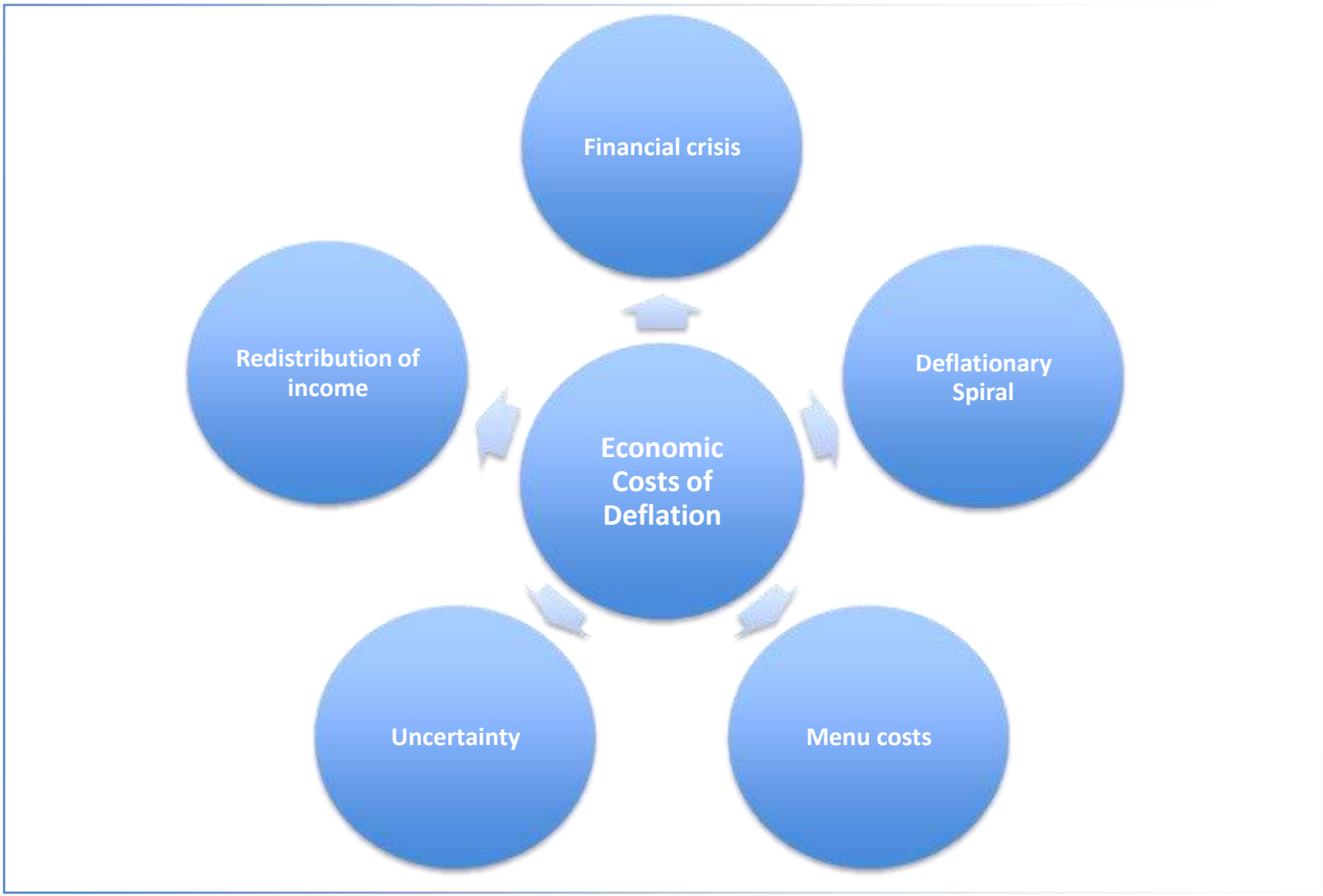
Savers

Borrowers at interest rates lower than inflation

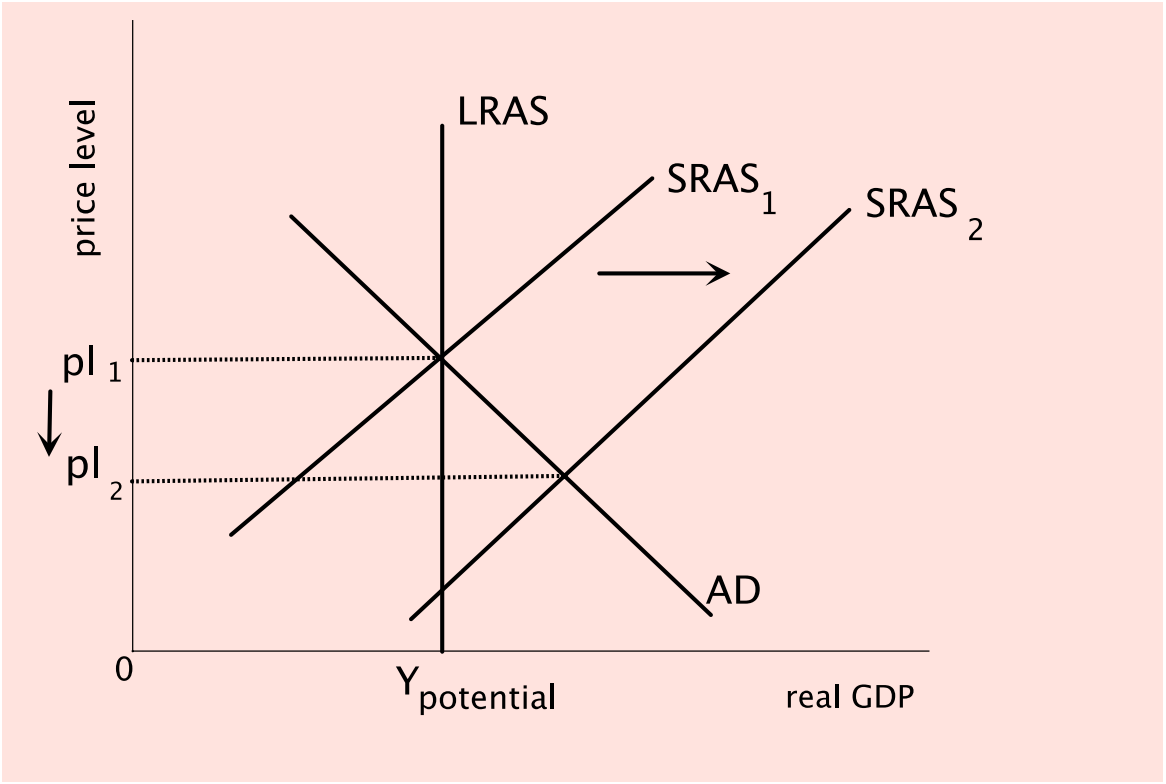
Losers

Borrowers at interest rates higher than inflation

Payers of fixed incomes and wages


Financial crisis
Redistribution of income
Deflationary Spiral
Economic Costs of Deflation
Uncertainty
Menu costs

“Good” Deflation



Measuring Inflation

The consumer price index (CPI) compares the value of a basket of goods and services in one year with a same basket in the base year.

Problems Measuring Inflation

Static Basket of Goods and Services

- Belongs to a fictitious "average" person
- Fixed weighting may not reflect substitutions people make in their spending (substitution effect leads to overestimation of inflation)

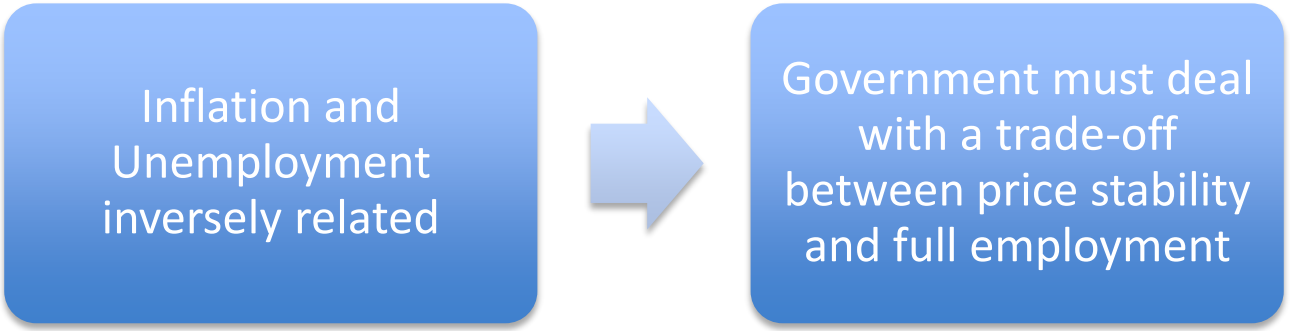
New Retail Outlets

- Purchases at discount stores, megastores and online stores may not be counted (new retail outlet bias leads to overestimation of inflation

New Products

- New products may not be immediately counted (new product bias leads to overestimation of inflation
- Improved quality may not be measured (quality bias leads to overestimation of inflation)

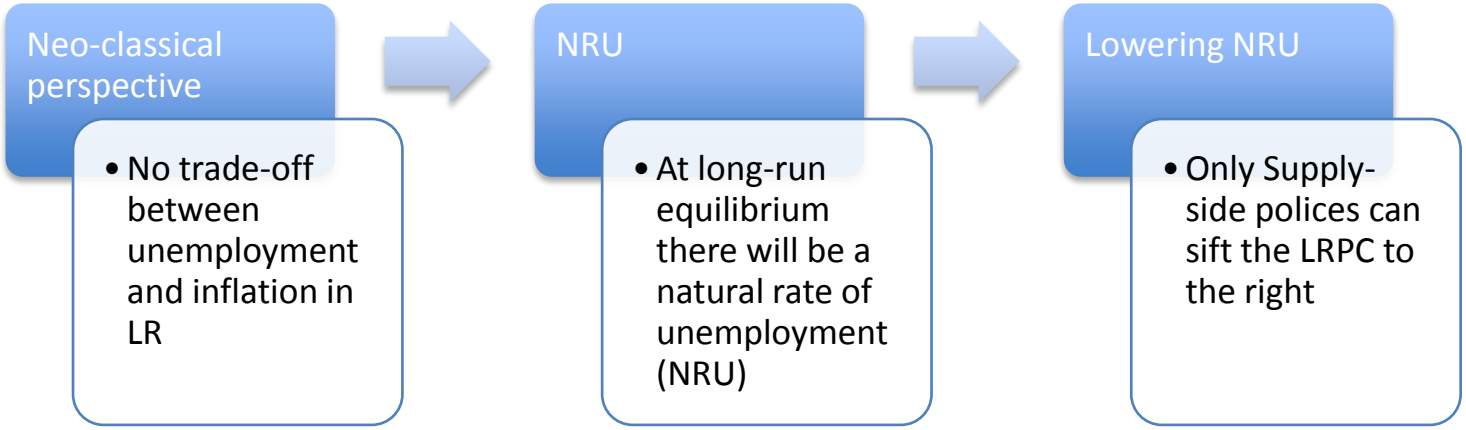
The Phillips Curve



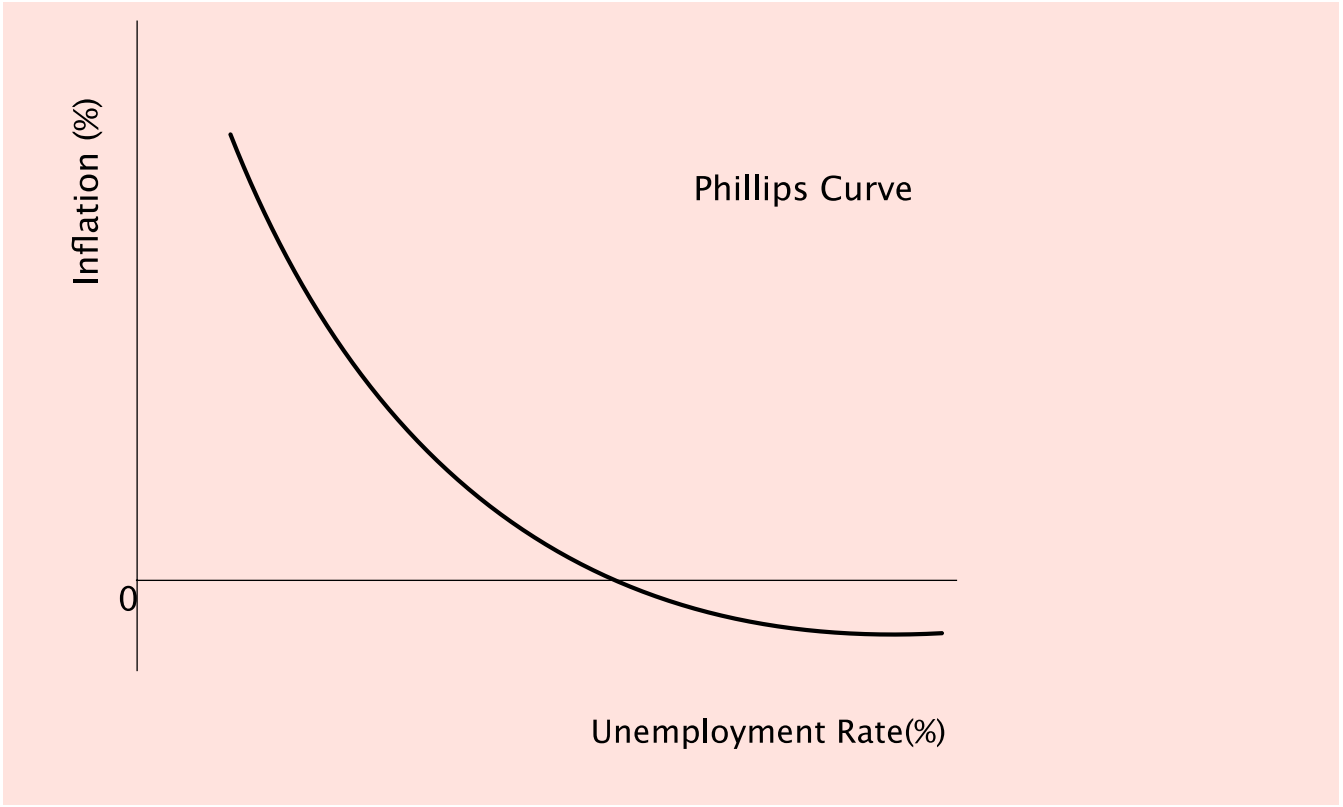
NRU = NAIRU

If governments avoid demand-side expansionary policies Non-accelerating inflation rate of unemployment is achieved (NAIRU)

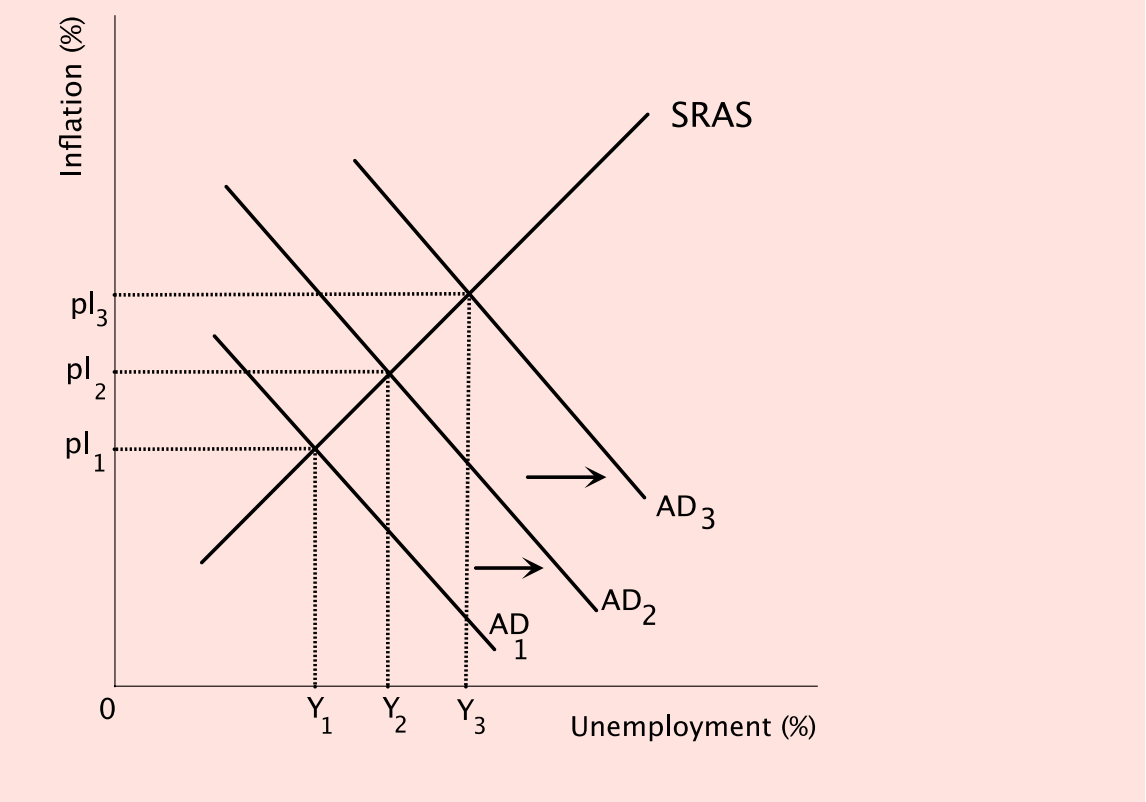
Long-run Phillips Curve



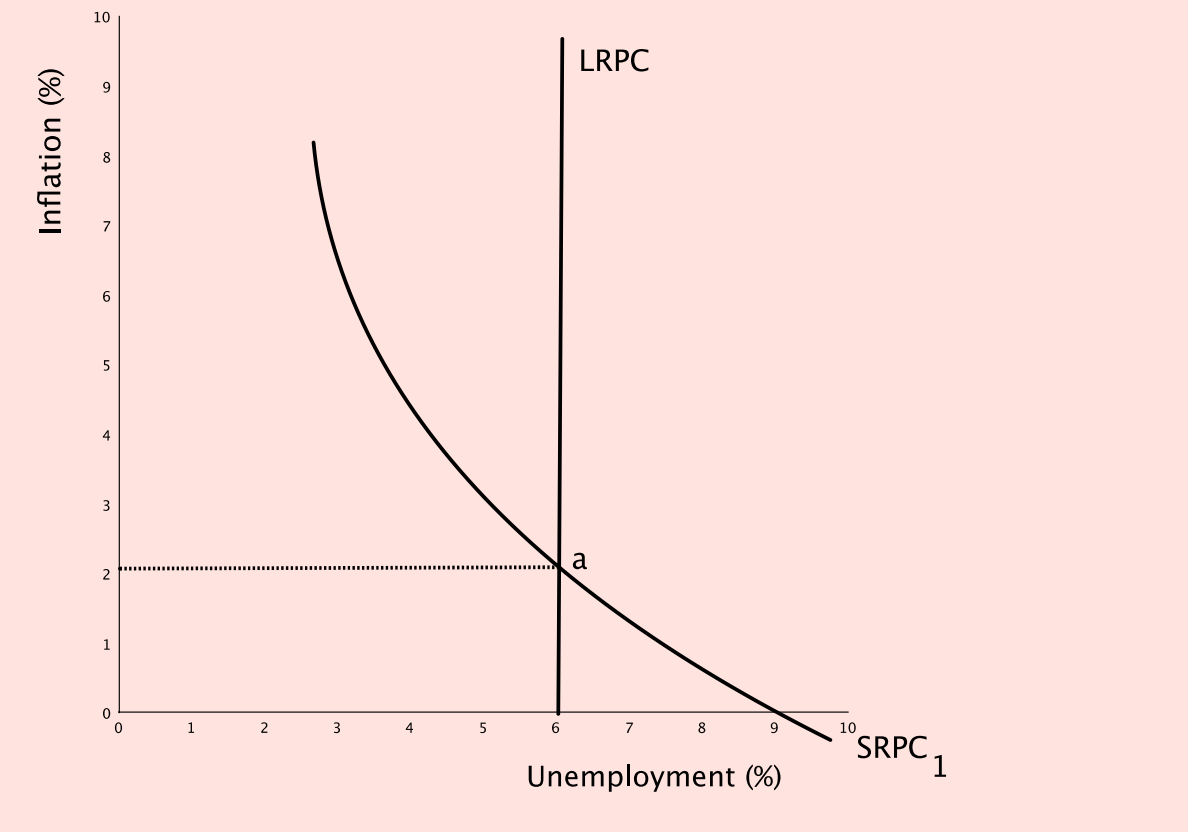
Phillips Curve



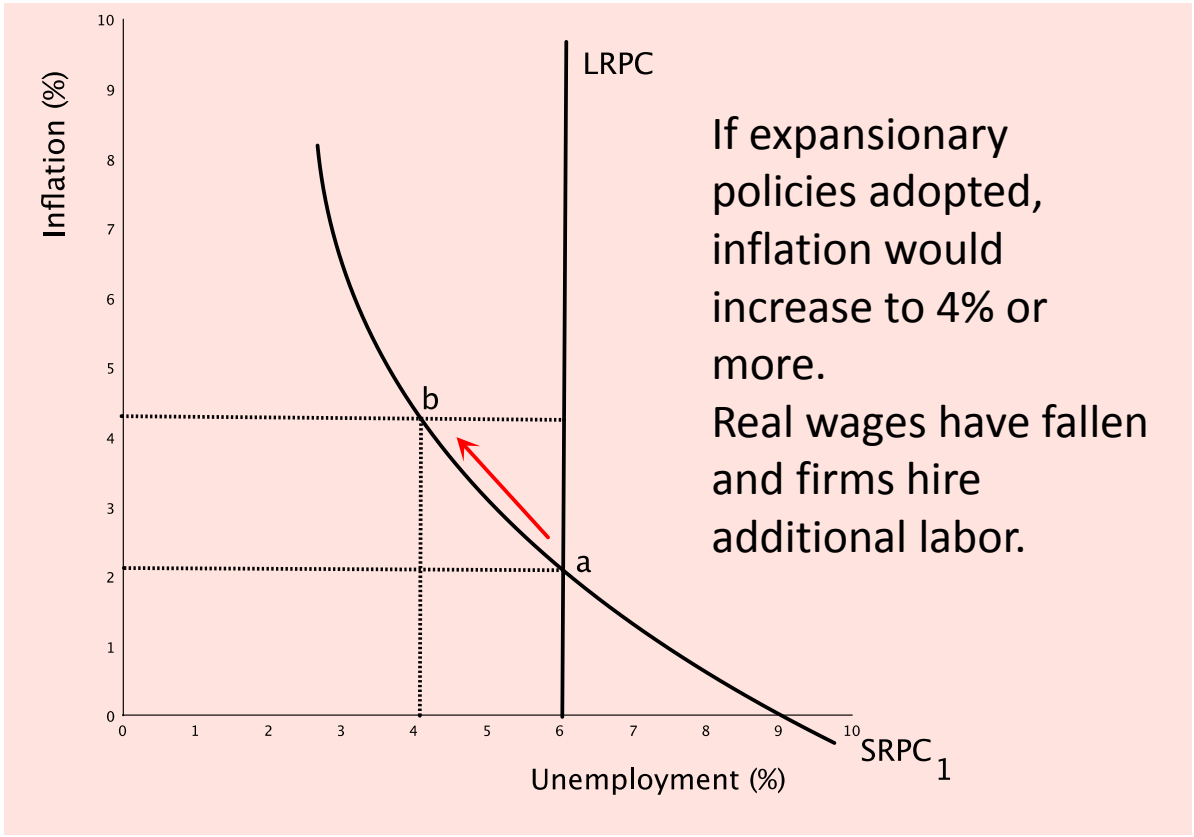
Phillips Curve



Neo-classical challenge to the Phillips Curve

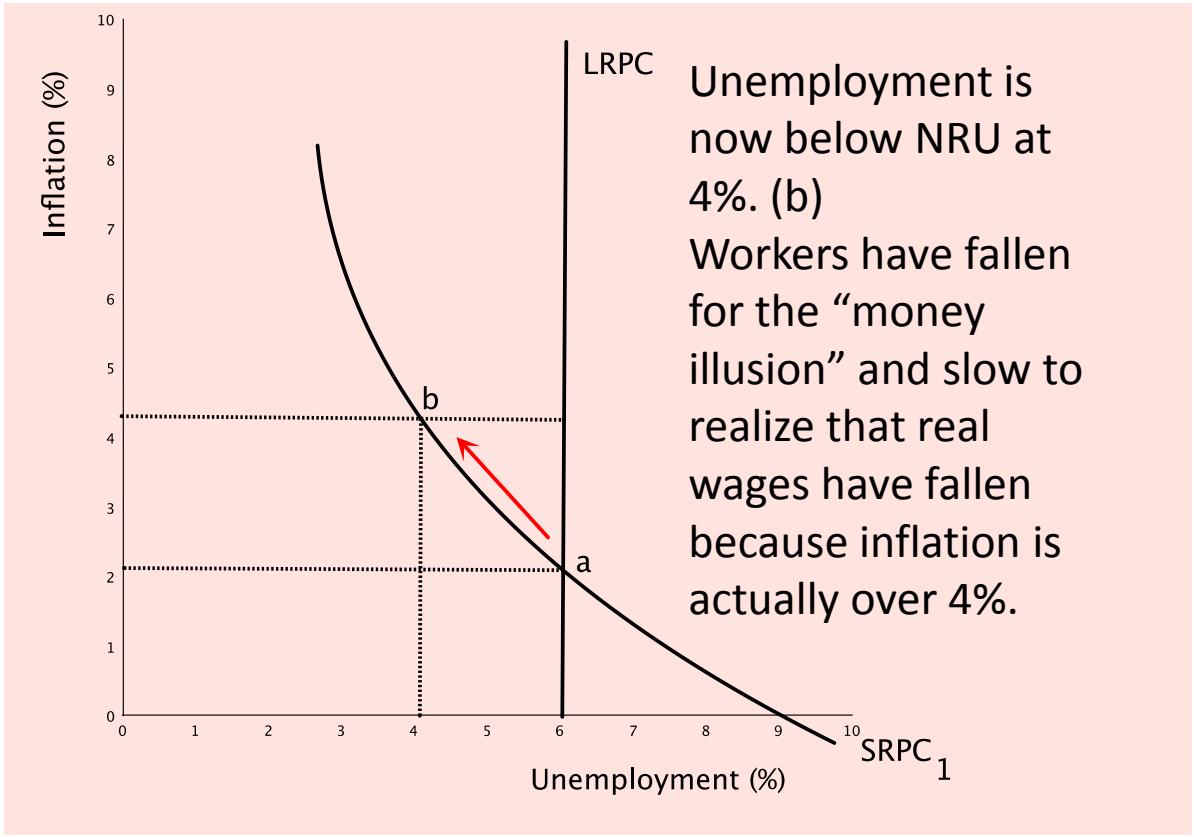


LR Phillips Curve



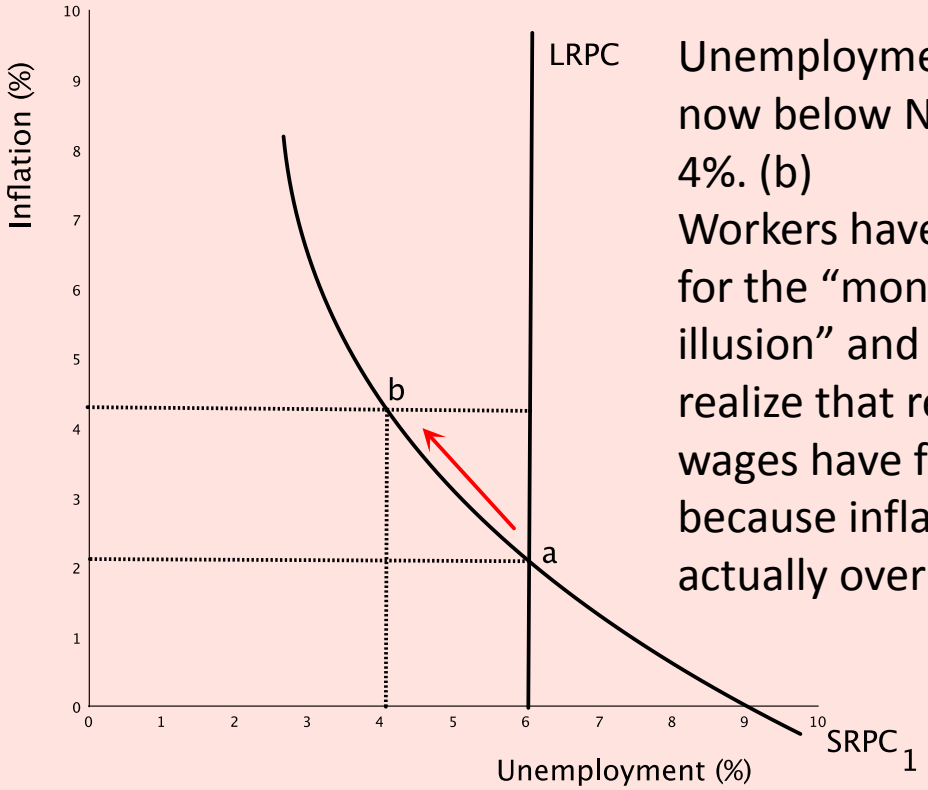
If expansionary policies adopted, inflation would increase to 4% or more.
Real wages have fallen and firms hire additional labor.

LR Phillips Curve



Unemployment is now below NRU at 4%. (b)
Workers have fallen for the "money illusion" and slow to realize that real wages have fallen because inflation is actually over 4%.

LR Phillips Curve



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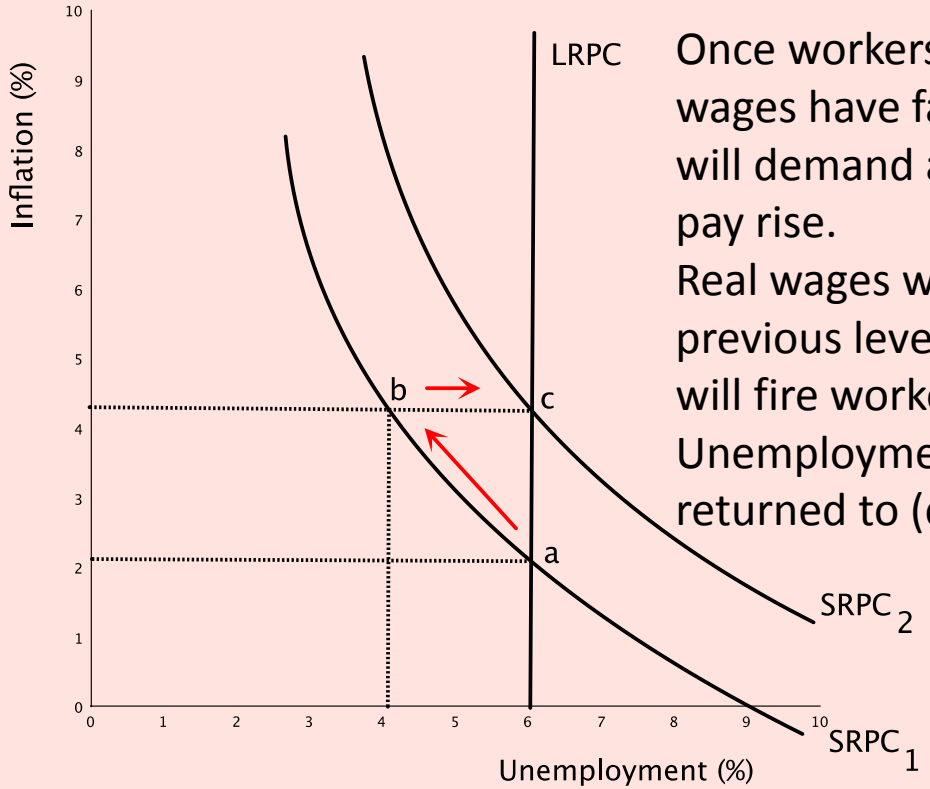
LR Phillips Curve

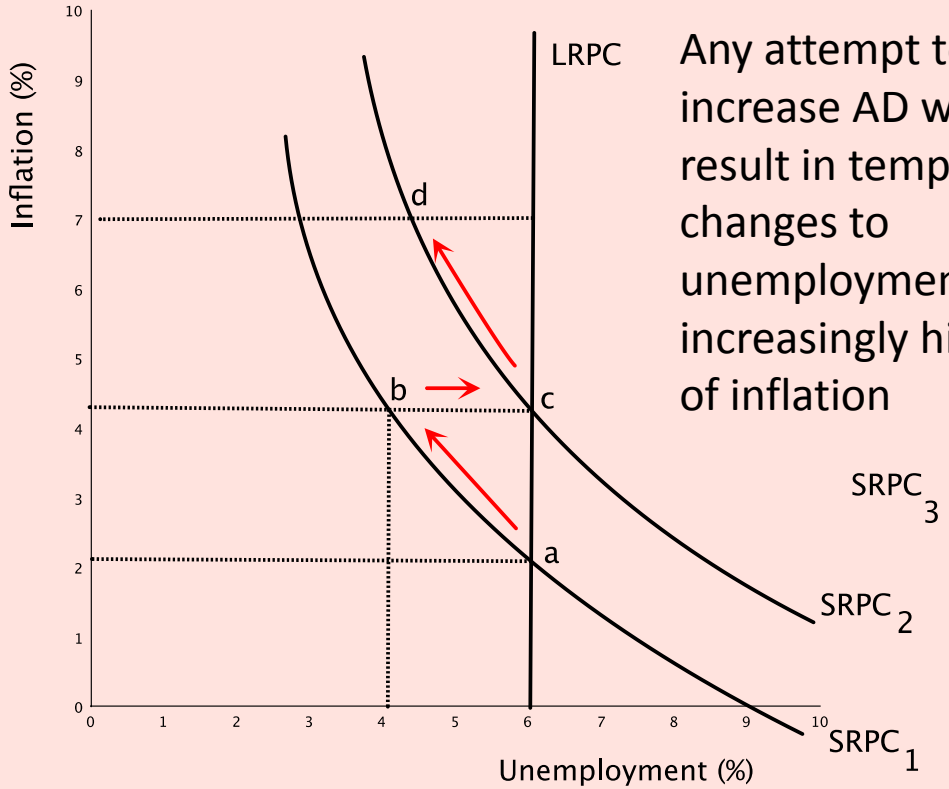


Once workers realize real wages have fallen they will demand at least a 4% pay rise.

Real wages will return to previous levels and firm will fire workers.

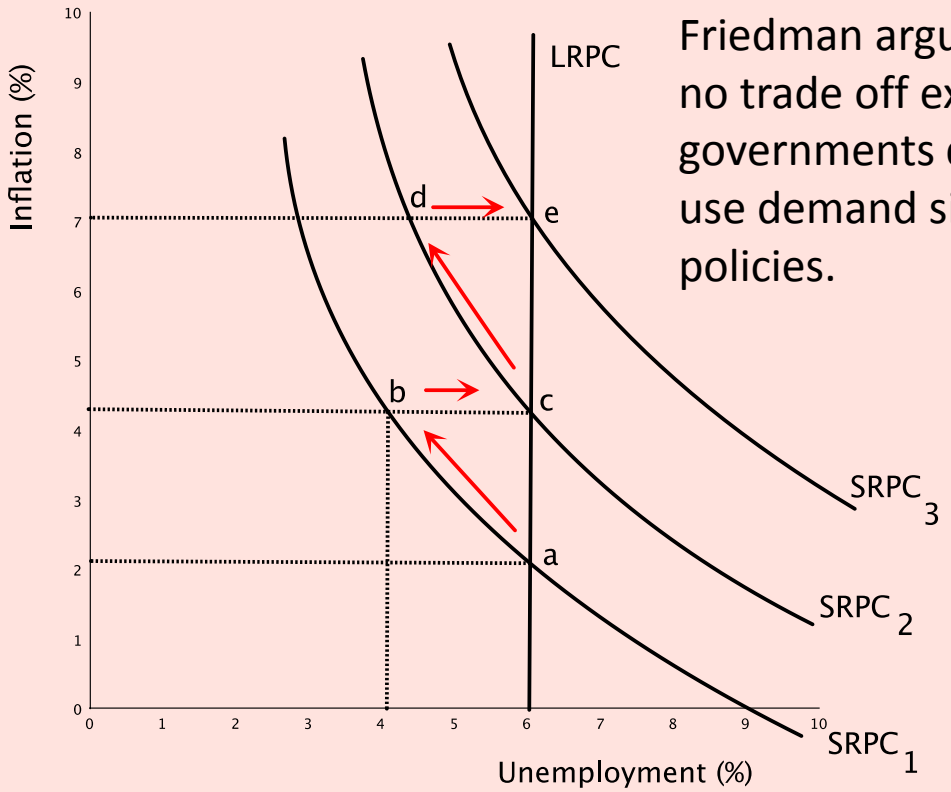
Unemployment has returned to (c)

LR Phillips Curve



Any attempt to to increase AD will only result in temporary changes to unemployment but increasingly high rates of inflation

LR Phillips Curve



Friedman argued that no trade off exists if governments do not use demand side policies.