

The aggregate demand/aggregate supply model

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The Theory of Economics . . . is a method rather than a doctrine, an apparatus of the mind, a technique of thinking which helps its possessor to draw correct conclusions.

— J. M. Keynes

Chapter Goals

- Discuss the historical development of macroeconomics
- Explain the shape of the aggregate demand curve and what factors shift the curve
- Explain the shape of the short-run aggregate supply curve and what factors shift the curve

Chapter Goals

- Explain the shape of the long-run aggregate supply curve
- Show the effects of shifts of the aggregate demand and aggregate supply curves on price level and output in both short run and long run
- Explain how dynamic feedback effects can destabilize the economy
- Discuss the limitations of the macro policy model

The U.S. Great Depression

- A deep recession that began in 1929 and lasted for 10 years
 - Output fell by 30%
 - Unemployment rose to 25%
 - It was a defining event that undermined people's faith in markets
- Led to emphasis on the short-run and the demand side of the economy and the development of macroeconomic theory separate from microeconomics

Classical Economists

- Earlier economists who focused on long-run issues
- Markets were self-regulating through the “invisible hand”
- The economy would always return to its potential output and target rate of unemployment in the long run
- Blamed the Depression on labor unions and government policies that prevented prices from falling
- Advocated a laissez-faire economic policy

The Essence of Keynesian Economics

- First outlined in 1936 by John Maynard Keynes
- Problems of the Depression required a short-run, rather than long-run, focus
 - Keynes famously said: “In the long run, we’ re all dead”
- Adjustments to equilibrium for a single market (micro issue) and the aggregate economy (macro issue) are different
- Keynesians argued that, in times of recession, spending is a public good that benefits everyone

The Essence of Keynesian Economics

- Short-run equilibrium income may differ from long-run potential income
 - **Equilibrium income** is the level of income toward which the economy gravitates in the short run because of the cumulative cycles of declining or increasing production
 - **Potential income** is the level of income that the economy technically is capable of producing without generating accelerating inflation
- Market forces may not be strong enough to get the economy out of a recession

The Essence of Keynesian Economics

- **Paradox of thrift**

- In the long run, saving leads to investment and growth
- In the short run, saving may lead to a decrease in spending, output, and employment

- Aggregate demand management, which is government's attempt to control the aggregate level of spending, may be necessary
- Keynesian economists advocated an activist demand management policy

Components of the AS/AD Model

Aggregate Demand Curve (AD)

- Is a curve that shows how a change in the price level will change aggregate expenditures on all goods and services in an economy

Short-Run Aggregate Supply Curve (SAS)

- Is a curve that specifies how a shift in the aggregate demand curve affects the price level and real output in the short run, other things constant

Long-Run Aggregate Supply Curve (LAS)

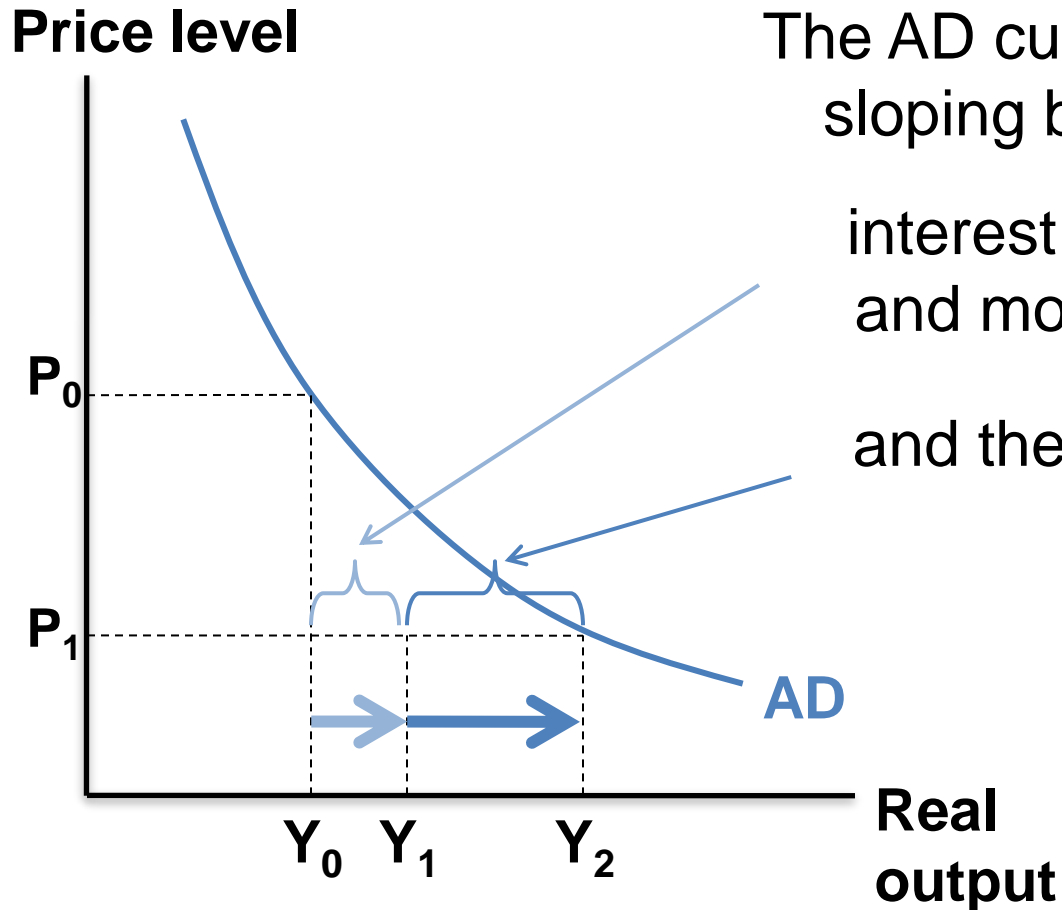
- Is a curve that shows the long-run relationship between output and the price level

The Slope of the AD Curve

The AD curve is *downward* sloping because of:

- **Interest rate effect**, the effect that a lower price level has on investment expenditures through the effect that a change in the price level has on interest rates
- **International effect**, as the price level falls (assuming the exchange rate does not change), net exports will rise
- **Money wealth effect**, a fall in the price level will make the holders of money richer, so they buy more
- **Multiplier effect**, the amplification of initial changes in expenditures

The Slope of the AD Curve

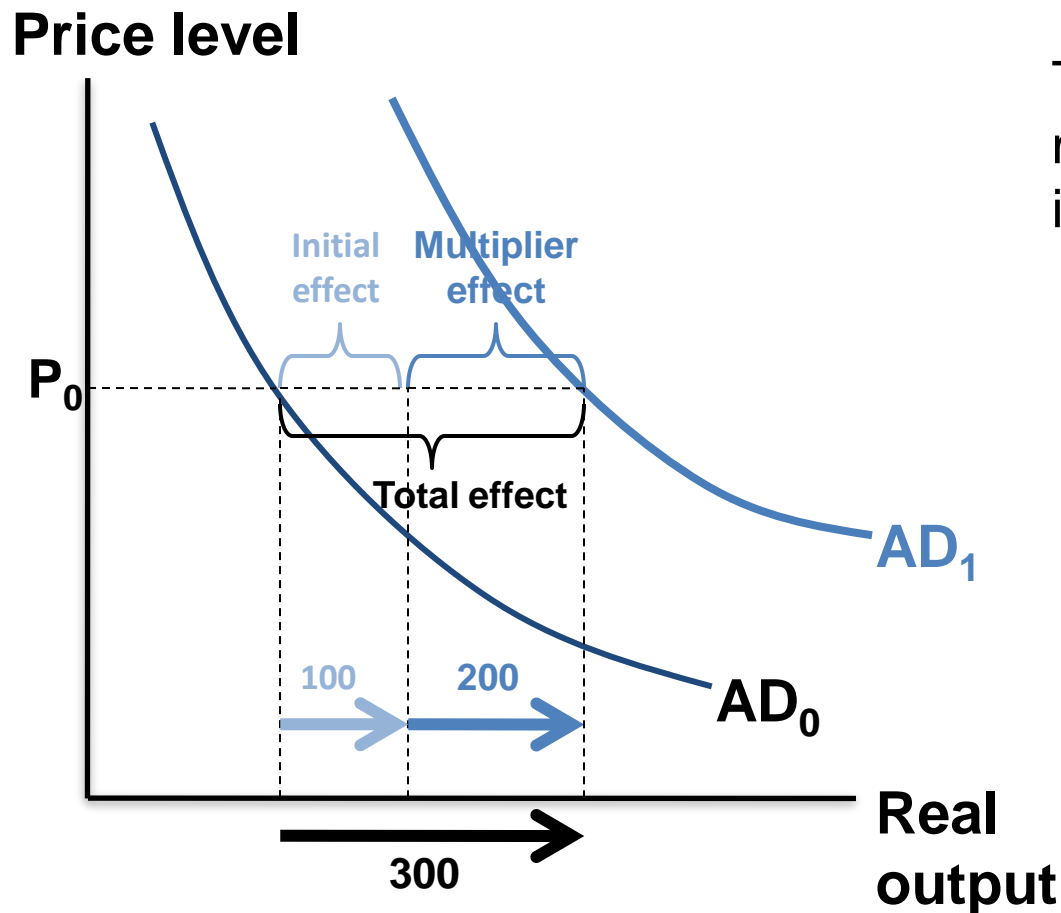


The AD curve is *downward* sloping because of the interest rate, international, and money wealth effects and the multiplier effect

Shifts in the AD Curve

- A shift in the AD curve means that at every price level, total expenditures have changed. Five important shift factors are:
 - Foreign income
 - Exchange rates
 - Distribution of income
 - Expectations
 - Monetary and fiscal policy
- Deliberate shifting of the AD curve is what most policy makers mean by macro policy

Shifts in the AD Curve



The AD curve shifts out by more than the initial change in expenditures

- Exports increase by 100
- The multiplier magnifies this shift

AD curve shifts to the *right* by a multiple of 100, in this case by 300

The Slope of the SAS Curve

The SAS curve is *upward* sloping because of:

- **Auction markets**

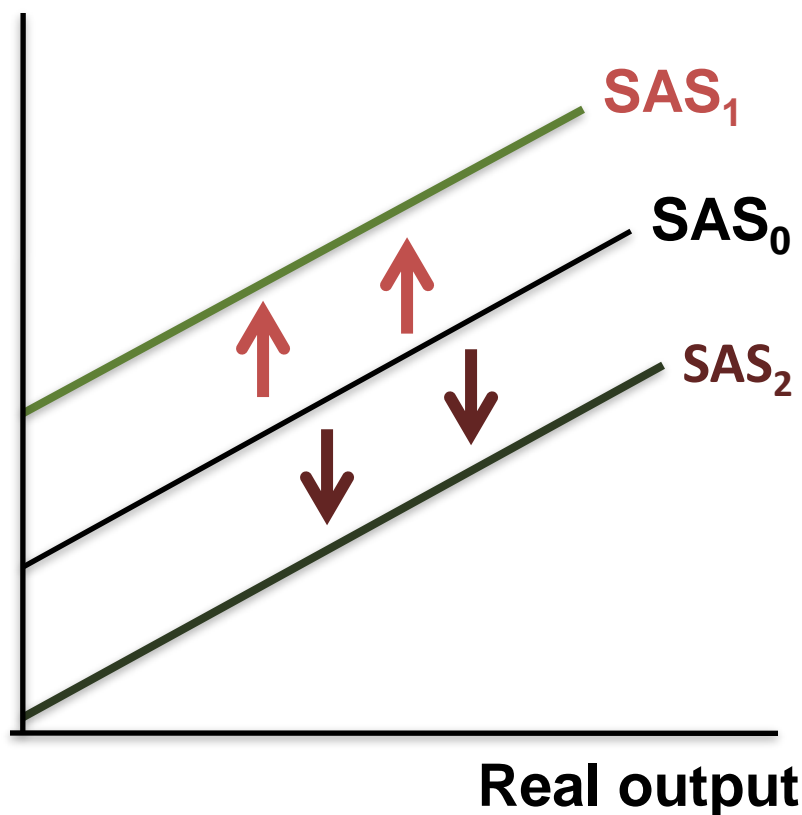
- Prices are determined by demand and supply and supply curves are upward sloping

- **Posted price markets**

- Also called **quantity-adjusting markets**, markets in which firms respond to changes in demand by changing production instead of changing their prices
- Firms tend to increase their markup when demand increases

Shifts in the SAS Curve

Price level



Shifts in the SAS are caused by changes in:

- Input prices
- Productivity
- Import prices
- Sales and excise taxes

In general:

$$\begin{aligned} \% \Delta \text{ in price level} = \\ \% \Delta \text{ in wages} \\ - \% \Delta \text{ in productivity} \end{aligned}$$

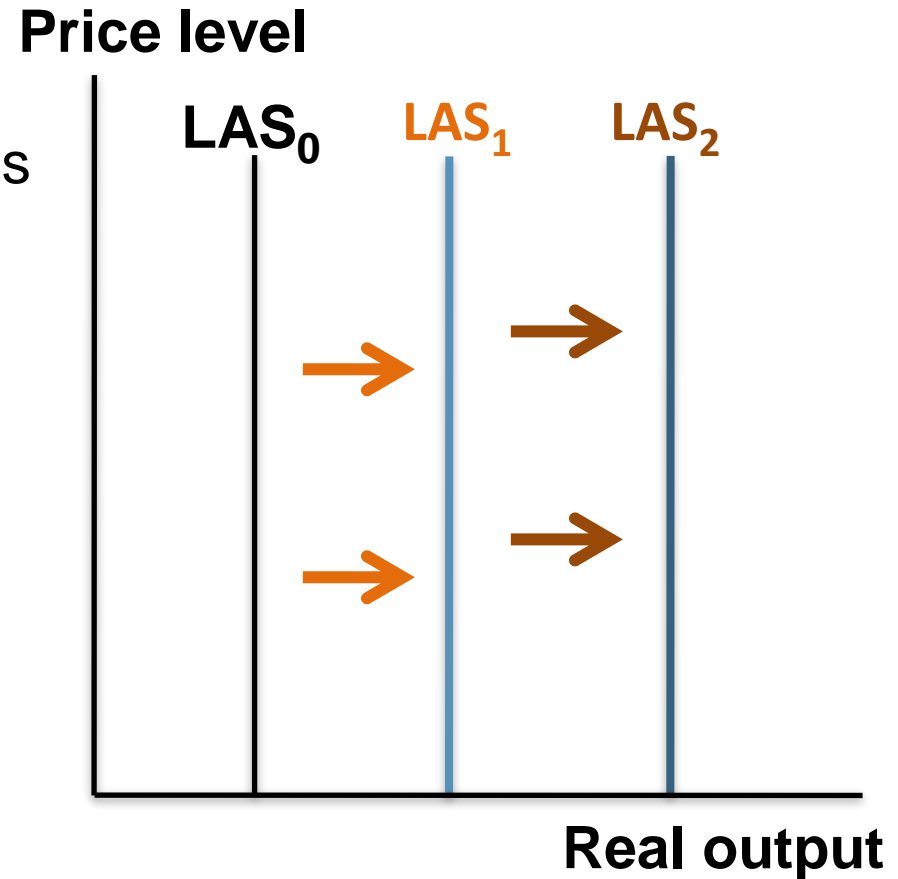
The LAS Curve

- The long-run aggregate supply curve shows the long-run relationship between output and the price level
- The position of the LAS curve depends on **potential output** which is the amount of goods and services an economy can produce when both capital and labor are fully employed
- The LAS curve is vertical because potential output is unaffected by the price level

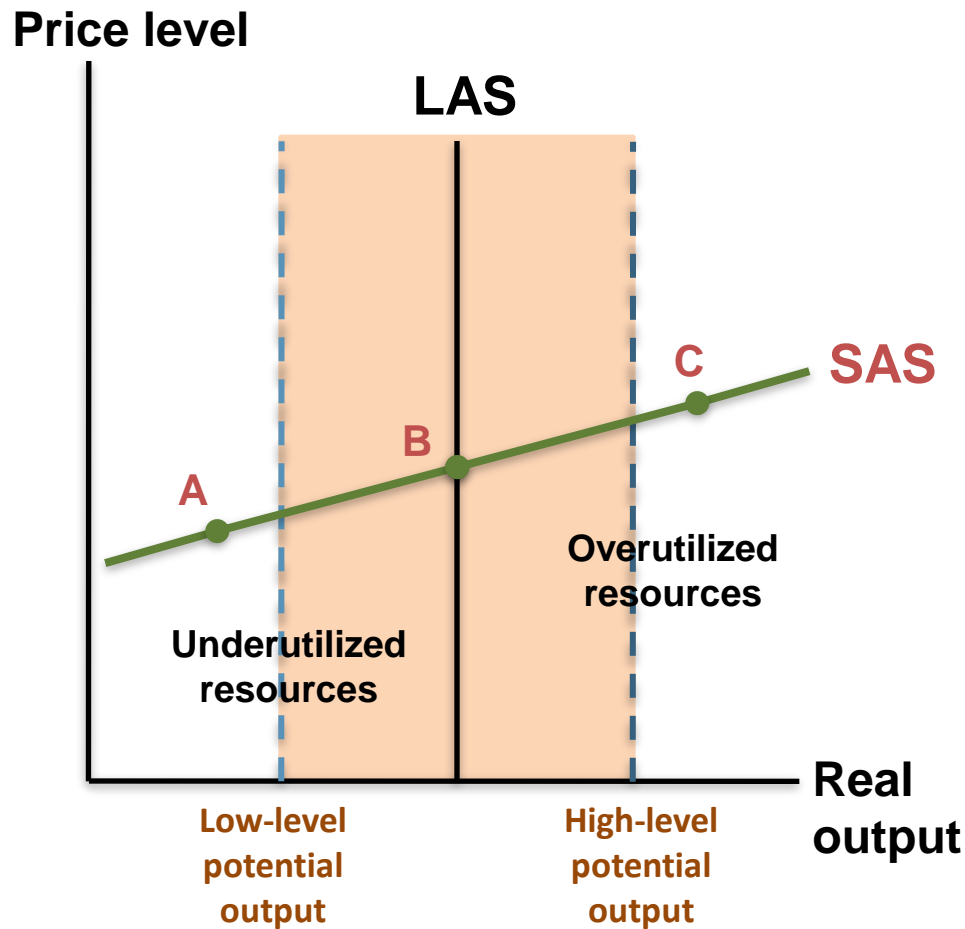
The LAS Curve

Increases in the LAS are caused by increases in:

- Capital
- Resources
- Growth-compatible institutions
- Technology
- Entrepreneurship



The LAS Curve

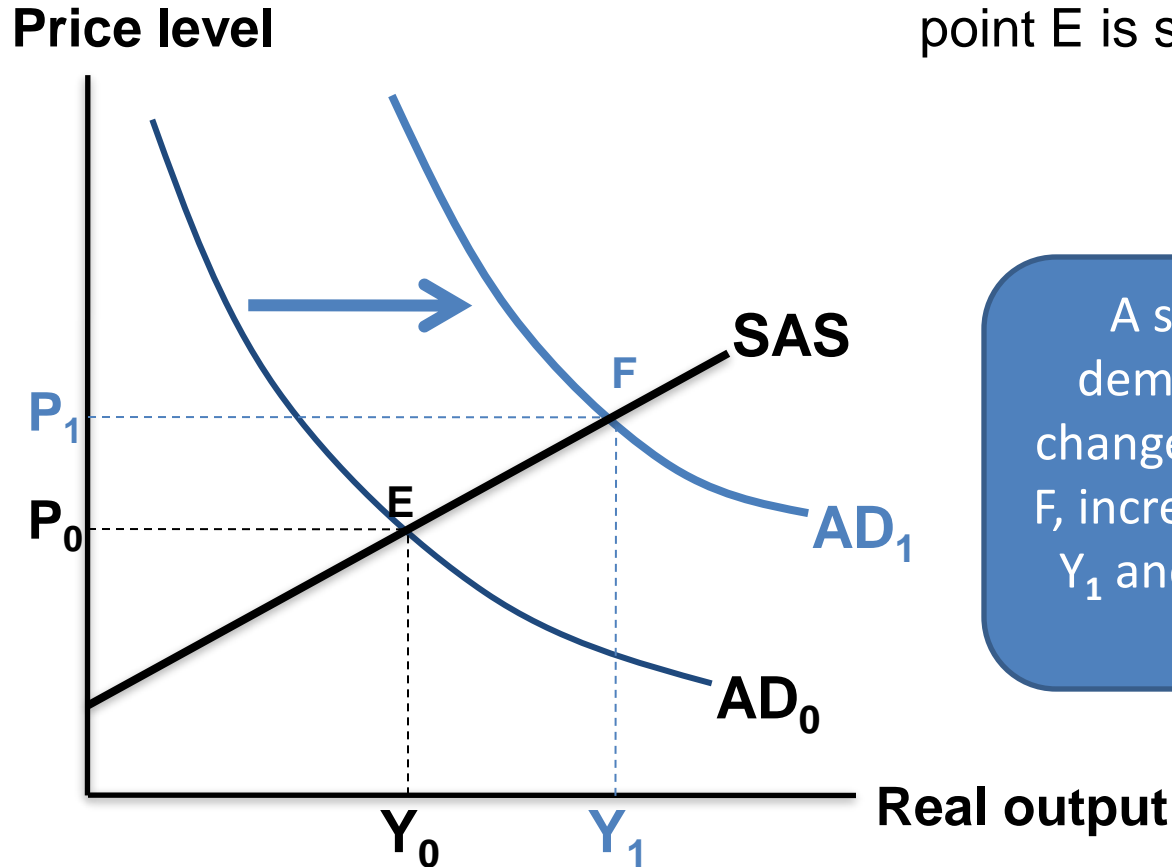


Potential output is assumed to be in the middle of a range bounded by high and low levels of potential output

- When resources are overutilized (point C), factor prices may be bid up and the SAS shifts up
- When resources are underutilized (point A), factor prices may decrease and SAS shifts down

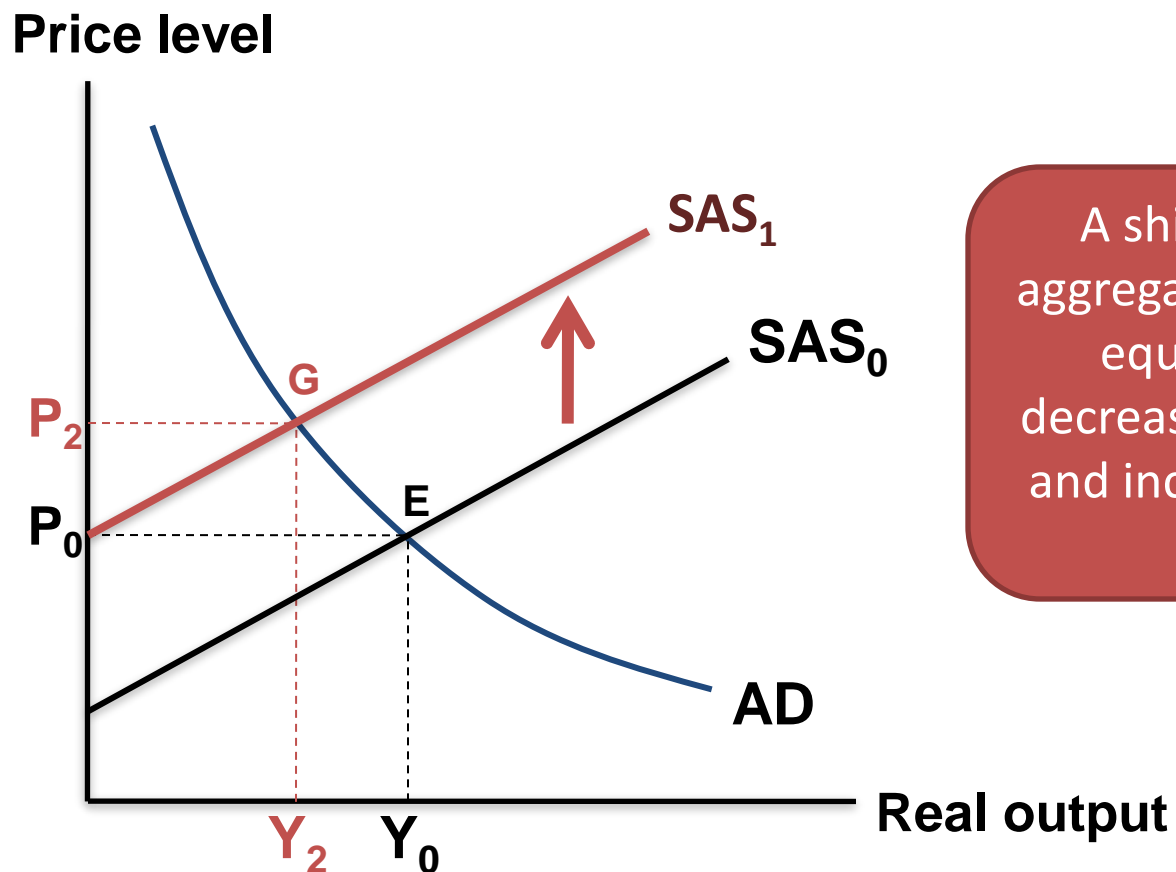
Short-Run Equilibrium in the AS/AS Model

Short-run equilibrium is where the SAS and AD curves intersect and point E is short-run equilibrium



A shift in the aggregate demand curve to the right changes equilibrium from E to F, increasing output from Y_0 to Y_1 and increasing price level from P_0 to P_1

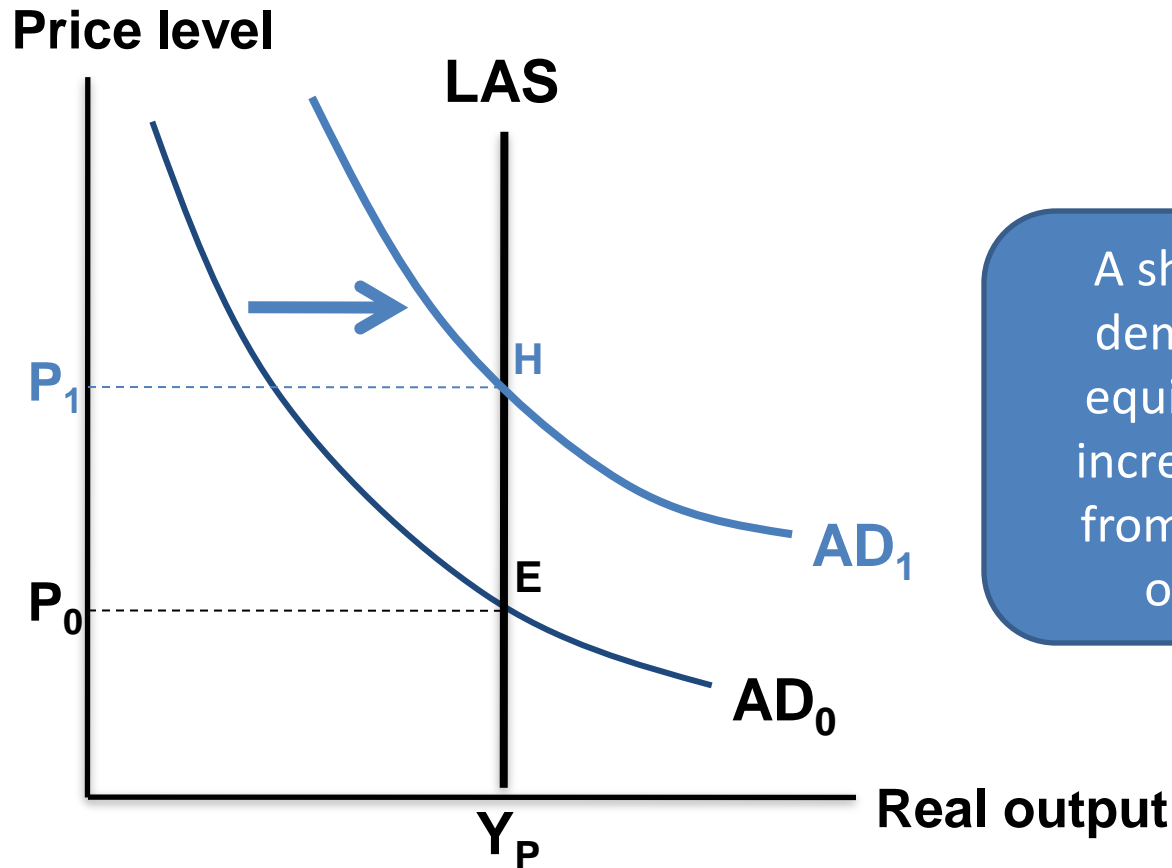
Short-Run Equilibrium in the AS/AS Model



A shift up in the short-run aggregate supply curve changes equilibrium from E to G , decreasing output from Y_0 to Y_2 and increasing price level from P_0 to P_2

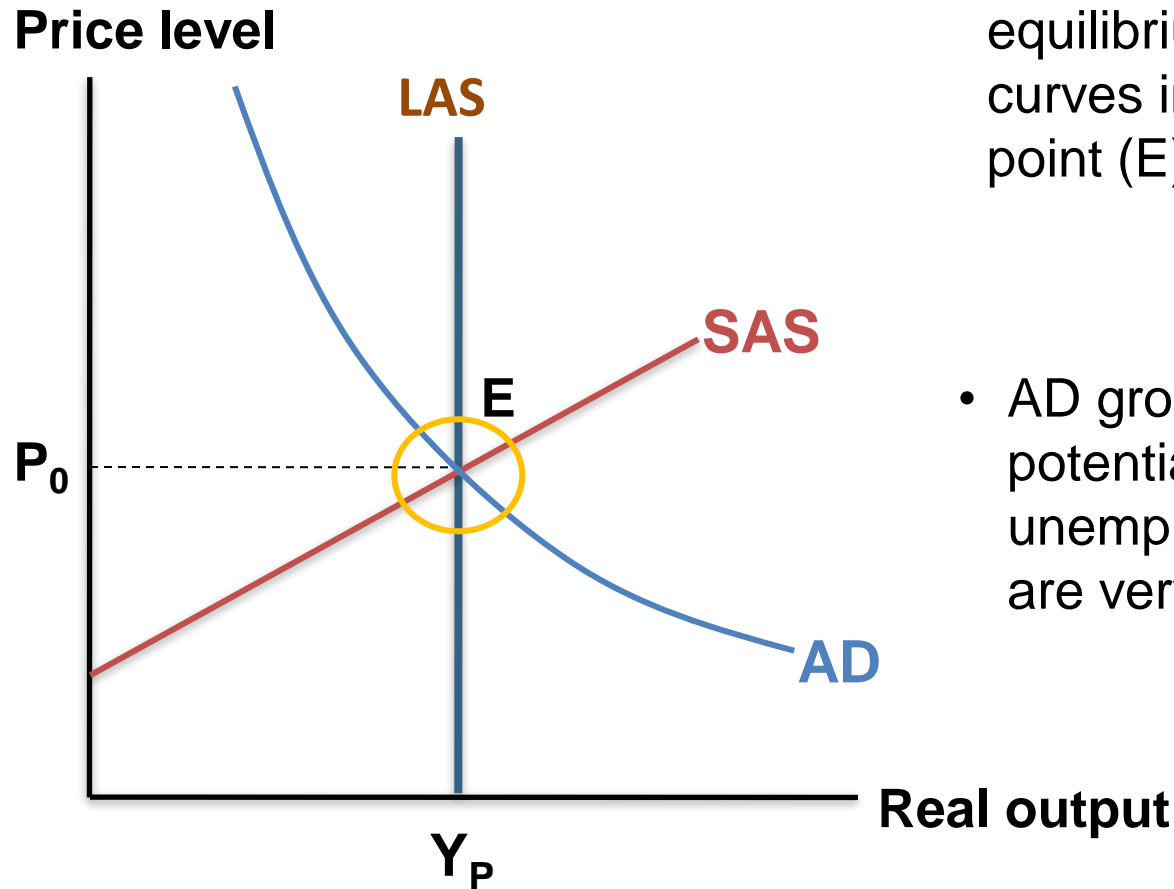
Long-Run Equilibrium in the AS/AS Model

Long-run equilibrium is where the LAS and AD curves intersect



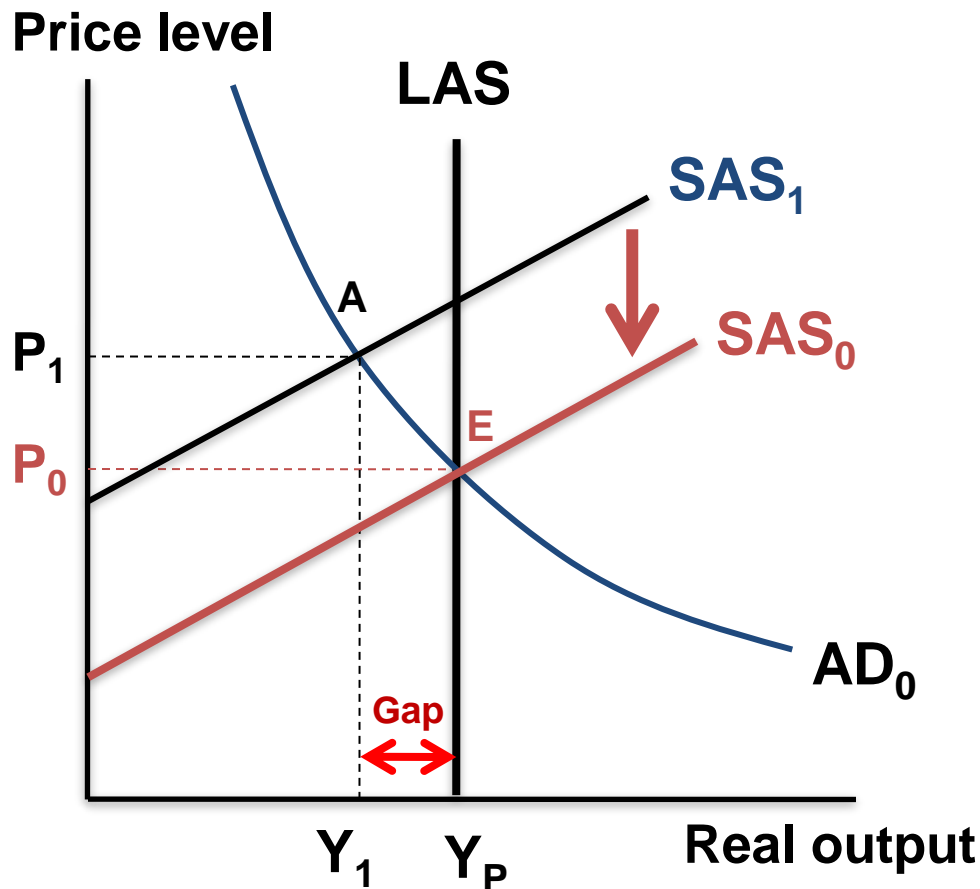
A shift in the aggregate demand curve changes equilibrium from E to H , increasing the price level from P_0 to P_1 but leaving output unchanged

Long-Run Equilibrium in the AS/AS Model



- The economy is in both short-run and long-run equilibrium when all three curves intersect in the same point (E)
- AD grows at the same rate as potential output, so that unemployment and inflation are very low

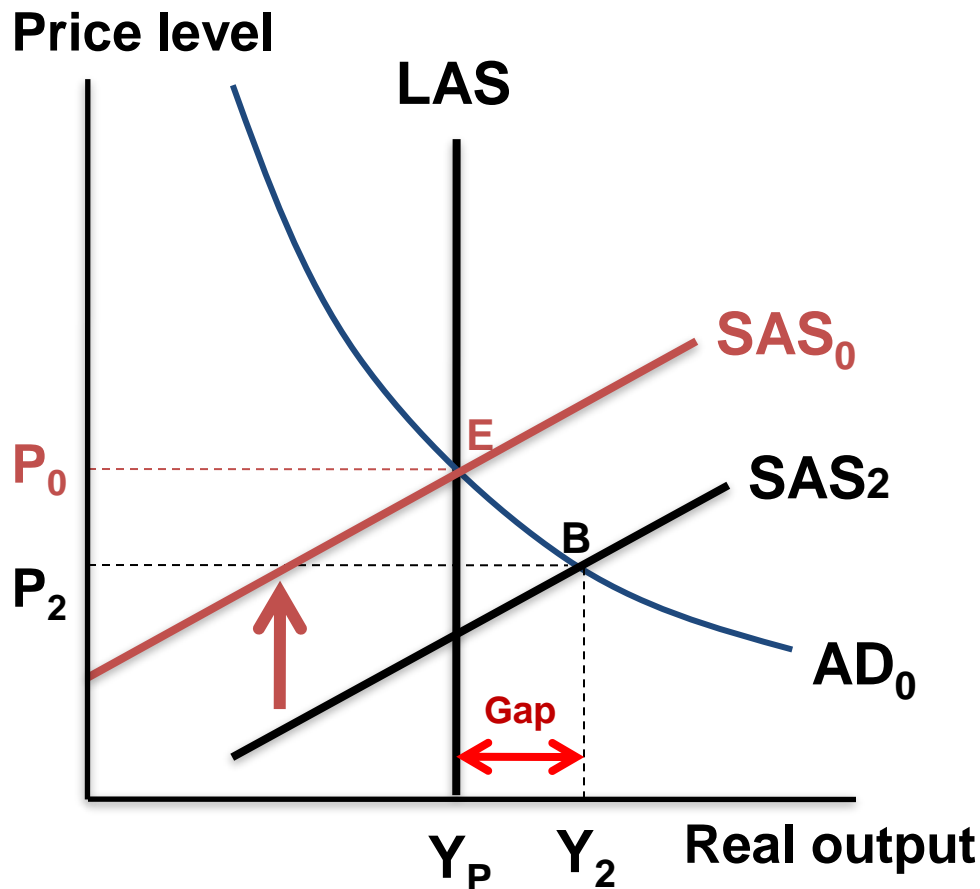
Application: A Recessionary Gap in the AS/AS Model



- A **recessionary gap** is the amount by which equilibrium output is below potential output
- At point A, some resources are unemployed and the recessionary gap is $Y_P - Y_1$

Eventually wages and prices decrease and SAS shifts down to return the economy to a long and short-run equilibrium at E

Application: An Inflationary Gap in the AS/AS Model



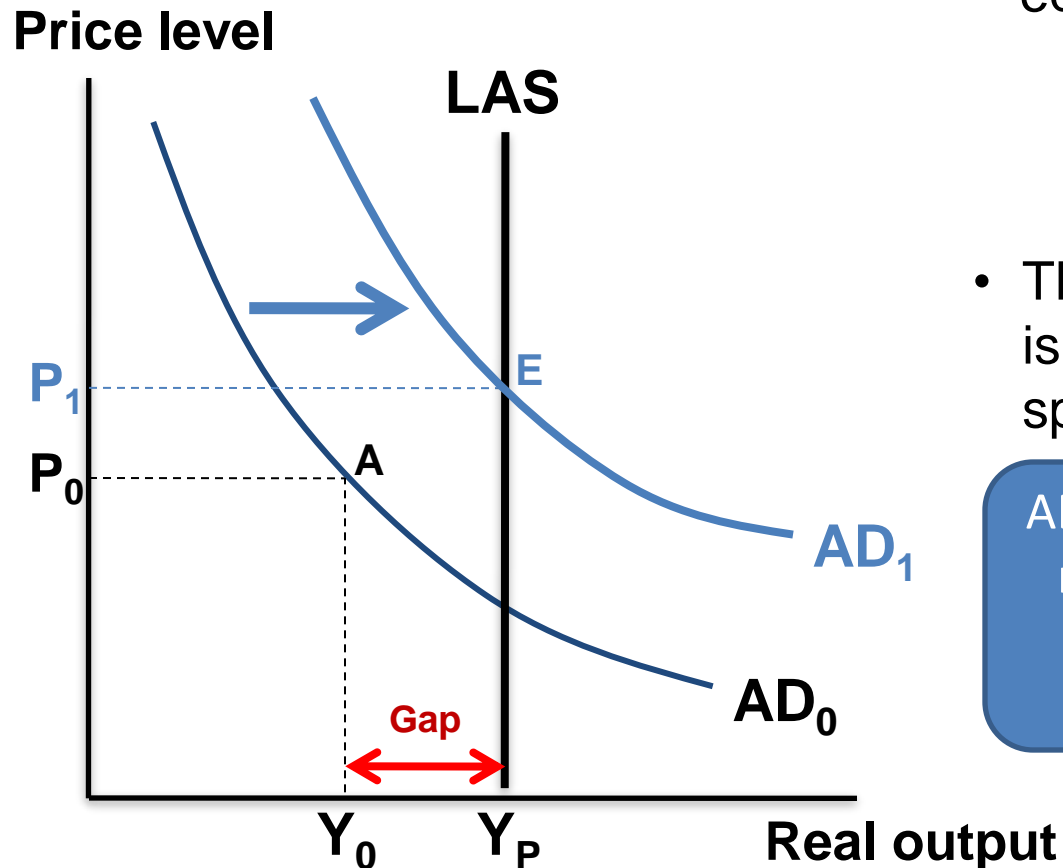
- An **inflationary gap** is the amount by which equilibrium output is above potential output
- At point B, resources are being used beyond their potential and the inflationary gap is $Y_2 - Y_P$

Eventually wages and prices increase and SAS shifts to return the economy to a long and short-run equilibrium at E

Aggregate Demand Policy

- A primary reason for government policy makers' interest in the AS/AD model is that monetary or fiscal policy shifts the AD curve
 - **Monetary policy** involves the Federal Reserve Bank changing the money supply and interest rates
 - **Fiscal policy** is the deliberate change in either government spending or taxes to stimulate or slow down the economy

Application: Expansionary Fiscal Policy in the AS/AS Model

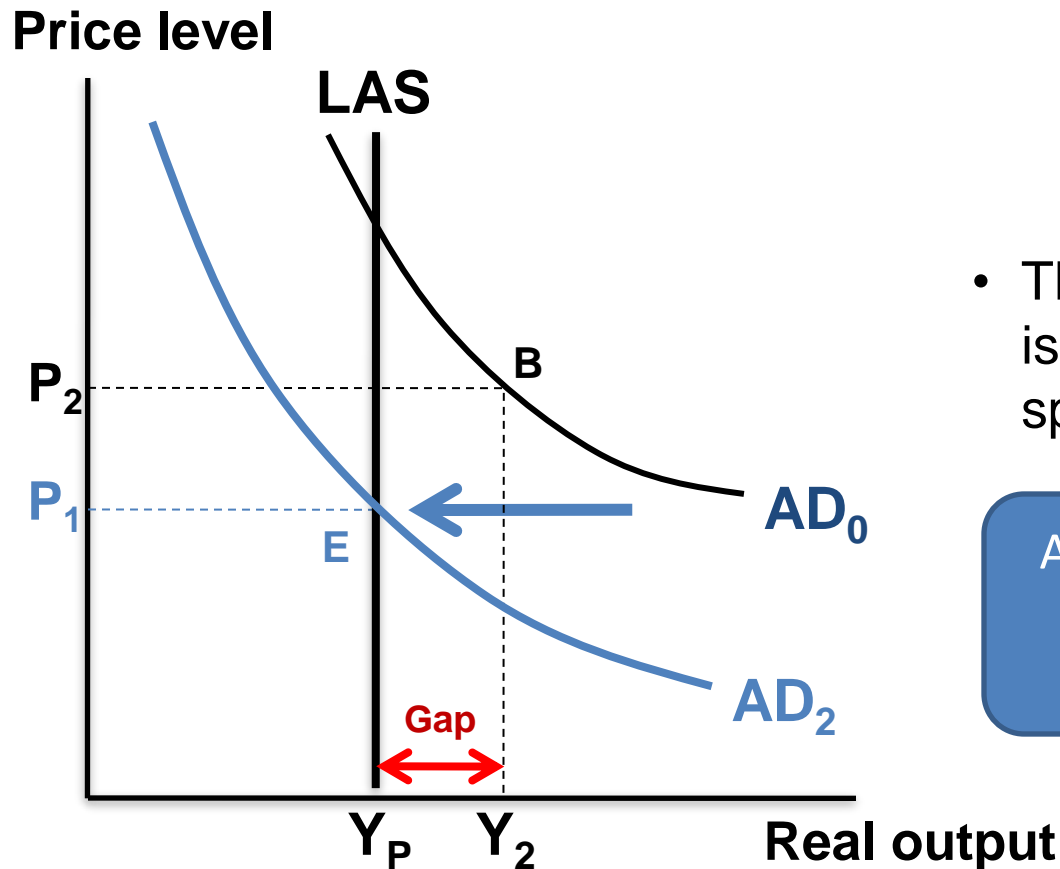


- If the economy is at point A, there is a recessionary gap equal to $Y_P - Y_0$
- The appropriate fiscal policy is to increase government spending and/or decrease taxes

AD shifts to the right and output returns to potential output Y_P and prices increase to P_1

Application:

Contractionary Fiscal Policy in the AS/AS Model



- If the economy is point B, there is an inflationary gap $Y_2 - Y_P$
- The appropriate fiscal policy is to decrease government spending and/or increase taxes

AD shifts to the left and output returns to potential output Y_P and inflation is prevented

Why Macro Policy Is More Complicated than the AS/AD Model Makes It Look

1. Implementing fiscal policy through changing taxes and government spending is a slow legislative process
 - There is no guarantee that government will do what economists say is necessary
2. Potential output (the level of output that the economy is capable of producing without generating inflation) is difficult to estimate
 - We do have ways to get a rough idea of where it is
3. There are many other possible interrelationships in the economy that the model does not take into account

Why Macro Policy Is More Complicated than the AS/AD Model Makes It Look

- There are two ways to think about the effectiveness of fiscal policy: in the model and in reality
- The effectiveness of fiscal policy depends on the government's ability to perceive and to react appropriately to a problem
- **Countercyclical fiscal policy** is fiscal policy in which the government offsets any change in aggregate expenditures that would create a business cycle
- **Fine-tuning** is used to describe such fiscal policy designed to keep the economy always at its target or potential level of income