Endogenous Factor Price Adjustments Lecture Notes

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Time Frames in Economics

Time frames in economics are defined not by a length of time, but rather according to which variables are assumed to change. Three time frames:

1. Short Run
2. Factor Price Adjustment Period
3. Long Run

Short Run Assumptions

- Factor Prices are exogenous, i.e. fixed
- Technology and Factor Supplies are constant - affects Y^*

* In the short run, eq'm is determined by the intersection of the AS and AD curves

- Exogenous shocks to supply and demand cause fluctuation around Y^*

Factor Price Adjustment Assumptions

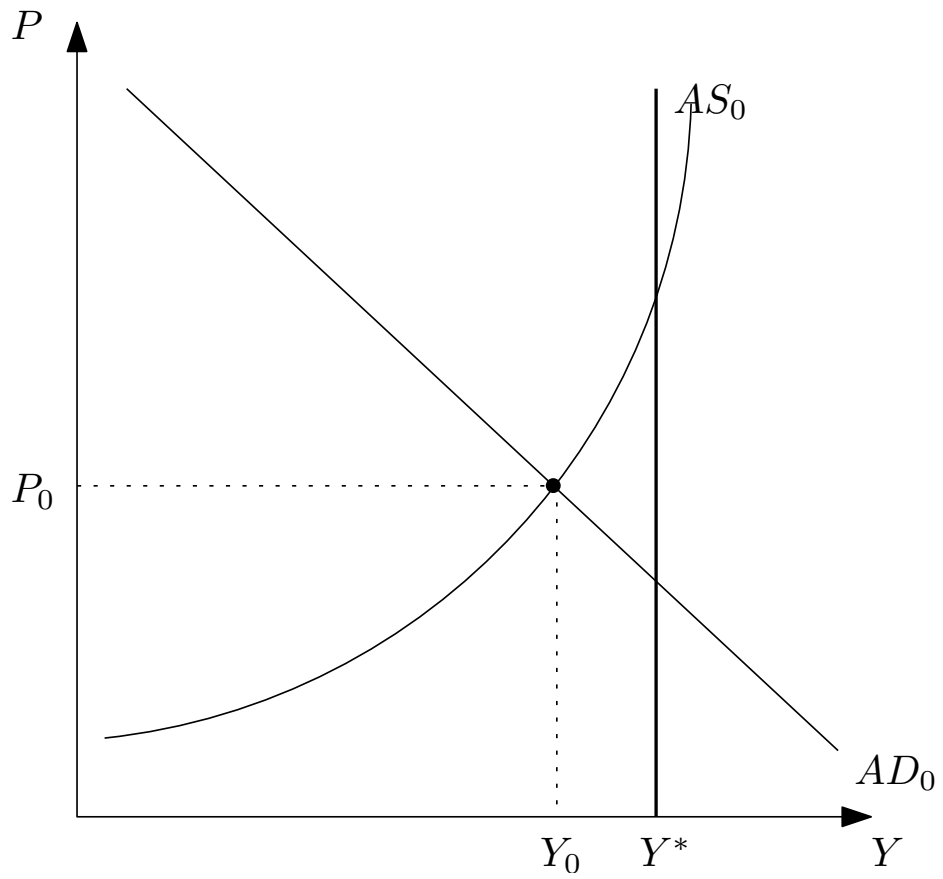
- Factor prices are flexible and adjust to output gaps
- Technology and Factor Supplies are constant

* Long Run Equilibrium occurs when AS=AD and factor prices are fully adjusted

Long Run Assumptions

- Factor prices have fully adjusted to output gaps
- Technology and Factor Supplies are changing

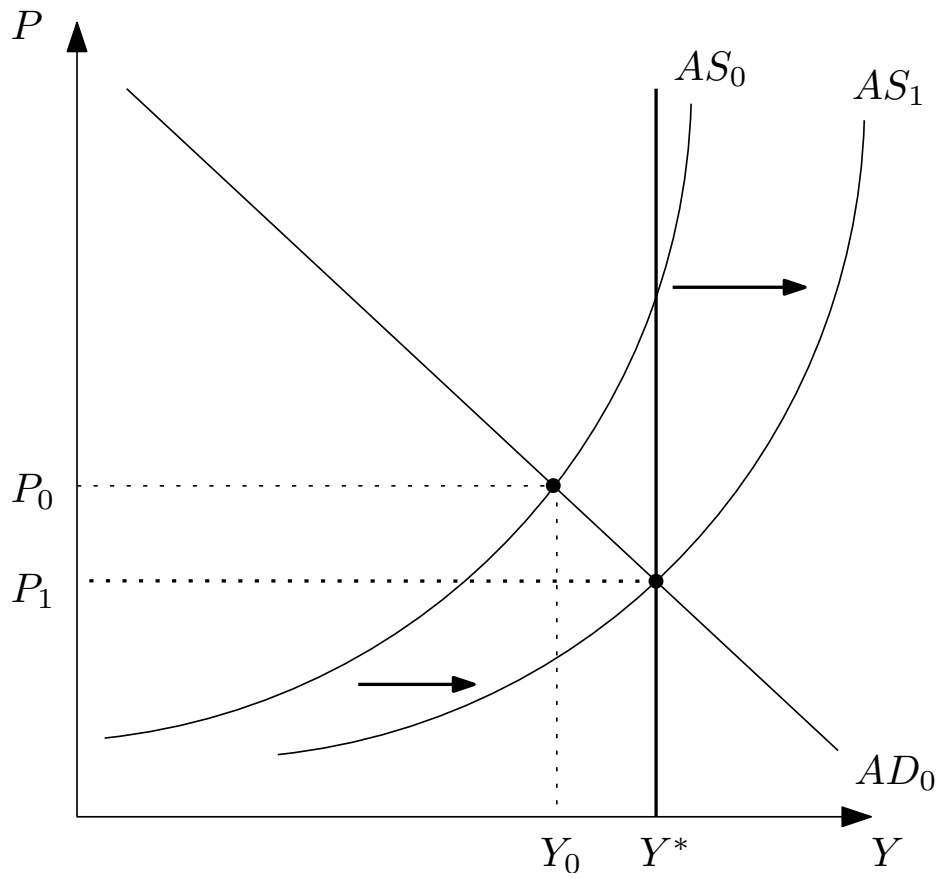
Output Gaps and Factor Prices



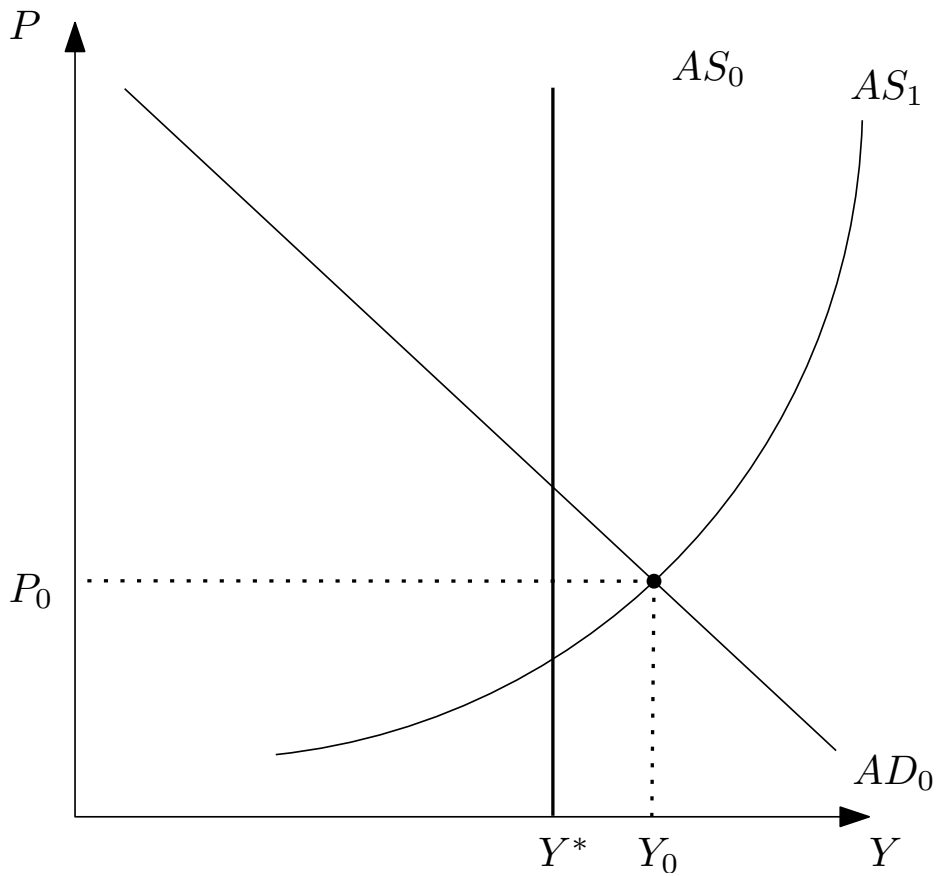
Factor Price Adjustments

- In a recessionary gap resources are underutilized, i.e. some factors of production are idle
- Likewise, there is an over-supply of factors
- This puts downward pressure on factor prices
- Which decreases unit costs for firms
- And Aggregate Supply increases, i.e. shifts to the right

Factor Price Adjustments



Inflationary Gap



Inflationary Gap

- In an inflationary gap resources are underutilized, i.e. some factors of production are idle
- Likewise, there is an under-supply of factors
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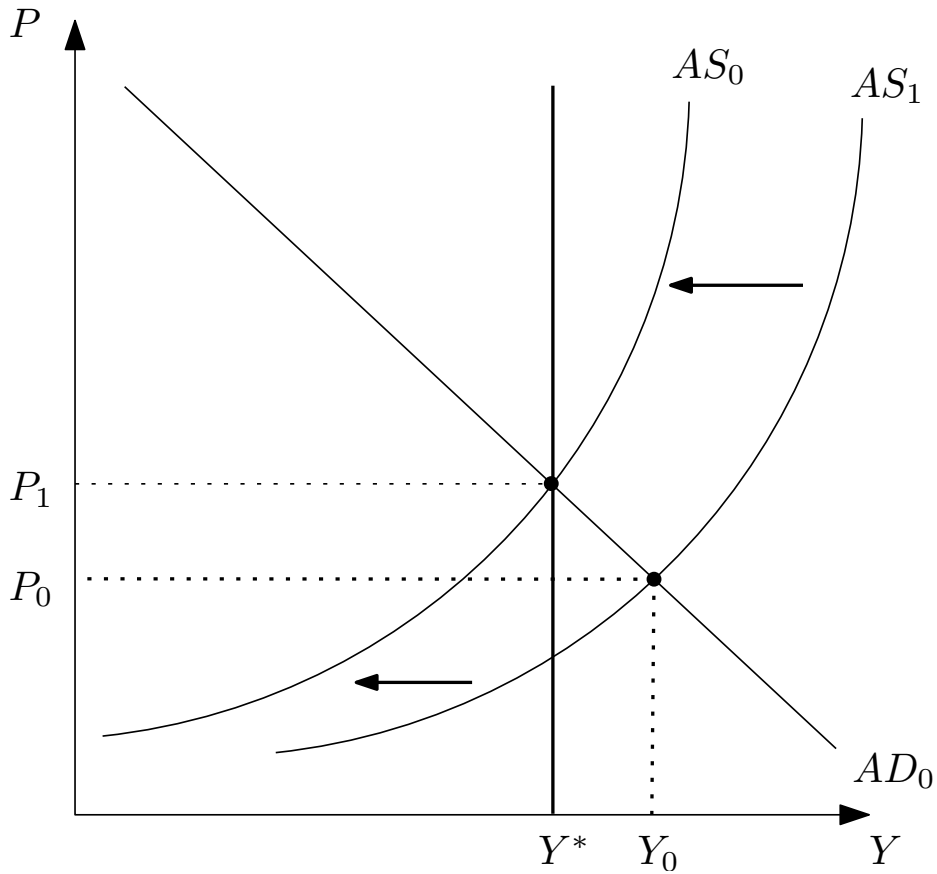
Factor Price Adjustments

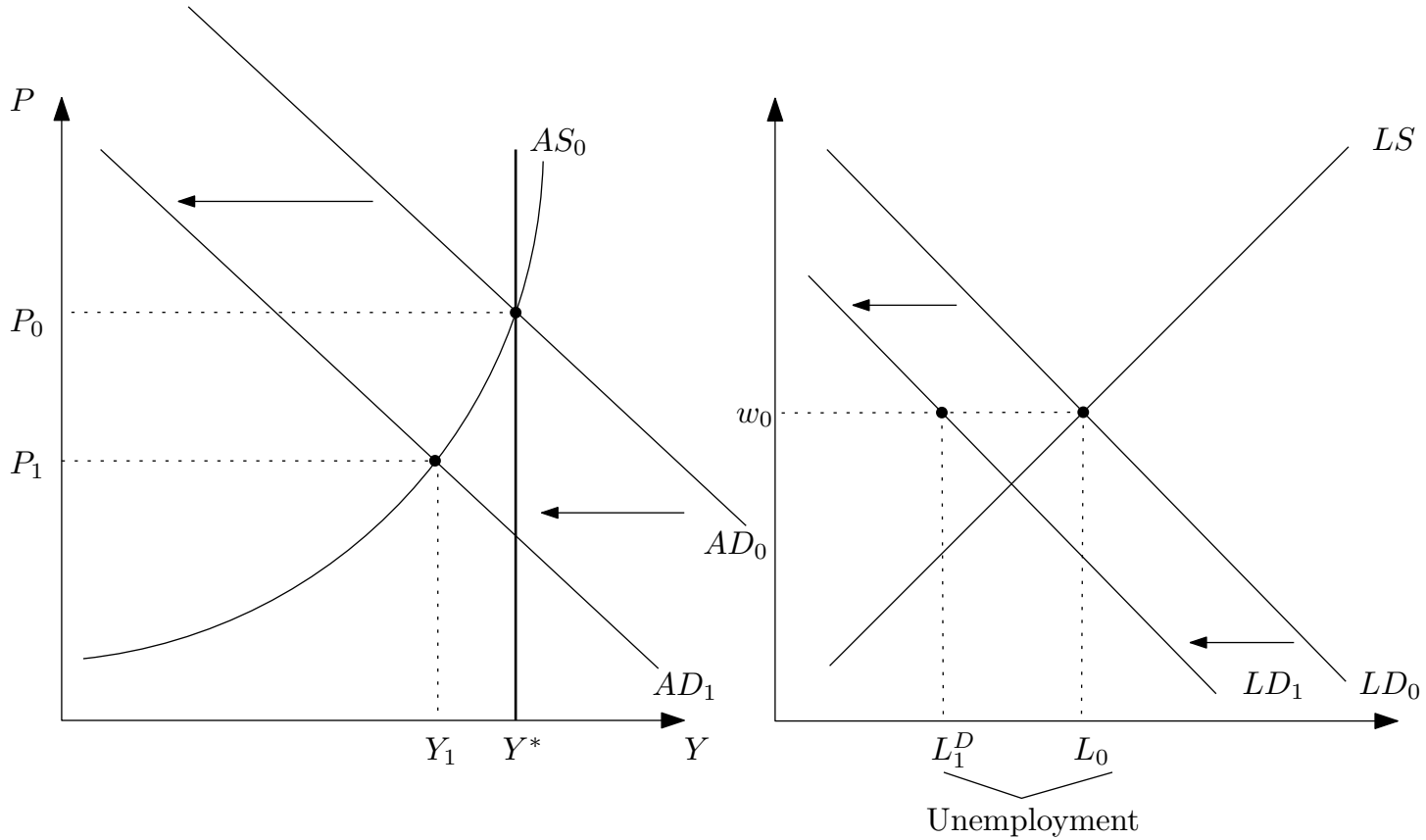


Labour Markets and the AS-AD Model

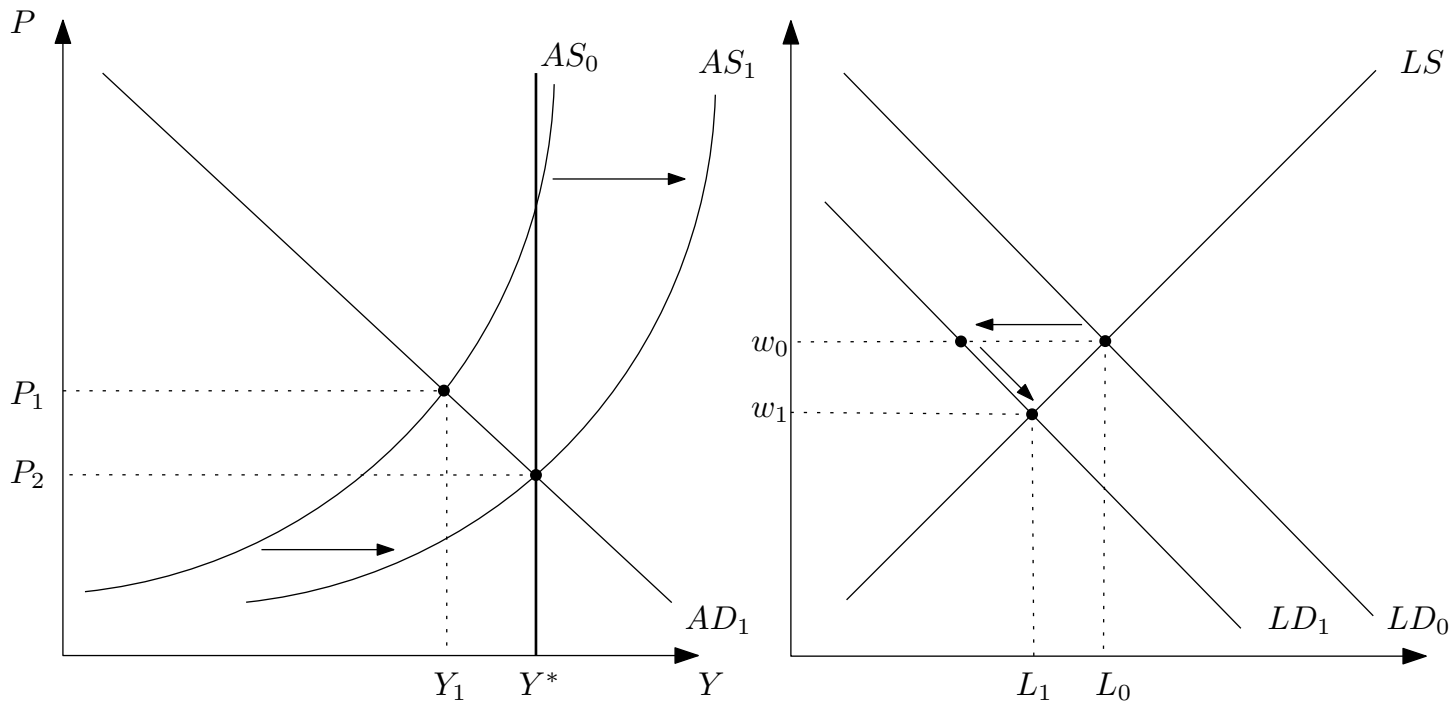
Suppose we integrate the the model of the labour market into the AS-AD model in order to analyze the factor price adjustment process

- Business cycles (i.e. output gaps) cause firms to alter their production decisions
- Demand for labour changes in response to business cycles
- Wages adjust (or don't) in response to labour demand shocks
- Changes in wages affect AS

Recessionary Gap



Recessionary Gap



Wage Adjustment Asymmetry

Will wages adjust at the same rate for either type of gap?

- Wage contracts or unions may make it difficult to lower wages
- Also, lowering wages may lead to disgruntled employees
- But who would say no to an increase in their wages?

Thus, we would expect a slower adjustment to recessionary gaps

Testing the Theory

Our theory of endogenous factor price adjustments implies the following:

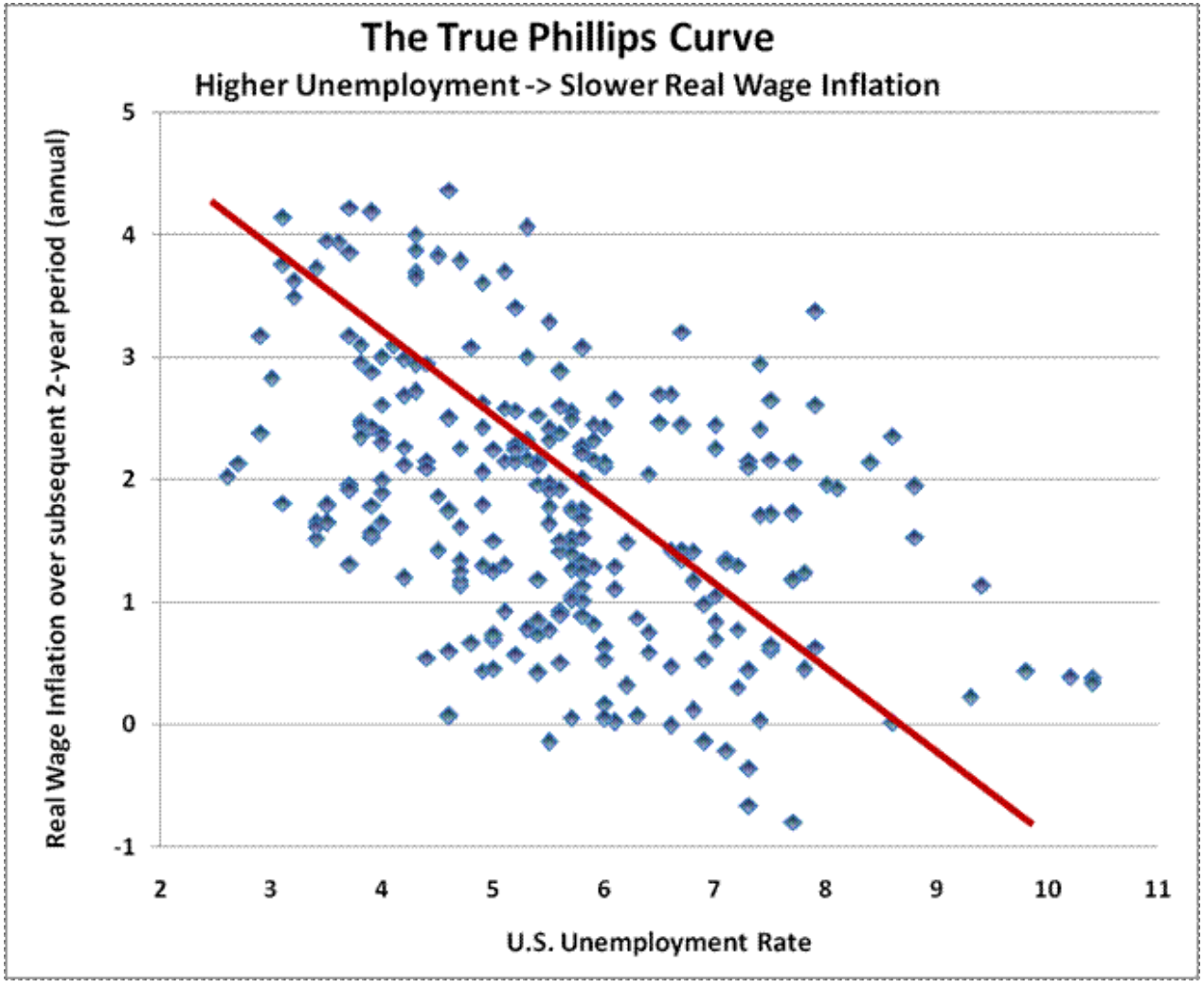
- Recessionary Gap $\Rightarrow$falling wages
- Inflationary Gap $\Rightarrow$rising wages

How can we test this?

The Phillips Curve

- The Phillips Curve describes the relationship between the rate of change of wages and the unemployment rate
- This is helpful because we can relate unemployment to the output gaps
- What sort of relationship would support our theory?

The Phillips Curve



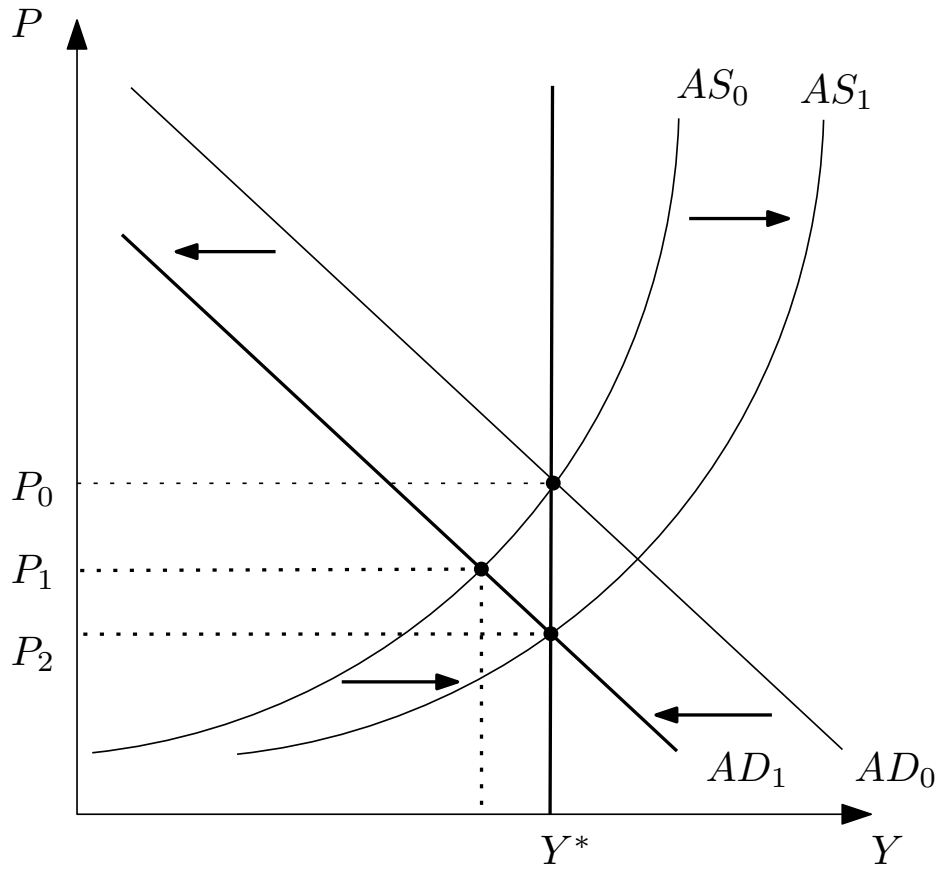
Aggregate Demand Shocks

What is the long-run impact of a shock to aggregate demand?

- Consider a rise in the interest rate?
- How does this affect national income and the price level in the short run? the long run?

Assume the economy begins where national income is equal to potential output

Aggregate Demand Shocks



Aggregate Demand Shocks

- Higher interest rate $\Rightarrow$ Decrease in Aggregate Demand
  - AD-curve shifts left - lower Y and P
- Recessionary Gap $\Rightarrow$ Under-utilization/over-supply of resources
  - Decrease in factor prices and unit costs
  - AS-curve shits right
  - $Y = Y^*$ and P is lower
- Long-run impact of shock is a lower price level

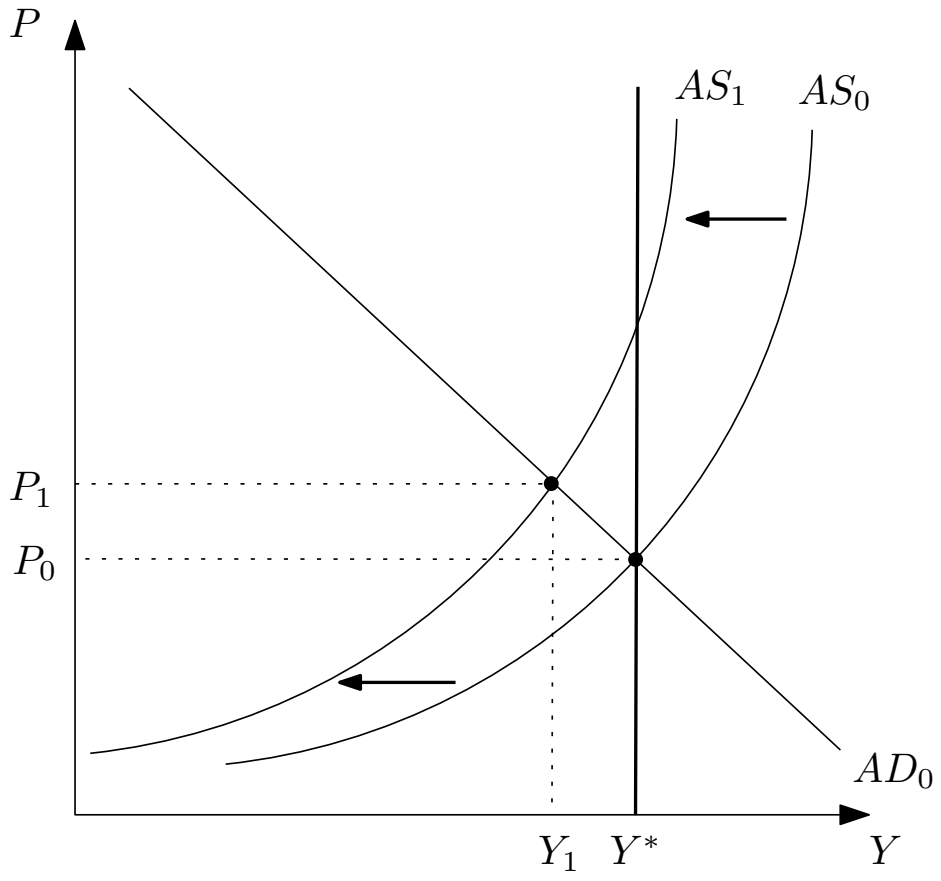
Aggregate Supply Shock

What is the *long-run* impact of a shock to aggregate supply?

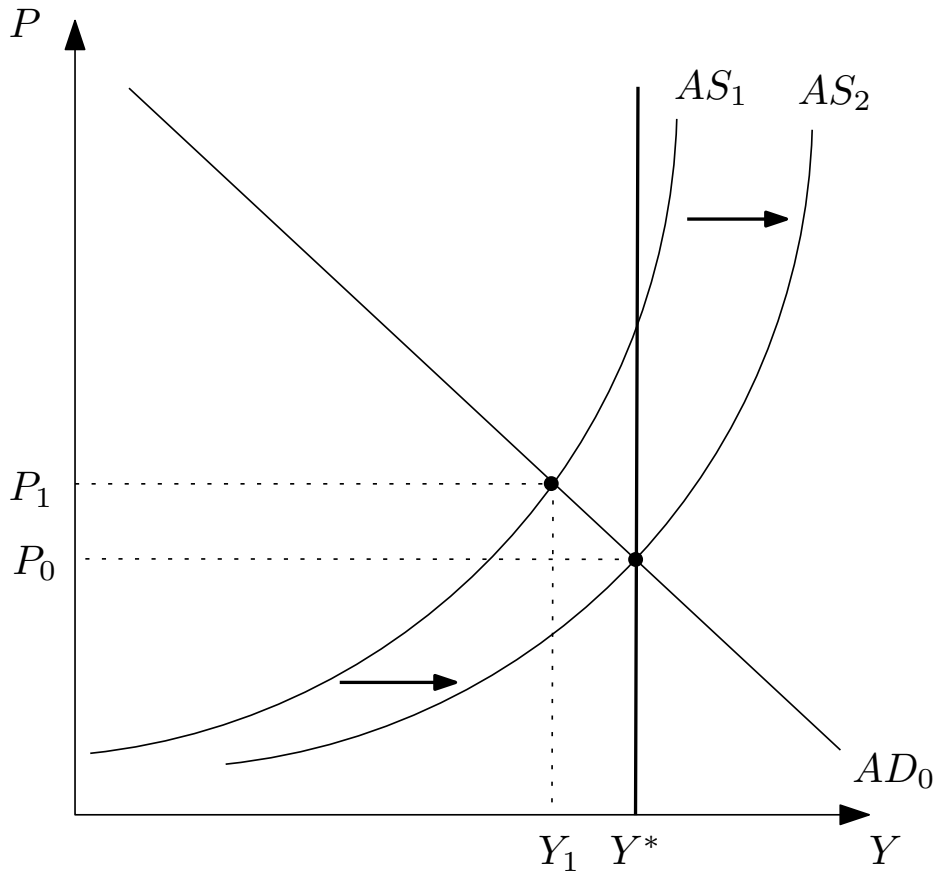
- Consider an increase in the price of oil?
- How does this affect national income and the price level in the short run? the long run?

Assume the economy begins where national income is equal to potential output

Aggregate Supply Shock



Aggregate Supply Shock



- Higher price of oil $\Rightarrow$ Decrease in Aggregate Supply
- AS-curve shifts left - lower Y and higher P
- Recessionary Gap $\Rightarrow$ Under-utilization/over-supply of resources
  - Decrease in factor prices and unit costs
  - AS-curve shits right
- Long-run impact of shock is no change price level or national income
- However, other factor prices (including wages) are now lower as a result!

Fiscal Stabilization Policy

How can the government use its policy tools in order to minimize fluctuations of Real GDP around its potential level?

- Recall: Fiscal policy refers to the use of government purchases and the net tax rate in order to influence Real GDP
- Potential Output serves as an anchor for Real GDP

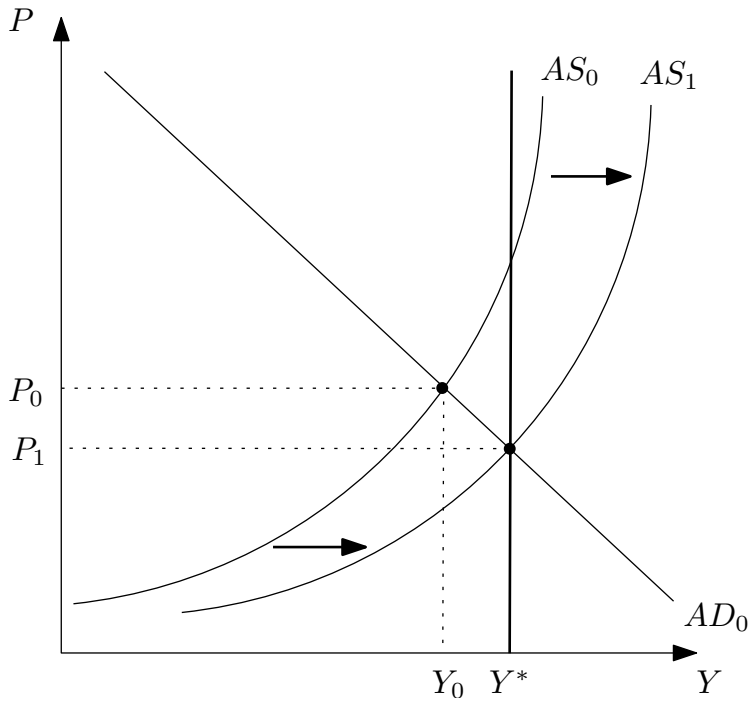
Closing a Recessionary Gap

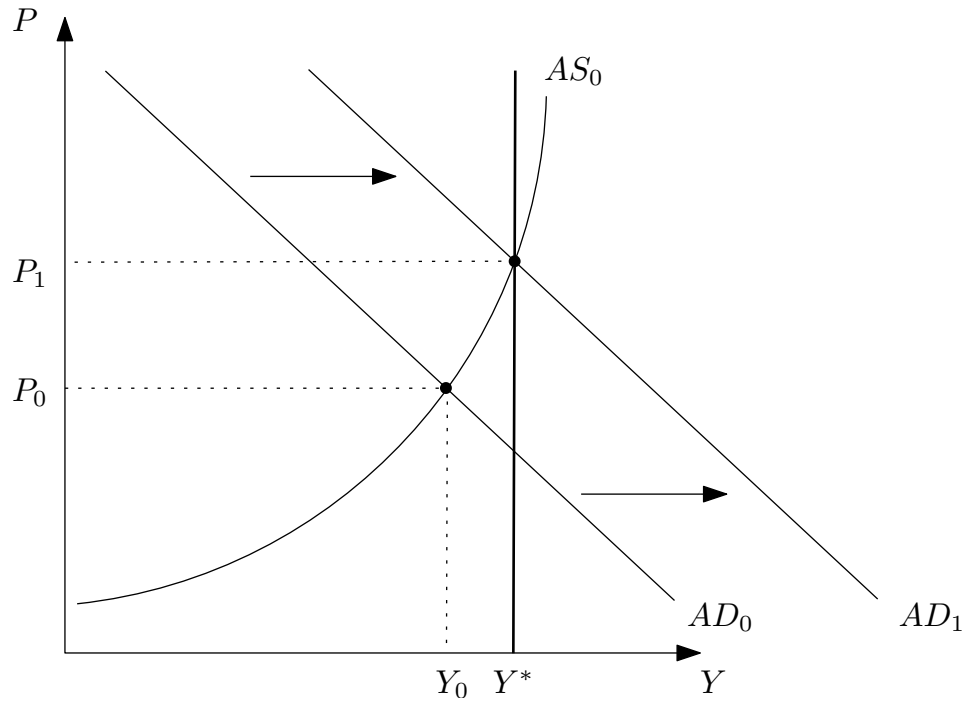
There are three ways to close a Recessionary Gap

- Private-sector demand recovers on its own
- Endogenous adjustment of factor prices
- Government Intervention
  - Reducing tax rates or increasing purchases

Comparing Options

- Recovery of demand and adjustment of factor prices may take a long time
- Fiscal policy may overshoot goal - increases instability
- Options impact price level differently


P
AS_0
AS_1
P_0
P_1
AD_0
Y_0
Y^*
Y


P
AS_0
P_1
P_0
AD_0
AD_1
Y_0
Y^*
Y

Limitations of Fiscal Policy

- Often we talk about government policy as if its implementation is simple.
- Politics is much more complicated than our model
- There are many practical limitations with respect to the implementation of fiscal policy

Limitations of Fiscal Policy

- Decision and Executive Lags
- Temporary vs Permanent Changes
- Fine Tuning vs Gross Tuning

Temporary Changes

- Suppose the government lowers the tax rate to encourage expenditure, i.e. increase aggregate demand
- This may create a deficit in the short run
- People may expect the government to increase the tax rate later to make up for the lost revenue
- People may save more today in anticipation - lowers aggregate demand
- Policy may be ineffective if changes are perceived to be temporary

Paradox of Thrift

Suppose you were concerned about your economic future. How would you respond?

- You might increase your savings (decrease your consumption) today
- Will have very little impact on current income

What if everyone did the same thing?

Paradox of Thrift

- An increase in the overall savings rate will reduce aggregate demand and national income
- The effect would be to make a recession even worse
- Gov't policy might be to encourage spending in recessions - seems counter-intuitive
  - Great Depression
  - 9/11
- Paradox of Thrift is not relevant in the Long Run