

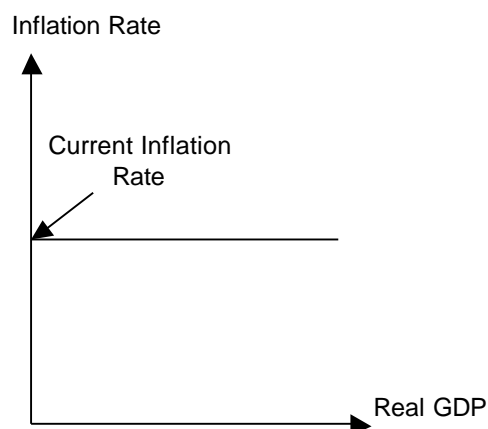
Lecture 14: The Price Adjustment Line

I. OVERVIEW

- In the last lecture we built up the first portion of the Aggregate Demand/Price Adjustment model. We derived a negative relationship between inflation and real GDP working through the channel of interest rates. Today's lecture looks at the second part of the model: the Price Adjustment line.

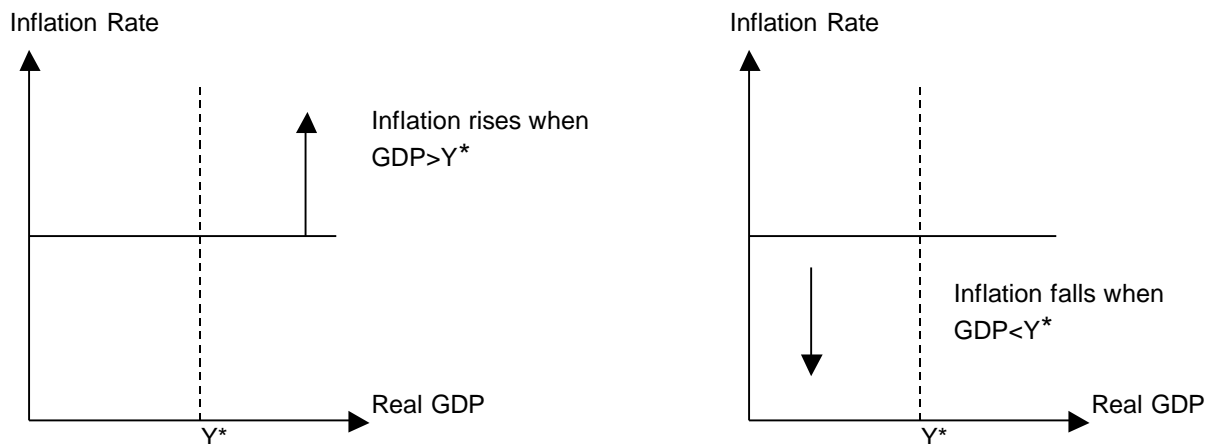
II. THE PRICE ADJUSTMENT LINE

- The price adjustment line shows the rate of inflation that prevails in the economy at a given time. It summarizes the outcome of the price and wage setting behavior of firms and workers.
- The price adjustment line is a flat line with the vertical intercept signifying the inflation rate that prevails in the economy. Underlying this line is an assumption, that in the short run, the rate of inflation is constant.
- Why can we make such an assumption? Basically because of a combination of
 1. Staggered wage and price setting and
 2. Expectations of steady inflation
- Workers in many industries negotiate their contracts in order to fix a real wage but allow for annual nominal wage increases to keep up with expected inflation.
- For example, if inflation is running at 10% a year, a 3 year teachers' union contract that comes up for renegotiation will probably build in a 10% per year nominal wage increase to keep up with expected inflation. If the next contract that comes up is a metal worker's union, then they will likely follow the teacher's union and build in a 10% wage increase as well.
- Since most firms know that their wage costs are under control, they are unlikely to revise prices frequently as well. In general, we would expect that prices and wages in the economy rise at a fairly smooth rate reflecting the expected rate of inflation in the economy.
- Given that most prices and wages in the economy are fixed at a given time and only a few are changing: price and wage decisions often reflect recent price and wage increases thus helping keep inflation fairly smooth. This provides some justification for our modeling the rate of inflation as being constant over the short run.



III. SHIFTS IN THE PRICE ADJUSTMENT LINE OVER TIME

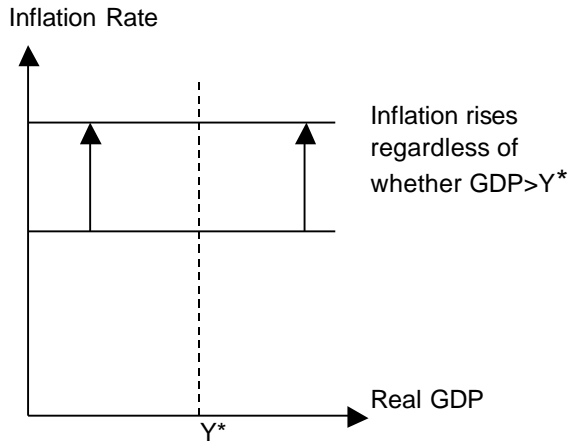
- In the short run we assumed that the price adjustment line is fixed. However in the intermediate run: let's say every year or so, the price adjustment line may shift up or down.
- Which direction the price adjustment line is likely to shift depends on whether output is higher or lower than potential GDP. Why? Well think about potential GDP as the economy's productive capacity in the long run.
- In the short run if demand is high enough firms may be willing to expand production without increasing prices either by working their machines overtime or putting more people to work. However, in the long run they will not do this and when faced with higher demand may instead choose to let their prices rise.
- So whatever the inflation rate is, firms will have to raise prices by more if they want the relative price of their individual goods to increase. As more and more firms start to increase their prices the rate of inflation will also rise.
- Conversely, if real GDP is below potential GDP, then inflation will fall over time. Why? If the short run output is below what the economy is capable of producing in the long run, then firms will begin to price their goods lower relative to other goods in order to make them more attractive to buyers.
- In order to make the relative price of their goods fall, they will set the price increase at a rate that is less than the rate of inflation. As more and more firms do this, the rate of inflation will start to fall.



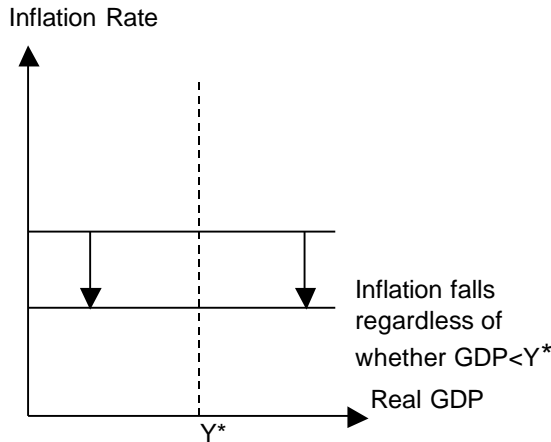
IV. SUDDEN SHIFTS IN THE PRICE ADJUSTMENT LINE

- Even though we generally assumed that the rate of inflation remains constant in the short run and only adjusts gradually over time, unforeseen occurrences can cause the price adjustment line to move suddenly.
- One possibility is a shift in expected inflation, or basically expected inflation that differs substantially from recent experience. Since expected inflation is built into the negotiated wage or price increase, inflation rates can change quickly if more and more contracts use the higher expected inflation rate as basis for negotiation on wages.
- A more likely occurrence, or at least a more familiar occurrence is an increase in the price of oil. A sudden jump in the price of oil will have an economy wide ripple effect in raising prices since costs of almost all goods are affected in some way shape or form by the price of oil. Therefore a sudden jump in the price of oil can cause the price adjustment line to shift upwards.

EXAMPLE 1: A rise in expected inflation



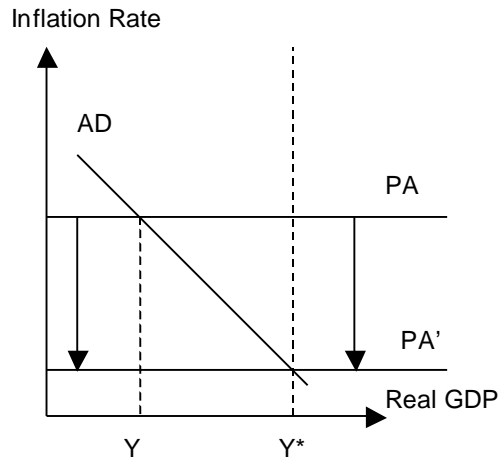
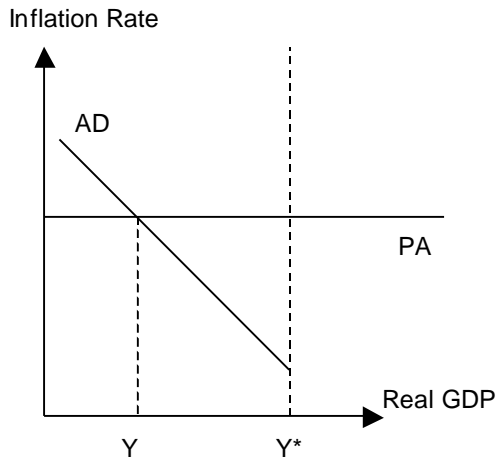
EXAMPLE 2: A fall in the price of oil



- Even though the theory seems theoretically plausible one needs to make sure that it is empirically valid too. That is, we must make sure that the data fits the theory. The textbook graphs data taken from the Department of Commerce and shows that for the most part, large deviations output from potential GDP are associated with movements in inflation in the expected direction.

V. COMBINING THE AGGREGATE DEMAND CURVE WITH THE PRICE ADJUSTMENT LINE

- Now that we have the two relationships: the aggregate demand curve and the price adjustment line, the next task is to combine them and examine the impact on the economy of various types of policy decisions.
- Since the Aggregate Demand curve summarizes all combinations of inflation and real GDP that could prevail in the economy and the Price Adjustment line tells us what the rate of inflation actually is in the economy, the intersection of the two gives the current rate of inflation and the current level of real GDP in the economy.
- Note that the intersection could appear either above or below (or even exactly at) the level of potential GDP in the economy.
- Clearly the equilibrium at Y is only a short run equilibrium. In the case where $Y < Y^*$, inflation will fall over time. So the PA line will shift downwards, increasing equilibrium output until output reaches potential output.



- In the case where $Y > Y^*$, inflation will rise over time causing the PA line to shift upwards, decreasing output until it reaches potential output.

