

The Inflation Unemployment Trade-off

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Inflation

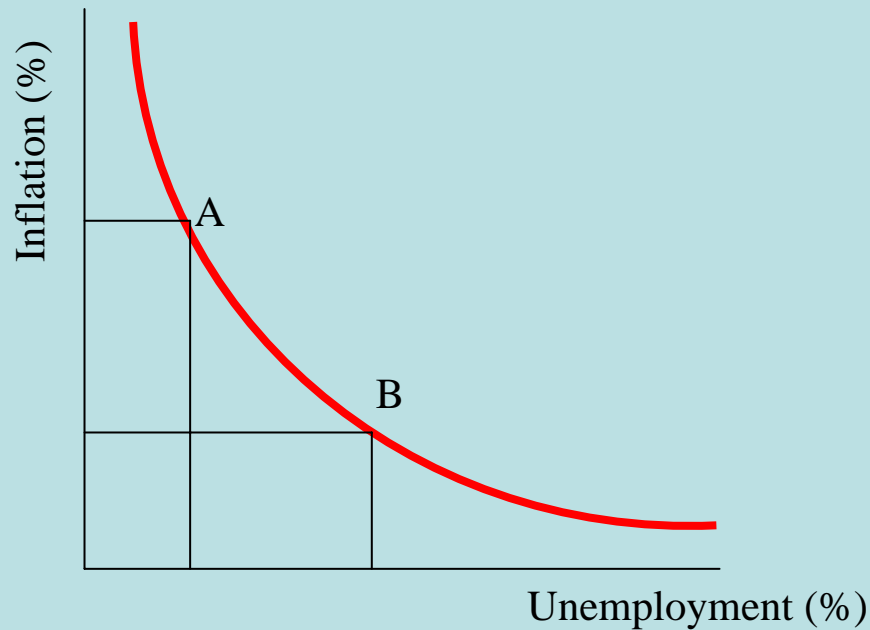
- Inflation is the percentage increase in prices over the past year
- What prices?
 - Usually the retail price level
 - but could also be: export prices, wholesale prices etc.
- Theories of inflation:
 - Cost-push
 - Demand-pull

Competition Between the Employed and Unemployed

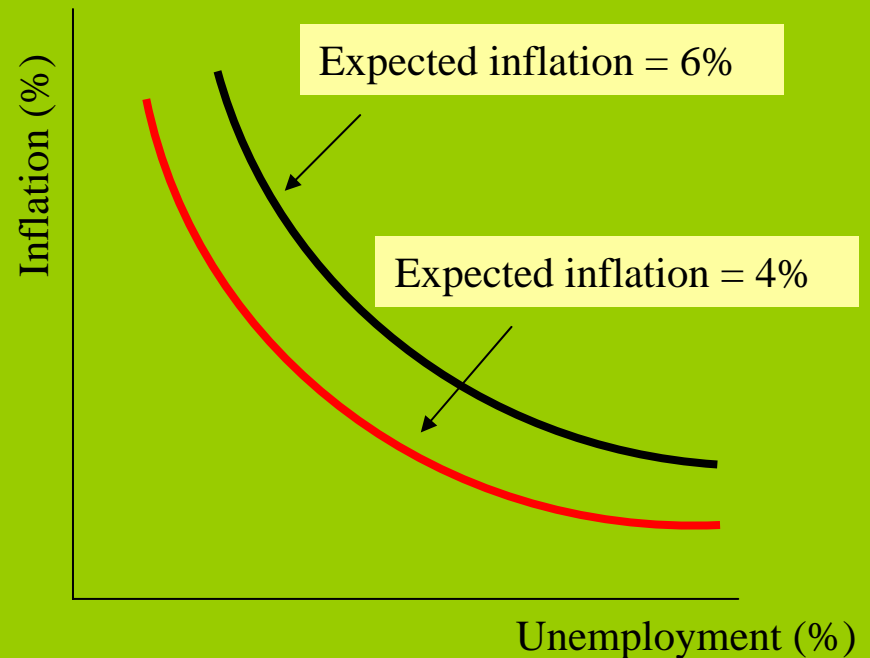
- Unemployed and employed persons are in competition: the employed have jobs the unemployed would like to have
- The strength of this competition moderates the wage (and other) demands of workers
- When unemployment is high, competition is strong, and wage demands are weak
- When unemployment is low, competition is weak, and wage demands are strong

The Phillips Curve

The **Phillips Curve** offers a menu of choices: lower unemployment can be bought with higher inflation



The **Expectations Augmented Phillips Curve**: the position of the curve depends on inflationary expectations



Wages and Prices

- The “unit cost” of a commodity is the cost of producing one unit of that commodity: C/Y
- Prices are determined as a mark-up over unit costs
- Labour costs ($w \times N$) are the most significant cost in product. So:

$$p = \alpha \frac{wN}{Y} = \alpha \frac{\textit{wage}}{\textit{productivity}}$$

Inflation and wage, and productivity, growth

So (price) inflation, defined as the percentage change in prices over time, is given by:

- change in profit margin
- + wage growth
- – productivity growth

If wages rose by $x\%$ and productivity growth was $y\%$, then, with constant profit margins:

$$\text{inflation} = x\% - y\%$$

Real Wages

- Real wages represent the amount of goods and services that a given (nominal) wage can buy

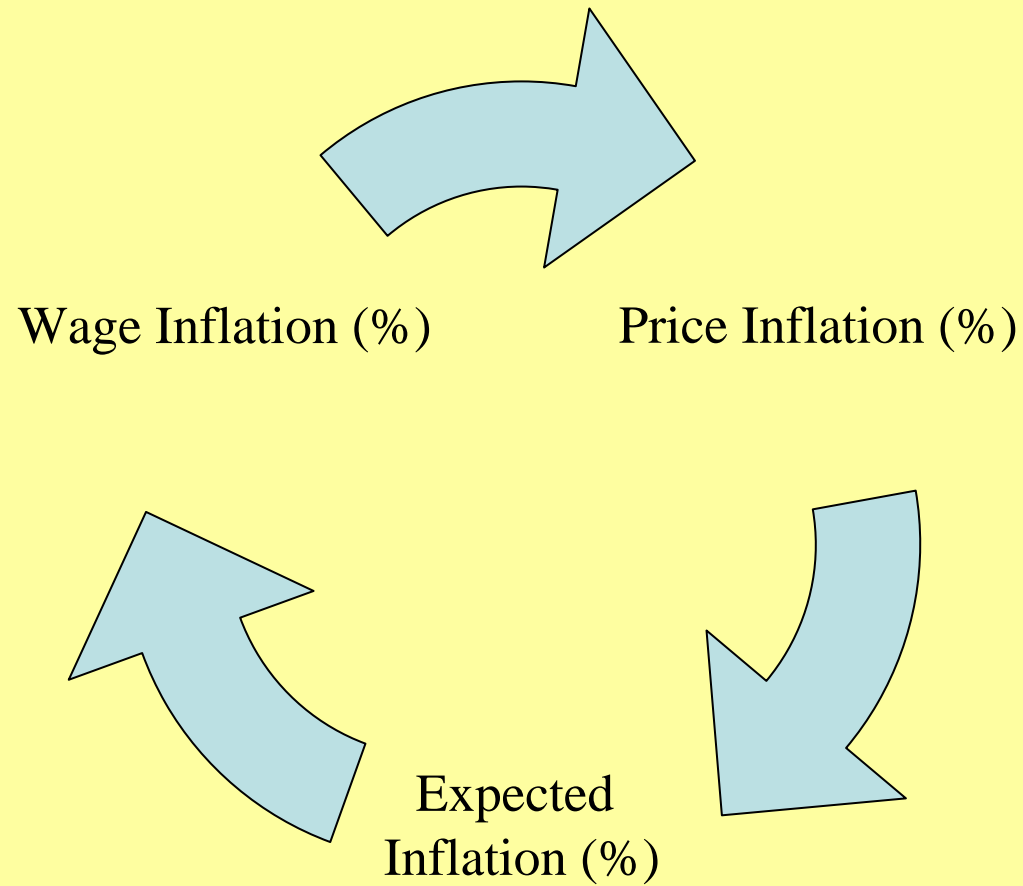
$$\text{real wage} = \frac{\text{wage}}{\text{price}}$$

- Real wages are a measure of how well off workers are: a rise in real wages represents a rise in their standard of living
- Real wage growth = wage growth – inflation
= productivity growth

Productivity and Real Wage Growth

- Suppose productivity and wages rose by 5%. Then prices remain unchanged and real wages will rise by 5%
- Suppose productivity growth was $y\%$ and wages rose by $x\%$. Then prices would rise by $x\% - y\%$ and real wages would rise by $y\%$
- Productivity growth is the sole determinant of real wage growth
- The excess of wage over productivity growth will be eaten away by higher prices

The Wage-Price Spiral



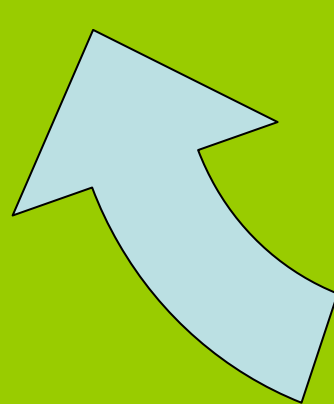
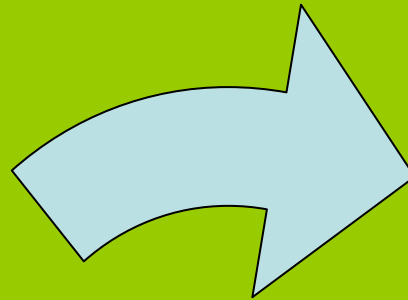
The Steady-State

Every year prices go up by 10%
Every year prices are expected to go up by 10%
Every year wages go up by 10%
Real wages are constant

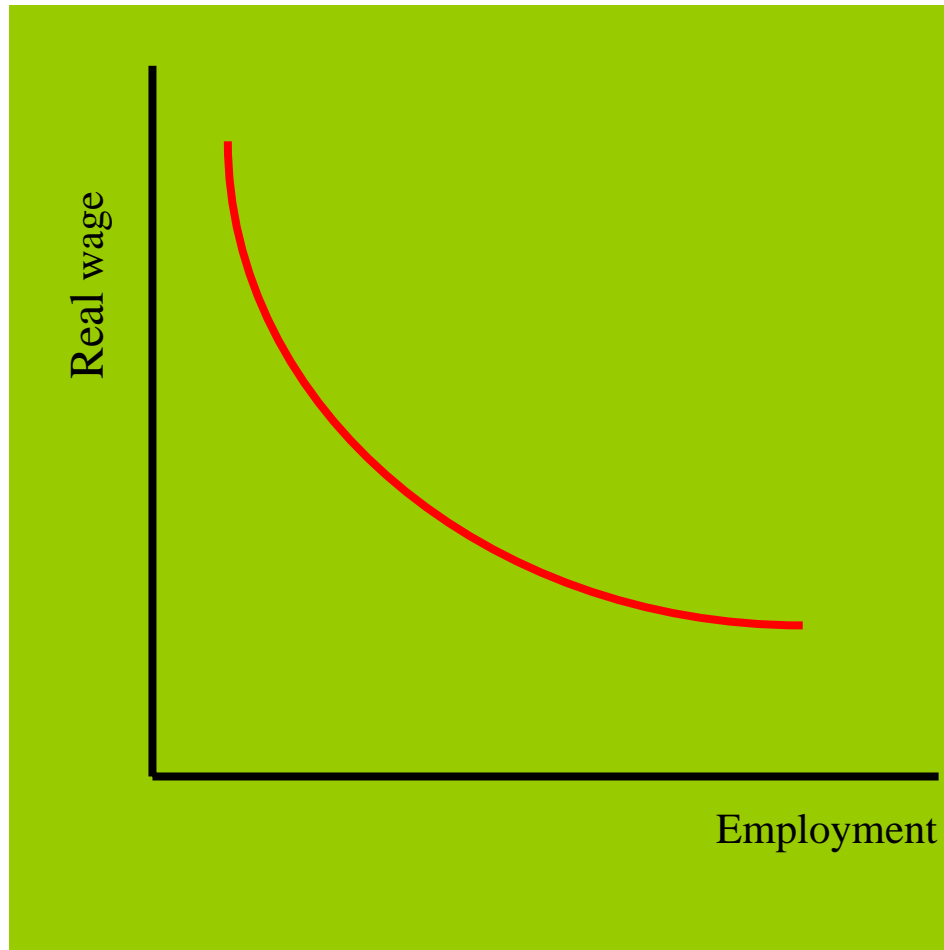
Wage inflation (10%)

Price Inflation (10%)

Expected
Inflation (10%)



The Demand for Labour



Labour is a commodity:
its demand depends
upon its price

Its price is the real wage

$$= \frac{\text{nominal wage}}{\text{price level}}$$

Fooling Workers

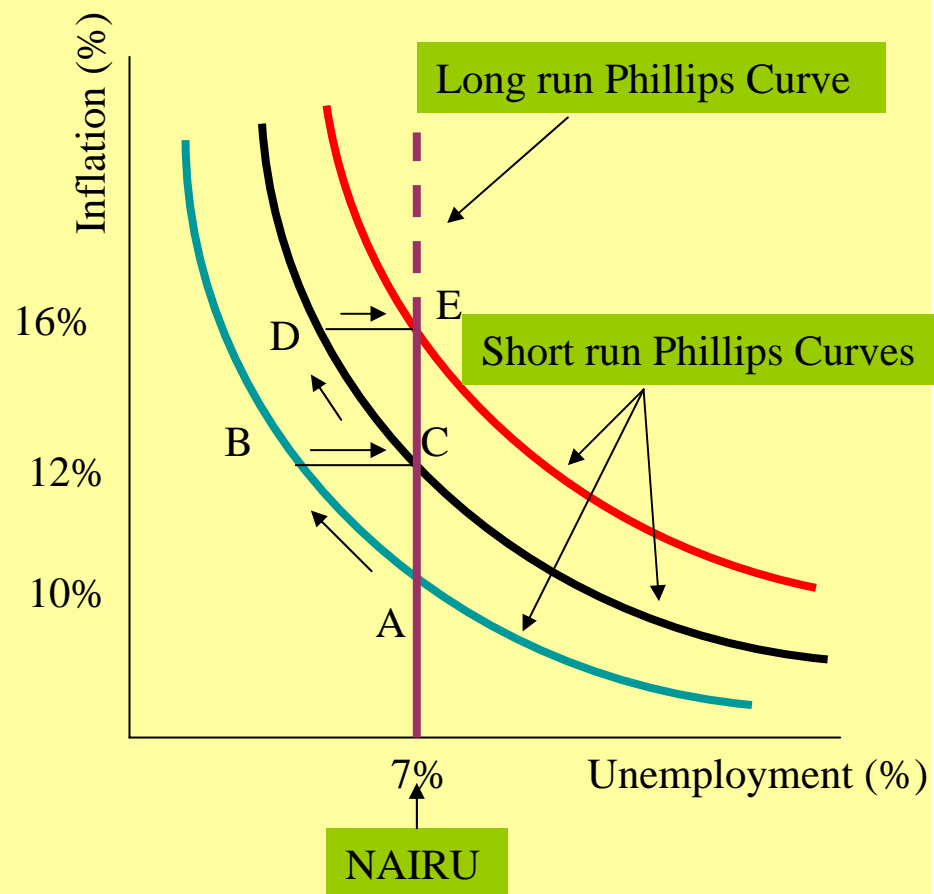
- When the inflation rate goes up (10% to 12%), workers do not immediately realise this: they think the inflation rate is unchanged
- So, their wage demands are based on the old inflation rate of 10%
- Therefore, real wages fall, employment increases, unemployment falls

Workers Catch On

- After a while, workers realise that the inflation rate has gone up (to 12%)
- So their wage demands (12%) are based on the new inflation rate
- The real wage returns to its old level and the old levels of employment and unemployment are restored
- How long does it take workers to catch on?

The Up Escalator

Ascending the Inflationary Tree



The economy is initially at equilibrium at A: unemployment is 7% and inflation is steady at 10%

At B, unemployment is lower but inflation is higher

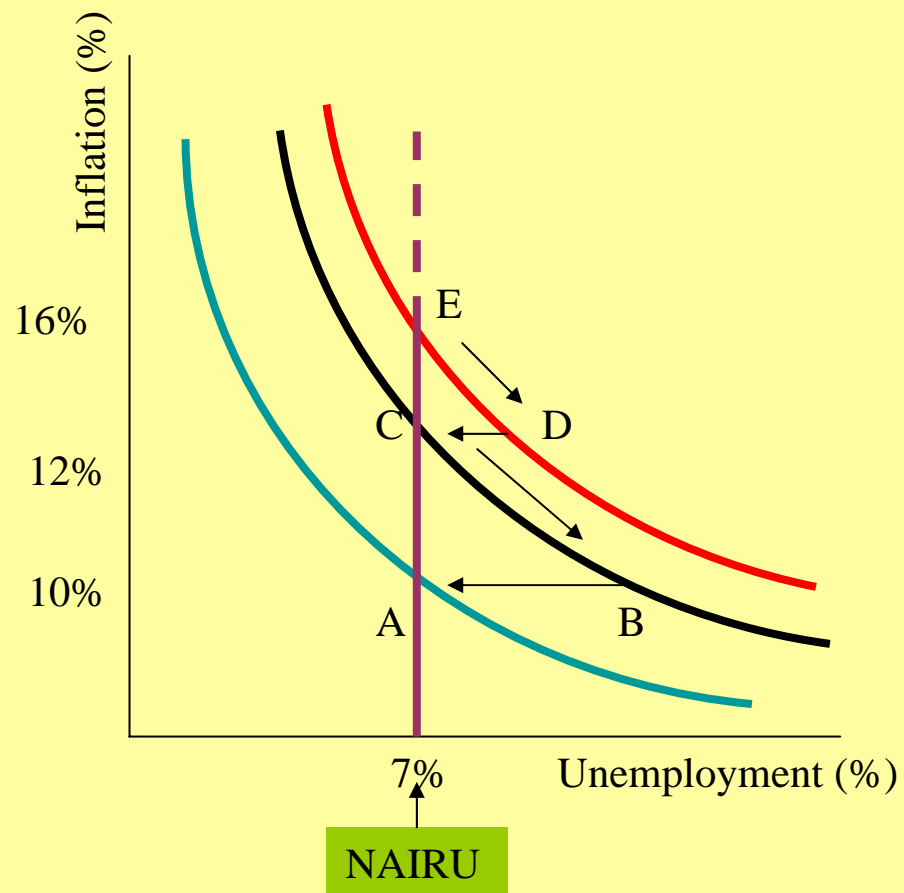
At C (2001) unemployment is back to 10%, but inflation is higher at 12%

At D, unemployment is lower but inflation is higher

At E (2002) unemployment is back to 10%, but inflation is higher at 16%

The Down Escalator

Descending the Inflationary Tree



The economy is initially at equilibrium at E (2000): unemployment is 7% and inflation is steady at 16%

At D, unemployment is higher, but inflation is lower

At C (2001) unemployment is back to 10%, but inflation is lower at 12%

At B, unemployment is higher but inflation is lower

At A (2002) unemployment is back to 10%, but inflation is lower at 10%

Why is Controlling Inflation Important?

- In an open economy, in which countries trade with each other, “being competitive” is very important
- The UK is competitive with respect to the US if the UK inflation rate is lower than the US inflation rate
- The UK is uncompetitive with respect to the US if the UK inflation rate is higher than the US inflation rate

The Exchange Rate

- The UK price level in \$ is:

$$P_{\$}^{\text{UK}} = \alpha \times \frac{\text{UK wage}}{\text{UK productivity}} \times E_{\$}^{\text{£}}$$

where: $E_{\$}^{\text{£}}$ is the exchange rate (the price of a \$)

- So, rise in the price of UK products in the US is:

- UK wage growth
- -UK productivity growth
- + % exchange rate change

Domestic
Inflation

Instruments for Improving Competitiveness

There are three instruments for improving competitiveness

- Higher productivity growth
- Lower wage growth
- Exchange rate depreciation

Exchange Rate Depreciation

- If UK inflation is higher than US inflation, the exchange depreciates so as to maintain the competitiveness of UK products
- A depreciation of sterling is bad for the UK because the UK's terms of trade deteriorate: it requires more UK exports to buy the same quantity of US imports
 - When $E_{\$/\pounds} = 0.50\text{p}$, it requires £50 of UK exports to buy \$100 of US imports
 - When $E_{\$/\pounds} = 0.75\text{p}$, it requires £75 of UK exports to buy \$100 of US imports