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Economics Revision Focus: 2004

A2 Economics

The Phillips Curve

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Revision Focus: The Phillips Curve

A2 Syllabus Requirements

Candidates should understand both the short run and the long run Phillips Curves and be able to discuss their implications for economic policy

The basics of the original Phillips Curve

The essence of the Phillips Curve is that there exists a short-term trade-off between unemployment and price inflation. But the reality is that the original Phillips Curve has come under sustained attack and the nature of the trade-off has certainly changed for the British economy and many others as well.

Why might there be a trade-off?

The key to understanding this is to consider the possible inflationary effects in both labour and product markets arising from an increase in national income, output and employment.

Labour market

As employment rises and unemployment falls, some labour shortages may occur in industries where skilled labour is in short supply (i.e. the labour supply to an occupation of industry is inelastic). This puts extra pressure on wages to rise, and since wages are usually a high percentage of total production costs, prices may rise.

Other factor markets

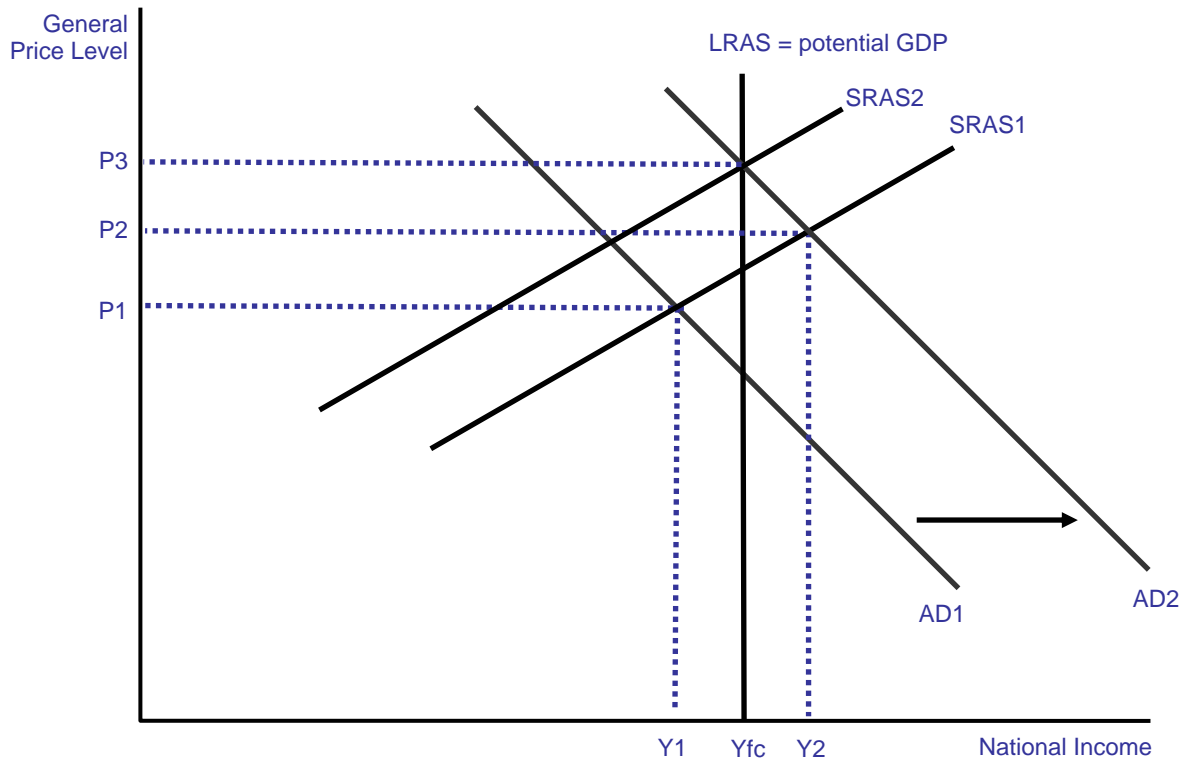
Cost-push inflation can also come from rising demand for commodities such as oil, copper and processed manufactured goods such as steel, concrete and glass. When an economy is booming, so too does demand for these components and raw materials. This increases inflationary pressures in the economy.

Product market

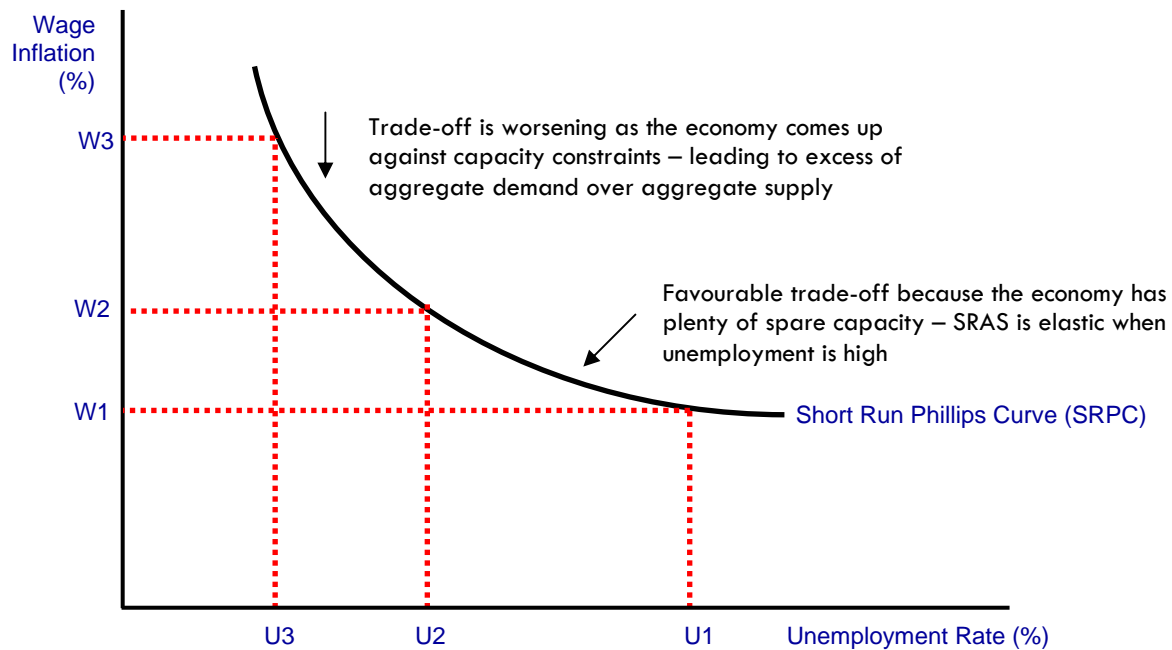
Rising demand and output puts pressure on scarce resources and can lead to suppliers raising prices in order to widen their profit margins. The risk of rising prices is greatest when demand is out-stripping supply-capacity leading to excess demand.

Explaining the Phillips Curve concept using AD-AS and the output gap

Before we get to the Phillips Curve diagram – let us consider the explanation for the trade-off using AD-AS analysis and the concept of the output gap. In the next diagram, we draw the LRAS curve as vertical - this makes the assumption that the productive capacity of an economy in the long run is independent of the price level. We see an outward shift of the AD curve (for example caused by a large rise in consumer spending) which takes the equilibrium level of national output to Y_2 beyond potential GDP Y_{fc} . This creates a positive output gap and it is this that is thought to cause a rise in inflationary pressure as described above. Excess demand in product markets and factor markets causes a rise in production costs and this leads to an inward shift in short run aggregate supply from $SRAS_1$ to $SRAS_2$. The fall in supply takes the economy back towards potential output but at a higher price level.



So this might help to explain the Phillips Curve idea. We could equally use a diagram that uses a non-linear SRAS curve to demonstrate the argument. The next diagram shows the original short-run Phillips Curve and the trade-off between unemployment and inflation

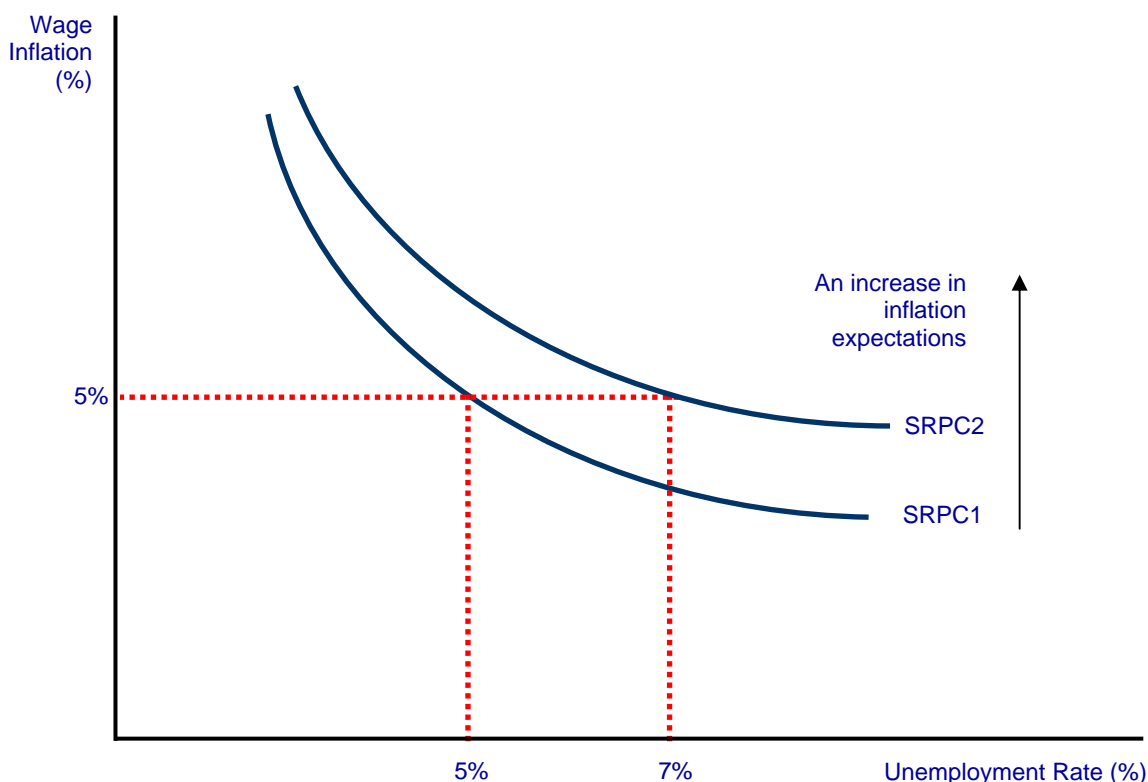


The Expectations-Augmented Phillips Curve

The original Phillips Curve idea was subjected to fierce criticism from the Monetarist economic school among them the American economist Milton Friedman. Friedman accepted that the short run Phillips Curve existed – but that in the long run, the Phillips Curve was vertical. In other words, Friedman argued that in the long run, there was **no trade-off between unemployment and inflation**. He argued that each short run Phillips Curve was drawn on the assumption of a **given expected rate of inflation**. So if there were an increase in inflation caused for example by a temporary boost to aggregate demand caused by a large monetary expansion and this had the effect of driving **inflationary expectations** higher, then this would cause an upward shift in the short run Phillips Curve.

The Monetarist view is that attempts to boost AD artificially to achieve faster growth and lower unemployment have only a **temporary effect on unemployment**. Friedman argued that a government could not permanently drive unemployment down below the **NAIRU** – the result would be higher inflation which in turn would eventually bring about a return to higher unemployment but with inflationary expectations increased along the way. Friedman introduced the idea of **adaptive expectations** – if people see and experience higher inflation in their everyday lives, they come to expect a higher average rate of inflation in future time periods. And they (or the trades unions who represent them) may then incorporate these changing expectations into their pay bargaining. Wages often follow prices. A burst of price inflation can trigger higher pay claims, rising labour costs and further upward pressure on the market prices of many different goods and services.

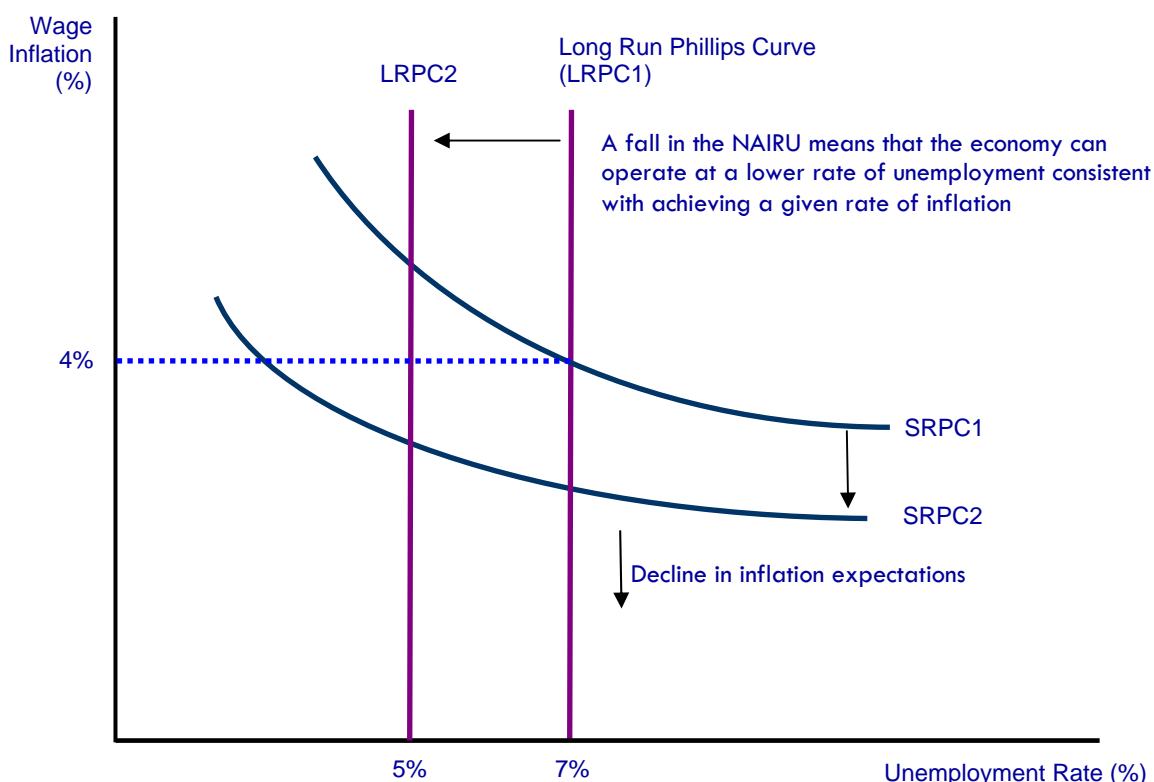
This is illustrated in the next diagram – inflation expectations are higher for SRPC2. The result may be that higher unemployment is required to keep inflation at a certain target level.



The expectations-augmented Phillips Curve argues that attempts by the government to reduce unemployment below the natural rate of unemployment by boosting aggregate demand will have little sustained success in the long run. The effect is to create higher inflation and with it an increase in inflationary expectations. The Monetarist school believes that inflation is best controlled through tight control of money and credit. Credible policies to keep on top of inflation can also have the beneficial effect of reducing inflation expectations – causing a downward shift in the short run Phillips Curve.

The Long Run Phillips Curve

Normally drawn as vertical – but the long run curve can shift inwards over time



An inward shift in the long run Phillips Curve might be brought about by supply-side improvements to the economy – and in particular a reduction in the natural rate of unemployment. For example labour market reforms might be successful in reducing frictional and structural unemployment – perhaps because of improved incentives to find work or gains in the human capital of the workforce that improves the occupational mobility of labour.

So what has happened to the inflation-unemployment trade off for the UK?

The evidence is that the supposed trade-off for the UK has improved over the last ten to fifteen years. Indeed since the early 1990s, the British economy has enjoyed a long period of falling unemployment and stable, low inflation. The next table provides some supporting data for this view.

	Unemployment % of labour force	RPIX Inflation % change	Estimated NAIRU % of labour force	Output Gap % of potential GDP
1992	9.3	4.7	9.5	-2.9
1993	9.7	3.0	9.4	-2.4
1994	8.7	2.4	9.1	-0.1
1995	7.6	2.8	8.7	0.5
1996	6.9	3.0	8.0	0.4
1997	5.2	2.8	7.2	0.9
1998	4.5	2.7	6.4	0.8
1999	4.1	2.3	5.8	0.0
2000	3.6	2.1	5.4	0.6
2001	3.2	2.1	5.0	-0.1
2002	3.1	2.2	5.0	-0.8
2003	3.1	2.8	5.0	-1.1
2004	2.9	2.3	5.0	-0.6
Average 1992-2004	5.5	2.7	6.9	-0.4

Factors that might explain the improved trade-off

No single factor on its own is sufficient to explain the changing (improving) trade-off. For revision purposes I have highlighted four key ones (but there are others!)

The labour market - A more flexible labour market has increased the size of the **labour supply** and a reduction in trade union power has reduced the **collective bargaining power** of many workers. Falling long-term unemployment is a sign of a reduction in structural unemployment rates. We can be pretty certain that the **NAIRU** (the non accelerating inflation rate of unemployment) has come down. Although the NAIRU is not something we can observe and measure directly, it is estimated that the NAIRU has fallen from nearly 10% of the labour force in 1992 to around 5% in the last few years.

The effect of inflation targets: The use of inflation targets which were introduced in 1992 has helped to reduce inflation expectations. For Britain, the adoption of inflation targets and granting independence to the Bank of England (1997) has been an important step in establishing a credible monetary policy framework as a way of “embedding” low-inflation in the British economy.

Low inflation in the global economy: External economic factors are important too! For a decade or more, cost and price inflation in many parts of the global economy has been on a downward path. Indeed the buzz word has been the threat of deflation in many developed countries. The rapid advance of **globalization** has increased the intensity of competition between nations and reduced the prices of many imported products.

Technological change and innovation has raised productivity and cut production costs across many different industries and sectors. This fundamental change in the supply-side of the British and international economy has been a key factor keeping inflation low even though unemployment has been falling.

Why does a change in the Phillips Curve / NAIRU matter?

Our main focus here is the possible consequences for the operation of government macroeconomic policy.

Firstly a reduction in the NAIRU will have implications for the setting of short term interest rates by the Monetary Policy Committee. If they believe that the labour market can operate with a lower rate of unemployment without the economy risking a big rise in inflation, then the Bank of England may be prepared to run their monetary policy with a lower rate of interest for longer. This has knock-on effects for the growth of aggregate demand as lower interest rates work their way through the transmission mechanism.

Secondly the trade-off between unemployment and inflation affects forecasts for how fast the economy can comfortably grow over the medium term. This information is a vital for the government when it is deciding on its key fiscal policy decisions. For example how much they can afford to spend on the major public services education, health, transport and defence. Forecast growth affects their expected tax revenues which together with government spending plans then determine how much the government may have to borrow (the budget deficit).

Summary notes

- The potential for a short run trade off between unemployment and inflation continues to exist! If aggregate demand is allowed to grow well above an economy's potential output, then unemployment will fall but there is a risk of rising inflation
- Changes in inflation expectations alter the position of the short run Phillips Curve in the x-y axis space – a fall in expectations of inflation causes a downward shift of the SRPC
- Monetary policy is probably most influential in affecting expectations of inflation – the success of the BoE since 1997 has influenced the unemployment-inflation trade off for the UK. Low global inflation rates have also had the effect of reducing inflation expectations.
- Supply side policies that raise productivity and increase potential output can help to cause an inward shift in the long run Phillips Curve
- There has been a fall in the NAIRU in the UK over the last fifteen years because of a decline in the equilibrium rate of unemployment
- By most estimates, the UK has a lower NAIRU than the average for the twelve countries inside the single currency (Euro Zone). The NAIRU is probably around 5% of the labour force
- Although unemployment has remained very low, some external factors have kept inflationary pressures in check (including the strong exchange rate and falling commodity prices)