

## Inflation and Unemployment

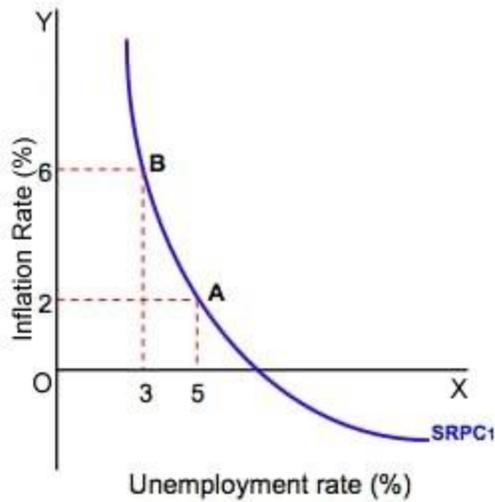
### **B. Com Sem-3 (GE-3)**

Inflation rate, Interest rate and Unemployment rate are main indicators of Economics. The relationship between inflation and unemployment was first introduced in 1958 by William Phillips who wrote a paper entitled “The Relation between Unemployment and the Rate of Change of Money Wage Rates in the United Kingdom, 1861–1957”. In his study he found a negative relationship by a curve between unemployment and money wage growth in the UK Which is known as Phillips Curve. Thus, the Phillips curve is an inverse relationship between the rate of unemployment and the rate of inflation in an economy. In other words, the lower the unemployment in an economy, the higher the rate of inflation. However, during the 1970s many countries suffered from high levels of inflation and unemployment (stagflation), so Phillips curve came under a concerted attack from a group of economists arguing that the Phillips curve relationship was only a short-run phenomenon Friedman argued that in the long run there is no trade-off between inflation and unemployment. According to Keynesian theory, governments could tolerate a reasonably high rate of inflation as this would lead to lower unemployment and subsequently a trade-off between inflation and unemployment. The new theory known as ‘natural rate of unemployment’ is distinguished between the ‘short-term’ Phillips curve and the ‘long-term’ one. The short-term Phillips curves looks like a normal Phillips curve but shifts in the long run as expectations changes. In the long run, only a single rate of unemployment (‘natural’ rate) is consistent with a steady rate of inflation. Thus, the long-run Phillips curve is vertical, so there is no trade-off between inflation and unemployment.

We can study Phillips curve into two parts Short-run and Long –run.

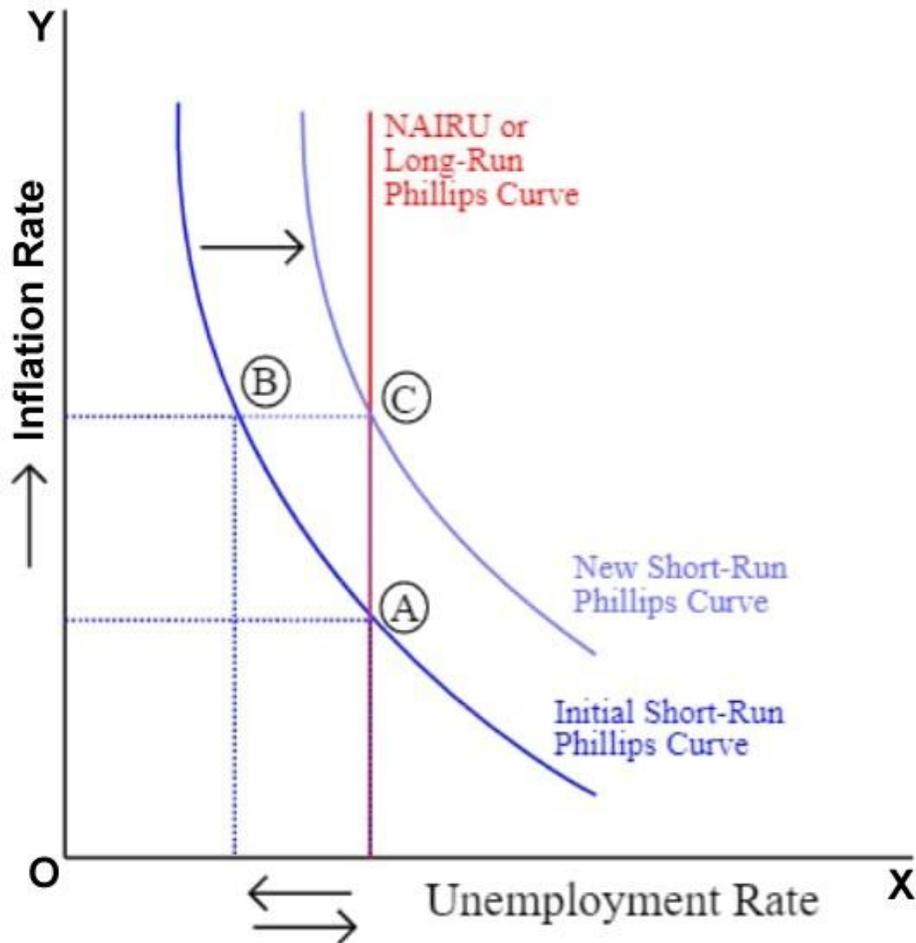
**Philips curve in Short-run:** In short-run Philips curve traces an L-shape. This L- shape shows the inverse relationship between the rate of unemployment and the rate of inflation in an economy. The Phillips curve argues that unemployment and inflation are inversely related as levels of unemployment decrease, inflation increases. In the following graph we can see L-shape curve where the unemployment rate has been plotted on the **X-axis** and the inflation rate has been plotted on the **Y-axis**.

### Short-run Phillips curve:



The above curve shows the inverse trade-off between inflation and unemployment. As inflation increases, unemployment decreases. The above graph indicates that when inflation rate is 2% then unemployment rate is 5% and when inflation rate is increase 2% to 6% Unemployment rate is decrease 5% to 3%. Thus, an economy can either experience 3% unemployment at the cost of 6% of inflation, or increase unemployment to 5% to bring down the inflation levels to 2%.

**Philips Curve in Long-run:** In the above graph we have seen decreases in unemployment can lead to increases in inflation in the short run but in the long-run inflation and unemployment are unrelated. In long-run Phillips curve is a vertical line at the natural rate of unemployment, so inflation and unemployment are unrelated in the long run. Graphically, this means the Phillips curve is vertical at the natural rate of unemployment, or the hypothetical unemployment rate if aggregate production is in the long-run level. Attempts to change unemployment rates only serve to move the economy up and down this vertical line. Following graph is more helpful to understand the Philips curve in long-run.



In the above graph it is assumed that the economy starts at point A and has an initial rate of unemployment and inflation rate. If the government decides to pursue expansionary economic policies, inflation will increase as aggregate demand shifts to the right. This is shown as a movement along the short-run Phillips curve, to point B, which is an unstable equilibrium. As aggregate demand increases, more workers will be hired by firms in order to produce more output to meet rising demand, and unemployment will decrease. However, due to the higher inflation, workers' expectations of future inflation changes, which shifts the short-run Phillips curve to the right, from unstable equilibrium point B to the stable equilibrium point C. At point C, the rate of unemployment has increased back to its natural rate, but inflation remains higher than its initial level.

**Reason of shift of Short-run Phillips curve:** The reason of the short-run Phillips curve shifts is due to the changes in inflation expectations. Workers, who are assumed to be completely rational and informed, will recognize their nominal wages have not kept pace with inflation increases (the movement from A to B), so their real wages have been decreased. As such, in the future, they will renegotiate their nominal wages to reflect the higher expected inflation rate, in order to keep their real wages, the same. As nominal wages increase, production costs for the supplier increase, which diminishes profits. As profits decline, suppliers will decrease output and employ fewer workers (the movement from B to C). Consequently, an attempt to decrease unemployment at the cost of higher inflation in the short run led to higher inflation and no change in unemployment in the long run.

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