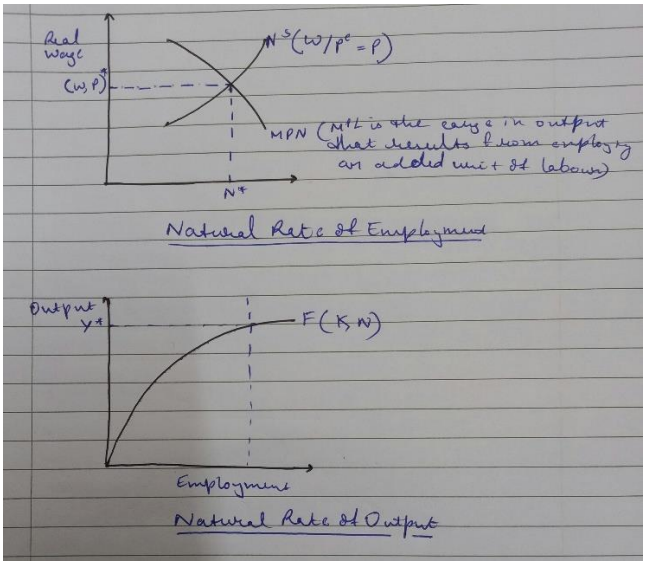
UNIT-3

INFLATION

- Inflation is defined as a long-term increase in an economy's general price level of goods and services. It is computed as the average change in the price of a basket of goods and services over time
- when the supply of money exceeds the demand for it, a decrease in the production of goods and services in an economy, high expenditures on consumer goods, and so on can lead to inflation if they are not matched with their demand
- Depending on the reason, inflation can be classed as **Demand-Pull** Inflation or **Cost-Push** Inflation
    - **Demand-Pull Inflation**
        - Demand-pull Inflation occurs when total demand for goods and services grows faster than the economy's capacity to produce them.
        - The reasons behind such type of inflation can be increased money supply, higher government spending or reduced taxes.
    - **Cost-Push Inflation**
        - Cost-Push Inflation is defined as an increase in the cost of manufacturing components such as labour, raw materials, and so on.
        - Inflation occurs when the cost of production rises, forcing firms to raise the prices of goods and services in order to maintain profit margins.
- Low inflation is a term that refers to a period of time when prices are rising slowly. It is also called creeping inflation.
- Crawling inflation is the situation when prices rise by less than 3% each year.
- Galloping inflation occurs when the economy's price level grows at double-digit each year. Galloping inflation is also known as jumping inflation or running inflation.
- Hyperinflation is the situation when the price rise is remarkably high and occurs over a short period of time. Germany witnessed such type of inflation after the First World War in the 1920s. Some recent examples of hyperinflation are Zimbabwe and Venezulea.

NATURAL RATE THEORY

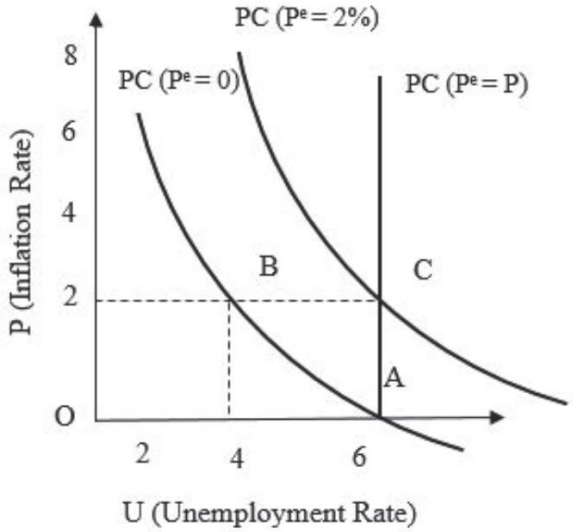
- there is an equilibrium level of output and an accompanying rate of unemployment that is determined by the supply of production factors, technology and economic institutions (i.e., determined by real factors).
- Changes in aggregate demand cause the economy to temporarily deviate from its natural rate
- For example, expansionary monetary policies temporarily raise output above the natural rate while temporarily lowering the unemployment rate below the natural rate. Prices would rise as a result of increased demand caused by such an expansionary policy. In the short run, the price adjustment would be incomplete, as opposed to the classical theory, in which increases in demand cause price increases but have no effect on output.
- Friedman did believe that in the long-run, equilibrating forces cause output and employment to return to their natural rates
- Natural rate of unemployment is the rate "which has the property that it is consistent with equilibrium in the structure of real wage rates"
- Natural rate of unemployment will be such that labour demand equals labour supply at an equilibrium real wage



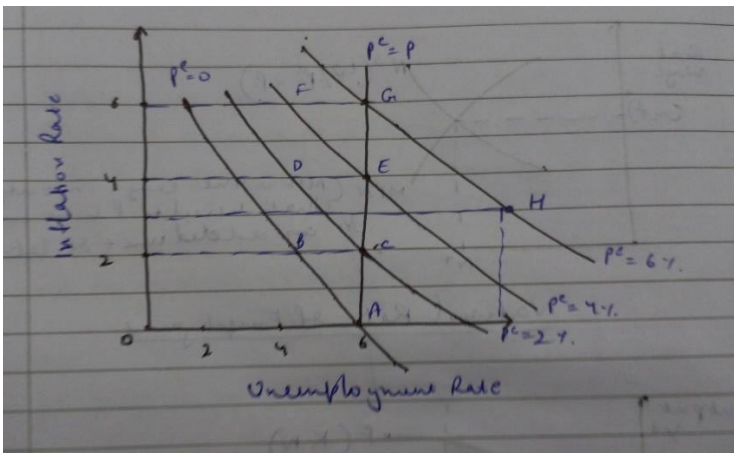
- At N*, the natural rate of employment, labour demand is equated with labour supply, where we stipulate that the price level expected by labour suppliers is equal to the actual price level (Pe = P) when drawing the labour supply schedule, Ns [W/(Pe = P)]. Only at this level of employment does the real wage have no tendency to fluctuate. Y* represents the natural level of output.
- The above curves show how the natural rates of output and employment are affected by the supply of production factors and technology (i.e., supply-side factors). In monetarist theory, as in classical economics, the natural rates of output and employment are unaffected by aggregate demand. The difference between monetarist and classical theories is that the monetarist proposition holds that the economy is not necessarily operating at natural levels of employment and output in the short-run

MONETARY POLICY OUTPUT AND INFLATION(PHILIPS CURVE: Monetarist View)

- **SHORT-RUN**
  - Suppose that the money supply has been growing at the same rate as real output. As a result, it is assumed that the price level has been stable for some time. Assume that the money supply rate is raised above the rate consistent with price stability.
  - For example, the rate of money supply increases from 3% to 5%. Increases in the rate of growth of the money supply will push aggregate demand and as a result, nominal income.
  - much or all of the increase in income will be in the form of increased output and employment rather than price increases
  - Producers will tend to increase output in response to the initial increase in aggregate demand, employees will work longer hours, and the unemployed will take jobs now offered at former nominal wages
  - High rates of aggregate demand growth stimulate output, lowering the unemployment rate
  - The Phillips curve suggests a trade-off between inflation and unemployment. That is, lower unemployment rates are possible, but only at the expense of higher inflation rates



- **LONG-RUN**
  - We examined the short-run effects of increasing the rate of growth of the money supply from 3% to 5%
  - The initial equilibrium had stable prices (P = 0) and unemployment equal to the natural rate, which was assumed to be 6%
  - We assume that as the rate of growth in the money supply increases, the economy enters a new short-run equilibrium with unemployment reduced to 4% and inflation at 2% (point B). The policy of expansionary aggregate demand reduces unemployment below the natural rate
  - But it only describes the initial effects. Because product prices typically respond to an unexpected rise in nominal demand faster than factor of production prices.
  - Employees will begin to consider rising goods and service prices and demand higher nominal wages in the future
  - Friedman observes that, in the short-run, product prices rise faster than factor prices, with the money wage being the most important factor price. As a result, the real wage (W/P) falls.
  - Workers are assumed to evaluate nominal wage offers at the earlier price level in the short-run, following a period of stable prices. Prices have risen, but workers have not yet seen this rise, and if offered a higher money wage, they will increase labour supply, even if the increase in the money wage is less than the increase in the price level
  - As a result, unemployment may fall below its natural rate. This is a temporary situation, as workers will eventually notice the higher price level and demand higher money wages
  - At a lower real wage, an excess demand for labour pushes the real wage back up to its equilibrium level, and this rise in the real wage causes employment to return to the natural rate



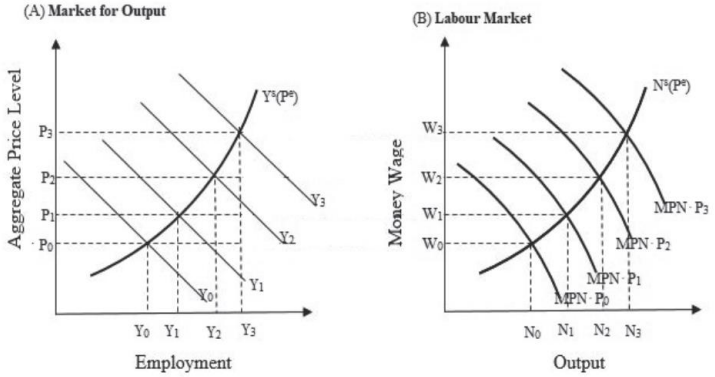
  - We have already examined how an increase in the rate of growth of the money supply from 3% to 5% moves the economy from point A to point B in the short-run. As labour suppliers anticipate rising prices, the Phillips curve will shift to the right. Labour suppliers will demand a faster rate of increase in monetary wages, and as a result, a faster rate of inflation will now correspond to any given unemployment rate. If money growth remains at 5%, the economy will return to its natural 6% unemployment rate, but with a 2% inflation rate instead of the initial stable price level.
  - long-run adjustment moves the economy from B to C. A policymaker who is dissatisfied with the return to 6% unemployment (the natural rate) may still pursue a target unemployment rate below the natural rate by increasing the rate of money supply growth
  - The policymaker raises the money supply growth rate from 5% to 7% this time.
  - Employment will grow until labour suppliers anticipate further increases in the inflation rate. The economy will reach a point, such as D where unemployment is lower than the natural rate. After a while, labour suppliers will begin to anticipate higher inflation, which corresponds to a 7% increase in the money supply.
  - Eventually, policymakers will conclude that inflation has become a more serious problem than unemployment (or that unemployment will be replaced by inflation) However, when inflation persists for a long period of time, inflationary expectations become embedded in the system
  - An attempt to reduce inflation by slowing the rate of growth in the money supply, say, all the way back to the initial non-inflationary 3 per cent, will not immediately return the economy to the initial point A.
  - we would move along the short-run Phillips curve, which corresponds to an expected inflation rate of 6%, to a point like H, where inflation is high and unemployment is above the natural rate. It took time for labour suppliers to recognise that the rate of inflation had increased and, as a result, to demand a faster rate of growth in money wages, and it will take time for them to recognise that the rate of inflation has slowed and to

modify their money wage demands to a level compatible with price stability. Meanwhile, according to monetarists, the economy must suffer from high inflation and high unemployment.

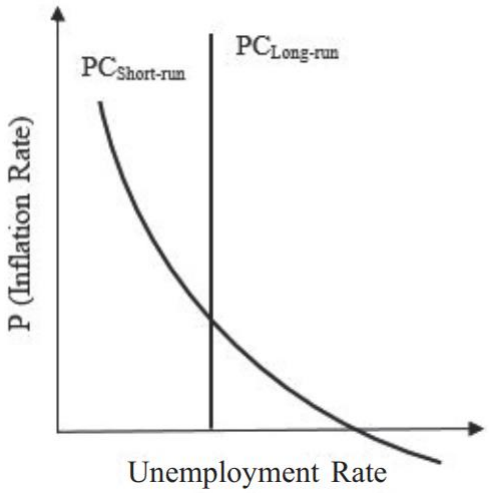
- Friedman believed that expansionary monetary policy could only temporarily reduce unemployment below the natural rate
- long-run Phillips curve, which depicts the relationship between inflation and unemployment when expected inflation has had time to adjust to the actual inflation rate (P = Pe) (i.e., when inflation is fully anticipated), is vertical

PHILIPS CURVE: SHORT RUN AND LONG RUN (Keynesian View)

- **SHORT RUN PHILIPS CURVE**
  - The money wage is flexible, and labour supply is assumed to be determined by the expected real wage (W/Pe), which is calculated by dividing the money wage by the expected price level. An expansionary aggregate demand policy in the Keynesian system could be a monetary policy action, such as an increase in the rate of growth in the money supply
  - The policy will cause a series of shifts in aggregate demand, it can be seen that these increases in aggregate demand will increase output (from Y0 to Y1 , to Y2 , then to Y3) and employment (from N0 to N1 , to N2 , then to N3), and the price level (from P0 to P1 , to P2 , then to P3).

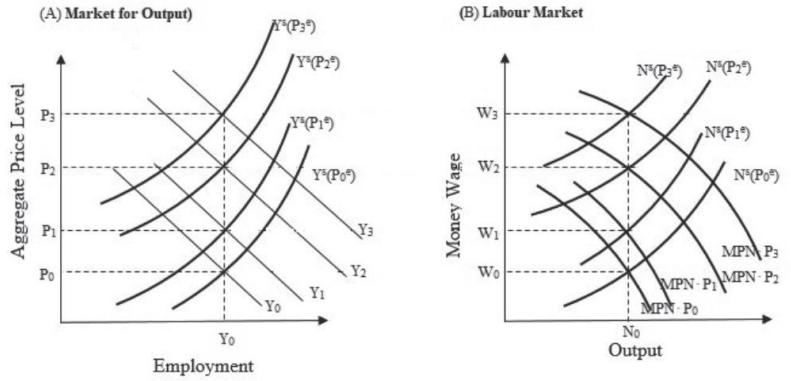


  - The unemployment rate will fall as employment rises. The level of money wage will rise.
  - The faster aggregate demand grows, the larger the rightward shifts in the aggregate demand schedule, and the faster the rate of growth in output and employment
  - The Keynesian model suggest a trade-off between inflation and unemployment. High rates of growth in aggregate demand correspond to low levels of unemployment and high rates of inflation
  - The Phillips curve in the Keynesian model is downward sloping
  - We know that Keynesians believe that the expected price level is primarily determined by past price behaviour. As a result, as the actual price level rises in successive periods, so will the expected price level



- **LONG RUN PHILIPS CURVE**
  - The expected price eventually adjusts to the actual price in the long‐run. Labour suppliers perceive inflation as a result of the expansionary aggregate demand policy

- We've already established that in the Keynesian system, labour supply is determined by the expected real wage: Ns = t(W/Pe)
- Where the effect of the monetary wage on labour supply is positive and the effect of an increase in expected price is negative.
- The labour supply schedule shifts to the left as the expected price rises. Because a given money wage (W) corresponds to a lower expected real wage (W/Pe) after an increase in the expected price level, less labour will be supplied at any money wage (W).
- The level of employment for any given price level decreases as the labour supply schedule shifts to the left.
- Any increase in expected price reduces employment at any price level and, as a result, reduces output supplied at any price level. With each increase in expected price, the aggregate supply schedule shifts upward to the left, reflecting the decrease in output supplied at a given price level
- The labour supply and aggregate supply schedules continue to shift to the left until the expected and actual prices match.



- At this point, income and employment have returned to their initial levels, Y0 and N0 , respectively. This must be the case because output and employment can be maintained above Y0 and N0 only if the expected price is less than the actual price—that is, if labour suppliers underestimate inflation. When labour suppliers correctly perceive price increases, they will demand wage increases proportionate to the price increase
- As a result, employment and output will remain at their initial N0 and Y0 levels. An increase in aggregate demand boosts output and employment, lowering the unemployment rate only in the short-run.