6 Inflation and Unemployment

1. INFLATION-UNEMPLOYMENT TRADE-OFF AND PHILLIPS CURVE

The most widely debated aspect of the theory of inflation since the 1950's has been the *Phillips Curve.* A.W. Phillips analysed the statistical data concerning the unemployment percentages and wage percentages in Britain during the period 1861 to 1957.[1] One of the objects of this study was to identify whether the demand pull or the cost push had been strong in the British economy. Another object was to determine the extent by which restrictive monetary and fiscal policies could be appropriate for the control of inflation. In demand inflation, the monetary and fiscal restraints seem to be quite capable of checking the expansion of aggregate demand. But these policies become somewhat inappropriate in case of a supply inflation. The most significant evidence of the existence of supply inflation is the rising price level associated with some unemployment, A restricitive monetary-fiscal policy, by restraining the excess demand, may aggravate the inflationary situation through its restrictive impact upon the investment spending and thereby slowing down the rise in labour productivity which could otherwise have off-set the wage push. The monetary and fiscal restraints are likely to check wage-push inflation through creating sufficiently large unemployment such that the increase in money wages over and above the rise in labour productivity is fully prevented. Thus the society can have price stability only at the cost of permitting the unemployment to exist in such amounts that may be socially and economically unacceptable. If the maintenance of price stability necessitates a high percentage of unemployment over the sustained periods, the society may prefer the lesser of the two evils and accept a moderate inflation that accompanies a socially and economically acceptable rate of unemployment. "The central contribution of Phillips' approach", says Johnson, "is to substitute an empirical relationship between the rate of inflation and the percentage of unemployment for the vague literary and judgemental arguments about how much reduction in employment would be necessary to halt inflation that had previously dominated the debate about economic policy."

Phillips found that *wage rates rose rapidly when employment was low; decreased when it was high and ; remained unchanged when about 5.5% of the labour force were out of job.* The relationship between unemployment and the rate of change of wage rates, according to Phillips, is both *inverse* and *non-linear.* The inverse character of wage-unemployment relation may be due to the following factors :

1. A.W. Phillips : *The Relation between Unemployment and the Rate of Change in Money Wages Rate in the United Kingdom, 1861-1957* in Economica, Nov.1958, Pp. 283–99.

(i) Relative bargaining strength of trade unions and management : The relative bargaining strength of the workers' unions and management seems to vary considerably with the changes in the unemployment rates and the general business activity. When the unemployment rates are low and the labour shortages are being felt, the trade unions can quite aggressively press for substantial increases in money wages. During the periods of high unemployment, on the contrary, the wage-claims are generally not pressed upon the managements.

(ii) Generalised excess demand for labour : Another reason for this inverse relationship between rates of money wages and unemployment is a state of generalised excess demand for labour. It is not necessary that the wage increases are brought about by the organised union action. In the United States, only a small proportion of total labour force is unionized, yet the money wages increase both in the unionized and non-unionized segments of the labour force primarily because of an excess demand for labour.

(iii) Imbalances between supply and demand in labour market : The Phillips type relationship between money wage rates and the unemployment rates may exist also on account of the imbalances between supply and demand in particular labour markets. If there are difficulties in the occupational and geographical mobility of labour, the existence of labour shortages in particular sectors may push up the wage rates even in a period of substantial unemployment because the workers from other sectors find it difficult to shift over to such sectors or occupations where the demand for labour is in excess of labour supply.

Phillips plotted the percentage changes in wage rates and unemployment on a scatter diagram and he found that the best fit was given by the non-linear curve AA as shown in Fig. 1.

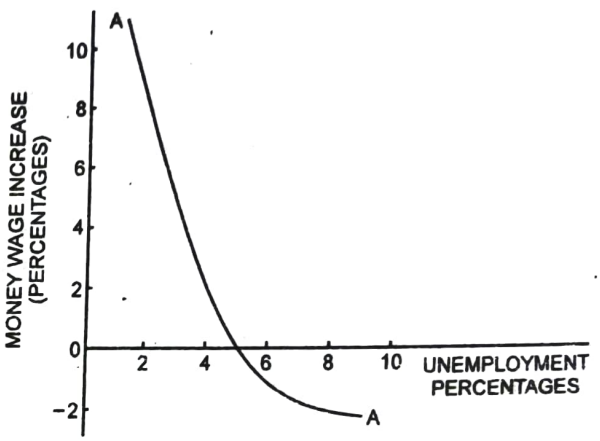

Fig. 1

It shows that the number of vacancies exceeded the number of job seekers, when the unemployment percentage was below 5.5. The existence of an excess demand for labour caused wages to climb up. When, on the contrary, the unemployment percentage was greater than 5.5, the excess supply conditions in the labour market brought down the wage rates. The shape of AA suggests that the demand pull element was stronger than the cost-push during the period covered by Phillips. Since a general fall in the unemployment rate is interpretted by the firms as an indication of the increasing demand for labour , more labour is hired in anticipation of it at the higher wage rates.

Through the use of this curve, Phillips determined that a rate of 5.5% unemployment in the U.K. is needed, if wages are to be held steady ; and a rate of 2.5% unemployment is needed if prices are to be steady. It implies that wages would rise by the same percentage as the increase in productivity which is estimated at about 2 percent per annum. Samuelson and Solow who fitted a similar curve for the United States, however, found that the unemployment rate had to be 5.5 percent to ensure price

stability, on the assumption that the labour productivity rose at the rate of 2.5 percent per annum.[2]

J.A. Pechman has pointed out that the correlation between changes in wages and unemployment, as suggested by Phillips in the British economy is rather exaggerated. The findings of Samuelson and Solow concerning wage-price-employment relationship in the U.S.A. in his opinion have not been supported by empirical facts.[3]

Studies similar to Phillips' were conducted by Lipsey and Routh. R.G. Lipsey reworked Phillips data. Covering the period 1862-1957, he showed that over four-fifths of the variance of money wage rates could be associated with the level of unemployment and its rate of change. He, however, pointed out that the relationship between wage rates and unemployment rates was much weaker during the period after 1913. Lipsey found that the wage change were related significantly to the changes in the cost-of-living index during the inter-war and post-war periods. Routh raised an objection to the validity of Phillips data and his methods of aggregation. His conclusions, however, were roughly the same. Kaldor developed a hypothesis that the change in wage rates in the United Kingdom were related primarily to the levels of profits.[4] Lipsey and Steur, however, could not find sufficient evidence in support of this hypothesis. On the basis of time series data for 10 British industries, they inferred that profits were not significant in explaining the post-war changes in wage rates whereas the level of unemployment was. Ball and Klien, through their study, also showed that profits and productivity are not very helpful in explaining the changes in wage rates.

Dicks Mireaux and Dow analysed the postwar inflation in Britain and found that wages were most sensitive to the changes in (V–U) a gap between unfilled vacancies (V) and the number of unemployed job-seekers (U). A one per cent increase in (V–U) was associated with a 3 to 4 per cent rise in wages.

The studies of wage-employment relation in the U.S. economy have yielded more pessimistic results. Phillips as well as Samuelson and Solow could find such results which were unfavourable to the possibility of checking tolerable limits of unemployment. Unlike the British economy a significant relationship between changes in profits and wage rates was found by Levinson in the United States. This result was also supported by R.J. Bhatia, who on the basis of data covering 1900-1958 period, found that there was much less evidence of Phillips type relationship and that wage changes were related more to the level and rate of change of profits than with the changes in unemployment. Eckstein and Wilson, however, found a better statistical fit. T.F. Dernburg pointed out that the standard negatively sloped Phillips Curve was discernible during 1972-73, 1976-79 and 1981-82 periods in the U.S. economy.[5]

2. PHILLIPS CURVE AND EFFECTIVENESS OF POLICIES

The Phillips curve can be used for determining the *effectiveness of monetary and fiscal policies to check inflation* as shown in Fig. 2.

2. P.A. Samuelson and M. Solow : *Analytical Aspects of Anti-inflation Policy*, American Economic Review ; Vol. 50 May 1960, Pp. 177 – 94.
3. J.A. Pechman : *Comment on Samuelson-Solow Paper*, AER (May 1960), P. 219.
4. N. Kaldor : *Economic Growth and the Problem of Inflation*, Part II, *Economica*, Nov. 1959, Pp. 287 – 98.
5. T.F. Dernburg : *Macro Economics* (1986), P. 298.