MR SPRINGTHORPE

cc Mr Burns
Mr Cassell
Mr Evans - or
Mr Sedgwick
Mr Riley
Mrs Stamler
Mr Mowl
Mr Hibberd

PM's QUESTIONS

I attach a short essay on the Phillips Curve as requested.

H NEUBURGER
EA1
31 March 1981

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PRIME MINISTER

Here is the Treasury's offering

MJS

31/3

THE NATURAL RATE OF UNEMPLOYMENT

1. The natural rate of unemployment achieved prominence in Milton Friedman's presidential address to the American Economic Association in 1967.* In this speech he extended the traditional Phillips Curve theory (based on a seminal article by the statistician and economist A W Phillips (London School of Economics) in 1960). It is easiest to start with the original Phillips article.

2. This established the existence of a relationship between the rate of growth of wages and the level of unemployment. The article was largely an empirical analysis of labour market developments over the previous hundred years. Much of the article is devoted to statistical methods and little to theoretical or policy implications. There was some criticism of the analysis at the time, but the theoretical underpinnings were explored by Lipsey 1961 (also LSE). The policy implications which became part of standard Keynesian analysis were that unemployment could be manipulated, but that the cost was a higher (but ultimately stable) level of inflation.

3. Friedman criticised this view as taking inadequate account of the role of expectations in the economy. He argued that while it might be possible to change real wages by changing the rate of inflation in the short run, eventually wages would adjust to the expected rate of price inflation. The implication of this change (he argued) was that if unemployment was reduced wages would start growing faster (as in the traditional Phillips Curve) but this in turn would push up prices which would give a further boost to inflation. This would lead to an accelerating spiral. Thus only if unemployment is at a certain level (the natural rate of unemployment) will inflation remain stable. (That stable level will itself depend on the growth rate of the money supply.)

* At the same time Phelps was developing a theory of the natural rate of unemployment along similar lines based on a theoretical analysis of workers choosing their jobs. The concept of natural rates originated with the Swedish economist Knut Wicksell at the end of the nineteenth century.

4. The natural rate of unemployment is not something which can be observed directly in an economy. It can be deduced by extrapolating from observations of wage movements and unemployment. In formal terms, what is known as a price augmented Phillips Curve is fitted to the behaviour of the economy. This relationship divides the growth of wages into that part attributable to price inflation, that part attributable to the level of unemployment and a residual not explained by either. At the natural rate of unemployment, wage and price inflation will differ only by the growth rate of productivity in the economy. If we impose this condition on the price augmented Phillips Curve, the natural rate of unemployment drops out of the calculation. In practice considerable difficulty has been experienced in observing a price augmented Phillips Curve especially in recent years

5. The estimate of the natural rate is extremely sensitive to the exact numbers in the price augmented Phillips Curve. The result of this sensitivity is that estimates fluctuate wildly and very little weight should be placed on any given number. In the case of the Treasury model estimate, as the original reply to the TCSC pointed out, neither the Phillips Curve nor the assumed productivity growth are based on empirical analysis. The 5% number has no direct relationship with formal analysis of the UK economy. Nor are the forces represented in the Treasury model which bring the economy to this natural rate powerful or quick acting. The role of the natural rate of unemployment in the model is therefore extremely limited.

NOT FOR USE

/6. Recent theoretical and empirical analysis of wage movements in the Treasury (but largely unknown outside of the Treasury) have suggested that the concept of the natural rate may not be as robust as was supposed during the seventies. This view does not reject Friedman's criticisms of the Phillips Curve, but questions some of the original Phillips/Lipsey/Phelps analysis./

7. It should, however, be emphasised that the natural rate of unemployment has played a central role in the monetarist analysis of the economy. Its importance lies in the fact that it determines how much of any given expansion in monetary demand goes to output and how much to inflation. If there is a single natural rate of unemployment, then any monetary expansion must eventually go into inflation

because output is given by the natural rate. It is not the only such mechanisms but it has been the one most used. Orthodox classical monetarists would rely more on "crowding out" arguments which suggest that any fiscal expansion by the government will not result in economic growth, because the private sector would contract to accommodate it. While the "Phillips Curve" mechanisms operate through the labour market, "crowding out" works more through financial markets (by adjustments of interest rates and exchange rates).