NEW VERSION OF UNOBSERVED COMPONENT METHOD

The notion behind the Unobserved Component (UC) method is that observable variables, such as inflation and actual GDP, can be used to try and determine variables that are not observable. The procedure starts from a model of the relationships between these two types of variables.[10] The new calculations with this approach are based on a modified model that seems to fit the economic statistics better than the earlier version.

The principal components of the new, modified model are an equation where the path of inflation is influenced by cyclical unemployment (a Philips curve relationship) and a relationship between cyclical unemployment and the output gap (an Okun's law relationship).[11] The model produces time-varying estimates of unobservable variables such as the levels of potential output and equilibrium unemployment (NAIRU).[12]

The Philips curve relationship is such that the influences on inflation also include inflation in earlier periods. This mirrors rigidities in the inflation process that arise from, for example, the slow adjustment of inflation expectations to the monetary policy stance or to actual inflation and the time that passes before nominal price and wage contracts are renewed. The new calculations differs from the earlier UC method mainly in that it incorporates the Okun relationship and tries to allow for supply shocks (exogenous shocks, occasioned for example by sudden changes in raw material prices or taxes, that affect the level of economic activity and inflation as well as their interrelationship).

The analysis which the UC model's development has provided as regards the dynamics of the inflation process suggests that both the *size* of the output gap and *changes* in this are of significance for inflation's path. Cyclical effects on inflation may accordingly vary with the rate at which the output gap is closing or widening. A gap that is negative but closing rapidly may therefore lead to rising inflation. This means that the growth profile is of major importance for how inflation will develop and the relationship between the output gap and inflation is rather complex.

10 For a more detailed account of the UC method and other ways of calculating the output gap, see Apel, M., Hansen, J. & Lindberg, H. (1996), Potential output and output gap, Sveriges Riksbank *Quarterly Review* No. 3.

11 Apel, M. & Jansson, P. (forthcoming), System Estimates of Potential Output and the NAIRU, Sveriges Riksbank *Working Paper*.

12 The estimate of NAIRU in 1996 is around 6 per cent, which is in relatively good agreement with other calculations.