Dewald and Marchon on the St. Louis Model: A Comment

By

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In a recent issue of this journal, Dewald and Marchon [1979] estimate a common model for six industrial economies. The specification of their model is derived from the St. Louis model, originally developed by Andersen and Carlson [1970]. However, Dewald and Marchon (D-M) make one significant alteration to this model, because their replication of its price equation over a more recent estimation period produces unacceptable results. It is the aim of this comment to show that D-M's criticism of the price equation in the St. Louis model is faulty and that their modified price equation makes little sense.

D-M begin by re-estimating the St. Louis equation for the anticipated rate of inflation. This equation explains the expected rate of inflation as a long distributed lag on actual past rates of price change, with the weights determined from another equation for the long-term interest rate. When D-M subsequently insert the calculated series for the expected rate of inflation in their price equation, they obtain a coefficient of 2.3 on the anticipated inflation variable. Regrettably, although D-M call this result "simply unbelievable," they nevertheless believe it, and proceed to develop another model for the anticipated rate of inflation.

The reason why the coefficient on the anticipated inflation variable is significantly above its theoretical value of one, is that D-M employ a very uncommon dependent variable in their price equation. Their price index change is defined as $(\Delta y_t - \Delta x_t) / x_{t-1}$ with Δy_t the change in nominal GNP during period t , Δx_t the change in real GNP, and x_{t-1} the rate of GNP in the previous period. The hypothetical data in the table show how this index performs over a period when both real GNP and the price of GNP have a rising trend.

In the top part of the table the price index is still close to 1.00, and the expression $(\Delta y_t - \Delta x_t) / x_{t-1}$ is virtually equal to the rate of change of the GNP deflator. However, once the level of prices has moved away from its value in the base period, significant differences appear. Note, for example, that the expression used by D-M signals a positive rate of price change in period $N+1$, although the correct price index does not change. In period $N+2$, the D-M index shows an increase of 14.2 percent, whereas the GNP index increases by only 5 percent. It will be clear from this illustration