BEHAVIOUR OF EMPLOYMENT AND PRICES IN THE INDIAN ECONOMY: 1960-61 to 1981-82

ABSTRACT

The objective of this study is to examine the behaviour of employment and prices in response to changes in nominal government investment. Government investment is supposed to be a powerful policy variable to achieve a higher level of employment and overall growth of the economy. Increase in public investment is bound to cause price escalation in a scarcity ridden economy like ours. A considerable and persistent rise in general price level has a great potentiality to decrease the real value of a given investment - whether public or private - by increasing the cost of investment. Thus, a price rise caused by the government investment itself may reduce its real worth and thereby lead to a lower than expected level of employment and economic activity. Therefore, the unplanned price rise may not only become a cause for non-fulfilment of plan targets but may also jeopardise the entire development plan. This phenomenon necessitates fixing our employment targets taking into consideration the strong possibility of price rise resulting from the employment promoting measures.

In the present study, an attempt has been made to examine the responses of employment and prices to increases in one of the major employment promotion measures, i.e., the nominal government investment. For this purpose, a multi-sectoral dynamic macro-economic model has been used. The model has been constructed by integrating the Input-Output methods and a Behaviouristic model. The model so constructed has a fair degree of 'realism' though it also incorporates some equations at current prices. Data for 22 years (1960-61 to 1981-82) has been used to estimate the parameters of the Behaviouristic Equations of the model and several coefficients.
The Model commences with the computation of the real government and private sectoral investments, which are endogenously determined by the model. These investments added for each sector give us real total sectoral investment. This, along with the endogenous real private and government consumption, real changes in stocks and exogenous real exports, form a vector of components of final demand. The vector of components of final demand is then converted into a vector of real sectoral final demand, which, in turn, gives a vector of real sectoral gross output, on the one hand, and employment patterns, on the other. The vector of real sectoral gross output is used to find a vector of real sectoral gross value added. This vector of real sectoral gross value added determines the real gross domestic product. The real gross domestic product is converted into nominal value added which, in turn, determines nominal disposable income. The nominal disposable income is used to estimate aggregate real private consumption.

The sectoral gross value added, along with real sectoral government investment and implicit price deflator for sectoral gross output estimate real sectoral private investment. The endogenous total nominal investment and exogenous nominal government consumption together determine the money supply which, along with per capita availability of real gross output determine the implicit price deflators for sectoral gross value added. These deflators, used with exogenous import prices yield a vector of implicit price deflators for sectoral gross output. And, the vector of implicit price deflators for sectoral gross output determines the implicit price deflators for the components of final demands consisting of private and government consumption, sectoral investments, changes in stocks and exports. The implicit price deflator for private consumption has been used to convert the nominal value of private consumption into its real value. Similarly, the implicit price deflator for
government consumption into endogenous real government consumption. The implicit price deflator for the changes in stocks helps in determining the implicit price deflators for the total sectoral investment. These implicit price deflators for total sectoral investment determine, on the one hand, the implicit price deflators for government sectoral investment, and nominal total investment on the other. The implicit price deflators for sectoral government investment convert the exogenous nominal sectoral government investment into its real value.

The functioning of the model has been tested with the help of a Historical Validation exercise in which all the exogenous variables are given their observed values and solution has been obtained for endogenous variables through the Gauss-Seidel technique. The solution values for endogenous variables have been compared with their respective observed values. The comparison has been made by calculating the Mean Square Percentage Error between the observed and estimated values and also by superimposing their graphs. The model has been found to function satisfactorily.

After establishing the validity of our model, it has been used to carry out the simulation exercises. In these exercises, all exogenous variables have been held back at their observed level except nominal sectoral government investment which has been increased by 5 per cent over and above its observed value in all the sectors. The model is then subjected to Gauss-Seidel iterations. The experiment is repeated with 10, 15, 20 and 25 per cent increases in the nominal sectoral government investment. The five solutions so obtained are compared with Historical Validation solution and elasticities
of various variables with respect to increases in nominal sectoral government investment have also been worked out.

On the basis of our results, we have concluded (i) that an increase in nominal government investment increases the employment in the economy and (ii) direct employment responds more to small increases in the nominal government investment whereas indirect employment responds more to the larger increases. Another important conclusion that emerges from our simulation experiments is that there is a general tendency in prices to increase with the increase in nominal government investment even if there exists excess capacity in each sector, such that the demand can always be satisfied. However, the Agriculture and 'Forestry and Logging' are two exceptions, in which a decline in prices of gross output is indicated with an increase in the nominal government investment. This is because of increased per capita availability of real gross output of these sectors, which more than compensates the effect of rise in money supply. As a result, the overall effect of increase in the nominal government investment is negative on the prices of gross output of these sectors.

Further, our results reveal that the increase in the price of investment goods caused by the increase in the nominal government investment reduces the real value of the nominal government investment itself -- the higher the level of nominal government investment, the larger the proportionate rise in prices of investment goods. Thus, a relatively smaller increase in the real government investment is indicated from the larger nominal government investment.
The study ends by suggesting that planning models for our economy should have an endogenous price mechanism of behavioural nature so that realistic plan targets can be fixed for employment and other variables such that their achievement is not hampered by the price rise caused by government investment activities.