GOALS OF ECONOMETRICS

We can distinguish three main goals of econometrics, namely, i) Analysis, i.e., testing of economic theory, ii) Policy making, ie., supplying numerical estimates of the coefficients of economic relationships, which may be then used for decision making and iii) Forecasting, i.e., using the numerical estimates of the coefficients in order to forecast the future values of the economic magnitudes.

Of course, these goals are not mutually exclusive. Successful econometric applications should really include some combination of all three aims.

1. Analysis: Testing Economic Theory

In the earlier stages of the development of economic theory economists formulated the basic principles of the functioning of the economic system using verbal exposition and applying a deductive procedure. The earlier economic theories started from a set of observations concerning the behaviour of individuals as consumers or producers.

Some basic assumptions were set regarding the motivation of individual economic units. Thus in demand theory it was assumed that the consumer aims at the maximization of his satisfaction (utility) from the expenditure of his income, given the prices of the commodities. Similarly, producers were assumed to be motivated by maximization of their profits.

From these assumptions the economists by pure logical reasoning derived some general conclusions (laws) concerning the working processes of the economic system. Economic theories thus developed in abstract level were not tested against economic reality. In other words, no attempt was made to examine whether the theories explained adequately the actual economic behaviour of individuals.

Econometrics aims primarily at the verification of economic theories. In this case, we say that the purpose of the research is analysis, i.e., obtaining empirical evidence to test the explanatory power of economic theories, to decide how well they explain the observed behaviour of the economic units. Today any theory regardless of its elegance in exposition or its sound logical consistency cannot be established and generally accepted without some empirical testing. Therefore, Econometrics is the science of estimation and testing.

2. Policy making: Obtaining Numerical Estimates of the Coefficients of Economic Relationships for Policy Simulations

In many cases, we apply the various econometric techniques in order to obtain reliable estimates of the individual coefficients of the economic relationships from which we may evaluate elasticities or other parameters of economic theory (multipliers, technical coefficients of production, marginal costs, marginal revenues, etc.). The knowledge of the numerical value of these coefficients is very important for the decisions of firms as well as for the formulation of the economic policy of the government. It helps to compare the effects of alternative policy decisions.

For example, the decision of the government about devaluing the currency will depend to a great extent on the numerical value of the marginal propensity to import, as well as on the numerical values of the price elasticities of exports and imports. If the sum of price elasticities of exports and imports is less than one in absolute value, the devaluation will not help in eliminating the deficit in the balance of payments.

Similarly, the price elasticity of demand for a product is less than one (inelastic demand), it does not pay the manufacturer because to decrease its price, his receipts would be reduced.

In a competitive market with linear demand and supply curves of the usual type (downward-sloping demand and upward-sloping), the government should not impose a specific excise tax (per unit of output) if its aim is to curb price increases, because such a tax would raise the price, although less than the amount of the tax per unit, *ceteris paribus*.

Such examples show how important is the knowledge of the numerical values of the coefficients of the economic relationships. Econometrics can provide such numerical estimates and has become an essential tool for the formulation of sound economic policies.

3. Forecasting the Future Values of Economic Magnitudes

In formulating policy decisions it is essential to forecast the value of the economic magnitudes. Such forecasts will enable the policy-maker to judge whether it is necessary to take any measures in order to influence the relevant economic variables.

For example, suppose that the government wants to decide its employment policy. It is necessary to know what is the current situation of employment as well as what the level of unemployment will be say, in 5 years' time, if no measure whatsoever is taken by the government.

With econometric techniques we may obtain such an estimate of the level of unemployment. If this level is too low, the government will take appropriate measures to avoid its occurrence. If the forecast value of employment is higher than the expected labour force, the government must take different measures in order to avoid inflation.

Forecasting is becoming increasingly important both for the regulation of developed economies as well as for the planning of the economic development of developing countries.
