INPUT OUTPUT MODELING OF UTILIZATION OF ENERGY RESOURCES AS BASE OF GROWTH OF INDIAN ECONOMY

Topic: Input-output analysis for policy making
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Energy resources are the pivot of modern development for emerging markets and developing economies. Both consumption and production revolves around use of energy resources. Whereas consumption expenditure on energy resources operationalizes consumption multiplier process of growth, use of energy resources for production activates investment multiplier on the one hand and linkage effect on growth of output on the other. Energy resources in India comprises of coal, mineral oil and oil products, gas and electricity. Whereas oil and oil products and coal are available in adequate quantity, gas and electricity are generated in short supply relative to demand. Availability of both these factors constitutes a bottleneck to growth. Whereas oil and oil products and gas are partly produced domestically but are largely imported, coal is abundantly produced in the country, but electricity is produced largely domestically and is imported partially from adjoining countries. But supply of electricity is perennially scarce relative to demand / requirement which lead to the use of alternative sources of in-house supplies both by households and business/commercial enterprises. The alternative sources of electricity supply are costlier than the public supplies. This enhances cost of production and hence price of goods and disrupts the comfortable living of households. Household budgets are also adversely affected.

In view of the above, this paper focuses on utilization of energy resources. The following research questions i) what is the current level of utilization of energy resources; ii) what is the broad and sector specific pattern of utilization of energy resources for consumption and production; iii) what is the growth effect of consumption multiplier of energy resources on Indian economy; iv) what is the growth effect of production and investment multiplier of energy resources; constitute the base of analysis. An Input Output model of consumption multiplier of energy resources is formulated and applied to Indian data. Model of a production and investment multiplier in Input Output framework is also formulated. The results of analysis are expected to highlight the more or less energy intensive sectors of the economy. In case some or more sectors are not in the rapid growth category, less priority to the growth of such sectors may be assigned in future development programmes and appropriate policies may be devised. The study will also highlight the more or less growth promoting sectors in the economy which may also lead to the evolving of the policies of incentives and disincentives for promotion of such sectors/activities. The following four Input Output tables shall be used (1993-94, 1998-99, 2003-04, and 2007-08). For purpose of comparison, the results of analysis will be adjusted for inflation, so that appropriate inter temporal comparisons can be made. The continuous time series data will also be subjected to application of econometric modeling.