

INPUT OUTPUT MODELING OF UTILIZATION OF ENERGY RESOURCES AS BASE OF GROWTH OF EMERGING MARKET ECONOMY OF INDIA

Topic: Emerging Developing Countries

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Abstract

Input Output Modeling of Utilization of Energy Resources As Base of Growth of Emerging Market Economy of India

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Energy resources are the pivot of modern developed, emerging market 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 comprise 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 in short supply relative to their demand. Availability of both these factors constitutes a bottleneck to growth. Oil and oil products and gas are partly produced domestically and 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 leads 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, prices of goods; but disrupts the comfortable living of households. Household budgets are also adversely affected by the use of alternative sources of electricity supply.

In view of the above, this paper focuses on utilization of energy resources. The following research questions constitute the base of analysis: (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? and (iv) what is the growth effect of production and investment multiplier of energy resources?

An Input Output model of consumption multiplier of energy resources is formulated and applied to Indian data. Model of production and investment multiplier in Input Output framework is also formulated. The continuous time series data will also be subjected to application of econometric modeling, including application of RWM for the evaluation of whether series are stationary.

The results of analysis are expected to highlight the more and less energy intensive sectors of the economy. In case, some or more energy intensive sectors are not in the rapid growth category, less priority to the growth of more energy intensive sectors may be assigned in future development programmes and appropriate policies may be devised to mitigate adverse growth effects of electricity shortage. The study will also highlight the more or less energy intensive sectors of growth in the Indian economy, which may also lead to the evolving of the policies of incentives and disincentives for promotion of such sectors/activities.

The Input Output tables for the following four years 1993-94, 1998-99, 2003-04, and 2007-08 shall be used. Results of analysis will be adjusted for inflation so that appropriate inter temporal comparisons can be made. Other data shall be taken from publications of CSO, RBI and Economic

Survey.