

Interfuel Substitution Possibilities in Indian Manufacturing Industries— A Translog Approach

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Introduction

In the wake of the disturbances in the energy sector the short and medium term policy objectives are framed in terms of substitution of high cost fuel by low cost fuel within the framework of available technology. The major thrust of the energy policy recommended by the working group of Energy Policy and the Planning Commission in India is towards substitution of high cost oil by indigenous coal or electricity as far as possible (Sixth Plan 1980-85, Report, 1979). Viability of such suggestions have been empirically and statistically checked through price and substitution elasticity estimates in the context of United States (Halvorsen, 1977), Canada (Fuss, 1977), Netherlands (Magnus and Woodland, 1980), certain developed countries (Pyndick, 1979), and OECD countries (Griffin, 1979b). But in Indian context such elasticity estimates are not available. The working group in its report has mentioned that "various policies have been determined on 'trial and error basis' since reliable estimates of price elasticity are not available in sufficient and in disaggregated form". An attempt has been made in this paper to verify the degree of inter-fuel substitution possibilities through the elasticity estimates for manufacturing sector.

The industrial sector in India accounts for around 40% of annual commercial energy consumption in India. There has been shifts in the composition of energy consumption over years. Out of the three major types of energy in 1953-54 coal accounted for 61.5% of the total commercial energy consumption in the industrial sector, oil 16.2% and Electricity 22.3%, in 70-71 these figures are 40.7%, 14.3% and 45.0%, in 1978-79 these are 44.5%, 7.9% and 47.6% respectively. Here attempt has been made to examine how far these shifts in the energy mix are due to changes in relative energy prices. Manufacturing sector's importance is established by the fact that this sector accounts for around 81 per cent of our total industrial production. This importance of manufacturing sector and the availability of data explain our bias for manufacturing sector over other sectors.