Liberalisation And Technological Change: A Study of Indian Manufacturing Sector

Abstract

The role of manufacturing sector is crucial for the growth of an economy. This is because the sector tends to have a multiplier effect on other sectors in the economy. The manufacturing sector avails raw materials and services from other sectors in the economy and in turn supplies them with finished products. Hence stimulating demand for everything from raw materials to intermediate goods. Its area of influence includes sectors like software, health, and transportation. World over the manufacturing sector is recognised for creating mass employment for low-skilled workers in the modern sector. With a rapid decline in the capacity of agriculture to offer jobs and the limited scope of the modern services sector to absorb relatively unskilled labour that has been displaced from agriculture, expectations are that the manufacturing sector will create mass employment for this displaced lot. In India also the role of the manufacturing sector is recognised to be critical not only for facilitating large-scale employment but also for enabling high GDP growth.

The study focuses on productivity and efficiency of manufacturing sector. The motivation for this study was derived from the fact that India has a large surplus labour available and agriculture alone cannot boost the development, so productivity increase in manufacturing sector is the root through which inclusive growth would be achieved Total Factor Productivity Growth has been calculated for measuring the performance of Indian Manufacturing industries. To calculate the Malmquist Productivity Index (MPI) in Indian manufacturing industry, DEA method has been used. The use of MPI has been preferred over traditional non-frontier techniques given the property of MPI that it decomposes the Total Factor Productivity change into two mutually exclusive and non-additive components namely, Efficiency Change (indicator of catching-up) and Technological Change (indicator of shift in production function).

To analyze the impact of economic reforms on Total Factor Productivity growth of Indian manufacturing sector the entire study period has been bifurcated into three sub
periods namely pre-reforms period (1980-81 to 1990-91) and post-reform period (1991-92 to 2000-01, and 2001-02 to 2009-10).

*In sum*, in comparison of productivity growth during three sub periods it was revealed that Total Factor Productivity growth in Indian manufacturing sector has fallen from 6.7 percent per annum during pre reform period to 4.7 percent per annum during the first phase of post-reform period, Total Factor Productivity growth registered 7.6 per cent increase per annum only in the second phase of post reform period which was marginally better than the pre-reform growth of Total Factor Productivity growth. Hence at aggregated levels impact of economic reforms was not in a desired direction as envisaged by the policy planners of India.

In the manufacturing industry subgroup out of 12 Manufacturing Industries six industries were showing positive Total factor productivity change and another six industries were showing a regress in Total Factor Productivity change throughout the study period i.e, 1980-81 to 2009-10. The lowest performers were food product and cotton textile industry, this low performance can be explained in terms of Technical change, since this was negative throughout the period, Efficiency change was positive but this positive change was waved off by negative change in Technical change and it resulted into negative Total Factor Productivity change. The highest performers were other manufacturing and transport equipment industry, these industries registered 14 per cent and 12.8 per cent average Total Factor Productivity change respectively. If we compare the manufacturing industries having positive Total Factor Productivity change and those who were having negative Total Factor Productivity change, we found in low performers with negative Total Factor Productivity change the reason was a regress in Technical change because Efficiency change was positive in most of the industries. Manufacturing industries having positive Total Factor Productivity change showed both Efficiency change and Technical change was positive, but the higher proportion of Total Factor Productivity change was explained by Technical change as compared to Efficiency change.