

Decomposition of Output and Productivity Growth in the 2-Digit Manufacturing Industries in India: An Interstate Analysis

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The study examines and applies the theoretical foundation of the decomposition of output total factor productivity growth (TFPG) of the 2-digit manufacturing industries in India and in its fifteen major industrialized states from 1981-1982 to 2010-2011, during the pre- and post-reform period (1981-1982 to 1990-1991 and 1991-1992 to 2010-2011). Output growth is decomposed into input growth effect and TFPG where the three attributes of TFPG are adjusted scale effect technological progress and technical efficiency change. A stochastic frontier model with a translog production function is used to estimate the growth attributes of TFP of the 2-digit manufacturing industries in 15 major industrialized states vis-a-vis all-India. Empirical results show that input growth effect is the major contributor to output growth, whereas TFPG sometimes remains inadequate even though it has a significant effect on output growth. Technological progress is found to be the major contributor to TFPG and the decline in it of the 2-digit manufacturing industries in almost all the states as well as in all-India during the post-reform period is due to decline in technological progress of the same. The scale effect has also become important in recent years, but the impact of technical efficiency effect becomes negative in most cases. The relevant policy implication for a sustainable post-reform Indian economy is the need to improve TFPG components of the manufacturing industries for the overall balanced growth of the economy.

I Introduction

Growth of output over time is usually decomposed into two parts: Input Growth effect (IG) and Total Factor Productivity Growth (TFPG). Measuring the sources of output growth, the contribution of TFPG is always estimated as a residual after

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