

ABSTRACT

India has focused on price policy and technological development to meet the target of energy efficiency gain. In this context, we explain the role of PAT scheme to check if India is meeting the committed target within the buffer period or not. This is important because it is expected to help to attain the Net-Zero target. The study empirically verifies whether energy efficiency is driven by the PAT scheme, and if not, then what are the main drivers of the energy intensity? To carry out the analysis, we use firm-level data from 2000 to 2021 for India's manufacturing sector from the Centre for Monitoring Indian Economy (CMIE). Our benchmark finding suggests that the energy intensity has increased post-implementation of PAT that puts a question mark on the outcome of the PAT. We use difference-in-difference (DID) to validate the underlying hypothesis and find that PAT is not playing a significant role to reduce the energy intensity at an aggregate level. Thus, we try to identify the determinants of the energy intensity. The Hausman-statistics favored fixed effects and we conclude that factors, such as TFP, different technologies, and export intensity are the main drivers of energy intensity. A non-linear relationship between the energy intensity and TFP is responsible for the productivity dilemma beyond 1.5 percent level of TFP growth. Further, we carry out robustness check for the sub-samples. We additionally found that the medium energy intensive firms are responsible for the rebound effect. We also find that export-intensive firms are energy efficient. It ensures that export promotion is helpful in terms of maintaining the environmental standards. The increasing competitiveness with the global firms and maintain the environmental standards for the export-intensive goods may help to increase the export share of Indian manufacturing in the global market.

Keywords: Energy intensity; Indian manufacturing; PAT; TFP

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