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KNOWLEDGE SPILLOVERS AND TECHNOLOGICAL CONVERGENCE: ROLE OF TRADE, FDI AND ABSORPTIVE CAPACITY IN TECHNOLOGICAL PRODUCTIVITY OF INDIAN MANUFACTURING SECTOR

Abstract:

The paper analyses how India's science, technology and innovation policy can channelise international knowledge spillovers from OECD partner countries into potential manufacturing sectors conditioned upon "absorptive capacity" to increase technological productivity. Imports and foreign direct investment provide two major channels of knowledge spillovers while industrial R&D and human capital are used as proxies for domestic absorptive capacity essential for effective knowledge absorption and diffusion. Applying fixed effects panel regression on 2-digit manufacturing sectors based on ISIC Rev. 4 for 2000-2015, preliminary results suggest significant sectoral heterogeneity with respect to trade and FDI from India's OECD partners on domestic TFP. Absorptive capacity in terms of quality of human capital is found to be crucial for productivity in labour intensive low-tech manufacturing sectors such as textiles, manufacturing of food products and paper industry. Research and development intensity is relevant for technological progress in the medium-high tech sectors, particularly in the electrical and non-electrical machinery industry and transportation including automobile. No significant effect is found for high-tech sectors implying that imported embodied technology might substitute in-house R&D efforts. Finally, industries witnessing considerable FDI inflows and imports in recent years such as automobile, food products, metals and machinery have not experienced productivity benefits in the same proportion. This reinforces the need in developing economies to synergise FDI and trade policies with human capital and private R&D policies, particularly in the private manufacturing sector wherein India lags significantly.

Keywords:

Industrial Policy, Absorptive Capacity, Knowledge spillovers, TFP growth, Indian manufacturing

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