

# Firm R&D, Innovation, and Productivity in German Industry

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## Abstract

This paper investigates empirically the effect of product and process innovations on the evolution of firm productivity. Firms exert effort and make investments in research and development (R&D) in order to produce innovations. These innovations in turn improve the firm's productivity level. Using German firm-level data from the manufacturing sector, we estimate a dynamic, structural model of the firm's choice to invest in R&D. The model captures both the impact of innovation on the firm's productivity evolution, and the cost and benefit of engaging in R&D. We find that among firms that engage in R&D, process and product innovations create a significant improvement in their productivity. The cost for performing R&D differs across firms based on their size and R&D history.