Robot Adoption and Innovation Activities

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We exploit firm-level data on robot adoption and use an event-study approach to study the unexplored relationship between robotisation and innovation. Instead of an enabling effect, we find a negative association between robot adoption and the probability to introduce product innovations, as well as their number; the results emerge using different proxy of product innovation. However, large-scale investments in mechanisation cancel-out the negative effect and show a positive association with R&D expenditure. We rationalise and interpret the findings suggesting that a piecewise substitutive relationship exists between process and product innovation. Large investments relax the product-process trade-off, as substantial R&D investments to accrue absorptive capacity are mobilised; as a result, they make less binding the allocation dilemma between implementing robot technology and designing and trialling new products. Finally, we discuss whether industrial robots studied here and in the literature feature enabling capabilities at all. The study has important implications for our understanding of the role of robots for firms' operations and strategies, as well as for policy design.