

# Estimating R&D Spillovers in Canada: Evidence from Firm-level Micro Data

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There is a rich empirical literature on the returns to R&D, covering private and social returns as well as the gap between the two, or the external return to R&D, which is relevant when assessing the appropriate amount of support to provide to R&D. The bulk of the research on the external return to R&D attempts to quantify the importance of knowledge spillovers by estimating a standard production or cost function augmented with the spillover pool -- R&D that is external to the firm or industry -- as an additional input.

This study adds to this empirical literature, filling three gaps. First, this study makes use of Canadian firm-level data. The only study of R&D spillovers using similar data was published 30 years ago by Bernstein (1988). Second, we define the spillover pool using a measure of technological proximity based on firms' reported expenditure in 145 research fields. This approach has a considerable advantage over the more usual approach of defining technological proximity in terms of patenting activities since it allows all R&D performers to be included in the analysis. Third, very little of the empirical analysis addresses how the external return to R&D varies by size of firm. In order to address this issue, we calculate separate spillover pools by size of firm.