R&D Spillovers through Buyer–Supplier Networks

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Abstract

We study how R&D spillovers propagate through buyer–supplier networks, exploiting a major reform of Japan's R&D tax credit system in 2003. The reform replaced the incremental credit for large firms with a volume-based scheme, reducing the marginal cost of R&D for firms with eligible expenditure below a ceiling but not for those above it or for SMEs. Using difference-in-differences, we find the reform increased R&D expenditure, innovative output and sales of treated firms. We find evidence of positive forward spillovers to downstream firms: the reform raised productivity of firms with a greater share of treated suppliers. Conversely, we find no evidence of backward spillovers to upstream firms. Treated firms also reallocated R&D from overseas affiliates to Japan while expanding affiliate employment, suggesting that headquarters' innovation enabled scaling up of foreign production operations.

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