The Impact of IT-Related Spillovers on Long-Run Productivity: An Empirical Analysis

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Abstract

This paper examines the effects of IT-related spillovers on firm-level productivity improvements over a long-term horizon. In contrast, prior research has largely focused on the direct and contemporaneous impacts of IT investments. As a result, we do not fully understand how IT investments are associated with ongoing productivity improvements in future periods and how spillovers influence these gains. In this paper, we examine whether firms receive incremental benefits from IT-related spillovers and whether these spillovers lead to more persistent returns. We focus on the spillovers that accrue to firms from their interindustry transactions, especially the IT services industry. We model and estimate the impact of spillovers on long-run productivity using firm-level data from the manufacturing, transportation, trade, and services sectors. We find that spillover impacts are highly significant, but that the magnitude and persistence of the impacts vary. Firms with high IT intensity receive greater spillover benefits from the IT services industry. Moreover, these benefits are sustained over a long-term horizon. However, the impact of IT-related spillovers does not persist in low IT intensity firms regardless of the source. Overall, our results shed light on the existence and sources of IT-related spillovers and on their important role in shaping the long-run returns to IT investment. Our results also help explain the findings of excess returns to IT investment in the IT productivity literature.