

Spillovers, Linkages, and Technical Change

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Abstract. Using U.S. input-output data for the period 1958 to 1987, I find strong evidence that industry TFP growth is significantly related to the TFP performance of supplying sectors, with an elasticity of almost 60 percent. R&D intensity is also found to be a significant determinant of industry TFP growth, with an estimated return of about 10-13 percent, and the return to embodied R&D is estimated at 43 percent. Direct productivity spillovers, from the technological progress made by supplying sectors, appears more important than spillovers from the R&D performed by suppliers. They also play a key role in explaining changes in manufacturing TFP growth over time. Changes in the contribution made by direct productivity spillovers to TFP growth account for almost half of the slowdown in TFP growth in manufacturing between 1958-67 and 1967-77 and 20 percent of the TFP growth recovery in this sector between 1967-77 and 1977-87. Changes in R&D intensity and embodied R&D are relatively unimportant in explaining movements in manufacturing TFP growth over these three periods.

JEL Codes: O30, O32, O47, O51, C67

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