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Do Technology Shocks Lower Hours Worked? - Evidence from Japanese Industry Level Data

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Abstract

We examine the response of productivity and hours worked to technology and nontechnology shocks using the Japan Industrial Productivity (JIP) Database. We find that, at the aggregate level, (1) hours worked increase in response to positive technology shocks both in the manufacturing and the nonmanufacturing sector; and (2) productivity decreases in response to positive nontechnology shocks. At the two- and three-digit industry levels, we find that the correlation between productivity and hours worked in response to technology shocks still tends to be positive in some manufacturing industries, while it tends to be negative in most nonmanufacturing industries. Further, we find that contributions of technology shocks to hours variances considerably diminish at the disaggregate level. Decomposing nontechnology shocks into permanent changes in the relative size of industries and industry-specific shocks shows that the negative productivity response to nontechnology shocks originates from industry-specific factors.

Keywords: Technology shocks, Composition shock, Hours worked, Japanese economy, VAR

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