

Industry-University Collaboration and Corporate Research Performance: Analysis of Firm-level Panel Data in Japan

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Abstract

This study quantitatively analyzes the impact of industry-academia collaboration on firms' research activities and productivity using Japanese firm data from 2001 to 2020. First, we analyzed the characteristics of firms that engage in industry-academia collaboration in terms of R&D input, output, and productivity. Next, based on the characteristics of firms that engage in industry-academia collaboration, we match firms that do and do not engage in industry-academia collaboration using the propensity score matching method and examine the impact of the implementation of industry-academia collaboration on productivity, research expenditures, and patents using the difference-in-differences method. By comparing firms with equal research scale, productivity, and characteristics of enrolled researchers but differing only in whether they implement industry-academia collaboration, it was confirmed that research expenditures increased after industry-academia collaboration, especially in applied development research expenditures. Moreover, no changes were observed in the number of patents in technological fields wherein many were filed before industry-academia collaboration, but there was an increasing trend in the number of patents in technological fields wherein many were filed after industry-academia collaboration.

Keywords: Industry-University Collaboration, R&D, Patents, Productivity, Propensity Score Matching

JEL classification: O31, O32, O36