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OPTIMAL R&D POLICIES UNDER PROCESS AND PRODUCT R&D

Abstract:

This study explores governments' optimal research and development (R&D) policies when firms invest in both process R&D and product R&D simultaneously. We develop a model based on the third-country trade model in an international duopoly and construct a three-stage game. In particular, we consider the following two cases. First case is that firms determine their products' qualities and costs by determining only total amount of R&D investments. Second case is that firms endogenously choose the total amount of R&D investments and the ratio of R&D investment in process R&D and product R&D. We found that the governments have incentives to subsidize their domestic firm's R&D investments in these two cases irrespective of the magnitude of the R&D fraction. In addition, the government's subsidy strategically affects the rival firm's total amount of R&D investment but has no impact on the rival firm's choice of R&D fraction. These results are maintained under both Cournot and Bertrand competition.

Keywords:

Optimal R&D policy, Process R&D, Product R&D, Endogenous Quality Choice

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