

Optimal R&D Subsidies, Industry Location, and Productivity Growth

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Abstract

Using a two-country framework, we study how national research subsidy policy affects productivity growth, market entry, and national welfare through adjustments in the location patterns of research and development (R&D) across countries. Our framework features a tension in the firm-level innovation location decision between accessing technical knowledge and sourcing low-cost high-skilled labor. With trade costs and imperfect international knowledge diffusion, the larger country has a greater share of industry and tends to host a larger share of innovation. Under this setting, we find that an R&D subsidy expands the implementing country's share of innovation, reduces market entry, and raises the rate of productivity growth. Although the non-implementing country experiences a welfare improvement, the rising cost of the policy generates a concave relationship between the R&D subsidy and the welfare of the implementing country, yielding an optimal R&D subsidy rate. Investigating the effects of improved market integration on R&D policy competition between the two countries, we conclude that lower trade costs lead to a reduction in the R&D subsidy of the larger country and an increase in the R&D subsidy of the smaller country. Greater international knowledge diffusion results in higher R&D subsidies for both countries.

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