Gains from Trade with Footloose R&D

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Abstract

This paper studies how the international distribution of R&D activity affects the gains from trade. It develops a quantitative general equilibrium model in which trade flows and the spatial allocation of innovative activity are jointly determined. Building on a multi-country Ricardian framework with directed technological change, the model allows researchers to relocate across countries in response to differences in real market size. This endogenous sorting determines national technology levels, which in turn feed back into the pattern of international trade. The model yields a tractable system of equilibrium conditions suitable for quantitative analysis. In particular, it delivers a closed-form expression for welfare as a function of observable trade shares and a small set of elasticity parameters, allowing transparent counterfactual analysis. Quantitatively, endogenous R&D allocation significantly changes the predicted welfare effects of counterfactual changes in trade barriers relative to standard benchmarks with exogenous technology.

Keywords: International trade; innovation; directed technological change; factor mobility; general equilibrium; welfare

JEL Classification: D58; F12; F22; F43; O33

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