Inventing Around, Trade in Similar Products, and Optimal Patent Breadths

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Abstract

This paper examines the effect of trade in imitated products, which are defined as products invented around, on innovators' behavior and patent breadths set by governments of trading countries. In particular, we compare unilateral patent breadth with the global optimum. To this end, we adopt a two-country model (home and foreign) in which (i) consumers are uniformly distributed on a circle in each country, (ii) there is one innovator in each country, (iii) there are potentially many imitators that invent around. The location of each consumer represents preferences for differentiated products.

We find that if both home and foreign countries are symmetric including patent breadths, a change from a closed to an open economy increases the investment amounts of innovators. We also find that, given patent breadths set by home and foreign governments, a change in investment of the home innovator in response to a small change in patent breadth of home patent breadth may be larger or smaller in an open economy than in a closed economy. When "larger", the home government has a stronger incentive to adopt broader patent protection in an open economy than in a closed economy.

Moreover, when both home and foreign countries are symmetric on innovators' invention probability and imitators' entry probabilities, unilateral patent breadth of each government is narrower, which means that patent protection is laxer, than the global optimum. This result holds even when there is only a home innovator and all imitators are foreign ones. However, when the foreign country has comparative advantage not in innovating but in producing similar products, unilateral home patent breadth may be broader than the global optimum.

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