

What determines the internationalisation of corporate technology?

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Abstract

Based on empirical data at an aggregate level it has been argued that the propensity to internationalise corporate technological activity is higher among firms originating from smaller countries and in less research-intensive industries. However, more disaggregated evidence on the patenting of the world's largest firms suggests a more complex picture.

First, at a disaggregated level there is a great diversity among countries within each industry in the degree of internationalisation of technological activity that is not recorded in global average position. The share of foreign-located activity (through outward investment) depends positively upon the technological strength of each national group of firms in an industry, while the share of foreign-owned activity (through inward investment in a host country) may be deterred by the technological competitiveness of indigenous firms. The degree of internationalisation of technological development depends inversely as well on the extent of localised user-producer interaction in innovation in an industry or in the relevant national innovation system.

Second, the largest firms increasingly use international research networks as a means of corporate technological diversification. Thus, when technologically leading groups invest in innovation abroad they tend to switch towards the foreign development of complementary and supporting technologies outside the primary field of their own industry, which tends to remain relatively more concentrated at home. Likewise, while foreign-owned firms in the same industry may be deterred by the intensity of competition in the home centre of a leading national group, strong foreign-owned firms in other industries may pursue their diversification strategies by developing locally the primary technology of that centre (which is not primary for their own industry).

Hence, we present a more general framework that takes into account the relative technological strengths of national groups of firms, and the role of corporate technological diversification through international networks in each industry. We show how this more comprehensive framework allows us to explain more fully cross-country variations around average industry positions (and cross-sectoral variations in average country positions) in the degree of internationalisation of technological development established by the world's largest firms.

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