

The diffusion of innovations, particularly process innovations, has historically been slow. Mansfield³⁹ argues that firms are often unwilling to license new technology abroad because it is difficult to control the diffusion of the technology in other countries. This licensing argument should not apply within firms, however. Multinational corporations (MNCs) typically do not sell their new technology to licensees. MNCs initially exported finished products, which embodied new technology and innovations. But MNCs have gradually changed their emphasis from solely exporting to local assembly or manufacturing in the host countries. The MNCs, with investments abroad in high-technology industries, such as IBM and Toyota, have significantly increased the pace of technological diffusion internationally. Local production in the host countries requires that new technology is transferred to subsidiaries much sooner than without the globalization of production by MNCs. The international process of innovation diffusion has, consequently, become shorter since 1965.

Daly and Globerman⁴⁰ have argued that in the past Canada's small, traditionally tariff-protected market has retarded both the initial adoption and the domestic diffusion of scale-oriented innovations. The technology transfer lags are relatively short with intra-corporate transfers. The implication of this is that restrictions on multinationals by host governments can have the effect of deterring or at least postponing the transfer of the most sophisticated technologies to the country. If the intra-corporate mode is cut off, it may be a long time before the arm's length alternative is sufficiently profitable to justify the transfer. International diffusion lags will be greater in the cases of countries which heavily screen foreign investment or maintain equity controls. Thus, policies favoring free capital flows reduce international diffusion lags. Policies restricting capital flows or otherwise making the local environment appear less hospitable (e.g., an intellectual property regime that falls short of the international norm) will discourage investment. Since the United States, and U.S. based MNCs, are our major source of technology transfer, it is important that Canadian subsidiaries have continuous accessibility to such technology transfers.

³⁹ Edwin Mansfield, "R&D Innovation: Some Empirical Findings." In *R&D, Patents and Productivity*, edited by Z. Griliches. Chicago: University of Chicago Press, 1984: 127-48.

⁴⁰ D.J. Daly and S. Globerman, *Tariff and Science Policies: Applications of a Model of Nationalism*. Toronto: University of Toronto Press, 1976.