the investment originates.[25] As a result, there is growing concern over the increasing lack of transparency in the development and implementation of national R&D strategies which can lead to the distortion of investment behaviour with adverse effects on trade flows.[26]

The economic importance of R&D is evident by the fact that the greatest growth in international trade during the last decade was in the sectors of the highest R&D intensity.[27] The importance of this linkage is compounded in Canada by the country's dependence on investment by foreign-owned manufacturing affiliates, rather than mostly on domestically-controlled industries, for R&D, technology transfer and exports.[28] Belgium and Canada aside, most developed countries depend on home-based firms for the bulk of their R&D/technological activities.[29]

Historically, R&D has tended to be both centrally controlled and centrally located. The increasing separation of R&D from production, however, makes it easier for a firm to avoid the intent of trade and industrial policy. In some sectors, technology "production" is disappearing (e.g., software and telecommunications) as most of the cost of producing products is in R&D. In other sectors, R&D is being decentralized as "virtual" corporations contract research (e.g., in pharmaceuticals and biotechnology) or purchase subsidiaries to work with at arm's length (e.g., Microsoft's purchase of Softimage).

It is no longer certain that R&D will be located within the home country nor that attracting FDI will bring R&D with it. Nor is it certain that, in attracting R&D, host countries will attract production. A complicating factor when analyzing technological aspects of foreign investment is that it tends to be industry specific. These issues are further confused by questions of "national security". Clearly, some sectors are more important than others, since failure to invest in certain "strategic" technologies with

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25 In the private sector, measures to protect technology are most evident in the push for broader and deeper intellectual property rights.

26 Inducement bidding wars over R&D incentives and locational subsidies offered by countries and sub-regional governments are often negated by their cost. See *Multinationals and the National Interest: Playing by Different Rules,* Office of Technology Assessment of the U.S. Congress, September 1993, p. 67.

27 In the first half of the 1980s, these sectors accounted for about 20 per cent of OECD industrial exports (and more than 30 per cent for the United States) against less than 14 percent in 1975.

28 MNEs outspend domestic companies in R&D. Bertin and Wyatt found this to be the case in the U.S.. Work done by Statistics Canada has found a similar tendency in Canada.

29 The bulk of FDI in Canada has taken place within industries of medium R&D expenditures (which have more mature technological inputs). In contrast, services have been one of the major growth areas of FDI and are a major user of advanced technologies.