

much or more for technology than they earn. Some have outflows two times greater than receipts and occasionally even higher. The main exception is the U.S., which is in a very strong surplus position with receipts about five times higher than payments in 1990. Canada's payments in 1990 (US \$775 million) were moderately higher than receipts (US \$721 million). As a result, Canada's TBP ratio (payments/receipts) was 1.07 in 1990, or similar to that of Japan (1.10) and the United Kingdom (1.04).¹⁸

2.4 Summary

Canada's recent trade balance performance in high-technology industries is largely negative. The sector is characterized by the rapid growth of imports and exports. The trade statistics demonstrate that, while the United States and European Union continue to be our largest market for technology exports (86% of advanced technology exports in 1994), trade with the Pacific Rim countries is quickly growing in importance. But is a deficit in advanced technology trade the entire story or even the most important factor?

While Canada may be lagging in infrastructure (i.e., the information highway), R&D expenditures and capital markets, in most areas Canadians clearly are getting the technology they need, embedded in goods, through licensing and through foreign direct investment. Although losing some learning and other externalities in some sectors, Canadians have tended to develop indigenous technology to improve competitiveness in sectors where they already have a comparative advantage (i.e., natural resources and agriculture) and in advanced technology industries that fit the country's physical and geographic needs (i.e., telecommunications, aspects of aerospace and biotechnology). Coe and Helpman suggest that Canada clearly benefits from "spillovers", primarily from the U.S., which help to offset its overall trade deficit in advanced technology.¹⁹

Recognizing that a small, open economy can really only expect to develop a handful of technology leaders, the rest of this Paper identifies issues that need to be addressed if we are to maintain unimpeded access to our traditional sources of technology abroad in those areas important to our economic security and to nurture future technology leaders.

¹⁸ Ibid.

¹⁹ David T. Coe and Elhanan Helpman, *International R&D Spillovers*, National Bureau of Economic Research Working Paper Series No.4444 (August 1993).