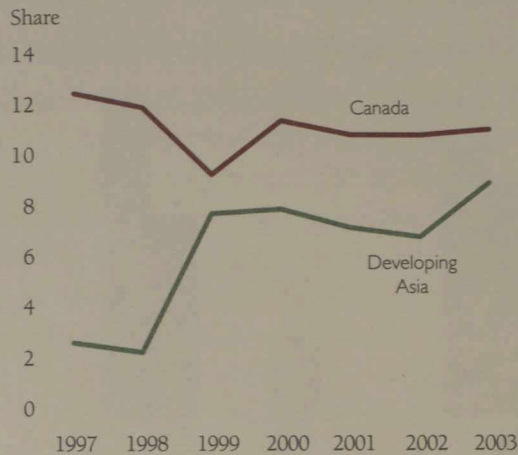


R&D expenditures by U.S. MNEs outside of the U.S.*



* U.S. majority owned foreign affiliates
 Source: Foreign Affairs and International Trade Canada
 calculations based on data from the U.S. Bureau
 of Economic Analysis.

to confirm, it may be that smaller Canadian companies have lost some of their attractiveness for internationally contracted R&D activities in recent years.

Foreign affiliates (foreign-owned firms operating in Canada) account for more than one-third of business sector R&D spending in Canada (roughly their share of the Canadian economy) and another 5% is performed by Canadian firms but funded from foreign sources. This means that nearly 40 cents out of every dollar of business sector R&D spending in Canada has some involvement of a foreign source. This is not surprising as the 700 largest R&D spenders accounted for 69% of the world's business spending on R&D and only a small number of these are Canadian. Siemens alone, for example, spends more on R&D than either Brazil or Russia.³⁶

But on direct measures of Canada's attractiveness as a location for foreign multinationals to locate their R&D activities, Canada is not performing well. Canada's share of North American (Canada and the U.S. only), all developed countries and even

the world have all fallen. This means that Canada is not losing share only because there are new competitors on the scene, such as China, or India, but also against developed countries, which includes the EU and Japan, and probably most importantly the U.S. – our primary competitor in North America. U.S.-based multinationals are particularly important for Canada, yet here too Canada's performance has not been strong. Canada's share has declined modestly from 12.5% in 1997 to 11.0% in 2003. But just this 1.5 percentage point decline is roughly the same value as all of the R&D spending by U.S. multinationals in Australia.

The importance of new competitors is extremely evident. The developing economies of Asia accounted for less than three per cent of R&D spending by U.S. multinationals outside of the U.S. as recently as 1998 but accelerated sharply thereafter and as of 2003 stood at nearly 9% – a more than three-fold increase in only five years. In the section relating to manufacturing, we discussed the total number of low-skilled labourers that China alone could potentially add to the global economy. But potentially more important for Canada in attracting and retaining high-valued activities such as R&D is the number of skilled people. While estimates of the number of science and engineering graduates in these emerging economies vary widely we will pick one; the U.S. National Science Foundation 2006 report which gives the number persons holding first degrees in science and engineering as of 2002, or the most recent year available, lists 534 thousand for China, 176 for India, 60 thousand for Canada and 416 thousand for the U.S.³⁷ In addition to the wide range of estimates of the number of science and engineering graduates, the quality of their education is also questionable. McKinsey came to the conclusion that only 10% of Chinese engineers and 25% of Indian engineers were of sufficient

³⁶ Ibid

³⁷ U.S. National Science Foundation 2006 appendix table 2-37.