1. THE CANADIAN CHEMICAL INDUSTRY

In 1988 the Canadian chemical industry shipped almost $22 billion worth of goods. Two-fifths of this total is accounted for by industrial inorganic and organic chemicals (Figures 1 and 2). A significant and increasing proportion is also accounted for by the pharmaceuticals (15.2 per cent) and the plastics and resins (12.3 per cent) industries.

Industrial (or "commodity") chemicals also dominate international trade in this sector (Figures 3 and 4). Canada has run a trade surplus in industrial chemicals over the past five years ($3.5 billion of exports versus $2.5 billion of imports in 1988). In plastics, resins, and elastomers there has been a persistent deficit, although its magnitude has been declining ($1.58 billion of imports versus $1.48 billion of exports).

The most substantial deficit has been in "other chemical products." This is the sector in which many, but not all, of the products considered to be "specialty chemicals" and "fine chemicals" are located. The former are compounds manufactured to satisfy a specific or narrow range of chemical functions. The latter are chemicals produced in small quantities to high standards of purity, largely as ingredients in pharmaceuticals. In each case these products are typically characterized by high value-added input in the manufacturing process, fairly high price mark-ups, and relative insensitivity to cyclical fluctuations. The large, international (often European), chemical companies have been shifting into the production of fine and specialty chemicals over the last decade and the bulk of such chemicals consumed in Canada are imported -- mainly from the U.S. or Europe.[1] It was recently estimated that there are about 92 producers of fine and specialty chemicals in Canada.[2] Nonetheless, this has not produced substantial exports of these chemicals. In interviews conducted for this study experts estimated Canada's exports of these products at about $170 million and imports at about $2.5 billion.

In 1988, of Canada's $6 billion of chemical exports the U.S. took almost two-thirds. As Figure 5 shows, less than 11 per cent went to EC countries, which are considerably less important as an export destination than the Pacific Rim countries, including Japan.

A small number of organic chemicals produced from oil and natural gas account for the bulk of Canada's exports. Polyethylene, styrene, methanol, ethylene glycol, polypropylene and isobutene-isoprene (butyl) rubber all appear in the list of the top 10 chemical exports in 1988 (in terms of value) (see Figure 7). Of the four remaining inorganic chemicals on the list, ammonia and urea are inorganic by-products of organic chemical manufacturing processes. That leaves uranium and "other radioactive elements" as the only chemicals in this list not originating in the processing of oil and natural gas.[3] These 10 commodity chemicals alone account for a little more than half of the value of total Canadian chemical exports. The pattern of exports to the EC is similar, except that the single most important export is uranium (see Figure 6).

1.1 Petrochemicals, including Resins and Elastomers

Most of the large firms in this industry are foreign-based multinationals (see Table 1). The exception is Nova, which in 1988 acquired the other large Canadian-owned firm, Polysar. Over the last decade and a half the petrochemical industry has had to adapt to a number of significant changes in its environment, their effects substantially mediated