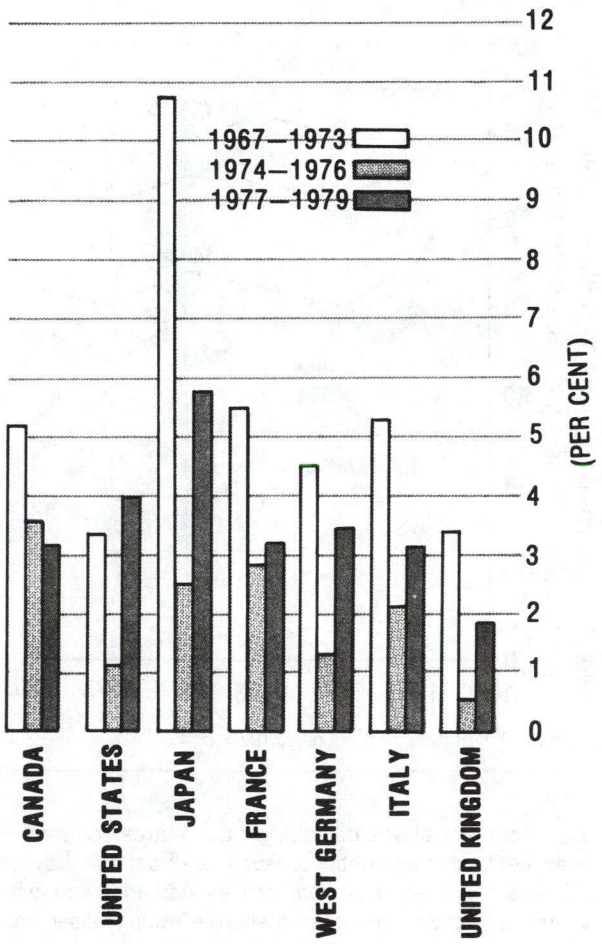
Figure 5-6: AVERAGE ANNUAL PERCENTAGE CHANGE IN REAL GROSS DOMESTIC PRODUCT, CANADA AND MAJOR OECD COUNTRIES, 1967-1979



Source: After Economic Council of Canada, 1980, p. 8.

prices are rising. In Canada, the relative advantages of energy abundance and low price have sheltered us from international developments and lessened the incentive to conserve energy. On an aggregate basis, Canada is using its cheap and abundant resources relatively more intensively than other resources such as capital and labour. Canadians can certainly use less energy in production in the short run but production costs will rise if more labour and capital must be employed instead.

The degree of total energy savings possible in this country is unclear. It seems that growth can occur with less energy usage — a truly desirable condition — but the relationship between growth and energy consumption has not been clearly uncovered. If, in fact, the long-term growth potential of the economy will be hampered by using less energy (particularly oil) today, then we should be aware of this since we will have to decide whether we were willing to accept smaller real incomes. If we are not willing to lower our income expectations, then investment in alternative sources of energy is urgently needed. Since the resolution of this uncertainty is imperative, *the relationship between energy consumption and economic growth in Canada should be thoroughly investigated.*

2. ENERGY CONSUMPTION BY PRODUCERS

The existing stock of capital in our economy is the result of investment decisions made in circumstances which were quite different from those prevailing today. In the past, as labour became a relatively more expensive input than energy, producers bought energy-intensive rather than labour-intensive machinery and equipment. Unfortunately, Canada is now locked, in the short term at least, into an economy which dictates a high rate of energy use. Nevertheless, producers do have some latitude to reduce energy consumption by varying the way they use factors of production. As examples, labour can be substituted for energy in certain circumstances and, where feasible, cheaper fuels can be substituted for oil.

In the longer run, energy demand changes because the total amount, or stock, of energy-using capital changes. When investment decisions are made, producers take into account the expected relative prices and security of energy supplies and they attempt to substitute more energy-efficient capital and labour for energy if changing relative prices and energy security warrant these substitutions. However, the state of technological advancement limits how much capital can be substituted for energy and energy efficiency is only a priority in producers' decisions to the extent that relative prices indicate that it should be.

Burdens of higher energy costs are greatest when substitution possibilities are restricted and energy's share of production costs is high. The result is reduced output, higher costs and inflationary pressure. Far too little work has been done though to identify in any detail the probable long-run impact of higher energy prices in Canada's industrial output. Studies should be done to first indicate how Canada's industrial mix will change as energy becomes increasingly expensive and, secondly, to offer ways of dealing with the change.

3. THE ROLE OF NEW ENERGY SOURCES AND TECHNOLOGICAL CHANGE

If future economic growth were to diminish to a condition of recession as a result of decreased energy use, then the energy strategy would be obvious — energy supply would have to be increased. Even with rigorous energy conservation, we can anticipate a time when energy demand management will no longer bal-