Illustration 9.1
Could the West do Without South Africa's Minerals?

As the civil unrest debate over South Africa's policy of apartheid continues in that country, many observers worry about America's dependence on South Africa for so many essential minerals. If South Africa produces a government hostile to the West, some analysts believe mineral exports to the United States might be sharply curbed.

South Africa is a major producer of several vital minerals. Its platinum is necessary as a catalyst for many chemical and refining processes, as an agent in reducing exhaust fumes, and as a component in electronic systems. While the Soviet Union is the second largest producer of platinum to the West is also unpredictable.* South Africa also produces a huge amount of chromium, used in stainless steel, and an important fraction of the total world output of manganese. In addition, South Africa plays a key role in world production of cobalt, which is used in cutting tools and jet engines. What would happen if these supplies were cut off? The best that would happen would be that the price of these minerals would skyrocket. In the worst case, these minerals might become unobtainable in the West.

While one solution is to find other sources of supply, another solution is to find substitutes for the South African minerals. For many uses, aluminum and manganese could replace chromium in making stainless steel. Other metals and ceramics, though not as efficient, could replace platinum as a catalyst. Also methods have been found to recycle much of the platinum in automobile-exhaust converters.

The point is that many of these minerals are being used in what appears to be fixed proportions in the production of many important products. But if these minerals become increasingly scarce, and if their prices rise substantially, alternative processes will be found that use less of these minerals. As the price of the minerals rise, producers will find ways to decrease the proportions in which these minerals are used.

This is precisely what has happened throughout history. In the long run, no input ***must*** be used in fixed proportions. People found ways to use less oil as it became more expensive in the 1970s. Before that, almost no one thought that would be possible. During World War II, manufacturers learned to use synthetic rubber when natural rubber became almost nonexistent. As wood became more expensive at the turn of the century, people learned to use less wood. And there are many more such examples. For this reason, we will continue to concentrate on production under variable proportions.

*See Neil Behrmann, "Soviet Union's Big Exports of Platinum Are Pushing Down Prices, Analysts Say," ***The Wall Street Journal,*** February 16, 1988.
Source: This illustration is taken, in part, from "The Mines of Apartheid," ***Newsweek,*** August 11,1986, p. 80.