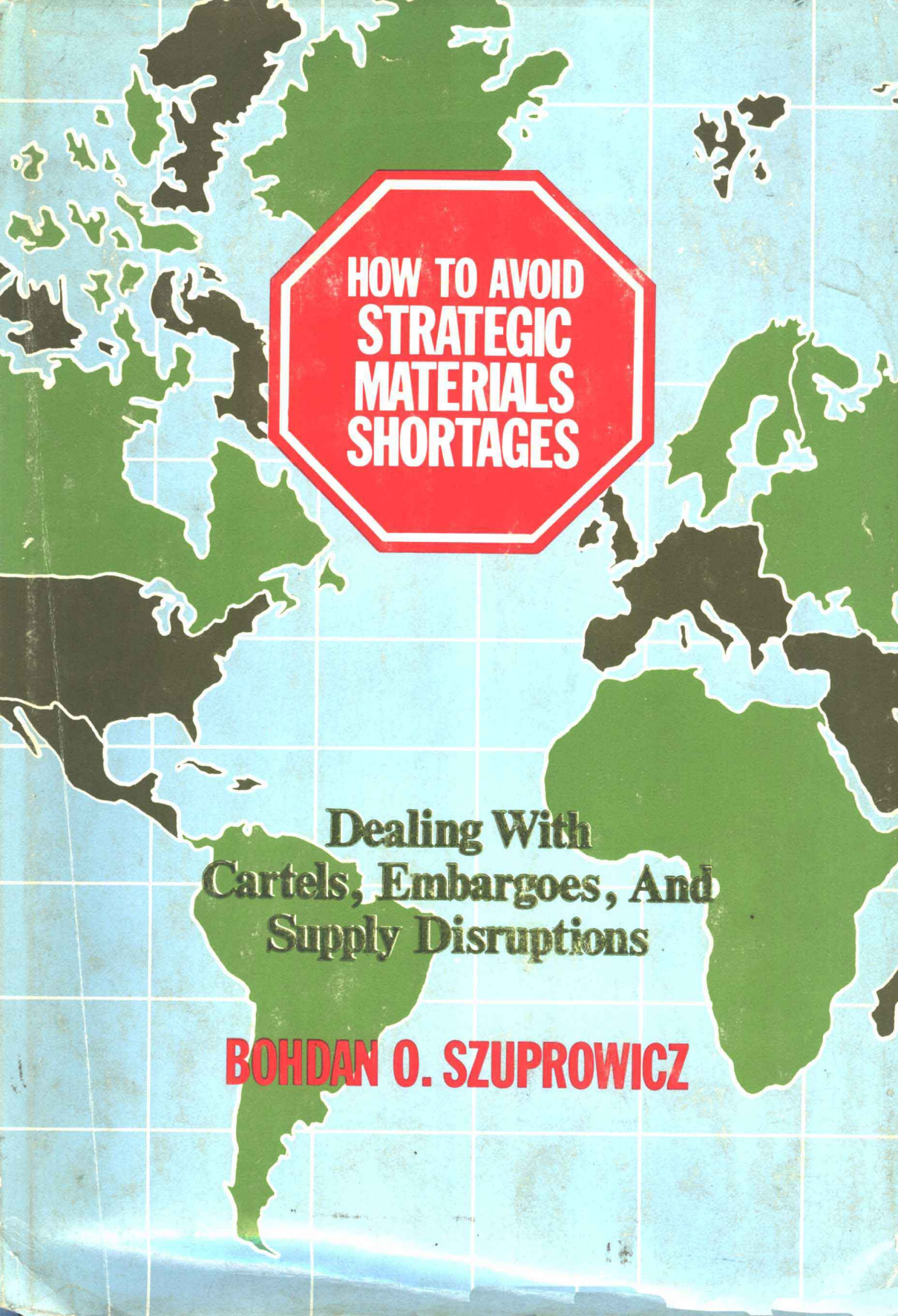

Dealing With Cartels, Embargoes, And Supply Disruptions

BOHDAN O. SZUPROWICZ

How to Avoid Strategic Materials Shortages

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21st Century Research

Library of Congress Cataloging in Publication Data:

Szuprowicz, Bohdan O 1931–
How to Avoid Strategic Materials Shortages

"A Wiley-Interscience publication."
Includes index.
1. Strategic materials. 2. Geopolitics.
I. Title

HC79.S8S98 355.2'4 80-24431
ISBN 0-471-07843-3

Printed in the United States of America

10 9 8 7 6 5 4 3 2 1

To my father Jakob Szuprowicz
a lifetime warrior against socialist imperialism

The supreme excellence is to subjugate the armies of your enemies without ever having to fight them.

Sun-Tzu in *The Art of War*
written in the fifth century B.C.

How to Avoid Strategic Materials Shortages

PREFACE

Following the tremendous success of the Organization of Petroleum Exporting Countries (OPEC), many developing countries that supply strategic and critical minerals to the West realized they had the potential to exert political and economic blackmail. As a result business and political leaders in most industrialized countries have been concerned about politically motivated shortages and supply disruptions of strategic materials, vital to industry and national security, that must be imported from unstable regions of the Third World.

This book discusses the geopolitics of most strategic and critical materials, centering on the crucial question of access and alternative solutions. The book's purpose is to outline political, economic, and technological factors that must be continually monitored to assess the vulnerability of governments, industries, military establishments, and individual corporations to sudden unexpected and prolonged shortages or embargoes of strategic and critical materials supplies.

The world seems to be entering a period of intensified economic competition, involving many new third world mineral supplying countries. This book identifies major potential actors and correlations of forces in this "resources war." The worst-case scenarios suggest possible outcomes, their impact on business and industry, and possible solutions.

Although the earth's crust and oceans contain an abundance of all minerals required by mankind for centuries to come, the perversity of nature placed the economically exploitable concentrations of minerals in widely scattered locations, with truly rich deposits very few and far between. The overwhelming control of the Soviet Union and southern African countries over most of the global reserves of such strategic materials as gold, diamonds, chromium, platinum, palladium, rhodium, cobalt, manganese, beryllium, and antimony is developing into an ominous geopolitical threat to the industrialized countries of the West.

The production and reserves overhang of these two regions is so huge and mineral markets so volatile that there are strong disincentives to explore and invest in other parts of the world without special inducements, guarantees,

and government support. Thus the United States, western Europe, Japan, and even China and their respective industries are at the mercy of political and economic forces in control of those areas.

The elements that might induce formation of a strategic materials "supercartel" are now in place, and if such an international structure develops even in part, it could have disastrous effects on the unprepared. This unusual correlation of forces also presents the Soviet bloc with the opportunity of the century to win political and economic concessions unwarranted by normal market forces, without resorting to military action.

This book is designed to provide essential and easily understood information to policymakers in all walks of life. If it is considered "too technical" by the politicians and "too political" by the engineers, they have merely recognized a purposeful attempt to bridge the range of interests contained between the two extremes. It should prove particularly useful to business executives, marketing and purchasing managers, production planners, government leaders, economists, military strategists, intelligence officers, politicians, international trade analysts, bankers, investment analysts, scholars, teachers, inventors, design engineers, and dictators.

Initial chapters of the book define strategic materials, identify political events that influence their availability, quantify import dependence of major end-user countries of the West, and indicate the importance of the issues to economic growth and national security. Several subsequent chapters discuss in detail strategic materials supply positions of major international groupings such as the Soviet bloc, southern Africa, China, the Pacific Basin, and Latin America.

Alternative solutions to shortages and supply disruptions, stockpiling policies, and politics of undersea resources are next examined to assess their potential contributions in case of a crisis. A need to recognize potential problems and develop appropriate foreign policies is advocated in anticipation of future events. From a strictly business-oriented point of view I examine various investment opportunities that may develop as a result of political and economic changes associated with persistent resource wars and shortages.

The final chapter of the book provides practical suggestions about how to assess the vulnerability of countries, industries, supplier and end-user corporations to strategic and critical materials shortages and supply disruptions and how to compare such organizations for investment purposes. All this is presented on the assumption that contingency planning will give an advantage to those who are prepared for the worst.

In the course of researching and writing this book many organizations and individuals were extremely helpful with their special insights into specific geopolitical situations and constructive criticism of potential scenarios and alternatives. Invitations to express many of my views during seminars and conferences and the benefit of resulting public discussion and comment

were particularly valuable. Special thanks must go to Mrs. Jerry Harris of the Council on Religion and International Affairs for numerous introductions to diplomats, businessmen, military strategists, scholars, and journalists; to Roberta Martin and Ed Winckler of the East Asian Institute at Columbia University for repeated invitations to speak at their seminars; to John Cunningham, International Division Director of American Management Associations, for providing a forum to present the issues to the business community; to Ed Dyckman of the Department of Defense (DOD) for arranging participation in the DOD Interagency Materials Availability Steering Committee meetings at the Pentagon; to Gary Lloyd, Director of the Business Council for International Understanding; to the organizers of Defense Technology '79, National Aerospace and Electronics Conference, the Infotech Conference, and the Georgia World Trade Institute for opportunities to place the issues before their audiences.

I am also extremely grateful for the personal comments and observations of many persons concerned with the issues involved. Special thanks are due to Robert Haavind, editor of *High Technology*, who was the first to undertake the publication of my discussion of this subject. Rene Le Moal of *Usine Nouvelle* in France, Mark Winchester of the Center for International Business, Trevor Sykes of *The Bulletin* from Australia, Alexander Ross of *Canadian Business*, and the editors of *Japan Economic Journal*, *Il Mondo* in Italy, *Purchasing*, and *Datamation* have also been helpful in publishing and reviewing my articles. Dr. K. P. Wang of the U.S. Bureau of Mines contributed very valuable observations on the minerals industries of China and the Far East. Professor Frank Barnett, Director of the National Strategy Information Center, introduced me to the concepts of Trioceanic Alliance and the need to expand the scope of the North Atlantic Treaty Organization (NATO). Dr. J. L. Steyn and his South African colleagues contributed invaluable insights into the policies of South Africa. Krys Mackiewicz of Great Britain deserves very special thanks for demonstrating the unusual potential in the question of Afghanistan. Other diplomats, businessmen, and officials, too numerous to mention by name, from Australia, Canada, China, France, Germany, Iraq, Israel, Japan, Malawi, Poland, the Soviet Union, the United Kingdom, and Taiwan also left their mark on the process of formulating the concepts and scenarios presented in this work.

A particularly insightful contribution was made by my father, Jakob Szuprowicz, a professional artillery officer, whose lifetime includes participation in the Bolshevik Revolution, World War I, the Polish-Russian War of 1920, and several theaters of World War II. I am especially grateful for the opportunity to draw freely from his personal memoirs, which provide invaluable observations and comparisons of the motivations of the "levantine mind" in conflict and competition with the precepts of the Western set of values.

Last but not least my most sincere appreciation is due to my wife Majusia not only for her unwavering enthusiasm to support this project but also for her patience and endurance in tolerating all the inevitable annoyances and aggravations that such an undertaking must entail.

BOHDAN OLGIERD SZUPROWICZ

North Bergen, New Jersey
January 1981

CONTENTS

CHAPTER ONE

What Are Strategic Materials?

Raw materials such as oil, iron ore, copper, aluminum, chromium, rubber, and many others are the lifeblood of modern industries. Most occur in the form of minerals or natural resources in practically every part of the world. Theoretically the earth's crust and the seas are believed to contain enormous reserves sufficient to satisfy the needs of the whole world for centuries to come.

In practice, however, mineral deposits that are economically exploitable with currently existing technologies are often concentrated in only a few regions of the world. Moreover many of the highly industrialized countries that are primary consumers of those raw materials often do not possess sufficient deposits of all the necessary minerals within their territorial boundaries. Japan is a good example of an economy with rapidly growing needs that must rely almost entirely on the imports of most of its raw materials from overseas.

When basic industries of a country become significantly dependent on supplies of such raw materials from foreign sources these become strategically important to the economies of those countries. Conversely an industrialized nation that possesses all the necessary raw materials within its own borders can consider itself truly self-sufficient. The United States until the late 1950s and the Soviet Union at present are two rare examples of such self-sufficient superpowers. China, Brazil, and southern Africa as a region are possible future groupings where such conditions may develop.

Not all the raw materials are of equal strategic importance to all the countries at all times. Even when a particular mineral is critical to one industry it may not be of importance to another unless it in turn depends on the output of the other industry. As a result the definition of what is a truly strategic and critical material will vary not only from country to country but also among industries and even enterprises within each country.

The concentration of global oil resources in the Middle East and the OPEC cartel focus the world's attention on oil as the most strategic and

critical material in the world. But oil is only one form of energy, and although up to a point it is indispensable to all countries and all modern industries it is not necessarily the most strategic or critical of them all.

Other minerals, less known than oil, are of immense strategic importance. These include chromium, cobalt, gold, titanium, tungsten, platinum, diamonds, or uranium. In recent years most of those minerals have been the subject of violent price and supply fluctuations often more unstable than the oil markets.

A QUESTION OF ACCESS AND PRICE

Among the 194 countries of the world there are three basic groups of nations that have differing vital interests in the supply and consumption of raw materials. These include the industrialized free market economies, the centrally planned economies dominated by the Soviet Union, and the developing countries of the Third World.

The industrialized free market economies are the largest users of all raw materials and account for about 70 percent of global consumption by volume. Those countries are also the largest producers of raw materials, accounting for about 45 percent of all such output in the world. This means that already 25 percent of the world's consumption of all raw materials must be imported by the industrialized free market economies from sources outside the territories under their political control (Figure 1.1).

As a result access to sources of raw materials and secure means of transportation to end-users is of paramount importance to industrialized free market economies. The price of raw materials under certain conditions may not be the decisive factor, particularly in the case of minerals whose sources are relatively few and for which substitute materials are not readily available. Such conditions are conducive to the formation of cartels that can unilaterally dictate the prices in full knowledge that continuing supplies even at escalating prices are of the utmost importance to the end-users.

By comparison the Third World countries produce about 30 percent of the world's raw materials. This is in fact somewhat less than the total production in the industrialized free market economies. However, the Third World countries consume only 6 percent of all the raw materials used in the world. In effect most Third World countries are large exporters of raw materials and of paramount importance to them is their ability to obtain the best price for their exports. This objective is often coupled with a desire to obtain financing and technology to establish more advanced minerals processing and end-user industries within their own countries. This objective becomes extremely important when one realizes that the world will need one billion new jobs before the year 2000, most of which must be created in Third World countries.