



National  
Foreign  
Assessment  
Center

~~Secret~~

(b)(1)  
(b)(3)

CIAGI TEEW 81-047

2 DLB

International  
Economic & Energy  
Weekly

27 November 1981

APPROVED FOR RELEASE DATE:  
06-09-2009

~~Secret~~

GI IEEW 81-047  
27 November 1981

38 Copy 0927

0 6 5 3

1 6 5 4

~~Secret~~

**International  
Economic & Energy  
Weekly**

27 November 1981

---

iii      **Synopsis of This Issue**

---

1      **Perspective—Strategic Minerals Vulnerability**

---

11      **Strategic Minerals: A Review of the Issues**

~~Secret~~

27 November 1981

1 6 5 5

BLANK PAGE

1 6 5 t

~~Secret~~

**International  
Economic & Energy  
Weekly**

**Synopsis of This Issue**

**Strategic Minerals: A Review of the Issues**

Concerns over Western dependence on strategic mineral imports have been heightened by recent events that suggest the West is dangerously vulnerable to supply cut-offs. For one thing, intensified political and military activity in Africa by the USSR and its proxies has raised apprehensions that the Soviets might be engaged in a "resource war" to deny to the West access to vital African minerals. The West, however, is far less vulnerable to supply cut-offs than is popularly supposed.

~~Secret~~

27 November 1981

1 6 5 7

**BLANK PAGE**

1 6 5 8

~~Secret~~

**International  
Economic & Energy  
Weekly**

27 November 1981

**Perspective**

***Strategic Minerals Vulnerability?***

Western vulnerability to mineral supply disruptions from the less stable areas of the world is not as great as commonly assumed. The impact of a supply disruption is greatly reduced by the market's ability to allocate short supplies, the opportunities for substitution and conservation, the existence of private and government inventories, and the availability of alternative sources of supply. Chromium dependence represents the greatest risk.

LDC suppliers are in turn dependent on Western markets, capital, and technology, and there is little evidence that they intend collusive action to cut production or engage in price gouging. Even if they did have such an intent, the likelihood that a minerals cartel would succeed is small.

Nor is there evidence that the USSR will become a major importer of any of the strategic minerals. Unlike the West, the USSR is virtually self-sufficient and has no known plans to shift to foreign sources of supply.

Soviet actions do not suggest that the USSR is attempting to wage a resource war against the West for control of strategic mineral supplies in Africa or elsewhere:

- The potential damage to the West appears too small to justify the cost of compensating cooperating countries for the loss of export earnings and of countering economic retaliation by the West.
- Soviet behavior in international metals markets has been opportunistic and occasionally destabilizing, but there is no evidence of buying simply to deny supplies to the West.
- The heightened degree of activity in Africa by the USSR and its proxies seems to be shaped by political and military priorities rather than by considerations of strategic minerals availability.

The economic impact on the West of disruptions in strategic minerals supplies would be small except under extreme circumstances. Only if all southern African minerals were suddenly cut off for at least a year would the economic damage be significant. Specific industries could, however, suffer in the event of a cutoff in the supply of a given mineral. Short of war, few scenarios can be conceived in which a lack of strategic minerals could cripple Western defense industries.

~~Secret~~

27 November 1981

0 6 5 5

~~Secret~~

## Strategic Minerals: A Review of the Issues

Concerns over Western dependence on strategic mineral imports have been heightened by recent events that suggest the West is dangerously vulnerable to supply cutoffs. For one thing, intensified political and military activity in Africa by the USSR and its proxies has raised apprehensions that the Soviets might be engaged in a "resource war" to deny the West access to vital African minerals. An examination of the factors affecting supply vulnerability for strategic metals suggests, however, that the West is far less vulnerable to supply cutoffs than is popularly supposed.<sup>1</sup>

### Minerals Supplies

Mineral supply problems are not new. Most interruptions have been brief and tend to be mitigated by inventory drawdowns, conservation, and the substitution of other materials. There is no evidence that increased import dependence has led to greater supply problems.

The LDC supply record has been generally good. Because minerals sales are often a major source of foreign exchange, LDCs go to great lengths to assure that these exports are not interrupted. Both state-owned and private mining concerns frequently carry large inventories as a safeguard against strike-induced interruptions.

The record of the Communist countries as minerals suppliers to the West is more erratic. The USSR and China have a history of bouncing in and out of the metals markets, especially in titanium (the USSR) and tungsten (China). The Communist countries have revealed little about minerals poli-

cies, production and export plans, or the timing of marketing decisions. Moreover, because Communist mineral exports are state controlled, they can be quickly cut off; at the beginning of the Korean war, for example, the USSR embargoed chrome shipments to the United States.

### Market Prospects

Barring major political disruptions in key supply countries, strategic metals markets are expected to continue soft for several years. The current oversupply will intensify if planned additions to capacities come on line:

- Zambia has plans to triple cobalt production to 10,000 tons per year if market conditions warrant. Zaire could easily boost cobalt production by one-third to 20,000 tons annually—about equal to total non-Communist consumption in 1980.
- South Africa is planning to develop new chrome and platinum deposits as part of a massive expansion of its mining sector.
- Zimbabwe plans to expand ferrochrome output by half, which would then rank it behind only South Africa.
- Brazil and Australia also have ambitious mineral development plans, which include major manganese and titanium projects.

Consumption of strategic metals has slowed considerably since the late 1970s. Lagging economic growth in the OECD countries, coupled with de-

~~Secret~~

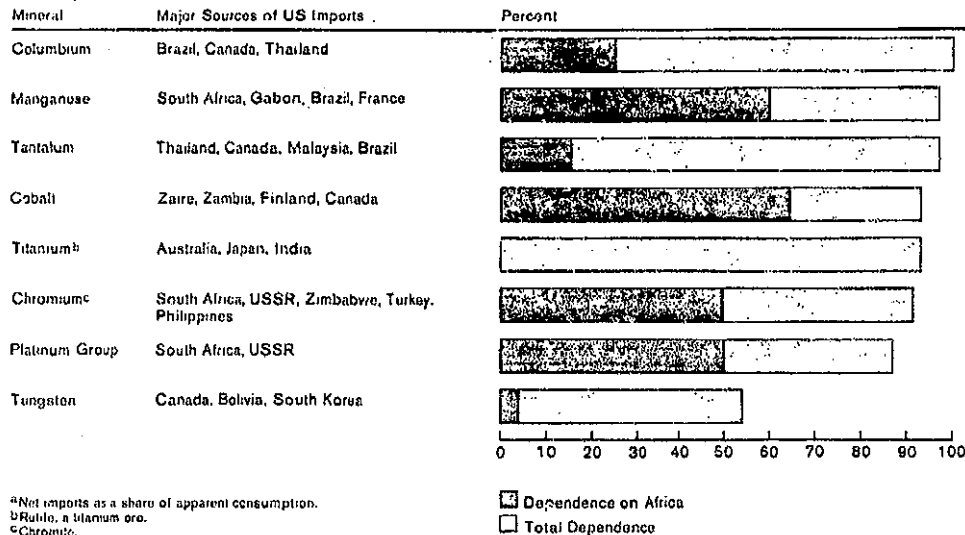
27 November 1981

1 6 6 9



~~Secret~~

### United States: Strategic Mineral Import Dependence<sup>a</sup>, 1980



56-467 9-81

clining steel usage and increased recycling, should hold non-Communist demand for strategic metals far below past trends. If a rapid economic recovery were to occur during a time of sharply increased weapons procurement, some spot shortages and a rise in prices could develop.

#### Vulnerability to Supply Disruption

With supplies of strategic metals relatively abundant, Western vulnerability has not yet been severely tested. Nevertheless, several possibilities exist for supply disruptions, mainly in southern Africa.

#### Southern Africa: Potential Troublespot

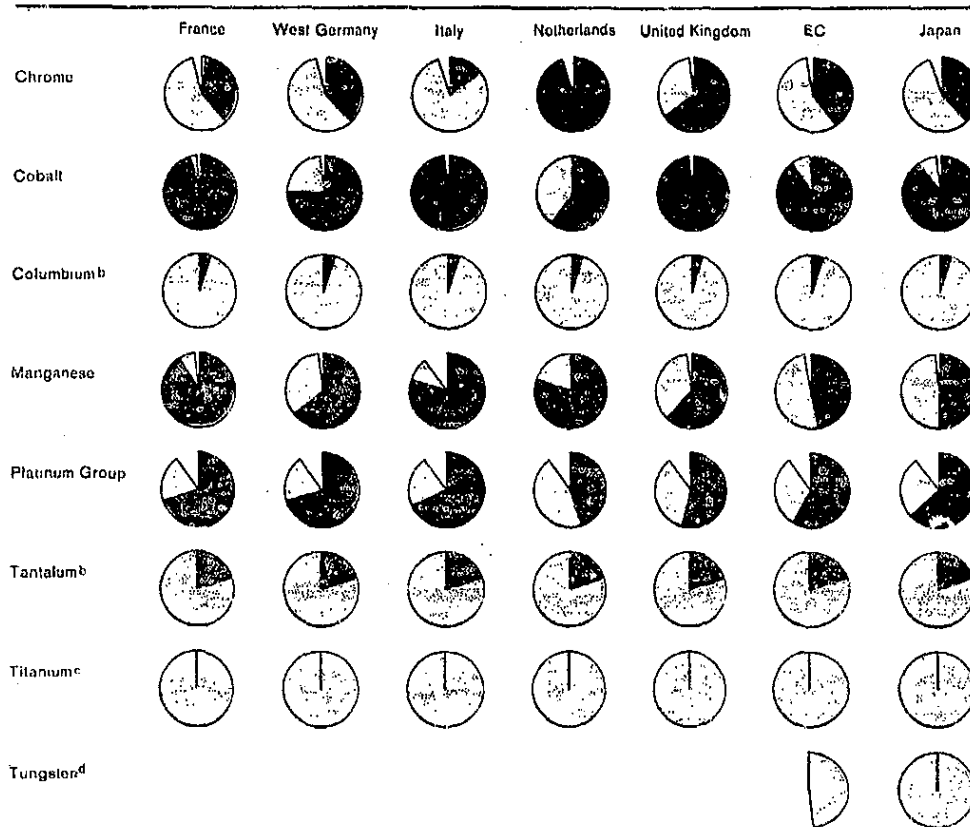
Temporary interruptions in the supply of a given strategic mineral would not cause the West any great economic harm. Far more serious would be a prolonged cutoff of several critical minerals, especially if it occurred suddenly and without warning. The most troubling possibility is that military or civil conflict in South Africa could halt nearly all mineral exports from southern Africa for an extended period. The West depends heavily on South Africa not only for chrome, manganese, and

~~Secret~~

27 November 1981

~~Secret~~

**Dependence of Selected Industrial Countries  
on Strategic Mineral Imports, 1980<sup>a</sup>**



<sup>a</sup>Not imports as a share of consumption.  
<sup>b</sup>Estimated.  
<sup>c</sup>Rutile, a titanium ore.  
<sup>d</sup>Data not available for some countries.

■ From Africa  
□ Total

565486 9-81

~~Secret~~  
27 November 1981

0 6 7 1

~~Secret~~

platinum, but also for other important minerals such as asbestos, industrial diamonds, vermiculite, phosphates, coal, and uranium. Many African countries, especially Zaire, Zimbabwe, and Zambia, depend on South African rail and port facilities for their mineral exports.

Chief among South Africa's many problems is the potential for civil revolt. While there is little immediate likelihood of a major uprising, it is difficult to be sanguine about South Africa's domestic political prospects. Nonetheless, because the mining sector is so important—accounting for two-thirds of export earnings and employing about 800,000 people—any rational leadership must ensure that mineral exports continue.

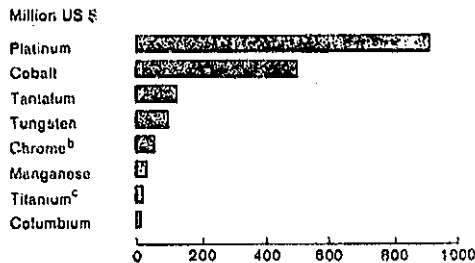
The possibility of a protracted civil war or the coming to power of an extremist regime cannot be ruled out. Should such events result in a minerals disruption lasting beyond a year, remedial measures such as stockpile releases or priority allocation programs in the West would probably be necessary.

#### Impact of a Disruption

Among the most critical factors determining the impact of a strategic minerals supply cutoff is its duration. In the short run (less than one year), an automatic adjustment response occurs. Rapidly rising prices allocate short supplies to the highest valued end use. Conservation and recycling programs are quickly instituted. Slack plant capacity is absorbed, and private inventories are drawn down. Such adjustments serve to diffuse the impact of a short-term cutoff.

In the medium term (one to five years), further adjustments take place. Chief among these are major substitution programs. Considerable material savings can be achieved through the implementation of programs designed to make fuller use of substitutes. Moreover, new processing technologies and materials that have been proved out but have not gone into commercial production for lack of economic incentive may be brought on line.

#### US Strategic Mineral Imports, 1979<sup>a</sup>



<sup>a</sup>Total value was \$1.7 billion.

<sup>b</sup>Chromite.

<sup>c</sup>Rutile, a titanium ore.

565490 9-81

The impact of a supply disruption would also depend on the extent of the cutoff and on how vital the metal is to the production of strategically important products. Other factors affecting vulnerability include:

- **Suddenness of the disruption**—the more unexpected the disruption, the more unlikely it is that metal users could build inventories in anticipation of the event.
- **Substitution and conservation possibilities**—the more substitutes available, the more easily an economy could do without the missing materials. In the short run, substitution would play a very small part in offsetting a supply loss, but conservation efforts could ease the shortfall significantly.
- **Diversity of suppliers**—where there are few alternative suppliers, a disruption would have more impact.

~~Secret~~

27 November 1981

0 6 7 2

~~Secret~~

**United States: Risk of Import Dependence**

Mineral	Import Dependence <sup>a</sup>	Unreliability of Supply <sup>b</sup>	Lack of Substitutes <sup>c</sup>	Stockpile Shortfall <sup>d</sup>	Economical and Strategic Impact <sup>e</sup>	Potential Risk of Import Dependence
Chrome	H	H	H	M	H	High
Cobalt	H	H	M	L	M	Medium
Columbium	H	M	L	H	L	Medium
Manganese	H	M	H	L	H	Medium-High
Platinum	H	H	M	M	L	Medium
Tantalum	H	L	M	M	L	Medium
Titanium Ore	H	L	L	M	M	Medium
Tungsten	M	L	L	L	L	Low
Average	H	M	M	M-L	M-L	Medium

<sup>a</sup> High: import-consumption ratio; >75%; Medium: <75% and >25%.

<sup>b</sup> High: main suppliers are southern African countries or the USSR; Medium: main suppliers are non-African LDCs. Low: main suppliers are the OECD countries.

<sup>c</sup> High: few good substitutes; Medium: several good substitutes; Low: many good substitutes.

<sup>d</sup> High: less than a year's supply in the US strategic materials stockpile; Medium: one to two years' supply; Low: more than two years' supply.

<sup>e</sup> High: use of the mineral is widespread in the economy or has substantial military or essential civilian industrial uses; Medium: important military/civilian uses in a few key industries like aerospace; Low: used in small quantities or for predominantly nonstrategic applications.

Nevertheless, because the value of imported strategic metals is small relative to the rest of the economy, and because opportunities to offset the loss of such metals through conservation and substitution are abundant, the economic impact of a disruption would be small in all but the most extreme cases. Only a sudden and prolonged loss of all strategic minerals from southern African, combined with a cessation of such exports from the USSR, would significantly harm the West.