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COMMITTEE OF ECONOMIC ADVISERS

ECONOMIC SIGNIFICANCE OF THE GROWING EXPORT
OF CHROME BY THE SOVIET BLOC

Note by the Chairman

The attached Note by the International Staff attempts to give some background information on world resources, production, consumption and trade of chromium, and also to assess the significance for NATO countries of growing Soviet bloc exports. As it has not been possible to bring up to date the information it contains, NATO member countries might wish to supplement it. It has been considered, however, that this Note might assist members of the Committee in their future discussion on the growing Soviet exports of chrome ore. (1)

(Signed) F.D. GREGH

OTAN/NATO,
Paris, XVIe.

(1) AC/127-R/106, Item IV.

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CHROMIUM

ECONOMIC BACKGROUND AND SIGNIFICANCE
OF GROWING SOVIET BLOC EXPORTS

Note by the Economics Directorate

INTRODUCTION.

Mined both by underground and open-cast methods and graded according to content in chromic oxide (CR_2O_3), chrome ore is classified by major end uses into the following three main types by order of importance: metallurgical, chiefly for the manufacture of ferro-chromium alloys used in the steel industry; refractory, for bricks and cement with high melting points and resistance to acids; chemical, for the manufacture of compounds used in making paint pigments, leather tanning, textile dyeing and printing, electro-plating of metals, etc.

WORLD RESOURCES, PRODUCTION, CONSUMPTION AND TRADE

2. Estimates of reserves are only of a very approximate nature and no reliable current world total can be given. As an indication of the magnitude involved, however, South Africa and Southern Rhodesia, have combined estimated reserves to limited depths only of many hundreds of millions of tons. Other large deposits exist in the USSR, Turkey, and the Philippines, smaller ones in Cuba, New Caledonia, Yugoslavia, Greece and Albania.

3. In 1947, world production of chrome ore stood at over $1\frac{1}{2}$ million tons gross weight, rose sharply to $4\frac{1}{2}$ million tons in 1957, then suffered a recession in 1958 from which it only recovered by 1960. The USSR is the world's largest producer and with Turkey and Southern Rhodesia provides most medium and high grade metallurgical ores. South Africa, the second largest world producer, is the main source of chemical grade ore, while the Philippines supply mostly refractory grade ore of low CR_2O_3 content.

4. The largest single world consumer is the United States. The metallurgical industry accounts for between one-half and two-thirds of United States consumption and the refractory industry between one-fifth and one-third. The USSR is the second largest consumer, accounting, however, for less than half of the United States total, followed by the Federal Republic of Germany, Japan, the United Kingdom, France, Sweden, and all other industrially developed countries.

5. Chrome ore deposits (chromite) are markedly deficient in most industrialised countries where consumption is highest. About 70% of chrome ore produced in the world in the years 1958-60 was exported; such trade was then four times the pre-war figure. The main exporters by order of importance in 1960 were: South Africa, the Philippines, the Federation of Rhodesia and Nyasaland, the USSR, Turkey and Albania. The United States accounts for over half of world imports followed by the German Federal Republic, with very much smaller total, the United Kingdom, Japan, France, Sweden, Poland, Norway, Austria, Canada, and Italy.

6. A strategic stockpile of chrome ore has been built up by the United States, estimated at 3½ million tons gross weight in 1960 and more than three years' supply at 1958-60 United States consumption levels. Owing to her predominant position in the world market, United States quotations determine world contract prices. After reaching a peak in 1957, they have since declined severely.

THE GROWTH OF SOVIET BLOC EXPORTS TO FREE WORLD MARKETS

7. Soviet and Albanian exports combined have risen from an average of only 2% of world exports in 1935-37 (approximately 12,000 tons), to 6% in 1950 (115,900 tons) and to 22% in 1960 (710,000 tons). Soviet exports to NATO countries doubled from 1955 to 1960, when they reached 147,000 tons. Of this total, the German Federal Republic bought 76,000 tons (21.4% of German chrome imports), France 47,000 tons (25.3% of French chrome imports) and the United Kingdom 20,000 tons (6.7% of United Kingdom chrome imports). Soviet exports to the United States curtailed in 1950 were resumed in 1958 (71,000 tons) but dropped sharply in 1959 (16,000 tons) and were nil in 1960. The remainder of Soviet exports to free world markets in 1960 was taken by Japan and Sweden. Such exports to the former had risen from 5,000 tons (8.7% of Japanese chrome imports) in 1955 to 60,000 tons (21.8% of Japanese chrome imports) in 1960. Exports to Sweden have remained high at 50,000 tons (63.5% of Swedish chrome imports) and 57,000 tons (41.1% of Swedish chrome imports) in 1955 and 1960 respectively. Figures for Albanian exports by destination are not available.

8. Recent articles in the press report⁽¹⁾ that the USSR has, in the last four years, acquired 70% of the European market for metallurgical grade chrome ores and that in recent months it has moved in on the United States market as well. Contracts are said to have been signed for the supply of 80,000 tons of Soviet ore to the United States, while another report mentions a 300,000 ton contract. Free world mining interests, especially in Turkey and Southern Rhodesia, where Soviet inroads into their

(1) The Financial Times of 31st January, 1963 (page 7), of 13th February, 1963 (page 2) and of 20th February, 1963 (page 2). The Economist of 9th February, 1963 (page 536).

traditional markets have been felt most, are protesting over unfair price competition alleged to amount to dumping. It is claimed that if present market conditions persist, a large number of mines will have to close down.

THE SIGNIFICANCE OF THE PRESENT SITUATION TO NATO COUNTRIES

9. Only experts could assess the implications for NATO of growing Soviet bloc exports of chrome ore and the likely repercussions of such exports on free world sources of supply. Though requirements by NATO countries for military purposes may be sufficiently well assured by the United States stockpile, economic needs may not be adequately provided for at short notice should a high level of long-term western dependence on Soviet supplies become established. There are no economic substitutes for chrome ore in its various uses, although for some refractory purposes it is possible to use magnesite, a more costly material. In addition, account should be taken of unfavourable repercussions on the Turkish economy especially, and to a lesser extent on that of Southern Rhodesia and other free world producers, due to losses in valuable foreign exchange earnings.

STATISTICAL ANNEX

- Tables: I. World Production of Chrome Ore.
II. Retained Imports of Chrome Ore in the Chief Importing Countries.
III. World Domestic Exports of Chrome Ore.
IV. USSR Exports of Chrome Ore by Destination in 1955, 1959 and 1960.
V. Exports of Chrome Ore as a Percentage of the World Total.
VI. The Relative Value of Chrome Ore Exports as a Percentage of all other National Exports.
VII. Chrome Ore Prices.
VIII. Estimated Additions to the United States Chrome Ore Stockpile.

Source: Iron and Steel and Alloying Metals, published in London (1962) for the Commonwealth Economic Committee by Her Majesty's Stationery Office.

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TABLE I
WORLD PRODUCTION OF CHROME ORE

(in thousand tons gross weight)

	Average 1935-37	1955	1957	1959	1960
South Africa	143	533	655	670	760
Philippines	26	586	714	643	727
Federation of Rhodesia and Nyasaland	185	401	584	485	597
Turkey	166	639	940	382	472
United States	1	137	148	94	95
Yugoslavia	55	124	118	105	99 ^(a)
Greece	44	25	71	79	100 ^(a)
India	40	89	79	94	99
Japan	41 ^(a)	26	46	57 ^(a)	66 ^(a)
Guba	68	96	151	59 ^(a)	45 ^(a)
Iran	-	34	38	50	50
New Caledonia	49	45	63	43	39
Pakistan	10	28	16	16	18 ^(a)
Sierra Leone	-	21	16	17	15 ^(a)
Other	6	13	18	20	19
<u>Total</u>	834	2,797	3,657	2,815	3,200
Soviet Union ^(a)	198 ^(b)	670	760	840	900
Albania	7	120	165	244	300
<u>World Total</u> ^(c)	1,040 ^(d)	3,590	4,580	3,900	4,400

(a) Estimated

(b) 1938

(c) Partly estimated

(d) Includes 1,000-tons for Bulgaria

- Nil or negligible

TABLE II.
RETAINED IMPORTS OF CHROME ORE IN THE CHIEF
IMPORTING COUNTRIES

(in thousand tons gross weight)

	Average 1935-37	1955	1957	1959	1960
United States	379.1	1,637.5	2,037.1	1,387.1	1,238.1
Federal Republic of Germany	115.1	234.3	173.7	263.4	355.9
United Kingdom	37.2	152.0	187.7	165.1	296.5
Japan	...	57.0	245.8	256.9	274.7
France	39.3	104.5	126.6	151.2	185.7
Sweden	53.7	78.8	87.3	108.8	138.7
Norway	37.0	77.0	60.0	72.4	92.3
Austria	...	57.6	105.4	52.3	58.9
Canada	---	46.3	99.5	43.5	52.7
Italy	...	25.2	32.6	51.4	69.9
Yugoslavia	0.2	0.5	12.0	4.9	22.7
Australia	1.8	9.6	8.7	6.4	21.3
<u>Total of above countries</u>	700.0 ^(*)	2,481.0	3,178.0	2,565.0	2,809.0
Poland	... ^(a)	60.9	99.1
Hungary	0.6	29.1	11.5	21.5	...

... Not available

--- Nil or negligible

* Estimated

(a) 1938

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TABLE III

WORLD DOMESTIC EXPORTS OF CHROME ORE

(in thousand tons gross weight)

	Average 1935-37	1955	1957	1959	1960
South Africa	108.0	463.7	631.8	599.5	743.8
Philippines	27.3	407.1	628.0	635.9	713.3
Federation of Rhodesia and Nyasaland	177.1	382.8	625.8	492.4	482.7
Turkey	162.0	550.7	562.1	301.0	380.1
India	43.5(a)	48.3	41.2	80.4	40.5
New Caledonia	72.9	87.7	60.0	44.0	44.2
Cuba	69.0	34.2	111.7	29.6	29.3(b)
Greece	44.6	38.0	44.4	20.8	28.6
Yugoslavia	23.1	44.8	35.6	24.5	19.7
Pakistan	...	22.1	12.8	13.8	10.9
Cyprus	0.2	8.6	5.1	12.2	14.0
Sierra Leone	-	17.8	16.4	5.0	14.7
Other	1.7	4.0	42.9	55.0(c)	50.0(c)
<u>Total</u>	729.4	2,109.8	2,817.8	2,314.8	2,572.0
Soviet Union	5.7(d)	155.5	254.7	267.7	420.3
Albania	6.9(e)	115.4	166.9	240.0*	290.0*
<u>World Total</u>	742.0	2,381.0	3,239.0	2,825.0	3,280.0

(a) Includes Pakistan

(b) Imports into the United States from Cuba

(c) Of which the United States, ten thousand-tons in 1959 and five-thousand-tons in 1960.

(d) Average 1935-36 only

(e) 1938

* Estimated

- Nil or negligible

... Not available.

TABLE IV

USSR EXPORTS OF CHROME ORE BY DESTINATION
IN 1955, 1959 AND 1960

(in thousand tons gross weight)

<u>Importing countries</u>	<u>1955</u>	<u>1959</u>	<u>1960</u>
United Kingdom	-	3	20
Other British Commonwealth	-	-	-
Federal Republic of Germany	4	65	76
France	38	22	47
Other EEC	-	-	4
Norway	31	9	-
United States	-	16	-
NATO Total (1)	73	115	147
Japan	5	23	60
Sweden	50	34	57
Other free world	-	-	-
Free World Total	128	172	264
Sino-Soviet Bloc Total	20	96	154
World Total	156(2)	268	420

(1) Turkey and Greece are both chrome ore exporters. Figures for imports by Denmark, Portugal and Iceland from the USSR are not given in the above source and may be nil.

(2) Including 7,000 tons to unspecified destinations.

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TABLE VEXPORTS OF CHROME ORE AS A PERCENTAGE OF THE WORLD TOTAL

	Average 1935-37	Average 1949-54	1955	1957	1959	1960
Southern Rhodesia	24	14	16	19	17	15
South Africa	15	22	20	20	21	23
Philippines	4	20	17	19	23	22
Turkey	22	24	23	17	11	12
Soviet Union) Albania)	2	6 ^(a)	11	13	18	22

(a) 1950 only.

TABLE VITHE RELATIVE VALUE OF CHROME ORE EXPORTS
AS A PERCENTAGE OF ALL NATIONAL EXPORTS

	1935-37	1958	1959	1960
Federation of Rhodesia and Nyasaland	...	2.2	2.0	1.7
Philippines	0.2	1.8	2.6	3.1
Turkey	0.9	7.6	2.8	2.7
South Africa	0.2	0.5	0.4	0.4
Soviet Union	-	0.2	0.2	0.2

... Not available

- Negligible.

TABLE VII

CHROME ORE PRICES

(United States quotations in dollars at beginning of years shown per long ton of 48% Cr₂O₃ content, dry basis, f.o.b. cars Atlantic ports)

	Remarks	1951	1953	1955	1957	1959	1960	1961
Southern Rhodesian	Term contracts, 3 : 1 Cr/Fe ratio	37	45	44	56	43	35	36
South African	Transvaal, no Cr/Fe ratio	27	35	33	39	31	25	26
Turkish	3 : 1 Cr/Fe ratio	44	56	47	60	(a) 45	37	37
(in United States dollars per long ton, average annual unit value of exports of all grades)								
Soviet Union	All grades	29	42	33	31	...

(a) 5th February.

TABLE VIII

ESTIMATED ADDITIONS TO THE UNITED STATES CHROME ORE STOCKPILE

(in thousand tons gross weight)

1950	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960	Total
422	170	380	613	417	500	372	265	239	43	323	3,744

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