

11990

~~Top Secret~~



DIRECTORATE OF
INTELLIGENCE

**CIA HISTORICAL REVIEW PROGRAM
RELEASE AS SANITIZED
1999**

Intelligence Report

The Soviet Gold Position

~~Top Secret~~

COPY No.

RR IR 67-10

APRIL 1967

~~WARNING~~

~~This document contains classified information affecting the national security of the United States within the meaning of the espionage laws, US Code Title 18, Sections 793, 794, and 798.~~

~~GROUP 1
EXCLUDED FROM AUTOMATIC
DOWNGRADING AND
DECLASSIFICATION~~

CONTENTS

	<u>Page</u>
Summary	1
I. Trends in Soviet Gold Reserves Through 1966	3
II. Production	4
III. Costs	6
IV. Outlook	8
A. Production	8
B. Sales, Consumption, and Reserves	10

Appendix

Methodology	11
-----------------------	----

Tables

1. Estimated Gold Reserve Balance of the USSR, 1960-66	3
2. Estimated Production of Gold in the USSR, 1960-66	5

Illustrations

Figure 1. USSR: Gold Reserves (chart)	1
Figure 2. USSR: Gold Production (chart)	5
Figure 3. USSR: Gold Producing Areas (map) <u>following page</u>	6

~~TOP SECRET~~

FOREWORD

This report deals primarily with developments in the Soviet gold position since 1960 and with the outlook through 1970. Although the estimate of Soviet gold reserves for 1960 in this report is approximately the same as those contained in previous CIA reports

the sources of the estimates differ. The 1960 reserve figure used in this report was derived

whereas previous reserve estimates were developed using a perpetual inventory approach linking 1960 reserves with those estimated for 1936. The closeness of the reserve estimate arrived at by the perpetual inventory method lends credence to and accounts for the acceptance concerning 1960 reserves.

The estimates of gold production, consumption, and sales in this report for the years since 1960 differ from previous estimates because of revisions in methodologies used, as explained in the appendix. These changes also account for the downward revision of the reserve level of \$1.3 billion in 1965

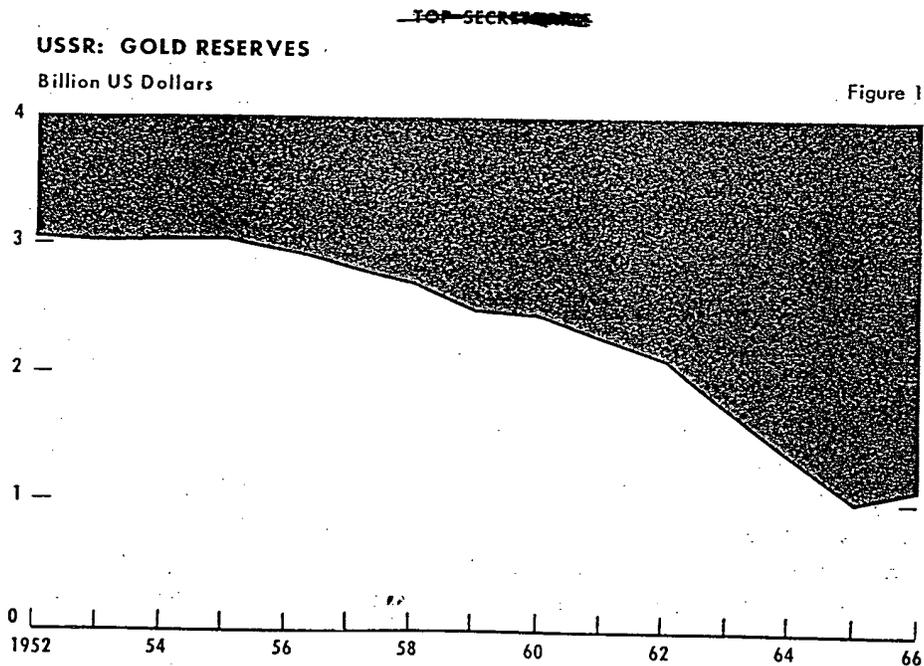
The series for production, sales, and consumption of gold, which are used to derive the series for gold reserves, 1960-66, have differing degrees of reliability. The series for consumption is the least reliable of the three, but has the smallest effect on total reserves; whereas the series for sales is the most reliable and has a great effect on estimates of total reserves. The production series, falls somewhere in between. Although some of the individual errors that occur in estimating production, sales, and consumption cancel out in the final estimate of gold reserves, the estimates on changes in reserves since 1960 are subject to a range of error on the order of plus or minus 15 percent.

~~TOP SECRET~~

THE SOVIET GOLD POSITION*

Summary

At the end of 1966, Soviet gold reserves were about \$1.1 billion, an increase of about 10 percent over 1965. This small improvement followed a decade during which reserves fell steadily from about \$3.0 billion** to about \$1.0 billion (see Figure 1). The decline was particularly sharp during 1963-65, when the USSR was forced to sell about \$1.5 billion in gold to cover large purchases of wheat from the Free World. Barring similar such emergencies, Soviet gold reserves probably will continue to rise slowly during the next several years.



* This report was produced solely by CIA. It was prepared by the Office of Research and Reports; the estimates and conclusions represent the best judgment of the Directorate of Intelligence as of March 1967.

** Dollar values are given in current dollars throughout this report.

~~TOP SECRET~~

Actions of Soviet leaders during the past several years indicate a serious concern about their dwindling gold reserve. Since 1963 the USSR has pursued a deliberate policy of expanding exports to hard currency countries and of restricting the import of commodities other than wheat. By 1966 the overall payments deficit with these countries had been sharply reduced. With the bumper wheat crop in that year, the USSR was able to reduce the outflow of gold to a mere \$35 million, far less than domestic production. In another measure to strengthen its gold position, the USSR raised the targets for gold production for 1964 and 1965. Although these goals were slightly overfulfilled, the rate of increase was no greater than in the preceding years, and unit costs of production rose.

Gold is produced at extremely high cost in the USSR, and the industry is heavily subsidized. The current cost of producing a gram of gold is estimated to be more than twice the official buying price of about 1 ruble per gram.* After modest declines for a number of years, costs have again begun to rise, primarily as a result of deterioration in the quality of ores.

Soviet plans for 1967-70 imply an average annual increase in the production of gold of about 7 percent -- the rate achieved during 1961-66. Thus the USSR is undertaking to improve its gold position by a steady expansion of the industry rather than through a crash program to boost output at any cost. Production costs will probably continue to rise, however, because of the declining quality of ore in the Northeast region, where most of the new gold is produced.

If gold production increases as planned during 1967-70, and domestic consumption does not rise appreciably, about \$740 million of additional gold will become available for sale abroad or for building up reserves. Most of this amount will probably be added to reserves, unless an emergency, such as a crop failure, necessitates large purchases from abroad. To minimize the need for selling gold, the USSR will probably try to balance its trade with hard currency countries. Barring an emergency or a sharp change in policy, in the next four years Soviet gold will contribute significantly less to the needed growth in the Free World's liquidity than it did during the past four years.

* Gosbank has established an official buying price of 1 ruble per gram for domestically produced gold. This is equivalent to \$35.00 per ounce at the nominal exchange rate of 1 ruble to US \$1.11.

~~TOP SECRET~~

I. Trends in Soviet Gold Reserves Through 1966

Soviet gold reserves declined gradually from an estimated all-time high of \$3.1 billion at the end of 1952 to an estimated \$2.5 billion at the end of 1960. They dropped more rapidly in 1961 and 1962 to a total of \$2.1 billion at the end of 1962, quite sharply for the next three years, to \$1.0 billion at the end of 1965, and then recovered slightly to \$1.1 billion at the end of 1966.

The steady decline in reserves from 1952 through 1960, with the exception of slight increases in 1954 and 1955, resulted from the Soviet policy of selling gold to help finance imports of machinery and equipment from the Free World. The more rapid drop in 1961 and 1962 represented an intensification of this policy. The much greater decline during 1963-65 was caused by large purchases of wheat from abroad, in response to crop failures in the Soviet Union. A bumper wheat crop in 1966, as well as strenuous efforts to improve the balance of payments, permitted the country to increase its reserves to a significant extent for the first time in 14 years. Table 1 shows Soviet gold reserves for the years 1960-66.

Table 1

Estimated Gold Reserve Balance of the USSR ^{a/}
1960-66

Million US \$				
<u>Year</u>	<u>Production</u>	<u>Sales</u>	<u>Net Consumption</u>	<u>Reserve Balance</u>
1960	124	149	27	2,476
1961	133	310	28	2,271
1962	143	239	30	2,145
1963	153	523	30	1,745
1964	164	520	32	1,357
1965	176	490	34	1,009
1966	188	35	36	1,126

a. For methodologies used in deriving these estimates, see the appendix.

Alarmed by its rapidly diminishing gold reserves, the Soviet regime took a number of steps during 1963-65 to stem the outflow of gold. These included an expansion of exports, particularly timber, cotton, and

nonferrous metals, and a reduction in imports of machinery and industrial materials such as copper and rolled steel. In addition, the USSR sold valuable art treasures in the Free World and opened "valuta" stores in the USSR. These stores sell, for hard currency, merchandise not normally available to the domestic public; their main customers are diplomats, tourists, and Soviet citizens who have managed to acquire foreign currencies. By 1966 these measures, together with the bumper wheat harvest of that year, had enabled the USSR to reduce its payments deficit with hard currency countries and to hold gold sales to only \$35 million, far less than production.

The USSR also continued longstanding efforts to restrict the domestic consumption of gold. As shown in Table 1, estimated net domestic consumption of gold has been held to about 20 percent of estimated production. The USSR has discouraged the use of gold in dentistry, jewelry, and the arts for many years by fixing the price for such consumers at about eight times the official price of 1 ruble per gram. In addition, the government in October 1964, in an effort to obtain larger quantities of gold from the population, increased its buying price for used gold from 4.3 rubles to 6 rubles per gram.

II. Production

Soviet gold production increased from an estimated \$124 million in 1960 to an estimated \$188 million in 1966, or by \$64 million. The major share of the gain was achieved in the Northeast region* of the country, where production of mined gold increased from \$66 million in 1960 to \$104 million in 1966, or by \$38 million. Elsewhere in the USSR, the increase was from \$39 million in 1960 to \$52 million in 1966. Production of gold as a byproduct of copper, lead, and zinc rose from \$19 million in 1960 to \$32 million in 1966. The contribution of each of these sources to total Soviet gold production for the period 1960-66 is shown in Figure 2 and Table 2. Figure 3 shows the principal gold mining areas of the USSR.

* The Northeast region is used in this report to denote the old Northeast sovnarkhoz which included Magadanskaya Oblast and Yakutskaya ASSR. Although the sovnarkhoz no longer exists as an administrative entity, its use as a geographically defined area makes the data in this report consistent with that contained in the two previous reports on Soviet gold cited in the Foreword.

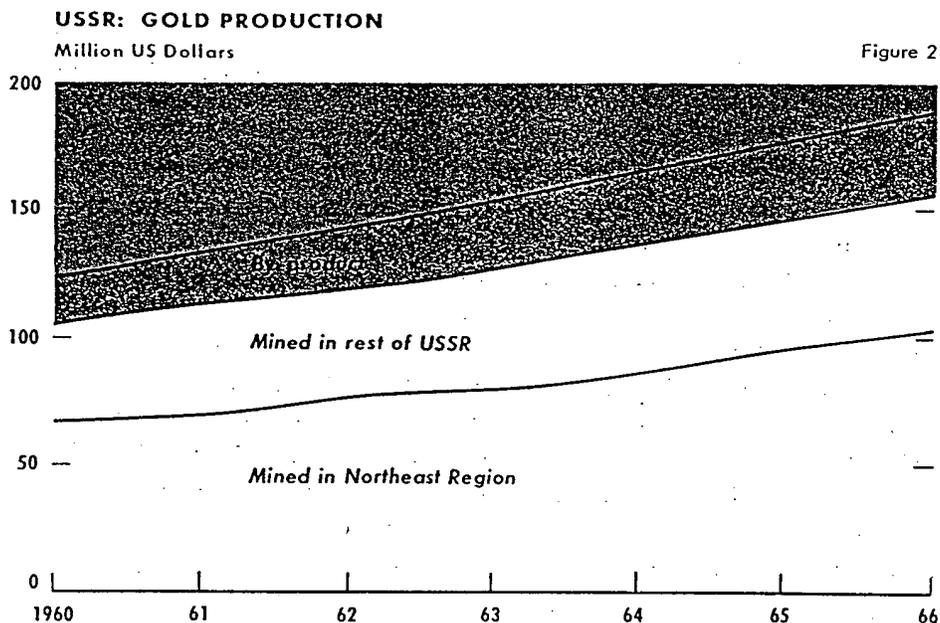


Table 2

Estimated Production of Gold in the USSR ^{a/}
 1960-66

	Million US \$						
	<u>1960</u>	<u>1961</u>	<u>1962</u>	<u>1963</u>	<u>1964</u>	<u>1965</u>	<u>1966</u>
Total production in the USSR	<u>124</u>	<u>133</u>	<u>143</u>	<u>153</u>	<u>164</u>	<u>176</u>	<u>188</u>
Byproduct	<u>19</u>	<u>21</u>	<u>24</u>	<u>26</u>	<u>28</u>	<u>30</u>	<u>32</u>
Mined gold	<u>105</u>	<u>113</u>	<u>119</u>	<u>127</u>	<u>136</u>	<u>146</u>	<u>156</u>
Northeast region	66	70	77	80	87	97	104
All other	39	43	43	47	49	49	52

a. Because of rounding, components may not add to the totals shown. For a description of the methodologies used in developing these data, see the appendix.

~~TOP SECRET~~

During 1961-66, production grew at an average annual rate of 7 percent. Although only slightly greater than that achieved during 1958-60, this rate represents a substantial accomplishment because of the declining quality of the ores in the major goldfields of the Soviet Union. In order to get a steady increase in production in the face of declining ore quality, the USSR was obliged to permit costs to rise during 1964-66, thereby reversing a trend of gradual cost reduction that had prevailed since the 1950's.

The USSR has relied on the Northeast region for most of its increase in gold production, particularly since 1963. The original 1964 goal for the Northeast called for an output of about \$82 million, only about \$2.0 million, or 2.5 percent, more than in 1963. This small increase would have held the growth of total gold production to only 4 percent for 1964. The limitations which Moscow placed on investment and on costs of production at that time probably reflected the judgment that Soviet resources could be employed more profitably in alternative uses. Because of concern over declining gold reserves, however, Moscow sent a special team to the Northeast early in 1964 to investigate prospects for increasing gold production in the area. The team decided that gold production could be increased, but only if more funds were invested in equipment and some operating costs were allowed to increase. These findings were promptly accepted by Moscow, although regional officials raised strenuous objections. As it turned out, gold production in the Northeast in 1964 exceeded the original plan by \$4.5 million, and total gold production grew by 7 percent.

The success achieved by the Northeast region in overfulfilling the plan in 1964 led to a new goal for production in 1965, designed to maintain the 7-percent increase in overall gold production. The original goal, \$86.6 million, was increased to \$95.2 million. As a result of considerable effort, additional investment, and permission for costs to increase still further, the revised goal was exceeded by about \$1.4 million. Although plan figures for 1966 are not known, output in the Northeast continued its upward trend; the total, about \$104 million, represented an increase of about \$7 million over 1965.

III. Costs

The USSR is an extremely high-cost producer of gold. Current average operating costs probably exceed 2 rubles per gram* -- more

* At the nominal rate of exchange of 1 ruble to US \$1.11, 2 rubles per gram would equal \$70 per ounce, or twice the world price for gold.

~~TOP SECRET~~

~~TOP SECRET~~

than twice the official buying price of 1 ruble per gram -- and may be close to 3 rubles per gram. In the Northeast region, which is reported to have the lowest gold mining costs in the Soviet Union, average operating costs are estimated to have been 2.35 rubles per gram in 1965. In mines outside the Northeast region, costs are even higher. Published information on the Lena Gold Trust, where mining is by dredging, one of the most efficient methods, indicates that average costs were at least 2.63 rubles per gram in 1965.

The high cost of mining Soviet gold is explained primarily by environmental conditions. Some of the important gold-producing areas are far from industrial centers, and the cost of transporting equipment and supplies is high. The severe winters, especially in the Northeast, sharply curtail the length of the working season. These factors also make it difficult to attract and maintain an adequate labor force. The payment of bonuses and the provision of other benefits make labor costs considerably higher than for other nonferrous industries located in the older, more highly developed areas of the USSR. The cost of production at the important Bilibino Gold Mining Directorate, located above the Arctic Circle in the Chukotsk National Okrug, makes the point. This Directorate mines the richest placer deposits in the Soviet Union, but its operating costs during 1964 were estimated to have been 1.86 rubles per gram. If located under more favorable natural conditions, these deposits could be worked at a cost well below 1 ruble per gram.

The willingness of the USSR to incur high costs of production is a clear indication both of the inadequacy of Soviet stocks and of the importance of gold to Soviet foreign trade. Gold can be sold easily in international markets in nearly unlimited quantities at a virtually fixed price and is thus a quick and reliable source of foreign exchange. Through its past sales of gold, the USSR has been able to acquire equipment, technology, and industrial materials which aided it in developing and modernizing the Soviet economy. In addition, gold has been used in emergencies, such as during the recent harvest failures when the USSR made large purchases of grain from the West.

The USSR is concerned, however, about the high cost of mining gold. A program of modernization was started in the early 1950's to improve efficiency and to reduce costs. Between 1950 and 1956, average annual operating costs for the production of gold were reduced

~~TOP SECRET~~

~~TOP SECRET~~

by 21.3 percent in the Northeast.* In 1955 a special commission under the direction of Anastas Mikoyan investigated conditions in the gold industry and endorsed continued programs of modernization to cut costs. In addition, it recommended the use of strict cost controls in determining whether a body of ore was economically exploitable.

The increases in gold production achieved during the Seven Year Plan (1959-65) were accompanied by cost reductions during the first five years of the Plan, but costs increased slightly in the last two years. The average cost of production in the Northeast is estimated to have been about 8.4 percent less in 1963 than in 1958. This reduction was achieved by the extensive mechanization of operations including the use of dredges, excavators, bulldozers, and other equipment, as well as by closing high-cost mines and increasing production from mines in Chukotsk with relatively low costs.

The USSR is concerned that costs may be forced still higher by the continuing depletion of the better grades of ore in the principal goldfields. Exploration and prospecting were increased sharply during the Seven Year Plan in an effort to find new sources of gold which could be mined more economically, and 280 new deposits were discovered. The most important single discovery was made in the Muruntau Mountains of Uzbek. The deposit there is to be mined by the economical open-pit method and is said to contain the largest body of gold-bearing ores in the country. Other discoveries of importance were made in the Urals, Kazakhstan, and the Lena River area. All told, these new deposits are said to have increased exploitable reserves of gold-bearing ores in the USSR by 150 percent. Although these new deposits are generally located in areas where environmental conditions should allow relatively low-cost exploitation, progress in developing the new mining areas has been slow, and at least several more years will be required before production will reach a significant level. As a consequence, they will have little impact on the average costs of mining gold in the USSR through 1970.

IV. Outlook

A. Production

It is estimated that the Soviet production of gold in 1970 will reach about \$250 million. This level of output would represent an

* More accurately, the cost reduction was reported for Dal'stroy, the organization which, until the industrial and economic reorganization of 1957, administered all of the gold trusts in Magadanskaya Oblast and two of the four gold trusts in Yakutskaya ASSR.

~~TOP SECRET~~

~~TOP SECRET~~

average annual increase of about 7 percent, the rate achieved during the past decade. Agreement to continue this growth rate was not easily reached by Soviet officials. Many cost-conscious central planners, including those in the Ministry of Finance, strongly opposed making the heavy investments needed to achieve this rate of growth. But at the meeting of the Central Committee of the Communist Party in September 1965, top Soviet leaders decided to continue the priority given to the development of the gold industry and to make the necessary investments. High-level support for the decision was provided by Premier Kosygin immediately after the plenum, when he told the head of the gold industry to send his designers to Moscow to plan new machinery for mining gold. He added that new machinery would be used regardless of the scale of operation, and that the machine building industry would promptly manufacture the quantities and types required.

The distribution of gold production will change little through 1970. The Northeast region, with an estimated output of about \$130 million in 1970, will continue to account for more than half the total, although its relative share will decline slightly. The share of other gold mining areas will remain unchanged at about 28 percent, with output reaching an estimated \$70 million in 1970. These areas may account for a larger share in the future, however, because of the discoveries of new deposits during the Seven Year Plan and because the USSR plans to concentrate future geological prospecting in the southern regions of the country. The production of the major nonferrous metals will continue to grow more rapidly than the production of gold. As a result, the share of byproduct gold will increase from 17 percent of the total to 20 percent, reaching a level of about \$50 million.

In the Northeast the USSR plans steady increases in output at each of the major gold-producing areas during 1966-70. A 30-percent increase is scheduled for Yakutskaya ASSR. An increase of 32 percent was announced for the Chukotsk Okrug as early as March 1965, and this goal may have been raised following the Central Committee meeting in September. In recent years the relatively low-cost mines in Chukotsk have produced a growing share of total output in Magadanskaya Oblast. The planned increases for other areas in Magadanskaya Oblast, including the long-established Kolyma goldfield, are probably less than for Chukotsk. The USSR intends, however, to rework old deposits in Magadan which are now more easily accessible to settlements in the area and which can advantageously use new, efficient machinery.

~~TOP SECRET~~

~~TOP SECRET~~

Most of the increased output of gold elsewhere in the USSR will come from newer deposits in Uzbekistan, Kazakhstan, and Armenia. It is estimated that the output of gold in Uzbekistan in 1970 will be between \$6 million and \$11 million, whereas output in 1965 was negligible. Most of the gold will come from the newly discovered deposit in the Muruntau Mountains, where a new concentrating plant is now under construction. This plant eventually may produce more than \$22 million of gold annually. Gold production in Kazakhstan is to increase by 50 percent during 1966-70. If the plan is fulfilled, gold output in 1970 would amount to between \$14 million and \$20 million. Most of the increase in output in Kazakhstan will come from recently discovered deposits, particularly those near Bakarchik in the east, where a new mining and ore-processing complex is under construction. Another ore-processing complex is under construction at Zod in Armenia, which may produce up to \$3 million annually by 1970.

In the older mining areas in the Lena, Amur, Transbaikal, Yenisey, Urals, and Primor regions, only a moderate expansion of gold production is likely because of the declining quality of ore deposits. The plan of the Amur Gold Trust in the Far East, probably representative of the older mining areas, calls for an increase in gold output of only 14 percent during 1966-70.

B. Sales, Consumption, and Reserves

If the estimated growth in gold production during 1967-70 is achieved, it will add \$900 million to the Soviet gold supply. The Soviet economy will probably use gold worth about \$160 million over the four-year period. About \$740 million will be available for sales abroad or to rebuild Soviet gold reserves. The USSR has shown considerable concern over the sharp decline in its reserves since 1962, and it is likely that most of this amount will be added to reserves. But much will depend on developments, including, for example, whether the USSR needs to import large quantities of grain.

In 1966 the USSR increased its orders for machinery and equipment from abroad, but this does not necessarily conflict with the judgment made above. The USSR will make every effort to eliminate import surpluses requiring settlement by sales of gold and to pay for purchases from hard currency countries by offsetting sales of commodities. The payments on major orders, such as those involved in the recent deal with Fiat for an automobile plant, can be stretched out over a considerable period of time. Barring an emergency or a sharp change in policy, most of the \$740 million of gold which will become available by 1970 will probably end up in official Soviet gold reserves.

~~TOP SECRET~~

~~TOP SECRET~~

APPENDIX

METHODOLOGY

This appraisal of the current Soviet gold position depends on four key estimates: the production of gold during 1957-66, domestic gold consumption since 1960, sales of gold abroad since 1960, and the level of reserves in 1960. The following paragraphs explain in general terms the derivation of each of these estimates.

1. Soviet Gold Production

Soviet gold comes from two sources: mined gold and byproduct gold obtained from the production of copper, lead, and zinc. To estimate the amount of gold mined in the USSR, 1957 was used as the base year because of the availability of data for that year. Detailed methodologies were applied resulting in a reasonably firm estimate for gold mined in the USSR in that year. Estimates of production through 1966 were

supplemented by information in Soviet publications and radiobroadcasts. No significant changes were made in previous estimates of mined gold production.

A revision was made in previous estimates of the amount of gold recovered from Soviet nonferrous metals production, based on a detailed examination of available information concerning the gold content of copper and polymetallic (copper, lead, and zinc) ores being mined in the USSR and of the recovery rates in subsequent processing, including concentrating, smelting, and refining. An average factor was developed for the recovery of gold per ton of copper produced at each of the copper refineries in the USSR, including an allowance for the gold recovered from processing the copper portion of polymetallic ores. An allowance was also made for the recovery of gold from lead and zinc concentrates. The average yield factors for each copper refinery were then weighted according to the estimated relative shares of each refinery in total Soviet output of refined copper in 1965. The resultant average-yield factor was 35 grams of gold per ton of copper output, compared with 66 grams used in earlier CIA estimates of byproduct gold production. The revised factor is believed to be better than the earlier one because it takes into account difficulties in obtaining satisfactory results in the recovery of gold from nonferrous ores.

~~TOP SECRET~~

2. Soviet Gold Consumption

The estimated consumption of gold in the USSR is based in part on US analogy. An arbitrary assumption was made for the first year of the estimate -- 1957 -- that Soviet gold consumption was in the same proportion to Soviet GNP as US gold consumption was to US GNP. The growth of Soviet GNP through 1966 was used to project the 1957 figure forward. The US gold consumption/GNP ratio on a year-by-year basis through 1966 was not used, because consumption of gold in the US has increased at a far more rapid rate than has GNP since 1957. This accelerated growth rate for gold consumption in the US was not imputed into the Soviet series, because of the Soviet government's concern over its gold reserve position and its restrictions on private use of gold.

3. Soviet Gold Sales

Most Soviet gold sales are believed to have been accurately reported. The major sources are actual sales, oral communications from the US Treasury Department, and CIA reports. This information is generally confirmed by the annual publications of the Bank of International Settlements (Switzerland) and Samuel Montagu and Co., Ltd. (London).

4. Soviet Gold Reserves

In mid-March 1961

equated 10 percent of total Soviet gold holdings to 220 tons. This reflects a total reserve of about 2,200 tons (\$2.476 billion at the world price of \$35 an ounce), probably at the end of 1960. This level of reserves in 1960 is similar to estimates in previous CIA reports, cited in the Foreword, which estimate the level of reserves by use of a perpetual inventory going back to 1919. The reserve figure was therefore been accepted as the base for projecting Soviet reserves to date, with net changes in the reserve level reflecting additions from production, minus sales and domestic consumption.