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ECONOMIC INTELLIGENCE REPORT

THE SOVIET ECONOMY IN 1956-57
AND PLANS FOR 1958-62



CIA/RR 132

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CIA/RR 132

(ORR Project 14.1546)

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C-O-N-F-I-D-E-N-T-I-A-LCONTENTS

	<u>Page</u>
Summary and Conclusions	1
I. Introduction	4
II. Economic Performance and Plans, 1956 and 1957	5
A. Fifth Five Year Plan Period	5
B. Sixth Five Year Plan Goals	6
C. 1956	6
D. 1957	10
III. Soviet Economic Priorities and Intentions	11
A. Economic Priorities Since the Stalin Era	11
B. Allocations of Resources Among Sectors	12
C. Incentive Measures	14
D. Probable Future Policies	14
IV. Problems of Economic Expansion	15
A. Introduction	15
B. Immediate Factors Behind the 1956 Shortfalls	16
C. Trends in Labor Supply	17
1. Over-All Labor Supply	17
2. Allocation of Employment to Sectors of the Economy	20
D. Trends in Investment Costs	22
E. Soviet Response to the Investment Problem	25
F. Problems of Management and of Organization	27
G. Impact of Foreign Trade upon Soviet Economic Development	28
V. Probable Courses of Action and Growth Projections	30
A. Introduction	30
B. Projections of Future Growth	32

C-O-N-F-I-D-E-N-T-I-A-L

	<u>Page</u>
1. Estimated Growth of Gross National Product, 1957-62	32
2. Comparison of Gross National Product in the USSR and the US	34
3. Projections of Industrial Growth	36
4. Projections of Agricultural Production	37

Appendixes

Appendix A. Statistical Tables	41
Appendix B. Methodology (Revised ORR Index of Soviet Industrial Production)	49

50X1

Tables

1. Growth of Soviet Industrial Production, Performance, and Prospects Based on Official Soviet Statements, 1951-60.	7
2. Soviet Completion of New Production Capacity and Percentage Fulfillment of Plans in Selected Industries, Fifth Five Year Plan and 1956.	16
3. Calculated Labor Force and Civilian Employment in the USSR, 1950-52	18
4. Civilian Employment in the USSR, by Economic Sector, 1950, 1955-56, and Projections to 1957 and 1962.	20
5. Distribution of Soviet Gross National Product at Factor Cost, by End Use, in the USSR and the US, 1956	33
6. Housing Space in Urban Areas of the USSR Per Capita, Selected Years, 1926-60	35

- iv -

C-O-N-F-I-D-E-N-T-I-A-L

C-O-N-F-I-D-E-N-T-I-A-L

	<u>Page</u>
7. Comparison of Gross National Product at Market Prices, USSR and US, Selected Years, 1950-62	35
8. Production of Meat and Milk in the USSR, Selected Years, 1950-60	38
9. Comparison of Production of Selected Industrial Products in the US and the USSR, 1948 and 1956	42
10. Estimates of Production of Selected Products of Heavy and Light Industry in the USSR, Selected Years, 1950-57	45
11. Indexes of Aggregate and Per Capita Household Consumption in the USSR, 1948-62	47
12. Estimated and Official Soviet Industrial Production Indexes, 1955	51

CIA/RR 132
(ORR Project 14.1546)

C-O-N-F-I-D-E-N-T-I-A-L

THE SOVIET ECONOMY IN 1956-57
AND PLANS FOR 1958-62*

Summary and Conclusions

From the announcement of the optimistic and ambitious Sixth Five Year Plan (1956-60) in mid-January 1956 to its virtual abandonment in September 1957, the Soviet leadership exhibited an increasing awareness of the need to reduce its optimism concerning future rates of growth and to realign its economic plans to conform more closely to a changed environment. To compensate for the newly emerged problems of shortages of raw materials and of worsened relations with the Satellite countries, and probably in anticipation of rising investment costs and tightening labor supplies in the future, several new and untested changes were introduced to the Soviet economy.

The original 1957 goals for raw materials, energy, and machinery production were revised downward as well as the plan for raising labor productivity. The original investment goal for 1960 was reduced, and the remaining volume of investment was redirected, to some extent, in favor of raw materials, agriculture, and housing. The administration of economic activity was extensively reorganized. A new Seven Year Plan was to be formulated for the period 1959-65 to stress, among other goals, the rapid exploitation of new raw materials resources in the Eastern areas and the concentration of investment among fewer projects.

The uncertain outcome of the corrective measures launched during the past year increases the hazards of projecting future rates of Soviet economic growth, but estimates both outside and inside the USSR envision some reduction from the rates of growth achieved during the Fifth Five Year Plan (1951-55). The forecast by Khrushchev in November 1957 of the 1972 level of production of selected industrial commodities represented, in every instance, a lower average annual percentage increase during the period 1958-72 than was

* The estimates and conclusions contained in this report represent the best judgment of ORR as of 1 March 1958.

C-O-N-F-I-D-E-N-T-I-A-L

C-O-N-F-I-D-E-N-T-I-A-L

achieved during the period 1951-56. The revision of the 1957 plan in February represented a substantial reduction from the rates of growth which had been envisioned a year earlier at the Twentieth Party Congress. The projections in this report, similarly, are lower than those of a year ago.

The reported annual increase in industrial production in 1957 was 10 percent compared with 10.7 percent in 1956 and an average annual rate of increase of 13.2 percent during the Fifth Five Year Plan.* The restriction of raw materials to a higher growth rate may be lessened during the next few years, but rising investment costs and a tightening labor supply will prevent industrial production from exceeding significantly an annual growth rate of 9 to 10 percent for the next 5 years.

The lower rate of growth of industrial production anticipated for the next 5 years will restrict the growth of gross national product (GNP) during this period to an estimated annual rate of 6.0 to 6.5 percent compared with the annual average increase of 6.8 percent during the Fifth Five Year Plan period and with the unusually high increase of 8.9 percent in 1956, which reflected an extraordinarily large increase in agricultural production because of ideal weather in the new lands area.

Marginal but significant shifts in economic priorities since the death of Stalin are partly responsible for the (CIA) estimates' being somewhat lower than those of a year ago. The Soviet reaction to the raw materials problem which appeared in 1956 indicated the extent to which the traditional emphasis upon heavy industry had lessened in intensity since 1953. Although the basic theme of the economy was still the maintenance of a strong military posture and the pursuit of a rapid rate of industrial growth, the leadership now showed a new willingness to treat underlying causes -- in this case, housing, agriculture, and the composition of industrial investment -- even though an immediate economic gain still might have been obtained by driving industry harder and depriving the consumer further in the Stalinist tradition.

* The estimates of Soviet industrial production in this report, computed on a value-added basis rather than a gross value basis, are somewhat lower than the official Soviet rates throughout 1951-57, but the trends of the Soviet index and the index used in this report are similar.

C-O-N-F-I-D-E-N-T-I-A-L

This approach of the Soviet leadership to present problems will keep the economy from regaining past high rates of growth in the immediate future. Furthermore, future trends in labor supply and in investment costs will probably emerge as new constraints on industrial growth. Low wartime birth rates will reduce additions to the total labor force at a time when planned shortening of the workweek will already have reduced the man-hour utilization of the existing labor force and when the transfer of workers from agriculture to industry hinges uncertainly on achievements in the further mechanization of agriculture.

At a time when it has been found necessary to cut back planned increases in investment in industry, investment requirements per ruble of additional output in industry will be increasing because of the need to concentrate investment in the more capital-intensive raw materials sectors and the need to develop new sources of raw materials supply in the Eastern areas. Current efforts to improve technology and management in industry are not likely to offset the rise of investment costs during the period of this estimate.

Political unrest and revolution in the European Satellites, in addition to influencing the priority structure of the Soviet economy, have imposed a further drain upon the already straitened supply of Soviet raw materials. In recent years the pattern of Soviet foreign trade has changed to reflect the rising internal scarcity of raw materials, but the gains achieved by imports of raw materials have been neutralized by the need to increase assistance to the faltering Satellite economies in the form of exports of raw materials. Trade relations with underdeveloped areas of the Free World have thus far involved developmental expenditures by the USSR with little prospect of return for several years. Available evidence indicates that Soviet efforts to woo selected non-Bloc economies will continue.

Events of the past 18 months provide some insight into the capabilities of the Soviet economy but have not, unfortunately, provided the same degree of insight into the courses of action which the leadership may adopt in the event that these capabilities are not adequate. The present survey of Soviet priorities and capabilities indicates that it will become increasingly difficult for the economy to meet all the demands imposed upon it simultaneously to the extent desired by the leadership. The resultant strains will, of necessity, lead to policy changes and possibly to policy disputes. The probable forms which such changes may take are difficult to foresee, given a leadership which is prone to undertake far-reaching experiments in economic policy.

- 3 -

C-O-N-F-I-D-E-N-T-I-A-L

C-O-N-F-I-D-E-N-T-I-A-L

I. Introduction.

The Soviet Sixth Five Year Plan, presented to the Twentieth Party Congress in February 1956, reflected a sense of accomplishment and an aura of confidence engendered by the successful completion of the preceding Five Year Plan. The ultimate objective of catching up industrially with the West "in the shortest possible historical time" continued to be expressed in a plan strongly biased in favor of heavy industry. The marginal shifts in emphasis since 1953 had not significantly reduced the ability of heavy industry to support a rapid rate of economic growth. The ambitious goals of the Sixth Five Year Plan, with the exception of that for agriculture, appeared feasible.

Foreseeable constraints on this rapid development of the Soviet economy were the decline in annual increments to the labor supply and the problem of supplying the material requirements of a rapidly expanding industry. The programs included in the Sixth Five Year Plan -- modernization and reequipment of industry and development of sources of raw materials in the Eastern areas -- if pursued expeditiously seemed adequate to overcome these constraints.

Events since February 1956 have presented the Soviet leadership with problems in its dealings with the Satellites and in maintaining its own rapid economic growth. The response of the leadership to these problems reflects its willingness to experiment and search for new and different solutions. Although the USSR accepted the Gomulka regime in Poland and renegotiated trade relations with the Satellites, it ruthlessly stamped out the revolution in Hungary. Solutions to the growing raw materials shortages and to other constraints on growth were sought in an unprecedented reduction in the planned rate of industrial growth for 1957, a sweeping reorganization of industrial management, the promise of relative gains for the consumer, and finally in the abandonment of the Sixth Five Year Plan and the consequent reliance on annual plans for 1957 and 1958 until a new Seven Year Plan could be drawn up to guide the economy over the period 1959-65.

The changes in the personnel of Soviet top leadership and the modification of priorities, implied in the 1957 Economic Plan and in subsequent policy statements, force a reconsideration of the goals and priorities that had been the basis of previous estimates of the future course of the Soviet economy. At the same time, the industrial reorganization, the shortfalls in key Soviet industries, and the modified priorities structure force a reevaluation of the ability of the Soviet economy to meet the demands levied upon it.

- 4 -

C-O-N-F-I-D-E-N-T-I-A-L

C-O-N-F-I-D-E-N-T-I-A-L

The outline of this estimate is as follows: a brief review of events leading up to the current period is provided in II, below; attention is directed in III, below, to Soviet economic priorities and intentions and the probable trends in the period 1957-62; Soviet economic capabilities are reassessed in IV, below; and, finally, the future consequences of Soviet economic policy in the light of Soviet economic priorities and capabilities are projected in V, below.

II. Economic Performance and Plans, 1956 and 1957.A. Fifth Five Year Plan Period:

Measures of the over-all performance of the Soviet economy during the period of the Fifth Five Year Plan presented a picture of remarkable success. The gross national product (GNP) of the economy increased at an average annual rate of 6.8 percent compared with the US growth rate of only 4.1 percent during the same period. Industrial production increased by an estimated 65 to 75 percent.* Progress in agricultural production, which had lagged significantly behind other sectors of the economy during the first 4 years of the plan period, apparently was reviving in 1955 in response to a series of reforms undertaken after the death of Stalin. Marginal changes in allocations after March 1953 also improved the position of the Soviet consumer, particularly the rural consumer.

General overfulfillment of the goals of the Fifth Five Year Plan and gains in agriculture and consumption tended to obscure the fact that agricultural production and labor productivity still were deterrents to continued high rates of growth and that a new problem was being generated during the 5-year period -- a lag in production capacity relative to planned production goals. For example, capacity in the iron ore industry was increased by only 60 percent of the planned goal, and capacity in the coal industry was increased by only 83 percent of the planned goal. Fulfillment of production goals during the Fifth Five Year Plan period in spite of such shortfalls in the creation of new plant capacity postponed the necessity of restoring a balance between planned increases in production and planned increases in capacity.

* The measurement of industrial production is discussed in Appendix B.

C-O-N-F-I-D-E-N-T-I-A-L

B. Sixth Five Year Plan Goals.

The Sixth Five Year Plan, announced in mid-January 1956, revealed a confidence engendered by the overfulfillment of the Fifth Five Year Plan which permitted a firm commitment of priorities strongly in favor of heavy industry and a clear statement of the objective of surpassing the capitalist countries in per capita production. Nevertheless, the plan also indicated the awareness of the Soviet leadership of the continuing need to strengthen agriculture and the performance of the labor force. This awareness took the form of a relatively modest plan to increase industrial production by 65 percent compared with the 70-percent increase planned for the preceding 5-year period,* continued improvement in living standards, expansion of the housing construction program, an intensive effort to raise the existing level of technology in industry by modernization and an ambitious program of introducing automation processes, and an overly ambitious expansion of agricultural production.

In the light of the past performance of the Soviet economy, the original plan goals of the Sixth Five Year Plan, except the goal for agriculture, appeared to be reasonable. The level of capital investment was planned to be 990 billion rubles, 67 percent higher than the level achieved in the Fifth Five Year Plan period. Furthermore, the pattern of investment was altered to overcome the lag in the capacity for production of raw materials. The new investment program, combined with the continuation into the Sixth Five Year Plan period of many of the new measures introduced after March 1953, was apparently considered to be sufficient to insure the successful fulfillment and perhaps overfulfillment of the goals for 1960.

C. 1956.

The over-all measures of achievement in 1956 showed considerable progress toward the goals of the Sixth Five Year Plan, but serious underfulfillment of goals in key sectors of the economy must have made the Soviet leadership more aware of the extent of its economic problems and the lengths to which it must go to obtain solutions. 1/** Industrial production in 1956 was reported to be 10.7 percent above the 1955 level, a rate which, if maintained, would be adequate to meet the 1960 industrial production goals (see Table 1***). A year

* As measured by the official Soviet production index.

*** Table 1 follows on p. 7.

50X1

C-O-N-F-I-D-E-N-T-I-A-L

Table 1

Growth of Soviet Industrial Production, Performance, and Prospects
Based on Official Soviet Statements
1951-60

	Average Annual Rate of Growth 1951-55	Reported Increase 1956	Reported Increase 1957	Planned Increase 1957	Percent Annual Rates Needed in 1958-60 to Meet Original 1960 Plan Goals
Industrial production	13.1	10.7	10	7	10.7
Producer goods	13.8	11.4	11	7.8	11.2
Consumer goods	10.5	9.4	8	5.9	10.6
Labor productivity	7	7	6.5	5.4	9.8
Coal	8.4	10	7.9	4	8.7
Petroleum	13.3	18	17	15.7	11.3
Electric power	13.3	13	9.1	10	14.9
Crude steel	10.7	7	4.9	6	10.5
Finished steel	11.1	7	5.8	4.5	10.4
Cement	14.1	11.1	16	14.3	24.0

C-O-N-F-I-D-E-N-T-I-A-L

C-O-N-F-I-D-E-N-T-I-A-L

of highly favorable weather made 1956 the best agricultural year of the Soviet era. These two performances combined to produce an unusually large increase of 8.9 percent in GNP above the 1955 level. But this picture was dimmed by an acute underfulfillment of plans for construction of new industrial capacity. New capacity scheduled for 1956 in the ferrous metals industry, for example, was underfulfilled by 50 percent. Furthermore, underfulfillment of new capacity plans in 1956 was accompanied by serious shortfalls in meeting production goals in several key industries. The 1956 performance jeopardized, for the first time since the early 1930's, 5-year production targets in several of these industries.

The top Soviet leaders had been forewarned of the impending difficulties when the Sixth Five Year Plan was presented to the Twentieth Party Congress in February 1956. ^{2/} The ministers of the coal and ferrous metals industries warned that planned investment in their industries would be inadequate to permit fulfillment of planned production goals. Their warning was reaffirmed by the 1956 mid-year plan fulfillment report which indicated shortfalls in the coal and ferrous metals output as well as lagging construction activities. ^{3/} The accumulating evidence of poor economic performance and the unfavorable turn of political events, especially in the Satellites, apparently caused a heightened concern over the progress of the economy and a reassessment of existing problems. In December 1956 a plenum of the central committee of the Party explicitly acknowledged that the economy had been overstrained and appointed Pervukhin, the new chief of the State Economic Commission, to the chairmanship of a special committee charged with the task of drawing up the 1957 plan and reviewing the Sixth Five Year Plan. ^{4/} A revised version of the Sixth Five Year Plan was to be drawn up by mid-year.

The decisions issued by the December plenum left unresolved most of the pressing issues which had brought the plenum into existence. Articles in the Soviet press throughout December indicated that the official course of action still had not been clearly delineated with regard to the housing construction program, organizational questions of management and planning, and even the more basic question of the pattern of resource allocations between heavy and light industry. The decisions of the December plenum indicated, however, that the top leadership was still not willing to admit that the 1957 plan or the final version of the Sixth Five Year Plan would have to depart greatly from the original goals stated in February 1956 at

C-O-N-F-I-D-E-N-T-I-A-L

C-O-N-F-I-D-E-N-T-I-A-L

the Twentieth Party Congress. But the 1956 plan fulfillment report, issued in January 1957, graphically underscored the need for a considerably revised plan. The report indicated underfulfillment of the goals for production of coal, ferrous metals, and cement and emphasized construction shortfalls in housing and in the coal, ferrous metallurgical, and construction materials industries. Production of steel was considerably below the level necessary to meet the 1960 goal, and labor productivity was lagging far behind the projected rate of increase.

Most of the economic problems facing the new collective leadership in March 1953 still existed in 1956 as well as some new ones. The problem of agricultural production was removed from the list, at least temporarily, by good weather, but there was no immediate prospect of large-scale transfers of labor from agriculture to industry. Underfulfillment of planned increases in labor productivity could no longer be offset as easily by increasing the number of workers in industry. Furthermore, the expected improvement in labor productivity gains had not materialized in spite of nearly 4 years of experimentation, first with the Malenkov attempt to increase workers' incentives with an expanded consumer goods program then with various measures designed to reduce the degree of coercive controls over the labor force and to make the wage system and working conditions more attractive.

Two new problems appeared during 1956 to increase the seriousness of these old problems. The outburst of nationalism in the Satellites in October and November contributed additional strains. Soviet imports from the Satellites, notably those of Polish coal, were reduced; the need arose for renegotiation of economic relations with the Satellites to forestall further disruptions; an additional element of uncertainty was introduced into Soviet plans for demobilization; and the possible effect of the Satellite disturbances on the attitudes of the Soviet population perhaps entered into the eventual decision not to cut back on consumer-oriented resource allocations in spite of shortfalls in industrial production in 1956. The other new problem which developed acutely in 1956 -- the pronounced failure to meet the output goals for raw materials -- was aggravated by the continued policy of reducing working inventories. Harassed industrial managers, with inadequate inventories to fall back on to meet production goals, had little choice but to express a rising discontent. These mounting problems were the focus of the December plenum of the central committee of the Party.

- 9 -

C-O-N-F-I-D-E-N-T-I-A-L

C-O-N-F-I-D-E-N-T-I-A-L

D. 1957.

The outcome of the December 1956 Party plenum and the consequent revision of the 1957 plan were revealed at the February 1957 meeting of the Supreme Soviet. The new plan provided for an unprecedented scaling down of economic goals. Rates of growth for industry as a whole, for key raw materials and energy, for machinery, and for labor productivity were reduced compared with those of 1956. The planned increase in industrial production, 7 percent, was the lowest annual goal since 1929 and well short of the annual increase of 10.7 percent required to fulfill the goals of the Sixth Five Year Plan. The industrial production plan was overfulfilled, however, reaching a reported annual rate of increase of 10 percent. The plan called for an increase of 9 percent in capital investment, a rate which was lower than originally planned for 1957 and lower than the annual rate for all postwar years except 1953 and 1955. The new investment plan was tailored to meet the demands of the more urgent problems encountered in 1956. Sharp increases were planned in investment allocations to the basic materials industries, particularly ferrous metals and coal, although planned additions to new capacity in pig iron and steel were smaller than in 1956.

A striking feature of the new investment plans was the increase in allocations to agriculture and to housing construction. In similar times of trouble under Stalin, these activities were always the first to be sacrificed in the effort to maintain an uninterrupted buildup of heavy industry. The approach of the 1957 plan was to cut back immediate production goals to restore balance between raw materials and production until new capacity could be completed. In the meantime, future investment plans were to be reexamined to determine if they could be reduced still further.

Eight days after the February meeting of the Supreme Soviet, a new plenum of the central committee of the Party was confronted by Khrushchev with a sweeping plan to reorganize the administration of industry and construction along regional lines in place of the existing functional organization of economic ministries. 5/ The final form of the reorganization, as reported to the May 1957 meeting of the Supreme Soviet, was less drastic than the original proposal, but the number of ministries was reduced to 15; among those remaining were the ministries dealing with defense, electric power, chemicals, transportation, and agriculture. 6/ Operational control of many of the enterprises of the surviving ministries as well as the activities of the

- 10 -

C-O-N-F-I-D-E-N-T-I-A-L

C-O-N-F-I-D-E-N-T-I-A-L

abolished ministries was placed under newly created regional economic councils. The number of remaining ministries was reduced further during the year. The official rationale of the reorganization was the hope that better utilization of the resources of each region would now be possible. It is not known to what extent political and strategic defense considerations may also have motivated the reorganization. Central control and planning are still to be retained in the Party Presidium, the Council of Ministers, and the State Planning Commission.

The mid-1957 plan fulfillment report indicated that industrial production and investment were progressing at above-plan rates, thus supporting the hopes of the leadership that former rates of expansion might soon be attained. 7/ The continued slow growth of some industries, however, particularly ferrous metals and electric power, hinted that a solution to the raw materials shortage was not yet in sight. In September 1957 the Sixth Five Year Plan was abandoned, and reliance was placed on annual plans alone for 1957 and 1958 until a new Seven Year Plan could be formulated for the period 1959-65. 8/ In November, Khrushchev gave further indication of the growth expectations of the Soviet leadership. 9/ Tentative production goals for 1972 were announced -- in every instance representing more modest rates of growth than those achieved during the Fifth Five Year Plan period.

The annual plan fulfillment report reaffirmed the midyear results. Growth rates, still high in terms of Western experience and generally higher than planned for 1957, were below past Soviet rates and below the rates which apparently had been contemplated in planning the original 1960 goals. The ambitious housing construction goal was overfulfilled for the first time in Soviet history, but continued underfulfillment of some important production goals and a low rate of growth of ferrous metals relative to that of past years hinted that simultaneous advances on many fronts created rigorous demands upon the economy which were not easily met.

III. Soviet Economic Priorities and Intentions.

A. Economic Priorities Since the Stalin Era.

The Soviet economy continues to be characterized by a concentration of economic decision-making in the hands of a political dictatorship which treats consumption as a cost to be minimized in the drive for a rapid expansion of the economy and in the preservation of

C-O-N-F-I-D-E-N-T-I-A-L

a high level of military preparedness. Four years after the death of Stalin, the basic Soviet pattern of economic priorities (as indicated by the end-use composition of GNP) still reveals the basic orientation of the economy toward rapid growth. The growth in the absolute size of the Soviet GNP has permitted the maintenance of a high level of defense. Defense as a share of GNP has remained almost constant since 1950 and consumption has fallen slightly, but the investment component has increased from 22 percent in 1950 to 26 percent in 1956.

A picture of basic priority patterns, however, obscures the marginal but significant shifts in allocations which have occurred since the death of Stalin. The changes made from 1953 through 1956 were not sufficiently great to cause an immediate reduction in the growth performance of the economy, although the implications of these changes may have diminished the prospects for a continuation of the high rates of growth achieved in the past. The rate of increase in total investment was maintained during the period 1953-56 although some shifts were made in the distribution of investment between heavy industry and the consumption sectors, especially agriculture. In the 1957 revision of economic goals the investment total as well as its composition was affected. The 1957 annual plan provided for a reduced rate of growth of capital investment, and it was indicated in April 1957 that the original Sixth Five Year Plan goal of 990 billion rubles of state capital investment was being reduced to 930 billion rubles. 10/

B. Allocations of Resources Among Sectors.

In spite of sporadic but vigorous discussions after 1953 concerning the appropriate share of total state investment to be devoted to light industry, this sector has made little headway. Except for the Malenkov period in 1954, when 7 percent of investment went to light industry, this sector has received only 4 to 5-1/2 percent of total investment. Agriculture, on the other hand, has received a continually rising share of total state investment, increasing from 8.6 percent in 1953 to more than 14 percent in 1957. The increasing level of investment in agriculture is reflected in the ambitious program of development of new lands in 1954 and 1955, the upward revision in 1956 of the goals for the output of agricultural machinery, and the recently announced intention of bringing under cultivation an additional 12 million to 15 million hectares of land during the next 2 years.

C-O-N-F-I-D-E-N-T-I-A-L

The share of total state investment allocated to industry has declined slightly from 64.6 percent in 1953 to 63.1 percent in 1957. Of greater importance, however, is the expected impact on the volume of industrial investment of the indicated downward revision of the Sixth Five Year Plan investment goal from 990 billion rubles to 930 billion rubles and the impact on the composition of industrial investment of the announced increase in housing investment. Industry, which normally receives more than 60 percent of total state investment, must bear much of the 60-billion-ruble reduction in planned investment, because agriculture and housing are slated to receive increased levels of investment in spite of the reduction in total investment. Furthermore, the share of investment allocated to industry includes some investment in housing, so the composition of industrial investment will now probably contain fewer productive investments and a greater proportion of nonproductive housing investment. Housing investment as a share of state investment was 13.5 percent in the Fifth Five Year Plan, was 15.5 percent in 1956, was planned for 17 percent in 1957, and according to the recent housing decree will rise to 19 percent during the Sixth Five Year Plan.

A further aspect of the improved position of agriculture has been the growth in recent years of the absolute number of workers in the agricultural labor force. The increase in 1956 was probably caused in part by the demobilization which released labor to all parts of the economy. But the increase in the size of the agricultural labor force in 1954 and 1955 indicates at least a temporary abandonment of the Stalinist view that agriculture constituted a labor pool to be drawn upon whenever industry failed to meet planned increases in labor productivity.

At the same time a number of measures were adopted which simultaneously raised farm incomes and lowered government revenues. The income tax on the agricultural population was cut nearly in half in 1953, and in each year since 1953 the prices paid by the state for agricultural produce have been increased. As a result, the income of the agricultural population has grown significantly faster than that of the population in general. The farm population will receive a further benefit by the abolition in 1958 of compulsory state delivery of agricultural products from peasants' private plots. 11/

C-O-N-F-I-D-E-N-T-I-A-L

C. Incentive Measures.

In addition to the increased allocations to agriculture and housing, a number of measures affecting incomes and working conditions have been adopted which cannot be explained in terms of maximizing the rate of growth. The intention to reduce the workweek from 48 to 40 hours was announced in 1956 and has recently been reaffirmed. In October 1956, old-age pensions paid by the state were increased by an average of 90 percent and state disability benefits were increased 50 to 60 percent over the previous level. Both the pensions and the shorter hours will have the effect of reducing the labor supply. In January 1956 the minimum taxable wage was increased and so also was the legal minimum wage level. Further changes in the wage system were to be made with the objective of relating individual earnings more closely to quantity and quality of output. It was later announced that the annual state subscription loan from the population was to be discontinued in 1958. ^{12/} Increased money incomes cannot improve levels of living unless matched by an increased supply of consumer goods. They indicate to some degree, however, an intent on the part of the leadership to improve consumption, and they certainly raise popular expectations.

D. Probable Future Policies.

The willingness of the post-Stalin leadership to revise investment goals downward and to increase the share of investment allocated to agriculture and housing suggests that a considerable evolution has occurred in the old Stalinist pattern of unrelenting sacrifice of all other sectors of the economy in favor of heavy industry. The general impact of these changes has been to favor consumption either present or future. Assessment of the future of the Soviet economy now rests on a judgment of the degree of stability of the new priority patterns; a determination of the impact upon heavy industry of simultaneous advances on other fronts (namely, agriculture and housing); and an estimate of how successfully the Soviet leadership will solve the problem of management of its scarce resources.

Given a continuation of the present Soviet leadership, there are several reasons for believing that the priorities implied by current plans will continue. Events in the Satellites in 1956 were a dramatic reminder that there are limits to the degree to which popular wants can be ignored. Even before the Satellite uprisings, Stalin's heirs adopted a general policy of reducing coercion and

C-O-N-F-I-D-E-N-T-I-A-L

replacing it with incentive measures. More importantly, Khrushchev has identified himself with the new priority pattern, especially its agricultural aspect. He has repeatedly and emphatically affirmed the goals of catching up with the US in meat and milk, most recently as a part of the justification of the purge of the anti-Party group.

Nevertheless, one can only speculate as to the durability of these priorities in the face of possible continued economic stress. If the current efforts to stimulate industrial production -- mainly by managerial reorganization, modernization, and the shift in industrial investment to basic materials industries -- fail to show significant results, the present resource allocations will surely come under review again.

Recent revisions of plans show that one can no longer count on the subordination of all other sectors to the heavy industry goal. On the other hand, it cannot be assumed that heavy industry will bear the entire brunt of any possible further shortfalls in available resources. Even the extreme case of a reversion to Stalinist priorities by the present, or some other, leadership cannot be ruled out. The assumption underlying the projections of economic activity in this report, however, is that presently planned allocations of resources will generally be continued.

IV. Problems of Economic Expansion.

A. Introduction.

The USSR faces serious difficulties in maintaining rapid economic growth. The scope of the problems is indicated by the drastic industrial reorganization which Khrushchev has proposed as a solution. Gross top-level planning errors and administrative bungling were clearly responsible for allowing the shortage of raw materials to reach bottleneck proportions. There is evidence, however, of more fundamental factors which have developed as constraints on industrial growth. These factors, which involve rising investment costs, cannot be quantitatively measured, but a qualitative appreciation suggests that, with the volume of investment which is now planned through 1960, industrial growth will be at a somewhat slower rate than the original plan of 65 percent even after the balance in raw materials supply has been restored.

C-O-N-F-I-D-E-N-T-I-A-L

C-O-N-F-I-D-E-N-T-I-A-L

The proposed policies for improving industrial performance are generally in the right direction. But these policies, especially the administrative reorganization and the heavy reliance on plans for replacement and modernization of equipment, are new departures. It is likely that, at best, they will not produce results as fast as Soviet leadership expects.

B. Immediate Factors Behind the 1956 Shortfalls.

The direct cause of the current problem of shortages of raw materials was the failure to complete new capacity in the raw materials industries rapidly enough to keep pace with the planned rate of growth of output. The underfulfillment of planned increases in capacity in 1956 was the climax of poor performance in construction during the preceding years. Table 2 summarizes the information concerning plan fulfillment in construction of new capacity. These failures in completions occurred despite the fulfillment of the plan for volume of investment.

Table 2

Soviet Completion of New Production Capacity and Percentage Fulfillment of Plans in Selected Industries
Fifth Five Year Plan and 1956

Industry	Percent	
	Fifth Five Year Plan	1956
Iron ore	60	52
Pig iron	87	Less than 50
Steel	72	50
Rolled steel	56	Less than 50
Coal	83	Less than 50
Electric power	84	Probably underfulfilled
Cement	N.A.	30

The construction industry has always been beset by a host of difficulties. The activity has been fragmented administratively among some 30 different ministries. The industry has had a plentiful supply of unskilled labor but a chronic shortage of skilled labor. It has almost always suffered from inadequate allocations of materials.

C-O-N-F-I-D-E-N-T-I-A-L

Along with these conditions the overriding emphasis imposed on the construction enterprises has been the planned volume of construction put in place rather than completions of projects. The inevitable result of this emphasis has been the dispersal of effort among too many projects, too few of which were completed.

Even with these difficulties, raw materials need not have become a general industrial bottleneck had the planners recognized the seriousness of the situation a year earlier. Their failure to do so and to act in time apparently stemmed from a complete breakdown in communication between the planners and the industrial ministers. Although the ministers of ferrous metallurgy and of coal warned the Twentieth Party Congress of the need for stepping up completions in their industries, Saburov rejected their arguments and asserted that their output plans could be fulfilled.

The real impact of the completion failures is impossible to measure since we only know the percentage of underfulfillment of plan without knowing for all industries what the plan was. But evidently, during the Fifth Five Year Plan, both capacity and output increased by considerably more than could have been contributed by newly constructed facilities. To the extent that this can be done, the investment cost per unit of increased output is reduced. The critical question for future Soviet growth is the degree to which these investment costs rise or fall.

Soviet past performance and future prospects are discussed in terms of (1) the trends in the labor force (see C, below) and (2) trends in conditions affecting investment cost per unit of output (see D, below). Finally, the support that the proposed industrial reorganization and the developing pattern of Soviet foreign trade can provide in implementing industrial production plans are discussed in E, F, and G, below.

C. Trends in Labor Supply.1. Over-All Labor Supply.

The extremely low birth rates in the USSR during the war and early postwar periods will result in reduced additions to the labor force in the period 1957-62. The quantitative effect of this

C-O-N-F-I-D-E-N-T-I-A-L

development is shown in Table 3. The category Calculated Labor Force in Table 3 reflects only those gains in labor supply that are contributed by population growth. It was computed by applying constant labor participation rates to the number of persons out of school in each age and sex class between the ages of 15 and 69 for each year.

Table 3

Calculated Labor Force and Civilian Employment in the USSR
1950-62

Millions			
Year	Calculated Labor Force <u>a/</u>		Civilian Employment <u>b/</u>
	Total	Annual Increment	
1950	91.6		83.4
1955	100.0	1.6 <u>c/</u>	90.4
1956	101.7	1.7	93.2
1957	103.1	1.4	94.9
1958	104.5	1.4	
1959	105.8	1.3	
1960	106.9	1.1	
1961	107.8	0.9	
1962	108.8	1.0	100.6

5-Year Increments			
1950-55		8.4	7.0
1955-60		6.9	
1957-62		5.7	5.7

a. Based on US Bureau of Census projections of Soviet population by sex and age and on estimated 1956 labor participation rates for the age-sex classes aged 15 to 69.

b. From 1950 to 1956, based on numbers of workers and employees and percentage breakdowns of total employment in the Soviet statistical handbooks; for 1957, based on planned number of workers and employees and on the assumption that all other categories of civilian employment stay constant; and for 1962, based on the assumption that the increase in Civilian Employment equals the increase in Calculated Labor Force. Civilian Employment excludes workers under 15 years, hired workers in kolkhoz industry, and a few other minor unreported categories.

c. 1955 above 1954.

C-O-N-F-I-D-E-N-T-I-A-L

The coverage of the calculated labor force in 1956 is intended to be approximately complete, including, besides civilian employment, military and security forces, forced labor, unemployment, and uncounted private employment. The increment to the calculated labor force from 1957 to 1962 -- 5.7 million -- is significantly less than in the 5 years from 1955 to 1960 -- 6.9 million -- or than from 1950 to 1955 -- 8.4 million.

Table 3 also shows the trend in civilian employment. From 1950 to 1955, civilian employment grew by 7 million, significantly less than the 8.4 million available from population growth. This difference could result either from declining participation rates or by shifts from civilian employment to other activities, such as armed forces or forced labor. It appears unlikely that, in the future, participation rates will rise again. Developments such as increasing urbanization, restoration of balance between sexes, and higher pensions will tend to lower rather than raise participation rates of individual age-sex classes.

In 1956, however, civilian employment rose by 2.8 million, and the calculated labor force rose by only 1.7 million. In 1957 the plan for workers and employees called for an increase of 1.7 million, but the calculated labor force rose by 1.4 million. Assuming that the number of kolkhozniki and workers in other nonstate categories remained the same in 1957 as in 1956, the increase in civilian employment from 1955 to 1957 was 4.5 million, or 1.4 million more than the increase contributed by population growth. There is no evidence available of sizable decreases in forced labor or unemployment, and, as indicated above, participation rates probably are not rising. The most likely explanation of the large increase in employment in 1956 and the planned increase for 1957 seems to be demobilization of armed forces as announced by the Soviet government.

The large gains in employment in 1956 and 1957 show that the economic problems in these years were not a result of a decline in the rate of growth of the labor force. From 1957 to 1962, unless there is further demobilization, the growth of employment is likely to be no greater than that contributed by population growth -- that is, 5.7 million. This figure will represent a considerable slowdown over the rate of growth from 1950 through 1957.

C-O-N-F-I-D-E-N-T-I-A-L

2. Allocation of Employment to Sectors of the Economy.

Table 4 shows employment in various sectors of the economy in the past and projections to 1957 and 1962.

Table 4

Civilian Employment in the USSR, by Economic Sector
1950, 1955-56, and Projections to 1957 and 1962

Economic Sector	Millions				
	1950	1955	1956	1957	1962
State and cooperative industry	15.6	19.2	19.7	20.1	24.1
Construction	2.6	3.2	3.4	3.7	3.8
Transportation	4.1	5.0	5.3	5.5	6.3
Communications	0.5	0.6	0.6	0.6	0.7
Trade and public dining	3.4	3.8	3.9	4.0	4.7
Education	3.8	4.6	4.7	4.9	5.5
Health	2.1	2.6	2.8	2.9	3.4
Other state branches and administrative apparatus	5.2	5.2	5.4	5.5	5.8
Total state and cooperative economy a/	<u>37.3</u>	<u>44.2</u>	<u>45.8</u>	<u>47.2</u> b/	<u>54.3</u> c/
Minor groups d/	0.8	0.5	0.5	0.5	0.6 c/
Total nonagriculture e/	<u>38.1</u>	<u>44.7</u>	<u>46.3</u>	<u>47.7</u>	<u>54.9</u> c/
Agriculture (15 to 69 years of age) f/	45.3	45.7	46.9	47.2 b/	45.7 c/
Total agriculture (12 to 69 years of age) f/	<u>47.8</u>	<u>47.2</u>	<u>48.5</u>	<u>48.8</u> b/	<u>46.7</u>
Total civilian economy (15 to 69 years of age)	<u>83.4</u>	<u>90.4</u>	<u>93.2</u>	<u>94.9</u>	<u>100.6</u>

a. Official figures for 1950 and 1955-56.

b. Based on a planned increase in the national economy of 1.7 million workers and employees in 1957. Of this increase, 300,000 were estimated as

C-O-N-F-I-D-E-N-T-I-A-L

Table 4

Civilian Employment in the USSR, by Economic Sector
 1950, 1955-56, and Projections to 1957 and 1962
 (Continued)

allocated to state agriculture, based on reported increases in number of state farms. The distribution by sector is based essentially on estimated increases in labor productivity and production for industry and construction, with other increases imputed to other sectors.

c. Based on estimates of labor force increases added by population growth (8.8 million in 1956-62), of increases in 1956 and 1957 apparently resulting from demobilization (1.4 million) added to the civilian economy, and of the same number of workers in agriculture (15 to 69 years old) as in 1955. The distribution by sector is based on estimated increases in productive activity by 1962 and on population increase. The estimate for industry is derived as a residual.

d. Pertains to workers of the Party Komsomols, Pioneers, and Komsomols and to private handicraftsmen.

e. Does not include hired workers in kolkhoz industry; workers 12 to 14 years old; family workers on private plots of workers and employees; personal and domestic servants; civilian employees of the Ministry of Defense, the MVD, and the KGB; and military personnel and security troops.

f. Based on (1) official Soviet civilian employment distributions (percentage) and (2) demographic data on the number of over-age workers (60 years old or older) and of under-age workers (12 to 14 years old).

Employment in agriculture fell steadily from 1950 to 1953 and then rose again until by 1956 it was well above the 1950 level. The projection of agricultural employment (15 to 69 years old) assumes that by 1962 agricultural employment will be 1.5 million below the 1957 level. The immediate objective of current Soviet plans for rapid mechanization of agriculture is to raise output. The ultimate aim is surely to draw labor out of agriculture. That the indicated reduction of 1.5 million below 1957 can be achieved by 1962 is uncertain.

Assuming that agricultural employment for 1962 will be 45.7 million, nonagricultural employment could be 54.9 million in 1962, representing a gain of 15 percent for the 5-year period compared with a little more than 17 percent from 1950 to 1955. The projection of industrial employment to 1962 is 24.1 million for a

C-O-N-F-I-D-E-N-T-I-A-L

gain of 20 percent from 1957 to 1962 compared with 23 percent for 1950 to 1955. Thus the prospects are for a reduced growth rate in the nonagricultural labor force as a whole and in industry even if it is assumed that 1.5 million workers can be drawn out of agriculture.

The labor force projections suggest that maintenance of the rate of growth of output will depend more heavily on gains in productivity and efficiency in the future than in the past. This conclusion is reinforced by the reduction in the workweek from 48 to 41 hours which is to occur during the period of this estimate. It must be pointed out that this labor constraint to economic growth would be mitigated if further demobilization occurs or if the chances of drawing labor out of agriculture are better than estimated.

• D. Trends in Investment Costs.

If the entire reduction in planned investment for the period 1956-60 were to be borne by Soviet industry, the amount remaining still would be great enough to support an industrial growth rate closely approximating that originally programmed for the Sixth Five Year Plan, if it were assumed that the investment-output relationship of the past 6 years could be projected into the future.* It is doubtful, however, whether Soviet industry will be able to derive output gains per unit of investment in the future comparable to those obtained in the period 1950-55.

In general, Soviet industry was able during the period 1950-56 to increase significantly the utilization of its capital stock by increasing the inputs of labor and raw materials partly at the expense of inventories, by increasing efficiency, by introducing technological modifications, and by producing a more restricted output than the variety planned. At the same time, the high output goals of the plan for 1950-55 forced Soviet industry to direct a large share of its investment resources into activities which would provide the most rapid gains in output. This policy neglected the replacement of antiquated and worn-out equipment and failed to provide adequate development of new sources of basic raw materials. As a result, Soviet industry, generally, is faced now with fewer opportunities to increase output without substantial increases in new plant investment and the diversion of a larger share of investment into the more capital-intensive raw materials industries.

* That is, if it were assumed that the increase in output, measured in rubles, obtained from a given ruble volume of investment remained constant.

C-O-N-F-I-D-E-N-T-I-A-L

In some Soviet industries, significant increases in the degree of utilization of capital facilities were obtained by increasing the inputs of labor and materials. In coal, for example, the utilization of capacity rose from 84 percent in 1950 to 95.8 percent in 1955, and in the cement industry utilization of rated capacity increased from 75 percent in 1950 to 85 percent in 1955. Concomitant with the increase in utilization the coal industry added 10 times more labor than was envisaged in the 1951-55 plan, and the cement industry reduced the amount of "downtime" and increased the input of raw materials. Comparable gains in the utilization of capacity will be difficult to achieve in the future. Zademidko, Minister of the Coal Industry, reported to the Twentieth Party Congress a goal of 97.5-percent utilization by 1960, 13/ but further large increases in utilization achieved by increasing the inputs of labor and materials are less likely to occur, because of the smaller supply of new labor envisaged for the future and the increasing requirements of maintenance and repair.

The growing development of a skilled labor, engineering, and managerial force accompanied by relatively simple changes in shop and plant layout facilitated the growth of industrial output during the period 1950-55, especially in machinery industries. Although this development was not universal and important gains may still be obtained from these sources, it appears that the opportunities for such gains will not be as numerous in the future as during the Fifth Five Year Plan, nor will they be as easy to obtain.

In some industries, relatively inexpensive technological innovations facilitated the achievement of the 1955 and 1956 production levels. For example, the adaptation of blast furnaces to top pressure operation increases their productivity by as much as 10 percent. In many of these instances, however, the most profitable of these gains have already been adopted (approximately 67 percent of the available blast furnace volume had been converted to top pressure by 1955), and similar increases in production could be obtained only at higher investment costs.

Another method which probably was employed to achieve the 1955 and 1956 production goals was product, or product mix, deterioration. In the case of cement, for example, it is possible to obtain increases in output even at full utilization levels, but at the cost of reduced quality. To maintain quality at higher output levels planned for the future will require a greater amount of investment per unit of additional output than experienced during the Fifth Five Year

C-O-N-F-I-D-E-N-T-I-A-L

Plan period. In the case of steel, the production of light sections, cold rolled strip, and sheet has the effect, generally, of reducing a given mill's capacity measured in tons. Soviet rolling mills produced 1.3 million tons of steel more than the 1955 planned level, but the output of light sections, wire rod, and cold rolled sheet was underfulfilled. To the extent that failure to produce the planned product mix was the result of a lack of finishing capacity rather than a practice followed merely to earn quantity production bonuses, future increases in finished steel output will require new investment in finishing plant facilities.

It would appear, then, that in many instances the opportunities to derive "easy" gains in the future, comparable to those obtained during the Fifth Five Year Plan, are limited. At the same time, additional investment costs will result from the need to rebuild inventories and from the expansion of the resource base, principally in the Asian areas of the USSR, where overhead costs in the form of transport, housing, and communal services are high.

The need for a considerable increase in investment in raw materials was recognized in the Sixth Five Year Plan, and a large share of planned investment was to go to electric power, fuels, metallurgy, chemistry, and building materials. Shortfalls experienced in the production of materials in 1956, although in most cases relatively small, indicated that their investment allocations were too small, and in the 1957 plan an even greater share of total investment was directed into the primary materials industries, particularly coal and steel. Forty-four percent of the increase in nonhousing investment planned for 1957 was directed to coal and ferrous metallurgy, raising their share in state investment from 14.7 percent in 1956 to 15.7 percent in 1957. Investment, therefore, is being shifted into industries where investment costs per unit of output are considerably higher than in industry as a whole. For example, according to 1938 data still cited in recent Soviet journal articles, electric power stations are more than 4 times as capital intensive as Soviet industry as a whole,* fuel extraction 3 times, and metallurgy 2 times.

At the same time, there has been a tendency for investment costs to rise in the USSR. In February 1956, V.A. Malyshev, Chairman of the State Committee on Technology, severely criticized the industrial ministries for defending such increases in petroleum

* That is, four times as many rubles of capital investment are required per ruble of expanded output as the average for Soviet industry.

C-O-N-F-I-D-E-N-T-I-A-L

refining, steel, nitrates, coal,* cement, and steam power. The ministries attempted to justify these rising costs as being outgrowths of additional byproduct or raw materials processing. Malyshev argued that the incorporation of new technology would sharply reduce capital costs per unit of output in many of these cases. Nevertheless, in certain industries lower quality of resources is raising costs -- for example, in ferrous metallurgy, lower quality ores require the construction of concentrating and beneficiating facilities which tend to raise the investment cost per unit of output.

E. Soviet Response to the Investment Problem.

To meet the immediate problems of inadequate facilities, particularly in the raw materials industries, and to attempt to avoid rising investment costs, the 1957 Economic Plan calls for a concentration of resources on the completion of a substantial backlog of unfinished construction projects. The completion of these projects (reported to represent an investment of 150 billion rubles by the end of 1955) 14/ would be a relatively rapid and inexpensive method of expanding capacity and output. This backlog of unfinished projects, however, includes many white elephants, such as the abandoned Turkmen Canal, which are of little present use and of questionable future value. Furthermore, some Soviet theorists observe that the backlog may be expected to grow as an increasing part of the investment program is committed to projects of 5 to 15 years' construction duration.

Much has been made of the fact that in some cases the redesign and reengineering of proposed projects will sharply reduce capital costs per unit of output below those originally planned. In some instances, there has been a lag of as much as 10 years between the initial design of a new unit and the initiation of its construction. For example, some new refineries, construction of which is only now being started, were designed during the period 1946-50, and these designs were used as the basis for their cost estimates as carried in the Sixth Five Year investment plan. The redesign of these plants and the adoption of new technology reduced the capital costs per unit of output considerably.** It is not possible to determine the extent

* Coal mine construction costs are reported elsewhere to have doubled during the course of the Fifth Five Year Plan.

** Capital costs of refined oil were reported to have been reduced from 442 rubles to 343 rubles per ton as a result of the resurvey of 7 refinery projects. 15/

C-O-N-F-I-D-E-N-T-I-A-L

of obsolescent design in current Soviet planning. It should be noted, however, that redesign involves delay, expense, and the redundant use of top engineering talent. It should be noted further that in the Fifth Five Year Plan the Soviet construction industry consistently failed to keep construction costs at originally planned levels.

The scope of the replacement and modernization goals is indicated by the plan to replace 25 percent of the national machine tool inventory and 20 percent of the national metalforming machinery inventory during the period 1956-60.* It is estimated that this would absorb slightly more than half the planned 1956-60 production of metal-cutting machine tools and almost 70 percent of the planned production of metalforming machinery. Obsolete steel-making facilities probably represented 12 percent (5.1 million tons) of the Soviet crude steel output in 1955.** The retirement of these facilities, if it were to take place, would account for nearly one-third of the new capacity planned for crude steel during the period 1956-60. This ambitious program to replace such a large volume of existing facilities, if carried out, would undoubtedly have a significant effect upon the productivity of labor and upon the efficiency of use of materials.

Successful implementation of the programs for modernization and automation of Soviet industry would require a large volume of investment during the next few years. Concurrently, success in these programs calls for the development of still further skills on the part of the labor force and a more efficient and effective industrial management.

Since 1956, however, the distribution of investment has been significantly altered. Allocations to housing and agriculture have been increased, so that the shares to transport and industry must have been reduced. Furthermore, a larger share of investment in industry is being directed toward the expansion of capacity of the more capital-intensive raw materials industries. For the rest of industry

* This probably refers to replacing low-productivity or obsolete machinery in direct production with new models and relegating the old machinery to repair shops or low-priority work.

** Includes plants which are, in general, completely obsolete. It does not include many outmoded units at plants which have a large output but which are not wholly up to modern standards.

C-O-N-F-I-D-E-N-T-I-A-L

the share of resources available for investment, therefore, must be less than that originally scheduled in the 1956-60 plan. This means that modernization and automation are not likely to be developed soon enough to contribute to increases in efficiency in the degree which would have been necessary to meet the original goals prescribed by the now defunct Sixth Five Year Plan. The automation program already appears to be behind schedule. The Ministry of Machine Tools produced only 929 of the 5,192 new-model metal-cutting tools called for in the 1956 plan. The 1956 plan of introducing into serial production the instruments and means of automation was not fulfilled, and no report was made of the progress of carrying out the Sixth Five Year Plan goal of 220 automatic and semiautomatic transfer lines in the machine-building industry. Thus an even greater responsibility, in increasing the efficient utilization of resources, must rest upon gains in technology and the recently reorganized industrial management structure. It seems unlikely, at the currently planned level of investment, that improvements in technology and management can be achieved rapidly enough to affect production significantly before 1960.

F. Problems of Management and of Organization.

The greater the need for increased efficiency in the use of resources, the greater the necessity for good management and the more obvious and costly the managerial mistakes. The increasing complexity of the economy and the broadening of the horizon of priorities have tended to make the problems of coordination of productive activity and efficiency at the plant level all the more vital. After years of extolling the virtues of a planned economy, Soviet academicians and planners have become vitally interested in improving the process of making economic decisions. Soviet literature is now replete with articles offering criteria for establishing an investment program and with discussions of costing, pricing, and the maintenance of inventories.

The role of coercion in the operation of the Soviet economy has been slowly declining since Stalin's death. Since 1953, there has been a long succession of measures in both economic policy and administration designed to increase worker, peasant, and managerial incentives. The most striking of these was the reorganization of the industrial structure promulgated under the aegis of Khrushchev in the spring of 1957. The majority of the economic ministries, which had been the basis of Soviet industrial administration since the initiation of full-scale planning, were abolished, the major

C-O-N-F-I-D-E-N-T-I-A-L

survivors being the defense industry, chemicals, transportation, and electric power. In their stead, 105 regional economic councils were established, in which were lodged operational control over all industrial and construction activities in their respective areas. In those union republics in which more than a single economic region exists, intermediate planning responsibilities devolve upon republic Gosplan organizations. The main planning function, however, still resides with the Gosplan of the USSR. Thus the reorganization attempts to increase efficiency by decentralizing industrial administration and at the same time to retain central determination of basic economic policy and basic control over the economy.

Whatever illusions may exist, the Soviet leadership expects significant gains from the reorganization in terms of more efficient utilization of resources and improvement of managerial efficiency at the plant level through stimulation of local initiative. By establishing a more intimate relationship between producer and consumer, it is hoped that the producer will become more sensitive to market demands, particularly important in the case of construction and of production of consumer goods. Emphasis upon the use of local resources is intended to minimize the burden on transport facilities. Local administration of economic operations should minimize wasteful duplication of effort, obviate vertical integration, and avoid construction of similar facilities by different organizations. The means by which managerial initiative at the plant level will be stimulated is less clear, although it is reported that managers have been granted unspecified additional decision-making authority.

The substitution of a regional structure of administration for a ministerial structure will bring problems of its own. Excessive ministerial self-sufficiency may be replaced by a tendency toward excessive regional autarky. Since many of these regions are based on union republics of distinct minority nationalities, local loyalties conflicting with national objectives may enforce the tendency toward regional autarky.

G. Impact of Foreign Trade upon Soviet Economic Development.

In a time of anticipated domestic labor shortages and of material shortages, an increase in foreign trade could be of increasing economic advantage to the USSR. But much of the national economic advantage from future trade with the most important trade

C-O-N-F-I-D-E-N-T-I-A-L

partners of the USSR, the European Satellites, has been lost in recent Soviet trade concessions designed to bolster the sagging Satellite economies which had been overburdened by past Soviet exploitation. Foreign economic relations are thus a mixed blessing to Soviet domestic economic policy.

The rapid expansion of the Soviet economy has required an ever-increasing consumption of natural resources and of power. Pressure against the supply of raw materials has been indicated by price movements since 1948; in July 1955, machinery prices averaged 40 percent lower than in 1948, but prices of raw materials and power averaged 20 to 24 percent above 1948. Although the USSR has been compelled to embark upon a costly program of resource development in its remote Asian areas, there will be a parallel tendency to increase the exchange of manufactures for raw materials in foreign trade. Thus the share of machinery and equipment in total exports increased from 5 percent in 1938 to 24 percent in 1955. Conversely, although imports of machinery and equipment have maintained a high level (35 percent of all imports in 1955), the share of ores and concentrates in the rapidly expanding total imports has risen from 1.7 percent in 1950 to 11.1 percent in 1956. 16/

In today's world, there is fierce long-term competition by all industrialized countries for supplies of raw materials. The Soviet Bloc has entered into this competition by negotiating attractive trade agreements with the so-called underdeveloped countries of the Free World whereby it assists in their economic development in exchange for return shipments of foodstuffs and raw materials. As with domestic investments of a similar nature, several years must elapse before returns on developmental outlays can be expected. During this period, foreign trade with underdeveloped countries will constitute a small net drain on the Soviet economy. The concentration of the program, however, in countries such as Egypt, Afghanistan, and India implies that political motivations must have played a dominant role in Soviet willingness to assume the initial costs of this type of trade relationships. Once the necessary developmental costs have been incurred, the resulting flow of foodstuffs and raw materials should make a positive contribution to Soviet economic capabilities.

Although the Soviet aid to underdeveloped countries arouses much interest, 4 rubles out of every 5 spent outside the Bloc by the USSR go to Western Europe. Greatest interest is expressed in the importation of machinery as prototypes for design of Soviet production models.

- 29 -

C-O-N-F-I-D-E-N-T-I-A-L

C-O-N-F-I-D-E-N-T-I-A-L

Developments in foreign trade with the European Satellites have been unfavorable to the USSR since the fourth quarter of 1956. Generally, since that time, the USSR has had to increase the level of its exports significantly, but the total return flow of goods has grown slightly if at all.

In 1957 the USSR expects to increase intra-Bloc trade by 13 percent, or 2.5 billion rubles, and to bring the total value of this trade to about 23 billion rubles. Most of the increase in trade turnover will be in the nature of an increase in Soviet exports to the European Satellites as a result of the supplementary credit and trade agreements of late 1956 and 1957. About one-third of these supplementary exports will be in grain shipments, and much of the remainder will be in scarce industrial materials such as steel, coal, oil, iron ore, and nonferrous metals. Imports of machinery and equipment from Czechoslovakia and East Germany will be increased; imports of coal from Poland and of oil from Rumania will be reduced. At a time when Soviet production of coal, iron ore, and steel is lagging, the European Satellites are increasing their drain upon Soviet availabilities of these commodities.

The greatest contributions which foreign trade could make to the economic capabilities of the USSR within the period of this estimate would be to improve the Soviet domestic availability of industrial and agricultural raw materials and specialized processing equipment for basic industry. Recent Soviet commitments to assist the Satellites and the necessity to undertake developmental investment in underdeveloped non-Bloc areas make it unlikely that there will be any major increase in the contribution of foreign trade to the Soviet economy for the next several years. By the end of the period of this estimate (1962), trade flows could become more favorable.

V. Probable Courses of Action and Growth Projections.

A. Introduction.

Projection of the course of the Soviet economy through 1962 is attended by more than the usual degree of uncertainty. It is difficult to assess the outcome of various new policies such as the administrative reorganization of industry and construction, the plans for modernization and reequipment of industry, and the plan for raising productivity in agriculture by mechanization. In

C-O-N-F-I-D-E-N-T-I-A-L

addition, the priorities of the leadership appear to have shifted slightly in the direction of consumption. The extent and permanence of this shift are uncertain. Developments in the Satellites, which cannot be predicted, may have a serious effect on Soviet economic plans, as they did in 1956. Furthermore, the dominant Soviet leader, Khrushchev, with his strong predilection for experimentation and innovation, adds more uncertainty to assumptions regarding future policies.

The abandonment of the revised Sixth Five Year Plan and the announcement of a Seven Year Plan to run through 1965 add to the complexity of anticipating the future course of the Soviet economy. Proceeding, however, from the analysis of priority patterns and capabilities discussed above, the paragraphs below list the future policy trends which appear most probable.

The highest priority objectives are still defense and economic growth. Consumer-oriented industries, however, have been elevated on the priority scale. Higher minimum wages, pension and welfare measures, and higher prices paid by the state for agricultural produce will make it more difficult to continue to reduce the consumption share of national income. Flexibility to cut back consumer-oriented expenditures in order to alleviate temporary difficulties in heavy industry has been reduced. It is assumed that the moderately increased priority for consumption will continue through the period of this estimate. Reflecting this priority, the projections are based on the reduced investment which has been unofficially announced and on the implied reallocation of this investment to various sectors. Specifically, it is assumed that most of the reduction will be made at the expense of industrial productive investment. It is also assumed that savings from demobilization will be more than offset by the rising cost of modern weapons systems and that defense expenditures as a share of GNP will remain about the same.*

Despite the strain of competing demands and long-run trends tending to reduce capabilities, the Soviet leaders will continue to drive the economy at a rapid pace in order to "catch up with the US." It is therefore estimated that the Soviet leaders will endeavor to return to an average annual rate of growth of industrial output of at least 10 percent in 1958-60. This would result in an over-all increase of about 60 percent for the period 1956-60.

* This statement should be considered tentative pending receipt and processing of the latest military estimates from the service intelligence agencies.

C-O-N-F-I-D-E-N-T-I-A-L

Khrushchev, apparently committed strongly to the seemingly impossible objective of catching up with the US in per capita production of dairy products by 1958 and in meat production by about 1962 or 1963, will continue to be relatively generous in allocating labor and investment to agriculture in an effort to approach these goals.

It will become increasingly difficult for the Soviet economy to meet all of the objectives originally announced for 1960. Given the present allocations to investment and defense, the USSR will make some progress toward "catching up with the US" during the next 5 years, but less progress than is implied by recent Soviet policy statements. The absolute gap between the US and Soviet economies will widen slightly, although by 1962, at present relative rates of growth, the percentage difference between the two economies will narrow. It will be difficult for the Soviet leadership to maintain desired rates of industrial growth and still satisfy rising consumer expectations and the pressing need for more housing and urban services. At some small economic sacrifice, it is expected that the Soviet leadership will continue the program of economic penetration of underdeveloped nations because of the potentially large political returns. The economic cost of maintaining the Soviet empire in Eastern Europe probably will continue to rise.

If, as it is estimated, the Soviet economy becomes increasingly hard put to meet all the demands placed upon it, the resultant strains may lead to serious policy disputes among the Soviet leaders during the next 5 years just as during the past year. This could be a source of political instability in the top leadership during the period of this estimate.

B. Projections of Future Growth.

1. Estimated Growth of Gross National Product, 1957-62.

During the period of the Fifth Five Year Plan (1950-55), Soviet GNP grew by 39.0 percent, or at an average annual growth rate of 6.8 percent -- compared with the GNP growth rate in the US of 4.1 percent for the same period (see Table 5*). It is estimated that the rate of growth of Soviet GNP will decline somewhat in the future compared with the exceptional growth in 1956, when the extraordinarily good harvest helped boost the growth of Soviet GNP to

* Table 5 follows on p. 33.

C-O-N-F-I-D-E-N-T-I-A-L

8.9 percent over 1955. For the period 1957-62 it is estimated that the average annual rate of growth will be 6.0 to 6.5 percent, resulting in an increase of 41 to 44 percent for this period.

Table 5

Distribution of Soviet Gross National Product at Factor Cost
by End Use, in the USSR and the US
1956

USSR (1,063 Billion 1955 Rubles)	
	<u>Percent</u>
Consumption	59
Investment	26
Defense a/ Administration	12 3
Total	<u>100</u>
US (378 Billion 1956 Dollars)	
	<u>Percent</u>
Consumption	66
Investment	20
Defense Administration	11 3
Total	<u>100</u>

a. Does not include foreign aid or stockpiling, as in the US.

C-O-N-F-I-D-E-N-T-I-A-L

Investment, even with the proposed downward revision, will rise somewhat faster than GNP as a whole and hence will be a larger share in 1962. It is assumed that the defense share may be about the same and that consumption will command a slightly smaller share of available resources.

The principal improvements in consumption will be in the form of better diet and more housing. Although Khrushchev's goals for meat and dairy products are considered utopian, the increase in production of animal protein and dairy foods anticipated for the period will permit a considerable improvement in the diet of most citizens. The recent housing decree reaffirms and to some extent extends the promise of more living space per capita contained in the original Sixth Five Year Plan directives. ^{17/} The decree does not increase the amount of living space to be built from state investment allocations, but it allocates 35 billion additional rubles of investment funds to housing to make up for the anticipated failure to reduce housing construction costs by 20 percent as originally planned. Furthermore, the decree commits the regime to make available for private purchase a substantially larger share of scarce building materials than was originally planned in order to support the planned increase in construction of housing by private individuals.

Assuming that the construction goals for state and co-operative housing and for individual housing are fulfilled, the amount of floorspace -- net of retirement -- available to the urban population in 1960 is presented in Table 6.* Even this generous assumption does not give the ordinary urban dweller much more floorspace than he had in 1926.. Hence widespread dissatisfaction with crowded housing conditions will not be greatly lessened by the revised program. The regime will find it difficult to avoid further increases in housing allocations, particularly as the reduced role of coercion makes housing availabilities a very important element in the allocation of labor.

2. Comparison of Gross National Product in the USSR and the US.

These projected rates of growth for Soviet GNP will increase the size of the Soviet economy relative to the size of the US economy (measured in GNP). Thus Soviet GNP in 1950 was 32.7 percent of US GNP, whereas in 1955 it was 37.2 percent of US GNP (see Table 7**). It is estimated that in 1962 Soviet GNP will rise to about 47 percent of US GNP, although the absolute gap will widen slightly.

* Table 6 follows on p. 35.

** Table 7 follows on p. 35.

C-O-N-F-I-D-E-N-T-I-A-L

Table 6

Housing Space in Urban Areas of the USSR Per Capita
Selected Years, 1926-60

Year (End of Year)	Urban Population (Millions)	Total Floorspace (Million Square Meters)	Total Floor- Space per Capita (Square Meters)
1926	26.3	216	8.2
1950	71.4	513	7.2
1955	86.6	640	7.4
1956	87.1	668	7.7
1960	101.9	937 <u>a/</u>	9.2

a. Assuming that the construction goals for state and cooperative housing and for individual housing are fulfilled, the fund of total floorspace by the end of 1960 was derived by applying the rate of retirement of the 1950 fund over the period of the Fifth Five Year Plan to the fund as reported for the end of 1955.

Table 7

Comparison of Gross National Product at Market Prices, USSR and US
Selected Years, 1950-62

	Billion 1955 US Dollars				
	<u>1950</u>	<u>1955</u>	<u>1956</u>	<u>1962</u>	<u>1962</u>
USSR	105	146	159	226 <u>a/</u>	232 <u>b/</u>
US	321	392	403	487 <u>c/</u>	487 <u>c/</u>
USSR as percent of US	33	37	39	46	47

a. 6.0-percent rate of growth, 1957-62.

b. 6.5-percent rate of growth, 1957-62.

c. The growth rates of 3.0 percent per year between 1956 and 1960 and of 3.7 percent per year between 1960 and 1962 are based on estimates of the Joint Economic Committee, Potential Economic Growth of the United States During the Next Decade, US Government Printing Office, 1954, p. 35.

C-O-N-F-I-D-E-N-T-I-A-L

The picture is somewhat different, however, when the principal end-use components of GNP are compared on the basis of ruble-dollar conversion ratios. In 1956 the Soviet economy was about 40 percent of the size of the US economy, measured in terms of GNP. But the absolute level of Soviet defense expenditures was approximately equal to US defense expenditures, and Soviet investment expenditures were approximately 57 percent as large as US investment expenditures. In the USSR, however, a higher portion of investment goes to heavy industry and proportionately less to light industry, housing, and services. On the other hand, Soviet consumption expenditures were only about 30 percent the size of US outlays, despite a population about 20 percent greater.

3. Projections of Industrial Growth.

If the planning errors which led to the serious imbalance between capacity and production goals in the basic materials industries had not occurred, the original goal for a 65-percent increase in industrial production in 1960 above 1955 might have been achieved despite the shifts in the priority patterns and the reduced rates of growth of the labor force and investment resources. As in the past, the 65-percent goal may have been rounded down somewhat to facilitate over-fulfillment. But it now appears that growth of the basic materials industries probably will not be rapid enough to support a 65-percent growth of industrial output for the 5-year period. Even after the restoration of balance between the growth rates of basic materials and the rest of industry, other factors, such as more slowly growing labor force and rising investment requirements, will operate as constraints. It is concluded, therefore, that the rate of growth in 1957-62 will be between 9 and 10 percent per year, which will result in an increase of 55 to 60 percent for the period.

It is estimated that the growth of labor productivity probably will not exceed 7 percent per year for the period 1956-62 and may decline slightly to about 6 percent per year if the introduction of new technology continues to fall behind schedule. Instead of the planned increase of 50 percent for industrial labor productivity in the period 1956-60, a range of 39 to 44 percent is estimated. This means that increments to the industrial labor force will have to be substantially larger than planned in order to offset the effect on production goals of the shortfall in labor productivity goals.

C-O-N-F-I-D-E-N-T-I-A-L

It is estimated that the reduction in investment in industry during the period 1956-60 will absorb most of the reduction in the total investment bill. Furthermore, it is quite likely that a share of industrial investment larger than originally planned will be allocated to "nonproductive" uses -- that is, housing and communal facilities. Investment in basic materials and energy industries also probably will be more than planned. It is assumed that the amount of investment estimated to be available will support an increase of 55 to 60 percent in industrial output.

4. Projections of Agricultural Production.

It is estimated that agricultural production will increase 15 to 20 percent in the period 1957-62 above 1956 and that, if 1956 output were deflated to "normal" weather conditions, an increase of about 25 percent for the 5-year period is possible. This estimate is based on the assumption that expansion of the sown area during the period 1957-62 will not proceed as rapidly as during the period 1953-55. A recently announced plan would bring under cultivation an additional 12 million to 15 million hectares of land during the next 2 years compared with the addition of about 30 million hectares in 1953-55. Furthermore, the excellent weather of 1956 will not be a common phenomenon. Although the growth of agricultural production will be far less than planned, it will be sufficient to provide some improvement in the national diet.

State investment in agriculture for the period 1956-60 will be at least the 120 billion rubles originally planned. In addition, investment from collective farm funds will be much higher than in the past. A considerable portion of state investment is in the form of agricultural machinery. By 1960 the grain combine park is scheduled to more than double to 890,000 units, the park for corn and ensilage combines to grow fourfold, and that of windrowers about 10 times. Inventories of tractor plows, cultivators, and drills should increase substantially. The immediate effect of these machinery investments is to raise output, but by the end of the period of this estimate they will have to be restructured so as to facilitate the movement of labor out of agriculture.

Calling upon the USSR to match US per capita production of milk and butter by 1958 and of meat by 1960-61, Khrushchev raised the meat target from a goal of doubling output between 1955 and 1960 to one of achieving more than 3 times the 1956 output by 1960. 18/

C-O-N-F-I-D-E-N-T-I-A-L

The original 1960 milk production goals -- an increase of 95 percent over 1955 -- apparently are to remain the same. It is believed that these goals will not be achieved by a wide margin and that actual production will approximate the levels indicated in Table 8. The principal reason for such a wide gap between planned and estimated actual production is that there simply will not be sufficient feed available to support such increases. It is estimated that Khrushchev's program would require an amount of feed equivalent to 344 million to 386 million metric tons of shelled corn. But the amount of feed expected to be available from all sources -- grains, potatoes, silage, root crops, and the like -- will amount to the equivalent of only about 212 million metric tons of shelled corn, or less than 60 percent of the amount of feed believed necessary to meet Khrushchev's production goals for meat and milk.

Table 8

Production of Meat and Milk in the USSR
Selected Years, 1950-60

Million Metric Tons				
Production Figures Apparently Used by the USSR				
	<u>1950</u>	<u>1955</u>	<u>1956</u>	<u>1960 Goals</u>
Meat	4.9	6.4	6.5	20.1
Milk	35.3	42.1	49.1	82.0

Estimated Actual Soviet Production				
	<u>1950</u>	<u>1955</u>	<u>1956</u>	<u>1960</u> <u>(Theoretical Maximum ^{a/})</u>
Edible meat	3.4	4.4	4.5	12.5
Milk	31.2	37.2	43.4	50.8

a. 1960 theoretical maximum achievements are based on a proportional utilization of maximum food units available and should not be regarded as forecasts.

C-O-N-F-I-D-E-N-T-I-A-L

Khrushchev's optimism may be related to the record 1956 grain harvest and its positive effects in 1957 on the production of livestock products. It is noteworthy that no new plans for additional resource allocations to agriculture were announced in connection with the recent livestock goals. On the other hand, Khrushchev's personal commitment to the agricultural program indicates that the current relatively high priority of agriculture will continue at least as long as Khrushchev is a political force.

C-O-N-F-I-D-E-N-T-I-A-L

C-O-N-F-I-D-E-N-T-I-A-L

APPENDIX A

STATISTICAL TABLES

C-O-N-F-I-D-E-N-T-I-A-L

Table 9

Comparison of Production of Selected Industrial Products in the US and the USSR*
 1948 and 1956

Product	Unit	1948		Soviet Production as Percent of US Production	1956		Soviet Production as Percent of US Production
		US	USSR		US	USSR	
Energy							
Hard coal	Million metric tons	593	150	25	479	302	63
Lignite	Million metric tons	3	58	1,933	3	127	4,233
Coal, total	Million metric tons	<u>596</u>	<u>208</u>	35	<u>482</u>	<u>429</u>	89
Electric power	Billion kilowatt- hours	355	66	19	724	192	27
Petroleum	Trillion British thermal units	18,060	1,400	8	26,000	4,000	15
Metals							
Finished steel	Million metric tons	63	14	22	76	38	50
Refined copper	Thousand metric tons	1,201	187	16	1,550	413	27
Aluminum	Thousand metric tons	566	104	18	1,524	362	24

* Footnotes for Table 9 follow on p. 44.

C-O-N-F-I-D-E-N-T-I-A-L

Table 9

Comparison of Production of Selected Industrial Products in the US and the USSR
1948 and 1956
(Continued)

Product	Unit	1948		Soviet Production as Percent of US Production	1956		Soviet Production as Percent of US Production
		US	USSR		US	USSR	
Fabricated metals							
Trucks	Thousand units	1,364	174	13			
Turbines	Thousand kilowatts	4,559	1,200	26	1,200	358	30
Generators	Thousand kilowatts	7,394 <u>b/</u>	820	11	9,384 <u>a/</u>	5,800	62
Power transformers	Thousand kilovolt- amperes	24,995 <u>b/</u>	6,100	24	9,384 <u>c/</u>	6,600	70
					52,446 <u>d/</u>	22,300	43
Chemicals							
Synthetic ammonia	Thousand metric tons	989	356	36			
Sulfuric acid (100 percent basis)	Thousand metric tons	10,393	1,590	15	3,027 <u>d/</u>	853	28
Synthetic rubber	Thousand metric tons	498	90	18	14,538 <u>d/</u>	4,323	30
					1,096	281	26
Manufactured consumer goods							
Cotton fabrics	Million meters	6,197	3,150	51			
Leather footwear	Million pairs	462	134	29	9,232 586	5,500 288	60 49

Table 9

Comparison of Production of Selected Industrial Products in the US and the USSR
1948 and 1956
(Continued)

Product	Unit	1948		Soviet Production as Percent of US Production	1956		Soviet Production as Percent of US Production
		US	USSR		US	USSR	
Transport							
Rail	Billion ton-kilo- meters	931	468	50	1,040 d/	1,076	103

- a. Preliminary estimate; excludes ship turbines.
- b. 1947.
- c. Preliminary estimate; excludes diesel-generator sets.
- d. Preliminary estimate.

C-O-N-F-I-D-E-N-T-I-A-L

Table 10

Estimates of Production of Selected Products of Heavy and Light Industry in the USSR
Selected Years, 1950-57

Product	Unit	1950	1955	1956	1957
Heavy industry					
Energy					
Coal, hard and lignite	Million metric tons	261	391	429	463
Electric power	Billion kilowatt-hours	91	170	192	210
Crude petroleum	Million metric tons	38	71	84	98
Metals					
Finished steel	Million metric tons	21	35	38	40
Refined copper	Thousand metric tons	247	377	413	
Aluminum	Thousand metric tons	120	335	362	
Fabricated metals					
Trucks	Thousand units	294	329	358	372
Tractors	Thousand units	109	163	184	204
Machine tools	Thousand units	71	118	121	
Freight cars	Thousand 2-axle equivalent units	102	69	80	
Chemicals					
Synthetic ammonia	Thousand metric tons	425	753	853	
Sulfuric acid (100 percent basis)	Thousand metric tons	2,125	3,798	4,323	4,600
Synthetic rubber	Thousand metric tons	143	240	281	323

Table 10

Estimates of Production of Selected Products of Heavy and Light Industry in the USSR
 Selected Years, 1950-57
 (Continued)

Product	Unit	1950	1955	1956	1957
Heavy industry (Continued)					
Construction materials					
Cement	Million metric tons	10	22	25	29
Bricks	Billion units	10	21	21	24
Light industry					
Processed foods					
Flour	Million metric tons	34	38	40	
Granulated sugar	Thousand metric tons (raw weight)	2,523	3,419	4,354	4,491
Consumer durables					
Television receivers, civilian	Thousand units	10	550	700	700
Manufactured consumer goods					
Cotton fabric	Million meters	3,900	5,900	5,500	5,600
Leather footwear	Million pairs	203	274	288	308

C-O-N-F-I-D-E-N-T-I-A-L

Table 11

Indexes of Aggregate and Per Capita Household Consumption in the USSR
1948-62

1955 = 100

Item	1948	1949	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960	1961	1962
Aggregate consumption	59.1	64.2	71.5	75.1	80.2	89.1	97.7	100	110.2	116.2	122.8	130.8	138.1	144.7	151.6
Food	67.9	72.3	77.7	79.7	86.0	92.9	98.8	100	111.1	114.7	119.8	125.0	129.7	134.1	138.6
Nonfood	31.5	39.4	53.2	60.0	63.5	78.7	96.6	100	111.5	124.0	135.0	150.0	165.0	178.0	191.0
Services	68.7	71.4	75.5	80.4	83.9	90.3	95.0	100	104.8	110.2	116.1	122.7	128.8	134.5	141.1
Housing and utilities	81	84	86	88	91	94	97	100	104	108	114	121	128	136	145
Population	89.3	90.4	91.9	93.5	95.1	96.7	98.3	100	101.7	103.4	105.2	107.0	108.8	110.7	112.5
Per capita consumption	66.2	71.0	77.8	80.3	84.3	92.1	99.4	100	108.4	112.4	116.7	122.2	126.9	130.7	134.8
Food	76.0	80.0	84.5	85.2	90.4	96.1	100.5	100	109.2	110.9	113.9	116.8	119.2	121.1	123.2
Nonfood	35.3	43.6	57.9	64.2	66.8	81.4	98.3	100	109.6	119.9	128.3	140.2	151.7	160.8	169.8
Services	76.9	79.0	82.2	86.0	88.2	93.4	96.6	100	103.0	106.6	110.4	114.7	118.4	121.5	125.4
Housing and utilities	90.7	92.9	93.6	94.1	95.7	97.2	98.7	100	102.3	104.4	108.4	113.1	117.6	122.9	128.9

C-O-N-F-I-D-E-N-T-I-A-L

APPENDIX B

METHODOLOGYRevised ORR Index of Soviet Industrial Production

The statistical handbook, Soviet Industry, 19/ published in the spring of 1957, provides a considerably larger sample of physical production data for industrial products than the USSR has previously released in the postwar period. Using this extended sample as a base, the ORR estimated index of production has been recomputed. The new estimate is that Soviet industrial production for 1955 lies in the range of 165 to 175 (1950 = 100) and is somewhat lower than the former ORR estimate of 178 for 1955.

Within the ORR index the sample of products for each industry is weighted by 1955 prices, and industries and major sectors are weighted by 1955 value added. The index is designed to be comparable, insofar as data will permit, with the Federal Reserve Board value-added, weighted index of US industry.* The Soviet official index is a gross value index and hence is not comparable to the Federal Reserve Board index. The Soviet index is subject to biases of unknown magnitude arising from new product pricing and double counting.

The industries for which the production sample has been extended by the new data are machine building, chemicals, and construction materials. The revised indexes for these industries are lower than the former indexes (except in the case of paper, which formerly was included under forest products) and very much lower than the corresponding Soviet indexes (see Table 12**). The new sample is still inadequate in several respects. Production data for military end items, electronics, and the bulk of electrical machinery are missing from the handbook. Furthermore, intermediate products, including spare parts, are not reported. The machinery items for which data are given are frequently broad categories covering a considerable range of size and complexity -- for example, machine tools are divided into only 17 categories. Production data reported in terms of number of machines of broad category tend to conceal increases in size and complexity. In many kinds of machine building, such as machine tools

* Electric power, however, is in the ORR index but not in the Federal Reserve Board index.

** Table 12 follows on p. 51.

C-O-N-F-I-D-E-N-T-I-A-L

and metalforming tools, there has been a rapid increase in complexity in the USSR. Some of these increases in complexity would consist of the inclusion of an increasing number of intermediate products in final products, and hence intermediate products should be included in the index as they are in the Federal Reserve Board index for US industry.

Because of the inadequate measurement of changes in complexity in the ORR index, a range was estimated for the machinery index. The low index consists of the handbook sample plus ORR estimates of military end items, electronics, and shipbuilding. In the high index, Soviet official indexes for machine tools, metalforming tools, and tractors were substituted for the corresponding physical production samples from the handbook. The high index assumes, therefore, that the Soviet official indexes in these particular industries more nearly reflect increases in complexity.

Ranges have been similarly estimated for chemicals, ferrous metals, and forest products. In these industries the physical production sample consists primarily of raw materials or intermediate products which do not reflect increasing complexity of final products.

The revised ORR index of processed food is based on commercially processed foods data which was provided in the recent retail trade statistical handbook. 20 In previous ORR indexes the food industry was based on all food products including home processed foods. The resulting index for 1955 -- 162 -- is considerably higher than the old index -- 127. The revision was undertaken in order to make the index of Soviet food industry more comparable to the Federal Reserve Board index.

Table 12

Estimated and Official Soviet Industrial Production Indexes
1955

1950 = 100

<u>1955 Value-Added Weights</u>			
<u>Sector Weights</u>	<u>Division Weights</u>	<u>Estimated Index</u>	<u>Official Soviet Index ^a/_*</u>
Raw materials			
Electric power	6.8	187	187
Solid fuels	18.6	149	150 ^b / _/
POL	9.7	192	187 ^c / _/
Ferrous metals	14.0	169	179 ^d / _/
Nonferrous metals	7.4	197	195
Forest products	21.7	125	146
Paper	3.6	155	172
Chemicals, including synthetic rubber	7.5	165	228
Construction materials	10.7	209	229
Total raw materials	<u>100.0</u>	46.3	<u>160</u>
			160 to 172 ^e / _/
Consumer goods			
Processed food	37.6	162	160
Soft goods	62.4	157	178
Total consumer goods	<u>100.0</u>	20.8	<u>159</u>
Machinery		32.9	171 to 200 ^f / _/
Total industry	<u>100.0</u>		165 to 175

* Footnotes for Table 12 follow on p. 52.

Table 12

Estimated and Official Soviet Industrial Production Indexes
1955
(Continued)

-
- a. Coverage of categories in the Soviet index is not precisely known and hence is not fully comparable with that of the ORR index.
 - b. Coal.
 - c. Petroleum.
 - d. Includes ore extraction.
 - e. Range with complexity adjustments for chemicals, ferrous metals, and forest products.
 - f. Range with complexity adjustments.

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