Assessing Soviet Economic Performance

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Author's Comments: James Noren

The CIA documents excerpted in this section illustrate the range of CIA's coverage of economic intelligence that supported US policymakers during the Cold War. The first document, "Long-Run Soviet Economic Growth," used an innovative analytical approach to address a much-debated question in the 1950s-1960s. Soviet agriculture, the Achilles' heel of Soviet economic development, was also an ongoing focus of CIA analysis. "The New Lands Program in the USSR" suggests the depth of research devoted to this subject. It was arguably the most important initiative of the 1950s.

CIA work on Soviet military spending was necessary to research on the Soviet Gross National Product (GNP). US defense planners enthusiastically read such material, asking for disaggregated estimates like those in the third document, "Soviet Military Expenditures by Major Missions, 1958-65." Monitoring Soviet crop prospects also attracted intense interest, especially after the USSR began to buy grain after poor harvests. "The Soviet Grain Deficit" is a typical report intended for the Washington audience. Searching for the causes of the slide in economic productivity, CIA tried to find alternative relations between output and inputs of labor and capital in the USSR. "Investment and Growth in the USSR" identifies one plausible source of the problem. CIA analysts also raised questions about the impact of technology transfer on Soviet capabilities during the Cold War. "Soviet Economic and Technological Benefits from Détente" is an example of the many papers issued in response to this question.

As a warning of the Soviet Union's impending descent into economic stagnation, "Soviet Economic Problems and Prospects," issued in 1977, was a paper of first importance. Reprinted by the Joint Economic Committee of the US Congress, it set out the reasons why the Soviet economy was in trouble and why its future was so grim. In addition, CIA singled out problems in Soviet oil production as a major factor in the outlook for the economy. See the selection, "The Impending Soviet Oil Crisis." The next document "Organization and Management in the Soviet Economy: The Ceaseless Search for Panaceas," represents CIA's consistently negative appraisal of Soviet attempts at economic reform, one prong of Moscow's efforts to jump-start the Soviet economy.

CIA's involvement in heated policy issues was evident in the Reagan administration's determination to stop the Siberia-to-Western Europe gas pipeline. The Agency's unwelcome evaluation of the chances for success were set out in "Outlook for Siberia-to-Western Europe Natural Gas Pipeline," a paper typical of the numerous assessments of various proposed sanctions and embargoes. The final selection, "Gorbachev: Steering the USSR in the 1990s," described the impasse Gorbachev's economic policies reached by 1987, considered the options open to him, and concluded that he could be deposed because of failure to deliver on his promises.

31.

CIA/RR 53
(ORR Project 10.406)

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LONG-RUN SOVIET ECONOMIC GROWTH*

Conclusions

Soviet economic growth is defined as the increase in the ability of the USSR to produce goods and services and may be measured in terms of the increase in Soviet gross national product. It is determined by the quantities of the factors of production available -- land, labor, and capital -- and by the efficiency with which they are used -- technology, management, the scale of production, and other elements which can be treated only qualitatively.

It is unlikely that the gross national product of the USSR will grow at an annual average rate of 5 percent or more over the period to 1975. The most probable average annual rate of growth will be between 4.2 and 4.8 percent, depending on the Soviet policy decisions concerning the allocation of the Soviet gross national product among various consuming sectors, primarily investment, consumption, and defense. The chief deterrents to a higher rate are the problems involved in increasing the output of the agricultural sector above that projected in this report. This difficulty is illustrated by the differences in the projected levels of nonagricultural and agricultural production for 1975: whereas nonagricultural output is expected to be 170 to 260 percent greater than in 1953, agricultural output is expected to be only 60 to 80 percent greater than in 1953.

The limits of this range are set by making assumptions as to the largest and smallest probable growth in consumption and in agricultural production. Two methods are used in projecting gross national product in this report.

The above estimates are based, not upon a sample projection of the gross national product, but upon projections of the principal factors determining production. To obtain nonagricultural output, the quantity and quality of labor, the stock of capital, and the net effect of all other factors (technology, management, and so on)

* The estimates and conclusions contained in this report represent the best judgment of the responsible analyst as of 13 December 1954.

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are projected. In the case of the agricultural sector, an assumed level of output serves as a basis for estimating labor and capital requirements.

A rough comparison of the projected gross national product of the USSR and that of the US is helpful in assessing the meaning of estimates developed in this study. This comparison cannot be precise, because it involves not only all the inaccuracies of projecting both the USSR and US data but also the inaccuracies of international comparison.

The best estimate is that the Soviet gross national product will increase from $103 billion in 1953 to $290 billion (4.8 percent per year), assuming low consumption, and $250 billion (4.2 percent per year), assuming high consumption, in 1975. It is estimated that the US gross national product will increase from $350 billion in 1953 to $735 billion (3.4 percent per year in 1975). The gap (in absolute terms) between the US and Soviet gross national product is expected to increase, even though the Soviet gross national product is expected to become a larger percentage of the corresponding US value by 1975.

A basic assumption of this report is that international trade will increase only slightly and will not contribute to the growth of the USSR substantially more than it currently does. If, however, the Soviet policy makers decide to supplement the agricultural output of the USSR by imports to a significant extent, the rate of growth of the Soviet gross national product could be higher.

Another basic assumption of this report is that expenditures for defense will be geared to a continuation of the cold war. If, however, defense expenditures are less than projected, it is possible that total production in 1975 would be higher than estimated.

It also should be pointed out that the contributions to the growth of the USSR made by the Satellites have not been explicitly considered. These effects have, however, been considered implicitly to the extent that they have affected Soviet growth in the past.

This report necessarily assumes there will be no basic changes in the Soviet political system.

Finally, it should be noted that the projections of Soviet output in 1975 are limited to the extent that all economic projections

31. (continued)

over a long period of time are limited. They are based on what is known about the past developments and present conditions and what can be deduced from this information and reasonable assumptions about the future. They are limited to the extent that currently unknown future events affect the quantities which this report attempts to estimate.

CIA/RR 87
(ORR Project 20.827)

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THE NEW LANDS PROGRAM IN THE USSR*

Summary

The "new lands" program in the USSR involves great amounts of capital investment and manpower and a vast area of land. In less than 2 years, 30 million hectares,** an area 25 percent larger than the acreage sown to wheat in the US in 1955, have been brought into cultivation, and eventually 40 million hectares may be reclaimed. The new lands program has been developed without major dislocations in the Soviet economy. A large part of the necessary total investment has been made, and in the future the program will impose no major strains on the economy.

On the basis of soil and climate, the major area of the new lands program may be divided into three zones.*** The Northern Zone includes the territory between the Ural and the Altay Mountains extending from the boundary of Kazakh SSR to the bogs and forests north of the Trans-Siberian Railroad. This zone is the northern part of the Asiatic spring wheat belt. The Southern Zone, the southern part of the Asiatic spring wheat belt, extends from the northern boundary of Kazakh SSR southward into the arid steppe. The Western Zone, the northeastern part of the Asiatic spring wheat belt, is largely in the European USSR and includes the southern Ural region, the northwest Kazakh SSR, and a part of the middle Volga region. The new lands program is also operative in several other relatively small areas of virgin and long-fallow land, chiefly in the southern regions of the European USSR, East Siberia, and southern Kazakh SSR.

The soils in much of the area covered by the three major zones are suitable for the production of grain. From north to south the soils are similar to those in the prairie provinces of Canada, one of the world's greatest wheat producing regions. In the new lands area of the USSR, gray-brown soils in the north merge with black soils to the south. Farther to the south are dark chestnut soils, merging with light chestnut soils in the extreme south.

* The estimates and conclusions contained in this report represent the best judgment of ORR as of 1 November 1956.

** One hectare equals 2.471 acres; 30 million hectares, therefore, equal about 74 million acres.

*** See Figure 1, following p. 2, below.

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32. (continued)

Virtually all of the more suitable soils in the new lands probably were under cultivation in 1953. There had been unsuccessful attempts at farming, and large acreages were abandoned because of excessive salinity and alkalinity. Much of the land reclaimed in 1955, when 30 million hectares were plowed for planting in 1956, was very poor.

More important than the poor quality of much of the soil in the new lands are the hazards of climate, particularly in the Southern Zone, where a major part of the reclamation is taking place. Rainfall is the most critical factor. In the Northern Zone, average rainfall is about the same as that in the Canadian spring wheat belt. Annual rainfall in the Southern Zone averages less than 12 inches, a minimum below which the cultivation of crops is hazardous. The absence of mountain barriers between the three major zones and the Central Asian deserts to the south and the Arctic to the north exposes the new lands to the drying desert winds, which may cause severe droughts, and to the Arctic winds, which may bring snow as early as August.

The new lands area of the USSR is a spring crop region in which grain -- mainly wheat -- is the major crop. Available data do not permit an estimate of the acreages and yields of specific grain crops in the new lands, but it may be assumed that yields of wheat are indicative, within a reasonable margin of error, of the yields of all grain crops.

On the basis of a 16-year series of yield data for wheat grown in the areas now affected by the new lands program, a long-term average yield, weighted by the distribution of acreages in the new lands in 1954, has been estimated. The estimate indicates that with an average distribution similar to that of 1954 an average yield of 6.6 centners* per hectare may be expected in the new lands. On the basis of the 1955 distribution of acreage, however, the long-term average yield which may be expected in the new lands is slightly lower, 6.2 centners per hectare; a larger percentage of the new lands brought into cultivation in 1955 was in the Southern and Western Zones, which have poorer soils and climate.

* One centner equals 220.46 pounds. A yield of 6.6 centners per hectare is equal to a yield of about 588 pounds -- 9.8 bushels -- per acre.

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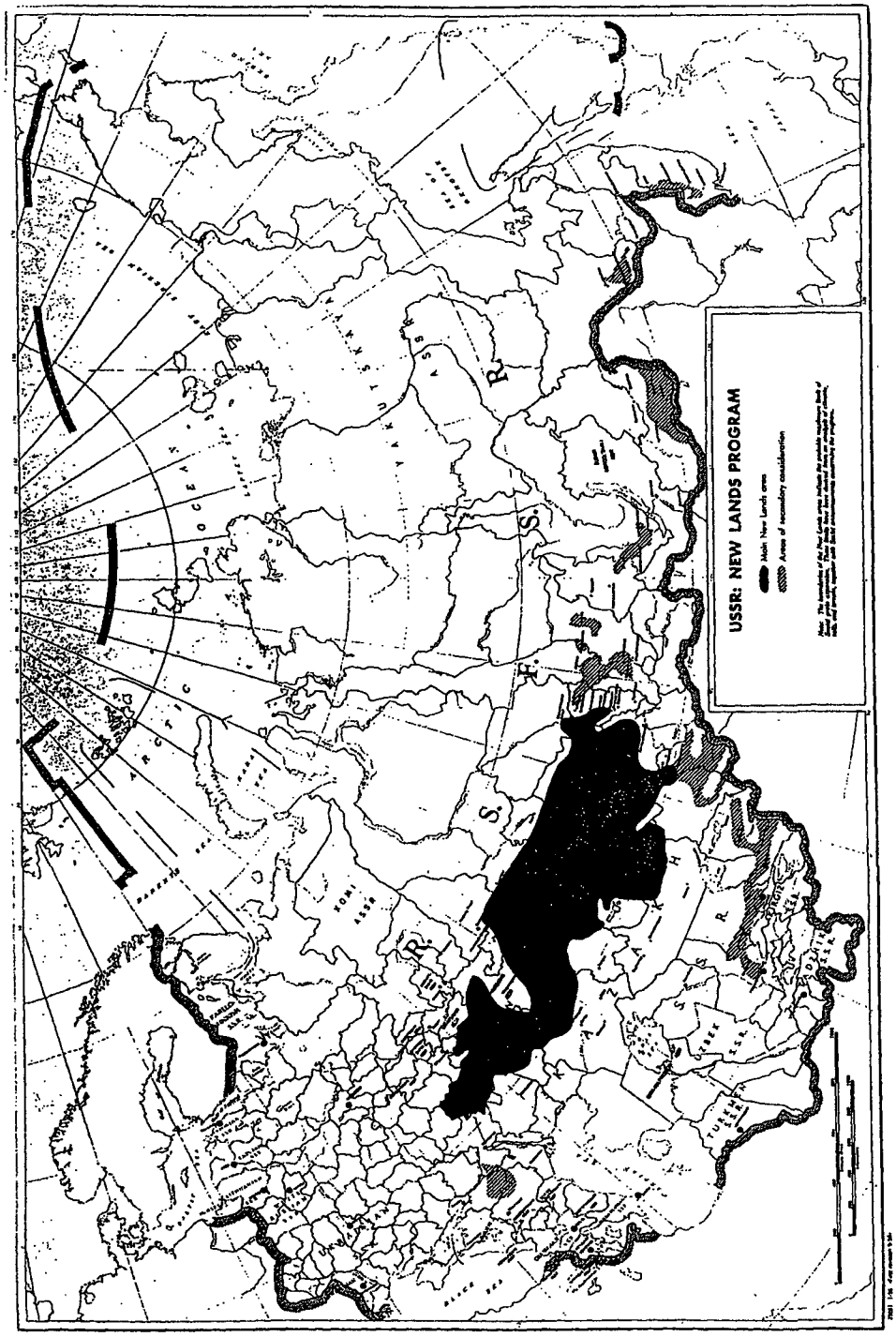

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Wide annual variability in yields is to be expected in the new lands, particularly in the Southern and Western Zones, because of the extreme fluctuation from year to year in the amount and distribution of rainfall. This variability in yields is well illustrated by the yields obtained during the first 2 years of the program.

Almost all of the 4.3 million hectares of new land sown in 1954 was sown to wheat. Growing conditions were unusually favorable in 1954, and there was a very good grain crop. The yield is estimated at 10.5 centners per hectare, 60 percent above the long-term average yield of 6.6 centners per hectare and about 35 percent above the estimated 1954 average yield per hectare in the USSR as a whole. The average yield of 10.5 centners per hectare, when applied to the 4.3 million hectares sown to grain in the new lands in 1954, indicates gross production of about 4.5 million metric tons,* about 5 percent of the estimated total Soviet production in 1954.

During the 1955 crop year, most of the new lands suffered from a drought, and the estimated yield of 4.3 centners per hectare was less than one-half of the yield obtained in the extraordinarily good year of 1954. The yield in 1955 is about 70 percent of the long-term average yield of 6.2 centners per hectare and is about 55 percent of the estimated 1955 average yield per hectare in the USSR as a whole.

When applied to the 18.5 million hectares sown to grain in the new lands in 1955, the average yield of 4.3 centners per hectare indicates an estimated gross production of almost 8 million tons, about 8 percent of the estimated total Soviet production in 1955. Because of the much larger area sown in 1955, production of grain in the new lands in that year -- in spite of unfavorable weather -- was substantially greater than in 1954.

Soviet planners know that continued productivity of the new lands depends on a system of crop rotation, including fallow. Present plans call for the introduction of rotation systems after an initial period of 2 to 6 years of continuous cultivation. In the majority of these systems, grain crops in any one year will occupy three-fourths of the land in rotation, and fallow and perennial grasses will occupy the remaining one-fourth.

* Tonnages throughout this report are given in metric tons.

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The proposed Soviet systems of crop rotation appear to include an exceptionally high proportion of land sown to grain. In Canadian practice, only one-third to one-half of the land in rotation is sown to grain, and the remainder is fallow or sown to perennial grasses. Canadian experience indicates that the Soviet systems may deplete the soil of the new lands if abnormally heavy cropping to grain is continued for many years. It is possible, however, that Soviet agricultural planners may not press exploitation of the soil to the point of depletion before they modify the proposed systems of rotation; there is evidence that the systems of rotation to be used have not been determined finally.

Official Soviet statements about expected successes in the new lands seem to be unrealistically optimistic. The statements about expected production, for example, imply an average yield over a period of years of 10 to 11 centners per hectare, a yield which is about one-third higher than the estimated 1950-55 average yield for the USSR as a whole. On the basis of the historical yield series for the area, 6 centners per hectare would be a more reasonable estimate of the long-term average yield that can be expected in the new lands.

Khrushchev has stated that he expects the annual average production of the new lands to be not less than 33 million tons (implying a yield of 11 centners per hectare on an area of 30 million hectares). Canadian experience in crop rotation indicates that to have 30 million hectares continuously sown to grain requires that there be 60 million to 90 million hectares in the rotation system, but no program of acreage expansion of this magnitude has been implied by Soviet officials. At the end of 1955, only about 30 million hectares had been reclaimed.

Recent Soviet statements provide a basis for a more realistic estimate of potential production in the new lands. These statements indicate that the current intention is to reclaim about 40 million hectares. Experience in Canada shows that of these 40 million hectares, 13 million to 20 million could be sown to grain. With a yield of 6 centners per hectare, an average production from the new lands of 8 million to 12 million tons could be expected. This production would represent about 10 to 15 percent of the estimated average production in the USSR for the period for 1950 through 1953, the 4-year period before the inauguration of the new lands program. A gross production of 8 million to 12 million tons of grain -- after deduction for seed and waste -- indicates a net availability for direct human consumption of 6 million to 9 million tons. This quantity would supply the grain requirements of 30 million to 40 million people.

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A part of the new lands program is the development of the livestock industry. The Soviet government plans to use the large areas of pasture and the increased production of straw, chaff, hay, and corn as food for great flocks and herds on each of the newly established state grain farms and state livestock farms and on the expanded collective farms. Each new state grain farm is to have between 2,500 and 5,000 head of cattle, up to 15,000 head of sheep, and 1,000 head of swine. As of 1 October 1955 the new state farms of Kazakh SSR, almost entirely within the Southern Zone of the new lands, had 89,500 head of cattle, 243,500 head of sheep, and "many pigs." These figures represent an average of about 265 head of cattle and 722 head of sheep per new state farm. Although the stocking of state grain farms has been progressing, as of 1 October 1955 livestock numbers were far short of ultimate goals.

The immediate source of livestock for stocking new state farms is apparently the privately owned livestock of collective farm households and the herds of existing livestock farms. As private ownership in animal husbandry decreases, state farms may replace collective farms as the centers of animal husbandry in the new lands. The completion of this transition, however, will depend on great improvement in the food base and heavy investment in water supplies and in shelter -- requirements which it will take many years to complete.

The new lands program is being implemented with the participation of about 10,660 collective farms, 1,740 machine tractor stations (MTS's), and an undetermined number of state farms, including 425 new state farms organized during 1954-55. In the initial phase of the new lands program the larger share of the reclamation tasks fell to existing MTS's and collective farms, which could most easily exploit the readily accessible land near them. These farm units have been relatively more important in the RSFSR, where 1,457 MTS's and about 8,960 collective farms are engaged in the program.

In establishing the 425 new state farms for the exploitation of virgin and long-fallow land in the remote areas of the new lands the Soviet authorities not only have been influenced by the suitability of the land for large-scale grain farming and by the inadequate labor resources in the region but also have been motivated by the desire to expand the state sector of agriculture. Their success in approaching

this goal is indicated by the doubling of the grain acreages of state farms in the USSR between 1954 and 1956 as a result of the disproportionately large role assigned to state farms in the new lands program. The creation of new state farms in the isolated areas of the new lands also assured the channeling of a larger share of agricultural products through the state distribution system.

Agriculture in the new lands is to be highly mechanized. Initial requirements for machinery have been met by heavy allocations of agricultural machinery to the new lands at the expense of deliveries to established agricultural areas and by loans of machinery from those areas. Loans of equipment were particularly important in facilitating the harvesting and delivery of grain to points of concentration.

The high priority assigned to the new lands is shown by the fact that deliveries of tractors to the established agricultural areas in 1954 dropped to one-half of the annual average delivery in the 3 preceding years. In 1955, however, deliveries of tractors to the established areas increased to 85 percent of this 3-year average in spite of the continuing priority accorded the new lands. Present plans call for the delivery to state farms in Kazakh SSR during 1956 of more than two-thirds as many tractors and combines as were delivered to them during 1954 and 1955.

The major effect of deliveries of agricultural machinery to the new lands probably has been a delay in the reequipment of agriculture in the established areas, particularly the grain areas, and therefore to impose temporarily a greater workload on the existing machinery park in those areas. After 1956 the mechanization problem of the new lands program will be largely one of replacement.

The tractors, combines, trucks, and other farm machinery operating in the new lands require large quantities of diesel fuel, gasoline, and lubricants. The percentage of the total Soviet production of petroleum products required for the exploitation of the new lands in 1955 is estimated to have been as follows: diesel fuel, 4.8 percent; gasoline, 4.8 percent; and lubricants, 1.9 percent. Although these quantities of petroleum products are large, they do not impose a serious strain on the resources of the USSR.

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The agricultural manpower requirements of the new lands program are estimated to be 1.33 million workers, about 2.4 percent of the total agricultural labor force in the USSR. In addition, about 400,000 workers are required for the construction and maintenance of ancillary service facilities associated with the program. The manpower requirements of the new lands, therefore, are relatively small. In fulfilling these requirements, however, some specialists and skilled workers have been recruited from industry, a reversal of the usual procedure in the USSR.

Barring major changes in the new lands acreage goals the program will not be a continuing drain on the national supply of manpower, and once the initial requirements for manpower are met, maintenance of the labor force should not be a major problem.

Announced and estimated requirements for carrying out the new lands program include housing and communal facilities for about 2.8 million persons; almost 2,300 kilometers of rail line (to be completed in 1957); more than 6,000 kilometers of motor roads; granary capacity of more than 773,000 tons; and nonresidential farm buildings for 425 new state farms, new and expanded MTS's, and expanded collective farms.

It is estimated that the total cost of state construction required for the new lands program in 1954-56 is about 13 billion rubles. In addition, the cost of construction of collective farms is estimated to be 5 billion to 15 billion rubles and the cost of construction of private housing to be about 5 billion rubles.

Although expenditures for construction have been large in the new lands, they do not appear to have had a serious impact on construction in other sectors of the Soviet economy. There have been many lags in agricultural construction, and a shortage of storage facilities and elevators caused some losses of grain after the harvest of 1954. It does not appear, however, that the underfulfillment of construction plans has seriously hindered the new lands program.

At the beginning of the new lands program in 1954 the new lands, particularly the Southern Zone, had very few railroads, and most motor roads were not suited to year-round use. It was inevitable that there would be serious transport problems until the transportation system was expanded and improved. In 1954 a high volume of construction materials, fuel, and machines congested the rail system, and in September

and October, outbound traffic was snarled by the increased load resulting from the very large grain crop. During 1955 the transportation problems were not so severe, because of the opening for temporary service of several new rail lines in the new lands.

The present program of transportation construction appears to be adequate to meet the eventual needs of the new lands program. Although there were confusion and delays during the harvest season of 1956, the transportation system probably will be adequate in the future.

The new lands program has increased allocations from the Soviet state budget to the agricultural sector of the economy, but there have been no consequent reductions in the allocations to other major sectors. In relation to total allocations to agriculture and to total state investment the budget expenditures on the new lands appear to be large but not excessive. The most costly year of the new lands program probably was 1955, when the planned allocations to the new lands were approximately 20 percent of total planned allocations to agriculture. In the same year, investment in the new lands probably was less than 5 percent of total planned state investment (in terms of fixed capital) in the national economy and less than 40 percent of the 1955 total state investment in agriculture.

The development of the new lands program exemplifies some of the major strengths and weaknesses of the Soviet system. Strength is indicated by the speed with which resources were marshalled and the initial objectives attained. An important weakness of the new lands program is that it appears to have been initiated and developed without a sound preliminary analysis of the best ways to proceed and without a realistic estimate of the production of grain that could be expected. Suitable systems of crop rotation and the total area that is to be reclaimed apparently have not yet been determined.

Khrushchev's expectation of obtaining 33 million tons of grain annually cannot be realized. Over a long period the new lands probably will not yield much more than one-third of this amount. The evidence indicates that an annual yield of only 8 million to 12 million tons, 10 to 15 percent of the annual average production of grain in the USSR in 1950-53, can be expected.

Speed was apparently of great importance to the USSR in the development of the new lands. The program was initiated and implemented very rapidly. Although the USSR will need more grain in the future to feed an expanded population and although an increase in agricultural production is necessary if levels of living are to rise substantially, there was no immediate food crisis in 1954, and the haste of the program cannot be explained on economic grounds. The new lands program was dramatic and, with the probability of initial success, was well designed to win popular approval. The decision to embark on the program may have been influenced greatly by the uneasy internal Soviet political situation in 1954.

The production of grain in the new lands is dependent on the weather and other natural factors, and it may fluctuate widely. In any one year, production may be considerably above or below average. In order to maintain yields, the USSR will have to develop systems of crop rotation more suitable than those that have been discussed publicly. If the stated intention to sow three-fourths of the area to grain each year is put into practice, declining yields and large-scale wind erosion may eventually result.

Although the new lands can produce, on a long-term basis, only about one-third of the target quantity mentioned by Khrushchev, it is likely that the program will not be abandoned unless production falls to a very low level.

I. Introduction.

A. General.

In spite of the continual, optimistic claims of the USSR that socialized agriculture is the most advanced type of agriculture in the world, the Soviet government, since the inception of collectivization in 1928, has been unable to provide a satisfactory diet for an increasing population. At times, especially in the early years of collectivization and during World War II, the USSR has even been plagued by severe shortages of food.

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SOVIET MILITARY EXPENDITURES BY MAJOR MISSIONS*
1958-65

Summary and Conclusions

Allocation of the estimated military expenditures of the USSR to the four major missions -- strategic attack, air defense, ground, and naval** -- in accordance with their requirements suggests that important changes in emphasis are occurring within the Soviet armed forces.*** The share of mission outlays (that is, the summation of all the outlays that are directly allocable to the missions) that is absorbed by the ground mission is expected to decline from 51 percent to 36 percent between 1958 and 1965.† During the same period the share for the air defense mission is expected to rise from 22 percent to 30 percent. The share allotted to the strategic attack mission also will increase, but for a limited time only -- it is expected to climb from 11 percent in 1958 to 25 percent in 1962 and then to fall back to 18 percent in 1965. The share represented by the naval mission is expected to decline only modestly, but it is estimated that by 1959-60 it was smaller than the shares going to the other missions. In 1958 this share claimed 17 percent of total mission outlays but during 1959-65 is expected to claim only 14 to 16 percent.

Total outlays for Soviet military programs during 1958-65 for these four missions, for unallocable overhead for the four missions -- command and support -- and a residual have been allocated as follows:

* The estimates and conclusions in this report represent the best judgment of this Office as of 15 March 1961.

** For definitions of the missions, see I, B, p. 6, below, and Appendix B.

*** It should be noted that the likelihood of error in the allocation of expenditures indicated in the discussion that follows is greater for 1964-65. Outlays for all missile programs could not be specified beyond 1963 in sufficient detail to assign them to individual missions. The missions most likely to be understated because of such unallocable missile expenditures (which are consigned to the residual) are air defense and strategic attack. Conceivably the decline in the later years of the period in the share absorbed by the strategic attack mission would be overcome if these missile expenditures could be allocated.

† All aggregates and percentages appearing in this report are based on unrounded figures.

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	Ground Mission	Air Defense Mission	Strategic Attack Mission	Naval Mission	Command and Support	Residual
Outlays (billion 1955 rubles*)	302	176	139	111	111	363
Percent of total	25	15	12	9	9	30

The large size of the residual is caused primarily by the inability to allocate 239 billion rubles of expenditure for research and development for 1958-65 and 28 billion rubles for certain guided missile programs after 1962.

An analysis of the expenditures presented in the chart, Figure 1,** also shows the striking reallocation of expenditures within the mission structure. The most dramatic examples are the 34-percent decline in expenditures for the ground mission and the 127-percent increase in outlays for the strategic attack mission that are expected to occur from 1958 through 1962. Expenditures on air defense are expected to climb erratically during 1958-65, whereas expenditures for the naval mission are expected to fall slightly. As a result of these changes, by 1965 the ground mission no longer will hold its historically dominating position in the structure of Soviet military expenditures.

These developments indicate the effect that changing weapons technology may be having on Soviet military planning. Increasing expenditures on strategic attack reflect the replacement of the manned bomber by long-range missiles and missile-launching submarines. Similarly the substitution of missiles and highly sophisticated warning and control systems for fighter aircraft and antiaircraft artillery in air defense will require a growing share of total mission expenditures. Within the naval mission the introduction of missile-launching destroyers and nuclear submarines (torpedo) will keep outlays for this mission from falling too drastically.

As is demonstrated in the chart, Figure 2,** there also are changes in the composition of the expenditures. In all missions except strategic attack, required outlays for personnel are expected to decline,

* All expenditures expressed in this report are in terms of 1 July 1955 rubles. From 1958 to 1965 the weighted ruble/dollar ratio for defense expenditures using Soviet weights varies between 3.6 rubles to US $1 and 4.1 rubles to US $1.

** Following p. 2.

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whereas expenditures for operation and maintenance will tend to increase. The changes in relative standing among the missions reinforce these trends in that the ground mission demands proportionately higher outlays for personnel and proportionately lower outlays for operation and maintenance than do the air defense and strategic attack missions. Increasing expenditures for nuclear weapons will offset a declining level of procurement for other categories of equipment.

Finally, when the programs and activities underlying the missions are expressed in 1959 US dollars (that is, what they would cost if purchased in the US at prevailing prices of 1959), they have an annual value of roughly $30 billion during 1958-61 and some $26 billion annually thereafter. This pattern reflects, in part, the estimated change in the composition of Soviet military expenditures toward areas that would be relatively less expensive in equivalent dollar terms -- for example, nuclear weapons as opposed to manpower. Total Soviet military programs and activities, when similarly expressed in US dollars, remain somewhat more constant, at an annual level of roughly $40 billion.

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CENTRAL INTELLIGENCE AGENCY
Directorate of Intelligence
March 1970

INTELLIGENCE REPORT

Investment And Growth In The USSR

Introduction

One of the principal features of Soviet economic development has been the government's policy of investing the maximum possible amount of the national product. This report explores the possibility that this traditional investment policy is no longer capable of providing the rate of economic growth desired by the Soviet leadership. After World War II, this policy for a time met with much the same sort of success in promoting high rates of economic growth as it had before the war. In the process, however, the investment rate (investment in buildings and equipment expressed as a share of gross national product) increased from 12% in 1950 to 23% in 1960. Since 1960, it has grown more slowly -- to about 26% in 1969.

The steady rise in the investment rate during the 1950s brought about a very rapid increase in the stock of capital in the economy. At the same time, output grew almost as rapidly, so the ratio of capital to output remained at a fairly low level. According to Simon Kuznets, a leading student of comparative economic development, "... the distinctive feature of the USSR record is that so much capital formation was possible without an increase in the capital-output ratio to uneconomically high levels."* He was referring to growth prior to 1958. The USSR now seems to have lost that distinction.

* Economic Trends in the Soviet Union, *Ed. A. Bergson and Simon Kuznets, 1963, p. 357.*

Note: This report was produced solely by CIA. It was prepared by the Office of Economic Research.

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In the 1960s the growth of output of industry, construction, and national income, as announced by the Soviet government, slowed dramatically. The growth in capital stock also declined, but not as much as the growth of output. The resulting fall in the ratio of output to capital was noted by Soviet politicians and technicians alike. Such a decline in the return on capital investment threatened the basic Soviet strategy of economic development. The economic difficulties of this period contributed to Khrushchev's fall from power in 1964 and led to the promulgation of Kosygin's reforms in 1965. At first, Khrushchev's successors tended to treat the decline in the output/capital ratio as a temporary phenomenon resulting from Khrushchev's bad management. More recently, they have reluctantly recognized that a turning point has been reached in the method of achieving economic growth.*

The role of investment and capital in Soviet economic growth is explored in this report by means of an aggregate production function. A production function is a relation between inputs -- usually capital and labor -- and the resulting output, or production. Production functions of one kind or another are often used for medium-range economic forecasting, but in previous work

* *The gist of the leadership's remarks to the December (1969) plenary meeting of the CPSU Central Committee has been reported as follows: "The definite reasons for our difficulties are essentially connected with the fact that we have entered a stage of development that no longer permits us to work in the old manner but demands new methods and new solutions ... . The raising of the effectiveness of social production has indeed become the key problem, primarily because the main factors in our economic growth have changed. If we were previously able to develop the national economy primarily by quantitative factors, i.e., by increasing the number of workers and by high rates of accumulation of capital investments, then henceforth we must count primarily on qualitative factors of economic growth, on raising the effectiveness, the intensification of the national economy."* (Pravda, *13 January 1970, p. 1.)*

on the USSR both the general form and the precise characteristics of the relationship between output and inputs have been usually assumed or specified by analogy with Western practice.

In this report a relatively new form of production function is fitted statistically to the Soviet postwar experience. This function -- known as the Arrow-Chenery-Minhas-Solow function after some of the economists who first proposed it -- has the characteristic of allowing for rapidly diminishing returns to capital. This function is compared with production functions previously used for forecasting Soviet economic growth. The various functions are then used as a basis for discussion of the following questions:

a. What return on investment can be expected in the USSR in the coming years?

b. Can the USSR rely on an upswing in the growth of investment -- perhaps at the expense of military expenditures -- to restore the rates of economic growth achieved in the 1950s (or mid-1960s)?

The production functions in this report are based on the past performance of the Soviet economic system -- in particular, on the past efficiency of its economic organization and on the past rate of adoption of new technology. If the USSR were to be more successful than in the past in its efforts to reform economic management or to expedite the process of introducing new technology, its performance would exceed that which the production functions project. Finally, it should be noted that the various future trends in investment and military expenditures assumed in the report are not predictions but are projections to illustrate the effects of possible alternative programs.

The production functions cover both the non-agricultural non-service sectors of the economy as a whole and industry alone. Agriculture is excluded because year-to-year changes in production

34. (continued)

are affected so much by variation in weather as well as in the amount of land cultivated. Services such as education, health, and housing are excluded because output in these sectors is measured by the amount of inputs of either labor or capital; no separate measure of output exists.

The statistical basis for the production functions described in this report is found in CIA estimates of GNP originating in the non-agricultural and non-service sectors of the Soviet economy (or, alternatively, in industry) in 1950-68. The data on labor inputs (expressed in man-hours) and on capital services (reflecting annual average fixed capital stock) are derived almost entirely from published Soviet sources.

Conclusions

43. The finding of this report is that Soviet economic growth since 1950 is best described by a production function in which strongly diminishing returns to new investment occur. This function, known as the ACMS function, fits the growth of the Soviet industrial and non-agricultural non-service sectors better than a Cobb-Douglas production function of the kind formerly used. In trying to achieve the highest possible volume of investment, Soviet economic policy has forced the capital-labor ratio continuously upward, and this strategy accentuates the effect of diminishing returns. Under these conditions, the ACMS production function estimated for the USSR -- with its relatively low substitutability of capital for labor -- generates a gain in output per unit increase in capital stock that falls off sharply over time. This pattern of growth accurately matches the observed Soviet slowdown since the 1950s.

44. If the relation of output to inputs in the USSR is of the character described by the ACMS function, the situation confronting the Soviet leadership is indeed discouraging. A continuation of the growth of man-hours and capital

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stock at the same rate as in the 1960s would result in a projected average annual rate of growth of output in the non-agricultural non-service sector of only 4.0% a year during 1969-80 -- far less than the 7.0% a year achieved in 1961-68 or the 8.6% in 1951-68. In a turnabout from its earlier economic history, the USSR would have to deal with a series of planning periods in which the growth of the labor force -- not the growth of capital stock -- is the real constraint on the rate of growth of output.

45. Should returns to investment -- or what amounts to the same thing, the substitutability of capital for labor -- actually be somewhat higher than the value projected by the ACMS function, the prospects would be brighter. Nevertheless, diminishing returns to new investment would be a serious problem for the leadership over a wide range of plausible functions. Studies of Western economies have found the substitutability of capital for labor to be lower than that inherent in the Cobb-Douglas production function, so a like finding for the USSR is credible.

46. Given a diminishing rate of growth of output with respect to capital, a transfer of a billion rubles from other end uses to investment was found to have a smaller and smaller effect on growth over time. This would be true for a simple transfer of funds from defense to investment. But high-quality resources, particularly scientific and technical manpower, now employed in defense might have a more than proportional effect on growth. Even so, it is doubtful if the potential of these resources could be fully realized without some drastic shake-up in the management of civilian R&D and investment.

47. The implications of such strongly diminishing returns to new investment for Soviet policy are pointed. Having assembled a huge stock of capital, the USSR needs to adopt a different strategy for growth. According to Simon Kuznets,

> *Modern economic growth is distinguished by the fact that the rate of rise in per capita product*

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was due primarily to improvements in quality, not quantity of inputs -- essentially to greater efficiency -- traceable to increases in useful knowledge and better institutional arrangement for its utilization.*

48. A change of priorities favoring a higher rate of capital formation will not insure even a continuation of present rates of economic growth. While the USSR recognizes that it is behind the West technologically and that it is not closing the gap, the policies necessary to spur technological progress are not obvious. The discussion above suggests that the USSR will have to choose between accepting a lower (and possibly still declining) rate of growth and attempting to improve the managerial efficiency of the system on a broad front. The dilemma for Soviet leaders is that no one has suggested a sure-fire program of reform that will spur economic progress and also insure the degree of central control that the leadership considers to be essential.

* *Modern Economic Growth -- Rate, Structure, Spread, 1966, p. 491.*

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February 1974

Soviet Economic and Technological Benefits from Detente

US-Soviet detente has already brought a succession of economic and technological benefits to the USSR: grain to offset a crop failure, access to technology and equipment previously denied, and long-term credits to finance imports. If detente continues, these gains will accumulate. Nevertheless, overall Soviet economic growth is unlikely to be affected appreciably. Machinery imports from the United States will be small relative to total Soviet investment, and the USSR will continue to have problems in assimilating new technology. The USSR, moreover, has alternative sources of goods and technology if US-Soviet relations sour. Moscow could benefit substantially, however, if it is able to acquire key military-related technology under the umbrella of detente.

The size and terms of the grain purchases from the United States undoubtedly were influenced by the detente atmosphere. The prices paid for the grain were favorable, and Commodity Credit Corporation credits helped the USSR at a time when it was incurring its largest hard currency deficit in history. The US-Soviet maritime agreement also saved the USSR hard currency, as the USSR was able to move several million metric tons of grain on its own bottoms rather than on third-country ships.

Under detente, export controls were relaxed, and some highly prized US equipment and technology became available to the USSR for the first time. Third-generation computers and components and equipment for their manufacture were high on the Soviet shopping list. If science and technology agreements just signed with US computer firms are implemented, Moscow could modernize its computer industry and thus boost productivity in both military and civilian industry. If negotiations for advanced semiconductor production are successful, the Soviets also could be helped in developing complex electronics systems and instrumentation for advanced weapons.

Heavy industry has also received technological aid from the United States. For the Kama truck complex, the Soviets have been able to buy US equipment and technology for the most advanced foundry in the world as well as other equipment not available elsewhere. US technology probably can also help to alleviate the many serious problems confronting Soviet oil and gas industries, particularly exploration and drilling in permafrost and offshore.

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To a substantial degree, these machinery purchases -- like the grain imports – have been facilitated by US long-term credits, both Eximbank and private. The terms of the Eximbank credits are comparable with or better than those offered in Western Europe and Japan, contributing to the already-existing world competition in promoting exports to the USSR.

US-Soviet trade in technology still has a large potential for growth. Cooperative ventures with US companies for the development of Soviet resources offer important advantages to the USSR. US companies are able to provide the USSR with advanced equipment, technology, and know-how to carry out the large internal development projects currently scheduled. Equally important, the Soviets need to tap US financial markets for government-backed credits if the massive Soviet imports needed for such projects are to be financed at reasonable interest rates.

-- So far in the detente period, the USSR has obtained US technology mainly through the trade channel. At the same time, however, a network of officially sponsored government-to-government bilateral agreements has been built up which could provide the Soviet economy with a good deal of US technology on an exchange basis. The US-USSR Science and Technology Agreement has led to the conclusion of more than 20 agreements between Soviet agencies and private firms. Most of the agreements call for general cooperation, joint research and development, and exchanges of delegations, information, processes, know-how, and licenses. Most agreements are also in high-technology industries of prime interest to the USSR such as electronics, chemicals, energy, and construction.

The growing imports of machinery and equipment together with cooperative ventures and bilateral agreements will transfer a substantial amount of Western technology to the USSR – whether in the form of informal (and sometimes inadvertent) disclosure of know-how, exchanges of technical data, or finished products. But the ultimate economic effect of technological transfer through either machinery imports or informal contacts and bilateral exchanges depends on how rapidly the technology is assimilated. Soviet R&D and economic administration have been weakest in carrying technology from research through the development and testing stages into production. Many of the reforms in economic administration, science, and education in the past decade attempted to deal with just this problem, but the reforms seem to have petered out. The Soviet economy must do better in this area if imports of US technology are to have a substantial effect.

Other factors will also reduce the impact of US-Soviet trade and technological relations on the USSR. First of all, US leverage is limited because the USSR can go elsewhere for credits and roughly equivalent machinery and technology, except in a few sectors or for a few giant projects. Second, the scale of such relations -- although increasing -- will remain small relative to total production or trade. For example, imported US equipment will be equal to no more than 1% of the total value of equipment scheduled to be installed in Soviet industry in 1971-75.

The effect on military capabilities is another matter. Some US technology could help the Soviets considerably in developing new weapons, especially in modernizing their strategic weapons systems. Although thus far the trade, contacts, and technical agreements associated with two years of detente have not transferred discernible amounts of military technology, the changes in US-Soviet relations under detente have the potential to upgrade Soviet military capabilities. While continuing their efforts to acquire such technology by espionage and theft and by purchase from other countries who evade COCOM controls, the Soviets will attempt to acquire military-related technology directly from the United States by opening up new channels of transfer and widening existing channels. Whether the full potential of transfer is realized depends in part on the care with which US firms, scientists, engineers, and technicians treat the developing contacts. In this regard, the guidelines set and administered by the US Government will be influential in determining private attitudes and decisive in limiting the transfer of military-related technology.

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THE SOVIET GRAIN DEFICIT

Principal Findings

Our current estimate of Soviet grain production for FY 1976 of 170 million tons falls about 58 million tons short of requirements.

The USSR has so far purchased approximately 16 million tons of foreign grain in FY 76. In addition, Moscow undoubtedly will draw down grain stocks which we believe do not exceed 10-15 million tons and may be considerably less. These two factors, taken together narrow the difference between available supply and requirements to a minimum of 27 million tons.

The Soviets presumably will have to take a combination of unpalatable steps: (a) negotiate for further large amounts of grain from the United States -- the only large supplier in sight; (b) import additional quantities of soybeans from the United States and Brazil; (c) cut livestock feed rations to the 1972 level while maintaining livestock numbers, saving up to 13 million tons; and (d) slaughter additional livestock (a 5% reduction in herds would save about 6 million tons).

Because of the continuing high priority given to increasing meat production, the latter two options will be taken as a last resort.

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36. (continued)

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Production and Requirements

Soviet grain requirements this year are expected to far exceed supply. Direct grain needs are estimated to be about 196 million metric tons. In addition, due to unusually large losses this year of hay and other forage crops -- normally supplying about two-thirds of the USSR's livestock feed* -- at least 11 1/2 million more tons of grain may be required to feed livestock.** The lost forage added to the normal grain requirements brings 1975/76 total grain needs to roughly 208 million tons. (See Table)

The quantity of grain required, however, cannot be directly balanced with the estimated gross output. The USSR reports grain production on a "bunker" weight basis that is, as the grain comes from the combine before preliminary cleaning and drying is done*** and before handling and transportation losses occur. At the same

* Important forage crops include silage (12% of total feed units in 1970, the year of most recent data), green chop (9%), potatoes and feed roots (3%), hay (10%), straw (6%), and pasture (22%).

** Since the nutritive content (or "feed-unit" value) varies by type of grain, the conversion from forage into grain equivalent depends on the type of grain available for feeding. Because corn is the most likely feed grain to be imported we have expressed the forage crop shortfall in "corn equivalent." The calculation is based on hay and silage losses only. It does not include an estimate of possible loss of pasture feed.

*** Bunker weight includes excess moisture, trash, dirt, weed seeds and grain admixtures, all of which are reduced to acceptable standards in several stages from farm to user.

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36. (continued)

time, uses shown in the table are given on a cleaned and standardized basis. Therefore, to be comparable, gross production must be discounted to exclude waste and losses.

Although the discount varies from year to year, evidence indicates that grain production -- as measured in standard condition -- has been from 4% to 12% less than reported during 1961-70. The average exaggeration for the 10-year period has been about 8%. In addition, roughly 3% of the reported production is lost in handling and transportation.

If our current production estimate of 170 million tons is realized, and if we have correctly estimated (1) normal requirements, (2) "losses" caused by exaggerated production data and in handling, and (3) the possible grain deficit caused by forage losses, the total gap will be 58 million tons (208 million m.t. minus 150 million m.t.) as shown in the table.*

So far, during FY 76 the USSR has contracted for about 16 million tons of foreign grain. In addition,

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* Another way to look at this adjustment is the following: a Soviet grain requirement of 208 million tons would be covered by a grain production, as reported by the Soviets, of 233 million tons. The resulting deficit of 63 million tons is reduced to 58 million tons when adjusted for losses. The 150 million tons of usable grain from a gross production of 170 million tons is derived by deducting 58 million tons from the total requirements of 208 million tons. Because of rounding, this total is slightly below the 151 million tons derived by deducting 11% (19 million tons) from a gross production of 170 million tons.

USSR: Estimated Production and Requirements of Grain

Million Metric Tons

Fiscal Year	Estimated Production (1)	Waste and Losses a/ (2)	Requirements						Deficit
			Total (3)	Feed (4)	Food b/ (5)	Seed (6)	Industrial (7)	Export (8)	
1975/76	170	19	208	115 c/	60	27	3	3	58 d/

a. Waste and loss rate of 11% applied to production. This includes an estimated 3% handling loss factor and an estimated 8% waste factor resulting from excess moisture and extraneous matter included in the bunker weight measurement of grain (see text). The average exaggeration for the period 1961-70 came to about 8%.
b. Our estimates of the quantity of grain required for food are based on production data for flour and groats.
c. Including an allowance of 11-1/2 million tons of corn equivalent for losses of forage crops.
d. This deficit of 58 million tons is derived by "inflating" the total requirements of 208 million tons to a total of 233 million tons, the amount of grain required to be reported in official Soviet terms (see text) -- 208 divided by .89 -- and subtracting the gross production of 170 million tons (column 1). Because of rounding, a nominal deficit of 57 million tons is obtained by subtracting the net availability of 151 million tons (gross production - column 1 - minus waste and losses - column 2) from requirement of 208 million tons (column 3).

36. (continued)

the Soviets undoubtedly will draw on its stocks, which we believe do not exceed 10 to 15 million tons.* This would narrow the gap between expected current supply (expected production net of losses and waste, plus current purchases of 16 million tons, plus the use of 15 million tons of stocks) and requirements to 27 million tons.

This estimate of the remaining gap between grain requirements and production is more likely to be too low than too high.

- An unofficial Soviet spokesman has admitted publicly that grain production would be "as low as in 1972," when it totalled 168 million tons. This suggests that production is expected to be no higher than 170 million tons, but could be lower.
- Our estimate of current requirements is conservative. It allows for only a moderate increase in livestock feed supplies considering the trend in livestock numbers.
- As mentioned above, we believe our allowance for drawdown of stocks to be high.

* Stocks could be substantially less. Less is known about Soviet grain stocks than any other aspect of the supply and demand situation. The quantity held in reserve is a state secret, protected by law. Estimates must be derived by balancing uses against production and imports using less-than-adequate data and requiring arbitrary assumptions for some important factors.

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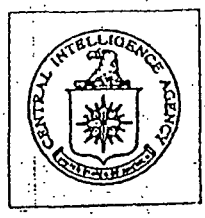

The Impending Soviet
Oil Crisis

The Soviet oil industry is in trouble. Soviet oil production will soon peak, possibly as early as next year and certainly not later than the early 1980s. The maximum level of output reached is likely to be between 11 and 12 million barrels per day (b/d)–up from the 1976 level of 10.4 million b/d. Maximum levels are not likely to be maintained for long, however, and the decline, when it comes, will be sharp.

The Soviets have two basic problems: one of reserves and one of production. Barring an extremely unlikely discovery of a massive new field close to an existing field, new deposits will not be found rapidly enough to maintain acceptable reserves-to-production ratios, and those fields that account for the bulk of Soviet production are experiencing severe water encroachment. As a result, increasingly large quantities of water must be lifted for each barrel of oil produced, and high-capacity submersible pumps–obtainable only from the United States–will be required if production declines are to be staved off even temporarily.

During the next decade, the USSR may well find itself not only unable to supply oil to Eastern Europe and the West on the present scale, but also having to compete for OPEC oil for its own use. This would be a marked change from the current situation, in which exports of oil to the West annually provide 40 percent of total Soviet hard currency earnings. The USSR has large reserves of coal and natural gas, but those scheduled for exploitation over the next decade are east of the Urals, far from consuming centers in the western USSR. Distance, climate, and te rain will make exploitation and transport difficult and expensive. Exports of gas will increase, but will not compensate for the loss of earnings from the export of oil. Although some substitution of coal and gas for oil in domestic use will be possible in the long run, the effect of such substitution will be minimal

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Note: Comments and queries regarding this memorandum are welcome. They may be directed to
the Office of Economic Research

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in the short run. Neither hydroelectric power transmitted from the east nor construction of nuclear electric plants (mainly in the western USSR) can be expected to afford much relief in the Soviet energy situation for more than a decade.

38.

Soviet Economic Problems and Prospects

Central Intelligence Agency
Directorate of Intelligence

July 1977

Summary

The Soviet economy faces serious strains in the decade ahead. The simple growth formula upon which the economy has relied for more than a generation—maximum inputs of labor and capital—will no longer yield the sizeable annual growth which has provided resources needed for competing claims.

In the past, rapid growth enabled Moscow simultaneously to pursue three key objectives:

- catching up with the US militarily;
- steadily expanding the industrial base; and
- meeting at least minimal consumer expectations for improved living conditions and welfare.

Reduced growth, as is foreshadowed over the next decade, will make pursuit of these objectives much more difficult, and pose hard choices for the leadership, which can have a major impact on Soviet relations with Eastern Europe and the West.

This study examines the causes of the slowdown in growth, its implications, the policy choices open to the Soviet leadership, and their possible impact on defense, the consumer, foreign trade, and US relations.

Causes of the Slowdown

Factors tending to slow down the rate of growth have been apparent for some time.

- The drying up of rural sources of urban labor force growth;
- A slowdown in the growth of capital productivity;
- An inefficient and undependable agriculture which may be hit hard by a return of the harsher–but probably more normal–climatic patterns that prevailed in the 1960s;
- A limited capacity to earn hard currency to pay for needed technology imports and intermittent massive grain purchases.

These problems are not new. The Soviet leadership has tried to offset their effect by improvisation and palliatives, without impairing the priority development of defense production. They did not succeed, however, in preventing a steady fall-off in economic growth from its earlier high rate.

Looking toward the next five to ten years, these long-standing problems are likely to intensify, and will be joined by two new constraints which will greatly aggravate the resource strain: a sharp decline in the growth of the working age population and an energy constraint.

Labor force. In the 1980s the rate of growth of the labor force is expected to drop sharply (to less than 1 percent beginning in 1982) because of the depressed birth rates of the 1960s. Moreover, additions to the labor force will come mostly from ethnic minorities in Central Asia who do not readily move to the northern industrial areas.

In anticipation of this labor force constraint, the Soviet government is planning for an accelerated growth in the productivity of both labor and capital in the current 5-year plan (1976-80). But for years productivity gains have been slowing, and this trend is likely to continue given the sharply rising resource costs facing the economy. The more readily accessible fuel and mineral reserves west of the Urals are being rapidly depleted, while the abundant but more remote resources of Siberia and Central Asia require enormous investment outlays.

Energy. The most serious problem is a looming oil shortage. Soviet exploration and extraction policy has long favored increasing current output over developing sources of future output. As a result, new oil deposits have not been discovered rapidly enough to offset inevitable declines in older

fields. Consequently, production will begin to fall off in the late 1970s or early 1980s. The current level of oil production is close to the estimated maximum potential of 11 million to 12 million b/d. By 1985 oil output is likely to fall to between 8 million and 10 million b/d.

The decline in output may or may not be a temporary phenomenon. The USSR is counting on large new supplies of oil and alternative energy sources—coal, natural gas, and hydroelectric power—coming onstream beyond the mid-1980s. But most of these energy sources lie east of the Urals, far from major industrial and population centers: their development would take years and require massive capital investment.

In the near-term, however, even if the development of alternative energy sources is pushed to the maximum, overall energy output will grow at a sharply declining rate. Under a plausible set of assumptions, it would decline from 4 percent in 1976-80 to slightly above 1 percent in 1981-85. Since Soviet energy consumption increases in close parallel with the growth of the economy, a sharp slowdown in energy production would seriously constrain economic growth unless Moscow finds ways of conserving large amounts of energy or covers its shortfall by becoming a net oil importer. The Soviet government appears to be aware that it has an energy problem but has not yet made the difficult choices which will be needed to deal with it. The longer the delay in adoption of a top-priority energy program, the greater will be the economic impact in the 1980s.

Policy Choices

Measures for grappling with these varied problems must meet two tests: first, they must be designed to remedy particular elements of the problem—the labor force, productivity, and energy constraints; second, they must be shaped with the recognition that the problems are interrelated, and that measures aimed at easing one problem may aggravate another.

Even on the first level, it will not be easy to find solutions that will do more than alleviate the component problems. Powerful remedies are either not readily available or not politically feasible.

The labor force constraint could be eased somewhat by such measures as retaining older workers longer in the labor force, shortening secondary education, and reducing military manpower by cutting the term of service. But such measures would have only a one-time impact.

Moscow's options for raising the rate of growth and productivity of plant and equipment are even more constrained.

- They could convert industrial capacity from defense to the production of investment goods. They would be reluctant, however, to impair their defense production capability. Moreover, specialized defense resources are not easily transferred on short notice.

- They could stretch out R&D programs and production schedules and slow the rate of expansion of defense-oriented industrial capacity, but this would have limited effect in the short run.

- They could institute incentive-enhancing reforms of economic management. Such reforms, however, will be resisted by powerful vested political and bureaucratic interests.

Even a combination of these measures—such as a leveling off of defense production, coupled with measures to obtain additional manpower—would probably raise economic growth only slightly.

Options for dealing with the energy problem are similarly constrained. Opportunities for conservation are less obvious in the USSR than in the West—for example, there are few automobiles and most are for commercial or industrial use. Consequently, conservation measures alone are unlikely to yield large oil savings. The leadership thus will probably have to rely on some combination of the following measures:

- importing substantial amounts of oil from non-Communist countries;

- cutting oil exports to Eastern Europe; and

- severely rationing oil to domestic users.

Moving from a position of major oil exporter to that of a net importer would be particularly painful. Last year Soviet oil exports of $4.5 billion accounted for almost one-half of its hard currency earnings. If current trends are projected with no change in present policies, Soviet oil import requirements by 1985 could cost $10 billion at today's prices. Even with high priority measures to boost other exports, including gold sales, oil imports at

that level would absorb most of the Soviet hard currency earnings in the 1980s, and largely foreclose the import of other goods from the West, including badly needed Western technology.

Cutting oil exports to Eastern Europe would ease this problem by forcing Eastern Europe to share the burden of the oil shortage. Any substantial cut in the Soviet oil supply commitment to Eastern Europe, however, would worsen that area's already difficult economic situation.

Placing the burden of the oil shortage on the domestic economy would mean curtailing oil rations to producing enterprises. Such cuts would almost certainly impede production, though the impact would be less severe if reductions were more gradual as part of a long-term energy-saving program.

Implementing the foregoing solutions is complicated by the fact that the problems are interrelated and the solutions impinge upon each other. For example, pressure on enterprises to save labor will be much less effective if they must also save energy. If the energy shortage is eased by allocating foreign exchange to import oil, the resulting decline of imports of foreign machinery and technology would adversely affect productivity and economic growth within a few years. Failure to import large amounts of energy equipment and technology from the West would substantially worsen the USSR's prospects for raising oil and gas production in the longer-term.

We conclude that a marked reduction in the rate of economic growth in the 1980s seems almost inevitable. At best, Soviet GNP may be able to continue growing at a rate of about 4 percent a year through 1980, declining to 3 - 3 1/2 percent in the early and mid-1980s. These rates, however, assume prompt, strong action in energy policy, without which the rate of growth could decline to about 3 1/2 percent in the near-term and to 2 - 2 1/2 percent in the 1980s.

These are average figures; in some years performance could be better, but in others, worse, with zero growth or even declines in GNP a possibility if oil shortages and a bad crop year coincide.

Potential Impact on Defense The slowdown in economic growth could trigger intense debate in Moscow over the future levels and pattern of military expenditures. Military programs enjoy great momentum and powerful political and bureaucratic support. We expect defense spending to continue to increase in the next few years at something like recent annual rates

of 4 to 5 percent because of programs in train. As the economy slows, however, ways to reduce the growth of defense expenditures could become increasingly pressing for some elements of the Soviet leadership.

On Consumers The reduced growth potential means that the Soviet consumer will fare poorly during the next five to 10 years compared to recent gains. Under the projected growth rates, per capita consumption could grow no more than 2 percent a year in contrast to about 3.5 percent since 1965. As a result, there will be no progress in closing the gap in living standards with the West or, for that matter, with most of Eastern Europe. Moreover, rises in wages over the next ten years combined with a slower growth in the availability of consumer goods would result in higher prices, more widespread shortages, and increasing consumer frustration.

On Relations with the US Moscow's economic problems in the 1980s will affect its relations with the West, especially the United States. Since the USSR's ability to pay for imports from the industrial West in the early and mid-1980s will be strained, Moscow may seek long-term credits (10-15 years), especially to develop oil and gas resources. Much of the needed energy technology would have to come from the US.

Stresses upon the Leadership

These serious problems ahead seem most likely to prompt Soviet leaders to consider policies rejected in the past as too contentious or lacking in urgency. Some leaders might be persuaded that basic organization and management reforms in industry are necessary. But that will raise the spectre that such reform would threaten political control. Consideration of other options—such as accelerating investment at the expense of defense or consumption, or reducing the armed forces to enhance the civilian labor force—could also result in strong leadership disagreements. Soviet responses to these problems could be further complicated by the fact that leadership changes will almost surely take place during the coming period. Even a confident new leadership would have difficulties in coming to grips with the problems ahead

39.

Organization and Management in the Soviet Economy: The Ceaseless Search for Panaceas

Central Intelligence Agency
National Foreign Assessment Center

December 1977

Introduction

Over the past decade, the USSR has been engaged in an effort, unprecedented in scope and intensity, to improve organization, management, and incentives in the economy. Most of the measures adopted stem directly from the program of reform outlined by Kosygin in 1965; other approaches, such as the effort to computerize everything computerizable, are ancillary to it. The effort as a whole is aimed at raising economic efficiency as measured by labor and capital productivity and improving the quality and mix of output.

The wide-ranging approaches may be conveniently grouped under five rubrics: (1) planning; (2) organization; (3) incentives, including those for improving quality of products; (4) computerization; and (5) miscellaneous programs. The first sections of this paper (1) review developments in each area over the past decade, with particular attention to changes during 1973-77, and (2) indicate the apparent future directions as reflected in the Directives for the 10th Five-Year Plan (1976-80) and the general literature.[1]* Final sections assess the success of the overall program in achieving its objectives up to now, its likely effects in the near term, and the prospects for effective reforms in the longer term.

Developments During 1965-77

Planning

Kosygin's program called for implementation of his economic reforms strictly within a framework of centralized planning, which was, however, to be improved in fundamental ways. First, the role of long-term plans was to be upgraded. To this end, the Five-Year Plan (FYP) was made legally binding

* For a discussion and list of source references, see the appendix.

and was to be a directive for enterprises. Annual plans are now drawn up taking into account the annual breakdowns set in FYPs, and incentive arrangements are supposed to allow for the degree of progress toward meeting FYP targets.

In addition, FYPs are being formulated within the framework of a 15-Year Plan (1976-90). During 1970-72, a great deal of work was set in motion to draft this plan. However, the effort was delayed by bureaucratic wrangling over planning methodology and probably also by the sheer magnitude of the task and the difficulty in getting agreement on long-range forecasts. Meanwhile, the Academy of Sciences and the State Committee for New Technology have drafted a "Comprehensive Program of Scientific-Technical Developments and Socioeconomic Consequences, 1976-90" with some 200 targets. [2] However, the draft of the overall 15-Year Plan is still in process of formulation. [3] At the 25th Congress of the Communist Party of the Soviet Union (CPSU) in 1976, Brezhnev again stressed the importance of long-term plans and the urgent need to improve their quality.

Second, the "scientific basis" for planning was to be radically upgraded. In practice, this has meant the more extensive use of mathematical forecasting models, input-output data, and optimizing techniques in planning. Although the traditional plan-formulation process remains intact, these approaches seem to be used extensively (notably in the economic research institutes) in preliminary planning work, in testing the consistency and balance of various kinds of plans, in calculating plan variants, and in making decisions about location, distribution, and mix of product in particular sectors. The "Comprehensive Program", for 1976-90, which used these techniques, aided the drafting of the 10th FYP, thus allegedly raising its "scientific basis."

Third, the system of plan indicators was to be directed more specifically toward solving problems of efficiency and product quality. As a result, an exhaustive discussion has taken place over the "correct" way to measure the efficiency of labor, capital, materials, new technology, computerized management systems, and much else. While the arguments have raged, the State Planning Committee (Gosplan) has introduced many new indicators of efficiency and product quality in national and enterprise plans. The national plan for 1976-80 and the annual plan for 1977 include over 500 such targets, and reporting is required in respect to their fulfillment. [4] At present, Gosplan is drafting proposals for further revision of these plan indicators to stress the use of long-term norms. In particular, a reorganization of the planning of wages and investment on the basis of such norms is under active consideration.

Fourth, some planning authority was to be delegated to the enterprise level, with the aim of spurring initiative on the periphery. To accomplish this

objective, the number of directive targets set centrally for enterprises was initially cut sharply as part of the economic reform. However, all important targets were retained; in the process of implementing the reforms, new ones (labor productivity, product quality, contract fulfillment) were added through formal changes in the rules; and in practice the ministries have set many others.

Finally, to the end of "improving planning," an extensive discussion has taken place concerning so-called "complex" planning, a "system approach" to planning, and the "program-goals" approach in planning. The discussion seems to concern mainly the planning of regional complexes (such as Baikal-Amur) and the planning of integrated programs aimed at fostering scientific-technical progress (such as mechanization of labor). Judging from a barrage of discussion and criticism,[5] satisfactory integration of national and regional planning remains an elusive goal. Despite the increased role given to republic and local planning agencies, regional planning seems to amount mostly to adding up the relevant sectoral plans, which continue to have priority. Much work was done by economists and planners during the Ninth FYP (1971-75) to develop "complex" approaches and efficiency calculations for various kinds of regional and functional complexes. The 10th FYP includes a number of such "complex programs"—for fuel and energy, building materials, development of agriculture and associated branches, the non-Black Soil area, and Eastern regional raw materials. The Plan Directives call for further "improvements" in plan formulation via use of the program goals and "comprehensive" approaches. A revised set of methodological instructions to accomplish these and other improvements in plan making is to be published in 1978.[6]

Prospects

Despite the revival of some discussion of economic reform in the Party press in 1976, the likelihood of radical changes in the established system of economic organization and management is remote at present. In respect to organization, discussions are taking place on the desirability of creating supraministries of some kind to manage groups of related activities. No concrete steps have yet been taken in this direction, and the whole idea is likely to encounter strong bureaucratic opposition. The scheme is reminiscent of Khrushchev's piling up of coordinating bodies and, even if implemented, is likely to do more harm than good.

The leadership seems fully committed to pushing the merger of producing units into ever-larger entities. In the industrial sector, this movement is in full swing and is scheduled to be completed by 1980. It is unlikely that large gains in efficiency will come from this source. The initiative and independence of individual producing units will be severely restricted in favor of greater power for the production associations. What is more important, it seems clear that the associations and their components will be operating within an essentially unchanged economic environment. Hence, their behavior is likely to resemble that of their predecessor independent enterprises. Moreover, the associations are likely to receive detailed and tight supervision from the industrial associations, as well as the ministries, which are ultimately responsible for the performance of their sectors and whose powers are actually being strengthened. The ministries are the organizations that administer the system of rewards and penalties for the associations. In agriculture, the giant collective and state farms, which are coming to resemble one another more and more, will remain the basic form of organization. Sizable extension of the private sector in agriculture and services does not seem likely, even though present policy shows more tolerance toward this activity.

No fundamental reform of economic incentives is currently under active discussion. At the 25th Party Congress, Brezhnev stressed the importance of rewarding enterprises and workers for "final" (net) results, rather than gross output, and experiments to test such measures are continuing. Although further modifications of success criteria are likely, the benefits will be inconsequential, as long as incentives remain tied to fulfilling plans for whatever target or targets. The cutting of this Gordian knot is not being seriously advocated, at least in the open press. Because rewards are linked directly to fulfilling plan targets, variously defined, the relationships among units in the entire chain of suppliers, shippers, manufacturers, and distributors are administrative, rather than economic, in nature. The behavior of each unit is oriented toward meeting its own particular plan targets, rather than satisfying its clients. This perverse effect of incentives is reinforced by the fact that each link also is aware that its clients lack alternative suppliers, shippers, or customers—there is no competition.

In the Directives for the 10th FYP, the present conservative leadership has opted for continuance of the status quo. Although experimentation with organizational forms and incentive schemes is continuing, they do not entail any esssential modification of the traditional system. Since the Soviet Union's persistent difficulties with efficiency, technical progress, and product quality are rooted in the nature of the bureau-administered economic system itself, these problems are likely to persist and to defy solution through modification of organizational forms and administrative rules. These chronic difficulties will be reflected in a continuing sluggish growth of productivity.

In the long run, radical economic reforms involving the introduction of market arrangements in some form might help alleviate these chronic problems and raise the rate of productivity growth. To be effective, such reforms would have to include abolition of directive plans for enterprises, replacing the rationing of most producer goods with markets, freeing most prices, and introduction of profit-based incentives. Transition to such a "market socialism" would surely cause serious economic disruptions in the short run, including inflation and unemployment. Moreover, such a move would disturb established balances in both political and economic power. It would be strongly opposed by the state bureaucracy, where jobs, careers, and political influence would be at stake, as well as by the Party bureaucracy, whose control over economic decisionmaking and resource allocation would be threatened. Faced with uncertain long-run benefits, probable high short-run costs, and certain strong opposition, a Soviet leadership of any foreseeable composition would probably opt against taking such risks. The political leadership probably would consider such a radical move, only if faced with a severe economic crisis, such as stagnating or declining production or serious popular unrest. As long as present organizational arrangements continue to yield modest, even if declining, rates of growth, the leadership will probably prefer to put up with the familiar deficiencies of the systems, rather than to launch major changes with unknown payoffs and known political risks.

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Outlook for the Siberia-to-Western Europe Natural Gas Pipeline

Key Judgments

We believe that the USSR will succeed in meeting its gas delivery commitments to Western Europe through the 1980s. Moscow has a wide range of options to accomplish this end:

- Deliveries could begin in late 1984, as scheduled, by using existing pipelines, which have excess capacity of at least 6 billion cubic meters (m^3) annually.
- Using some combination of Soviet and West European equipment, deliveries through the new export pipeline could probably begin in late 1985 and reach nearly full volume in 1987—about one year later than if the sanctions had not been imposed.
- At substantial cost to the domestic economy, the USSR could divert construction crews and compressor-station equipment from new domestic pipelines to the export pipeline or even dedicate a domestic pipeline for export use to ensure capacity adequate to meet contractual delivery obligations.

The task confronting the Soviets is made easier by the nonlinear relation between compressor power requirements and gas throughput in pipeline operations. By obtaining the 20 or so turbines built with the GE-made rotors already in Western Europe and operating compressor stations without standby units, Moscow could deliver through the new pipeline about three-fifths of the planned annual throughput of nearly 30 billion m^3. Turbines using an additional 40 rotors—the number Alsthom-Atlantique contracted before the US embargo to build for the Soviet Union under GE license—could boost throughput to nearly 90 percent of capacity. For reliability of pipeline operation and periodic maintenance, however, the Soviets would probably use some of the available turbines as standby units, thereby limiting throughput to about three-quarters of capacity.

Completion of the pipeline has become a top-priority objective for the Soviet leadership. On the economic side, they look forward to some $5 billion a year in new hard currency earnings from gas in the early 1990s (after repayment of pipeline borrowing) to partially offset declining oil export revenues. In their view, moreover, the United States' imposition of

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sanctions has made completion of the pipeline a matter of national prestige and has provided an opportunity to foment dissension in the Western alliance.

The West Europeans see Soviet gas as a relatively low-priced substitute for uncertain Middle Eastern oil and also view the Soviet pipeline equipment orders as easing their substantial unemployment problems. In addition, they hold that increased East-West economic interdependence will lead to more responsible Soviet behavior. They are deeply angry about the US decision, especially the extraterritorial and retroactive features of the measures, which they regard as a serious infringement of their sovereignty.

As a result, the West Europeans are seeking ways to defeat or circumvent the extended US sanctions. Paris has ordered French firms to honor their Soviet contracts, and [redacted] Rome has said that pipeline contracts will be honored but has not yet ordered Italian firms to do so.

Taking all this into account, we think the likely Soviet choices for completing the export pipeline—in descending order of probability—are:

- Shipment of completed turbines built with the 20 or so GE rotors already in Western Europe.
- Production of the 40 GE-designed rotors by the French firm Alsthom-Atlantique under its existing contract with the Soviets—the move already announced by Paris.
- Production by Alsthom-Atlantique of 60 additional GE rotor sets, to be supplied to the West European turbine manufacturers.
- Western assistance in manufacturing rotors for Soviet-designed megawatt turbines.
- Soviet redesign of pipeline compressor stations, substituting a combination of smaller turbines or other drivers of either foreign or Soviet design.

Only the last outcome—primary reliance on their own resources—would cause the USSR much difficulty. The costs to them will be much higher if they have to build their own gas turbines and compressors for the export pipeline. Specifically, diverting from the domestic pipeline program Soviet equipment sufficient to equip the export line could reduce gas delivery to the domestic economy by as much as 30 billion m³ annually for a year or two. Other Soviet equipment options would have considerably smaller impact on domestic gas supply.

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Gorbachev: Steering the USSR Into the 1990s [redacted]

Key Judgments

Information available as of 30 June 1987 was used in this report.

In the next year, Soviet leader Mikhail Gorbachev and his Politburo will have to agree on adjustments to the current (1986-90) five-year plan to cope with emerging shortfalls and to correct imbalances. Meanwhile, the future of economic reform is being worked out, and the Soviet leaders will be attempting to formulate their resource allocation guidelines for the 1991-95 plan. The USSR's planning cycle calls for these guidelines to be given to the economic planners by about mid-1988. This will be a tough call because not all the returns will be in from measures already implemented. [redacted]

Adjusting the 1986-90 Plan

The present five-year plan has virtually no slack that would permit more attention to one of the major sectors of the economy without some impact or offsetting adjustments in other areas. For example, the growth in overall volume of investment, while higher than in the two previous five-year plans, still appears low in comparison with the production targets. Taken at face value, the plan indicates that the Soviets expect a sharply increasing ratio of output per ruble of investment. But if the efficiency gains from the "human factor" campaign do not materialize, the leadership will have to decide whether to push for faster investment growth in the present plan to keep its industrial modernization program on track. Such a step could force the USSR to consider permitting a buildup of debt to the West to finance more imports. And sustained higher rates of investment would not be feasible, in our view, without holding military procurement relatively flat. [redacted]

Similarly, allocations to the consumer in the current five-year plan, particularly goals for consumer durables, have been held down against a promise of better things to come in the 1990s as the hoped-for benefits of industrial modernization are realized. The leadership, however, will have to be careful to avoid the kinds of shortages that in the past have had a dampening effect on labor incentives—particularly because so much of the present plan appears to bank on increasing productivity through a motivated work force. [redacted]

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Reforms

In the case of reforms, what has been accomplished so far amounts to a set of partial measures. Soviet leaders will need to consider adjustments to those measures already implemented and how to implement the more comprehensive changes in the organization and management of the economy that Gorbachev called for at the Central Committee plenum in June 1987. It will be particularly important for the leadership to avoid the kind of backsliding that has brought past reforms to a standstill. Gorbachev has been searching for a formula that encourages more initiative at lower levels while permitting control to be maintained from the center. This is a delicate balance at best; early in the 1965 and 1979 reforms, for example, the ministries began to reassert their control over enterprises by multiplying the number of plan targets and limiting their use of discretionary funds. And the natural inclination of local party officials will be to exercise the same kind of petty tutelage over enterprises that they have in the past. Preventing this will require a fundamental restatement of the responsibilities of ministries and party organizations. [redacted]

According to guidelines approved by the Central Committee on 26 June 1987, the next phase in improving organization and management will involve curbing the powers of central economic authorities, developing genuine wholesale trade, reforming the price system and financial and credit institutions, and introducing stronger incentives for enterprises to use their increased independence in ways that satisfy the guidelines set out in the state plan. Gorbachev could also expand the permissible boundaries of private production and allow greater wage differentiation. Even with the best leadership intentions, improving worker incentives will depend mainly on whether workable arrangements in these areas can be developed and on how the labor force reacts to them. Elastic work rules and narrow wage differentials have become an important part of the "social contract" in the Soviet Union. [redacted]

Formulating Resource Guidelines for 1991-95

The leadership's perception of progress on the industrial modernization program—especially in the machine-building sector—will be a critical factor in its outlook on the next five-year plan. If by next year this program does not appear to promise growth large enough to give generous increments to consumers and defense as well as investment, the leadership will

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be forced to decide whether civilian machine building should get more funding in the 1991-95 plan. Another factor that could contribute to pressures for higher investment than originally envisaged for 1991-95 would be a dwindling of the impetus to growth from tightening labor discipline and weeding out poor managers. And a key unknown may be whether the construction and machine-building base will be adequate in scale and quality to support a large increase in investment without a cutback in the defense plan submitted by the General Staff. [redacted]

Foreign Help

So far, Gorbachev has had little success in obtaining help for his economy from abroad—either from Eastern Europe or the West. The Soviets have had trouble getting their East European allies to shoulder more of the burden of the USSR's resource development and the Warsaw Pact's force modernization. Meanwhile, although the extent to which the leadership planned on increasing imports from the West during the 1986-90 plan period remains an unsettled question, Moscow's ability to buy more Western machinery or farm products has eroded badly because of the decline in world energy prices and the lower value of the dollar. At this juncture, the Soviets appear to be counting heavily on joint ventures with Western firms. They are currently negotiating with about 100 Western companies, although only a few of these negotiations appear to be in their final stages. [redacted]

The Potential Pitfalls . . .

A wide range of special interests and sensitivities will impinge on Politburo decisions over the next few years. First of all, military support for the modernization of civilian industry could erode substantially if the external threat assessment now being offered by military leaders becomes starker because arms negotiations fail to constrain NATO defense programs and bilateral US-Soviet relations worsen. In the reform arena:

- A relaxation in the tautness of the economy would help innovation and ease a transition to new economic arrangements, but Gorbachev stands in the way. From his first days in power he has stepped up the pressure on workers, managers, and bureaucrats.

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- Ministries are not likely to easily accept a lesser role in administering the economy. They probably will try to entrap their enterprises in a new web of rules and requirements, while ideological conservatives will fight an expansion of private economic activity.
- Genuine elections for party-state offices would evoke the specter of factionalism and be seen as a threat to the top-down direction of the society and the economy that has characterized "democratic centralism" for 60 years. [redacted]

. . . And A Helpful Environment

The investment/defense decisions to be made would, of course, be generally much easier if economic growth turned upward sufficiently to ease the resource bind and diminish some of the fears of the fence sitters in Gorbachev's Politburo. At the same time, arms control agreements and improved US-Soviet relations that reduced both the momentum of NATO military programs and the influence of the Soviet military-industrial complex would give Gorbachev more room to maneuver. Soviet success in these areas would in turn raise Western interest in granting credits to Eastern Europe and establishing joint ventures in both the USSR and Eastern Europe. [redacted]

Somewhat paradoxically, however, better economic performance and a favorable international climate would both strengthen and weaken the case for more ambitious economic reform. Reform is easier to implement when annual GNP growth is high, but the urgency attached to a reform program tends to fade when the economy is doing relatively well. [redacted]

Gorbachev's Next Steps

At considerable risk to his political future, Gorbachev is gambling that his policies will rejuvenate the USSR's economy and society. The problems he is encountering have not yet derailed his program or diminished his determination to change the system radically. But even his supporters are concerned that he will need to win new victories before long if he is to sustain the momentum for change he has generated. [redacted]

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Thus, we believe that Gorbachev cannot work out the next steps toward renewal at his leisure. Developments during the past year have increased the chances that he will act boldly to sustain the momentum of his program. Because he seems determined to protect a modernization program that is already underfunded and because the milestones for fashioning the 1991-95 economic plan are fast approaching, Gorbachev is likely to seek arms control agreements in the final years of the Reagan administration rather than wait for the next election. Moreover, the weaknesses of the reform measures undertaken thus far are likely to become clearer over the next few years. We think Gorbachev is likely to move forward rather than retreat and push through more radical reforms so that they will be in place for the 1991-95 plan period. In this context, Gorbachev sees publicity and elections at lower levels as a way of exposing and disciplining those who will not or cannot implement his program. In the economy, workers probably will have a greater say in choosing trade union officials, foremen, and even managers. [redacted]

The Consequences of Failure

Gorbachev has already asked the military and the population to curb their appetites in return for more later. If his programs do not work out, other leaders could appeal to these constituencies. The risks in a more radical reform and a rewrite of the social contract are that confusion, economic disruption, and worker discontent will give potential opponents a platform on which to stand. Gorbachev's position could also be undermined by the loosening of censorship over the written and spoken word and the promotion of limited democracy. If it suspects that this process is getting out of control, the party could well execute an abrupt about-face, discarding Gorbachev along the way. [redacted]

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