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INTELLIGENCE MEMORANDUM

SOVIET PLAN FULFILLMENT
MID-YEAR 1955

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CENTRAL INTELLIGENCE AGENCY

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SOVIET PLAN FULFILLMENT*
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Summary and Conclusions

Soviet economic progress should be assessed, for intelligence purposes, from two divergent points of view: that of the Soviet leaders and that of the great mass of Soviet citizens. If the progress of the Soviet economy at mid-1955 is assessed from the point of view of the Soviet leaders, it must be concluded that they had better reason than the Soviet citizen to be pleased with the improved performance of the Soviet economy since the end of 1954.

Gross industrial production already had exceeded (in May 1955) the original Fifth Five Year Plan (1951-55) goals and was running well ahead of the very conservative increase planned for 1955. The volume of investment increased substantially and assured a slight overfulfillment of the plan. Both these developments suggest that changes in industrial organization and planning over the past 2 years were successful. Production of coal, petroleum, steel, and electrical energy is rapidly approaching the levels which Stalin designated in his 1946 election speech as the material basis for Communism and should reach most of these goals in 10 to 13 years instead of the 15 to 20 years which Stalin thought would be required.

A number of immediate problems, however, still persist. Many of the top-priority industries will slightly exceed the 5-year targets but only by straining capacity to the utmost without the slack that has usually been available for above-plan production at the end of a plan period. Considerable excess purchasing power remains in the hands of consumers, and the whole wage structure must be overhauled. Agricultural production is still lagging and has necessitated the diversion of labor from industry to agriculture. The investment plan for the

* The estimates and conclusions contained in this memorandum represent the best judgment of ORR as of 1 November 1955.

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1951-55 period will be achieved, but because of inefficient construction, the cost of the program will be considerably higher than anticipated. Although there has been considerable improvement in construction labor productivity thus far in 1955, the high cost of construction remains one of the most serious chronic problems in the Soviet economy. Cost reductions in industry were slightly behind the plan on the whole. The volume of rail transport increased in the first half of 1955, but the original 1955 goals already had been exceeded in 1954. This overfulfillment resulted from longer-than-planned length of haul for fuel, timber, and other basic materials rather than from the early completion of over-all production plans. The economy as a whole reflected not only the stresses and strains incurred by the "great projects" and by logistical support of the Korean War (1949-52) but also the difficulties encountered in launching and implementing the post-Stalin consumer goods program.

The principal long-range problem facing the Soviet leadership on the eve of the Sixth Five Year Plan (1956-60) is a lagging agricultural production. In addition, the leadership faces serious problems in the slow rates of growth of labor productivity and of saving to support state investments. These problems are closely interdependent, and with the maturation of the Soviet economy, the solution to each problem is more dependent upon success in the other two than in the 1928-50 period. Expansion of agricultural production is essential to provide more quality foodstuffs for industrial worker incentives, to continue to provide an important contribution to investment, and eventually to resume the transfer of labor from the agricultural to the industrial sector. Current policies designed to increase agricultural production combine both the carrot and the stick -- on the one hand, increased incentives and concessions to the peasantry and more local authority in production planning, and, on the other, increased authority of the machine tractor stations, increased obligations for deliveries to the state, and the assignment of 30,000 Party technicians of urban origin as collective farm chairmen. Agricultural production, however, is not particularly responsive in the short run to changes in investment priorities and administrative reorganization. Here the Soviet leaders are faced with the traditional peasant resentment against the regime, the depletion of human resources in the villages bequeathed to them by Stalin, their own ideology which forbids any retreat from the collective farm system,

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and the innate characteristics of agricultural production, where the human and physical environment is much less subject to control and manipulation than in the factories. Although some improvement in agricultural production can be anticipated during the period 1956-60, it very probably will be less than planned and less than required to achieve the other objectives of the leaders.

For the first time since 1928 the Soviet leadership must rely primarily on increased productivity per worker in order to obtain most of the planned increases in industrial production during the period 1956-60, because an expansion of the labor force will provide only about 25 percent of the increase in production instead of about 50 percent as in the past. The leadership realizes that if lagging output per worker endangers the production goals during the next 3 to 5 years, agriculture no longer can provide a pool of surplus labor from which the industrial labor force can be increased in compensation. Four important measures are being taken to increase output per worker: excess purchasing power is being reduced so that the incentive effects of consumer goods are not negated by the Soviet variety of inflation, the supply of quality foodstuffs and clothing is being increased, the system of worker output-quotas ("norms") is being revised upward, and a rapid expansion in the quantity and quality of capital equipment available to each worker is planned.

In order to finance the flow of capital equipment required to continue the rapid expansion of industrial production, it is necessary to reverse the recent trend of savings mobilized by the state. The growth of state savings will be facilitated if the reduction in the growth of purchasing power and the reform of the wage system insure that in the future (unlike the period 1952-54) the state receives more from the workers each year in the form of increased productivity than it in turn pays to the workers in the form of increased wages. Military requirements will continue to be a serious drain on resources which otherwise would be available for investment, and the current Soviet peace campaign probably is in part a direct consequence of the leadership's desire to keep the increase in defense expenditures to a minimum during the period 1956-60. Higher profits made possible by cost reductions throughout the industrial sector will continue to be an important source of savings, but it is unlikely that the proportion of increased profits derived from this source could be much higher in the future than in the past.

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Whereas maintaining high rates of investment may be more difficult in the future, the Soviet leadership anticipates that recent developments in technology will provide some improvement in output per unit of new investment during the next 5 years as compared with the period 1950-55, when capital expenditures required for an additional unit of output were increasing in a number of key industries. This expectation probably will prove overoptimistic, however, inasmuch as declining output per unit of new investment appears to be normal as the ratio of capital to labor increases. At the same time, current ideological objectives, which neglect the efficiency of unskilled labor relative to machinery and highly skilled labor in some production processes, are to a certain extent incompatible with the need to get more production from a given amount of investment.

If the performance of the Soviet economy is now assessed from the point of view of the Soviet masses, it can be concluded that the material well-being of the Soviet citizen continued to improve during 1955 but that expectations for the future were subject to more conflicting currents than at the end of 1954. This will undoubtedly be the best year for the Soviet consumer since the onset of forced industrialization and collectivization in 1928, but the more immediate personal needs of the ordinary citizen were far from satisfied. Although production of manufactured consumer goods continued to increase in the first half of 1955, only a very small number of Soviet households could afford to buy many of the luxury consumer goods, such as automobiles or television sets. Increased production of textiles, pots and pans, footwear, and furniture benefited the broad masses of the population, but these items remained relatively expensive and low in quality. Many consumers had the desire and the rubles to purchase larger quantities of less expensive goods which are in short supply, particularly quality foodstuffs (meat and dairy products and vegetables) and housing. But queues were still chronic and long. Consequently, although the increase in the state loan and the failure to reduce retail prices* have prevented the usual increase in the size and purchasing power of the take-home pay of the Soviet citizen, his morale probably has been little affected, because the consumers still have more rubles available than can be spent on the things most desired.

* Price reductions on a few luxury items and aluminum cookware were announced in July, but this reduction was in no way comparable to the annual price reductions of the previous 7 years.

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Any hopes that the Soviet economy would shift its orientation from investment to consumption in the immediate future has been exploded during the past 6 months. However, the new agricultural program, the continued substantial increase in consumer goods products, and the emphasis on better housing leave no doubt in the mind of the Soviet citizen that the present leadership accords consumption much higher priority than did Stalin. Social discipline was tightened a little in the beginning of 1955, but this was directed at improving efficiency in production and lacked the punitive characteristics of the Stalin era. On the whole, the bonds remain loosened, and there are some signs of further relaxation in some areas.

The expectations of the Soviet citizen for the next 5 years are also favorably affected by the stress on technological progress and on the elimination of the distinction between mental and physical labor, which means that more and more Soviet citizens will be engineers, technicians, and highly skilled workers, thereby escaping the illiteracy and manual labor of the past. Last but not least, the slight relaxation of international tensions during 1955 not only should reduce the popular fear of war but also should raise the ordinary citizen's hopes of a slightly more favorable distribution of the social product in the future.

On the whole, the Soviet leadership currently is exhibiting a more realistic, rational, and flexible approach to the economic problems confronting them and somewhat greater concern for the economic lot of the ordinary citizen than was characteristic of Stalin.

I. Introduction.

In February 1955, Malenkov "requested" his release from the post of Premier on the grounds of error and incompetence in the administration of the economy of the USSR. With the appointment of Bulganin as Premier the vast propaganda machine did an about-face -- a povorot -- reemphasizing the preeminence of heavy industry and the subordination

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of light industry in the Soviet pattern of growth. A number of economists who had assumed or argued that the USSR had made a basic, permanent change in economic policy and that consumption rather than investment was to become the end of economic activity in the USSR were severely criticized. The plan fulfillment results for the first half of 1955* provide an opportunity to evaluate the impact of these events on the Soviet economy and to determine whether the pattern of resource allocations has changed.

Along with the release of the plan fulfillment data, Bulganin delivered a detailed report on industry to a plenum of the Central Committee of the Communist Party of the USSR. The substance of Bulganin's report had been largely foreshadowed in a number of articles which appeared in the theoretical journals during the second quarter of 1955. Taken together, this body of information provides the basis for a fairly complete evaluation of the Soviet economy immediately preceding the Sixth Five Year Plan (1956-60). The principal objectives of this memorandum, therefore, are to relate actual achievements to planned goals, to indicate the principal problems facing Soviet planners for the next 5-year period, and to outline some of the basic policies which will determine the growth pattern of the economy in the Sixth Five Year Plan.

II. Industry.

A. Trends in Production.

During the first half of 1955, industrial production in the USSR not only exceeded the original (1952) 5-year goals but also increased at a rate which will exceed the planned level of production announced in 1955, when the goals were revised upward in view of the imminent achievement of the original objectives. Total industrial production as well as the production of heavy and light industry grew considerably faster than the rates planned for 1955, which were much lower than at any other time in the post-World War II period (see Table 1**). If the actual rates of growth of the first half of 1955 are projected to the end of the year, the result in terms of the cumulative growth of industrial production is as shown in Table 2.***

* Unless otherwise stated, the base period for all percentage changes reported in this memorandum for the first half of 1955 is the first half of 1954.

** Table 1 follows on p. 7.

*** Table 2 follows on p. 9.

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Table 1

Increases in Gross Industrial Production in the USSR
1951-55 a/

	Percent					
	Increase over Previous Year					
	1951	1952	1953	1954	1955 (Plan)	First Half of 1955
Total production	17	11	12	13	9	12
Producer goods	17	(12) b/	(12)	(13)	11	(13) c/
Consumer goods	16	11	13	(12)	(6)	(10) c/

a. Data contained herein are from yearly plan fulfillment reports and from Bulganin's speech to the 1955 Supreme Soviet. (For serially numbered source references, see the Appendix.) Although the weighting system employed is unknown, Soviet statistics on gross industrial production provide a rough measure of the direction and magnitude of change. Moreover, these statistics are useful because they represent one of the principal yardsticks by which economic growth is planned and measured in the USSR.

b. Parentheses denote interpolation.

c. Only the rate of growth of total production -- 12 percent -- was reported in the plan fulfillment report. The interpolated rates of growth for producer and consumer goods are consistent with the 7 to 3 ratio of weights given in Soviet sources. A number of pairs of rates are, of course, consistent with a 12-percent increase in total production. Rates of growth of 13 percent for producer goods and 10 percent for consumer goods are estimated for the following reasons: (1) the increase in consumer goods production in 1955 would be at least as large as the increase in trade turnover, which was reported as 8 percent, because inventories and stockpiles were depleted in previous years and probably are being replenished in 1955, and the data on the increase in the sales of various consumer goods

Table 1

Increases in Gross Industrial Production in the USSR
1951-55 a/
(Continued)

indicate that the rate of increase in consumer goods available to the population declined about 15 percent in the first 6 months of 1955, as compared with the rate of increase in 1954, which is consistent with a decline in the rate of growth of consumer goods production from 12 percent in 1954 to 10 percent during the first 6 months of 1955.

These achievements suggest that the changes in organization and planning and the emphasis upon the introduction of new technology already have had some effect, unless Bulganin purposely underestimated the capability of the economy in February. It was believed at that time that the low rates of growth planned for 1955 represented the desire of the regime to ease temporarily the strain on the economy in order to provide a more firm and flexible base for the Sixth Five Year Plan. In view of subsequent developments, however, this hypothesis appears unlikely. There remain several alternative explanations for the low rates of growth planned for 1955: (1) Bulganin stated a conservative estimate pending the implementation of changes in organization and planning, (2) Bulganin purposely underestimated the capabilities of the economy as part of the propaganda campaign to dampen popular expectations of a rapid improvement in the standard of living, or (3) Bulganin and his planners erred seriously in their estimate of immediate production prospects.

Despite current successes, the Fifth Five Year Plan (1951-55) will not exceed the original estimates as much as did the results of the Fourth Five Year Plan (1946-50). The Fifth Five Year Plan, however, was somewhat more ambitious than the Fourth Five Year Plan, and it did not have the benefit of quick returns from reconstruction and reconversion. In the Fourth Five Year Plan, however, the planned growth of industrial production (1950 over 1940) was exceeded substantially -- the actual reported increase of 73 percent in contrast to the 48-percent increase planned. On the other hand, production of consumer

Table 2

Cumulative Indexes of Industrial Production in the USSR a/
1952-55

1950 = 100

	Original 1952 Goals (Reached 1 May 1955)	Revised 1955 Goals	First Half of 1955 Projected to the End of the Year
Total industrial production	174	180	185
Producer goods	180	184	187
Consumer goods	160	172	177

a. Original goals are from the Fifth Five Year Plan directives; revised 1955 goals are as stated by Bulganin in July 1955. The index of 172 for consumer goods represents an upward revision from the index of 171 given by Bulganin in his speech to the Supreme Soviet in February. Bulganin also stated in July that the original goal for consumer goods was 165 instead of the index of 160 previously used by Soviet leaders. The projected end-of-the-year indexes are derived from Table 1, p. 7, above.

goods fell far short of the Fourth Five Year Plan goals, whereas in the current plan the original goals will be substantially exceeded.

The cumulative (1951-55) goal for consumer goods under the Malenkov program was never published, but it is estimated that the 1955 index would have been between 180 and 185 (for comparison, see Table 2*). The Malenkov program, however, was dependent upon unrealistic goals for agricultural production. Foodstuffs alone, for example, account for nearly 55 percent of state retail trade. By the end of 1954 it was apparent to the USSR that it could not meet the planned goals and that temporary expedients were nearly exhausted. In the meantime, consumer purchasing power, which already had exceeded the available supply of goods at the beginning of the "new course," had expanded too rapidly as a result of the reduction in the state loan, the retail price reductions, and the concessions to the peasantry in taxes and procurement prices. Moreover, the propaganda campaign associated with the Malenkov program raised popular expectations to unjustified levels. Several Soviet writers in the official journals even went so far as to say that the period of forced industrialization was over and that, in the future, individual consumption rather than heavy industrial growth would be the end object of economic activity in the USSR. There is no evidence that Malenkov concurred (although the planned rates of growth for 1954 and 1955 may have been a little higher for light industry than for heavy industry in order to rectify the past "disproportion"), but these ideas apparently were widespread.

The USSR presently is undertaking a long-range program to increase production of quality foodstuffs and to provide more living space. At the same time an end has been put to speculation that there has been a revolutionary change in economic policy. The policy innovations of 1955 reflect not a reversion to Stalin's policy but an adjustment in the light of 2 years' experience. Both the Malenkov program and the current programs are based upon the implicit assumption that consumption, which is in effect treated as a cost of production to the state, must be increased across the board in order to provide incentives for increased labor productivity.

* P. 9, above.

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If Bulganin's report can be taken as a guide, the pattern of growth of industrial production in the Sixth Five Year Plan will remain approximately the same as in the past. Heavy industry will continue to expand faster than light industry -- that is, the yearly rate of growth of the former probably will be planned at 2 or 3 percent above the latter, but consumer goods production will continue to receive much higher priority than under Stalin. Within heavy industry the so-called "leading links" -- coal, petroleum, metallurgy, and electric power -- will continue to receive high priority. The yearly production of 60 million tons of petroleum, 500 million tons of coal, 50 million tons of pig iron, 60 million tons of steel, and 250 billion kilowatt-hours (kwh), which Stalin in 1946 defined as the point of departure for Communism and which he expected to require three or more Five Year Plans to attain, will be exceeded or closely approximated by 1960. Indeed, petroleum production will have reached Stalin's goal by the end of 1955.

B. Heavy Industry.

1. Basic Material and Service Inputs.

In the first half of 1955 the rates of growth in the "leading links" -- coal, petroleum, metallurgy, electric power -- generally were higher than in 1954, and consequently the Five Year Plan goals for these industries generally will be exceeded by a small margin. This is a reversal of the trend evident at the end of 1954, when it appeared that a number of these top-priority industries would barely reach, and in some cases would even fall short of, the 1955 production goals (see Table 3*). Throughout the post-World War II period these industries received a proportionately larger share of available resources than in the prewar period. In 1948-49 there occurred a marked shift in investment allocations in favor of these industries, and a further shift was made in the Fifth Five Year Plan. As a result of this emphasis, production goals of the Fourth Five Year Plan for these industries were exceeded substantially, and the goals for the Fifth Five Year Plan (announced in 1952) required further growth at very rapid rates, despite the already expanded base to which the increases would apply. For example, the plan called for a 62-percent increase in production

* Table 3 follows on p. 12.

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Table 3

Increases in Production of Selected Basic Industrial Materials
in the USSR
1951-55

Industrial Material	Increase over Previous Year					First Half of 1955	Planned Increase: 1955 over 1950	Increase Required in 1955
	1951	1952	1953	1954	1955			
Pig iron	14	14	9	9	12	76	14	
Crude steel	15	10	10	8	10	62	8	
Rolled steel	15	12	10	9	11	64	6	
Zinc	15	24	13	7	7	150	45	
Lead	25	17	22	13	14	170	34	
Copper	14	15	N.A.	5	14			
Coal	8	7	6	8	12	43	8	
Crude petroleum	12	12	12	12	19	85	17	
Electric power	14	13	13	11	12	80	11	
Caustic soda	8	11	15	11	12	79	17	
Calcined soda	9	21	19	10	9	84	6	
Mineral fertilizers	7	8	9	16	21	88	28	
Synthetic rubber	20	9	13	1	9	82	22	
Cement	19	15	15	19	22	120	17	
Bricks	20	19	12	13	13	130	27	
Slate	27	26	22	17	18	160	14	
Paper	12	9	10	10	4	46	a/	

a. Overfulfilled in 1954.

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of crude steel and an 85-percent increase in production of crude petroleum, which may be contrasted with the comparable increases of about 35 percent and 10 percent, respectively, planned on a much smaller base for the 1940-50 period.

Despite the high priorities accorded to, and the rapid rates of growth achieved in, these "leading link" industries throughout the post-World War II period, the requirements placed upon them have grown even faster. Thus a Soviet writer recently admitted what had long been suspected -- namely, that the growth of the engineering industries had been inhibited by an insufficient supply of ferrous metals:

As is known, the engineering industries have for a number of years developed at a more rapid rate than the metallurgical industries. Consequently metals have been constantly in short supply in the engineering industries. The shortage of metals acted as a brake on the growth of production in the machine building industries, which, nevertheless, continued to expand faster than metallurgy. The engineering industries achieved great economies in the use of metal by reducing input quotas and by improving the structure of metal consumption. The weight of new and modernized machinery has been continuously reduced without impairing the technological parameters... . The objective for the future is not only to liquidate scarcity in the supply of metal to the engineering industries but also to create a reserve stock of metals in order to provide supplemental allocations to machine building enterprises which have overfulfilled the plan for the more important end items, and for those items which are in short supply.

The recently initiated program to increase the use of ferroconcrete structures instead of steel in building is also indicative of the shortage. Similarly, the emphasis on hydroelectric construction and the recent upward revision of coal production plans both suggest that

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energy requirements consistently have been underestimated. Bulganin's report to the Central Committee indicated that the expansion of electric power generation was not sufficiently ahead of the expansion of industry as a whole.

The generation of electric power increased 12 percent in the first half of 1955, and the Fifth Five Year Plan will be slightly exceeded if this trend continues. Because of a serious lag in the production of steam turbines and generators, however, such success apparently will be at the price of using existing equipment to the limit, with little reserve capacity. It is estimated that the installed electrical generating capacity by the end of 1955 may be as low as 75 percent above 1950 instead of 100 percent as originally planned. The rate of increase of electric power generation probably will be higher in the next 5 years inasmuch as "electrification" of production processes is to be one of the key factors in the growth of labor productivity.

In the Sixth Five Year Plan the USSR is planning to increase hydroelectric power as a proportion of the total, principally by the construction of a number of extremely large installations in Siberia. At the same time, a large-scale expansion of industry in Siberia is being planned for the next 5 or possibly 10 years.

Output of petroleum has gone up sharply since the end of 1954, increasing 19 percent compared with yearly increases of 12 percent for the 1951-54 period. At the end of 1954 it appeared that the original Fifth Five Year Plan goal for petroleum had been revised downward, but the 19-percent increase in the first half of 1955, if maintained, will bring about the achievement of the original Five Year Plan goals. It is possible that a basic shift in policy regarding the proportion of energy to be derived from petroleum compared with coal and other fuels occurred in the early part of 1955. Historically, Soviet planners have substituted coal for petroleum on a large scale despite the fact that production costs of petroleum were far less (on an energy equivalent basis) than for coal -- so much less, in fact, that petroleum products included a turnover tax even to heavy industrial consumers. The rationale for discounting the lower production cost of petroleum is believed to have included several factors:

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(a) the high transportation costs incurred owing to the historical concentration of petroleum production in the Baku area, (b) the vulnerability of the Baku region to attack, and (c) the desire to keep the dependence of the economy on petroleum products at a minimum and thereby provide greater flexibility in an emergency. Recent changes in the location and availability of petroleum deposits may have reduced the importance of these factors and resulted in a decision to take advantage of the low cost of petroleum as compared with coal by increasing petroleum's share (currently about 20 percent) in the fuel balance. The Trans-Volga and southern Urals fields now provide almost 60 percent of the total production of petroleum and apparently are very low-cost producers. Consequently transportation costs of petroleum now compare much more favorably with those of coal, and the vulnerability of the industry is somewhat reduced. Moreover, the post-Stalin regime shows a greater propensity to take real-cost considerations into account when making decisions. The locational shift in production of petroleum also may be a causal factor in the renewed emphasis on locating new industries in Asiatic USSR and should add to the general efficiency of the economy by reducing transport costs.

The rates of increase in output of ferrous metals were somewhat higher in the first half of 1955 than in 1954. In the latter year it appeared that production of steel would barely reach the 1955 target and that there would be a significant shortfall in pig iron (see Table 3*). Inasmuch as the short supply of ferrous metals has slowed the growth of the engineering industries in recent years despite the fact that production goals for finished steel have been met, a considerable expansion of the former industry can be anticipated in the next 5 years. According to Soviet writers, future increases in production of iron and steel will require a relatively greater investment in new plants and facilities than in the current Five Year Plan, when increased efficiency in the use of existing plants was to provide 25 to 30 percent of the increase in output.

A projection of trends in chemical production during the first half of 1955 leads to the conclusion that production of many chemicals will fall short of the cumulative 1951-55 goals. Production

* P. 12, above.

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of caustic soda and synthetic rubber almost certainly will be less than planned. Production of mineral fertilizers rose sharply (21 percent) during the first half of 1955, and if the 1955 goal of a 24-percent increase is achieved, the cumulative growth for the 5-year period will be more than 80 percent (1955 over 1950). Although this will be less than the original goal of 88 percent (1955 over 1950), the result is still impressive and important because of heavy requirements for more mineral fertilizers in agriculture.

The chemical industries are slated for rapid expansion in the Sixth Five-Year Plan. The broader application of chemical processes in the economy, the so-called "chemicalization of production," is to be one of the key measures in increasing labor productivity. The chemical industries themselves are readily adaptable to automation. Moreover, the high priority accorded to the agricultural sector is reflected in plans to double production of chemical fertilizers in the next 5 years.

Judging from the results of the first 6 months, the production of aluminum at the end of 1955 will slightly exceed the ambitious planned increase of 160 percent for the 1951-55 period. Apparently this is not enough, however, because Bulganin singled out the aluminum industry for continued rapid expansion, which probably reflects not only increased requirements for military end items but also the requirements for consumer goods. Production of other non-ferrous metals, however, is considerably behind the original 5-year plan. Production of copper is especially lagging, and this metal is known to be in short supply. Although in 1954 output of lead was double that of 1950 and output of zinc was more than 70 percent above the 1950 level, the original 1951-55 plan for these metals has been abandoned. Nevertheless, it can be inferred from available Soviet data that the output of zinc during the first half of 1955 was running well behind even the new, downwardly revised plan, increasing only 7 percent over the first half of 1954 compared with a planned increase for the year of 16.5 percent. On the other hand, output of lead exceeded the planned rate of increase for the year. Pressure for rapid expansion of these industries can be anticipated in the future. Goals for 1960 may be double the 1955 level of output for most nonferrous metals.

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2. Engineering Industries.

During the first half of 1955 the engineering industries continued to expand rapidly, and the pattern of growth generally foreshadowed the basic trends planned for the Sixth Five Year Plan. In some instances, however, the rates of growth of machinery production are far less than the planned rates of growth (see Table 4*) and do not appear consistent with the growth of the industries which use this machinery. The whole pattern of development of the engineering industries is considerably different in the Fifth Five Year Plan from that in the Fourth Five Year Plan. From 1946 to 1950, almost every major engineering industry had a 1950 goal of from 2 to 4 times the 1940 rate, and much of the increase was to come from new plants in the relatively less industrialized areas of the country. In the Fifth Five Year Plan, many engineering industries had relatively small projected rates of increase -- about 20 percent for the automobile and tractor industry, for example. On the other hand, those engineering industries which provided the capital equipment for the basic metal and energy industries and for the "great projects" -- the oil and electrical equipment industries, for example -- were scheduled for great expansion. In practice, some industries -- the locomotive industry, for example -- were so disrupted by shifts in the product mix during 1949-52 that production declined substantially.

The cumulative increase in production of hydroturbines during the first half of 1955 will exceed 700 percent for the 1951-55 period. Production of steam turbines, on the other hand, has remained at the same level as the first half of 1954, although a 33-percent increase in 1955 is required to meet the Five Year Plan goal. Production of equipment for the petroleum industry will be far behind the Five Year Plan goal for a 230-percent increase because by the end of 1954 production of petroleum equipment was only 50 percent above the 1950 level. Similarly, production of metallurgical equipment probably is barely above the 1950 level despite the planned increase of 85 percent (1955 over 1950). How the USSR is achieving its planned production goals for ferrous metallurgical products and petroleum products without the planned inputs of capital equipment is not known. In any event, production of equipment for these industries is scheduled to be expanded substantially in the next 5 years. In ferrous metallurgy, in particular, a smaller proportion of the increment to production**

* Table 4 follows on p. 18.

** Continued on p. 20.

Table 4

Increases in Production of Selected Industrial End Items
in the USSR
1951-55

End Item	Increase over Previous Year					First Half of 1955	Planned Increase 1955 over 1950	Increase Required in 1955
	1951	1952	1953	1954	1955			
Steam turbines	10	8	40	44	44	10	130	33
Large hydroturbines	145	24	35	82	82	22	680	a/
Electric locomotives	11	N.A.	34	7	7	-16	N.A.	
Steam locomotives	N.A.	N.A.	163	13	13	38	N.A.	
Freight cars	N.A.	N.A.	3	N.A.	N.A.	12	15	
Trucks	N.A.	7	11	11	11	13	49	
Passenger cars	N.A.	17	30	23	23	15	N.A.	
Antifriction bearings	30	17	15	13	13	N.A. b/	250	
Petroleum equipment	N.A.	44	17	N.A.	N.A.	12	85	80 c/
Metallurgical equipment	N.A.	12	18	5	5	16	N.A.	
Metal-cutting machine tools		3 d/	14	8	8	26 e/	N.A.	
Large, heavy, and unique tools	11					5	N.A.	
Chemical equipment	38	28	24	14	14	2	230	32
Looms	N.A.	39	2	69	69	11	N.A.	
Spinning machines	N.A.	18	N.A.	9	9	27	N.A.	
Tractors	N.A.	7	13	22 f/	22 f/	22	68 f/	14
Grain combines	15	N.A.	2	N.A.	N.A.	75	N.A.	
Sugar-beet combines	N.A.	19	50	140	140		N.A.	

* Footnotes for Table 4 follow on p. 19.

Table 4
Increases in Production of Selected Industrial End Items
in the USSR
1951-55
(Continued)

- a. Overfulfilled in 1954, when the cumulative index for the 1951-54 period reached 746.
- b. Production of petroleum equipment is planned to be only 50 percent above the 1950 level at the end of 1955.
- c. It is estimated that production of metallurgical equipment dropped sharply in 1951 and that the index at the end of 1954 (1950 = 100) was approximately 103.
- d. Ministry of Machine Tool Industry only.
- e. Production of this class of machine tools is planned to be 180 percent over the 1950 level by the end of 1955.
- f. The original goal of a 19-percent increase is believed to be in terms of horsepower, which is estimated to be equivalent to about a 40-percent increase in terms of physical units. Revised goals under the "new course" provided for about a 68-percent increase in physical units, which probably will be achieved.

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will be derived from increased efficiency in the use of existing capacity, and a correspondingly larger proportion from new plants and facilities, than has been the case during the past 5 years.

A 16-percent increase in production of metal-cutting machine tools was reported for the first half of 1955, and, more important for the future, a 67-percent increase in production of forging and pressing equipment. Soviet reporting of metalworking machinery in the Fifth Five Year Plan has not been consistent either in terms of categories or in terms of subordination of the producing units. It is probably a safe assumption, however, that the 1951-55 goals will be reached.

The metalworking equipment industry is scheduled for substantial expansion during the next 5 years, particularly in the form of more complex, automatic machinery, which is to be one of the key factors in increasing labor productivity. Unlike the emphasis in the first four Five Year Plans, the main emphasis in machine-tool production in the 1951-55 period has been on heavier, more complex tools rather than on rapid expansion of unit output. At the same time, however, as a heritage of the past, an excessively large proportion of Soviet production has consisted of relatively few models which are mass produced at low cost. These mass production models are general-purpose tools and are often technologically obsolescent. Moreover, production of forging and pressing equipment (which is usually far more efficient in producing small metal items that are required in large numbers) has enjoyed lower priority in the past than production of metal-cutting tools. These two factors probably are largely responsible for the fact that the USSR requires a machine tool inventory approximately three-fourths that of the US in order to process only about one-third as much metal.

In the Sixth Five Year Plan the dominant trends in the metalworking equipment industries will be as follows: (a) complex, specialized tools (with particular emphasis on groups linked together to perform a production task automatically) will account for a much larger proportion of production, and (b) production of forging and pressing equipment will continue to expand rapidly. In other words, these industries are to provide the machinery for the automation and mechanization of production processes which the Soviet leaders believe will increase labor productivity more rapidly than in the past few years.

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Production of row-crop-type tractors continued to increase rapidly in 1955 and should total at least 63,000 to 65,000 units for the year compared to approximately 70,000 units planned. The probable slight shortfall, however, will be in the most important row-crop model; the "Belorus." Production of heavy, general-purpose tractors (used primarily for small-grain cultivation) has been stable for several years and should be ample to support both the agricultural and industrial sectors during the next 5 years. Further increases in production of row-crop-type tractors can be anticipated.

One of the most marked trends in the first half of 1955 was the sharp increase (see Table 4*) in the production of most types of railroad equipment, an industry which has been in the doldrums during most of the Fifth Five Year Plan. Production of steam locomotives, which dropped to less than one-third the 1949 level in 1952 when many plants were switched over to producing capital equipment for the leading links and the great projects, probably regained only about 75 percent of the 1949 level in 1954 and then dropped about 16 percent in the first half of 1955. The USSR has, however, a substantial reserve inventory of older steam locomotives and is currently converting to the production of new, larger, and more efficient models. Unit production of steam locomotives will continue to decline in the future as the USSR begins to implement the extensive dieselization and electrification program outlined by Kaganovich in mid-1954. The internal evidence in Kaganovich's speech indicates that a comparable program was proposed in one of the original versions of the Fifth Five Year Plan, but it is believed that the program was dropped because of the magnitude of requirements for the great projects, the accelerated expansion of the leading links, and possibly the requirements for logistical support of the Korean War. If the large increases in production of diesel and electric locomotives reported for the first half of 1955 are indicative of the future, the USSR will have made substantial progress toward dieselization and electrification of freight hauling on all main lines by 1960. Production of railroad cars, which probably was below the 1950 level in 1954, also is increasing rapidly.

In general, the results of the first half of 1955 indicate that the major commodity production goals in the producer goods sector will be fulfilled. Most of the items subject to specific annual

* P. 18, above.

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reporting will barely reach the planned goals, which is in sharp contrast to the large overfulfillments of the Fourth Five Year Plan. Even with a slight shortfall in the present plan, however, the increase in production is impressive because of the larger base (1950 for the Fifth Five Year Plan, 1940 for the Fourth Five Year Plan) and the virtual exhaustion of unusual sources of growth available during the Fourth Five Year Plan, such as reconversion and reconstruction, looted capital equipment, and the retention of skilled prisoners of war.

The pattern of growth of the engineering industries in the Sixth Five Year Plan apparently will be more similar to the pattern in the Fourth Five Year Plan than to that in the Fifth Five Year Plan. Expansion will be general rather than concentrated in only those industries which contribute directly to the leading links. The 1951-55 period was largely devoted to completing and expanding plants started or reconstructed in the 1946-50 period, and geographic dispersion almost ceased. It is evident from the data presently available that much new construction of engineering industry plants will be initiated in the next 5 years and that a significant part of this new construction will be in Central Asia and the Far East. Concomitantly with this new construction, there evidently will be an extensive program to reequip the technologically more backward and high-cost enterprises. Previously the planners had concentrated on getting more production, largely ignoring the fact that some plants had production costs which were 2 or 3 times as high as other plants producing the same product. Similarly, there will be much greater emphasis on specialization -- that is, on reducing the range of end items produced by an enterprise. In the past the tendency has been to distribute responsibility for producing a new product among the existing plants rather than to build a new, specialized plant to produce the new product. Thus the pattern of growth of the engineering industries in the Sixth Five Year Plan, while in many cases more similar to the 1946-50 period than to the 1951-55 period, will aim at a more rational growth in the interest of the greater over-all efficiency of the economy.

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C. Light Industry.

In assessing the growth in production of consumer goods in the USSR, it is necessary to distinguish between those items which are processed agricultural raw materials and those goods which are produced from raw materials of industrial origin. This distinction roughly corresponds to the standard categorization of nondurables and durables. The USSR, by shifting distribution priorities and by increasing investment allocations, has at various times in the past substantially increased the output of industrial consumer goods in a relatively short time. The situation is quite different, however, if an increase in the output of agricultural raw materials is a prerequisite.

Historically (from 1928 to the present), investment in Soviet agriculture has had an almost negligible effect upon agricultural production. State investment in agriculture (particularly machinery) has facilitated the large-scale migration of labor to the cities and has more than compensated for the disinvestment of collectivization (particularly in the form of animal draft power), but the normal effects of greater capital intensity upon production have been negated by peasant resentment resulting from the low level of peasant income and the political and social pressures applied to the peasantry by Stalin. In the long run it is increased peasant income, relaxation of political pressures, more realistic planning, more fertilizers, and better agrotechnology which offer the greatest potential for increasing productivity in agriculture. In addition, agricultural production depends upon such factors as adequate rainfall and the time required to build up livestock herds, which makes it very difficult to secure short-run increments to output merely by shifts in distribution priorities and in investment allocations.

Output of consumer goods as a whole continued to increase substantially in the first half of 1955, but the estimated rate of growth declined 2 to 3 percent below 1954. In general, those items which were lagging behind plan in 1954 have continued to fall short thus far in 1955. Increases in the production of sewing machines, radios, and television receivers were substantial but still well behind plan. Production of cameras, watches and clocks, and household refrigerators is keeping abreast of the plan. Production of passenger automobiles increased 13 percent despite the fact that the 1955 plan was fulfilled

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in 1954. On the other hand, the rates of growth in production of bicycles and furniture, which promised to reach "new course" goals if the 1954 rates were maintained, declined substantially in the first half of 1955. Production of furniture may have been affected by the continued failure of the timber industry to meet the production plan.

Production of cotton textiles probably will meet the plan, but production of wool and linen fabrics and leather goods probably will not. In general, raw materials are in short supply in these industries, with the exception of raw cotton. Production in the linen and silk industries actually declined slightly in the first half of 1955. Production of leather footwear has definitely been affected by leather shortages, whereas production of rubber footwear shows a satisfactory increase. The most serious production failures continue to be in quality foodstuffs. The only favorable development in this area was the reported increase of 16 percent in the production of milk products. Although still far behind plan these were the highest rates of growth reported for several years.

In the future the bulk of the increase in consumer goods production will continue to depend upon increased agricultural production, particularly of quality foodstuffs which will simultaneously provide incentives to the bulk of the population and absorb the normal increases in mass purchasing power. The other essential to any substantial improvement in the standard of living of the average Soviet citizen is more and better housing. In addition, production of durables will have to increase despite the fact that durables are luxuries to the mass of the population. Provision of incentives for the ever growing class of engineers, highly paid technicians, and managers will require a much higher level of output of television sets, home refrigerators, quality furniture, and even of passenger automobiles.

III. Capital Investment.

The reported 11-percent increase in the volume of capital investment (measured in 1950 prices) during the first half of 1955 is surprisingly large in view of the slight reduction in planned budgeted expenditures for capital investment (see Table 5*). A continuation of the 11-percent rise for the entire year will insure an overfulfillment of 3 to 6 percent in the cumulative 1951-55 plan, which specified an increase of

* Table 5 follows on p. 25.

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Table 5

Volume and Financing of Capital Investment
in the USSR a/
1951-55

	<u>1951</u>	<u>1952</u>	<u>1953</u>	<u>1954</u>	<u>1955</u>
Volume (actual)					
Increase over preceding year (percent)	112	111	104	115	111 b/
Financing (planned)					
(Billion 1 July 1950 rubles)	132.0	143.1	156.1	169.0	167.5
As percent of preceding year	97	108	109	108	99

a. Volume of investment refers to the value of essentially completed investment (according to a complex definition of "completion"). It is distinct from the financing of investment, which measures current expenditures for investment purposes.

b. First 6 months of 1955 only.

90 percent over the 1946-50 period. It is not known precisely how such a rate of increase in volume was achieved while planned expenditures remained approximately the same, but a number of possibilities exist. First, actual expenditure for investment in 1954 definitely may have been less than planned, so that planned expenditures in 1955 actually represent an increase. Second, installation of equipment paid for in previous years but not actually installed and the completion of a large number of projects (both of which goals have received much attention in the Soviet press) would make possible an increase in volume without a corresponding increase in expenditures. Finally, inasmuch as a large number of projects are being pushed to completion this year, the 1955 expenditures for investment may not have included an increase in working capital for construction.

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Aside from general statements about the trends, little information on the distribution of investment was released in the 6 months' plan fulfillment report. Increases were specifically mentioned for certain sectors of heavy industry, for transport, and for agriculture. Failure to specify an increase in investment in light industry suggests that investment may have fallen below the level of the first 6 months of 1954. Although the amount of housing construction was stated to have increased, omission of the customary volume increase indicates that the rise was less than in other years of the current Five Year Plan. In general, investment in heavy industry, state agriculture, and housing probably will exceed the 5-year goals for volume increases whereas transport and communications and light industry probably will fall slightly short of the 1951-55 targets.

The generally satisfactory quantitative trends are somewhat offset by the fact that the current cost of the program for the 1951-55 period will be higher than anticipated owing to the failure to reduce construction costs as planned and to the lagging growth of labor productivity in construction. Construction costs were not reduced according to plan in the first half of 1955 -- a failure characteristic of all the previous years of the Fifth Five Year Plan. Indeed, official reports indicate that construction costs actually increased in 1953. On the other hand, labor productivity in construction increased 10 percent in the first 6 months of this year, which is the highest rate of increase of the current Five Year Plan (see Table 6). Nevertheless, the Five

Table 6

Annual Increases in the Productivity of Construction Labor
in the USSR
1951-55

						Percent
<u>1951</u>	<u>1952</u>	<u>1953</u>	<u>1954</u>	<u>First Half of 1955</u>	<u>Increase Required in 1955</u>	<u>1951-55 Goal</u>
9.5	7	4	8	10	17	55

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Year Plan for the growth of labor productivity in construction will not be fulfilled, because of the quite unfavorable rates of growth in the earlier years. Soviet data indicate that the 1951-55 investment program probably will exceed the total cost of the 1946-50 program by about 90 percent rather than the planned 60 percent. The cost of the investment program in the Fourth Five Year Plan also was greater than planned, but the volume goal for that period was exceeded by 22 percent compared with the probable 3- to 6-percent overfulfillment for the 1951-55 period.

The scale and pattern of investment in the next 5 years probably will be quite similar to the trends in the past few years. Consumer-oriented activities -- agriculture, housing, and light industry -- will continue to receive a somewhat larger share of investment funds. Considerable new construction will be combined with renewed emphasis upon improving existing plants by introducing more technologically advanced machinery. Thus the investment program in the Sixth Five Year Plan will be a cross between the dominant trends of the Fourth and Fifth Five Year Plans. Two of the primary determinants of the scale of the 1956-60 investment program are, however, relatively unknown quantities -- namely, the degree to which agricultural production can be increased so as to provide a larger investment surplus, and the competition of the military program for investment resources.

IV. Industrial Labor Force and Labor Productivity.

A. Current Trends.

The last 2 or 3 years mark the passing of the era when Soviet planners could freely milk the agricultural sector of surplus labor in order to meet and exceed industrial production goals when output per man in industry did not increase as planned. For the next 5 years at least the dynamics of Soviet economic growth will differ significantly from the past because the industrial labor force can no longer be expanded at will. Explicit, and remarkably frank, recognition of this change has recently appeared in the Soviet press, as follows:

The plan for industrial production was overfulfilled for the first four years of the Fifth Five Year Plan despite the fact that the plan for labor

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productivity was not achieved for the 1952-54 period. These results were achieved by increasing the number of workers more than planned.

In the first half of 1954 the number of workers and employees in industry, construction and transport increased 1,200,000 in comparison with the first half of 1953. Such a tempo of growth of workers in industry will not be possible in the Sixth Five Year Plan inasmuch as the agricultural labor force will have to be increased, and in part by drawing upon the urban population. Already in the first half of 1954 the number of workers in agriculture (machine tractor stations and state farms) increased by 2,300,000 over the first half of 1953.

Thus in the Sixth Five Year Plan the growth in industrial production must come from increased productivity of labor to a greater degree than in the Fifth Five Year Plan. The engineering industries, which employ the largest number of workers, are of particular importance in increasing labor productivity.

Bulganin said much the same thing in his July 1955 report to the Central Committee, and most of the important policy decisions of the past 2 years, the agricultural and consumer goods programs, the reduction in administrative overhead, and the changes in the planning apparatus have been adopted primarily to increase labor productivity.

The rate of growth of labor productivity is important to the Soviet leadership for several reasons. First, in each of the postwar Five Year Plans about 75 percent of the increment to production was planned to come from increased output per worker, the other 25 percent to be achieved by expanding the labor force. It should be noted in this context that the USSR classifies the contribution of all other factors (land, capital, management) under the category of labor productivity. Second, the Soviet leaders believe that exceeding the level of labor productivity which exists in the

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capitalist world is a prerequisite for the final victory of their system. Third, it is a principle of Soviet planning that labor productivity should increase faster than real wages in order to provide the necessary saving for investment and future growth. In other words, what the state gets out of the workers should increase faster than what the state pays to the workers.

During the past 4 years the growth of labor productivity has been unsatisfactory on all counts. In order to fulfill production goals in the face of lagging output per worker, the labor force has been increased far more rapidly than planned (see Table 7). Exceeding the planned rate of growth resulted, of course, in a much larger increase in the wage bill than originally was anticipated, which contributed to the growth of excess purchasing power. The growth of excess purchasing

Table 7

Increases in the Industrial Labor Force
and of Industrial Labor Productivity in the USSR
1951-55

	Percent						
	Increase over Previous Year				First Half of 1955	Planned Increase 1955 over 1950	Increase Required in 1955
	<u>1951</u>	<u>1952</u>	<u>1953</u>	<u>1954</u>			
Industrial labor force <u>a/</u>	5	4	6	6	4.5	13 <u>b/</u>	<u>c/</u>
Industrial labor productivity	10	7	6	7	7.0	50	13

a. Derived from Soviet data on increases in industrial output and industrial labor productivity which indicate that the Fifth Five Year Plan goal was achieved by the end of 1953.

b. Based on original plan of a 70-percent increase; see Table 1, p. 7, above. Since the output goal has been revised upward, the labor force goal also would be increased somewhat (it is known that the productivity goal was not increased).

c. Overfulfilled. Actual increase will be nearly double the planned increment.

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power was aggravated further by the reductions in retail prices and in the state loan in 1953-54, while the supply of consumer goods did not increase commensurately despite the releases from inventories and reserves, imports, and the emphasis on consumer goods production in 1953-54. Explicit recognition of this phenomenon recently appeared in the official press, as follows:

Despite the significant increase in the supply of consumer goods, certain imbalances exist between the level of production of consumer goods and the purchasing power of the population. During the past few years the purchasing power of the working population increased faster than the production of consumer goods. The income of workers, peasants, intelligentsia was excessively increased by the reductions in retail prices. A larger proportion of the population was able to demand higher quality goods. During the postwar years, particularly in 1953 and 1954, there was a rapid shift in mass demand toward higher quality consumer goods. At the present time the trade network is unable to supply the demand for certain categories of consumer goods, particularly for high quality industrial products and for foodstuffs.

Meanwhile, labor productivity was not increasing according to plan, and the imbalance between the consumer purchasing power and the availability of consumer goods was an important contributing factor. The net result was that payments of goods and services to the workers was increasing faster than labor productivity. According to Soviet statistics, labor productivity increased only 33 percent for the 1951-54 period, whereas real wages increased 37 percent. From the point of view of the Soviet leadership, such a relation between these rates of growth is highly unfavorable because it tends to constrict the surplus available for investment and hence the rate of growth of the Soviet economy.

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Labor productivity has been lagging not only in industry as a whole but also in many of the basic extractive industries, where the rates of growth have been much less than the average (see Table 8).

Table 8

Indexes of Labor Productivity in Selected Industries
in the USSR
1940 and 1954

	<u>1940</u>	<u>1954</u>
Total industrial labor productivity	100	180
Coal industry,	100	120
Timber industry	100	106
Ferrous metallurgy	100	174
Transport	100	131

Indeed, some of the high-priority industries -- coal and timber,* for example -- have the lowest rates of growth in labor productivity despite the heavy capital investment in these industries during the postwar period. The timber industry, for example, had a fourfold increase in capital stock between 1940 and 1954, but labor productivity increased only 6 percent, and the slow rate of growth of labor productivity in the coal industry persists despite the large investment in modern machinery and facilities. This suggests that coercion and control techniques are essential factors in the growth of labor productivity in the USSR, since in these two industries, which have been relatively well provided with incentives and capital equipment in recent years but in which labor cannot be continuously controlled and supervised as in a factory, the relative growth of labor productivity is low.

* The high priority of the timber industry, of course, dates only from the end of the Fourth Five Year Plan (about 1949).

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In addition to morale factors, there are other important institutional phenomena which are inhibiting the growth of industrial labor productivity. The whole system of labor "norms," or output quotas for various types of workers, is completely out of date. The last complete revision was in 1931 and was only partial; despite the tremendous subsequent changes in technology, only haphazard adjustments have been made since that time. Premiums and bonuses for exceeding the norms account for nearly one-half the total wage bill. It is probable that the premiums and bonuses are being paid as much to reduce labor turnover as to reward the workers for outstanding levels of productivity. The abuses of the wage system and attendant consequences have recently been stated quite frankly by Soviet writers, as in the following excerpts:

The system of premiums which is in force in industry and transport, because of its deficiencies often leads to the result that in a number of industries and enterprises the workers who do the easiest work are the ones who get the premiums.

The socialist principle of distribution according to work plays an important role in the raising the technico-cultural level of the workers. It provides a material incentive to each worker not only to increase his output but also to improve his quality. Consequently the correct application of the socialist principle of distribution according to work is a key factor not only in the growth of labor productivity but also in the technico-cultural level of the workers. The serious deficiencies of the existing wage rate system, and particularly the output quotas [norms] in a number of industries, reduce the influence of this most important principle and damage the national economy.

As long as the industrial labor force could readily be expanded by transferring labor from agriculture, these deficiencies in the wage system apparently could be disregarded. The overriding objective was to get production. But with the passing of the era of surplus labor in agriculture the wage system will have to be reformed.

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Recently Soviet leaders have publicly complained that the growth of labor productivity has been inhibited by the slow tempo of technological progress and by the unsatisfactory dissemination and adaptation of Western technological developments in the Soviet economy. The latter failure is apparently one of the consequences of the "Zhdanovshchina" -- the campaign against "bourgeois cosmopolitanism," against the "kow-towing to the West," against the thought that any one else had discovered anything first -- which was launched by Zhdanov in 1947. One of its manifestations was the disappearance of news about foreign technological advances from the industrial trade journals. To be sure, superpriority activities such as the atomic energy program undoubtedly were not affected, but for the ordinary Soviet industry, for the rank and file of engineers and managers, an important source of knowledge and stimulus was largely eliminated. The gradual reappearance since Stalin's death of discussions of Western technological advances indicates that the desire to speed up technological progress which in turn will tend to increase labor productivity has overcome these ideological inhibitions.

The growth of labor productivity is slowed not only by the lagging of technological advance but also by the wide variations in the technology, scale, and managerial efficiency of plants producing the same product. Historically, the preoccupation with increasing production as fast as possible has resulted not only in the construction of modern and efficient plants but also in the continued operation of backward and high-cost producers. Few if any Soviet plants have been known to go out of production because their costs were 2 or 3 times as high as the average. An excellent example of this phenomenon is provided by the indexes of labor productivity in the largest ferrous metallurgical plants in the USSR (see Table 9*). Such variations in labor productivity are usually accompanied by comparable variations in production costs, which in turn vastly complicate the planning process. In the future a more rational distribution of resources, particularly of labor, will be necessary if high rates of growth of industrial production are to be maintained.

* Table 9 follows on p. 34.

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Table 9

Comparative Indexes of Average Output per Worker
in Selected Ferrous Metallurgical Plants in the USSR a/
1954

<u>Plants</u>	<u>Blast Furnaces</u>	<u>Open-Hearth Furnaces</u>
Kuznetsk Combine	100	100
Magnitogorsk Combine	122	89
Novo-Tagil'skiy Plant	79	52
Chelyabinsk Plant	69	50
"Zaporozhstal'" Plant	55	77
"Azovstal'" Plant	50	57
Makeyevskiy	51	43
Krivorozhskiy	42	N.A.
Dzerzhinskovo	38	43
Stalina	34	N.A.
Voroshilova	N.A.	46

a.

B. Future Problems and Policies.

The future possibilities for increasing industrial production by expanding the labor force and the recent trends in the distribution of increments to the labor force are illustrated in Tables 10* and 11.** During the period from 1950 to 1955 (inclusive), nearly 5 million new workers were obtained from the agricultural population. It is estimated that in 1956-60, only about 1 million to 2.5 million workers can be added to the nonagricultural labor force from the normal increment to the agricultural population, and a considerable number of people with technical educations will be transferred to agriculture. Consequently, increased output per worker will have to account for the bulk of the increase in industrial production during the next few years.

* Table 10 follows on p. 35.

** Table 11 follows on p. 36.

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Table 10

Nonagricultural Employment in the USSR
1946-60

	Million Workers and Employees				
	1 January 1946	1 January 1951	1 January 1956	1 January 1956	1 January 1961
Fourth Five Year Plan (1946-50)	23.7	36.8			
Fifth Five Year Plan (1951-55)		36.8	43.3		
Sixth Five Year Plan (1956-60)			43.3	43.3	48.0 to 48.5

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Table 11

Total Labor Force in the USSR
1950 to 1 January 1956

Year	Million Workers and Employees		
	<u>Collective Farms</u>	<u>State Agriculture</u>	<u>Nonagricultural</u>
1950	49.0	2.4	34.8
1951	49.0	2.4	36.8
1952	48.2	2.6	38.2
1953	48.7	2.6	39.1
1954	48.5	4.1	40.7
1955	48.6	5.0	42.0
1956 a/	49.6	5.5	43.0

a. Preliminary estimate:

Current Soviet policies designed to promote the rapid growth of labor productivity run the gamut from the long-range program to increase the supply of quality foodstuffs, which presumably will increase incentives for higher productivity, to measures designed to speed technological innovation. The underlying assumption that greater incentives are necessary to promote the growth of labor productivity has not changed since the adoption of the "new course." The current agricultural program and the emphasis on improving housing are both designed to provide greater incentives to the labor force.

During the first 6 months of 1955 there has been a significant increase in emphasis on improved technology as one of the keys to labor productivity. Introduction of new technology has two aspects: (1) the general diffusion of knowledge and information concerning

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technological developments, and (2) the widespread application of specific techniques, particularly mechanization and automation.*

These techniques not only have great potentialities in terms of reducing labor inputs into productive processes but also have a distinctive ideological and emotional appeal to the Soviet leadership. Automation in particular promises to become a mystique, to become charged with more ill-defined overtones of a panacea than was "planning" in the early 1930's. Soviet leaders look to mechanization and automation not only to reduce direct labor inputs but also to make possible the "elimination of the distinction between mental and physical labor" which they conceive to be essential to the transition from the present "socialism" to the future "communism." In other words, even the manual worker will become a combination of meter reader, maintenance man, and low-grade engineer. It is also likely that the Soviet leadership anticipates the promulgation of such a vision to strike sparks of interest and enthusiasm and to improve worker morale.**

* The Soviet concept of automation is somewhat broader than the term used in the West inasmuch as the USSR tends to apply the term to a single machine which performs one, or possibly two, operations with very little assistance from the human operator. In the West, automation is usually limited to a number of machines which are linked together and which automatically perform a number of operations, including the inspection of the quality of the product.

** In the past, the Russians have had difficulty in adjusting mass expectations concerning the technical training and responsibilities which would be available to the average worker to what actually was available. In the 1930's, because of the demands of industrialization and the Party's desire to relieve itself of dependence upon the technical intelligentsia inherited from the Tsarist period, great stress was laid upon the opportunities open to all for technical advancement. The response was a widespread aspiration for higher education and the white smock of the engineer. When, however, the immediate needs for engineers and technicians had been largely met in the late 1930's, and it was desired to control entry into this social class more closely, it was found necessary to limit these expectations; Kalinin complained eloquently, "Who is going to do the hot and dirty jobs?" In subsequent years the class lines between the workers and the intelligentsia have been clearly drawn, and movement from the first to the second has been restricted in order to enhance the prestige of the new managerial class.

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The Soviet desire to eliminate the "essential distinction" between mental and physical labor complicates the problem of getting more capital per unit of output through mechanization and automation. Given the rate of output specified in the plan as the objective, the Soviet engineer is told to design machinery which will require engineers and highly skilled technicians to operate it, eliminating the use of unskilled and semiskilled workers if possible. Judging from US experience and from a few examples of Soviet designs, the same rate of output usually could be achieved by using machinery of lower original cost and of lower operating costs in terms of wages but which would still use some unskilled and semiskilled labor. Such capital intensive solutions, of course, represent an improvement over the existing combinations of capital and labor but certainly do result in more capital intensive solutions than in the West, where the primary objective is to minimize total costs (both capital and labor). Unless sharply modified in practice, the Soviet theory will tend to slow down the rate at which the new technology will reduce unit costs. Furthermore, the introduction of mechanization and automation competes very directly with the production of military end items for modern weapons systems, and the pinch on such industries as electronics and precision instruments can be expected to be severe.

The "elimination of the distinction between mental and physical labor" seemingly is the slogan adopted to dramatize the current policy on this matter. It appears that, through the provision of more complicated equipment and continuous training of the laboring force, an attempt is being made to raise the general level of technical ability far enough to obtain increased productivity and to provide some prestige rewards to the working class. But the process of raising the general level of technological competence, in its social aspects, must stop short of destroying the distinctive position and special privileges of the intelligentsia. Although the current slogan has not yet been widely popularized (it is, of course, a historic goal, but it fell from prominence for many years), it will probably come increasingly to the fore. This development is related to current revisions of the 10-year school curriculum in the direction of increased vocational training. In the future, 10-year education is to become universal and is to be aimed not only at entrance into universities but chiefly at manning the labor force with personnel falling in the range between skilled workers and technicians.

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The prospects for achieving a more rapid growth of labor productivity in the next 5 years, and an increase of 50 to 60 percent compared with about 40 percent officially reported for the 1951-55 period, may be assayed briefly. The Soviet leaders should be successful in increasing the flow of technical knowledge, improving the general level of technology in the economy, and reforming the wage system, although there will be strong institutional pressures to abuse the system of premiums and bonuses. All these things should do much to promote the growth of labor productivity. Two crucial problems remain, however. First, there is by no means any guarantee that increased output of quality foodstuffs, which will increase mass incentives, will be forthcoming and, second, the ability of the planners to insure the necessary degree of improvement in the general technological level of the economy may well be limited by the competition of modern weapons systems.

V. Cost Reductions and Technological Progress.

A. Cost Reductions and Investment Surplus.

There are several measures of efficiency which are quite important in assessing Soviet plan fulfillment. All Soviet production schedules are based on anticipated cost reductions and increased productivity of capital as well as on the planned allocations from current account. In the current Five Year Plan, for example, of the 90-percent increase planned in the volume of investment, one-third was to be achieved by reducing total investment costs (1951-55 compared with 1946-50) and two-thirds by increasing allocations from current account. Probably the most important efficiency measure is the reduction in sebestoimost' (cost of production*) of industrial production, which includes the value of raw materials and semifinished goods, fuel and power, wages, an amortization allowance,** and certain administrative expenditures. This cost reduction is the difference

* Sebestoimost', the accounting category which is the basis for most Soviet pricing and cost accounting, cannot be directly translated. The closest approximation is our concept of total cost with the qualification that under the Soviet system fixed costs are geared more closely to production than is common in the West.

** The Soviet amortization allowance includes repair and replacement of capital equipment but does not contain an obsolescence factor.

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between the actual cost of production in year II and the total cost of production in year II calculated on the basis of cost per unit in Year I. Such reductions in the cost of industrial production increase the state surplus available for investment and defense and provide the basis for price reductions in producer goods and military end items. Price reductions for producer goods, raw materials, and semifinished goods together with reductions in construction costs make possible a greater increase in real volume of investment than is indicated by the allocations from current account. The yearly decline in the aggregate sebestoimost' of industrial production is shown in Table 12.

Table 12

Reduction in the Total Cost of Industrial Production in the USSR
1951-55

					Percent	
Percentage Reduction from Preceding Year					Cumulative	
1951	1952	1953	1954	1955 (6 Months' Plan)	Four-Year Reduction (1952-55)	Five Year Plan (1951-55)
N.A. a/	8.0	5.0	4.0	3.8 (4.5)	19.0	25.0

a. The total reduction in 1951 was not reported in percentage terms. The Soviet press, however, did report that savings from cost reductions, excluding the savings from the reduction in wholesale prices of raw materials and semifinished goods, amounted to 26 billion rubles. Apparently, most of the savings from 1951 price reductions were passed on to provide the unusually large reduction in 1952.

As indicated above, planned cost reductions for the 1951-55 period were to amount to 25 percent (aggregate production in actual costs compared with aggregate production in 1950 costs). If 1951 is

* Price reductions in consumer goods are derived primarily from the reduction in the turnover tax, although reduction of the sebestoimost' of processing may be a factor. In general, the rate of profit decreed by the state is higher in the consumer goods industry than in heavy industry.

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excluded from consideration and if it is assumed that the rate of decrease during the first half of 1955 is representative of the entire year, the cumulative cost reductions for the 1952-55 period will amount to 19 percent. Even allowing for the savings in 1951, it is now doubtful if the economies planned for the 1951-55 period will be achieved.

Reductions in production costs will assume even greater importance in the next 5 years than in the past because they are one of the principal means of increasing the state surplus -- that is, that part of the difference between production and consumption (in a given time period) which is available to the state for investment and defense.* According to Soviet accounting practice, this surplus consists primarily of the profits of state enterprises and the turnover tax. Reductions in sebestoimost', together with increased volume of production, increase the profits of enterprises and hence the state surplus. Trends in the growth of this surplus and the demands made upon it by investment and defense are illustrated in Table 13.** It will be noted that, in the 1952-54 period, the surplus grew at a slower rate than did the demands upon it. The same process is also expressed in the growth of real wages at a faster rate than labor productivity during the same period.

In recent years the share of the state surplus derived from the turnover tax has been declining rather rapidly; this has been compensated for by profits of enterprises, which in turn are heavily dependent upon cost reductions. This trend is illustrated in Table 14** and is in sharp contrast to the Fourth Five Year Plan, when almost the entire surplus was derived from the turnover tax. Furthermore, during the immediate postwar period almost the entire turnover tax was levied on goods which were agricultural in origin, serving as a vehicle for extracting the bulk of the state surplus from the economy as a whole.

* This assumes, of course, that consumption as a proportion of national income remains the same. The definition of the state surplus as used here corresponds to the Soviet concept of "net income" of the state; it should not, of course, be confused with the budget surplus. Private savings are excluded, as are private and collective farm investments.

** Tables 13 and 14 follow on p. 42.

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Table 13

Trends in the Formation and Use of the State Surplus
in the USSR
1950-55

1950 = 100

	<u>1950</u>	<u>1951</u>	<u>1952</u>	<u>1953</u>	<u>1954</u>	<u>1955</u> (Plan)
Income to surplus a/	100	107	110	111	111	125
Expenditures from surplus b/	100	105	113	115	118	121

a. Turnover tax collections plus total profits of state enterprises.
b. Explicit defense expenditures plus total investments in state enterprises.

Table 14

Turnover Tax as a Proportion of State Surplus
in the USSR
1950-55

Percent of Total

<u>1950</u>	<u>1951</u>	<u>1952</u>	<u>1953</u>	<u>1954</u>	<u>1955</u> (Plan)
78	77	75	73	67	62

Industrial profits probably were outweighed by subsidies during the 1946-49 period. Since 1951-52, however, the contribution of the agricultural sector has leveled off and may have declined owing to increased procurement prices and the growth of other state outlays for agriculture. Retail price reductions (carried out primarily by reducing the turnover tax) have tended to reduce the contribution of urban

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consumers. The declining contribution of the agricultural sector to the investment surplus while the industrial base is expanding rapidly poses a serious long-run growth problem for the Soviet planners and increases the importance of cost reductions in industry as a compensating factor. It can be anticipated that the planned reductions in sebestoimost' of industrial production in the 1956-60 period will be at least 25 percent and probably more. The capability of the economy to reduce costs is, of course, heavily dependent upon the rapid growth of labor productivity, which has been lagging seriously throughout the 1951-55 period. Moreover, the political unpalatability of increasing retail prices and resorting to heavy income taxes will make it difficult to reduce consumption, and thereby increase the state surplus by such means.

B. Efficiency Measures.

Several measures of utilization of capital equipment are considered sufficiently important to be reported in the annual plan fulfillment announcements. Plans for production of capital equipment inputs necessary to achieve final output goals are based upon the anticipated economies in the use of the existing stock of capital equipment in each time period. Among the most important efficiency measures are production per cubic meter of blast furnace volume and coal input per kilowatt-hour of electricity. Efficiency trends for the Fifth Five Year Plan are indicated in Table 15.* Although progress has been substantial, most of the cumulative 5-year efficiency goals probably will not be reached. The failure after 1951 to report improvement in the utilization of coal combines probably indicates that in fact no improvement occurred. In general, the coal industry has been operating quite inefficiently despite the fact that gross output goals will be exceeded. While improvement in efficiency of use of existing capital stock will continue to be a very important aspect of planning, more rapid and comprehensive introduction of new technology is necessary if the Soviet planners are to count on continued rapid improvement of efficiency in the future.

* Table 15 follows on p. 44.

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Table 15

Trends in the Improvement of Production Efficiency
in Certain Key Industries in the USSR
1951-55

	Increase in Yield per Unit of Input					Cumulative Target (1951-55)	Increase Required in 1955
	1951	1952	1953	1954	First Half of 1955		
Production of pig iron per cubic meter of blast furnace volume	5	5	2	4	5	30	10
Production of crude steel per square meter of open-hearth furnace area	5	3	5	3	5	25	7
Productivity of coal combines	19	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
Speed of drilling in proved fields		4	5	5	N.A.	N.A.	N.A.
Output of electric power per unit of coal input	N.A.	2.4	1.9	2.6	N.A.	N.A.	N.A.

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VI. Agriculture.

The semiannual plan report gives impressive data concerning increments to the input side of the agricultural economy. A remarkable increase in sown acreage, an increased flow of agricultural machinery, and a marked improvement in the quality of the machine tractor station managerial class are indicators that concrete efforts are being made to increase output.

The increase in sown acreage of all crops of the 1955 harvest probably will be about 22 million hectares, a gain of more than 13 percent above last year. The actual acreage increase of the 7 or 8 crops listed in the plan report exceeds by 5 million hectares the net increase in acreage. This is probably the result of a decrease in perennial grasses and low-yielding small-grain acreages in favor of corn.

Besides a fourfold acreage increase in corn, sowings of the other heavily emphasized grain crop, wheat, also increase, perhaps by as much as a quarter. Most of the wheat increase was accomplished in the overfulfillment of the "new lands" expansion plan. Sizable increases in area planted to other important food crops, such as potatoes, sunflowers, and sugar beets, and to flax were in line with plans announced since the initiation of the "new course."

The one significant negative aspect of this acreage expansion is the large increase in labor required to care for these crops. The acreage increments to relatively high labor-consuming crops such as corn, flax, sugar beets, and potatoes in the traditional agricultural regions and the demands on these settled regions to send manpower to open up the unsettled "new lands" regions are undoubtedly causing temporary labor shortages. Press complaints this year on the lag in such operations as haymaking indicate that local farm managers are being forced to give priority to the cultivation of corn, for example, rather than to the timely cutting of hay. The problem of labor shortages probably will be at its height during the grain harvest.

Although 1955 is the second year of the "new lands" program for the extension of area sown to small grains in Kazakhstan and West Siberia, this is the first year in which the acreage is of nationally

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significant proportions -- 20 million hectares (roughly one-sixth of total grain acreage). The lack of rains in the late spring and early summer indicates that grain yields in the "new lands" will be at or below the low average characteristic of the region. Unpublished comments made recently by a high Soviet agriculture official indicate that the Soviet planners are well aware of the limiting factors (mostly low rainfall) in crop cultivation in these areas but believe that the venture will be profitable because of low labor and material expenditures per sown hectare. Khrushchev has indicated that the planned "break-even point" is an average yield of 4.8 centners of grain per hectare, which is approximately the long-run average yield in this area. This required average yield is too low, if past experience with planning the cost of state farm production can be used as a criterion. Operational and investment expenditures on state farms, the primary unit in the "new lands," have always been above the planned level of cost per unit of output. The success or failure of the "new lands" program may depend on whether the Russians can increase labor and capital productivity to a point where cost of production to the state in the "new lands" will be below costs incurred in the non-black-soil regions of European USSR.

Machinery allocations for the first 6 months were at a higher annual rate than for the previous year. Especially prominent is the increase in allocations and production of labor-saving machinery for the cultivation of "new" crops such as corn and formerly unmechanized crops such as potatoes and vegetables. As is indicated by the republic plan reports, most of the large diesel tractor and grain combine allocations are going to the "new lands." Although production of corn-harvesting combines was tripled compared with the first 6 months of last year, the harvesting of this crop will be mostly unmechanized at least for this crop year. The lack of sufficient peak season labor in cutting and ensilaging undoubtedly will lead to large fodder losses and to lower feed value for the silage.

The plan to increase the quality of the rural elite or managing class apparently is being met, if one uses the criterion of educational background. Ninety percent of the directors of machine tractor stations now have special secondary or higher educational training, and 70 percent of the chiefs of repair shops are now in the upper educational brackets compared with 36 percent and 10 percent, respectively, in 1953. No indication was given as to how successfully

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the plan is being carried out to make 1 out of every 3 collective farm chairmen a Party technician from the urban areas. This plan, first announced in April, calls for the staffing of 30,000 backward collective farms with chairmen of Party and usually nonagricultural experience.

In the livestock sector the most notable success has been the raising of milk production during the nonpasture season of October to May, when as little as 20 percent of the annual milk production is usually produced. There is no indication that there were sizable increases in holdings of livestock of individual owners. One of the key incentives given the peasants early in the post-Stalin era was the official encouragement, including financial aid, to restore the depleted holdings of privately owned livestock. After large gains in these holdings over the 1953-54 period, there now seems to have been a levelling off, suggesting that feed was in such short supply after the regional droughts last summer that many private owners had to dispose of holdings during the winter.

VII. Trade and Consumption.

A. Trends in Retail Trade.

Sales of goods to the population for the first half of 1955 are reported only 8 percent above (in comparable prices) those for the first half of 1954; these, in turn, had been reported 21 percent above those for the first half of 1953. This significant drop in the rate of increase probably reflects a diminished ability to exploit withdrawals from state reserves as well as a possible reluctance to increase greatly imports of consumption goods.

Inasmuch as the plan is reported fulfilled, this decrease probably means that the Russians, forced now to rely chiefly upon current domestic output for the supply of goods for sale (see B, below), anticipated in their planning a tighter availability than in 1953 and 1954. If this is so, the growth of sales is as rapid as is possible with current production rates, which are restricted both by a limited past investment in facilities for production of consumer goods and by lags in the growth of agricultural output, which provides most of the material input for consumer goods production.

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Generally speaking, the individual items and categories of items which comprise the bulk of retail trade show a significantly diminished rate of sales growth for the first half of 1955 compared with the rate of increase for the first half of 1954 (see Table 16).

Table 16

Trends in Retail Trade Turnover in the USSR

<u>Selected Items</u>	<u>First Half of 1954 as Percent of First Half of 1953</u>	<u>First Half of 1955 as Percent of First Half of 1954</u>
Meat and meat products	130	106
Fish and fish products	124	120
Milk and milk products	121	112
Cotton fabrics	119	110
Clothing	124	118
Knitted goods	124	113
Footwear a/	115	106
Sewing machines	131	117
Furniture	137	117
Bicycles	129	120

a. For 1954, leather footwear.

Besides the supply constrictions on sales, it is likely that demand also was somewhat curtailed during the first half of 1955. In addition to governmental fiscal measures designed to blot up liquid assets held by the populace -- for example, the increase in the state loan -- effective demand was influenced by consumer expectations, with some prospective purchasers probably delaying their buying of certain items (particularly durables) in anticipation of a general price reduction before the middle of the year -- a reduction which failed to materialize (though some few reductions occurred, and were locally publicized, in the cost of certain television sets and radios).

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The general demands of the population are reported as still being met inadequately, both in respect to the aggregate amount of goods available in certain areas and in respect to the assortment of items offered, such as food and clothing.

Progress in the development of rural trade was not mentioned in the official plan fulfillment report. Subsequently, consumer cooperative trade -- predominantly rural -- was reported to have grown 13.5 percent over the first half of 1954, representing a 101-percent fulfillment of the plan. These figures include commission trade. Excluding commission trade, the increase was slightly less -- 12.4 percent.

B. Trends in Consumption Availabilities from Production.

Inasmuch as sales trends increasingly depend upon the trends of current domestic production of consumer goods, these production trends must themselves be examined. Whereas the growth of retail sales has dipped from its 1954 high, general availability of goods from current production continues to grow at a fairly constant rate.* Growth in availability of the major categories of consumer goods is shown in Table 17.**

* These indexes are computed on the basis of adjusted physical production estimates of significant items of consumption, weighted by their current ruble prices. The rough preliminary comparison of the annual growth rates of the first half of 1955 with the 1954 rates is computed by applying announced percentage production increases for the first half of 1955 to the appropriate figure in the array of 1954 price-quantity products. These adjusted products are summed and the totals compared with the 1954 totals. This preliminary comparison, of course, has limited reliability: the first-half-of-1955 annual rates are compared with full-year rates for 1954, and for such commodities as are not reported it is assumed that the 1955 rate will be the same as the rate for 1954. Thus, if 1955 is a better crop year than 1954, this comparison will understate the full-year growth -- say of wheat, which naturally was not reported but which plays a large role in the index.

** Table 17 follows on p. 50.

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Table 17

Trends in Availability of Consumer Goods from Current Production
in the USSR

Category	Calculated Weights	Year 1954 as Percent of Year 1953	Annual Rate for First Half of 1955 as Percent of Year 1954
Food products	55	103	104
Clothing	41	111	107
Manufactured consumer goods	4	123	111
Total	<u>100</u>	<u>107</u>	<u>105.5</u>

The dips in growth for 1955, of course, are in manufactured consumer goods and clothing; food products actually increased at a higher rate than in 1954. That agricultural production is a basic problem should be clear from the fact that food production, though increasing, is growing at a rate significantly below other consumer goods. Because of its weight, therefore, this slow growth constitutes the major drag on increases in the living standard.

C. Investment in Trade Activities.

The amount of Soviet investment in trade is unreported, but the pattern of this investment is fairly clear. In developing the trade net, two aspects are currently emphasized: extensive development of facilities in the area of the virgin lands enjoys high priority, and a considerable amount of investment in trade activities is devoted to construction of new facilities to replace obsolete stores in the older areas of the USSR.

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VIII. Transport.

A. Trends in Goods Haulage.

The aggregate volume of goods transported during the first half of 1955 increased significantly over the first half of 1954, even though the precise increase cannot be determined on the basis of the report of plan fulfillment.* The increases in average daily loadings by rail were appreciable, and in cargo turnover and cargo carriage by the seagoing merchant fleet were the highest that have been reported during the period of the Fifth Five Year Plan (see Table 18**). The half-year plan was markedly overfulfilled for these two modes of transport, which together haul about 90 percent of the volume of Soviet transport. Although substantial gains are reported in river and motor transport, the increases fall somewhat short of the plans in each case (except for overfulfillment of the plan for bus passenger transport).

The above-plan increase in aggregate carriage may reflect, in addition to overfulfillment of the plan for industry as a whole, a possible Soviet tendency to solve crash production problems by means of increased transport inputs rather than by means of higher levels of plant inventories of scarce raw materials. Given ample capacity in the transport plant, such substitution might involve less current outlay than would an increment to the materials inventory.

The plan for increasing the average speed of freight trains, a goal unfulfilled for some time, was fulfilled in the first half of 1955. Freight-car turnaround time was also reported decreased. These two operating factors are related to the announced 9-percent increase in average daily loadings, one of the highest reported in the post-reconstruction period. This is especially significant because of the large proportion of total transport that is handled by Soviet railroads.

* However, as an approximation and based on average daily loadings by rail and cargo turnover data for other modes of transport, aggregate transport plan fulfillment is almost 102 percent. Similarly, total volume of traffic is about 111 percent of the first half of 1954. Weights used are as follows: rail, 85; merchant fleet, 5; river fleet, 6; and motor transport, 4.

** Table 18 follows on p. 52.

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Table 18

Trends in Transport Activity in the USSR

Transport Activity	Percent of Plan Fulfillment		Transport Increase over Previous Period	
	First Half of 1954	First Half of 1955	1954	First Half of 1955
Rail				
Average daily loading	102 a/	103	106 b/	109
Merchant fleet				
Cargo turnover	102	106	118	130
Cargo carriage	93	102	106	118
River fleet				
Cargo turnover	82	87	106	108
Cargo carriage	N.A.	N.A.	111	100
Motor transport				
Cargo turnover	103	95	166	135
Cargo carriage	101	99	175	150
Bus passengers	108	106	N.A.	148

a. Not given; figure relates to full years 1954 and 1953.

b. Figure relates to first half of 1954 and first half of 1953.

The increased volume of goods transported by the merchant fleet accompanies a general rise in Soviet foreign trade activity which persisted into the first half of 1955. The increased volume of cargo also reflects increasing POL transport by Soviet bottoms as well as increasing dry cargo movements between the Far East and the European USSR.

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The shortfalls from river fleet transport plans probably are in good part a consequence of the unusually late thaws of the 1955 spring. The primary regions for river fleet operations are extremely vulnerable to weather conditions. It should be noted that the shortfalls for the first half of 1954 were even larger than those currently reported -- yet the 1954 full-year plan was met.

The reported shortfalls from the very high planned increases in motor transport for 1955 are not large. In fact, the physical volume of the increase probably is significantly larger than that of the comparable 1954 period over 1953. These high targets clearly highlight the sharply increasing reliance of Soviet economic planners upon motor transport to provide urban dray services and rural railhead access.

B. Transport Investment.

Because of its paramount role in the movement of goods and persons in the USSR, rail transport absorbs the bulk of transport investment. Such investment may take place in three major directions: extension of rights-of-way, the improvement of fixed plants and facilities (such as signal systems, marshalling yards, or depots), and expansion and improvement of the rolling stock park. The first of these, by expanding the territory of service, is considered to involve extensive development. The latter two generally are considered to involve intensive improvements.

Under Stalin the railroads of the USSR were rapidly extended in an effort to keep pace with the geographic dispersion of economic activity and the widely publicized emphasis upon Siberian development. In the investment review that occurred immediately after Stalin's death, the policy seemed to have shifted to give less emphasis to the rapid laying of new trackage and more emphasis to improvement of the existing plant and equipment park. Total transport investment increased, however. Data reported for the first half of 1955 indicate continuance of this policy (see Table 19*). The electrification and dieselization programs are clearly reflected in the above figures. The drop in output of steam locomotives is probably temporary owing to model changes.

* Table 19 follows on p. 54.

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Table 19

Trends in Production of Transport Rolling Stock in the USSR

<u>Item</u>	<u>First Half of 1954 as Percent of First Half of 1953</u>	<u>First Half of 1955 as Percent of First Half of 1954</u>
Mainline electric locomotives	104	122
Mainline diesel locomotives	N.A.	121
Mainline steam locomotives	131	84
Mainline freight cars	N.A.	138
Trolleybuses	109	113
Motor trucks	110	112
Autobuses	168	100

The Ministry of Transport Construction is reported to have increased the volume of its construction-assembly work for the first half of 1955 by 4 percent over the first half of 1954, or about one-half the 1954 increase. This is the smallest increase reported for any of the construction ministries and represents underfulfillment of the plan. Since this ministry is principally concerned, of course, with the extension of rights-of-way and their improvement, this relatively small increase in construction-assembly work reflects continuation of the relatively slight emphasis on extension of the transport net.

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APPENDIX

SOURCE REFERENCES

This memorandum is based on Soviet plan fulfillment reports, issued quarterly through 1952 and semiannually thereafter, and on CIA analyses of the mid-1954 report.

All data in this memorandum, unless otherwise indicated, are taken from the annual and semiannual Soviet plan fulfillment reports. These reports appeared in the Soviet press on the following dates: 21 January 1947, 18 January 1948, 20 January 1949, 18 January 1950, 27 January 1951, 29 January 1952, 23 January 1953, 17 July 1953, 31 January 1954, 23 July 1954, 21 January 1955, 22 July 1955, and Premier Bulganin's speech in Pravda, 17 July 1955. Translations of these reports, beginning with the annual report for 1948, appear in the following numbers of the Current Digest of the Soviet Press: 1948 annual: Vol. I, No. 4; 1949 annual: Vol. II, No. 4; 1950 annual: Vol. III, No. 3; 1951 annual: Vol. IV, No. 3; 1952 annual: Vol. V, No. 2; 1953 semiannual: Vol. V, No. 27; and 1953 annual: Vol. VI, No. 5.

All Soviet newspapers, books, and journals are considered to be highly reliable sources of economic information. The FBIS publications are primarily translations, and slight errors in broadcast intercept as well as in subsequent translation make them slightly less reliable sources than the originals.

Evaluations, following the classification entry and designated "Eval.," have the following significance:

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<u>Source of Information</u>	<u>Information</u>
Doc. - Documentary	1 - Confirmed by other sources
A - Completely reliable	2 - Probably true
B - Usually reliable	3 - Possibly true
C - Fairly reliable	4 - Doubtful
D - Not usually reliable	5 - Probably false
E - Not reliable	6 - Cannot be judged
F - Cannot be judged	

Evaluations not otherwise designated are those appearing on the cited document; those designated "RR" are by the author of this memorandum. No "RR" evaluation is given when the author agrees with the evaluation on the cited document.

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