89th Congress
2d Session

JOINT COMMITTEE PRINT

NEW DIRECTIONS IN THE SOVIET ECONOMY

STUDIES PREPARED FOR THE
SUBCOMMITTEE ON FOREIGN ECONOMIC POLICY
OF THE
JOINT ECONOMIC COMMITTEE
CONGRESS OF THE UNITED STATES

Part III

THE HUMAN RESOURCES

Printed for the use of the Joint Economic Committee

U.S. GOVERNMENT PRINTING OFFICE
63-591 O WASHINGTON : 1966

For sale by the Superintendent of Documents, U.S. Government Printing Office
Washington, D.C. 20402 - Price 65 cents

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PART III. HUMAN RESOURCES

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POPULATION POLICY AND DEMOGRAPHIC TRENDS IN THE SOVIET UNION

BY

JAMES W. BRACKETT and JOHN W. DE PAUW

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Introduction

Recent developments in the Soviet Union point to changes in the traditional Communist opposition to family planning in developing countries. A series of articles written by leading Soviet demographers and published in the intellectual newspaper "Literaturnaya gazeta" caution Marxist demographers against brushing aside overpopulation as a problem "not of our time" and imply that something must be done now to solve the population problem. A later article with the same theme appeared in "New Times," a magazine for foreign consumption available in a number of different languages.

The purposes of this paper are to examine the implications of these developments for official Soviet population policy and to analyze major demographic trends in the Soviet Union since 1950 and prospective changes in the size and composition of the population after 1966. Special sections have been devoted to the Seven-Year Plan period, 1959–65, and to the current Five-Year Plan period, 1966–70. Data for the United States have been included where comparisons between the U.S.S.R. and the United States are most relevant. In addition, the paper presents extensive statistical data relating to the population of the Soviet Union. Many of these data are presented here for the first time in English; others are presented in a new format. All of them are derivations from official materials or estimates based on official data. In general, the more voluminous data and those not treated in the text are presented in the detailed tables at the end of the text.

The size and structure of the population obviously influence a wide range of economic, social, educational, and military decisions. Thus, this paper attempts to point out some of the present and future implications of the Soviet Union's population structure and particularly to identify demographically based potential areas of stress. Specialists in various other fields must assess the actual impact of the demographic situation and judge the ability of the system to accommodate to the demographic condition.

With the exception of the section on families, the topics covered in this paper are the same as those covered in an earlier paper, "Demographic Trends and Population Policy in the Soviet Union," prepared for the Joint Economic Committee in 1962 and published in "Dimensions of Soviet Economic Power." The organizations and focus of the material is quite different, however. The present paper concentrates more on an analysis of the 1959 census data, most of which were not available in 1962. The section on families has been added to complete the coverage of the principal types of demographic data available

*Mrs. Frances T. Manning and Dr. Arthur Saul assisted in the preparation of this paper.

from that census. The earlier paper includes historical materials not repeated here, and thus should serve as background reading for the present paper.

Chapter I. Population Policy: International and Domestic

Of the various topics with which one might begin a discussion of the demography of the Soviet Union, perhaps none is of more importance than the apparent change in Communist attitude toward fertility control in developing countries. It is still too early to assess the full import of the change, but at the very least Soviet demographers now are able to discuss the population problem openly in a more or less objective manner without running counter to established Marxist theories. The publication in a magazine for foreign consumption of an article espousing the new position supports the contention that the changes have official sanction.

In order to provide a foundation for discussing the change, this chapter presents a brief résumé of Marxist theories of population as they developed historically. It then examines, in detail, the recent polemical discussions suggesting change and the potential international implications. It concludes with a discussion of current domestic population policy.

Early Marxist Theories of Population [1]

Historically, Marxist writers have denied the existence of a population problem. They considered Malthus an apologist for the evils of capitalism and asserted that the misery which Malthus attributed to overpopulation was really due to the maldistribution of wealth. The Communist form of society would alleviate the evils of capitalism by redistributing wealth and by giving jobs to the unemployed workers. "Overpopulation," in other words, was equated to "relative surplus labor," that is, to unemployment. "Relative surplus labor" in the form of "enormous reserves of unemployed proletarians" was said to be both an inevitable consequence of capitalism and essential to its continuation. Even capitalist countries whose populations are declining must, by definition, have unemployment. Since there could be no unemployment in a Communist society, there could be no overpopulation.

Marxist writers did not maintain that a Communist society can support high birth rates indefinitely. Rather, their thesis was that the Communist society, by some unexplained mechanism, would bring into balance the birth rate and the level of production. Urbanization, industrialization, and an increasing level of living seem to be necessary ingredients to lower fertility, but the manner in which these factors affect fertility was not explained. They did maintain that birth rates also decline in capitalist countries, apparently in response to these same factors, but since (as is alleged) overpopulation (unemployment) is an inevitable consequence of capitalism, the birth rate cannot be brought into balance with production—or, more correctly, with that portion of production available to the working class.

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[1] Most of the material on early Marxist theories of population is a summary of that given in James W. Brackett, "Demographic Trends and Population Policy in the Soviet Union," Dimensions of Soviet Economic Power, Joint Economic Committee, Congress of the United States, 1962, pp. 542–547.

During the 1950's Marxist demographers developed a theory of optimum population development, applicable only to Socialist countries.[2] This theory differed, in certain respects, from some of the optimum population theories advanced by non-Communist demographers in that it emphasized the dynamics of population and rejected the concept of an absolute optimum population size. According to this theory, the government of a Socialist country is responsible for insuring a rate of population growth *en rapport* with the rate of economic development. When the birth rate is so high as to threaten the future with more workers than can properly be employed or so low as to threaten a future labor shortage, the Socialist government is authorized to take whatever actions it deems necessary to bring the birth rate into line.

RECENT DEVELOPMENTS IN SOVIET POPULATION THEORIES

In March 1965, the newspaper "Literaturnaya gazeta" published a Russian translation of a Reader's Digest article by Marya Mannes entitled "The Threatening Crowd."[3] Mrs. Mannes' article was accompanied by a rejoinder by the Soviet economist, V. Cheprakov. Cheprakov begins his article with the classic Marxist accusation that bourgeois propaganda attempts to instill into the readers the belief that the roots of all social evils under capitalism is not the socioeconomic system but the unrestrained growth of population. He accuses the "apologists of colonialism and imperialism" of using the theory of overpopulation to explain the backwardness of the underdeveloped countries and to prove the futility of socioeconomic reform. The "imperialist press" was accused of combating the introduction of modern methods of production and of preaching the return to more primitive methods in order to insure employment of the indigenous population.

Cheprakov admits that the population of the earth is growing at a very rapid rate, but maintains that the replacement of the capitalist system by a Socialist order would open up unlimited possibilities for meeting the problem. He implies that overpopulation (in an absolute sense) may be a problem for the future, but he contends that that problem will not confront mankind until the "third millennium" when "our children will be living under universal communism" and (paraphrasing Cheprakov) will thus be better equipped to handle it.

Cheprakov's article is one of the last to maintain the traditional line. Soviet delegates to the Second World Population Conference, which was held in Belgrade, Yugoslavia, in September 1965, did adhere to the traditional line in their papers (which were prepared during late 1964 and early 1965) and in their discussions at the Conference. They maintained that science can provide the means to support many times the world's present population and that India (which was singled out) should stop wasting money on birth control and concentrate on economic development. The Soviet delegates could well have been impressed by the concern of most delegates, and particularly those from developing countries, about the problem of overpopulation. By November 23, two months after the Conference closed, two important So-

[2] See, for example, Bohumil Vobornik, "The Basic Problems of Demography and Population Under Socialism." Demografie: Revue pro vyzkum populacniho vyvoje (Demography: A Review for Research on Population Development), vol. 1, Nos. 2–3, Prague, 1959.

[3] Literaturnaya gazeta, Mar. 13, 1965. Mrs. Mannes' article was taken from the Reader's Digest for February 1965.

viet demographers, Boris Urlanis and Dmitry Valentey, seemed to be taking issue with much of the previous Marxist doctrine: Valentey, by pointing out that the center of attention at the Conference was the search for a solution to the population problem, and Urlanis by stating that the population problem must be solved now.[4]

Valentey notes that there were twice as many delegates at the Belgrade Conference as attended the First World Population Conference in 1954 and that, in particular, there were many representatives of developing countries. He states that "among the participants there was not even one who openly declared his adherence to the Malthusian theory," although he says that neo-Malthusian ideas were presented, in a disguised form, in many of the papers.

Valentey's statement that there was "not even one" proponent of Malthus represents a substantial retreat from the previous Soviet practice of accusing anyone who expressed concern about the population problem as being a "Malthusian" or at best a "neo-Malthusian." His note that there were many representatives of the developing countries is probably not an incidental statement. It indicates an awareness by the Soviet Union of the fact that developing countries are concerned about population problems and that the traditional Marxist opposition to birth control in such countries is not popular.[5]

Urlanis' article makes a point-by-point refutation of many of the main points of traditional Marxist population dogma, but, of course, without identifying the points he refutes as being Marxist. Urlanis begins his article:

> When the conversation touches upon the problems of population, some are astonished: Do we still have these problems? Where did they come from? However, they are not at all imaginary; they are quite real. In some countries, possibly, they may be absent; in others, they are only approaching, while in still others, they may have already "arrived" and persist in making their presence felt.

In this initial statement, Urlanis takes issue with the main thesis of earlier Marxist writers on population theory, which denies the existence of a population problem. His statement that "some" are astonished at the existence of a population problem is even more interesting.

A little later Urlanis states that the "imperialist theoreticians" have advanced "theories" about the necessity of limiting the total population of the underdeveloped countries under the pretext that the natural resources of our planet will soon be exhausted and predict the extinction of an entire country from famine. He does not, however, attack the "imperialist theoreticians" in the traditional manner, but rather criticizes the extreme statements of the Marxist scientists (again without identifying them as Marxist) who contend that the earth can feed a greater number of people than now live on it. Urlanis says that:

> Some of these scientists, having been carried away a trifle, have made the assumption that with modern technology there is enough to feed ten times the

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[4] Boris Urlanis, "Are There Any Population Problems" and Dmitry Valentey (article not titled) in Literaturnaya gazeta, Nov. 23, 1965. Urlanis is currently a senior research worker at the Institute of Economics, which is part of the Department of Economic Sciences of the U.S.S.R. Academy of Sciences. Valentey is currently Chairman of the Council of Population Problems of the Ministry of Higher and Secondary Specialized Education.

[5] Although neither Valentey nor Urlanis comments on the point, it is quite likely that the Soviet delegates knew that the large representation from the developing countries was possible because private American foundations provided travel funds.

earth's population and with the advance of science there would be enough to feed one hundred times the present numbers. Personally, I believe that these estimates are based more on arithmetic than on economics.

Urlanis then turns to the main theme the Soviet delegates to the World Population Conference advanced time after time in the discussion: that developing countries are misguided when they spend their effort on family planning directly; that much more would be accomplished if the resources devoted to birth control were channeled into economic development; that urbanization and industrialization would lead to a reduction in birth rate in the absence of government effort; and that moreover, peasant populations at a low level of subsistence will not repond to efforts to reduce fertility until they have attained a certain higher level. The Soviet delegates at Belgrade singled out India as a case in point.

Urlanis raises the question:

> Is it not possible that * * * [urbanization and industrialization], *per se*, will lead to a reduction in natality in the near future? Let us look at the facts:
>
> In India the percent urban in the population has increased almost two times in the past 40 years, but natality is at the same level as before. In Venezuela the urban population has grown more than twice in the past 30 years. In Mexico, the United Arab Republic, Algeria, and many other countries the urban population grows rapidly. But it is impossible to assert that the growth of the urban population is accompanied by a decrease in natality.

He concludes that it is not possible to transfer automatically the experience of developed countries to those countries whose "economies were restrained by imperialism and colonialism."

> Industrialization and the development of urban life will bring, in time, a reduction of natality in these countries. *But it is important that the population problem for most of these countries must be solved immediately.* (Emphasis added.)

Urlanis attempts to bring "Malthusians" and "Marxists-Leninists" together by stating that the two—

> are differentiated not by their approach towards regulating natality but by their diametrically opposite understanding of the substance of the processes of population dynamics.

He cautions the Marxist demographers about going to the extreme in their criticism of those who are concerned about overpopulation and specifically refutes Cheprakov's arguments:

> While decisively rejecting all kinds of panicky representations about "threatening crowd" perspectives as portrayed in Marya Mannes' article in the *Literaturnaya gazeta* of March 18, 1965, the Marxist demographers should guard themselves against a too flippant approach, whereby they would set all their hopes on the success of science and brush aside the population problem as one destined only for the "3rd millennium." By the way, the 3rd millennium is only at arm's length from us. There is less time to it than the number of years which have already passed, for example, from the beginning of the first Five-Year Plan.

One week after Urlanis' article appeared, Ya. Guzevatyy published in the same newspaper an article entitled "What is the Population Explosion?"[6] Guzevatyy begins by referring to the Urlanis article, saying that its chief merit consisted of its being directed against the dogmatic and simplified understanding of the problems of population.

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[6] Literaturnaya gazeta, Nov. 30, 1965. Guzevatyy is currently a senior research worker of the Institute of World Economics and International Relations which is part of the Department of Economic Sciences of the U.S.S.R. Academy of Sciences.

Guzevatyy then makes a plea for the recognition of the population problem. He states that in a country where "economics and sociology are in ascendency" as social sciences, there is no reason why the study of demographic problems should be thought to be any less scientific. These problems merit attention for their own sake and not simply as a negative effort to refute Malthusianism. "* * * population problems do exist, and to underestimate them is to weaken our economic, political and ideological efforts."

Guzevatyy calls attention to the fact, well known to Western readers but not often discussed in the Soviet Union, that within the past 10 to 20 years death rates in the developing countries have dropped very sharply while birth rates have remained high. He then advances a justification, acceptable within Marxist dogma, for government-sponsored family planning programs in developing countries.

> The governments of various countries have officially undertaken "programs of family planning" directed to restricting the birth rate, in addition to plans for economic construction. Such programs have been undertaken by the governments of India, Pakistan, Ceylon, the United Arab Republic, Tunisia, Turkey, Chile, and several others. It should be emphasized that these "programs" are not intended to restrict the size of the family by a legislative edict or to encroach upon the right of the parents to bear as many children as they please. These "programs," as a rule, provide for disseminating information about marriage hygiene and popularizing birth control methods.

By emphasizing the education aspect of, and the lack of coercion in the family planning programs, Guzevatyy rejects any attempt to portray the programs as Malthusian and places them within the limits of one of Lenin's basic principles, that parents should be free to decide whether to have a child.

Urlanis' earlier article had also attempted to justify the family planning programs.

> In one of the most populous countries in the world—India—the government at the present time is energetically promoting birth control measures: Special clinics are being organized; medical information is being widely disseminated; definite legislative directives are being carried out in family-marital relations.
>
> The dissemination of specific medical and sanitary hygienic information should not be confused with neo-Malthusian propaganda. V. I. Lenin has stated this problem quite definitely: "Freedom [to spread] medical propaganda and the preservation of the elementary democratic rights of the citizenry is one thing, but it is quite a different matter to publicize the social teachings of neo-Malthusianism."

On December 25, 1965, one month after the appearance of Urlanis' article, "Literaturnaya gazeta" published an article by M. Kolganov entitled "Does Overpopulation Menace the World?" Kolganov begins his article by acknowledging a change in the Marxist attitude to the population problem.

> The world's rapid population growth engenders many problems. One of them, the principal one, poses the question: "Does this growth conceal a threatening crowd?" Even in framing the question people may look for something criminal. A short while ago the accusation of being guilty of Malthusianism made it difficult to analyze in a calm and scientific manner one of the present-day urgent questions—which is the population problem.

Kolganov draws a distinction between classic overpopulation in the Marxian sense—the "relative overpopulation" which is "inevitable" under capitalism—and the "absolute overpopulation" of the underdeveloped countries. He describes a finite earth whose land area is

fixed. Since the earth is not limitless and since each person requires a certain minimum area for living, Kolganov believes that it is not difficult to grasp the significance of an uninterrupted population growth.

Kolganov, too, refutes the contentions of some Soviet writers that science can take care of the problem by increasing crop yields. He ridicules such writers as I. Zabelin who mentioned in a 1960 article in "Literaturnaya gazeta" that one square meter of land is enough to support one person and that consequently an area of 50 square kilometers would be sufficient to support the whole of mankind.

Kolganov, too, attempts to justify his stand in Marxist terms:

> Engels considered the population problem not of "great urgency" during his life time and this is quite understandable. When he wrote these lines the world's population was a little more than a billion; there existed vast regions with free land in all parts of the world and the annual population increase was less than one percent.

Kolganov introduces into Marxist writings on population the concept of a *comfortable life* and its relationship to population size. Also, in counter-distinction to many other Soviet writers who emphasize the ability of science to produce food to feed enormous populations, Kolganov is concerned with the shortage of fresh water and pure air and with the general *quality* of life.

In February and March 1966, "Literaturnaya gazeta" published two additional articles in the continuing dialogue. On February 22, Pytor Podyachikh took issue with an article which appeared in the New York Herald Tribune on December 16, 1965, which indicated that there has been a change in Soviet policy toward birth control in developing countries.[7] The Tribune based its interpretation on the Urlanis article. Podyachikh reemphasized the traditional Soviet position that the population of an underdeveloped country cannot reduce its birth rate until it has attained a certain level of cultural development. He states that the official Soviet position on population growth in the developing countries is set forth in a 1964 statement to the United Nations. He does, however, state that—

> Methods of artificially reducing the birthrate to solve population problems can play a certain positive role as a transitory measure, but only when the population has attained the necessary, cultural level.

On March 3, Gennady Gerasimov took issue with Podyachikh.[8] He points to China and Poland as examples of countries in which the change to a new social order did not automatically solve the problems of a growing population. He concludes:

> Of course, a pharmacological novelty does not in itself represent salvation. The English sociologist A. Nevett justly notes in his book "Population Explosion or Control?" that "even if the pill were no more expensive than aspirin, many people would not buy it for the same reason they do not buy aspirin," i.e., owing to cultural backwardness and poverty. However, it is hardly correct on this basis to reject in toto the dissemination of medical knowledge in, for instance, the Indian countryside.
>
> The acknowledgment of the decisive role of social-economic reforms for the solution of the population problem should be supplemented by the acknowledgment of the necessity for examining without prejudice auxiliary measures, which are called demographic policy.

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[7] Literaturnaya gazeta, February 22, 1966. Podyachikh is currently Deputy Chief of the Central Statistical Administration.
[8] Literaturnaya gazeta, Mar. 3, 1966.

Gerasimov had, on January 19, 1966, published an article entitled "Overcrowded World?" in the English edition of the "New Times," a magazine of which he is currently Executive Secretary. "New Times" appears in Russian, German, French, Spanish, Czech, and Polish, as well as in English, and the article presumably appeared in all editions. The appearance of this article, which presents the general theme expressed by Urlanis, et al., in a magazine for foreign consumption suggests that the dialogue has official sanction. Soviet writers may on occasion express individual views in their own literary gazette, but they would not be allowed to publish unsanctioned ideas in an article for foreign audiences.

The timing of the series of articles in relation to the Belgrade conference and the fact that so many postconference writers expounded the new theory adds further support to the thesis that something more than individual opinions are involved. Moreover, the tone of the articles, including Kolganov's statement that "*a short while ago* the accusation of being guilty of Malthusianism made it difficult to analyze in a calm and scientific manner * * * the population problem," [emphasis added], lends still further support to the thesis that the Soviet Government has changed its position on one of the world's most pressing problems.[9]

Should the Soviet Union decide to provide large-scale assistance in the family planning field, she has at her disposal an invention that could simplify abortion—the one method that has brought about dramatic reductions in the birth rate in a short period of time. Using a suction device rather than the more conventional abortive procedure and restricting the operation to the early stages of pregnancy, the operation apparently is rather routine and carries with it an extremely low rate of complications. The suction device, according to a Soviet medical journal,

> * * * has a considerable number of advantages over the old operation method: Since it requires a smaller widening of the cervical canal, the removal of the contents of the uterus cavity is performed without the use of a sharp curet, and * * * the loss of blood * * * is reduced by one-half, also the muscular layer of the uterus is not harmed.
>
> An analysis of clinical material shows that women can bear better the operation performed with the aid of the vacuum-excochleation method, as it is not accompanied with painful sensations. At present the vacuum apparatuses are being produced in our enterprises and are being introduced into the practice of obstetrical institutions.[10]

DOMESTIC POPULATION POLICY AND PRACTICE

In his writings, Lænin advocated the legalization of abortion and the dissemination of contraceptives. He contended that one of the basic rights of a citizen was that of deciding whether a child should be born.

Thus, in November 1920, barely two years after Lænin came to power, the new Soviet Government legalized abortion. It is important to note here that this 1920 decree as well as later decrees, relating

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[9] Also in early 1966, more than 100 doctors from Communist countries reportedly had accepted contracts from the Tunisian Government to work in public health programs of all types. Approximately 25 were said to be actively involved in family planning programs, including about 5 from the Soviet Union.

[10] E. K. Nikonchik, "Protection of Women's Health in the U.S.S.R.," Sovetskoye zdravookhraniye, (Soviet Public Health), No. 2, February 1965, pp. 3–7.

to factors which might influence the birth rate, were not presented as measures designed to carry out a population policy. They were presented as social welfare programs, measures designed to raise the status of women, or to recognize their equal status, and measures designed to protect the health of the population. For example, one important consequence of the legalization of abortions was said to be a reduction in the number of abortions performed by poorly trained or untrained practitioners and sharp reductions in the number of infections resulting from such operations.

The Soviet Union followed Lenin's principle until the mid-1930's by which time the abortion rate had grown to alarming proportions. Following the issuance of a series of increasingly restrictive regulations governing abortions, in June 1936, abortions were forbidden outright for all but medical reasons. Between 1936 and 1955 the Soviet Union followed a restrictive abortion policy, but by the mid-1950's the Soviet Government became so alarmed at the high rate of illegal abortions that it once again promulgated a liberal abortion decree.

Each of the three changes in the abortion laws were presented as measures to protect the health of the population, and given the particular circumstances of the respective periods, there is probably some justification for this claim. In both 1920 and again in the mid-1950's the illegal abortion rate reportedly was high, as were the numbers of women who died after having abortions performed by poorly trained abortionists. The 1936 decree might well have been sparked by an understandable concern for the health of the many women who received one abortion after another. Of no little importance, however, was the amount of absenteeism for working women who received abortions.

Unlike most of the Communist countries of Eastern Europe, the Soviet Union has not published data on the incidence of abortion. When pressed for such data at the 1965 World Population Conference, one of the Soviet delegates reported privately that the Soviet Union does not compile abortion statistics, an amazing admission, if true, considering the volume and variety of abortion data published by East European countries. Data from several surveys concerning abortion have been published, however, and these data led one American demographer to conclude that the annual number of abortions may well be higher than the number of live births.[11] This conclusion was based on a statement from an article by E. C. Sadvokasova that "According to our data, the frequency of abortion among women who work is considerably higher than among those not occupied in work (10.5 per thousand as against 41.5 per thousand)."[12] Considering the fact that about 60 percent of all pregnancies in Hungary and up to one-half of those in several other East European countries are terminated in abortion, it is quite conceivable that one-half or more of the pregnancies in the Soviet Union are likewise aborted. By restricting abortion to the early stages of pregnancy and by using new operative techniques, both mortality and morbidity are said to be quite low.

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[11] David M. Heer, "Abortion, Contraception, and Population Policy in the Soviet Union," Demography, vol. 2, 1965, pp. 531–539.
[12] As quoted by Heer.

The Soviet Union has expressed concern about the high abortion rate, and there is little doubt that the government sincerely wants to reduce that rate, if for no other than economic reasons. Abortion operations do tie up considerable hospital facilities and result in the loss of many hours of worktime. Governmental campaigns to encourage the use of contraceptives have been conducted to curtail the abortion rate, but information concerning the effectiveness of these campaigns is lacking.

At the present time the Soviet Union does not pursue a clearcut policy of either encouraging or discouraging childbearing. Government programs and practices which tend to encourage childbearing coexist with programs and practices which tend to discourage it. Although probably not by design, practices which tend to depress the birth rate are the more numerous and many of the programs which may be construed to be pronatalist are probably not very effective. The family allowance program, for example, provides payments to families with three children or more. Payment for the third child consists of a single grant of only 20 rubles. Payments for the fourth consist of a single grant of 65 rubles and a monthly stipend of 4 rubles, which stops when the child reaches his fifth birthday. Thus, the family allowance program in its present form is little more than a social welfare program offering some financial relief to the family until the mother is able to return to work. Since the couple does not receive any financial assistance (except a small payment to cover the cost of a layette) for the first two children, and since the allowances are rather small even when they are given for later children, it is difficult to see how family allowances in their present form can offer much of an incentive for childbearing.

The birth rate in the Soviet Union has declined by about one-fourth during the past few years and it seems likely that it will decline even further. It is, of course, impossible to forecast with any certainty the future level of the birth rate, or to foretell what interpretations the government might place on particular levels of that rate. Should further declines occur, it is always possible that some officials will become concerned lest the low birth rate threaten future labor resources. Whether this concern, if it develops, could be translated into effective action to encourage couples to have more children remains to be seen.

Chapter II. Population Size and Age-Sex Composition

GROWTH OF THE TOTAL POPULATION

The 1950's, a decade of sustained population growth.—The decade of the 1950's was the longest period of sustained population growth during the entire Soviet period. The population increased by almost 34 million persons, from 178.5 million at the beginning of 1950 to 212.3 million at the beginning of 1960. (See table 1.) The annual growth rate varied from a low of 1.6 percent to a high of 1.8 percent. In contrast, population changes during the three preceding decades were very erratic. Years during which the population declined (often quite sharply) were followed by years during which the population experienced a moderate increase.

TABLE 1.—*Total population of the Soviet Union and the United States: selected years, 1950–66*

Date	Population (in millions)		United States population as a percent of Soviet population
	Soviet Union	United States	
Jan. 1, 1950	178.5	151.1	85
Jan. 1, 1955	194.4	164.6	85
Jan. 1, 1960	212.3	179.4	85
Jan. 1, 1965	229.2	193.5	84
Jan. 1, 1966	231.9	195.8	84

Source: Soviet Union: Tsentral'noye statisticheskoye upravleniye pri Sovete ministrov SSSR, "Narodnoye khozyaystvo SSSR v 1964 godu, statisticheskiy yezhegodnik" (National Economy of the U.S.S.R. in 1964, A Statistical Yearbook), Moscow, Statistika, 1965, p. 7. This volume and others in the same series are cited hereafter as Nar. khoz. v 19—. This issuing agency is cited hereafter as TsSU. TsSU, "SSSR v tsifrakh v 1965 godu, kratkiy statisticheskiy sbornik" ("U.S.S.R. in Figures in 1965, A Brief Statistical Compilation"), Moscow, Statistika, 1965, p. 8. This volume and others in the series are cited hereafter as "Tsifrakh v 19—".

United States: U.S. Department of Commerce, Bureau of the Census, Current Population Reports, "Estimates of the Population of the United States Jan., 1, 1950, to Feb. 1, 1966," series P-25, No. 332.

In comparison, the population of the United States grew from 151.1 million at the beginning of 1950 to 179.4 million at the beginning of 1960, an increase of 28.3 million. The annual growth rate varied from 1.6 to 1.8 percent and was thus not markedly different from that of the Soviet Union. The components of population growth in the two countries differed, however. The United States received an annual average (net) of 300,000 immigrants during the decade while migration into and out of the Soviet Union was not a major factor.[13] The birth rates in the two countries were very nearly the same (around 25 to 26 per 1,000 population) but because the Soviet Union has substantially fewer older people than does the United States, the death rate in the Soviet Union was lower.

The early 1960's, a period of declining growth rates.—The first half of the 1960's has been a period of lower growth rates for both the Soviet Union and the United States. By 1965, the rate of increase for the Soviet population was 1.1 percent and that for the United States population was 1.2 percent. In both countries, lower growth rates stem directly from declining birth rates.

At the beginning of 1966, the population of the U.S.S.R. was 231.9 million and the population of the United States was 195.8 million. Thus, the population of the United States was about 84 percent as large as that of the Soviet Union, which is nearly the proportion observed in 1950.

Prospective population growth to 1985.—During the next two decades it is unlikely that the Soviet population will grow at a rate substantially higher than the 1.1 percent recorded for 1965. In fact, annual growth rates substantially below that level are quite likely. If fertility remains constant at the 1965 level, the average annual rate of population growth will be about 1.0 percent. If recent declines in fertility continue, the growth rate will fall below 1 percent before the end of the decade and may be as low as 0.5 percent by the mid-1970's.

[13] About one-quarter of a million persons left the Soviet Union during the last half of the decade under an agreement with the Polish Government which permitted persons claiming Polish citizenship to emigrate to Poland.

Because the age structure of the Soviet population is becoming less favorable to growth, only a sharp rise in the level of fertility (10 to 15 percent by 1970) could prevent further declines in the growth rate. For the reasons stated in the section on fertility, conditions in the Soviet Union appear to be more favorable to a further drop.

In order to obtain some indication of the range within which the future population might fall, the Bureau of the Census has prepared four projection series based on varying assumptions about the future course of fertility. Projection series A assumes that fertility will increase; series B assumes that fertility will remain constant at the 1965 level; and series C and D assume that fertility will decrease. (The specific assumptions are given in the source note to table A–1.) Total population figures for selected dates from these four series are given in table 2. The implied annual average rates of population growth are given in table 3.

The projections postulate a population of from 239 to 243 million by 1970, from 254 to 277 million by 1980, and from 261 to 296 million by 1985. The series A projections show the population as increasing by about 67 million during the next 20 years while the series D projections point to an increase of only 32 million.

TABLE 2.—*Estimates and projections of the total population of the Soviet Union: selected years, 1960–85*

[Jan. 1 figures in millions. The letters A, B, C, and D denote the projection series]

Year	Projection series			
	A	B	C	D
1960	212.3			
1961	216.1			
1962	219.7			
1963	223.1			
1964	226.3			
1965	229.2			
1970	243.2	241.4	240.3	239.3
1975	258.8	253.6	250.3	247.0
1980	276.8	267.1	260.4	253.7
1985	296.3	281.6	271.2	260.7

TABLE 3.—*Estimated and projected annual average rates of population growth for the Soviet Union: 1960–84*

[Rates per 1,000 population. The letters A, B, C, and D denote the projection series]

Year	Projection series			
	A	B	C	D
1960	17.8			
1961	16.9			
1962	15.4			
1963	14.0			
1964	13.0			
1965–69	11.9	10.4	9.5	8.7
1970–74	12.5	9.9	8.2	6.3
1975–79	13.5	10.4	7.9	5.4
1980–84	13.7	10.6	8.2	5.5

The Soviet Union has published projections of its total population to 1980, and these figures are as follows (in millions): [14]

1970	247.5
1975	262.9
1980	280.0

They are higher than the Bureau of the Census, series A. They imply an average annual growth rate of about 1.3 percent for the period 1964–70, a level equal to that recorded for 1964. For the period 1970–75, the growth rate is 1.2 percent, and for the period 1975–80 the rate is 1.3 percent. The rates for the periods 1970–75 and 1975–80 are about the same as those shown for series A. The official projections seem highly optimistic in view of recent demographic trends.

Projections of the U.S. population, prepared on a basis comparable to the Census Bureau's projections of the Soviet population point to significantly higher growth rates for the United States than for the U.S.S.R. (see tables 4 and 5). During the next two decades, persons born during the postwar "baby boom" will reach childbearing age and short of a very sharp drop in the level of fertility (such as that postulated for series D) the rate of increase will be higher than that observed for 1965. Projection series D provides for a rate of population growth which is higher than that postulated by both series C and D for the U.S.S.R. and about the same as that for series B.

TABLE 4.—*Estimates and projections of the total population of the United States: selected years, 1960–85*

[Jan. 1 figures in millions. The letters A, B, C, and D denote the projection series]

Year	Projection series			
	A	B	C	D
1960	179.4			
1961	182.3			
1962	185.3			
1963	188.2			
1964	190.9			
1965	193.5			
1970	207.3	205.7	204.3	203.2
1975	225.5	221.2	216.9	213.0
1980	247.1	239.9	232.0	224.7
1985	270.9	260.8	249.2	238.4

Source: U.S. Department of Commerce, Bureau of the Census, Current Population Reports, "Revised Projections of the Population of the United States by Age and Sex to 1985," series P-25, No. 329, March 10, 1966.

[14] P. G. Podyachikh, "The Calculation of Future Population With Allowance for Planned Migration," paper submitted to the United Nations World Population Conference held in Belgrade, Yugoslavia, Aug. 30–Sept. 10, 1965. The assumptions upon which these projections were based are that mortality will decline, that fertility (taking urban and rural fertility separately) will rise, and that the proportion urban will increase. Because urban fertility is lower than rural fertility, an increase in the proportion urban would serve to counteract some of the assumed rise in fertility.

TABLE 5.—*Estimated and projected annual average rates of population growth for the United States: 1960–84*

[Rates per 1,000 population. The letters A, B, C, and D denote the projection series]

Year	Projection series			
	A	B	C	D
1960	16.4			
1961	16.5			
1962	15.3			
1963	14.4			
1964	13.8			
1965–69	13.8	12.3	11.0	9.8
1970–74	17.0	14.6	12.0	9.5
1975–79	18.5	16.3	13.5	10.7
1980–84	18.6	16.8	14.5	11.9

Source: Same as table 4.

The rate of increase for the United States according to series C is about the same level as that for the high series for the U.S.S.R. Thus, it seems likely that the gap between the size of the populations of the two countries will narrow.

AGE-SEX COMPOSITION

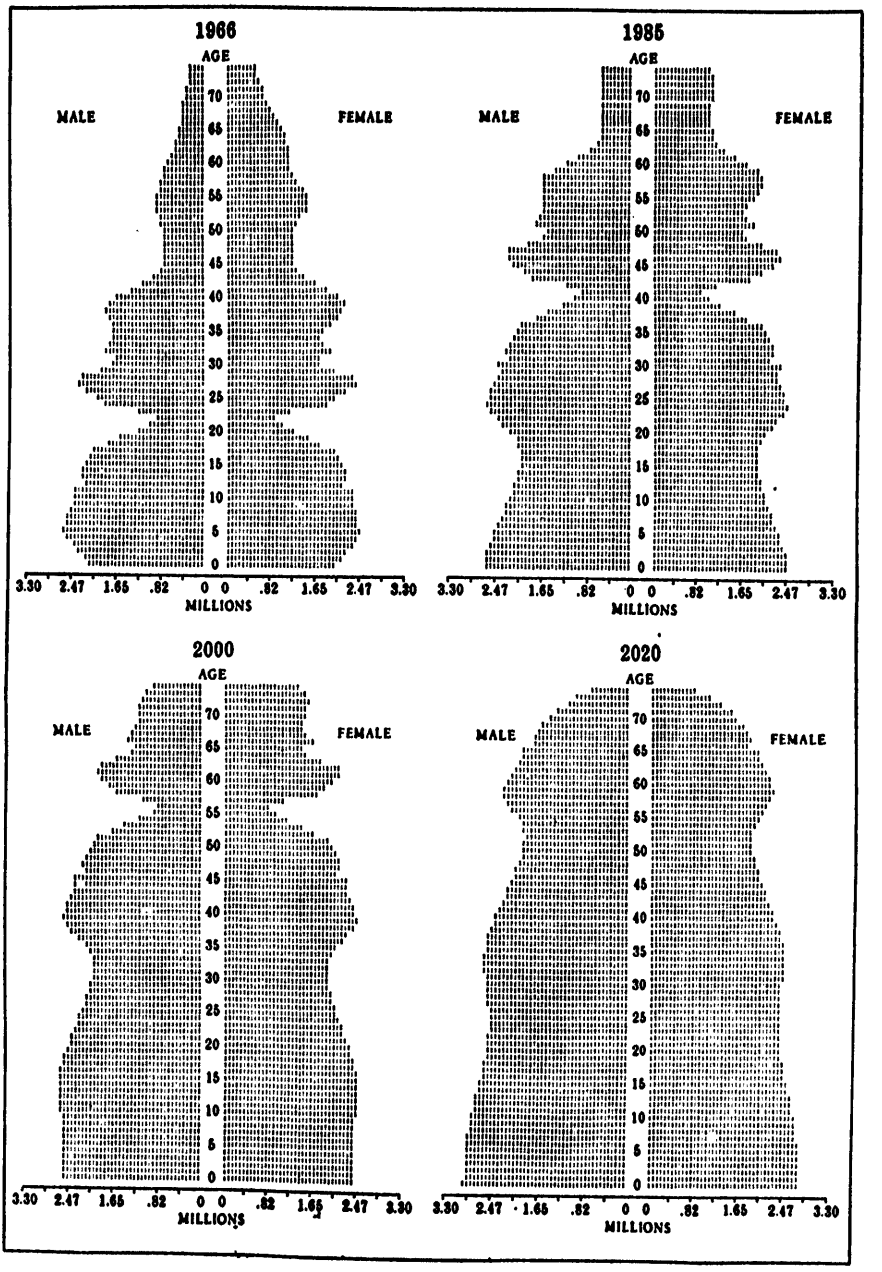
Present population.—The population pyramids for the U.S.S.R. shown in figure 1 provide a graphic representation of the demographic consequences of war, famine, and civil strife which characterized the Soviet Union during her first 30 years. The sharp indentations around age 22 in the 1966 pyramid reflect the sharply reduced birth rates of World War II. Although exact data are lacking, it appears that only about one-third as many children were born during 1943 and 1944 as during 1939 and 1940. The lesser indentation around age 45 is the result of lower birth rates during World War I and the Civil War. The birth rate during the late 1910's and early 1920's was probably only 50 or 60 percent of its pre-World War I level. The beginnings of another indentation—the result of lower birth rates during the 1960's—can be seen at the base of the pyramid.

The other prominent feature of the Soviet Union's population pyramid is the pattern of shorter bars for males age 35 years and over. At the beginning of 1966, females outnumbered males by 19 million. At age 36 there were about 10 women for every 9 men; at age 40 there were 10 women for every 8 men; at age 45 there were 10 women for every 6 men; and at age 62 there were more than 2 women for every man.

The Soviet Union is now passing through a period during which the smaller birth cohorts of World War II and the immediate postwar period, which are in their late teens and early twenties, are having their greatest impact.

Draftees, students of higher education, and the more mature and better educated entrants to the labor force are generally in this age range. Males of conscription age (those age 18 at the beginning of the year), for example, are estimated to have numbered 1.8 million at the beginning of 1966. Although this figure is substantially higher than that for some recent years (0.9 million higher than the figure for 1962),

Figure 1.--HYPOTHETICAL DISTRIBUTION OF THE POPULATION OF THE U.S.S.R., BY AGE AND SEX: 1966, 1985, 2000, AND 2020



it is considerably below the 2.2 million 18-year-olds estimated for 1958. Similarly, the population of "college age" (20 to 24 years) numbered about 21.9 million at the beginning of 1961. Five years later, at the beginning of 1966, the size of this group had declined to 12.4 million, or by almost 45 percent. Moreover, further declines are expected and by the beginning of 1967 there will be only 11.9 million persons in this age range, or 10 million fewer than in 1961.

Prospective changes in the composition of the population after 1965.—The distortions in the age-sex structure of the Soviet popula-

tion are so severe that even if nothing else intercedes to further distort that structure, not until well into the next century could the Soviet Union attain a normal structure. In order to trace the potential long-term effect of the distortions, the Bureau of the Census extended its series B projection (which assumes constant fertility) to the year 2020. The population pyramids for 1985, 2000, and 2020 resulting from this projection are shown in figure 1.

By 1985, the smaller birth cohorts of World War II will be centered around age 40 while persons born during World War I will be near the top of the pyramid at ages 65 to 69. The "ripple" effect of the low birth rates during World War II is also apparent. The pyramid shows a dip at ages 15 to 19 which reflects lower numbers of births expected during the 1960's as persons born during World War II begin having children. The male deficit is concentrated in the ages 55 years and over.

By the year 2000, persons born during World War II will be in their mid-50's while those born during World War I will be 80 to 84 years old, and therefore not represented on the pyramid. At the bottom of the pyramid, the secondary "ripple" effect of World War II is represented by the flattening of the distribution. Finally, the war-caused male deficit is apparent only at the top of the pyramid. The pyramid for the year 2020 shows the direct effects of World War II only in the older age groups. The primary and secondary "ripple" effects, however, are quite apparent.

The male deficit which is pronounced in 1966 will gradually age out of the population and by 2020 most persons who were of military age during World War II will have died. The gradual dissipation of the male deficit can be seen from the data in table 6. At the beginning of 1966, women outnumbered men by about 19 million. The projections show an excess of about 18 million females by 1970, 14 million by 1980, and only 5.2 million by 2000.

TABLE 6.—*Estimated and projected population of the Soviet Union, by sex: 1966–2020*

[Absolute figures in millions. Population figures are the series B projections for Jan. 1]

Year	Males	Females	Excess of females over males	Males per 100 females
1966	106.4	125.4	19.0	84.9
1970	111.8	129.6	17.8	86.3
1980	126.6	140.5	14.0	90.1
1990	143.1	152.5	9.4	93.8
2000	157.1	162.3	5.2	96.8
2010	169.3	171.2	1.9	98.9
2020	180.9	180.7	−0.2	100.1

POPULATION CHANGES DURING THE SEVEN-YEAR PLAN PERIOD, 1959 THROUGH 1965

Total population.—During the course of the recently terminated Seven-Year Plan, 1959–65, the population of the Soviet Union increased from 208.7 million to 231.8 million,[15] or by 23 million (see

[15] This figure was derived by adding to the official estimate for Jan. 1, 1965, the natural increase implied by the official birth and death rates for 1965. It served as a control total for the population estimates by age and sex shown in table 7 and elsewhere in this paper. After the estimates were completed, however, a provisional estimate of 231.9 million for Jan. 1, 1966, was announced. See Tsifrakh v 1965, p. 8.

table 7). The annual increments were much smaller during the last few years of the period than during the earlier years. The increment for 1965 was 2.6 million as compared with 3.8 million for 1960.

Population of preschool age.—The population of preschool age (under 7 years) was about 0.3 million lower at the end of 1965 than it was at the beginning of the Plan period. Although the size of the group

TABLE 7.—*Population changes in the Soviet Union during the Seven-Year Plan period, 1959–1965*

[In millions. Figures may not add to totals because of independent rounding. The net change figures were obtained by rounding the differences between unrounded population figures]

Population group	Population on Jan. 1—								Net change, 1959 through 1965
	1959	1960	1961	1962	1963	1964	1965	1966	
Total population [1]	208.7	212.3	216.1	219.7	223.1	226.3	229.2	[2] 231.8	.....
Net change	3.7	3.8	3.6	3.4	3.1	2.9	2.6	.....	23.1
Population of preschool age:									
Series B (under 7 years)	33.2	33.7	34.4	34.6	34.6	34.4	33.8	32.9	.....
Net change	.4	.7	.2	0	−.2	−.6	−.9	.....	−.3
School age population: [3]									
Primary school age (7 to 10 years)	17.1	17.6	17.8	18.1	18.4	18.6	19.1	19.3	.....
Net change	.5	.2	.4	.2	.2	.5	.2	.....	2.1
Intermediate school age (11 to 14 years)	11.3	13.2	14.9	16.1	17.1	17.6	17.7	18.1	.....
Net change	2.0	1.7	1.2	1.0	.5	.2	.4	.....	6.9
Secondary school age (15 to 17 years)	8.0	6.3	6.4	7.7	9.2	10.7	11.8	12.6	.....
Net change	−1.6	.1	1.3	1.5	1.5	1.1	.8	.....	4.6
"College age" population: (20 to 24 years) [4]	20.3	21.4	21.9	21.6	19.3	16.4	14.0	12.4	.....
Net change	1.0	.6	−.3	−2.3	−3.0	−2.4	−1.6	.....	−7.9
Males of military age:									
Registration and conscription age (17 to 19 years) [5]	6.1	5.1	4.0	3.2	3.2	3.9	4.6	5.4	.....
Net change	−1.0	−1.1	−.8	0	.7	.7	.8	.....	−.7
17 years	1.9	1.2	.9	1.0	1.3	1.6	1.8	2.0	.....
18 years	2.0	1.9	1.2	.9	1.0	1.3	1.6	1.8	.....
19 years	2.2	2.0	1.9	1.2	.9	1.0	1.3	1.6	.....
Prime military ages (17 to 34 years)	33.7	33.4	32.6	31.8	31.1	30.8	30.8	31.1	.....
Net change	−.3	−.8	−.8	−.6	−.3	0	.3	.....	−2.6
Population of "able-bodied" ages:									
Both sexes	119.7	119.4	119.3	119.7	120.6	121.8	123.4	125.1	.....
Net change	−.3	−.1	.4	.9	1.2	1.6	1.6	.....	5.3
Males (16 to 59 years)	55.0	55.2	55.5	55.9	56.7	57.6	58.8	60.0	.....
Net change	.1	.3	.5	.8	.9	1.2	1.2	.....	5.0
Females (16 to 54 years)	64.7	64.2	63.9	63.7	63.9	64.2	64.6	65.1	.....
Net change	−.5	−.3	−.1	.2	.3	.5	.4	.....	.4
"Overage" population:									
Both sexes	25.5	26.3	27.2	28.0	28.9	29.9	30.9	32.0	.....
Net change	.9	.8	.9	.9	1.0	1.1	1.1	.....	6.5
Males (60 years and over)	6.6	6.8	7.0	7.2	7.4	7.7	7.9	8.2	.....
Net change	.2	.2	.2	.2	.2	.3	.3	.....	1.6
Females (55 years and over)	18.8	19.5	20.2	20.8	21.5	22.2	23.0	23.8	.....
Net change	.7	.6	.7	.7	.7	.8	.8	.....	5.0

[1] For the total population, official Soviet estimates are shown where available.

[2] Obtained by adding natural increase implied by the officially reported rate of increase to the Jan. 1, 1965, population estimate.

[3] During the period of the Seven-Year Plan, the Soviet school system was organized as follows: primary grades, 1 through 4; intermediate grades, 5 through 7; and secondary grades, 8 through 11. The age groups shown for the respective school groups assume that children enter grade 1 at age 7 and progress through the system one grade per year.

[4] During the period of the Seven-Year Plan, persons entering higher education were supposed to have 2 years of "practical work." Since graduates from the 11-year school system would normally be about age 18, first-year students in higher education should be about age 20. The course of study in Soviet higher education is about 5 years.

[5] Prior to 1962, males who were 18 years old on Jan. 1 were required to register for military service during January and February of that year. Conscription followed during the fall of that year after most of the draftees had reached their 19th birthday. In 1962, the registration age was reduced by 1 year, requiring persons age 17 on Jan. 1 to register. The induction age was not changed, however. Thus, the number of persons shown as being age 18 at the beginning of each year are those from which normal draft commitments would be met.

increased from 33.2 million in 1959 to 34.6 million in 1962, the lower birth rates of the later Plan years resulted in a drop in the size of the group after 1963.

Because women make up such a large share of the labor force in the U.S.S.R., the state must provide some system of child care during the mother's working hours. There are two types of child care centers in the Soviet Union for preschool children: nurseries for children under age 3 and kindergartens for children of ages 3 to 6. Some centers provide accommodations for both age groups and for the purpose of the discussion, all child-care centers for preschool children will be combined.

By 1959, about 3.5 million, or 12 percent of the preschool age children, were being cared for in permanent nurseries and kindergartens, and perhaps another 10 percent were being cared for in temporary or seasonal centers.[16] Most of the seasonal facilities are in rural areas. The facilities have been expanded to accommodate about 0.5 million more children each year. Thus, by 1964, about 7 million children, or 20 percent of the preschool population, were being cared for in permanent facilities.[17] Assuming a continuation of the expansion program, permanent centers should have been able to accommodate about 22 to 24 percent of the children by the end of the Plan period. Since the temporary and seasonal centers probably have not been greatly expanded, it appears that about one-third of the preschool children were being cared for in child care centers in 1965.

School-age population.—The school system in the Soviet Union, as it was organized during the Plan period, consisted of three levels: (1) the primary grades, 1 through 4; (2) the intermediate grades, 5 through 8; and (3) the secondary grades, 9 through 11. Since age 7 is the usual age for entering the first grade, the normal ages for primary school children are 7 through 10; the ages for intermediate school children are 11 through 14; and the ages for secondary school students are 15 through 17.

The population of primary school age increased gradually over the period. There were about 17 million children 7 to 10 years old in 1959 and 19.3 million at the beginning of 1966. The population of intermediate school age (11 to 14) increased rather rapidly during the early years of the Plan period, as persons born during World War II and the early postwar years aged out of the group. Growth was much slower during the latter years of the plan period. The increase for the entire Seven-Year Plan period was almost 7 million, from 11.3 million in 1959 to 18.1 million in 1966.

The population of secondary school age declined by 20 percent between 1959 and 1960 (from 8 million to 6.3 million) but recouped the loss by the middle of the Plan period. There were 12.6 million in the age group by 1966, some 4.6 million more than in 1959.

"College age" population.—As a result of Khrushchev's education reform of 1958, persons who wished to continue their education beyond the secondary level were supposed to perform 2 years of "practical work" before entering higher education. Since males presumably would not be draft exempt during this work period, many of

[16] Nar. khoz. v 1964, p. 600.
[17] Ibid.

them were probably drafted for the standard 3 years of military service and thus had their education delayed even further. Assuming that most students completed secondary school (the 11th grade) by age 18 and worked for 2 years before entering higher education, the normal college entrance age would be about 20 years and the roughly 5-year course of study would lead to graduation at about age 25. Thus, the age group 20 to 24 years will be used here to represent the "college ages" for the period 1959 to 1966.

In 1959, there were 20.3 million persons 20 to 24 years old. The size of this group increased somewhat during the early Plan period and at the beginning of 1961 there were about 21.9 million "college age" persons. After 1963, however, as birth cohorts of World War II began reaching college age, the size of this group began to diminish rapidly and by the end of the Plan period there were only 12.4 million persons 20 to 24 years old, almost 8 million fewer than in 1959 and 9.5 million below the 1961 peak.

Because enrollment in higher education has been increasing rapidly during a period of declining numbers of college-age persons, the ratio of higher education students to the population 20 to 24 years old has increased sharply. For the 1959–60 school year, about 2.3 million students were enrolled in higher education, or about 11 students per 100 persons 20 to 24 years old. By 1964, enrollment had risen to 3.6 million and the enrollment ratio had more than doubled to 24 per 100 "college age" persons. Based on expected increases in enrollment, there were probably about 30 higher education students per 100 persons 20 to 24 years old in 1965 with a further rise expected in 1966.

A recently announced education reform should have the effect of greatly increasing the universe from which students of higher education are drawn.[18] At the end of the 1965–66 school year, the 11th grade will be abolished and 2 years of work will no longer be required before entering higher education. Thus, for the 1966–67 school year, first-year students in higher education may be selected from among the two graduating classes (both the 10th and 11th grades will graduate at the end of the 1965–66 term) as well as from among earlier graduates of secondary school who were barred by the work requirement from continuing their education immediately after completing secondary school.

Males of military age.—Most of the Soviet Union's current military requirements are met by drafting 19-year-olds. During the first half of the Seven-Year Plan period, males who were 18 years old on January 1 were required to register during January and February of that year. Conscription came in the fall of that year after most of the draftees had reached 19. In 1962, the registration age was changed and beginning in 1963 persons who were 17 on January 1 were required to register. The 1962 decree did not change the callup age, however, and the callup orders issued since 1962 have continued to specify those reaching 19 during the year in which they are drafted. The Soviet Union does not have universal military training. Rather, it follows the same general policy as does the United States by inducting the number deemed necessary to meet current military requirements.

[18] "Official Summary of the Soviet Union's 8th Economic Plan," New York Times, Feb. 21, 1966, p. 3.

Males who are not called during years in which the number reaching conscription age exceeds military requirements may be drafted during years in which those reaching draft age fall short of the requirement.

The tour of military service in the U.S.S.R. is about 39 months. Persons who are inducted in the fall of the year in which they reach 19 are released at the end of December, 3 years later, when they are 22. Those inducted into the navy serve 1 year longer and are released when they are about 23.

Table 7 shows the number of males aged 17, 18, and 19 as the registration and conscription ages, and 17 to 34 as the prime military ages. Since 1963, those age 17 have been required to register while those age 18 on January 1 comprise the group from which draftees are normally drawn. At the beginning of 1959, there were about 2 million 18-year-old males, or about two persons for each of the roughly 1 million conscripts required to maintain the Soviet armed forces at recent levels. The number for 1960 was only slightly less. By 1961, however, when persons born during 1942 reached draft age, there were only 1.2 million males from which to draw about 1 million conscripts, and by 1962 (the year in which the registration age was lowered), the number reaching draft age dropped below 1 million. By 1966, the number of 18-year-old males had increased to 1.8 million, a level which should be adequate for current draft calls despite the fact that it is below the level shown for 1959.

The number of males in the broader range of military ages, 17 to 34 years, declined by about 10 percent between 1959 and 1964 and despite a small recovery during 1965 was 2.6 million lower in 1966 than in 1959. The Soviet Union has substantially more males of military age than does the United States. Her 31 million males 17 to 34 years old is about one-third more than the 23 million American males in this age range.

Population of "able-bodied age".—In Soviet usage the term "able-bodied age" refers to males 16 to 59 years old and females 16 to 54 years old. The concept is based on the minimum nonagricultural work age (16 years) and the legal age at which persons other than collective farmers become eligible for retirement (60 years for males and 55 years for females). Most of the labor force is drawn from this group, and, although many persons outside it are employed, the number of persons of "able-bodied age" does provide some indication of the universe from which the Soviet Union's work force must come.

There were 119.7 million persons of "able-bodied age" at the beginning of 1959. The size of the group declined between 1959 and 1961 by about 0.4 million as persons born during World War II reached age 16 but increased thereafter to register a gain of a little more than 5 million during the Plan period, virtually all of which was in the male component.

Population of "retirement" age.—In Soviet usage the "overage" population consists of males 60 years or older and females 55 years and over, corresponding to retirement age. This population grew rather rapidly during the Plan period, increasing from 25.5 million in 1959 to 32 million in 1966, or by almost 1 million annually. In contrast to the population of "able-bodied" ages, most of the increase in the older population was in the female component. The large loss

of males during the Second World War depleted the male population in the age groups which reached retirement age during the Plan period.

PROSPECTIVE POPULATION CHANGES DURING THE CURRENT FIVE-YEAR PLAN, 1966–70

Total population.—Table 8 presents projections of the population according to series B (which assumes constant fertility at the 1965 level) and series C (which assumes declining fertility). The series B projection shows the population as increasing by about 2.4 million annually to reach 244 million at the end of the Plan period (January 1, 1971). The series C projection which in light of recent fertility trends appears to be more likely than series B, shows the population as increasing by only 2.1 million annually to reach 242 million by 1971.

The rates of increase for both series B and C between 1966 and 1971 are markedly lower than the rate during the period of the Seven-Year Plan. The 2.4 million annual increase shown for series B is 27 percent lower than the average increase of almost 3.3 million for the period 1959 to 1966. The lower increase for the period 1966–71 stems partly from lower fertility (series B is based on constant fertility at the 1965 level which is lower than that for other years in the Seven-Year Plan period) and partly from a decline in the population of childbearing age.

Population of preschool age.—The population of preschool age (under 7 years) is expected to decline during the next 5 years. The series B projection postulates a decline of 4.6 million (to 28.3 million in 1971) and series C postulates a decline of about 6 million (to 26.9 million by 1971). As indicated above, declining fertility such as that assumed for series C appears to be more likely than constant fertility assumed for series B.

TABLE 8.—*Projected population changes in the Soviet Union during the period of the current Five-Year Plan: 1966–71*

[In millions. Figures may not add to totals because of independent rounding. See text for an explanation of the series and the footnotes to table 7 for explanations of the age groupings not defined in the notes to this table]

Population group	Population on Jan. 1—						Net change, 1966–70
	1966	1967	1968	1969	1970	1971	
TOTAL POPULATION							
Series B	231.8	234.3	236.7	239.0	241.4	243.8	
Net change	2.4	2.4	2.3	2.4	2.4		12.0
Series C	231.8	234.1	236.2	238.3	240.3	242.4	
Net change	2.3	2.2	2.1	2.0	2.0		10.5
POPULATION OF PRESCHOOL AGE (UNDER 7 YEARS)							
Series B	32.9	31.9	30.7	29.7	28.9	28.3	
Net change	−0.7	−0.8	−0.7	−0.5	−0.3		−3.0
Series C	32.9	31.7	30.3	29.0	27.9	26.9	
Net change	−1.1	−1.3	−1.2	−1.1	−1.0		−5.8
SCHOOL AGE POPULATION [1]							
Primary grade ages (7 to 9 years)	14.6	14.8	15.1	15.1	14.8	14.2	
Net change	0.3	0.2	0.0	−0.3	−0.7		−0.4
Secondary grade ages (10 to 14 years)	22.8	23.1	23.4	24.0	24.2	24.6	
Net change	0.2	0.3	0.6	0.2	0.4		1.8
Senior grade ages (15 to 16 years)	8.6	8.8	9.0	8.9	9.1	9.4	
Net change	0.3	0.2	−0.1	0.2	0.3		0.9

See footnotes at end of table.

TABLE 8.—*Projected population changes in the Soviet Union during the period of the current Five-Year Plan: 1966–71*—Continued

Population group	Population on Jan 1—						Net change, 1966–70
	1966	1967	1968	1969	1970	1971	
"COLLEGE AGE" POPULATION [2]							
20 to 24 years	12.4	11.9	13.0	15.2	17.3	19.1	.....
Net change	−0.6	1.1	2.2	2.1	1.8	.....	6.7
17 to 21 years	15.2	17.4	19.2	20.5	21.5	21.8	.....
Net change	2.1	1.8	1.3	1.0	0.3	.....	6.6
MALES OF MILITARY AGE							
Registration and conscription age (17 to 19 years)	5.4	6.0	6.4	6.6	6.8	6.8	.....
Net change	0.5	0.4	0.2	0.2	0.0	.....	1.4
17 years	2.0	2.1	2.2	2.3	2.3	2.2	.....
18 years	1.8	2.0	2.1	2.2	2.3	2.3	.....
19 years	1.6	1.8	2.0	2.1	2.2	2.3	.....
Prime military age (17 to 34 years)	31.1	31.5	31.9	32.3	32.9	33.4	.....
Net change	0.4	0.4	0.4	0.6	0.5	.....	2.3
POPULATION OF "ABLE-BODIED" AGES							
Both sexes	125.1	126.8	128.7	130.7	132.6	134.9	.....
Net change	1.8	1.9	2.0	1.9	2.3	.....	9.9
Males (16 to 59 years)	60.0	61.3	62.5	63.8	65.0	66.3	.....
Net change	1.3	1.3	1.3	1.2	1.3	.....	6.4
Females (16 to 54 years)	65.1	65.6	66.2	66.9	67.6	68.6	.....
Net change	0.5	0.6	0.7	0.7	1.0	.....	3.5
"OVERAGE" POPULATION							
Both sexes	32.0	33.2	34.2	35.2	36.1	37.0	.....
Net change	1.1	1.1	1.0	0.9	0.8	.....	4.9
Males (60 years and over)	8.2	8.5	8.9	9.2	9.6	9.9	.....
Net change	0.3	0.3	0.3	0.4	0.4	.....	1.7
Females (55 years and over)	23.8	24.6	25.4	26.0	26.6	27.0	.....
Net change	0.8	0.8	0.6	0.5	0.4	.....	3.2

[1] During the period of the current Five-Year Plan, the Soviet school system presumably will be organized as follows: primary grades, 1 through 3; secondary grades, 4 through 8; senior grades, 9 and 10. The age groups shown for the respective school groups assume that children enter grade 1 at age 7 and progress through the system one grade per year

[2] According to the recent education reform, at the end of the school year 1965–66, both the 10th and 11th grades will graduate, and in future school years those in the 10th grade will graduate. Moreover, 2 years of "practical work" will no longer be required prior to entering higher education. Thus, once the new reform is fully operative, the normal college ages should be 17 to 21 years. During much of the period of the current Five-Year Plan, however, students of higher education will be drawn from a much broader range of ages.

The current Five-Year Plan calls for an increase of about 60 percent in permanent nursery and kindergarten space. Facilities for about 12.2 million children are to be available by 1970.[19] The Plan for the single year 1966 calls for a 10.8-percent increase in such facilities,[20] to about 8 million places. If the 1966 Plan is fulfilled, there will be accommodations in permanent centers for about one-fourth of the preschool children. If the 5-year goal is met, about 45 percent of the expected number of preschool children will be able to be accommodated. Assuming that the number of places in seasonal facilities remains at about the 3 million level, facilities for somewhat more than one-half of the preschool children would be available by 1971.

Population of school age.—A reorganization of the Soviet school system has recently been proposed.[21] The new system provides for a 10-grade arrangement (the 11th grade, introduced in 1958, is to be

[19] Ibid.
[20] Pravda, Dec. 10, 1965.
[21] New York Times, Jan. 12, 1966.

abandoned) consisting of: (1) The primary grades, 1 through 3; (2) the secondary grades, 4 through 8; and (3) the senior grades, 9 and 10. Since the entry age of 7 presumably will remain, the corresponding ages will be 7 to 9 years, 10 to 14 years, and 15 and 16 years, respectively. Those graduating from the 10th grade will be about 17 years old if they progress through the system one grade each year.

None of the three levels will experience any marked change in the number of children to be accommodated during the next 5 years. The number of children 7 to 9 years old is expected to increase from 14.6 million in 1966 to a high of 15.1 million in 1968 and then to decline to 14.2 million by 1971. The net change during the Plan period will be a decline of 0.4 million, although an absolute decline of about 1 million is expected during the last 2 years of the period.

The number of children 10 to 14 years old is expected to increase from 22.8 million in 1966 to 24.6 million in 1971. The total increase for the period is about 1.8 million, or an average of less than 0.4 million annually. The number of adolescents age 15 and 16 is expected to increase by about 10 percent over the period, from 8.6 million in 1966 to 9.4 million in 1971.

"College age" population.—In addition to lowering by 1 year the age at which students complete their studies in the regular school system, the recent education reform removed the requirement that persons entering higher education must have 2 years of work experience. One immediate effect of these changes apparently will be that first year students of higher education for the 1966–67 school year will be drawn from a wide population consisting of the two graduating classes from the 1965–66 school year (the 10th and 11th grades), those persons who graduated during the previous 2 years and who were fulfilling the 2-year work requirement, and those persons who have completed 2 years of work and would be eligible for college entrance under the old system. The long-term effect should be a substantial lowering of the age range from which students of higher education are drawn. The new "college ages" would be 17 to 21 years. Table 8 presents data for both the prereform "college ages" (20 to 24 years) and the postreform ages (17 to 21 years).

Had the Soviet Union retained the former system, the number of "college age" persons (20 to 24 years) would continue its recent decline during the first year of the Plan period. The number in 1967 is expected to fall below 12 million and the enrollment ratio, the number of students enrolled per 100 persons of "college age," would rise to 32 or 33. By switching to the new age range, the enrollment ratio, ignoring the fact that persons from both the old and the new "college ages" would constitute the universe from which students would be drawn during the early years of the Plan period, would drop to about 22 per 100. After 1967, the number of persons 20 to 24 years old is expected to increase rapidly, but even though the projection shows 19 million persons in this age range by 1970, this number is still about 2.7 million below the number of 17 to 21 year olds.

Males of military age.—The number of conscription age males (18 years old) should be ample to meet the Soviet Union's requirements unless there is a sharp increase in the size of her armed forces. There

were an estimated 1.8 million 18-year-old males at the beginning of 1966. The size of this group is expected to increase to 2.3 million by 1970. The number of males in the prime military ages (17 to 34 years) is expected to increase somewhat (from 31.1 million in 1966 to 33.1 million in 1971).

The Soviet Union has about the same number of 18-year-old males in 1966 as has the United States, but by 1971 it is expected to have about 0.5 million more. At the beginning of 1966, the United States had 23.6 million males of prime military age, or about three-fourths as many as the Soviet Union. By 1971, the United States will have about 27.7 million males in this age range, or about 83 percent as many as the Soviet Union.

Population of "able-bodied" age.—The population in the "able-bodied" ages (16 to 59 for males, 16 to 54 for females) numbered about 125 million at the beginning of 1966. This group is expected to increase by an average of 2 million annually during the next 5 years to about 135 million by 1971. About two-thirds of the increase is expected in the male component which should increase from about 60 million in 1966 to 66 million in 1971, reducing the numerical superiority of females in the group to 2.2 million. This reduction of the gap between males and females does not mean that the sex ratio for the "able-bodied" ages is nearly normal. Because the span of years for males in the "working ages" is 5 years longer than that for females, there should be more males than females in this group.

Population of "retirement" age.—The so-called "overage" population (males, 60 years and over; females, 55 years and over) is estimated to have been 32 million at the beginning of 1966. The group is expected to increase about 1 million annually to 37 million by 1971. Males 60 years and over numbered a little more than 8 million in 1966, while females 55 years old and over numbered nearly 24 million. By 1971, the projection shows almost 10 million "overaged" males and 27 million "overaged" females.

Chapter III. Population Redistribution

Although the registration of internal migration began in 1953 in cities and in 1960 in rural areas,[22] the registration system apparently does not yet function well enough to produce satisfactory statistics. An article published in "Vestnik statistiki" in July 1965 stated specifically that "all instances of population movement into the rural localities are not covered" in the migration data collected by the Central Statistical Administration.[23] The main reasons cited by the article

[22] V. V. Pokshishevskiy, V. I. Perevedentsev, et al., "On Basic Migration Patterns," Izvestiya Akademii Nauk SSSR, Seriya Geograficheskaya (News of the U.S.S.R. Academy of Sciences, Geographical Series), No. 5, September–October 1964, as translated in Soviet Geography, Review and Translation, December 1964, p. 7.

[23] L. Denisova and T. Fadeeva, "Some Data on Migration of the Population in the U.S.S.R.," in Vestnik statistiki (Statistical Herald), No. 7, July 1965, pp. 16–17.

for this lack of coverage are that the passport system does not extend to all rural populated points and that occasionally the secretaries of rural soviets fail to complete their work on time. Incomplete statistical coverage was also mentioned in a paper submitted to the Fourth Congress of the U.S.S.R. Geographical Society's Symposium on Economic-Geography by four leading geographers.[24] It was noted that the absence of comprehensive data on migration made it difficult to assess the relative importance of migration and natural increase in overall population growth.

Because the population and vital statistics registration systems apparently work better than the system for registering migration, the Soviet Central Statistical Administration has published estimates of the total population by oblast for several recent years. They have also published birth and death rates for a variety of areas ranging from economic regions to oblasts. Using these data, it is possible to obtain estimates of implied net migration by taking the difference between the actual population change for an area and the natural increase for that area implied by the official vital statistics. This technique has been used by Soviet researchers interested in internal migration, and it was used to produce the basic data for this section.

Using this technique, Pokshishevskiy and his associates[25] obtained estimates of implied net migration for the 1959–62 period. These data were then plotted on two maps, one displaying circles representing net in- and out-flows of 25,000 and 100,000 migrants, the other a shaded map showing net migration as a percent of natural increase. These maps are important because they provide a graphic portrayal of the migratory flow between 1959 and 1962. Such migratory flows have been alluded to by Soviet writers[26] but never before have they been graphically delineated. Because the maps were not of reproducible quality, they are not presented here. Table 9, however, summarizes the main points of one of them.

RECENT TRENDS IN MIGRATION

The rural areas of the western regions of the country, which have a relatively high population density, have been the principal areas of out-migration. These regions are the central and western oblasts of the R.S.F.S.R., which experienced an out-migration of over 1 million persons in the period 1959–62, and some oblasts of the Ukraine and Belorussia.[27]

[24] Pokshishevskiy, Perevedentsev, et al., op. cit., pp. 6–7.
[25] Ibid.
[26] For example, V. I. Perevedentsev, "Problems of Territorial Redistribution of Labor Resources," Voprosy ekonomiki (Problems of Economics), No. 5, 1962, p. 51.
[27] Pokshishevskiy, Perevedentsev, et al., op. cit., pp. 7 and 9.

TABLE 9.—*Selected areas in the Soviet Union with significant net migration during the period 1959–62*

Category	Areas experiencing out-migration		Areas experiencing in-migration	
	Name	Location	Name	Location
I. Migration exceeded natural increase	Yaroslavl Novgorod' Pskov, Kalinin, Ivanov, Kostroma and Kirov Oblasts.	Area to the north and northwest of Moscow Oblast.	Leningrad Oblast	Western R.S.F.S.R.
	Dagestan A.S.S.R.	Caucasia	Karaganda and Alma-Ata Oblasts.	Kazakh S.S.R.
II. Migration amounted to 50 to 100 percent of natural increase.	Sakhalin	Far East	Magadan Oblast	Far East.
	Karelian A.S.S.R.	Western R.S.F.S.R.	Moscow, Murmansk, Kalingrad, and Kuybyshev Oblasts.	Western R.S.F.S.R.
	Tomsk Oblast	Central R.S.F.S.R.		
	Amur and Chita Oblasts	Far East		
	Smolensk, Kaluga, Tula, Bryansk, Kursk, Belgorod, Ryazan, and Gorkov Oblasts.	Area to the south and southwest of Moscow Oblast.	Yakut A.S.S.R. and Kamchatka Oblasts.	Far East.
III. Migration amounted to 20 to 50 percent of natural increase.	Perm Oblast, Udmurt and Tatar A.S.S.R.'s.	Western R.S.F.S.R.	Saratov Oblast	Western R.S.F.S.R.
	Altay Kray	Central R.S.F.S.R.	Tuvin A.S.S.R.	Central R.S.F.S.R.

Source: Based on Pokshishevskiy, Perevedentsev, et al., op. cit., p. 10.

The outflow was so heavy that in some oblasts adjacent to the Moscow Oblast, out-migration actually exceeded natural increase during the 4-year period (see table 9). Such phenomena appeared in only two other areas of the Soviet Union: Sakhalin Island and the Dagestan A.S.S.R. on the western shore of the Caspian Sea. It is to be noted that while the oblasts around Moscow experienced out-migration during this period, Moscow Oblast itself had a pronounced in-migration, which accounted for a substantial part of its population growth.

Out-migration was also particularly heavy in the Volga-Vyatka region where it almost equaled natural increase.[28] V. I. Perevedentsev, a noted Soviet expert on internal migration, emphasizes this point in another article in which he compares the number of persons who have left a particular region with the number of new arrivals. In 1962, the Volga-Vyatka region surpassed all other regions in the U.S.S.R. with 167 departures for every 100 new arrivals.[29]

The principal area of heavy in-migration during the 1959–62 period was a swath of territory beginning on the eastern shore of the Black Sea and running eastward into Central Asia and Kazakhstan. The cities of Moscow and Leningrad also drew fairly large numbers of migrants. Smaller numbers of migrants went into the Baltic republics, Murmansk, and to scattered areas in Siberia and the Far East. Although Pokshishevskiy et al., do not show data for oblasts in the Ukraine, the Crimean Oblast, which contains the principal Black Sea resorts, apparently experienced substantial in-migration during the period. The population of the Crimea increased by almost 16 percent during the 4-year period, or at an average annual rate of 3.8 percent.

Figure 2, which shows net migration for the 2 years 1963–64 as a percent of the January 1, 1964, population in each administrative area, points to a continuation of the same general pattern of heavy out-migration from the Western regions of the country as that reported for 1959–62. One notable exception was the Tula Oblast which showed a slight in-migration during the period 1963–64. Sakhalin Island and Dagestan A.S.S.R., the other areas with a significant out-migration in the earlier period, continued this trend after 1962.

Coastal areas and areas bordering on Communist China were the principal regions of in-migration during the period 1963–64. Despite the apparent slackening of migration into Kazakhstan and parts of Central Asia, migration into the two eastern-most republics of Central Asia, the Tadzhik and Kirgiz S.S.R.'s which border on China, remained quite heavy, as did migration into the Crimea and Murmansk. In addition, the Maritime and Khabarovsk Krays, which are coastal as well as bordering on China, and the border oblasts of Amur and Chita experienced significant in-migration during this period.

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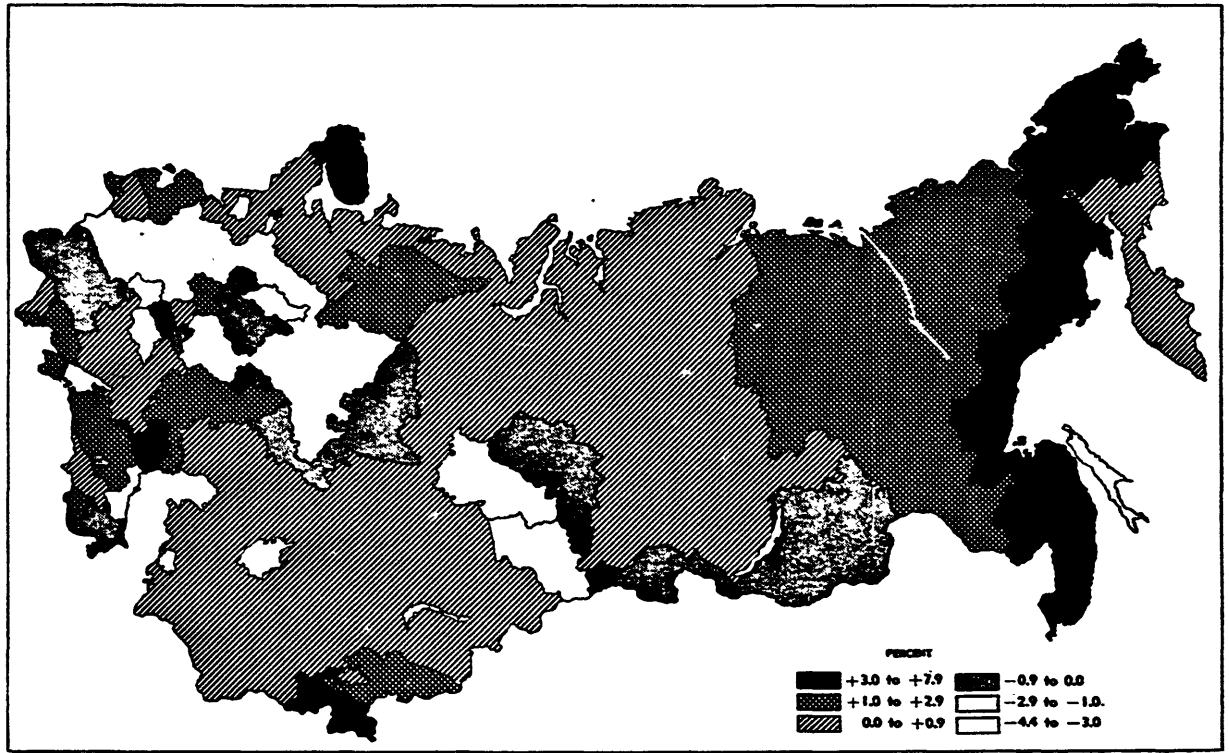
[28] Pokshishevskiy, Perevedentsev, et al., op cit., p. 7.

[29] V. I. Perevedentsev, "Some Questions Concerning the Interdistrict Redistribution of Labor Resources" in Izvestiya Sibirskogo otdeleniya Akademiya nauk SSSR—Seriya Obshchestvennykh nauk (News of the Siberian Branch of the U.S.S.R. Academy of Sciences—Social Science Series), No. 9, 1964 (issue 3), p. 78.

Figure 2.—NET MIGRATION AS A PERCENT OF THE POPULATION, BY ADMINISTRATIVE AREA: 1963-1964[1]



Source: Based on *Nar. khoz. v 1962*, pp. 20–24; *Nar. khoz. v 1963*, pp. 13–17; *Nar. khoz. v 1964*, pp. 13–17 and pp. 38–39; TsSU RSFSR, *Narodnoye khozyaystvo RSFSR v 1964 godu (The National Economy of the RSFSR in 1964)*, Moscow, Statistika, 1965, pp. 20–23; and *Vestnik statistiki (Statistical Herald)*, No. 1, 1965, pp. 86–91.

[1] (Data are shown for oblasts in the RSFSR, economic regions in the Ukraine, and republics elsewhere)

Much of the interest concerning migration and the focus of studies of Soviet geographers, particularly V. I. Perevedentsev, has been the problem of labor turnover. The principal finding of these studies has been that labor turnover tends to be quite high in remote areas where the amenities of life are limited. One study indicates that Western Siberia experienced a net migratory loss of 230,000 during the period 1959–63.[30] Another study by the Institute of Economics in Novosibirsk (the Siberian branch of the U.S.S.R. Academy of Sciences) revealed that approximately half of the new arrivals in the "typical" Siberian cities of Achinsk, Nazarovo, and Dzerzhinskiy departed after 3 years.[31]

Population needs for Siberia and the Far East "for the foreseeable future" have been estimated to be between 5 and 15 million persons.[32] In order to meet these needs, new settlers must be offered more incentives such as higher wages and better living conditions than they have been offered in the past. Also, the cultural advantages available in the established European cities must be extended to the more remote regions.

The intensification of the conflict with Communist China undoubtedly has increased the importance of rapid development in the eastern region. Whether the change in the migration pattern for much of the region from one of a net out-flow for the years 1959–62 to one of a net in-flow for the years 1963–64 was related to the conflict is, at least for the present, a matter of speculation. Since the problem of labor turnover has been discussed for some years, it is possible that some progress has been made toward providing the amenities necessary to obtain and hold new workers. It is still too early to determine whether the migration pattern for 1963–64 will continue, and whether this pattern indicates some measure of success for the efforts to stem the heavy labor turnover. An editorial in the September 4, 1965 edition of "Literaturnaya gazeta" suggests that turnover is still a serious problem. The editorial stated that:

> State and public organizations send hundreds of thousands of skilled workers to the eastern regions of the country annually, and many western enterprises and construction sites entice them back * * *. The "job transfers" column from the eastern regions to the west in statistical summaries is never blank.

GROWTH OF CITIES: 1959–65

There were 5,193 cities and towns in the Soviet Union at the beginning of 1965, an increase of more than 12 percent from the 4,619 places reported for 1959. The urban population in 1965 was 121.6 million, as compared with 100 million in 1959.

There were seven cities with populations of 1 million or more in 1965 as compared with only three in 1959. The number of cities in the 750,000 to 1 million size class increased from 6 to 8, while the number with populations of from 500,000 to 750,000 declined. There were more cities and towns in all other size classes in 1965 than in

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[30] Literaturnaya gazeta (Literary Gazette), Sept. 4, 1965. Book review citing V. I. Perevedentse., "Sovremennaya migratsiya naseleniya Zapadnoy Sibiri" (The Present-Day Migration of the People of Western Siberia), Novosibirsk, 1965.

[31] Perevedentsev, "Problems * * *," op. cit., p. 53.

[32] V. V. Pokshishevskiy, "Prospects of Population Migrations in the U.S.S.R.," "Geografiya naseleniya Vostochnoy Sibiri" (Population Geography of Eastern Siberia), Moscow, 1962, p. 75.

1959 except for very small places (less than 3,000 population). Slightly more than one-half of the urban population lived in cities of 50,000 or more (see table 10).

At the beginning of 1965, there were 188 [33] cities in the Soviet Union with populations of 100,000 or more, as compared with 148 in 1959.

TABLE 10.—*Number and population of urban places in the Soviet Union, by size of place: 1959 and 1965*

[Population figures are in millions. Those for 1959 relate to Jan. 15; those for 1965 relate to Jan. 1]

Size class	Number of places		Population	
	1959	1965	1959	1965
All places	4,619	[1] 5,190	100.0	[2] 121.5
1,000,000 and more	3	7	9.1	15.2
750,000 to 1,000,000	6	8	5.3	6.6
500,000 to 750,000	16	14	9.8	9.2
300,000 to 500,000	18	30	6.7	11.2
100,000 to 300,000	105	128	17.7	20.7
50,000 to 100,000	156	[1] 181	11.0	[2] 12.6
20,000 to 50,000	474	545	14.8	16.7
10,000 to 20,000	798	931	11.2	12.9
5,000 to 10,000	1,296	1,597	9.2	11.2
3,000 to 5,000	904	957	3.6	3.8
Less than 3,000	843	792	1.6	1.4

[1] According to "Nar. khoz. v 1964," p. 32, there were 5,193 urban places on Jan. 1, 1965, of which 184 were in the size class 50,000 to 100,000. The 181 cities shown above for this size class are those whose names appear in the "Nar. khoz. v 1964," pp. 22-31. The city of Maykop, whose population is shown as 100,000, was included in the size class 50,000 to 100,000 on the theory that the original figure had been rounded upward. By including this city in the lower size class, the number of urban places in the 100,000 to 500,000 range shown above is the same as the published total.

[2] The figures shown for the total urban population and for the population of cities of 50,000 to 100,000 are 200,000 lower than the official figures because 3 cities were missing from the list.

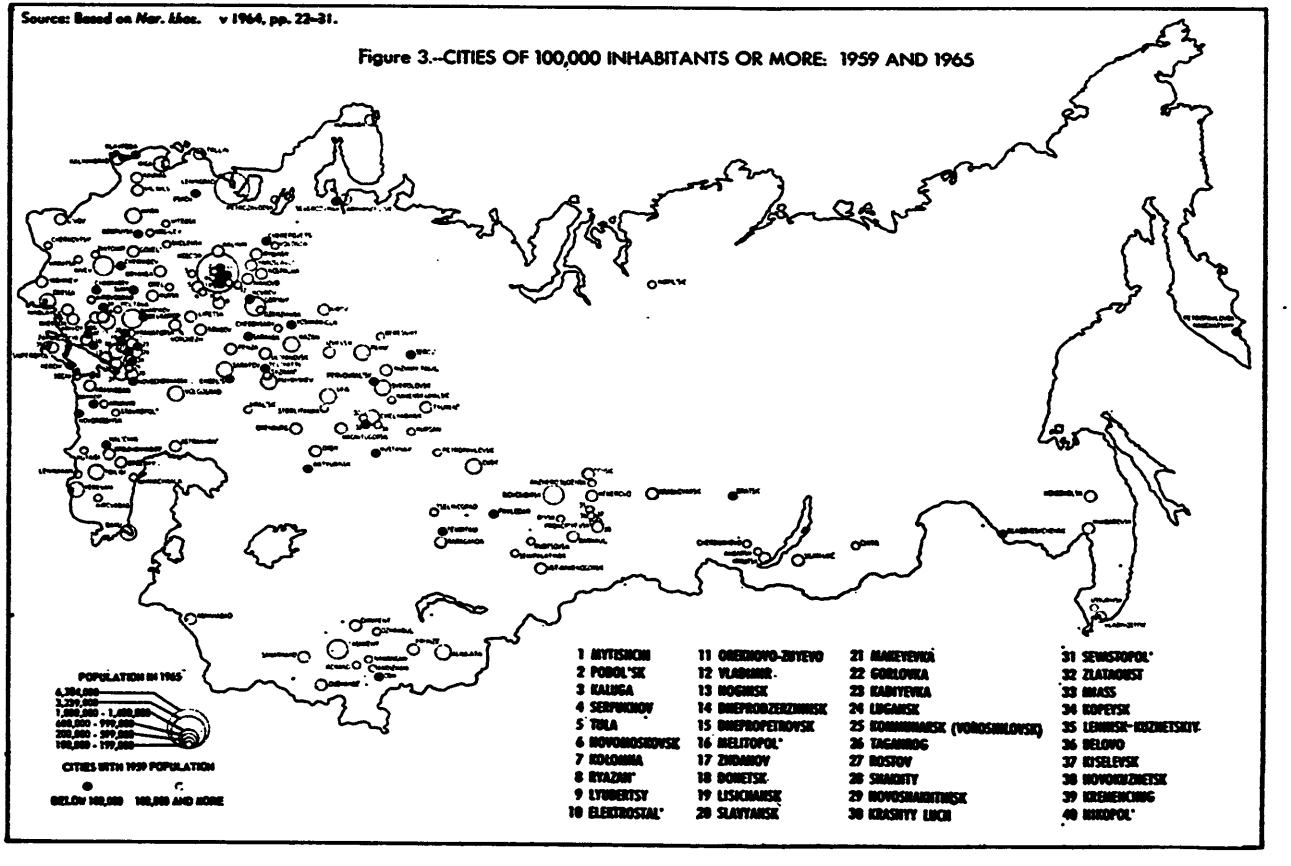
As figure 3 shows, most of these cities are concentrated in the western part of the country, that is, to the west of the Ural Mountains and the Caspian Sea. Although there are cities throughout this region, there are two major clusters of cities. The largest in terms of population is that centered around Moscow. The second and much smaller cluster has no major city with which it can be identified. It consists of a concentration near the mouth of the river Don, southwest of Moscow. The cities in this cluster include Rostov, Donetsk, Lugansk, and Makeyevka.

In addition to the cities in the western part of the country, a belt of cities has grown up along the Trans-Siberian Railroad, which runs southeast from Moscow to the Lake Baykal area. Another group of cities is clustered in a triangle-shaped area in the eastern end of Central Asia near the border with the Chinese province of Sinkiang.

In order to examine more closely regional variations in the growth characteristics of cities, the U.S.S.R. was divided into five zones, as suggested by Pokshishevskiy.[34] The West zone comprises the area

[33] The official count of cities in this size class is 187. "Nar. khoz. v 1964" lists, by name, 187 cities with populations of more than 100,000, and 1 city, Maykop, with a population of 100,000 exactly. However, the published figures have been rounded, and it is quite likely that Maykop's population was between 99,500 and 99,999. It can be demonstrated that for 1959, unrounded figures were used to assign cities to the respective size classes.

[34] V. V. Pokshishevskiy, "Study of Geographic Differences in the Population Structure of the U.S.S.R." in I. P. Gerasimov, et al. (Eds.), "Sovremennyye problemy geografiy" (Modern Problems of Geography), Nauka, Moscow, 1964, p. 36.


Source: Based on Nar. khoz. v 1964, pp. 22-31.
Figure 3.--CITIES OF 100,000 INHABITANTS OR MORE: 1959 AND 1965
POPULATION IN 1965
CITIES WITH 1959 POPULATION
BELOW 100,000
100,000 AND MORE
1 MYTISHCHI
2 PODOL'SK
3 KALUGA
4 SERPUKHOV
5 TULA
6 NOVOMOSKOVSK
7 KOLOMNA
8 RYAZAN'
9 LYUBERTSY
10 ELEKTROSTAL'
11 OREKHOVO-ZUYEVO
12 VLADIMIR
13 KOVROV
14 DNEPRODZERZHINSK
15 DNEPROPETROVSK
16 MELITOPOL'
17 ZHDANOV
18 DONETSK
19 LISICHANSK
20 SLAVYANSK
21 MAKEYEVKA
22 GORLOVKA
23 KADIYEVKA
24 LUGANSK
25 KOMMUNARSK (VOROSHILOVSK)
26 TAGANROG
27 ROSTOV
28 SHAKHTY
29 NOVOSHAKHTINSK
30 KRASNYY LUCH
31 SEVASTOPOL'
32 ZLATOUST
33 MASS
34 KOPEYSK
35 LENINSK-KUZNETSKIY
36 BELOVO
37 KISELEVSK
38 NOVOKUZNETSK
39 KEMEROVO
40 MYSKOVSK

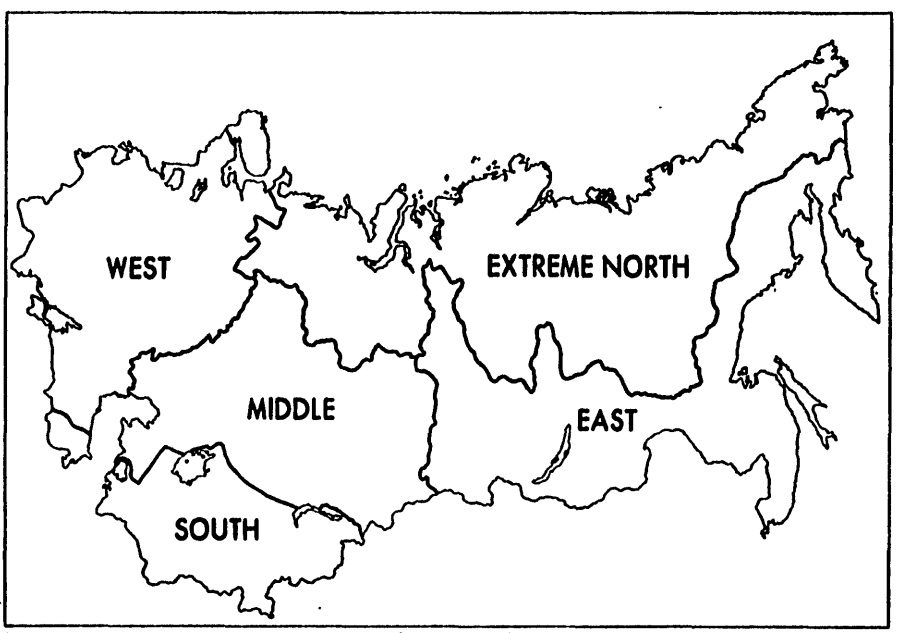
to the west of the Ural Mountains and the Caspian Sea, except the Caucasus republics. This zone is the industrial heartland of the Soviet Union and includes the major cities of Moscow, Leningrad, and Kiev, as well as the smaller cities of Volgograd (formerly Stalingrad), the Black Sea port of Odessa, and Kuybyshev.

The Middle zone includes northern Kazakhstan and the adjoining areas of the R.S.F.S.R. This zone encompasses the region of the Virgin Lands, and the belt of cities which have grown up along the Trans-Siberian Railroad. Such cities as Sverdlovsk, Novosibirsk, and Karaganda, are found here. The South zone includes southern Kazakhstan, Central Asia, and the Caucasus. It includes the important oil city of Baku on the western shore of the Caspian Sea, Samarkand, Alma-Ata, Tashkent, and Frunze.

The East zone stretches from the southern portion of Krasnoyarsk Kray to Sakhalin. Its best known city is Vladivostok on the Sea of Japan. The Extreme North zone stretches over almost the entire length of the U.S.S.R., from Arkhangel'sk in the west to the tip of Alaska in the east. It includes much of the country where population is sparse and the major economic activities are mining and lumbering. The five zones are outlined in figure 4.

As might be expected, more than three-fifths of the cities with 1965 populations of 50,000 or more are located in the West zone. Five of the 7 cities of 1 million inhabitants or more are found in this zone, as are 4 of the 8 cities with between 750,000 and 1 million inhabitants, and 8 of the 14 cities of 500,000 to 750,000 population (see table 11). Of the 75.5 million persons in the Soviet Union who lived in cities of 50,000 or more, 48.8 million were in the West zone. More than 13 million persons in the West zone, or 86 percent of the 15.3 million in the U.S.S.R. as a whole, resided in cities of 1 million or more.

Figure 4.--MAJOR GEOGRAPHICAL ZONES IN THE SOVIET UNION



Source: Based on a map presented in V.V. Pokshishevsky, "Study of Geographical Differences in the Population of the U.S.S.R.," in I.P. Gerasimov et. al., (Eds.) Sovremennyye problemy geografii, (Modern Problems of Geography), Moscow, Nauka, 1964, p. 36.

TABLE 11.—*Number and population of cities in the Soviet Union with 50,000 inhabitants or more, by size class and major geographic zone: 1959 and 1965*

[Population figures are in thousands. See notes to table 10]

Size of place	Jan. 15, 1959						Jan. 1, 1965					
	Total country	West	Middle	South	East	Extreme North	Total country	West	Middle	South	East	Extreme North
NUMBER OF PLACES												
50,000 or more	304	183	63	31	21	6	368	227	72	40	22	7
1,000,000 or more	3	3					7	5	1	1		
750,000 to 1,000,000	6	3	2	1			8	4	3	1		
500,000 to 750,000	16	9	4	3			14	8	2	3	1	
300,000 to 500,000	18	9	5	1	3		30	17	8	2	3	
100,000 to 300,000	105	61	23	12	7	2	128	79	27	11	9	2
50,000 to 100,000	156	98	29	14	11	4	181	114	31	22	9	5
POPULATION												
50,000 or more	59,647	38,651	11,465	5,965	2,991	575	75,514	48,824	14,223	7,998	3,709	760
1,000,000 or more	9,136	9,136					15,213	13,094	1,029	1,090		
750,000 to 1,000,000	5,259	2,682	1,665	912			6,586	3,293	2,488	805		
500,000 to 750,000	9,836	5,535	2,446	1,855			9,226	5,328	1,386	1,971	541	
300,000 to 500,000	6,697	3,411	1,729	456	1,101		11,145	6,288	3,016	665	1,176	
100,000 to 300,000	17,706	10,799	3,614	1,786	1,176	331	20,723	12,992	4,185	1,789	1,361	396
50,000 to 100,000	11,013	7,088	2,011	956	714	244	12,621	7,829	2,119	1,678	631	364

Source: Based on data in "Nar. khoz. v 1964," pp. 22-31; and TsSU, "Itogi Vsesoyuznoy perepisi naseleniya 1959 goda" (Results of the All-Union Census of Population of 1959), Gosstatizdat, Moscow, 1962 and 1963 (15 volumes).

About one-fifth of the cities with as many as 50,000 inhabitants were in the Middle zone. Only 1 city, Novosibirsk, had as many as 1 million inhabitants, although 3 cities had populations of from 750,000 to 1 million. The population of cities with 50,000 inhabitants or more amounted to 14.2 million.

About 10 percent of the Soviet Union's cities are located in the South zone. The largest city in this region, and the only one with more than 1 million population, is Tashkent, the capital of the Uzbek S.S.R. Tbilisi, the capital of Georgia, is the only other city with as many as 750,000 inhabitants. Eight million persons lived in cities with as many as 50,000 inhabitants.

The East and Extreme North zones have very few cities. There are only 22 cities with as many as 50,000 inhabitants in the East zone and only 7 in the Extreme North zone. Neither zone has any very large cities. The Extreme North zone has no city with as many as 500,000 population while the East has only 1 such city, Krasnoyarsk, whose population was 541,000 at the beginning of 1965. Khabarovsk, with a population of 408,000, is the second largest city in the east. The largest city in the Extreme North is Murmansk whose 1965 population was 272,000.

In order to examine more closely the growth pattern of cities between 1959 and 1965, urban places with populations of 50,000 or more were grouped, within each of the 5 zones, into 6 size classes according to their 1965 populations. Both the 1959 and 1965 populations of the cities within each grouping were summed, by zone, and growth rates calculated for each size-zone class. These data (see table 12), show: (1) that the very large cities grew less rapidly than middle size and smaller cities; (2) that the cities in the south grew more rapidly than those in other zones; and (3) that the cities in the Middle zone grew less rapidly than those of other zones.

TABLE 12.—*Population growth between 1959 and 1965 in cities in the Soviet Union with 1965 populations of 50,000 or more, by size of place in 1965 and major geographic zone*

[Population figures in thousands]

Size of place	Total country	West	Middle	South	East	Extreme North
POPULATION IN 1959 IN PLACES WITH 1965 POPULATION OF						
50,000 or more	62,037	40,140	11,886	6,352	3,038	621
1,000,000 or more	12,810	11,012	886	912	----------	----------
750,000 to 1,000,000	5,612	2,812	2,097	703	----------	----------
500,000 to 750,000	7,560	4,412	1,128	1,608	412	----------
300,000 to 500,000	9,204	5,257	2,523	444	980	----------
100,000 to 300,000	16,639	10,327	3,457	1,407	1,117	331
50,000 to 100,000	10,212	6,320	1,795	1,278	529	290
POPULATION IN 1965						
50,000 or more	75,514	48,824	14,223	7,998	3,709	760
1,000,000 or more	15,213	13,094	1,029	1,090	----------	----------
750,000 to 1,000,000	6,586	3,293	2,488	805	----------	----------
500,000 to 750,000	9,226	5,328	1,386	1,971	541	----------
300,000 to 500,000	11,145	6,288	3,016	665	1,176	----------
100,000 to 300,000	20,723	12,992	4,185	1,789	1,361	396
50,000 to 100,000	12,621	7,829	2,119	1,678	631	364
PERCENT CHANGE, 1959–65, IN PLACES WITH 1965 POPULATIONS OF						
50,000 or more	21.7	21.6	19.7	25.9	22.1	22.4
1,000,000 or more	18.8	18.9	16.1	19.5	----------	----------
750,000 to 1,000,000	17.4	17.1	18.6	14.5	----------	----------
500,000 to 750,000	22.0	20.8	22.9	22.6	31.3	----------
300,000 to 500,000	21.1	19.6	19.5	49.8	20.0	----------
100,000 to 300,000	24.5	25.8	21.1	27.1	21.8	19.6
50,000 to 100,000	23.6	23.9	18.1	31.3	19.3	25.5

Source: Based on data in "Nar. khoz. v 1964," pp. 22-31.

In 1959, about 62 million persons lived in the 368 cities whose 1965 populations were 50,000 or more. More than 75.5 million persons lived in these cities in 1965, an increase of 21.7 percent during the 6-year period, 1959–65. The 7 largest cities in the country—that is, those whose 1965 populations numbered 1 million or more—grew by only 18.8 percent, while those in the 750,000 to 1 million class grew by only 17.4 percent. Cities whose 1965 populations were less than 300,000 had the highest increase rate.

The 40 cities in the South zone grew by 25.9 percent. The 2 South zone cities in the 300,000 to 500,000 size class—Frunze, capital of the Kirgiz S.S.R., and Dushanbe, capital of the Tadzhik S.S.R.—recorded a combined growth rate of 49.8 percent. Frunze is the faster growing of the two. Its 1965 population of 355,000 was almost 62 percent above the 220,000 recorded in 1959. Dushanbe grew by 38 percent, from 224,000 in 1959 to 310,000 in 1965. The 22 cities in the South zone with 1965 populations of less than 100,000 grew by more than 31 percent and those in the 100,000 to 300,000 size class grew by 27 percent. These rates are well above those for the respective size classes in other zones.

Surprisingly, cities in the Middle zone grew at a slower rate than those of any other zone despite the fact that this zone encompasses the virgin lands region, the area favored by Khrushchev for development. Novosibirsk, the largest city in this zone, increased by only 16 percent between 1959 and 1965, while Sverdlovsk, the second rank-

ing city, grew by only 18 percent. The fastest growing group of cities in the Middle zone are those with populations of 500,000 to 750,000. The combined populations of the two cities in this group—Omsk and Ufa—increased by almost 23 percent between 1959 and 1965.

Chapter IV. Ethnic Composition

The 1959 census provides the only recent data on the ethnic composition of the population of the Soviet Union. Two types of ethnic data are available from that census: nationality and native language. The respondent himself indicated his nationality. A child's nationality was taken to be the same as his parents'. If the parents were of different nationalities, the nationality of the mother was recorded. The respondent also indicated his native language. Both of these measures of ethnic composition, however, are inherently limited. Because the Russian nationality is predominant and in some respects has the characteristics of a "Soviet" nationality, some members of other groups undoubtedly reported themselves as Russian. Native language is even more limited as an indicator of ethnic composition because Russian is the intranational language for the Soviet Union. According to the 1959 census, 124 million persons affirmed that Russian was their native language, but only 114.1 million persons said that they were of Russian nationality.

According to A. A. Isupov, the 1959 census used a basic list containing 126 nationalities to classify the population by nationality.[35] The published results of the census for the U.S.S.R. as a whole lists 109 separate groups. Of this number, 10 are listed as subnationalities of the "Dagestan People," two represent a splitting of the Komi and Komi-Permyak, who are shown as 1 group with 2 subgroups, and 20 are small subnationalities under the major heading "Peoples of the North." If the individual subgroups are disregarded and only the major groups of which they are a part counted, the number of nationalities for which data are published is reduced to 80.

SIZE AND DISTRIBUTION

According to the 1959 census, 19 nationalities in the Soviet Union had a million members or more. Counting the "Dagestan People" as 1 group, 43 had 100,000 members or more.[36] The size of these 43 groups are listed in table 13. Russians are by far the largest nationality group. Numbering 114.1 million, they comprised 53 percent of the total population of 208.8 million. The Ukrainians with 37.3 million, and the Belorussians with 7.9 million constitute the next largest groups. The Uzbeks and the Tatars are the most numerous of the non-Slavic peoples with 1959 populations of 6 million and 5 million, respectively.

Russians comprise 83 percent of the population of the R.S.F.S.R., the largest of the Soviet Union's 15 Republics and the one named for the Russian majority. Among the other Republics, each of which is named for a nationality group, they comprise 30 percent or more of

[35] A. A. Isupov, "Natsional'nyy sostav naseleniya SSSR" (Nationality Composition of the U.S.S.R. Population). Moscow. Statistika. 1964. p. 12.

[36] If the individual subgroups for the "Dagestan People" are counted separately, there are 46 nationalities with as many as 100,000 members.

the population in two, between 20 and 30 percent of the population in two, between 10 and 20 percent of the population in seven, and about 8 percent in two (see table 14). In the Armenian S.S.R., Russians are less numerous than in any of the other Republics, comprising only 3.2 percent of that Republic's population. In the Kazakh Republic, they account for almost 43 percent of the population and are more numerous than any other group, including the Kazakhs for whom the Republic is named.

TABLE 13.—*Nationality groups with 100,000 members or more in the Soviet Union, by rank order: Jan. 15, 1959*

[In thousands]

Nationality	Number	Nationality	Number
1. Russian	114,114	23. Dagestan People [1]	944
2. Ukrainian	37,253	24. Udmurt	625
3. Belorussian	7,913	25. Mari	504
4. Uzbek	6,015	26. Komi and Komi-Permyak	431
5. Tatar	4,968	27. Chechen	419
6. Kazakh	3,622	28. Ossetin	413
7. Azerbaydzhan	2,040	29. Bulgarian	324
8. Armenian	2,787	30. Korean	314
9. Georgian	2,692	31. Greek	309
10. Lithuanian	2,326	32. Buryat	253
11. Jewish	2,268	33. Yakut	237
12. Moldavian	2,214	34. Kabardin	203
13. German	1,620	35. Karakalpak	173
14. Chuvash	1,470	36. Karelian	167
15. Latvian	1,400	37. Hungarian	155
16. Tadzhik	1,397	38. Gypsy	132
17. Polish	1,380	39. Gagauz	124
18. Mordvinian	1,285	40. Rumanian	106
19. Turkmen	1,002	41. Kalmyk	106
20. Bashkir	989	42. Ingush	106
21. Estonian	989	43. Tuvinian	100
22. Kirgiz	969		

[1] The census lists 10 subgroups under Dagestan People, four of which have 100,000 members or more: Avar, 270,000; Lezgin, 223,000; Dargin, 158,000; and Kumyk, 135,000.

Source: TsSU, "Itogi vsesoyuznoy perepisi naselenlya 1959 goda, SSSR, svodnyy tom" (Results of the All-Union Census of Population of 1959, U.S.S.R., Summary Volume), Moscow, Gosstatizdat, 1962, pp. 184-188. This source is cited hereafter as Itogi.

TABLE 14.—*Persons of Russian nationality in the Soviet Union, by republic: Jan. 15, 1959*

Republic	Number (in thousands)	Percent distribution	Percent of the total population of the Republic	Percent of the population of the Republic capital
Soviet Union	114,114	100.0	54.6	57.3
R.S.F.S.R.	97,864	85.8	83.3	86.6
Ukrainian S.S.R.	7,091	6.2	16.9	23.0
Kazakh S.S.R.	3,974	3.5	42.7	73.1
Uzbek S.S.R.	1,091	1.0	13.5	43.9
Belorussian S.S.R.	659	.6	8.2	22.8
Kirgiz S.S.R.	624	.6	30.2	68.6
Latvian S.S.R.	556	.5	26.6	39.5
Azerbaydzhan S.S.R.	501	.4	13.6	34.7
Georgian S.S.R.	408	.4	10.1	18.1
Moldavian S.S.R.	293	.2	10.2	32.2
Turkmen S.S.R.	263	.2	17.3	50.3
Tadzhik S.S.R.	263	.2	13.3	47.7
Estonian S.S.R.	240	.2	20.1	32.2
Lithuanian S.S.R.	231	.2	8.5	29.4
Armenian S.S.R.	56	(1)	3.2	4.4

[1] Less than 0.05 percent.

Source: Itogi, pp. 202-208.

An examination of data for administrative areas below the Republic level shows a similar pattern of Russian presence; they constituted the predominant group in 78 of the 162 areas for which data are plotted in figure 5.[37] The populations of about 15 percent of 76 administrative areas outside the R.S.F.S.R. were 50 percent Russian or more. Seventeen percent had populations of from 30 to 50 percent Russian and another 16 percent had populations of from 10 to 20 percent Russian. Thus, in about 55 percent of the administrative areas in "non-Russian" Republics, Russians comprise 10 percent or more of the population. According to the 1959 census, there was no administrative area in any Republic that did not report the presence of some Russians.

Several examples may be cited to show this overwhelming Russian presence in so-called non-Russian areas. In the Jewish autonomous oblast, Jews constituted only 8.8 percent of the area's population while Russians accounted for 78.2 percent. In the Yakut A.S.S.R., the Yakut people account for 46.4 percent of the population while Russians constitute 44.2 percent.

Russian presence is also strikingly illustrated by their concentration in the Republic capitals (see table 14). Russians comprise a larger proportion of the population of every Republic capital than they do of the population of the Republic as a whole, indicating that sizeable administrative contingents are located in these important centers. Alma-Ata, the capital of the Kazakh S.S.R., and Frunze, the capital of the Kirgiz S.S.R., have the largest percent Russian of any Republic capital except Moscow.

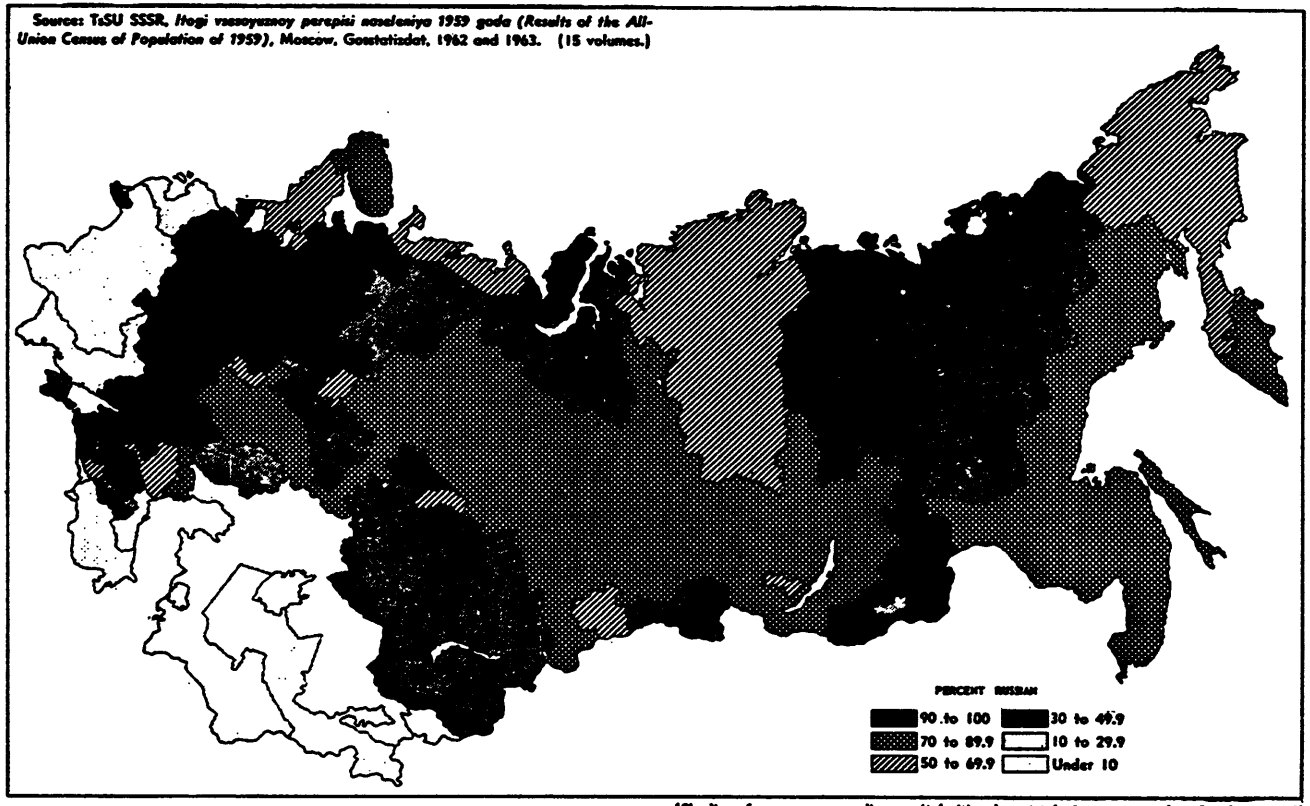
Russians comprise 73 percent of the population of the Alma-Ata and 69 percent of the population of Frunze. Even in the Armenian S.S.R., where Russians constitute a smaller proportion of the population than in any other Republic, approximately 40 percent of its 56,000 Russians are located in the capital city of Yerevan.

Figure 6 shows the principal nationality group—that is, the group which constitutes a larger proportion of the population than any other—in each of 162 administrative areas. Only 25 of the nationality groups enumerated by the census comprised a plurality of the population in at least one kray, autonomous Republic, oblast, national okrug, or Republic capital, the administrative units for which data from the 1959 census have been published. Had data for rayons been available, it is likely that many more nationality groups would be represented on the map.

Perhaps the most striking feature of the map is that with the exception of the Russians, no group represents a plurality of the population outside its own area. Not even the 37 million Ukrainians, the second largest group in the U.S.S.R., are concentrated in large enough colonies outside the Ukraine to constitute the dominant ethnic group within a particular administrative area. The three principal Slavic groups—the Russians, Ukrainians, and Belorussians—accounted for 76.3 percent of the total population, but they were predominant in 81.5 percent of the administrative units for which nationality data are available.

[37] The 1959 census provides data on ethnic composition for autonomous Republics, autonomous oblasts, krays, national okrugs, and Republic capitals.

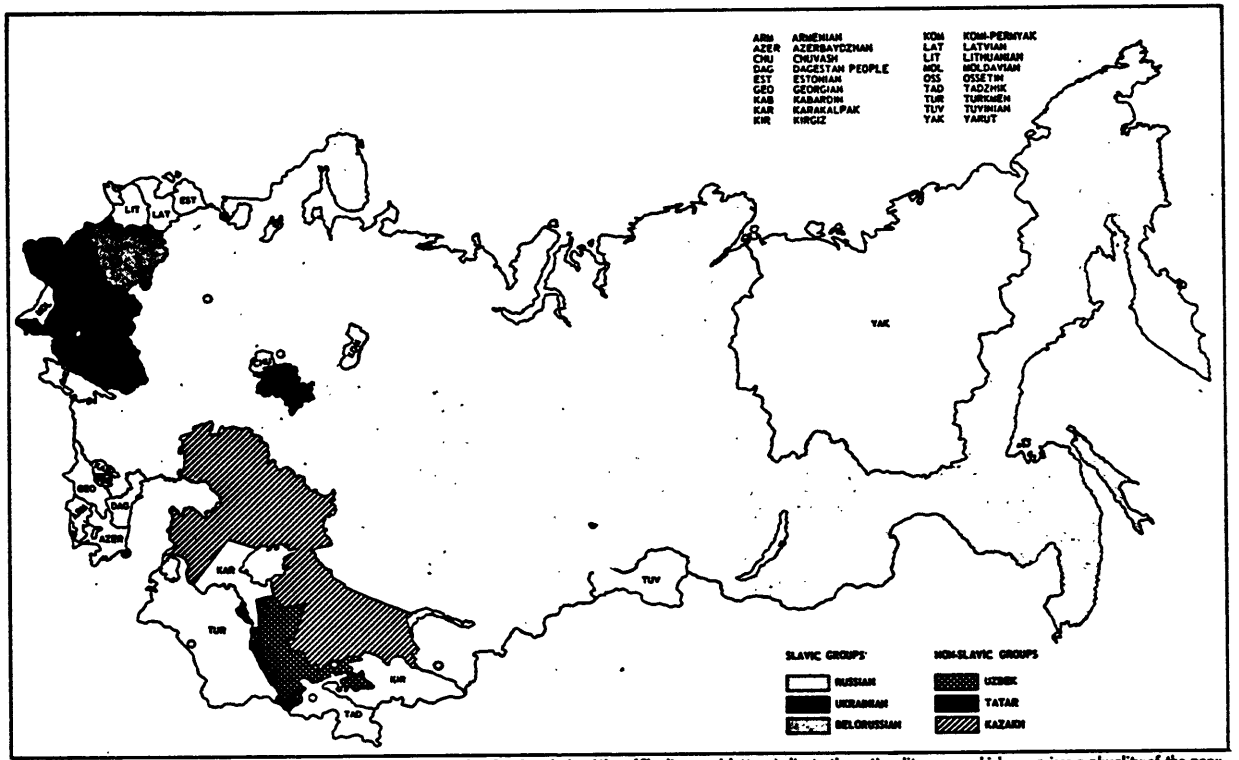
Figure 5.—RUSSIANS AS A PERCENT OF THE POPULATION, BY ADMINISTRATIVE AREA: JANUARY 15, 1959



Source: TsSU SSSR, *Itogi vsesoyuznoy perepisi naseleniya 1959 goda (Results of the All-Union Census of Population of 1959)*, Moscow, Gosstatizdat, 1962 and 1963. (15 volumes.)

(Shadings for areas surrounding capital cities do not take into account data for the capital)

Figure 6.—PRINCIPAL NATIONALITY GROUPS, BY ADMINISTRATIVE AREA: JANUARY 15, 1959



Source: TsSU SSSR, *Itogi vsesoyuznoy peripisi naseleniya 1959 goda (Results of the All-Union Census of Population of 1959)*, Moscow, Gosstatizdat, 1962 and 1963. (15 volumes.)

(Shadings and letters indicate the nationality group which comprises a plurality of the population. Shadings and letters for areas surrounding capital cities do not take into account data for the capital)

Only 22 non-Slavic groups constituted a plurality in any one area. The largest of these is the Uzbeks (6 million), who are concentrated in the central Asian Republic named for them. Other large non-Slavic nationality groups, such as the Azerbaydzhans (2.9 million), Armenians (2.8 million), Georgians (2.7 million), and Lithuanians (2.3 million), also are located in Republics named for them. The Kirgiz, who number just under 1 million, are the least numerous nationality in whose name a union Republic has been established. Except for the Kazakhs and Kirgiz, each of the nationality groups for which a union Republic has been named comprises a clear majority of the population of that Republic. The Kirgiz represent a plurality but not a majority of the population of their Republic, while Russians outnumber Kazakhs in the Kazakh S.S.R.

Other sizeable groups, such as the Tatars whose 5 million members rank them as the second largest non-Slavic group in the U.S.S.R., are concentrated in autonomous Republics named for them. The Tatar A.S.S.R. is located in the center of the Russian Republic. Among other groups shown in figure 6 in whose name autonomus Republics have been established are the Chuvash (1.4 million), "Dagestan people" (0.9 million), Ossetins (0.4 million), and Tuvinians (0.1 million).

There are two other types of administrative units in the Soviet Union which have been established in the name of nationality groups—autonomous oblasts and national okrugs. Five of the 8 autonomous oblasts and all of the 10 national okrugs are located in the R.S.F.S.R. Georgia, Azerbaydzhan, and Tadzhikstan have one autonomous oblast each. Russians are the principal group in all five of the autonomous oblasts in the R.S.F.S.R. and in all but one of the national okrugs. Komi-Permyaks comprise 58 percent of the population of the Komi-Permyak National Okrug. Russians, however, account for nearly one-third of the population.

Of the three autonomous oblasts outside the R.S.F.S.R., Gorno-Badakhshan in the Tadzhik S.S.R. is the only one in which the nationality group of the union Republic is the principal group. Ossetins comprise a majority of the population in the Southern Ossetin Autonomous Oblast in the Georgian S.S.R., while Armenians account for 85 percent of the population of the Nagorno-Karabakh Autonomous Oblast in the Azerbaydzhan S.S.R.

In addition to the groups shown in figure 6, there are other large nationalities, such as the Jews (2.3 million), Germans (1.6 million), and Poles (1.4 million), which do not constitute a plurality of the population in any area. Jews are concentrated in Kiev, where they account for more than 10 percent of the population, and in such cities as Leningrad and Moscow, where they comprise 5.6 percent and 1.1 percent of the respective populations. Almost two-thirds of the Poles enumerated in the census are located in the Belorussian and Ukrainian S.S.R.'s.

Germans were not listed in the 1959 census results as a separate nationality in any oblast. Below the national level, the census identifies Germans as a separate group only for the R.S.F.S.R. as a whole, which reported 820,000, or about half of the Germans in the Soviet Union.

Most of the remaining Germans are believed to be in Kazakhstan. The census did not identify the nationality of 967,000 residents of that Republic, or more than 10 percent of the total population. In the 13 Republics excluding the R.S.F.S.R. and Kazakhstan, 466,000 persons were not identified by nationality. This figure represents about 0.6 percent of the combined populations of these areas. Several individual Republics have somewhat higher percentages, which may signify the presence of Germans, but the numbers are relatively small. The assumption that Germans are located in Kazakhstan and in adjoining areas of the R.S.F.S.R. is supported by a Soviet map showing the geographical dispersion of the population by native language.[38] German-speaking persons are shown in scattered pockets along the R.S.F.S.R.-Kazakhstan border. They are located near the Kazakhstan cities of Karaganda, Tselinograd, and Aktyubinsk, and the R.S.F.S.R. cities of Novosibirsk, Omsk, and Kuybyshev. Other pockets are shown in Kirgizia, Uzbekistan, and the northern Caucasus.

LANGUAGE AND NATIONALITY

The 1959 census listed 16 languages with 1 million native speakers or more, 7 with between 500,000 and 1 million, and 18 with between 100,000 and 500,000 native speakers. More than 124 million persons gave Russian as their native language, about 33 million gave Ukrainian, and another 7 million gave Belorussian. Thus, 164 million persons in the Soviet Union considered 1 of the 3 major Slavic languages to be their mother tongue (see table 15). Six million persons speak Uzbek, 4.9 million Tatar, and 3.6 million Kazakh as their native language. German was cited as the native language of 1.2 million persons. Only 585 persons reported English as their native language.

A large proportion of the members of most nationality groups gave the language of their nationality as their mother tongue. Of the 20 nationality groups, excluding the Russians, presented in table 15, 11 show 95 percent or more of their members as reporting the language of their nationality as their mother tongue. Two groups show between 90 and 95 percent. For all but 2 of the 20 groups, three-fourths or more of their members speak the tongue of their nationality.

Since Russian is not only the language of the majority group but also the language of government and commerce, perhaps one measure of the assimilation of the respective nationalities into the Russian-dominated Soviet system is the proportion of each group reporting Russian as their mother tongue. Using this criteria, the Jews are by far the most Russified, since 76 percent of them report Russian as their native language.

Data on language from the 1959 Soviet census do not provide information on the knowledge of a second language. Given the intensity of Russian language study and the position of Russian as the language of government and commerce, the number of people who know Russian as a second language must be quite large.

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[38] "Glavnoye upravleniye geodezii i kartografii Ministerstva geologii i okhrany nedr SSSR" Karta narodov SSSR (Nationality map for the U.S.S.R.). 1:10,000,000, Moscow, 1962.

TABLE 15.—*Persons in the Soviet Union by native language and selected nationality: Jan. 15, 1959*

[Population figures in thousands]

Nationality	Number who consider their native language to be			Percent		
	Russian	Language of their nationality	Another language	Russian	Language of their nationality	Another language
1. Russian	113,936	----------	177	99.8	----------	0.2
2. Ukrainian	4,541	32,681	31	12.2	87.7	0.1
3. Jewish	1,733	488	47	76.4	21.5	2.1
4. Belorussian	1,212	6,665	37	15.3	84.2	0.5
5. German	393	1,215	12	24.2	75.0	0.8
6. Tatar	349	4,573	45	7.0	92.1	0.9
7. Mordvian	280	1,004	1	21.8	78.1	0.1
8. Armenian	233	2,505	49	8.3	89.9	1.8
9. Polish	203	624	553	14.7	45.2	40.1
10. Chuvash	132	1,334	3	9.0	90.7	0.2
11. Moldavian	79	2,108	27	3.6	95.2	1.2
12. Latvian	64	1,331	5	4.6	95.1	0.4
13. Estonian	46	941	2	4.7	95.1	0.2
14. Kazakh	44	3,563	15	1.2	98.4	0.4
15. Azerbaydzhan	36	2,870	34	1.2	97.6	1.2
16. Georgian	35	2,655	2	1.3	98.6	0.1
17. Uzbek	30	5,921	64	0.5	98.4	1.1
18. Lithuanian	29	2,275	23	1.2	97.8	1.0
19. Tadzhik	8	1,371	18	0.6	98.1	1.3
20. Turkmen	7	990	5	0.7	98.8	0.5
21. Kirgiz	3	956	10	0.3	98.7	1.0

Source: Itogi, pp. 184-185.

CHAPTER V. FAMILY SIZE AND COMPOSITION

According to the 1959 census, a "family" consists of related persons "living under a common budget." Data are given for family members living together and family members living apart from their families. Most of the latter group consist of students receiving support from their families, persons who work in a different locality from that in which their families reside and who contribute to the support of the family, and possibly members of the Armed Forces. Older persons who live alone but receive assistance from their children are also included in this group, although the number of such persons is likely to be small. The mere presence of related individuals in the some housing unit was not sufficient proof that these individuals belong to the same family. The enumerators were instructed to ascertain the budgetary relationship among the various individuals and to report a separate family for each budget. Single persons living alone who were not family members as defined by the census are shown separately.

There are important differences in the statistical concept of the family in the Soviet Union and in the United States which must be taken into account when data for the two countries are compared. "Common budget" as a criteria for delimiting a family is not used in the United States. Rather, the 1960 census of the United States defined a "household" as one or more persons occupying a housing unit intended for occupancy as separate living quarters.[39] A "pri-

[39] An individual living alone was classified as a "household" if he occupied a housing unit (i.e., did not live in "group quarters" such as barracks, dormitories, etc.).

mary" family was then to consist of members of the household who are related by blood, marriage, or adoption to the head of the household. When a relative of the head of the household is married and lives in the household with his spouse and/or children, these individuals are considered to be a "subfamily." Members of a subfamily, however, were counted as members of the primary family and the total number of families reported for the United States does not include subfamilies. When the household contains other families not related to the head of the household, such as lodgers or resident employees, these "secondary" families were included in the family statistics as separate families.

This definition is reasonable for the United States because most American families live in a housing unit to themselves. When more than one family resides in the same household, one family can usually be clearly designated as the "primary" family. Such a definition would not be satisfactory for the Soviet Union, however, because most families in urban areas occupy one or two rooms of a housing unit and share kitchen and bathroom facilities with one or more other families. All of the families in a housing unit occupy it on more or less equal terms and none can be designated as the "primary" family. The "common budget" concept appears to be a reasonable way to delimit the family under such circumstances.

One other conceptual difference in the family statistics for the Soviet Union and the United States is the definition of the head of the family. In the Soviet Union, the family was permitted to designate any adult family member as head, providing that person lived with the family. If the family had difficulty in naming its head, the family member who contributed the principal means of support was so designated. In the United States, the family was also allowed to designate its own head, but the data were edited so as not to show a woman as head if her husband was present.

The 1959 census provides family statistics for the "permanent" (*postoynnoye*) population. This population numbered 208,246,874 as compared with an "on hand" (*nalichnoye*) population of 208,826,650. The difference of 579,776 between the two apparently resulted from errors in counting persons who were temporarily absent from their place of permanent residence. Generally, persons who were to be away less than 6 months were to be enumerated at their places of permanent residence as "temporarily absent" and at their temporary domiciles as "temporarily present." The enumeration documents were to be matched so as to avoid double counting.[40]

Theoretically, the two counts should differ to the extent that the number of Soviet citizens temporarily living outside the U.S.S.R. differs from the number of foreigners temporarily residing in the U.S.S.R. Since the Soviet Union has large numbers of its own nationals (e.g., armed forces) outside the country and relatively few foreigners in the country, the permanent population would be the larger of the two except for the fact that military personnel apparently

[40] See A. I. Yezhov, "Sistema i metodologiya pokazateley sovetskoy statistiki" (System and Methodology of Soviet Statistical Indicators), Moscow, Statistika, 1965, p. 15.

were counted in the on hand population in their area of callup.[41] Conversely, the "on hand" population would be larger than the permanent population if persons who have moved are recorded as temporarily present in their area of domicile but are not recorded in their place of permanent residence as temporarily absent. The Soviet census seems to offer ample opportunity for errors of this type.

Of the 208.2 million persons who were enumerated as the permanent population of the U.S.S.R. in 1959, 198.9 million, or 95.5 percent, were classified as family members and 9.4 million, or 4.5 percent, were classified as single persons living alone. However, 12 million family members were listed as living apart from their families. The 186.9 million family members living together represent 89.7 percent of the permanent population (see table 16). Counting both family mem-

TABLE 16.—*Family status of the permanent population of the Soviet Union, by sex and urban-rural residence: Jan. 15, 1959*

[Population figures in thousands. Figures may not add to totals because of independent rounding.]

Residence and population group	Both sexes	Male	Female	Percent		
				Both sexes	Male	Female
Total:						
Total permanent population	208,247	93,783	114,463	100.0	45.0	55.0
Family members	198,871	91,262	107,608	95.5	43.8	51.7
Living together	186,881	83,147	103,734	89.7	39.9	49.8
Living apart	11,989	8,115	3,874	5.8	3.9	1.9
Single persons living alone	9,376	2,521	6,855	4.5	1.2	3.3
Urban:						
Total permanent population	99,099	44,847	54,252	100.0	45.3	54.7
Family members	93,334	43,078	50,256	94.2	43.5	50.7
Living together	86,045	38,222	47,823	86.8	38.6	48.3
Living apart	7,289	4,856	2,433	7.4	4.9	2.5
Single persons living alone	5,765	1,769	3,996	5.8	1.8	4.0
Rural:						
Total permanent population	109,147	48,936	60,211	100.0	44.8	55.2
Family members	105,536	48,184	57,352	96.7	44.1	52.5
Living together	100,836	44,925	55,911	92.4	41.2	51.2
Living apart	4,700	3,259	1,441	4.3	3.0	1.3
Single persons living alone	3,611	752	2,859	3.3	.7	2.6

Source: Itogi, p. 240 ff.

bers who live apart from their families and single individuals living alone, some 21.4 million persons, or 10.3 percent of the permanent population, did not live with their families. In comparison, 166.0 million persons, or 92.6 percent of the U.S. population, were members of families according to the 1960 census, and 13.3 million, or 7.4 percent,

[41] The census volume states that students and members of the armed forces were enumerated as the permanent population at their place of domicile. It then states: "However, in the results of the census military personnel were included in their place of callup and not in the place where they were enumerated." See Itogi, p. 8. It is not clear whether this statement refers to both the permanent and the on hand populations.

lived alone or in group quarters. Thus, in comparison with the U.S.S.R., a somewhat smaller proportion of the U.S. population lived alone.

FAMILIES

According to the 1959 census, there were 50.3 million families in the U.S.S.R., or about 5 million more than there were in the United States in 1960. As a result of the Soviet Union's male deficit, 14.4 million Soviet families (28.5 percent) had female heads. This was almost 3.5 times the number of American families headed by women, but some of the difference is attributable to the conceptual difference between the two countries in designating the family head (see table 17).

TABLE 17.—*Families in the Soviet Union (1959) and the United States (1960), by sex of head and urban-rural residence*

[Number of families in thousands. Figures may not add to totals because of independent rounding.]

Country and sex of head	Number of families		
	Total	Urban	Rural
Soviet Union:			
All families	50,333	24,376	25,957
Male head	35,980	17,866	18,115
Female head	14,353	6,511	7,842
United States:			
All families	45,149	31,958	13,190
Male head	40,952	28,659	12,294
Female head	4,196	3,300	897
Percent distribution:			
Soviet Union:			
All families	100	48.3	51.6
Male head	100	49.7	50.3
Female head	100	45.4	54.6
United States:			
All families	100	70.8	29.2
Male head	100	70.0	30.0
Female head	100	78.6	21.3

Source: Soviet Union, Itogi, p. 242; United States, U.S. Bureau of Census, U.S. Census of Population 1960, Subject Reports. Families: "Final Report, PC(2)4A," Washington, 1963, p. 44–53.

Reflecting the roughly even split of the population between urban and rural, slightly more than half of the Soviet families (51.6 percent) live in rural areas. Less than 30 percent of the American families are rural. Because males in the U.S.S.R. tend to migrate to cities much more than do women and because many women who do migrate return to the country when they are older or when their husbands die, families headed by females are more common in rural areas. Almost 55 percent of the Soviet families with female heads were rural as compared with only 50 percent of those with male heads. In contrast, American families with female heads are more common in urban areas. According to the 1960 census, only 21 percent of the families with female heads were rural as compared with 30 percent of the families headed by men.

The Soviet Union has fewer small families (two persons) and fewer very large families (nine members or more) than does the United States. The Soviet census shows only 13.1 million 2-person families as compared with 14.7 million American families in this size class; only about one-fourth of the Soviet families and almost one-third of the American families were of this size. There were about half a million Soviet families with nine members or more compared with three-quarters of a million American families with as many members. In contrast, the Soviet Union had substantially more families with three members than did the United States. The 13.1 million Soviet families with three members were about a third higher than the 9.8 million American families of this size (see table 18).

TABLE 18.—*Size of family in the Soviet Union (1959) and the United States (1960), by urban-rural residence*

[Number of families in thousands]

Country and residence	All families	Families with—							
		2 members	3 members	4 members	5 members	6 members	7 members	8 members	9 members or more
Total families:									
Soviet Union	50,333	13,078	13,078	10,937	6,762	3,606	1,638	730	504
United States	45,149	14,748	9,761	8,998	5,757	3,042	1,390	695	758
Urban families:									
Soviet Union	24,376	6,603	7,040	5,614	2,958	1,300	509	209	144
United States	31,958	10,720	7,086	6,473	4,000	2,006	869	408	398
Rural families:									
Soviet Union	25,957	6,476	6,037	5,323	3,804	2,306	1,129	521	361
United States	13,190	4,028	2,676	2,525	1,757	1,036	521	287	360
Percent distribution:									
Total families:									
Soviet Union	100.0	26.0	26.0	21.7	13.4	7.2	3.3	1.5	1.0
United States	100.0	32.7	21.6	19.9	12.8	6.7	3.1	1.5	1.7
Urban families:									
Soviet Union	100.0	27.1	28.9	23.0	12.1	5.3	2.1	.9	.6
United States	100.0	33.5	22.2	20.3	12.5	6.3	2.7	1.3	1.2
Rural families:									
Soviet Union	100.0	24.9	23.3	20.5	14.7	8.9	4.3	2.0	1.4
United States	100.0	30.5	20.3	19.1	13.3	7.9	3.9	2.2	2.7
Percent urban:									
Soviet Union	48.4	50.5	53.8	51.3	43.7	36.1	31.1	28.6	28.6
United States	70.8	72.7	72.6	71.9	69.5	65.9	62.5	58.7	52.5

Source: Soviet Union, Itogi, p. 250ff.; United States, U.S. Bureau of the Census, U.S. Census of Population, 1960, Subject Reports. Families. "Final Report PC(2)-4A," Washington, 1963, p. 21ff.

The most likely explanation for the relative paucity of 2-person families in the U.S.S.R. is the housing shortage, which is generally more acute in the cities. Young couples are often forced to continue living with their parents or in dormitories long after they are married. Many couples are not able to establish a household before the birth of a child. That the housing shortage may be the reason for the small number of 2-person families is supported by the fact that a smaller proportion of 2-person families than the 3- or 4-person families were urban.

As would be expected larger families are much more common in rural areas than in cities in both countries. For example, in the Soviet Union, more than half of the families with 4 members or less are urban, as compared with 44 percent for families of 5 members and

only 29 percent for families of eight members or more. Because a higher proportion of the U.S. population than that of the Soviet Union is urban, there is a larger number of urban than rural families in every size class in the United States. However, large families are still more common in rural areas. Data on family size for the United States show a declining urban proportion as family size increases.

Nationality differences in family size in the Soviet Union appear to be more important than urban-rural differences. Rural families averaged 3.9 persons in 1959 as compared with 3.5 for urban families. Among the 15 nationality groups listed in table 19, however, Tadzhik families averaged 5.2 persons as compared with 3 for Estonian families. Thus, on the average, rural families were only 11 percent larger than urban families where Tadzhik families were 73 percent larger than Estonian families.

TABLE 19.—*Average family size in the Soviet Union, by nationality and urban-rural residence: Jan. 15, 1959*

[Nationality groups are ranked according to average family size]

Nationality	Percent urban	Percent distribution of the total population	Average family size		
			Total	Urban	Rural
All nationalities	48	[1] 100.0	3.7	3.5	3.9
Tadzhik	21	0.7	5.2	5.1	5.2
Uzbek	22	2.9	5.0	4.9	5.0
Turkmen	25	.5	5.0	4.7	5.1
Azerbaydzhan	35	1.4	4.8	4.6	4.9
Armenian	57	1.3	4.7	4.4	5.0
Kazakh	24	1.7	4.6	4.7	4.5
Kirgiz	11	.7	4.5	4.3	4.6
Georgian	36	1.3	4.0	3.8	4.1
Moldavian	13	1.1	3.9	3.6	4.0
Belorussian	32	3.8	3.7	3.4	3.7
Russian	58	54.6	3.6	3.5	3.7
Lithuanian	35	1.1	3.6	3.4	3.6
Ukrainian	39	17.8	3.5	3.3	3.6
Latvian	48	.7	3.1	3.0	3.2
Estonian	47	.5	3.0	3.1	3.0

[1] Because about 10 percent of the population are members of nationality groups other than those listed, the distribution does not add to the total. Data on average family size for other nationalities are not reported.

Source: Itogi, p. 184 ff. and 252.

Much of the rural-urban difference for the country as a whole appears to be due to the tendency for those nationality groups with small families to live in cities. For example, only 21 percent of the Tadzhiks, who averaged 5.2 persons per family, were urban, whereas 47 percent of the Estonians, who averaged 3 persons per family, were urban. Of the 8 nationality groups whose average family size was four persons or more, five had 25 percent or less living in urban places and two had about 35 percent living in urban places. Only the Armenians, with 57 percent living in urban places, were more urban than the population of the country as a whole. Among the seven groups whose average family size was less than four persons, only one was significantly less than one-third urban.

An examination of the urban-rural differences within the respective groups reveals that only one group, the Armenians, who comprised only 1.3 percent of the population, had a larger urban-rural difference in family size than did the total population, while two groups, the Turkmen and the Moldavians, comprising about 1.6 percent of the population, displayed the same difference as the total population. Data for two other groups, the Kazakhs and the Estonians, who together accounted for about 2.2 percent of the population, showed larger urban families than rural families.

PERSONS LIVING ALONE

As indicated earlier, the 1959 Soviet census shows almost 21.4 million persons as living alone. The term "living alone" as it is used here refers to the familial relationship of the individuals and not to their living quarters. In fact, due to the severe housing shortage, all but a few of these probably do not reside in separate living quarters. A few may actually live with relatives because the criteria used by the Soviet census based the delineation of families on budget considerations rather than on housing accommodations.

Persons who live alone are about equally divided between women and men. The census shows 10.6 million males and 10.7 million females in this group. Most of the men, however, are "family members living apart from their families" while most of the women are "single persons living alone." Of the 12 million family members living apart from their families, 8.1 million were men and only 3.9 million were women. Of the 9.4 million single persons living alone, only 2.5 million were men and almost 6.9 million were women. Many of the latter group were older women who lost their husbands or prospective husbands during World War II.

About 60 percent of the persons living alone live in cities and towns as compared with only 48 percent of the total population. The proportion was about the same for family members living apart from their families. However, a substantially larger proportion (70 percent) of the single males living alone were urban (see table 16).

Data by age and urban-rural residence but not cross classified by sex are reported for the two categories of persons living alone. These data indicate that most of the "family members" are younger persons while the distribution of "single persons" is bi-modal with concentrations at the younger and older ages. About 28 percent of the "family members" were under 20 years and another 46 percent were 20 to 29 years old. Less than 5 percent were 60 years and over. About 13 percent of the "single persons" were under 20 and another 27 percent were 20 to 29. However, another 15 percent were 50 to 59, and 22 percent were 60 years and over (see table 20). Younger persons in both groups tend to be concentrated in urban areas and older persons in rural areas. About 63 percent of the "family members" under 40 years old and between 70 and 75 percent of the "single persons" under 40 were urban as compared with 42 percent for members of both groups at ages 60 years and over.

TABLE 20.—*Family members living apart from their families and single persons living alone in the Soviet Union, by age and urban-rural residence: Jan. 15, 1959*

Group and age	Total	Urban	Rural	Percent			Percent urban
				Total	Urban	Rural	
All persons living alone:							
All ages	21,365	13,054	8,311	100.0	100.0	100.0	61.1
Under 20 years	4,637	3,000	1,637	21.7	23.0	19.7	64.7
20 to 29 years	8,020	5,374	2,647	37.5	41.2	31.8	67.0
30 to 39 years	2,227	1,473	754	10.4	11.3	9.1	66.1
40 to 49 years	1,883	1,080	803	8.8	8.3	9.7	57.4
50 to 59 years	1,947	1,022	925	9.1	7.8	11.1	52.5
60 years and over	2,652	1,105	1,547	12.4	8.5	18.6	41.7
Family members living apart from their families:							
All ages	11,989	7,289	4,700	100.0	100.0	100.0	60.8
Under 20 years	3,378	2,065	1,313	28.2	28.3	27.9	61.1
20 to 29 years	5,470	3,450	2,020	45.6	47.3	43.0	63.1
30 to 39 years	1,251	796	455	10.4	10.9	9.7	63.6
40 to 49 years	744	441	303	6.2	6.1	6.4	59.2
50 to 59 years	557	291	266	4.6	4.0	5.7	52.2
60 years and over	590	245	344	4.9	3.4	7.3	41.5
Single persons living alone:							
All ages	9,376	5,765	3,611	100.0	100.0	100.0	61.5
Under 20 years	1,259	935	324	13.4	16.2	9.0	74.3
20 to 29 years	2,550	1,924	627	27.2	33.4	17.4	75.5
30 to 39 years	976	677	299	10.4	11.7	8.3	69.4
40 to 49 years	1,139	639	500	12.1	11.1	13.8	56.1
50 to 59 years	1,390	731	659	14.8	12.7	18.2	52.6
60 years and over	2,062	860	1,203	22.0	14.9	33.3	41.7

Source: Itogi, p. 248.

FAMILY MEMBERS LIVING TOGETHER

The summary volume of the 1959 census presents a table in which relative distributions of family members by age, sex, and family size are given. These data are said to be based on the tabulation of a 5 percent sample of the census results. Using these relative data in conjunction with absolute data on the number of families in each size class, it was possible to convert the relative distributions into absolute ones. Although the absolute data (which are presented in table A–6) contain errors [42] limiting their utility, they permit much more meaningful analysis than do the relative data.

Although females constitute a majority of the members of families of every size, their proportion decreases as the size of the family increases. In 2-person families, there were only 60 males per 100 females. This ratio rises sharply to almost 77 for 3-person families, and to 84

[42] The absolute data contain at least two types of errors: (1) Rounding error generated by applying a relative (and previously rounded) number to an absolute total; and (2) sampling error resulting from the use of a 5 percent sample rather than a complete count. Since no information is available on the method of selecting the sample, it is difficult to assess sampling error. The rounding error can be measured, however, since normally a relative number is obtained by dividing the absolute number for the particular cell by the absolute total and then rounding the results to the desired number of places. Thus, if the relative distribution shows 75 males out of a total relative population of 100 for 2-person families, it is likely that the true value is not less than 74.5 nor greater than 75.5. The range of error would be ±5 in 750, or about 0.7 percent. When the numbers become quite small, as for example the relative value of 2 shown for males age 35 to 39 in 2-person families, the possible error is quite large—25 percent. The rounding error may, however, be larger than these examples suggest because Soviet distributions normally add to the given total, indicating that the distributions have been adjusted to insure agreement. Because of rounding and adjustment error, the urban and rural distributions in table A–6 do not add to the distributions for the country as a whole.

for 4-person families. The sex ratio for members of families with 10 members or more is 93.1. Women comprise a larger proportion of the members of rural families with less than five persons than of urban families of comparable size. For larger families, on the other hand, rural families tend to have proportionately fewer women members than do urban families (see table 21).

TABLE 21.—*Males per 100 females among family members in the Soviet Union, by family size: Jan. 15, 1959*

Residence and age	All families	Families with—								
		2 members	3 members	4 members	5 members	6 members	7 members	8 members	9 members	10 members or more
TOTAL										
All ages	80.2	60.0	76.5	84.3	85.9	88.1	89.7	90.5	92.0	93.1
Under 20 years	99.6	87.5	100.0	101.2	100.9	100.0	99.0	98.3	99.3	99.7
20 to 34 years	80.3	71.4	84.6	81.0	79.1	80.9	79.5	81.4	81.8	87.7
35 to 49 years	64.6	31.3	51.4	78.9	88.1	87.3	88.5	84.9	83.2	79.4
50 to 59 years	61.9	48.0	60.0	66.6	66.7	81.0	85.8	104.8	111.1	101.9
60 years and over	59.5	79.2	58.8	47.1	45.8	48.3	55.2	51.8	60.0	71.4
URBAN										
All ages	79.9	61.3	78.6	85.2	85.2	86.3	88.7	89.2	90.4	92.3
Under 20 years	98.5	81.3	100.0	101.2	99.1	98.6	98.4	96.6	96.9	98.3
20 to 34 years	78.7	67.7	82.5	79.3	80.3	80.3	80.1	83.6	85.3	86.3
35 to 49 years	68.3	40.6	55.5	85.3	91.3	86.5	85.6	81.5	80.7	82.5
50 to 59 years	65.7	50.0	70.6	75.1	66.7	78.3	91.8	104.0	110.0	94.1
60 years and over	55.4	83.3	58.3	33.5	37.5	44.8	51.7	50.8	55.6	78.9
RURAL										
All ages	80.4	58.7	73.4	83.5	86.6	89.3	90.2	91.4	92.6	93.7
Under 20 years	101.1	100.1	102.2	102.5	100.8	100.6	100.0	99.9	100.5	100.4
20 to 34 years	81.3	73.9	83.3	83.9	81.9	79.4	78.5	78.7	82.3	87.1
35 to 49 years	60.9	25.9	42.8	69.5	84.6	90.8	86.7	84.7	83.6	82.2
50 to 59 years	58.6	40.7	56.6	60.0	66.5	79.7	94.4	111.1	106.8	102.7
60 years and over	61.1	76.6	59.1	52.6	50.1	53.6	53.4	52.7	58.1	69.0

Source: Table A-7.

As might be expected, there are about the same number of males as females among family members in the age group under 20 years. Only among members of two-person urban families do the data show significant differences between the numbers of males and females in this age group and here the low sex ratio is probably due to rounding error. The estimates of male and female family members in this group contain possible errors of about ±15 percent. Thus, the possible error for the sex ratio would be twice the error in the estimates, or about ±30 percent. The possible rounding error for the estimates in larger families is sharply reduced.[43]

The sharp rise in the sex ratio for ages 20 to 34 between two- and three-person families (from 71 to 85) can probably be traced to differences in the composition of families in these size classes, although

[43] For three-member families, for example, the possible rounding error for the age group under 20 is about ±4.5 percent and for three-member families about ±2.7 percent. The error tends to be smaller for larger families because the sums of the relative distributions increase with family size. These distributions are all based on 100 families of each size. Thus, 2-person families have 200 members to distribute by age and sex, 3-person families have 300 members, etc.

here again errors in the estimates of family members cannot be ruled out. Members of 2-person families are likely to be one of the following: (1) husband and wife, (2) one parent with a child under 20 years old, or (3) an adult and a parent. Young adults in cases (2) and (3) seem more likely to be females because a young child is more likely to live with his mother and because a young woman is more likely to continue living with an older parent (who in most cases will be the mother).

Three-member families may consist of: (1) husband and wife with one child, (2) husband and wife with an older parent; (3) one parent with two children; or (4) one parent with a child and an older person. Type (1) families are probably the most common, possibly followed by type (2). Types (3) and (4) would include war widows, but not many of these are 20 to 34 years old. For families with more than three members, the sex ratio for ages 20 to 34 remains around 80. Only for very large families of 10 members or more does the sex ratio rise again.

For the age group 35 to 49, the sex ratio of family members rises for family sizes of two through five, and then declines for larger families. For the age group 50 to 59, sex ratios are higher for each successive family size, except for families with 10 members or more. These patterns are probably a function of the peculiar sex composition of the Soviet population, coupled with differences in the composition of families from one size to another.

Because older couples comprise a significant proportion (20 percent) of 2-person families, the sex ratio for members of such families in the age group 60 years and over (79 males per 100 females) is higher than that for older persons in other families.

Chapter VI. Fertility Trends

TRENDS DURING THE 1950'S

According to official Soviet statistics, female fertility in the Soviet Union as a whole changed very little during the 1950's.[44] The maternal gross reproduction rate[45] varied between 95 and 102 percent of its 1950 level and in 1960 was only 3 percent below the level at the beginning of the previous decade (see table 22). The paternal gross reproduction rate, on the other hand, declined.[46] The rate for 1960 was about 21 percent below that for 1950.

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[44] Age-specific fertility rates for females have been reported for several years during the last half of the 1950's. Births and/or birth rates for other years are available as controls for estimating gross reproduction rates.

[45] Gross reproduction rates indicate the replacement potential of the population in the reproductive ages. They are more commonly based on the female population of reproductive age, indicating the number of female children that will be born to 100 women during their reproductive lives if a given set of birth rates by age of mother remains in effect. Paternal gross reproduction rates, relating male births to the male population of reproductive age, however, may also be calculated. A maternal gross reproduction rate of 100, for example, signifies that 100 women will, during their reproductive lives, gives birth to 100 daughters, a rate of 150 signifies that 100 women will bear 150 daughters, etc.

[46] Data relating births to age of the father have not been published. The estimates of the paternal gross reproduction rate were based on a pattern of age-specific fertility rates for males derived by dividing marital fertility rates by age for males in the Netherlands by the proportion married at corresponding ages in the U.S.S.R. Considerable variation may be obtained in the specific level of the rate by using different patterns of age-specific rates, although the downward trend in male fertility is still evident regardless of the pattern. The abnormal age-sex composition of the population may have produced considerable year-to-year variation in the pattern of age-specific rates for males and in the resulting gross reproduction rate, but not in the general downward trend.

TABLE 22.—*Estimated maternal and paternal gross reproduction rates in the Soviet Union: 1950–65*

Year	Gross reproduction rate		Index (1950=100)	
	Maternal	Paternal	Maternal	Paternal
1950	139	225	100	100
1951	141	222	102	99
1952	139	212	100	94
1953	132	195	95	87
1954	140	202	101	90
1955	137	192	99	85
1956	136	185	97	82
1957	137	184	98	82
1958	137	181	99	80
1959	135	175	97	78
1960	135	174	97	77
1961	131	165	94	73
1962	127	154	91	68
1963	124	145	89	64
1964	118	135	85	60
1965	116	128	83	57

Source: See text.

Despite the surface appearance of stability, however, female fertility in the Soviet Union underwent profound changes. Most important is the fact that because fertility of men has declined fertility of married women must also have declined. In 1950, the war-caused deficit of males affected virtually all of the prime reproductive ages. For example, at age 22 there were 12 percent more females than males, at ages 25 to 29, there was a female "excess" of nearly 30 percent, and at ages 30 to 34, there was an excess of 37 percent. Thus, if women married men of their own age, only about two-thirds to three-fourths of the women in the prime reproductive ages could marry even if all men married. The number of unmarried women was undoubtedly higher than these figures imply, however, because women generally marry men somewhat older than themselves and some men prefer to remain single. Moreover, according to the 1959 census, only about 70 percent of the women who had been 25 to 29 years old in 1950, about 60 percent of those who had been 30 to 34, and about 55 percent of those who had been 35 to 39, were married in 1959.[47]

By 1960, the sex ratio had become "normal" for the ages up to about 32, that is, for most of the "prime" reproductive ages. Thus, marriage opportunities for younger women were much better, and, according to the 1959 census, these younger women did marry in much greater proportions. For example, about 76 percent of those 25 to 29 years old in 1959 and 78 percent of those 30 to 34 were married.[48] Thus, if the fertility of Soviet women as measured by the gross reproduction rate, a statistic which does not take account of the marital status of the population, remained constant despite higher marriage rates, marital fertility unquestionably declined, probably by at least 21 percent, the amount of decline in the paternal gross reproduction rate.

[47] According to the 1959 census, the proportion married among males was quite high and relatively stable from age to age within the age range 30 to 69. About 92 percent of the males age 30 to 34 were married, 95 percent of those 35 to 39, and about 96 percent of those age 40 to 54. Eighty percent of those 25 to 29 were married. Itogi, p. 73.

[48] Loc. cit.

Recently released data indicate that the apparent stability of female fertility, even when the proportion married is ignored, may also be illusory. An analysis of regional changes in birth rates between 1950 and 1960 point to very substantial decreases in the birth rates in some areas and to very substantial increases in others (see fig. 7). Relatively few areas reported as little change as did the Soviet Union as a whole.

The primary areas reporting substantially higher birth rates in 1960 than in 1950 were northern Kazakhstan, central Asia, the Caucasus, the Tatar and Bashkir A.S.S.R.'s, and Magadan Oblast. The indigenous population in most of these areas is Asian; their religion is Moslem. Large families are traditional, and it is likely that, except for the period of World War II, fertility remained high or declined gradually. The reported increases during the decade of the 1950's most likely stem from improvements in birth registration. This possibility seems to be supported by the fact that birth rates for certain of the areas increased between 1940 and 1950 as well.

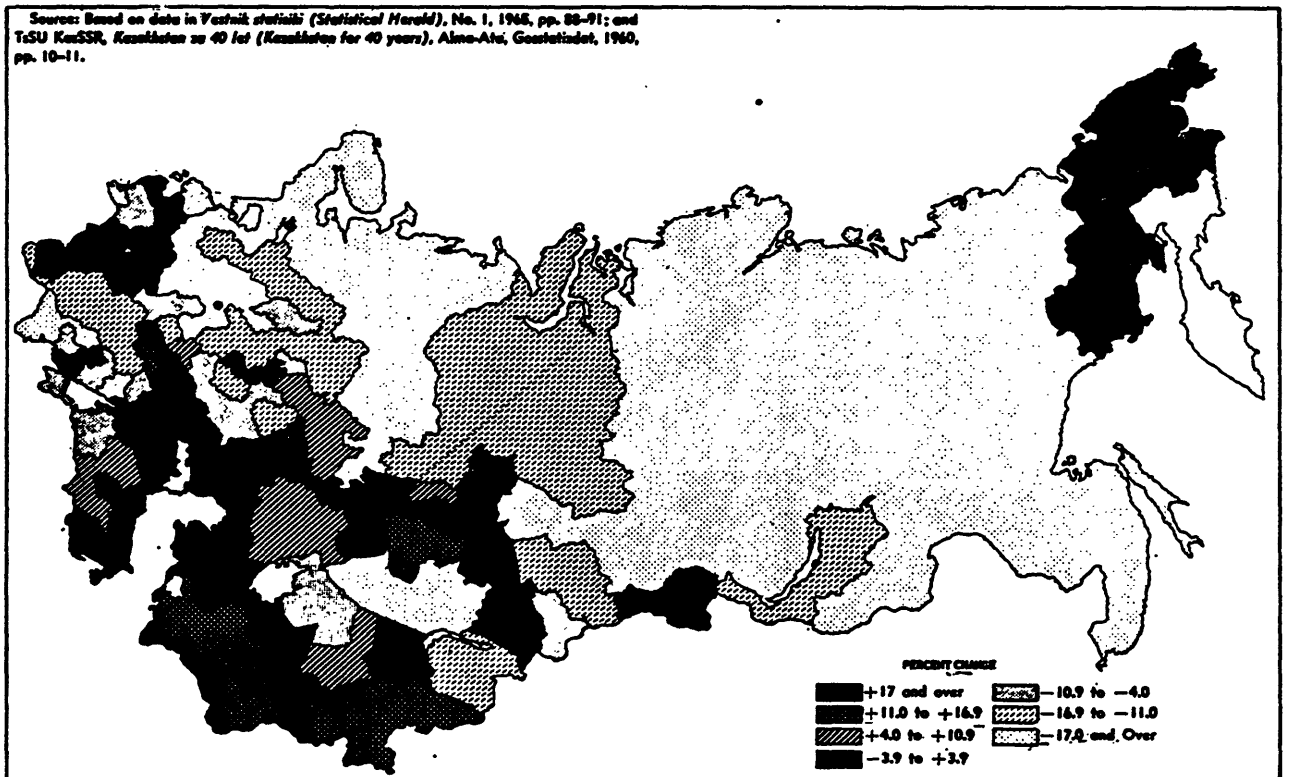
In other areas, birth rates in 1950 were lower than those for both 1940 and 1960. Two possible explanations offer themselves for this down-up pattern: (1) that birth registration deteriorated during the 1940's and was not revamped until after 1950; or (2) that birth rates declined during World War II and did not recover as quickly in these areas as in others. The latter explanation appears to be the less likely because sex ratios are generally less abnormal in these areas than in many others, indicating lower military losses during World War II.[49] Birth rates in other areas recovered from their wartime lows by 1948 or 1949 (albeit to a level significantly lower than that of the late 1930's). Other areas in which changes were relatively small (less than 4 percent) included Latvia, Belorussia, and scattered oblasts in the Ukraine, the R.S.F.S.R., and Kazakhstan.

The areas of sharpest decline (more than 30 percent) were Kaliningrad (formerly part of East Prussia), the Komi A.S.S.R. in the Far North, the Island of Sakhalin, and various relatively sparsely populated areas of Siberia. The declines in some areas resulted from changes in the age structure. In Kaliningrad, for example, virtually the entire (German) population was expelled at the end of World War II, and the area was settled by Slavs (mostly Russians). The settlers apparently were young adults. The age structure for the area shows a very large number of persons 30 to 34 years old in 1959, who would have been in the early twenties at the beginning of the decade. The sharp declines in other areas cannot be attributed to an abnormal age structure, at least on the basis of the data at hand, although it is possible that migration between 1950 and 1959 obscured an abnormal structure in 1950. Overall, much of the decline in birth rates must be attributed to declines in fertility.

In contrast to fertility declines in the Soviet Union, the fertility of American women increased markedly during the 1950's. At the beginning of the decade, the maternal gross reproduction rate for the United States was 144. By 1957, when it attained its peak, it was 177, or 23

[49] Another possible explanation for the relatively high sex ratio is that Moslem women were underenumerated in the census and that mortality among them is higher than among Moslem men. Unfortunately, at present it is not possible to assess these factors.

Figure 7.—PERCENT CHANGE IN THE BIRTH RATE, BY ADMINISTRATIVE AREA: 1950-1960



Source: Based on data in *Vestnik statistiki (Statistical Herald)*, No. 1, 1965, pp. 88-91; and TsSU KazSSR, *Kazakhstan za 40 let (Kazakhstan for 40 years)*, Alma-Ata, Gosstatizdat, 1960, pp. 10–11.

(Data are shown for oblasts in the RSFSR, the Ukraine, and Kazakhstan and for republics elsewhere. For Kazakhstan the period covered is 1950–59)

percent above the 1950 level. By 1960, it had declined slightly, to 172. Thus, in 1950 the gross reproduction rate for the United States was about 5 percent higher than that for the U.S.S.R. and by 1960 it was more than 25 percent higher.

Several Soviet demographers have contended that a true comparison of fertility levels in the two countries must be based on statistical measures which take account of marital status because, as a result of the war-caused deficit of males, Soviet women are less likely to be married than American women. Some contend that marital fertility in the U.S.S.R. is, in fact, higher than that in the United States and that the allegedly higher marital fertility demonstrates the superiority of the Soviet system.

A comparison of the relative levels of marital fertility in the two countries supports the contention that a larger proportion of American women at any given age is married. Data by 5-year groups within the age range 15 to 49 show that the proportion married among American women is invariably higher than the comparable proportion for Soviet women (see table 23). The differences range from a low of 14 percent for ages 25 to 29 and 30 to 34, to a high of 57 percent for ages 15 to 19; the differences for ages 30 years and over can probably be attributed to the deficit of males in the U.S.S.R. while those for ages under 30 stem from earlier marriages in the United States.[50]

TABLE 23.—*Percent married, by age, among women in the Soviet Union, 1959, and in the United States, 1960*

Age	Soviet Union, 1959	United States, 1960 [1]	United States as a percent of Soviet Union
15 to 19	[2] 10.0	15.7	157
20 to 24	50.1	69.5	139
25 to 29	75.9	86.2	114
30 to 34	77.6	88.7	114
35 to 39	72.5	88.2	122
40 to 44	62.3	85.9	138
45 to 49	54.9	82.5	150

[1] Includes separated.

[2] The official data show the proportions married for the age groups 16-17 and 18-19. The estimate shown was derived by applying these proportions to the total population in the age groups and then dividing by the population 15 to 19. Population data for these age groups are estimates because official Soviet data have not been published. The Soviet demographer Boris Urlanis also estimated that 10 percent of the women 15 to 19 were married. (See "Trends and Factors of Natality in the U.S.S.R.," paper submitted to the United Nations World Population Conference held in Belgrade, Yugoslavia, Aug. 30 to Sept. 10, 1965.)

Sources: Soviet Union: Itogi, p. 73. United States: U.S. Bureau of the Census, U.S. Census of Population, 1960. Detailed Characteristics. U.S. Summary. Final Report PC(1)-1D. Washington, 1963, p. 425.

Because the Soviet Union has published female fertility rates by age, it is possible to obtain "marital" fertility rates by dividing the proportion married at each age into the fertility rate for that age. "Marital" fertility rates computed in this way must be interpreted with care because all births (both legitimate and illegitimate) are attributed to married women. The bias introduced in this pro-

[50] Among women marrying during 1960 in the U.S.S.R. a little more than one-fourth were under 21 years old, as compared to nearly half (48 percent) in the United States. On the other hand, more than 40 percent of the Soviet women marrying during 1960 were 21 to 25 years old, as compared with only 24 percent of the American women.

cedure, however, may be less significant for the Soviet Union than for some other countries. Although the Soviet Union has not published any information on illegitimacy, it is likely that illegitimate births account for a smaller proportion of the births in that country than in the United States because Soviet women may resort to legal abortion to terminate an unwanted pregnancy. Conventional marital fertility rates, that is, rates computed by dividing the number of legitimate births to women of a particular age by the number of married women in that age, are available for the United States.

Data for 1959 point to lower marital fertility among younger women in the Soviet Union than in the United States (see table 24). For the older reproductive ages, where fertility is relatively low in both countries, married women in the Soviet Union gave birth to more children than their American counterparts. Over the entire reproductive ages, 15 to 49, the fertility of married women in the United States was slightly higher (4 percent) than that of married women in the U.S.S.R. If illegitimate births for American women were also included (as they are for Soviet women), the fertility of married American women would have been about 10 percent higher than that of married Soviet women.

TABLE 24.—*Marital fertility rates, by age, for the Soviet Union and the United States, 1959*

[Rates for the Soviet Union were obtained by dividing percent married at each age into the age-specific fertility rate for that age. The fertility rates used were based on all births rather than legitimate births only. Rates for the United States are based on legitimate births only.]

Age	Soviet Union, 1958–59	United States, 1959	United States as a percent of the Soviet Union
15 to 49	152.7	158.1	104
15 to 19	292.0	492.8	169
20 to 24	328.8	350.2	108
25 to 29	217.1	221.9	102
30 to 34	141.9	126.8	89
35 to 39	91.9	64.3	70
40 to 44	38.7	17.7	46
45 to 49	9.1	1.2	13

Sources: Soviet Union: See note. United States: U.S. Department of Health, Education, and Welfare, Vital Statistics for the United States, 1961, vol. I—Natality, Washington, 1963, sec. 1, p. 25.

TRENDS SINCE 1960

Between 1960 and 1965, the maternal gross reproduction rate in the U.S.S.R. declined from 135 to 116, or by about 14 percent. This recent decline apparently stems from a continued drop in the fertility of married couples at a time when the proportion married among the women in the prime reproductive ages should have stabilized and when improvements in birth registration should have been less significant than earlier. Fertility in the United States has also been declining during recent years. In 1960, the maternal gross reproduction rate was 178. By 1965, it had declined to 144, or 19 percent below the 1960 level.

Birth rates for administrative areas in the Soviet Union have been reported for 1960, 1963, and 1964. For 1960, the administrative areas

consist of oblasts in the R.S.F.S.R. and the Ukraine and republics elsewhere. However, data for oblasts in Kazakhstan are available for 1959, and these data were used as though they were for 1960. For 1963 and 1964, birth rates are available for oblasts in the R.S.F.S.R., for economic regions in the Ukraine, and for republics elsewhere. Data for 1960 are presented in figure 8; those for 1964 in figure 9. Because the scales on the two figures are the same, a comparison of the two gives an impressionistic view of declines in the birth rate between 1960 and 1964.

The largest declines between 1960 and 1963 were recorded for oblasts in the Eastern part of the R.S.F.S.R. and for several areas of Eastern Siberia. Declines of one-fourth were not uncommon, and declines of 18 percent or more were recorded for virtually all of the oblasts in the R.S.F.S.R., for about 40 percent of the oblasts in the Ukraine, and for Belorussia, Lithuania, Moldavia, Armenia, and Kazakhstan. The smallest declines occurred in the Republics of Turkmen, Uzbekistan, and Kirgizia in Central Asia and in the Caucasus Republics of Georgia and Azerbaydzhan. The Tadzhik S.S.R. is the only area for which the birth rate reported for 1963 was higher than that for 1960.

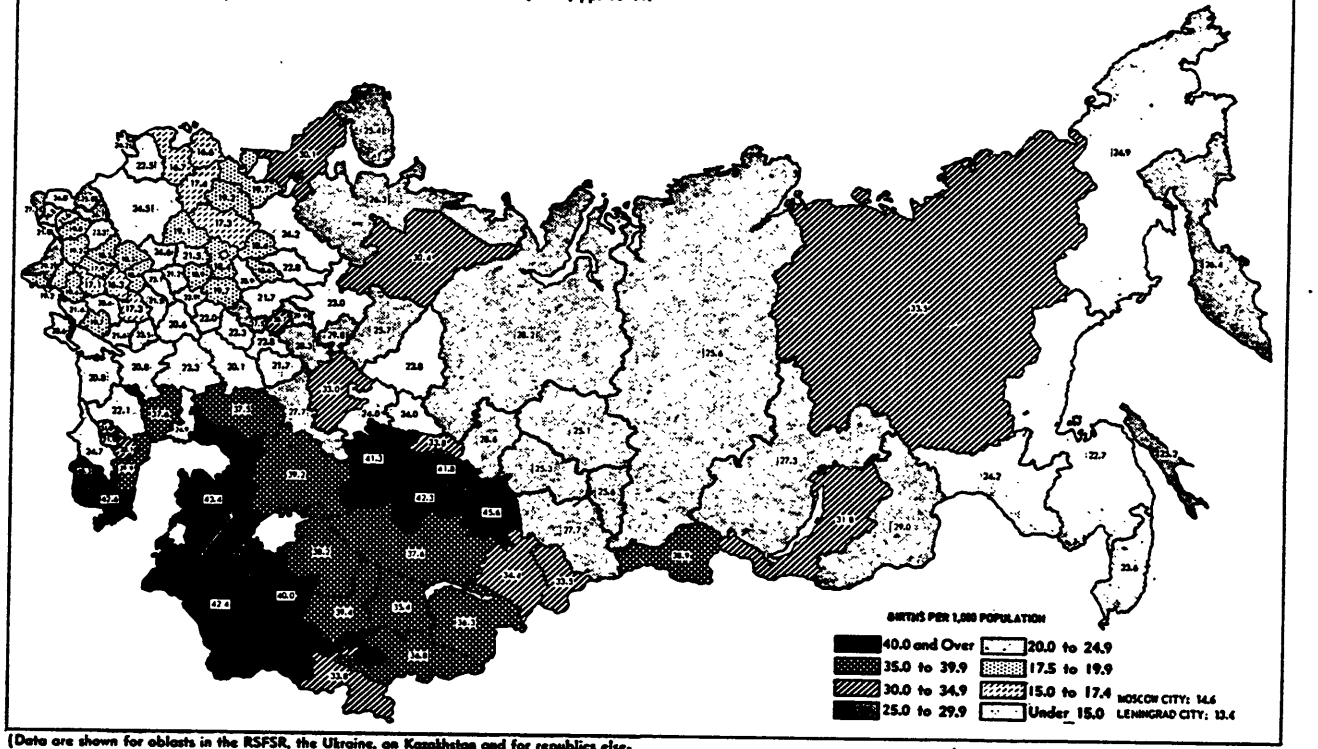
Between 1963 and 1964, birth rates declined in all but 2 of the 90 areas for which data are reported. The birth rate in the Tadzhik S.S.R. continued the rise observed for the period 1960 to 1963 and that in Estonia registered an insignificant increase. As in the period 1960–63, the largest declines between 1963 and 1964 were observed in the European part of the R.S.F.S.R. and in the Ural and western Siberian regions. The smallest declines were reported for Central Asia, the Caucasus, and the Baltic Republics.

The general decline of birth rates is reflected in the levels of the birth rate in 1964. Of the 90 areas for which data are available, none reported a birth rate of 40 or more per 1,000 population, only 4 reported rates of 35.0 to 39.9, and only 13 areas reported rates of 25 or higher. More than 45 percent of the areas reported rates of 15.0 to 19.9 per 1,000 population.

A comparison of the ethnic map shown in figure 6 with the birth rates for 1960 and 1964 shown in figures 8 and 9 indicates that Slavs tend to live in areas with relatively low birth rates. An examination of the ethnic composition of the areas experiencing the largest drops in birth rates shows that fertility of the Slavs has declined more than that of the national minorities. The coefficient of correlation between the percent Russian in 1959 and the change in the birth rate between 1960 and 1963 is minus 0.36. The negative sign indicates that the relationship is in the expected direction; namely, that areas which experienced large declines in the birth rate tended to be those with high percentages of Slavs. A value of 0.36, however, is relatively low, perhaps understandably so, considering the great diversity among the non-Slavic minority nationalities in the various regions and the lack of data for subunits in such large Republics as Kazakhstan. Moreover, some of the regions with significant Slavic populations are those experiencing recent heavy in-flows of migrants among whom young adults are predominant.

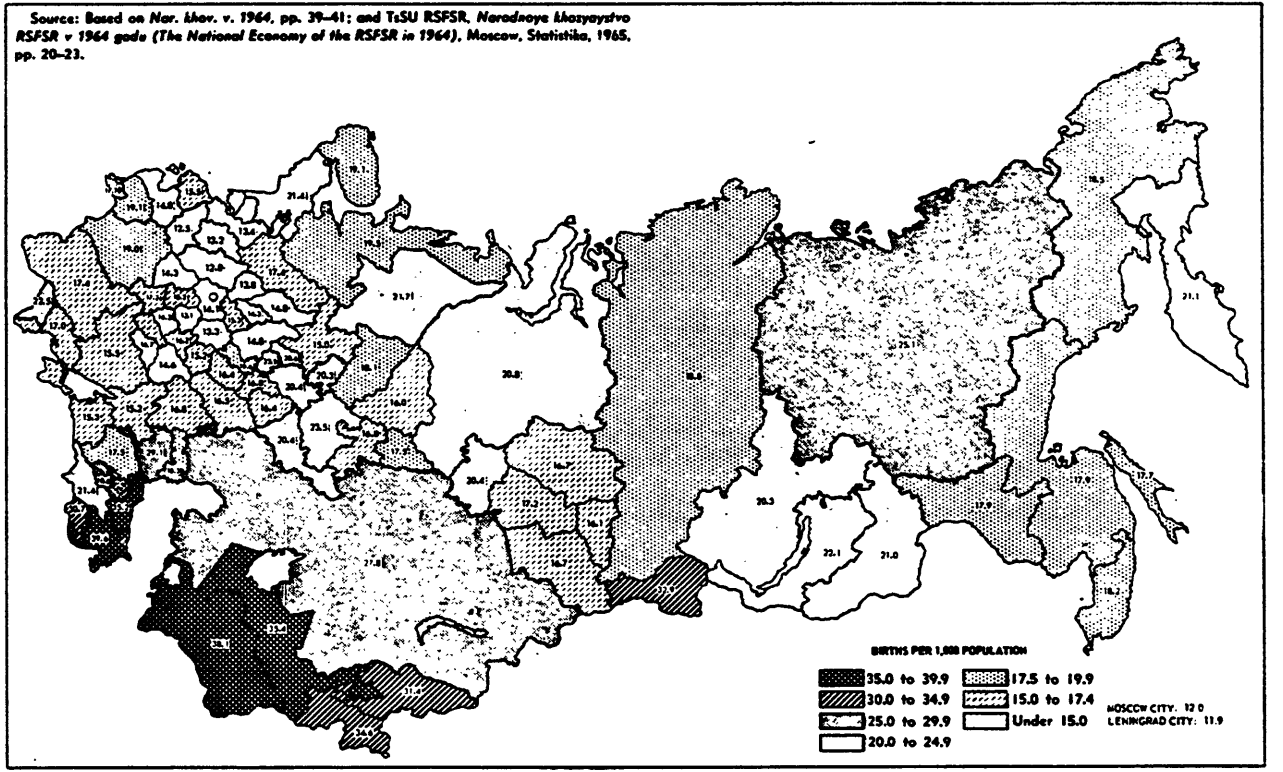
Figure 8.—BIRTH RATES, BY ADMINISTRATIVE AREA: 1960

Source: *Vestnik statistiki (Statistical Herald)*, No. 1, 1965, pp. 88–91; and TsSU KazSSR, *Kazakhstan za 40 let (Kazakhstan for 40 years)*, Alma-Ata, Gosstatizdat, 1960, pp. 10–11.



(Data are shown for oblasts in the RSFSR, the Ukraine, on Kazakhstan and for republics elsewhere. Data for Kazakhstan relate to 1959)

Figure 9.—BIRTH RATES, BY ADMINISTRATIVE AREA: 1964



Source: Based on *Nar. khoz. v. 1964*, pp. 39–41; and TsSU RSFSR, *Narodnoye khozyaystvo RSFSR v 1964 godu (The National Economy of the RSFSR in 1964)*, Moscow, Statistika, 1965, pp. 20–23.

(Data are shown for oblasts in the RSFSR, economic regions in the Ukraine, and republics elsewhere)

APPENDIX TABLES

TABLE A–1.—*Estimated and projected total population, components of population change, and vital rates, for the Soviet Union, by sex: 1950–85*

[Absolute numbers in thousands; rate per thousand population]

Year	Population [1]		Natural increase		Births		Deaths	
	Jan. 1	July 1	Number	Rate	Number	Rate	Number	Rate
BOTH SEXES								
ESTIMATES								
1950	178,519	180,049	3,060	17.0	4,805	26.7	1,745	9.7
1951	181,579	183,164	3,169	17.3	4,945	27.0	1,776	9.7
1952	184,748	186,348	3,198	17.2	4,948	26.6	1,750	9.4
1953	187,946	189,462	3,032	16.0	4,756	25.1	1,724	9.1
1954	190,978	192,684	3,411	17.7	5,125	26.6	1,714	8.9
1955	194,389	196,106	3,435	17.5	5,048	25.7	1,613	8.2
1956	197,824	199,580	3,513	17.6	5,029	25.2	1,516	7.6
1957	201,337	203,125	3,576	17.6	5,159	25.4	1,583	7.8
1958	204,913	206,788	3,749	18.1	5,240	25.3	1,491	7.2
1959	208,662	210,493	3,664	17.4	5,264	25.0	1,600	7.6
1960	212,323	214,212	3,819	17.8	5,341	24.9	1,522	7.1
1961	216,101	217,923	3,622	16.8	5,192	23.8	1,570	7.2
1962	219,745	221,434	3,298	14.9	4,959	22.4	1,661	7.5
1963	223,122	224,688	3,140	14.0	4,758	21.7	1,618	7.3
1964	226,253	227,726	2,885	12.7	4,457	19.6	1,572	6.9
1965	229,198	230,489	2,581	11.2	4,264	18.5	1,683	7.3
PROJECTIONS								
Series A								
1966	[2] 231,779	233,220	2,882	12.4	4,586	19.7	1,704	7.3
1967	234,661	236,082	2,841	12.0	4,557	19.3	1,716	7.3
1968	237,502	238,922	2,839	11.9	4,574	19.1	1,735	7.3
1969	240,341	241,778	2,873	11.9	4,630	19.1	1,757	7.3
1970	243,214	244,682	2,935	12.0	4,718	19.3	1,783	7.3
1971	246,149	247,662	3,026	12.2	4,829	19.5	1,803	7.3
1972	249,175	250,735	3,119	12.4	4,949	19.7	1,830	7.3
1973	252,294	253,896	3,204	12.6	5,076	20.0	1,872	7.4
1974	255,498	257,153	3,310	12.9	5,212	20.3	1,902	7.4
1975	258,808	260,519	3,421	13.1	5,356	20.6	1,935	7.4
1976	262,229	263,995	3,531	13.4	5,507	20.9	1,976	7.5
1977	265,760	267,562	3,604	13.5	5,617	21.0	2,013	7.5
1978	269,364	271,204	3,680	13.6	5,733	21.1	2,053	7.6
1979	273,044	274,921	3,754	13.7	5,850	21.3	2,096	7.6
1980	276,798	278,711	3,826	13.7	5,959	21.4	2,133	7.7
1981	280,624	282,565	3,881	13.7	6,058	21.4	2,177	7.7
1982	284,505	286,468	3,926	13.7	6,140	21.4	2,214	7.7
1983	288,431	290,407	3,951	13.6	6,202	21.4	2,251	7.8
1984	292,382	294,355	3,945	13.4	6,240	21.2	2,295	7.8
1985	296,327	298,288	3,921	13.1	6,255	21.0	2,334	7.8
Series B								
1966	[2] 231,779	233,017	2,475	10.6	4,169	17.9	1,694	7.3
1967	234,254	235,456	2,403	10.2	4,105	17.4	1,702	7.2
1968	236,657	237,839	2,363	9.9	4,084	17.2	1,721	7.2
1969	239,020	240,200	2,360	9.8	4,098	17.1	1,738	7.2
1970	241,380	242,566	2,372	9.8	4,139	17.1	1,767	7.3
1971	243,752	244,959	2,414	9.9	4,199	17.1	1,785	7.3
1972	246,166	247,394	2,455	9.9	4,266	17.2	1,811	7.3
1973	248,621	249,865	2,487	10.0	4,338	17.4	1,851	7.4
1974	251,108	252,377	2,537	10.1	4,417	17.5	1,880	7.4
1975	253,645	254,939	2,587	10.1	4,501	17.7	1,914	7.5
1976	256,232	257,550	2,635	10.2	4,589	17.8	1,954	7.6
1977	258,867	260,212	2,690	10.3	4,681	18.0	1,991	7.7
1978	261,557	262,931	2,748	10.5	4,778	18.2	2,030	7.7
1979	264,305	265,707	2,803	10.5	4,875	18.3	2,072	7.8
1980	267,108	268,536	2,855	10.6	4,966	18.5	2,111	7.9
1981	269,963	271,410	2,894	10.7	5,048	18.6	2,154	7.9
1982	272,857	274,321	2,927	10.7	5,117	18.7	2,190	8.0
1983	275,784	277,253	2,937	10.6	5,169	18.6	2,232	8.1
1984	278,721	280,185	2,928	10.5	5,200	18.6	2,272	8.1
1985	281,649	283,102	2,905	10.3	5,212	18.4	2,307	8.1

See footnotes at end of table.

TABLE A–1.—*Estimated and projected total population, components of population change, and vital rates, for the Soviet Union, by sex: 1950–85*—Continued

[Absolute numbers in thousands; rate per thousand population]

Year	Population [1]		Natural increase		Births		Deaths	
	Jan. 1	July 1	Number	Rate	Number	Rate	Number	Rate
PROJECTIONS								
Series C								
1966	[2] 231,779	232,915	2,271	9.8	3,961	17.0	1,690	7.3
1967	234,050	235,133	2,165	9.2	3,859	16.4	1,694	7.2
1968	236,215	237,258	2,086	8.8	3,798	16.0	1,712	7.2
1969	238,301	239,322	2,042	8.5	3,770	15.8	1,728	7.2
1970	240,343	241,347	2,008	8.3	3,766	15.6	1,758	7.3
1971	242,351	243,354	2,006	8.2	3,779	15.5	1,773	7.3
1972	244,357	245,357	2,000	8.2	3,796	15.5	1,796	7.3
1973	246,357	247,346	1,978	8.0	3,818	15.4	1,840	7.4
1974	248,335	249,326	1,981	7.9	3,843	15.4	1,862	7.5
1975	250,316	251,302	1,972	7.8	3,870	15.4	1,898	7.6
1976	252,288	253,270	1,964	7.8	3,901	15.4	1,937	7.6
1977	254,252	255,256	2,007	7.9	3,978	15.6	1,971	7.7
1978	256,259	257,284	2,049	8.0	4,061	15.8	2,012	7.8
1979	258,308	259,352	2,088	8.1	4,143	16.0	2,055	7.9
1980	260,396	261,459	2,125	8.1	4,221	16.1	2,096	8.0
1981	262,521	263,598	2,153	8.2	4,291	16.3	2,138	8.1
1982	264,674	265,763	2,177	8.2	4,350	16.4	2,173	8.2
1983	266,851	267,939	2,175	8.1	4,394	16.4	2,219	8.3
1984	269,026	270,110	2,168	8.0	4,420	16.4	2,252	8.4
1985	271,194	272,265	2,142	7.9	4,430	16.3	2,288	.....
Series D								
1966	[2] 231,779	232,813	2,068	8.9	3,752	16.1	1,684	7.2
1967	233,847	234,809	1,924	8.2	3,612	15.4	1,688	7.2
1968	235,771	236,676	1,809	7.6	3,513	14.8	1,704	7.2
1969	237,580	238,443	1,725	7.2	3,442	14.4	1,717	7.2
1970	239,305	240,129	1,648	6.9	3,394	14.1	1,746	7.3
1971	240,953	241,753	1,599	6.6	3,360	13.9	1,761	7.3
1972	242,552	243,323	1,542	6.3	3,328	13.7	1,786	7.3
1973	244,094	244,832	1,475	6.0	3,297	13.5	1,822	7.4
1974	245,569	246,279	1,419	5.8	3,268	13.3	1,849	7.5
1975	246,988	247,666	1,355	5.5	3,241	13.1	1,886	7.6
1976	248,343	248,989	1,292	5.2	3,212	12.9	1,920	7.7
1977	249,635	250,296	1,321	5.3	3,277	13.1	1,956	7.8
1978	250,956	251,631	1,349	5.4	3,345	13.3	1,996	7.9
1979	252,305	252,991	1,372	5.4	3,413	13.5	2,041	8.1
1980	253,677	254,379	1,403	5.5	3,476	13.7	2,073	8.1
1981	255,080	255,787	1,413	5.5	3,534	13.8	2,121	8.3
1982	256,493	257,206	1,426	5.5	3,582	13.9	2,156	8.4
1983	257,919	258,630	1,422	5.5	3,618	14.0	2,196	8.5
1984	259,341	260,042	1,402	5.4	3,640	14.0	2,238	8.6
1985	260,743	261,429	1,371	5.2	3,649	14.0	2,278	8.7
MALE								
ESTIMATES								
1950	78,183	78,987	1,609	20.4	2,475	31.3	866	11.0
1951	79,792	80,619	1,654	20.5	2,547	31.6	893	11.1
1952	81,446	82,282	1,671	20.3	2,548	31.0	877	10.7
1953	83,117	83,912	1,590	18.9	2,449	29.2	859	10.2
1954	84,707	85,600	1,785	20.9	2,639	30.8	854	10.0
1955	86,492	87,390	1,796	20.6	2,600	29.8	804	9.2
1956	88,288	89,210	1,844	20.7	2,590	29.0	746	8.4
1957	90,132	91,071	1,878	20.6	2,657	29.2	779	8.6
1958	92,010	92,993	1,965	21.1	2,699	29.0	734	7.9
1959	93,975	94,946	1,941	20.4	2,711	28.6	770	8.1
1960	95,916	96,931	2,032	21.0	2,751	28.4	719	7.4
1961	97,946	98,913	1,933	19.5	2,674	27.0	741	7.5
1962	99,879	100,780	1,767	17.5	2,554	25.3	787	7.8
1963	101,681	102,529	1,696	16.5	2,450	23.9	754	7.4
1964	103,377	104,177	1,577	15.1	2,295	22.0	718	6.9
1965	104,976	105,689	1,425	13.5	2,196	20.8	771	7.3
PROJECTIONS								
Series A								
1966	106,401	107,194	1,586	14.8	2,362	22.0	776	7.2
1967	107,987	108,773	1,572	14.5	2,347	21.6	775	7.1
1968	109,559	110,345	1,572	14.2	2,355	21.3	783	7.1
1969	111,131	111,929	1,595	14.3	2,384	21.3	789	7.0
1970	112,726	113,543	1,634	14.4	2,430	21.4	796	7.0
1971	114,360	115,205	1,690	14.7	2,486	21.6	796	6.9

See footnotes at end of table.

TABLE A–1.—*Estimated and projected total population, components of population change, and vital rates, for the Soviet Union, by sex: 1950–85*—Continued

[Absolute numbers in thousands; rate per thousand population]

Year	Population [1]		Natural increase		Births		Deaths	
	Jan. 1	July 1	Number	Rate	Number	Rate	Number	Rate
PROJECTIONS								
Series A—Con.								
1972	116,050	116,923	1,746	14.9	2,549	21.8	803	6.9
1973	117,796	118,692	1,792	15.1	2,614	22.0	822	6.9
1974	119,588	120,517	1,857	15.4	2,684	22.3	827	6.9
1975	121,445	122,404	1,917	15.7	2,758	22.5	841	6.9
1976	123,362	124,353	1,981	15.9	2,836	22.8	855	6.9
1977	125,343	126,355	2,023	16.0	2,893	22.9	870	6.9
1978	127,366	128,400	2,067	16.1	2,953	23.0	886	6.9
1979	129,433	130,487	2,108	16.2	3,013	23.1	905	6.9
1980	13.,541	132,615	2,147	16.2	3,068	23.1	921	6.9
1981	133,688	134,776	2,176	16.1	3,120	23.1	944	7.0
1982	135,864	136,964	2,200	16.1	3,162	23.1	962	7.0
1983	138,064	139,173	2,217	15.9	3,194	22.9	977	7.0
1984	140,281	141,389	2,215	15.7	3,214	22.7	999	7.1
1985	142,496	143,601	2,209	15.4	3,221	22.4	1,012	7.0
Series B								
1966	106,401	107,090	1,377	12.9	2,147	20.0	770	7.2
1967	107,778	108,452	1,347	12.4	2,114	19.5	767	7.1
1968	109,125	109,789	1,328	12.1	2,103	19.2	775	7.1
1969	110,453	111,119	1,331	12.0	2,110	19.0	779	7.0
1970	111,784	112,457	1,345	12.0	2,132	19.0	787	7.0
1971	113,129	113,817	1,376	12.1	2,162	19.0	786	6.9
1972	114,505	115,208	1,405	12.2	2,197	19.1	792	6.9
1973	115,910	116,622	1,424	12.2	2,234	19.2	810	6.9
1974	117,334	118,064	1,460	12.4	2,275	19.3	815	6.9
1975	118,794	119,539	1,489	12.5	2,318	19.4	829	6.9
1976	120,283	121,043	1,520	12.6	2,363	19.5	843	7.0
1977	121,803	122,580	1,554	12.7	2,411	19.7	857	7.0
1978	123,357	124,152	1,589	12.8	2,461	19.8	872	7.0
1979	124,946	125,756	1,620	12.9	2,511	20.0	891	7.1
1980	126,566	127,390	1,648	12.9	2,557	20.1	909	7.1
1981	128,214	129,049	1,669	12.9	2,600	20.1	931	7.2
1982	129,883	130,727	1,687	12.9	2,635	20.2	948	7.3
1983	131,570	132,418	1,696	12.8	2,662	20.1	966	7.3
1984	133,266	134,113	1,694	12.6	2,678	20.0	984	7.3
1985	134,960	135,805	1,689	12.4	2,684	19.8	995	7.3
Series C								
1966	106,401	107,037	1,272	11.9	2,040	19.1	768	7.2
1967	107,673	108,286	1,225	11.3	1,987	18.3	762	7.0
1968	108,898	109,491	1,186	10.8	1,956	17.9	770	7.0
1969	110,084	110,668	1,168	10.6	1,941	17.5	773	7.0
1970	111,252	111,831	1,158	10.4	1,940	17.3	782	7.0
1971	112,410	112,994	1,167	10.3	1,946	17.2	779	6.9
1972	113,577	114,162	1,170	10.2	1,955	17.1	785	6.9
1973	114,747	115,329	1,163	10.1	1,966	17.0	803	7.0
1974	115,910	116,497	1,174	10.1	1,979	17.0	805	6.9
1975	117,084	117,671	1,173	10.0	1,993	16.9	820	7.0
1976	118,257	118,845	1,176	9.9	2,009	16.9	833	7.0
1977	119,433	120,035	1,203	10.0	2,049	17.1	846	7.0
1978	120,636	121,251	1,230	10.1	2,092	17.3	862	7.1
1979	121,866	122,493	1,253	10.2	2,134	17.4	881	7.2
1980	123,119	123,756	1,273	10.3	2,173	17.6	900	7.3
1981	124,392	125,036	1,288	10.3	2,210	17.7	922	7.4
1982	125,680	126,332	1,303	10.3	2,240	17.7	937	7.4
1983	126,983	127,635	1,304	10.2	2,263	17.7	959	7.5
1984	128,287	128,939	1,304	10.1	2,276	17.7	972	7.5
1985	129,591	130,240	1,297	10.0	2,281	17.5	984	7.6
Series D								
1966	106,401	106,985	1,168	10.9	1,932	18.1	764	7.1
1967	107,569	108,120	1,101	10.2	1,860	17.2	759	7.0
1968	108,670	109,192	1,044	9.6	1,809	16.6	765	7.0
1969	109,714	110,217	1,005	9.1	1,772	16.1	767	7.0
1970	110,719	111,206	973	8.7	1,748	15.7	775	7.0
1971	111,692	112,171	957	8.5	1,730	15.4	773	6.9
1972	112,649	113,117	936	8.3	1,714	15.2	778	6.9
1973	113,585	114,038	906	7.9	1,698	14.9	792	6.9
1974	114,491	114,934	885	7.7	1,683	14.6	798	6.9
1975	115,376	115,804	856	7.4	1,669	14.4	813	7.0
1976	116,232	116,647	829	7.1	1,654	14.2	825	7.1
1977	117,061	117,487	852	7.3	1,688	14.4	836	7.1
1978	117,913	118,348	870	7.4	1,723	14.6	853	7.2

See footnotes at end of table.

TABLE A–1.—*Estimated and projected total population, components of population change, and vital rates, for the Soviet Union, by sex, 1950–85*—Continued

[Absolute numbers in thousands; rate per thousand population]

Year	Population [1]		Natural increase		Births		Deaths	
	Jan. 1	July 1	Number	Rate	Number	Rate	Number	Rate
PROJECTIONS								
Series D—Con.								
1978	118,783	119,225	884	7.4	1,758	14.7	874	7.3
1980	119,667	120,119	904	7.5	1,790	14.9	886	7.4
1981	120,571	121,026	909	7.5	1,820	15.0	911	7.5
1982	121,480	121,938	916	7.5	1,845	15.1	929	7.6
1983	122,393	122,855	918	7.5	1,863	15.2	945	7.7
1984	123,314	123,769	910	7.4	1,875	15.1	965	7.8
1985	124,224	124,675	902	7.2	1,879	15.1	977	7.8
FEMALE								
ESTIMATES								
1950	100,336	101,062	1,451	14.4	2,330	23.1	879	8.7
1951	101,787	102,545	1,515	14.8	2,398	23.4	883	8.6
1952	103,302	104,066	1,527	14.7	2,400	23.1	873	8.4
1953	104,829	105,550	1,442	13.7	2,307	21.9	865	8.2
1954	106,271	107,084	1,626	15.2	2,486	23.2	860	8.0
1955	107,897	108,716	1,639	15.1	2,448	22.5	809	7.4
1956	109,536	110,370	1,669	15.1	2,439	22.1	770	7.0
1957	111,205	112,054	1,698	15.2	2,502	22.3	804	7.2
1958	112,903	113,795	1,784	15.7	2,541	22.3	757	6.6
1959	114,687	115,547	1,723	14.9	2,553	22.1	830	7.2
1960	116,407	117,281	1,787	15.2	2,590	22.1	803	6.8
1961	118,155	119,011	1,689	14.2	2,518	21.2	829	7.0
1962	119,866	120,654	1,531	12.7	2,405	19.9	874	7.2
1963	121,441	122,159	1,444	11.8	2,308	18.9	864	7.1
1964	122,876	123,549	1,308	10.6	2,162	17.5	854	6.9
1965	124,222	124,800	1,156	9.3	2,068	16.6	912	7.3
PROJECTIONS								
Series A								
1966	125,378	126,026	1,296	10.3	2,224	17.6	928	7.4
1967	126,674	127,309	1,269	10.0	2,210	17.4	941	7.4
1968	127,943	128,577	1,267	9.9	2,219	17.3	952	7.4
1969	129,210	129,849	1,278	9.8	2,246	17.3	968	7.5
1970	130,488	131,139	1,301	9.9	2,288	17.4	987	7.5
1971	131,789	132,457	1,336	10.1	2,343	17.7	1,007	7.6
1972	133,125	133,812	1,373	10.3	2,400	17.9	1,027	7.7
1973	134,498	135,204	1,412	10.4	2,462	18.2	1,050	7.8
1974	135,910	136,637	1,453	10.6	2,528	18.5	1,075	7.9
1975	137,363	138,115	1,504	10.9	2,598	18.8	1,094	7.9
1976	138,867	139,642	1,550	11.1	2,671	19.1	1,121	8.0
1977	140,417	141,208	1,581	11.2	2,724	19.3	1,143	8.1
1978	141,998	142,805	1,613	11.3	2,780	19.5	1,167	8.2
1979	143,611	144,434	1,646	11.4	2,837	19.6	1,191	8.2
1980	145,257	146,097	1,679	11.5	2,891	19.8	1,212	8.3
1981	146,936	147,789	1,705	11.5	2,938	19.9	1,233	8.3
1982	148,641	149,504	1,726	11.5	2,978	19.9	1,252	8.4
1983	150,367	151,234	1,734	11.5	3,008	19.9	1,274	8.4
1984	152,101	152,966	1,730	11.3	3,026	19.8	1,296	8.5
1985	153,831	154,687	1,712	11.1	3,034	19.6	1,322	8.5
Series B								
1966	125,378	125,927	1,098	8.7	2,022	16.1	924	7.3
1967	126,476	127,004	1,056	8.3	1,991	15.7	935	7.4
1968	127,532	128,050	1,035	8.1	1,981	15.5	946	7.4
1969	128,567	129,082	1,029	8.0	1,988	15.4	959	7.4
1970	129,596	130,110	1,027	7.9	2,007	15.4	980	7.5
1971	130,623	131,142	1,038	7.9	2,037	15.5	999	7.6
1972	131,661	132,186	1,050	7.9	2,069	15.7	1,019	7.7
1973	132,711	133,243	1,063	8.0	2,104	15.8	1,041	7.8
1974	133,774	134,313	1,077	8.0	2,142	15.9	1,065	7.9
1975	134,851	135,400	1,098	8.1	2,183	16.1	1,085	8.0
1976	135,949	136,507	1,115	8.2	2,226	16.3	1,111	8.1
1977	137,064	137,632	1,136	8.3	2,270	16.5	1,134	8.2
1978	138,200	138,780	1,159	8.4	2,317	16.7	1,158	8.3
1979	139,359	139,951	1,183	8.5	2,364	16.9	1,181	8.4
1980	140,542	141,146	1,207	8.6	2,409	17.1	1,202	8.5
1981	141,749	142,362	1,225	8.6	2,448	17.2	1,223	8.6
1982	142,974	143,594	1,240	8.6	2,482	17.3	1,242	8.6
1983	144,214	144,835	1,241	8.6	2,507	17.3	1,266	8.7
1984	145,455	146,072	1,234	8.4	2,522	17.3	1,288	8.8
1985	146,689	147,297	1,216	8.3	2,528	17.2	1,312	8.9

See footnotes at end of table.

TABLE A–1.—*Estimated and projected total population, components of population change, and vital rates, for the Soviet Union, by sex, 1950–85*—Continued

[Absolute numbers in thousands; rate per thousand population]

Year	Population [1]		Natural increase		Births		Deaths	
	Jan. 1 [2]	July 1	Number	Rate	Number	Rate	Number	Rate
PROJECTIONS								
Series C								
1966	125,378	125,878	999	7.9	1,921	15.3	922	7.3
1967	126,377	126,847	940	7.4	1,872	14.8	932	7.3
1968	127,317	127,767	900	7.0	1,842	14.4	942	7.4
1969	128,217	128,654	874	6.8	1,829	14.2	955	7.4
1970	129,091	129,516	850	6.6	1,826	14.1	976	7.5
1971	129,941	130,361	839	6.4	1,833	14.1	994	7.6
1972	130,780	131,195	830	6.3	1,841	14.0	1,011	7.7
1973	131,610	132,018	815	6.2	1,852	14.0	1,037	7.9
1974	132,425	132,829	807	6.1	1,864	14.0	1,057	8.0
1975	133,232	133,632	799	6.0	1,877	14.0	1,078	8.1
1976	134,031	134,425	788	5.9	1,892	14.1	1,104	8.2
1977	134,819	135,221	804	5.9	1,929	14.3	1,125	8.3
1978	135,623	136,033	819	6.0	1,969	14.5	1,150	8.5
1979	136,442	136,860	835	6.1	2,009	14.7	1,174	8.6
1980	137,277	137,703	852	6.2	2,048	14.9	1,196	8.7
1981	138,129	138,562	865	6.2	2,081	15.0	1,216	8.8
1982	138,994	139,431	874	6.3	2,110	15.1	1,236	8.9
1983	139,868	140,304	871	6.2	2,131	15.2	1,260	9.0
1984	140,739	141,171	864	6.1	2,144	15.2	1,280	9.1
1985	141,603	142,026	845	5.9	2,149	15.1	1,304	9.2
Series D								
1966	125,378	125,828	900	7.2	1,820	14.5	920	7.3
1967	126,278	126,690	823	6.5	1,752	13.8	929	7.3
1968	127,101	127,484	765	6.0	1,704	13.4	939	7.4
1969	127,866	128,226	720	5.6	1,670	13.0	950	7.4
1970	128,586	128,924	675	5.2	1,646	12.8	971	7.5
1971	129,261	129,582	642	5.0	1,630	12.6	988	7.6
1972	129,903	130,206	606	4.7	1,614	12.4	1,008	7.7
1973	130,509	130,794	569	4.4	1,599	12.2	1,030	7.9
1974	131,078	131,345	534	4.1	1,585	12.1	1,051	8.0
1975	131,612	131,862	499	3.8	1,572	11.9	1,073	8.1
1976	132,111	132,343	463	3.5	1,558	11.8	1,095	8.3
1977	132,574	132,809	469	3.5	1,589	12.0	1,120	8.4
1978	133,043	133,283	479	3.6	1,622	12.2	1,143	8.6
1979	133,522	133,766	488	3.6	1,655	12.4	1,167	8.7
1980	134,010	134,260	499	3.7	1,686	12.6	1,187	8.8
1981	134,509	134,761	504	3.7	1,714	12.7	1,210	9.0
1982	135,013	135,268	510	3.8	1,737	12.8	1,227	9.1
1983	135,523	135,775	504	3.7	1,755	12.9	1,251	9.2
1984	136,027	136,273	492	3.6	1,765	13.0	1,273	9.3
1985	136,519	136,754	469	3.4	1,770	12.9	1,301	9.5

[1] For the years 1960–65 the estimates for Jan. 1 are consistent with official figures, expressed in thousands of persons, published in various Soviet sources. However, the figures shown for 1962 and 1964, when rounded to the nearest 0.1 million differ by 0.1 million from official estimates, also shown in 0.1 millions, from "Nar. khoz. v 1964," p. 7. Although some of the latter figures may reflect revisions, others apparently result from the Soviet practice of forcing the rounded figures for the total, urban, and rural populations to add to the rounded total for the country as a whole. The unrounded estimates (i.e., those expressed in thousands) were deemed preferable. For the years 1950–58, the estimates shown are consistent with the 1959 census and with official data on births and deaths during the period. The estimates shown for 1952, 1953, 1956, and 1957 differ slightly from those shown in "Nar. khoz. v 1964." Estimates shown for July 1 are annual averages.

[2] The estimate shown for Jan. 1, 1966, was derived by adding natural increase implied by official birth and death rates for 1965 to the official population estimate for Jan. 1, 1965. After the projections were prepared, a provisional estimate of 231,869,000 for Jan. 1, 1966, was announced.

Source: Prepared by the Foreign Demographic Analysis Division, Bureau of the Census, U.S. Department of Commerce, in April 1966. The assumptions used in the preparation of the projections are as follows:

Fertility: Series A: That the maternal gross reproduction rate will rise from its level of about 116 in 1965 to 128 in 1966 and will continue to rise by a constant annual amount until 1975 after which it will stabilize at 139. Series B: That the maternal gross reproduction rate will remain constant at the 1965 level throughout the projection period. Series C: That the maternal gross reproduction rate will decline to 110 in 1966 and will continue to decline by a constant annual amount until 1975 after which it will stabilize at 99. Series D: That the maternal gross reproduction rate will decline to 104 in 1966 and that it will continue to decline by a constant annual amount until 1975, after which it will stabilize at 81.

Mortality: That age-specific death rates will decline in accordance with postwar international experience.

Migration: That there will be no migration.

The methodology is described more fully in U.S. Department of Commerce, Bureau of the Census, "Projections of the U.S.S.R., by Age and Sex: 1964–85," by James W. Brackett, International Population Reports, Series P–91, No. 13, Washington, 1964. The actual projections contained in that publication have been superseded by those presented here, however.

TABLE A-2.—*Estimated population of the Soviet Union, by age and sex, Jan. 1, 1950 to 1966*

[In thousands]

Age	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964	1965	1966
Both Sexes																	
All ages	178,519	181,579	184,748	187,946	190,978	194,389	197,824	201,337	204,913	208,662	212,323	216,101	219,745	223,122	226,253	229,198	231,779S
Under 5 years	17,830	19,729	21,073	22,051	22,356	22,857	23,166	23,401	23,730	24,306	24,526	24,902	25,118	24,961	24,536	23,814	22,782
Under 1 year	4,405	4,597	4,714	4,734	4,568	4,932	4,873	4,885	5,012	5,102	5,128	5,218	5,072	4,837	4,650	4,369	4,167
1 year	4,126	4,293	4,451	4,574	4,602	4,441	4,815	4,779	4,789	4,920	5,011	5,058	5,145	4,992	4,772	4,602	4,312
2 years	3,583	4,097	4,264	4,418	4,541	4,567	4,412	4,791	4,755	4,766	4,896	4,992	5,039	5,126	4,975	4,761	4,587
3 years	3,181	3,569	4,083	4,251	4,403	4,524	4,552	4,401	4,780	4,745	4,754	4,886	4,982	5,029	5,116	4,969	4,752
4 years	2,535	3,173	3,561	4,074	4,242	4,393	4,514	4,545	4,394	4,773	4,737	4,748	4,880	4,977	5,023	5,113	4,964
5 to 9 years	14,214	12,622	12,054	13,152	15,371	17,522	19,374	20,712	21,694	22,017	22,548	22,894	23,133	23,481	24,063	24,323	24,694
5 years	2,080	2,531	3,167	3,557	4,068	4,237	4,387	4,509	4,540	4,389	4,768	4,733	4,744	4,878	4,973	5,021	5,109
6 years	1,840	2,078	2,527	3,163	3,551	4,063	4,232	4,382	4,504	4,535	4,384	4,763	4,728	4,741	4,873	4,971	5,016
7 years	2,454	1,838	2,076	2,524	3,159	3,547	4,058	4,227	4,379	4,499	4,530	4,381	4,760	4,727	4,738	4,872	4,968
8 years	3,729	2,450	1,836	2,074	2,521	3,156	3,544	4,053	4,222	4,376	4,494	4,527	4,378	4,759	4,724	4,737	4,869
9 years	4,111	3,725	2,448	1,834	2,072	2,519	3,153	3,541	4,049	4,218	4,372	4,490	4,523	4,376	4,755	4,722	4,732
10 to 14 years	21,661	22,219	21,855	19,559	16,569	14,148	12,562	11,995	13,086	15,298	17,441	19,291	20,628	21,620	21,945	22,490	22,835
10 years	4,501	4,107	3,721	2,446	1,832	2,070	2,517	3,150	3,538	4,046	4,215	4,369	4,487	4,522	4,373	4,754	4,719
11 years	4,826	4,495	4,103	3,718	2,444	1,830	2,068	2,515	3,147	3,535	4,043	4,212	4,366	4,486	4,519	4,372	4,750
12 years	4,740	4,820	4,489	4,100	3,715	2,442	1,828	1,066	2,513	3,144	3,532	4,040	4,209	4,365	4,483	4,518	4,369
13 years	4,067	4,734	4,814	4,485	4,097	3,712	2,440	1,826	2,064	2,511	3,142	3,530	4,038	4,209	4,363	4,483	4,516
14 years	3,527	4,063	4,728	4,810	4,481	4,094	3,709	2,438	1,824	2,062	2,509	3,140	3,528	4,038	4,207	4,363	4,481
15 to 19 years	18,134	18,006	18,502	19,556	20,480	21,529	22,095	21,745	19,462	16,485	14,074	12,500	11,939	13,032	15,244	17,392	19,240
15 years	3,430	3,523	4,057	4,722	4,804	4,477	4,090	3,706	2,436	1,822	2,060	2,507	3,138	3,528	4,036	4,207	4,361
16 years	3,877	3,426	3,519	4,051	4,716	4,799	4,472	4,086	3,703	2,434	1,820	2,058	2,505	3,137	3,525	4,035	4,203
17 years	3,657	3,870	3,420	3,513	4,045	4,711	4,794	4,467	4,081	3,698	2,431	1,818	2,056	2,503	3,135	3,523	4,032
18 years	3,544	3,650	3,863	3,414	3,507	4,040	4,705	4,788	4,461	4,076	3,693	2,428	1,815	2,052	2,499	3,131	3,518
19 years	3,626	3,537	3,643	3,856	3,408	3,502	4,034	4,698	4,781	4,455	4,070	3,689	2,425	1,812	2,049	2,496	3,126
20 to 24 years	19,839	19,584	18,975	18,475	18,365	17,963	17,848	18,348	19,403	20,328	21,370	21,939	21,596	19,339	16,384	13,994	12,425
20 years	3,811	3,618	3,529	3,636	3,849	3,403	3,497	4,028	4,690	4,773	4,449	4,066	3,685	2,422	1,810	2,047	2,493
21 years	3,956	3,803	3,610	3,522	3,629	3,842	3,397	3,491	4,022	4,682	4,765	4,443	4,060	3,681	2,419	1,808	2,044
22 years	4,124	3,947	3,795	3,603	3,515	3,622	3,836	3,391	3,485	4,015	4,674	4,759	4,437	4,056	3,677	2,416	1,805
23 years	4,114	4,113	3,938	3,786	3,596	3,508	3,616	3,829	3,385	3,479	4,009	4,668	4,753	4,433	4,052	3,674	2,414
24 years	3,834	4,103	4,103	3,928	3,776	3,588	3,502	3,609	3,821	3,379	3,473	4,003	4,661	4,747	4,426	4,049	3,669

25 to 29 years	13,163	14,868	16,724	18,267	19,209	19,598	19,361	18,768	18,282	18,180	17,790	17,686	18,192	19,253	20,180	21,236	21,805
30 to 34 years	10,538	10,402	10,474	10,904	11,742	12,979	14,673	16,515	18,046	18,986	19,373	19,149	18,573	18,110	18,022	17,647	17,540
35 to 39 years	12,577	12,105	11,517	10,970	10,594	10,357	10,236	10,322	10,751	11,580	12,807	14,481	16,308	17,835	18,775	19,184	18,962
40 to 44 years	11,469	11,902	12,319	12,562	12,548	12,308	11,854	11,284	10,756	10,398	10,177	10,064	10,157	10,586	11,413	12,634	14,294
45 to 49 years	9,762	9,996	10,218	10,481	10,792	11,153	11,593	12,010	12,256	12,254	12,030	11,588	11,035	10,529	10,187	9,980	9,876
50 to 54 years	7,927	8,219	8,528	8,832	9,122	9,391	9,626	9,858	10,119	10,437	10,797	11,224	11,637	11,883	11,886	11,679	11,254
55 to 59 years	6,299	6,483	6,702	6,937	7,196	7,474	7,772	8,091	8,397	8,694	8,961	9,189	9,413	9,660	9,960	10,311	10,725
60 to 64 years	5,248	5,343	5,429	5,519	5,619	5,771	5,958	6,181	6,423	6,692	6,968	7,262	7,573	7,868	8,143	8,399	8,616
65 to 69 years	3,947	4,077	4,211	4,356	4,505	4,611	4,717	4,818	4,916	5,037	5,191	5,371	5,583	5,805	6,044	6,303	6,575
70 to 74 years	2,789	2,852	2,929	3,012	3,110	3,229	3,354	3,495	3,637	3,805	3,915	4,008	4,102	4,189	4,281	4,419	4,576
75 years and over	3,122	3,172	3,238	3,313	3,400	3,499	3,635	3,794	3,955	4,165	4,355	4,553	4,758	4,971	5,190	5,393	5,580
Under 16 years	57,135	58,093	59,039	59,484	59,100	59,004	59,192	59,814	60,946	63,443	66,575	69,594	72,017	73,590	74,580	74,834	74,672
16 to 59/54 years [1]	102,372	104,010	105,719	107,901	110,671	113,464	115,891	117,880	119,437	119,732	119,400	119,334	119,691	120,609	121,790	123,429	125,072
60/55 years and over [2]	19,012	19,476	19,990	20,561	21,207	21,921	22,741	23,643	24,530	25,487	26,348	27,173	28,037	28,923	29,883	30,935	32,035
12 years and over	137,148	140,626	143,797	146,579	148,975	150,110	150,699	151,559	152,804	154,758	156,991	159,724	162,641	165,672	168,762	171,935	174,834
14 years and over	128,341	131,072	134,494	137,994	141,163	143,956	146,431	147,667	148,227	149,103	150,317	152,154	154,394	157,098	159,916	162,934	165,949
12 to 15 years	15,764	17,140	18,088	18,117	17,097	14,725	12,067	10,036	8,837	9,539	11,243	13,217	14,913	16,140	17,089	17,571	17,727
14 to 34 years	65,201	66,923	69,403	72,012	74,277	76,163	77,686	77,814	77,017	76,041	75,116	74,414	73,828	73,772	74,037	74,632	75,491
35 to 64 years	53,282	54,048	54,713	55,301	55,871	56,454	57,039	57,746	58,702	60,055	61,740	63,838	66,123	68,361	70,364	72,187	73,727
65 years and over	9,858	10,101	10,378	10,681	11,015	11,339	11,706	12,107	12,508	13,007	13,461	13,932	14,443	14,965	15,515	16,115	16,731
MALE																	
All ages	78,183	79,792	81,446	83,117	84,707	86,492	88,288	90,132	92,010	93,975	95,916	97,946	99,879	101,681	103,377	104,976	106,401
Under 5 years	9,059	10,036	10,725	11,227	11,389	11,650	11,814	11,944	12,122	12,424	12,553	12,760	12,881	12,807	12,595	12,223	11,693
Under 1 year	2,244	2,350	2,410	2,420	2,337	2,524	2,494	2,504	2,570	2,614	2,634	2,680	2,605	2,484	2,388	2,244	2,140
1 year	2,097	2,183	2,265	2,330	2,345	2,264	2,457	2,440	2,449	2,518	2,565	2,597	2,641	2,562	2,449	2,362	2,213
2 years	1,819	2,082	2,168	2,247	2,312	2,326	2,248	2,444	2,427	2,436	2,506	2,555	2,587	2,631	2,553	2,443	2,354
3 years	1,613	1,812	2,074	2,161	2,239	2,303	2,318	2,242	2,438	2,422	2,430	2,501	2,550	2,582	2,626	2,550	2,439
4 years	1,286	1,609	1,808	2,069	2,156	2,233	2,297	2,314	2,238	2,434	2,418	2,427	2,498	2,548	2,579	2,624	2,547
5 to 9 years	7,161	6,372	6,096	6,663	7,792	8,890	9,835	10,520	11,025	11,196	11,474	11,660	11,793	11,984	12,294	12,445	12 650
5 years	1,051	1,283	1,606	1,806	2,065	2,153	2,230	2,294	2,311	2,235	2,431	2,416	2,425	2,497	2,546	2,578	2,622
6 years	930	1,050	1,280	1,604	1,802	2,062	2,150	2,227	2,291	2,308	2,232	2,428	2,413	2,423	2,494	2,545	2,576
7 years	1,237	929	1,049	1,278	1,602	1,800	2,059	2,147	2,225	2,288	2,305	2,230	2,426	2,412	2,421	2,493	2,543
8 years	1,879	1,234	928	1,048	1,276	1,600	1,798	2,056	2,144	2,223	2,285	2,303	2,228	2,425	2,410	2,420	2,491
9 years	2,064	1,876	1,233	927	1,047	1,275	1,598	1,796	2,054	2,142	2,221	2,283	2,301	2,227	2,423	2,409	2,418
10 to 14 years	10,771	11,073	10,920	9,796	8,321	7,120	6,337	6,064	6,625	7,749	8,841	9,784	10,469	10,979	11,15-	11.436	11,621
10 years	2,251	2,061	1,873	1,232	926	1,046	1,274	1,596	1,794	2,052	2,140	2,219	2,281	2,300	2,225	2,422	2,407
11 years	2,402	2,248	2,058	1,871	1,231	925	1,045	1,273	1,594	1,792	2,050	2,138	2,217	2,280	2,298	2,224	2,419
12 years	2,354	2,399	2,245	2,056	1,869	1,230	924	1,044	1,272	1,592	1,790	2,048	2,136	2,216	2,278	2,297	2,222
13 years	2,017	2,351	2,396	2,243	2,054	1,867	1,229	923	1,043	1,271	1,591	1,789	2,047	2,136	2,215	2,278	2,296
14 years	1,747	2,014	2,348	2,394	2,241	2,052	1,865	1,228	922	1,042	1,270	1,590	1,788	2,047	2,135	2,215	2,277

See footnotes at end of table.

TABLE A–2.—*Estimated population of the Soviet Union, by age and sex, Jan. 1, 1950 to 1966*—Continued

[In thousands]

Age	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964	1965	1966
MALE—continued																	
15 to 19 years	8,994	8,944	9,181	9,689	10,145	10,693	10,999	10,853	9,738	8,272	7,078	6,302	6,033	6,595	7,719	8,814	9,757
15 years	1,693	1,744	2,011	2,344	2,390	2,239	2,050	1,863	1,227	921	1,041	1,239	1,589	1,788	2,[illegible]	2,135	2,214
16 years	1,931	1,690	1,741	2,007	2,340	2,387	2,236	2,048	1,861	1,223	920	1,040	1,238	1,589	1,787	2,046	2,134
17 years	1,827	1,927	1,687	1,737	2,003	2,337	2,384	2,233	2,045	1,858	1,224	919	1,039	1,267	1,588	1,786	2,045
18 years	1,764	1,823	1,923	1,683	1,733	2,000	2,333	2,380	2,229	2,042	1,855	1,222	917	1,038	1,264	1,585	1,782
19 years	1,779	1,760	1,819	1,918	1,679	1,730	1,996	2,329	2,376	2,225	2,038	1,852	1,220	915	1,034	1,262	1,582
20 to 24 years	9,223	9,253	9,111	8,998	9,037	8,881	8,839	9,077	9,589	10,049	10,592	10,900	10,756	9,655	8,203	7,023	6,254
20 years	1,832	1,774	1,755	1,814	1,913	1,676	1,727	1,992	2,324	2,371	2,221	2,035	1,849	1,218	914	1,033	1,261
21 years	1,869	1,827	1,769	1,750	1,809	1,908	1,672	1,723	1,988	2,319	2,366	2,217	2,031	1,846	1,216	913	1,032
22 years	1,919	1,864	1,822	1,764	1,745	1,804	1,904	1,668	1,719	1,984	2,314	2,352	2,213	2,028	1,843	1,214	911
23 years	1,883	1,912	1,859	1,817	1,759	1,740	1,800	1,899	1,664	1,715	1,990	2,310	2,358	2,210	2,025	1,841	1,213
24 years	1,720	1,876	1,906	1,853	1,811	1,753	1,736	1,795	1,894	1,660	1,711	1,976	2,305	2,353	2,205	2,022	1,837
25 to 29 years	5,374	6,283	7,290	8,161	8,749	9,075	9,112	8,976	8,869	8,912	8,764	8,728	8,972	9,486	9,945	10,493	10,800
30 to 34 years	4,087	3,995	3,996	4,187	4,612	5,265	6,166	7,162	8,022	8,606	8,932	8,976	8,847	8,751	8,802	8,662	8,623
35 to 39 years	4,903	4,713	4,484	4,265	4,101	3,985	3,900	3,909	4,103	4,523	5,166	6,054	7,037	7,889	8,471	8,803	8,849
40 to 44 years	4,550	4,706	4,835	4,895	4,864	4,754	4,575	4,356	4,145	3,993	3,885	3,810	3,824	4,018	4,436	5,074	5,950
45 to 49 years	3,471	3,645	3,834	4,029	4,206	4,370	4,531	4,662	4,725	4,701	4,599	4,428	4,218	4,020	3,878	3,780	3,708
50 to 54 years	2,915	2,940	2,972	3,029	3,132	3,272	3,442	3,636	3,826	4,005	4,167	4,325	4,455	4,516	4,494	4,403	4,240
55 to 59 years	2,393	2,451	2,519	2,576	2,623	2,663	2,695	2,736	2,798	2,906	3,042	3,210	3,392	3,570	3,735	3,890	4,037
60 to 64 years	1,940	1,964	1,989	2,017	2,047	2,100	2,161	2,231	2,292	2,348	2,392	2,428	2,468	2,531	2,630	2,760	2,914
65 to 69 years	1,417	1,460	1,499	1,545	1,592	1,614	1,644	1,677	1,710	1,751	1,806	1,857	1,930	1,985	2,034	2,077	2,109
70 to 74 years	952	972	994	1,020	1,053	1,089	1,128	1,173	1,218	1,273	1,301	1,330	1,359	1,386	1,416	1,465	1,515
75 years and over	973	985	1,001	1,020	1,044	1,071	1,110	1,156	1,203	1,267	1,324	1,384	1,445	1,509	1,574	1,628	1,681
Under 16 years	28,684	29,225	29,752	30,030	29,892	29,899	30,036	30,391	30,999	32,290	33,909	35,473	36,732	37,558	38,086	38,239	38,178
16 to 59 years	44,217	45,186	46,211	47,485	49,079	50,719	52,209	53,504	54,588	55,046	55,184	55,464	55,945	56,712	57,637	58,807	60,004
60 years and over	5,282	5,381	5,483	5,602	5,736	5,874	6,043	6,237	6,423	6,639	6,823	7,009	7,202	7,411	7,654	7,930	8,219
12 years and over	57,310	59,075	60,694	62,124	63,369	63,981	64,320	64,799	65,475	66,511	67,699	69,169	70,707	72,310	73,965	75,662	77,232
14 years and over	52,939	54,325	56,053	57,825	59,446	60,884	62,167	62,832	63,160	63,648	64,318	65,332	66,524	67,958	69,472	71,087	72,714
12 to 15 years	7,811	8,508	9,000	9,037	8,554	7,388	6,068	5,058	4,464	4,826	5,692	6,696	7,560	8,187	8,674	8,925	9,009
14 to 34 years	29,425	30,489	31,926	33,429	34,784	35,966	36,981	37,296	37,140	36,881	36,636	36,496	36,396	36,534	36,804	37,207	37,711
35 to 64 years	20,172	20,419	20,633	20,811	20,973	21,144	21,304	21,530	21,889	22,476	23,251	24,255	25,394	26,544	27,644	28,710	29,698
65 years and over	3,342	3,417	3,494	3,585	3,689	3,774	3,882	4,006	4,131	4,291	4,431	4,581	4,734	4,880	5,024	5,170	5,305

FEMALE																	
All ages	100,336	101,787	103,302	104,829	106,271	107,897	109,536	111,205	112,903	114,687	116,407	118,155	119,866	121,441	122,876	124,222	125,378
Under 5 years	8,771	9,693	10,348	10,824	10,967	11,207	11,352	11,457	11,608	11,882	11,973	12,142	12,237	12,154	11,941	11,591	11,089
Under 1 year	2,161	2,247	2,304	2,314	2,231	2,408	2,379	2,381	2,442	2,488	2,494	2,538	2,467	2,353	2,262	2,125	2,027
1 year	2,029	2,110	2,186	2,244	2,257	2,177	2,358	2,339	2,340	2,402	2,446	2,461	2,504	2,430	2,323	2,240	2,099
2 years	1,764	2,015	2,096	2,171	2,229	2,241	2,164	2,347	2,328	2,330	2,390	2,437	2,452	2,495	2,422	2,318	2,233
3 years	1,568	1,757	2,009	2,090	2,164	2,221	2,234	2,159	2,342	2,323	2,324	2,385	2,432	2,447	2,490	2,419	2,313
4 years	1,249	1,564	1,753	2,005	2,086	2,160	2,217	2,231	2,156	2,339	2,319	2,321	2,382	2,429	2,444	2,489	2,417
5 to 9 years	7,053	6,250	5,958	6,489	7,579	8,632	9,539	10,192	10,669	10,821	11,074	11,234	11,340	11,497	11,769	11,878	12,044
5 years	1,029	1,248	1,561	1,751	2,003	2,084	2,157	2,215	2,229	2,154	2,337	2,317	2,319	2,381	2,427	2,443	2,487
6 years	910	1,028	1,247	1,559	1,749	2,001	2,082	2,155	2,213	2,227	2,152	2,335	2,315	2,318	2,379	2,426	2,440
7 years	1,217	909	1,027	1,246	1,557	1,747	1,999	2,080	2,154	2,211	2,225	2,151	2,334	2,315	2,317	2,379	2,425
8 years	1,850	1,216	908	1,026	1,245	1,556	1,746	1,997	2,078	2,153	2,209	2,224	2,150	2,334	2,314	2,317	2,378
9 years	2,047	1,849	1,215	907	1,025	1,244	1,555	1,745	1,995	2,076	2,151	2,207	2,222	2,149	2,332	2,313	2,314
10 to 14 years	10,890	11,146	10,935	9,763	8,248	7,028	6,225	5,931	6,461	7,549	8,600	9,507	10,159	10,641	10,794	11,054	11,214
10 years	2,250	2,046	1,848	1,214	906	1,024	1,243	1,554	1,744	1,994	2,075	2,150	2,206	2,222	2,148	2,332	2,312
11 years	2,424	2,247	2,045	1,847	1,213	905	1,023	1,242	1,553	1,743	1,993	2,074	2,149	2,206	2,221	2,148	2,331
12 years	2,396	2,421	2,244	2,044	1,846	1,212	904	1,022	1,241	1,552	1,742	1,992	2,073	2,149	2,205	2,221	2,147
13 years	2,050	2,383	2,418	2,242	2,043	1,845	1,211	903	1,021	1,240	1,551	1,741	1,991	2,073	2,148	2,205	2,220
14 years	1,780	2,049	2,380	2,416	2,240	2,042	1,844	1,210	902	1,020	1,239	1,550	1,740	1,991	2,072	2,148	2,204
15 to 19 years	9,140	9,062	9,321	9,867	10,335	10,836	11,096	10,892	9,724	8,213	6,996	6,198	5,906	6,437	7,525	8,578	9,483
15 years	1,737	1,779	2,046	2,378	2,414	2,238	2,040	1,843	1,209	901	1,019	1,238	1,549	1,740	1,990	2,072	2,147
16 years	1,946	1,736	1,778	2,044	2,376	2,412	2,236	2,038	1,842	1,208	900	1,018	1,237	1,548	1,738	1,989	2,069
17 years	1,830	1,943	1,733	1,776	2,042	2,374	2,410	2,234	2,036	1,840	1,207	899	1,017	1,236	1,547	1,737	1,987
18 years	1,780	1,827	1,940	1,731	1,774	2,040	2,372	2,408	2,232	2,034	1,838	1,206	898	1,016	1,235	1,546	1,736
19 years	1,847	1,777	1,824	1,938	1,729	1,772	2,038	2,369	2,405	2,230	2,032	1,837	1,205	897	1,015	1,234	1,544
20 to 24 years	10,616	10,331	9,864	9,477	9,328	9,082	9,009	9,271	9,814	10,279	10,778	11,039	10,840	9,684	8,181	6,971	6,171
20 years	1,979	1,844	1,774	1,822	1,936	1,727	1,770	2,036	2,366	2,402	2,228	2,031	1,836	1,204	896	1,014	1,232
21 years	2,067	1,976	1,841	1,772	1,820	1,934	1,725	1,768	2,034	2,363	2,399	2,226	2,029	1,835	1,203	895	1,012
22 years	2,205	2,083	1,973	1,839	1,770	1,818	1,932	1,723	1,766	2,031	2,360	2,397	2,224	2,028	1,834	1,202	894
23 years	2,231	2,201	2,079	1,969	1,837	1,768	1,816	1,930	1,721	1,764	2,029	2,358	2,395	2,223	2,027	1,833	1,201
24 years	2,114	2,227	2,197	2,075	1,965	1,835	1,766	1,814	1,927	1,719	1,762	2,027	2,356	2,394	2,221	2,027	1,832
25 to 29 years	7,789	8,585	9,434	10,106	10,460	10,523	10,249	9,792	9,413	9,268	9,026	8,958	9,220	9,767	10,235	10,743	11,005
30 to 34 years	6,451	6,407	6,478	6,717	7,130	7,714	8,507	9,353	10,024	10,380	10,441	10,173	9,726	9,359	9,220	8,985	8,917
35 to 39 years	7,674	7,392	7,033	6,705	6,493	6,372	6,336	6,413	6,648	7,057	7,641	8,427	9,271	9,946	10,304	10,381	10,113
40 to 44 years	6,919	7,196	7,484	7,667	7,684	7,554	7,279	6,928	6,611	6,405	6,292	6,254	6,333	6,568	6,977	7,560	8,344

See footnotes at end of table.

TABLE A-2.—*Estimated population of the Soviet Union, by age and sex, Jan. 1, 1950 to 1966*—Continued

[In thousands]

Age	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964	1965	1966
FEMALE—continued																	
45 to 49 years	6,291	6,351	6,384	6,452	6,586	6,783	7,062	7,348	7,531	7,553	7,431	7,160	6,817	6,509	6,309	6,200	6,168
50 to 54 years	5,012	5,279	5,556	5,803	5,990	6,119	6,184	6,222	6,293	6,432	6,630	6,899	7,182	7,367	7,392	7,276	7,014
55 to 59 years	3,906	4,032	4,183	4,361	4,573	4,811	5,077	5,355	5,599	5,788	5,919	5,979	6,021	6,090	6,225	6,421	6,688
60 to 64 years	3,308	3,379	3,440	3,502	3,572	3,671	3,797	3,950	4,131	4,344	4,576	4,834	5,105	5,337	5,513	5,639	5,702
65 to 69 years	2,530	2,617	2,712	2,811	2,913	2,997	3,073	3,141	3,206	3,286	3,385	3,504	3,653	3,820	4,010	4,226	4,466
70 to 74 years	1,837	1,880	1,935	1,992	2,057	2,140	2,226	2,322	2,419	2,532	2,614	2,678	2,743	2,833	2,865	2,954	3,061
75 years and over	2,149	2,187	2,237	2,293	2,356	2,428	2,525	2,638	2,752	2,898	3,031	3,169	3,313	3,462	3,615	3,765	3,899
Under 16 years	28,451	28,868	29,287	29,454	29,208	29,105	29,156	29,423	29,947	31,153	32,666	34,121	35,285	36,032	36,494	36,595	36,494
16 to 54 years	58,155	58,824	59,508	60,416	61,592	62,745	63,682	64,376	64,849	64,686	64,216	63,870	63,746	63,897	64,153	64,622	65,068
55 years and over	13,730	14,095	14,507	14,959	15,471	16,047	16,698	17,406	18,107	18,848	19,525	20,164	20,835	21,512	22,229	23,005	23,816
12 years and over	79,838	81,551	83,103	84,455	85,606	86,129	86,379	86,760	87,329	88,247	89,292	90,555	91,934	93,362	94,797	96,273	97,602
14 years and over	75,402	76,747	78,441	80,169	81,717	83,072	84,264	84,835	85,067	85,455	85,999	86,822	87,870	89,140	90,444	91,847	93,235
12 to 15 years	7,953	8,632	9,088	9,080	8,543	7,337	5,999	4,978	4,373	4,713	5,551	6,521	7,353	7,953	8,415	8,646	8,718
14 to 24 years	35,776	36,434	37,477	38,583	39,493	40,197	40,705	40,518	39,877	39,160	38,480	37,918	37,432	37,238	37,233	37,425	37,780
25 to 64 years	33,110	33,629	34,080	34,490	34,898	35,310	35,735	36,216	36,813	37,579	38,489	39,553	40,729	41,817	42,720	43,477	44,029
65 years and over	6,516	6,684	6,884	7,096	7,326	7,565	7,824	8,101	8,377	8,716	9,030	9,351	9,709	10,085	10,491	10,945	11,426

[1] Age 16 to 59 years for males; 16 to 54 years for females.
[2] Age 60 years and over for males; 55 years and over for females.

Source: Prepared by the Foreign Demographic Analysis Division, Bureau of the Census, U.S. Department of Commerce.

TABLE A-3.—*Projected population of the Soviet Union, by age and sex, January 1, 1967 to 1985*

[In thousands]

Series and age	1967	1968	1969	1970	1971	1972	1973	1974	1975
BOTH SEXES									
All ages:									
A	234,661	237,502	240,341	243,214	246,149	249,175	252,294	255,498	258,808
B	234,254	236,657	239,020	241,380	243,752	246,166	248,621	251,108	253,645
C	234,050	236,215	238,301	240,343	242,351	244,357	246,357	248,335	250,316
D	233,847	235,771	237,580	239,305	240,953	242,552	244,094	245,569	246,988
Under 5 years:									
A	22,227	21,869	21,710	21,894	22,367	22,638	23,053	23,571	24,165
B	21,820	21,024	20,389	20,060	19,970	20,030	20,216	20,489	20,825
C	21,616	20,582	19,670	19,023	18,569	18,422	18,391	18,431	18,527
D	21,413	20,138	18,949	17,985	17,171	16,817	16,564	16,376	16,228
Under 1 year:									
A	4,485	4,461	4,483	4,541	4,630	4,742	4,863	4,992	5,127
B	4,078	4,019	4,002	4,019	4,062	4,123	4,192	4,266	4,345
C	3,874	3,778	3,722	3,698	3,696	3,710	3,731	3,754	3,780
D	3,671	3,536	3,441	3,376	3,330	3,298	3,270	3,242	3,215
1 year:									
A	4,117	4,435	4,415	4,438	4,500	4,592	4,704	4,827	4,956
B		4,032	3,977	3,963	3,982	4,028	4,091	4,161	4,236
C		3,831	3,739	3,686	3,663	3,666	3,682	3,703	3,728
D		3,629	3,500	3,408	3,345	3,303	3,273	3,246	3,220
2 years:									
A	4,299	4,106	4,423	4,402	4,428	4,489	4,562	4,694	4,817
B			4,021	3,966	3,954	3,973	4,019	4,062	4,153
C			3,820	3,728	3,677	3,655	3,657	3,673	3,696
D			3,619	3,490	3,400	3,338	3,295	3,266	3,240
3 years:									
A	4,579	4,292	4,100	4,416	4,396	4,423	4,484	4,577	4,690
B				4,015	3,960	3,949	3,968	4,015	4,078
C				3,814	3,722	3,672	3,651	3,653	3,671
D				3,614	3,485	3,396	3,333	3,292	3,262
4 years:									
A	4,747	4,575	4,289	4,097	4,413	4,392	4,420	4,481	4,575
B					4,012	3,957	3,946	3,965	4,013
C					3,811	3,719	3,670	3,646	3,632
D					3,611	3,482	3,393	3,330	3,291
5 to 9 years:									
A	24,906	24,770	24,368	23,637	22,627	22,083	21,732	21,578	21,771
B						21,682	20,896	20,270	19,948
C						21,481	20,457	19,555	18,917
D						21,281	20,021	18,844	17,888
5 years:									
A	4,960	4,743	4,572	4,287	4,096	4,411	4,390	4,417	4,478
B						4,010	3,955	3,944	3,963
C						3,809	3,717	3,668	3,646
D						3,609	3,481	3,392	3,329
6 years:									
A	5,104	4,956	4,739	4,569	4,284	4,093	4,409	4,398	4,415
B							4,008	3,953	3,942
C							3,807	3,715	3,666
D							3,607	3,479	3,390
7 years:									
A	5,013	5,101	4,953	4,737	4,567	4,282	4,091	4,406	4,396
B								4,006	3,951
C								3,805	3,714
D								3,606	3,477
8 years:									
A	4,965	5,010	5,098	4,950	4,735	4,565	4,280	4,089	4,405
B									4,005
C									3,804
D									3,605
9 years:									
A	4,864	4,960	5,006	5,094	4,946	4,732	4,562	4,278	4,087
B									
C									
D									
10 to 14 years:									
A	23,072	23,408	23,990	24,240	24,613	24,829	24,699	24,304	23,580
B									
C									
D									
10 years:									
A	4,729	4,861	4,957	5,003	5,091	4,944	4,730	4,560	4,277
B									
C									
D									

TABLE A-3.—*Projected population of the Soviet Union, by age and sex, January 1, 1967 to 1985*—Continued

[In thousands]

Series and age	1967	1968	1969	1970	1971	1972	1973	1974	1975
BOTH SEXES—con.									
11 years:									
A	4,715	4,725	4,858	4,954	5,000	5,088	4,941	4,728	4,558
B									
C									
D									
12 years:									
A	4,747	4,712	4,722	4,855	4,951	4,997	5,086	4,939	4,726
B									
C									
D									
13 years:									
A	4,367	4,745	4,710	4,720	4,853	4,949	4,995	5,084	4,937
B									
C									
D									
14 years:									
A	4,514	4,365	4,743	4,708	4,718	4,851	4,947	4,993	5,082
B									
C									
D									
15 to 19 years:									
A	20,576	21,559	21,884	22,420	22,767	23,006	23,346	23,929	24,180
B									
C									
D									
15 years:									
A	4,479	4,512	4,363	4,741	4,706	4,716	4,849	4,945	4,991
B									
C									
D									
16 years:									
A	4,357	4,476	4,509	4,360	4,738	4,703	4,714	4,847	4,943
B									
C									
D									
17 years:									
A	4,200	4,354	4,473	4,507	4,358	4,736	4,701	4,712	4,845
B									
C									
D									
18 years:									
A	4,027	4,195	4,349	4,468	4,502	4,354	4,732	4,697	4,708
B									
C									
D									
19 years:									
A	3,513	4,022	4,190	4,344	4,463	4,497	4,350	4,728	4,693
B									
C									
D									
20 to 24 years:									
A	11,868	12,957	15,163	17,300	19,145	20,481	21,465	21,793	22,331
B									
C									
D									
20 years:									
A	3,123	3,510	4,019	4,187	4,341	4,460	4,494	4,348	4,726
B									
C									
D									
21 years:									
A	2,490	3,120	3,506	4,015	4,183	4,337	4,456	4,490	4,344
B									
C									
D									
22 years:									
A	2,041	2,487	3,116	3,502	4,011	4,179	4,333	4,452	4,486
B									
C									
D									
23 years:									
A	1,803	2,039	2,485	3,114	3,500	4,009	4,177	4,330	4,449
B									
C									
D									
24 years:									
A	3,411	1,801	2,037	2,482	3,110	3,496	4,006	4,173	4,326
B									
C									
D									

TABLE A-3.—*Projected population of the Soviet Union, by age and sex, January 1, 1967 to 1985*—Continued

[In thousands]

Series and age	1967	1968	1969	1970	1971	1972	1973	1974	1975
BOTH SEXES—con.									
25 to 29 years	21,466	19,221	16,286	13,910	12,355	11,808	12,892	15,090	17,221
30 to 34 years	18,044	19,095	20,018	21,058	21,631	21,303	19,082	16,174	13,816
35 to 39 years	18,394	17,934	17,851	17,478	17,378	17,882	18,930	19,851	20,890
40 to 44 years	16,102	17,610	18,543	18,937	18,723	18,173	17,726	17,651	17,285
45 to 49 years	9,969	10,393	11,207	12,407	14,041	15,820	17,301	18,221	18,615
50 to 54 years	10,719	10,234	9,906	9,708	9,611	9,708	10,129	10,927	12,101
55 to 59 years	11,122	11,360	11,368	11,170	10,766	10,262	9,805	9,497	9,312
60 to 64 years	8,821	9,057	9,341	9,671	10,070	10,447	10,677	10,687	10,504
65 to 69 years	6,855	7,127	7,380	7,612	7,808	7,994	8,211	8,474	8,780
70 to 74 years	4,753	4,946	5,156	5,380	5,621	5,867	6,105	6,323	6,523
75 years and over	5,767	5,962	6,170	6,392	6,626	6,874	7,141	7,428	7,734
Under 16 years:									
A	74,684	74,559	74,431	74,512	74,313	74,266	74,333	74,398	74,507
B	74,277	73,714	73,110	72,678	71,916	71,257	70,660	70,008	69,344
C	74,073	73,272	72,391	71,641	70,515	69,448	68,396	67,235	66,015
D	73,870	72,828	71,670	70,603	69,117	67,643	66,133	64,469	62,687
16 to 59/54 years:									
A									
B	126,818	128,711	130,698	132,595	134,913	137,253	139,643	142,190	144,863
C									
D									
60/55 years and over	33,159	34,232	35,212	36,107	36,923	37,656	38,318	38,910	39,438
12 years and over:									
A									
B	178,084	181,277	184,448	187,726	191,064	194,422	197,838	201,061	204,037
C									
D									
14 years and over:									
A									
B	168,970	171,820	175,016	178,151	181,260	184,476	187,757	191,038	194,374
C									
D									
12 to 15 years:									
A									
B	18,107	18,334	18,538	19,024	19,228	19,513	19,877	19,961	19,736
C									
D									
14 to 34 years:									
A									
B	76,468	77,197	78,094	79,396	80,616	81,449	81,732	81,979	82,630
C									
D									
35 to 64 years	75,127	76,588	78,216	79,371	80,589	82,292	84,568	86,834	88,707
65 years and over	17,375	18,035	18,706	19,384	20,055	20,735	21,457	22,225	23,037
MALE									
All ages:									
A	107,987	109,559	111,131	112,726	114,360	116,050	117,796	119,588	121,445
B	107,778	109,125	110,453	111,784	113,129	114,505	115,910	117,334	118,794
C	107,673	108,898	110,094	111,252	112,410	113,577	114,747	115,910	117,064
D	107,569	108,670	109,714	110,719	111,692	112,649	113,585	114,491	115,376
Under 5 years:									
A	11,408	11,225	11,142	11,237	11,481	11,622	11,838	12,105	12,413
B	11,199	10,791	10,464	10,295	10,250	10,283	10,381	10,522	10,607
C	11,094	10,564	10,095	9,763	9,531	9,458	9,443	9,465	9,517
D	10,990	10,336	9,725	9,230	8,813	8,633	8,505	8,410	8,335
Under 1 year:									
A	2,303	2,291	2,302	2,332	2,379	2,436	2,499	2,565	2,635
B	2,094	2,064	2,055	2,064	2,087	2,118	2,154	2,192	2,233
C	1,989	1,940	1,911	1,899	1,899	1,906	1,917	1,929	1,943
D	1,885	1,816	1,767	1,734	1,711	1,694	1,680	1,666	1,652
1 year:									
A		2,276	2,266	2,278	2,310	2,359	2,416	2,479	2,546
B	2,113	2,089	2,041	2,034	2,044	2,089	2,101	2,137	2,176
C		1,966	1,919	1,892	1,880	1,883	1,891	1,902	1,915
D		1,862	1,796	1,749	1,717	1,697	1,681	1,667	1,654
2 years:									
A			2,269	2,259	2,272	2,304	2,353	2,410	2,474
B	2,206	2,107	2,063	2,035	2,029	2,039	2,064	2,096	2,133
C			1,960	1,913	1,887	1,876	1,878	1,886	1,898
D			1,857	1,791	1,745	1,713	1,692	1,677	1,664
3 years:									
A				2,266	2,256	2,270	2,302	2,351	2,408
B	2,350	2,203	2,104	2,060	2,032	2,027	2,037	2,062	2,094
C				1,957	1,910	1,885	1,874	1,876	1,885
D				1,854	1,788	1,743	1,711	1,691	1,675

TABLE A-3.—*Projected population of the Soviet Union, by age and sex, January 1, 1967 to 1985*—Continued

[In thousands]

Series and age	1967	1968	1969	1970	1971	1972	1973	1974	1975
MALE—con.									
4 years:									
A	2,436	2,348	2,201	2,102	2,264	2,253	2,268	2,300	2,350
B					2,058	2,030	2,025	2,035	2,061
C					1,955	1,908	1,883	1,872	1,876
D					1,852	1,786	1,741	1,709	1,690
5 to 9 years:									
A	12,769	12,706	12,505	12,129	11,611	11,333	11,152	11,072	11,170
B						11,127	10,723	10,401	10,235
C						11,024	10,498	10,034	9,705
D						10,921	10,274	9,670	9,179
5 years:									
A	2,545	2,434	2,346	2,200	2,101	2,263	2,252	2,267	2,298
B						2,057	2,029	2,024	2,034
C						1,954	1,907	1,882	1,871
D						1,851	1,786	1,741	1,709
6 years:									
A	2,620	2,543	2,432	2,345	2,199	2,100	2,262	2,251	2,266
B							2,056	2,028	2,023
C							1,953	1,906	1,881
D							1,850	1,785	1,740
7 years:									
A	2,574	2,618	2,541	2,431	2,344	2,198	2,099	2,260	2,250
B								2,055	2,027
C								1,952	1,905
D								1,850	1,784
8 years:									
A	2,541	2,572	2,616	2,539	2,430	2,343	2,197	2,098	2,259
B									2,054
C									1,951
D									1,849
9 years:									
A	2,489	2,539	2,570	2,614	2,537	2,429	2,342	2,196	2,097
B									
C									
D									
10 to 14 years:									
A	11,753	11,938	12,249	12,396	12,602	12,723	12,665	12,470	12,096
B									
C									
D									
10 years:									
A	2,416	2,487	2,537	2,568	2,612	2,536	2,428	2,341	2,195
B									
C									
D									
11 years:									
A	2,404	2,413	2,485	2,535	2,566	2,610	2,534	2,426	2,339
B									
C									
D									
12 years:									
A	2,417	2,402	2,411	2,483	2,533	2,564	2,609	2,533	2,425
B									
C									
D									
13 years:									
A	2,221	2,416	2,401	2,410	2,482	2,532	2,563	2,608	2,532
B									
C									
D									
14 years:									
A	2,295	2,220	2,415	2,400	2,409	2,481	2,531	2,562	2,607
B									
C									
D									
15 to 19 years:									
A	10,442	10,948	11,120	11,399	11,564	11,717	11,904	12,215	12,362
B									
C									
D									
15 years:									
A	2,276	2,294	2,219	2,414	2,369	2,408	2,480	2,530	2,561
B									
C									
D									
16 years:									
A	2,213	2,275	2,293	2,218	2,413	2,366	2,407	2,479	2,529
B									
C									
D									

TABLE A-3.—*Projected population of the Soviet Union, by age and sex, January 1, 1967 to 1985*—Continued

[In thousands]

Series and age	1967	1968	1969	1970	1971	1972	1973	1974	1975
MALE—con.									
17 years:									
A									
B	2,133	2,212	2,274	2,292	2,217	2,412	2,397	2,406	2,478
C									
D									
18 years:									
A									
B	2,041	2,129	2,206	2,270	2,288	2,214	2,409	2,394	2,403
C									
D									
19 years:									
A									
B	1,779	2,038	2,126	2,205	2,267	2,285	2,211	2,406	2,391
C									
D									
20 to 24 years:									
A									
B	5,992	6,553	7,674	8,764	9,704	10,388	10,894	11,066	11,345
C									
D									
20 years:									
A									
B	1,581	1,776	2,037	2,125	2,204	2,266	2,284	2,210	2,405
C									
D									
21 years:									
A									
B	1,260	1,580	1,776	2,035	2,128	2,202	2,264	2,282	2,208
C									
D									
22 years:									
A									
B	1,030	1,258	1,577	1,773	2,032	2,120	2,199	2,261	2,279
C									
D									
23 years:									
A									
B	910	1,029	1,257	1,576	1,772	2,031	2,119	2,197	2,259
C									
D									
24 years:									
A									
B	1,211	905	1,027	1,255	1,573	1,769	2,028	2,116	2,194
C									
D									
25 to 29 years	10,660	9,571	8,133	6,464	6,205	5,949	6,507	7,623	8,709
30 to 34 years	8,863	9,371	9,829	10,369	10,678	10,545	9,473	8,055	6,898
35 to 39 years	8,726	8,633	8,667	8,549	8,514	8,755	9,261	9,718	10,256
40 to 44 years	6,920	7,763	8,338	8,664	8,713	8,598	8,510	8,566	8,432
45 to 49 years	3,722	3,919	4,221	4,945	5,802	6,753	7,578	8,143	8,468
50 to 54 years	4,043	3,859	3,726	3,633	3,566	3,584	3,771	4,170	4,777
55 to 59 years	4,159	4,220	4,203	4,118	3,968	3,788	3,621	3,499	3,415
60 to 64 years	3,082	3,251	3,401	3,546	3,686	3,800	3,860	3,848	3,774
65 to 69 years	2,145	2,203	2,294	2,410	2,547	2,696	2,847	2,984	3,111
70 to 74 years	1,568	1,614	1,654	1,697	1,715	1,746	1,796	1,873	1,972
75 years and over	1,785	1,792	1,852	1,916	1,984	2,053	2,119	2,181	2,245
Under 16 years:									
A	38,206	38,163	38,115	38,176	38,093	38,086	38,135	38,177	38,242
B	37,997	37,729	37,437	37,224	36,862	36,541	36,249	35,923	35,501
C	37,892	37,502	37,068	36,702	36,143	35,613	35,086	34,499	33,851
D	37,788	37,274	36,698	36,169	35,425	34,665	33,924	33,080	32,173
16 to 59 years:									
A									
B	61,251	62,536	63,812	64,991	66,335	67,669	69,039	70,525	72,103
C									
D									
60 years and over	8,530	8,860	9,204	9,550	9,932	10,295	10,622	10,986	11,100
12 years and over:									
A									
B	78,990	80,728	82,462	84,257	86,090	87,949	89,844	91,644	93,328
C									
D									
14 years and over:									
A									
B	74,362	75,910	77,660	79,264	81,075	82,853	84,672	86,503	88,371
C									
D									

TABLE A-3.—*Projected population of the Soviet Union, by age and sex, January 1, 1967 to 1985*—Continued

[In thousands]

Series and age	1967	1968	1969	1970	1971	1972	1973	1974	1975
MALE—con.									
12 to 15 years:									
A	9,209	9,332	9,446	9,707	9,823	9,985	10,183	10,233	10,125
B									
C									
D									
14 to 34 years:									
A	38,252	38,663	39,171	39,896	40,580	41,080	41,369	41,521	41,921
B									
C									
D									
35 to 64 years	30,652	31,638	32,679	33,455	34,249	35,278	36,601	37,944	39,124
65 years and over	5,448	5,609	5,800	6,013	6,246	6,495	6,762	7,038	7,326
FEMALE									
All ages:									
A	126,674	127,943	129,210	130,488	131,789	133,125	134,498	135,910	137,363
B	126,476	127,532	128,567	129,596	130,623	131,661	132,711	133,774	134,851
C	126,377	127,317	128,217	129,091	129,941	130,780	131,610	132,425	133,232
D	126,278	127,101	127,866	128,586	129,261	129,903	130,509	131,078	131,612
Under 5 years:									
A	10,819	10,644	10,568	10,657	10,886	11,016	11,215	11,466	11,752
B	10,621	10,233	9,925	9,765	9,720	9,747	9,835	9,967	10,128
C	10,522	10,018	9,575	9,260	9,038	8,964	8,948	8,966	9,010
D	10,423	9,802	9,224	8,755	8,358	8,184	8,059	7,966	7,893
Under 1 year:									
A	2,182	2,170	2,181	2,209	2,251	2,306	2,364	2,427	2,492
B	1,984	1,955	1,947	1,955	1,975	2,005	2,038	2,074	2,112
C	1,885	1,838	1,811	1,799	1,797	1,804	1,814	1,825	1,837
D	1,786	1,720	1,674	1,642	1,619	1,604	1,590	1,576	1,563
1 year:									
A	2,004	2,159	2,149	2,160	2,190	2,233	2,288	2,348	2,410
B		1,963	1,936	1,929	1,938	1,959	1,990	2,024	2,060
C		1,865	1,820	1,794	1,783	1,783	1,791	1,801	1,813
D		1,767	1,704	1,659	1,628	1,606	1,592	1,579	1,566
2 years:									
A	2,093	1,999	2,154	2,143	2,156	2,185	2,229	2,284	2,343
B			1,958	1,931	1,925	1,934	1,955	1,986	2,020
C			1,860	1,815	1,790	1,779	1,779	1,787	1,798
D			1,762	1,699	1,655	1,625	1,603	1,589	1,576
3 years:									
A	2,229	2,089	1,996	2,150	2,140	2,153	2,182	2,226	2,282
B				1,955	1,928	1,922	1,931	1,953	1,984
C				1,857	1,812	1,787	1,777	1,777	1,786
D				1,760	1,697	1,653	1,622	1,601	1,587
4 years:									
A	2,311	2,227	2,088	1,995	2,149	2,139	2,152	2,181	2,225
B					1,954	1,927	1,921	1,930	1,952
C					1,856	1,811	1,787	1,776	1,776
D					1,759	1,696	1,652	1,621	1,601
5 to 9 years:									
A	12,137	12,064	11,863	11,598	11,016	10,750	10,580	10,506	10,601
B						10,555	10,173	9,869	9,713
C						10,457	9,959	9,521	9,212
D						10,360	9,747	9,174	8,709
5 years:									
A	2,415	2,309	2,226	2,087	1,994	2,148	2,138	2,150	2,180
B						1,963	1,926	1,920	1,929
C						1,855	1,810	1,786	1,775
D						1,758	1,695	1,651	1,620
6 years:									
A	2,484	2,413	2,307	2,224	2,085	1,993	2,147	2,137	2,149
B							1,952	1,925	1,919
C							1,854	1,809	1,785
D							1,757	1,694	1,650
7 years:									
A	2,439	2,483	2,412	2,306	2,223	2,084	1,992	2,146	2,136
B								1,951	1,924
C								1,853	1,809
D								1,756	1,693
8 years:									
A	2,424	2,438	2,482	2,411	2,305	2,222	2,083	1,991	2,146
B									1,951
C									1,853
D									1,756
9 years:									
A	2,375	2,421	2,436	2,480	2,409	2,303	2,220	2,082	1,990
B									
C									
D									

TABLE A-3.—*Projected population of the Soviet Union, by age and sex, January 1, 1967 to 1985*—Continued

[In thousands]

Series and age	1967	1968	1969	1970	1971	1972	1973	1974	1975
FEMALE—con.									
10 to 14 years:									
A	11,319	11,470	11,741	11,844	12,011	12,106	12,034	11,834	11,482
B									
C									
D									
10 years:									
A	2,313	2,374	2,420	2,435	2,479	2,408	2,302	2,219	2,082
B									
C									
D									
11 years:									
A	2,311	2,312	2,373	2,419	2,434	2,478	2,407	2,302	2,219
B									
C									
D									
12 years:									
A	2,330	2,310	2,311	2,372	2,418	2,433	2,477	2,406	2,301
B									
C									
D									
13 years:									
A	2,146	2,329	2,309	2,310	2,371	2,417	2,432	2,476	2,405
B									
C									
D									
14 years:									
A	2,219	2,145	2,328	2,308	2,309	2,370	2,416	2,431	2,475
B									
C									
D									
15 to 19 years:									
A	10,134	10,611	10,764	11,021	11,183	11,289	11,442	11,714	11,818
B									
C									
D									
15 years:									
A	2,203	2,218	2,144	2,327	2,307	2,308	2,369	2,415	2,430
B									
C									
D									
16 years:									
A	2,144	2,201	2,216	2,142	2,325	2,305	2,307	2,368	2,414
B									
C									
D									
17 years:									
A	2,067	2,142	2,199	2,215	2,141	2,324	2,304	2,306	2,367
B									
C									
D									
18 years:									
A	1,986	2,066	2,141	2,198	2,214	2,140	2,323	2,303	2,305
B									
C									
D									
19 years:									
A	1,734	1,984	2,064	2,139	2,196	2,212	2,139	2,322	2,302
B									
C									
D									
20 to 24 years:									
A	5,876	6,404	7,489	8,536	9,441	10,093	10,571	10,727	10,986
B									
C									
D									
20 years:									
A	1,542	1,732	1,982	2,062	2,137	2,194	2,210	2,138	2,321
B									
C									
D									
21 years:									
A	1,230	1,540	1,730	1,980	2,060	2,135	2,192	2,208	2,136
B									
C									
D									

TABLE A-3.—*Projected population of the Soviet Union, by age and sex, January 1, 1967 to 1985*—Continued

[In thousands]

Series and age	1967	1968	1969	1970	1971	1972	1973	1974	1975
FEMALE—con.									
22 years:									
A									
B	1,011	1,229	1,539	1,729	1,979	2,059	2,134	2,191	2,207
C									
D									
23 years:									
A									
B	893	1,010	1,228	1,538	1,728	1,978	2,058	2,133	2,190
C									
D									
24 years:									
A									
B	1,200	893	1,010	1,227	1,537	1,727	1,977	2,057	2,132
C									
D									
25 to 29 years	10,806	9,650	8,153	6,946	6,150	5,859	6,385	7,467	8,512
30 to 34 years	9,181	9,724	10,189	10,689	10,953	10,758	9,609	8,119	6,918
35 to 39 years	9,668	9,301	9,164	8,929	8,864	9,127	9,609	10,133	10,632
40 to 44 years	9,182	9,847	10,205	10,273	10,010	9,575	9,216	9,085	8,853
45 to 49 years	6,247	6,481	6,886	7,462	8,239	9,067	9,723	10,078	10,147
50 to 54 years	6,676	6,375	6,180	6,075	6,045	6,124	6,358	6,757	7,324
55 to 59 years	6,963	7,140	7,165	7,052	6,798	6,474	6,184	5,998	5,897
60 to 64 years	5,739	5,806	5,937	6,125	6,384	6,647	6,817	6,839	6,730
65 to 69 years	4,710	4,924	5,086	5,202	5,261	5,298	5,364	5,490	5,669
70 to 74 years	3,185	3,332	3,502	3,693	3,906	4,121	4,309	4,450	4,551
75 years and over	4,032	4,170	4,318	4,476	4,642	4,821	5,022	5,247	5,491
Under 16 years:									
A	36,478	36,396	36,316	36,336	36,220	36,180	36,198	36,221	36,265
B	36,280	35,985	35,673	35,444	35,054	34,716	34,411	34,085	33,753
C	36,181	35,770	35,323	34,939	34,372	33,835	33,310	32,736	32,134
D	36,082	35,554	34,972	34,434	33,692	32,958	32,209	31,389	30,514
16 to 54 years:									
A									
B	65,567	66,175	66,886	67,604	68,578	69,584	70,604	71,665	72,760
C									
D									
55 years and over	24,629	25,372	26,008	26,548	26,991	27,361	27,696	28,024	28,338
12 years and over:									
A									
B	99,094	100,549	101,986	103,469	104,974	106,473	107,994	109,417	110,709
C									
D									
14 years and over:									
A									
B	94,618	95,910	97,366	98,787	100,185	101,623	103,085	104,535	106,003
C									
D									
12 to 15 years:									
A									
B	8,898	9,002	9,092	9,317	9,405	9,528	9,694	9,728	9,611
C									
D									
14 to 34 years:									
A									
B	38,216	38,534	38,923	39,500	40,036	40,369	40,423	40,458	40,709
C									
D									
35 to 64 years	44,475	44,950	45,537	45,916	46,340	47,014	47,967	48,890	49,583
65 years and over	11,927	12,426	12,906	13,371	13,809	14,240	14,695	15,187	15,711

TABLE A-3.—*Projected population of the Soviet Union, by age and sex, January 1, 1967 to 1985*—Continued

[In thousands]

Series and age	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985
BOTH SEXES										
All ages:										
A	262,229	265,760	269,364	273,044	276,798	280,624	284,505	288,431	292,382	296,327
B	256,232	258,867	261,557	264,308	267,108	269,963	272,857	275,784	278,721	281,649
C	252,288	254,252	256,259	258,308	260,396	262,521	264,674	266,851	269,026	271,194
D	248,343	249,635	250,956	252,305	253,677	255,080	256,493	257,919	259,341	260,743
Under 5 years:										
A	24,815	25,503	26,179	26,843	27,487	28,096	28,652	29,181	29,659	30,055
B	21,202	21,605	22,030	22,477	22,943	23,413	23,877	24,318	24,715	25,046
C	18,649	18,787	18,983	19,236	19,545	19,900	20,295	20,670	21,006	21,288
D	16,094	15,968	15,934	15,994	16,147	16,391	16,714	17,024	17,301	17,533
Under 1 year:										
A	5,273	5,422	5,533	5,650	5,768	5,877	5,976	6,059	6,123	6,161
B	4,431	4,519	4,611	4,708	4,807	4,908	4,980	5,049	5,102	5,134
C	3,810	3,841	3,919	4,002	4,086	4,163	4,233	4,292	4,337	4,364
D	3,190	3,163	3,228	3,296	3,365	3,429	3,486	3,535	3,571	3,594
1 year:										
A	5,094	5,241	5,392	5,503	5,620	5,740	5,850	5,950	6,034	6,098
B	4,317	4,404	4,493	4,586	4,684	4,783	4,875	4,956	5,028	5,082
C	3,756	3,787	3,819	3,898	3,981	4,065	4,143	4,214	4,273	4,319
D	3,194	3,171	3,145	3,210	3,279	3,349	3,413	3,471	3,520	3,557
2 years:										
A	4,948	5,086	5,232	5,383	5,495	5,613	5,731	5,841	5,941	6,025
B	4,229	4,310	4,397	4,486	4,579	4,677	4,776	4,868	4,951	5,021
C	3,721	3,750	3,782	3,813	3,892	3,976	4,060	4,138	4,208	4,268
D	3,214	3,189	3,165	3,140	3,205	3,274	3,343	3,408	3,466	3,515
3 years:										
A	4,813	4,943	5,081	5,228	5,378	5,490	5,607	5,726	5,837	5,936
B	4,149	4,225	4,306	4,393	4,482	4,575	4,673	4,772	4,864	4,947
C	3,693	3,718	3,746	3,778	3,810	3,888	3,972	4,056	4,134	4,205
D	3,236	3,211	3,187	3,163	3,137	3,203	3,271	3,340	3,405	3,463
4 years:										
A	4,687	4,811	4,941	5,079	5,226	5,376	5,488	5,606	5,724	5,835
B	4,076	4,147	4,223	4,304	4,391	4,480	4,573	4,671	4,770	4,862
C	3,669	3,691	3,717	3,745	3,776	3,808	3,887	3,970	4,054	4,132
D	3,260	3,234	3,209	3,185	3,161	3,136	3,201	3,270	3,339	3,404
5 to 9 years:										
A	22,249	22,525	22,944	23,465	24,063	24,712	25,401	26,078	26,743	27,388
B	19,865	19,930	20,121	20,399	20,738	21,116	21,520	21,946	22,394	22,860
C	18,474	18,333	18,306	18,353	18,450	18,573	18,712	18,910	19,163	19,474
D	17,084	16,735	16,490	16,307	16,161	16,032	15,908	15,874	15,936	16,091
5 years:										
A	4,572	4,685	4,809	4,939	5,077	5,222	5,374	5,485	5,603	5,722
B	4,011	4,074	4,145	4,221	4,302	4,389	4,478	4,571	4,669	4,768
C	3,650	3,667	3,689	3,715	3,743	3,774	3,806	3,886	3,968	4,052
D	3,289	3,260	3,233	3,208	3,183	3,160	3,135	3,199	3,268	3,338
6 years:										
A	4,476	4,570	4,683	4,805	4,936	5,074	5,220	5,371	5,483	5,601
B	3,961	4,009	4,072	4,143	4,219	4,300	4,387	4,476	4,569	4,667
C	3,644	3,648	3,665	3,687	3,713	3,741	3,772	3,804	3,884	3,967
D	3,328	3,287	3,258	3,232	3,207	3,182	3,159	3,138	3,199	3,267
7 years:										
A	4,413	4,475	4,569	4,681	4,804	4,935	5,072	5,219	5,370	5,481
B	3,940	3,960	4,008	4,071	4,142	4,218	4,299	4,386	4,475	4,568
C	3,664	3,643	3,647	3,664	3,686	3,712	3,740	3,772	3,803	3,833
D	3,388	3,327	3,287	3,257	3,231	3,206	3,181	3,158	3,133	3,198
8 years:										
A	4,385	4,412	4,474	4,568	4,680	4,803	4,934	5,071	5,218	5,366
B	3,950	3,939	3,969	4,007	4,070	4,141	4,217	4,298	4,385	4,474
C	3,713	3,664	3,643	3,646	3,663	3,685	3,711	3,739	3,771	3,802
D	3,476	3,387	3,326	3,286	3,256	3,230	3,205	3,180	3,157	3,132
9 years:										
A	4,403	4,383	4,409	4,472	4,566	4,678	4,801	4,932	5,069	5,216
B	4,003	3,948	3,937	3,957	4,006	4,068	4,139	4,215	4,296	4,383
C	3,803	3,711	3,662	3,641	3,645	3,661	3,683	3,709	3,737	3,770
D	3,603	3,474	3,386	3,324	3,284	3,254	3,228	3,204	3,179	3,156
10 to 14 years:										
A		22,042	21,696	21,545	21,736	22,217	22,492	22,909	23,432	24,030
B	22,579	21,642	20,861	20,228	19,917	19,835	10,900	20,091	20,369	20,708
C		21,442	20,425	19,528	18,891	18,449	18,306	18,277	18,324	18,422
D		21,242	19,987	18,813	17,859	17,068	16,711	16,465	16,283	16,136
10 years:										
A		4,402	4,382	4,408	4,471	4,565	4,677	4,800	4,931	5,068
B	4,086	4,002	3,947	3,926	3,964	4,004	4,057	4,126	4,214	4,296
C		3,802	3,711	3,661	3,649	3,644	3,669	3,692	3,708	3,726
D		3,602	3,473	3,396	3,323	3,283	3,254	3,228	3,203	3,170

TABLE A-3.—*Projected population of the Soviet Union, by age and sex, January 1, 1967 to 1985*—Continued

[In thousands]

Series and age	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985
BOTH SEXES—con.										
11 years:										
A	4,276	4,085	4,401	4,381	4,407	4,470	4,564	4,676	4,799	4,930
B			4,001	3,946	3,935	3,955	4,003	4,066	4,137	4,213
C			3,801	3,710	3,660	3,639	3,643	3,659	3,681	3,708
D			3,601	3,472	3,384	3,323	3,282	3,253	3,227	3,202
12 years:										
A	4,557	4,275	4,084	4,400	4,379	4,406	4,469	4,562	4,675	4,798
B				4,000	3,945	3,934	3,954	4,002	4,065	4,136
C				3,801	3,709	3,659	3,638	3,642	3,658	3,681
D				3,600	3,471	3,384	3,322	3,281	3,252	3,226
13 years:										
A	4,725	4,556	4,274	4,083	4,399	4,378	4,405	4,467	4,561	4,674
B					3,999	3,944	3,933	3,953	4,001	4,064
C					3,800	3,708	3,658	3,637	3,641	3,658
D					3,599	3,470	3,383	3,321	3,281	3,251
14 years:										
A	4,935	4,724	4,555	4,273	4,082	4,398	4,377	4,404	4,466	4,560
B						3,998	3,943	3,932	3,952	4,000
C						3,799	3,707	3,657	3,636	3,640
D						3,598	3,470	3,382	3,320	3,280
15 to 19 years:										
A	24,556	24,773	24,647	24,257	23,539	22,541	22,007	21,662	21,513	21,710
B							21,607	20,828	20,208	19,891
C							21,408	20,393	19,498	18,865
D							21,207	19,955	18,786	17,837
15 years:										
A	5,080	4,933	4,723	4,554	4,272	4,081	4,397	4,376	4,403	4,465
B							3,997	3,942	3,931	3,951
C							3,798	3,706	3,656	3,635
D							3,597	3,469	3,381	3,319
16 years:										
A	4,989	5,078	4,931	4,721	4,552	4,270	4,079	4,396	4,375	4,402
B								3,996	3,941	3,930
C								3,797	3,705	3,655
D								3,596	3,468	3,380
17 years:										
A	4,941	4,987	5,076	4,929	4,719	4,550	4,269	4,078	4,394	4,374
B									3,995	3,940
C									3,796	3,704
D									3,596	3,467
18 years:										
A	4,841	4,937	4,983	5,073	4,926	4,717	4,548	4,267	4,077	4,393
B										3,994
C										3,795
D										3,596
19 years:										
A	4,705	4,838	4,934	4,980	5,070	4,923	4,714	4,545	4,264	4,076
B										
C										
D										
20 to 24 years:										
A	22,681	22,926	23,269	23,853	24,107	24,486	24,704	24,582	24,194	23,489
B										
C										
D										
20 years:										
A	4,691	4,703	4,836	4,932	4,978	5,068	4,921	4,712	4,543	4,263
B										
C										
D										
21 years:										
A	4,722	4,688	4,700	4,833	4,929	4,975	5,065	4,919	4,710	4,541
B										
C										
D										
22 years:										
A	4,340	4,718	4,684	4,696	4,829	4,926	4,972	5,062	4,916	4,707
B										
C										
D										
23 years:										
A	4,483	4,338	4,715	4,681	4,694	4,826	4,923	4,969	5,059	4,914
B										
C										
D										

TABLE A-3.—*Projected population of the Soviet Union, by age and sex, January 1, 1967 to 1985*—Continued

[In thousands]

Series and age	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985
BOTH SEXES—con.										
24 years:										
A										
B	4,445	4,479	4,334	4,711	4,677	4,691	4,823	4,920	4,966	5,056
C										
D										
25 to 29 years	19,061	20,393	21,375	21,704	22,243	22,595	22,842	23,186	23,771	24,027
30 to 34 years	12,277	11,733	12,814	15,007	17,130	18,964	20,295	21,277	21,607	22,145
35 to 39 years	21,464	21,145	18,944	16,058	13,717	12,192	11,656	12,734	14,921	17,035
40 to 44 years	17,191	17,692	18,736	19,655	20,690	21,259	20,944	18,764	15,903	13,586
45 to 49 years	18,407	17,871	17,436	17,368	17,010	16,922	17,422	18,456	19,365	20,386
50 to 54 years	13,699	15,434	16,877	17,774	18,159	17,958	17,439	17,020	16,955	16,610
55 to 59 years	9,228	9,326	9,739	10,515	11,647	13,185	14,850	16,235	17,097	17,462
60 to 64 years	10,126	9,655	9,230	8,947	8,779	8,705	8,802	9,197	9,934	11,006
65 to 69 years	9,146	9,497	9,706	9,715	9,549	9,206	8,781	8,400	8,146	7,999
70 to 74 years	6,690	6,847	7,033	7,261	7,526	7,846	8,149	8,327	8,333	8,189
75 years and over	8,060	8,398	8,739	9,077	9,414	9,740	10,069	10,423	10,809	11,219
Under 16 years:										
A	74,723	75,003	75,542	76,407	77,560	79,106	80,942	82,544	84,237	85,938
B	68,726	68,110	67,735	67,668	67,870	68,445	69,294	70,297	71,409	72,565
C	64,782	63,495	62,437	61,671	61,158	61,003	61,111	61,563	62,149	62,820
D	60,837	58,878	57,134	55,668	54,439	53,562	52,930	52,832	52,901	53,081
16 to 59/54 years:										
A								160,256	161,298	162,285
B	147,613	150,411	152,935	155,067	156,847	158,154	159,105	159,856	160,465	160,980
C								159,657	160,030	160,270
D								159,456	159,593	159,558
60/55 years and over	39,893	40,346	40,887	41,570	42,391	43,364	44,458	45,631	46,847	48,104
12 years and over:										
A				213,947	216,370	218,781	221,211	223,696	226,250	228,886
B	206,803	209,245	211,458	213,547	215,536	217,475	219,390	221,316	223,261	225,235
C				213,348	215,101	216,765	218,364	219,930	221,468	222,968
D				213,147	214,662	216,051	217,335	218,540	219,674	220,738
14 years and over:										
A						209,997	212,337	214,667	217,014	219,414
B	197,521	200,414	203,100	205,464	207,592	209,597	211,503	213,361	215,195	217,035
C						209,398	211,068	212,651	214,169	215,649
D						209,197	210,630	211,938	213,141	214,261
12 to 15 years:										
A				17,310	17,132	17,263	17,648	17,809	18,105	18,497
B	19,297	18,488	17,636	16,910	16,298	15,957	15,827	15,829	15,949	16,161
C				16,711	15,863	15,247	14,801	14,642	14,591	14,614
D				16,510	15,424	14,533	13,772	13,453	13,234	13,076
14 to 34 years:										
A						92,984	94,225	95,111	95,551	95,922
B	83,510	84,549	86,660	89,094	91,101	92,584	93,391	93,805	93,732	93,543
C						92,385	92,956	93,095	92,706	92,157
D						92,184	92,518	92,382	91,678	90,769
35 to 64 years	90,115	91,123	90,962	90,317	90,002	90,221	91,113	92,406	94,175	96,065
65 years and over	23,896	24,742	25,478	26,053	26,489	26,792	26,999	27,150	27,288	27,407
MALE										
All ages:										
A	123,362	125,343	127,366	129,433	131,541	133,688	135,864	138,064	140,281	142,496
B	120,283	121,803	123,257	124,946	126,566	128,214	129,883	131,570	133,266	134,960
C	118,257	119,433	120,636	121,866	123,119	124,392	125,680	126,982	128,287	129,591
D	116,232	117,061	117,913	118,783	119,667	120,571	121,480	122,396	123,314	124,224
Under 5 years:										
A	12,747	13,102	13,450	13,792	14,124	14,436	14,724	14,995	15,242	15,445
B	10,891	11,099	11,318	11,549	11,789	12,030	12,270	12,496	12,701	12,871
C	9,580	9,652	9,752	9,883	10,043	10,225	10,429	10,622	10,795	10,940
D	8,267	8,202	8,186	8,218	8,297	8,422	8,590	8,748	8,891	9,009
Under 1 year:										
A	2,710	2,786	2,844	2,904	2,965	3,020	3,072	3,114	3,148	3,167
B	2,277	2,322	2,370	2,420	2,471	2,517	2,560	2,596	2,623	[illegible]
C	1,968	1,974	2,014	2,057	2,100	2,139	2,176	2,206	2,220	2,243
D	1,630	1,626	1,660	1,694	1,730	1,762	1,792	1,817	1,836	1,847
1 year:										
A	2,617	2,698	2,770	2,828	2,898	2,960	3,006	3,068	3,101	3,134
B	2,218	2,263	2,308	2,357	2,407	2,458	2,506	2,548	2,584	2,612
C	1,930	1,946	1,962	2,003	2,046	2,080	2,120	2,166	2,198	2,220
D	1,641	1,629	1,616	1,660	1,686	1,721	1,754	1,784	1,809	1,828
2 years:										
A	2,541	2,612	2,688	2,706	2,824	2,884	2,946	3,001	3,063	3,096
B	2,172	2,214	2,260	2,304	2,353	2,408	2,454	2,501	2,544	2,580
C	1,911	1,926	1,943	1,968	2,000	2,042	2,086	2,126	2,163	2,198
D	1,651	1,638	1,626	1,613	1,647	1,682	1,718	1,751	1,781	1,806

Table A-3.—*Projected population of the Soviet Union, by age and sex, January 1, 1967 to 1985*—Continued

[In thousands]

Series and age	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985
MALE—con.										
3 years:										
A	2,472	2,539	2,610	2,686	2,762	2,821	2,881	2,942	2,999	3,050
B	2,131	2,170	2,212	2,257	2,302	2,351	2,401	2,452	2,499	2,542
C	1,897	1,910	1,924	1,941	1,957	1,998	2,041	2,084	2,124	2,161
D	1,662	1,649	1,637	1,625	1,611	1,646	1,681	1,716	1,749	1,779
4 years:										
A	2,407	2,471	2,538	2,609	2,685	2,761	2,820	2,880	2,941	2,998
B	2,093	2,130	2,169	2,211	2,256	2,301	2,350	2,400	2,451	2,498
C	1,884	1,896	1,909	1,924	1,940	1,956	1,997	2,040	2,083	2,123
D	1,674	1,661	1,648	1,636	1,624	1,611	1,645	1,680	1,716	1,749
5 to 9 years:										
A	11,417	11,561	11,778	12,047	12,356	12,691	13,045	13,395	13,738	14,069
B	10,194	10,229	10,329	10,473	10,649	10,844	11,052	11,272	11,503	11,743
C	9,479	9,409	9,398	9,423	9,474	9,538	9,610	9,713	9,844	10,003
D	8,767	8,589	8,465	8,372	8,298	8,233	8,169	8,153	8,185	8,266
5 years:										
A	2,348	2,406	2,470	2,537	2,608	2,683	2,760	2,819	2,879	2,940
B	2,060	2,092	2,129	2,168	2,210	2,255	2,300	2,349	2,399	2,450
C	1,875	1,883	1,895	1,908	1,923	1,939	1,955	1,997	2,039	2,082
D	1,689	1,674	1,661	1,648	1,635	1,624	1,610	1,644	1,679	1,715
6 years:										
A	2,297	2,347	2,405	2,468	2,535	2,607	2,682	2,759	2,818	2,878
B	2,033	2,059	2,091	2,128	2,167	2,209	2,254	2,299	2,348	2,398
C	1,870	1,874	1,882	1,894	1,907	1,922	1,938	1,954	1,996	2,038
D	1,708	1,688	1,673	1,660	1,647	1,635	1,623	1,609	1,644	1,679
7 years:										
A	2,265	2,296	2,346	2,403	2,467	2,534	2,605	2,681	2,758	2,816
B	2,022	2,032	2,056	2,090	2,127	2,166	2,208	2,253	2,298	2,347
C	1,880	1,869	1,873	1,881	1,893	1,906	1,921	1,936	1,953	1,995
D	1,739	1,707	1,688	1,672	1,659	1,646	1,634	1,622	1,609	1,643
8 years:										
A	2,249	2,264	2,295	2,345	2,402	2,466	2,533	2,604	2,680	2,756
B	2,026	2,021	2,031	2,057	2,089	2,126	2,165	2,207	2,252	2,297
C	1,904	1,880	1,869	1,872	1,880	1,892	1,905	1,920	1,937	1,952
D	1,783	1,738	1,706	1,687	1,671	1,656	1,645	1,633	1,621	1,608
9 years:										
A	2,258	2,248	2,262	2,294	2,344	2,401	2,465	2,532	2,603	2,679
B	2,053	2,025	2,020	2,030	2,056	2,088	2,125	2,164	2,206	2,251
C	1,950	1,903	1,879	1,868	1,871	1,879	1,891	1,904	1,919	1,936
D	1,848	1,782	1,737	1,705	1,686	1,670	1,657	1,645	1,632	1,621
10 to 14 years:										
A	11,583	11,306	11,125	11,046	11,143	11,390	11,533	11,749	12,019	12,329
B		11,100	10,697	10,378	10,210	10,169	10,204	10,304	10,448	10,624
C		10,997	10,473	10,012	9,684	9,458	9,386	9,373	9,398	9,432
D		10,895	10,249	9,645	9,154	8,745	8,569	8,444	8,352	8,279
10 years:										
A	2,098	2,257	2,247	2,261	2,293	2,343	2,400	2,464	2,531	2,602
B		2,052	2,024	2,019	2,029	2,056	2,087	2,124	2,163	2,205
C		1,949	1,903	1,878	1,867	1,870	1,878	1,890	1,903	1,918
D		1,847	1,781	1,736	1,704	1,685	1,670	1,657	1,644	1,632
11 years:										
A	2,194	2,096	2,256	2,246	2,260	2,292	2,342	2,399	2,463	2,530
B			2,051	2,023	2,018	2,028	2,054	2,086	2,123	2,162
C			1,948	1,902	1,877	1,866	1,869	1,877	1,889	1,902
D			1,846	1,780	1,735	1,704	1,684	1,669	1,656	1,643
12 years:										
A	2,336	2,193	2,094	2,255	2,244	2,259	2,291	2,340	2,398	2,462
B				2,050	2,022	2,017	2,027	2,053	2,085	2,122
C				1,948	1,901	1,876	1,865	1,868	1,876	1,889
D				1,845	1,779	1,735	1,703	1,683	1,668	1,655
13 years:										
A	2,424	2,337	2,192	2,093	2,254	2,243	2,258	2,289	2,339	2,397
B					2,049	2,021	2,016	2,026	2,052	2,084
C					1,947	1,900	1,875	1,864	1,867	1,875
D					1,844	1,778	1,734	1,702	1,683	1,667
14 years:										
A	2,531	2,428	2,336	2,191	2,092	2,253	2,242	2,257	2,288	2,338
B						2,048	2,020	2,015	2,025	2,051
C						1,946	1,899	1,874	1,863	1,866
D						1,843	1,778	1,733	1,701	1,682
15 to 19 years:										
A	12,570	12,682	12,694	12,449	12,070	11,585	11,277	11,096	11,017	11,119
B							11,072	10,689	10,349	10,185
C							10,970	10,468	9,986	9,669
D							10,867	10,222	9,621	9,159
15 years:										
A	2,606	2,530	2,427	2,335	2,190	2,091	2,252	2,241	2,256	2,287
B							2,047	2,019	2,014	2,050
C							1,945	1,898	1,873	1,862
D							1,842	1,777	1,732	1,700

TABLE A-3.—*Projected population of the Soviet Union, by age and sex, January 1, 1967 to 1985*—Continued

[In thousands]

Series and age	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985
MALE—con.										
16 years:										
A	2,560	2,605	2,529	2,421	2,334	2,189	2,090	2,251	2,240	2,255
B								2,046	2,018	2,013
C								1,944	1,897	1,872
D								1,841	1,776	1,731
17 years:										
A	2,528	2,559	2,604	2,528	2,420	2,333	2,188	2,089	2,249	2,239
B									2,045	2,017
C									1,943	1,896
D									1,841	1,775
18 years:										
A	2,475	2,525	2,556	2,602	2,526	2,418	2,331	2,186	2,088	2,248
B										2,044
C										1,942
D										1,840
19 years:										
A	2,401	2,473	2,523	2,554	2,600	2,524	2,416	2,329	2,184	2,087
B										
C										
D										
20 to 24 years:										
A	11,531	11,666	11,854	12,165	12,314	12,525	12,648	12,593	12,400	12,032
B										
C										
D										
20 years:										
A	2,390	2,400	2,472	2,522	2,553	2,599	2,523	2,415	2,328	2,183
B										
C										
D										
21 years:										
A	2,403	2,388	2,398	2,470	2,520	2,551	2,507	2,522	2,414	2,327
B										
C										
D										
22 years:										
A	2,205	2,400	2,385	2,395	2,467	2,518	2,549	2,505	2,520	2,412
B										
C										
D										
23 years:										
A	2,277	2,204	2,398	2,383	2,394	2,465	2,516	2,547	2,503	2,519
B										
C										
D										
24 years:										
A	2,286	2,274	2,201	2,395	2,380	2,392	2,463	2,514	2,545	2,591
B										
C										
D										
25 to 29 years	9,646	10,326	10,830	11,003	11,283	11,470	11,607	11,796	12,108	12,259
30 to 34 years	6,150	5,897	6,452	7,564	8,643	9,574	10,253	10,757	10,931	11,210
35 to 39 years	10,566	10,440	9,262	7,979	6,834	6,094	5,846	6,397	7,503	8,576
40 to 44 years	8,401	8,640	9,144	9,599	10,135	10,442	10,317	9,272	7,894	6,753
45 to 49 years	8,517	8,409	8,328	8,388	8,269	8,233	8,470	8,967	9,416	9,944
50 to 54 years	5,610	6,532	7,320	7,878	8,194	8,245	8,146	8,073	8,133	8,011
55 to 59 years	3,357	3,377	3,560	3,945	4,524	5,318	6,193	6,961	7,472	7,771
60 to 64 years	3,638	3,475	3,324	3,217	3,144	3,094	3,114	3,267	3,646	4,199
65 to 69 years	3,237	3,342	3,394	3,362	3,317	3,199	3,059	2,930	2,839	2,777
70 to 74 years	2,086	2,210	2,335	2,449	2,554	2,650	2,746	2,786	2,779	2,727
75 years and over	2,304	2,389	2,446	2,539	2,646	2,762	2,886	3,018	3,152	3,298
Under 16 years:										
A	39,353	38,498	38,775	39,220	39,813	40,608	41,554	42,280	43,256	44,120
B	35,274	34,958	34,706	34,733	34,838	35,194	35,573	36,091	36,606	37,262
C	33,248	32,588	32,045	31,653	31,391	31,312	31,370	31,606	31,910	32,257
D	31,223	30,216	29,322	28,570	27,930	27,491	27,170	27,122	27,160	27,254
16 to 59 years:										
A	73,744	75,449	77,092	78,626	80,087	81,386	82,505	83,661	84,608	85,385
B								83,456	84,182	84,717
C								83,254	83,909	84,353
D								83,251	83,726	83,989
60 years and over	11,286	11,396	11,499	11,587	11,661	11,715	11,805	12,023	12,418	12,981
12 years and over:										
A	94,998	96,338	97,686	99,087	100,508	101,926	103,353	104,811	106,307	107,880
B				98,882	100,081	101,257	102,429	103,592	104,776	105,979
C				98,780	99,858	100,898	101,894	102,881	103,856	104,827
D				98,677	99,638	100,527	101,367	102,169	102,928	103,674

TABLE A-3.—*Projected population of the Soviet Union, by age and sex, January 1, 1967 to 1985*—Continued

[In thousands]

Series and age	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985
MALE—con.										
14 years and over:										
A	90,146	91,798	93,349	94,739	96,010	97,424	98,8 4	100,182	101,570	102,991
B						97,219	98,377	99,513	100,639	101,773
C						97,117	98,154	99,149	100,113	101,062
D						97,014	97,930	98,784	99,587	100,352
12 to 15 years:										
A	9,899	9,483	9,044	8,874	8,780	8,846	9,043	9,127	9,281	9,484
B				8,669	8,353	8,177	8,110	8,113	8,176	8,281
C				8,567	8,130	7,813	7,584	7,504	7,479	7,493
D				8,464	7,905	7,447	7,057	6,895	6,784	6,704
14 to 34 years:										
A	42,428	43,004	44,106	45,363	46,402	47,377	48,027	48,490	48,744	48,955
B						47,172	47,600	47,830	47,813	47,737
C						47,070	47,377	47,466	47,287	47,028
D						46,967	47,153	47,101	46,761	46,316
35 to 64 years	40,091	40,873	41,068	41,006	41,091	41,426	42,086	42,947	44,056	45,244
65 years and over	7,627	7,921	8,175	8,370	8,517	8,621	8,691	8,736	8,770	8,792
FEMALE										
All ages:										
A	138,867	140,417	141,998	143,611	145,257	146,936	148,641	150,367	152,101	153,831
B	135,949	137,064	138,200	139,359	140,542	141,749	142,974	144,214	145,455	146,689
C	134,031	134,819	135,623	136,442	137,277	138,129	138,994	139,868	140,739	141,603
D	132,111	132,574	133,043	133,522	134,010	134,509	135,013	135,523	136,027	136,519
Under 5 years:										
A	12,068	12,401	12,729	13,051	13,363	13,660	13,928	14,186	14,417	14,610
B	10,311	10,506	10,712	10,928	11,154	11,383	11,607	11,822	12,014	12,173
C	9,069	9,135	9,231	9,353	9,502	9,675	9,866	10,048	10,211	10,348
D	7,827	7,766	7,748	7,776	7,850	7,969	8,124	8,276	8,410	8,524
Under 1 year:										
A	2,563	2,636	2,689	2,746	2,803	2,857	2,904	2,945	2,975	2,994
B	2,154	2,197	2,241	2,288	2,336	2,381	2,420	2,454	2,479	2,495
C	1,852	1,867	1,905	1,945	1,986	2,024	2,057	2,086	2,107	2,121
D	1,551	1,538	1,569	1,602	1,635	1,667	1,694	1,718	1,735	1,747
1 year:										
A	2,477	2,548	2,622	2,675	2,732	2,790	2,844	2,892	2,933	2,964
B	2,099	2,141	2,185	2,229	2,277	2,325	2,370	2,410	2,444	2,470
C	1,826	1,841	1,857	1,895	1,935	1,976	2,014	2,048	2,077	2,099
D	1,553	1,542	1,529	1,560	1,594	1,628	1,659	1,687	1,711	1,729
2 years:										
A	2,407	2,473	2,544	2,618	2,671	2,729	2,786	2,840	2,888	2,929
B	2,057	2,096	2,138	2,182	2,226	2,274	2,322	2,367	2,407	2,441
C	1,810	1,824	1,839	1,855	1,892	1,933	1,974	2,012	2,046	2,075
D	1,563	1,551	1,539	1,527	1,558	1,592	1,625	1,657	1,685	1,709
3 years:										
A	2,341	2,404	2,471	2,542	2,616	2,669	2,726	2,784	2,838	2,886
B	2,018	2,055	2,094	2,136	2,180	2,224	2,272	2,320	2,365	2,405
C	1,796	1,808	1,822	1,837	1,853	1,890	1,931	1,972	2,010	2,044
D	1,574	1,562	1,550	1,538	1,526	1,557	1,590	1,624	1,656	1,684
4 years:										
A	2,280	2,340	2,403	2,470	2,541	2,615	2,668	2,725	2,783	2,837
B	1,983	2,017	2,054	2,093	2,135	2,179	2,223	2,271	2,319	2,364
C	1,785	1,795	1,808	1,821	1,836	1,852	1,890	1,930	1,971	2,009
D	1,586	1,573	1,561	1,549	1,537	1,525	1,556	1,590	1,623	1,655
5 to 9 years:										
A	10,832	10,964	11,166	11,418	11,707	12,021	12,356	12,683	13,005	13,319
B	9,671	9,701	9,792	9,928	10,089	10,272	10,468	10,674	10,891	11,117
C	8,995	8,924	8,908	8,930	8,976	9,035	9,102	9,197	9,319	9,471
D	8,317	8,146	8,025	7,935	7,863	7,799	7,739	7,721	7,751	7,826
5 years:										
A	2,224	2,279	2,339	2,402	2,469	2,539	2,614	2,686	2,754	2,813
B	1,961	1,982	2,016	2,053	2,092	2,134	2,178	2,222	2,270	2,318
C	1,775	1,784	1,794	1,807	1,820	1,835	1,851	1,869	1,889	1,910
D	1,600	1,586	1,572	1,560	1,548	1,536	1,525	1,515	1,509	1,513
6 years:										
A	2,179	2,223	2,278	2,337	2,401	2,467	2,538	2,612	2,686	2,758
B	1,928	1,950	1,981	2,015	2,052	2,091	2,133	2,177	2,221	2,269
C	1,774	1,774	1,783	1,793	1,808	1,819	1,834	1,850	1,868	1,889
D	1,620	1,599	1,585	1,572	1,560	1,547	1,536	1,524	1,515	1,508
7 years:										
A	2,146	2,179	2,223	2,278	2,337	2,401	2,467	2,538	2,612	2,686
B	1,913	1,928	1,950	1,981	2,015	2,052	2,091	2,133	2,177	2,221
C	1,784	1,774	1,774	1,783	1,793	1,808	1,819	1,834	1,850	1,868
D	1,640	1,620	1,599	1,585	1,572	1,560	1,547	1,536	1,524	1,515

TABLE A-3.—*Projected population of the Soviet Union, by age and sex, January 1, 1967 to 1985*—Continued

[In thousands]

Series and age	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985
FEMALE—CON.										
8 years:										
A	2,136	2,148	2,179	2,223	2,278	2,337	2,401	2,467	2,536	2,612
B	1,924	1,918	1,928	1,950	1,981	2,015	2,052	2,091	2,133	2,177
C	1,809	1,784	1,774	1,774	1,783	1,793	1,806	1,819	1,834	1,850
D	1,603	1,649	1,620	1,599	1,585	1,572	1,560	1,547	1,536	1,524
9 years:										
A	2,145	2,135	2,147	2,178	2,222	2,277	2,336	2,400	2,466	2,537
B	1,950	1,923	1,917	1,927	1,949	1,980	2,014	2,051	2,090	2,132
C	1,853	1,808	1,783	1,773	1,774	1,782	1,792	1,805	1,818	1,834
D	1,755	1,692	1,649	1,619	1,598	1,584	1,571	1,559	1,547	1,535
10 to 14 years:										
A	10,998	10,737	10,571	10,499	10,595	10,827	10,959	11,160	11,413	11,701
B		10,542	10,164	9,862	9,707	9,666	9,696	9,787	9,921	10,084
C		10,445	9,952	9,516	9,207	8,991	8,920	8,904	8,926	8,971
D		10,347	9,738	9,166	8,706	8,313	8,142	8,021	7,931	7,859
10 years:										
A	1,990	2,145	2,135	2,147	2,178	2,222	2,277	2,336	2,400	2,466
B		1,950	1,923	1,917	1,927	1,949	1,980	2,014	2,051	2,090
C		1,853	1,808	1,783	1,773	1,774	1,782	1,792	1,805	1,818
D		1,755	1,692	1,649	1,619	1,598	1,584	1,571	1,559	1,547
11 years:										
A	2,082	1,990	2,145	2,135	2,147	2,178	2,222	2,277	2,336	2,400
B			1,950	1,923	1,917	1,927	1,949	1,980	2,014	2,051
C			1,853	1,808	1,783	1,773	1,774	1,782	1,792	1,805
D			1,755	1,692	1,649	1,619	1,598	1,584	1,571	1,559
12 years:										
A	2,219	2,082	1,990	2,145	2,135	2,147	2,178	2,222	2,277	2,336
B				1,950	1,923	1,917	1,927	1,949	1,980	2,014
C				1,853	1,808	1,783	1,773	1,774	1,782	1,792
D				1,755	1,692	1,649	1,619	1,598	1,584	1,571
13 years:										
A	2,201	2,219	2,082	1,990	2,145	2,135	2,147	2,178	2,222	2,277
B					1,950	1,923	1,917	1,927	1,949	1,980
C					1,853	1,808	1,783	1,773	1,774	1,782
D					1,755	1,692	1,649	1,619	1,598	1,584
14 years:										
A	2,404	2,201	2,219	2,082	1,990	2,145	2,135	2,147	2,178	2,222
B						1,950	1,923	1,917	1,927	1,949
C						1,853	1,808	1,783	1,773	1,774
D						1,755	1,692	1,649	1,619	1,598
15 to 19 years:										
A	11,986	12,081	12,013	11,817	11,469	10,986	10,730	10,566	10,496	10,594
B							10,535	10,159	9,859	9,706
C							10,438	9,947	9,513	9,206
D							10,340	9,733	9,165	8,704
15 years:										
A	2,474	2,403	2,301	2,219	2,082	1,990	2,145	2,135	2,147	2,178
B							1,950	1,923	1,917	1,927
C							1,853	1,808	1,783	1,773
D							1,755	1,692	1,649	1,619
16 years:										
A	2,429	2,473	2,402	2,300	2,218	2,081	1,989	2,145	2,135	2,147
B								1,950	1,923	1,917
C								1,853	1,808	1,783
D								1,755	1,692	1,649
17 years:										
A	2,413	2,428	2,472	2,401	2,299	2,217	2,081	1,989	2,145	2,135
B									1,950	1,923
C									1,853	1,808
D									1,755	1,692
18 years:										
A	2,366	2,412	2,427	2,471	2,400	2,299	2,217	2,081	1,989	2,145
B										1,950
C										1,853
D										1,755
19 years:										
A	2,304	2,365	2,411	2,426	2,470	2,399	2,296	2,216	2,080	1,989
B										
C										
D										
20 to 24 years:										
A	11,150	11,269	11,415	11,626	11,798	11,961	12,056	11,989	11,794	11,448
B										
C										
D										

TABLE A-3.—*Projected population of the Soviet Union, by age and sex, January 1, 1967 to 1985*—Continued

[In thousands]

Series and age	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985
FEMALE—con										
20 years:										
A										
B	2,301	2,303	2,364	2,410	2,425	2,469	2,398	2,297	2,215	2,079
C										
D										
21 years:										
A										
B	2,319	2,300	2,302	2,363	2,409	2,424	2,468	2,397	2,296	2,214
C										
D										
22 years:										
A										
B	2,135	2,318	2,299	2,301	2,362	2,408	2,423	2,467	2,396	2,295
C										
D										
23 years:										
A										
B	2,206	2,134	2,317	2,298	2,300	2,361	2,407	2,422	2,466	2,395
C										
D										
24 years:										
A										
B	2,189	2,205	2,133	2,316	2,297	2,299	2,360	2,406	2,421	2,465
C										
D										
25 to 29 years	9,415	10,067	10,545	10,701	10,960	11,125	11,235	11,390	11,663	11,768
30 to 34 years	6,127	5,836	6,362	7,443	8,487	9,390	10,042	10,520	10,676	10,935
35 to 39 years	10,896	10,705	9,562	8,079	6,883	6,098	5,810	6,337	7,418	8,459
40 to 44 years	8,790	9,052	9,592	10,056	10,555	10,817	10,627	9,492	8,019	6,833
45 to 49 years	9,890	9,462	9,108	8,980	8,750	8,689	8,952	9,480	9,949	10,442
50 to 54 years	8,089	8,902	9,547	9,896	9,965	9,713	9,293	8,947	8,822	8,599
55 to 59 years	5,871	5,949	6,179	6,570	7,123	7,867	8,657	9,284	9,625	9,691
60 to 64 years	6,488	6,180	5,906	5,730	5,635	5,611	5,688	5,910	6,286	6,817
65 to 69 years	5,909	6,155	6,312	6,333	6,232	6,007	5,722	5,470	5,307	5,222
70 to 74 years	4,604	4,637	4,698	4,812	4,972	5,186	5,403	5,539	5,554	5,462
75 years and over	5,756	6,029	6,293	6,538	6,768	6,978	7,183	7,405	7,657	7,931
Under 16 years:										
A	36,370	36,505	36,767	37,187	37,747	38,498	39,388	40,164	40,982	41,808
B	33,452	33,152	32,969	32,935	33,032	33,311	33,721	34,206	34,743	35,303
C	31,534	30,907	30,392	30,018	29,767	29,691	29,741	29,957	30,239	30,563
D	29,614	28,662	27,812	27,098	26,500	26,071	25,760	25,710	25,741	25,827
16 to 54 years:										
A								[76,595	76,690	76,900
B								76,400	76,283	76,263
C	73,869	74,962	75,843	76,441	76,780	76,789	76,600	76,303	76,071	75,917
D								76,205	75,857	75,589
55 years and over	28,628	28,950	29,388	29,983	30,730	31,649	32,653	33,608	34,429	35,123
12 years and over:										
A				[114,860	115,862	116,855	117,858	118,885	119,943	121,036
B	111,895	112,917	113,823	114,665	115,455	116,218	116,970	117,724	118,485	119,256
C				114,568	115,243	115,872	116,470	117,049	117,612	118,161
D				[114,470	115,029	115,524	115,968	116,371	116,736	117,064
14 years and over:										
A						[112,573	113,533	114,485	115,444	116,423
B	107,375	108,616	109,751	110,725	111,582	112,378	113,126	113,848	114,556	115,282
C						112,281	112,914	113,502	114,056	114,587
D						[112,183	112,700	113,154	113,554	113,909
12 to 15 years:										
A				[8,436	8,352	8,417	8,605	8,682	8,824	9,013
B	9,398	9,036	8,592	8,241	7,945	7,780	7,717	7,716	7,773	7,870
C				8,144	7,733	7,434	7,217	7,138	7,112	7,121
D				[8,046	7,519	7,086	6,715	6,556	6,450	6,372
14 to 34 years:										
A						[45,607	46,198	46,612	46,807	46,967
B	41,082	41,545	42,554	43,731	44,699	45,412	45,791	45,975	45,919	45,808
C						45,315	45,579	45,629	45,419	45,131
D						[45,217	45,365	45,281	44,917	44,453
35 to 64 years	50,024	50,250	49,894	49,311	48,911	48,795	49,027	49,459	50,119	50,841
65 years and over	16,269	16,821	17,308	17,883	17,972	18,171	18,308	18,414	18,518	18,615

TABLE A–4.—*Population of cities in the Soviet Union with 100,000 inhabitants or more in 1965, by administrative area: 1939, 1959, 1962, and 1965*

[Population figures in thousands. Figures for 1939 presumably relate to the beginning of the year; those for 1959 relate to the census of January 15. All other figures for cities relate to January 1. A minus sign (−) in the percent columns denotes a decrease]

Area and city	Population				Percent change			
	1939	1959	1962	1965	1939–65	1939–59	1959–62	1962–65
U.S.S.R.	34,197	51,050	57,064	61,561	80.1	49.3	11.8	7.9
R.S.F.S.R.	22,043	33,157	37,125	39,769	80.4	50.4	12.0	7.1
Altay Kray	266	562	639	693	160.5	111.3	13.7	8.5
Barnaul	148	305	347	382	158.1	106.1	13.8	10.1
Biysk	80	146	165	175	118.8	82.5	13.0	6.1
Rubtsovsk	38	111	127	136	257.9	192.1	14.4	7.1
Khabarovsk Kray	278	500	555	612	120.1	79.9	11.0	10.3
Khabarovsk	207	323	363	408	97.1	56.0	12.4	12.4
Komsomolsk—on—Amur	71	177	192	204	187.3	149.3	8.5	6.3
Krasnodar Kray	443	644	755	810	82.8	45.4	17.2	7.3
Armavir	84	111	123	131	56.0	32.1	10.8	6.5
Krasnodar	193	313	354	385	99.5	62.2	13.1	8.8
Novorossiysk	95	93	104	115	21.1	−2.1	11.8	10.6
Sochi	71	127	174	179	152.1	78.9	37.0	2.9
Krasnoyarsk Kray	190	412	465	541	184.7	116.8	12.9	16.3
Krasnoyarsk	190	412	465	541	184.7	116.8	12.9	16.3
Maritime Kray	278	395	438	488	75.5	42.1	10.9	11.4
Ussuriysk	72	104	113	121	68.1	44.4	8.7	7.1
Vladivostok	206	291	325	367	78.2	41.3	11.7	12.9
Stavropol Kray	137	226	253	280	104.4	65.0	11.9	10.7
Stavropol	85	141	154	165	94.1	65.9	9.2	7.1
Karachay Cherkess Autonomous Oblast	52	85	99	115	121.2	63.5	16.5	16.2
Cherkessy	52	85	99	115	121.2	63.5	16.5	16.2
Amur Oblast	59	95	101	114	93.2	61.0	6.3	12.9
Blagoveshchensk	59	95	101	114	93.2	61.0	6.3	12.9
Arkhangelsk Oblast	251	256	276	303	20.7	2.0	7.8	9.8
Arkhangelsk	251	256	276	303	20.7	2.0	7.8	9.8
Astrakhan Oblast	254	296	320	342	34.6	16.5	8.1	6.9
Astrakhan	254	296	320	342	34.6	16.5	8.1	6.9
Bryansk Oblast	174	207	241	267	53.4	19.0	16.4	10.8
Bryansk	174	207	241	267	53.4	19.0	16.4	10.8
Chelyabinsk Oblast	616	1,421	1,528	1,613	161.9	130.7	7.5	5.6
Chelyabinsk	273	689	751	805	194.9	152.4	9.0	7.2
Kopeysk	60	161	166	168	180.0	168.3	4.3	0.0
Magnitogorsk	146	311	333	348	138.4	113.0	7.1	4.5
Miass	36	99	109	117	207.9	160.5	10.1	7.3
Zlatoust	99	161	167	175	76.8	62.6	3.7	4.8
Chita Oblast	121	172	185	198	63.6	42.1	7.6	7.0
Chita	121	172	185	198	63.6	42.1	7.6	7.0
Gorkiy Oblast	747	1,106	1,206	1,278	71.1	48.1	9.0	6.1
Dzerzhinsk	103	164	189	198	87.4	59.2	9.8	7.2
Gorkiy	644	942	1,026	1,086	68.5	46.3	8.8	5.9

TABLE A–4.—*Population of cities in the Soviet Union with 100,000 inhabitants or more in 1965, by administrative area: 1939, 1959, 1962, and 1965*—Con.

Area and city	Population				Percent change			
	1939	1959	1962	1965	1939–65	1939–59	1959–62	1962–65
R.S.F.S.R.—Continued								
Irkutsk Oblast	306	623	664	690	125.5	103.6	6.6	3.9
Angarsk	(1)	134	160	176	.....	(1)	19.4	10.0
Cheremkhovo	56	123	119	113	101.8	119.6	−3.3	−5.0
Irkutsk	250	366	385	401	60.4	46.4	5.2	4.2
Ivanovo Oblast	285	335	360	389	36.5	17.5	7.5	8.1
Ivanovo	285	335	360	389	36.5	17.5	7.5	8.1
Kaliningrad Oblast	(2)	204	232	253	.....	(2)	13.7	9.1
Kaliningrad	(2)	204	232	253	.....	(2)	13.7	9.1
Kalinin Oblast	216	261	286	306	41.7	20.8	9.6	7.0
Kalinin	216	261	286	306	41.7	20.8	9.6	7.0
Kaluga Oblast	89	134	151	169	89.9	50.6	12.7	11.9
Kaluga	89	134	151	169	89.9	50.6	12.7	11.9
Kamchatka Oblast	35	86	100	115	228.6	145.7	16.3	15.0
Petropavlovsk-Kamchatskiy	35	86	100	115	228 6	145.7	16.3	15.0
Kemerovo Oblast	645	1,422	1,527	1,631	152.9	120.5	7.4	6.8
Anzhero-Sudzhensk	69	116	120	119	72.5	68.1	3.4	−0.8
Belovo	43	107	118	114	165.1	148.8	10.3	−3.4
Kemerovo	133	278	305	351	163.9	109.0	9.7	15.1
Kiselevsk	44	130	142	140	218.2	195.5	9.2	−1.4
Leninsk-Kuznetskiy	83	132	140	141	69.9	59.0	6.1	0.7
Prokopyevsk	107	282	292	291	172.0	163.6	3.5	−0.4
Novokuznetsk	166	377	410	475	186.1	127.1	8.8	15.9
Kirov Oblast	144	252	277	296	105.6	75.0	9.9	6.9
Kirov	144	252	277	296	105.6	75.0	9.9	6.9
Kostroma Oblast	121	172	189	202	66.9	42.1	9.9	6.9
Kostroma	121	172	189	202	66.9	42.1	9.9	6.9
Kurgan Oblast	53	146	173	198	273.6	175.5	18.5	14.5
Kurgan	53	146	173	198	273.6	175.5	18.5	14.5
Kursk Oblast	120	206	228	245	104.2	70.8	11.2	7.5
Kursk	120	206	228	245	104.2	70.8	11.2	7.5
Kuybyshev Oblast	473	965	1,040	1,113	135.3	101.9	8.9	7.0
Kuybyshev	390	806	861	948	143.1	106.7	9.3	7.6
Syzran	83	149	159	165	98.8	79.5	6.7	3.8
Leningrad Oblast	3,104	2,986	3,036	3,239	4.3	−3.9	1.7	6.7
Leningrad	3,104	2,986	3,036	3,239	4.3	−3.9	1.7	6.7
Lipetsk Oblast	67	157	194	238	237.3	134.3	23.6	16.5
Lipetsk	67	157	194	238	237.3	134.3	23.6	16.5
Moscow Oblast	4,618	5,771	7,049	7,228	56.5	25.0	22.5	2.2
Elektrostal	43	97	106	113	162.8	125.6	8.2	7.6
Kolomna	75	109	126	130	73.3	33.3	25.0	4.0
Lyubertsy	46	91	109	111	141.3	97.8	9.9	11.0
Moscow	4,132	5,046	6,262	6,488	84.1	22.1	24.1	1.7
Mytishchi	60	99	107	111	85.0	65.0	8.1	3.7
Orekhovo-Zuyevo	99	108	113	116	17.2	9.1	4.6	2.7
Podolsk	72	124	144	157	118.1	72.2	16.1	9.0
Serpukhov	91	108	113	119	30.8	16.5	6.6	5.3

See footnotes at end of table, p. 689.

TABLE A–4.—*Population of cities in the Soviet Union with 100,000 inhabitants or more in 1965, by administrative area: 1939, 1959, 1962, and 1965.*—Con.

Area and city	Population				Percent change			
	1939	1959	1962	1965	1939–65	1939–59	1959–62	1962–65
R.S.F.S.R.—Continued								
Murmansk Oblast	119	222	245	272	128.6	86.6	10.4	11.0
Murmansk	119	222	245	272	128.6	86.6	10.4	11.0
Novosibirsk Oblast	404	886	985	1,029	154.7	119.3	11.2	4.5
Novosibirsk	404	886	985	1,029	154.7	119.3	11.2	4.5
Omsk Oblast	289	581	650	721	149.5	101.0	11.9	10.9
Omsk	289	581	650	721	149.5	101.0	11.9	10.9
Orel Oblast	111	150	174	197	77.5	35.1	16.0	13.2
Orel	111	150	174	197	77.5	35.1	16.0	13.2
Orenburg Oblast	238	443	487	516	116.8	86.1	9.9	6.0
Orenburg	172	267	288	306	77.9	55.2	7.9	6.3
Orsk	66	176	199	210	218.2	166.7	13.1	5.5
Penza Oblast	160	255	286	315	96.9	59.4	12.2	10.1
Penza	160	255	286	315	96.9	59.4	12.2	10.1
Perm Oblast	357	735	821	896	151.0	105.9	11.7	9.1
Berezniki	51	106	120	132	158.8	107.8	13.2	10.0
Perm	306	629	701	764	149.7	105.6	11.4	9.0
Pskov Oblast	60	81	98	108	80.0	35.0	21.0	10.2
Pskov	60	81	98	108	80.0	35.0	21.0	10.2
Rostov Oblast	882	1,102	1,190	1,270	44.0	24.9	8.0	6.7
Novoshakhtinsk	48	104	108	109	127.1	116.7	3.8	0.9
Rostov-on-Don	510	600	661	720	41.2	17.6	10.2	8.9
Shakhty	135	196	201	207	53.3	45.2	2.6	3.0
Taganrog	189	202	220	234	23.8	6.9	8.9	6.4
Ryazan Oblast	95	214	252	287	202.1	125.3	17.8	13.9
Ryazan	95	214	252	287	202.1	125.3	17.8	13.9
Saratov Oblast	441	672	737	799	81.2	52.4	9.7	8.4
Engels	69	91	106	116	68.1	31.9	16.5	9.4
Saratov	372	581	631	683	83.6	56.2	8.6	8.2
Smolensk Oblast	157	147	164	183	16.6	−6.4	11.6	11.6
Smolensk	157	147	164	183	16.6	−6.4	11.6	11.6
Sverdlovsk Oblast	743	1,447	1,570	1,659	123.3	94.8	8.5	5.7
Kamensk-Uralskiy	51	141	152	158	209.8	176.5	7.8	3.9
Nizhniy Tagil	160	329	359	370	131.3	111.9	5.9	3.1
Pervouralsk	44	90	104	108	145.5	104.5	15.6	3.8
Sverdlovsk	423	779	853	919	117.3	84.2	9.5	7.7
Serov	65	98	102	104	60.0	50.8	4.1	2.0
Tambov Oblast	106	172	189	203	91.5	62.3	9.9	7.4
Tambov	106	172	189	203	91.5	62.3	9.9	7.4
Tomsk Oblast	145	249	275	302	108.3	71.7	10.4	9.8
Tomsk	145	249	275	302	108.3	71.7	10.4	9.8
Tula Oblast	348	423	456	489	40.5	21.6	7.8	7.2
Novomoskovsk	76	107	114	123	61.8	40.8	6.5	7.9
Tula	272	316	342	366	34.6	16.2	8.2	7.0
Tyumen Oblast	79	150	174	201	154.4	89.9	16.0	15.5
Tyumen	79	150	174	201	154.4	89.9	16.0	15.5

TABLE A-4.—*Population of cities in the Soviet Union with 100,000 inhabitants or more in 1965, by administrative area: 1939, 1959, 1962, and 1965*—Con.

Area and city	Population				Percent change			
	1939	1959	1962	1965	1939-65	1939-59	1959-62	1962-65
R.S.F.S.R.—Continued								
Taymyr (Dolgano-Nenets) National Okrug	14	109	117	124	785.7	678.6	7.3	6.0
Norilsk	14	109	117	124	785.7	678.6	7.3	6.0
Ulyanovsk Oblast	98	206	239	265	170.4	110.2	16.0	10.9
Ulyanovsk	98	206	239	265	170.4	110.2	16.0	10.9
Vladimir Oblast	134	253	279	309	130.6	88.8	10.3	10.8
Vladimir	67	154	174	196	192.5	129.9	13.0	12.6
Kovrov	67	99	105	113	68.7	47.8	6.1	7.6
Vologda Oblast	127	231	273	311	144.9	81.9	18.2	13.9
Cherepovets	32	92	124	152	375.0	187.5	34.8	22.6
Vologda	95	139	149	159	67.4	46.3	7.2	6.7
Volgograd Oblast	445	592	649	700	57.3	33.0	9.6	7.9
Volgograd	445	592	649	700	57.3	33.0	9.6	7.9
Voronezh Oblast	344	448	516	576	67.4	30.2	15.2	11.6
Voronezh	344	448	516	576	67.4	30.2	15.2	11.6
Yaroslavl Oblast	453	589	638	686	51.4	30.0	8.3	7.5
Rybinsk	144	182	195	208	44.4	26.4	7.1	6.7
Yaroslavl	309	407	443	478	54.7	31.7	8.8	7.9
Bashkir A.S.S.R.	297	659	741	816	174.7	121.9	12.4	10.1
Sterlitamak	39	112	131	151	287.2	187.2	17.0	15.3
Ufa	258	547	610	665	157.8	112.0	11.5	9.0
Buryat A.S.S.R.	126	175	196	218	69.0	38.9	12.0	8.7
Ulan-Ude	126	175	196	218	69.0	38.9	12.0	8.7
Chechen-Ingush A.S.S.R.	172	242	280	314	82.6	40.7	15.7	12.1
Groznyy	172	242	280	314	82.6	40.7	15.7	12.1
Chuvash A.S.S.R.	31	104	134	163	425.8	235.5	28.8	21.6
Cheboksary	31	104	134	163	425.8	235.5	28.8	21.6
Dagestan A.S.S.R.	87	119	135	152	74.7	36.8	13.4	12.6
Makhachkala	87	119	135	152	74.7	36.8	13.4	12.6
Kabardin Balkar A.S.S.R.	48	88	102	111	131.3	83.3	15.9	8.8
Nalchik	48	88	102	111	131.3	83.3	15.9	8.8
Karelian A.S.S.R.	70	136	142	157	124.3	94.3	4.4	10.6
Petrozavodsk	70	136	142	157	124.3	94.3	4.4	10.6
Mari A.S.S.R.	27	89	110	129	377.8	229.6	23.6	17.3
Yoshkar-Ola	27	89	110	129	377.8	229.6	23.6	17.3
Mordovian A.S.S.R.	41	91	118	139	239.0	122.0	29.7	17.8
Saransk	41	91	118	139	239.0	122.0	29.7	17.8
North Ossetian A.S.S.R.	131	164	183	208	58.8	25.2	11.6	13.7
Ordzhonikidze	131	164	183	208	58.8	25.2	11.6	13.7
Tatar A.S.S.R.	398	647	711	762	91.5	62.6	9.9	7.2
Kazan	398	647	711	762	91.5	62.6	9.9	7.2

TABLE A-4.—*Population of cities in the Soviet Union with 100,000 inhabitants or more in 1965, by administrative area: 1939, 1959, 1962, and 1965*—Con.

Area and city	Population				Percent change			
	1939	1959	1962	1965	1939-65	1939-59	1959-62	1962-65
R.S.F.S.R.—Continued								
Udmurt A.S.S.R.	176	285	322	351	99.4	61.9	13.0	9.0
Izhevsk	176	285	322	351	99.4	61.9	13.0	9.0
Ukrainian S.S.R.	6,736	8,839	9,659	10,439	55.0	31.2	9.3	8.1
Chernigov Oblast	69	90	107	126	82.6	30.4	18.9	17.8
Chernigov	69	90	107	126	82.6	30.4	18.9	17.8
Chernovtsy Oblast	106	146	150	172	62.3	37.7	2.7	14.7
Chernovtsy	106	146	150	172	62.3	37.7	2.7	14.7
Crimean Oblast	361	432	478	519	43.8	19.7	10.6	8.6
Kerch	104	98	107	114	9.6	−5.8	9.2	6.5
Sevastopol	114	148	169	192	68.4	29.8	14.2	13.6
Simferopol	143	186	202	213	49.0	30.1	8.6	5.4
Dnepropetrovsk Oblast	804	1,242	1,377	1,480	71.3	43.8	10.9	7.5
Dneprodzerzhinsk	148	194	207	218	47.3	31.1	6.7	5.3
Dnepropetrovsk	527	660	722	774	46.9	25.2	9.4	7.2
Krivoy Rog	180	388	448	488	158.2	105.3	15.5	8.9
Donets Oblast	1,205	1,749	1,897	2,041	69.4	45.1	8.5	7.6
Gorlovka	181	293	309	337	86.2	61.9	5.5	9.1
Kramatorsk	94	115	126	135	43.6	22.3	9.6	7.1
Makeyevka	242	358	381	399	64.9	47.9	6.4	4.7
Donetsk	466	699	760	809	73.6	50.0	8.7	6.4
Zhdanov	222	284	321	361	62.6	27.9	13.0	12.5
Kharkov Oblast	833	934	990	1,070	28.5	12.1	6.0	8.1
Kharkov	833	934	990	1,070	28.5	12.1	6.0	8.1
Kherson Oblast	97	158	183	210	116.5	62.9	15.8	14.8
Kherson	97	158	183	210	116.5	62.9	15.8	14.8
Kirovograd Oblast	100	128	138	153	53.0	28.0	7.8	10.9
Kirovograd	100	128	138	153	53.0	28.0	7.8	10.9
Kiev Oblast	847	1,104	1,208	1,332	57.3	30.3	9.4	10.3
Kiev	847	1,104	1,208	1,332	57.3	30.3	9.4	10.3
Luganak Oblast	405	553	608	587	44.9	36.5	9.9	−3.5
Kadiyevka	135	180	192	138	2.2	33.3	6.7	−28.1
Luganak	215	275	306	330	53.5	27.9	11.3	7.8
Kommunarsk	55	98	110	119	116.4	78.2	12.2	8.2
Lvov Oblast	340	411	447	496	45.9	20.9	8.8	11.0
Lvov	340	411	447	496	45.9	20.9	8.8	11.0
Nikolayev Oblast	169	226	258	280	65.7	33.7	14.2	8.5
Nikolayev	169	226	258	280	65.7	33.7	14.2	8.5
Odessa Oblast	602	667	704	735	22.1	10.8	5.5	4.4
Odessa	602	667	704	735	22.1	10.8	5.5	4.4
Poltava Oblast	128	143	154	170	32.8	11.7	7.7	10.4
Poltava	128	143	154	170	32.8	11.7	7.7	10.4
Sumy Oblast	64	98	113	130	103.1	53.1	15.3	15.0
Sumy	64	98	113	130	103.1	53.1	15.3	15.0

TABLE A–4.—*Population of cities in the Soviet Union with 100,000 inhabitants or more in 1965, by administrative area: 1939, 1959, 1962, and 1965*

Area and city	Population				Percent change			
	1939	1959	1962	1965	1939–65	1939–59	1959–62	1962–65
Ukrainian S.S.R.—Continued								
Vinnitsa Oblast	93	122	136	148	59.1	31.2	11.5	8.8
Vinnitsa	93	122	136	148	59.1	31.2	11.5	8.8
Zaporozhye Oblast	358	530	594	662	84.9	48.0	12.1	11.4
Melitopol	76	95	104	112	47.4	25.0	9.5	7.7
Zaporozhye	282	435	490	550	95.0	54.3	12.6	12.2
Zhitomir Oblast	95	106	117	128	34.7	11.6	10.4	9.4
Zhitomir	95	106	117	128	34.7	11.6	10.4	9.4
Belorussian S.S.R.	720	1,045	1,208	1,381	90.2	43.9	15.6	14.3
Gomel Oblast	139	168	193	216	55.4	20.9	14.9	11.9
Gomel	139	168	193	216	55.4	20.9	14.9	11.9
Minsk Oblast	237	509	599	707	198.3	114.8	17.7	18.0
Minsk	237	509	599	707	198.3	114.8	17.7	18.0
Mogilev Oblast	183	220	247	271	48.1	20.2	12.3	9.7
Bobruysk	84	98	106	115	36.9	16.7	10.2	8.5
Mogilev	99	122	139	156	57.6	23.2	13.9	12.2
Vitebsk Oblast	167	148	169	187	12.0	−11.4	14.2	10.7
Vitebsk	167	148	169	187	12.0	−11.4	14.2	10.7
Uzbek S.S.R.	936	1,466	1,617	1,758	87.8	56.6	10.3	8.7
Andizhan Oblast	165	253	283	309	87.3	53.3	11.9	9.2
Andizhan	85	130	145	159	87.1	52.9	11.5	9.7
Namangan	80	123	138	150	87.5	53.8	12.2	8.7
Fergana Oblast	85	105	117	126	48.2	23.5	11.4	7.7
Kokand	85	105	117	126	48.2	23.5	11.4	7.7
Samarkand Oblast	136	196	215	233	71.3	44.1	9.7	8.4
Samarkand	136	196	215	233	71.3	44.1	9.7	8.4
Tashkent Oblast	550	912	1,002	1,090	98.2	65.8	9.9	8.8
Tashkent	550	912	1,002	1,090	98.2	65.8	9.9	8.8
Kazakh S.S.R.	964	2,112	2,503	2,794	192.9	121.4	18.5	11.6
Aktyubinsk Oblast	49	97	111	127	159.2	98.0	14.4	14.4
Aktyubinsk	49	97	111	127	159.2	98.0	14.4	14.4
Alma Ata Oblast	222	456	534	617	177.9	105.4	17.1	15.5
Alma Ata	222	456	534	617	177.9	105.4	17.1	15.5
Chimkent Oblast	74	153	178	200	170.3	100.8	16.3	12.4
Chimkent	74	153	178	200	170.3	100.8	16.3	12.4
Dzhambul Oblast	64	113	136	148	131.3	76.6	20.4	8.8
Dzhambul	64	113	136	148	131.3	76.6	20.4	8.8
East Kazakhstan Oblast	20	150	181	202	910.0	650.0	20.7	11.6
Ust Kamenogorsk	20	150	181	202	910.0	650.0	20.7	11.6
Karaganda Oblast	161	474	562	624	287.6	194.4	22.8	7.2
Karaganda	156	397	459	482	209.0	154.5	15.6	5.0
Temirtau	5	77	123	142	2,740.0	1,440.0	59.7	15.4

TABLE A-4.—*Population of cities in the Soviet Union with 100,000 inhabitants or more in 1965, by administrative area: 1939, 1959, 1962, and 1965—Continued*

Area and city	Population				Percent change			
	1939	1959	1962	1965	1939–65	1939–59	1959–62	1962–65
Kazakh S.S.R.—Continued								
Kustanay Oblast	34	86	102	111	226.5	152.9	18.6	8.8
Kustanay	34	86	102	111	226.5	152.9	18.6	8.8
North Kazakhstan Oblast	29	90	115	139	379.3	210.3	27.8	20.9
Petropavlovsk	29	90	115	139	379.3	210.3	27.8	20.9
Pavlodar Oblast	92	131	146	158	71.7	42.4	11.5	8.2
Pavlodar	92	131	146	158	71.7	42.4	11.5	8.2
Semipalatinsk Oblast	110	156	182	192	74.5	41.8	16.7	5.5
Semipalatinsk	110	156	182	192	74.5	41.8	16.7	5.5
Tselinograd Oblast	32	102	127	159	396.9	218.8	24.5	25.2
Tselinograd	32	102	127	159	396.9	218.8	24.5	25.2
Uralsk Oblast	67	104	109	117	74.6	55.2	4.8	7.3
Uralsk	67	104	109	117	74.6	55.2	4.8	7.3
Georgian S.S.R.	867	823	884	959	60.6	37.9	7.4	8.5
Kutaisi	78	128	141	154	97.4	64.1	10.2	9.2
Tbilisi	519	695	743	805	55.1	33.9	6.9	8.3
Azerbaydzhan S.S.R.	643	759	814	897	39.5	18.0	7.2	10.2
Baku	544	643	688	731	34.4	18.1	7.0	6.3
Kirovabad	99	116	126	166	67.7	17.2	8.6	31.7
Lithuanian S.S.R.	[3] 307	[3] 540	616	682	85.8	[3] 22.6	14.1	10.7
Kaunas	152	214	247	269	77.0	40.8	15.4	8.9
Klaypeda	(2)	90	105	120	..	(2)	16.7	14.3
Vilnius	215	236	264	293	36.3	9.8	11.9	11.0
Moldavian S.S.R.	112	216	244	278	148.2	92.9	13.0	13.9
Kishinev	112	216	244	278	148.2	92.9	13.0	13.9
Latvian S.S.R.	348	580	620	657	88.8	66.7	6.9	6.0
Riga	348	580	620	657	88.8	66.7	6.9	6.0
Kirgiz S.S.R.	93	220	312	355	281.7	136.6	41.8	13.8
Frunze	93	220	312	355	281.7	136.6	41.8	13.8
Tadzhik S.S.R.	83	224	260	310	273.5	169.9	16.1	19.2
Dushanbe	83	224	260	310	273.5	169.9	16.1	19.2
Armenian S.S.R.	272	617	700	750	175.7	126.8	13.5	7.1
Yerevan	204	509	583	623	205.4	149.5	14.5	6.9
Leninakan	68	108	117	127	86.8	58.8	8.3	8.5
Turkmen S.S.R.	127	170	197	224	76.4	33.9	15.9	13.7
Ashkhabad	127	170	197	224	76.4	33.9	15.9	13.7
Estonian S.S.R.	160	282	305	328	105.0	76.3	8.2	7.5
Tallin	160	282	305	328	105.0	76.3	8.2	7.5

[1] Angarsk was established in 1951.
[2] Because most of the prewar (German) population of Kaliningrad (formerly the East Prussian city of Königsberg) has been expelled and replaced by Russians, no figure for 1939 is shown.
[3] Because much of the prewar population of Klaypeda (formerly Memel) has been expelled and replaced by Russians, no figure for 1939 is shown. The percent change between 1939 and 1950 and between 1939 and 1961 for Lithuanian S.S.R. excludes Klaypeda.

Source: Based on data reported in *Nar. khoz. v 1961*, pp. 20–26; *Nar. khoz. v 1964*, pp. 22–31; and *Tsifrakh v 1964*, pp. 10–11.

TABLE A 5.— *Population of cities in the Soviet Union with 250,000 inhabitants or more in 1965, by rank order: 1939, 1959, 1963, and 1965*

[Population figures in thousands. Figures for 1939 presumably relate to the beginning of the year, those for 1959 to the census of January 15. Figures for other years are official estimates for January 1]

City	Population				Percent change		
	1939	1959	1963	1965	1939–65	1959–65	1963–65
1. Moscow	4,132	5,046	6,317	6,388	54.1	26.2	0.8
2. Leningrad	3,104	2,888	3,180	3,220	4.3	11.5	1.9
3. Kiev	847	1,104	1,248	1,332	57.3	20.7	6.7
4. Tashkent	550	912	1,029	1,080	96.2	18.5	5.0
5. Gorkiy	644	942	1,042	1,085	68.5	15.2	4.1
6. Kharkov	833	934	1,018	1,070	28.5	14.6	5.4
7. Novosibirsk	404	885	980	1,029	154.7	16.1	3.9
8. Kuybyshev	390	806	901	948	143.1	17.6	5.2
9. Sverdlovsk	423	779	869	919	117.3	18.0	5.8
10. Donetsk	466	699	774	809	73.6	15.7	4.5
11. Tbilisi	519	708	768	805	55.1	14.5	4.8
12. Chelyabinsk	273	689	767	805	194.9	16.8	5.0
13. Dnepropetrovsk	527	660	738	774	46.9	17.3	4.9
14. Perm	338	629	722	764	149.7	21.5	5.8
15. Kazan	398	647	728	762	91.5	17.8	5.1
16. Odessa	602	667	719	735	22.0	10.2	3.6
17. Baku	544	643	710	731	34.4	13.7	4.4
18. Omsk	289	581	674	721	149.5	24.1	7.0
19. Rostov-on-Don	510	600	689	720	41.2	20.0	4.5
20. Minsk	237	509	644	707	198.3	38.9	9.8
21. Volgograd	445	592	669	700	57.3	18.2	4.6
22. Saratov	372	581	644	663	83.6	17.6	6.1
23. Ufa	258	547	630	665	157.8	21.6	5.6
24. Riga	348	580	632	657	88.8	13.3	4.0
25. Yerevan	204	509	578	623	205.4	22.4	7.8
26. Alma-Ata	222	456	590	617	177.9	35.3	6.4
27. Voronezh	344	448	535	576	67.4	28.6	7.7
28. Zaporozhye	282	435	507	550	95.0	26.4	8.5
29. Krasnoyarsk	190	412	483	541	184.7	31.3	12.0
30. Lvov	340	411	469	496	45.9	20.7	5.8
31. Krivoy Rog	189	368	(1)	486	158.2	32.8	(2)
32. Karaganda	156	397	462	482	209.0	21.4	4.3
33. Yaroslavl	309	407	454	478	54.7	17.4	5.3
34. Novokuznetsk	166	377	(1)	475	186.1	26.0	(2)
35. Khabarovsk	207	323	377	408	97.1	26.3	8.2
36. Irkutsk	250	366	390	401	60.4	9.6	2.8
37. Makeyevka	242	356	(1)	390	64.9	11.5	(2)
38. Ivanovo	285	335	366	380	36.5	16.1	5.7
39. Krasnodar	193	313	366	385	99.5	23.0	6.6
40. Barnaul	148	305	357	382	158.1	25.2	7.0
41. Nizhniy Tagil	160	339	(1)	370	131.3	9.1	(2)
42. Vladivostok	206	291	336	367	78.2	26.1	9.6
43. Tula	272	316	351	366	34.6	15.8	4.3
44. Zhdanov	222	284	(1)	361	62.6	27.1	(2)
45. Frunze	93	220	326	355	281.7	61.4	8.9
46. Izhevsk	176	295	330	351	99.4	23.2	6.4
47. Kemerovo	133	278	328	351	163.9	26.3	7.0
48. Magnitogorsk	146	311	(1)	328	124.4	11.9	(2)
49. Astrakhan	254	296	324	342	34.6	15.5	5.6
50. Gorlovka	181	283	(1)	337	86.2	18.0	(2)
51. Lugansk	215	275	314	330	53.5	20.0	5.1
52. Tallin	160	282	311	328	105.0	16.3	5.5
53. Groznyy	160	256	296	315	96.9	23.5	6.4
54. Dushanbe	172	242	310	314	82.6	29.8	4.7
55. Penza	83	224	276	310	273.5	38.4	12.3
56. Kalinin	216	261	292	306	41.7	17.2	4.8
57. Orenburg	172	257	293	306	77.9	14.6	4.4
58. Arkhangelsk	251	256	286	303	20.7	18.4	5.9
59. Tomsk	145	249	282	302	108.3	21.3	7.1
60. Korov	144	252	284	295	106.6	17.5	4.2
61. Vilnius	215	235	271	293	36.3	24.9	8.1
62. Prokopyevsk	107	262	(1)	291	172.0	3.2	(2)
63. Ryazan	98	214	262	287	202.1	34.1	9.5
64. Nikolayev	169	225	253	260	53.7	23.9	6.5
65. Kishinev	112	216	254	278	148.2	28.7	9.4
66. Murmansk	119	222	254	272	128.6	22.5	7.1
67. Kaunas	152	214	(1)	269	77.0	25.7	(2)
68. Bryansk	174	207	249	267	53.4	29.0	7.2
69. Ulyanovsk	98	206	247	265	170.4	28.6	7.3
70. Kaliningrad	(1)	204	236	253	(2)	24.0	6.3

[1] Not available.
[2] Not applicable.

Source: "Nar. khoz. v 1962," pp. 26-27; "Nar. khoz. v 1964," pp. 22-31; and "Tsifrakh v 1964," pp. 10-11.

TABLE A 6. *Total, urban, and rural population of the Soviet Union, by administrative area: 1959, 1961, 1963, and 1965*

[Population figures in thousands. Figures for 1959 refer to the census of Jan. 15, those for other years are official estimates for Jan. 1. A minus (−) denotes a decrease]

Area	1959	1961	1963	1965	Percent change		
					1959–61	1961–63	1963–65
TOTAL POPULATION							
USSR	208,827	216,151	223,123	230,169	3.5	3.2	3.2
RSFSR	117,534	120,554	123,441	126,708	2.6	2.4	2.7
Altay Kray	2,693	2,765	2,832	2,772	2.7	2.4	−2.1
Gorno-Altay Autonomous Oblast	187	189	188	189	1.3	−0.4	1.8
Other	2,506	2,576	2,644	2,583	2.7	2.6	−2.3
Khabarovsk Kray	1,142	1,166	1,208	1,279	2.1	3.6	6.1
Jewish Autonomous Oblast	163	161	167	172	−1.2	3.7	3.0
Other	979	1,005	1,039	1,107	2.7	3.4	6.5
Krasnodar Kray	3,782	3,888	4,036	4,147	2.8	3.8	2.8
Adyge Autonomous Oblast	305	307	343	353	0.7	15.5	2.9
Other	3,477	3,581	3,693	3,794	3.0	2.6	2.7
Krasnoyarsk Kray	2,615	2,698	2,801	2,891	3.2	3.8	3.6
Khakass Autonomous Oblast	411	426	442	458	3.4	4.0	3.6
Taymyr (Dolgano-Nenets) National Okrug	33	33	33	36	0	0	9.1
Evenki National Okrug	10	10	11	11	0	10.0	0
Other	2,161	2,230	2,315	2,386	3.2	3.8	3.5
Maritime Kray	1,301	1,401	1,467	1,564	1.4	4.7	6.6
Stavropol Kray	1,883	1,957	2,060	2,112	3.9	4.2	2.5
Karachay Cherkess Autonomous Oblast	276	300	308	320	7.9	2.7	3.9
Other	1,606	1,657	1,752	1,792	3.2	4.5	2.5
Amur Oblast	718	728	742	769	1.4	1.9	3.6
Arkhangel Oblast	1,276	1,305	1,352	1,398	2.3	3.6	3.4
Nenets National Okrug	46	37	36	36	−19.6	2.7	0.0
Other	1,230	1,268	1,314	1,360	3.1	3.6	3.5
Astrakhan Oblast	702	734	762	792	4.6	3.8	3.9
Belgorod Oblast	1,228	1,250	1,256	1,251	2.0	.4	−0.3
Bryansk Oblast	1,550	1,557	1,571	1,559	.5	.9	−0.8
Chelyabinsk Oblast	2,977	3,100	3,190	3,248	4.1	2.9	1.8
Chita Oblast	1,036	1,046	1,057	1,094	1.0	1.1	3.5
Ago Buryat National Okrug	69	53	56	59	8.2	5.7	5.4
Other	987	993	1,001	1,035	.6	.8	3.4
Gorkiy Oblast	3,591	3,657	3,660	3,666	1.8	.1	0.2
Ivanovo Oblast	1,322	1,338	1,345	1,350	1.2	.5	0.4
Irkutsk Oblast	1,976	2,090	2,155	2,227	5.8	3.1	3.3
Ust-Orda Buryat National Okrug	133	150	164	154	12.8	9.3	−6.1
Other	1,843	1,940	1,991	2,073	5.3	2.6	4.1
Kaliningrad Oblast	611	644	645	681	5.4	.2	5.6
Kalinin Oblast	1,807	1,790	1,769	1,746	−.9	−1.2	−1.3
Kaluga Oblast	936	944	957	981	.9	1.4	0.4
Kamchatka Oblast	221	231	246	256	4.5	6.5	4.1
Koryak National Okrug	29	32	35	35	14.3	9.4	0.0
Other	193	199	211	221	3.1	6.0	4.7
Kemerovo Oblast	2,796	2,914	2,980	3,030	4.6	2.3	1.7
Kirov Oblast	1,916	1,843	1,821	1,797	−3.8	−1.2	−1.3
Kostroma Oblast	920	914	907	894	−.7	−1.9	−1.5
Kuybyshev Oblast	2,256	2,368	2,447	2,531	4.9	3.3	3.4
Kurgan Oblast	999	1,021	1,037	1,052	2.2	4.5	1.4
Kursk Oblast	1,483	1,507	1,510	1,502	1.6	.2	−0.5
Leningrad Oblast	4,566	4,718	4,860	4,993	3.3	3.0	2.7
Lipetsk Oblast	1,141	1,162	1,190	1,217	1.8	2.4	1.4
Magadan Oblast	236	248	279	309	5.1	12.5	10.8
Chukchi National Okrug	47	52	66	78	10.6	26.9	18.2
Other	189	196	213	231	3.7	8.7	8.5

TABLE A-6.—*Total, urban, and rural population of the Soviet Union, by administrative area: 1959, 1961, 1963, and 1965*—Continued

[Population figures in thousands. Figures for 1959 refer to the census of Jan. 15; those for other years are official estimates for Jan. 1. A minus (—) denotes a decrease]

Area	1959	1961	1963	1965	Percent change		
					1959–61	1961–63	1963–65
TOTAL POPULATION—Continued							
R.S.F.S.R—Continued							
Moscow Oblast	10,949	11,204	11,472	11,710	2.3	2.4	2.1
Murmansk Oblast	568	608	649	686	6.7	7.1	7.2
Novgorod Oblast	730	730	726	724	—.8	—.5	—0.3
Novosibirsk Oblast	2,291	2,376	2,450	2,462	3.8	3.1	0.5
Omsk Oblast	1,645	1,698	1,768	1,800	3.2	4.1	1.8
Orel Oblast	929	936	945	944	.8	1.0	—0.1
Orenburg Oblast	1,829	1,909	1,991	2,037	4.4	4.3	2.3
Penza Oblast	1,510	1,521	1,539	1,545	.7	1.2	0.4
Perm Oblast	2,993	3,043	3,091	3,115	1.7	1.2	1.1
Komi-Permyak National Okrug	217	223	231	228	7.4	—.9	—1.3
Other	2,776	2,810	2,850	2,887	1.2	1.4	1.3
Pskov Oblast	952	918	904	883	—3.6	—1.5	—2.3
Rostov Oblast	3,312	3,455	3,567	3,684	4.3	3.2	3.3
Ryazan Oblast	1,445	1,460	1,467	1,453	1.0	—.2	—0.3
Sakhalin Oblast	649	630	627	638	—2.9	—.5	1.8
Saratov Oblast	2,163	2,221	2,289	2,360	2.7	3.1	3.1
Smolensk Oblast	1,143	1,111	1,106	1,101	—2.8	—.5	—0.5
Sverdlovsk Oblast	4,044	4,162	4,256	4,336	2.9	2.3	1.8
Tambov Oblast	1,849	1,846	1,848	1,535	—.2	.1	—0.8
Tomsk Oblast	747	744	764	779	—.4	2.7	2.0
Tula Oblast	1,920	1,928	1,928	1,955	.4	0	1.4
Tyumen Oblast	1,092	1,121	1,183	1,226	2.7	5.5	3.6
Khanty-Mansi National Okrug	124	134	161	194	8.1	20.1	20.5
Yamal Nenets National Okrug	62	64	65	68	3.2	1.6	4.6
Other	906	923	957	964	1.9	3.7	0.7
Ulyanovsk Oblast	1,117	1,131	1,153	1,169	1.3	1.9	1.4
Vladimir Oblast	1,402	1,435	1,463	1,484	2.4	2.0	1.4
Volgograd Oblast	1,854	1,923	2,023	2,122	3.7	5.2	4.9
Vologda Oblast	1,308	1,312	1,314	1,309	.3	.2	—0.4
Voronezh Oblast	2,369	2,410	2,454	2,477	1.7	1.8	0.9
Yaroslavl Oblast	1,396	1,392	1,392	1,398	—.3	0	0.4
Bashkir A.S.S.R	3,342	3,464	3,603	3,693	3.7	4.0	2.5
Buryat A.S.S.R	673	711	737	761	5.6	3.7	3.3
Chechen Ingush A.S.S.R	710	840	922	983	18.3	9.8	6.6
Chuvash A.S.S.R	1,098	1,127	1,143	1,168	3.6	.8	2.2
Dagestan A.S.S.R	1,063	1,165	1,222	1,291	9.6	4.9	5.6
Kabardin Balkar A.S.S.R	420	455	485	505	8.3	6.6	4.1
Kalmyk A.S.S.R	185	193	219	238	4.3	13.5	8.7
Karelian A.S.S.R	661	659	673	686	1.2	2.1	3.4
Komi A.S.S.R	906	851	903	950	5.6	6.1	5.2
Mari A.S.S.R	648	662	657	656	2.2	—.8	—0.2
Mordovian A.S.S.R	1,000	1,003	1,007	1,011	.3	.4	0.4
North Ossetin A.S.S.R	451	469	487	506	4.0	3.8	3.9
Tatar A.S.S.R	2,650	2,948	3,011	3,065	3.4	2.1	1.8
Tuvin A.S.S.R	172	186	196	207	8.1	6.5	4.5
Udmurt A.S.S.R	1,337	1,368	1,377	1,376	2.3	.7	—0.1
Yakut A.S.S.R	488	527	577	612	8.0	9.5	6.1
Ukrainian S.S.R	41,869	43,091	44,054	45,100	2.9	2.2	2.4
Cherkassy Oblast	1,503	1,482	1,486	1,503	—1.4	.3	1.1
Chernigov Oblast	1,554	1,561	1,570	1,593	.5	.6	1.5
Chernovtsy Oblast	774	795	814	823	2.7	2.4	1.1
Crimean Oblast	1,201	1,297	1,392	1,509	8.0	7.3	8.4
Dnepropetrovsk Oblast	2,705	2,854	2,963	3,087	5.5	3.8	4.2
Donets Oblast	4,262	4,439	4,555	4,720	4.2	2.6	3.6
Ivan-Franko Oblast	1,095	1,128	1,171	1,194	3.0	2.9	2.0
Kharkov Oblast	2,520	2,578	2,601	2,650	2.3	.9	1.9
Kherson Oblast	824	842	897	938	2.2	6.5	4.6
Khmelnitskiy Oblast	1,611	1,628	1,627	1,627	1.1	—.1	0.0
Kiev Oblast	2,823	2,934	3,034	3,141	3.9	3.4	3.5
Kirovograd Oblast	1,218	1,241	1,252	1,273	1.9	.9	1.7
Lugansk Oblast	2,452	2,573	2,648	2,732	4.9	2.9	3.2
Lvov Oblast	2,108	2,185	2,267	2,336	3.7	3.8	3.0
Nikolayev Oblast	1,014	1,031	1,053	1,082	1.7	2.1	2.8
Odessa Oblast	2,027	2,083	2,131	2,193	2.8	2.3	2.9
Poltava Oblast	1,632	1,647	1,662	1,673	.9	.9	0.7

TABLE A-6.—*Total, urban, and rural population of the Soviet Union, by administrative area: 1959, 1961, 1963, and 1965*—Continued

[Population figures in thousands. Figures for 1959 refer to the census of Jan. 15; those for other years are official estimates for Jan. 1. A minus (—) denotes a decrease]

Area	1959	1961	1963	1965	Percent change		
					1959–61	1961–63	1963–65
TOTAL POPULATION—Continued							
Ukrainian S.S.R—Continued							
Rovno Oblast	926	961	990	1,032	3.8	3.0	4.2
Sumy Oblast	1,514	1,528	1,529	1,518	.9	.1	−0.7
Ternopol Oblast	1,086	1,116	1,134	1,142	2.8	1.6	0.7
Transcarpathian Oblast	920	966	999	1,022	5.0	3.4	2.3
Vinnitsa Oblast	2,142	2,160	2,164	2,147	.8	.2	−0.8
Volyn Oblast	890	925	939	962	3.9	1.5	2.4
Zhitomir Oblast	1,604	1,598	1,600	1,591	−.4	.1	−0.6
Zaporozhye Oblast	1,464	1,529	1,576	1,642	4.4	3.1	4.2
Belorussian S.S.R	8,056	8,226	8,413	8,533	2.1	2.3	1.4
Brest Oblast	1,206	1,210	1,211	1,227	.4	.1	1.3
Gomel Oblast	1,357	1,392	1,426	1,460	2.5	2.2	1.7
Grodno Oblast	1,077	1,090	1,104	1,098	1.2	1.3	−0.5
Minsk Oblast	2,037	2,064	2,153	2,216	1.3	4.3	2.9
Mogilev Oblast	1,132	1,152	1,196	1,207	4.4	1.2	0.9
Vitebsk Oblast	1,247	1,289	1,313	1,325	3.4	1.9	0.9
Uzbek S.S.R	8,262	8,836	9,492	10,130	6.9	7.4	6.7
Andizhan Oblast	1,163	1,237	1,481	1,566	6.4	19.7	5.7
Bukhara Oblast	585	641	702	747	9.6	9.5	6.4
Fergana Oblast	1,139	1,218	1,138	1,215	6.9	−6.6	6.8
Kashkadarya Oblast [1]				634			
Khorezm Oblast	381	404	433	464	6.0	7.2	7.2
Samarkand Oblast	1,025	1,092	1,181	1,256	6.5	8.2	6.5
Surkhan-Darya Oblast [1]	919	993	1,073	534	8.1	8.1	−50.2
Syrdarya Oblast	512	556	602	641	8.6	8.3	6.5
Tashkent Oblast	2,028	2,151	2,209	2,475	6.1	7.3	7.2
Kara-Kalpak A.S.S.R	510	544	573	598	6.7	5.3	4.0
Kazakh S.S.R	9,154	10,216	11,270	11,853	11.6	8.5	5.2
Aktyubinsk Oblast	401	439	477	519	9.5	8.7	8.8
Alma-Ata Oblast	1,402	1,569	1,734	1,847	11.8	10.5	6.5
Chimkent Oblast	765	840	898	962	9.8	6.9	7.1
Dzhambul Oblast	562	597	637	696	6.2	6.7	9.3
East Kazakhstan Oblast	735	796	834	833	8.3	4.8	−0.1
Guryev Oblast	286	313	335	367	8.7	7.0	9.6
Karaganda Oblast	1,019	1,212	1,369	1,458	18.9	13.0	6.5
Kokchetav Oblast	469	554	612	606	12.4	10.5	−1.0
Kustanay Oblast	711	833	931	974	17.2	11.8	4.6
Kzyl-Orda Oblast	327	341	365	395	4.3	7.0	8.2
North Kazakhstan Oblast	457	495	556	553	8.3	12.3	−0.5
Pavlodar Oblast	455	526	605	646	15.6	15.0	6.8
Semipalatinsk Oblast	520	572	641	650	10.0	12.1	1.4
Tselinograd Oblast	637	714	831	866	12.1	16.4	4.2
Uralsk Oblast	381	415	445	481	8.9	7.2	8.1
Georgia S.S.R	4,044	4,200	4,342	4,483	3.9	3.4	3.2
Abkhaz A.S.S.R	405	426	442	456	5.2	3.8	3.2
Adzhar A.S.S.R	245	260	272	288	6.1	5.0	5.5
South Ossetian Autonomous Oblast	97	98	101	102	1.0	3.1	1.0
Other	3,297	3,416	3,526	3,637	3.6	3.2	3.1
Azerbaydzhan S.S.R	3,698	3,973	4,232	4,518	7.4	6.5	6.8
Nakhichevan A.S.S.R	141	154	162	177	9.2	5.2	9.3
Nagorno-Karabakh Autonomous Oblast	131	139	143	145	6.1	2.9	1.4
Other	3,426	3,680	3,927	4,196	7.4	6.7	6.9
Lithuanian S.S.R	2,711	2,804	2,878	2,949	3.4	2.6	2.5
Moldavian S.S.R	2,885	3,041	3,172	3,303	5.4	4.3	4.1
Latvian S.S.R	2,093	2,142	2,187	2,241	2.3	2.1	2.5
Kirgiz S.S.R	2,066	2,225	2,379	2,569	7.7	6.9	8.0
Osh Oblast	870	933	986	1,071	7.2	5.7	8.6
Other	1,196	1,292	1,393	1,498	8.0	7.8	7.5

See footnote a end of table, p. 700.

TABLE A-6.—*Total, urban, and rural population of the Soviet Union, by administrative area: 1959, 1961, 1963, and 1965*—Continued

[Population figures in thousands. Figures for 1959 refer to the census of Jan. 15; those for other years are official estimates for Jan. 1. A minus (—) denotes a decrease]

Area	1959	1961	1963	1965	Percent change		
					1959–61	1961–63	1963–65
TOTAL POPULATION—Continued							
Tadzhik S.S.R.	1,980	2,104	2,267	2,432	6.3	7.7	9.5
Gorno-Badakhshan Autonomous Oblast.	73	80	83	89	9.6	3.8	7.2
Other	1,907	2,024	2,184	2,393	6.1	7.9	9.6
Armenian S.S.R.	1,763	1,863	2,007	2,134	7.4	6.0	6.3
Turkmen S.S.R.	1,516	1,626	1,744	1,862	7.3	7.3	6.8
Estonian S.S.R.	1,197	1,221	1,244	1,273	2.0	1.9	2.3
URBAN POPULATION							
U.S.S.R.	99,978	108,273	115,088	121,673	8.3	6.3	5.7
R.S.F.S.R.	61,611	66,196	70,039	73,559	7.4	5.8	5.0
Altay Kray	882	967	1044	1,093	9.6	8.0	4.7
Gorno-Altay Autonomous Oblast.	30	31	33	34	3.3	6.5	3.0
Other	852	936	1011	1,059	9.9	8.0	4.7
Khabarovsk Kray	848	891	944	1,006	5.1	5.9	6.6
Jewish Autonomous Oblast.	117	117	119	121	0	1.7	1.7
Other	731	774	825	885	5.9	6.6	7.3
Krasnodar Kray	1,462	1,584	1,803	1,893	8.3	13.8	5.0
Adyge Autonomous Oblast.	96	103	120	135	7.3	16.5	12.5
Other	1,366	1,481	1,683	1,758	8.4	13.6	4.5
Krasnoyarsk Kray	1,296	1,431	1,538	1,634	10.4	7.5	6.2
Khakass Autonomous Oblast.	222	243	254	268	9.5	4.5	5.5
Taymyr (Dolgano-Nenets) National Okrug	20	20	20	22	0	0	10.0
Evenki National Okrug	2	3	3	3	50.0	0	0
Other	1,052	1,165	1,261	1,341	10.7	8.2	6.3
Maritime Kray	928	980	1,030	1,125	6.6	5.1	8.3
Stavropol Kray	587	635	678	722	8.2	6.8	6.5
Karachay Cherkess Autonomous Oblast	66	70	86	95	6.1	22.9	10.5
Other	521	565	592	627	8.4	4.8	5.9
Amur Oblast	429	436	447	477	2.1	2.1	6.7
Arkhangel Oblast	675	759	850	917	12.4	12.0	7.9
Nenets National Okrug	26	17	18	18	−34.6	5.9	0
Other	649	742	832	899	14.3	12.1	8.1
Astrakhan Oblast	365	413	433	454	13.2	4.8	4.8
Belgorod Oblast	240	265	290	317	10.4	12.8	9.4
Bryansk Oblast	540	564	621	645	8.1	6.8	3.9
Chelyabinsk Oblast	2,270	2,390	2,464	2,528	5.0	3.1	2.6
Chita Oblast	564	594	606	622	5.3	2.0	2.6
Ago Buryat National Okrug	.....	6	7	7	.....	16.7	0
Other	564	588	599	615	4.3	1.9	2.6
Gorkiy Oblast	1,982	2,021	2,130	2,214	7.4	5.4	3.9
Ivanovo Oblast	876	919	943	973	4.9	2.6	3.2
Irkutsk Oblast	1,227	1,337	1,409	1,516	9.0	5.4	7.6
Ust-Orda Buryat National Okrug	20	20	21	21	0	5.0	0.0
Other	1,207	1,317	1,388	1,495	9.1	5.4	7.7
Kaliningrad Oblast	394	430	443	468	9.1	3.0	5.6
Kalinin Oblast	788	828	859	900	5.1	3.7	3.6
Kaluga Oblast	350	373	406	430	6.6	8.8	5.9
Kamchatka Oblast	141	158	171	194	12.1	8.2	13.5
Koryak National Okrug	6	8	10	11	33.3	25.0	10.0
Other	135	150	161	183	11.1	7.3	13.7

TABLE A-6.—*Total, urban, and rural population of the Soviet Union, by administrative area: 1959, 1961, 1963, and 1965*—Continued

[Population figures in thousands. Figures for 1959 refer to the census of Jan. 15; those for other years are official estimates for Jan 1. A minus (—) denotes a decrease]

Area	1959	1961	1963	1965	Percent change		
					1959–61	1961–63	1963–65
URBAN POPULATION—Continued							
R.S.F.S.R.—Continued							
Kemerovo Oblast	2,149	2,201	2,377	2,454	7.1	3.3	3.2
Kirov Oblast	704	757	795	860	7.5	5.0	8.2
Kostroma Oblast	366	389	398	416	6.3	2.3	4.5
Kuybyshev Oblast	1,397	1,517	1,611	1,720	8.6	6.2	6.8
Kurgan Oblast	328	356	382	405	8.5	7.3	6.0
Kursk Oblast	303	346	370	389	14.2	6.9	5.1
Leningrad Oblast	3,949	4,130	4,280	4,419	4.6	3.6	3.2
Lipetsk Oblast	344	380	414	447	10.5	8.9	8.0
Magadan Oblast	191	207	228	264	8.4	15.0	10.9
Chukchi National Okrug	27	25	50	60	29.6	42.9	20.0
Other	164	172	188	204	4.9	9.3	8.5
Moscow Oblast	8,577	9,072	9,554	9,831	5.8	5.3	2.9
Murmansk Oblast	523	573	616	666	9.6	7.5	8.1
Novgorod Oblast	281	303	328	343	7.8	8.3	4.6
Novosibirsk Oblast	1,276	1,374	1,440	1,493	7.7	4.8	3.7
Omsk Oblast	711	782	830	879	10.0	6.1	5.9
Orel Oblast	221	253	277	298	14.5	9.5	7.6
Orenburg Oblast	826	899	964	1,006	8.8	7.2	4.4
Penza Oblast	500	551	583	594	10.2	5.8	1.9
Perm Oblast	1,765	1,877	1,983	2,055	6.3	5.6	3.6
Komi-Permyak National Okrug	22	37	41	40	68.2	10.8	−2.4
Other	1,743	1,840	1,942	2,015	5.6	5.5	3.8
Pskov Oblast	258	282	303	316	9.3	7.4	4.3
Rostov Oblast	1,899	2,048	2,207	2,297	7.8	7.8	4.1
Ryazan Oblast	433	490	526	566	13.2	7.3	7.6
Sakhalin Oblast	489	492	493	513	.6	.2	4.1
Saratov Oblast	1,164	1,246	1,310	1,391	7.0	5.1	6.2
Smolensk Oblast	366	390	412	452	6.6	5.6	9.7
Sverdlovsk Oblast	3,074	3,255	3,363	3,480	5.9	3.3	3.5
Tambov Oblast	408	453	471	489	11.0	4.0	3.8
Tomsk Oblast	360	381	404	437	5.8	6.0	8.2
Tula Oblast	1,160	1,214	1,264	1,294	4.7	4.1	2.4
Tyumen Oblast	347	397	428	526	14.4	7.8	22.9
Khanty-Mansi National Okrug	33	43	55	113	30.3	27.9	105.5
Yamal-Nenets National Okrug	22	24	26	29	9.1	8.3	11.5
Other	292	330	347	384	13.0	5.2	10.7
Ulyanovsk Oblast	404	432	477	498	6.9	10.4	4.4
Vladimir Oblast	796	850	889	937	6.8	4.6	5.4
Volgograd Oblast	1,008	1,140	1,222	1,295	13.1	7.2	6.0
Vologda Oblast	453	502	531	560	10.8	5.8	5.5
Voronezh Oblast	821	901	966	1,024	9.7	7.2	6.0
Yaroslavl Oblast	814	853	889	925	4.8	4.2	4.0
Bashkir A.S.S.R.	1,281	1,403	1,506	1,631	9.5	7.3	8.3
Buryat A.S.S.R.	276	294	313	328	6.5	6.5	4.8
Chechen-Ingush A.S.S.R.	294	327	370	390	11.2	13.1	5.4
Chuvash A.S.S.R.	263	294	317	340	11.8	7.8	7.3
Dagestan A.S.S.R.	315	346	375	413	9.8	8.4	10.1
Kabardin Balkar A.S.S.R.	166	181	196	223	9.0	8.3	13.8
Kalmyk A.S.S.R.	39	46	59	71	17.9	28.3	20.3
Karelian A.S.S.R.	409	428	455	487	4.6	6.3	7.0
Komi A.S.S.R.	475	519	565	607	9.3	8.9	7.4
Mari A.S.S.R.	183	203	218	234	10.9	7.4	7.3
Mordovian A.S.S.R.	183	234	257	287	27.9	9.8	11.7
North Ossetin A.S.S.R.	238	252	273	315	5.9	8.3	15.4
Tatar A.S.S.R.	1,190	1,280	1,346	1,429	7.6	5.2	6.2
Tuvin A.S.S.R.	50	63	71	76	26.0	12.7	7.0
Udmurt A.S.S.R.	594	661	693	722	11.3	4.8	4.2
Yakut A.S.S.R.	240	265	303	339	10.4	14.3	11.9
Ukrainian S.S.R.	19,147	20,823	21,859	23,093	8.8	5.0	5.6
Cherkassy Oblast	345	377	397	419	9.3	5.3	5.5
Chernigov Oblast	350	434	461	495	24.0	6.2	7.4
Chernovtsy Oblast	203	237	245	261	16.7	3.4	6.5
Crimean Oblast	775	850	905	981	9.7	6.5	8.4

TABLE A-6.—*Total, urban, and rural population of the Soviet Union, by administrative area: 1959, 1961, 1963, and 1965*—Continued

[Population figures in thousands. Figures for 1959 refer to the census of Jan. 15; those for other years are official estimates for Jan. 1. A minus (—) denotes a decrease]

Area	1959	1961	1963	1965	Percent change		
					1959–61	1961–63	1963–65
URBAN POPULATION—Continued							
Ukrainian S.S.R.—Continued							
Dnepropetrovsk Oblast	1,899	2,070	2,182	2,330	9.0	5.4	6.8
Donets Oblast	3,656	3,855	3,976	4,127	5.4	3.1	3.8
Ivan-Franko Oblast	250	292	312	330	16.8	6.8	5.8
Kharkov Oblast	1,574	1,692	1,738	1,808	7.5	2.7	4.0
Kherson Oblast	332	388	420	475	16.9	8.2	13.1
Khmelnitskiy Oblast	305	351	363	388	15.1	3.4	6.9
Kiev Oblast	1,548	1,666	1,771	1,887	7.6	6.3	6.5
Kirovograd Oblast	376	417	448	478	10.9	7.4	6.7
Lugansk Oblast	1,944	2,112	2,193	2,304	8.6	3.8	5.1
Lvov Oblast	821	893	964	1,041	8.8	8.0	8.0
Nikolayev Oblast	400	430	451	483	7.5	4.9	7.1
Odessa Oblast	957	1,010	1,063	1,118	5.5	5.2	5.2
Poltava Oblast	484	526	558	593	8.7	6.1	6.3
Rovno Oblast	188	218	229	244	36.1	5.5	6.6
Sumy Oblast	485	532	564	589	9.7	6.0	4.4
Ternopol Oblast	190	210	229	238	10.7	9.0	3.9
Transcarpathian Oblast	265	279	289	301	5.3	3.6	4.2
Vinnitsa Oblast	363	385	411	427	6.1	6.8	3.9
Volyn Oblast	231	267	278	289	15.6	4.1	4.0
Zaporozhye Oblast	829	893	941	1,004	7.7	5.4	6.7
Zhitomir Oblast	417	442	471	483	6.0	6.6	2.5
Belorussian S.S.R.	2,481	2,779	3,037	3,270	12.0	9.3	7.7
Brest Oblast	284	323	346	365	13.7	7.1	5.5
Gomel Oblast	389	438	476	511	12.6	8.7	7.4
Grodno Oblast	251	280	309	338	11.6	10.4	9.4
Minsk Oblast	793	867	972	1,064	9.3	12.1	9.5
Mogilev Oblast	360	405	431	453	12.5	6.4	5.1
Vitebsk Oblast	404	466	503	539	15.3	7.9	7.2
Uzbek S.S.R.	2,775	3,080	3,360	3,603	11.0	9.1	7.2
Andizhan Oblast	296	320	385	408	7.4	20.3	6.0
Bukhara Oblast	130	151	175	197	16.2	15.9	12.6
Fergana Oblast	333	366	363	386	9.9	—.8	6.3
Kashkadarya Oblast [1]	.....	.....	87	.....	.....	.....	.....
Khorezm Oblast	64	70	77	85	9.4	10.0	10.4
Samarkand Oblast	314	317	334	354	1.0	5.4	6.0
Surkhan-Darya Oblast [1]	132	147	160	86	11.4	8.8	−46.3
Syrdarya Oblast	71	106	137	147	49.3	29.2	7.3
Tashkent Oblast	1,294	1,454	1,553	1,663	12.4	6.8	7.1
Kara-Kalpak A.S.S.R.	139	149	176	190	7.2	8.1	8.0
Kazakh S.S.R.	4,021	4,589	5,096	5,576	13.6	10.3	9.4
Aktyubinsk Oblast	174	188	207	225	8.0	10.1	8.7
Alma-Ata Oblast	655	760	839	932	16.0	10.4	11.1
Chimkent Oblast	303	333	358	380	9.9	−2.2	6.1
Dzhambul Oblast	202	230	245	264	13.9	6.5	7.8
East Kazakhstan Oblast	394	428	463	477	8.6	8.2	3.0
Guryev Oblast	162	176	190	218	8.6	8.0	14.7
Karaganda Oblast	706	962	1,078	1,179	20.6	12.1	9.4
Kokchetav Oblast	122	139	159	176	13.9	14.4	10.7
Kustanay Oblast	185	226	267	322	21.3	17.1	20.6
Kzyl-Orda Oblast	152	163	177	195	7.2	8.6	10.2
North Kazakhstan Oblast	156	167	181	187	7.1	8.4	3.3
Pavlodar Oblast	132	154	204	237	16.7	32.5	16.2
Semipalatinsk Oblast	228	247	266	274	8.3	7.7	3.0
Tselinograd Oblast	256	293	338	383	13.6	15.4	13.3
Uralsk Oblast	113	121	124	127	7.1	2.5	2.4
Georgia S.S.R.	1,713	1,818	1,968	2,085	6.1	8.3	5.9
Abkhaz A.S.S.R.	150	155	172	183	3.3	11.0	6.4
Adzhar A.S.S.R.	111	117	123	135	5.4	5.1	9.8
South Ossetian Autonomous Oblast	24	31	34	33	29.2	9.7	−2.9
Other	1,428	1,515	1,639	1,734	6.1	8.2	5.8

See footnote at end of table, p. 700.

TABLE A-6.—*Total, urban, and rural population of the Soviet Union, by administrative area: 1959, 1961, 1963, and 1965*—Continued

[Population figures in thousands. Figures for 1959 refer to the census of Jan. 15; those for other years are official estimates for Jan. 1. A minus (—) denotes a decrease]

Area	1959	1961	1963	1965	Percent change		
					1959–61	1961–63	1963–65
URBAN POPULATION—Continued							
Azerbaydzhan S.S.R.	1,767	1,958	2,104	2,265	10.8	7.5	7.7
Nakhichevan A.S.S.R.	38	41	41	43	7.9	0	4.9
Nagorno-Karabakh Autonomous Oblast.	27	40	43	49	48.1	7.5	14.0
Other	1,702	1,877	2,020	2,173	10.3	7.6	7.6
Lithuanian S.S.R.	1,046	1,123	1,203	1,289	7.4	7.1	7.1
Moldavian S.S.R.	643	727	783	858	13.1	7.7	9.6
Latvian S.S.R.	1,174	1,233	1,303	1,367	5.0	5.7	4.9
Kirgiz S.S.R.	696	775	894	972	11.4	15.4	8.7
Osh Oblast	279	312	339	366	11.8	8.7	8.6
Other	417	463	555	604	11.0	19.9	8.8
Tadzhik S.S.R.	646	723	778	865	11.9	7.6	11.2
Gorno-Badakhshan Autonomous Oblast.	8	9	10	11	12.5	11.1	10.0
Other	638	714	768	854	11.9	7.6	11.2
Armenian S.S.R.	882	973	1,069	1,175	10.3	9.9	9.9
Turkmen S.S.R.	700	771	844	908	10.1	9.5	7.6
Estonian S.S.R.	676	706	751	788	4.4	6.4	4.9
RURAL POPULATION							
U.S.S.R.	108,849	107,878	108,034	107,525	−0.9	0.1	−0.5
R.S.F.S.R.	55,923	54,359	53,402	52,209	−2.8	−1.8	−2.2
Altay Kray	1,801	1,798	1,788	1,679	−.2	−.6	−6.1
Gorno-Altay Autonomous Oblast.	127	128	133	135	.8	3.9	1.5
Other	1,674	1,670	1,655	1,544	−.2	−.9	−6.7
Khabarovsk Kray	294	275	262	273	−6.5	−4.7	4.2
Jewish Autonomous Oblast.	46	44	43	51	−4.3	9.1	6.3
Other	248	231	214	222	−6.9	−7.4	3.7
Krasnodar Kray	2,300	2,314	2,233	2,254	.6	−3.5	0.9
Adyge Autonomous Oblast.	189	194	223	218	2.6	14.9	−2.3
Other	2,111	2,120	2,010	2,036	.4	−5.2	1.3
Krasnoyarsk Kray	1,319	1,267	1,263	1,267	−3.9	−.3	0.3
Khakass Autonomous Oblast.	189	182	188	190	−3.7	3.3	1.1
Taymyr (Dolgano-Nenets) National Okrug	13	13	13	14	0	0	7.7
Evenki National Okrug	8	7	6	6	−12.5	14.3	0.0
Other	1,109	1,065	1,054	1,055	−4.0	−1.0	0.1
Maritime Kray	453	412	428	439	−9.1	3.9	2.6
Stavropol Kray	1,296	1,322	1,362	1,390	2.0	3.0	2.1
Karachay Cherkess Autonomous Oblast.	212	220	222	225	3.8	−3.5	1.4
Other	1,084	1,092	1,140	1,165	.7	4.4	2.2
Amur Oblast	289	290	295	292	.3	1.7	−1
Arkhangel Oblast	601	546	502	481	−9.2	−8.1	−16.7
Nenets National Orkug	20	20	20	20	0	0	0.0
Other	581	526	482	461	−9.5	−8.4	−4.4
Astrakhan Oblast	337	321	329	338	−4.7	2.5	2.7
Belgorod Oblast	966	965	956	924	−.1	−2.9	−3.3
Bryansk Oblast	1,010	978	950	914	−3.7	−2.4	−3.8
Chelyabinsk Oblast	701	710	726	720	1.3	2.3	−0.8
Chita Oblast	472	462	461	472	4.2	2.0	2.4
Gorkiy Oblast	1,709	1,636	1,530	1,452	−4.3	−6.5	−5.1
Ivanovo Oblast	446	419	402	377	−6.1	−4.1	−6.2

TABLE A–6.—*Total, urban, and rural population of the Soviet Union, by administrative area: 1959, 1961, 1963, and 1965*—Continued

[Population figures in thousands. Figures for 1959 refer to the census of Jan. 15; those for other years are official estimates for Jan. 1. A minus (—) denotes a decrease]

Area	1959	1961	1963	1965	Percent change		
					1959–61	1961–63	1963–65
RURAL POPULATION—Continued							
R.S.F.S.R—Continued							
Irkutsk Oblast	749	753	746	711	.5	—.9	—4.7
Ust-Orda Buryat National Okrug	113	130	143	133	15.0	10.0	—7.0
Other	636	623	603	578	—2.0	—3.2	—4.1
Kaliningrad Oblast	217	214	202	213	—1.4	—5.6	5.4
Kalinin Oblast	1,019	962	910	856	—5.6	—5.4	—5.9
Kaluga Oblast	586	571	551	531	—2.6	—3.5	—3.6
Kamchatka Oblast	80	73	75	62	—8.8	2.7	—17.3
Koryak National Okrug	22	24	25	24	9.1	4.2	—4.0
Other	58	49	50	38	—15.5	2.0	—24.0
Kemerovo Oblast	637	613	603	576	—3.8	—1.6	—4.5
Kirov Oblast	1,212	1,086	1,026	937	—10.4	—5.5	—8.7
Kostroma Oblast	554	525	499	468	—5.2	—5.0	—6.2
Kuybyshev Oblast	861	851	836	811	—1.2	—1.8	—3.0
Kurgan Oblast	671	665	685	677	—.9	3.0	—1.2
Kursk Oblast	1,180	1,161	1,140	1,113	—1.6	—1.8	—2.4
Leningrad Oblast	617	588	580	574	—4.7	—1.4	—1.0
Lipetsk Oblast	797	782	776	760	—1.9	—.8	—2.1
Magadan Oblast	45	41	41	45	—8.9	0	9.8
Chukchi National Okrug	20	17	16	18	—15.0	—5.9	12.5
Other	25	24	25	27	—4.0	4.2	8.0
Moscow Oblast	2,372	2,132	1,918	1,879	—10.1	—10.0	—2.0
Murmansk Oblast	45	33	33	30	—26.7	0	—9.1
Novgorod Oblast	455	427	398	381	—6.2	—6.8	—4.3
Novosibirsk Oblast	1,023	1,002	1,010	969	—2.1	.8	—4.1
Omsk Oblast	934	916	938	921	—1.9	2.4	—1.8
Orel Oblast	708	693	668	646	—3.5	—2.2	—3.3
Orenburg Oblast	1,003	1,010	1,027	1,031	.7	1.7	.4
Penza Oblast	1,010	970	956	951	—4.0	—1.4	—.5
Perm Oblast	1,228	1,166	1,098	1,060	—5.0	—5.8	—3.5
Komi-Permyak National Okrug	195	196	190	188	.5	—3.1	—1.1
Other	1,033	970	908	872	—6.1	—6.4	—4.0
Pskov Oblast	694	636	601	567	—8.4	—5.5	—5.7
Rostov Oblast	1,413	1,407	1,380	1,387	—.4	—1.9	.5
Ryazan Oblast	1,012	970	931	887	—4.2	—4.0	—4.7
Sakhalin Oblast	160	138	134	125	—13.8	—2.9	—6.7
Saratov Oblast	999	975	979	969	—2.4	.4	—1.0
Smolensk Oblast	777	721	694	649	—7.2	—3.7	—6.5
Sverdlovsk Oblast	970	907	895	856	—6.5	—1.3	—4.4
Tambov Oblast	1,141	1,093	1,077	1,046	—4.2	—1.5	—2.9
Tomsk Oblast	387	363	360	342	—6.2	—.8	—5.0
Tula Oblast	760	714	664	661	—6.1	—7.0	—0.5
Tyumen Oblast	745	724	755	700	—2.8	4.3	—7.3
Khanty-Mansi National Okrug	91	91	106	81	0	16.5	—23.6
Yamal-Nenets National Okrug	40	40	39	39	0	—2.5	0.0
Other	614	593	610	580	—3.4	2.9	—4.9
Ulyanovsk Oblast	713	699	676	671	—2.0	—3.3	—0.7
Vladimir Oblast	606	585	574	547	—3.5	—1.9	—4.7
Volgograd Oblast	846	783	801	827	—7.4	2.3	3.2
Vologda Oblast	855	810	783	749	—5.3	—3.3	—4.3
Voronezh Oblast	1,548	1,509	1,488	1,453	—2.5	—1.4	—2.4
Yaroslavl Oblast	552	539	503	473	—7.4	—6.7	—6.0
Bashkir A.S.S.R.	2,061	2,061	2,097	2,062	0	1.7	—1.7
Buryat A.S.S.R.	397	417	424	433	5.0	1.7	2.1
Chechen-Ingush A.S.S.R.	416	513	552	593	23.3	7.6	7.4
Chuvash A.S.S.R.	835	843	826	828	1.0	—2.0	0.2
Dagestan A.S.S.R.	748	819	847	878	9.5	3.4	3.7
Kabardin Balkar A.S.S.R.	264	274	289	282	7.9	5.5	—2.4
Kalmyk A.S.S.R.	146	147	160	167	.7	8.8	4.4
Karelian A.S.S.R.	242	231	218	209	—4.5	—5.6	—4.1
Komi A.S.S.R.	331	332	338	343	.3	1.8	1.5
Mari A.S.S.R.	465	459	439	422	—1.3	—4.4	—3.9
Mordovian A.S.S.R.	817	769	750	724	—5.9	—2.5	—3.5

TABLE A-6.—*Total, urban, and rural population of the Soviet Union, by administrative area: 1959, 1961, 1963, and 1965*—Continued

[Population figures in thousands. Figures for 1959 refer to the census of Jan. 15; those for other years are official estimates for Jan. 1. A minus (—) denotes a decrease]

Area	1959	1961	1963	1965	Percent change		
					1959–61	1961–63	1963–65
RURAL POPULATION—Continued							
R.S.F.S.R—Continued							
North Ossetin A.S.S.R.	213	217	214	191	1.9	−1.4	−10.7
Tatar A.S.S.R.	1,660	1,668	1,665	1,636	.5	−.2	−1.7
Tuvin A.S.S.R.	122	123	127	131	.8	3.3	3.1
Udmurt A.S.S.R.	743	707	684	654	−4.9	−3.3	−4.4
Yakut A.S.S.R.	248	262	274	273	5.6	4.6	−0.4
Ukrainian S.S.R.	22,722	22,268	22,195	22,007	−2.0	−.3	−0.8
Cherkassy Oblast	1,158	1,103	1,069	1,084	−4.6	−1.4	−0.5
Chernigov Oblast	1,204	1,127	1,109	1,096	−6.4	−1.6	−1.0
Chernovtsy Oblast	571	558	569	562	−2.3	2.0	−1.2
Crimean Oblast	426	447	457	528	4.9	8.9	8.4
Dnepropetrovsk Oblast	806	784	781	757	−2.7	−.4	−3.1
Donets Oblast	606	584	579	593	−3.6	−.9	2.4
Ivan-Franko Oblast	845	846	859	864	.1	1.5	0.6
Kharkov Oblast	946	886	863	842	−6.3	−2.6	−2.4
Kherson Oblast	492	454	477	463	−7.7	5.1	−2.9
Khmelnitskiy Oblast	1,306	1,277	1,264	1,239	−2.2	−1.0	−2.0
Kiev Oblast	1,275	1,268	1,263	1,254	−.6	−.4	−0.7
Kirovograd Oblast	842	824	804	795	−2.1	−2.4	−1.1
Lugansk Oblast	508	461	455	428	−9.3	−1.3	−5.9
Lvov Oblast	1,287	1,292	1,303	1,295	.4	.9	−0.6
Nikolayev Oblast	614	601	602	599	−2.1	.2	−0.5
Odessa Oblast	1,070	1,073	1,068	1,075	.3	−.5	0.7
Poltava Oblast	1,148	1,121	1,104	1,080	−2.4	−1.5	−2.2
Rovno Oblast	766	746	761	758	−2.9	2.0	−0.4
Sumy Oblast	1,029	996	965	929	−3.2	−3.1	−3.8
Ternopol Oblast	906	906	905	904	0	−.1	−0.1
Transcarpathian Oblast	655	687	710	721	4.9	3.3	1.5
Vinnitsa Oblast	1,779	1,775	1,753	1,720	−.2	−1.2	−1.9
Volyn Oblast	669	668	661	673	−.2	.5	1.8
Zaporozhye Oblast	635	636	635	638	.2	−.2	0.5
Zhitomir Oblast	1,187	1,166	1,129	1,108	−2.6	−2.3	−1.9
Belorussian S.S.R.	5,574	5,447	5,376	5,263	−2.3	−1.3	−2.1
Brest Oblast	921	887	865	862	−3.7	−2.5	−0.3
Gomel Oblast	968	953	960	949	−1.6	.7	−1.1
Grodno Oblast	826	810	795	760	−1.9	−1.9	−4.4
Minsk Oblast	1,244	1,197	1,181	1,152	−3.8	−1.3	−2.5
Mogilev Oblast	772	777	765	754	.6	−1.5	−1.4
Vitebsk Oblast	843	823	810	786	−2.4	−1.6	−3.0
Uzbek S.S.R.	5,503	5,756	6,132	6,527	4.6	6.5	6.4
Andizhan Oblast	865	917	1,096	1,158	6.0	19.5	5.7
Bukhara Oblast	455	490	527	550	7.7	7.6	4.4
Fergana Oblast	806	852	775	829	5.7	−9.0	7.0
Kashkadarya Oblast [1]				847			
Khorezm Oblast	317	334	356	379	5.4	6.6	6.5
Samarkand Oblast	727	775	847	904	6.6	9.3	6.7
Surkhan-Darya Oblast [1]	787	846	918	448	7.5	7.9	−50.9
Syrdarya Oblast	441	460	465	494	2.0	4.2	6.3
Tashkent Oblast	734	697	756	812	−5.0	8.5	7.4
Kara-Kalpak A.S.S.R.	371	395	397	406	6.5	.5	2.3
Kazakh S.S.R.	5,117	5,627	6,174	6,277	10.0	7.1	1.7
Aktyubinsk Oblast	227	251	270	294	10.6	7.6	8.9
Alma-Ata Oblast	748	809	895	915	8.2	10.6	2.2
Chimkent Oblast	462	507	540	582	9.7	6.5	7.8
Dzhambul Oblast	360	367	392	432	1.9	6.8	10.2
East Kazakhstan Oblast	341	366	371	356	7.9	.8	−4.0
Guryev Oblast	126	137	145	149	8.7	5.8	2.8
Karaganda Oblast	221	250	291	279	13.1	16.4	−4.1
Kokchetav Oblast	371	415	453	430	11.9	9.2	−5.1
Kustanay Oblast	523	605	664	652	15.7	9.8	−1.8
Kzyl-Orda Oblast	175	178	188	200	1.7	5.6	6.4
North Kazakhstan Oblast	301	328	375	366	9.0	14.3	−2.4
Pavlodar Oblast	323	372	401	409	15.2	7.8	2.0
Semipalatinsk Oblast	292	325	375	376	11.3	15.4	.3
Tselinograd Oblast	379	421	493	483	11.1	17.1	−2.0
Uralsk Oblast	268	294	321	354	9.7	9.2	10.3

See footnote at end of table, p. 700.

TABLE A–6.—*Total, urban, and rural population of the Soviet Union, by administrative area: 1959, 1961, 1963, and 1965*—Continued

[Population figures in thousands. Figures for 1959 refer to the census of Jan. 15; those for other years are official estimates for Jan. 1. A minus (—) denotes a decrease]

Area	1959	1961	1963	1965	Percent change		
					1959–61	1961–63	1963–65
RURAL POPULATION—Continued							
Georgia S.S.R.	2,331	2,382	2,374	2,398	2.2	—.3	1.0
Abkhaz A.S.S.R.	255	271	270	273	6.3	—.4	1.1
Adzhar A.S.S.R.	134	143	150	153	6.7	4.9	2.0
South Ossetian Autonomous Oblast	73	67	67	69	—8.2	0	3.0
Other	1,869	1,901	1,877	1,903	1.7	—1.3	1.4
Azerbaydzhan S.S.R.	1,931	2,015	2,128	2,253	4.4	5.6	5.9
Nakhichevan A.S.S.R.	103	113	121	134	9.7	7.1	10.7
Nagorno-Karabakh Autonomous Oblast	104	99	100	96	—4.8	1.0	—4.0
Other	1,724	1,803	1,907	2,023	4.6	5.8	6.1
Lithuanian S.S.R.	1,665	1,681	1,675	1,660	1.0	—.4	—0.9
Moldavian S.S.R.	2,242	2,313	2,389	2,445	3.2	3.3	2.3
Latvian S.S.R.	919	909	884	874	—1.1	—2.8	—1.1
Kirgiz S.S.R.	1,370	1,450	1,485	1,597	5.8	2.4	7.5
Osh Oblast	591	621	647	703	5.1	4.2	8.7
Other	779	829	838	894	6.4	1.1	6.7
Tadzhik S.S.R.	1,334	1,381	1,489	1,617	3.5	7.8	8.6
Gorno-Badakhshan Autonomous Oblast	65	71	73	78	9.2	2.8	6.8
Other	1,269	1,310	1,416	1,539	3.2	8.1	8.7
Armenian S.S.R.	881	920	938	959	4.4	2.0	2.2
Turkmen S.S.R.	816	855	900	954	4.8	5.3	6.0
Estonian S.S.R.	521	515	493	485	—1.2	—4.3	—1.6

[1] Kashkadarya Oblast was organized in 1964 from part of Surkhan-Darya Oblast. Population data for the new oblast are available only for 1965. The figures shown for Surkhan-Darya Oblast for the years prior to 1965 include data for Kashkadarya Oblast.

Source: "Nar. khoz. v 1959," pp. 27–33; "Nar. khoz. v 1960," pp. 44–49; "Nar. khoz. v 1961," pp. 15–19; "Nar. khoz. v 1962," pp. 20–22; "Nar khoz. v 1963," pp. 13–17; and "Nar. khoz. v 1963," pp. 13–17.

TABLE A–7.—*Members of families living together in the Soviet Union, by family size, urban-rural residence, and age and sex: Jan. 15, 1959*

[In thousands. The data presented in this table were derived from distributions of relative numbers which were based on a 5-percent sample of census schedules. Thus, they are subject to at least 2 types of error: (1) rounding error and (2) sampling error. Since the basis for the sample is not stated, it is not possible to assess sampling error. Rounding error can be assumed to be a maximum of ±0.5 for each of the relative numbers in the published distribution. Since the smallest relative number was 2, the maximum possible rounding error should be ±0.5/2.0, or ±25 percent]

Age, sex, and residence	All families	Number of Family Members								
		2	3	4	5	6	7	8	9	10 or more
URBAN AND RURAL										
BOTH SEXES										
All ages	186,797	26,157	39,233	43,747	33,812	21,636	11,466	5,840	2,720	2,186
Under 10 years	45,896	1,439	6,800	11,593	10,347	7,428	4,243	2,213	1,031	802
10 to 19 years	27,463	2,485	5,231	6,234	5,275	3,678	2,211	1,248	619	482
20 to 24 years	13,922	2,354	3,923	3,062	2,029	1,226	622	343	179	184
25 to 29 years	16,296	2,092	4,708	4,375	2,637	1,370	590	263	123	138
30 to 34 years	17,410	1,831	3,923	5,031	3,448	1,839	786	321	127	104
35 to 39 years	10,637	1,308	2,093	2,844	2,097	1,226	606	277	112	74
40 to 44 years	9,436	1,700	2,093	2,187	1,555	938	508	263	115	77
45 to 49 years	11,336	2,485	2,746	2,406	1,690	1,010	524	270	121	84
50 to 54 years	9,480	2,485	2,354	1,859	1,353	757	360	175	76	61
55 to 59 years	7,742	2,354	1,831	1,422	1,014	613	279	124	57	48
60 years and over	17,179	6,624	3,531	2,734	2,367	1,551	737	343	160	132
Median age	26.9	44.6	28.9	26.1	23.2	19.2	16.7	15.7	15.3	16.0

TABLE A-7.—*Members of families living together in the Soviet Union, by family size, urban-rural residence, and age and sex: Jan. 15, 1959*—Continued

Age, sex, and residence	All families	Number of Family Members								
		2	3	4	5	6	7	8	9	10 or more
MALE										
All ages	83,131	9,809	17,001	20,014	15,621	10,133	5,422	2,774	1,303	1,054
Under 10 years	23,277	654	3,531	5,906	5,275	3,750	2,130	1,110	517	404
10 to 19 years	13,326	1,177	2,485	3,062	2,570	1,803	1,081	606	305	237
20 to 24 years	5,574	915	1,560	1,203	811	505	262	153	79	77
25 to 29 years	7,878	1,046	2,354	2,078	1,217	649	279	124	60	71
30 to 34 years	7,764	654	1,831	2,297	1,555	829	344	139	54	51
35 to 39 years	4,050	262	654	1,203	947	541	262	109	42	30
40 to 44 years	3,632	392	654	984	744	433	229	117	49	30
45 to 49 years	4,645	654	1,046	1,094	811	505	278	146	67	44
50 to 54 years	3,786	785	915	765	609	361	180	95	43	33
55 to 59 years	2,798	785	654	547	338	252	115	58	27	22
60 years and over	6,411	2,485	1,308	875	744	505	262	117	60	55
Median age	24.5	42.6	26.9	24.3	19.9	17.3	15.4	14.6	14.4	15.2
FEMALE										
All ages	103,666	16,348	22,232	23,733	18,191	11,503	6,044	3,066	1,417	1,132
Under 10 years	22,619	785	3,269	5,687	5,072	3,678	2,113	1,103	514	398
10 to 19 years	14,137	1,308	2,746	3,172	2,705	1,875	1,130	642	314	245
20 to 24 years	8,348	1,439	2,354	1,859	1,218	721	360	190	100	107
25 to 29 years	8,418	1,046	2,354	2,297	1,420	721	311	139	63	67
30 to 34 years	9,656	1,177	2,092	2,734	1,893	1,010	442	182	73	53
35 to 39 years	6,587	1,046	1,439	1,641	1,150	685	344	168	70	44
40 to 44 years	5,804	1,308	1,439	1,203	811	505	279	146	66	47
45 to 49 years	6,691	1,831	1,700	1,312	879	505	246	124	54	40
50 to 54 years	5,694	1,700	1,439	1,094	744	396	180	80	33	28
55 to 59 years	4,944	1,569	1,177	875	676	361	164	66	30	26
60 years and over	10,768	3,139	2,223	1,859	1,623	1,046	475	226	100	77
Median age	29.0	46.8	30.9	27.5	25.4	21.4	18.0	16.7	16.2	16.9
URBAN										
BOTH SEXES										
All ages	85,997	13,205	21,121	22,454	14,791	7,800	3,560	1674	771	621
Under 10 years	19,371	792	3,943	5,894	4,201	2,366	1,145	557	265	208
10 to 19 years	12,220	1,122	2,535	3,256	2,455	1,430	732	373	180	137
20 to 24 years	6,654	1,387	1,971	1,403	887	507	249	130	61	59
25 to 29 years	8,068	1,255	2,816	2,077	1,065	481	198	90	41	45
30 to 34 years	9,166	1,122	2,535	2,863	1,568	676	239	94	37	32
35 to 39 years	5,503	792	1,267	1,684	1,006	455	178	71	30	20
40 to 44 years	4,903	924	1,196	1,291	799	390	168	77	34	24
45 to 49 years	5,589	1,255	1,478	1,291	799	416	194	88	39	29
50 to 54 years	4,539	1,255	1,197	954	591	299	137	62	25	19
55 to 59 years	3,431	1,122	845	618	444	234	97	40	17	14
60 years and over	6,553	2,179	1,338	1,123	976	546	223	92	42	34
Median age	27.9	40.7	28.7	26.6	24.2	21.0	18.7	17.5	16.8	17.5
MALE										
All ages	38,184	5,018	9,293	10,329	6,804	3,614	1,673	789	366	298
Under 10 years	9,884	396	2,042	3,031	2,130	1,196	575	279	131	104
10 to 19 years	5,792	462	1,197	1,572	1,183	689	356	178	88	67
20 to 24 years	2,511	529	704	505	355	208	102	57	27	24
25 to 29 years	3,835	595	1,408	954	473	221	96	44	21	23
30 to 34 years	4,173	396	1,197	1,347	740	312	107	42	16	16
35 to 39 years	2,105	198	422	730	444	195	71	27	10	8
40 to 44 years	2,003	264	422	617	385	182	76	33	15	9
45 to 49 years	2,383	396	563	617	414	208	102	46	21	16
50 to 54 years	1,875	396	493	449	266	143	71	33	14	10
55 to 59 years	1,286	396	352	225	148	91	41	19	8	6
60 years and over	2,337	990	493	282	266	169	76	31	15	15
Median age	26.2	38.3	27.4	25.3	21.3	18.9	17.3	16.8	15.9	16.7

TABLE A-7.—*Members of families living together in the Soviet Union, by family size, urban-rural residence, and age and sex: Jan. 15, 1959*—Continued

Age, sex, and residence	All families	Number of Family Members								
		2	3	4	5	6	7	8	9	10 or more
FEMALE										
All ages	47,813	8,187	11,828	12,125	7,987	4,186	1,887	885	405	323
Under 10 years	9,487	396	1,901	2,863	2,071	1,170	570	278	134	104
10 to 19 years	6,428	660	1,338	1,684	1,272	741	376	195	92	70
20 to 24 years	4,143	858	1,267	898	532	299	147	73	34	35
25 to 29 years	4,233	660	1,408	1,123	592	260	102	46	20	22
30 to 34 years	4,993	726	1,338	1,516	828	364	132	52	21	16
35 to 39 years	3,398	594	845	954	562	260	107	44	20	12
40 to 44 years	2,900	660	774	674	414	208	92	44	19	15
45 to 49 years	3,206	859	915	674	385	208	92	42	18	13
50 to 54 years	2,664	859	704	505	325	156	66	29	11	9
55 to 59 years	2,145	726	493	393	296	143	56	21	9	8
60 years and over	4,216	1,189	845	841	710	377	147	61	27	19
Median age	29.5	41.5	30.4	27.7	26.0	23.0	19.9	18.4	17.4	18.2
RURAL										
BOTH SEXES										
All ages	100,799	12,951	18,111	21,292	19,022	13,837	7,906	4,166	1,949	1,565
Under 10 years	26,378	583	2,838	5,642	6,163	5,051	3,083	1,656	767	595
10 to 19 years	15,354	1,360	2,656	3,088	2,853	2,260	1,479	875	440	343
20 to 24 years	7,303	1,036	1,932	1,650	1,141	715	373	213	117	126
25 to 29 years	8,232	842	1,932	2,236	1,508	899	384	167	82	92
30 to 34 years	8,306	712	1,449	2,182	1,826	1,199	553	224	89	72
35 to 39 years	5,315	583	845	1,224	1,103	784	429	208	84	55
40 to 44 years	4,521	777	905	905	761	530	328	182	80	53
45 to 49 years	5,658	1,166	1,268	1,118	875	577	339	177	82	56
50 to 54 years	4,893	1,165	1,147	959	723	461	226	120	52	40
55 to 59 years	4,399	1,295	1,026	745	609	369	192	89	39	35
60 years and over	10,440	3,432	2,113	1,843	1,370	992	520	255	117	98
Median age	25.8	47.5	29.2	25.6	22.2	18.3	15.9	14.9	14.7	15.5
MALE										
All ages	44,932	4,792	7,667	9,688	8,826	6,526	3,750	1,989	937	757
Under 10 years	13,396	324	1,449	2,874	3,120	2,560	1,547	833	388	301
10 to 19 years	7,586	648	1,328	1,844	1,407	1,107	734	432	217	169
20 to 24 years	3,042	453	785	692	457	300	158	94	50	53
25 to 29 years	4,003	389	1,026	1,065	761	415	181	78	41	47
30 to 34 years	3,646	259	604	1,011	837	530	237	94	39	35
35 to 39 years	2,085	130	241	532	494	369	181	83	32	23
40 to 44 years	1,677	130	241	373	381	254	158	83	35	22
45 to 49 years	2,103	259	423	426	380	277	170	94	45	29
50 to 54 years	1,897	323	423	373	304	230	124	68	30	22
55 to 59 years	1,536	388	362	266	228	138	79	42	17	16
60 years and over	3,961	1,489	785	532	457	346	181	88	40	40
Median age	22.4	46.2	26.3	23.1	19.2	16.4	14.5	13.7	13.7	14.6
FEMALE										
All ages	55,867	8,159	10,444	11,604	10,196	7,311	4,156	2,177	1,012	808
Under 10 years	12,982	259	1,389	2,768	3,043	2,491	1,536	823	379	294
10 to 19 years	7,768	712	1,328	1,844	1,446	1,153	745	443	223	174
20 to 24 years	4,261	583	1,147	956	684	415	215	119	67	73
25 to 29 years	4,229	453	906	1,171	837	484	203	89	41	45
30 to 34 years	4,660	453	845	1,171	989	669	316	130	50	37
35 to 39 years	3,230	453	604	692	609	415	248	125	52	32
40 to 44 years	2,844	647	664	532	380	276	170	99	45	31
45 to 49 years	3,555	907	845	692	495	300	169	83	37	27
50 to 54 years	2,996	842	724	586	419	231	102	52	22	18
55 to 59 years	2,863	907	664	479	381	231	113	47	22	19
60 years and over	6,479	1,943	1,328	1,011	913	646	339	167	74	58
Median age	28.5	47.9	32.7	27.3	24.5	20.1	17.3	16.0	15.7	16.3

Source: Adapted from Norton T. Dodge, "Women in the Soviet Economy," Baltimore, Johns Hopkins Press, 1966, pp. 254–256 (forthcoming).

MANPOWER IN THE U.S.S.R.: A SURVEY OF RECENT TRENDS AND PROSPECTS

BY

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MANPOWER IN THE U.S.S.R.: A SURVEY OF RECENT TRENDS AND PROSPECTS

I. Introduction

A. THE MANPOWER PROBLEM

During the first four decades of the Soviet regime, labor was treated almost as a free good. Little concern was expressed over its relative scarcity or abundance and, except for the efforts devoted to training skilled workers and transferring masses of collective farmers to industry, only minor attention was given to the operation of the labor market.

Shortly before World War II, as the leaders began to prepare the nation for mobilization and possible war, an attempt was made to institute some sort of control over the distribution of labor. In 1938, labor booklets were issued to all persons employed in the state sector as a means of controlling hiring and turnover. Tightened control was extended to the collective farm sector a year later when a minimum number of labor-days to be earned annually by each collective farmer was established. In 1940, a series of measures were adopted which greatly restricted the mobility of state workers and imposed firm controls on the conditions of work.

These measures were largely kept in force until the mid-1950's, although the labor shortages of the war years no longer existed. Throughout the postwar period—as indeed throughout the entire Soviet period—the principal problem was not the number of persons available for labor, but the number who had the skills and training required to meet the demands of an industrializing economy, and the wartime controls were particularly useful in controlling the distribution and utilization of the skilled labor force.

As work began on the draft of the 7-year plan, however, the problem of actual shortages of persons entering into economic activity during the plan period (1959–65) became of great concern. The reduced birth cohorts of the war years were to reach working age in the early 1960's and the prospects of an inadequate labor supply seemed all too real. In order to cope with this situation, a number of administrative and institutional changes were made and, as will be pointed out below, the labor goals of the plan were greatly "overfulfilled" by the end of the plan period. As a matter of fact, it seems clear that the real concern *during* the plan period was not with numbers of people, but with their training.

The manpower problems facing Soviet planners at present are complex in character, typical of a modern urban, industrial society. First is the problem of supply. A rapid growth in the annual increment of young persons to the working ages and a revision of the school system (eliminating the 11th grade, thus obtaining two gradu-

ating classes in 1966) means that at least during the first few years of the new 5-year plan (1966–70) the economy will be faced with the problem of job placement for millions of young people. Numerous Soviet officials have discussed this problem, and in December 1965 one noted that unless prompt action were taken perhaps half of the anticipated 3 million graduates from the 10th and 11th grades in 1966 "will remain without jobs."[1] Projections of the population 14 years of age and over, of the labor force, and of annual average employment (table 5), however, suggest that the total supply of labor during the new plan period will not be overly abundant.[2] A series of measures to meet demand probably will have to be taken, viz., to utilize the persons available more intensively, to retain pensioners in the active work force, and to continue the program for a shortened period of training in higher and secondary specialized educational institutions.

The problem of labor supply includes not only the number of persons available, but also their sectoral and regional distributions. For several decades there have been virtually no serious studies of labor turnover and migration, yet these important factors have resulted in crucial shortages of labor in many enterprises, industries, and regions. Even collective farms, the continual supplier of masses of workers for the state sector, are undergoing serious outflows of trained young persons and partial imbalances, both local and regional, in their supply of labor.

Perhaps the most serious manpower problem confronting Soviet planners, however, and one closely related to the supply problem, is that of training and skills. The ever-increasing demands for more highly trained labor in all sectors of the economy are widely discussed and of great concern at all levels. Efforts to meet these demands will affect the entire educational system as well as the in-service and on-the-job training programs of economic enterprises and organizations. One striking illustration of the problem can be seen in a report on the demand for economists, which, reflecting the enhanced cost consciousness throughout the economy, has risen sharply in recent years. According to data collected in a special survey made by the Central Statistical Administration (*Tsentral'noye statisticheskoye upravleniye*—cited hereafter as TsSU) only 20,300 of 257,000 economists' positions were filled by persons with a higher education. In addition to this group, which comprised 8 percent of the total, only 19 percent more of the positions were filled by persons who had special training. The remaining 73 percent of the positions were filled by persons without specialized training, i.e., the so-called *praktiki*.[3]

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[1] Pravda, Dec. 10, 1965, p. 3. In July 1965, N. Rogovskiy, chief of the Department of Labor Productivity and Labor Resources in Gosplan, addressed himself to the problem of job placement of youths in an article which appeared in the Ukraine (Pravda Ukrainy, July 7, 1965, p. 3) and in Tadzhikistan (Kommunist Tadzhikistana, July 2, 1965, p. 4). At the December 1965 plenum, the recently appointed chairman of Gosplan, N. K. Baybakov, stated that Gosplan, the State Committee on Labor and Wage Problems, and other concerned agencies were then working on the problem.

[2] The concept of "labor force" used here is that employed in the 1959 All-Union Population Census of the U.S.S.R. It relates to persons who participated in economic activity during the year, and represents the number of persons claiming a particular occupation, even if they are not presently working at that occupation. Employment data are annual averages based on monthly reports of persons actually employed at an enterprise, institution, or farm.

[3] Ye. S. Rusanov, Zanyatost' naseleniya i ispol'zovaniye trudovykh resursov (Employment of the Population and Utilization of Labor Resources), Moscow, 1965, p. 95.

This paper will present a detailed survey of the manpower situation in the Soviet Union, with special attention to the changes during and the achievements of the 7-year plan period (1959–65) and to the problems which exist in meeting the goals of the new 5-year plan for the years 1966–70. The remainder of this section provides a brief outline of the efforts made by Soviet officials and scholars to study the problems which they face in planning the use of their manpower resources and of the data on manpower which have recently become available. The next three sections are devoted to the supply, demand, and utilization of Soviet labor, and the final section is a brief summary. The appendix tables present selected statistical data on Soviet manpower and some comparisons with employment in the United States.

B. NEW INSTITUTIONS AND RESEARCH

The serious study of labor resources and utilization was almost totally neglected in the U.S.S.R. during the Stalin regime. After abolition of the Labor Commissariat in July 1933, official policy dictated the elimination of other labor research institutes and journals along with

> * * * the curtailment or complete cessation of social research (in demography, social psychology, social statistics, social hygiene, and so forth) and of research on the scientific organization of labor and administration, the lack or scarcity of information on employment, and the utilization of labor resources. The neglect until now of the "labor services" has had an extremely negative effect on the growth of labor productivity, the planning of public education, the preparation of skilled cadres, and job placement, and it has often created many complications for young men and women starting out in their economically active life.[4]

Many scholars have commented on this situation. A prominent economist, L. V. Starodubskiy, underscored the neglect of research during the earlier period when he wrote in 1962 that "At best, a small section at the end of a long monograph was devoted to labor resources."[5] Ye. V. Kasimovskiy, a staff member of the Central Scientific Economic Research Institute of Gosplan R.S.F.S.R., complained that little work on labor resources was performed during the earlier period:

> Essentially this work was limited to individual field investigations carried out on an experimental basis by scientific research organizations and, infrequently, by statistical and planning agencies. It is enough to indicate that until now even certain persons in the Central Statistical Administration of the U.S.S.R. have denied not only the expediency, but also the feasibility of working out balances of labor resources by city.[6]

V. I. Perevedentsev, a leading analyst of migration who is attached to the Institute of Economics and Organization of Industrial Production of the Siberian Division of the U.S.S.R. Academy of Sciences in Novosibirsk, has noted that "Despite exceptionally large-scale migrations in our country and the availability of some statistical data concerning them, population migration * * * essentially was never stud-

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[4] V. N. Shubkin, "Youths Enter Life (According to Materials of a Sociological Investigation of the Problem of Job Placement and Selection of Occupation)," Voprosy filosofii (Questions of Philosophy), No. 5, May 1965, pp. 59–60.

[5] L. V. Starodubskiy, "Questions of Methods of Research on the Complex Development of a Region," Izvestiya Sibirskogo otdeleniya AN SSSR (News of the Siberian Division of the Academy of Sciences of the U.S.S.R.), No. 10, 1962, p. 14.

[6] Ye. V. Kasimovskiy (Ed.), Problemy ekonomiki truda (Problems of Labor Economics), Moscow, 1965, p. 287.

ied by economic science until recently."[7] This neglect continued until recently with the single major exception being M. Ya. Sonin's monograph on the growth of the labor force, which was published in 1959 and was the forerunner of the current interest in labor studies.[8]

This interest has resulted in the burgeoning of solid research conducted by a number of recently organized institutions. Since the formation of the Siberian Division of the Academy of Sciences of the U.S.S.R. in Novosibirsk in 1958, a major portion of the work on manpower problems has been conducted by the Institute of Economics and Organization of Industrial Production of the Division, under the directorship of G. A. Prudenskiy. The institute began to publish the results of its work in 1961, and it has since been a prime source of information on the organization of production and labor, worktime, labor turnover, migration, and labor productivity—all areas in dire need of serious study.

Another fairly recent (1955) organization is the State Committee on Labor and Wage Problems. This Committee, especially its Scientific Research Institute of Labor (1956) and Central Bureau for Industrial Labor Norms (1957), was the responsible coordinating agency (in 1962) of over 72 institutions and organizations working on problems of labor productivity, 89 working on the organization of and norms for labor, 57 working on methods of improving the organization of administrative work, 33 working on labor resources, and 96 working on problems of improving wages and raising the level of living.[9] The Scientific Research Institute of Labor also provides technical assistance to organizations which lack the capacity to design surveys on labor problems.

Although the Scientific Research Institute of Labor has now had almost 10 years of experience in conducting studies and surveys on labor turnover, it appears that two other organizations have preempted the field by combining in their work the disciplines of economics, sociology, and industrial psychology. In 1960, a sociological laboratory and an economic research laboratory were formed under the Leningrad State University to study manpower problems separately; after a brief period they were combined into the Scientific Research Institute of Complex Social Research. In 1964, an Institute of Social Research was organized under the Leningrad City Party Committee.[10] The results of the surveys conducted by these two Leningrad organizations provide the most extensive data available on labor turnover in the U.S.S.R.—motivation, occupation, branch or sector, level of pay in prior and new employment, age, sex, and education—as well as proposals for means of reducing the level of turnover.

In 1963, the interdepartmental Labor Resources Laboratory of the Economics Faculty of Moscow State University was formed to study the impact of automation on the organization of labor, labor turnover, and balances of labor resources at the local level. This laboratory was

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[7] V. I. Perevedentsev, "Questions of Methods for Studying Contemporary Population Migration in the U.S.S.R.," in G. A. Prudenskiy (Ed.), Voprosy trudovykh resursov v rayonakh Sibiri (Questions of Labor Resources in Regions of Siberia), Novosibirsk, 1961, p. 129.

[8] M. Ya. Sonin, Vosproizvodstvo rabochey sily v SSSR i balans truda (Growth of the Labor Force in the U.S.S.R. and the Balance of Labor), Moscow, 1959, 368 pp.

[9] Trud i zarabotnaya plata (Labor and Wages), No. 12, December 1962, p. 6.

[10] A. G. Zdravomyslov and V. A. Yadov, Trud i razvitiye lichnosti (Labor and Personality Development), Leningrad, 1965, pp. 13–14.

authorized a full-time staff of nine persons as well as the right to request students and other scholars to assist in the design and conduct of surveys.[11]

The Scientific Research Laboratory on the Economics of Public Education under the Moscow State Pedagogical Institute was formed in 1964 to study such questions as: What is the best means of training skilled workers—the vocational-technical schools, secondary polytechnical schools with production training, or on-the-job apprenticeship? What are the relative costs and returns emanating from investment in education? These and other important aspects of integrating educational forecasts with manpower and national-economic planning had never been *systematically* investigated before the formation of this Laboratory.[12]

In late 1965, the All-Russian Scientific Research Institute of the Organization of Labor and Payment for Work in Agriculture was created.[13] V. A. Tikhonov, the director of the new Institute, indicated in an interview that its first project would be on the rational utilization of labor resources, to include differential regional goals for output per man and associated problems of machinery supply, the location of enterprises, the distribution of employment between the socialized sector and the private subsidiary economy, and the training of cadres. In addition, concentrated work on studies of the worktime of the rural population will be undertaken. These studies will follow the pattern used by S. G. Strumilin in the 1920's.

This renaissance of serious manpower analysis has not evolved without some interesting sidelights, however. In November 1964, the Deputy Chief of Gosplan in Kazakhstan, I. Omarov, had the following tale to relate. Kazakhstan, according to Omarov, had experienced a rapid expansion of its population from 9 to 12 million in the short period of 5 years. Nevertheless, the Republic had an acute labor shortage, due to excessively high turnover. Because of frictional unemployment, wrote Omarov, in 1963 some 45,000 persons did not participate in productive work. Seeking to rectify this situation, the republican Gosplan deemed it necessary to know more than the numbers involved. Since the republican statistical agency (TsSU) could provide no more than general information on how many wage workers voluntarily quit their past place of employment, how could the planning organization find out about the occupational composition of this group, by age, sex, length of tenure, education, and earnings? By taking a sample survey. Information was collected on such factors as motivation, skill level, and interbranch movement. "Completely unexpectedly," however, "a telegram arrived which was signed by Starovskiy, the Chief of the Central Statistical Administration of the U.S.S.R., with the request that the survey be stopped." How could this occur when the statistical agency virtually disregards any social research? The Kazakh Gosplan, according to Omarov, also had endeavored to analyze the composition of persons not working due to

[11] N. Filin, "Study of Labor Resources," Vestnik Moskovskogo universiteta, Seriya VIII, Ekonomika, filosofiya (Herald of Moscow University, series VIII, Economics, Philosophy), No. 2, March–April 1965, pp. 105–106.

[12] I. Kaplan, "Concern With the Economics of Education," Nauchnyye doklady vysshey shkoly, Ekonomicheskiye nauki (Learned Reports of Higher Schools, Economic Sciences), No. 1, January–February 1965, pp. 126–129.

[13] "For the Village—Extensive Science," Komsomol'skaya Pravda, Dec. 15, 1965, p. 1.

technological unemployment or the lack of job opportunities for women (especially in certain cities engaged almost exclusively in heavy industry). The survey was not allowed to continue, however, and the local planning authorities were advised by TsSU to utilize data from the 1959 census of population. Omarov complained that these materials already were 6 years old, and that Kazakhstan had changed significantly. After citing another example of the type of information desired by the republican planners but which could not be obtained, Omarov closed with an appeal for the creation of an institution to collect many types of socioeconomic information.[14]

In considering this recent development of research on labor problems, one cannot but wonder how manpower was planned in the Soviet Union in earlier years. Apparently such planning was essentially statistical in nature, an exercise in a series of calculations and estimates of productivity levels and production goals. Clearly, planning was not based on a *broad* analysis of the size and composition, flows, occupational structure, organization, wage levels, and attitudes of the labor force.

C. NEW DATA

As both cause and effect of the heightened interest in manpower problems and the activities of the new organizations, a great amount of new manpower statistics and analyses has been published in recent years—primarily in studies of the research institutes. For the first time since the 1930's, aggregate rates of labor turnover are available, as well as information on characteristics and motivations of those changing jobs. Data on migration, including volume, direction, and composition have been released, in addition to analyses of the cause and impact of migration. Materials on regional (i.e., below the republic) industrial employment and output have appeared in recent publications on the location of industry and in numerous works prepared by various republican institutes of economics. Some trade union membership data, which are conceptually more comparable to U.S. employment data than the annual average branch employment data regularly reported in Soviet sources, have been released in trade union publications. Information on the channels of labor supply, however, is still scattered and haphazard. It is still impossible, for example, to obtain a systematic series of data on numbers of graduates from the eighth and tenth (eleventh) grades or on the flow of these graduates to work, higher school, the Armed Forces, or other activities.

There has been some improvement in the amount and types of labor statistics issued by TsSU. Since the issuance of "Dimensions," [15] the major contribution of this agency was made in the release of 16 volumes of data from the 1959 All-Union Census of Population. TsSU has also released, for the first time since 1936, average monthly wage data for all workers and employees in the national economy and for both total workers and employees and wage workers in the various branches of the national economy. Some worktime data for industry as a whole and

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[14] "Omissions of Statistics," Izvestiya, Nov. 14, 1964, p. 3.

[15] Joint Economic Committee, "Dimensions of Soviet Economic Power," Washington, December 1962, 744 pp. A summary of the census data on the labor force, by socioeconomic category, age, and sex, was given in Joint Economic Committee, "Annual Economic Indicators for the U.S.S.R.," February 1964, table V–A–1, pp. 44–45. This publication is cited hereafter as Annual Economic Indicators.

for selected branches have been published, but for the remainder of the state sector very little worktime data has been issued. Finally, TsSU has released for the first time in the postwar period a sizable amount of information on employment in industry, by branch, for both wage workers and total industrial-production personnel.

II. Supply

One of the principal goals set forth in the 7-year plan was a net growth in the annual average number of workers and employees [16] during the plan period of 11.5 to 12 million. The principal sources of supply for this growth, according to Soviet writers, were to be the schools, the households, the private subsidiary economy, and the collective farms.[17] What actually occurred was almost a doubling of this planned net increment, or an increase of 22.3 million persons from 54.6 million in 1958 to 76.9 million in 1965. The additional numbers came not only from the above sources but from others as a result of unanticipated changes in the educational system and the pension laws, of continued demobilization, and of other statistical and sectoral transfers.

Perhaps the greatest change during the plan period was one of approach to manpower problems. At the beginning, the strategy was one of attracting as many persons as possible into the socialized economy to alleviate an expected labor shortage. By the end of the plan period, the thrust was toward adjusting both the labor market and the educational system to absorb vast inflows of young persons. In addition, the continuation of uncontrolled labor mobility was a matter of serious concern, for the great amount of movement was aggravating not only regional labor deficits and surpluses, but plans for investment and output as well.

These developments point out the complex nature and many-sided aspects of labor supply—not only in the Soviet Union but in all countries. The discussion which follows is concerned with two aspects of labor supply in the U.S.S.R.: the resources, or sources from which it derives, and the institutional channels through which it enters economic activity.

A. SOURCES

1. The population base

During the 7-year plan period, the population 14 years of age and over grew by 16.8 million, and it will grow by an estimated 15.3 million in the years 1966–70. The average annual growth was 2.4 million during the first period but it will be 3.1 million during the second. The population in the able-bodied ages grew by 5.3 million during the 7-year plan period; [18] in contrast, over the next 5-year plan period, it is estimated that the same group will grow by almost twice this

[16] This is a major socioeconomic group in the U.S.S.R. comprising persons employed primarily in the state sector. It embraces all classes of workers: i.e. wage workers (*rabochiye*) engaged in physical work directly related to production; salaried employees (*sluzhashchiye*) performing administrative, accounting, professional (except technical), secretarial, clerical, and supply and sales functions; engineering-technical personnel (*ITR*); minor service personnel employed as office cleaners, doormen, messengers, etc.; guards; and apprentices.

[17] For a detailed review of the plan and the labor resources, see "Dimensions," pp. 627–633.

[18] The able-bodied age group consists of males 16 to 59 years of age and females 16 to 54 years of age.

number (9.8 million) in 2 less years. Thus, from a point of low increase due to wartime birth deficits, the supply of population is currently returning to a more "normal" situation. The nadir in the total size of the able-bodied population was reached in 1961.[19]

These data show that the labor supply from the population during the forthcoming 5-year plan will be more generous that it was during the past plan period. If employment increases as expected, however, additions to the labor force from the population base may not be sufficient. As noted below, measures probably will be adopted to utilize the existing labor force more efficiently and to draw labor from sources other than increments to the able-bodied population.[20]

2. The educational system

The educational system has more and more come to be used as an instrument for regulating the supply of labor in the economy. Changes in requirements for admission to the various educational institutions have been used as a device for encouraging students to enroll directly in a higher school after graduation from a lower school or to discourage them from enrolling and push them to go to work. After the 1958 school reform, the concern of most potential entrants to higher educational institutions was the fact that entrance priority was given to applicants with 2 years of work or military service prior to enrollment. The large majority of students were forced to take a job until they could qualify for full-time studies or to enroll in the evening or correspondence divisions of higher educational institutions.

The results of this school reform, however, have been negative. Dropout rates from evening and correspondence schools have been two to three times higher than those of day schools, and the quality of the students in full-time day schools has been acknowledged to be of a lower level than prior to the school reform. When describing the revocation of certain rules of admission, V. Yelyutin, the Minister of Higher and Secondary Specialized Education of the U.S.S.R., admitted that the priority admission of students with production experience, or of students sponsored by enterprises and organizations, "failed to prove itself."[21] From the viewpoint of labor supply, however, the part-time students did enter the ranks of persons employed earlier than they would have prior to the reform.

Three subsequent rulings have affected higher educational institutions and their role in the supply of labor. In June 1964, the length of courses in higher and secondary specialized educational institutions was scheduled to be reduced by 6 months to 1 year, depending on the field of study, over the course of the following 3 years.[22] Beginning in 1965, the period of active military duty was reduced to 1 year for enlisted men who are graduates of higher educational institutions, thereby enabling them to be employed much earlier in the civilian

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[19] From unpublished estimates of the Foreign Demographic Analysis Division, U.S. Bureau of the Census. For more details on the population structure, see James W. Brackett and John W. De Pauw, "Population and Demographic Trends in the Soviet Union," in this volume.

[20] See table 5 and sec. III, below.

[21] "The Higher Educational Institutions Expect Good Replenishment," Pravda, Mar. 20, 1965, p. 6.

[22] V. Yelyutin, "Outstanding Specialists To Be Prepared in Shorter Time," Pravda, June 20, 1964, p. 4; and Ekonomicheskaya gazeta, July 18, 1964, p. 39.

economy and to lengthen their working life.[23] In February 1966, a decree was issued which was contrary to the intent of the previous measures and which reflected the vastly increased supply of young persons. According to this decree, there is to be an increase (in comparison with 1965) in the number of admissions to full-time higher and other schools to accommodate the overflow of secondary school graduates.[24]

The vocational-technical school system also has been used to adjust the supply of young persons to the demand for labor. In the school reform of 1958, admissions to these training schools were limited generally to applicants with 8 years of education, though for certain cases the level was set at 6 years.[25] Only a fourth-grade education had been required when this training system was created in 1940; the minimum was later raised to 7 years.

It is at the 8th and 10th-11th grade levels in which the greatest impact on labor supply can be effected by changing educational requirements, since it is from these grades that the greatest number of persons enter the labor force. In the school reform of 1958, under pressure to provide better trained entrants to the labor force, an 11th grade was added to the existing 10-year system. By the fall of 1964, more than 1.4 million students were in this class.[26] The decision has now been made to eliminate the 11th grade at the end of the 1965/66 school year, thus releasing additional students for entry into the working force.

As noted above, the data reported in Soviet sources do not permit detailed analysis of the allocation of graduates from the educational system. Thus, it is not possible to determine how many get jobs, how many continue full-time schooling, how many enter the armed forces, or how many marry and become economically inactive. The educational system is the prime source of new entrants to the labor force, however, and Soviet leaders clearly plan to continue to control the size, career orientation, and allocation of its graduates. The overall impact of recent changes seems to be toward increasing the flow of young persons into the labor force. No further changes which would counteract this trend have been announced.

3. Pensioners

The supply of labor also was augmented during the 7-year plan period, apparently beyond original expectations, by a revision of the pension laws. Persons receiving pensions had been penalized, under the July 1956 regulations for working full time: anyone who earned more than 100 rubles per month previous to retirement could draw no pension if he went back to work, no matter what the amount of his new wages. Other working pensioners could earn any amount in their new job and receive their pension of 15 rubles per month. Persons who had retired on a "privileged" basis under the 1956 law could receive up to 50 percent of their pension no matter what they earned.

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[23] "On the Period of Active Military Service for Soldiers, Sailors, Sergeants, and Sergeant Majors With Higher Education," Vedomosti Verkhovnogo Soveta SSSR (Journal of the Supreme Soviet of the U.S.S.R.), No. 13, March 1965, art. 165, p. 269.

[24] "In the Central Committee of the C.P.S.U. and the U.S.S.R. Council of Ministers," Pravda, Feb. 6, 1966, p. 2.

[25] N. Rogovskiy, "Employment of Youth Today and Tomorrow," Kommunist Tadzhikistana, July 2, 1965, p. 4.

[26] TsSU pri Sovete ministrov SSSR, Narodnoye khozyaystvo SSSR v 1964 godu, statisticheskiy yezhegodnik (The National Economy of the U.S.S.R. in 1964, A Statistical Year book) Moscow, 1965, p. 668. This volume, and others in this series are cited hereafter as Nar. khoz. v 19—.

Persons who worked less than the minimum amount of time for eligibility (25 years for men, 20 years for women) did not receive any pension. Finally, the 1956 law did not provide for special compensation or differentiation in earnings by geographic region, branch of economy in which employed, or personnel category.[27]

According to new regulations adopted in February 1964, as of April 1, 1964, and for 5 years thereafter, there are no limits on the amount of time which can be worked by persons receiving a pension. There are, however, limits on the branch or sector in which certain categories of retired personnel may seek employment and on the amount of gross earnings, or combined pensions and earnings.[28] A maximum of 200 rubles per month may be earned (inclusive of pensions) by all pensioners, except those working in agriculture, who have no maximum. Retired wage workers, minor service personnel, and communications workers may work in any branch and receive the maximum possible combined income. Former engineering-technical personnel, if employed in one of a limited number of sectors (industry, construction, transportation, communications, or housing and communal economy) may receive up to 50 percent of their pensions in addition to earnings for work, and up to 75 percent if they accept employment in the Urals, Siberia, or the Far East. There are no limits set for pensioners who find work on collective farms or in state agricultural organizations. Special limits on gross earnings have been set for pensioners working as medical personnel, since this category was recently given a pay raise.

The state social security system for collective farmers, adopted in 1964, is officially described as a "new and important stimulant for the further increase of work activity by the collective farm peasantry and of agricultural production."[29] As in the pension law for the state sector, a minimum of 25 years of work for males and 20 years for females is required for basic eligibility. Even though this pension law (the first such state law for collective farmers) took effect only at the beginning of 1965, by July 1 more than 6,300,000 collective farmers were receiving pensions from the central fund.[30]

These changes in the pension laws were aimed not only at facilitating the return of older persons to work in order to compensate for partial or local labor shortages; they probably also had the special purpose of recruiting skilled persons from among the retired, for the number of *trained* young persons entering the market is not adequate. The original prediction by the Deputy Minister of Social Security of the R.S.F.S.R., G. T. Drozdov, that 1 million persons (workers and employees) would return to work apparently was reasonably accurate. According to the 1965 plan goal, which was published in early 1964 prior to the promulgation of the pension law, the annual average number of workers and employees was expected to reach 76.1 million in 1965, an increase of 2.9 million over 1964. The figure reported for 1965 is 76.9 million, an increment of 3.7 million over 1964, which may well

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[27] M. L. Zakharov (compiler), Gosudarstvennoye sotsial'noye strakhovaniye (State Social Insurance), Moscow, 1963, pp. 170–172.

[28] "Payment of Old-Age Pensions to Working Pensioners," Sotsial'noye obespecheniye (Social Security), No. 6, June 1964, pp. 54–58.

[29] "On Pensions and Aid to Collective Farm Members," Vedomosti Verkhovnogo Soveta SSSR, No. 29, July 18, 1964, art. 340, p. 547.

[30] Nar. khoz. v 1964, p. 603.

have contained 800,000 pensioners.[31] The increase of 14 to 15 million workers and employees projected for the 1966–70 plan period yields an average annual increase of 2.8 to 3 million, and probably contains no allowance for returned pensioners.[32] The influx during 1965 no doubt included the bulk of pensioners who are eligible—and willing—to return to work, but some may be expected to reenter active employment each year during the forthcoming plan period.

4. Sectoral transfers

A major source of labor supply in the Soviet Union has been the transfer of persons between sectors—usually from the private or collective economies to the state economy. Such transfers, which are not truly net additions to the total working force, have been both forced and voluntary. Throughout the Soviet period, it has been in large part due to such means that the state sector was able to meet its goals for labor. The great reserves contained in the collective and private sectors are now largely depleted, however, and future transfers will be much more difficult to make.

(*a*) *Demobilization.*—The demobilization of military personnel is estimated to have released some 800,000 men to the civilian economy during the years 1959–61. (See table 5.) Little is known about changes in the size of the Armed Forces since 1961, and it has been assumed that the level remained constant at 3 million through 1965 and that no change will occur through 1970.

(*b*) *Collective farms.*—The conversion of collective farms to state farms began before the 7-year plan period. Prior to 1959, approximately 8,500 farms were converted, including 5,730 in the peak year of 1957. During the years 1959–63, more than 10,700 farms were converted, largely in the first 3 years, for the process slowed down in 1962 and 1963 when only 402 and 271 farms, respectively, were converted. Thus, through the year 1963 over 19,200 collective farms were transferred from the collective to the state sector.[33]

The total employment added to state farms through this conversion process is reported to have been about 4 million (annual average) persons.[34] Of this number, 2.9 million were transferred to the State sector during the years 1959–64. Corresponding to the sharp cutback in the number of farm conversions in 1963 and 1964, only 100,000 farmers were transferred in each of these years. Brezhnev announced a moratorium on such actions in March 1965, but recent data show that 1,336 collective farms were eliminated and 1,564 state farms created in 1965.[35] Although the type of manpower available on these farms is less desirable than hitherto, the process of transferring collec-

[31] G. T. Drozdov, "2,000,000 Hands More," Nedelya, No. 10, Mar. 1–7, 1964, p. 4; A. Korobov, "Basic Tasks of the Two-Year Plan," Planovoye khozyaystvo (Planned Economy), No. 2, February 1964, p. 10; and Pravda, Feb. 3, 1966, p. 2.

[32] Ekonomicheskaya gazeta, No. 49, December 1965, p. 6; and A. A. Bulgakov, "25 Years of the State Vocational-Technical Educational System," Professional'no-tekhnicheskoye obrazovaniye (Vocational-Technical Education), No. 9, September 1965, p. 5.

[33] V. G. Venzher, Ispol'zovaniye zakona stoimosti v kolkhoznom proizvodstve (Utilization of the Law of Value in Collective Farm Production), second revised and enlarged edition, Moscow, 1965, pp. 113–114. This source reports the following data on the number of conversions: prior to 1957—more than 1,500 farms; 1957—5,730; 1958—1,256; 1959—2,074; 1960—5,068; 1961—2,000; 1962—402; 1963—271. Data are also given on the formation of new farms, consolidations, and subdivisions.

[34] Nar. khoz. v 1962, p. 373; Nar. khoz. v 1963, p. 369; Nar. khoz. v 1964, p. 427.

[35] Pravda, March 2, 1965, p. 3; and TsSU, SSSR v tsifrakh v 1965 godu (The U.S.S.R. in Figures in 1965), Moscow, 1966, pp. 93–94. This publication is cited hereafter as Tsifrakh v 1965.

tive farmers to the state sector probably will continue. Estimates of collective farm employment in table 5 are based on the assumption that there will be a net loss of 300,000 collective farmers per year throughout the next five-year period.

Collective farm employment was further reduced—and state employment increased—by expansion of the intercollective farm system of enterprises and organizations. The bulk of these joint-share organizations is engaged in construction work, and employment in construction activities has been estimated to have amounted to more than 80 percent of total intercollective farm employment at the beginning of 1961. Annual average employment in construction units increased from 164,000 in 1959 to 444,000 in 1964, though employment in other intercollective farm activities has decreased somewhat. The propect for this sector during the period 1966–70, according to the draft plan, is for growth beyond present levels. Rural activities, particularly during periods which do not coincide with peak agricultural labor inputs, will be expanded.[36]

(*c*) *Producers' cooperatives.*—On October 1, 1960, after it had been partially converted to state industry in 1956, the producers' cooperative system was abolished and all enterprises and personnel were transferred to the state sector. The reasons given for this conversion were the outmoded need for a sector of activity outside the socialized economy and the low level of productivity in these relatively less capital-intensive production units. A total of 1.4 million persons was thus added to the rolls of the state sector, including 1.2 million in industry. This conversion, of course, was a one-time transfer, and no future gains to state employment can be derived from this source.

One result of this action, possibly inadvertent, is that invalids have found it difficult to find employment. The cooperative artels had employed many invalids, both war-disabled and others physically handicapped, some of whom were organized in special cooperatives. In order to prevent extended unemployment of this less-productive group, a quota system was initiated for hiring war invalids.[37] Under this system, an enterprise could be required to employ invalids at a level equal at most to 2 percent of its total personnel, though it could voluntarily employ more.[38] In July 1962, it was reported that 2.5 million invalids were working in collective farms, state farms, and enterprises and organizations.[39]

(*d*) *Households and the private subsidiary economy.*—Two integral factors in the original calculations of the supply of labor for the 7-year plan period were the households and the private subsidiary economy. These two categories, which are closely interrelated, were viewed by many planners and scholars as rich sources of labor for the state sector, although estimates of the numbers to be recruited were not large. One economist, V. Moskalenko, estimated that during the 20

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[36] See the discussion in a forthcoming report on intercollective farm organizations in the U.S.S.R. by Ritchie H. Reed of the Foreign Demographic Analysis Division, U.S. Bureau of the Census.

[37] A. Patrikeyev, "For Invalids of All Groups," Sotsial'noye obespecheniye, no. 1, January 1965, p. 34.

[38] Pravda, Mar. 25, 1965, p. 1. Nar. khoz. v 1960 p. 637, gives a distribution by branch of the national economy of the persons formerly employed in producers' cooperatives.

[39] L. P. Lykova, "The Tasks of Social Security Organs in the Light of Decisions of the XXII Congress of the C.P.S.U.," Sotsial'noye obespecheniye, no. 7, July 1962, p. 2.

years from 1960 to 1980 some 5 to 6 million women could be recruited for the "socialized" economy from the household and private sectors.[40] The noted labor economist, Sonin, wrote that of the 5 million able-bodied persons engaged solely in the private subsidiary economy who are reported in the 1959 census returns, only 1 million could be tapped for the socialized sector.[41] This, he indicated, is clear if one examines the census results and notes the age and sex structure of these categories. In addition, Sonin noted the persistent lack of child-care facilities, the low level of skills which these persons have, and the limited job opportunities, all of which are important considerations in any attempt to draw these "reserves" into the labor force.

According to the 1959 census results, the majority of women engaged in the private subsidiary economy were over 45 years of age.[42] There were 12,860,000 able-bodied persons in households, nearly 89 percent of whom were women.[43] Of these, 59 percent (6,750,000) had children under 14 years of age.[44] Able-bodied males in the household and private subsidiary categories are either youths not yet working or non-working group III invalids.[45] As Sonin commented, these data show that the able-bodied persons in the households and private subsidiary economy are not a promising "reserve" of labor.

In respect to the availability of child-care facilities, A. Korobov, a deputy chairman of Gosplan, reported that spaces in kindergartens and nurseries were to increase from an amount sufficient to care for 10 percent of potential demand in 1958 to 22 percent in 1965.[46] According to surveys conducted to determine the reasons which housewives give for not working, the unavailability of child-care facilities (even including temporary facilities) looms large. In the cities of Sakhalin Oblast in 1954, this reason was given by 23 percent of the housewives who were not working, and in 1961 the proportion increased to 37 percent. In Khabarovsk in 1954, the lack of child-care facilities was listed by 27 percent of those not working in the socialized sector as the reason for their inactivity; in cities of Krasnoyarsk Kray, the proportion was over 50 percent; in Novosibirsk City, 25 percent; and in Chimkent City, 22 percent.[47]

Other reasons given for not working involve the care of husbands or elderly persons, poor health, work on private plots, adequate income, and no job available in the proper specialty or trade. The 5-year plan for 1966–70 promises the attainment of complete satisfaction of urban

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[40] V. Moskalenko, "The Main Productive Force of Society," Ekonomicheskaya gazeta, Mar. 26, 1962, p. 4.

[41] M. Ya. Sonin, Aktual'nyye problemy ispol'zovaniya rabochey sily v SSSR (Urgent Problems in the Utilization of Labor Force in the U.S.S.R.)," Moscow, 1965, p. 195.

[42] Ibid.

[43] Annual Economic Indicators, loc. cit.

[44] TsSU, Itogi Vsesoyuznoy perepisi naseleniya 1959 goda, SSSR, svodnyy tom (Results of the All-Union Census of Population of 1959, U.S.S.R., Summary Volume) Moscow, 1962, table 32, p. 99. This publication is cited hereafter as Itogi.

[45] This is a status of minimum disability. L. V. Starodubskiy, "Questions of the Method of Making an Analysis of the Balances of Labor Resources of Cities and Rural Regions," in Prudenskiy, op. cit., p. 25.

[46] Korobov, loc. cit. See also Brackett and De Pauw, op. cit.

[47] L. L. Rybakovskiy, "Results of the Questionnaire Survey of Persons Employed in the Household Economy of Sakhalin," Soobshcheniya DV filiala Sibirskogo otdeleniya Akademii nauk Soyuza SSR (Communications of the Far Eastern Branch of the Siberian Division of the Academy of Sciences of the U.S.S.R.), vypusk 22, Seriya ekonomicheskaya, Issue 22 (Economic Series), 1964, p. 76; I. M. Musatov and V. G. Il'ina, "Sample Survey of Women Engaged in the Household and Private Subsidiary Economies of Novosibirsk City," in Prudenskiy, op. cit., p. 88; and G. Vechkanov, "Why are Labor Resources Not Utilized?", Nauchnyye doklady vysshey shkoly, Ekonomicheskiye nauki, no. 4, July-August 1965, p. 85.

requirements for child-care facilities and much improvement for rural areas.[48] Despite grandiose plans, however, high capital costs contribute to the difficulty of mobilizing housewives into the socialized economy. A scarcity of capital limits the adequate construction of nurseries and kindergartens and hampers the establishment of a production structure in which women can find employment. According to V. Markov of the Central Scientific Research Economics Institute of Gosplan R.S.F.S.R., only limited capital resources will be available during the immediate future for allocation among the eastern and southern regions of the R.S.F.S.R. to solve this problem.[49] This suggests that the plan for satisfying needs for child-care facilities will be met only with great effort and difficulty.

In regard to the private sector, a major shift in policy was recently adopted which will in effect make work in this sector more attractive and inhibit movement to the state sector. In late 1965, the "unjustified restrictions" imposed on private agriculture were lifted. These restrictions included limitations on the size of plot and livestock holdings, as well as on access to pasture and feed from the socialized sector of the farm. Among the reasons given for the shift in policy were inadequate food supplies from state sources for state farm workers, and their lower income as compared with city workers. An increased scale of activity in the private subsidiary sector will certainly ease these strains, but Soviet planners must hope that excessive diversions from work in the socialized economy will not occur. Greater incentives through higher income and better organization of production and work would, of course, contribute to retaining both collective and state farmers in the socialized sector.[50]

Limitations on the hiring of housewives and other persons from the private sector also evolve from their low level of labor skills and education. Sample surveys have shown that from one-half to two-thirds of these persons do not have sufficient skills.[51] Although the authors do not say, these data probably are based on sample surveys taken in the cities of Novosibirsk Oblast and Krasnoyarsk Kray. In the large cities of these areas, almost 54 percent of the women not working in the socialized economy have completed only 6 years or less of school. In the medium-size and small cities, the proportion is much greater—in Novosibirsk Oblast, 69.5 percent, and in Krasnoyarsk Kray, 63.2 percent.[52]

Job opportunities for women in medium-size and small cities generally are limited, although opportunities in labor surplus areas are different from those in labor deficit areas. In labor surplus areas, such as the Northern Caucasus, which has received much recent migration, limited job opportunities exist for new arrivals. As a rule, therefore, they have found alternative opportunities for gainful work in the private subsidiary economy. Because of this excess supply, the Northern Caucasus now has the highest proportion of persons employed in private agriculture of all regions in the European portion of the

[48] Trud, Feb. 20, 1966, p. 4.
[49] V. Markov, "Urgent Problems in the Utilization of Labor Resources," Planovoye khozyaystvo, No. 10, October 1965, p. 4
[50] R. Nazarov, "The Subsidiary Economy: Its Role and Place in Agricultural Production," Kommunist (Communist), No. 26, November 1965, pp. 68–69.
[51] V. Kostakov and P. Litvyakov, "Planning the Rational Utilization of Labor Resources," Planovoye khozyaystvo, No. 3, March 1965, p. 24.
[52] Additional details are given in Sonin, Aktual'nyye * * *, op. cit., p. 206. Data are also presented on family size, years since last (socialized) work experience, if any, reason for being in this status, age, etc.

R.S.F.S.R.[53] More labor-intensive medium-scale enterprises, rather than modern large-scale production units with high capital/labor ratios, have been proposed for construction in these regions as a means for absorbing surplus labor and conserving scarce capital. Gosplan reportedly is studying these alternatives for the future development of cities with populations of 50,000 or less.[54]

In labor-deficit regions, on the other hand, and especially beyond the Urals, the strategy of industrial development has been predicated on the priority of heavy industry, to the neglect of the light and food industries which are traditionally prime employers of women. An interesting proposal for increasing the limited job opportunities for women has been made in Turkmenistan. This solution would involve placing a limit on the future supply of skilled males available for employment in the service industries by establishing a quota of 20 to 25 percent maximum male enrollment in educational institutions preparing students for occupations in trade.[55]

A striking illustration of the difference in structure of employment between large and small cities is shown by the data for cities in Novosibirsk Oblast in table 1. The lowest proportion of persons engaged in household and private activities is found in the large city, where diverse job opportunities are available.[56] In small cities, despite general labor deficits in the socialized economy throughout the eastern regions, there is a relatively high proportion of persons in the household and private economies. The Soviet economist, Ye. Manevich, has placed this situation in a broader context by reporting that in Moscow and Leningrad only 6 to 7 percent of the able-bodied population do not participate in the socialized economy, whereas in the U.S.S.R. as a whole, it is 20 percent, and in Siberia, 26 percent.[57]

This review of the amount, education, and skills of persons employed in the household and private subsidiary economies clearly indicates that there are severe constraints on the total magnitude of labor available to the state sector, but that for local markets—and especially small cities—there is a pool of relatively low-educated, unskilled labor. In order to draw people from this labor pool, however, they will have to be paid a price which will overcome the disutility of giving up such intangibles as personal care of their children and earnings from the private subsidiary economy. Sonin has estimated that this price is a minimum average annual wage in excess of 1,100 rubles, which is a fantastic amount, considering the fact that the average annual *money* wages received by all workers and employees in 1964 was 1,080 rubles.[58] The prospects that such wages can or will be paid are

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[53] E. V. Alayev, Effektivnost' kompleksnogo razvitiya ekonomicheskogo rayona (Effectiveness of the Complex Development of an Economic Region), Moscow, 1965, pp. 72, 76; and Markov, op. cit., pp. 5–6.

[54] See Ya. B. Kvasha, "Capital Consumption," in V. G. Zenzher et al., Proizvodstvo, nakopleniye, potrebleniye (Production, Accumulation, Consumption), Moscow, 1965, p. 155; and Rogovskiy, loc. cit.

[55] V. S. Manakov et al., "Labor Resources of Turkmen S.S.R. and Means for Improving its Utilization," Izvestiya Akademii nauk Turkmenskoy SSSR, Seriya obshchestvennykh nauk (News of the Academy of Sciences of the Turkmen S.S.R., Economic Sciences Series), No. 2, 1965, pp. 39–40.

[56] Novosibirsk produces almost three-quarters of the total industrial output of the oblast. Sonin, Aktual'nyye * * *, op. cit., p. 230.

[57] Manevich, loc. cit.

[58] Sonin, Aktual'nyye * * *, op. cit., p. 204. Sonin's estimate is based on data from sample surveys conducted in Novosibirsk Oblast and Krasnoyarsk Kray. The date is not specified, but the general period of all surveys is indicated as between 1960 and 1963. An average monthly money wage of 90 rubles for each worker and employee is given in Nar. khoz. v 1964, p. 555.

nil; thus the possibility that additional labor will be voluntarily attracted is, to say the least, very restricted. The only possible solution for overcoming the restraint on the viability of this supply of labor is the projected expansion of part-time work.

TABLE 1.—*Employed population in large and small cities of Novosibirsk Oblast, by sector: 1958, 1962, and 1965*

[Employment data refer to the population in the able-bodied ages]

City	Total population (census of Jan. 15, 1959)	Sector in which employed (percent)					
		1958		1962		1965 (plan)	
		Socialized economy and full-time students	Household and private subsidiary economy	Socialized economy and full-time students	Household and private subsidiary economy	Socialized economy and full-time students	Household and private subsidiary economy
LARGE CITY							
Novosibirsk	886,470	84.6	15.4	90.0	10.0	86.5	13.5
SMALL CITIES							
Iskitim	34,320	67.0	33.0	80.4	19.6	74.6	25.4
Berdsk	29,021	68.6	31.4	72.8	27.2	80.4	19.6
Kupino	23,185	69.0	31.0	62.7	37.3	76.3	23.7
Karasuk	19,961	70.2	29.8	70.0	30.0	69.4	30.6
Toguchin	19,619	63.2	36.8	61.2	38.8	73.1	26.9

Source: Population: TsSU SSSR, Itogi Vsesoyuznoy perepisi naseleniya 1959 goda, RSFSR (Results of the All-Union Census of Population of 1959, R.S.F.S.R.), Moscow, 1963, p. 37.
1958 and 1965: S. S. Zykov, "Experience in Analyzing the Balances of Labor Resources of the Cities of Novosibirsk Oblast," in Prudenskiy, op. cit., p. 54.
1962: Ye. Manevich, "Universality of Labor and Problems of the Rational Utilization of the Labor Force in the U.S.S.R., Voprosy ekonomiki (Questions of Economics), no. 6, June 1965, p. 27.

5. Volunteers

One form of labor supply which contributed materially to total labor inputs during the 7-year plan period—without increasing the reported numbers employed—was the organized "voluntary" extra work of persons who were on pension, had full-time jobs, or were full-time students. Though this form of activity was not new to the Soviet scene, it was given great impetus during this plan period. In 1957, Khrushchev initiated a policy of "allowing" individuals to perform professional work in various local governmental activities by donating their time and services. By 1962, over 2 million volunteers were participating in the work of lower-level city and rayon administrations. Most of the volunteer departments, which are nonstaff and therefore unpaid, have been organized in the areas of trade, cultural activities, and "organizational-instructor" work. They never are organized as substitutes for local finance offices, although individual volunteers are used.[59]

In general, the use of volunteer labor upgrades average wages, for most of the volunteers appear to fill what probably are low-paid jobs.

[59] L. V. Pritchin, "The Role and Tasks of the Soviets of Workers' Deputies Under Conditions of Full-Scale Construction of Communism (Party Management of the Soviets)," Voprosy partiynogo stroitel'stva (Questions of Party Construction), Leningrad, 1962, p. 650; and D. A. Gaydukov and N. G. Starovoytov (Eds.), Mestnyye sovety na sovremennom etape (Local Soviets at the Current Stage), Moscow, 1965, pp. 42, 256–258.

The work is performed by persons employed full-time elsewhere and by pensioners. Now that pensioners are encouraged rather than penalized to return to active work, it can be expected that registered employment in administration will increase to the extent that unpaid substitute labor is not available. It can also be expected, however, that "volunteer" work of this sort, which has not been measured statistically, will continue throughout the near future.

Another type of "volunteer" labor which is not included in the registered staff, but which is not without cost, is that performed by students. Study plans introduced in the 1962/63 school year provided that certain upperclassmen in higher educational institutions be given paid jobs for part of the school year. As a consequence, production work by 70,000 students for periods of 6 to 10 months during their fourth and sixth years of higher education was reported. In addition, about 300,000 students, including students of specialized secondary as well as higher educational institutions, performed productive labor as part of their educational program in the 1960/61 school year.[60]

Short-term volunteers also contribute free labor and services in activities other than those described above. As indicated in "Dimensions" (p. 642), they build and repair roads and houses, plant trees, gather the harvest, collect scrap metal, etc. In the 1961/62 school year, for example, about 700,000 students of secondary specialized educational institutions took part in various jobs requiring "volunteers."[61] At the beginning of 1963, more than 160,000 "volunteers" were donating their time and services to 15,000 nonstaff design and technological bureaus.[62] Collective farmers continue to be subject to a corvée for roadbuilding (according to regulations, a 4- to 6-day work norm is authorized for each able-bodied collective farmer), and military personnel assist in gathering the harvest, unload ships, do construction work, etc. These and other examples could be adduced to illustrate the exaggeration of output, productivity, and average wages in Soviet statistics—without coordinate increases in the numbers of employed persons used to derive these measures.

6. Worktime

Manipulation of the length of the workday or workweek has a direct effect on the real supply of labor. When the average length of the workday was reduced in 1960, the estimated loss in the supply of labor amounted to more than 10 billion man-hours.[63] In sovnarkhoz industry of the R.S.F.S.R. during the years 1959–61, losses of work-

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[60] N. G. Alexandrov et al., Voprosy trudovogo prava na sovremennom etape (Questions of Labor Law at the Current Stage), Moscow, 1964, p. 74; Verkhovnyy Sovet SSSR, Zasedaniya Verkhovnogo Soveta SSSR, Shestogo sozyva, Vtoraya sessiya (10–13 dekabrya 1962 g.), Stenograficheskiy otchet (Meeting of the U.S.S.R. Supreme Soviet, Sixth Sitting, Second Session, Dec. 10–13 1962, Stenographic Report), Moscow, 1963, p. 323; N.I. Shishkin (ed.), Trudovyye resursy SSSR (Labor Resources of the U.S.S.R.), Moscow, 1961, p. 234.

[61] N. F. Rubtsov, "More Attention to the Upbringing of Youths," Sredneye spetsial'noye obrazovaniye (Secondary Specialized Education), No. 1, January 1962, p. 2.

[62] N. S. Zlobin, "The Socialist State and the Formation of a Communist Culture," in A. N. Muslin and A. I. Arnol'ov (Eds.), Stroitel'stvo kommunizma i problemy kul'tury (Construction of Communism and Cultural Problems), Moscow, 1963, p. 111.

[63] V. Loktev, Rabochiy den' v SSSR (Workday in the U.S.S.R.), Minsk, 1961, p. 27. Of the 62 million workers and employees in 1960, the work schedule of 56 million was converted to an authorized 7-hour workday, and of 6 million to a 4- to 6-hour workday (including youths under 18 years of age). A. L. Maksimov, Perevod rabochikh i sluzhashchikh promyshlennykh predpriyatiy SSSR na sokrashchennyy rabochiy den' (Transfer of Workers and employees of Industrial Enterprises of the U.S.S.R. to a Reduced Workday), Moscow, 1965, p. 55.

time due to idleness, absence without leave, or administratively authorized absence amounted to 1.5 percent of total time worked. During the same period, the proportion of overtime work almost doubled. In 1959, overtime amounted to 0.3 percent of the time worked in R.S.F.S.R. sovnarkhoz industry; by 1962, it increased to 0.58 percent.[64] In Leningrad, the proportion of overtime hours worked in industry was almost double that of the R.S.F.S.R. During the years 1960–63, this "hidden form of employing above-plan workers" in Leningrad amounted to 1.1 percent of total time worked.[65]

On collective farms, a real source of labor supply is believed to exist in the reduction of worktime away from the socialized sector.[66] The major factor here, of course, is the reduction of inputs to the private sector. One such input is the estimated expenditure of approximately 250 million man-hours each year by the 700,000 collective farmers trading each day at their markets.[67] Other Soviet estimates indicate that only two-thirds to three-quarters of the total potential worktime of able-bodied collective farmers is actually worked.[68] On the basis of these data, Soviet economists conclude that a sizable reserve of labor still exists on the collective farm.

B. CHANNELS

Despite Soviet protestations to the contrary, the U.S.S.R. has a labor market in which workers seek the highest possible returns in terms of money and fringe benefits. From the data now available, this market appears to be much freer than it was hitherto thought to be. In part, of course, this is due to the political decision to allow a certain freedom of choice to labor—a decision which was a formal recognition of the extensive labor mobility in existence, despite specified penalties to the contrary. The legal constraints have been largely abolished, and a variety of economic, organizational, and administrative controls are now operating in an unsuccessful attempt to control the movement of labor. The means by which the labor supply reaches economic activity is the subject of this section.

1. Direct hires

The overwhelming proportion of workers hired in industry is accounted for by the direct-hire method (table 2). An estimate of 4,300,000 as the gross number of accessions of wage workers into industry in 1960 through the channels listed in table 2 can be derived from the report that 172,000 vocational-technical school graduates were allocated to industry in 1960,[69] and the figure in the table which shows that 4 percent of all accessions came from this source. The absolute number of direct hires in 1960, therefore, was almost 4 million persons (i.e., 92 percent of the total). The net change in the

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[64] Kasimovskiy, op. cit., p. 268.

[65] L. S. Blyakhman, Proizvoditel'nost' i oplata truda v period razvernutogo stroitel'stva kommunizma (Productivity and Payment of Labor in the Period of Full-Scale Construction of Communism), Leningrad, 1964, pp. 337–338.

[66] Sonin, Aktual'nyye * * *, op. cit., p. 197.

[67] I. Dmitrashko, "Accumulation and Development of Collective Farm Property," Ekonomika sel'skogo khozyaystva (Economics of Agriculture), No. 3, March 1964, p. 117.

[68] V. Mashenkov, "Labor Resources, Structure, and Possibilities for Utilizing Them in Agriculture, by Zone of the Country," ibid., No. 10, October 1963, p. 27; M. P. Vasilenko, Puti preodoleniya sezonnosti truda v kolkhozakh (Means for Overcoming Seasonality on Collective Farms), Moscow, 1963, p. 47; and others.

[69] TsSU SSSR, Zhenshchina i deti v SSSR, statisticheskiy sbornik (Women and Children in the U.S.S.R., A Statistical Compilation), Moscow, 1961, p. 182.

annual average number of industrial wage workers in 1960 was 1,781,000, or 41 percent of the gross number of accessions.

TABLE 2.—*Percent distribution of wage workers hired in Soviet industry, by method of accession, 1950 to 1962*

Method of accession	1950	1955	1958	1959	1960	1962
Total [1]	100	100	100	100	100	100
Direct hires	79	84	90	92	92	90
Organized recruitment	14	11	6	4	4	4
Labor reserve (vocational-technical) schools	7	5	4	4	4	4
Higher educational institutions and technicum students on production work training	([2])	([2])	([2])	([2])	([2])	2

[1] Methods shown here do not include administrative transfers from other enterprises, allocations of secondary specialized and higher school graduates, persons assigned by quota from local governmental authorities, or persons dispatched on Komsomol travel orders to new industrial and construction sites. Using data for 1950, 1955, and 1958 in Sonin, Vosproizvodstvo, * * * op. cit., p. 177, it can be estimated that an additional 6 to 7 percent are transferred from other enterprises.
[2] Not applicable.

Source: 1959: S. L. Senyavskiy, "On the Sources and Forms of Replenishment of the Working Class of the U.S.S.R. in 1953-61," Voprosy istorii (Questions of History), no. 11, November 1963, p. 209.
All other years: Rusanov, op. cit., p. 128.

The channels of labor supply for at least one industry can be described from 1962 data on the chemical industry. The basic source for meeting the demand for additional wage workers in this industry was "from the gate," that is, direct hires, which accounted for 83.5 percent (90,400) of the total of 108,333 wage workers hired. About half of these direct-hire workers lacked the appropriate skills and underwent short-term on-the-job production training. Twelve percent of all persons employed were graduates of vocational-technical schools, 2.2 percent had completed secondary schools with production training, 1 percent came from technicums, and 1.2 percent transferred between similar plants.[70] The supply of skilled workers from the educational institutions was so inadequate that G. Zelenko, the former chairman of the vocational-technical school system, acknowledged that "many new, large-scale chemical plants experienced acute shortages of skilled worker cadres."[71] Attempts by the Government, through "economic levers" and other controls, have been clearly inadequate to stem or channel the tide of direct hires obtained through migration, turnover, or the displacement of working persons.

(*a*) *Migration.*—At present, over 3 percent of the population of the U.S.S.R. is involved in internal migration each year. Since the total population is now approximately 232 million, this means that a minimum of 7 million persons are annually on the move. In 1959, the reported number of persons leaving their place of residence was 7 million—though the reported number registered as arriving at a destination was 9 million.[72] At a conference held in June 1962 under the sponsorship of the Institute of Labor, some further details on this movement were presented. Of the 7 million migrants, about 4 million moved to urban areas. It was also noted that "not more than 2 million

[70] Estimated from information in V. Krevnevich and L. Podvoyskiy, "Great Chemistry—Skilled Cadres," Professional'no-tekhnicheskoye obrazovaniye, No. 3, March 1963, p. 4.
[71] G. Zelenko, "The Training and Upbringing of Worker Cadres—At the Level of New Tasks," ibid., No. 7, July 1963, p. 3.
[72] Alayev, op. cit., p. 70; and Ya. G. Feygin et al. (eds.). Zakonomernosti i faktory razvitiya ekonomicheskikh rayonov SSSR (Patterns and Factors in the Development of Economic Regions of the U.S.S.R.), Moscow, 1965, pp. 178–179.

persons move through organized channels." The 5 million others apparently drifted according to their own desires, especially to the southern regions (Northern Caucasus, Central Black Earth Region, etc.).[73]

Various Soviet analysts have expressed concern over the magnitude and structure of migration from rural to urban areas. S. P. Pavlov, the first secretary of the central Young Communist League (Komsomol) organization, underscored this problem at the March 1965 party plenum when he stated that "In recent years, a reduction of 6 million persons has taken place in the age group 17 to 29; consequently, many collective farms are operating with a labor force averaging over 50 years of age."[74] The young people who leave are mainly males trained to operate machinery. When this occurs in labor surplus areas, such as Belorussia and the Central Black Earth regions, the consequences are not as serious as in the rural labor deficit regions of the eastern portion of the country. This deterioration of the age-sex structure on farms "hinders the introduction and mastering of new technology and machinery, lowers the effectiveness of capital investment, and retards the growth of labor productivity and agricultural output."[75] With the introduction of more modern, capital-intensive production methods, the demand by industry in the European part of the U.S.S.R. for a supply of large numbers of persons from farms is expected to be limited during the next 10 to 15 years.[76] Tikhonov, the aforementioned head of the new agricultural labor research institute, responding to the Vasilenko and Kolesnev analysis of the rural labor supply and reduction in demand by industry, states that this "serious social problem" is not understood by certain individuals, who, it is implied, should be vitally concerned over its impact. One-third of the out-migrants from the Urals (where the average age of agricultural labor is now 48–49 years) leave because of low earnings, and two-thirds leave because of dissatisfaction with living and working conditions, including the lack of cultural and educational facilities.[77]

The population of receiving areas also has undergone radical shifts in certain areas. For example, a sample survey of the personnel of industrial enterprises in Sakhalin Oblast revealed that in 1960 only 4.5 percent were born in Sakhalin.[78] The problem is how to retain workers in such areas, for reports indicate that outmigration from Siberia during the period 1956–60 exceeded inmigration. Because of this continuing movement away from the eastern regions, there most likely has been an underfulfillment of the

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[73] D. G. Onika et al. (eds.), Problemy ekonomiki truda (Materialy teoreticheskov konferentsii) (Problems of Labor Economics [Materials From a Conference on Theory], Moscow, 1963, pp. 201–202.

[74] It is unclear whether the reference is to the entire rural population or to the collective farm population alone. TsK KPSS, Plenum Tsentral'nogo komiteta Kommunisticheskoy partii Sovetskogo Soyusa, 24–26 marta 1965 goda; stenograficheskiy otchet (Plenum of the Central Committee of the Communist Party of the Soviet Union, Mar. 24–26, 1965; Stenographic Report, Moscow, 1965, p. 162.

[75] Kasimovskiy, op. cit., p. 266. Also see, Markov, op. cit., p. 5, and Zh. A. Zayonchkovskaya and V. I. Perevedentsev, Sovremennaya migratsiya naseleniya Krasnoyarskogo kraya (Current Migration of the Population of Krasnoyarsk Kray), Novosibirsk, 1964, p. 78.

[76] M. Vasilenko and S. Kolesnev, "Problems in the Utilization of Labor Resources of the Villages," Kommunist, No. 18, December 1965, p. 68. A reduction in the demand for rural labor in Estonia, as well as the need for interrepublican migration, is discussed in K. Laas, "Some Questions of the Distribution of Population of the Estonian S.S.R.," Kommunist Estonii (Estonian Communist), No. 12, December 1964, pp. 15–22.

[77] "Problems in the Utilization of Labor Resources of the Villages, A Review of Comments," Kommunist, No. 2, January 1966, p. 88. Also see V. N. Shubkin, "Some Questions of the Adaptation of Youths to Work," in N. V. Novikov et al. (eds.), Sotsial'nyye issledovaniya (Social Researches), Moscow, 1965, pp. 138–139.

[78] L. L. Rybakovskiy, "On the Formation of Permanent Cadres in Sakhalin," in Prudenskiy, op. cit., p. 158.

7-year plan goal for the permanent settlement of more than 2 million able-bodied persons from labor surplus regions of the European part of the U.S.S.R. to the northern and eastern regions.[79] Calculations made by the Siberian Institute of Economics and Organization of Industrial Production lead to the conclusion that if the direct expenditures for the organized movement of the population (*orgnabor*—see below—resettlement, etc.) had been used instead for housing construction and the improvement of cultural and personal service institutions in Siberia, the population remaining in that area would have been significantly greater and the diseconomies resulting from turnover less burdensome.[80]

(*b*) *Labor turnover.*—Some movement of people to high priority regions, to better jobs, to locations with improved working and living conditions, or because of the completion of work contracts, is in principle both inevitable and desirable from the Government's point of view. But the scale, direction, and velocity of turnover within the context of the Soviet planned economy has become so large that major problems of structural demand for labor have arisen as a result. As used here, labor turnover (*tekuchest'*) follows the Soviet concept, and includes only those persons who quit their employment on their own volition or were fired for infractions of labor discipline. It does not, therefore, include those persons who were drafted into the Armed Forces, transferred at the convenience of the Government, or involved in any other movement conducted in an organized, regulated manner. There are no data available on total labor turnover in the U.S.S.R. as a proportion of the total number of separations. In the Ukrainian Ministry of Trade in 1959, turnover comprised 19 percent of the total number of separations, and increased to 30 percent in 1962.[81] In Moscow, turnover accounted for about 67 percent of all separations in 1963.[82]

Since the first survey of labor turnover was taken by the Institute of Labor in 1958–59, a wealth of additional information has been released.[83] The most detailed information available on turnover comes from a survey taken in Leningrad during the first 10 days of April 1963. This survey covered 10,720 persons in 25 representative

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[79] Manevich, op. cit., pp. 25–26; and N. I. Shishkin, "On the Formation of Permanent Cadres in the Northern Regions of the Country," Problemy severa (Problems of the North), Issue 6, 1962, p. 20.

[80] "Causes and Effects," Trud, Dec. 26, 1964, p. 2.

[81] M. F. Makarova (ed.), Voprosy razvitiya ekonomiki torgovli v SSSR (Questions of the Development of the Economi s of Trade in U.S.S.R.), Moscow, 1965, pp. 85–86.

[82] Based on a June-July 1963 survey of 129 enterprises of 11 branches of industry. V. N. Yagodkin, Puti likvidatsii tekuchesti kadrov v promyshlennosti SSSR (Means for Eliminating Cadre Turnover in U.S.S.R. Industry), Moscow, 1965, p. 74.

[83] The results of this first major postwar survey, which covered 64,000 wage workers in 550 enterprises of 20 sovnarkhozy, were released in I. Kaplan, "Questionnaire Survey of Causes for Cadre Turnover in Sovnarkhoz Industry," Trud i zarabotnaya plata, No. 4, April 1961, pp. 33–45. The Institute of Economics in Novosibirsk in 1961 published a book entitled "Voprosy tekuchesti i prishivayemosti v rayonakh Sibiri" (Questions of Turnover and Settlement in Regions of Siberia). Articles, too numerous to cite, then began to appear in journals, newspapers, and in collections of articles. In 1964, a book by Kaplan appeared under the title "Profsoyuznomu aktivu—o putyakh sokrashcheniya tekuchesti kadrov na predpriyatii" (For the Trade Union Activist Unit—On Means for Reducing Cadre Turnover in Enterprises), Moscow, 1964, 96 pages. This book contains data from a followup survey taken in 1960 by the Institute of Labor of over 70,000 persons in 670 enterprises and construction organizations. In 1965, three major publications appeared. One was a monograph by V. N. Yagodkin, of the labor resources group of Moscow State University entitled "Puti likvidatsii tekuchesti kadrov v promyshlennosti SSSR" (Means for Eliminating Cadre Turnover in U.S.S.R. Industry), Moscow, 175 pages. The other two books were published by the Leningrad group: L. S. Blyakhman, A. G. Zdravomyslov, and O. I. Shkaratan, "Dvizheniye rabochey sily na promyshlennykh predpriyatiyakh" (Movement of Labor Force in Industrial Enterprises), Moscow, 152 pages; and A. G. Zdravomyslov and V. A. Yadov (eds.), "Trud i razvitiye lichnosti" (Labor and Personality Development), Leningrad, 192 pages. Considering the scope of the problem and the volume of research now being conducted, many other publications can be expected.

organizations who had changed their place of employment during 1962 or the first quarter of 1963. Because of structural and regional differences, the results of this survey may not present a typical pattern of the causes of turnover throughout the Soviet Union; a comparison of the results of this survey with scattered data reported for various other cities and sovnarkhozy throughout the country, however, suggests that the pattern reported for Leningrad may be fairly representative.[84]

A summary of the results from the Leningrad survey is presented below. It shows the specific reasons given for changing jobs, and the proportion of all respondents who listed each as their motivating factor.

	Percent
Total	100.0
I. Dissatisfaction with work-related activities	35.7
1. Dissatisfaction with conditions of work	19.6
(a) Physically difficult work	4.8
(b) Work inappropriate for health condition	4.0
(c) Night shift work	3.5
(d) Hazardous working conditions	2.4
(e) "Dirty" (*gryaznaya*) work	2.2
(f) Monotonous work	2.0
(g) Inadequate length of leave	0.7
2. Absence of growth prospects at given enterprise	9.8
(a) Work not corresponding to skill	3.3
(b) Work not corresponding to inclinations	2.6
(c) Lack of conditions for study	2.2
(d) Lack of perspective for raising wage-skill category	1.7
3. Dissatisfaction with organization of work	3.7
(a) Dissatisfaction with conditions of equipment, lack of needed instruments, incorrect formulation of job orders, etc	1.5
(b) "Storming" (*shturmovshchina*), overtime work	1.3
(c) Idleness due to lack of work	0.9
4. Dissatisfaction with own relationship with co-workers and with the management	2.5
(a) Poor relations with the shop chief, the norm-setter, or other administrative personnel	1.4
(b) Poor relations with the foreman	0.9
(c) Poor relations with co-workers	0.3
II. Dissatisfaction with housing and personal services	27.5
1. Impossibility of placing child in child-care institutions; necessity to care for children	9.0
2. Distance of residence from place of work	8.8
3. Change of place of residence	7.7
4. No hope to obtain housing	2.0

[84] The data for Leningrad are reported in Blyakhman, Dvizhenive * * *, op. cit., p. 53ff. Data for other areas are reported in Yagodkin, op. cit., p. 76; Kanlan, "Questionnaire * * *" oj cit., p. 35; V. S. Sominskiy, Ekonomika novykh proizvodstv (Economics of New Production Units), Moscow, 1965, p. 166; and Gotlober and L. Pysin, "Overcome Cadre Turnover—An Important National Economic Problem," Nauchnyee doklady vysshey shkoly, Ekonomicheskiye nauki, No. 2, March–April 1964, p. 18.

	Percent
III. Dissatisfaction with earnings	21.4
1. Dissatisfaction with amount of wages	21.0
2. Desire to convert to time-rated work	0.4
IV. Dismissed for infractions of labor discipline	1.2
V. Other reasons	14.5

Nearly two-thirds (63.2 percent) changed their jobs because of dissatisfaction with the overall work situation (dissatisfaction with work-related activities and with housing and personal services) and not directly with the wages or salary received.

This overall pattern of motivations is subject to wide variation for respondents from specific branches or sectors, or by the sex of the respondent. Additional results of the survey show, for example, that conditions of work, which weighed heavily among all reasons, was particularly important in three branches of industry—textile (27 percent), chemical (26.7) and food (25.5). The lack of possibilities for advancement was most frequently given as a motive for turnover by former employees of scientific research or design institutes, followed by former employees of the metalworking industry and transport and communications. The possibility for advancement is closely connected with educational status as a reason for turnover, and it was the primary reason given by part-time students of technicums and higher educational institutions for leaving (26 percent), whereas for nonstudent workers it occupied fifth place (7.9 percent). A small portion of all respondents designated poor organization of work as the motive for quitting; persons employed in the metalworking industry comprised the largest group which gave this reason. Problems associated with housing and personal services were the most important (27.5 percent) of all reasons given by workers for leaving their former jobs. As might be expected, this was the most important reason listed by women, accounting for 36.5 percent of all reasons given. Only 22 percent of all men listed this reason.

TABLE 3.—*Amount of wages earned by wage workers in Leningrad, before and after changing jobs: 1963*

[In percent]

Monthly wages at previous place of work (rubles)	Monthly wages at new place of work (rubles)							
	Under 40	40 to 59	60 to 79	80 to 99	100 to 119	120 to 149	150 to 200	Over 200
Under 40	5.2	27.8	48.0	15.6	2.6	0.5	0.3	(1)
40 to 59	2.4	27.1	50.0	16.4	3.1	.7	.3	(1)
60 to 79	1.0	14.7	50.0	24.0	6.6	1.5	.2	(1)
80 to 99	.7	6.5	22.2	44.0	21.5	5.0	.1	(1)
100 to 119	.3	2.5	11.9	28.8	41.0	14.4	1.1	(1)
120 to 149	.1	1.9	6.9	22.7	29.9	35.8	2.6	0.1
150 to 200	(1)	2.0	4.0	25.1	21.0	28.2	20.7	4.0
Over 200	1.0	2.0	13.6	18.8	27.2	21.9	5.2	10.3

[1] Zero entry.

Source: Blyakhman, Dvisheniye * * *, op. cit., p. 106.

Unsatisfactory earnings accounted for 21.4 percent of all motives indicated. The branches of the economy which had the highest proportion of respondents listing this motive were the communal economy (37.6 percent), scientific organizations (29.4 percent), and trade and public dining (24.7 percent). These are all nonproductive branches which, except for the science organizations, lagged far behind the national average wage level until the wage increases of 1964–65. Additional data from the survey which show, in terms of wages earned, the results achieved by wage workers in changing jobs (table 3), indicate very clearly that it was only the lower paid workers who improved their lot by changing. A majority of the workers earning less than 60 rubles per month improved their income significantly by moving to a new job, while those in the 60- to 79-ruble group achieved only a slight improvement. Workers in the 80- to 99-ruble bracket, which spanned the national average wage (in 1963) of 87.6 rubles per month,[85] experienced a decline in their overall earning power by a change in jobs, and this was increasingly true of workers in the higher brackets. For those who ended with wage reductions, the primary basis for turnover was housing and personal services (32.8 percent); the level of wages was cited by slightly less than 5 percent as the motive for changing jobs. For those who remained at the same earnings level, housing and personal services also predominated (31.3 percent), and wages were cited by 12.3 percent. For those who bettered themselves financially, however, dissatisfaction with previous wages was the basic reason (40.5 percent); housing and personal services were listed by only 20.1 percent of this group.

In the northern and eastern regions of the U.S.S.R., the rate of labor turnover is one-third higher than the average for the R.S.F.S.R.[86] The level of wages is much higher in these regions than in the central and western regions, but they are still inadequate to reduce turnover due to higher costs of living and poorer facilities and services. Wages in the coal industry in the Magadan and Yakutsk Sovnarkhozy in 1962 were 166 percent and 130 percent, respectively, of the average wages in the coal industry of the entire R.S.F.S.R.; wages in nonferrous metallurgical enterprises in the two sovnarkhozy were 177 and 150 percent, respectively, of the average wages in R.S.F.S.R. nonferrous metallurgy; 202 and 191 percent of those in the construction materials industry; and 170 and 166 percent of those in the timber, paper, and woodworking industry. In nearly all cases they were more than double the wages paid in the same industries in the Moscow Sovnarkhoz.[87]

The monetary differential is insufficient compensation, however. The total cost of a market basket (*byudzhetnyy nabor*) of goods in the northeastern regions of the Far North is 172 percent of that in the Ukraine; a "rational" basket of foodstuffs alone in Magadan and Yakutia costs 137 percent of the same basket in the central regions.[88]

[85] Nar. khoz. v 1964, p. 555.
[86] N. I. Shishkin, "Problems of the Utilization of Labor Resources and the Tasks of the Scientific-Research Institute of Labor," in Onika, op. cit., p. 42.
[87] Kasimovskiy, op. cit., p. 152.
[88] Ibid., p. 141; and V. N. Yagodkin (ed.), Osnovnyye zakonomernosti vosproizvodstva rabochy sily v period razvernutogo stroitel'stva kommunizma (Basic Patterns in the Growth of the Labor Force in the Period of the Full-Scale Construction of Communism), Moscow, 1965, p. 172.

The cost of communal services, when they are available, is 2 to 2½ times higher than in the central regions.[89] Water pipe systems, central heating, and gas supply for residences are all much less available in the northern and eastern regions than in the European part of the U.S.S.R.[90] The number of child-care facilities in urban areas of Kazakhstan and Siberia is only 75 to 80 percent of the number available on the average throughout the U.S.S.R.[91]

In writing about the problems of migration and turnover in Western Siberia, the Soviet migration analyst V. I. Perevedentsev has noted that although industrial wages in this region are higher than the average for the country, wages in the other branches of the economy are lower. And not all branches of industry pay regional differentials; the light and food industries, possible employers of women from households, do not. Further, there is less housing per capita and its condition is worse, public transportation is poorer and it costs more, medical personnel and hospital beds are fewer, and space in rest homes and sanitariums is much more restricted.[92] The higher cost of living and the scarce or poor services have more than eliminated the wage differentials in this and other regions, and the more difficult living conditions are not readily acceptable to many Soviet citizens. A special survey conducted in industrial enterprises in the city of Krasnoyarsk in 1960 revealed that of all persons who voluntarily quit their jobs 49 percent left the city and 51 percent remained. The principal reasons given for leaving the city were unsatisfactory housing conditions and the desire to return to own family.[93]

The use of indigenous populations as a means of reducing migration and turnover has long been advocated. However, in such an important region as the Yakut A.S.S.R., with its vital gold, diamond, and other nonferrous metals industries, the proportion of labor resources recruited from the local population is still miniscule. Of the total employment in the gold mining industry, the proportion of Yakuts was 0.9 percent in 1957 and 1.3 percent in 1958; in diamond mining, 14.7 and 26.1 percent; and in tin mining, 3.6 and 4.8 percent, for the 2 years, respectively. In these and three other branches of industry (mica, coal mining, and logging and woodworking) the average for 1957 was 2.6 percent, and in 1958 it was 4 percent. The situation in later years was reported to be basically similar.[94] Other evidence of the neglect of local labor resources derives from the fact that it was not until February 1960 that the privileges (bonuses, pension rights,

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[89] Shishkin, "On the Formation * * *," op. cit., p. 23.

[90] The proportion of residences with water pipe supply ranges from 27.3 to 48.2 percent in various regions of the north and east. The range in the west is between 44.8 and 58.7 percent. The relative proportions of residences with central heating supply reflect a much better pattern, 23.0 to 48.5 and 26.2 to 46.3 percent, respectively. For gas supply, however, the western region is at a much higher level, 5.4 to 41.1 in comparison with 1.8 to 8.4 percent in the north and east. G. A. Prudenskiy, Vremya i trud (Time and Work), Moscow, 1964, p. 138.

[91] Blyakhman, Proizvoditel'nost' * * *, op. cit., p. 50.

[92] V. I. Perevedentsev, Sovremennaya migratsiya naseleniya Zapadnoy Sibiri (Current Migration of the Population of Western Siberia), Novosibirsk, 1965, cited in A. Smirnov-Cherkezov, "Resettlers and Economists," Literaturnaya gazeta, Sept. 4, 1965, p. 1.

[93] V. I. Perevedentsev, "Toward the Problem of the Optimal Location of Labor Resources of the U.S.S.R.," in V. A. Kalmyk (Ed.), Nekotoryye voprosy politicheskoy ekonomii, Nauchnyye trudy, Seriya ekonomicheskaya, Vypusk I, Ekonomicheskiye problemy truda v period perekhode k kommunizmu (Some Questions of Political Economy, Scholarly Transactions, Economic Series, Issue I, Economic Problems of Labor in the Period of Transition to Communism), Novosibirsk, n.p., 1964, pp. 33–34.

[94] G. G. Yegorov, "Cadres of Nationalities in Yakut Industry," in Akademiya nauk SSSR, Sibirskoye otdeleniye, Yakutskiy filial, Voprosy ekonomiki promyshlennosti Yakutii (Questions of the Economics of Yakutsk Industry), Yakutsk, 1962, p. 48.

prolonged length of ordinary leave, etc.) authorized for all persons who came to work in the Far North were extended to the local populations.[95]

Selected aggregate rates of turnover now available for certain branches of the economy demonstrate the initial increase in turnover when the 1940 law restricting voluntary quits was removed early in 1956 (table 4). Industrial wage workers, who had had a turnover rate of slightly more than 15 percent in 1950 (about 1,700,000 persons quit out of 11,208,000 annual average wage workers) showed their pent-up desire to move in 1956. At a level two and one-half times that of 1950 and twice that of 1960, some 38 percent, or almost 5,800,000 persons, quit voluntarily when no severe punitive action could be taken against them. This rate dropped to 20 percent in 1961 and 1962.

TABLE 4.—*Labor turnover in the Soviet Union, by selected branch of the national economy and area: 1950–64*

[Number of persons who quit their employment voluntarily or were fired for infractions of labor discipline per 100 annual average wage workers employed. See text]

Branch of the national economy and area	1950	1955	1956	1958	1959	1960	1961	1962	1963	1964
Industry, total	[1]15.0	.....	[2]38.0	.....	.....	[1]19.0	[2]20.0	[4]20.0	.....	.....
R.S.F.S.R. Sovnarkhoz [5]	.....	.....	.....	.....	18.0	.....	.....	18.6	.....	.....
Krasnoyarsk City:										
Synthetic rubber plants [6]	.....	.....	.....	22.7	15.9	20.4	19.9	.....	.....	.....
Artificial fiber plants [6]	.....	.....	.....	25.0	22.6	26.3	23.3	.....	.....	.....
Tire plants [6]	.....	.....	.....	.....	16.4	43.9	40.5	.....	.....	.....
Medical preparations plants [6]	.....	.....	.....	.....	.....	26.1	34.6	39.7	.....	.....
Leningrad City [7]	.....	.....	.....	16.0	15.5	16.8	18.0	17.3	16.8	.....
Moscow chemical plants [8]	.....	.....	.....	.....	.....	13.7	15.2	15.8	10.6	.....
Sverdlovsk Sovnarkhoz [9]	.....	.....	.....	.....	.....	18.0	20.0	.....	.....	.....
Georgian Sovnarkhoz [3]	.....	.....	.....	.....	.....	.....	30.2	.....	.....	.....
Kazakh Sovnarkhoz [10]	.....	.....	.....	.....	.....	.....	31.9	.....	.....	.....
Construction [1]	18.0	.....	.....	.....	.....	41.0	.....	.....	.....	.....
Railroad transport [11]	8.3	6.6	9.6	.....	.....	12.6	12.1	11.8	11.4	10.4

NOTE.—Leaders (.....) indicate not available.

[1] Blyakhman Dvizheniye * * *, op. cit., p. 15.
[2] Yagodkin, Puti likvidatsii * * *, op. cit., p. 15. Reported as double the 1960 rate.
[3] G. A. Gegeshidze, "On Reserves for the Growth of Labor Productivity in Industry of the Georgian S.S.R.," in G. A. Gegeshidze et al., Voprosy povysheniya proizvoditel-nosti truda (Questions of Raising Labor Productivity), Tbilisi, 1964, p. 33.
[4] F. I. Kotov, Problemy truda i zarabotnoy platy v period perekhoda k kommunizmu (Problems of Labor and Wages in the Period of Transition to Communism), Moscow, 1963, p. 109.
[5] Kasimovskiy, op. cit., p. 263.
[6] Sominskiy, op. cit., p. 164.
[7] B. G. Sochilin, Kazhdomu predpriyatiyu—stabil'nyye kadry (Stable Cadres for Each Enterprise), Leningrad, 1964, p. 5.
[8] Vasil'yev and Pankratov, loc. cit.
[9] Gotlober and Pysin, op. cit., p. 15.
[10] S. Sundetov, "Some Questions of the Rational Utilization of Labor Resources in Kazakhstan," Narodnoye khozyaystvo Kazakhstana (National Economy of Kazakhstan), No. 3, March 1963, p. 60.
[11] V. N. Shvetsov, Statistika truda na zheleznodorozhnom transporte (Labor Statistics in Railroad Transport), Moscow, 1965, p. 51.

The turnover rates vary widely by region and branch, as can be seen from the data in table 4. In 1961, industrial workers in the Kazakh Sovnarkhoz reportedly achieved the dubious distinction of having "the highest rate of turnover in the country" (31.9 percent); a slight decline took place in 1962.[96] Rates for Leningrad City and Sverdlovsk Sov-

[95] I. M. Sakharova et al., Sbornik zakonodatel'nykh aktov o trude (Collection of Labor Legislation), third revised and enlarged edition, Moscow, 1960, pp. 685–687.
[96] Sundetov, op. cit., p. 60.

narkhoz were less than two-thirds of the Kazakh rate—and they must have been even lower in other areas. The rate for construction workers jumped from 18 percent in 1950 to the astonishing level of 41 percent in 1960, and indirect reports indicate that it is still about twice as high as in industry. An editorial in "Transport Construction" stated that the workers' mobility "still remains the main scourge of construction organizations."[97] Data for railroad transport personnel show an increase in turnover rates between 1955 and 1960, with a slight decline since. It should not be forgotten that turnover accounts for only a portion of the total number of persons leaving during the year. The gross rate of separation (*oborot*) for railroad transport has hovered around 20 percent since 1950.[98]

Although labor turnover has many economic, social, and political effects, the principal impact on the economy is the loss of labor inputs to productive activities. The extent of the loss depends not only on the rate of turnover but also on the interval between jobs. In Georgia, in 1961, the average was between 30 and 35 days, and in Moscow City and Oblast, in 1963, it was 17 days. One source gives a range of 14 to 40 days for various regions and localities throughout the U.S.S.R., but indicates that the national average is about 20 days.[99]

These averages, of course, conceal local variations and individual experience. A survey conducted at four large plants in Gorkiy revealed that 12 percent of the persons hired by the plants during the 3 months preceding the survey spent over 30 days looking for a job; 16 percent spent 20 to 30 days; 15 percent 10 to 20 days; 33 percent 3 to 10 days; 15 percent 1 to 2 days, and only 9 percent was hired the same day they left their former place of employment.[100]

The sex and marital status of workers are important characteristics in the overall impact of turnover on the supply of labor. According to the results of the survey in Leningrad, the break in work during turnover did not exceed 1 week for 36 percent of the married men involved; it was between 1 week and 1 month for 50 percent, and it exceeded 1 month for 14 percent. The corresponding percentages for married women were 20, 37, and 43 percent, respectively. Sixty percent of the total number of days not worked due to turnover were accounted for by women who stayed out of work over 2 months each, usually to take their children away during the summer season.[101]

A rough estimate of the total loss to Soviet industry due to turnover in 1964 can be derived. If the rate of turnover in that year is assumed to be the same as that reported for 1961 and 1962 (20 percent) and the

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[97] V. Malyugin and I. Semenov, "Incentives and Economic Levers in Construction," Ekonomicheskaya gazeta, No. 2, January 1966, p. 20; and "Form and Retain Permanent Skilled Cadres," Transportnoye stroitel'stvo (Transport Construction), No. 2, February 1965, p. 2.

[98] Shvetsov, op. cit., p. 48.

[99] Prudenskiy, Vremya * * *, op. cit., p. 130; Gegeshidze, loc. cit.; Yagodkin, Osnovye zakonomernosti * * *, op. cit., p. 193; Zayonchkovskaya, op. cit., p. 89; I. Kaplan, "Cadre Turnover in Enterprises and Means for its Elimination," Voprosy ekonomiki, No. 10, October 1963, p. 47; and P. P. Luzan, "Stability of Production Worker Cadres—An Important Condition for the Growth of Labor Productivity," in A. N. Grzhegorzhevskiy et al. (eds.), Problemy povysheniya effektivnosti obshchestvennogo truda v SSSR (Sbornik statey) (Problems of Raising the Effectiveness of Socialized Labor in the U.S.S.R., A Collection of Articles), Moscow, 1965, p. 285.

[100] E. Parkhomovskiy and P. Ivnev, "Work Seeks the Man * * *," Izvestiya, Oct. 7, 1965, p. 3.

[101] L. S. Blyakhman et al., "Problems in the Management of Labor Force Movement," in Zdravomyslov and Yadov, op. cit., p. 148.

average amount of time lost during turnover was 20 days, the aggregate loss would have been 85,740,000 man-days, or 1.5 percent of the estimated 5,712.4 million man-days actually worked in industry. This loss of man-days would have been equal to more than 320,000 man-years, a significant loss of labor for any economy.[102]

Time is not the only loss caused by turnover, however. Sizable losses are also brought on by changes in occupation and branch of employment, with resultant lower productivity. In 40 to 45 percent of all cases, turnover involves a change in occupation.[103] More than half of the accessions to industrial enterprises in 1960 came from other industrial organizations, but 25 to 30 percent came from other branches of the national economy, and the remaining 15 to 20 percent were starting work for the first time.[104] In machine-building enterprises of Moscow in 1964(?), nearly 40 percent of newly hired workers came from enterprises within the same branch of industry, 25 percent from other branches of industry, 5 percent from construction, 8 percent from transport organizations, 9 percent from trade and public dining, and the remaining 13 percent from other branches or sectors. About 60 percent of these newly hired workers also changed their occupation.[105]

Age plays a part in determining occupational mobility. In the U.S.S.R., persons under 35 years of age accounted for 85 percent of turnover. Of this group, more than half were persons between 18 and 25 years of age.[106] More than 85 percent of those under 20 years of age chose other occupations when they quit jobs as construction workers, workers in subsidiary shops, or turret-lathe operators. In contrast, only 9 to 15 percent of young persons involved in turnover changed from chemical, electrical, or radio occupations.[107]

Retraining costs for workers who change occupations are often one and one-half to two times those for training new workers. These are in addition, of course, to the costs of turnover due to the lowering of productivity both before and after the change of jobs. According to estimates of the Institute of Labor, during the period immediately before a worker leaves an old job and his first month on a new job, labor productivity is usually 25 to 30 percent below normal; during the second month on the new job it is 10 percent below normal; during the third month, 3 to 5 percent below; and only in the fourth month is normal producivity regained.[108] Aggregate underproduction, due to turnover has been increasing. These losses were estimated by the Institute of Labor to have amounted to 1.86 billion rubles in 1958 and to 2 billion in 1959. By the time of the June 1963 plenum, they had increased to 3 billion rubles.[109]

Various administrative and economic measures to curtail turnover have been enacted or proposed. Although it is still too early to tell,

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[102] The number of workers, 21,435,000 in 1964, is reported in Nar. khoz. v. 1964, p. 136. The actual number of days worked in 1964 is given at 266.5 in ibid., p. 138.

[103] Luzan, op. cit., p. 285; Rusanov, op. cit., p. 79; Blyakhman, Dvizheniye * * *, op. cit., p. 14.

[104] Kaplan, Profsoyuznomu * * *, op. cit., p. 24.

[105] L. Smirnova, "Cadre Turnover and Nonproductive Expenditures," Finansy SSSR (Finances of the U.S.S.R.), No. 7, July 1965, p. 56.

[106] Kaplan, "Cadre Turnover * * *," op. cit., p. 48.

[107] Blyakhman et al., Dvizheniye * * *, op. cit., p. 78.

[108] Zdravomyslov et al., "Problems of Turnover * * *," loc. cit.; and Blyakhman et al., Dvizheniye * * *, op. cit., p. 14.

[109] Kaplan, "Questionnaire * * *" op. cit., p. 38; and Blyakhman et al., Dvizheniye * * *, op. cit., p. 129.

the 1964–65 wage increases for the nonproductive sphere probably will have a beneficial effect in reducing turnover in these branches. In the process of changing the system for awarding bonuses, the criteria were amended to include an individual's tenure at a given enterprise as part of the consideration for an award. This is expected to be more effective than the old system of longevity pay, which was given to only one-fifth of all workers and employees.[110] A more equitable distribution of regional wage differentials in branches other than heavy industry may help reduce turnover, but the improvement of housing, services, and cultural facilities, especially in rural areas, may be even more effective.[111] The allocation of housing to induce workers not to leave has been the practice for many years. The law now in effect stipulates that only those who quit for unacceptable reasons, i.e., turnover, may be evicted from plant- or organization-owned housing.[112]

(*c*) *Labor displacement.*—The displacement of workers due to the introduction of new technology has apparently not been a serious problem to date. Calculations made by the State Committee on Vocational-Technical Education of the amount of displacement during the 7-year plan period indicated that 130,000 low-skill workers would be affected in the coal industry, 59,000 in the oil industry, 150,000 in ferrous metallurgy, and 133,000 (ditchdiggers) in construction, among others.[113] There have been no data reported on the numbers of workers actually displaced, but results of surveys taken during the years 1960–62 indicate that 80 percent of the displaced workers were absorbed within the basic organization and 20 percent were considered redundant.[114]

Relocation of the redundant workers in many cases requires retraining. This training now is apparently conducted on a purely *ad hoc* basis by individual enterprise managers to meet their own needs. Since technological displacement can be expected to continue, there is an obvious need for coordinated efforts to retrain and channel displaced workers into useful new fields. According to several sources, however, there is no nationwide organization in existence which is concerned with this problem.[115]

2. Educational institutions

The long run problem of whether to train high- or middle-level manpower, in narrow or broad specialties, takes on added importance as the demands of an ever-increasing technology are felt and the movement of manpower between jobs, branches, and regions is stimulated. This problem has been faced in the Soviet Union and decisions on revamping the educational system to link it more closely with manpower

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[110] A. Volkov, "A Powerful Stimulant for the Development of Production," Pravda, Nov. 14, 1965, p. 2.

[111] At the present time, the level of personal services in rural areas is one-quarter to one-third of the level in cities. L. Zaytseva, "Problems of Utilization * * *," Kommunist, op. cit., p. 89. The author is the deputy chief of the Administration for Kolkhoz Affairs of the U.S.S.R. Ministry of Agriculture.

[112] V. P. Skripko et al., Zhilishchnoye zakonodatel'stvo v SSSR i RSFSR (Housing Legislation in the U.S.S.R. and R.S.F.S.R.), Moscow, 1965, pp. 201–202.

[113] B. D. Breyev, Tekhnicheskiy progress i struktura rabochikh kadrov (Technical Progress and the Structure of Worker Cadres), Moscow, 1963, p. 4; and V. P. Zhezhelenko et al., Tekhnika, trud i chelovek (Technology, Labor, and Man), Moscow, 1963, p. 66.

[114] See, for example, V. Yagodkin and I. Maslova, "Toward the Question of Utilization of Labor Force Displaced Because of Technical Progress," Voprosy ekonomiki, No. 6, June 1965, p. 39.

[115] Ibid., p. 37.

requirements have been taken in a decree issued by the Central Committee of the C.P.S.U. and the Council of Ministers of the U.S.S.R. in May 1963.[116] Based on the conclusion that the number and structure of specialists provided by the educational pipeline was inadequate to meet current and future needs, this decree set forth three major steps. First, the ratio of specialists with higher education to those with secondary specialized education was scheduled to be 1 to 3 or 4 in industry, construction, transport, communications, and agriculture by 1970. Second, educational facilities were to be more rationally distributed geographically, especially in the eastern regions, and local populations were to be trained and utilized rather than workers from far distant areas who are more inclined to add to turnover rather than to permanent settlement. Third, diplomas were to be issued to graduates only after completion of 1 year at the specific place of assignment.

As part of the effort to coordinate the educational system with the structure of demand for specialists work was undertaken on a thorough reassessment of the production process and the attendant requirements for manpower. The May 1963 directive authorized a detailed study of the needs for engineering, technical, and administrative personnel. Using this directive as its authority, the State Committee on Labor and Wage Problems coordinated and assigned to numerous branch research institutes the preparation of standard tables of organization and staffs (*nomenklatura*) for their respective branches, enterprises, or organizations.[117] Work on these *nomenklatura* was to be completed by the end of 1965. The accuracy of these evaluations of manpower requirements is debatable. Writing in August 1965, M. Prokof'yev, then a first deputy minister of higher and secondary specialized education of the U.S.S.R., admitted that there was no clear demarcation or understanding of the functions of engineers versus technicians in production.[118] The pace of change in technology combined with the need for skilled—but not overtrained—manpower was a major factor in setting the new 5-year plan goal for specialists.

In a decree of June 1964, the length of training for students at various levels of schooling was abbreviated. Over a period of 3 years, 1964–66, the length of higher education was scheduled to be reduced by 6 months to 1 year, and the length of secondary specialized education was to be reduced by 6 months to 1½ years. Another directive issued in June 1964 reduced the length of training in vocational-technical schools by 4 months to 1 year. Finally, in August 1964, the 11th year of general educational schools with production training was scheduled for elimination at the end of the 1965/66 school year.[119]

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[116] The original decree of May 9, 1963, was reissued as an order, dated May 24, 1963, of the Ministry of Higher and Secondary Specialized Education of the U.S.S.R. under the title, "On Measures for the Further Development of Higher and Secondary Specialized Education, Improvement of Training, and Utilization of Specialists." Byulleten' Ministerstva vysshego i srednego spetsial'nogo obrazovaniya SSSR (Bulletin of the Ministry of Higher and Secondary Specialized Education of the U.S.S.R.), No. 8, August 1963, pp. 4–13.

[117] "On the Preparation of Model Structures of Administration and Normatives of the Number of Engineering-Technical Personnel and Salaried Employees," Byulleten', No. 2, February 1964, pp. 15–17 and No. 7, July 1964, pp. 37–39.

[118] M. Prokof'yev, "Higher School and Current Requirements," Pravda, Aug. 31, 1965, p. 2.

[119] V. Yelyutin, "Outstanding specialists * * *," loc. cit.; Ekonomicheskaya gazeta, July 18, 1964, p. 39; "For Rational Periods of Training in Vocational-Technical Schools," Professional'no-tekhnicheskoye obrazovaniye, No. 10, October 1964, p. 2; and "On the Changes in Periods of Training in Secondary General Educational Labor Polytechnical Schools with Production Training," Pravda, Aug. 13, 1964, p. 1.

These measures, as well as the aforementioned reduction of active military service to 1 year for graduates of higher educational institutions, are steps in the effort to supply the national economy with more skilled persons who will have a longer working life.[120]

The ratio of specialists with higher education employed in the national economy to specialists with secondary specialized education, excluding the military sector, households, and the private subsidiary economy, has stayed between 1 and 1.45 to 1.48 since the end of 1958.[121] Since these ratios are a function of the admissions to the various levels of educational institutions, it is instructive to compare the trend of admissions as a forecast of future supply—ignoring, for the sake of this comparison, the differences in course length as well as the future military shares and dropout rates. The ratio of day admissions in secondary specialized schools to those in higher schools declined from a peak of 1.69 in the 1958/59 school year to 1.48 in 1963/64 and, despite the decree of May 1963, to a low of 1.42 in 1965/66. With the increase of day admissions to secondary specialized schools in order to accommodate the large numbers of students graduating from both the 10th and 11th grades in 1966, the (plan) ratio will again climb to 1.61. This pattern of schooling obviously will not bring about the desired employment relationship of three or four secondary school specialists to one higher school specialist.[122]

The description given in "Dimensions" (pp. 638–639) of the organized allocation of school graduates is still generally applicable, including the obligation to work a certain number of years where assigned. Among the major innovations is the formal requirement to inform potential graduates of their forthcoming assignments 1 year rather than 3 months ahead of graduation.[123] Another change, effective at the beginning of 1964, was the decision to grant only temporary certificates, good for only 18 months, to graduates of full-time higher educational institutions. Diplomas are to be granted finally only after

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[120] The number of persons in the Armed Forces who had a higher education at the time of the census in January 1959 can be estimated as not less than 244,000. This number amounted to 0.5 percent of the total stock of persons with a higher education, including persons employed in the national economy, households, private subsidiary economy, and the military. It is based upon a method of estimation different from that used by De Witt (as well as on data not available to him), who arrived at a "crude estimate" of 363,000. Nicholas DeWitt, "Education and Professional Employment in the U.S.S.R.," Washington, 1961, pp. 445–446. The method used here was to apply the 1959 census attainment rate of persons with higher education employed in the national economy (33 per 1,000) to the total number employed in the national economy (99,130,000) to obtain an estimate of 3,271,300 persons with higher education employed in the national economy, including the Armed Forces. From this total, the reported number employed—based on an establishment survey for the end of 1958, usually December 1—in the national economy, excluding military personnel (3,027,000) was subtracted to obtain 244,000. As a proportion of persons with higher education employed in the economy, the proportion in the military services is slightly over 8 percent. See Itogi, op. cit., pp. 104, 115, 123, and Nar. khoz. v 1960, p. 648. If there were some graduations during the interval between the date of the survey and the census date, the derivation would be affected. Although graduations are reported to occur in December, there is evidence also to the contrary. Yelyutin, reporting in *September* of 1964 on the number of graduations of that year specified that almost 354,000 persons *had* graduated. Nar. khoz. v 1964, p. 686, reports the number of graduates to be 354,000, thereby indicating no further graduations after August. V. Yelyutin, "The Soviet Higher School," Pravda, Sept. 1, 1964, p. 2.

[121] Nar. khoz. v 1964, p. 560.

[122] Ibid., p. 685; "Current Economic Indicators for the U.S.S.R.," pp. 131, 138; TsSU SSSR, Srednyye spetsial'nyye obrazovaniye SSSR (Secondary Specialized Education in the U.S.S.R.), Moscow, 1962, p. 94; "On Measures for the Further * * *," Byulleten' Ministerstva vysshego * * *, op. cit., p. 7; and Pravda, Feb. 6, 1966, p. 2. An additional problem in interpreting these data is whether or not the different specialists are being utilized in work corresponding to their level or field of training.

[123] "On the Approval of the Statutes on Individual Distribution of Young Specialists Graduating From Higher and Secondary Specialized Educational Institutions," Byulleten' Ministerstva vysshego i srednego spetsial'nogo obrazovaniya SSSR, No. 11, November 1963, p. 7.

1 year of work at the place assigned, although military service can be counted in lieu of this year.[124] Graduates of the evening and correspondence divisions of higher schools are "free agents," because they are not subject to the 3-year work assignment or to the delay in being granted diplomas.[125] Because of this factor and other acceptable reasons for nonappearance at an assigned place of work, the initial plan for the allocation of graduates usually is decreased by a minimum of 18 to 20 percent.[126]

According to the 1963 regulations, the only penalty for not reporting to an assigned place of work or for not working the full 3 years (most persons would work at least the first year to get the diploma in hand) was to make full restitution of the travel advance.[127] This undoubtedly was insufficient to retard turnover. In November 1964, a more severe penalty was authorized. Infractions of the obligation for 3 years' work could provide the basis for individual enterprises, institutions, or organizations to petition the U.S.S.R. Ministry of Higher and Secondary Specialized Education to revoke the malefactor's diploma. This ruling also included refusal to work in the specialty field in which trained as a basis for revocation of a diploma.[128]

The poor geographical distribution of educational facilities has been criticized for many years. A special point on the location of schools was made in the May 1963 directive on education, and the schools to be opened during the years 1963–70 is supposed to reflect the emphasis on opening higher and secondary specialized schools in the regions of more intensive economic development.[129] The allocation of graduates from schools in other areas tends to be a less reliable, more impermanent source of employees than a locally trained labor supply. During the period 1958–60, for example, only 59 percent of the engineers and 70 percent of the technicians allocated by Gosplan R.S.F.S.R. to the Buryat A.S.S.R. reported for work. This low supply compounded the difficulty of the Buryat Sovnarkhoz, inasmuch as its original level of demand for such personnel had been reduced by the R.S.F.S.R. Gosplan by some 25 to 35 percent. The mere act of appearing at the location assigned is no guarantee of long residence, however. An extreme example is afforded by medical doctors. In 1963, 207 physicians arrived in Yakutia, but 196 left the republic.[130] In some local

[124] "On the Approval of the Example of a Temporary Certificate, and Instructions for the Sequence of Issuing Temporary Certificates and Diplomas to Persons Completing Higher Educational Institutions With Separation From Production," ibid., pp. 2–3; and Yu. Muromskiy, "Distribution and Utilization of Young Specialists," Sotsialisticheskiy trud (Socialist Labor), No. 11, November 1964, p. 144.

[125] V. Korotkov, "For Young Specialists," Sovetskiye profsoyuzy (Soviet Trade Unions), No. 13, 1963, p. 44. Limited control remains over graduates who had been sent to school by enterprises, collective farms, etc.

[126] K. P. Savichev, "Timely Plan the Allocation of Graduates!," Vestnik vysshey shkoly (Herald of Higher Schools), No. 7, July 1965, pp. 31–34, especially p. 33. Savichev, the chief of the Department for Distribution of Young Specialists of the R.S.F.S.R. Ministry of Higher and Secondary Specialized Education, makes particular comment on the impossibility of meeting the requirement to inform graduates 1 year ahead of time. The draft of the 1966 annual plan was prepared only in March of 1965, and the final plan was not yet approved in July. Because of the timelag between initial requests, actual graduations, and determination of final production requirements, according to Savichev, the number of specialists who were refused by the agencies to which they were assigned continued to grow. Ibid., pp. 31–34.

[127] "On the Approval * * *," Byulleten' Ministerstva * * *, op. cit., p. 10.

[128] "Review of Labor Legislation: Cadre Training," Sotsialisticheskiy trud, No. 2, February 1965, pp. 146–147.

[129] "On Measures * * *," Byulleten' Ministerstva * * *, op. cit., pp. 4, 8–9.

[130] I. M. Zandanov, "On Means for Increasing the Supply of Specialist Cadres to Buryat A.S.S.R.," in Prudenskiy, Voprosy trudovykh * * *, op. cit., p. 152; and A. M. Zagrebin, "Public Health Questions in the Sessions of Local Soviets," Zdravookhraneniye Rossiyskoy Federatsii (Public Health of the Russian Federation), No. 6, June 1965, p. 4.

areas, especially rural regions, there is a complete turnover of medical personnel every 2 or 3 months.

Efforts to expand the training of local labor resources are underway but the construction of school facilities has lagged far behind planned development. The chairman of the national vocational-technical committee expressed concern over the construction lag in the first half of 1965. At the time he spoke (September 1965), only one-third of the planned capital investment expenditures had been spent and only 3 percent of the schools scheduled to start holding classes had actually opened. Although the 1965 plan called for five times the capital outlay of 1963, the pace was still too slow—especially in anticipation of the large graduation classes of 1966 and the relatively larger number of entrants into vocational-technical schools to follow.[131] One change in the school system which was authorized in early 1966 included the setting up of new types of technical schools in the vocational-technical system which will be attached to enterprises or other organizations to train 97,000 graduates of general educational schools.[132]

The employment status of 14- to 17-year-old graduates of the 8th and 10th or 11th grades is tied to the revision of entrance requirements to higher schools, as indicated above, and to the removal of age obstacles to employment through the use of hiring quotas. Enterprise directors are given a quota, or percentage of their total work force which must be filled by persons in this age group. The size of the quotas has changed from an unspecified level when the system was introduced in 1957, to a level of 3 to 5 percent in 1963, and now from 0.5 to 10 percent, or higher if necessary. Managerial resistance to hiring young people has persisted, despite the obligatory quotas. This resistance, however, may lessen as a result of the permission granted enterprises, as of the beginning of 1964, to exclude workers under 17 years of age from the registered number of industrial-production personnel and from productivity calculations.[133] Other alleviating factors are that a separate wage fund is used and that the period of time for which these young people must be retained has not been specified, apparently enabling managers to release them after a brief period of work.

3. Organized recruitment and resettlement

The organized recruitment (*orgnabor*) system remains an important, albeit somewhat curtailed, channel of labor supply. Since the mid-1950's this system has recruited less from among the rural population and more from among the urban.[134] It has, however, been authorized since October 1961 (at least in the R.S.F.S.R.) to recruit not just skilled, experienced wage workers as in earlier years, but special-

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[131] A. A. Bulgakov, "The Family of Workers is Growing," Trud, Sept. 10, 1965, p. 2.
[132] "In the Central * * *," loc. cit.
[133] Ibid. Similar difficulty in obtaining jobs for young people exists in construction organizations. A letter to the national construction newspaper (A. Tarasov, "Selection of Young Persons: Construction Sites of the Five-Year Plan Period," Stroitel'naya gazeta, June 19, 1966, p. 2) contained the following plaintive appeal: "Advise me what to do. I have completed eight grades. I am 16 years of age, and I do not work anywhere because I am not 18 years old. And I want to be a worker just like my father." In order to overcome resistance by these organizations, a quota of 3 to 4 percent of the average annual employment in construction organizations is currently imposed.
[134] "Dimensions," pp. 639–641. In 1957, the *orgnabor* system was combined with the resettlement administration.

ists with higher and secondary specialized education as well.[135] Agricultural resettlement operations remain the same as described in "Dimensions," at a continuing low level.

Representatives of the *orgnabor* system, because of their knowledge of job availabilities in individual organizations, have recently begun to participate in the decision-making of the Commissions for the Individual Distribution of Young Specialists which decide on job assignments for graduates of higher and secondary specialized educational institutions. Also, the *orgnabor* and resettlement administration, at least in one republic, has expanded the scope of its activities in another area of manpower management. In Turkmenistan, it is the function of this organization to arrange jobs for young people with 8-year general education or complete (10- or 11-year) secondary school education. During 1964, this organization arranged for three times the number of jobs which had been arranged for in 1963, and in 1965, 50 percent more than had been arranged for in 1964.[136]

Appeals for the abolition of the *orgnabor* system are less frequently heard now than during the early part of the 7-year plan period. This change in attitude has come about not only because it has been recruiting higher quality personnel, but also because it represents an organized means for allocating and utilizing surplus labor. In fact, the job opportunities offered by *orgnabor* have been called a "safety valve" for the overpopulated areas.[137] As part of its efforts to improve its image, the *orgnabor* system in 1964 began to exercise greater control over the keeping of promises to recruits by contracting enterprises. In addition, more attention is being paid to the personal characteristics of seasonal workers in an attempt to reduce their turnover.

A suggestion that *orgnabor* be eliminated and the expenditures reallocated for new housing has been rejected by Gosplan R.S.F.S.R. on the basis of the following rationale. The 30,000 persons who are sent each year to the Far East and Eastern Siberia cost the State approximately 9 million rubles. If this outlay were cut by as much as 50 percent, only 22,000 to 25,000 square meters of housing space could be built—a very small increment to the 3 million square meters built annually at state expense in these regions.[138]

4. Social mobilization

Although there is no formal apparatus in existence to organize it, social mobilization (*obshchestvennyy prizyv*), under the auspices of the Komsomol, continues to play a part in the channeling of "volunteers" to labor deficit areas and priority sites. As indicated in "Dimensions" (pp. 641–642), the program to provide labor for the Virgin Lands campaign began in the spring of 1954. During the period

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[135] See the Statutes of the Chief Administration of Resettlement and Organized Recruitment of Wage Workers attached to the Council of Ministers of the R.S.F.S.R., in V. V. Kuznetsov et al. (Compilers). Spravochnik po zakonodatel'stvo dlya predsedatelya kolkhoza (Handbook on Legislation for a Collective Farm Chairman), Moscow, 1962, pp. 520–525. Additional information is found in Ye. V. Magnitskaya, "Legal Questions of Organized Recruitment of Cadres in the U.S.S.R.," Vestnik Leningradskogo universiteta (Herald of the Leningrad University), No. 23, Seriya ekonomiki, filosofii i prava (Economic, Philosophy, and Law Series), Issue 4, 1962, pp. 70–79.

[136] Kh. Esenov, "The Job Placement of Youths—A Concern of the State," Turkmenskaya Iskra, July 2, 1965, p. 3.

[137] See V. Kantorovich, "Seasonal Workers; Notes in Far Eastern Diaries," Oktyabr' (October), No. 6, June 1963, pp. 163–177; and M. Sergeyeva, "Again About the Problem of Seasonality," ibid., No. 6, June 1964, pp. 199–200.

[138] Ya. Chadayev, "Permanent Cadres for the Far East and Siberia," Ekonomicheskaya gazeta, No. 21, May 25, 1963, p. 44.

1956–62, almost 1,400,000 long-term young volunteers were dispatched to Siberia, the North, the Far East, and Kazakhstan on Komsomol travel passes. In some areas, such as Karaganda, the numbers of volunteer youths who arrived were equal to the need for labor during several years of this period, and the authorities were enabled to reduce the supply of labor through *orgnabor*.[139]

Many incentives, including lump-sum payments, housing, and training, are offered to volunteers as they are to recruits of the *orgnabor* or agricultural resettlement systems. Requests for the release of volunteers from their work at full-time jobs in the settled western areas to take jobs in priority industrial or construction sites in outlying areas must be granted automatically by their employing organizations.[140]

5. Wages and labor mobility

The Soviet wage system is based on a series of wage rates which differ by branch of the economy, branch of industry, and geographic region. The opportunities provided in this system for improving earnings by moving from one job to another necessarily mean that a certain amount of turnover or frictional unemployment is inevitable.[141] Great concern is frequently expressed over the disturbing amount of mobility due to aspirations for higher wages, and attempts are being made to improve the wage system.

Wage rates are combined into groups which reflect branch or sectoral priorities. For example, in industry, the highest wages are paid in the raw materials branches, which have a basic wage rate (first wage-skill category) 10 to 15 percent higher than the next group, which includes the processing branches of heavy industry. The third group, which pays a basic rate 15 to 25 percent lower than the first, is comprised of the light and food industries. Enterprises of local industry frequently have rates which are 10 percent below the rates of similar enterprises subordinate to a sovnarkhoz, or now, a ministry.[142] Money wages actually paid reportedly accord closely to the pattern of wage rates.[143]

Wages paid for certain skills and occupations do not always correspond to manpower requirements. The supply of machine-tool operators, for example, is so limited that in 15 oblasts and krays of the R.S.F.S.R. the demand reportedly would be unsatisfied even if all persons engaged in the household and private subsidiary economy took up this trade. Around 1962, machine-building plants in Moscow, Moscow Oblast, and Leningrad were short 360,000 persons. Despite this, the earnings of machine-tool operators were 10 to 20 percent lower than

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[139] See V. P. Mironova, "Social Mobilization of Youths for the New Construction Sites of the Country (1956–62)," in N. M. Shevtsov and K. S. Vasilenko (eds.), Rabota partii po vospitaniyu kommunisticheskogo otnosheniya k trudu (Party Work Toward Bringing About a Communist Attitude to Work), Moscow, 1965, pp. 170–175.

[140] "Privileges and Advantages for Persons Dispatched to Work Through Social Mobilization," Sotsialisticheskiy trud, No. 5, May 1965, pp. 141–144.

[141] The prominent labor economist, N. I. Shishkin, stated that "Until recently, the basic stimulus in drawing labor force to the new regions was much higher payments for work, together with regional coefficients and privileges for persons in the Far North. However, the experience of many years shows that the high payments in the eastern and northern regions are inadequate to keep working persons, even though these payments attract the working people to these regions." See Onika, Problemy ekonomiki truda, op. cit., p. 44.

[142] A. G. Aganbegyan et al., "Characteristics of the Operation of the Law on Distribution According to Work in the Period of Full-Scale Construction of Communist Society," in Kalmyk, op. cit., p. 168.

[143] See Gertrude Schroeder, "Industrial Wage Differentials in the U.S.S.R.," Soviet Studies, vol. XVII, January 1966, No. 3, p. 316, for estimates of annual wages by branch of industry and branch rankings over time.

those of a metalworker.[144] During 1962 and 1963, turnover among machine-tool operators in Leningrad was 15 to 20 percent higher than among other occupations. To prevent the continuation of the search by workers for other jobs and more money, local action was taken successfully to raise wage rates.[145]

The wage reform of 1964–65, which increased wages in the nonproductive branches, was a result of the growing demand for labor in these branches. Prior to the reform, average wages in this sphere, as a proportion of the average for all workers and employees in the country, were 71.6 percent in the housing-communal economy, 72.5 percent in public health, 72.9 percent in trade, and 87.2 percent in education and cultural services. Due to the 1965 increments, however, wages in these sectors grew much faster than the aggregate rate. The overall increase in 1965 was 4.4 percent, as compared with 13.2 percent in the housing-communal economy, 21.0 percent in public health, 15.7 percent in trade, and 19.7 percent in education and cultural services.[146] The setting of higher wage rates, however, may not be sufficient to draw adequate labor, for job preference surveys show a strong disinclination to work in the service trades. One Soviet writer noted that young people consider work in the service sector to be "degrading." Nonetheless, during the new 5-year plan, an anticipated 1 million additional persons will be needed in this sector.[147]

It is too soon to evaluate the changes in the planning and administrative systems which were effected in October 1965, including the use of the wage fund as a control over the enterprise. (See sec. III, below.) Plant managers will, within the limits of the total wage fund assigned, have the authority to adjust wages in order to compete in the local market. Managers will continue to attempt to draw skilled workers away from other enterprises by a combination of higher wage-skill categories, lower output norms, less intensive work, and guaranteed leave during the so-called "velvet season," or slack period.[148] The new system is contradictory to the drive for full employment and maximum output; if the manager is to cut costs and economize, he probably will attempt to rid himself of surplus workers. But will the authorities allow this to happen? Too much local option in wage setting surely will not be permitted, since centralized direction of wage policy and centralized guidelines for wage rates and salaries are to be continued.[149]

6. New organizations

As the foregoing review has demonstrated, a variety of organizations are involved in channeling the labor supply. They may be nationwide, such as *orgnabor*, or local, such as committees to determine job quotas for invalids in individual enterprises. Local organizations tend to proliferate. In 1961, for example, there were separate commissions under the city executive committee to arrange employment for discharged servicemen, youths, secondary school graduates, and invalids.

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[144] Prudenskiy, Vremya * * *, op. cit., pp. 107–108.
[145] M. Korolev, "It is a Pity for One's Occupation * * *," Pravda, July 27, 1965, p. 2.
[146] Nar. khoz. v 1964, p. 555.
[147] Rogovskiy, loc. cit. See also Shubkin "Youths * * *," op. cit., p. 67.
[148] G. Podorov, "For Stable Cadres," Partiynaya zhizn' (Party Life), no. 17, September 1963, p. 24.
[149] A. P. Volkov, the head of the State Committee on Labor and Wage Problems, made this point abundantly clear when treating this aspect of the reforms envisaged by the September 1965 Plenum. Volkov, "A Powerful * * *", loc. cit.

In addition, the local military commissariat, the Komsomol city committee, and the local *orgnabor* and resettlement unit kept track of local labor resources.[150] Coordination of these organizations is required on the national level and a significant number of appeals have been made to combine all of them.

Also, recognition has emerged that unemployment has not been and will not be automatically eliminated from Soviet society. (See sec. IV–E, below.) Sonin wrote that it would be "economic naiveté" to think that the absence of unemployment (in the Soviet concept) precludes the necessity for active organizational work.[151] At the theoretical conference held by the Institute of Labor in 1962, Antosenkov bluntly stated that "Full employment and the absence of unemployment is not attained automatically under socialism."[152] Several proposals have come forth advocating national agencies which would study both the demand of and the supply for the current market and integrate them with forecasts of future requirements of trained labor.[153] At the moment, however, no Ministry of Labor appears on the immediate horizon.

III. Demand

The pattern and level of employment within a nation depend on a multitude of factors, including the level of output, official employment and wage policies, the structure of production relationships, the nature of the educational system, and the age-sex structure of the population. Most, if not all, of these factors are considered by Soviet planners in preparing employment plans, and all of them play a role in determining the use of labor, whether the planners take them into account or not. This section is concerned with the demand for labor in the Soviet Union as it is reflected in the actual pattern of employment After a brief discussion of the recent changes in the administrative-planning system, which may well have a great impact on the nature of demand for labor, there is a detailed description of the size, sectoral distribution, and qualitative structure of the employed population in the U.S.S.R. today. The trends and developments to be expected in these areas during the current 5-year plan are also discussed.

A. The Impact of Recent Reforms

Many questions remain to be resolved concerning the implementation of recent revisions in the planning system and the reorganization of the administrative structure. Of particular note here are the factors in these changes affecting labor policies and utilization. In the transformation back to a ministerial system, inevitable disruptions will occur in planning the goals for output, investment, labor, etc. The adjust-

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[150] A. Orlov, "Some Questions of the Rational Utilization of Labor Resources of an Administrative-Economic Region," Nauchnyye doklady vysshey shkoly, Ekonomicheskiye nauki, No. 1, January–February 1962, p. 89. Also see K. Urzhinskiy, "Job Placement of Youths in the U.S.S.R. (On Quotas for Young Persons)," Sotsialisticheskiy trud, No. 10, October 1963, p. 112.

[151] Sonin, Aktual'nyye * * *, op. cit., pp. 100–101.

[152] Onika, op. cit., p. 204.

[153] Perevedenstev in Kalmyk, op. cit. p. 43; and A. P. Shevtsov et al. (editors), Period razvernutogo stroitel'stva kommunizma v SSSR i ispol'zovaniya ekonomicheskikh zakonov (The Period of Full-Scale Construction of Communism in the U.S.S.R. and the Use of Economic Laws), Saratov, 1965, p. 285. Some attention has been paid to the experience of one local labor exchange functioning in Gor'kiy. Parkhomovskiy and Ivnev, loc. cit.

ment of sectoral and branch targets among both new and old administrative agencies will take time. In addition, the new statute on planning by enterprises is not to be applied universally. The Statute of Socialist State Enterprises, as it is called, applies only to the state sector of the economy, and all activities of collective farms and consumers' cooperatives are thereby excluded.

There are limits also to the application of this statute within the state sector. Only enterprises and organizations classified under industry, construction, transportation, communications, and agriculture are included; trade and the entire nonproductive sphere are excluded. Plans for introducing the new system provide for initial application in specified enterprises and in certain regions only during 1966; full implementation to entire branches of industry or the economy and all regions will come only in 1967 and 1968. During the first quarter of 1966, 43 industrial enterprises of 17 ministries were to be converted to operation under the new system. In April 1966, 180 to 200 more plants and factories were scheduled to be converted. During the second half of 1966 and the first half of 1967, all remaining enterprises of the branches of industry included up to this point are to be converted, as well as certain other branches of the economy (forestry, river transport, etc.). By the beginning of 1967, all of light industry, part of the food and machine-building industries, and the remainder of the nonferrous metallurgical industry are to be converted. The timetable calls for conversion of all branches of industry by January 1, 1968.[154]

In contrast to the detailed labor and wage assignments given to enterprises under the old system, the new regulations require only that the global wage fund be stipulated by superior echelons. The number of personnel, their internal distribution, and their average wages are now to be omitted from assignments handed down by superior agencies. Enterprise directors are to be *guided* only by internal staff schedules (tables of organization), and they will no longer need to report compliance with staffing estimates.[155] Previously, enterprise managers have had to operate under a self-imposed employment policy designed to protect themselves from the vagaries of the supply system, intermittent changes in production plans during the plan period, demands to release personnel for agricultural work at peak periods, and featherbedding due to the dictates of the full employment policy of the Government. Under the new regulations, managers will be able to dispose of excess personnel in order to maximize output with least cost. An agency to assist in relocating displaced workers has not yet been created.

Detailed planning of the demand for high- and middle-level manpower may suffer because of the new regulations. Since staffing plans will no longer be reported, a pattern of recruitment and employment

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[154] See "Statute on Socialist State Production Enterprises," Ekonomicheskaya gazeta, Oct. 20, 1965, pp. 25–29; V. Rzheshevskiy, "Labor Questions in the Statute on Enterprises," Sotsialisticheskiy trud, No. 11, November 1965, pp. 17–25; A. Volkov, "Labor, Profits, Bonuses," Izvestiya, Feb. 13, 1966, p. 1; and "On Work According to the New System," ibid., Mar. 20, 1966, p. 2.

[155] This relaxation of control over enterprises had been anticipated in September 1964, when a new statute for the sovnarkhozy was enacted by the U.S.S.R. Council of Ministers. Under this statute, staffing plans and estimates of administrative-management expenditures of sovnarkhoz enterprises no longer had to be registered at finance offices. The only copy of this statute which has been found is in a book on civil, not administrative, law. A. Yu. Kabalkin (compiler) Normativnyye materialy po sovetskomu grazhdanskomu pravu (sbornik) (Normative Materials on Soviet Civil Law [A Compilation]) Moscow, 1965, pp. 56–76.

which is substantially different from that now existing or from that which is now designated on the tables of organization may emerge. Perhaps only the total flows of persons through the educational pipeline will be forecast, instead of the detailed numbers of graduates by specialty and level of training which have been made heretofore. In preparing the plans for 1964 and 1965, for example, forecasts were made of the number of graduates in all 22 groups and 330 specialties of higher education, and in all 21 groups and 375 specialties of secondary specialized education.[156] The greater emphasis on broad training in higher education which was initiated in 1963 may serve as a stopgap measure until the emerging pattern of demand resulting from the new regulations become evident.

B. SIZE AND DISTRIBUTION OF EMPLOYMENT

1. Total

Estimates and projections of the labor force, the population aged 14 years and over, and employment for selected years during the period 1950–70 are given in table 5.[157] The projections of civilian employment are based largely on plan goals; the projections of the labor force are based on the assumption that the overall rate of participation in the labor force will remain unchanged after 1964. The estimates in this table show that during the 7-year plan period (1959–65) civilian employment remained at nearly a constant proportion of the civilian labor force, approximately 89 percent, but that during the coming 5-year plan this proportion will rise to slightly more than 91 percent. This rise implies that the availability of labor will be somewhat tighter during the next 5 years. As noted in section II, above, the population in the able-bodied ages will increase more rapidly during the current plan period than it did during the 7-year plan period, but if civilian employment increases as expected the total increase in the labor force may not be sufficient.

Several steps probably will be taken as a consequence of this somewhat more taut labor market. First, more intensive use of the available labor may be sought through attempts to reduce seasonality and turnover. Second, labor may have to be drawn from other sources. As indicated in the discussion of supply above, a limited number can be drawn from the households if the plan for increasing preschool and child-care facilities is met. In addition, according to an estimate given by A. Ivanchenko of the Council on Productive Forces of Gosplan, no less than 2.5 to 3 million persons could be drawn into the socialized economy if a more appropriate distribution of the location of industry into small and medium-sized urban places is made.[158] The reservoir

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[156] N. V. Tsapkin and V. L. Pereslegin (editors), Planirovaniye narodnogo khozyaystva SSSR (Planning the National Economy of the U.S.S.R.), Moscow, 1964, p. 258. By August 1965, there were 450 specialties taught in the secondary specialized schools. Narrower specialization in the fields of training for the chemical industry, agriculture, services, etc. also is contemplated. "Higher School, 1965," Komsomol'skaya pravda, Aug. 26, 1965, p. 1.

[157] This table differs somewhat from previous tables in "Dimensions" and "Indicators" in that the methodology has been slightly revised and labor force estimates pertain to mid-year instead of beginning of year. The data in the table have been taken from a forthcoming report by Ritchie H. Reed and Murray Feshbach, Foreign Demographic Analysis Division U.S. Bureau of the Census, on estimates and projections of labor force and employment in the U.S.S.R., 1950–75. This report will contain detailed methodological notes and year-by-year estimates and projections for the entire period.

[158] A. A. Ivanchenko, "Labor Resources of Economic Regions of the U.S.S.R and Problems in Their Rational Utilization," N. N. Nekrasov et al. (editors), Voprosy razmeshcheniya proizvodstva v SSSR, Sbornik statey (Questions of the Location of Production in the U.S.S.R., A Collection of Articles), Moscow, 1965, p. 179.

TABLE 5.—*Population, labor force, and employment, U.S.S.R., 1950 to 1970*

[In thousands. Population and labor force figures are as of July 1, and employment figures are annual averages. Figures are independently rounded not add to and may totals]

Population characteristic	1950	1958	1959	1960	1961	1962	1963	1964	1965	1970
I. POPULATION										
Population aged 14 years and over	129,708	148,663	149,710	151,235	153,274	155,746	158,507	161,426	164,441	179,706
Male	53,633	63,403	63,983	64,825	65,928	67,241	68,715	70,280	71,900	80,220
Female	76,075	85,260	85,727	86,410	87,346	88,505	89,792	91,146	92,541	99,486
II. LABOR FORCE										
Total	94,852	108,305	110,104	111,270	113,111	115,555	117,987	120,248	122,412	133,865
Armed forces	4,600	3,800	3,600	3,300	3,000	3,000	3,000	3,000	3,000	3,000
Civilian labor force	90,252	104,505	106,504	107,970	110,111	112,555	114,987	117,248	119,412	130,865
Nonagricultural branches	41,006	55,190	57,859	61,015	64,466	66,749	68,892	71,695	74,283	87,438
Agriculture	49,246	49,315	48,645	46,955	45,645	45,806	46,095	45,553	45,129	43,427
III. CIVILIAN EMPLOYMENT										
Total	79,858	93,577	94,086	95,402	98,008	99,771	100,793	103,364	106,428	119,521
Nonagricultural branches	36,778	49,499	51,893	54,724	57,819	59,866	61,788	64,302	[1] 67,465	[2] 81,065
Industry	15,444	20,775	21,407	22,291	23,475	24,297	25,057	[3] 25,933	[1] 27,070	[4] 30,302
Other	21,334	28,724	30,486	32,433	34,344	35,569	36,731	[3] 38,369	[1] 40,395	50,763
Agriculture	43,080	44,078	42,193	40,678	40,189	39,905	39,005	39,062	38,963	38,456
Workers and employees	6,368	9,581	9,459	11,186	12,445	12,930	12,899	13,132	13,843	15,361
State farms	2,425	4,614	4,957	6,324	7,366	7,730	7,874	[3] 8,071	[1] 8,520	[2] 9,520

Private subsidiary economy [5]	2,487	3,519	3,269	3,704	4,229	4,322	4,161	4,176	[6] 4,408	[6] 4,926
Other	1,456	1,448	1,233	1,158	850	878	864	[3] 885	[1] 915	[2] 915
Collective farmers	35,560	34,464	32,710	29,477	27,732	26,966	26,106	25,930	25,120	23,095
Socialized sector	27,300	25,400	24,500	22,300	20,700	20,000	19,400	[3] 19,200	[7] 18,600	[7] 17,100
Private subsidiary economy [5]	8,260	9,064	8,210	7,177	7,032	6,966	6,706	6,730	[6] 6,520	[6] 5,995
Individual peasants [8]	1,152	33	24	15	12	9	(11)	(11)	(11)	(11)
Class of worker:										
Workers and employees	40,395	55,405	57,909	62,032	65,861	68,300	70,526	73,258	76,900	91,500
Collective farmers [9]	35,560	34,434	32,710	29,477	27,732	26,966	26,106	25,930	25,120	23,095
Other [10]	3,903	3,708	3,467	3,893	4,415	4,505	4,161	4,176	4,408	4,926

[1] Tsifrakh v 1965, pp. 121–22.

[2] The total of 91.5 million workers and employees is the average of the plan goal of 91–92 million workers and employees for 1970, as reported in Izvestiya, February 20, 1966, p. 3. Employment on state farms is estimated by assuming that it will grow at the rate of 200,000 per year after 1965; "other" state agriculture was assumed to remain constant after 1965. Nonagricultural workers and employees were derived as a residual.

[3] Nar. khoz. v 1964, pp. 272, 353, 354, 419, and 550.

[4] Computed from planned increases in output and productivity reported in Izvestiya, February 20, 1966, p. 2.

[5] Estimates shown here for the private subsidiary economy differ slightly from those given in Current Economic Indicators. The same method and sources were used, but a different input factor (a constant, consolidated input factor) for crop raising was used for these estimates.

[6] Assumed to be equal to the 1964 proportion of either the state or the collective farm socialized sector, as appropriate.

[7] The figure for 1965 is reported in Tsifrakh v 1965, p. 91. Assumed to decrease by 300,000 per year between 1965 and 1970. Agricultural artels only. Probably omits about 200,000 persons employed in other nonagricultural artels.

[8] These data are man-year inputs calculated in the same manner as the private subsidiary economy man-year figure.

[9] Includes both the socialized and private sectors.

[10] Includes members of worker and employee families engaged in the private subsidiary economy, independent artisans, and individual peasant employment. In 1963, the amount of independent artisan and individual peasant employment became insignificant, and thereafter this line includes only worker and employee family members in the private subsidiary economy.

[11] Negligible.

Source: I. Population: Estimates and projections prepared by the Foreign Demographic Analysis Division, Bureau of the Census.

II. Labor force: 1950–64: Derived in the same manner as in table VI–1, Current Economic Indicators, pp. 65–6. 1965, 1970: Computed by assuming that the 1964 labor force participation rate will remain constant and applying it to the population 14 years of age and over. The nonagricultural total was projected by a least squares linear regression expressing the trend of the nonagricultural labor force during the period 1955–64. The agriculture total was derived as a residual. Armed Forces: 1950, 1958–61: Central Intelligence Agency, "Labor Supply and Employment in the U.S.S.R., 1950–1970," Washington, August 1964, p. 16. 1962–65, 1970: Assumed to remain constant at the 1961 level.

III. Civilian employment: Derived in the same manner as in table VI–2, Current Economic Indicators, pp. 67–9, except as indicated otherwise.

of pensioners is still only partially tapped, according to Soviet estimates, and an additional 200,000 to 300,000 persons may be added to the employment rolls from this source during the next few years. On the other hand, the drive toward universal 10-year education by 1970 would seem to preclude any further change in the lower levels of the educational system which could contribute to employment. No demobilization of military personnel is predicted for the plan period.

As in the past, the plan goal for workers and employees will partially be met through sectoral transfers of collective farmers. The conversion of collective farms into state farms can be expected to continue, and it is estimated that 300,000 collective farmers will be transferred to the state sector each year, or a total of 1.5 million over the entire plan period. In addition, increases in the number of workers and employees can be achieved through statistical reclassification of collective farmers. If, for example, a collective farmer works less time on the collective farm but more time in intercollective farm enterprises, he can contribute more to the average number of workers and employees during the year. Additional opportunities for this type of employment outside the collective farms will be created through the planned expansion of subsidiary nonagricultural enterprises and organizations in rural areas.

The annual increase in the gross demand for manpower (workers and employees) in the state sector is reported to be slightly over 5 million persons,[159] which would amount to approximately 7 percent of the 73.2 million workers and employees in 1964. This increase in the gross demand includes both the satisfaction of new requirements and the replacement of persons leaving employment in the state sector. The net increase in the annual average number of workers and employees during the years 1966–70 is expected to equal 14 to 15 million persons, or 2.9 million persons per year. Using the 7 percent rate of increase in gross demand and the planned net increase of 2.9 million persons per year, an estimated 30 million workers and employees can be derived as the number of new persons required during the plan period. If the rate of demand is arbitrarily decreased linearly to 6 percent by 1970, an estimated 27.7 million persons will be needed to satisfy the projected net growth of 14 to 15 million workers and employees. There is some justification for lowering the rate of demand, for, as the share of young persons in the labor force increases and the number of pensioners who continue to work also increases, the attrition (or replacement) rate must decrease.

The average of the annual net increases in the number of workers and employees over the forthcoming 5-year period is estimated at 3.5 percent. Subtracting this rate from the estimated rate of increase in gross demand, 7 percent, results in the average residual attrition rate, which will also be about 3.5 percent per year. During the 7-year plan period, under conditions of a reduced supply at the lower ages and a monetary disadvantage for pensioners to prolong their working life, the residual attrition rate was 4 percent per year. The rate for industry and construction was approximately 4 to 5 percent.[160]

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[159] Rogovskiy, loc. cit.

[160] I. Paskhaver, "Questions of the Utilization of Collective Farm Labor Resources," Ekonomika Sovetskoy Ukrainy (Economics of the Soviet Ukraine), No. 2, March–April,

2. Sector and branch

The total growth of employment in industry is estimated to be 3.2 million over the next 5 years, or an average of about 640,000 per year. This assumes achievement of the maximum output goals (47–50 percent) and the midpoint of the productivity goal (33–35 percent) for industry. The growth of industrial employment projected in the new draft plan is only about 70 percent of the average of 899,000 achieved during the preceding 7 years, and it remains to be seen whether this slowdown will be permitted. In railroad transport, plan goals for the growth of freight turnover and productivity indicate that little change in employment can be expected.

Since employment in industry probably will have a modest growth and employment in railroad transport, construction, and agriculture (see below) probably will not change significantly, most of the employment growth can be expected in the services sector. This would be the continuation of a recent trend in which, contrary to earlier years when the basic branches of industry, construction, and transport and communications grew most quickly, the service sectors has gained at the fastest rate.[161] In the period 1964–65, increases in the production branches were 4.4 percent in industry, 4.7 percent in construction, and 4 percent in transport and communications. Increases in the services, however, were higher—6.5 percent in science and scientific services, 4.8 percent in trade and public dining, and 5.1 percent in public health.

Employment data by branch of industry are given in appendix table A–2. This table contains systematic data on the number of industrial-production personnel and wage workers by branch of industry which have recently been published for the first time since the 1930's. They show that employment (wage workers) in the chemical industry increased by over 75 percent, or from 494,000 in 1958 to 870,000 in 1964. This rate of growth, about 2½ times greater than that for all industry, is a direct reflection of the priority assigned to the branch during the 7-year plan period. The share of the chemical industry in total industrial employment grew from 3 percent in 1958 to 4.1 percent in 1964. At the same time, the share of the competing ferrous metallurgical industry dropped from 5 percent in 1958 to 4.7 percent in 1964, due in large part to the substitution of chemical for iron and steel products. Employment in the machine-building and metalwork-

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1961, p. 44; and Kasimovskiy, op. cit., p. 257. In 1956 or 1957, a Chinese source reported an attrition rate of 3 to 5 percent for the Soviet Union. Ch'en Chi-ch'en and Ch'en Chih-chang, "Ti shih-i chiang: Kan-pu chi-hua piao-ke" ("Lecture 11: Cadre Planning Tables"), Chi-hua ching-chi (Planned Economy), November 9, 1957, p. 36.

There are several other incremental and replacement demand rates which deserve mention. During the fifth 5-year plan period (1951–55), the average annual attrition rate of specialists with a higher education was 3.8 percent. The number of graduates entering economic activity during these years could not be used, therefore, solely as increments to the available stock. Of the 1,121,400 graduates, 380,400, or about one-third, were used as replacements. During the same period, the average attrition rate of specialists with a secondary specialized education was between 4 and 5 percent per year. Over an 11-year period, not specified but probably 1951–62, the estimated average annual attrition for graduates of higher education was 3.2 percent. During the years 1956–60, an average annual rate of 4.3 percent was observed for specialists with secondary specialized education. See V. Komarov, "Some Questions in Planning the Training of Specialists for the National Economy," Planovoye khozyaystvo, No. 9, September 1957, pp. 61–62; K. Nozhko, "Improve the Planning of the Training of Specialists," ibid., No. 9, September 1961, p. 48; B. I. Braginskiy (ed.) Planirovaniye potrebnosti narodnogo khozyaystva v spetsialistakh (Planning the Demand of the National Economy for Specialists), Moscow, 1959, p. 93; and K. G. Nozhko, Methods of estimating the demand for specialists and of planning specialized training within the U.S.S.R., UNESCO, Paris, 1964, p. 15.

[161] Current Economic Indicators, p. 63.

ing branch continues to grow: the proportion of all industrial wage workers employed in this branch increased from 30.3 percent in 1958 to 33.8 percent in 1964. The number of persons in the construction materials industry surprisingly has remained at about the same level, after a large increase of over 12 percent between 1959 and 1960, i.e., at the beginning of the 7-year plan period. Employment in the coal industry has decreased by almost 100,000 since 1959—probably as a result of both the shift to other fuels and increased productivity. In the consumers' goods sector, the food industry dropped from 10.2 percent of total industrial employment in 1958 to 9.2 percent in 1964. The other consumers' goods branch, light industry, increased from 15.4 percent in 1958 to 17 percent in 1964.[162]

Total agricultural employment is estimated to have dropped below 40 million only in 1962 and to have stayed slightly below that level in 1963 and 1964. Collective farm employment is projected as decreasing by 300,000 per year during the next 5 years whereas state farm employment is projected as increasing by 200,000 per year; therefore, total socialized agricultural employment is expected to drop by only 500,000 between 1965 and 1970. This is in accord with the production/productivity goals for agriculture set forth in the 5-year plan.[163] The projected 1970 level of employment in all of agriculture is still above 38 million.

As a proportion of total employment, the agricultural sector has dropped from 44.8 percent in 1959 to 37.8 percent in 1964, and it will be an estimated 32.2 percent in 1970. In comparison with the United States, however, these proportions continue to represent much larger allocations of manpower resources to the agricultural sector. In the United States, 8.9 percent of employment in 1959 and 7.3 percent in 1963 were engaged in agricultural pursuits; it will be an estimated 5.2 percent in 1970.[164]

Employment in the private subsidiary economy declined slightly between 1959 and 1964, from an estimated 11.5 million to 10.9 million man-year equivalents, and it is expected to remain at the same level until 1970. These estimates are much higher than those reported in the statistical handbooks for employment in this sector, but they are supported by information from several recent Soviet sources. Ye. S. Rusanov, of the Institute of Labor, stated in a book published in 1965, but probably based on data for 1963, that "At the present time approxi-

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[162] A further breakdown by class of worker (engineering-technical personnel, salaried employees, apprentices, minor service personnel, and guards) has not been possible. Except for some limited data in the recent RSFSR handbook for industry (TsSU RSFSR, Promyshlennost' RSFSR, statisticheskiy sbornik (Industry of the R.S.F.S.R., A Statistical Compilation), Moscow, 1961, p. 36) there has been no data on ITR by branch of industry since the statistical handbook Dostizheniye Sovetskoy vlasti za sorok let v tsifrakh (Accomplishments of the Soviet Regime Over Forty Years, in Figures), was published in 1957. The distribution of all industrial employment by category of personnel in the national statistical yearbooks always leaves a combined residual of minor service personnel and guards. It is possible to split the two groups for 1960, however. Of the joint total, 212,000 were minor service personnel and 261,000 were guards. Yagodkin, Zakonomernosti * * *, op. cit., p. 134.

[163] Planned output and productivity are given in all major newspapers of Feb. 20, 1966. Data used as the basis for the calculation are from Nar. khoz. v 1964, p. 247; and V. Manyakin, "Overcome the Lag in the Development of Agriculture," Ekonomika sel'skogo khozyaystva, No. 2, February 1965, p. 10.

[164] A projected employment total for agriculture in 1970 is given in "Manpower Report of the President, March 1966," Washington, 1966, table E-5, p. 217. The total nonagricultural employment given in this source was expanded to fit the "constructed" series shown in table A-7 by the 1965 ratio of "constructed" to "household" estimates of employment in nonagricultural industries.

mately 35 million persons are employed in U.S.S.R. agriculture. Of these, about 10 million are in the private subsidiary economy." [165] Another monograph appeared in 1965 which contained information on the distribution of labor inputs into the private subsidiary economy in 1959.[166] After examining the 1959 census data on the population of able-bodied ages in rural areas, the author, V. F. Mashenkov, rejects them as being an incomplete representation of total labor inputs into the household and private economies. In the private economy, he writes, collective farmers in the able-bodied ages contributed about two-thirds of the total labor input, and overaged persons, invalids, and youths contributed approximately one-third. Four-fifths of the able-bodied farmers who worked in the private subsidiary economy also participated in the socialized economy. From these two bits of information, it can be estimated that seven-fifteenths of the total labor input to the private economy was contributed by persons engaged solely in that sector. Combining this fraction with the number enumerated in the census as employed only in the private economy, an aggregate estimate of 13.1 million for 1959 can be derived.[167] This estimate is somewhat higher than the figure of 11.5 million cited above. It is believed, however, that the general level of magnitude of these estimates (13.1 and 11.5 million) is a closer approximation of the actual level of employment in the private sector than the 6 to 7 million figures reported in the handbooks.

C. STRUCTURE OF EMPLOYMENT

1. Skill level

As the result of a major and continuing effort by Soviet leaders to extend and improve their educational system, the average level of education of the Soviet worker has increased significantly since the early 1930's. For industrial wage workers, the level has increased from 3.5 years of schooling in 1929 to 5.9 years in 1959, and to about 7.5 years in 1965.[168] The need to continue the drive to raise this level is commonly accepted, for, as one source has noted, given the present requirements for highly skilled workers, an 8-year general education often is insufficient.[169]

The proportion of highly skilled and skilled wage workers among all industrial workers also has increased over the years. In 1925, only 18.5 percent of all workers were considered highly skilled or skilled. By 1950, the proportion had increased to 49.6 percent, and in 1961 it climbed to 64.6 percent. Semiskilled workers in industry represented 41.3 percent in 1925, 47.9 percent in 1950, and 35.4 percent (including unskilled workers) in 1961. Unskilled workers accounted for 40.2

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[165] Rusanov, op. cit., p. 112. The statistical handbooks report a total of 31 million in agriculture in 1963.

[166] V. F. Mashenkov, Ispol'zovaniye trudovykh resursov sel'skoy mestnosti (The Utilization of Labor Resources of Rural Localities), Moscow, 1965, especially pp. 52–53.

[167] See discussion of this category in A. Nove, "2½ Per Cent and All That," Soviet Studies, vol. XVI, July 1964, No. 1, pp. 17–21, and also "Comment on '2½ Per Cent and All That,'" ibid., vol. XVI, January 1965, No. 3, especially pp. 316–325.

[168] Ye. I. Kapustin, Kachestvo truda i zarabotnaya plata (The Quality of Labor and Wages, Moscow, 1964, p. 124.

[169] Rogovskiy, "Employment * * *," loc. cit. This feeling is tempered somewhat, however, by a report on a study carried out in machine-building plants in Moscow, Novosibirsk, and other cities by the Laboratory for Economic and Mathematical Research of the Novosibirsk State University, which concludes with the statement that there is a definite correlation between education up to 7 years and the growth of a worker's skill level, but little beyond that point. Shubkin, "Some Questions * * *," op. cit., p. 132.

percent of the total in 1925, but only 2.5 percent in 1950.[170] The proportion of unskilled laborers, including subsidiary workers, in construction, decreased from 25.9 percent in 1954 to 15.7 percent in 1959.[171]

The situation is quite different in agriculture. During the years 1950–62, 7,403,000 persons were trained in "schools for mechanization" in state farms, collective farms, and machine-tractor stations. As of April 1, 1963, however, only 1,072,000 of these persons were still employed in agriculture. This failure to retain trained personnel retards technical progress in agriculture and represents a large cost to the sector without any direct return.[172] The lack of skilled persons in agriculture in general is extremely high. According to results of the 1959 census, of 33.9 million persons engaged primarily in physical labor on state and collective farms, 24.2 million, or 71.4 percent, had no specialty or skill. On state farms this unskilled group amounted to 42.0 percent of the total, but on collective farms it amounted to 76.6 percent.[173]

2. Occupation

Despite the great increase in information on manpower published in the Soviet Union over the last decade, there still are relatively few data released on the occupational characteristics of Soviet workers. A great amount of data on this subject is collected each year, both in regular establishment reports and in surveys, but relatively little of it is published in a systematic form.

Two contrasting trends are emerging in Soviet occupational classification schemes. As the economic-social system has become more complex, a coordinate increase in the division of labor has taken place. Thus, at the time of the 1926 census the manual of occupational titles contained 10,371 job titles; for the 1939 census the manual listed about 19,000 titles; and for the 1959 census, approximately 30,000 titles.[174] Concurrently, an opposite trend has been underway. In the coal industry, for example, due to new technology and to changes in the organization of work, the number of occupations of underground workers has decreased from 50 to 22. For industry as a whole, the State Committee on Labor and Wage Problems has been working on a "unified" list of general worker occupations. Occupational titles for 67.2 percent of all workers, which were previously classified under 2,888 designations, have been combined into 314—187 occupations

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[170] Kh. Rodriges and S. I. Vul, Formirovaniye rabochikh shirokogo profilya (The Formation of Wage Workers With Broad Occupational Profiles), Moscow, 1964, p. 41; V. Ye. Komarov, Stroitel'stvo kommunizma i professional'naya struktura rabotnikov proizvodstva (The Construction of Communism and the Occupational Structure of Production Personnel), Moscow, 1965, p. 90; M. Koday, "The Growth of Labor Skills Under the Influence of Technical Progress," in A. N. Grzhegorzhevskiy (editor), Tekhnicheskiy progress i voprosy truda pri perekhode k kommunizmu, Sbornik statey (Technical Progress and Questions of Labor in the Transition to Communism. A Collection of Articles), Moscow, 1962, p. 145; and A. M. Omarov, Tekhnika i chelovek (Technology and Man), Moscow, 1965, p. 100.

[171] V. S. Svetlov, Tekhnicheskiy progress i rabochiye kadry v stroitel'stve (Technical Progress and Wage Worker Cadres in Construction), Moscow, 1962, p. 29.

[172] L. Bulochnikova and Ye. Gorodetskiy, Tekhnicheskiy progress i rentabel'nost' kolkhoznogo proizvodstva (Technical Progress and the Profitability of Collective Farm Production), Moscow, 1965, pp. 127 ff.

[173] Itogi * * *, op. cit., p. 159. This is probably an understatement inasmuch as some of the designated specialties do not appear to be particularly complex or difficult.

[174] L. M. Vaynshteyn, "Tendencies Toward Division of Labor and the Development of Personality Under Socialism and Communism," Voprosy filosofii, No. 11, November 1963, p. 96.

(*professii*) and 127 specialties (*spetsial'nosti*).[175] This combination of adjacent functions in new titles means that a wider technical knowledge will be needed by future workers, and the vocational-technical schools have been proposed as the best type of institution to conduct the necessary training. Also, a requirement has been imposed on the State Committee for Vocational-Technical Education of the U.S.S.R. Council of Ministers to make estimates of the incremental demand for skilled cadres with "leading" occupations, by branch. The impact of technical progress on the future distribution of worker occupations is to be reflected in these demand estimates.[176]

According to data available on the employment of engineering-technical personnel (ITR) by branch of industry at the end of 1960, the largest proportion employed was in the analine-paint industry where there were 25.7 ITR per 100 wage workers; next was the power-machinery building industry, which had 25.1 ITR per 100 wage workers, and the synthetic rubber industry, which had 21.0. The lowest rates were in light industry (5.7), ferrous metallurgy (9.6), the coal industry (10.8), and the food industry (11.1). The lowest rate within the machine-building sector was in the tractor and agricultural machinery industry (13.7).[177]

These rates, of course, tell only part of the story concerning the supply of trained manpower in the technical operations of production. Despite many years of remarkable endeavors to raise the level of education, quite large proportions of the ITR positions are filled by *praktiki* ("practical" or experienced persons who have neither higher nor secondary specialized education). An excessive "manning table" demand for engineers has engendered 90 percent more engineer positions than technician positions. Due to the inadequate supply of engineers, however, only 40 percent of all positions are filled by engineers, 41 percent by technicians, and the rest by *praktiki*.[178] Also, despite acute shortages of engineers and technicians in agriculture, of the 60,000 engineers and more than 100,000 technicians trained in the mechanization and electrification of agriculture over the years, only 11,000 engineers and 30,000 technicians were working directly on state and collective farms in 1962. Only 4 out of every 10 collective farms had even one technician on its staff.[179]

In some regions, the supply of trained personnel has been improving. In Estonia, for example, the proportion of *praktiki* among all managers of industrial enterprises declined from 70.6 percent at the end of 1956 to 60.9 percent by the end of 1959. A similar pattern of declining shares of *praktiki* has evolved for chief engineers and other chief specialists in Estonia: in 1956 *praktiki* represented 51.4 percent of total employment in this group, but by 1959 they represented only 34.4 percent. In all other categories (shop chiefs, senior engineers, techni-

[175] Komarov, Stroitel'stvo * * *, op. cit., p. 85, and Omarov, op. cit., p. 101.
[176] See I. Yagodkina, "The Influence of Technical Progress on the Occupational Composition of Wage Workers," Nauchnyye doklady vysshey shkoly, Ekonomicheskiye nauki, No. 5, September–October 1964, p. 25; N. Rogovskiy, "Inexhaustible Sources for the Growth of Labor Productivity," Kommunist, No. 11, July 1962, p. 46; and VTsSPS, Materialy XII s"yezda professional'nykh soyuzov SSSR (Materials of the Twelfth Congress of Trade Unions of the U.S.S.R.), Moscow, 1964, p. 27.
[177] Komarov, Stroitel'stvo * * *, op. cit., pp. 105–106.
[178] V. P. Yelyutin, "For New Successes of Higher Schools," Vestnik vysshey shkoly, No. 1, January 1963, p. 5.
[179] Ibid., p. 6.

cians, etc.), a similar decline took place. Corresponding to this general trend, the proportion of all ITR in the Estonian Sovnarkhoz who had only a primary education declined from 23.3 percent in 1957 to 8.6 percent in 1959. At the same time, the overall number of ITR increased by 31.4 percent. Nonetheless, in all categories at least one-third of the ITR positions remained filled by *praktiki* in 1959.[180]

Despite these major achievements in raising the educational level of workers and technicians, there have been persistent shortages in professional categories. Two of the most pervasive are teachers and medical personnel. Shortages of qualified professionals in these fields are so great that major exceptions to the general limitations on dual jobholding have been authorized for persons employed within them.

The number of teachers has long been insufficient, and the situation was aggravated by the announcement in February 1966 concerning an additional increase in day enrollment in the higher levels of education (see above), which increased the demand for teachers as well as for facilities. This shortage apparently is expected to continue, for, at the December 1965 session of the U.S.S.R. Supreme Soviet, it was reported that in Azerbaydzhan alone a shortage of more than 80,000 teachers will exist by 1970. More schools are being constructed but the number of schools with three shifts still is increasing.[181]

The program for training teachers also has been criticized, particularly for the failure to train teachers in key specialties. For example, the chief of the subdepartment for technicums of Gosplan R.S.F.S.R. recently complained that although there were institutes for training teachers in general education subjects, there were none preparing teachers in the critical area of engineering disciplines.[182] There are even reports of shortages of instructors in higher educational institutions, though the understaffing there is in part compensated for by the use of part-time instructors paid from an "hourly" wage fund.[183]

The demand for medical personnel also continues unabated and unsatisfied. The number of staff doctor "positions" (*dolzhnosti*) is determined on the basis of norms related to the number of doctors required, by specialty, in each type of medical institution, the number of visits for medical aid or general standard staffing tables. In 1960, the medical-sanitary institutions of the U.S.S.R. Ministry of Public Health had 478,800 staff doctor positions. Of these, only 92.3 percent were filled by trained doctors and dentists. These figures do not tell the whole story, however, for all positions were not "filled" by different people. In the same year, there were in *all* the institutions and educational facilities of the Ministry, 378,300 doctors (including 24,900 dentists) who filled 473,900 staff positions. The only way this was possible was by dual jobholding. The coefficient of dual jobholding in this year was 1.25 (473,900/378,300), which was no improvement over 1956 when the coefficient was 1.24. In urban areas the rate in 1960 was

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[180] A. Veymer, Kompleksnoye razvitiye i spetsializatsiya promyshlennosti Estonkogo ekonomicheskogo administrativnogo rayona (The Complex Development and Specialization of Industry in the Estonian Economic Administrative Region), Tallin, 1961, pp. 317 and 320.

[181] Speech of Kh. Kh. Akhundova, in Pravda, Dec. 9, 1965, p. 3.

[182] I. Vlasenko, "Once Again About the Sergeants of Industry," Izvestiya, June 20, 1965, p. 3.

[183] See L. Tul'chinskiy, "Means for Raising the Effectiveness of Expenditures for Higher Education," Finansy SSSR, No. 4, April 1964, pp. 33–34.

1.2, but in rural areas it was 1.4.[184] According to a report by the chief of the cadre administration of the R.S.F.S.R. Ministry of Public Health, the staff "completeness" rate dropped from 92.8 percent in 1960 to 91.6 percent in 1964. This decline took place because the number of staff positions increased more than the absolute increase in the number of physicians. In 1964, there would have had to be 97,100 more doctors to eliminate all dual jobholding.

Middle medical personnel (nurses, pharmacists, etc.) have been in short supply also, and the demand reportedly cannot be met by 1970. Thus, in 1964, 801,700 persons filled 935,200 out of a possible 962,400 positions. By 1970, the total requirements by the Ministry of Public Health for middle medical personnel will be 1,166,000 persons. (An additional 11 percent, or 132,500, will be required by medical institutions and nurseries of other agencies.) If planned enrollment and graduations are met, the aggregate supply for the Ministry at the end of 1970 will be only 909,100, or about 257,000 persons short of the demand. Thus, the shortage will be 60 percent greater than it was in 1964.[185]

IV. Utilization

One means of compensating for deficits in the supply of labor, and particularly skilled labor, is the improved utilization of available resources. Soviet planners are well aware of the many avenues for improvement in this area and it is being given much attention, not only in the plans but in the new research institutes and in newspapers, journals, and monographic studies. The following discussion is concerned with but several of the nontechnical economic aspects of the problem.

A. WORKTIME

The reduction in worktime carried out in the years 1956–60 was the first such reduction in the postwar period. Until recently it was possible to find many references to another program which, beginning in 1964 and continuing until 1970, was to result in the reduction of the workday to 6 hours and the workweek to 35 hours.[186] Concurrently, of course, productivity of labor was to increase, and wages and social consumption funds were to keep pace. The draft plan for 1966–70 omits any reference to the length of the workweek. At the 23d Party Congress, however, Party Secretary Brezhnev announced that the length of the workweek is to remain the same in 1970 (41 hours) as in 1965, but that the number of workdays is to be reduced to 5.[187] This seems to be clear evidence of the tight supply of labor, and especially of trained, highly skilled labor. It also indicates that more efficient utilization of worktime is as important as ever.

The impact of past reduction in the length of the workday can be seen from the data in appendix table A–3. Growth in the number of wage workers in industry and in the number of man-days worked since 1950 have been at nearly equal rates, though the growth in man-

[184] G. A. Popov, Vrachebnyye kadry i planirovaniye ikh podgotovki (Medical Cadres and Planning of Their Training), Moscow, 1963, pp. 131–133.
[185] I. Kh. Andreyev, "The Training and Distribution of Medical Cadres in the Russian Federation," Zdravookhraneniye Rossiyskoy Federatsii, No. 12, December 1965, pp. 4, 6.
[186] See Maksimov, op. cit., p. 5.
[187] Komsomol'skaya pravda, Mar. 30, 1966, p. 6.

days worked has lagged slightly due to reduction of the workweek in some industries. The growth in the number of man-hours worked, however, has dropped well behind the growth in the number of workers—a direct reflection of the reduction of the workday. The estimated annual average number of man-hours worked per wage worker decreased from 2,211 hours in 1950 to 2,013 hours in 1959 and to 1,847 hours in 1964. The latter drop during the 7-year plan period was over 8 percent of the annual labor input per wage worker. Almost all of this reduction took place between 1959 and 1960, when worktime was reduced throughout the entire state sector.

Further decreases in labor inputs stem from the losses of intrashift worktime. Reports based on official statistics compiled by TsSU reveal that in 1962 over 14 million man-days, or approximately 1 percent of all man-days worked, were lost in sovnarkhoz industry due to the idleness of wage workers. This figure has been disputed as being incomplete, however, on the basis of the claim that the loss of worktime in industry (as determined by a survey of over 300,000 workers in Siberian industry) should be in the range of 10 to 15 percent.[188] A special survey conducted by the Institute of Labor revealed that 28 percent of the idleness in industrial enterprises in 1963 stemmed from the poor organization of work and the lack of parts, materials, and semifabricates. The second largest cause for idleness (21.3 percent) was found to be equipment undergoing or awaiting repair or adjustment, followed by the lack of tools and attachments (7 percent) and the poor timing of shipments (4.3 percent). One-third of all idleness took place during the first hour of work on a shift.[189]

In construction, estimates of 15 to 17 percent losses of intrashift work time are reported.[190] About 180 million man-days lost due to intrashift idleness in construction were recorded in 1959, more than half of which were caused by the late supply of materials. Construction machinery was idle between 20 and 40 percent of the time.[191] The total loss of intrashift worktime in construction declined in 1965, but it still amounted to about 13 percent of the total worktime. Reduction of half of this loss reportedly would permit the release of more than 250,000 workers, or would result in the gain of 1 billion rubles more work per year.[192]

The utilization of worktime at a level significantly less than the optimum is caused, according to the Institute of Labor, by the restricted application of work norms throughout the national economy. Estimates of the Institute, indicate that only 40 percent of all persons employed in the economy (excluding collective farmers and the private economy, of course) are working according to norms. Even within industry, the situation regarding the use of work norms is not satis-

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[188] See, among others, V. G. Fomin, "On the Results of Scientific-Research Work in the Social Sciences," Izvestiya Sibirskogo otdeleniya Akademii nauk SSSR, No. 1, Seriya obshchestvennykh nauk, vypusk 1, 1964, p. 128.

[189] D. Onika, "Questions of Scientific Work in the Field of Organization and Norming of Labor," Voprosy ekonomiki, No. 11, November 1964, pp. 22–23.

[190] B. Ya. Ionas, Ekonomika stroitel'stva (Economics of Construction), Moscow, 1963, p. 179.

[191] V. Yermolayev, "This Is Intolerable—One Out of Seven Construction Workers Is Idle," Stroitel'naya gazeta, June 29, 1960, p. 4.

[192] "Organization of the Work of Construction Workers—On a Scientific Basis," Ekonomika stroitel'stva (Economics of Construction), No. 6, June 1965, p. 3.

factory. A. P. Bugrov, the director of the Central Bureau of Industrial Labor Norms of the Institute, wrote that: [193]

> Out of 11 million piece-rate wage workers, only about 4.4 million work on the basis of technically based norms, the remaining 6.6 million work on the basis of empirical-statistical norms. Thus, of the 23.5 million persons working in industry [1961], 19 million, or over 80 percent of the total number, work according to empirical-statistical norms. Of the 4.4 million working according to technically based norms, about 3 million work according to local and only about 1.4 million according to branch norms. Of these, no more than 400,000 work according to unified branch norms.

And even when norms exist, they are not always coordinated. Norms of output for identical work in the various metalworking industries reportedly differ by 250 percent and in the construction materials industry by 650 percent.[194]

Part-time work, other than seasonal, occurs in several branches of the economy. In industry, a short workday (at full pay) of 4 to 6 hours is authorized for persons under 18 years of age, for nursing mothers, and for certain other groups of workers and employees. Organizations of the Ministry of Communications employ young people as letter carriers for 2 hours per day at regular hourly wages.[195] In apparent recognition of the need for more part-time work, particularly in regions in which job opportunities for women are limited, a directive was recently issued which in effect will stimulate the construction of new garment industry enterprises. During 1966 and 1967, work will begin in theR.S.F.S.R., the Ukraine, Belorussia, and Kazakhstan on the construction of 12 new plants and the reconstruction of 10 others, all of which were not previously stipulated in the plan. In 1967, according to the plan, 18 new plants will be built (and put into operation in 1968) in these republics and in Lithuania and Moldavia. Plant directors are explicitly authorized to hire part-time female help which is otherwise engaged only in household work. Moreover, cottage industry activities will be encouraged, inasmuch as the sewing of precut materials belonging to these enterprises at home also is authorized.[196]

One side effect of this drive to increase part-time work may well be an artificial increase in the number of workers and employees which is disproportionate to the amount of time worked or of output.

B. SEASONALITY

Total worktime available for production depends not only on the average length of the workday or workweek. In varying degrees by branch of the economy, as well as by branch of industry, the seasonality of production, with its consequent fluctuations in demand for labor, is an important determinant of labor utilization. Little information related to seasonality in industry has been located. Recently published data on the annual average number of days worked by branch of industry in 1963 and 1964 do not indicate sharp differences except in the agricultural product processing, logging, and peat industries, which are inevitably seasonal in character.[197] There also are few data avail-

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[193] A. P. Bugrov and G. S. Chubarov, Otraslevyye normy truda (Branch Labor Norms), Moscow, 1964, pp. 26–27.
[194] Blyakhman, Proizvoditel'nost' * * *, op. cit., p. 128.
[195] Sonin, Aktual'nyye * * *, op. cit., p. 162.
[196] "New Developments in the Garment Industry," Izvestiya, Feb. 8, 1966, p. 3.
[197] See Vestnik statistiki, No. 8, August 1964, p. 87, and No. 10, October 1965, p. 89.

able on seasonality in construction. In the years 1956 and 1958, 16.4 and 18.9 percent, respectively, of the annual production in construction was scheduled for the first quarter, 23.7 and 25.7 percent in the second quarter, 28.7 and 28.3 percent in the third quarter; and 31.2 and 27.1 percent in the fourth quarter. In 1960, the *actual* completion of construction-installation work showed somewhat the same pattern: 19.1 percent of the annual volume of work was completed in the first quarter, 26.4 percent in the second, 27.7 percent in the third, and 26.8 percent in the fourth.[198]

Monthly variations in the participation of collective farmers in the socialized economy during the years 1950–63 are presented in table 6. There is no discernible trend of improvement in the utilization of labor during this period in the sense that a larger proportion of farmers now participate in the socialized economy in the fall and winter months. As can be seen from this table, in none of the years were more than 59 percent of the peak (July) employment at work in January, 61 percent in February; 63 percent in December, and 73 percent in November. Data in appendix table A–4 (cols. 9 and 11) show an almost continuous decrease in the annual average number of man-days worked by collective farmers since 1958. Thus, total labor inputs to the collective farm socialized economy have dropped due to a fewer number of days worked each year by a decreasing number of collective farmers—but the seasonal pattern of employment has remained unchanged, at least since 1950.

Seasonality among the different categories of collective farmers differs sharply, i.e., among able-bodied farmers, students who participate during their off time, and overaged persons. In January and February of 1958, able-bodied farmers worked at a level between 68 and 69 percent of their peak participation in July; in October and November of the same year this level was 84 percent, and in December, 74 percent. Students over 16 years of age, who represent a small proportion of the total number of participants, performed most of their work during the planting and harvest months—May through October. In the remaining months, they continued to participate, but to a much smaller degree—that is, at a rate only 11 to 14 percent of the July level. Overaged persons participated at a higher rate: May through October at a rate 84 to 97 percent of the July level, and in the remaining months, at a level 43 to 58 percent of the July level.[199] During the period from November through February an estimated 10 million able-bodied collective farm members do not participate in the socialized economy of the collective farms. Alternative activity for them, con-

[198] A. N. Starikov, Voprosy ekonomiki stroitel'nogo proizvodstva (Questions of the Economics of Construction Production), Leningrad, 1960, p. 37; and I. G. Galkin, Voprosy ritmichnosti i zadela v stroitel'stve (Questions of Regularity, and Incomplete Work in Construction), Moscow, 1962, p. 17.

[199] Ye. S. Rusanov, "Labor Productivity and Questions of the Distribution and Utilization of Labor Resources," in Akademiya obshchestvennykh nauk pri TsK KPSS, Voprosy proizvoditel'nosti truda v period stroitel'stva kommunizma (Questions of Labor Productivity in the Period of Construction of Communism), Moscow, 1961, p. 345. The author cites "Sel'skoye khozyaystvo v 1960 godu" as his source, but the edition available in the West neither contains these particular data nor any basis for such a calculation, although the pages cited—pp. 460–461—correspond exactly to the pages containing employment data in "Sel'skoye khozyaystvo SSSR," which was published in 1960.

TABLE 6.—*Participation of collective farmers in the socialized economy, by month: 1950 to 1963*

[In percent of the number of collective farmers who worked in July. Figures in parentheses are estimated]

Month	1950 to 1959	1953	1955	1956	1957	1958	1959	1960	1961	1962	1963
January	56	56	56	56	57	58	59	59	58	58	59
February	59	58	59	57	60	60	61	61	60	59	.....
March	67	66	68	66	67	66	68	68	68	66	68
April	76	76	76	75	76	75	76	76	76	75	.....
May	85	84	86	84	85	85	86	86	85	85	86
June	93	93	93	92	92	92	92	92	94	93	92
July	100	100	100	100	100	100	100	100	100	100	100
August	99	99	101	98	96	97	96	96	96	97	96
September	91	90	93	91	89	90	89	89	91	91	.....
October	83	82	85	84	82	84	83	84	86	86	83
November	73	68	73	70	69	72	70	70	72	72	.....
December	62	61	63	62	61	63	62	62	62	62	62
Average for year as percent of July [1]	79	78	80	78	78	79	78	79	79	79	.....
Number of collective farmers who worked in July (in thousands)	.....	[2] 32,667	[2] 32,952	[2] 34,619	[2] 32,460	[2] 31,916	[2] 30,704	[3] (27,510)	[3] (25,725)	[3] (25,043)	.....
Annual average number of collective farmers (in thousands) [4]	.....	25,458	26,198	26,980	25,280	25,075	24,101	21,733	20,323	19,784	19,198

NOTE.—Leaders (.....) indicate "not available."

[1] Computed either as the average of monthly percentages or by dividing the average number of collective farmers participating during the year by the number in July.
[2] TsSU SSSR, Sel'skoye khozyaystvo SSSR (Agriculture of the U.S.S.R.), Moscow, 1960, pp. 460–461.
[3] Estimated by dividing the annual average number of collective farmers by the ratio "Average for year as percent of July."
[4] Table A-4.

Source: 1950 to 1959: Ye. P. Gubin, Puti formirovaniya agrarno-promyshlennykh ob"yedineniy (Means of Forming Agrarian-Industrial Associations), Moscow, 1963, p. 20; 1953, 1955–59: TsSU SSSR, Sel'skoye khozyaystvo SSSR (Agriculture of the U.S.S.R.), Moscow, 1960, pp. 460–461. 1960–61: Yu. A. Granatkin, "On the Relationship of the Rates of Growth of Productivity and Payment for Labor in Industry and Agriculture," in L. S. Blyakhman (Ed.), Voprosy proizvoditel'nosti i oplaty truda v period stroitel'stva kommunizma (Questions of Productivity and Payment for Labor in the Period of Construction of Communism), Leningrad, 1964, p. 28. 1962: G. I. Shmelev, Raspredeleniye i ispol'zovaniye truda v kolkhozakh (The Distribution and Utilization of Labor on Collective Farms), Moscow, 1964, p. 83. 1963: Rusanov, op. cit., p. 99.

sisting of work on their own private plots, in caring for their own livestock, and in intercollective farm organizations, is relatively limited during this agriculturally inactive period.

Many members of collective farms are employed "permanently" in industry, construction, transport, and even in the service sectors; 3.1 percent of all able-bodied members of collective farms did not work a single day on the farm in 1963.[200] The drain on the collective farm labor supply of members working permanently elsewhere is significant. In 1953, there were 2,354,000 members working permanently in the state sector, or 0.2 percent of annual average employment. In 1959, there were 1,876,000 members working in the state sector, or 7.8 percent of employment, and, in 1961, 1,810,000 members, or 8.9 percent of employment.[201] In 1962, the number of workers and employes "residing" on collective farms was 2,480,000. It is unclear whether these were members "permanently working" in the state sector, but if so they would represent 13 percent of the annual average employment of collective farmers.[202]

Limitations in the current drive to develop rural economic activity outside the collective sector in order to provide alternative employment to collective farmers in the off season can be seen from data on the urban-rural distribution of workers and employees in the R.S.F.S.R. (table 7).[203] These data, which are not available for the country as a whole but which are very likely typical of those for the other republics, show that in all branches but two—construction and agriculture—the proportions of workers and employees who are employed in rural areas has decreased between 1958 and 1964. Thus, industrial employment in rural areas dropped by one-third between 1958 and 1964, and employment in communications dropped by nearly one-half. Public health, a branch in which employment would be expected to be relatively proportionate to the population, shows a surprisingly low proportion of employment in the rural areas. The table clearly indicates that the development of nonagricultural economic activities and social services during the 6 years between 1958 and 1964 took place primarily in urban areas and not in the rural areas. These data point up the need, as planned, for increased opportunities for employment of collective farmers during the slack winter months; such opportunities will either have to be on the collective farms themselves (in subsidiary activities) or be part of a new drive to develop state activities in rural areas.[204]

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[200] Mashchenkov, "Labor Resources * * *," op. cit., p. 33.

[201] N. P. Golubkova, "Redistribution of Labor Force From Agriculture to Nonagricultural Branches in the Period of Full-Scale Construction of Communism," in G. S. Grigor'yan (ed.), Problemy proizvoditel'nosti truda i narodnogo potrebleniya v period razvernutogo stroitel'stva kommunizma (Problems of Labor Productivity and Public Consumption in the Period of Full-Scale Construction of Communism), Moscow, 1965, pp. 11–12; and appendix table A–4, col. 5.

[202] See N. S. Lagutin, Problemy sblizheniya urovnya zhizni rabochikh i kolkhoznikov (Problems of Drawing Closer the Level of Living of Wage Workers and Collective Farmers), Moscow, 1965, p. 90.

[203] On Jan. 1, 1965, the R.S.F.S.R. had 54.8 percent of the total population of the U.S.S.R., and in 1964 it had 62.2 percent of the annual average number of workers and employees in the country. The rural population of the R.S.F.S.R. declined from 48 percent of the total at the time of the January 1959 census of population to 42 percent on Jan. 1, 1965.

[204] See Pravda, Apr. 10, 1966, p. 4.

TABLE 7.—*Percent distribution of workers and employees in the R.S.F.S.R., by branch of the national economy and by urban-rural place of work: 1958–64*

Branch of the national economy	1958		1962		1963		1964	
	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural
Total	74	26	75	25	76	24	77	23
Industry (industrial-production personnel)	85	15	89	11	89	11	90	10
Construction (construction-installation personnel)	86	14	86	14	84	16	84	16
Agriculture	10	90	9	91	8	92	8	92
Transport	88	12	90	10	91	9	91	9
Communications	78	22	82	18	87	13	88	12
Trade, public dining, procurement, and material-technical supply	76	24	.....	.....	80	20	80	20
Housing-communal economy	89	11	.....	.....	91	9	91	9
Public health	74	26	76	24	77	23	77	23
Enlightenment	58	42	62	38	63	37	63	37
Science and scientific services	76	24	85	15	85	15	87	13
Credit and insurance institutions	76	24	82	18	84	16	85	15
State and economic administrative organs, administrative organs of cooperative and social organizations	74	26	77	23	82	18	82	18

NOTE.—Leaders (....) indicate not available.

Source: 1958 and 1964: TsSU RSFSR, Narodnoye khozyaystvo RSFSR v 1964 godu, statisticheskiy yezhegodnik (The National Economy of the R.S.F.S.R. in 1964. A Statistical Yearbook). Moscow, 1965, p. 367. This volume, and others in this series, cited hereafter as "Nar. khoz. RSFSR v 19——."
1962: Nar. khoz. RSFSR v 1962, p. 419.
1963: Nar. khoz. RSFSR v 1963, p. 404.

Seasonality on state farms is less pronounced than on collective farms. Monthly data for state farm employment in the entire U.S.S.R. are available only for 2 years, 1958 and 1962 (average monthly employment as a percent of July):[205]

	1958	1962		1958	1962
January	67	75	July	100	100
February	70	78	August	103	100
March	72	79	September	101	99
April	78	86	October	96	93
May	88	90	November	84	85
June	95	95	December	76	81

In contrast to the experience of collective farms, annual average employment on state farms as a percent of peak July employment has increased. In 1958 it was 86 percent of employment in July, and in 1962 it was 88 percent; the corresponding percent of collective farms was about 79 percent for all years in the period 1950 to 1963.

The number of temporary and seasonal workers on state farms has declined, relative to the number of permanent workers. In 1940, the temporary and seasonal workers represented 42 percent of the total number of persons employed on state farms; in 1953, the proportion was slightly less—41 percent—but in 1960 it dropped to 23 percent

[205] Ya. G. Feygin et al. (editors), Osobennosti i faktory razmeshcheniya otrasley narodnogo khozyaystva SSSR (Characteristics and Factors of Location of Branches of the National Economy of the U.S.S.R.), Moscow, 1960, p. 405; and Mashenkov, Ispol'zovaniya * * *, op. cit., p. 139.

and in 1962 to 18 percent.[206] Despite this decrease in temporary and seasonal employment, however, workers on state farms still have difficulty in finding full-time employment on the farms during the winter months. The state farm workers face the same problem of alternative opportunities as do the collective farmers, and it has been a subject of concern on all sides. The solution generally proposed, like that for the collective farms, is a better organization of work over the year and the creation of subsidiary enterprises or handicraft production.[207]

The improved organization of production on farms for the purpose of reducing or eliminating seasonality would also help nonagricultural enterprises in the state sector. A joint party and Government directive in 1962 declaimed against the poor organization of work on farms which led to the enlistment of masses of urban workers at the time of peak agricultural requirements. In 1961 alone, collective farms obtained through this method an additional input of 75 million man-days, or 378,000 "annual" workers. During the period 1960–63, hired workers and other persons brought in temporarily from urban areas worked an average of 83 million man-days per year—the equivalent of about 420,000 additional workers over the year. To the industrial enterprise manager for whom a major disruption of production results when workers are dispatched to the fields at the time of agricultural peak periods, the loss of man-days is a critical matter. It is reported that many plants maintain surplus workers during the entire year in anticipation of such demands for agricultural labor.[208]

C. ORGANIZATION OF WORK

The retention of excess workers relative to the basic needs of production reportedly is prevalent throughout Soviet industry (and other sectors) for a number of reasons, though largely because of the poor organization of work, the lack of materials-handling equipment, and uncertainties of the supply system. Improvement in the organization of work, or "rationalization of the production process," has been given much greater emphasis in the Soviet Union recently. A primary stimulant for this activity was a directive issued in January 1963 by the party and Government which demanded work on the "scientific organization of labor." This directive initiated a long-needed assessment of problems concerned with the appropriate division of labor, work schedules, the improvement of working conditions, raising the average skill level of workers, and many other such areas.[209]

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[206] Ye. S. Karnaukhova, "Utilization of Labor Resources on Collective Farms," in Ye. S. Karnaukhova and M. I. Kozlov (editors), Puti povysheniya proizvoditel'nosti truda v sel'skom khozyaystve SSSR (Means for Raising Labor Productivity in Agriculture of the U.S.S.R.), Moscow, 1964, p. 48; and I. A. Borodin, "Decisive Factors in the Effective Utilization of Labor Resources in Agriculture," in I. A. Borodin (editor), Ispol'zovaniye trudovykh resursov v sel'skom khozyaystve SSSR (Utilization of Labor Resources in U.S.S.R. Agriculture)," Moscow, 1964, p. 10. Somewhat different proportions are given in A. Glukhov, "Utilization of Labor Resources in Agriculture," Nauchnyye doklady vysshey shkoly, Ekonomicheskiye nauki, No. 2, March–April 1964, p. 24.

[207] Proposals for increased rural nonagricultural activities are found in "We Await You, Graduates!" Trud, Feb. 8, 1966, p. 3; A. Mironov, "Subsidiary Craft Work in the Economy of Collective Farms," Sel'skaya zhizn', Feb. 9, 1966, p. 2; Yu. Chernichenko, "Second Choice," Pravda, Feb. 11, 1966, p. 4; and N. S. Bashlykov, "Also Busy During the Winter (for Collective and State Farms—Subsidiary Enterprises and Crafts)," Trud, Feb. 10, 1966, p. 2; and others.

[208] See "On the Requests of Some Union Republics for Drawing Urban Workers and Employees into Agricultural Work on Collective and State Farms," Pravda, July 14, 1962, p. 1; Shmelev, op. cit., pp. 24 and 100; and Vasilenko and Kolesnev, op. cit., p. 73.

[209] Onika, "Questions of Scientific • • •," op. cit., p. 17; and B. F. Petrochenko (editor), Voprosy nauchnoy organizatsii truda na promyshlennom predpriyatii (Questions of the Scientific Organization of Work in Industrial Enterprises), Moscow, 1965, pp. 233–236.

The need for improvement in rationalizing production processes is felt particularly in respect to repair work performed in industrial enterprises. In 1958, only 577,000 of the 2.6 million repair workers were employed in specialized repair plants and workshops. The rest were dispersed throughout all branches of industry in small, unspecialized shops. The productivity of workers in these latter shops is much lower than that of workers employed in the specialized shops, and Soviet authors consider that great savings would be achieved by reorganizing and concentrating this activity.[210]

There were 650,000 workers engaged in quality control work throughout all of industry in 1962. Of these workers, nearly 86 percent performed their work manually, without the aid of any instruments or machines to verify the quality of products.[211] One of the factors behind the low level of equipment supply for these quality control workers is the poor organization of the production of tools and instruments. Estimates made by the former State Committee on Automation and Machine-building indicate that 6 million machine-operated tools (*mekhanizirovannyye instrumenty*) were required in 1965, but only 25 percent of the demand was met.[212]

The continuing short supply of freight-handling equipment parallels the inadequate supply of machine-operated tools. It is likely that the reduction in employment in the labor-intensive materials-handling operations forecast for achievement in 1965 has not been attained. As indicated in "Dimensions" (p. 643), mechanized freight handling in Soviet industry was planned to increase from 4 billion tons in 1960 to 8 billion tons in 1965, yet the demand for mechanized equipment was satisfied by only 53 percent in 1961. The technical level of production in this activity also was inadequate.[213]

The impact of scale of production, with its attendant economics or diseconomies, on the distribution of employment in industry as a whole, in a particular branch of industry, or in cities of various sizes is rarely analyzed in Soviet sources. In March 1966, P. Litvyakov, the head of the Labor Resources Sector of Gosplan's Scientific Research Economics Institute, decried the lack of specialized designs for enterprises with a relatively small work force. The study of the optimal size of organizations will be particularly necessary for the projected allocation of industry to small and medium-size cities contained in the current 5-year plan. Planning of the location of industry in cities is still inadequate for this purpose since it deals only with average employment of all personnel in plants, differentiated somewhat by given annual production capacities.[214]

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[210] It was estimated that, in the same year, the share of repair work carried out by auxiliary workers in Soviet industry was twice as large as in American industry. N. A. Podkovyrov, "Sovershenstvovaniye organizatsii truda na vspomogatel'nykh rabotakh (Improvement of the Organization of Labor in Auxiliary Work), Moscow, 1965, p. 98; S. A. Kheynman, Ekonomicheskiye problemy organizatsii promyshlennogo proizvodstva (Economic Problems in the Organization of Industrial Production), Moscow, 1961, p. 199; and S. A. Kheynman, Organizatsiya proizvodstva i proizvoditel'nost' truda v promyshlennosti SSSR (Organization of Production and the Productivity of Labor in Industry of the U.S.S.R.), Moscow, 1961, p. 74.

[211] Podkovyrov, op. cit., pp. 93–94.

[212] Ibid., p. 103, and G. P. Sofonov, "Specialization Is Needed!," Trud, Feb. 25, 1966, p. 2.

[213] M. N. Zaikin, "Increase Labor Productivity in Freight-Handling Work," Mekhanizatsiya i avtomatizatsiya proizvodstva (Mechanization and Automation of Production), No. 6 June 1963, pp. 1–2.

[214] P. Litvyakov, "Utilize Labor Resources Rationally," Kommunist, No. 4, March 1966, p. 41; and V. A. Shkvarikov et al. (editors), Spravochnik proyektirovshchika; Grodostroitel'stvo (Handbook for a Designer; City Building), Moscow, 1963, pp. 265–270.

Recent statistical handbooks have presented percentage distributions of employment in 1960 and 1963 by size of industrial enterprise.[215] Little significant change took place during these years, except at the lower end of the scale. Thus, the proportion of the total annual average number of wage workers in enterprises with less than 200 workers, decreased from 13.1 to 9.9 percent, or an absolute decrease of about 2.4 million workers. Although a trend toward the concentration of production in larger units—such as the new Soviet "firms"—is typical of economies with high levels of technology and complexity, such a trend is contrary to the expansion of employment to smaller-scale organizations in small and medium-size cities currently planned in the Soviet Union.

Some estimates of the size of industrial organizations in the U.S.S.R. and some comparisons with the United States can be made. The number of industrial enterprises (on an independent profit and loss balance) barely grew in the U.S.S.R. between 1961 and 1962. At the beginning of 1961, there were 46,169 enterprises in this category, and in 1962, 46,587.[216] If total industrial employment in 1962 (appendix table A–1) is divided by the reported number of enterprises, the average size of a Soviet enterprise is computed as about 520 persons.[217] In 1961, there were 7,369 large-scale mining and manufacturing enterprises with an average employment of 501 wage workers or more as compared with about 4,800 enterprises of this size in the United States. Medium-sized enterprises (101–500 workers) were estimated to number 19,022 in the U.S.S.R. and about 23,700 in the United States. The total number of medium- and large-scale enterprises is, therefore, about 28,500 in the United States and 26,391 in the U.S.S.R. The average size of Soviet large-scale enterprises is reported to be 7 times larger than the medium-scale plants, and Soviet enterprises are estimated to be larger on the average than enterprises in the United States.[218]

D. PRODUCTIVITY

Factor productivity in the national economy, in industry, and in agriculture is examined in detail in several other studies (by Stanley Cohn, James Noren, and Douglas Diamond) contained in the present collection of reports submitted to the Joint Economic Committee. Therefore, only a few remarks related to this subject are presented here.

The general decline in rates of growth of the Soviet economy during the 7-year plan period was accompanied by a retardation in the growth of labor productivity in industry and agriculture. The 7-year plan anticipated that labor productivity in industry would grow at an average annual rate of 5.5 to 6.0 percent, but only 5.1 percent was

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[215] See, for example, Nar. khoz. v 1961, p. 188, and Nar. khoz. v 1963, p. 129.

[216] P. N. Shevtyak, Finansy promyshlennykh predpriyatiy (Finances of Industrial Enterprises), Moscow, 1963, pp. 97–98; and TsSU SSSR, Promyshlennost' SSSR (Industry of the U.S.S.R.), Moscow, 1964, p. 82. The former source also gives the number of organizations in 15 other branch categories.

[217] The actual size is probably smaller, due to the fact that the number of industrial-production personnel given in appendix table A–1 includes persons employed in certain subsidiary industrial units (not on an independent balance) which are not included in the number of enterprises. On the other hand, these employment figures exclude the nonindustrial personnel of industrial enterprises. The net effect of adjusting for these two factors would probably be to decrease the average size as computed. Derived from information on total employment, by form of subordination, in Nar. khoz. RSFSR v 1960, p. 397, and the corresponding number of enterprises on Jan. 1, 1961, given in TsSU RSFSR, Promyshlennost' RSFSR (Industry of the R.S.F.S.R.), Moscow, 1961, p. 10.

[218] A. I. Kats, Proizvoditel'nost' truda v SSSR i glavnykh kapitalisticheskikh stranakh (Labor Productivity in the U.S.S.R. and Main Capitalist Countries), Moscow, 1964, p. 202.

achieved. The original goal of 45 to 50 percent total growth in labor productivity over the plan period was thought by Soviet analysts to be too low, and estimates made by the Institute of Labor indicated a possible growth of about 60 percent. The actual increase was 42 percent.[219] Detailed information on the growth of labor productivity in socialized agriculture during the entire plan period is not available, but it has been reported that during the years 1959–62 it grew at a rate of 6.85 percent per year. This was just slightly lower than the annual rate of growth of 7 percent achieved during the years 1953–58.[220]

The capital/employment ratio in industry is much higher than in socialized agriculture. In 1962, there were 3.3 times more basic productive funds per unit of employment in industry than in this sector of agriculture.[221] In comparison with capital/employment and output/employment ratios in U.S. industry, however, Soviet industry is in the same relative status (about one-third) as Soviet agriculture is to Soviet industry. Among the major reasons given by Soviet writers for the lower level of industrial and agricultural productivity in their country are that the amount of power and technical equipment per worker is less available, there is less mechanization, and there is less utilization of chemical processes in production than in the United States. For example, Soviet economists estimated their level of labor productivity in industry in 1962 to be 40 to 50 percent of productivity in the United States. In that same year, over 38,000 kilowatt-hours of electrical power per worker were available in American industry, but only 13,000 kilowatt-hours per worker were available in Soviet industry.[222]

In addition to faults of organization and inadequate incentives for farmers, agricultural yields (and productivity of labor) are clearly limited by insufficient supplies of machinery and fertilizers. The poor supply of agricultural machinery is notorious. For example, estimates of the national agricultural materials and equipment supply agency, *Soyuzsel 'khoztekhnika*, showed that at the beginning of 1962 only 1,168,000 tractors were available, whereas 2,696,000 were needed to perform the work efficiently. The same agency estimated that total requirements in 1965 amounted to 3 million tractors, but that only 1,600,000 were available.[223] Shortages of other machinery are equally serious. The price increases of 1958 have made it more difficult for the farms to acquire machinery or to purchase the spare parts necessary for repair of the high number of inoperable machines. Spare parts prices more than doubled in 1958.[224] Also, fertilizer requirements have remained unsatisfied despite ambitious plans to produce large additional quantities. During the period 1959–61, only 44 percent of the plan for implementation of new capacity for fertilizer production was met.[225]

[219] See, A. Dovba and V. Shernykh "Growth of Labor Productivity in Industry," Kommunist, No. 4, March 1966, p. 18; and M. Gorshunov and A. Zalkind, "Growth of Labor and Productivity in the U.S.S.R. National Economy in the First Two Years of the Seven-Year Plan," in Nauchno-issledovatel'skiy institut truda, Voprosy proizvoditel'nosti truda v semiletke, Sbornik (Questions of Labor Productivity in the Seven-Year Plan, A Collection), "Voprosy truda," issue VI, Moscow, 1961, p. 37.

[220] M. F. Kovaleva et al. (editors), Puti povysheniya proizvoditel'nosti truda v sel'skom khozyaystve (Means for Raising Productivity in Agriculture), Moscow, 1965, p. 106.

[221] Ibid., p. 100.

[222] Kasimovskiy, op. cit., p. 27.

[223] See M. G. Vayner and V. P. Alfer'yev, Material'no-tekhnicheskoye snabzheniye sel'skogo khozyaystva SSSR (Material-Technical Supply of Agriculture in the U.S.S.R.), Moscow, 1963, p. 28; and S. Kolesnev, "On Some Questions of Raising Agriculture," Ekonomika sel'skogo khozyaystva, No. 4, April 1965, p. 21.

[224] See TsK KPSS, Plenum Tsentral'nogo * * * marta 1965 g., op. cit., p. 149.

[225] Vayner and Alfer'yev, op. cit., p. 27.

E. UNDEREMPLOYMENT AND UNEMPLOYMENT

As indicated in the discussion above, the problem of unemployment has been given some recognition by Soviet sources. Inasmuch as there has been no registered unemployment since the end of 1930, information on the size, duration, and composition of any unemployment is not available. From the evidence at hand, however, it seems clear that Soviet unemployment is basically related to structural problems and not to inadequate aggregate demand. Underemployment is much more difficult to measure in any economy;[226] that it exists in the Soviet Union, however, in various forms and degress of severity, is without question.

Before reviewing some indications of these phenomena, a matter of Soviet terminology should be noted. When writing about unemployment outside the Soviet Union and the other "socialist" countries, the term used for unemployment is always "*bezrabotitsa*," or "without work." The term used by the Poles, when translating their statistical yearbooks into Russian, is, in translation, "Remaining Registered Number Seeking Work," a term equivalent to "Out of work and actively seeking work" in the United States.[227] In referring to the Soviet Union, Soviet writers always use the term "*nezanyatyy*," or "not employed." This term, however, is ambiguous since it does not indicate whether or not the persons "not working" are also actively seeking work.

The excess numbers of workers employed in auxiliary activities of many Soviet industrial enterprises have been referred to above. Poor organization of work probably leads to some underemployment of these workers. As technological improvements cause more displacement of labor, and as managers are permitted to release workers to reduce costs, it is likely that some reduction in the number of these auxiliary workers will take place. An estimate of the amount of underemployment in Soviet industry is not feasible. With respect to collective farms, however, one source indicates that in the aggregate there was 7 percent more farm labor in 1958 than the actual demand as determined for the peak agricultural period at the existing level of mechanization.[228]

The Soviet Union has made a tremendous investment in persons with higher and secondary specialized education, but a direct measure of their possible underemployment was not available to Soviet analysts until after the survey of specialists in December 1963. TsSU was enjoined to collect data in this survey not only on the number of specialists employed in the national economy, by field of training, but also on the position held currently.[229] These data have not been published. The data which have been released on the surveys of specialists taken in 1960 and 1962 on engineers and technicians, by branch of industry and field of training, are too imprecise to determine any

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[226] The International Labor Office states that "The conceptual and practical problems of defining and measuring unemployment pale into insignificance compared with those surrounding the concept of underemployment." See I.L.O., Employment and Economic Growth, Geneva, 1964, p. 24.

[227] See TsSU Pol'skoy narodnoy respubliki, Kratkiy statisticheskiy yezhegodnik Pol'skoy narodnoy respubliki 1963 (Short Statistical Yearbook of the Polish People's Republic 1963), Warsaw, 1963, p. 34.

[228] A. P. Voronin, "Employment of the Labor Force and the Development of Industrial Branches in the Rural Areas," in Borodin, op. cit., pp. 263–264. In the Georgian S.S.R. in 1959 the supply of labor on collective farms was twice as high as the demand. V. Perevedentsev, "Resettlement, Economy, Science," Literaturnaya gazeta, March 10, 1966, p. 2.

[229] See Byulleten' Ministerstva vysshego i srednego spetsial'nogo obrazovaniya SSSR, No. 8, August 1963, p. 7.

underemployment which existed, relative to field of specialty in which trained. The positions currently held by the specialists surveyed were not reported.[230]

There are instances of structural, technological, and frictional unemployment evident in the Soviet economy, as in any economy. Structural unemployment occurs where women in small- and medium-size cities cannot find employment, even if desired. Evidence for Novosibirsk and Latvia indicates that a number of women would work if there were jobs in their trade or specialty.[231] Technological unemployment is inevitable in a country undergoing dynamic changes in technology. In Alma-Ata and several other large Kazakh cities, for example, stonemasons were not employed because the demand for persons with their skills was eliminated by large-panel construction methods.[232]

Frictional unemployment is inevitable as persons move between jobs. To some extent, it is a reflection of desirable paterns of movement. One survey by TsSU found that movement took place from branches of declining employment (e.g., state farms, transportation, the construction materials industry, the fuel industry, etc.) to growing branches (machine-building and chemical industries).[233] Seasonal unemployment of Soviet farmers cannot be measured because we do not know the number of farmers who actively seek work at times of low farm activity. Job placement of young persons through the use of quotas, as described above, is one form of overcoming possible unemployment of this group in the face of managerial resistance.

In summary, evidence is abundant of the existence of all types of unemployment, but the magnitude remains unknown. It probably is not at such a high level or so widespread that pressures will build up to curtail it (in forms other than "antiparasite" laws or the reduction of disability benefits) or to curtail freedom of movement by fixing workers to their jobs. An interesting equivalent of unemployment aid is in use in one area where seasonality is caused by difficult weather conditions. The open-pit mining and fishing industries of the northeastern region (Yakut A.S.S.R. and Magadan and Kamchatskaya Oblasts), are closed down during the harsh winter months. It is too expensive, however, to bring workers from the central and western regions for the season of operation only. Alternative jobs are found for some workers in equipment repair work, logging, etc., but the majority of the displaced workers are "in practice not employed from December through May." These workers are given a form of unemployment aid in the guise of wages (at a lower level than in the summer). Although this practice raises the magnitude of average wages and increases unit costs, it is considered the preferable solution to the problem.[234]

V. Summary and Prospects

The problems facing Soviet manpower planners today are real and immediate, for the country is confronted with the possibility of a labor scarcity, particularly of skilled manpower. These problems have been

[230] Nar. khoz. v 1962. Moscow, 1963, pp. 468–469; and TsSU SSSR, Vysshoye obrazovaniye v SSSR (Higher Education in the U.S.S.R.). Moscow, 1961, p. 56.

[231] Musatov and Il'ina, op. cit., p. 88; and Gulyan, op. cit., p. 167.

[232] Omarov, "Omissions * * *," loc. cit.

[233] The source specifically cites state farms and transportation as branches of declining employment, although data reported in the statistical handbooks show both to have increased regularly in total employment. Biyakhman, Dvizheniye * * *, op. cit., p. 13.

[234] V. Loginov and D. Moskvin, "Supplying Industry of the Northeast of the U.S.S.R. With Wage Worker Cadres," Sotsialisticheskiy trud, No. 7, July 1962, pp. 23–24.

examined here primarily from an economic point of view—supply, demand, and utilization—as they developed during the 7-year plan period and as the prospects appear for them during the forthcoming 5-year plan.

Much of the success is achieving the goal set forth in the 7-year plan for the number of workers and employees was attained by manipulating the administrative and statistical systems. Many collective farmers were converted to workers of the state sector, as were most members of the producers' cooperative system. In addition, pensioners were encouraged to return to work, and housewives were drawn into the labor force. Some of these alternatives are no longer open, however, and additional labor will in the future have to come from other sources.

The projected increase in total employment during the new 5-year plan, plus the increase in full-time students, will exceed the increase of the able-bodied population. The intensity of use of labor resources will therefore play a large part in determining the relative success in meeting the goals. More realistic attention is expected to be devoted to drawing housewives into the labor pool, but employment opportunities are limited for these women, especially in small-and medium-sized cities. Jobs cannot be created in these cities without the diversion of capital from other uses, for as relatively less-developed communities they need an infrastructure of transportation, communications, housing, services, child-care institutions, etc. Part of the success in achieving the desired magnitudes of supply from this source will depend upon the extent of part-time work.

A number of problems are associated with the flows of labor from the educational system. As a link between the supply of trained manpower and demand, this system can regulate the movement of new entrants through changes in the type and length of training and control over post graduation utilization. The vocational-technical school system is to grow rapidly and significantly during the current 5-year period, and a doubling of new admissions by 1970, as compared with 1965, will increase the share of this system in supplying trained labor. At present, this share amounts to 15 to 20 percent of all new workers. Also, an increased demand for technicians will enhance the importance of secondary specialized educational institutions. At present, increased admissions do not appear to be sufficient to achieve the desired ratio of three to four technicians per engineer, but a reversal of past trends in the reduction of this ratio is clearly evident. The higher educational system is being revised to provide students with a more general background, thereby facilitating labor mobility.

The announced demand for labor in the new plan appears to reflect a more realistic assessment of the probable growth of output, productivity, and labor resources than in previous plans. The 7-year plan called for an increase of 11.5 to 12 million workers and employees, but the increase actually achieved amounted to between 21 and 22 million. Because of the underachievements in regard to production and productivity goals, and changes in the statistical and sectoral parameters for assessing the size of employment, this overfulfillment of the labor plan had no real meaning. Output goals for 1970 are generally lower than those set in the 20-year Party program drawn up in 1961, expectations of growth in productivity are not too different from the growth attained during the past period (except in agriculture), and the annual

increments in the number of workers and employees is less than actually experienced during the period 1959–65.

The demand for female participation in the labor force will remain high. In 1964, the proportion of women among able-bodied collective farmers who worked was 55 percent, only 1 percentage point less than in most of the years since 1959, and women workers and employees still accounted for about one-half (49 percent) of all persons employed in the State sector. Undoubtedly, their share in the private subsidiary agricultural sector will remain at about 90 percent, despite the efforts to enlist them into work in the socialized economy.

The demand for labor in the services sector is expected to increase. An attempt is currently being made to change the long-time pattern of low wages in the services sector. This shift from discrimination against the nonmaterial production branches is in the self-interest of the Government, as it attempts to meet the increasing demand of the population for services.

Regional demand for labor in areas beyond the Urals probably will continue to remain unsatisfied. Wage incentives in these areas have not been sufficient to retain a stable work force. Kosygin has announced that special allowances will be extended to all workers in these regions, but the amenities of everyday life and cultural facilities will have to be drastically improved and increased to reduce turnover and out-migration.

Wages are not necessarily the primary reason for turnover. Housing, poor organization of work, distance from family, etc., have accounted for a large proportion of voluntary separations. Discussion of the possible introduction of labor passports which was conducted several years ago seems to have disappeared, for it is hoped that moral and material incentives will be sufficient deterrents to unreasonable levels of turnover. The new planning statutes could encourage an increase in turnover. If a manager is authorized to eliminate excess workers from his plant, or if he bids for skilled workers and specialists from other plants because there are no specified limits on the size and composition of the work force within his plant, a real stimulus to turnover will result.

Despite the many new research institutions and the excellent work being done, many important subjects need to be examined. For example, numerous problems in the planning of labor utilization in small areas remain unresolved and the solutions to these problems become urgent as greater attention is devoted to possible investment, output, and employment in these areas. Also, the implications of the effect of increased consumer demand and supply on employment need attention. The new institutions which are studying consumer demand and the distribution system largely ignore problems of employment, though some mention has been made of the implications for product and service demand in the current expanded analyses of income elasticity of demand. In these analyses, however, the impact on the structure of demand for labor to produce the desired basket of goods or to perform the services demanded at various levels of income is disregarded.

There is no doubt that the initial steps toward a more realistic approach of analyzing all the factors of production, including labor, have been taken in the Soviet Union. The Scientific Research Institute of Labor is acting as the initiator and coordinator of work in this field, and a general and growing awareness is taking place of the implications of the effective use of human resources in economic expansion.

APPENDIX TABLES

TABLE A-1.—*Workers and employees, by branch of the national economy, U.S.S.R., 1928–65*

[Employment figures are annual averages and are in thousands; figures in parentheses are estimated]

Branch of the national economy	1928	1932	1937	1940	1945	1950	1952	1953	1954	1955
Total	10,790	22,601	26,744	31,192	27,263	38,895	42,204	43,660	47,300	48,380
Industry (industrial-production personnel)	3,773	8,000	10,112	10,967	9,508	14,144	15,556	16,261	17,016	17,367
Construction (construction-installation personnel)	723	2,289	1,576	1,563	1,515	2,569	2,788	2,843	3,179	3,190
Agriculture	1,735	3,048	2,857	2,976	.....	3,881	4,155	4,442	.....	6,546
Sovkhozy and other state agricultural establishments	345	2,259	1,748	1,760	2,147	2,425	2,533	2,552	2,639	2,832
MTS/RTS [1]	X	144	566	530	385	678	794	1,118	(2,966)	3,065
Unspecified agricultural establishments [2]	1,315	545	295	407	.....	334	366	356	.....	260
Forestry	75	100	248	279	.....	444	462	416	.....	389
Transport and communications	1,365	2,241	3,026	3,903	3,537	4,624	5,160	5,352	.....	5,650
Transport	1,270	2,017	2,651	3,425	3,111	4,082	4,595	4,770	.....	5,039
Railroad transport	971	1,297	1,512	1,752	1,841	2,068	2,232	2,275	2,321	2,302
Water transport	104	146	180	203	190	222	244	260	.....	285
Motor vehicle, urban electrical and other transport; freight handling; and road economy	195	574	959	1,470	1,080	1,792	2,119	2,235	.....	2,452
Communications	95	224	375	478	426	542	565	582	(595)	611
Trade, procurement, material-technical supply and sales, and public dining	(583)	(2,184)	(2,509)	3,303	2,462	3,325	3,495	3,463	(3,668)	3,725

Trade, procurement, and material-technical supply and sales	[3] (528)	[3] (1,551)	[3] (2,038)	2,519	1,747	2,666	2,775	2,698	2,348	2,869
Retail trade		855	1,264	1,382		1,308	1,435	1,404	1,519	1,634
Wholesale trade										
Material-technical supply and sales										
Procurement										
Public dining	55	633	471	784	715	659	720	765	820	856
Public health and education	1,206	2,106	3,495	4,531		6,080	6,608	6,815		7,607
Public health	399	669	1,127	1,507	1,419	2,051	2,226	2,308		2,627
Education	807	1,437	2,368	3,024		4,029	4,382	4,507		4,980
Educational institutions	725	1,292	2,089	2,663	2,551	3,315	3,553	3,647		3,988
Science	82	145	279	361		714	829	860		992
Of which—										
Geological prospecting	10	23	30	70		245		320		356
Hydrometeorological services	8	12	15	24		32		39		42
"Other" branches	1,405	2,733	3,169	3,949		4,272	4,442	4,484		4,295
Housing-communal economy	147	661	1,023	1,221		1,210	1,315	1,345		1,400
Administrative organs	1,010	1,650	1,488	1,825	1,645	1,831	1,786	1,728		1,361
State and economic administrative organs										[5] (1,225)
Administrative organs of cooperative and social organizations										[6] (136)
Credit and insurance organizations	95	128	193	262	197	264	262	263		265
Other residual	153	294	465	641		967	1,079	1,150		1,269
Capital repair of buildings and structures										
Drilling										
Project-survey organizations										
Literature and publishing										
Art										
Other unidentified										

See footnotes at end of table.

TABLE A–1.—*Workers and employees, by branch of the national economy, U.S.S.R., 1928–65*—Continued

Branch of the national economy	1956	1957	1958	1959	1960	1961	1962	1963	1964	1965
Total	50,537	53,148	54,605	56,509	62,032	65,861	68,300	70,526	73,258	76,900
Industry (industrial-production personnel)	18,500	19,144	19,675	20,207	22,291	23,475	24,297	25,057	25,933	27,070
Construction (construction-installation personnel)	3,550	4,000	4,421	4,800	5,143	5,270	5,150	5,237	5,370	5,620
Agriculture	6,485	7,170	6,562	6,190	7,482	8,216	8,608	8,738	8,956	9,435
Sovkhozy and other state agricultural establishments	2,925	3,961	4,614	4,957	6,324	7,366	7,730	7,874	8,071	8,520
MTS/RTS [1]	2,880	2,554	1,219	469	348	3	0	0	0	0
Unspecified agricultural establishments [2]	290	278	362	412	451	469	489	465	481	510
Forestry	390	377	367	352	359	378	389	399	404	405
Transport and communications	5,840	5,996	6,332	6,663	7,017	7,308	7,509	7,718	7,982	8,305
Transport	5,216	5,355	5,668	5,972	6,279	6,518	6,677	6,841	7,054	7,295
Railroad transport	2,307	2,323	2,330	2,338	2,348	2,311	2,295	2,301	2,300	2,320
Water transport	300	317	320	317	322	327	327	327	333	345
Motor vehicle, urban electrical and other transport; freight handling; and road economy	2,609	2,715	3,018	3,317	3,609	3,880	4,055	4,213	4,421	4,630
Communications	624	641	664	691	738	790	832	877	928	1,010
Trade, procurement, material-technical supply and sales, and public dining	3,826	4,017	4,190	4,389	4,675	5,010	5,253	5,487	5,752	6,030
Trade, procurement, and material-technical supply and sales	2,935	3,089	3,231	3,398	3,606	3,852	4,015	4,181	4,342	----------
Retail trade	1,666	1,739	1,888	2,050	2,226	2,403	2,562	2,685	2,813	----------
Wholesale trade	----------	----------	[4] (216)	[4] (221)	[4] (249)	[4] (287)	[4] (280)	[4] (320)	[4] (339)	----------
Material-technical supply and sales	----------	----------	[4] (537)	[4] (561)	[4] (588)	[4] (612)	[4] (617)	[4] (637)	[4] (668)	----------
Procurement	----------	----------	[4] (541)	[4] (517)	[4] (496)	[4] (494)	[4] (492)	[4] (488)	[4] (468)	----------
Public dining	891	928	959	991	1,069	1,158	1,238	1,306	1,410	----------
Public health and education	7,933	8,350	8,775	9,275	10,027	10,853	11,552	12,138	12,783	13,550
Public health	2,736	2,892	3,059	3,245	3,461	3,677	3,818	3,933	4,082	4,290
Education	5,197	5,458	5,716	6,030	6,566	7,176	7,734	8,205	8,701	9,260
Educational institutions	4,103	4,250	4,378	4,556	4,803	5,165	5,521	5,835	6,204	6,600
Science	1,094	1,208	1,338	1,474	1,763	2,011	2,213	2,370	2,497	2,660

Of which—										
Geological prospecting	379	382	398	.....	.....	.....	.....	.....	.....	.....
Hydrometeorological services	42	45	47	.....	.....	.....	.....	.....	.....	.....
"Other" branches	4,403	4,471	4,650	4,985	5,397	5,729	5,931	6,151	6,482	6,890
Housing-communal economy	1,503	1,579	1,632	1,713	1,920	2,030	2,096	2,182	2,282	2,410
Administrative organs	1,342	1,294	1,294	1,273	1,245	1,295	1,316	1,308	1,354	1,440
State and economic administrative organs	.....	.....	[5](1,165)	[5](1,146)	[5](1,120)	[5](1,166)	[5](1,184)	[5](1,177)	[5](1,219)	.....
Administrative organs of cooperative and social organizations	.....	.....	[5](129)	[5](127)	[5](124)	[5](130)	[5](132)	[5](131)	[5](135)	.....
Credit and insurance organizations	266	261	260	260	265	277	283	289	296	300
Other residual	1,292	1,337	1,464	1,739	1,967	2,027	2,236	2,372	2,550	2,740
Capital repair of buildings and structures	.....	.....	.....	.....	.....	[6](740)	[6](766)	[6](822)	[6](879)	.....
Drilling	.....	.....	.....	.....	.....	[6](130)	[6](142)	[6](157)	[6](159)	.....
Project-survey organizations	.....	.....	.....	.....	.....	[6](430)	[6](460)	[6](487)	[6](506)	.....
Literature and publishing	.....	.....	.....	.....	.....	[6](90)	[6](75)	[6](72)	[6](83)	.....
Art	.....	.....	.....	.....	.....	[6](315)	[6](312)	[6](323)	[6](344)	.....
Other unidentified	.....	.....	.....	.....	.....	[6](425)	[6](477)	[6](510)	[6](579)	.....

NOTE—Leaders (....) indicate not available. X indicates not applicable.

[1] No adjustment has been made for transfers of some of the collective farmers to the rolls of machine-tractor stations between 1953 and 1958.

[2] Includes veterinary services, artificial insemination stations, research stations, etc.

[3] Adjusted for reclassification of the personnel engaged in collection of secondary raw materials. The adjustment involved transferring the following number of persons from the "Trade, procurement, and material-technical supply" category to the "Other" category: 1928, 4,000; 1932, 13,000; and 1937, 16,000 (0.8 percent of total, based on the 1940 relationship: 2,519÷2,539=99.2 percent).

[4] Estimated from data reported on employment in the R.S.F.S.R. in wholesale trade, material-technical supply and sales, and procurement. These reported data were expanded to an all-Union total by use of the ratio of employment in all trade, procurement, material-technical supply, and public dining in the U.S.S.R. to employment in these categories in the R.S.F.S.R., computed separately for each year. (See Nar. khoz. RSFSR v 1962, pp. 417–418, 443; Nar. khoz. RSFSR v 1963, pp. 403, 548; and Nar. khoz. RSFSR v 1964, pp. 366–367, 416.) Due to rounding, the figures for wholesale trade, material-technical supply and sales, and procurement, when combined with the reported data for retail trade and public dining, do not add to reported totals.

[5] In the handbook Nar. khoz. RSFSR v 1961, p. 442, for the 1st time in the postwar period is reported the employment in "Administrative organs" for the years 1955 and 1958–61, in 2 parts—i.e., "State and economic administrative organs" and "Administrative organs of cooperative and social organs." The sum of these 2 subbranches equals that shown for the R.S.F.S.R. in the republic breakdown of the national employment figures in Nar. khoz. v 1961, p. 570, and in other handbooks for 1958 and 1960. Similar data for 1962 to 1964 were reported in the R.S.F.S.R. handbooks for 1962 to 1964. For all of the years shown in the R.S.F.S.R. handbooks, the proportion of the 1st subbranch to the total of the 2 subbranches varies no more than 2/10 of a percentage point from 90 percent.

[6] Estimates of subbranch employment can be derived for the 1st time in the postwar period for the "Residual" category of "Other branches" by the following procedure: The R.S.F.S.R. handbooks report employment in "Other branches" to be 1,347,000 workers and employees in 1961, and the U.S.S.R. handbook reports 2,127,000 workers and employees in the same year for the country as a whole. The ratio of these 2 figures (U.S.S.R./R.S.F.S.R.=1.58) was applied to each of the reported R.S.F.S.R. subbranches to obtain approximations of the U.S.S.R. 1961 employment in these subbranches. A similar procedure was used for 1962–64.

Source:
1928–63: See source note to table VI–3, in Current Economic Indicators, p. 70.
1964: Nar. khoz. v 1964, pp. 546–47, 640.
1965: Tsifrakh v 1965, pp. 121–22.

TABLE A–2.—*Industrial-production personnel and wage workers, by branch of industry, U.S.S.R., 1940–64*

[Employment figures are annual averages and are in thousands; figures in parentheses are estimated]

Branch of industry	1940	1950	1952	1953	1955	1956	1957	1958	1959	1960	1961	1962	1963 [1]	1964 [22]
Total:														
Industrial-production personnel*	[2] 10,967	[2] 14,144.0	[3] 15,556.0	[3] 16,261.0	[2] 17,367.0	[3] 18,500.0	[3] 19.144.0	[2] 19,675.0	[3] 20,207.0	[2] 22,291.0	[3] 23,475.0	[3] 24,297.0	25.057	25,933
Wage workers	[3] 8,290	[21] 11,208.0	[4] 12,474.0	[3] 13,179.0	[3] 14,281.0	[3] 15,226.0	[4] 15,760.0	[3] 16,279.0	[4] 16,793.0	[3] 18,574.0	[3] 19,548.0	[3] 20,176.0	20.760	21,435
Machine-building and metal-working, including repair enterprises:														
Industrial-production personnel										[23] 7,360			8,742	
Wage workers	[3] 2,395	[3] 3,216.0	[4] 3,581.0	[3] 3,837.0	[3] 4,256.0	[4] 4,539.0	[4] 4,736.0	[3] 4,932.0	[4] 5,149.0	[3] 5,665.0	[4] 6,207.0	[3] 6,586.0	[24] 6,938	7,249
Machine-building and metal-working:														
Industrial-production personnel														
Wage workers								[4] 4,355.0						
Repair enterprises:														
Industrial-production personnel														
Wage workers								[4] 577.0						
Fuel:														
Industrial-production personnel								[5] 1,644.3	[5] 1,617.2	[5] 1,557.2		[5] 1,154.4		
Wage workers														
Coal:														
Industrial-production personnel								[5] 1,256.2	[5] 1,245.4	[5] 1,196.3		[5] 1,161.8	1,158	
Wage workers	[3] 436	[3] 732.0	[4] 763.0	[3] 793.0	[3] 897.0	[4] 968.0	[4] 1,021.0	[3] 1,071.0	[4] 1,074.0	[3] 1,031.0	[4] 1,005.0	[3] 996.0	986	988
Oil extraction and refining:														
Industrial-production personnel								[6] 174.5	[6] 173.3	[6] 178.3		[6] 185.2	185	
Wage workers	[3] 45	[3] 90.0	[4] 102.0	[3] 107.0	[3] 122.0	[4] 125.0	[4] 128.0	[3] 138.0	[4] 140.0	[3] 145.0	[4] 154.0	[3] 150.0	150	
Oil extraction:														
Industrial-production personnel								[5] 86.0	[5] 85.4	[5] 85.0		[5] 88.5		
Wage workers	[4] 28	[4] 53.0				[4] (64.0)	[4] (65.0)	[4] 68.0	[4] (70.0)	[4] (72.0)				
Oil refining:														
Industrial-production personnel								[5] 88.5	[5] 87.9	[5] 93.3		[5] 96.7		
Wage workers	[4] 17	[7] (37.0)				[4] (61.0)	[4] (63.0)	[4] 70.0	[4] (70.0)	[4] (73.0)				

Gas extraction and refining:														
Industrial-production personnel								[5] 18.1	[5] 17.6	[5] 18.2		[5] 18.8	20	
Wage workers													16	
Gas extraction:														
Industrial-production personnel			[24] (2.1)			[24] (2.9)	[24] (2.9)	[24] (3.2)	[24] (3.7)	[24] (5.0)	[24] (5.9)	[24] (5.6)	[24] 6.0	
Wage workers				[4] (2.1)	[4] (2.1)	[4] (2.7)	[4] (2.8)	[4] (3.2)	[4] (3.4)				[24] 5.0	
Gas refining:														
Industrial-production personnel														
Wage workers														
Peat:														
Industrial-production personnel								[5] 172.7	[5] 158.1	[5] 141.0		[5] 126.3		
Wage workers														
Other:														
Industrial-production personnel								[7] (22.8)	[7] (22.8)	[7] (23.4)		[7] (22.3)		
Wage workers														
Of which, shale extraction:														
Industrial-production personnel														
Wage workers						[4] (13.6)	[4] (13.3)	[4] (13.9)						
Ferrous metallurgy:														
Industrial-production personnel													1,161	
Wage workers	[2] 405	[2] 604.0	[4] 675.0	[2] 706.0	[2] 742.0	[4] 751.0	[4] 764.0	[2] 812.0	[4] 841.0	[2] 886.0	[4] 923.0	[2] 947.0	979	1,009
Ferrous metallurgy in metallurgical plants:														
Industrial-production personnel								[5] 966.0	[5] 996.0	[5] 1,047.0	[5] 1,090.0	[5] 1,122.0		
Wage workers														
Pig iron, steel, and rolled products:														
Industrial-production personnel								[5] 695.0	[5] 719.0	[5] 747.0	[5] 774.0	[5] 796.0		
Wage workers														
Other products of metallurgical plants:														
Industrial-production personnel								[7] (271.0)	[7] (277.0)	[7] (300.0)	[7] (316.0)	[7] (326.0)		
Wage workers														
Ferrous metallurgy in nonmetallurgical plants:														
Industrial-production personnel														
Wage workers														

See footnotes at end of table.

TABLE A–2.—*Industrial-production personnel and wage workers, by branch of industry, U.S.S.R., 1940–64*—Continued

[Employment figures are annual averages and are in thousands; figures in parentheses are estimated]

Branch of industry	1940	1950	1952	1953	1955	1956	1957	1958	1959	1960	1961	1962	1963 [1]	1964 [22]
Nonferrous metallurgy:														
Industrial-production personnel														
Wage workers		[4] (458.0)	[4] (499.0)	[4] (497.0)	[4] (466.0)			[4] (494.0)		[4] (500.0)				
Logging, woodworking, and paper:														
Industrial-production personnel								[9] 2,501.4		[9] 2,597.5	[9] 2,619.6	[9] 2,639.8	2,682	
Wage workers		[2a] 1,678.0						[2a] 2,148.0		[2a] 2,236.0		[2a] 2,275.0	2,308	2,310
Logging:														
Industrial-production personnel								[9] 1,369.0		[9] 1,299.3	[9] 1,251.7	[9] 1,257.0		
Wage workers								[10] 1,172.2						
Woodworking:														
Industrial-production personnel								[9] 949.2		[9] 1,111.5	[9] 1,177.1	[9] 1,185.6		
Wage workers									[11] 1,100.0					
Sawmilling:														
Industrial-production personnel								[9] 303.8		[9] 301.8	[9] 325.7	[9] 314.5		
Wage workers								[10] 262.1						
Furniture:														
Industrial-production personnel								[9] 232.8		[9] 336.4	[9] 363.9	[9] 379.0		
Wage workers														
Paper:														
Industrial-production personnel	[23] 92.3							[9] 150.6		[9] 154.0	[9] 159.5	[9] 166.0	[23] 168.6	
Wage workers	[23] 55.7	[2a] 109.0						[23] 129.5		[2] 132.8	[2] 137.2	[23] 142.7	[23] 144.9	149
Wood chemicals and wood hydrolysis:														
Industrial-production personnel								[9] 31.9		[9] 32.7	[9] 31.3	[9] 31.2		
Wage workers														
Food:														
Industrial-production personnel								[12] 2,068.1	[12] 2,089.8	[12] 2,146.0	[12] 2,241.3	[12] 2,307.5	2,349	
Wage workers	[2] 1,049	[2] 1,232.0	[4] 1,322	[2] 1,398.0	[2] 1,478.0	[4] 1,579.0	[4] 1,645.0	[2] 1,662.0	[4] 1,688.0	[2] 1,743.0	[4] 1,827.0	[2] 1,884.0	[2a] 1,919	1,975

Sugar:														
Industrial-production personnel		[13] 122.0				[13] 141.0		[12] 164.7	[13] 163.6	[12] 170.4	[12] 197.5	[12] 185.2		
Wage workers									[14] (145.0)					
Meat:														
Industrial-production personnel		[13] 117.0				[13] 148.0		[12] 199.4	[12] 218.0	[12] 238.3	[12] 244.1	[12] 257.4		
Wage workers		[15] 76.3				[15] 117.9						[15] 207.0		
Fishing:														
Industrial-production personnel								[12] 251.1	[12] 250.7	[12] 251.1	[12] 257.8	[12] 265.4		
Wage workers														
Milk and milk products:														
Industrial-production personnel								[12] 249.1	[12] 246.9	[12] 245.4	[12] 252.3	[12] 261.1		
Wage workers														
Vegetable oils:														
Industrial-production personnel								[12] 64.3	[12] 69.8	[12] 66.6	[12] 69.5	[12] 72.4		
Wage workers														
Flour milling and grain cracking:														
Industrial-production personnel								[12] 131.8	[12] 127.7	[12] 126.3	[12] 126.8	[12] 127.1		
Wage workers														
Baking:														
Industrial-production personnel								[12] 395.4	[12] 406.7	[12] 419.9	[12] 440.3	[12] 463.9		
Wage workers														
Candy and confectionary products:														
Industrial-production personnel		[13] 82.0				[13] 89.0		[12] 113.8	[12] 115.9	[12] 126.1	[12] 131.2	[12] 135.0		
Wage workers														
Macaroni:														
Industrial-production personnel								[12] 23.2	[12] 22.2	[12] 24.1	[12] 22.9	[12] 23.2		
Wage workers														
Fruits and vegetables:														
Industrial-production personnel								[12] 141.4	[12] 140.6	[12] 142.4	[12] 153.9	[12] 162.8		
Wage workers														
Starch and sirup:														
Industrial-production personnel								[12] 16.4	[12] 15.6	[12] 16.5	[12] 17.5	[12] 16.6		
Wage workers														
Tobacco, makhorka:														
Industrial-production personnel								[12] 36.8	[12] 36.0	[12] 33.9	[12] 32.9	[12] 31.7		
Wage workers														

See footnotes at end of table.

TABLE A–2.—*Industrial-production personnel and wage workers, by branch of industry, U.S.S.R., 1940–64*—Continued

[Employment figures are annual averages and are in thousands; figures in parentheses are estimated]

Branch of industry	1940	1950	1952	1953	1955	1956	1957	1958	1959	1960	1961	1962	1963 [1]	1964 [2]
Food—Continued														
Other (alcohol, canning, wines, beer, nonalcoholic drink, tea, other food products, perfumes and cosmetics, salt):														
Industrial-production personnel								[7] (280.7)	[7] (276.1)	[7] (285.0)	[7] (294.6)	[7] (305.7)		
Wage workers														
Chemical and rubber-asbestos:														
Industrial-production personnel													986	
Wage workers	[2] 273	[2] 326.0		[2] 404.0	[2] 452.0			[2] 494.0		[2] 584.0		[2] 705.0	800	870
Light:														
Industrial-production personnel								[16] 2,943.7	[16] 2,999.6	[16] 3,893.5	[16] 3,990.2	[16] 4,063.7	4,070	
Wage workers	[2] 1,489	[2] 1,678.0	[4] 1,885	[2] 1,975.0	[2] 2,158.0	[4] 2,385.0	[4] 2,467.0	[2] 2,515.0	[4] 2,579.0	[2] 3,371.0	[4] 3,472.0	[2] 3,544.0	3,550	3,648
Textiles:														
Industrial-production personnel								[16] 1,602.8	[16] 1,610.1	[16] 1,814.0	[16] 1,849.8	[16] 1,864.8		
Wage workers														
Cotton ginning:														
Industrial-production personnel								[16] 29.6	[16] 28.8	[16] 29.1	[16] 27.4	[16] 26.7		
Wage workers														
Cotton textiles:														
Industrial-production personnel								[16] 727.2	[16] 722.3	[16] 776.0	[16] 786.7	[16] 787.6		
Wage workers								[17] 705.0						
Wool:														
Industrial-production personnel								[16] 191.5	[16] 197.4	[16] 234.3	[16] 249.6	[16] 255.9		
Wage workers														
Flax (linen):														
Industrial-production personnel								[16] 131.4	[16] 133.2	[16] 137.7	[16] 138.7	[16] 137.5		
Wage workers														
Silk (including silk reeling):														
Industrial-production personnel								[16] 110.2	[16] 114.1	[16] 122.9	[16] 126.8	[16] 129.3		
Wage workers														

Hemp and jute:															
Industrial-production personnel								[16] 43.1	[16] 37.4	[16] 41.0	[16] 40.0	[16] 36.8			
Wage workers															
Knitted wear:															
Industrial-production personnel								[16] 200.7	[16] 207.4	[16] 254.0	[16] 257.6	[16] 260.2			
Wage workers															
Felt:															
Industrial-production personnel								[16] 46.8	[16] 47.6	[16] 65.6	[16] 66.7	[16] 64.5			
Wage workers															
Other:															
Industrial-production personnel								[7] (122.3)	[7] (121.9)	[7] (153.4)	[7] (156.3)	[7] (166.3)			
Wage workers															
Sewn goods:															
Industrial-production personnel								[16] 841.7	[16] 869.7	[16] 1,372.3	[16] 1,413.8	[16] 1,454.4			
Wage workers															
Leather, fur, and shoe:															
Industrial-production personnel								[16] 490.0	[16] 512.0	[16] 687.8	[16] 712.6	[16] 727.9			
Wage workers															
Leather:															
Industrial-production personnel								[16] 53.4	[16] 54.7	[16] 63.7	[16] 67.8	[16] 67.2			
Wage workers															
Leather substitutes:															
Industrial-production personnel								[16] 18.7	[16] 23.2	[16] 27.2	[16] 29.7	[16] 30.7			
Wage workers															
Leather luggage and haberdashery goods:															
Industrial-production personnel								[16] 29.7	[16] 30.7	[16] 48.9	[16] 51.3	[16] 53.4			
Wage workers															
Fur:															
Industrial-production personnel								[16] 39.4	[16] 39.2	[16] 47.1	[16] 50.1	[16] 51.6			
Wage workers															
Shoe (including rubber shoes):															
Industrial-production personnel								[16] 333.9	[16] 351.8	[16] 482.2	[16] 494.2	[16] 503.4			
Wage workers															
Other:															
Industrial-production personnel								[7] (14.9)	[7] (12.4)	[7] (18.7)	[7] (19.5)	[7] (21.6)			
Wage workers															

See footnotes at end of table.

TABLE A–2.—*Industrial-production personnel and wage workers, by branch of industry, U.S.S.R., 1940–64*—Continued

[Employment figures are annual averages and are in thousands; figures in parentheses are estimated]

Branch of industry	1940	1950	1952	1953	1955	1956	1957	1958	1959	1960	1961	1962	1963 [1]	1964 [2]
Light—Continued														
Other (including tanning?):														
Industrial-production personnel								[7] (9.2)	[7] (7.8)	[7] (19.4)	[7] (14.0)	[7] (16.6)		
Wage workers														
Construction materials:														
Industrial-production personnel								[18] 1,217.5	[18] 1,316.3	[18] 1,493.4	[18] 1,575.3	[18] 1,597.8	1,583	
Wage workers	[2] 252	[2] 547.0	[4] 649	[2] 720.0	[2] 830.0			[2] 1,072.0	[4] 1,162.0	[2] 1,310.0	[4] 1,375.0	[2] 1,383.0	1,364	1,365
Cement:														
Industrial-production personnel								[18] 69.5	[18] 77.3	[18] 83.1	[18] 86.5	[18] 94.7		
Wage workers	[4] (26)	[19] 35.3			[4] (42.0)	[4] (44.0)	[4] (48.0)	[19] 51.2	[4] (57.0)	[19] 59.4	[19] 61.5	[19] 65.2		
Lime, gypsum (alabaster), and other local binding materials:														
Industrial-production personnel								[18] 66.1	[18] 67.7	[18] 76.2	[18] 71.1	[18] 66.9		
Wage workers														
Wall materials (including bricks) and tiles:														
Industrial-production personnel								[18] 429.2	[18] 456.6	[18] 515.5	[18] 517.6	[18] 492.2		
Wage workers														
Prefabricated reinforced concrete, concrete structures, and parts:														
Industrial-production personnel								[18] 327.3	[18] 401.2	[18] 484.1	[18] 544.5	[18] 592.7		
Wage workers														
Asbestos-cement goods:														
Industrial-production personnel								[18] 14.0	[18] 14.4	[18] 15.6	[18] 17.7	[18] 18.6		
Wage workers														
Soft roofing materials:														
Industrial-production personnel								[18] 8.7	[18] 8.4	[18] 11.0	[18] 11.2	[18] 12.1		
Wage workers														
Extraction and processing of nonmetallic construction materials and light aggregates:														

Industrial-production personnel								[18] 173.1	[18] 167.4	[18] 181.2	[18] 189.8	[18] 184.6		
Wage workers														
Other:														
Industrial-production personnel								[7] (129.6)	[7] (123.3)	[7] (116.7)	[7] (126.9)	[7] (136.0)		
Wage workers														
Glass and chinaware:														
Industrial-production personnel								[18] 208.6	[18] 215.4	[18] 226.3	[18] 234.8	[18] 241.0	249	
Wage workers								[4] 181.0					216	
Glass:														
Industrial-production personnel								[18] 163.2	[18] 168.6	[18] 176.8	[18] 183.9	[18] 189.1		
Wage workers														
Chinaware and glazed pottery:														
Industrial-production personnel								[18] 45.4	[18] 46.8	[18] 49.5	[18] 50.9	[18] 51.9		
Wage workers														
Electric power:														
Industrial-production personnel										[23] 388				
Wage workers								[4] 222.0		[4] (247.0)				
Printing:														
Industrial-production personnel		[20] 186.0												
Wage workers		[23] 125.0			[21] 141.3					[21] 163.5				

NOTE.—Leaders (....) indicate not available.

*(Includes employment in the basic production activity of all personnel categories: wage workers, engineering-technical personnel, salaried employees, apprentices, minor service personnel, and guards. This does not include employment in nonindustrial activities in industrial enterprises, such as housing, education, personal services, and public health.)

NOTE.—Footnotes 1 to 21 are given in Current Economic Indicators, table VI–5, p. 79.

[22] Nar. khoz. v 1964, pp. 135–136.

[23] B. I. Braginskiy et al., Planirovaniye proizvoditel'nosti truda v narodnom khozyaystve SSSR (Planning Labor Productivity in the National Economy of the U.S.S.R.), Moscow, 1965, p. 64.

[24] Estimated from an index of volume of gas extracted per person employed and reported output data. G. S. Urinson, Ekonomika dobychi prirodnogo gaza (Economics of Natural Gas Extraction), Moscow, 1965, p. 152, and Prom. SSSR, p. 213. Employment in 1963 is reported in Urinson (op. cit., p. 42).

[25] A. P. Vikulov, Proizvoditel'nost' truda i sebestoimost' produktsii v tsellyulozno-bumazhnoy promyshlennosti (Labor Productivity and Cost of Production in the Paper Industry), Moscow, 1965, p. 41.

TABLE A–3.—*Average number of days and hours worked in industry by wage workers, U.S.S.R., 1928–64*

[Figures in parentheses are estimated]

Item	1928	1932	1937	1940	1950	1962	1955	1956
1. Number of calendar days	366.0	366.0	365.0	366.0	365.0	366.0	365.0	366.0
Less: days off and holidays	62.3	67.1	66.8	64.0	55.5	55.8	55.5	56.9
2. Number of calendar days, less days off and holidays	303.7	298.9	298.2	302.0	309.5	310.2	309.5	309.1
Less: paid regular leave	14.2	15.1	13.7	13.0	14.9	15.4	16.0	16.0
3. Maximum number of workdays	289.5	283.8	284.5	289.0	294.6	294.8	293.5	293.1
Less: sick, maternity, and administrative leave	18.9	19.4	21.8	17.5	17.4	18.9	19.3	20.0
Of which—								
Sick and maternity leave, paid out of social insurance account	15.3	14.2	17.6	13.9	13.4	14.4	13.7	14.6
Administrative leave (authorized by law and by plant administration)	3.6	5.2	4.2	3.6	4.0	4.5	5.6	5.4
Less: other absences (absences without reason and whole-day plant work stoppage)	7.6	7.2	2.4	1.7	.9	1.1	.9	1.0
4. Actual average number of days worked (including intrashift work stoppages)	283.0	257.2	260.3	269.8	276.3	274.8	273.3	272.1
(1950=100)	95.2	93.1	94.2	97.6	100.0	99.5	98.9	98.5
5. Annual average number of wage workers (thousands)	3,124.0	6,007.0	7,924.0	8,290.0	11,308.0	12,474.0	14,281.0	15,226.0
(1950=100)	27.6	53.1	70.1	73.3	100.0	110.3	126.3	134.6
6. Estimated annual number of man-days worked in industry by wage workers (millions) (line 4×line 5)	(821.6)	(1,545.0)	(2,062.6)	(2,236.6)	(3,124.4)	(3,427.9)	(3,903.0)	(4,143.0)
(1950=100)	26.3	49.4	66.0	71.6	100.0	109.7	124.9	132.6
7. Reported average scheduled number of man-hours worked per day per adult wage worker in industry (excluding overtime)	7.81	6.99	7.0	8.0	8.0	8.0	8.0	7.96
(1950=100)	97.6	87.4	87.5	100.0	100.0	100.0	100.0	99.5
8. Estimated annual number of man-hours worked in industry by wage workers (billions) (line 6×line 7)	(6.4)	(10.8)	(14.4)	(17.9)	(25.0)	(27.4)	(31.2)	(33.0)
(1950=100)	25.7	43.2	57.8	71.6	100.0	109.7	124.9	131.9
9. Estimated annual average number of man-hours worked in industry per wage worker (line 8÷line 5)	(2,049)	(1,798)	(1,817)	(2,159)	(2,211)	(2,197)	(2,185)	(2,167)
(1950=100)	92.7	81.3	82.2	97.6	100.0	99.4	98.8	98.0

Item	1957	1958	1959	1960	1961	1962	1963	[1] 1964
1. Number of calendar days	365.0	365.0	365.0	366.0	365.0	365.0	365.0	366.0
Less: days off and holidays	57.1	57.7	58.2	59.3	60.8	61.0	61.3	61.4
2. Number of calendar days, less days off and holidays	307.9	307.3	306.8	306.7	304.2	304.0	303.7	304.6
Less: paid regular leave	[2] 16.9	16.9	17.2	17.4	17.3	17.6	17.6	17.8
3. Maximum number of workdays	291.0	290.4	289.6	289.3	286.9	286.4	286.1	286.8
Less: sick, maternity, and administrative leave	22.7	21.5	22.4	21.7	22.0	22.3	20.9	19.6
Of which—								
Sick and maternity leave, paid out of social insurance account	.....	16.1	17.5	16.6	16.9	17.0	15.8	14.5
Administrative leave (authorized by law and by plant administration)	.....	5.4	4.9	5.1	5.1	5.3	5.1	5.1
Less: other absences (absences without reason and whole-day plant work stoppage)	0.9	0.9	0.7	0.7	0.7	0.7	0.7	0.7
4. Actual average number of days worked (including intrashift work stoppages)	267.4	268.0	266.5	266.9	264.2	263.4	264.5	266.5
(1950=100)	96.8	97.0	96.5	96.6	95.6	95.3	95.7	96.5
5. Annual average number of wage workers (thousands)	15,760.0	16,279.0	16,793.0	18,574.0	19,548.0	20,176.0	20,680.0	21,435.0
(1950=100)	139.4	144.0	148.5	164.3	172.9	178.4	182.9	189.6
6. Estimated annual number of man-days worked in industry by wage workers (millions) (line 4×line 5)	(4,214.2)	(4,362.8)	(4,475.3)	(4,957.4)	(5,164.6)	(5,314.4)	(5,469.9)	(5,712.4)
(1950=100)	134.9	139.6	143.2	158.7	165.3	170.1	175.1	182.8
7. Reported average scheduled number of man-hours worked per day per adult wage worker in industry (excluding overtime)	7.90	7.70	7.56	6.94	6.93	6.93	6.93	6.93
(1950=100)	98.8	96.2	94.5	86.8	86.6	86.6	86.6	86.6
8. Estimated annual number of man-hours worked in industry by wage workers (billions) (line 6×line 7)	(33.3)	(33.6)	(33.8)	(34.4)	(35.8)	(36.8)	(37.9)	(39.6)
(1950=100)	133.2	134.4	135.3	137.6	143.2	147.3	151.6	158.4
9. Estimated annual average number of man-hours worked in industry per wage-worker (line 8÷line 5)	(2,113)	(2,064)	(2,013)	(1,852)	(1,831)	(1,824)	(1,833)	(1,847)
(1950=100)	95.6	93.4	91.0	83.8	82.8	82.5	82.9	83.5

NOTE.—Leaders (.....) indicate not available.

[1] Nar. khoz. v 1964, pp. 138 and 590.

[2] Trud i zarabotnaya plata, No. 7, July 1959, p. 31.

Source: "Current Economic Indicators," table VI-6, pp. 80-81, except as noted.

TABLE A–4.—*Measures of collective farm employment, U.S.S.R.: 1937–65*

[Figures in parentheses are estimated]

Year	Number of collective farmers who participated in the socialized economy during the year (thousands)		Number of able-bodied [1] collective farmers who did not earn 1 labor-day [2] nor work 1 man-day [3] (thousands)				Annual average number of collective farmers who participated in the socialized economy (thousands)		
							Total activity		Of which, in agriculture
	Total	Of which, able-bodied	Total	Percent of total able-bodied	Percent of total able-bodied for each sex		Excluding fishing collective farms	Including fishing collective farms	
					Male	Female			
	(1)	(2)	(3)	(4)	(4a)	(4b)	(5)	(6)	(7)
1937	[4] 40,716	[5] (25,000)		[7] 10.4					
1940	[8] 42,673	[9] 31,922	[10] 517.4	[7] 1.3			[11a] 28,500	[11] 29,000	[11] 26,100
1950	[4] (38,537)	[10] 28,088					[10] 27,305	[10] 27,600	[10] 25,100
1951	[4] (38,371)								
1952	[4] (37,467)								
1953	[11a] 36,200	[10] 26,761		[12] 2.6	[12] 1.3	[12] 3.3	[12] 25,458	[11] 25,600	[11] 23,300
1954	[4] (37,668)	[10] 27,263							
1955	[4] (40,044)	[7] (28,419)					[12] 26,198	[11] 24,800	[11] 22,500
1956	[10] 38,450	[7] (29,282)					[12] 26,980	[10] 25,700	[10] 22,900
1957		[10] 27,690			[13] 1.5	[13] 3.7	[12] 25,280	[10] 24,300	[10] 21,500
1958	[10] 38,482.1	[10] 27,580					[12] 25,675	[11] 24,900	[11] 22,500
1959	[10] 35,411.1	[7] 28,160	[10] 788.5	[10] 3.0	[13] 1.7	[13] 4.1	[10] 24,101	[11] 24,500	[11] 22,100
1960	[11a] 32,300	[6] 23,626					[6] 21,733	[6] 22,300	[6] 20,100
1961	[11a] 30,400	[11a] 21,900	[6] 836.1		[13] 1.9	[13] 5.0	[6] 20,323	[6] 20,700	[6] 18,700
1962	[6] 28,550	[11a] 21,200	[6] 782.4		[13] 1.8	[13] 5.3	[6] 19,784	[10] 20,000	[10] 18,100
1963		[7] (20,000)		[10] 3.1			[6] 19,198	[6] 19,400	[6] 17,600
1964							[10] 19,601	[10] 19,200	[10] 17,700
1965							[6] 18,600		

Year	Annual average number of labor-days earned or man-days worked by—				Total number of labor-days earned (millions)	Conversion factor (number of labor-days per 1 man-day)	Total number of man-days (millions)	Number of able-bodied equivalent farmers who worked [4] (thousands)
	All ages		Of which, able-bodied					
	Labor-days	Man-days	Labor-days	Man-days				
	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
1937	[9] 194	[9] (149)	[9] 238	----	[5] 7,693	[19] 1.30	[11] (6,072)	[12] (36,206)
1940	[10] 222	[9] (171)	[9] 254	[56] 195	[5] 9,319	[17] 1.30	[11] (7,168)	[12] (36,689)
1950	[8] (268)	[9] (179)	[20] 251	----	[5] 8,286	[17] 1.16	[11] (7,143)	[21] 32,600
1951	[8] (221)	[9] (178)	----	----	[5] (8,490)	[17] 1.24	[11] (6,839)	----
1952	[8] (236)	[9] (170)	----	----	[5] 8,847	[17] 1.39	[11] (6,365)	----
1953	[8] (241)	[9] (166)	[26] 295	[56] 200	[5] 9,605	[17] 1.45	[11] (6,210)	[12] (30,525)
1954	[8] (262)	[9] (168)	[26] 317	[56] 226	[5] 9,852	[17] 1.56	[11] (6,315)	[12] (31,079)
1955	[8] (271)	[9] (166)	[26] 335	[26] (220)	[5] 10,852	[17] 1.63	[11] (6,658)	[12] (32,394)
1956	[8] (286)	[9] (159)	[26] 331	[26] (205)	[5] 11,103	[17] 1.69	[30] 6,810	[12] (33,544)
1957	----	----	[26] 335	[26] (214)	----	[17] 1.74	----	----
1958	----	[33] 193	[26] 342	[26] 214	[55] 10,300	[17] 1.78	[30] 6,840	[12] (30,117)
1959	----	[46] 170	[26] 348	[46] 205	----	[41] 1.70	[47] 6,145	[21] 30,700
1960	----	[47] 163	[26] 326	[47] 197	----	----	[48] 5,271	[12] (26,750)
1961	----	[47] 160	----	[47] 198	----	----	[48] (5,350)	[12] (27,020)
1962	----	[47] 157	----	[47] 199	----	----	[48] 4,761	[12] (23,875)
1963	----	----	----	----	----	----	----	----
1964	----	----	----	[60] 196	----	----	----	----
1965	----	----	----	----	----	----	----	----

NOTE.—Leaders (.....) indicate not available.

NOTE.—Footnotes 1-53 are given in "Current Economic Indicators," table VI-8, pp. 84-85.

[54] Ye. Karnaukhova, "Secure Full Employment of Collective Farmers During the Course of the Year," Kolkhozno-sovkhoznoye proizvodstvo (Collective Farm-State Farm Production), No. 1, January 1965, p. 22.

[55] Nar. khoz. v 1964, p. 420.

[56] Ibid., p. 419.

[57] Estimated from data on the number of able-bodied collective farmers per farm, in Venzher, op. cit., p. 111; and Nar. khoz. v 1963, p. 348.

[58] Mashenkov, "Labor Resources * * *," op. cit., p. 23.

[59] T. I. Zaslavskaya, Raspredeleniye po trudu v kolkhozakh (Distribution According to Work on Collective Farms), Moscow, 1966, p. 40.

[60] Tsifrakh v 1965, p. 21.

TABLE A–5.—*U.S.S.R. and U.S. employment, by nonagricultural and agricultural sectors, 1940–65*

[In thousands; figures in parentheses are estimated]

Year	U.S.S.R.			United States					
				Constructed series			Household interview series		
	Total, excluding domestics, day laborers, etc.	Nonagricultural sector	Agricultural sector	Total, excluding employment in private households	Nonagricultural sector	Agricultural sector	Total, excluding employment in private households	Nonagricultural sector	Agricultural sector
1940	70,619	26,129	43,890	47,433	37,893	9,540	45,329	35,780	9,540
1950	79,858	41,100	38,758	58,985	51,478	7,507	57,962	50,455	7,507
1955	81,938	45,324	36,646	63,190	56,628	6,562	60,231	53,669	6,562
1955	87,382	48,250	39,134	63,736	57,026	6,730	60,978	54,248	6,730
1956	90,157	49,929	40,228	65,453	58,868	6,585	62,620	56,035	6,585
1957	91,284	51,757	39,527	65,705	59,483	6,222	62,683	56,461	6,222
1958	93,577	53,845	39,757	63,787	57,943	5,844	61,510	55,666	5,844
1959	94,686	56,133	37,952	65,710	[1] 59,874	5,836	63,961	57,225	5,836
1960	95,462	57,985	37,384	[1] 66,619	60,896	5,723	[1] 64,192	58,469	5,723
1961	98,008	60,702	37,283	[1] 66,229	60,766	5,463	[1] 64,202	58,739	5,463
1962	99,771	62,728	37,059	[1] 67,434	62,244	5,190	[1] 65,221	60,031	5,190
1963	100,793	64,549	36,246	[1] 68,207	63,261	4,946	[1] 66,226	61,280	4,946
1964	103,264	66,765	36,598	[1] 69,451	64,690	4,761	[1] 67,736	62,975	4,761
1965	(106,428)			[1] (71,773)	(67,188)	4,585	[1] 69,631	65,046	4,585

NOTE.—Leaders (.....) indicate not available.

[1] Beginning in 1960, all U.S. data include Alaska and Hawaii. For 1959, only the Bureau of Labor Statistics component data, based on establishment payroll records, include Alaska and Hawaii. (See table A–6.)

Source: U.S.S.R.: Table A–7. Nonagricultural and agricultural employment as shown in table 5 was adjusted in order to achieve greater comparability for U.S.S.R.-United States comparisons. Employment in U.S.S.R. agriculture for such activities as repair of machinery and equipment, and industrial and construction activities was transferred to the nonagricultural sector. Detailed numerical adjustments are shown in table A–7. United States: No adjustments were made to transfer from agricultural employment such farm activities as the repair of machinery and equipment, and logging operations of farmers. A Soviet economist, Ya. Iofle, contends that U.S. agricultural employment statistics omit women who cook for hired laborers on farms, whereas in the U.S.S.R. employment of cooks in field camps is included. (Ya. Iofle, "The Level of Labor Productivity in the U.S.S.R. and the U.S.A.," Planovoye khozyaystvo [Planned Economy], No. 3, March 1960, p. 51.) Constructed series: Table A–6. Household interview series: For all years except 1960, the subtraction of employment in private households from total employment and the nonagricultural sector is based on data given in the annual reports for this series. The 1960 estimate for employment in private households, 2,280,000, is based on national income data (U.S. Department of Commerce, Office of Business Economics, "National Income, 1954 Edition, A Supplement to the Survey of Current Business, 1954," table 25, pp. 196 and 197). 1940: Bureau of the Census, "Statistical Abstract of the United States, 1960," 1960, table 263, p. 205. 1950: Annual Report on the Labor Force, 1950, series P–50, No. 31, March 1951, table 9, p. 23. 1953: Annual Report on the Labor Force, 1954, series P–50, No. 50, April 1955, table C–9. 1955: Annual Report on the Labor Force, 1955, series P–50, No. 67, March 1956, table 12, p. 28. 1956: Annual Report on the Labor Force, 1956, series P–50, No. 72, March 1957, table 12, p. 28. 1957–60: U.S. Department of Labor, "Labor Force and Employment in 1960," by Robert L. Stein and Herman Travis, "Special Labor Force Report, No. 14," table C–4, p. A–21. 1961: "Labor Force and Employment in 1961," by Carol Kalish, Frazier Kellogg, and Matthew Kessler, "Special Labor Force Report, No. 23," table C–4, p. A–20. 1962: "Labor Force and Employment, 1960–62," by Jane L. Meredith, "Special Labor Force Report, No. 31," table C–4, p. A–18. 1963: "Labor Force and Employment in 1963," by Susan S. Holland, "Special Labor Force Report, No. 43," table C–4, p. A–18. 1964: Bureau of Labor Statistics, "Employment and Earnings, Annual Supplement Issue," vol. 11, No. 7, January 1965, p. 74. 1965: Bureau of Labor Statistics, "Employment and Earnings, Annual Supplement Issue," vol. 12, No. 7, January 1966, p. 74.

holds from total employment and the nonagricultural sector is based on data given in the ... p. 14. ...65: Bureau of Labor Statistics, "Employment and Earnings, Annual Supplement Issue," vol. 12, No. 7, January 1966, p. 74.

TABLE A–6.—*Civilian employment in the United States, by major employment categories, 1940–65*

[In thousands; figures are independently rounded and may not add to totals; figures in parentheses are estimated]

Source of information and major employment category [1]	1940	1950	1953	1955	1956	1957	1958	1959	1960 [2]	1961 [2]	1962 [2]	1963 [2]	1964 [2]	1965 [2]
Total civilian employment, excluding private household workers [3]	47,433	58,995	63,199	63,756	65,453	65,705	63,787	65,719	66,619	66,229	67,434	68,297	69,651	(71,773)
BLS data based on establishment payroll records—wage and salary employment [4]	32,376	45,222	50,232	50,675	52,498	52,894	51,368	[2]53,297	54,283	53,999	55,515	56,682	58,156	60,432
Mining	925	901	898	792	822	828	751	732	712	672	659	635	633	628
Contract construction	1,294	2,333	2,623	2,802	2,999	2,923	2,778	2,980	2,885	2,816	2,982	2,963	3,056	3,211
Manufacturing	10,985	15,241	17,549	16,882	17,263	17,174	15,945	16,675	16,796	16,326	16,853	16,995	17,259	17,984
Transportation, communications, and public utilities	3,038	4,034	4,290	4,141	4,244	4,261	3,976	4,011	4,004	3,903	3,906	3,903	3,947	4,031
Wholesale and retail trade	6,750	9,396	10,247	10,535	10,858	10,896	10,750	11,127	11,391	11,337	11,566	11,778	12,132	12,585
Finance, insurance, and real estate	1,502	1,919	2,146	2,325	2,429	2,477	2,519	2,594	2,669	2,731	2,800	2,877	2,964	3,043
Services and miscellaneous	3,681	5,262	5,867	6,274	6,536	6,749	6,811	7,115	7,392	7,610	7,947	8,226	8,569	8,903
Government	4,202	6,026	6,645	6,944	7,277	7,616	7,839	8,063	8,353	8,594	8,890	9,225	9,595	10,046
BLS-Census data based on household interviews—wage and salary, self-employed, and unpaid family employment [5]	10,999	7,911	6,985	7,254	7,166	6,948	6,449	6,432	6,338	6,125	5,813	5,533	5,355	5,201
Agriculture	9,560	7,597	6,562	6,739	6,585	6,222	5,844	5,836	5,723	5,463	5,190	4,946	4,761	4,585
Unpaid family employment (nonagricultural)	539	404	423	534	581	626	685	597	615	662	623	587	594	616
NID data—self-employed (nonagricultural) [6]	4,997	5,862	5,973	5,827	5,879	5,963	5,970	5,899	6,078	6,115	6,106	6,072	6,140	[7](6,140)

[1] BLS refers to the U.S. Department of Labor, Bureau of Labor Statistics; Census refers to the U.S. Department of Commerce, Bureau of the Census; NID refers to the U.S. Department of Commerce, Office of Business Economics, National Income Division.

[2] Beginning in 1960, all data include Alaska and Hawaii. For 1959, only BLS data based on establishment payroll records include Alaska and Hawaii.

[3] Employment excludes that for private household workers since no employment estimates are available for the U.S.S.R. for domestics, day laborers, etc. Employment estimates for private household workers are reported in the former series of Annual Reports on the Labor Force, issued by the U.S Department of Commerce, Bureau of the Census, and now in the Special Labor Reports, prepared by the U.S. Department of Labor, Bureau of Labor Statistics. A similar series for workers in private households is presented in the various National Income editions of the Survey of Current Business. See, Joint Economic Committee, "Current Economic Indicators for the U.S.S.R.," Washington, 1965, table VI–10, footnote 3, p. 88, for further details.

[4] Manpower Report of the President, Washington, March 1966, table C–1, p. 198.

[5] Same as Current Economic Indicators, op. cit., footnote 5, p. 88, except for 1965 which is from Bureau of Labor Statistics, Employment and Earnings, Annual Supplement Issue, vol. 12, No. 7, January 1966, table A–12, p. 74.

[6] 1948–59, same as Current Economic Indicators, op. cit., table VI–10, p. 87. 1953–64 computed from revised, unpublished estimates of the National Income Division, Office of Business Economics, U.S. Department of Commerce. The number of full-time equivalent employees, by industry, less those for farms, was subtracted from the number of persons engaged in production, less those for farms.

[7] Assumed to be the same as in 1964.

TABLE A–7.—*Adjustment of U.S.S.R. civilian employment to correspond to U.S. nonagricultural and agricultural sectors, 1940–64*

[Figures are annual averages and are in thousands]

Employment category	1940	1950	1953	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964
Total civilian employment	79,089	79,658	81,936	87,362	90,137	91,264	93,577	94,096	95,402	96,698	99,771	100,793	103,364
Nonagricultural branches	35,129	41,109	45,334	48,259	49,929	51,757	53,845	56,133	57,965	60,702	62,726	64,549	66,765
Workers and employees (excluding agricultural establishments and forestry)	28,216	35,014	39,218	41,834	44,052	45,978	48,043	50,319	54,550	57,645	59,692	61,788	64,302
Members of producers' cooperatives	2,200	1,500	1,600	1,600	1,200	1,200	1,300	1,400	[1]	[1]	[1]	[1]	[1]
Independent artisans	604	264	214	164	195	145	156	174	174	174	174	[1]	[1]
Collective farms	3,100	3,080	2,697	2,716	2,834	2,766	2,960	3,019	2,054	1,902	1,873	1,762	1,459
Agricultural	2,700	2,600	2,400	2,300	2,400	2,300	2,700	2,700	1,600	1,600	1,700	1,600	1,300
Nonagricultural [2]	400	480	297	416	434	466	260	319	454	302	173	162	159
State agricultural establishments	730	878	1,189	1,347	1,258	1,289	1,019	869	846	603	600	600	600
State farms and subsidiary state agricultural establishments [3]	200	200	300	200	200	300	300	400	500	600	600	600	600
Machine tractor stations (repair-technical stations)	530	678	889	1,147	1,058	989	719	469	346	3	[1]	[1]	[1]
Forestry	279	444	416	399	300	377	367	352	359	376	389	399	404
Agricultural branches	43,960	38,738	36,646	39,134	40,228	39,527	39,757	37,952	37,384	37,253	37,059	36,246	36,598
Workers and employees	4,606	5,046	5,113	5,787	5,694	7,231	8,195	8,238	9,979	11,464	11,941	11,900	12,128
State farms and subsidiary state agricultural establishments	1,560	2,225	2,252	2,632	2,725	3,661	4,314	4,557	5,524	6,766	7,130	7,274	7,471
Agricultural activities not specifically identified	407	334	356	260	290	276	362	412	451	469	469	465	481
Private subsidiary economy	2,639	2,487	2,505	2,895	2,679	3,302	3,519	3,269	3,704	4,229	4,322	4,161	4,176
Collective farms	33,934	32,560	31,460	33,296	34,288	32,160	31,529	29,690	27,390	25,807	25,109	24,346	24,470
Agricultural	24,700	24,200	23,109	23,900	24,600	23,000	22,400	21,400	20,100	18,700	18,100	17,600	17,700
Nonagricultural [2]	100	100	74	104	108	117	65	90	113	75	63	40	40
Private subsidiary economy	9,134	8,260	8,386	9,292	9,580	9,043	9,064	8,210	7,177	7,032	6,986	6,706	6,730
Individual peasants	5,950	1,152	53	51	46	36	33	24	17	12	9	0	0
Correction for rounding	0	0	−42	−2	−20	−20	−25	+1	+33	+23	−16	−2	+1

[1] Not applicable.

[2] 80 percent of all employment in nonagricultural collective farms was allocated to the nonagricultural branches and 20 percent to agricultural branches.

[3] Obtained by subtracting agricultural from total employment on state farms as reported in the statistical handbooks.

Source: Table 5 and "Current Economic Indicators," table VI–12, p. 90, except as noted.

HIGH-LEVEL MANPOWER IN THE U.S.S.R.

BY

NICHOLAS DEWITT

CONTENTS

TABLES

HIGH-LEVEL MANPOWER IN THE U.S.S.R.*

The importance of high-level manpower to the economic, political and social development of nations can hardly be overemphasized. One of the distinctive features of the development strategy of the U.S.S.R. has been the prominent role assigned to education, particularly to higher professional and secondary specialized education, as both an instrument of and a major ingredient of the process of Soviet economic growth and development.

In past decades as well as for the foreseeable future, the quality of human skill was and will serve as a decisive element in the Soviet drive toward modernizing the nation's economic activity, maintaining and energizing human organization for maximum production, and applying accumulated knowledge to the efficient use of physical resources. Whereas land, capital, raw materials, technology and—to a large extent—raw and untrained labor itself, are but passive economic inputs, educated human resources and especially high-level manpower are active agents in the process, serving to integrate and mobilize the other factors of production. Were it not for the use of high-level manpower as a decisive integrating agent, these passive resources would have remained largely idle in the process of providing for the advances in the material welfare of Soviet citizens and the expansion of the Soviet system as a world power.

The present report investigates in summary fashion the development and utilization of high-level manpower in the Soviet economy from the standpoint of the influence it exerts in advancing organizational, managerial, technical, and research capabilities of the U.S.S.R. Specifically, this report summarizes data and reviews recent developments in Soviet education and manpower training policies, in particular as they affect the supply of specialized professional manpower.[1] Obviously, the quality of human resources available for the achievement of economic expansion is determined largely by the domestic system of education. Therefore, Soviet planning efforts designed to integrate education and the training of cadres of specialized personnel with economic development must be reviewed briefly in order to

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*This paper was prepared by Dr. Nicholas DeWitt in his capacity as consultant to the National Science Foundation, Office of Economic and Manpower Studies. The cooperation of Dr. Bowen C. Dees, Dr. H. E. Riley and Mr. Joseph P. Kozlowski is gratefully acknowledged. Most of the material for this report was gathered from Soviet primary sources and represents an up-dated analysis of information presented in the author's earlier studies: N. DeWitt, "Education and Professional Employment in the U.S.S.R.," National Science Foundation, 1961, and N. DeWitt, "Costs and Returns in Education in the U.S.S.R.," unpublished Ph. D. thesis, Harvard University, 1962. Dr. DeWitt is currently associate professor of economics and government, Indiana University, and director of the Carnegie Corp. project, "International Survey of Educational Development and Planning."

[1] All data for the pre-1961 period originate in Soviet primary publications indicated and referred to as sources in N. DeWitt, "Education and Professional Employment in the U.S.S.R.," National Science Foundation, 1961, passim. The compilation of facts and figures, unless specifically noted otherwise, is from: "Tsentral'noe Statisticheskoe Upravlenie SSSR" (Central Statistical Administration of the U.S.S.R.), "Narodnoe khoziaistvo SSSR v * * * godu" (National Economy of the U.S.S.R. in * * * year), Moscow. These are statistical yearbooks for 1961, 1962, 1963, and 1964, published respectively in 1962, 1963, 1964 and 1965.

ascertain the responsiveness of the educational system to the growing and changing needs of the Soviet economy.

Education and Manpower Planning

It is an accepted textbook maxim that in any country the purposes of education are shaped by the attitudes of the particular society, by its cultural heritage, its political, economic, and social institutions, and—to a greater or lesser extent—by the "world outlook" of the leadership upon which that society is based. In characterizing the communist commitment to education, it must be recognized that Soviet society is a planned society and that, as such, the Government of the U.S.S.R. maintains a centrally planned economy requiring, in turn, a certain optimal combination of human skills. Ever since Lenin declared that education should be a weapon for moving society forward on the road to communism, the Soviet leaders have used their educational system to serve the needs of the state and to help attain its goal. It is a major thesis of the doctrine of socialism, and of communism, that economic activity, including all aspects of manpower requirements and thus the educational system which produces this trained manpower, should, and indeed can, be subjected to systematic planning.

The specific function of Soviet educational planning is to set up a scale of preferences for various kinds of specialized manpower, based on the overall economic plan, and to assure that the proper numbers of qualified students are channeled into each type and level of training. The Soviet technique of such planning is essentially that of establishing a system of "labor balances," that is, matching "flows" of new graduates, by type and level, with the "requirements" for such graduates estimated on the basis of current and projected parameters of the labor force by education, occupation and sectoral employment. In pursuing this approach, the Soviet Union attempts to integrate educational and manpower policies much more closely with economic and political objectives than is done by most other modern industrial countries whose policies are based on a pluralistic approach to national decision-making and values. This integration of education into overall economic planning has, in turn, engendered a pronounced shift toward functional education in the U.S.S.R., with the individual's potential usefulness for the performance of productive tasks serving as the dominant criterion of the type, extent, and quality of education the person in question should receive.

Current Reforms of the Soviet System of Education

Although the operational details of the educational system of the U.S.S.R. are presently in the process of change, its basic characteristics are expected to remain unaltered. In the U.S.S.R. the educational system is designed to serve, not the individual, but the collectivist state which, by identifying its own interests with the common good of the society, subordinates the individual—his rights, privileges, choices, and his entire physical and mental training—to its own particular needs. It is only within the confines of choice determined by the state that the individual may develop his personal abilities. This substitu-

tion of the concept of service to the state for the concept of individual benefit constitutes the fundamental distinguishing feature of Soviet educational philosophy and practice.

To be sure, a young Soviet citizen chooses his special field of training in accordance with his abilities, parental prodding, motivation and the incentives which society offers. But the options of training, specialities of study, curricula, syllabi and contents of instruction—and above all—admission quotas to different levels and types of schools are all determined by the national plan. In essence, the private demand for education is satisfied if, and only if, an individual succeeds in gaining access to the training options offered by the national plan, the educational options being determined on the basis of "need" for different kinds and levels of manpower.

Over the past decade the entire Soviet system of education has been in flux, highlighted by the introduction of Khrushchev's educational reforms in 1958. The meaning of these educational reforms, because of their complexity, was controversial to say the very least, not only among Western students of Soviet society but among Soviet planners, educationalists, and parents. During the early 1960's, as the reform began to unfold, most of the official Soviet press was celebrating in advance its successful fulfillment by 1965. Occasionally, however, a few highly skeptical voices could be heard expressing misgivings about its purpose and effectiveness. Then, at the point where the deadline of its full implementation began to be approached, in the summer of 1964,[1] the Soviet Government abruptly decreed the elimination of some of the major features of Khrushchev's educational program. This shift did not entirely come as a surprise to the author of this paper, for in his earlier studies [2] it was argued that the major aim of Khrushchev's school reform was guided by shortrun considerations.

It was argued then that the timing of the reform as well as some of its features were designed to speed up additions to the Soviet labor force of young people with skill qualications urgently needed to alleviate the shortages caused by current unfavorable demographic trends. The sharp drop in the birth rate caused by wartime conditions had affected the growth of the Soviet school-age population throughout the 1950's and curtailed the availability of new entrants into the work force in the early 1960's. The reform of 1958 was therefore aimed at alleviating this situation; and as the emergency eased, the reform lost its original purpose, with the result that some of its labor-channeling features were scrapped by the Soviet Government in 1964.

For almost three decades prior to 1958 the Soviet system of education had a rather stable structure of school grouping. It operated a system of primary, junior secondary, and senior secondary schools with a grade structure of 4–3–3. The 1958 reforms changed this structure to 4–4–3, with the addition of mandatory vocational training in the three upper grades of secondary school. The 1964 change, in turn, transformed the schools to a 4–4–2 structure, eliminating in the process, vocational training (and part-time employment) in the upper secondary schools.

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[1] See esp. Uchitel'skaia Gazeta, Aug. 15, Aug. 18, 1964.

[2] N. DeWitt, "Education and Professional Employment in the U.S.S.R.," National Science Foundation, 1961, esp. pp. 9–20, 83–90, and N. DeWitt, "Education and Development of Human Resources: Soviet and American Effort," in Joint Economic Committee, 87th Cong., 2d sess., Dimensions of Soviet Economic Power, 1962, esp. p. 251.

The U.S.S.R. today follows the practice—common to many countries—of having a standard curriculum in its primary-secondary schools of the general educational system. All pupils, as they progress through school, generally study the same subjects. There are some variations between urban and rural schools, for the purpose of allowing pupil participation in agricultural or industrial work, and small variations between Russian-language and native-language schools. Until the mid-1950's, primary and secondary schooling was intended primarily to lay the groundwork for higher education, weeding out the less competent pupils and providing those of demonstrated ability with a foundation of general academic knowledge required for further specialized learning (particularly in the sciences).

By design, the Stalinist educational system was geared to the development of a "learned elite," of a class of persons who, having devoted themselves almost exclusively to higher specialized learning, would be exempt from working with their hands. To be sure, the official social ethos and approved Marxist disquisitions required that their academic studies would be in some way related to "production" and to "labor," but neither of these was adequately defined. So long as the number of highly educated persons was relatively small and so long as they could be provided with white-collar and supervisory jobs, the emphasis on training a technocratic elite engendered little difficulty. But as the output of the Soviet educational system increased by leaps and bounds and when, as a consequence, it was no longer possible to provide white-collar and supervisory (however humble) jobs to all specialists, this new condition forced the introduction of reforms in education which resulted, on the one hand, in a massive diversion of students into applied training on the secondary schooling level and, on the other, the expansion of part-time evening and extension-correspondence programs combining practical work with study. This operational shift had, at the same time, the effect of raising the status of the men and women who "work" in Soviet society.

During the 1950's, secondary schooling was expanding more rapidly than the other components of the Soviet educational system. This rapid expansion of secondary schooling was also responsible, in part, for the educational reforms; namely, for the adjustment of the former largely academic curriculum to the needs of diversified and vocationally oriented training. In particular, during the late 1950's, first through a process of piecemeal adjustment and then by the means of radical institutional reform, the primary-secondary schools of the U.S.S.R. became institutions designed for turning out students who, in addition to having academic preparation, were trained in labor skills and were thus ready for employment. This modification was well suited for the emergency conditions at hand, but it did not provide for an effective solution of the longrun problems in education.

The longrun objective calls for an improvement and expansion of the formal training of the young along such lines as are required to enhance the total skill preparation of the labor force. The critical problem was how to achieve labor-oriented schooling for the mass of the population without sacrificing altogether the essential academic preparation of the relatively small number of persons required by the socioeconomic plan to be trained for advanced professional tasks. The practice of superimposing on the standard general education

curriculum a localized system of supplemental labor training shaped in accordance with local economic needs and the availability of skilled training outlets did not produce the desired results. First, students who received specific vocational skill training did not in most cases enter employment in the same skill. Meanwhile, the reform's emphasis on vocational-technical training in the general education schools and part-time employment of upper secondary school students resulted in a considerable deterioration of standards and quality of instruction. This had an adverse effect not only in primary-secondary general education, but also in semiprofessional and professional training programs which must absorb the graduates of the general education schools. Finally, the separate network of vocational-technical schools, which in the Soviet Union is specifically geared to apprenticeship training in economic enterprises, was handicapped by this change in recruiting entrants.

In training new skilled labor and improving the quality of the labor force, the Soviet Union depends on an elaborate system of schools. There are two components in the Soviet educational system which must be clearly distinguished. First, the general education schools, which until the mid-1950's were primarily concerned with the preparation of students for higher education, were equipped to offer an academic curriculum. The second component consisted of a system of schools specifically aimed at training semiskilled and skilled manpower and, on the secondary level, semiprofessionals. This dual division of functions reflects the philosophy of Soviet education which had prevailed over a period of almost four decades and which stipulated that specialized education could be offered more efficiently in a separate system of school facilities. Semiprofessional schools have been providing for the necessary diversity in training which the standard-curriculum, one-track, academic secondary schools did not. Under the current reforms, their training functions have been strengthened and enrollments considerably expanded. In addition, students who terminate general education 8-year schools will continue to be absorbed in the greatly expanded network of lower level vocational-technical schools for the training of skilled workers.

This report will not examine in detail the curricular changes in Soviet primary-secondary schools during the last 10 years.[1] It should suffice, for our purposes, to indicate that the initial increase in the total number of instruction hours (1955—10-year school, 9,554 hours; 1958–64—11-year school, 12,828 hours) introduced under Khrushchev's reform has been cut back[2] by an estimated 1,500–1,700 instruction hours in the post-1964 10-year schools. These cuts eliminated for the most part the applied vocational training and the apprenticeship employment requirement.

Indicators of Performance of the Soviet Educational System

Elementary education and junior secondary education are at present nearly universal in the U.S.S.R. However, it is on the senior secondary and higher education levels that selective education con-

[1] For discussion of school curricula materials see paper by Seymour M. Rosen in the present compendium.
[2] Uchitel'skaia Gazeta, Aug. 20, 1964.

tinues to prevail. Only about one-half of the respective age population of the U.S.S.R. is enrolled in educational establishments on the senior secondary school level. If we were to consider only the regular upper secondary grades of Soviet schools, only about one-third of the entire age group of youths is enrolled. Beyond that, in the Soviet Union only 6 percent of the total respective age group is enrolled in institutions of higher learning. But, if part-time students in higher education are considered, the rates of attendance would increase steeply—in fact, almost double.

Although the Soviet Government compiles very detailed educational statistics, it fails as a rule to make public the essential information concerning the progress of pupils by grade and age level; their success, promotion, and graduation rates, and the composition of admissions to the next-higher level of education by type of previous school preparation. Of necessity, then, any examination of the quantitative indices of Soviet educational performance must perforce rely on a set of aggregative correlations.

The general performance of the educational system of the U.S.S.R. can be examined in quantitative terms by relating enrollments on any given level of schooling to the respective age groups of population. The difficulty in comparing normal attendance age and school enrollment in the Soviet Union is caused by the inclusion of part-time students in the total. Thus, table 1 summarizes 1959 and 1965 data on aggregate enrollments (full-time and part-time) in relation to the age group, 7–24; and table 2 presents information on full-time enrollments in Soviet general education schools in relation to the respective age cohorts in primary, junior-secondary and senior-secondary grades.

TABLE 1.—*Aggregate enrollments in Soviet education in relation to population of school age, 1959 and 1965*

[In thousands]

Type of educational institution and enrollment category	1959	1965
Total population ages 7 to 24	68,800	72,500
1. Full-time formal education, total	32,776	46,763
By type of school:		
(a) General education primary-secondary (1 to 10/11) grades	29,567	42,008
(b) Full-time day semiprofessional schools (technicums)	1,125	1,634
(c) Full-time vocational-technical schools	904	1,607
(d) Full-time day institutions of higher education (VUZ)	1,180	1,514
Percent of population in full-time education	47.6	64.5
2. Part-time (extension and evening) education, total	3,666	8,442
By type of school:		
(a) General education schools for working and rural youth and adults	1,916	4,656
(b) Evening and extension semiprofessional schools	751	1,902
(c) (See below—on-the-job training)	None	None
(d) Evening and extension higher education	999	2,094
Ratio of part-time to full-time education (percent 2 to 1)	11.2	18.1
3. Other informal education—All types of on-the-job training and apprenticeship programs	9,615	13,721

TABLE 2.—*Full-time general school enrollments in relation to age groups, 1959 and 1965*

Level of grades and age group	1959			1965		
	Population (thousands)	School enrollment		Population (thousands)	School enrollment	
		Number (thousands)	Percent		Number (thousands)	Percent
Primary, grades 1 to 4 (ages, 7 to 10)	17,100	17,700	103.5	19,100	19,900	104.2
Junior secondary, grades 5 to 7/8 (ages, 11 to 14/15)	11,300	9,600	85.0	17,700	17,700	100.0
Senior secondary, grades 7/8 to 10/11 (ages, 14/15 to 17/18)	8,000	2,200	27.5	11,800	4,200	35.6
In all grades, 1 to 10/11 (ages 7 to 17/18)	36,400	[1] 29,500	81.2	48,600	[1] 41,800	86.2

[1] The slight difference in the figures in this table versus those in table 1 is due to the exclusion of students in schools for the physically handicapped and for the mentally retarded.

Examination of these data indicates that a substantial (17 percent) increment has been achieved during the current 7-year plan in rates of full-time school enrollment, along with a very substantial (almost 5 million) increment in part-time schooling. Although the recent educational reforms (both 1958 and 1964) place great emphasis upon part-time, evening, and extension-correspondence training (enrollments more than doubled over the last 7 years), the largest proportion of students still continues its schooling on a full-time basis. At the same time, it is evident (see table 2) that over the last 7 years, junior-secondary schooling in the U.S.S.R. has indeed become universal. Senior-secondary education, however, continues to be highly selective, accommodating only slightly over one-third of the youngsters of the pertinent age group.

SEMIPROFESSIONAL SECONDARY EDUCATION

Semiprofessional schools (technicums) and lower vocational schools provide opportunities for additional training at the secondary level. The aim of instruction in the semiprofessional schools is to train the students in skills and knowledge that will qualify them for employment on the intermediate levels of professional competence. In 1964 there were 3,326,000 students in 3,717 technicums. Whereas, moreover, in 1964 the number of graduates was 558,000, this number rose to some 600,000 in 1965, approximately one-half of whom had obtained diplomas in evening and extension-correspondence divisions.

Until the early 1950's, Soviet semiprofessional schools were as a rule 4-year secondary schools, accepting persons with a 7-year junior-secondary education who could pass the competitive entrance examinations. They were thus in effect the vocational-technical school counterparts of the upper secondary grades of the Soviet 10-year school. In the course of the 1950's new programs began to be set up within the existing semiprofessional schools, and by 1964 about 40 percent were enrolled in 1½- to 2½-year programs offering training to graduates of the Soviet secondary school. At the present time, the major emphasis is being placed upon the expansion of semiprofessional schools as institutions similar to "junior college" expansion in the United States. Soviet policymakers hope to attain a ratio of 2 to 4 semi-

professional graduates per each professional higher education graduate. However, this ratio has not yet been reached, as indicated by the following data:

Specialized graduates	1959	1964	1965
1. Semiprofessional schools	527,900	558,300	621,400
2. Higher education schools	338,900	354,000	403,800
Ratio of row 2 to row 1	1 : 1.6	1 : 1.6	1 : 1.5

The renewed emphasis on semiprofessional education in the Soviet Union is a reflection of changing demand conditions in the field. There has been an intensified demand in recent years for persons in intermediate supporting positions in the economy at large. Furthermore, because the withdrawal rate (for personal reasons, or service in the armed forces or the continuation of training in higher education) from employment among semiprofessionals is substantially higher than that among professionals, the Soviet Government has conveyed its decision that their output be accelerated. A summary of the total number of Soviet semiprofessional graduates and their distribution by field is presented in table 3.

TABLE 3.—*Graduates of Soviet semiprofessional schools, 1928–64*

	Graduates, 1928–64 (thousands)	Distribution in percent
Engineering-industrial technicians	3,579.2	38.0
Agricultural	1,431.3	14.5
Socioeconomic	835.9	8.8
Educational-cultural	1,974.9	20.7
Health-medical	1,718.4	18.0
Total	9,539.7	100.0
Regular attendance	8,436.7	88.4
Extension-correspondence attendance	1,103.0	11.6

The above data reveal that during the period 1928–64 the main effort of the Soviet semiprofessional schools was concentrated on the training of industrial technicians (38 percent of all graduates). This high-priority category was followed by semiprofessionals in the educational-cultural field (20 percent) and the health-medical fields (18 percent). During the recently completed 7-year plan the emphasis on training technicians for industry has, in fact, been still further intensified, particularly during the period 1960–64, when among the total 1,951,000 technicum graduates, technicians for Soviet industry accounted for 903,000, or about 46 percent.

LEVELS OF EDUCATIONAL ATTAINMENT

The results of a country's educational effort can of course, be measured in various ways. One of these measures is the educational attainment of the population (and the labor force as a major component). The educational attainment of a nation is often expressed in physical units—level of school completed by a given number of people. Soviet data on this score are very revealing when arranged in proper sequence and subjected to analysis as presented in table 4.

TABLE 4.—*Educational attainment levels of total population and persons employed in gainful occupations aged 15 and over, in Russia and the U.S.S.R., 1897, 1926, 1939, 1950, 1959, and 1965*

[In thousands]

Levels of educational attainment of population aged 15 and over	January 1965 estimate		January 1959 census		January 1951 estimate		January 1939 census				December 1926 census		February 1897 census	
							Postwar boundaries		Prewar boundaries				Empire boundaries	
	Population	In gainful occupations	Population	In gainful occupations	Population	In gainful occupations	Population	In gainful occupations	Population	In gainful occupations	Population	In gainful occupations	Population	In gainful occupations
1. Higher education, total	8,000		5,516	4,452	3,241	2,430	1,838	1,347	1,691	1,240	602	293	139	56
2. Completed higher education	5,600	4,548	3,778	3,047	2,200	1,650	1,177	883	1,094	803	452	220	93	37
3. Partial higher education	2,400		1,738	1,405	1,041	780	661	494	597	438	150	73	46	19
4. Secondary education, total	68,300		51,355	38,471	28,246	21,185	14,028	9,357	12,677	8,452	5,004	2,151	1,245	502
5. Complete secondary specialized (technicum)	10,600	6,702	7,870	6,353	5,272	3,954	3,599	2,400	3,252	2,164	1,250	537	172	69
6. Complete secondary general (10-year)	12,000		9,936	7,355	5,012	3,759	3,393	2,264	3,067	2,045	1,250	537	358	144
7. Partial secondary general (7- to 10-year)	45,700		33,549	24,763	17,962	13,472	7,036	4,693	6,358	4,243	2,504	1,077	715	289
8. Education beyond partial secondary (7-year), total	76,300		56,871	42,923	31,487	23,615	15,866	10,704	14,368	9,692	5,606	2,444	1,584	558
9. Total population	229,200		208,827		182,000		190,678		170,557		145,028		125,681	
10. Population aged 15 and older	158,200		147,586	99,130	125,000	83,750	123,564	89,213	109,099	78,797	89,344	37,758	82,406	33,202
11. Illiterates	3,000		4,183		6,250		24,466	12,233	21,602	10,800	44,583	18,814	62,628	25,239
12. Literate population with 6 or less years of education	78,900		86,532	56,207	87,253	60,135	83,232	66,276	73,129	58,305	39,695	16,500	15,394	7,405

Over the past few decades, illiteracy has been virtually eliminated in the U.S.S.R. During the period of Soviet rule the number of persons with elementary and partial junior-secondary education grew on a vast scale. The expansion of the system of general education—particularly during the recent 7-year plan—increased the number of persons with 7 or more years of schooling fivefold as compared with immediate years prior to World War II. At this particular level some 20 million persons were educated in the last 7 years alone. The median number of school years completed by the adult population of the U.S.S.R. is presently approaching 6 to 6.5 years, a gain of almost 2 years over the last 7 years.

The aforementioned quantitative changes unmistakably reflect the educational policies of the Soviet Government. During the 1930's when the school system was small, the main effort of the system was aimed at the elimination of illiteracy, mainly by providing for compulsory and universal primary (4-year) education. Higher education was restricted to less than 2 percent of the pertinent age group. Since the late 1930's, and particularly in the 1950's, the secondary schooling network has been expanding more rapidly than other components of the Soviet educational system. In the late 1940's and 1950's, by comparison, this expansion at the secondary level was not matched by the growth of facilities for higher education. As a result, the rate of growth of professionals with completed higher education in relation to population trailed the growth of population with completed secondary schooling. In recent years, however, this trend has been reversed; the expansion of the system of higher education with its important adjunct—semiprofessional training—has been greatly accelerated.

Higher Education Programs in the Soviet Union

Education beyond the secondary school in the Soviet Union, as elsewhere, is pursued in a network of institutions of higher learning. In many respects, however, Soviet higher education is quite different from its counterpart in American and most West European countries. All higher education in the Soviet Union is a public service provided by the state, and all higher education programs are designed to develop individual talent for specialized professional employment in the economy. The 754 institutions of higher learning in existence in the U.S.S.R. are operated by the Central Government, which alone determines all such issues as to the number of institutions to be maintained, the programs of instruction to be offered, the number of students to enroll, the staff to keep, the facilities to operate, and all the other questions of educational policy and practice. The individual institutions have some autonomy in regard to deciding on minor operational matters, but all major questions of educational policy are resolved by the All-Union (Central) Government. This centralized administration is the hallmark of Soviet higher education, which is thus integrated into the overall centralized planning of the economic and social development of the country.

Training at the higher education level in the U.S.S.R. may be obtained through attendance at higher educational institutions of several

types. Included in this category are medical institutes with a 6-year course of training; engineering institutes and universities with 5- to 5½-year courses; agricultural, pedagogical, and socioeconomic institutes with 4 or 5 years of training; and teacher training institutes with 2 years (now replaced by 4- and 5-year pedagogical institutes).

All Soviet higher educational establishments are occupationally oriented establishments: The Soviet Union does not have any general education or liberal arts colleges or any other nonprofessionally oriented undergraduate programs of instructions such as are commonly found in American colleges and universities. Soviet institutions of higher learning combine under one roof undergraduate college education and the professional school training of American universities. Soviet students trained in these various types of universities or institutes follow standardized curriculums and receive diplomas (but not degrees) upon graduation.

In the Soviet Union, as elsewhere, students are educated in diverse fields of specialization. The Soviet philosophy of higher education is firmly rooted in the conviction that man is required to perform a specific task in society. Those who advance into higher education, therefore, must become specialists in some approved task so that they may make maximum use of their capabilities. What gives Soviet higher education its distinct character in regard to the concept of functional education is the degree of specialization derived during the course of formal training. Largely because of this specialization, Soviet professional schools are maintained as independent units—called "institutes"—which are physically separated from one another.

The student's field of study in higher education is designated by the term "specialty" (spetsial'nost'). All students acquire a specialty as a result of higher education study. This applies to any field of knowledge, be it science, engineering, literature, the fine arts, ballet, schoolteaching, or medicine. The Soviet student chooses his specialty at the time he enters higher education, then embarks on a well-defined program which he must complete in order to qualify as a "specialist" in the narrow occupational meaning of the term. "Specialization" in the U.S.S.R., therefore, has a considerably narrower meaning than in American professional education; it entails training in an individual, narrowly defined field of professional knowledge, which will equip the student to perform a given occupational job. Professional specialization in the Soviet Union is in fact much more highly differentiated than anywhere else in the world.

Higher Education Graduations: Recent Trends and Projections for 1970

Table 5 summarizes data on graduations from Soviet higher education institutions by branch of study and time period. Table 6 presents further information for selected years, 1950–64, on graduations from Soviet higher education by specialty groups. While there was a substantial increase in the output of professionals for the engineering-industrial branch, it is to be particularly noted that in recent years there has been a fundamental shift in the training of engineers—a decline in the output of engineering graduates for basic extracting in-

dustries and large increases in the training of engineers for advanced branches of technology (particularly electronics).

During the 1928–64 period, the Soviet Union trained about 5,800,000 professionals in all fields, of whom about one-third were in engineering fields and about one-fifth were educational specialists. During the recently completed 7-year plan period (1959–65), the annual output of graduates by specialty branch of professional training reflects the dominance of these same two fields—education and engineering. The output of graduates in agricultural and medical fields in recent years has remained about stationary, and the output in education shows a slight decline. In the early 1960's, there was a particular upsurge in enginering field graduates, both in absolute numerical terms and as a proportion of the total graduating classes.

TABLE 5.—*Graduations from Soviet higher educational establishments by branch and period, 1928–64*

[In thousands and percent]

Fields of study	1928		1st 5-year plan 1928–32			2d 5-year plan 1933–37			3d 5-year plan 1938–40			War years 1941–45			4th 5-year plan 1946–50		
	Total	Percent	Total	Per annum	Percent	Total	Per annum	Percent	Total	Per annum	Percent	Total	Per annum	Percent	Total	Per annum	Percent
1. Engineering-industrial	8.9	31.1	67.7	16.92	39.8	134.4	26.88	36.3	89.8	29.93	27.4	70.8	14.16	23.4	134.1	26.82	20.6
(a) Industry and construction						107.4	21.48	29.0	72.0	24.00	22.0	54.2	10.84	17.9	112.9	22.58	17.3
(b) Transportation and communication						27.0	5.40	7.3	17.8	5.93	5.4	16.6	3.32	5.5	21.2	4.24	3.3
2. Agriculture	6.4	22.3	30.6	7.65	18.0	41.6	8.32	11.2	31.2	10.40	9.5	21.7	4.34	7.2	45.3	9.06	6.9
3. Socioeconomic	2.0	6.8	17.9	4.47	10.5	[1] 73.6	14.72	19.9	[1] 23.2	7.73	7.1	12.1	2.42	4.0	38.8	7.76	6.0
4. Educational-cultural	5.2	18.2	34.6	8.65	20.4	84.2	16.80	22.8	140.0	46.66	42.6	135.0	27.00	44.7	324.7	64.94	49.8
(a) Education									137.4	45.80	41.8	131.4	26.28	43.5	316.1	63.22	48.5
(b) Arts									2.6	.86	.4	3.6	.72	1.2	8.6	1.72	1.3
5. Health-medical	6.2	21.6	19.2	4.80	11.3	36.1	7.22	9.8	4.0	14.60	13.4	62.4	12.48	20.7	109.1	21.82	16.7
Grand total T	28.7	100.0	170.0	42.50	100.0	369.9	63.50	100.0	328.2	107.50	100.0	302.0	60.40	100.0	652.0	130.40	100.0
Grand total R	28.7	100.0	170.0	42.50	100.0	369.9	63.50	100.0	304.3	99.53	92.7	286.0	57.20	94.7	561.0	112.20	86.0
Grand total E	None		None			None			23.9	7.97	7.3	16.0	3.20	5.3	91.0	18.20	14.0

Fields of study	5th 5-year plan 1951–55			6th 5-year plan 1956–59			Total, 1928–59		1960 total	1961 total	1962 total	1963 total	1964 total	1960–64	
	Total	Per annum	Percent	Total	Per annum	Percent	Total	Percent						Total	Percent
1. Engineering-industrial	268.7	51.74	23.1	356.0	89.00	30.9	1,120.4	27.2	111.3	114.1	115.6	121.1	128.0	590.1	35.4
(a) Industry and construction	219.0	43.80	19.5						95.2	97.1	99.7	104.4	112.3		
(b) Transportation and communication	39.7	7.94	3.6						16.1	17.0	15.9	16.7	15.7		
2. Agriculture	91.5	18.30	8.2	121.4	30.30	10.5	389.7	9.3	34.7	31.8	30.8	31.4	34.1	162.8	9.7
3. Socioeconomic	71.2	14.24	6.3	88.1	22.00	7.6	[1] 326.7	7.9	25.0	24.7	24.1	24.8	28.1	126.7	7.6
4. Educational-cultural	612.2	122.44	54.6	489.9	122.50	42.4	1,825.8	44.3	141.6	124.3	115.8	122.9	131.8	636.4	38.1
(a) Education	599.4	119.88	53.4						139.1	121.8	113.2	119.9	128.8		
(b) Arts	12.8	2.56	1.2						2.5	2.5	2.6	3.0	3.0		
5. Health-medical	87.8	17.56	7.8	99.9	25.00	8.6	464.7	11.3	30.7	30.6	30.3	31.5	31.6	154.7	9.2
Grand total T	1,121.4	224.28	100.0	1,155.1	288.80	100.0	4,127.3	100.0	343.3	325.5	316.6	331.7	354.0	1,671.1	100.0
Grand total R	874.4	174.88	77.9	852.5	213.10	73.9	3,446 9.	83.5	228.7	204.9	196.1	200.7	200.8	1,030.2	61.7
Grand total E	247.0	49.40	22.1	302.6	75.70	27.1	680.4	16.5	114.6	120.6	121.5	131.0	153.2	640.9	38.3

[1] Includes Higher Communist Party school graduates during the mid-1930's.

T—Total.
R—Regular, day programs.
E—Extension-correspondence and evening programs.

TABLE 6.—*Comparison of the composition of Soviet higher education graduating classes by specialty group, 1950–64*

Specialty classification		1950		1955		1960		1964	
Specialty code	Specialty group	Number	Percent	Number	Percent	Number	Percent	Number	Percent
	Engineering-industrial, total	34,300	17.4	63,776	29.3	112,300	32.7	125,000	35.3
	Mining engineering, total	3,100	1.7	9,266	3.7	9,200	2.6	5,900	1.7
0100	(a) Geology and exploration of mineral deposits	1,700	1.0	3,976	1.6	3,900	1.1	2,400	.7
0200	(b) Exploitation of mineral deposits	1,400	.8	5,290	2.1	5,300	1.5	3,500	1.0
0400	Metallurgy	1,400	.8	2,656	1.0	3,900	1.1	3,600	1.0
	Electrical and power engineering, total	5,200	2.9	10,888	4.4	22,800	6.5	35,300	9.9
0300	(a) Power engineering	2,400	1.3	4,957	2.0	8,400	2.4	6,100	1.7
0600	(b) Electrical machine building and electrical instrument construction	1,400	.8	2,981	1.2	8,100	2.3	18,400	5.2
0700	(c) Radio engineering and communications	1,400	.8	2,950	1.2	6,300	1.8	10,800	3.0
0500	Machine building and instrument construction	9,100	5.1	15,736	6.4	30,600	8.9	37,200	10.5
1200	Construction	4,900	2.8	9,440	3.8	17,700	5.2	17,700	5.0
	Chemical and related, total	6,800	3.8	10,396	4.2	16,000	4.7	16,800	4.8
0800	(a) Chemical technology engineering	2,600	1.5	4,954	2.0	5,700	1.7	7,500	2.1
0900	(b) Timber engineering and technology of wood processing, cellulose, and paper manufacturing	700	.4	1,885	.8	3,700	1.1	2,400	.7
1000	(c) Technology of food products industry	2,300	1.3	1,878	.8	3,500	1.0	4,200	1.2
1100	(d) Technology of consumer goods industry	1,200	.7	1,669	.7	3,100	.9	2,700	.8
1600	Transportation	3,100	1.7	4,236	1.7	6,600	1.9	7,000	2.0
	Other, total	700	.4	1,168	.5	1,300	.4	1,400	.4
1300	(a) Geodesy and cartography	300	.2	540	.2	600	.2	700	.2
1400	(b) Hydrology and meteorology	400	.2	628	.3	700	.2	700	.2
1500	Agriculture and forestry, total	12,900	7.3	24,563	10.0	30,300	8.8	32,900	9.3
	Economics and jurisprudence, total	15,800	8.9	24,264	9.9	36,700	10.6	41,100	11.0
1700	(a) Economics	10,100	5.7	16,138	6.6	30,700	8.9	34,900	9.3
1800	(b) Jurisprudence	5,700	3.2	8,126	3.3	6,600	1.7	6,200	1.7
	Education-cultural, total	93,200	52.6	116,300	47.3	133,400	38.8	123,200	34.7
2000	(a) University specialties	12,300	6.9	15,560	6.3	29,900	8.7	26,700	7.5
2100	(b) Specialties in pedagogical and library institutes	78,500	44.4	98,249	39.9	101,000	29.4	93,100	26.3
2200	(c) Arts	2,400	1.3	2,491	1.0	2,500	.7	3,400	.9
1900	Medicine, health and physical culture	20,700	11.7	16,943	6.9	30,600	8.9	32,100	9.1
	Grand total	176,900	100.0	245,846	100.0	343,300	100.0	354,000	100.0

In 1965 Soviet institutions of higher learning graduated 403,800 professionals,[1] an actual total exceeding the planned target by some 30,000 due largely to improvement in the success rates of students enrolled in extension-correspondence programs. The composition of the 1965 graduating class was as follows:

Fields	Total	Percent
Engineering-industrial	158,900	39.5
Agricultural	36,000	8.9
Socioeconomic	32,100	7.9
Educational-cultural	146,200	36.2
Health-medical	30,600	7.5
Total	403,800	100.0

In comparison with the early 1960's there is another marked increase in the training of engineering-industrial field graduates, with the 7-year plan target of 135,000 engineering graduates by 1965 being exceeded by almost 24,000. Since two-thirds of educational-cultural field graduates are trained as research scientists in universities and as science teachers in pedagogical institutes, a total of about 325,000, representing 80 percent of all Soviet higher education graduates in 1965, received training in scientific and applied fields. This constitutes a further acceleration of training professional manpower with applied scientific specializations.

Table 7 presents information on first-year admissions to Soviet higher education. The increases in admissions to engineering fields are to be particularly noted for recent years (1964 versus 1959). On the basis of data for 1956–60 on first year admissions (table 7) and 1960–64 graduations (table 5), the success (graduation) rates can be estimated approximately as follows:

Field of study:	*Approximate number of graduates per 100 entering students*
Engineering-industrial	62
Agricultural	57
Socioeconomic	67
Educational-cultural	80
Health-medical	95

[1] Tsentral'noe Statisticheskoe Upravlenie pri SM SSSR, "SSSR v tsifrakh v 1965 godu," Moscow, 1966, p. 134.

TABLE 7.—*Admissions in Soviet higher educational establishments, 1940, 1950, 1955–64*

[In thousands]

	1940	1950	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964
1. Engineering-industrial: Total	53.7	96.0	174.6	182.2	178.0	181.5	217.8	229.5	283.4	310.8	329.8	357.3
Regular	41.1	70.1	121.1	-------	-------	-------	-------	-------	-------	-------	-------	-------
Extension-correspondence	12.6	15.9	53.5	-------	-------	-------	-------	-------	-------	-------	-------	-------
A. Industry and construction: Total	45.4	74.0	144.8	151.1	147.7	152.2	185.6	225.4	245.8	270.8	287.3	312.6
Regular	34.5	60.2	100.8	-------	-------	-------	-------	-------	-------	-------	-------	-------
Extension-correspondence	10.9	13.8	44.0	-------	-------	-------	-------	-------	-------	-------	-------	-------
B. Transportation and communication: Total	8.3	12.0	29.8	31.1	30.3	29.0	32.2	34.1	37.6	40.0	42.5	44.7
Regular	6.6	9.9	20.3	-------	-------	-------	-------	-------	-------	-------	-------	-------
Extension-correspondence	1.7	2.1	9.5	-------	-------	-------	-------	-------	-------	-------	-------	-------
2. Agricultural: Total	11.9	28.5	51.1	48.7	51.8	56.6	57.3	62.7	71.9	81.3	86.5	87.4
Regular	9.2	23.8	32.7	-------	-------	-------	-------	-------	-------	-------	-------	-------
Extension-correspondence	2.7	4.7	18.4	-------	-------	-------	-------	-------	-------	-------	-------	-------
3. Socioeconomic: Total	13.5	25.5	28.5	35.2	34.0	38.1	40.1	43.9	50.7	47.3	[illegible]	54.5
Regular	5.8	12.8	11.6	-------	-------	-------	-------	-------	-------	-------	-------	-------
Extension-correspondence	7.7	12.7	16.9	-------	-------	-------	-------	-------	-------	-------	-------	-------

4. Educational-cultural and arts (total):												
Total	161.2	185.4	175.0	161.6	143.7	145.2	163.3	190.4	222.0	247.3	262.6	275.7
Regular	82.2	108.7	89.9									
Extension-correspondence	79.0	76.7	85.1									
A. Education (universities, pedagogical and teachers' institutes) and cultural services:												
Total	159.0	182.6	172.1	158.6	140.3	141.3	159.0	185.1	216.0	241.0	255.7	269.2
Regular	80.3	106.1	87.5									
Extension-correspondence	78.7	76.5	84.6									
B. Arts:												
Total	2.2	2.8	2.9	3.0	3.4	3.9	4.3	5.3	6.0	6.3	6.9	6.5
Regular	1.9	2.6	2.4									
Extension-correspondence	.3	.2	.5									
5. Medical and health (including physical culture):												
Total	23.0	23.7	32.3	31.0	30.8	31.9	33.2	36.8	38.9	40.8	43.3	45.6
Regular	23.0	22.2	30.3									
Extension-correspondence		1.5	2.0									
6. Grand total:												
Total	263.3	349.1	461.4	458.7	438.3	453.3	511.7	593.1	689.9	727.5	772.4	820.5
Regular	161.3	237.6	285.6	263.8	254.4	256.1	290.6	257.9	279.4	312.1	339.0	356.2
Extension-correspondence	102.0	111.5	175.8	194.9	183.9	197.2	221.1	335.2	390.5	415.4	433.4	464.3

These success rates are not only influenced by the differences in the difficulty of the study course, but also largely reflect the presence of extension-correspondence students, whose success rate is almost one-half that of full-time day students. Fields other than health-medical (where almost all students are in full-time day programs) are affected to a large degree by the recent expansion of part-time higher education.

If we rely upon data for admissions during the 1961–65 period, the projected output of graduates during the 1966–70 period can be estimated approximately as follows:

Field of study:	*1966–70 Graduates*
Engineering-industrial	930,000– 950,000
Agricultural	215,000– 230,000
Socioeconomic	160,000– 170,000
Education-cultural	980,000–1,100,000
Health-medical	190,000– 210,000
Total	2,475,000–2,660,000

During the next 5-year plan (1966–70), some 2.5 million professionals will be trained by institutions of higher learning of the U.S.S.R. This will increase the total stock of professionals employed in the Soviet economy by about one-third (from about 4,700,000 in January 1966 to about 7,100,000 in January 1971). Again, in the next 5 years about 80 percent of these new additions will be in scientific and applied science fields.

Stock and Deployment of Professional Manpower

As of January 1965, the U.S.S.R. had a total stock (table 4) of about 5.6 million higher education graduates, some 81 percent of whom were gainfully employed in the national economy (table 8). In recent years there has been some improvement in the rates of gainful employment of professional graduates, but a significant deterioration in the rates of employment of semiprofessional graduates as indicated by the following data:

	Professional higher education graduates (thousands)		Semiprofessional (technicum) graduates (thousands)	
	1959	1965	1959	1965
1. Total population of graduates	3,778	5,600	7,870	10,600
2. Graduates employed in gainful occupations in the national economy	3,047	4,548	6,353	6,702
Percent gainfully employed	80.6	81.2	78.1	63.2

The reasons for the decline in the rate of gainful employment of semiprofessionals are attributable partly to demographic considerations (the need to draft semiprofessionals into the Soviet armed forces at a time of shortage of draft-age males in the population), but mainly to the educational policies which foster the retraining of semiprofessionals in higher education. While a considerable drain on semiprofessional manpower had been in evidence in the past in connection with the need for further training, the recent educational reforms have further intensified this trend.

Table 8 presents information on the actual employment of Soviet professionals by industry sector of the national economy. Two particularly important developments are worthy of note: (1) Over the past 10 years the employment of professionals in Soviet industry almost tripled and (2) the number of professionals working in Soviet research and development establishments increased about 3.4-fold in the course of the same decade.

TABLE 8.—*Employment of Soviet professionals by branch of the national economy, 1940–64*

[In thousands]

	Jan. 1, 1941	July 1, 1950	July 1, 1955	Dec. 1, 1960	Nov. 15, 1964
Total in national economy	909.0	1,442.8	2,184.0	3,845.2	4,847.6
I. Industry and related, total	277.9	371.1	566.0	1,202.7	1,647.8
1. Industrial enterprises (manufacturing, mining and utilities)	152.5	172.6	256.8	494.4	643.6
2. Construction enterprises	16.9	25.0	39.5	93.1	143.7
3. Transportation and communication	17.3	32.0	43.2	73.1	95.4
4. Research, development and testing	91.2	141.5	226.5	542.1	765.1
(*a*) Research and development organizations	50.1	84.2	112.5	272.5	586.2
(*b*) Project and design organizations	37.3	49.3	96.7	232.1	178.9
(*c*) Geological and surveying organizations	3.8	8.0	17.3	37.5	(1)
II. Agricultural enterprises, total	12.2	22.0	88.4	98.0	115.6
III. Trade, procurement, and distribution	7.0	18.5	28.5	79.7	100.6
1. Trade, public catering, and materiel-technical supply organizations	1.6	11.5	18.7	62.0	75.6
2. Banking and insurance establishments	5.4	7.0	9.8	17.7	25.0
IV. Government administration; cooperative, trade union, and other social organization management	129.4	157.3	196.2	300.3	411.3
V. Education and cultural services, total	343.9	572.2	927.3	1,349.4	1,696.7
1. Higher education and specialized manpower training establishments (semiprofessional and labor reserve)	114.5	163.5	215.3	278.3	1,696.7
2. General education (primary-secondary schools) and sociocultural facilities	229.4	408.7	712.0	1,071.1	
VI. Public health institutions	114.8	202.1	267.1	361.7	440.8
VII. Other, unspecified	23.8	99.6	110.5	153.4	135.4

[1] Included in I-4-a in 1964.

Furthermore, a comparison of the data on the stock of graduates by branch of training (table 5) and actual employment by branch of the economy suggests that the pattern of employment of Soviet professional graduates by field of former training indicates a high concentration of such graduates in employment sectors coinciding with the fields for which they were trained. Indeed, the majority of Soviet graduates trained in engineering are concentrated in industry, research and related fields. Likewise, the majority of graduates trained in education fields are employed in the public education sector. The majority of physicians are engaged in public health establishments. This pattern of employment suggests that not only initial placement policies (which assign graduates for a 3-year period to a place designated by the planning organs) but general employment policies of the Soviet regime concerning specialized professional manpower have been relatively effective in retaining professionals in those branches of activities for which they were specifically trained.

Partly as a result of the training policies, which restrict the number of specialists trained for any given specialized field, and largely due to employment practices accounting for the drift of highly trained manpower into leading administrative, managerial and white-collar occupations, a substantial disparity has emerged in the Soviet economy as to the rates of employment of specialized personnel by branch. Table 9 presents information on the ratios of professionals and semiprofessionals per 1,000 employees by sectors and branches of the national economy. It is evident that in such branches as government administration, education, and research, well over 25 percent of all employees are professionals with completed higher education. These employment ratios are almost 10 times higher than in Soviet industry and some 50 times higher than in Soviet agriculture. There is also a significant variation in the ratio among various sectors of industry, both for professionals and semiprofessionals, with the heavy industry sectors having high saturation ratios and light industry (especially consumer goods) sectors displaying very low ratios of employment of specialists. The data in table 9 also point out the sharp differences in the proportion of semiprofessionals to professionals throughout the Soviet economy, ranging from less than one semiprofessional to each professional (in research and development, for instance) to about 4 semiprofessionals to each professional (in nursery schools, for instance).

The sharp differences in the utilization ratios of specialists to employees throughout the Soviet economy raise a fundamental issue. The pronounced differences in staffing give rise to the question of why certain positions should be filled by a certain type of specialist with a certain level of training. The normative aspects of manpower planning in the U.S.S.R. are currently under sharp criticism:

> The planning organs still do not have * * * scientifically based methodology for estimating the demand for specialists either for the national economy as a whole or for its individual branches. There is no methodology which allows us to take into consideration the most significant factors influencing increases or decreases in the demand for specialists in relation to the further growth of socialist production and the development of science, culture, and technical progress.[1]

According to hypothetical job descriptions and staffing tables, certain positions should be filled by trained specialists. Why? Over the years such jobs may well have been filled by "practicals" [praktiki] who came up from the ranks. But "model" staffing tables specify that these positions should be filled by trained specialists. This in itself is enough to create an additional demand for trained specialists. Will production in a brick yard, in a mine, or in a blast furnace shop be hampered if these positions are not filled by "trained specialists"? It may well be that in some instances the planners' job specifications may be justified on the basis of prevailing practice, but in others they may be utterly arbitrary "desires" of an ambitious planner. Adherence to the staffing schedules has proved to be unworkable. This has led to imbalances and great disparity in the employment of specialists by individual plants and branches of industry.

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[1] G. S. Anodin, Opredelenie potrebnosti v spetsialistakh v promyshlennosti: iz opyta ugol'noi promyshlennosti (Determination of Demand for Specialists in Industry: On the Basis of Experience in the Coal Industry), Moscow, 1959, pp. 6–7.

TABLE 9.—*Number of professional specialists with completed higher education and semiprofessionals with technicum education per 1,000 workers by branch of the national economy of the U.S.S.R., November 1963*

Branch and sector of employment	Average number of specialists per 1,000 workers employed		
	Total	Professionals with higher education	Semiprofessionals with specialized education
National economy, total	115	47	68
I. Industry, total, of which	78	22	56
1. Ferrous metals	94	31	63
2. Nonferrous metals	103	33	70
3. Oil extracting industry	132	49	83
4. Oil processing industry	140	44	96
5. Gas, peat, shale and other branches of fuel industry	74	19	55
6. Production of electric and thermal power	158	52	106
7. Machine-construction and metal-processing, total, of which	107	33	74
(a) Power machinery	138	50	88
(b) Electrical engineering	104	33	71
(c) Machine-tool and instrument making	113	36	77
(d) Toolmaking	127	43	84
(e) Equipment manufacture	118	37	81
(f) Lifting, hoisting and transport of machinery	116	35	81
(g) Building and roadmaking machinery	117	32	85
(h) Transport machinery	122	36	86
(i) Motor vehicles	98	29	69
(j) Tractor and agricultural machinery	91	29	62
8. Chemical industry	123	41	82
9. Timber, paper and woodworking industry, total, of which	42	11	31
(a) Lumber operations	35	19	26
(b) Woodworking	44	12	32
(c) Paper and pulp	73	20	53
10. Building materials industry	63	16	47
11. Light industry, total, of which	45	9	36
(a) Textiles	46	10	36
(b) Garment	40	6	34
(c) Leather, fur, and footwear	49	12	37
(d) Foods	71	21	50
II. Construction industry, total	62	21	41
III. Agriculture, total, of which	20	6	14
1. Collective farms	10	2	8
2. State farms and ancillary agricultural enterprises, veterinary services	39	14	25
IV. Forestry	11	4	7
V. Transportation, total, of which	56	14	42
1. Railway transport	57	16	41
2. Water transport	14	4	10
3. Motor vehicle, municipal, electromotive and other transport; loading/unloading operations	44	8	36
VI. Communications	68	10	58
VII. Trade, public catering, procurement, technical materials supply	76	13	63
VIII. Communal housing	35	8	27
IX. Public health	423	107	316
X. Education, total, of which	521	293	228
1. Educational establishments training skilled workers	475	353	122
2. General educational schools	607	344	263
3. Preschool institutions, kindergartens, etc.	306	56	250
4. Cultural-educational institutions	274	86	188
XI. Research, development and testing, total, of which	395	255	140
1. Scientific research institutions	377	266	111
2. Design organizations	410	239	171
3. Geological surveying organizations	214	105	109
4. Hydrometeorological service organizations	266	99	167
5. Planning and prospecting organizations	607	388	219
XII. Banking and insurance organizations	315	73	242
XIII. Government administration, cooperative, trade unions and other social organizations	470	257	213
XIV. Other branches, total, of which	93	44	49
1. Public entertainment	107	48	59
2. Publishing and editing of newspapers and magazines	441	346	95
3. Other organizations not specified	73	25	48

The Research and Development Establishment

The last decade has witnessed a most spectacular expansion in the Soviet research and development establishment. At the beginning of 1965 it accounted for about 2,500,000 employees, among them approximately 1 million professionals. Thus some one-quarter of professional specialists employed in the national economy were engaged in the Soviet research and development establishment.

In recent years the entire Soviet research establishment has been subject to considerable reorganization, with many shifts in the jurisdictional subordination of individual institutes. This reorganization was undertaken in conjunction with changes in the organization of the economic administratoin. Contrary to some set notions that the Soviet research organization represents a streamlined administrative pyramid with a well-developed decision-making mechanism, Soviet research in reality has been an unwieldy maze of institutions, sometimes thrown together haphazardly, with different lines of administrative subordination, parochial interests, and widespread duplication. In the last 40 years "institutional research" has mushroomed in the U.S.S.R. along functional lines. Broadly speaking, three pyramids came into existence: (1) higher educational establishments, (2) institutes of the academies, and (3) ministerial departmental research institutes. The growth of research establishments was most extensive in the latter two, with functional institutes formed at the academies and under ministerial-departmental auspices, which are in charge of a specific branch of Soviet industry or the economy.[1]

The overall dimensions of the Soviet research effort are most conveniently measured by the data on overall research personnel employed. As of January 1965, these data were:

Total employment in the Soviet research establishment	2,497,000
Among which:	
Number of professionals	765,000
Number of semiprofessionals	418,000
Number of research and academic personnel	357,000
Number of research institutes	2,000

In addition, institutions of higher education employed some 300,000 professionals, of whom some 206,000 were research and academic personnel.

These constellations and the interpenetrating hierarchy of Soviet research establishments, design and development offices, administrations, trusts design and surveying institutes and their branches, constitute the chief components of the Soviet "industry of invention," which by all indications is receiving major emphasis and is undergoing major expansion.

Table 10 summarizes data on Soviet research and academic personnel, by place of employment, advanced academic degree, and academic rank. The data indicate that expansion proceeded more rapidly in research institutions than in higher education. Despite this total expansion, the number of advanced degrees and advanced rank awards has not kept pace; and in proportionate terms, there has been a marked decline in senior and advanced degree personnel. In order to counteract these trends, the recent expansion of advanced degree training (aspirantura) was considerably speeded up—from 23,000 postgraduate students in 1959 to 83,000 in 1965.

[1] During the period 1957–64 the intermediate territorial link was made up by regional councils of the economy. Prior to 1957, and presently, ministries are in direct charge of most research institutes.

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TABLE 10.—*Summary data on the composition of Soviet research and academic personnel (RAP) for selected postwar years (as of Oct. 1)*

	1947		1950		1953		1954		1955		1956		1957	
	Thousands	Percent	Thousands	Percent	Thousands	Percent	Thousands	Percent	Thousands	Percent	Thousands	Percent	Thousands	Percent
Total RAP	145.6	100.0	162.5	100.0	191.9	100.0	210.2	100.0	223.9	100.0	239.9	100.0	261.6	100.0
Of whom employed in:														
Research establishments [1]	59.3	40.7	70.5	43.4	80.0	41.7	88.7	42.2	96.5	43.1	106.4	44.3	121.5	46.4
Higher educational establishments	81.5	56.0	86.5	53.2	105.4	54.9	114.2	54.3	119.1	53.2	125.0	52.2	132.3	50.6
Other	4.8	3.3	5.5	3.4	6.5	3.4	7.3	3.5	8.3	3.7	8.5	3.5	7.8	3.0
Total RAP	145.6	100.0	162.5	100.0	191.9	100.0	210.2	100.0	223.9	100.0	239.9	100.0	261.6	100.0
Of whom:														
With doctor's degree	7.7	5.3	8.3	5.1	8.5	4.4	9.0	4.3	9.5	4.2	9.8	4.1	10.0	3.8
With candidate's degree	36.9	25.3	45.5	28.0	59.5	31.0	69.2	32.9	78.0	34.8	85.7	35.7	87.2	33.3
Without advanced degree [2]	101.0	69.4	108.7	66.9	123.9	64.6	132.0	62.8	136.4	61.0	144.4	60.2	164.4	62.9
Total RAP	145.6	100.0	162.5	100.0	191.9	100.0	210.2	100.0	223.9	100.0	239.9	100.0	261.6	100.0
Of whom with academic rank of:														
Professor	8.9	6.1	8.9	5.5	8.5	4.4	8.8	4.2	9.0	4.0	9.1	3.8	9.4	3.6
Associate professor	20.2	13.9	21.8	13.4	24.7	12.9	26.8	12.7	28.6	12.8	30.4	12.7	31.6	12.1
Senior research associate	9.8	6.7	11.4	7.0	12.9	6.7	14.0	6.7	14.6	6.5	15.6	6.6	16.7	6.4
Junior research associate and assistant professor	25.6	17.6	19.6	12.1	19.8	10.3	16.2	7.7	17.1	7.6	17.8	7.4	21.3	8.1
Other (lower ranks) [2]	81.1	55.7	100.8	62.0	126.0	65.7	144.4	68.7	154.6	69.1	167.0	69.5	182.6	69.8

Footnotes at end of table, p. 814.

TABLE 10.—*Summary data on the composition of Soviet research and academic personnel (RAP) for selected postwar years (as of Oct. 1)*—Continued

	1958		1959		1960		1961		1962		1963		1964	
	Thousands	Percent	Thousands	Percent	Thousands	Percent	Thousands	Percent	Thousands	Percent	Thousands	Percent	Thousands	Percent
Total RAP	284.0	100.0	310.0	100.0	354.2	100.0	404.1	100.0	524.5	100.0	566.0	100.0	612.0	100.0
Of whom employed in:														
Research establishments[1]	141.0	49.6	164.8	53.2	200.1	56.5	238.5	59.0	299.0	57.0	326.8	57.7	356.7	58.3
Higher educational establishments	135.7	47.8	137.8	44.4	146.9	41.5	158.4	39.2	179.5	34.2	196.8	34.8	206.3	33.7
Other	7.3	2.6	7.4	2.5	7.2	2.0	7.2	1.8	46.0	8.8	42.4	7.5	49.0	8.0
Total RAP	284.0	100.0	310.0	100.0	354.2	100.0	404.1	100.0	524.5	100.0	566.0	100.0	612.0	100.0
Of whom:														
With doctor's degree	10.3	3.6	10.6	3.4	10.9	3.1	11.3	2.8	11.9	2.3	12.7	2.2	13.7	2.2
With candidate's degree	90.0	31.7	93.4	30.3	98.3	27.7	102.5	25.4	108.7	20.7	115.2	20.3	123.9	20.2
Without advanced degree[2]	183.7	64.7	205.0	66.3	245.0	69.2	290.3	71.8	403.9	77.0	438.1	77.5	474.4	77.6
Total RAP	284.0	100.0	310.0	100.0	354.2	100.0	404.1	100.0	524.5	100.0	566.0	100.0	612.0	100.0
Of whom with academic rank of:														
Professor	9.6	3.4	9.7	3.2	9.9	2.8	10.3	2.5	11.0	2.1	11.4	2.0	12.0	1.9
Associate professor	32.7	11.5	34.3	11.1	36.2	10.2	38.2	9.4	40.6	7.7	42.9	7.6	46.0	7.6
Senior research associate	17.2	6.1	18.4	5.9	20.3	5.7	21.0	5.2	23.8	4.5	25.8	4.6	27.2	4.4
Junior research associate and assistant professor	23.6	8.3	26.3	8.5	26.7	7.5	28.7	7.1	45.0	8.6	47.9	8.5	48.2	7.9
Other (lower ranks)[2]	200.9	70.7	221.3	71.3	261.1	73.7	305.9	75.8	404.1	77.0	438.0	77.3	478.6	78.2

[1] Includes research establishments and academies of the U.S.S.R. and union republics.

[2] Derived as a residual.

In the last few years a new centralization of the decision-making mechanisms over Soviet research and development has been established. The powers of the Committee on Coordination of Research and Development (now called the State Committee for Science and Technology) were strengthened in 1964 and 1965. Soviet authorities hope that the new measures will (1) improve the system of both long-run and current planning of research and development activity, (2) further strengthen theoretical research on the most important scientific problems within the academy, (3) allow for closer ties between departmental research institutes and industry, and (4) allow more rapid introduction of research and development results into production technology and the economy. These measures are a recognition of the fact that a turning point has recently been reached in Soviet technological development—a point of diminishing returns from the adaptations of Western technology has now been reached, and new and vigorous domestic technological development becomes henceforth a matter of urgent necessity. Reorganization of the Soviet research setup could provide an effective mechanism for channeling scientific manpower and material resources into strategic areas of the physical sciences and engineering and other complex areas of interdisciplinary research toward the achievement of the highly cherished and most ambitious long-run goal of the Soviet regime—world leadership in science and technology.

Retrospect

The development of Soviet education and specialized manpower resources should be viewed mainly in the context of the general setting of communist goals—political, economic, social, and cultural. There has been perhaps no more succinct statement of the pitfalls involved in interpreting and evaluating the Soviet system of education in its current state of flux than that given by John W. Gardner in his foreword to Dr. James B. Conant's book, "The American High School Today." Mr. Gardner writes:

> The surge of publicity about Soviet schools has produced more false impressions and foolish conclusions than almost any other element in current discussions of education. Sensible generalizations about Russian schools are made doubly difficult by the recent switches in Soviet educational policy. The future direction of Russian education is not clear. And even if we knew exactly where Soviet education was going, the information would be of limited relevance. It is impossible to evaluate an educational system apart from the society which it both reflects and serves.[1]

These observations are highly relevant to our discussion, at least on two counts. First of all, in measuring our own educational system against that of the Soviet Union, there has too often been a tendency to draw comparisons that are invidious to the American system on the basis of inadequate knowledge not merely of educational realities in the U.S.S.R., but of Soviet society and institutions in general.

In the Soviet Union a high premium is placed upon technical and specialized, rather than general educational, excellence. Science and technology are particularly recognized as the foundation of national strength in modern times, and consequently they receive unique em-

[1] J. B. Conant, The American High School Today, New York: McGraw-Hill Book Co., Inc., 1959, p. xi.

phasis on all levels of the educational effort. Secondary schooling provides the base for early (and mandatory) exposure to the sciences and technology, from which select individuals are chosen for professional education. The quality of Soviet professional training in scientific, engineering, and applied fields today is, on substantive grounds, comparable to that offered in the West. This is not true, however, of all fields—especially where political intervention is heavily felt or where exclusively applied objectives prevail.

Indeed, if we compare the numerical rates of output of professional specialists in the U.S.S.R. with those in the United States, the Soviet lead continues to be obvious. In engineering, the U.S.S.R. has trained 2.5 times more persons than the United States and continues to train engineers at annual rates 4 times higher. The U.S.S.R. has trained 2.5 times more physicians than the United States, and the Soviet annual output is currently 3 times higher. Agricultural specialists in the U.S.S.R. outrank those in the United States by a ratio of 2 to 1. In all other nonspecialized fields, however, the United States continues to maintain a 3- to 4-fold lead over the Soviet Union. All of this raises a fundamental issue—In the long run is general higher education more important to development than narrow specialized training?

With the numerical expansion of the stock of higher graduates, the question of the adequacy of their specialized training becomes increasingly important in internal discussions within the U.S.S.R. In recent years the exceedingly narrow specialization in the training of Soviet professionals has been curtailed somewhat, though it still remains more pronounced than in the West. With the advent of the new phase of Soviet industrial expansion—accelerated technological change and the intensive development of automation in which the narrow specialties of engineering and industrial technician training may prove quite insufficient and inadequate for the more sophisticated needs of the Soviet industrial economy—perhaps a broader professional education of Soviet specialists may become accepted as an operational necessity.

During the last four decades, Soviet planners have succeeded in increasing the training of specialists at a spectacular rate. At the same time, higher education continues to be accessible to a substantially smaller proportion of the Soviet population than is the case in the United States. Instead of making higher educational opportunity widely available, the Soviet regime has chosen to concentrate its efforts at this level on the development of the specialized manpower needed to further its economic and military goals. While the utility of a technical specialist to society is undeniable, the narrow functional approach employed in the preparation of the Soviet technical specialist, the lack of humanistic education in his schooling, the exclusion from the curriculum of broad cultural, ethical and social values which are considered indispensable in the West, tend to limit the Soviet specialist in his aptitude for participating in the solution of the important interpersonal and operational problems that are associated with the responsibilities of a professional specialist in our modern industrial society.

CHANGING GUIDEPOSTS IN SOVIET EDUCATION

BY

SEYMOUR M. ROSEN

CONTENTS

CHANGING GUIDEPOSTS IN SOVIET EDUCATION

The General Overall Statistical Setting

Those aspects of Soviet education that can be measured statistically have been characterized generally by steady growth during the recent period of significant reform. The relevant statistics, as released by the Soviet Government, are presented in some detail in appendix A.

During the period from 1950 to 1964 total school enrollments increased at an average rate of about 7 percent a year, reaching about 55 million (excluding factory training programs) in the 1964–65 school year. Within the totals, enrollments in elementary-secondary schools of general education increased at about the same average rate, 7 percent a year. Enrollments in secondary specialized schools (or what might be called vocational high schools) increased at the higher rate of about 7½ percent a year, and enrollments in higher educational institutions at the somewhat lower rate of about 6⅓ percent a year.

The total enrollments in these major categories for 1964–65 were 42 million in elementary-secondary schools of general education, about 3.3 million in secondary specialized schools, and 3.6 million in higher educational institutions.

Roughly comparable statistics on education in the United States are given in appendix B. With a smaller school age population, total U.S. elementary, secondary, and higher education enrollments for the fall of 1964 were 53.5 million, or close to the Soviet totals. The figures cannot be compared more than grossly, since the statistics on each side include elements not included in the other.

In the fall of 1964, higher education enrollments in the United States were almost 5 million, considerably higher than the Soviet totals. Higher education degrees in the United States, conferred in the 1963–64 school year, totaled about 600,000, of which approximately 500,000 were bachelor's and first professional degrees and 100,000 were master's and doctor's degrees. Higher education diplomas and degrees in the Soviet Union for the same period totaled about 343,000 of which approximately 331,000 were first professional diplomas and 12,000 were advanced degrees. Because of the different contexts and purposes of the education and training involved, these figures can only give a general sense of the order of magnitude, and would require exhaustive detailed analysis to explain what are in large measure noncomparable data.

Statistics given in the "State Plan for Development of the Economy of the U.S.S.R. in 1966" approved by the U.S.S.R. Supreme Soviet Session in December 1965, suggest that the recent rate of growth in major education categories will continue at approximately the same levels. Specifically, the plan called for a growth in enrollments of 6 percent in Soviet higher educational institutions and of 7.6 percent in secondary specialized schools as compared with 1965.

The differential rate between higher and secondary specialized education is caused primarily by the continuing objective of Soviet planners to produce much larger numbers of technicians, or graduates of secondary schools who become engineering-support personnel, in proportion to the output of engineers. Because of chronic shortages of technicians, engineers frequently continue to be engaged in work which should be performed by persons of lower levels of training.

A Pravda editorial (Mar. 18, 1965) gives a more precise indication of the overall ratio for which the Soviet state is aiming:

> * * * by 1970 we must have in industry, construction, transportation and agriculture three to four specialists with a secondary education to each worker with a higher education diploma.

A discussion of more refined statistics and categories gives a further indication of significant recent developments in Soviet education.

The conversion of the elementary-secondary schools from a 10-year system to an 11-year system, as a major aspect of the Soviet education reform, caused the retention of increasing numbers of teenagers in the schools rather than releasing them into the labor force. In the 1960–61 school year only 57,000 pupils were enrolled in the newly established 11th grade. By 1962–63, the number enrolled had grown to 427,000 and the following year to 945,000. The number by 1964 presumably was well over a million.

During this same period the labor force was feeling the effects of a significant drop in the total number of youth entering the 17–19-year-old groups, as a result of birth deficits resulting from World War II. It would appear, therefore, that a developing shortage of young workers may have been one of the unstated reasons for reversion to a 10-year system of public education in 1964 (the reversal from the 1959–64 11-year education system to a 10-year system beginning in 1964 is discussed in the next section on the Soviet education reform). As a result of this reversal, two graduating classes were scheduled for June 1966, from the finally phased out 11th grade and simultaneously from the 10th grade. Each of these classes would graduate 1.3 million, and would about double the number that year entering the labor force.

Another probable reason, also unstated by Soviet sources, is the goal established by the Communist Party program and adopted by the 22d Congress of the Party in October 1961 of universal compulsory secondary education for all children of school age within a decade. There would obviously be more possibility of attainment of the goal in a 10-year rather than an 11-year system.

The major quantitative development at the higher education level in the late 1950's and early 1960's was the growth of the correspondence-extension system of instruction, the rate of enrollments in which (more clearly seen if taken in a 10-year period) far exceeded that of full-time day instruction. The latter, which would be comparable to the regular system of higher education in the United States, grew modestly in enrollments, from about a million in 1953 to 1.4 million in 1963. Correspondence instruction enrollments, on the other hand, grew from about ½ million in 1953 to slightly more than regular day enrollments in 1963.

Since, despite various efforts of the Soviet Government to improve correspondence education, its caliber remained significantly lower than regular full-time education, the problem of the quality of Soviet higher education and the impact on the pool of available highly skilled manpower reached significant proportions, particularly in the more recent reform period under review.

A series of high-level Soviet policy statements throughout the early 1960's reiterated the theme of the desirability of continued growth of "education without interruption of production," which primarily referred to correspondence education and to a much smaller extent to evening schools.

In 1965, however, some evidence appeared that correspondence education enrollments may have reached their peak and might level off or become smaller than full-time day enrollments in the late 1960's. Conversely, it suggested that regular day enrollments, which had barely increased from year to year for a decade, would grow at a more substantial rate in the late 1960's.

In an article in Pravda, August 31, 1965, M. Prokofiev, U.S.S.R. First Deputy Minister of Higher and Secondary Specialized Education, indicated that in the forthcoming 5-year plan (1966–70) the further development of specialized training must be realized mainly through increasing the admission of students in regular daytime instruction. He apparently was referring primarily to the training of specialists at the higher education level.

Prokofiev stated that certain revisions had already been introduced "this year in the plan" for enrolling new students in higher educational institutions [presumably in the 1965 plan for admitting students in the 1965–66 school year]; admission to daytime departments was somewhat increased, and admission to correspondence departments reduced.

During the reform period, 1959–64 the pattern of admissions by general fields, or groups of specialties, has remained relatively stable. Since these enrollments are based on a quota system established by government planners, the pattern suggests that in the broadest categories of specialties there were few major quantitative shifts planned for the pool of specialized manpower at work in the national economy.

The most notable characteristic is, rather, growth in enrollments in all categories, and the continued dominance of engineering or industrial technical specialties.

The leading groups of specialties in order of size of enrollments may be compared for the 1959–60 and 1963–64 school years in listing No. 1.

LISTING NO. 1.—*Groups of specialties with heaviest enrollments in secondary specialized and higher education*

Group of specialties	1959–60 *Enrollments (thousands)*
A. Secondary specialized:	
Technical	922.8
(Machine building and instrument making	330.2)
Agriculture	301.3
Economics	236.2
Health and physical culture	159.5

LISTING No. 1.—*Groups of specialties with heaviest enrollments in secondary specialized and higher education*—Continued

Group of specialties	*Enrollments (thousands)*
1959–60	
B. Higher education:	
Technical	824.3
(Machine building and instrument making	270.1)
Pedagogical and library	512.5
Agriculture and forestry	254.2
Economics	198.4
C. Graduate training:	
Technical	13.0
Physicomathematics	3.4
Agriculture and veterinary	2.0
Economics	2.7
1963–64	
A. Secondary specialized:	
Technical	1,422.2
(Machine building and instrument making	473.3)
Economics	401.8
Agriculture	389.1
Health and physical culture	279.5
B. Higher education:	
Technical	1,305.0
(Machine building and instrumentmaking	414.0)
Pedagogical and library	687.7
Economics	316.8
Agriculture and forestry	202.0
C. Graduate training:	
Technical	32.2
Physicomathematics	8.9
Agriculture and veterinary	6.7
Economics	6.4

In the listing, the term "technical" is synonymous with "engineering", or at the secondary level "engineering-support" specialties, and includes professionals and technicians who are primarily intended for the various industrial and construction fields. The major subgroup of technical specialties is in the machine-building and instrument making field, which alone can be listed in the leading group of specialties.

In 1963–64 training in technical fields continued to dominate higher and secondary specialized education, accounting for about 40 percent of the total undergraduate and graduate enrollments and close to half of the secondary specialized enrollments.

Economic specialties were among the top four groups at each education level, and enrollments in economic fields moved in relative position from fourth to third place, while the reverse occurred with agricultural specialties at the secondary and undergraduate levels. This shift of emphasis was reflected in official statements on the growing need for adequately trained specialists in economic fields.

The economics group, at the higher education level, consists of 35 specialties most of which are related to the economics and organization of a particular major industry or means of transportation. A few are related directly to consumer needs, specifically the specialties for finance and credit and for merchandising of industrial goods and of food products.

Statistics on the recent trend of enrollments in individual specialties, rather than groups of specialties, are not available. Information on the 7-year plan (1959–65), released in 1960, indicated that increases would be in such fields as chemical technology, automation, computer technology, radioelectronics, and other new technological fields.

This trend was confirmed by U.S.S.R. Minister of Higher and Secondary Specialized Education V.P. Elyutin (as reported in "Vechernaia Moskva," July 6, 1964), who indicated that by 1964 for the first time there were substantial numbers enrolled in such specialties as complex automation and mechanization of industrial processes, semiconductor apparatuses and materials, radioelectronics, electronic and computing techniques, radio engineering and radiophysics, in chemistry specialties, and in other new technological fields. He also noted increased graduations of specialists in biophysics, biochemistry, microbiology and virology.

It is noteworthy, in concluding this brief statistical survey, that enrollments in groups of specialties that appear related to sophisticated technological requirements of defense and space programs have had the most dramatic increases. In 1963–64 as compared with 1959–60, enrollments in higher education specialties under the group radiotechnics and communication have almost doubled, to 126,400, and in electromachine building and electroinstrument making they have tripled, to 218,500.

Soviet Education Reform

The most significant and far-ranching development in Soviet education in the past few years has been the attempt to implement the reform launched by the Communist Party and the Soviet Government in December 1958. In the course of implementation, however, a number of major elements of the reform failed to live up to official expectations, resulting in turn, in substantial further revisions during 1964.

The reform of 1958 introduced a number of major educational changes throughout the U.S.S.R. The most important of these changes was the introduction of a substantial "polytechnical" component into the system of general education. In theory, as well as an ideal practical arrangement, the polytechnical component was to provide students with a well-rounded knowledge of fundamental production processes, relating the theoretical content of various school subjects with their practical application in industry and agriculture. The favorite slogan of the reform was to "link school with life." The dominant element of polytechnical education in practice was the inclusion of vocational training as part of the regular school curriculum.

To list briefly some of the major elements of the reform which were introduced between 1959 and 1964:

1. Transformation of 10-year (grades 1–10) schools of general education into 11-year "general education labor-polytechnical schools with production training."

2. Establishment of a new curriculum in which one-third of the school time in grades 9–10–11 was spent in the theory and practice of production, including work in school shops and local factories.

3. Establishment of a quota system in higher educational institutions requiring up to 80 percent of applicants admitted to have worked for 2 years after completion of secondary school.

4. Lengthening of the higher education curriculum in virtually all fields of specialization by 6 months or more and curriculum revisions to allow for production training of students.

5. An increase in the role of correspondence and evening education in the training of specialists at the secondary and higher education levels, along with special provision in the regulations applying to the status of worker-students.

As the reform began to be put into practice, however, the problems multiplied. The number of teachers trained and textbooks written to give a polytechnic component to education proved to be grossly inadequate. There was rivalry between proponents of practical training for pupils in school shops and practical training in local factories.

The knowledge of the fundamentals of production imparted to pupils was largely limited to the production of the particular factory located near the school. The work skills acquired by the pupils were the one or two available at the local factory; choice and variety of work experience were minimal. Some factory managers had little patience for pupil training and orientation, which consumed factory personnel, space, equipment, and time, when primary pressures on the managers were to meet the State's industrial production goals. Training in a particular job was largely wasted as in most cases pupils completing secondary school did not pursue work in the same field.

The word "training" was frequently loosely applied. In some factories, pupils merely watched "over the shoulder" while workers worked at their machines. In others, pupils were given menial tasks to perform. While some schools in big cities had well-equipped shops, many schools did not. In schools lacking shops and equipment, "training in a particular job was largely wasted, as in most cases pupils ects.

At the secondary school level, the reform had attempted to provide work training and experience without cutting down seriously on the academic curriculum. As a result, pupils were overloaded, and the quality of their academic work suffered.

Despite the provision for particularly able students, particularly in the sciences, to go directly to universities after completing secondary school the great majority of applicants had to go to work for 2 years. While this requirement undoubtedly served as a maturing experience, it also created problems of academic capability and drop off of academic knowledge in entering college students.

Lengthening the period of time for higher education by incorporating work experience into the curriculum also created problems, many of them similar to those encountered at the secondary level, ranging from lack of instructional personnel and facilities to implement the program to the adverse impact of the program on academic studies.

Study by means of correspondence extension courses, while working full time with some special allowances for carrying out studies, placed a heavy burden on students attempting such programs, and the quality of such studies was admittedly inferior to full-time studies. In addition, dropout rates from such programs were high.

The reform as originally formulated and elaborated was attempted between 1959 and 1964. On the basis of this experience, major changes were introduced in the summer of 1964 which took effect

beginning in the 1964–65 school year. Along with these changes in 1964, the salaries of elementary-secondary schoolteachers, which were low in comparison with other professionals, were raised an average of 20 to 25 percent..

As of 1964–65, upper secondary education in Soviet schools was reduced from 3 to 2 years, or from grades 9 to 11 to grades 9 to 10. The total elementary-secondary period of general education was reduced from an 11- to a 10-year system, or to its same length as before the 1958 reform.

The most notable change in the upper secondary school curriculum was the sharp reduction, but not complete elimination of polytechnical training. The time devoted to "theoretical and practical production training" was cut in half, but it still remained one-fourth of the revised curriculum. Further, as in the 1959–64 period, pupils would continue not only to receive an academic education but to receive certificates noting qualification in a series of specialties, such as radio repairman or lathe operator.

Since the upper secondary curriculum was now 2 years rather than 3, the total academic time was also reduced, particularly in geography, biology, foreign language, and physical training. The total school time in physics, chemistry, and mathematics, however, was trimmed only slightly by an actual increase per year in the class hours per week in grades 9 and 10 in these subjects, indicating the continuing priority of physical sciences and mathematics in the Soviet education system.

In higher education and specialized (technical) secondary education the total time in studies in any given field of specialization was reduced by 6 months to a year. The total length of courses by groups of specialties, which became effective beginning in 1964–65, is noted in listings Nos. 2 and 3.

LISTING No. 2.—*Length of courses in regular day programs in secondary specialized educational institutions (1964–65 school year)*

Groups of specialties:	*Length of courses*
Toolmaking, radio-technical, communications, automation of production, power technology, construction, machine building, lumbering, and woodworking	3 years 6 months.
Mining, metallurgical, chemical, and transport	4 years.
Geological, geodetic and cartographic, hydrological, and meteorological	3 years 6 months.
Technological training for production of consumers goods and food products	3 years.
Agricultural	3 years 6 months.
Finance-economic, statistical, and trade	3 years.
Pedagogical, library, cultural enlightenment, legal, and editorial	Do.
Medical assistant (feldsher) and midwife	3 years 6 months.
Medical (other than assistant (feldsher) and midwife specialties), pharmaceutical, physical education, and sports	3 years.
Artistic and musical	3½ to 4 years.
Theatrical and applied arts	3 years 6 months.

LISTING No. 3.—*Length of courses in regular day programs in higher educational institutions (1964–65 school year)*

Groups of specialties:	*Length of courses*
Engineering-technical and engineering-economic	5 years.
Agronomy, animal husbandry, and forestry	4 years 4 months.
Veterinary	5 years.
University programs (other than law, journalism, and history)	Do.
Credit-finance, accounting-statistical, commercial, library, bibliographical, journalism, law, and history	4 years.
International economic relations and international relations	5 years.
Medicine	5 years 6 months.
Pharmacy and stomatology	4 years 6 months.
Physical education and sports	4 years.
Music	4 years 6 months.
Graphic arts	5 years.
Drama, art, and cultural enlightment	4 years.
Preprimary and primary school teachers	Do.
Secondary school teachers in the following specialties: Russian language and literature, history, foreign language, mathematics, physics, chemistry, defectology, and physical training	Do.
Secondary school teachers in the following specialities: Russian language and literature, native language and literature; Russian language and literature for the non-Russian schools; mathematics and physics; biology and chemistry; geography and biology; biology and fundamentals of agriculture; physics and electrotechnics; physics and astronomy; mathematics and programing; mathematics and mechanical drawing; mathematics and astronomy; graphic arts; musical pedagogics; and industrial pedagogics	5 years.

Admission requirements to higher education were modified, also beginning in the 1964–65 school year. The basic education requirement, as it had been before 1959, was completion of 10 years rather than 11 years of elementary-secondary education. The 1959–64 formula of admitting most applicants (up to 80 percent) only after 2 years of work experience following completion of secondary education was abandoned. A new formula was devised, making admissions proportional to the ratio of applications of those currently completing school and those working. The new formula, in effect, allowed for substantially higher admissions direct from secondary school.

In part-time education, recent indications of a pending slowdown in the size of correspondence enrollments have already been discussed. Another development of interest is the now small, but potentially significant, development of higher technical educational institutions located within and incorporated into large work establishments, resuming an experiment that was begun in the 1920's and soon abandoned.

A handful of these special higher technical schools was established in large automobile, metallurgical, and machine building plants in 1960–61. By 1964 the Government began also to set them up on large state farms. The schools, as well as the industrial plants and state

farms, are Government owned and operated. The aim appeared to be to improve workers' qualifications without losing time on the job.

Developments in Selected Fields

In the past few years, new developments have been notable in several fields concerned with Soviet education. Three of the major ones will be explored here: The areas of programed learning and audiovisual aids; social studies, and indoctrination: and the training of foreign students.

A. Programed Learning and Audiovisual Aids

Soviet work in the field of programed learning, and specifically in the development of teaching machines, has progressed rapidly since 1961, when Soviet activities in this field appeared to be at a low level. Up to 1961 the U.S.S.R. had developed very few instructional devices which could be considered teaching machines. By 1963, according to Soviet reports, there were more than 40 types, and by 1965 there were over 200 of these types of machines.

The policy of the Soviet Government at the present time is to encourage research and development in the field of programed learning. It is moving very slowly, however, in any general application in the schools. Until considerably more research is done on the effectiveness of programed instruction vis-a-vis regular instruction, the Government is adopting a wait-and-see attitude. The Soviet Government has not yet set a hard line either pro- or anti-teaching machines, allowing the debate between the "enthusiasts" and the "critics" of programed learning to continue.

The machinery for defining and implementing policy has been set up, reflecting the seriousness of purpose of the Government in exploring this field. The key organization for overall coordination in the field and research and development in higher education, is the Inter-Agency Scientific Council for Problems of Programed Instruction. The Council is under the U.S.S.R. Ministry of Higher and Secondary Specialized Education.

The Russian S.F.S.R. Ministry of Education, responsible for administration of elementary-secondary schools, deals with teaching machine programs and planning through its Department of Technical Devices and Programed Instruction. Policy on research for elementary-secondary schools is developed in the R.S.F.S.R. Academy of Pedagogical Sciences, under the Ministry of Education.

Soviet officials tend to view programed learning as "cybernetics" in the field of education. Policy on basic research, linking programed learning to related fields in cybernetics, is coordinated in the Scientific Council for Problems of Cybernetics, attached to the Presidium of the U.S.S.R. Academy of Sciences.

The role of audiovisual aids in Soviet education is growing currently, not only in research and development but also in general application.

The use of projectors and screens, films and filmstrips, posters, models and diagrams, and language laboratories with microphones,

earphones and tape recorders appears to be fairly widespread in the urban schools. There is considerable variation in the quality of such equipment, with much of it (projectors, tape recorders) bulky and antiquated.

The official policy is oriented toward increasing the use of educational television, which at present is exploited on a small scale (small in terms of programs designed to teach specific subjects in school curriculums, as distinct from widespread general cultural programs).

The first educational TV channel was established in 1963 in Leningrad by the Leningrad Television Studio in affiliation with the Northwest Correspondence Polytechnical Institute (a major higher education training institution for Soviet engineers). Another education channel has been scheduled for Moscow by the State Committee for Radio and Television. Radio is used particularly for adult education in the "Peoples Universities of Culture," in widespread nonaccredited short courses.

The uses of teaching machines are being intensively explored in selected educational institutions, the most enthusiasm appearing in technical (engineering) institutes, the least in foreign languages institutes which advocate primarily direct teacher-pupil contact plus regular audiovisual aids.

The two dominant elements in the present stage of Soviet work in programed learning appear to be—

(1) The preponderance of machines and sparsity of standard programs prepared for the machines.

(2) The use of machines primarily as testing devices rather than as teaching instruments.

At present, the typical pattern is for teachers to make up their own programs after they have received machines. These teachers are not trained especially in machine program design, but rely on their years of experience in asking students questions to develop sequential programs. Some Soviet specialists express more interest in textbook rather than machine programs, but only a small number of Soviet textbook programs covering fragments of a few school courses have been developed so far.

A large variety of machines are in current use overwhelmingly as testing machines, typically with a fairly small number of multiple-choice questions making up a "program." These machines could be used as teaching machines with longer sequences of frames and dependence of each frame on the preceding one, but at present there is a shortage of programs and an initial concentration (similar to the previous U.S. experience) on machine rather than program construction.

Outstanding work in audiovisual aids is claimed by Soviet education officials particularly in the extensive development of large film libraries and the ready availability of films and film strips in quantity to teachers. But ready accessibility of these films to classroom teachers is a question, as many of the libraries are located far from the schools.

Language laboratories appear to be in frequent use in the better urban schools, primarily consisting of partitioned desks in the classroom, at which students sit with headphones, while the teacher works

from a central control panel. This system is noisy and distracting in operation, but little appears to have been done by Soviet schools with construction of individual booths for students.

Four of the ten research institutes of the Russian S.F.S.R. Academy of Pedagogical Sciences are engaged in research on programed instruction and audiovisual aids in terms of their use in the general elementary-secondary school system. These are the Institutes of Psychology, General and Polytechnical Education, Evening and Correspondence Education, and Defectology (education of handicapped children).

There is no institute of the Academy at the present time primarily devoted to programed instruction and audiovisual aids, but there is some indication that such an "Institute of Technical Devices in Education" will be set up in the near future.

Experimentation takes place not only within the institutes but in certain units of the school system designated as experimental schools and affiliated with given institutes. Such elementary-secondary schools contain a plentiful supply of teaching machines being used by the teachers and students. Teaching machines, however, are not generally distributed in the school system. Soviet Government officials and educators feel that much research has to be done before decisions on mass distribution can be made.

Research in general appears to be largely at the stage of initial data compilation; little research on teaching effectiveness of machines has been done; and substantial conclusions based on extensive research have not yet been reached. Perhaps the most interesting research now underway may be found in the area of combining systems of programed learning and audiovisual aids in the classroom. Experimental Soviet classrooms are using simple but effective combinations of programed devices, electrically operated sliding blackboards and window curtains, and film strip projectors and tape recorders. These are all synchronized and controlled by the teacher working at a central console to give an automated lesson.

The growing Soviet interest in the fields of programed learning and audiovisual aids in education may be expected to stimulate considerable development of the "hardware" of education, but with the continuing guideline that the classroom teacher is the focal point of the teaching process.

B. SOCIAL STUDIES AND INDOCTRINATION

The purpose of indoctrination of students in Communist ideology is served in the Soviet school system primarily by means of several required "social science" courses. The recent trend in the schools is to expand and intensify the indoctrination program, at all levels, by the introduction of additional courses in the "social sciences."

At the elementary or elementary-junior high school level, which in Soviet terminology is called primary through incomplete secondary education (grades 1–8) the established social science subjects are "History and Constitution of the U.S.S.R." and "Geography." The history course consumes 2 hours a week in grades 4 through 7, and 3 hours a week in grade 8. The geography course, which is also referred to as "economic geography" follows the same schedule as history beginning with grade 5.

These courses are the first systematic exposure of pupils in the school system to the Communist dogma, which particularly in the later grades involves various ideological stereotypes and gross political formulations designed to depict the "good Communist society" versus the "evil capitalist society," "the omniscient leadership of the Communist Party and the benevolence of the Soviet State" versus "the manipulation and control by monopolists and militarists in the West," the economic equality of all Soviet citizens" versus "Western exploitation of workers and discrimination," and "the inevitable victory of humanistic communism over capitalist imperialism."

Indoctrination is an intrinsic element not only in the study of the social sciences, but in all courses at all grade levels, proceeding in a lower key at the lowest levels, intensifying and becoming more pronounced as the pupil progresses toward maturity. Foreign language courses, for example, beginning with the fifth grade, are utilized as a prime opportunity for the inculcation of anti-Western views.

Teachers are held directly responsible for the continued indoctrination of pupils. To quote the leading Soviet newspaper for teachers, published by the Ministry of Education and the Teachers' Trade Union (Dec. 30, 1961, article entitled "The School—An Ideological Institution"):

> The rearing of school children in the spirit of the [Communist] Party Program and of decisions of the [Communist Party] Congress is not a short-term campaign. The teacher must not limit himself to a few lectures, talks or lessons. Shaping a Communist world outlook means prolonged and constant work.
>
> All teachers, no matter what their subjects, are obliged to make their contribution to instilling a Communist world outlook in the youth. "Development of a firm Communist world outlook in [elementary]-secondary students," L.F. Il'ichev [Secretary of the Communist Party Central Committee] emphasized in his report, "is a most important task of teaching staffs, Party, Komsomol and young pioneer organizations [Communist Youth groups organized in the schools], parents and the public as a whole." Success depends, above all, on the teachers themselves having Communist ideological integrity and profound Communist convictions.

In the course of the 1965–66 school year, a new subject was introduced in the curriculum of the eighth grade, which is the terminal year of compulsory education in the Soviet Union after which 15-year olds may continue with upper secondary general or vocational education or go to work. The new subject, for which 1 hour a week is set aside, is entitled "Conversations on Our Soviet Society" (the title may vary somewhat in curriculums of different Soviet republics). This, the latest of newly introduced social sciences courses, is probably modeled on the course entitled "Social Science" which was introduced earlier for the terminal year of upper secondary education.

At the upper secondary education level, the predominant social science course has been history, which is taught 3 or 4 times a week in grades 9 and 10.

In the early 1960's, because of dissatisfaction by the Party and State with the overall impact of the social sciences courses then being taught, experimentation began with a new course.

The course, initially called "Fundamentals of Political Knowledge," was taught in Soviet experimental schools for 3 years, and introduced into the regular school system in 1963. The argument for introduction was that pupils had previously been exposed to Marxist-Leninist con-

cepts on a piecemeal basis in various courses, but there was no single course providing an overall ideological view.

Soviet education planners felt that a single comprehensive course surveying all major facets of Marxism-Leninism and responsive to the current Party position should be given in the terminal year of secondary education. The apparent object was to make these graduating pupils age 17 and 18, who were about to enter the adult world, more politically indoctrinated and thereby better motivated in their daily economic activities.

Shortly after the course was introduced into the regular school curriculum, its name was changed to "Social Science." It meets twice a week in the final grade not only in schools of secondary general education, roughly comparable to U.S. high schools, but also in schools of secondary specialized education, or *tekhnikumi*, which provide vocational-technical training at the secondary level.

Among the materials studied by pupils in the course, aside from the writings of Marx, Engels, and Lenin are the current program of the Communist Party and documents of the party congresses, which are intended to develop a militant Communist spirit in conformity with the goals of the latest party directives.

At the higher education level, in the 40 universities and 700-odd specialized institutes, all Soviet students regardless of their fields of specialization are required to take certain "social science" courses devoted to Communist ideology.

The three established required courses are history of the Communist Party of the Soviet Union, political economy, and dialectical and historical materialism (or Marxist-Leninist philosophy). According to a student's field of specialization, roughly 10 to 15 percent of the higher education curriculum is devoted to these courses, with the highest percentage for university students specializing in the social sciences.

A relatively high proportion of the time of students in the sciences and mathematics, humanities, and pedagogy above the primary level is devoted to these courses. The lowest proportion is spent by students in medicine and engineering.

In 1963, beginning in the 1963–64 school year, a fourth required "social science" course was introduced into Soviet higher education entitled "Fundamentals of Scientific Communism." According to the announcement of the course in August 1963 by the U.S.S.R. Ministry of Higher and Specialized Secondary Education, by 1964–65 the course would be taught in all Soviet higher educational institutions for a total of 70 hours. This presumably would make it a one-semester 2-hour-a-week course.

As in the case of the 8th-grade "Conversations on Our Soviet Society" and the 10th-grade "Social Science" the course titled "Fundamentals of Scientific Communism" is given in the terminal year of its education level, in this case the senior year of undergraduate studies.

It was explained in the August 1963 announcement that the course is intended to give students a comprehensive system of knowledge concerning the laws of the origin, formation and development of Communism and "concerning ways and methods of the victory of the dictatorship of the proletariat and the building of socialism and Communism."

Following is a sampling of statements in social science and other textbooks currently used in the Soviet schools at various levels.[1] The textbooks are published, approved, and distributed by agencies of the Soviet Government, and thus represent the considered official views that are designed to be instilled into millions of Russian school children.

[From a 4th grade history textbook: "Rasskazy po istorii SSSR dlia 4 Klassa." Moscow, 1965; pp. 195–196]

* * * Life is difficult for the working classes in all capitalist countries. In the USA, for example, there are about 5 million unemployed. They are strong, healthy persons, wishing to work but unable to find it. The capitalists are the masters in the capitalist countries. Plants, factories, and railroads belong to them.

* * * * * * *

The capitalists are concerned about their own profits and not about the way the workers live. They look upon the worker not as upon a human being but as an appendage to a machine which will not run without it. The sick, the aged, and the invalids are considered useless, and superfluous in the capitalist world * * *.

With each day the struggle of the workers against capitalists increases and gains in strength. The Communist Party of all countries leads this struggle of the working classes * * *.

[From a 10th grade geography textbook: "Ekonomicheskaia geografia zarubezhnykh stran." Moscow, 1964; p. 329]

* * * The United States has many secondary and higher schools and well-equipped hospitals. However, the greater part of the working masses cannot get an education; and a long illness, requiring medical care, also infringes on the material welfare of the well-to-do professional workers. The cost of education and medical care is too great for the majority of Americans. Also expensive are living quarters in the well-built houses. Therefore, the low-paid workers often huddle in old homes * * *. The interests of a small but strong economic group of the large bourgeoisie are maintained by two bourgeois parties—the Republican and the Democratic. The Communist Party, despite brutal persecution, is carrying on a persistent struggle for the vital interests of the American working class; for the democratic rights of the people; for peace; against the arms race and preparations for a new war. The Party is supported by all the progressive strata of society * * *.

[From a grade 6–7 geography textbook: "Geografia chastei sveta." Moscow: Prosveshchenie, 1965; pp. 255–267]

On the United States of America.—The United States of America is the richest and the best developed industrially of all the capitalist countries in the world. At the same time, the highly developed capitalism of the USA is the very largest exploiter and enemy of all nations; it is the fundamental bulwark of contemporary colonialism and the creator of new seats of military aggression in various parts of the world * * *. In the USA there exists a sharp contrast between the vast riches of a small group of multi-millionaires (controlling billions of dollars) and the many million poor inhabitants. The workers suffer from unemployment, high taxes, expensive food products, high rents, back-breaking labor on the capitalist enterprises.

* * * * * * *

The whole government is concentrated in the hands of a small group of big capitalists. * * * Many capitalist governments receive loans and financial aid from the USA * * * and find themselves dependent on it * * *.

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[1] Translated by Nellie Apanasewicz, Research Assistant, Comparative Research Branch, U.S. Office of Education.

[From a textbook for secondary schools (grade level not indicated): "Novelshaia istorlia" (1917–1945). Moscow, 1964; p. 68]

* * * In 1935, the American Congress accepted a decree on "neutrality," which deprived the countries which fell victim to Fascist aggression the means of acquiring arms from the USA. This decree played into the hands of the Fascist powers and made it easier for them to unleash the second world war * * *.

[From the Social Science course textbook, "Obshchestvovedenie," for graduating classes of secondary schools. Moscow, 1964; pp. 375–376]

* * * In August 1945, literally within days before the Japanese surrender, President Truman of the USA issued an order to use the atomic bomb against the cities of Hiroshima and Nagasaki * * * Mankind will never forget this dark day in history.

Why, in spite of the absence of military emergency, did the ruling circles of the USA make use of the atom bomb? Because they felt that a "demonstration of force" was necessary and in this way they felt they could frighten their ally—the USSR—and force the whole world to submit to their will. Having a monopoly in nuclear arms, American imperialism began to carry on a policy of atomic blackmail. Zealous generals from the Pentagon (the War Ministry of the USA) devised plans of atomic bombing of the larger industrial centers of our country; they were prepared to destroy millions of Soviet people in order to overthrow the socialist structure so odious to them.

[From an 11th grade history textbook; "Istorlia SSSR. Epokha sotsializma." Moscow, 1965; p. 316]

* * * In the post-war years, two world socialist camps were formed—a socialist, democratic camp and an imperialist, anti-democratic camp. The imperialist camp began to carry on a policy leading to a new world war. The main role in carrying out this policy was played by the imperialists of the USA, openly striving for world supremacy * * *.

[From a secondary school history textbook: "Novelshaia istorlia" (1945–1964 gg) (grade level not indicated). Moscow, 1964]
[From p. 112]

* * * The monopolies of the USA are attempting in every way possible to safeguard their position in Latin America. Economic pressure, terror, bribery, direct military intervention, utilization of reactionary forces inside the countries—all are applied by them to suppress the national liberation movement of the Latin American nations * * *.

[From p. 124]

* * * After the war, the foreign policy of the USA acquired an extremely aggressive character. The American imperialists openly made known their pretensions for world supremacy. They began the "cold war" against the socialist countries. The USA is preventing China from occupying its lawful place in the UN, and is continuing the occupation of the Island of Taiwan * * *.

C. TRAINING OF FOREIGN STUDENTS

The enrollment of foreign students in educational institutions in the U.S.S.R. rose dramatically in the 1960's as compared with the 1950's. Total foreign enrollments in Soviet schools increased from about 13,000 in the 1958–59 school year to over 21,000, from 119 countries, in 1964–65. In this respect, the United States has continued to maintain a substantial lead, its enrollments increasing from about 47,000 to 82,000 during the same period.

The 1964–65 pattern of foreign student enrollments in the U.S.S.R. was reported to shape up as follows: slightly less than half (10,000 students) from Asia, Africa, and Latin America; slightly more than half (11,000) from Communist countries. Less than 1 percent of all foreign students (under 200) come from the West. In the U.S.S.R. totals, "Asia and Africa" presumably also includes the Near and Middle East. Over half the foreign students are training to become engineers. The remainder are studying in the medical, agricultural, pedagogical, and other fields.

The U.S. totals for the same period from Asia (29,000 or 35.8 percent of foreign students in the United States), Africa (6,855 or 8.4 percent), Near and Middle East (11,217 or 13.7 percent), and Latin America (13,657 or 16.6 percent) add up to a grand total of 61,000 or 75 percent (rounded). This number may be compared with the 10,000 students from the same areas of the world studying in the U.S.S.R.

The remainder of the foreign students in the United States are from Europe (10,108 or 12.3 percent, North America (9,338 or 11.4 percent), and Oceania (1,265 or 1.5 percent). (The U.S. figures for 1964–65 are from the Institute of International Education's "Open Doors, 1965."

In the United States, as in the U.S.S.R., engineering is the single most popular field for foreign students. However, this profession was chosen by only 22 percent of the total number of students as compared with over 50 percent in the U.S.S.R. At the same time in the United States the humanities, physical sciences, and social sciences have 15 to 20 percent each of the foreign students, and other fields much smaller percentages. In contrast, humanities and social sciences do not appear to be fields for which a substantial percentage of the foreign students are trained in the U.S.S.R.

The number of Soviet higher education institutions at which foreign students from Asia, Africa, and Latin America are studying continues to expand. Among those that have been identified to date are (by city):

Moscow:
- Peoples' Friendship University (named for Patrice Lumumba).
- Moscow State University.
- All-Union State Institute of Cinematography.
- First Medical Institute and Second Medical Institute.

Leningrad: Leningrad State University.

Kiev:
- Kiev State University.
- Kiev Construction Engineering Institute.
- Probably Kiev Polytechnical Institute and Kiev Medical Institute.

Tashkent:
- Central Asian University.
- Tashkent Agricultural Institute.
- Tashkent Medical Institute.

Tbilisi: Probably the Georgian Polytechnical Institute and the Agricultural Institue.

Baku: Azerbaidzhan Institute of Petroleum and Chemistry.

Minsk: Belorussian State University.

In addition to studying in the schools in the cities listed, students from underdeveloped areas are probably studying in higher educational institutions in Kharkov, Erevan, and Alma-Ata.

Foreign students also are studying at Soviet secondary specialized, or vocational-technical schools, as apprentices in Soviet industry, and at various international summer schools in the U.S.S.R.

The most important facilities for training foreign students in the U.S.S.R. are Peoples' Friendship University, established in Moscow in 1960 specifically for students from Asia, Africa, and Latin America, and Moscow State University, which expanded its facilities for foreign students in 1959 and which trains students from all areas, developed and underdeveloped, Communist and non-Communist.

In 1964–65, Peoples' Friendship University had an enrollment of about 3,200 students from 82 countries. In September 1965 the enrollment was scheduled to be 3,800, close to the goal of a 4,200 student enrollment. The foreign student enrollment at Moscow State University in 1963 was over 2,000 from 73 countries; foreign enrollments currently, from about 100 countries, may be about 3,000.

CHART No. 1.—*Organizational structure of Peoples Friendship (Lumumba) University*

- University council:
  - Academic council
  - Rectorate:
    - Faculties:
      - Preparatory faculty
      - Engineering faculty:
        - Specialties:
          - Machine building
          - Power machine building
          - Construction
          - Geology and exploration for mineral resources
          - Exploitation of mineral resources
      - Medical faculty:
        - Specialty: Medicine
      - Physico-mathematical and natural sciences faculty:
        - Specialties:
          - Mathematics
          - Physics
          - Chemistry
      - Agricultural faculty:
        - Specialty: Agronomy and zootechnics
      - Economics and law faculty:
        - Specialties:
          - Economics and planning of national economy
          - International law
      - Historico-philological faculty:
        - Specialties:
          - Russian language and literature
          - History
  - Administrative and maintenance unit

Source: "Universitet Druzhby Narodov imeni Patrisa Lumumby. Spravochnik 1964. Moskva" (Peoples Friendship University named for Patrice Lumumba. 1964 Handbook. Moscow).

In 1965, Peoples' Friendship University graduated its first class of those admitted as students in 1960, when the university opened. A total of 228 graduated from five "faculties" or departments. The sixth faculty from which students graduate, the medical faculty, will have its first graduating class in 1966.

The remaining faculty, the "preparatory faculty," is primarily a 1-year intensive Russian language program in which all foreign students are enrolled prior to enrolling in one of the six faculties concerned with their special fields. Studies in all fields but medicine are 4 years in addition to the year at the preparatory faculty (in medicine it is 5 years), based on completion of secondary education or its equivalent.

Since enrollments in Peoples' Friendship University in its first school year (1960–61), presumably all or virtually all freshmen, numbered approximately 600, it would appear that perhaps half the entering students of 1960 failed to graduate as scheduled in 1965. In addition to academic and personal adjustment problems, foreign student dissatisfaction caused by racial incidents, political indoctrination and manipulation of students for propaganda purposes, and controls, restrictions, and surveillance reported by some ex-students and press sources may have contributed to produce the high proportion of dropouts.

Nevertheless, requests for admission to the university, which provides not only a free education and transportation from the home country but also relatively generous stipends, are substantial, numbering about 9,000 applications each year for 600 openings, according to the university's rector or president.

The 1964 handbook of Peoples' Friendship University provides some details on its administration (see chart No. 1). It states that the university's governing body is the university council which consists of representatives of the Soviet Committee of Solidarity of Asian and African Countries, the Union of Soviet Societies for Friendship and Cultural Relations with Foreign Countries, the All-Union Central Council of Trade Unions (the three organizations which were announced as founders of the university in 1960), the Committee of Youth Organizations of the U.S.S.R., the U.S.S.R. Ministry of Higher and Specialized Secondary Education, and deans, representatives of the teaching staff and students, the rector, and prorectors of the university.

The council confirms the university's budget and teaching and research plans, reviews development plans, confirms rules of admission, and performs other broad functions.

The chairman of the council is the rector of the university, who is responsible for administration of the university. He fulfills resolutions of the council, and organizes and supervises all academic, extracurricular, research, publishing, finance, and other administrative work of the university. He is assisted by five prorectors for, respectively, academic and research work in the natural and technical sciences; the same in the humanities; recruitment and foreign relations; administrative-maintenance and finance matters; and extracurricular activities.

Problems of academic or research work are reviewed by the academic council, consisting of the rector, prorectors, deans of the seven faculties or departments, heads of the specialty "Chairs," the director of the library, and representatives of the teaching staff.

The university's officials have recurringly pointed to its successes and to the satisfaction of the majority of students, and the university has

recently undergone a major expansion of its physical plant. Starting in 1960 with three buildings, which were two former military schools and a military barracks, the university has been engaged for several years in building a large separate campus. The construction plans, some of which have been completed, include separate new buildings for each faculty, dormitories, a stadium seating 5,000, a campus club seating 1,500, a computer center, laboratories, a clinic, and a nursery school, presumably for facuty and students with children.

By 1965, almost 800 delegations, primarily from underdeveloped areas, had visited Peoples' Friendship University, and its role as an international showcase for communism was clearly expanding.

In January 1964, the legal frame of reference for foreign students in the U.S.S.R. was spelled out by regulations issued by the U.S.S.R. Ministry of Higher and Specialized Secondary Education (Order No. 6, January 7, 1964; released in the "Bulletin" of the Ministry in March 1964).

The regulations for admission requirements, training, stipends, and acceptable organizations of foreign students in the U.S.S.R. had been released in various announcements in previous years. The section of the regulations quoted below, on the "duties of foreign students," however, suggests a reaction by the Government to recent student problems, a tightening up of controls, and a warning to foreign students henceforth to conform to what is expected of them by the Soviet state:

DUTIES OF FOREIGN STUDENTS

Foreign students being trained in educational institutions and scientific research establishments in the U.S.S.R. are obliged to do the following:

Observe Soviet laws and respect the customs and generally accepted traditions of the peoples of the U.S.S.R.

Observe all demands made on students by the regulations of the higher, secondary specialized, and other educational institutions in which they are being trained.

Observe the established rules of residence and movement for foreign citizens in the U.S.S.R.

Master the theoretical knowledge and practical skills of their chosen specialty systematically and thoroughly, and work to advance their own scientific technical level.

Take course credit tests and qualifying examinations stipulated in the study plan on time.

Observe strictly the regulations of student communal living and participate in self-help.

Students who do not pass course credit tests and qualifying examinations for a given course without a valid excuse, in accordance with the decision of the administration of the educational institution, can be kept in the course for repeated training. Students who do not take the course credit tests and qualifying examinations without a valid excuse are expelled from the educational institution.

Penalties as severe as expulsion from the educational institution may be given for a breach of student discipline, regulations, or unworthy conduct toward foreign and Soviet students.

Foreign students abusing Soviet hospitality will be deported according to the established legal procedure. A person committing a criminal offense is liable to criminal prosecution in accordance with Soviet law.

The regulations in other sections pointed to the generosity of the Soviet state and a particularly humanitarian clause asserted that "[Soviet] educational institutions will purchase, in case of need, warm clothes (overcoat, hat, warm footwear) for students coming from countries with a warm climate."

In April 1965, the Soviet Government announced that a special diploma would be issued to foreign students in the U.S.S.R. successfully completing undergraduate training. This diploma, entitled *magistr*, or "master," is not part of the regular Soviet education system and is not issued to Russian students in Soviet higher educational institutions. (The *magistr* or "master," an undergraduate degree issued to foreign students only in the U.S.S.R., is not to be equated with the U.S. "masters" degree).

This special diploma may indicate special problems in equating the level of education and achievement of foreign students in the U.S.S.R. with those of Russian students, and may indicate an attempt by the Soviet Government to prevent confusion of diplomas earned by Soviet students with those earned by foreign students.

APPENDIX A. STATISTICS ON EDUCATION IN THE U.S.S.R.

SOURCE: Data in the tables on Soviet education are primarily from the following source: *Narodnoe khoziaistvo SSSR v. 1963 g., statisticheskii ezhegodnik (National Economy of the U.S.S.R. in 1963, statistical yearbook)*, published by the Central Statistical Administration attached to the U.S.S.R. Council of Ministers, Moscow, 1965. Data from other official Soviet statistical handbooks have also been included: for 1964–65 from *Vestnik statistiki*, July 1965 and *SSSR v. Tsifrakh v. 1964 godu*, Moscow, 1965.

TABLE NO. 1.—*Enrollment in schools and training programs of various types at all levels, U.S.S.R., selected years, 1914–15 to 1964–65*

[Thousands of students at beginning of school year]

Schools and training programs	1914-15	1940-41	1952-53	1958-59	1959-60	1960-61	1961-62	1962-63	1963-64	1964-65
Total enrollment	10,588	47,547	47,717	46,057	48,741	52,600	56,340	61,265	65,100	68,386
General education schools of all types	9,656	35,552	32,643	31,483	33,364	36,187	39,087	42,445	44,682	46,653
Primary, 7-year, 8-year and complete secondary schools	9,656	34,784	30,953	29,567	31,046	33,417	35,813	38,482	40,478	42,007
Schools for workers and rural youth and schools for adults (including correspondence study)	.....	768	1,690	1,916	2,318	2,770	3,274	3,960	4,204	.....
Trade-technical and factory schools	106	717	774	904	996	1,113	1,266	1,397	1,491	1,600
Secondary specialized educational institutions [1]	54	975	1,477	1,876	1,908	2,060	2,370	2,668	2,983	3,325
Higher educational institutions	127	812	1,441	2,179	2,267	2,396	2,640	2,944	3,261	3,608
Training programs for new trades and raising qualifications in factory and other courses (excluding political education)	645	9,491	11,382	9,615	10,206	10,844	10,977	11,814	12,683	13,200

[1] These are industrial technicums and other secondary specialized schools, providing vocational-technical training.

TABLE NO. 2.—*Primary, 7-year, 8-year, and complete secondary schools, number of schools, enrollment, and number of teachers, U.S.S.R., 1952–53 and 1958–59 to 1964–65*

[At beginning of school year]

	1952-53	1958-59	1959-60	1960-61	1961-62	1962-63	1963-64	1964-65
Total number of schools (thousands) [1]	198.3	199.7	199.3	199.2	198.8	197.6	195.5	.....
Primary	115.8	112.4	111.6	110.1	108.0	105.4	101.8	.....
7-year	62.0	55.7	54.4	36.4	21.1	.....	.....	.....
8-year	.....	.....	2.1	22.5	40.5	62.8	63.7	.....
Complete secondary	19.7	30.7	30.2	29.2	28.0	28.1	28.5	.....
Special schools for mentally and physically handicapped children	.8	.9	1.0	1.0	1.2	1.3	1.5	.....
Total enrollment (millions)	30.9	29.6	31.0	33.4	35.8	38.5	40.5	42.0
Primary	4.5	4.5	4.5	4.4	4.4	4.3	4.2	4.0
7-year	13.6	8.9	9.3	6.1	3.1	.....	.....	.....
8-year	.....	.....	.8	5.9	11.2	16.0	17.1	17.5
Complete secondary	12.7	16.1	16.3	16.9	17.0	18.0	19.0	20.3
Special schools	.1	.1	.1	.1	.1	.2	.2	.2
Total number of teachers (thousands)	1,531.0	1,813.0	1,855.0	1,933.0	2,024.0	2,120.0	2,218.0	.....

[1] Excluding schools for working and rural youth and schools for adults.

TABLE NO. 3.—*Higher and secondary specialized educational institutions, number of schools, and enrollment by type of instruction, U.S.S.R., 1952–53, 1958–59 to 1964–65*

	1952-53	1958-59	1959-60	1960-61	1961-62	1962-63	1963-64	1964-65
Higher schools:								
Total number	827	766	753	739	731	738	742	754
Total enrollments (thousands)	1,441	2,179	2,267	2,396	2,640	2,944	3,261	3,608
Day division	933	1,180	1,146	1,156	1,204	1,287	1,383	1,514
Evening division	38	153	196	245	307	374	439	2,094
Correspondence instruction	470	846	925	995	1,129	1,283	1,439	
Secondary specialized schools:								
Total number	3,604	3,346	3,330	3,328	3,416	3,521	3,626	3,718
Total enrollments (thousands)	1,477	1,876	1,908	2,000	2,370	2,668	2,983	3,325
Day division	1,219	1,125	1,007	1,091	1,203	1,310	1,474	1,634
Evening division	82	303	318	370	431	489	536	1,691
Correspondence instruction	176	448	523	599	736	869	973	

TABLE NO. 4.—*Admissions to secondary specialized educational institutions by type of instruction, and admissions and graduations by branch group of educational institutions, U.S.S.R., 1952 and 1958–64*

[Thousands of students]

	1952	1958	1959	1960	1961	1962	1963	1964
Admissions:								
Type of instruction:								
Day division	412.0	363.7	378.4	415.0	451.3	466.3	500.8	532.0
Evening division	28.1	75.2	98.7	130.0	139.1	141.4	146.1	506.0
Correspondence instruction	59.9	145.2	179.1	224.3	280.7	297.9	308.1	
Branch groups of educational instructions, total	500.0	584.1	656.2	769.3	871.1	905.6	955.0	1,038.0
Industry and construction	193.8	221.5	271.2	322.2	347.6	360.0	385.1	.....
Transport and communications	35.5	46.6	51.6	60.8	68.4	73.0	77.6	.....
Agriculture	85.0	108.4	111.3	120.3	134.7	146.3	151.0	.....
Economics and law	35.7	70.3	77.0	92.7	117.2	122.0	124.3	.....
Health, physical culture, and sports	58.0	67.5	70.5	85.5	92.3	91.3	102.1	.....
Education	84.2	58.5	61.9	72.1	91.4	92.9	94.4	.....
Art and cinematography	7.8	11.3	12.7	15.7	19.5	20.1	20.5	.....
Graduations:								
Branch groups of educational institutions, total	280.6	551.2	527.9	483.5	429.5	452.2	510.7	559.1
Industry and construction	79.3	219.7	224.3	189.9	170.9	163.6	202.9	217.4
Transport and communications	14.7	42.2	40.5	36.6	37.1	34.6	35.3	41.0
Agriculture	47.0	96.3	89.5	80.2	77.7	74.8	64.6	80.1
Economics and law	23.7	45.2	50.3	56.5	56.2	59.8	67.9	74.0
Health, physical culture, and sports	41.0	77.2	71.0	64.2	31.3	58.6	71.8	75.8
Education	70.2	63.4	45.1	48.9	48.6	51.9	58.0	58.4
Art and cinematography	4.7	7.2	7.2	7.2	7.7	8.9	10.2	12.4

TABLE NO. 5.—*Graduations of specialists from higher and secondary specialized institutions, according to type of instruction, U.S.S.R., selected years, 1940, 1950, 1958, and 1960–64*

[In thousands]

	1940	1950	1958	1960	1962	1963	1964
Graduations from higher educational institutions	126.1	176.9	290.8	343.3	316.6	331.7	354.3
Type of instruction:							
Daytime divisions	97.8	145.9	205.4	228.7	195.1	200.7	201.1
Evening divisions	4.4	2.0	8.7	15.4	22.5	25.9	153.2
Correspondence instruction	23.9	29.0	76.7	99.2	99.0	105.1	
Graduations from middle specialized educational institutions	236.8	313.7	551.2	483.5	452.2	510.7	559.1
Type of instruction:							
Daytime divisions	205.3	279.0	463.2	348.1	290.3	288.8	313.9
Evening divisions	2.5	4.7	37.5	57.9	56.8	91.0	245.2
Correspondence instruction	29.0	30.0	50.5	77.5	105.1	130.9	

TABLE NO. 6.—*Number and percent of admissions to higher educational institutions by branch group of institutions, U.S.S.R., selected years, 1940–65*

[Admissions in thousands]

Branch group	1940–41	1945–46	1950–51	1955–56	1959–60	1960–61	1961–62	1962–63	1963–64	1964–65
Total admissions	263.4	285.7	349.1	461.4	511.7	593.1	666.9	727.5	772.4	820.0
Industry and construction	45.4	52.5	74.0	144.8	185.6	225.4	245.8	270.8	287.3	.....
Transport and communications	8.3	9.5	12.0	29.8	32.2	34.1	37.6	40.0	42.5	.....
Agriculture	11.9	17.9	28.5	51.1	57.3	62.7	71.9	81.3	86.5	.....
Economics and law	13.6	20.3	25.5	28.5	40.1	43.9	50.7	47.3	50.2	.....
Health, physical culture, and sport	23.0	26.7	23.7	32.3	33.2	36.8	38.9	40.8	43.3	.....
Education	159.0	155.0	182.6	172.0	159.0	185.1	216.0	241.0	255.7	.....
Art and cinematography	2.2	3.8	2.8	2.9	4.3	5.3	6.0	6.3	6.9	.....

TABLE NO. 7.—*Number and percent of graduations of specialists from higher educational institutions, by branch group, U.S.S.R., selected years, 1940–64*

[Graduations in thousands]

Branch group	1940	1945	1950	1955	1959	1960	1961	1962	1963	1964
Total graduations	126.1	54.6	176.9	245.8	338.0	343.3	325.5	316.6	331.7	354.3
Industry and construction	24.2	8.5	30.0	56.4	92.3	95.2	97.1	99.7	104.4	112.4
Transport and communications	5.9	1.6	6.1	9.5	16.3	16.1	17.0	15.9	16.7	15.7
Agriculture	10.3	2.9	12.7	24.1	34.5	34.7	31.8	30.8	31.4	34.1
Economics and law	5.7	2.4	11.4	15.6	25.0	25.0	24.7	24.1	24.8	28.2
Health, physical culture, and sport	17.4	6.6	20.0	16.9	29.5	30.7	30.6	30.3	31.5	31.6
Education	61.6	32.0	94.1	120.8	138.0	139.1	121.8	113.2	119.9	128.9
Art and cinematography	1.0	.6	2.6	2.5	2.4	2.5	2.5	2.6	3.0	3.4

TABLE NO. 8.—*Persons with higher and secondary education (complete and incomeplete) per 1,000 inhabitants, U.S.S.R., selected years, 1939, 1959, 1964, and 1965*

	Per, 1,000 of total number of inhabitants				Per 1,000 of all working inhabitants			
	1939	1959	1964	1965	1939	1959	1964	1965
Persons with education:								
Completed higher education	6	18	24	25	13	33	43	45
Uncompleted higher, secondary, and incomplete secondary	77	263	296	308	110	400	458	477
Total with higher and secondary education (complete and incomplete)	83	281	320	333	123	433	501	522

TABLE NO. 9.—*Enrollment of aspirants (graduate students) by branches of study; U.S.S.R., 1950, 1960–64 (at end of year)*

Branch of study	1950		1960		1960 as percent (or multiple) of 1950		1961	1962		1963		1964	
	Number of aspirants	Number in higher educational institutions	Number of aspirants	Number in higher educational institutions	Number of aspirants	Number in higher educational institutions	Number of aspirants	Number of aspirants	Percent of total	Number of aspirants	Percent of total	Number of aspirants	Percent of total
Total	21,905	12,487	36,754	20,406	168	163	47,500	61,809	100	73,105	100	83,271	100
Physicomathematics	972	618	3,435	2,726	(1)	(2)	4,887	6,345	10.3	7,548	10.3	8,895	10.7
Chemistry	1,319	667	2,402	1,296	182	194	3,001	3,586	5.8	4,064	5.6	4,735	5.7
Biology	1,247	611	1,877	732	151	120	2,396	3,821	6.2	4,604	6.3	5,502	6.6
Geology-minerology	503	233	1,313	533	261	229	1,659	2,273	3.7	2,509	3.4	2,633	3.1
Technical	5,809	2,854	13,936	6,720	240	235	17,630	22,433	36.3	27,509	37.6	32,192	38.6
Agriculture and veterinary	2,165	835	2,877	1,077	133	129	3,953	4,786	7.7	5,948	8.1	6,731	8.1
History and philosophy	2,607	1,745	1,726	1,184	66	68	2,194	3,020	4.9	3,623	5.0	3,913	4.7
Economics	1,366	1,014	2,776	1,661	203	164	3,504	4,627	7.5	5,465	7.5	6,398	7.7
Philology	1,980	1,457	1,471	1,067	74	73	1,830	2,453	4.0	2,539	3.5	2,432	2.9
Geography	328	190	402	254	123	134	505	731	1.2	759	1.0	814	1.0
Law	748	489	402	280	54	57	497	707	1.1	742	1.0	722	.4
Pedagogy	862	568	956	691	111	122	1,291	1,832	2.9	1,816	2.5	1,734	2.1
Medicine and pharmacy	1,386	862	2,585	1,846	187	214	3,441	4,057	6.5	4,733	6.5	5,245	6.3
Art	459	290	448	314	98	108	598	785	1.3	861	1.2	854	1.0
Architecture	154	54	148	25	96	46	174	353	0.6	385	.5	471	.6

[1] 3.5 times. [2] 4.4 times.

TABLE No. 10.—*Enrollments of aspirants (graduate students), by type of instruction, U.S.S.R., selected years, 1940–64*

Type of instruction	Number of aspirants				1960 as percent (or multiple of)—			1961	1962	1963	1964
	1940	1950	1955	1960	1940	1950	1955				
Total	16,863	21,995	29,362	36,754	218	168	125	47,560	61,809	73,105	83,271
In higher educational institutions	13,169	12,487	16,774	20,406	155	163	122	27,066	36,334	43,297	49,522
Training with interruption from production (full time)	11,506	11,199	13,212	13,463	177	120	102	17,367	23,130	27,583	31,191
Training without interruption from production (part time)	1,663	1,288	3,562	6,943	(1)	(2)	195	9,699	13,204	15,714	18,331
In scientific organizations	3,694	9,418	12,588	16,348	(3)	174	130	20,494	25,475	29,808	33,749
Training with interruption from production (full time)	2,919	6,944	8,145	9,515	(4)	137	117	11,308	13,584	15,312	16,737
Training without interruption from production (part time)	775	2,474	4,443	6,833	(5)	276	154	9,186	11,891	14,496	17,012

[1] 4.2 times. [2] 5.4 times. [3] 4.4 times. [4] 3.3 times. [5] 8.8 times.

TABLE No. 11.—*Number of graduations of aspirants (graduate students), by type of instruction, U.S.S.R., selected years, 1940–64*

Years	Total	Number of graduations by type of instruction			
		In higher educational institutions		In scientific organizations	
		With interruption from production	Without interruption from production	With interruption from production	Without interruption from production
1940	1,978	1,411	61	454	52
1945	1,366	1,092	108	129	37
1946–50	16,295	10,087	733	4,767	708
1951–55	31,475	18,128	1,371	9,887	2,089
1956	8,453	4,805	496	2,408	744
1957	8,250	4,288	653	2,523	786
1958	6,802	3,119	707	2,053	923
1959	5,603	2,585	745	1,504	769
1960	5,517	2,407	613	1,718	779
1961	6,921	3,145	650	2,262	864
1962	8,515	3,835	886	2,689	1,105
1963	11,660	5,035	1,819	3,210	1,596
1964	15,320	6,836	2,277	4,067	2,140

TABLE No. 12.—*The number of scientific workers, U.S.S.R., selected years, 1950, 1958, and 1960–64*

[At the end of the year]

	1950	1958	1960	1962	1963	1964
Total number of scientific workers (thousands)	162.5	284.0	354.2	524.5	566.0	611.6
In scientific institutions	70.5	141.0	200.1	299.0	326.8	356.3
In higher educational institutions	86.5	135.7	146.9	179.5	196.8	206.3

TABLE No. 13.—*The composition of scientific workers, according to degrees and rank (or title), U.S.S.R., selected years, 1950, 1958 and 1960–64*

[At the end of the year]

	1950	1958	1960	1962	1963	1964
Total number of scientific workers (thousands)	162.5	284.0	354.2	524.5	566.0	611.6
Those with degrees:						
Doctors of sciences	8.3	10.3	10.9	11.9	12.7	13.7
Candidates of sciences	45.5	90.0	98.3	108.7	115.2	123.9
Those with academic rank:						
Academicians, corresponding members, professors	8.9	9.6	9.9	11.0	11.4	12.0
Docents	21.8	32.7	36.2	40.6	42.9	46.0
Senior scientific collaborators	11.4	17.2	20.3	23.8	25.8	27.2
Junior scientific collaborators and assistants	19.6	23.6	26.7	45.0	47.9	48.2

TABLE NO. 14.—*Distribution of scientific workers by branches of specialization, U.S.S.R., 1963 and 1964*

[At the end of the year]

	1963			1964		
	Number of scientific workers	The number with academic degrees		Number of scientific workers	The number with academic degrees	
		Doctors of sciences	Candidates of sciences		Doctors of sciences	Candidates of sciences
Total	565,958	12,744	115,240	611,639	13,713	123,896
Type of specialty:						
Physics-mathematics	54,898	1,331	9,566	58,202	1,494	10,859
Chemistry	28,810	771	6,202	31,618	814	6,922
Biology	23,858	1,468	9,206	25,699	1,544	9,874
Geology-mineralogy	15,136	682	3,696	15,415	724	4,079
Technical sciences	245,441	2,618	29,815	268,961	2,853	32,120
Agriculture and veterinary science.	27,993	940	8,467	29,106	971	8,657
History and philosophy	24,592	603	9,767	26,596	715	10,368
Economics	24,364	368	6,220	27,769	425	7,027
Philology	32,606	390	6,007	34,772	433	6,379
Geography	5,428	212	1,791	5,553	221	1,812
Jurisprudence	2,950	128	1,480	3,072	145	1,502
Pedagogy	20,003	109	2,724	21,223	120	2,870
Medicine and pharmacy	34,556	2,906	16,239	35,131	3,012	16,797
Art	7,922	75	752	8,249	79	812
Architecture	1,803	43	530	1,788	40	537
Other	15,598	106	2,778	18,485	123	3,281

APPENDIX B. STATISTICS ON EDUCATION IN THE UNITED STATES

TABLE NO. 15.—*Fall enrollment in educational institutions, by grade level and type of school: United States, 1963 and 1964**

Grade level and type of school	Fall 1963	Fall 1964
Total, elementary, secondary, and higher education	51,682,000	53,566,000
Kindergarten through grade 8	34,904,000	35,725,000
Public school systems (regular full time)	29,304,000	30,025,000
Nonpublic schools (regular full time) [1]	5,400,000	5,500,000
Other schools [1 2]	200,000	200,000
Grades 9 through 12	12,283,000	12,891,000
Public school systems (regular full time)	10,883,000	11,391,000
Nonpublic schools (regular full time) [1]	1,300,000	1,400,000
Other schools [1 2]	100,000	100,000
Kindergarten through grade 12	47,187,000	48,616,000
Public school systems (regular full time)	40,187,000	41,416,000
Nonpublic schools (regular full time) [1]	6,700,000	6,900,000
Other schools [1 2]	300,000	300,000
Higher education: Universities, colleges, professional schools, junior colleges, normal schools, and teachers colleges (degree-credit enrollment)	4,495,000	4,950,000

[1] Estimated.
[2] Includes Federal schools for Indians, federally operated elementary and secondary schools on posts, subcollegiate departments of institutions of higher education, and residential schools for exceptional children.
*U.S. Department of Health, Education, and Welfare, Office of Education. "Progress of Public Education in the United States of America, 1964-65," OE-10005-65-A.

NOTE.—Fall enrollment is usually smaller than school-year enrollment, since the latter is a cumulative figure which includes students who enroll at any time during the year.
Source: U.S. Department of Health, Education, and Welfare, Office of Education, surveys and estimates of the National Center for Educational Statistics.

TABLE No. 16.—*Earned degrees conferred by institutions of higher education: United States, selected years from 1869–70 to 1963–64* [1]

Year	Earned degrees conferred			
	All degrees	Bachelor's and first professional	Master's except first professional	Doctor's
1869–70	9,372	9,371	0	1
1879–80	13,829	12,896	879	54
1889–90	16,703	15,539	1,015	149
1899–1900	29,375	27,410	1,583	382
1909–10	39,755	37,199	2,113	443
1919–20	53,516	48,622	4,279	615
1929–30	139,752	122,484	14,969	2,299
1939–40	216,521	186,500	26,731	3,290
1949–50	496,661	432,058	58,183	6,420
1951–52	401,203	329,986	63,534	7,683
1953–54	356,608	290,825	56,788	8,995
1955–56	376,973	308,812	59,258	8,903
1957–58	436,979	362,554	65,487	8,938
1959–60	476,704	392,440	74,435	9,829
1961–62	514,323	417,846	84,855	11,622
1962–63	551,810	447,622	91,366	12,822
1963–64	614,194	496,654	101,050	14,490

[1] U.S. Department of Health, Education, and Welfare, Office of Education. "Progress of Public Education in the United States of America 1964–65," OE–10005–65–A.

NOTE.—Beginning in 1959–60, includes Alaska and Hawaii.

Source: U.S. Department of Health, Education, and Welfare, Office of Education, *Digest of Educational Statistics* and circulars on *Earned Degrees Conferred*.

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RECENT CHANGES IN LABOR CONTROLS IN THE SOVIET UNION

BY

EDMUND NASH

CONTENTS

RECENT CHANGES IN LABOR CONTROLS IN THE SOVIET UNION [1]

Introduction

Within the past dozen years the Government of the U.S.S.R. has legislated an extensive relaxation of labor controls, and has adopted measures aimed at gradually improving working and living conditions.[2] This policy of relaxation and beneficial measures may be accounted for partly by the change in the leadership of the Communist Party after the death of Stalin [1953], with the apparent realization by the new leaders that such a policy would be more profitable than the previous one of compulsion and terror, and partly by the growth of the Soviet economy to a stage where more resources can be allocated to the production of consumer goods and to the extension of consumer services.

Normally the important relaxations and benefits to be legislated were announced in advance, at the party congresses. The two most important in this respect were the 20th and the 21st party congresses which convened in February 1956 and January 1959, respectively. The 22d and the 23d congress (which convened in October 1961 and March 1966, respectively) mostly reaffirmed the labor policies announced in 1956 and 1959, and promised an intensification of the Government's efforts to improve working and living conditions.

1. Measures for the Relaxation of Labor Controls

Labor force controls.—The most important relaxation in labor controls was brought about by the decree of March 8, 1956, which abolished the penal liability of workers for unauthorized quitting or absences; the decree gave workers the right to quit their jobs without permission of the management, provided they gave 2 weeks' notice. By this decree court-imposed sentences for unauthorized absences (including repeated tardiness) were replaced by administrative penalties (listed below in the section on "Standard Factory and Office Regulations"). Many important changes were made affecting young new workers. The decree of March 18, 1955, abolished the draft of youth (boys, 14 to 17 years of age, and girls, 15 to 17) into trade and railroad schools, and the decree of December 13, 1956, forbade the hiring of juveniles under 16 years of age, except for training purposes (15-year-olds only). Since at that time 7 years of compulsory education began at the age

[1] An earlier version of this article appears in "Dimensions of Soviet Economic Power," hearings together with compilation of studies prepared for the Joint Economic Committee, Congress of the United States, 87th Cong., 2d sess., Dec. 10 and 11, 1962, pp. 391–407 and pp. 691–693.

[2] Most of the pertinent legislation is presented in "Principal Current Soviet Labor Legislation, a Compilation of Documents." (Washington, Government Printing Office, Bureau of Labor Statistics Rept. No. 210) January 1962, p. 58.

of 7 for most pupils who would graduate at 14, the Government on December 25, 1958, decreed the replacement ("within 3 to 5 years") of the then existing 7-year elementary education system with an 8-year system. During the period of transition and later, it would appear that most 14- and 15-year-olds who were not going on to high school would be encouraged to enroll voluntarily in the trade and railroad schools, or to go directly into enterprises for training. In 1966, there were over 1,500,000 boys and girls enrolled in trade schools, and the new 5-year plan (for 1966–70) provides for the training of 6 million of them.[3]

By 1966, the majority of eighth-grade graduates (72.4 percent of those in the Russian Republic) were exepected to enter high school, which provides 2 more years of education.[4] Tuition fees had been abolished, as of September 1, 1956, for students in high schools, vocational schools, and higher educational institutions. Enrollment in secondary technical schools, however, is limited, and priority is given to persons with at least 2 years of work experience.[5]

Most high school graduates must work for at least 2 years before they are permitted to apply for entry into the universities and the college-level professional schools. Only a small proportion of the applicants are successful in being enrolled as full-time students. By 1966, there were 3,830,000 students in the higher educational institutions of the Soviet Union; this number is to be increased to about 5 million by 1970.[6] Under Soviet law, graduates of secondary specialized and college-level professional schools are obligated to work in places to which they are assigned for the first 3 years after graduation. However, they now have the right to find a job on their own before they are assigned.[7] They may not quit by giving management 2 weeks' notice; nor may graduates of trade schools, who must work where assigned for the first 4 years. If any such graduate quits his job without the permission of management before his 3 or 4 years are up he will not be liable criminally but will suffer not only moral condemnation by party-directed "social groups" and individuals but also serious economic consequences, for the management of the enterprise where he works before surrendering his workbook (which must be submitted when a new job is applied for) will note in it that he was discharged for absence without valid reasons, and the management will have the right to recover from him the expenses (such as transportation and per diem allowances) involved in getting him to the place of work after graduation.[8] An important discouragement to quitting was a decree issued in May 1963 which provides that a graduate of a higher educational institution will receive his diploma only after working 1 year at his assigned job.[9]

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[3] Pravda (Truth, Communist Party daily), Mar. 30, 1966, p. 7.
[4] Pravda, Feb. 9, 1966, p. 1, and Mar. 25, 1966, p. 3.
[5] Trud (Labor, the Soviet trade union daily), Feb. 1, 1966, p. 1.
[6] Pravda, Apr. 6, 1966, p. 6.
[7] Kunik, Ya. A., "Osnovy sovetskogo trudovogo prava i grazhdanskogo protsesa" (Fundamentals of Soviet Labor Law and the Civil Process), Moscow, 1965, p. 19.
[8] "Chto nuzhno znat' rabochim i sluzhashchim o trudovom zakonodatels'tve" (What the Workers Need To Know About Labor Legislation), Moscow, 1960, pp. 40–41.
[9] For discussion of assignments to jobs, see "Labor Law and Practice in the U.S.S.R." (Washington, Government Printing Office, 1964; Bureau of Labor Statistics Rept. No. 270), pp. 39–40.

Women were barred from underground work (with certain exceptions) by the decree of July 13, 1957.

Toward the end of 1957, an amnesty decree shortened or abolished the sentences of prisoners "who do not constitute a great danger to the State." The prison population of the existing system of "corrective labor colonies" in the Soviet Union appears to have decreased considerably as a result of amnesties (there was also one in 1953 and one in 1955) and of the new legislation providing that only courts of law may convict and send persons to such colonies.[10]

The decree of March 4, 1960, condemned the bureaucratic demands for numerous documents at the time a worker applies for a new job and declared the worker's passport and his workbook to be sufficient documents (the workbook was introduced by the decree of December 20, 1938, and contains the worker's identification, a record of his education and training, a list of all the jobs he has had, the reasons for being separated from all previous jobs, and a record of any rewards for outstanding work). A person without a workbook must submit with his passport a certificate concerning his last employment from the management of his apartment building, or from the street or ward committee, or from the village council.[11] The Soviet passport is an identification document obligatory for all Soviet citizens, 16 years of age and over, who live in urban and certain other specified areas.

Standard factory and office regulations.—Labor controls on the factory and office level were defined on January 12, 1957, in the standard factory and office regulations concerning employees which were approved by the U.S.S.R. Council of Ministers' State Committee on Wage and Labor Questions (this commitee, which issues definitive rules and instructions implementing labor legislation, had been created on May 24, 1955). The stated purpose of these regulations was "to assure the strengthening of Socialist discipline of labor, the proper organization and the safe conditions of work, the full and efficient utilization of working time, the increase in productivity of labor, and the production of good quality merchandise." These regulations reaffirmed that no worker may be hired without the submission of his internal passport and his workbook. Workers are obliged, among other things, to come to work on time, to fulfill work quotas and to strive to overfulfill them, to protect factory property, to avoid waste, to observe fully safety and fire regulations, and to keep their working places clean. Management may impose the following penalties for the violation of labor discipline (the most frequent serious violation being unjustified absence from work): (1) a warning, (2) a reprimand, (3) a severe reprimand, or (4) the transfer of the employee to a lower paid job, or one with lesser responsibilities, for a period of up to 3 months. (For repeated absenteeism, the worker may also be dismissed, if the trade union committee approves.) Management has also the option of transmitting the labor discipline violation case to the comrades' court for review (this court of 5 to 15 members is elected at a general meeting of employees in enterprises with

[10] For discussion of forced labor camps, see Paul Barton, "An End to Concentration Camps?" in Problems of Communism. Washington, D.C., No. 2, March–April 1962, pp. 38–46.

[11] Sotsialisticheskii Trud (Socialist Labor, a monthly). February 1960, p. 140.

at least 100 employees).[12] In addition to disciplinary authority, the management has the following incentive measures at its disposal: (1) an expression of appreciation, (2) an award of an honorary certificate, (3) the placing of the employee's name in the book of honor or on the wall board of honor, (4) the granting of the title of best worker in his type of job, (5) a money award, and (6) an award of a valuable gift.

Compulsion to useful work.—The Soviet Constitution states (article 12) that "Work in the U.S.S.R. is a duty and a matter of honor for every able-bodied citizen, in accordance with the principle: 'He who does not work, neither shall he eat.'" Though this was first published in 1936, there are still some Soviet citizens who have not taken this principle to heart, as was made clear by the decree of May 4, 1961, entitled "Concerning the Intensification of the Fight Against Persons Who Avoid Socially Useful Work and Lead an Antisocial Parasitic Way of Life." This decreee provided that by a decision in each case of a public court, such persons will be deported to specially designated localities where they must work for a period of from 2 to 5 years. In some cases such a sentence may be handed down by the collective of workers at an enterprise, workshop, institution, or collective farm. Persons who are subject to such a penalty are, reads the decree, "able-bodied adult citizens who avoid socially useful work and derive unearned income from the exploitation of land plots, automobiles, or housing, or commit other antisocial acts that enable them to lead a parasitic way of life," and "persons who take jobs * * * only for the sake of appearance and live on funds obtained by nonlabor means."[13]

One important feature of the Soviet labor control system is that workers who are grievously disaffected with the prevailing system and living conditions are not permitted, however much they might want it, to emigrate from the Soviet Union. By contrast, in Yugoslavia, another Communist country, such absolute controls do not exist: In 1965, over 700,000 Yugoslavs traveled abroad and over 200,000 were in temporary employment abroad.[14]

Allocation of labor force.—One important aspect of labor force control in the Soviet Union is the problem of the efficient allocation of labor resources in the unevenly distributed and underemployed population.[15] Party leader Leonid Brezhnev, at the 23d party congress, declared this problem to be one of great economic and political importance. He also said that a serious improvement is necessary in the training and retraining of personnel for party, government, and economic bodies.[16] A national system of labor exchange offices does not exist. A Soviet economist has urged that such a system be established to take care of the many manual workers that are expected to be displaced by the planned extension of mechanization and the more efficient operation of enterprises; these workers are to be trained in new trades.[17] Of interest in this connection was an earlier report that many

[12] For discussion of Comrades' Courts, see Labor Law and Practice in the U.S.S.R., p. 43.
[13] Principal Current Soviet Labor Legislation, pp. 125–127.
[14] Yugoslav Life (a monthly), Belgrade, April 1966, p. 5.
[15] For discussion of underemployment, see "Underemployment and Unemployment in the Soviet Union," Labor Developments Abroad (Bureau of Labor Statistics), November 1965, pp. 1–8.
[16] Pravda, Mar. 30, 1966, p. 8. Moscow News, Apr. 2, 1966, p. 37.
[17] Trud, Mar. 10, 1966, p. 3.

workers who had received degrees in specialized fields of study from night and correspondence schools on the secondary specialized and college level often continued, for lack of opportunity, in the jobs they had held, making no use whatever of their acquired specialties.[18] As for the acknowledged surplus of manpower in small cities, the same economist said the party directives concerning the new 5-year economic plan recommend "the construction of new enterprises mainly in medium-sized and small cities." [19]

The main agency for considering problems of the labor force is the Scientific-Research Institute of Labor, an organ of the U.S.S.R. Council of Ministers' State Committee on questions of labor and wages (created on May 24, 1955).[20] In recent years this Institute has done considerable study of the utilization and interregional distribution of the country's labor resources.

A joint Government-party resolution in February 1966 directed the councils of ministers of the 15 union republics that make up the U.S.S.R. to prepare concrete measures for every city and district within their republics for the allocation by local authorities (executive committees of councils of workers' deputies) of public school graduates to industrial enterprises, state and collective farms, construction sites, and to other establishments. They were also directed to establish the proportion of young workers within every enterprise and establishment, the proportion ranging from 0.5 percent to 10 percent of all the workers.[21]

Public appeals and pressure under the organized recruitment program have been a favorite means of persuading annually hundreds of thousands of public school graduates, demobilized Armed Forces personnel, and others to go, usually under 2-year or longer term contracts,[22] to work in the eastern and northern regions of the country. However, there has been a clear reluctance among many Soviet citizens, especially graduates of secondary and college level technical and professional schools, to accept, and continue in, job assignments in the more remote regions of the country, where living conditions are far inferior to those of most of the European part of the Soviet Union. For example, Pravda, on June 14, 1962, reported that only half of the number of teachers assigned by universities in the Russian Republic to Tadjikistan schools in 1961 arrived there and that in the preceding few years about the same number of specialists (i.e., graduates of secondary and college level schools) left Kazakhstan annually as were sent there.

Controls through trade unions.—V. I. Lenin, who planned and brought about the Communist seizure of power in Russia in 1917, had set forth the basic Communist principle that the Soviet trade unions "are an educational organization * * * a school of administration, a school of management, a school of communism." [23] The present party leader Brezhnev reported at the 23d Party Congress on March 29, 1966, that "the functions of the trade unions as schools of communism are being given a new content," and that for these functions to reach a

[18] Trud i zarabotnaya plata (Labor and Wage Payments, a monthly), No. 9, 1962, p. 37.
[19] Trud, Mar. 10, 1966, p. 3.
[20] Trud i zarabotnaya plata, No. 8, 1962, p. 6.
[21] Pravda, Feb. 6, 1966, p. 2.
[22] Andreyev, V. S. (editor). Sovetskoe trudovoe pravo (Soviet Labor Law). Moscow, 1965, p. 119.
[23] "Principal Current Soviet Labor Legislation," p. 112.

higher level it is necessary "to improve the party leadership of the trade unions and to pay still greater attention to the selection and training of trade union officials by the party." [24] In his report to the 22d Congress in October 1961, the then First Secretary of the Central Committee of the Communist Party, Nikita Khrushchev, emphasized that the main function of the trade unions "must be the struggle to realize the program of Communist construction," and that the trade unions would increasingly be assigned tasks now performed by Government agencies.[25] As a result of the sweeping economic reform of the national economy approved on September 29, 1965, by the Central Committee of the Communist Party, the structure and functions of the Soviet trade unions are to be correspondingly reorganized to strengthen the production role of the industrial trade unions.[26]

The Soviet trade unions do not have the right to strike against the Government, which fixes wage rates, hours of work, and working conditions. The 22 industrial trade unions in the U.S.S.R. have a membership in 1966 of "about 80 million," according to the trade union chief, Victor V. Grishin.[27] Officially he is the chairman of the All-Union Central Council of Trade Unions. Since the figure of "about 80 million" appears to be larger than the total number of wage and salary earners,[28] some explanation is called for, especially as trade union membership hitherto has not been compulsory. In 1964, for example, just over 95 percent of all the wage and salary earners in the Soviet Union were trade union members.[29] An amplification of Grishin's membership figure was subsequently made in a report on the ninth plenary meeting of the All-Union Central Council of Trade Unions which stated that the trade unions now unite "about 80 million workers, employees, collective farmers, and students." [30] It would appear that collective farmers and students have swelled the trade union membership.

Grishin summarized the main tasks of the trade unions under the 20-year (1960–80) program approved by the 22d Congress as follows: to develop further worker competition not only for increasing the volume and quality of production but also for lowering the costs of production; to inspire the workers with enthusiasm for Communist ideals and goals; to pay more attention to meeting the material and cultural needs of everyday living; and to draw workers into greater participation in the administration of factory, Government, and social activities.[31] Grishin reiterated these broad tasks in his speech of April 1, 1966, at the 23d Congress of the party and confirmed Brezhnev's statement to the Congress that one of the important duties of the trade unions is to help the party to train more skilled workers and efficient administrators for the national economy. He said that "the trade unions are the support of the Communist Party, the executors of its policies among the masses." [32]

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[24] Pravda, Mar. 30, 1966, p. 8.
[25] Pravda, Oct. 18, 1961, p. 10.
[26] Sovetskie profsoyuzy (Soviet Trade Unions, a biweekly), Moscow, No. 20 (October) 1965, p. 38.
[27] Trud, Apr. 2, 1966, p. 2.
[28] The annual report on the national economy of the Central Statistical Office of the U.S.S.R. Council of Ministers gave the average number of wage and salary earners in 1965 as 76.9 million. (Pravda, Feb. 3, 1966.)
[29] Sovetskie profsoyuzy, No. 3 (February), 1965, p. 26.
[30] Pravda, Apr. 28, 1966, p. 2.
[31] Trud, Oct. 22, 1961, p. 2.
[32] Trud, Apr. 2, 1966, p. 2.

The trade unions have had the additional responsibility since 1961 of attracting housewives into work by promoting the establishment of consumer services to ease their housework (such as take-home meals from factory and public kitchens) and the establishment of nurseries at working places, and of kindergartens elsewhere, where working mothers may leave their young children. Small beginnings have been made in the exhibition and sale of consumer goods in factories.[33]

The role of the Soviet trade unions in the post-Stalin period received its greatest expansion in the years 1957–59. On January 31, 1957, an improved procedure for the settlement of workers' disputes or grievances was decreed. The disputes are normally handled by labor disputes boards, which are composed of an equal number of permanent representatives of the trade union in the enterprise and of the management. Wages, hours of work, and working conditions are set by law and are not subject to dispute; nor are penalties by management for violation of labor discipline. Among the more important subjects concerning which disputes are permitted are the dismissal or transfer of a worker; the proper job classification of a worker and the application of the proper wage scale; questions of payment for overtime, sick leave, defective products, and other work; severance pay; and deductions from wages for material damages to factory property. An employee who is dissatisfied with the decision of a labor disputes board may appeal to a public court for a review of his dispute. Top level managerial and technical personnel, editors of publications, teachers in higher educational institutions, and higher level trade union personnel cannot take their disputes in connection with dismissals or transfers to labor disputes boards but must appeal to higher administrative authorities.

The decree of July 15, 1958, extended the rights and functions of Soviet trade unions by empowering the executive committee of the trade union local: (1) To participate in the drafting of production and construction (including workers' housing) plans and in the determination of work quotas and wage payments; (2) to hear reports from the management on the fulfillment of production plans and management's collective agreement obligations (in March 1966, a joint Government-trade union decree directed that the collective agreement in each enterprise spelling out the obligations of management and of the trade union will be signed annually by the trade union local and management); (3) to control general meetings of workers and the technical and production conferences; (4) to check on management's observance of labor laws, on the distribution of housing space to workers, and on the efficient operation of various consumer services; (5) to permit the discharge of a worker only with its consent; (6) to criticize and recommend the discharge or disciplinary punishment of managerial workers who are inefficient or careless of workers' rights; (7) to be obligatorily consulted by management in the appointment of workers to managerial positions at all levels; and (8) to continue to administer the social security laws.

The trade union constitution was revised, as of March 27, 1959.[34]

[33] Trud, Dec. 24, 1965, p. 2.
[34] For essential text, see "Principal Current Soviet Labor Legislation," pp. 112–119.

The primary function of trade unions continues to be that of encouraging workers to fulfill and overfulfill production plans; for this purpose the trade unions are obligated to promote competition in production among workers and to check on labor discipline (namely, on workers' absenteeism, tardiness, and negligence). The Government's stated goal is gradually to supplant management-imposed disciplinary penalties by persuasive informal appeals to individuals by trade union officials, stressing the social and moral responsibilities of the violators of labor discipline.[35] In December 1965, the All-Union Central Council of Trade Unions directed trade union bodies, in their fight against violators of labor discipline, to use more thoroughly the available collective means of prevention and correction, including the comrades' courts (whose disciplinary role is steadily being increased), workers' general meetings, local radio stations, local newspapers, notices on factory bulletin boards, and announcements during cultural programs.[36] Drunkenness, as a cause of absenteeism and negligence, continues to be a serious problem.[37] The trade union bodies were also directed to insist on management's observing all laws and rules concerning working conditions, including overtime, sanitary, and safety provisions. In the Soviet Union the refusal to perform overtime work, whenever such becomes necessary, is a breach of labor discipline.[38] Overtime work, however, is limited to 4 hours within 2 successive days. The most frequent types of labor law violations on the part of management have been reported as (1) the illegal dismissal or transfer of a worker, (2) illegal overtime work, and (3) the arbitrary change of a worker's weekly rest day (for example, forcing a worker to work on Sunday when that is his usual day off).[39]

One of the latest developments promoted by the Soviet trade unions in the drive to stimulate greater and better production has been "the movement for Communist labor," which has been called, "the highest form of competition."[40] The movement began in November 1958, and by the end of 1965 included over 33 million persons, including collective farmers. Its objective has been to inspire a moral fervor among persons competing in production to win the titles of "Communist Labor Collective" and "Shockworker of Communist Labor." The motto of the movement is, "Let's learn how to work and live the Communist way."[41] Over 90 percent of the Soviet wage and salary earners are engaged in some form of competition in production.[42] The 23d Congress of the party declared it to be the obligation of the trade unions to develop socialist competition still more widely among the workers.[43]

2. Measures Concerning Labor and Living Conditions

Hours of work.—The present 6-day, 41-hour workweek for most workers was gradually reduced from 48 hours by two decrees: (1) the

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[35] "Trudovoe pravo v svete reshenii XXI s'ezda KPSS" (Labor Law in the Light of the Decisions of the 21st Congress of the Communist Party of the Soviet Union), a collection of articles, N. Aleksandrov, editor, Moscow, 1960, p. 17.
[36] Trud, Dec. 28, 1965, p. 2.
[37] Trud, Dec. 24, 1965, p. 2.
[38] Yarko, Anatoli. "Sverkhurochnye raboty" (Overtime Work). Moscow, 1965, p. 12.
[39] Trud, Dec. 24, 1965, p. 2.
[40] Trud, Apr. 2, 1966, p. 2.
[41] "Dvizhenie za kommunisticheskii trud v promyshlennosti SSSR, 1958–63 gg." (The Movement for Communist Labor in U.S.S.R. Industry in the Years 1958–63). Institute of History of the U.S.S.R. Academy of Sciences, Moscow, 1965, pp. 3 and 10. Trud, Dec. 28, 1965, p. 2.
[42] Trud, Apr. 2, 1966, p. 2.
[43] Pravda, Apr. 9, 1966, p. 4.

decree of March 8, 1956, which cut the length of working day from 8 to 6 hours on Saturday and on days preceding holidays (there are 8 holidays), and (2) the law of May 7, 1960, which provided for reducing each of the 5 other 8-hour workdays to 7 hours or less (for example, 6 hours for underground miners) by the end of 1960. Overtime work in the Soviet Union has long been forbidden except in certain special situations, and then permission must be obtained from the factory or local trade union committee. The 5-day workweek was introduced experimentally in March 1960 in a textile plant, and was in effect in April 1966 in over 500 industrial enterprises.[44] In his report to the 23d Party Congress on March 29, 1966, Party chief Leonid Brezhnev said that the 5-day, 41-hour workweek, would be gradually extended, as circumstances warranted.[45] In this connection it is interesting to note that at the June 1956 International Labor Conference in Geneva, a Soviet Government delegate announced that the Soviet Union by becoming the second country to ratify the 1935 International Labor Organization Convention, which approves the 40-hour workweek in principle, brought it into effect.

The decree of May 26, 1956, reduced the workday of workers 16 and 17 years of age from 7 to 6 hours (15-year-old trainees have a 4-hour workday).

There has been no change in the length of the prewar basic paid annual vacation: All workers are guaranteed a paid annual vacation of at least 12 workdays (2 weeks), provided they have been on the job at least 11 months. Workers in hazardous, arduous, or responsible jobs get up to 39 additional days of leave. In 1964, over 61 percent of the workers received 12 to 18 days of annual leave; 4.4 percent received 48 days (6 weeks); a few (0.2 percent) received more, presumably the maximum of 51 days.[46] Workers under 18 years of age are entitled to 1 calendar month of annual leave. In 1965, the number of holidays was increased by 2 (one of them being International Woman's Day, March 8), for a total of 8 holidays a year.[47]

Wages and purchasing power.—Average monthly earnings of all wage and salary earners in 1965 were reported as 95 rubles[48] (US $105.56).[49] Average monthly wages have increased steadily in the post war period (by 19 percent in the last 5 years alone),[50] and State-fixed retail prices of essential consumer goods have been, with a few exceptions, relatively stable since 1955. Clothing, meat, and milk products are still in short supply; and much of the clothing is of low quality.[50] Table A shows that the approximate worktime required to buy fixed quantities of selected foods at State-fixed prices in Moscow declined, as a percent of 1928 worktime required, from 145 percent in 1953 to 89 in January 1966. A large part of this percentage decline is due to the cut in the number of working hours per day, for most workers, from 8 hours to 7 hours. But the increase in average earnings

[44] Trud, Mar. 9, 1966; and Trud, Apr. 2, 1966, p. 2.
[45] Pravda, Mar. 30, 1966, p. 7.
[46] Vestnik Statistiki (Statistical Herald, a monthly), Moscow, No. 6, 1965, p. 93.
[47] Spravochnik profsoyuznogo rabotnika (Handbook of the Trade Union Official), Moscow, 1965, p. 206.
[48] Pravda, Feb. 3, 1966, p. 2.
[49] At the tourist rate of .90 ruble equals US$1, fixed by the Soviet Government.
[50] Pravda, Mar. 30, 1966, pp. 6–7 (report of L. Brezhnev). For table of average monthly wages for selected years in the period 1940–64, see "Narodnoe Khozialstvo SSSR v 1964 g." (The National Economy of the U.S.S.R. in 1964), Moscow, 1965, p. 555.

has been a more important factor. The increase in average earnings, has been due primarily to (1) the sweeping reorganization of the wage structures in Soviet industry during the years 1956–61, when the wage rates of the workers in the lower wage categories were raised, (2) the increase during 1964 and 1965 of the wage rates of some 20 million persons in the service sectors of the national economy, and (3) the raising of the minimum monthly wage to 40 rubles ($44.44) in rural areas and 45 rubles ($50) in urban areas, which was completed by January 1, 1965.[51] The previous minimums, fixed by the decree of September 1956, were 27 rubles ($30) and 30 rubles ($33.33), respectively. The new 5-year economic plan (1966–70) provides for raising the monthly minimum wage to 60 rubles (about $67). The number of industrial workers paid on the piece-rate basis has declined in recent years, from 63 percent in March 1961 to 57.6 percent in August 1965.[52]

The purchasing power of workers has been gradually increased also by such measures as (1) the cancelation by the end of 1957 of compulsory bond purchases, which amounted to several weeks of pay annually (however, the redemption date of all outstanding bonds was extended for 20 years), (2) the abolition on October 1, 1961, of the income tax for those earning under 60 rubles ($66.67) a month (a year earlier the income tax has been abolished for all those earning under 50 rubles ($55.56) a month), and (3) the State pensions law of July 14, 1956, which reportedly increased the average of all pensions by about 50 percent (the minimum old-age pension was set at 22.5 rubles ($25) and the maximum at 120 rubles ($133.33) a month).

The purchasing power of many workers is expected to rise still further under the system of special economic incentives to increase production which will be introduced during the period 1966–68 as a part of the sweeping economic reform of the national economy approved on September 29, 1965, by the Central Committee of the Communist Party of the Soviet Union.[53]

Although the purchasing power of the average industrial Soviet worker has risen considerably in recent years, it is still far below that of the average manufacturing worker in the United States. Figures in table B show that the average worker in Moscow must work 3 to 15 times as long as the average worker in New York City to buy certain basic consumer foods, and 6 to 10 times as long for clothing.

Other provisions.—On March 26, 1956, the Government made it economically advantageous for women workers to continue in their jobs by extending maternity leave with pay from 77 to 112 days. In March 1966, 49 percent of all wage and salary earners in the Soviet Union were women (in the United States about 35 percent of all the

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[51] For discussion of recent Soviet wage developments, see Labor Developments Abroad (U.S. Department of Labor, Bureau of Labor Statistics) Washington, April 1966.
[52] Vestnik Statistiki, No. 3, 1966, p. 95.
[53] For discussion, see "The Economic Reform and Its Labor Aspects in the U.S.S.R." Labor Developments Abroad, June 1966.

employed are women). In March 1966, a Soviet economist repeated the recommendation that housewives be permitted to work part-time in paid employment.[54]

On February 1, 1957, disability benefits amounting to average full earnings were granted to most workers temporarily disabled or ill from causes connected with their work; these benefits became available to all workers when they were extended by the decree of January 25, 1960, to workers with less than 6 months of service who had left their former jobs at their own request (thus one way of penalizing job quitting was abolished).

The decree of July 31, 1957, optimistically announced an all-out program to eliminate the important national problem of the housing shortage in the Soviet Union within the next 12 years. The acuteness of the housing shortage (which was mentioned by Brezhnev at the 23d Congress) may be illustrated by a story in the trade union daily Trud on March 25, 1966 (p. 2), which describes the difficulty a factory worker's family of four (including two school-age children) living in a single damp room was having in trying to get a better place in which to live; the worker's wife also worked, as a public school teacher.[55]

3. Soviet Labor Policies, as Expressed at the 20th, 21st, and 22d Party Congresses

Every party congress, from the 20th to the 23d, has been the platform from which the party leaders enunciated labor policies which resulted in the labor legislation already summarized here or are still to be implemented by future legislation. All the congresses have uniformly adopted policies stressing the need for expanding and strengthening (especially for defense) the national economy, for increasing labor productivity, for improving the welfare of the workers, and for strengthening the political indoctrination of the workers, especially the new generation.

The 20th Congress of the Communist Party, held in February 1956, which was called "the turning point in the life of our party and of the Soviet people,"[56] approved a specific program to improve working and living conditions which has been gradually implemented, as already described.

The 21st Congress in January 1959 was hailed as having "marked the entrance of our country into the period of developed construction of a Communist society." During this period were to be created the necessary prerequisites for the universal transition to the acceptance of "labor as the need of a healthy organism" (Lenin's phrase).

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[54] Trud, Mar. 10, 1966, p. 3.

[55] For additional comments on the serious current Soviet housing shortage, see U.S. News & World Report, Washington, D.C., Mar. 28, 1966, p. 62.

[56] Reshenlya XXII s'ezda KPSS-boevaya programma deyatel'nosti sovetskikh profsoyuzov (the decisions of the 22d Congress of the CPSU—the militant program of Soviet trade union activity). Profizdat. Moscow, 1962, p. 5.

The prerequisites were listed as: (1) the continued technical progress in the whole national economy on the basis of the priority development of heavy industry; (2) a fundamental lightening of arduous work (particularly by shortening the workday and introducing mechanization) and the improvement of the safety of workers by means of greater mechanization and automation in production; (3) the progressive abolition of the distinction between mental and physical work in connection with raising the cultural-technical level of workers and the closer union of education with production; and (4) the further strengthening of labor discipline on the basis of the development of moral incentives to work and the augmenting of the interest of workers in greater production by corresponding immediate material rewards for the results of their work.[57]

The 22d Congress in October 1961 adopted the Communist Party program for the completion of the transition from a Socialist to a basically Communist society (in terms of material and technical achievements) in the Soviet Union by 1980. This program reiterated the accepted policies that labor for the welfare of society is the sacred obligation of every man * * *. All workers must be trained on the best examples of labor, on the best examples of administering the public economy.[58]

It was at the 22d Congress that the workers were promised a set of grandiose future benefits within 10 to 20 years, which included the following;[59] free meals in schools and at places of work; the reduction of the workday of most workers from 7 hours to 6 hours and a 35-hour workweek (there would be for most workers 6 workdays a week as at the present time); the improvement of working conditions by the introduction of modern safety techniques and health standards; the abolition of nightwork execpt for indispensable public services; the raising of the annual minimum vacation from 2 to 3 weeks (and eventually to 1 month); an apartment for every family, eventually rent free; free medicines (now free medicine is available only to hospitalized persons); and free transportation. An apartment for every family is specified because in the fall of 1962, the Government suspended the allocation of lots and the granting of loans for the building of private urban homes in the larger cities.

At the end of the 20-year program, according to the official claim, wages—which will still be paid according to the amount of work done, but with the level of the lowest wage rates nearer the level of the top rates—will account for only about half of the workers' income and benefits, in view of the various services, benefits, and pensions that will be paid for by the state. This, it has been asserted, will be an indica-

[57] "Trudovoe pravo v svete reshenii XXI s'ezda KPSS" (labor law in the light of the decisions of the 21st Congress of the Communist Party of the Soviet Union), a collection of articles, N. Aleksandrov, editor, Moscow 1960, p. 6.
[58] O kommunisticheskom otnoshenii k trudu (the Communist attitude toward labor), Moscow, 1962, p. 3.
[59] Kommunist (Communist, a triweekly magazine of the Communist Party) Moscow, No. 16 (November) 1961, pp. 73–76.

tion of the increasing implementation of the Communist principle of distribution of goods to the people according to need.[60]

4. The 23d Congress and Labor Policies for the Future

At the 23d Congress of the Communist Party, in March–April 1966, the party leaders reaffirmed among other things the broad labor policies approved by the three previous congresses. In its directives concerning the new 5-year plan (1966–70), which promotes economic growth through a rapid technical reequipment of the entire national economy, the Congress stated that "the party considers as its most important task the further improvement of the life of the Soviet people," [61] Party Leader Leonid Brezhnev reported to the Congress that the party, guided by the policies laid down by the 20th, 21st, and 22d party congresses, had devoted all its activities to the fulfillment of the Communist Party program, the creation of the material and technical basis of communism, the insuring of a higher standard of living, and the education of the Soviet people in a spirit of "lofty Communist consciousness." [62] He claimed that the Soviet Union had almost doubled its basic production assets during the 7-year plan period, 1959–65. However, he reported that the failure of agriculture to meet its production targets, the decline in the rate of growth of labor productivity, and the necessity of making additional substantial defense investments prevented the realization of the planned measures for raising the living standards of the people.[63] Brezhnev admitted that meats and milk products continued to be scarce, that clothing was of inadequate assortment and of low quality, and that the housing problem was most acute.[64]

Brezhnev asserted in his report to the Congress that in the Soviet Union "the main goal of socialism is the welfare of man, his all-round development," and outlined the following benefits for workers to be introduced during the new 5-year plan period, 1966–70. Most of these benefits were mentioned in the final "resolution" [65] and in the "Directives Concerning the 5-Year Plan" approved by the 23d Congress; they are to be spelled out precisely in the draft of the 5-year plan which will be submitted to the Supreme Council ("parliament") for enactment into law, by the summer of 1966. No mention was made of the grandoise specific future benefits, "within 10 to 20 years," promised at the 22d Congress.

Breshnev reported that the draft of the new 5-year plan provides for a 30-percent increase in the per capita real income of the popula-

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[60] Trud i zarabotnaya plata, September 1962, pp. 72 and 76.
[61] Pravda, Apr. 10, 1966, p. 2.
[62] Pravda, Mar. 30, 1966, p. 2; "Moscow News," Apr. 2, 1966, supplement, p. 3.
[63] Pravda, Mar. 30, 1966, p. 5.
[64] Pravda Mar. 30, 1966, pp. 6–7.
[65] The text of this resolution is given in Pravda, Apr. 9, 1966.

tion by 1970. This is to be achieved by various ways, primarily by a general increase in wages (especially through incentive premiums and bonuses, under the provisions of the new economic reform now being introduced) and a reduction of retail prices as labor productivity increases. The increase in industrial productivity—to be achieved with the help of modern technology and the more efficient use of labor—is to be, on the average, 6 percent annually, as compared with the actual average annual increase of 4.6 percent during the preceding 5 years. Average monthly earnings of wage and salaried workers are to be increased 20 percent by 1970, to about 115 rubles (US$128). The monthly minimum wage is to be raised to 60 rubles (about $67); it is now 40 rubles (about $44). Income taxes on workers' earnings are to be reduced and, for those earning less than 70 rubles ($78) a month, abolished (at present, earnings of less than 60 rubles ($67) a month are not taxed). (The income tax rate on the lowest taxable income bracket is surprisingly high: A worker without dependents earning 70 rubles a month pays a tax of 4.50 rubles [66] (or 45 percent) on the 10 rubles above the nontaxable first 60 rubles.) (In the United States, the corresponding tax rate is only 14 percent.) Wages and benefits are to be increased for workers in the Far North, Far East, and Siberia. A guaranteed monthly wage is to be introduced for collective farmers, at a level near that paid to state farmworkers for similar work. Old-age and disability pensions are to be increased, and the retirement age of farmers is to be lowered to that of industrial workers. (State pensions for collective farmers were established in 1965.)

Brezhnev said that nearly twice as much is to be spent in the next 5 years on the construction of factories that produce consumer goods as was spent during the preceding 5 years. Likewise, about 30 percent more is to be spent on housing. Water and gas utilities are to be established in additional municipal areas. Health and cultural facilities are to be extended. The production of meat, milk, and sugar is to be increased (by 15 to 25 percent). Consumer services are to be improved, and additional ones are to be provided through the establishment of more restaurants, hair-cutting shops, laundries, and repair shops. It has also been reported that more public elementary and secondary school graduates will be directed to work in these establishments.[67] Brezhnev said that it had been decided to make high school education available to all qualified elementary school graduates by 1970.

Brezhnev promised that the 5-day, 41-hour workweek would be extended as circumstances would permit. (The 5-day workweek was introduced experimentally in March 1960 in a textile plant, and is now in effect in over 500 industrial enterprises.[68]) Modern safety techniques and sanitary working conditions are to be introduced more widely.

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[66] Moscow News, Apr. 23, 1966, p. 2.
[67] Trud, Mar. 10, 1966, p. 3.
[68] Pravda, Apr. 19, 1966, p. 2.

An important feature of the new 5-year plan, Brezhnev said, is to speed the coming of the time when (in conformity with the principles of communism [69]) the basic differences between the living levels of urban and rural populations and of those doing mental and physical labor would disappear.

Comments on the new program of labor benefits.—The major specific labor benefits promised by Brezhnev appear to be modest and realizable, in comparison with the grandiose promises made at the 22d Congress by his predecessor, Khrushchev. Because of the improvements during the past decade, living and working conditions in the Soviet Union now are not as harsh as they were in the postwar period under Stalin. Despite these steady improvements, however, the morale of the Soviet workers still needs propping up, as is clearly indicated by the need of the party to trumpet the various improvements in working and living conditions that are to be realized within the next 5 years. In this connection it is interesting to note that during these years more television sets (27 million) are to be manufactured than washing machines (19 million) or refrigerators (18.5 million).[70]

5. Some Problems in the Implementation of Labor Controls

The above survey of the major Soviet labor legislation and policy of the past 11 years clearly indicates that the regime has expended considerable efforts in its drive to win the approval of the workers by relaxing the severity of labor controls and by persistently and repeatedly stressing its intention to improve gradually working and living conditions. It may be expected that all this labor legislation will eventually be incorporated into a new labor code. The Labor Code of November 1922, though obsolete in many parts, is still quoted in Soviet legal literature, and its revision was discussed widely in the Soviet press in 1960.[71] However, no draft of the proposed new labor code has as yet been published.

Although the list of existing and planned ameliorative legislation on labor reviewed herein is doubtless impressive, there always arises the question as to how effectively the basic legislation has been and is being implemented, and whether this legislation is of an enduring character. In the past, there has been evident instability and nonstrict enforcement of labor legislation: For example, article 129 of the 1922 Labor Code of the RussianSoviet Federated Socialist Republic, forbade the employment of women in underground work; however, 35 years later the U.S.S.R. Council of Ministers, by a decision of July 13, 1957, found it necessary to ban once more, still with certain ex-

[69] "Sovetskoe trudovoe pravo," p. 6.
[70] Pravda, Apr. 6, 1966, p. 6.
[71] For example, see "Trudovoe pravo v svete reshenii XXI s'ezda KPSS," pp. 19–20.

ceptions, underground mining work by women. (This prohibition against underground work by women was nullified during World War II, but was not reinstated until about 12 years after the war.) In other cases there has been evident instability, for favorable labor legislation has been countermanded. For instance, the law of May 7, 1960, providing for the gradual abolition of the income tax by 1965 was suspended in the fall of 1962, just as monthly earnings up to 70 rubles ($78) were to be exempted.[72] Under the new 5-year plan, as already indicated, earnings up to 70 rubles are to be exempted from taxation by 1970.

An example of laxity in implementation of Soviet laws and regulations involves article 21 of the constitution of the Trade Unions of the U.S.S.R. which provides that the congress of the trade unions be convened not less than once in 4 years. However, the 13th congress (October 1963) was convened over 4½ years after the 12th congress (March 1959), the 12th also over 4½ years after the 11th (June 1954), and the 11th over 5 years after the 10th (April 1949). This, however, is an improvement by Soviet standards, for 17 years had elapsed between the 9th and 10th trade union congresses. This element of delay would appear to permeate the Soviet labor field, and may be illustrated by additional examples: The 21st party congress in January–February 1959 called for an early raising of the minimum wage rates by another step; yet, as indicated earlier, it was not until January 1, 1965, that this step was completed. The 21st congress in 1959 promised a 35-hour workweek within 10 to 20 years. However, thus far the Government has suspended, if not abandoned, the idea of an early transition from the 41-hour workweek to a 40-hour workweek, though preparations were begun for this in 1962.[73] The best that Soviet workers may now expect is, as indicated earlier, the gradual introduction of a 5-day, 41-hour workweek, as circumstances permit. Former Party Leader Khrushchev had promised that the minimum wage would be raised to 50 rubles (about $56) by the end of 1965,[74] but in 1966 it still was 40 rubles (about $44).

Some labor legislative trends have been reversed; for instance, there was a series of annual across-the-board price reductions in state stores from 1947 to 1954; after that, prices of basic consumer goods remained relatively stable but only until June 1, 1962, when the prices of meat were raised 30 percent and the prices of butter, 25 percent.[75] These price increases apparently were a serious matter to the Soviet people, for they reportedly were the cause of protest rallies and riots in several cities which resulted in the death of dozens of people.[76]

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[72] "Principal Current Soviet Labor Legislation," p. 122.
[73] Trud i zarabotnoya plata, September 1962, p. 38.
[74] Pravda, Oct. 18, 1961.
[75] Tables showing the trend in the purchasing power of Soviet workers and a recent comparison with the purchasing power of U.S. workers are attached.
[76] New York Times, Oct. 8, 1962, p. 1.

Despite the uncertainties of implementation of some specific instances of Soviet labor legislation, as indicated above, the bulk of Soviet labor laws would appear to be more or less effectively enforced especially where the legal provisions are so specific that workers can assert their claims by appealing to their trade unions, to the management, to the factory labor disputes boards, and to the courts. In the past, and to a large extent today, the shortage or misappropriation of resources has prevented the widespread implementation of certain labor legislation—especially that providing for the introduction of modern safety equipment and the improvement of working conditions (including ventilation, lighting, and washrooms), and that providing for adequate housing (including schools and nurseries) for workers and their children.[77]

The Communist Party, with its formal approval of the new economic reform of Soviet industry in September 1965, reemphasized the use of material incentives to boast the morale and production of workers. This action was a reaffirmation of the principle of the material self-interest of the workers propounded by V. I. Lenin in the early days of the Soviet regime; according to this principle, the higher the skill of the worker and the greater his production, the more he gets paid.[78] This principle is applicable only during the Socialist stage of the Soviet society; according to Communist doctrine, once the transition is made from the Socialist society to a Communist society there will prevail the law of "from each according to his ability, to each according to his needs."

Material incentives, however, are not enough. In addition, the Soviet press continues constantly to exhort party, trade union, Komsomol (Communist Youth), and other organizations to advance the new reform by strengthening their efforts in educating workers to an awareness of their moral duty in the matter of taking responsibility for the results of their work as individuals and as collectives. For example, the trade union daily Trud on February 2, 1966, quoted from the September 1965 party resolution on the new economic reform that "Only by means of a conscientious, enterprising, and creative approach of every worker to his work, and by a thrifty economical attitude of everyone to national property can we fight for the construction of a Communist society." The exhortation of workers to greater

[77] Trud, Dec. 14, 1965, and Apr. 2, 1966 (report of Trade Union Leader Viktor V. Grishin).
[78] Kommunist, No. 16 (November) 1961, p. 71.

productivity, including the achievement of economies in the consumption of raw materials, fuel, and other production factors, is an old practice within the Soviet system.[79]

To get workers to produce more, each industrial enterprise with its greater responsibility for production under the new economic reform will be obliged to pay more attention to enforcing production and labor discipline. According to one periodical,[80] abuses which lead to poor morale among workers (as manifested by absenteeism and a lackadaisical attitude to work) must be eliminated. The main abuses were listed as the imposition of excessive compulsory overtime work and the costly work stoppages resulting from preventable machine breakdown, the exhaustion of supplies of raw materials, and accidents to workers. Trade Union Leader Grishin called for strictly penalizing those responsible for violating the rules of safety technique and labor legislation.[81] The other more serious management violations have been identified as the introduction of factory machinery without the proper safety guards,[82] and the reportedly frequent arbitrary illegal discharges and transfers of workers, without their consent.[83]

The perennial scarcity of consumer goods and everyday amenities in the Soviet Union is reflected in the practice of the Soviet press to gloss over the present difficulty and in many ways unpleasant living and working conditions and to dwell on or to play up benefits that have been promised to be granted or gradually introduced in the future—that is, for example, by the end of the 5-year plan in 1970, or by the end of 1980 (under the 20-year party program), or even later, at some distant time when the promised "completion of the building of the Communist society will take place,"[84] and, according to Communist doctrine, everyone will contribute according to his ability, and receive according to his needs.

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[79] For example, see the resolution of the All-Union Central Council of Trade Unions, in Trud, Apr. 7, 1957.
[80] Sovetskie profsoyuzy, January 1960, p. 4.
[81] Trud, Apr. 2, 1960, p. 2.
[82] Trud, Nov. 25, 1961, p. 2.
[83] Trudovoe pravo v svete reshenii XXI s'ezda KPSS, p. 17.
[84] Program of the Communist Party of the Soviet Union. Pravda, Nov. 2, 1961, p. 5.

TABLE A.—*Approximate worktime required to buy selected foods at state-fixed prices in Moscow, Apr. 1, 1928, Apr. 1, 1953, June 15, 1962, and Jan. 15, 1966*

Food	Prices (in rubles)				Quantity consumed per week by a family of 4 [6]	Approximate worktime for weekly consumption [1]						
						In hours				1953 [3] as percent of 1928	1962 as percent of 1928	1966 as percent of 1928
	1928 [2]	1953 [3]	1962 [4]	1966 [5]		1928 [3]	1953 [3]	1962	1966			
Rye bread, 1 kilogram (2.2 pounds)	0.080	1.35	0.13	0.14	9.84 kilograms	2.71	4.52	2.84	2.30	167	105	85
Potatoes, 1 kilogram	.085	.75	.10	.10	12.16 kilograms	3.56	3.10	2.70	2.03	87	76	57
Beef, 1 kilogram	.870	12.60	1.60	1.60	3.68 kilograms	11.04	15.77	13.08	9.81	143	118	89
Butter, 1 kilogram	2.430	26.75	3.60	3.60	.44 kilogram	3.69	4.00	3.52	2.64	108	95	73
Sugar, 1 kilogram	.620	9.09	.89	1.04	1.80 kilograms	3.85	5.57	3.56	3.12	145	92	81
Milk, 1 liter (1.06 quarts)	.063	2.20	.29	[7] .30	4.96 liters	1.08	3.71	3.20	2.48	344	296	230
Eggs, per 10	.200	6.88	.80	[8] .90	6.40 eggs	.44	1.50	1.14	.96	341	259	218
All 7 foods						26.37	38.17	30.04	23.34	145	114	89

[1] Worktime is computed by multiplying quantity consumed by price and dividing the product by average hourly earnings. In 1928, official national average earnings were 703 rubles per year (figure given in "Trud v SSSR" [Labor in U.S.S.R.], Moscow, 1936, p. 17), or 0.29 rubles per hour; in 1953, the estimated average earnings were about 600 rubles a month, or 2.94 rubles per hour; according to an analysis of scattered data appearing in the Soviet press. In June 1962, estimated average earnings of manufacturing workers, in terms of the recent revaluated ruble were about 80 rubles a month, or 0.45 ruble an hour; and in January 1966, the estimated average earnings were 105 rubles a month, or about 0.60 rubles per hour.

[2] Official Soviet prices from the People's Commissariat of Labor, as transmitted to the International Labor Office (see International Labor Review, vol. 18, October-November 1928, pp. 657-660). These prices were lower than those in private trade which played a large role in workers' consumption, and their use may somewhat inflate the workers' real purchasing power at that time. On the other hand, it appears that Moscow food prices were noticeably higher than the national average in 1928; but Moscow goods were superior in quality. (See Naum Jasny, "The Soviet Economy During the Plan Era," Stanford, Calif., Stanford University Press, 1951, p. 105.)

[3] Data from "Purchasing Power of Soviet Workers in the U.S.S.R." (in Monthly Labor Review, April 1960, pp. 359-364).

[4] Prices in Moscow state stores during June 1962, based on information appearing in the Soviet press and in published reports of U.S. and European visitors to the U.S.S.R.

[5] Based on published reports of U.S. and European visitors to the U.S.S.R. and on information appearing in the Soviet press where several prices were reported, the one nearest the 1962 price was used.

[6] Weekly consumption figures per person in 1928 from International Labor Review, ibid., p. 659; the average worker's family in 1928 consisted of 4 persons. (See Solomon Schwarz, "Labor in the Soviet Union," New York Praeger, 1952, p. 145.) The same percent relationship between 1928 and 1966 would be obtained if the quantities for 1 person were used instead of the quantities for a family of 4.

[7] Milk was usually available only in half-liter bottles, at 0.30 rubles per bottle.

[8] Usually eggs were not available at this lowest observed price. They were more often available at 1.34 rubles per 10.

NOTE.—In the interest of a balanced view of the main trends in living standards in the U.S.S.R. since 1928, it is important to take cognizance of the fact that as a result of the increase in industrial production under the economic plans, manufactured consumer goods have become more available, although they are still inadequate to meet existing consumer needs and are below prevailing standards in other industrialized countries. In addition, it needs to be noted that the consumer in the U.S.S.R. is provided by the state with a number of free services, such as medical service, education, and pensions. Furthermore, Soviet workers pay low housing rentals, usually amounting to 4 to 6 percent of their monthly earnings. However, most workers live in cramped quarters; for example, in Moscow most families live in only 1 room and have to share bathrooms and kitchens with other families.

TABLE B.—*Approximate worktime required to buy selected commodities at state-fixed prices[1] in Moscow and at retail stores prices in New York City, Jan. 15, 1966*

Commodity	Moscow price (in rubles)[2]	New York City prices (in dollars)[3]	Approximate worktime[4]			Moscow worktime as a percent of New York City work time
			Unit	Moscow	New York City	
Foods:						
White bread:						
1 pound	0.23	0.248	Pound	23 minutes	6 minutes	400
500 grams (1.1 pounds)	.28	.546	500 grams	28 minutes	6.6 minutes	
Potatoes:						
1 pound	.045	.066	Pound	4.5 minutes	1.5 minutes	300
1 kilogram	.10	.146	Kilogram	10 minutes	3.3 minutes	
Beef, rib roast:						
1 pound	.73	.884	Pound	73 minutes	20 minutes	350
1 kilogram	1.60	1.945	Kilogram	160 minutes	44 minutes	
Butter, salted:						
1 pound	1.63	[5].775	Pound	163 minutes	17 minutes	1,000
1 kilogram	3.60	1.705	Kilogram	360 minutes	37 minutes	
Sugar:						
1 pound	.47	.121	Pound	47 minutes	2.7 minutes	1,500
1 kilogram	1.04	.266	Kilogram	104 minutes	6 minutes	
Milk, at grocery:						
1 quart	.28	.264	Quart	28 minutes	5.9 minutes	500
1 liter (1.06 quarts)	.30	.280	Liter	30 minutes	6.2 minutes	
Eggs, 2d grade:						
Per dozen	.96	[6].630	Dozen	108 minutes	14 minutes	800
Per 10	[7].90	.525	Per 10	90 minutes	11.7 minutes	
Tea, 50 grams (1¾ ounces)	.38	.145	Ounce	22 minutes	1.8 minutes	1,200
			50 grams	38 minutes	3.2 minutes	
Men's clothing:						
Shirt, cotton[8]	8.00	4.70	Each	13 hours	1.7 hours	750
Suit, wool, single-breasted, middle of price range	110.00	63.66	do	183 hours	23.6 hours	800
Shoes, leather oxfords, pair	24.50	17.93	Pair	41 hours	6.6 hours	600
Women's clothing:						
Dress, street, rayon	29.40	13.88	Each	49 hours	5 hours	1,000
Shoes, leather oxfords, middle of price range	23.00	15.06	Pair	38 hours	5.5 hours	700
Stockings, nylon	3.20	1.39	do	5 hours	21 minutes	1,000
Other commodities:						
Soap, toilet, 100-gram cake (3½ ounces)	.21	.12	Each	21 minutes	2.7 minutes	800
Cigarettes, package of 20	[9].20	.363	Package	20 minutes	5 minutes	250
Vodka:						
Fifth	4.64	[10] 5.12	Fifth	8 hours	2 hours	400
½ liter (.662 fifth)	3.07	3.39	½ liter	5 hours	1 hour 15 minutes	

[1] Prices observed on the open market, where collective farmers sell their produce, were much higher in comparison with state store prices.

[2] Moscow prices in state stores, based on information appearing in the Soviet press and in published reports of U.S. and European visitors to the U.S.S.R.; where several prices were reported, the one nearest the 1962 price was used (or the 1962 price, for nonfoods only, when no current price was available). Especially valuable for comparison were the prices listed in the article, "Soviet Living Standards" by P. Hanson in Bulletin of the Oxford University Institute of Economics and Statistics, August 1965, pp. 201–227.

[3] New York City prices in retail stores were collected by the Bureau of Labor Statistics; the prices for kilogram, liter, and 10 eggs were calculated from New York City prices for pound, quart, and dozen, respectively.

[4] Worktime figures for Moscow were computed on the basis of estimated average gross earnings of 0.60 ruble per hour of Moscow workers in manufacturing, a figure that is consistent with the Bureau of Labor Statistics estimate of about 105 rubles a month. New York City worktime figures were computed from BLS retail prices and earnings in mid-January 1966 of $2.70 per hour of production workers in manufacturing in New York City.

[5] First quality (92–93 score).

[6] Large eggs, grade A.

[7] Eggs were usually not available at this lowest observed price.

[8] Low-priced shirt.

[9] Brand name: Belomorkanal.

[10] Spirit blended whisky.