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ECONOMIC INTELLIGENCE REPORT

REGIONAL PRODUCT IN THE USSR



CIA/RR 59
27 July 1955

CENTRAL INTELLIGENCE AGENCY

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ECONOMIC INTELLIGENCE REPORT

REGIONAL PRODUCT IN THE USSR

CIA/RR 59

(ORR Project 10.431)

NOTICE

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FOREWORD

This report is essentially a regional analysis of the gross national product of the USSR. It may be said to give a third dimension to the understanding of the Soviet economy by adding estimates of the distribution of output geographically to estimates of its distribution over time and among industries. It also has been designed to provide the intelligence community with background material on the 15 economic regions of the USSR.

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Members of the Geographic Research Area also contributed to the section in the body of the report dealing with the origin and significance of the economic regions.

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REGIONAL PRODUCT IN THE USSR*

Summary and Conclusions

Planning effort in the USSR has aimed at a balanced development of regional resources and the construction of an integrated and relatively self-sufficient economy in each region of the USSR. The success of this effort since 1938 is evidenced in the more rapid rates of growth and the increasing proportion of total productive activity taking place in the eastern sections of the country. It also is evidenced in the fact that since 1938 in every region manufacturing, agriculture, and services have been brought into better balance.**

Since the late 1930's the Soviet policy of regional economic development has caused an increasing proportion of the total output of the USSR to be produced in the previously undeveloped area stretching from the Urals to the Pacific. Meanwhile, the relative importance of the older regional economies, the Ukraine and the Central Industrial Region, while still dominant, has been declining. This estimated shift of the center of production is especially

* The estimates and conclusions contained in this report represent the best judgment of ORR as of 1 December 1954.

** The total volume of goods and services produced in each economic region of the USSR (gross regional product) in 1938, 1948, 1951, and 1953 is estimated by aggregating, for each region in each year, the value added to materials and supplies by the production of each industry. This method of constructing the measures of gross regional product also yields estimates of the structure of each regional economy: that is, of the relative importance of each industry in the total output of the region. Since gross national product is by definition the sum of the total volume of production of every region in the country, the estimates of gross regional product further reveal the regional distribution of gross national product and of its rate of growth.

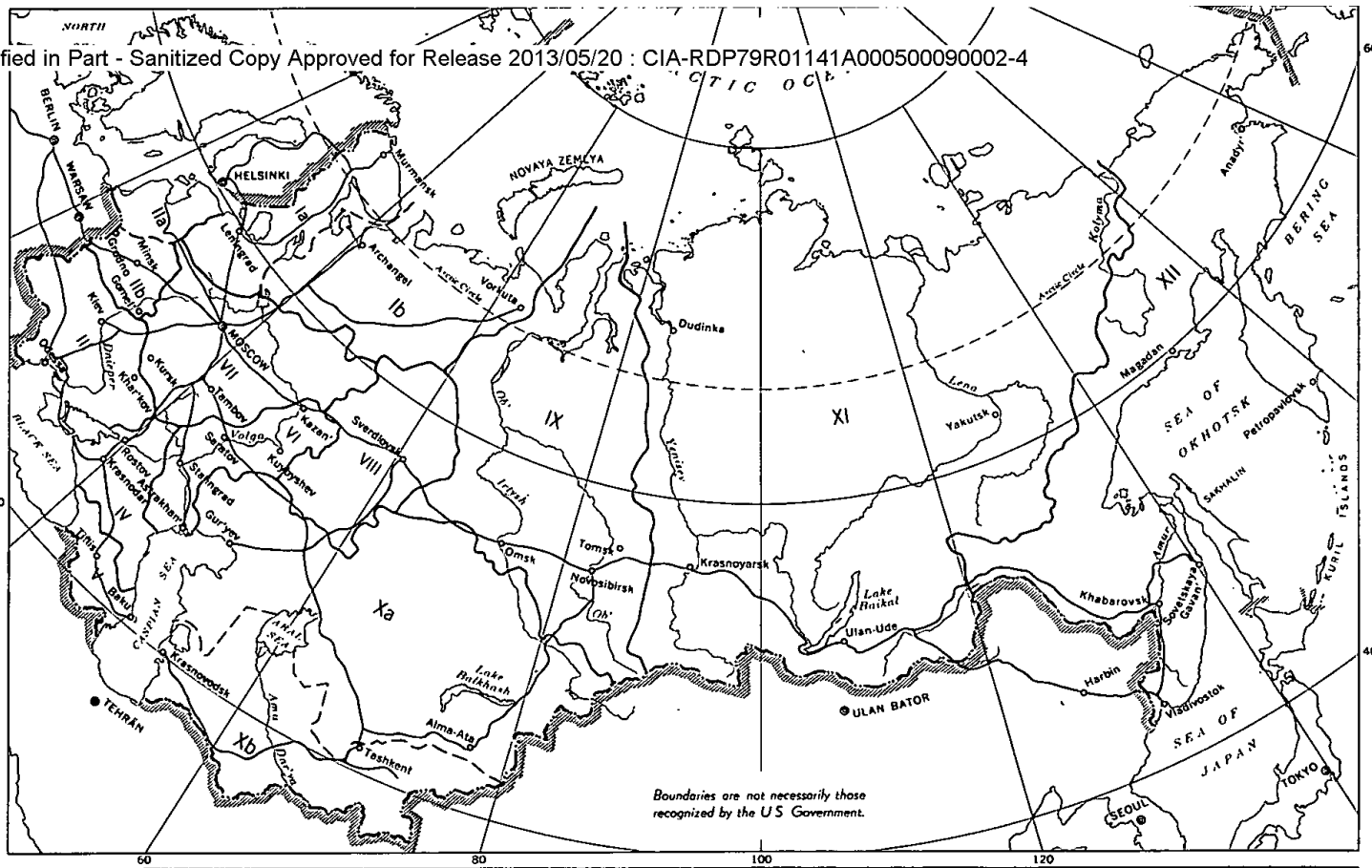
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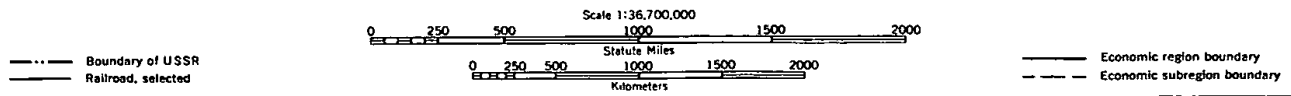
marked in manufacturing. In 1938, only 15 percent of the total of manufactured goods was produced in the Urals, Siberia, and the Far East; in 1953 the proportion had nearly doubled, being just less than 30 percent. Between 1938 and 1953 the proportion of total manufacturing output contributed by the Ukraine and the Central Industrial Region declined from less than 60 to 40 percent. The relative position of the various regions in the total of agricultural output has changed little since before World War II, although here, too, evidence appears of a slight eastward shift in the center of production.

The most rapidly growing regions were thus those in the eastern sections of the country, which previously had been undeveloped. There, average annual rates of growth for the 15 years covered ranged from 5 to 10 percent as compared with less than 4 percent for the entire country, and about 2 percent for the older areas of the Ukraine and the Central Industrial Region. In the eastern sections, as in the entire country, manufacturing expanded most rapidly and accounted for an increasing share of regional product, while services expanded moderately. Total agricultural output, after recovering from the effects of World War II, has only recently regained its prewar level.

In all regions, economic development since World War II has brought a decline in the relative importance of agricultural production and an increase in that of manufacturing. In most cases, not only the recently developed regions in the east but also the older industrialized areas of the west have achieved a more balanced economy, with the contributions to gross national product from manufacturing, agriculture, and the services becoming more nearly equal. Thus the eastward shift in the center of productive activity serves to further the Soviet policy of regional development and the dictates of strategic security.

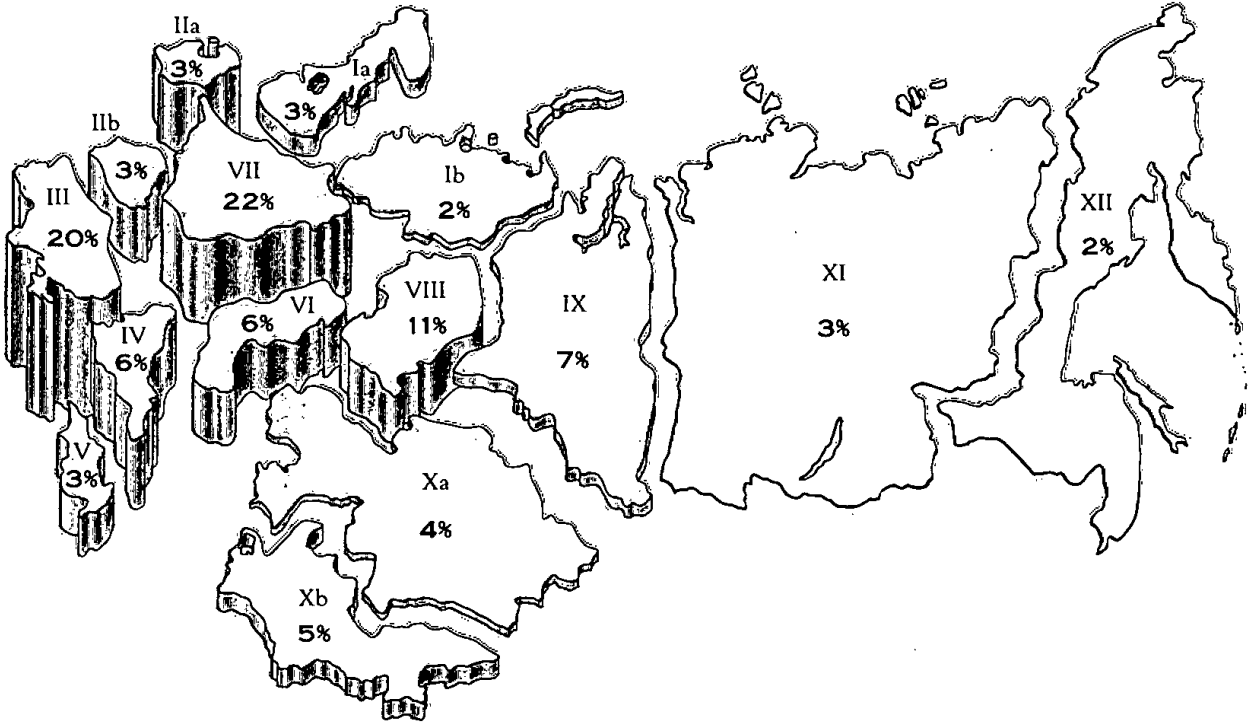


USSR ECONOMIC REGIONS



USSR: REGIONAL DISTRIBUTION OF GROSS NATIONAL PRODUCT, 1953

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I. Soviet Regional Structure.

A. Origin.

The basis for the present-day regional structure of the Soviet economy was inherited from prerevolutionary Russia. The early economy was characterized by a concentration of economic development in the area west of the Volga and the Caspian Sea. This concentration reflected variations among different regions in population density (the distribution of which partly mirrors the distribution of ethnic groups of various sizes) and in amounts of arable land, the population being primarily agrarian. Agricultural output as well as population was concentrated in the east, and consequently export industries, the rail network, and trade routes became centered there also. When the regions were first conceived, mining and heavy manufacturing played a minor role in the total of productive activity.

In 1928 the USSR launched its first program of intensified industrialization. The geographical aspects of the First Five Year Plan (1928-32), which was based on 21 economic regions, emphasized the cardinal importance of regional specialization and nationwide economic interchange. The Plan was dominated by the attempt to maximize the output of mining and allied heavy industries. By the middle 1930's the economic and strategic inadequacies of the pattern laid out by the First Five Year Plan and continued in the Second Five Year Plan (1933-37) had become obvious. The Third Five Year Plan (1938-42) reflected an altered theory of regional development. It aimed at maximum regional self-sufficiency rather than interdependence and at homogeneous development rather than specialization. To attain this goal, new and larger economic regions were defined (15 regions) that would ultimately be capable of both agricultural and industrial development. These regions have, with minor alterations, survived to the present time.*

* This report deals with the economic regions of the USSR as of 1953. The regions are designated by number and name as follows:

Ia	Northwest	IV	Southeast	Xa	Kazakhstan
Ib	North	V	Transcaucasus	Xb	Central Asia
IIa	Baltic	VI	Volga	XI	East Siberia
IIb	Belorussia	VII	Central (Industrial)	XII	Far East
III	South (Ukraine and Moldavia)	VIII	Urals		
		IX	West Siberia		

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Although the economic regions, especially those in the western part of the USSR, follow essentially ethnic-territorial-administrative lines, their physical environments are highly diverse. The fertile plains of the Ukraine in Region III contrast sharply with the boggy soils of Belorussia in Region IIB, the swamps of the West Siberian Lowland in Region IX, and the dry steppes of Kazakhstan in Region Xa. A substantial proportion of the total area of the country lies within the temperate zone, but the regions in the west are subject to varying degrees of marine influence while those in the east have markedly continental climates. More extreme are the contrasts between the subtropical climate in parts of Region V and the arctic climate in the northern parts of Regions IX, XI, and XII, and even within a single region there is wide environmental diversity. This phenomenon is most striking in the regions west of the Urals, whose areas stretch from the southern borders of the USSR to the Arctic Ocean.

The map of Soviet economic regions employed in this report (CIA Map 12651, March 1953*) is similar to that used by Soviet administrative units in planning and reporting regional economic activity and is used within the US intelligence community as the basis for regional economic analysis. The map is based primarily on Soviet reporting units. Although the units have varied through time, the regional structure represented is as nearly as can be determined the regional framework for Soviet reporting in 1953.**

B. Meaning and Significance.

The detailed plan which is the basis for Soviet economic activity must be cast in an areal framework as well as in a commodity and technological framework. The areal unit within which Soviet economic activity is planned and executed is referred to in the Soviet literature as the economic region. This economic region has been variously defined by Soviet economists and planners, many of the definitions being mutually contradictory. For this reason, an attempt will be made here to set up the principal reasons for a definition of the economic region and then to draw these together into some reasonably consistent concept.

* Following p. 2.

** For changes made in 1954, see Appendix A.

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First, the Soviet government intends the region to be as self-sufficient as possible in its economic development. This notion is fundamental to all Soviet ideas regarding the region. Second, the economic region constitutes the physical geographic base on which the plan is formed and implemented. Third, and certainly an overriding reason from the point of view of the Soviet economic ideology, is the notion that the Soviet economy shall provide for continuous expansion of economic activity. Thus the region must be defined in such a way as to further the development of the Soviet economy and the utilization of Soviet productive resources.

1. Regional Self-Sufficiency.

The concept of the economic region as a self-sufficient unit stems from several propositions fundamental to the Marxist ideology. Basic is the proposition that the exploitation involved in imperialistic economic development must be abolished. Marx viewed the capitalistic development of undeveloped areas as a continuous process of skimming the most valuable materials from any one region without attempting to develop the basic productive resources existing there. Soviet ideology consequently views as an absolute essential of Communist development the construction of well-rounded, integrated regional economies based on the existing resource pattern. This aim is usually expressed in the goal of bringing closer together industrial activity, the existing raw material base, and the principal consuming areas. This philosophy of self-sufficiency is further strengthened by the belief of the Soviet planners that most transportation service is an uneconomical use of resources. The transportation industry is one which requires extremely large amounts of capital while yielding relatively modest production results in any one year. Thus, essentially, the proposition of regional self-sufficiency in industrial development stems from two basic aims: that of securing a well-rounded, balanced development of regional resources, and that of attaining an optimum allocation of transport which the planners intend to continue to hold as a relatively scarce commodity.

In addition, however, the Soviet state is intensely interested in developing the specialized economic resources of a particular area in support of the total Soviet economy as well as of the regional economy. This implies a concentration of activity, with specific regions specializing in the production of those commodities for which each is most favorably equipped. Such commodities are produced in quantities well beyond the requirements of the immediate

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economic region, the regional surplus then being moved to other producing sectors deficient in this resource. Although such specialization is fundamentally in conflict with the notion of regional autarky, it is certainly consistent with general spatial economic theory, and Soviet planners find no incompatibility between these two major philosophies of development. Thus the region attempts to secure an "optimal" degree of self-sufficiency using local resources, but depending for certain specialized production on exchange with other regions.

2. Correspondence to Administrative Subdivisions.

Because of its necessary relationship with the planning mechanism, the Soviet region must coincide with the administrative subdivision. The necessity for coincidence between economic and administrative regions tends to create economic regions which are not completely self-contained nor completely related to any homogeneous activity occurring within this particular area. At the same time, however, the administrative regions themselves are primarily defined in terms of units of economic activity occurring in certain areas. As the economic aspects of an area have changed, administrative units have been redefined to suit the new economic circumstances. In recent years, therefore, new regions have been organized and new oblasts constructed in order better to administer a larger volume of production in a given area. Thus the delimitation of an economic region at any one time represents the interaction of administrative and economic considerations.

3. Concept of Continuous Economic Growth.

The third reason for the concept of an economic region, that is, the application to specific areas of the overriding Soviet concept of continuous economic growth, has exercised a tremendous influence over the construction of actual regions in Siberia and Central Asia. Within this area, the primary goal has been to establish complexes with a resource base capable of supporting heavy industry as well as the principal local requirements of a modern industrial organization. Thus, in each of regions VI, VIII, IX, X, XI, and XII, is found the resource base* which allows Soviet planners to establish what are essentially outposts of heavy industry capable of supporting the development of the local economy. Each of these

* See Appendix A.

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outposts is constructed on the raw material base which can most feasibly support the planned expansion of the Soviet economy. The outposts based on these resources then provide the basic material for the development of the regional economy also. Thus the Communist concept of regional development represents a blend of the principal Marxist propositions relating to the economic and cultural elevation of previously backward peoples, the national utilization of the natural resources of different parts of the country, and the creation of conditions favoring continuous growth of the Soviet economy.

II. Conceptual Framework.

An estimate of national or regional product measures the value of goods and services produced over a certain period of time, usually a year. As such, it is a net concept, for any given material or service is counted only once -- duplicates are eliminated. One could, for example, get a measure of the total value of production in an area by aggregating the output of every industry located there. Such a measure would, however, count the same commodity many times. The value of coal produced in any one year not only would be included in the output of the mining industries but also would account for part of the value of the output of industries which purchase coal for any business reason and would in turn enter into the value of the output of other industries purchasing goods or services from them.

In order to avoid such multiple-counting, a measure of national product may be computed so as to take account of goods and services only at the point where they are sold to final consumers -- that is, individuals and institutions that will not process them further but will use them themselves. Thus the value of a ton of coal sold to the homeowner for heating purposes would enter a measure of national product directly, whereas the value of a ton of coal sold to a steel mill would not. Rather, that coal's value would be embodied in the value of the refrigerator, say, which contains the steel which the coal helped to produce. A measure of national product, in defining "product" in terms of final consumer goods -- and guns, tanks, and (in some types of analysis) capital goods are as much final consumer goods as are bread and butter -- avoids multiple-counting in this way.*

* A measure of total production, on the other hand, derived by simple aggregation of the output of every producing unit would be very much affected in its size by the nature of business organization. If all business were vertically integrated so that each unit produced for itself everything needed for production and sold its output directly

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A. Application to Interregional Comparisons.

In practice, it may be desirable or necessary in measuring national product -- and even more so in measuring regional product -- to approach the problem of multiple-counting from the opposite direction, by aggregating, not the values of final consumer goods, but rather the values added at all stages in producing them. With perfect information the results would be the same. Thus the value of a ton of coal produced would enter a measure of national (or regional) product only to the extent that it represented the value added by the factors of production (labor, land, and capital) directly employed in the coal-mining industry and would not include such values as that of the electric power used in mining the coal and of the transportation and marketing services entailed in getting the coal to the consumer. At the same time, every ton of coal produced would be entered in this manner and not simply the coal sold to final consumers such as homeowners.

There are two reasons for using this method. The first, which applies to its general use as a supplementary method of analysis, is to reveal the structure of the economy. This method reflects the contribution of each sector, including those whose contributions to the productive process are largely or wholly submerged and partially concealed in the final consumer goods produced. The second reason, which applies peculiarly to its use in measuring regional product, is that this method makes unnecessary data on interregional trade. Such data would be required to adjust the measure of national (or regional) product obtained by aggregating the values of final consumer goods, unless the total volume of external trade were so small or its character were such that it could be disregarded. Interregional exchange, which is large and is not likely to be in balance, is irrelevant in the aggregation of values added by the factors of production, since these values are all added in the region and are the only values added in the region. In effect, this method of constructing regional product includes as final consumer goods all raw materials and intermediate products produced but not sold in the region and excludes all raw materials and intermediate products bought in the region but not produced there. This method, of course,

to final consumers, then this measure of total production would be the same as the usual gross national product (GNP). In the case of the US, on the other hand, the sum of the output of every business firm would yield a figure greater than GNP by many times. It would represent actually the total volume of turnover in the country.

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does not take account of interregional trade in final consumer goods and services, which, however, need not be considered in constructing regional product, though it would have to be included in computing regional consumption.

In the course of constructing the estimates of regional product presented here, it has been necessary to determine the value of the output of many industries (see Appendix D). These output data were not aggregated, because of the many duplications involved. When interest lies in the ability of the economy to produce final consumer goods, what is pertinent is not the total market value of the output of every industry or every producing unit, but rather the increment in the value of the materials used which results from the processing done by this firm. The value added by each producing unit to the materials on which it works is represented by the payments made by this firm directly to factors of production (in contrast to its payments to another business firm). Thus the wages and salaries paid to labor, the rent paid to the land owner, the interest paid on the capital invested, and the depreciation resulting from the use of the capital equipment, when aggregated (and imputed, if the firm -- or in the case of the USSR, the state -- should own the factors of production itself), measure the value added to materials by the production of this unit. A measure of national or regional product by industrial origin thus reflects the value added to output by the factors of production employed directly in each industry. It is on this basis that the estimates of gross regional product have been constructed.

B. Interpretation of Interregional Comparisons.

Measures of gross regional product constructed on the basis of industrial value-added data must, however, be interpreted with caution, for they reflect a varying regional distribution of economic activities. Different regions, in specializing in the production of certain commodities, employ the factors of production in different proportions. Value added in agriculture, for example, contains a high proportion of (imputed) rent; value added in the electric power industry, a high proportion of interest and depreciation; value added in services, a high proportion of wages. Thus gross regional product, as the sum of the value added by the factors of production in any one area, contains varying combinations of the payments to the owners of factors of production, depending on how the latter are combined in the industries in which they are used. Insofar as some factors are

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relatively more expensive than others, the regions employing larger amounts of the more expensive factors will have the higher gross regional products. To infer from this that one region produces a larger quantity of goods than another, or contributes a larger share of gross national product, may be misleading. A comparison of one region's output with that of another, or with the national total of which it is a part, may be made ambiguous by variations in the structure of factor costs between regions.*

This ambiguity in interregional comparisons results from the fact that the structure of factor costs in any one industry will influence the ratio of value added by that industry to the gross value of its output. The ratio of value added to gross output value may be high because this industry employs primarily the most highly priced factors, or because techniques of production are such that relatively small quantities of materials and supplies are purchased from outside sources (a relatively small division of labor). Insofar as a region's output is dominated by industries with a disproportionately high or low ratio of value added to gross output value, the region's share of gross national product will similarly be high or low. Since, for example, in many parts of the agricultural industry almost all costs represent direct payments to a factor of production (rather than to another business for materials and supplies), almost all of the gross value of, say, the raw cotton produced on cotton farms represents the value added to output by this producing unit. On the other hand, a smaller fraction of the gross value of cotton yarn would be added by the cotton-spinning industry, for a sizable portion of the value of

* Regional variation in the list of goods and services produced affects the comparison of various gross regional products in a manner quite analogous to its effect on intercountry comparisons. Two countries producing the same commodities with the same factors of production could have quite different measures of gross national product if the structure of factor costs varied internally. Under such conditions, to say that the total output of one country is greater than the other has little meaning: the two totals in value terms are not comparable. Similarly, one region might produce larger amounts of a given list of commodities than another, but still the measures of gross regional product could be the same if different techniques of production were used (if variations in the structure of factor costs counteracted variations in output). Thus to deduce that, because two regions have the same measure of gross regional product, they contribute equal amounts to gross national product may be misleading.

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cotton yarn represents the value of the raw cotton. Thus a region's share of gross national product will reflect the structure of factor costs, and, because of this structure, will be high or low, depending on whether its economy is dominated by industries with a high or low ratio of value added to the gross value of output.

The ambiguities associated with interregional comparisons of total output, because of regional variations in factor proportions and in the ratio of direct factor costs to total costs, appear also when regional output measures are related to population data. If the economy of the region is characterized by industries with a high ratio of value added to gross output value (for example, the primary industries or services), it is likely that the region's share of national product will be large relative to its share of population or the labor force. Under these conditions gross regional output per capita would be above the national average, as would regional output per worker. These regional per capita measures thus would not be indicative of average income or of productivity in the usual sense of the term (namely, the availability of finished goods per capita).

The present estimates of gross regional product reflect in many cases only very approximate allowances for direct payments to the owners of the factors of production. They do, however, reflect the fact that value added in agriculture (which includes a large element of imputed rent) is high in relation to labor employed in agriculture. For the predominantly agricultural regions, therefore, the regional share of gross national product is large relative to the regional share of the population.

III. Significant Empirical Results.

A. Introduction.

The regional structure of gross national product by major industrial sectors in 1953 is discussed below, together with the changes that occurred between 1938 and 1953 in gross regional product and its industrial composition. Shifts in the relative importance of manufacture, agriculture, and services in each region are surveyed on the basis of the Soviet philosophy of regional economic development.

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Table 1* contains measures of real gross regional product (in constant 1951 prices) according to major sectors of origin for 1938, 1948, 1951, and 1953 for each of the 15 economic regions of the USSR. The same data, expressed as a percentage of the national total to show the regional distribution of gross national product, are contained in Table 2.** Table 3,*** stating the relative importance of each major industrial group in the output of each region, depicts the shifting industrial structure of each regional economy. Table 4**** has comparative rates of growth by industry; Table 5***** shows per capita gross regional product. Table 6***** indicates shifts in the regional distribution of industrial activity with industrial categories shown in greater detail. The physical production information and population data underlying these estimates are in Appendix D (Tables 8 through 24†). Appendix D also indicates the value of production of a sample of products in each major industrial sector together with the regional coefficients for the major sectors and detailed measures of gross regional product.

Figure 1†† shows the generally accepted economic areas of the USSR. Figure 2†† indicates how the map of the USSR would be affected if its total area were distributed among each region in proportion to gross regional product. Figures 3, 4, 5, and 6††† show the relative concentration of gross national product, population, industry, and agriculture in the USSR.

B. Regional Shares in Production in 1953.

The dominance of the Central Industrial Region (VII) and the Ukraine (III) in 1953 is easily apparent. Together the two produced about 40 percent of the total of all commodity and service output in††††

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- * Table 1 follows on p. 13.
 - ** Table 2 follows on p. 14.
 - *** Table 3 follows on p. 15.
 - **** Table 4 follows on p. 16.
 - ***** Table 5 follows on p. 17.
 - ***** Table 6 follows on p. 18.
 - † Pp. 81-143, below.
 - †† Following p. 2.
 - ††† Figure 3 follows p. 22, below; Figures 4 and 5 follow p. 24; Figure 6 follows p. 26.
 - †††† Continued on p. 22.

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Table 1
Regional Distribution of Soviet Gross National Product by Industrial Origin a/
1938, 1948, 1951, and 1953

		Billion 1951 Rubles															
		Regions															
Sectors	Year	Total USSR	Ia	Ib	IIa	IIb	III	IV	V	VI	VII	VIII	IX	Xa	Xb	XI	XII
Manufacturing	1938 b/	183.4	8.1	2.7	2.5	2.4	50.2	12.8	9.8	8.4	52.2	15.9	6.9	2.6	5.1	1.6	2.1
	1948	212.3	11.2	4.0	4.2	3.2	33.7	10.7	8.8	9.9	51.5	36.1	15.5	6.8	7.1	6.5	3.2
	1951	342.2	19.9	5.7	7.1	5.4	60.3	17.5	12.6	17.7	84.2	51.2	26.3	9.5	10.6	8.8	5.6
	1953	406.1	23.7	6.6	8.5	6.8	68.0	20.7	14.0	23.2	97.7	65.4	29.4	11.3	12.5	10.3	7.9
Agriculture	1938 b/	341.5	6.7	3.4	16.6	20.1	83.2	23.7	10.9	20.1	70.3	26.7	23.4	10.4	16.1	9.9	Negl
	1948	290.3	5.7	2.8	14.1	14.1	64.7	16.9	9.1	17.0	59.5	22.5	19.8	14.6	18.1	11.2	Negl
	1951	316.3	6.2	3.2	12.2	15.3	69.9	21.6	10.3	18.4	61.3	24.3	21.3	15.8	21.3	12.1	3.0
	1953	327.8	6.4	3.3	12.7	15.8	72.6	22.7	10.8	19.1	63.5	25.2	22.1	16.5	21.4	12.5	3.1
Services	1938 b/	239.1	9.7	4.1	5.8	9.0	59.1	11.6	8.8	14.2	57.3	18.0	13.0	6.9	10.8	7.0	3.7
	1948	336.4	13.3	5.7	8.5	10.2	76.0	16.3	12.4	20.2	80.5	28.0	19.9	10.5	16.3	11.1	7.2
	1951	417.5	16.8	7.1	10.8	12.1	95.7	21.0	14.6	25.2	96.8	34.9	24.9	13.2	20.3	14.1	10.0
	1953	471.1	16.6	11.1	12.1	13.5	106.3	23.7	16.4	26.2	106.3	39.5	31.0	14.9	26.2	15.9	11.4
Total GNP	1938 b/	764.0	24.5	10.2	24.9	31.5	192.6	48.1	29.5	42.7	179.8	60.6	43.2	19.9	32.1	18.5	5.8
	1948	839.0	30.2	12.5	26.8	27.5	174.4	43.8	30.4	47.1	191.6	86.6	55.3	32.0	41.5	28.8	10.5
	1951	1,076.0	42.9	15.9	30.1	32.8	226.0	60.1	37.5	61.3	242.3	110.4	72.5	38.5	52.2	34.9	18.6
	1953	1,205.0 c/	46.6	21.0	33.2	36.1	247.0	67.1	41.3	68.5	267.5	130.1	82.5	42.7	60.1	38.8	22.4

a. Computed from Tables 8-11. Manufacturing includes the production of energy, metals and metal products, chemicals, construction materials, forest products, food products, manufactured consumer goods, and military end items. Agriculture includes the production of food, livestock, and industrial crops. Services include transportation, communications, construction, wholesale and retail trade, and personal and professional services.

b. Postwar boundaries. See Appendix C for comments on the relative importance of industrial groups in 1938.

c. The negligible difference between this measure of total output in 1953 and that appearing in recent ORR reports results from a slightly different method of computation.

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Table 2

Regional Distribution of Soviet Gross National Product by Industrial Origin
1938, 1948, 1951, and 1953

Sector	Year	Total Output (Billion 1951 Rubles)	Region (Percent of Total Output)														
			Ia	Ib	IIa	IIb	III	IV	V	VI	VII	VIII	IX	Xa	Xb	XI	XII
Manufacturing	1938 a/	183.4	4	1	1	1	27	7	5	5	29	9	4	1	3	1	1
	1948	212.3	5	2	2	1	16	5	4	5	25	17	7	3	3	3	2
	1951	342.2	6	2	2	1	18	5	4	5	24	15	8	3	3	2	2
	1953	406.1	6	2	2	2	17	5	3	6	24	16	7	3	3	2	2
Agriculture	1938 a/	341.5	2	1	5	6	24	7	3	6	20	8	7	3	5	3	Negl
	1948	290.3	2	1	5	5	22	6	3	6	20	8	7	5	6	4	Negl
	1951	316.3	2	1	4	5	22	7	3	6	19	7	7	5	7	4	1
	1953	327.8	2	1	4	5	22	7	3	6	19	8	7	5	6	4	1
Services	1938 a/	239.1	4	2	2	4	25	5	4	6	24	8	5	3	4	3	1
	1948	336.4	4	2	2	3	23	5	4	6	24	8	6	3	5	3	2
	1951	417.5	4	2	3	3	23	5	4	6	23	8	6	3	5	3	2
	1953	471.1	4	2	3	3	23	5	3	6	23	8	6	3	6	3	2
Total output	1938 a/	764.0	3	1	3	4	25	6	4	6	24	8	6	3	4	2	1
	1948	839.0	4	1	3	3	21	5	4	6	23	10	7	4	5	3	1
	1951	1,076.0	4	1	3	3	21	6	3	6	22	10	7	4	5	3	2
	1953	1,205.0	4	2	3	3	20	6	3	6	22	10	7	4	5	3	2

a. Postwar boundaries. See Appendix C for comments on the relative importance of industrial groups in 1938.

S-E-C-R-E-T

Table 3

Distribution of Soviet Gross National Product and Gross Regional Product by Industrial Origin
1938, 1948, 1951, and 1953

Sector	Year	Total USSR	Region														
			Ia	Ib	IIa	IIb	III	IV	V	VI	VII	VIII	IX	Xa	Xb	XI	XII
Manufacturing (Percent)	1938 a/	24	33	26	10	8	26	27	33	20	29	26	16	13	16	9	35
	1948	25	37	32	16	12	19	24	29	21	27	42	28	21	17	22	31
	1951	32	46	36	23	16	27	29	33	29	35	46	36	25	20	25	30
	1953	34	51	31	26	19	28	31	34	34	36	50	35	26	21	27	35
Agriculture (Percent)	1938 a/	45	27	34	67	63	43	49	37	47	39	44	54	52	50	54	Negl
	1948	35	19	22	52	51	37	39	30	36	31	26	36	46	44	39	Negl
	1951	29	15	20	41	47	31	36	28	30	25	22	30	41	41	35	16
	1953	27	14	16	38	44	29	34	26	28	24	20	27	39	35	32	14
Services (Percent)	1938 a/	31	40	40	23	29	31	24	30	33	32	30	30	35	34	37	65
	1948	40	44	46	32	37	44	37	41	43	42	32	36	33	39	39	69
	1951	39	39	44	36	37	42	35	39	41	40	32	34	34	39	40	54
	1953	39	35	53	36	37	43	35	40	38	40	30	38	35	44	41	51
Total output (billion rubles)	1938 a/	764.0	24.5	10.2	24.9	31.5	192.6	48.1	29.5	42.7	179.8	60.6	43.2	19.9	32.1	18.5	5.8
	1948	839.0	30.2	12.5	26.8	27.5	174.4	43.8	30.4	47.1	191.6	86.6	55.3	32.0	41.5	28.8	10.5
	1951	1,076.0	42.9	15.9	30.1	32.8	226.0	60.1	37.5	61.3	242.3	110.4	72.5	38.5	52.2	34.9	18.6
	1953	1,205.0	46.6	21.0	33.2	36.1	247.0	67.1	41.3	68.5	267.5	130.1	82.5	42.7	60.1	38.8	22.4

a. Postwar boundaries. See Appendix C for comments on the relative importance of industrial groups in 1938.

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Table 4

Comparative Growth of Output by Region in the USSR
1938, 1948, 1951, and 1953

1938 = 100

Sector	Year	Total USSR	Region														
			Ia	Ib	IIa	IIb	III	IV	V	VI	VII	VIII	IX	Xa	Xb	XI	XII
Manufacturing	1938 a/	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
	1948	116	138	148	172	130	67	83	90	117	99	227	227	259	138	391	156
	1951	187	245	212	290	221	120	137	128	209	161	321	383	361	206	529	271
	1953	221	291	245	346	279	135	162	143	275	187	411	429	430	243	624	386
Agriculture	1938 a/	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	Negl
	1948	85	85	82	85	70	78	71	84	85	85	84	85	141	112	113	Negl
	1951	93	92	93	73	76	84	91	95	92	87	91	91	153	132	122	100 b/
	1953	96	95	96	76	79	87	96	100	95	90	94	94	160	133	126	104
Services	1938 a/	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
	1948	141	137	140	147	113	129	140	141	142	140	156	153	153	151	160	194
	1951	175	173	172	187	134	162	181	166	178	169	194	192	192	188	202	267
	1953	197	170	270	209	150	180	205	186	185	185	219	239	216	242	229	303
Total GNP	1938 a/	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
	1948	110	123	123	108	87	91	91	103	110	107	143	128	161	129	155	180
	1951	141	175	156	121	104	117	125	127	144	135	182	168	194	163	188	320
	1953	158	190	205	134	115	128	140	140	160	149	215	191	215	187	209	387

a. Postwar boundaries. See Appendix C for comments on the relative importance of industrial groups in 1938.

b. 1951 = 100, since there was virtually no production in this area in prior years.

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Table 5

Per Capita Gross National Product and Gross Regional Product
1938, 1948, 1951, and 1953

Thousand 1951 Rubles

Year	Total USSR	Region														
		Ia	Ib	IIa	IIb	III	IV	V	VI	VII	VIII	IX	Xa	Xb	XI	XII
1938 a/	4.0	3.5	3.1	4.1	3.9	4.2	4.7	4.2	4.1	3.9	4.6	4.9	3.3	3.1	3.5	2.5
1948	4.3	3.9	4.3	4.3	3.7	3.8	4.8	3.7	4.1	4.1	6.5	5.4	5.3	4.0	5.1	3.0
1951	5.3	5.1	5.2	4.3	4.1	4.8	6.1	4.5	5.5	5.1	7.9	6.5	5.6	4.9	5.7	4.0
1953	5.7	5.8	5.8	4.6	3.9	5.3	6.8	4.9	6.2	5.5	9.0	7.1	5.9	5.3	5.4	4.4

Year	Total USSR	Region														
		Ia	Ib	IIa	IIb	III	IV	V	VI	VII	VIII	IX	Xa	Xb	XI	XII
1938 a/	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
1948	108	112	137	106	95	91	103	89	101	107	141	109	163	132	148	118
1951	132	148	165	107	105	115	132	108	135	132	171	132	171	162	165	156
1953	143	166	185	113	99	126	145	118	152	143	196	144	183	173	156	174

1938 = 100 b/

a. Postwar boundaries. See Appendix C for comments on the relative importance of industrial groups in 1938.
 b. Percentages were calculated from unrounded per capita figures.

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Table 6

Shifts in the Regional Distribution of Industrial Activity in the USSR
1938, 1948, 1951, and 1953

Sector	Year	Value Added (Million 1951 Rubles)	Region (Percent of Total Value Added)														
			Ia	Ib	IIa	IIb	III	IV	V	VI	VII	VIII	IX	Xa	Xb	XI	XII
Manufacturing																	
Energy	1938	31,400	3	Negl	Negl	Negl	31	10	25	1	11	5	7	2	1	2	2
	1948	40,300	2	3	Negl	1	20	8	13	3	11	14	10	5	3	4	3
	1951	60,300	3	3	Negl	1	22	9	12	3	12	13	10	4	2	3	3
	1953	69,900	2	2	1	1	21	9	11	5	11	16	9	4	2	3	3
Metals	1938	18,300	2	Negl	0	0	49	4	2	2	9	21	8	3	Negl	Negl	Negl
	1948	23,500	3	Negl	0	0	18	2	2	1	15	40	9	7	1	2	Negl
	1951	37,700	3	Negl	1	0	28	2	3	Negl	8	33	12	7	1	2	Negl
	1953	47,000	3	1	Negl	0	23	3	2	2	7	36	9	8	1	3	2
Fabricated metals	1938	26,700	4	0	1	1	14	10	1	6	55	7	1	0	Negl	Negl	0
	1948	33,600	12	0	2	1	13	9	3	4	37	13	3	Negl	Negl	3	Negl
	1951	64,600	14	Negl	3	2	18	5	2	4	38	9	3	Negl	1	1	Negl
	1953	74,700	14	Negl	3	3	18	5	2	4	37	9	3	Negl	1	Negl	1
Chemicals	1938	5,400	3	0	0	0	47	Negl	1	1	17	23	8	Negl	Negl	Negl	Negl
	1948	7,600	Negl	0	0	0	27	0	0	1	12	34	18	Negl	8	Negl	Negl
	1951	11,800	3	Negl	1	0	38	Negl	1	1	14	25	9	1	7	Negl	Negl
	1953	14,500	3	Negl	0	0	33	1	2	2	17	26	8	1	6	1	Negl
Construction materials	1938	6,900	3	1	7	5	14	6	4	13	24	10	5	3	2	1	2
	1948	5,900	2	1	5	3	10	9	5	9	16	9	5	7	3	5	11
	1951	11,800	2	2	5	3	9	9	5	9	16	9	5	6	3	6	11
	1953	15,700	2	2	4	4	9	10	6	8	17	8	5	6	3	6	10

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Table 6

Shifts in the Regional Distribution of Industrial Activity in the USSR
1938, 1948, 1951, and 1953
(Continued)

Sector	Year	Value Added (Million 1951 Rubles)	Region (Percent of Total Value Added)														
			Ia	Ib	IIa	IIb	III	IV	V	VI	VII	VIII	IX	Xa	Xb	XI	XII
Manufacturing (Continued)																	
Forest products	1938	14,500	10.	13	5	5	4	1	Negl	2	24	18	5	1	Negl	6	6
	1948	23,500	8	12	6	5	4	1	Negl	2	25	17	7	1	Negl	7	5
	1951	25,800	9	13	4	4	4	1	Negl	2	22	18	7	1	Negl	8	7
	1953	27,700	9	13	7	3	2	1	Negl	1	23	19	7	Negl	1	7	7
Food products	1938	48,900	1	1	2	1	45	8	1	4	21	2	2	2	9	Negl.	1
	1948	39,400	3	Negl	4	2	28	5	3	6	22	5	5	6	9	2	Negl
	1951	49,500	3	1	5	3	26	6	2	5	23	5	5	6	7	3	Negl
	1953	55,400	3	1	5	3	26	6	2	5	23	5	5	6	7	3	Negl
Manufactured consumer goods	1938	19,100	8	1	Negl	2	6	4	3	6	67	Negl	1	1	1	Negl	Negl
	1948	18,400	7	Negl	1	2	8	4	4	8	58	1	3	1	3	Negl	Negl
	1951	36,600	6	Negl	Negl	2	8	5	4	9	57	1	4	1	3	Negl	Negl
	1953	44,600	6	Negl	Negl	2	9	5	4	9	56	1	4	1	3	Negl	Negl
Defense industry	1938	12,200	15	0	0	0	5	8	0	14	29	27	2	0	0	0	0
	1948	20,100	5	0	Negl	0	4	3	0	11	20	37	12	0	4	4	1
	1951	44,100	4	0	1	0	6	4	0	13	17	30	15	0	6	3	1
	1953	56,600	4	0	1	0	6	4	0	13	17	31	14	0	5	4	1

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Table 6

Shifts in the Regional Distribution of Industrial Activity in the USSR
1938, 1948, 1951, and 1953
(Continued)

Sector	Year	Value Added (Million 1951 Rubles)	Region (Percent of Total Value Added)														
			Ia	Ib	IIa	IIb	III	IV	V	VI	VII	VIII	IX	Xa	Xb	XI	XII
Agriculture	1938	341,500	2	1	5	6	24	7	3	6	20	8	7	3	5	3	
	1948	290,300	2	1	5	5	22	6	3	6	20	8	7	5	6	4	Negl
	1951	316,300	2	1	4	5	22	7	3	6	19	7	7	5	7	4	1
	1953	327,800	2	1	4	5	22	7	3	5	19	8	7	5	6	4	1
Transportation	1938	45,100	4	2	Negl	3	26	4	3	7	20	9	7	3	4	4	4
	1948	55,400	3	2	1	Negl	23	5	3	7	21	10	8	3	5	5	4
	1951	81,800	3	2	1	Negl	25	5	3	7	19	10	8	3	5	5	4
	1953	96,400	3	2	1	Negl	24	5	3	7	19	10	8	3	6	5	4
Communications	1938	3,800	4	1	2	2	23	4	3	4	36	7	5	2	4	2	1
	1948	7,500	4	1	2	3	24	3	3	4	34	8	5	2	4	2	1
	1951	9,700	4	1	2	3	23	3	3	4	33	8	6	2	4	2	2
	1953	12,000	4	1	2	3	23	3	3	4	33	8	6	2	4	2	2
Trade	1938	26,000	6	1	3	4	26	4	3	4	29	7	4	2	4	2	1
	1948	40,300	5	1	2	3	22	4	3	5	27	10	6	3	4	3	2
	1951	44,100	6	1	3	3	22	4	3	5	27	9	5	3	4	3	2
	1953	48,200	6	1	3	3	22	4	3	5	26	9	6	3	4	3	2
Services	1938	126,800	4	2	3	4	24	5	4	6	24	7	5	3	5	3	1
	1948	182,000	4	2	3	4	23	5	4	6	24	7	5	3	5	3	2
	1951	206,600	4	2	3	4	23	5	4	6	24	7	5	3	5	3	2
	1953	228,900	3	3	3	4	23	5	4	5	23	7	6	3	6	3	2

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Table 6
Shifts in the Regional Distribution of Industrial Activity in the USSR
1938, 1948, 1951, and 1953
(Continued)

Sector	Year	Value Added (Million 1951 Rubles)	Region (Percent of Total Value Added)														
			Ia	Ib	IIa	IIb	III	IV	V	VI	VII	VIII	IX	Xa	Xb	XI	XII
Construction	1938	37,400	3	1	3	4	25	6	4	6	24	8	6	3	4	2	1
	1948	51,200	4	1	3	3	21	5	4	6	23	10	7	4	5	3	1
	1951	75,300	4	1	3	3	21	6	3	6	22	10	7	4	5	3	2
	1953	85,600	4	2	3	3	20	6	3	6	22	10	7	4	5	3	2

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the USSR. Each produced almost twice as much as the next most significant region, the Urals (VIII), which accounted for 10 percent of national output. At the other end of the spectrum, the North (Ib) and the Far East (XII) produced the least, about 2 percent each of the national output or about one-tenth the production in the Central Industrial Region and the Ukraine.

The two older industrialized regions together also dominated all major sectors of production, accounting for 40 percent of both manufacturing output and agricultural production and for 45 percent of the total volume of services produced (see Table 2*). In each of these major sectors also the Urals ranked next in size, accounting for 8 to 14 percent of the national total in each major sector. The North contributed the smallest volume of manufacturing and service output to the national total, while the Far East (XII) produced the smallest amount of agricultural goods.

C. Trends in Gross Regional Product, 1938-53.

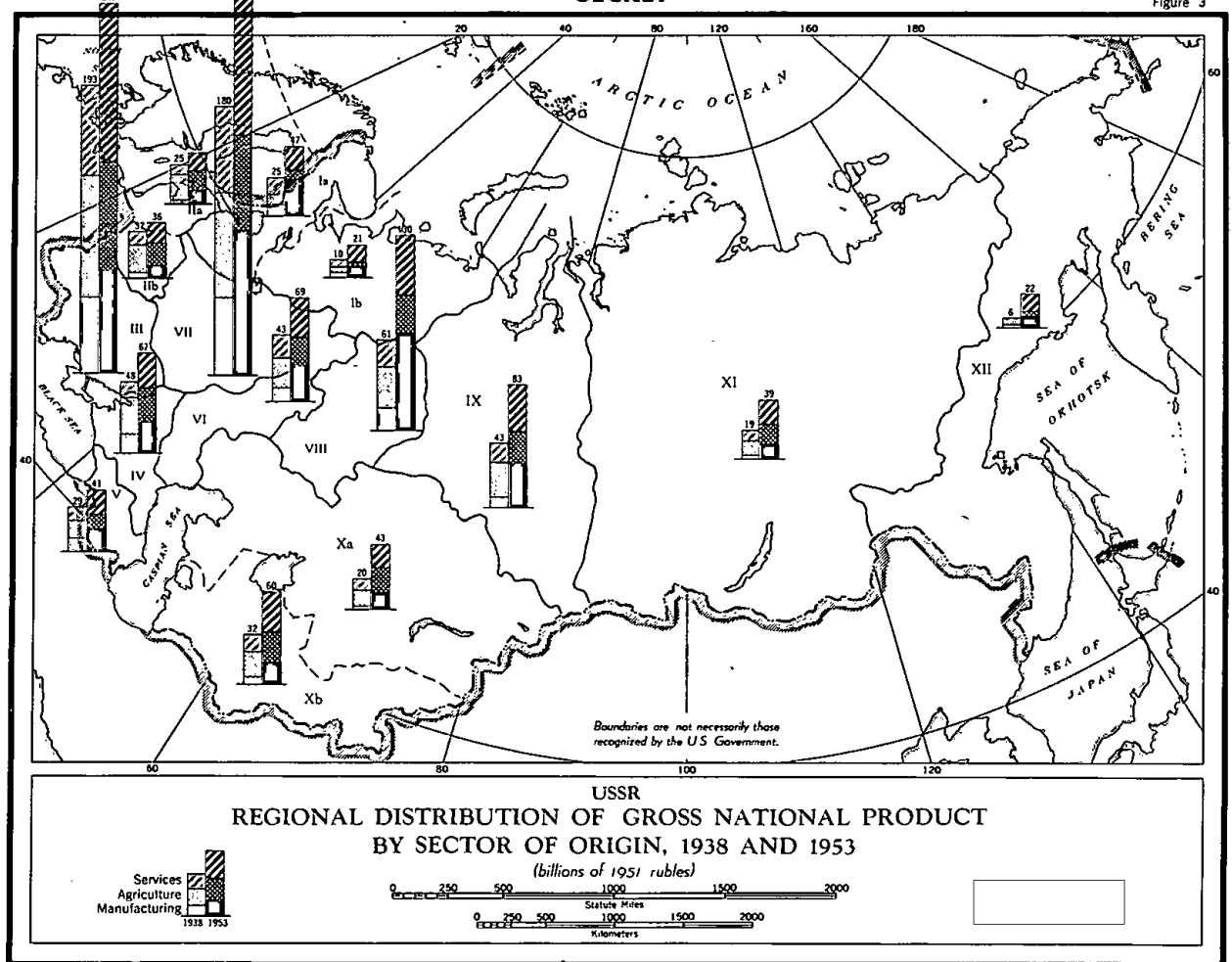
On the other hand, between 1938 and 1953 the most rapidly growing region was the Far East, where total output increased by nearly 300 percent (Table 4**). Over the same years the total Soviet output of goods and services increased by only 60 percent. By contrast, the most lethargic regions were Belorussia (IIb) and the Ukraine (III), where production increased by 15 and 30 percent, respectively, over the 15-year period. In general, the most rapidly growing regions were those wherein industrial development has been most recent (including the regions to the east of the Urals): East Siberia (XI); the Far East, Kazakhstan (Xa), and the North, in each of which production more than doubled. Production in the Urals also increased by more than 100 percent over these years. Thus the data indicate that the regional distribution of economic activity in the USSR has experienced a gradual shift eastward since the years just before World War II. In 1938, about 50 percent of the total of all goods and services was produced in the two older industrialized regions, the Central Industrial Region and the Ukraine, while the regions east of the Urals -- West and East Siberia and the Far East -- accounted for only about 10 percent of total output.

* P. 14, above.
** P. 16, above.

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SECRET

Figure 3



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SECRET

50X1

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Population was similarly distributed in this year, about one-half of the people being located in the Central Industrial Region and Ukraine and less than one-tenth in the three eastern regions.

By 1953, on the other hand, 40 to 45 percent of production was carried in the two largest regions, the Central Industrial Region and the Ukraine, in which about 45 percent of the population was located. The three regions east of the Urals produced between 10 and 15 percent of total production and contained a similar proportion of the population. The other western regions remained in about the same relative position in total production, with the exception of the Urals, whose share of the total increased. Thus the economies of the Urals and the regions to the east grew more rapidly after 1938 than the Soviet economy as a whole, while the Central Industrial Region and the Ukraine grew somewhat less rapidly. Other regions on the average kept pace with over-all Soviet growth.

The widespread destruction of productive facilities that occurred during the war in those areas of the USSR which were subjected to German occupation is clearly revealed in the comparison of the 1948 with the 1938 regional shares of production. (See Table 2.*) The occupation inflicted greatest damage on the productive capabilities of Regions III, IV, VI, and VII just because these regions possessed a sizable amount of capital equipment which was removed or destroyed by the invaders. Regions IIa and IIb were also occupied but escaped the heavier losses of the other regions, since they were primarily engaged in light industry. The increased production of the Urals and regions to the east in 1948 similarly mirrors the effects of the industrial equipment moved there from the West during the war period.

D. Changing Composition of Regional Production.

During the 15 years since 1938 the most sizable regional shifts have occurred in the manufacturing sector. Before World War II, more than one-half of industrial activity was located in the Central Industrial Region and the Ukraine, with about 15 percent in the Urals and to the east. By 1953 the share of the two former regions in manufacturing activity had declined to about 40 percent, while that of the four eastern regions had increased

* P. 14, above.

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to nearly 30 percent. The remainder of manufacturing activity was distributed among the other economic regions in a relatively constant fashion.

The distribution of Soviet agricultural output regionally has remained remarkably stable since the prewar era. Table 4,* however, does reveal the concentration of Soviet agricultural investment in areas specializing in industrial crops, especially in Regions Xa and Xb. In Table 4 the lag in the re-establishment of the prewar level of agricultural production is demonstrated rather forcefully, although the fact that both 1951 and 1953 were years of poor crop yields tends to distort the picture somewhat. The rates of growth of agricultural output, however, when compared with those for manufacturing indicate that the agricultural problem is an acute one for all parts of the USSR.

The share of services produced in each region has undergone the same shifts as those of population and manufacturing: a slight decline in the relative output of the Central Industrial Region and the Ukraine accompanied by a gradual increase in those of the Urals, West Siberia, and the Far East regions.**

While shifts since the late 1930's in the regional distribution of gross national product and in major industrial components have been moderate, the composition of the several gross regional products reveals changes of a much larger magnitude. For the country as a whole the total volume of goods and services increased by about 60 percent between 1938 and 1953. Meanwhile, however, the growth of manufacturing activity was about twice as rapid, increasing by 120 percent, while agricultural output remained about constant and service output nearly doubled. As a result, whereas, in 1938, manufacturing activity accounted for about one-quarter of gross national product, agriculture for about two-fifths, and services for about one-third, by 1953, manufacturing contributed over one-third of total output, agriculture only about one-quarter, and services about two-fifths.

In 1938, as Table 3*** indicates, the relatively industrialized regions (those wherein manufacturing contributed relatively more to gross regional product than was the case for the entire country)

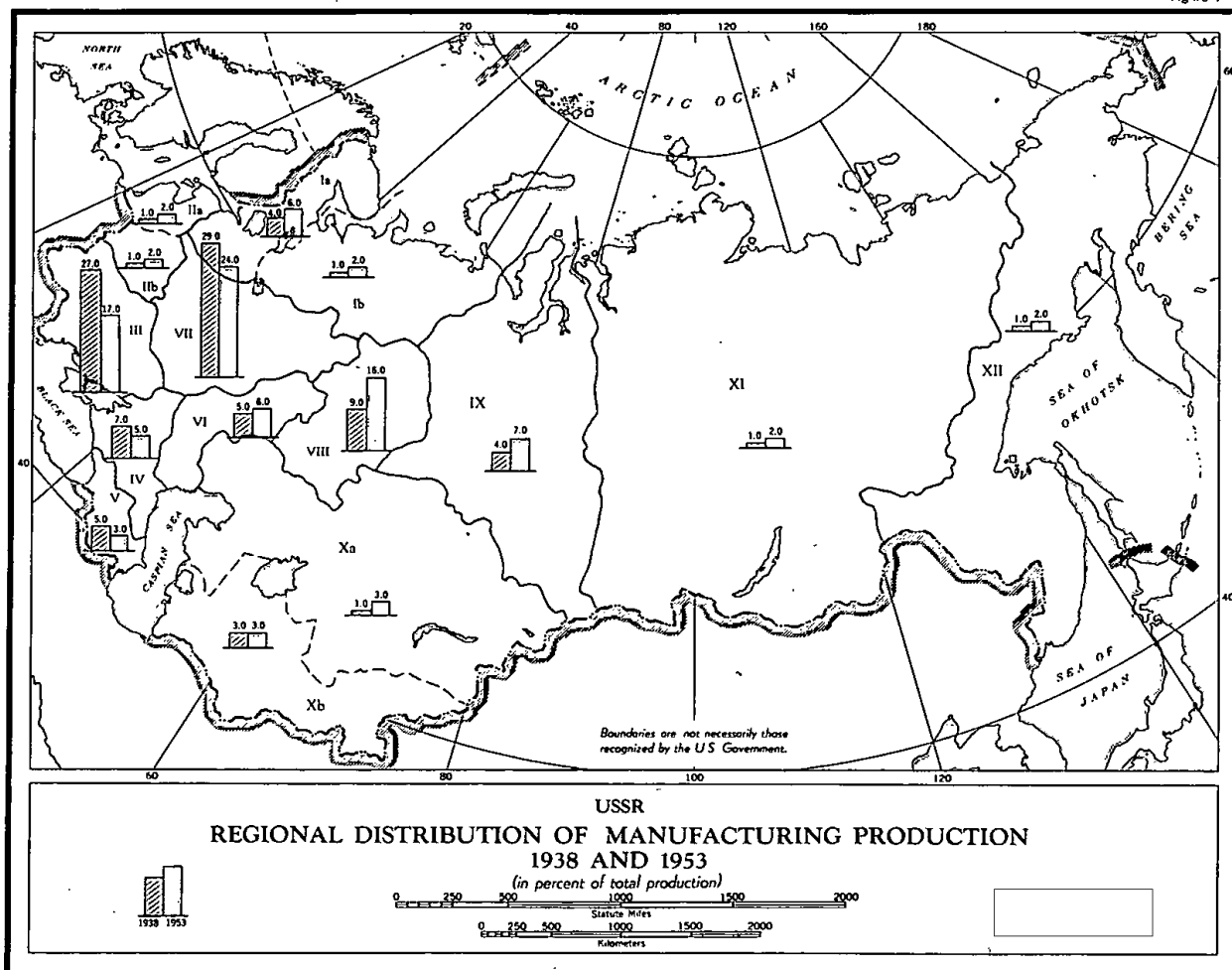
* P. 16, above.

** This result is determined in large part by the method of estimation, which is discussed in Appendix B.

*** See Appendix D.

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Figure 4



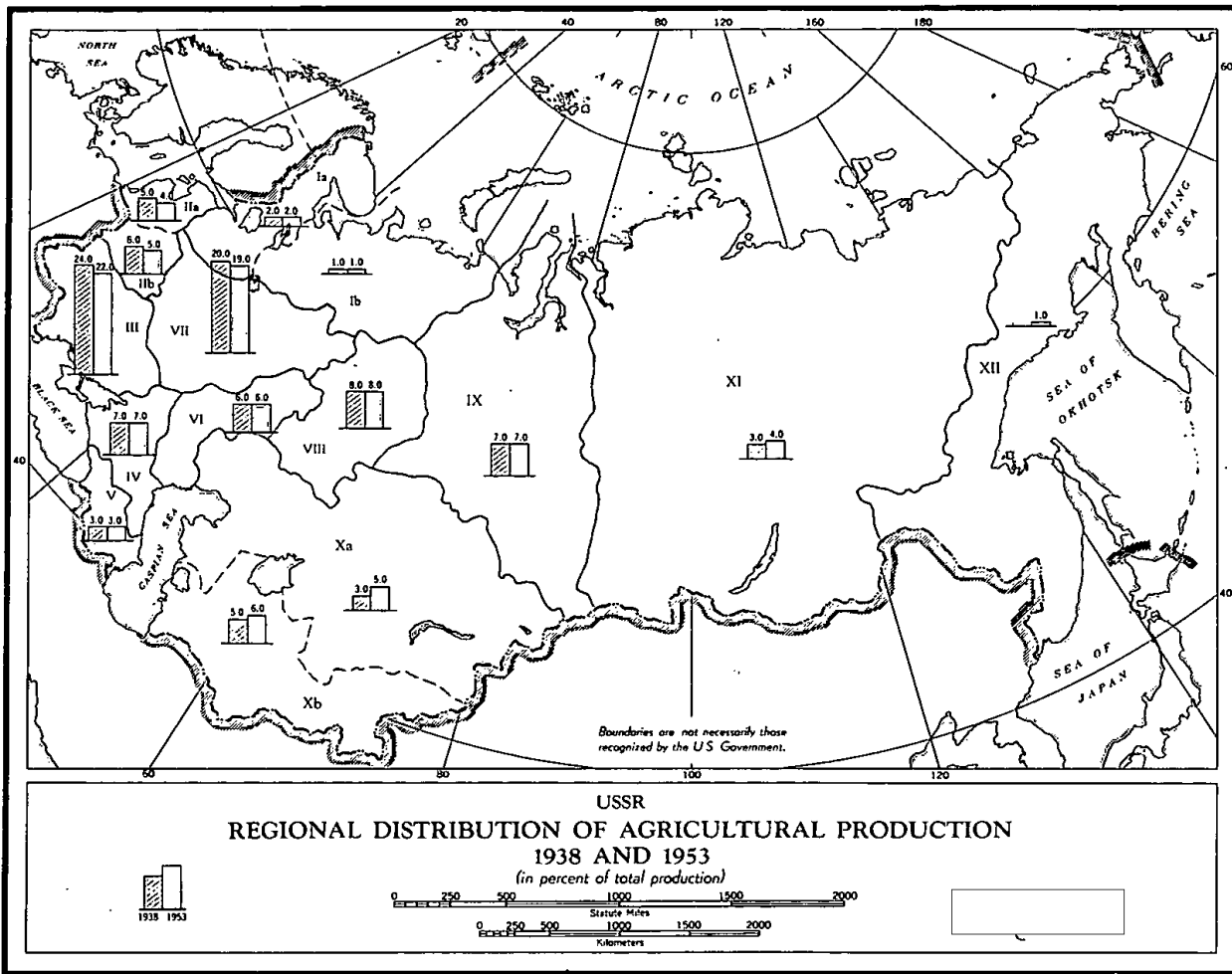
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Figure 5



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were the Northwest (Ia), Transcaucasus (V), and the Central Industrial Region (VII), while the agricultural regions were the Baltic (IIa), Belorussia (IIb), West Siberia (IX), East Siberia (XI), and Central Asia (Xa). Only in the Baltic (IIa) and the Southeast (IV) were services of less relative importance than in the country as a whole.

Over the years since 1938, the relative importance of manufacturing increased in every region.* The most rapid growth of industrialization has occurred in the area from the Urals to the east (especially Regions IX and XI) and in Kazakhstan (Xa). In the Urals, manufacturing rose from about one-quarter of gross regional product to a position where it accounted for about one-half of gross regional product in 1953, or it increased by more than 300 percent. In West Siberia the relative importance of manufacturing more than doubled, from 15 to about 35 percent of regional output. In East Siberia the increase in the relative importance was equally dramatic, rising from about 10 to over 25 percent of regional product for the same years. Over the 15-year period, while manufacturing activity in the Ukraine was increasing by 35 percent (about 2 percent per year compounded) in East Siberia it was being sextupled (under 15 percent per year), and in West Siberia it increased by 300 percent (about 10 percent per year compounded).**

The relative importance of agriculture in the total output declined in every region, a fact which reflects the more rapid growth of manufacturing and services than of agricultural output and also the fact that both 1951 and 1953 were years of poor crops.

* The constant position of manufacturing in the economy of the Transcaucasus (V) is in part spurious and results from the fact that the regional distribution of the output of petroleum products in 1938 was assumed to be the same as that of crude oil output, an assumption which inflates the importance of the Transcaucasus, in which the Baku area is located, as a petroleum-product producer.

** The rapid rate of growth of Regions X, XI, and XII is in part overstated because of the number of industrial categories in which regional output was negligible in 1938 but significant in the later years.

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E. Per Capita Regional Product.

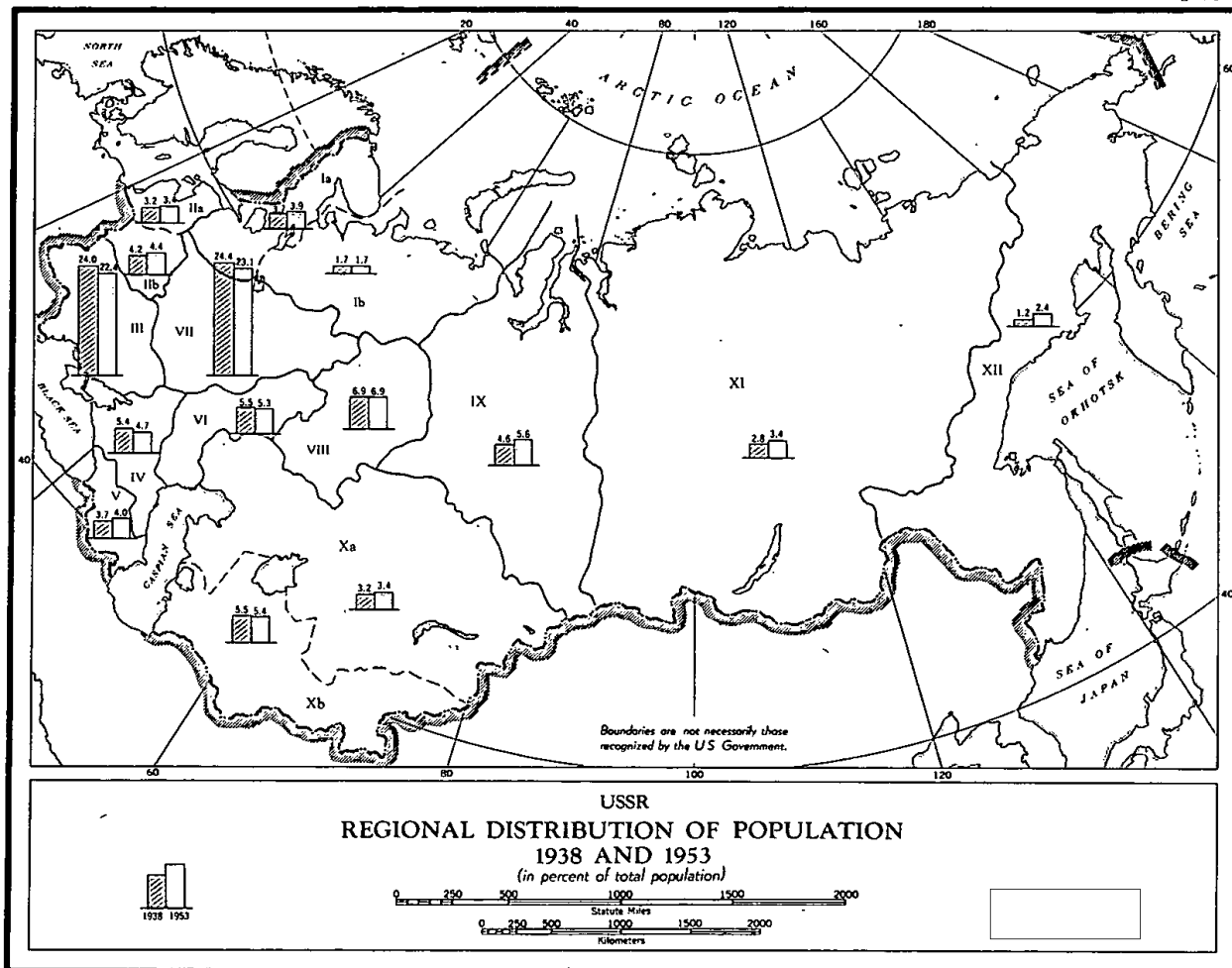
There have been fairly extreme variations in per capita output. Table 5,* obtained by dividing the estimate of gross regional production (constant prices) by the population of the region, yields an estimate of per capita value added, which (as was pointed out in II, above) reflects the structure of factor cost in the region. In 1938, per capita output for the USSR as a whole amounted to about 4,000 rubles (1951 prices). By comparison, regional figures varied from a measure of about 2,500 rubles in the Far East to one of about 4,900 rubles in West Siberia. By 1953 per capita output for the entire country had risen by nearly 45 percent to about 5,700 rubles (1951 prices). In general, between 1938 and 1953, per capita output experienced the greatest growth in the rapidly developing areas east of the Urals. In 1953 the highest per capita output among regions was achieved in the Urals, with 9,000 rubles (an increase of over 90 percent). The North also experienced a sizable increase in per capita output, reaching a level of 5,800 rubles, also an increase of more than 80 percent over 1938. This level, however, undoubtedly reflects the fact that the most important industries in the region, lumbering and services, are industries with a typically high ratio of value added per worker. Some part of the more rapid growth of per capita output in the Northwest, the Volga, Central Asia, Kazakhstan, and the Far East as well as in the Urals over that of the country as a whole is undoubtedly to be explained by the increasing importance of such industries in the economies of these regions.

In general, as in these cases, regional product per capita should not be interpreted as indicative of regional variations in labor productivity. Variations among regional patterns of economic activity make the product per capita computations nonhomogeneous for this purpose. In addition, regional differences in the composition of the population (for example, age distribution or sex distribution) would make it inappropriate to assume that the regional distribution of the labor force is the same as that of the population. At this time it is not possible to estimate the labor force of the various regions of the USSR.

* P. 17, above.

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Figure 6



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F. Policy Implications.

The success of the Soviet policy of regional self-sufficiency is indicated in Table 3* in the increased balance among the three major sectors of production being achieved in nearly every region. Except in the northern regions where the climate makes agricultural pursuits virtually impossible, most regional economies are approaching rough equality in manufacturing, agricultural, and service production.** The data suggest that the USSR has nearly achieved its goal of a regional economic structure which provides an industrial and agricultural base in support of the population and industry located in the region. The fact that the output of transportation services has grown more rapidly than either GNP or commodity production,*** on the other hand, suggests that the USSR has not been completely successful in its aim of minimizing transport.

What part of the eastward shift in the center of productive activity in the USSR, which appears throughout the data, represents the fruits of a planning effort directed toward the settlement and orderly development of the previously undeveloped sections of the country and what part represents the results of planning for strategic security are not questions which can be easily dissociated. The two policies, that of regional development and military security, can both be furthered by the same course of action. The development of Region XII, for example, could be justified solely in terms of strategic considerations or in terms of regionalism. From the action alone it is therefore not possible to determine what the primary motivating consideration was. This determination would be possible only in those cases where the two policies might require conflicting action. That the goal of a balanced development of regional resources was not insignificant in determining the location of economic activity is even more strongly

* P. 15, above.

** It should be pointed out again that the poor crops in 1951 and 1953 cause the relative importance of agriculture to be understated and that of the other sectors to be overstated in those years. Also, the relative importance of services in Region XII results from the fact that the region's output of a number of commodities included in the industry samples was negligible (less than one-half of 1 percent). In omitting this production the manufacturing and agricultural sectors were understated in importance.

*** GNP minus services.

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suggested in Table 6.* The more even geographic distribution of energy, metals, and especially food and manufactured consumer goods in 1953 as compared with 1938 reflects not only the further development of undeveloped regional economies but also increased regional self-sufficiency.

* P. 18, above.

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APPENDIX A

GEOGRAPHIC BRIEFS OF THE ECONOMIC REGIONS OF THE USSR *

Each of the 15 economic regions of the USSR is founded on a resource complex that forms the basis for its local economy and contributes to the economic structure of the entire country. The following briefs give a concise description of the geographic-resource base of each of the 15 regions.

Most of the regions in the European part of the USSR are smaller than in the remainder of the country. Population is denser, the degree of urban concentration is higher, the industries are older and better established, and physical environments are more favorable to agriculture. Manufacturing and transportation play a leading role in the economies. In Central Asia and Siberia, by contrast, the regions are considerably larger and are characterized by more recent industrial and agricultural development. Large cities are fewer and farther apart, the over-all population density is sparse, and the transportation network is poorly developed.

Despite regional differences, some degree of equalization is in progress. As development continues, changes may be expected in both size and character of the regions.

* For data on population and area of the economic regions of the USSR in 1953, see Table 7, on the following page. For terrain and economic regions, see Figure 7, following p. 68, below.

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Table 7
Population and Area
of the Economic Regions of the USSR
1953 a/

<u>Economic Region</u>	<u>Population b/ (Millions)</u>	<u>Area (Thousand Square Miles)</u>	<u>Population (Density per Square Mile)</u>
Ia	8.1	188	43
Ib	3.6	443	8
IIa	7.2	74	97
IIb	9.3	80	116
III	46.8	246	190
IV	9.9	138	72
V	8.4	74	113
VI	11.1	187	59
VII	48.6	380	128
VIII	14.4	294	49
IX	11.7	936	12
Xa	7.2	1,063	6
Xb	11.4	475	24
XI	7.2	2,781	3
XII	5.1	1,207	4
Total USSR	<u>210.0</u>	<u>8,566</u>	<u>24.5</u>

a. The boundaries of the economic regions given in this report are as of 1953. In early 1954 a series of territorial-administrative changes took place, including the creation of two new oblasts that straddle economic region boundaries.

The new Balashov Oblast includes territory from both Region VII and Region VI. Kamensk Oblast includes territory from Regions IV, VI, and VII. It may be assumed that changes in the boundaries of the economic regions have been or will be effected in order to include each of these oblasts within a single economic region.

b. Population data from Appendix D, Table 24.

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I. Economic Region Ia.

Economic Region Ia, Northwest, is the second most important industrial region in the USSR. It covers a total area of 188,455 square miles and includes the Leningrad, Murmansk, Pskov, and Novgorod Oblasts of the RSFSR and all of the Karelo-Finnish SSR.

Most of the activity of the region is focused on the city of Leningrad, which ranks second to Moscow as the major industrial, cultural, and scientific center of the country. Concentrated within the city and its suburbs is the manufacture of precision instruments, tractors, turbines, textile machinery, business machines, photo equipment, telephones and radios, and factory and plant equipment for other industrial areas. Leningrad plays the leading role in the chemical industry of the region, primarily in the manufacture of synthetic rubber from potato alcohol and the processing of phosphate fertilizers from Khibiny apatites.

The port of Leningrad, located on the banks and islands of the Neva River at its entrance to the Gulf of Finland, is the best equipped port and has the largest shipbuilding yards in the USSR. Within Leningrad is the naval base at Kronshtadt.

Leningrad ranks equally with Moscow as a railroad center and is the terminus of several major inland water routes. The Kirov Railroad and the Baltic-White Sea Canal have created particularly strong ties between Leningrad and Murmansk and the Kola Peninsula. During the winter the ice-free port of Murmansk takes over the shipping of the ice-bound port of Leningrad. Murmansk Oblast (Kola Peninsula) provides the industries of Leningrad with mineral raw materials, especially apatite, nepheline, and nickel. Leningrad in return provides the base of all developments in the Murmansk Oblast and continues to supply it with a variety of manufactured goods, equipment, and skilled labor.

The increase in industrial power production has given rise to some centers outside of Leningrad. Volkhov with its abundant water-power is a center of aluminum production. Boksitogorsk, near Tikhvin,

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processes bauxite, which is mined in the vicinity. Large deposits of lignite are located near Borovichi, where refractory materials, lumber products, paper, and linen are produced.

In the far northern oblast of Murmansk, unusual mineral wealth forms the basis of recent industrial activity. A number of minerals, including apatite, nepheline, nickel, and copper, are found here in quantity, as well as smaller amounts of such rare metals as titanium, vanadium, zirconium, and molybdenum. Kirovsk, which is on a branch line of the Kirov Railroad, is a relatively new town situated in a recently developed apatite-mining area. Nikel' is also a new town that has grown up in the vicinity of rich nickel deposits.

In addition to its port functions, the city of Murmansk serves as a center for the lucrative fishing industry of Barents Sea along the northern coast of the Kola Peninsula. Fish processing and shipbuilding are two of the most important activities of the city. A Soviet naval base is located at Severomorsk adjoining Murmansk on the east.

In the Karelo-Finnish part of Region Ia, lumbering and allied activities are the main industries. Although lumbering and sawmilling centers are distributed throughout the Republic, the heaviest concentration is found in the vicinity of the Kirov Railroad and the Baltic-White Sea Canal. The chief sawmilling centers are Petrozavodsk; Solomennoye, a northern suburb of Petrozavodsk; Nadvoitsy; Idel'; and Letnerechenskiy; and the lumber ports of Belomorsk and Kem'. These towns make furniture, prefabricated houses, and plywood. Paper is milled at Segezha and Kondopoga.

Although industry in Region Ia is of much greater importance than agriculture, a significant part of the industry is concentrated in Leningrad itself, and much of the remaining territory retains a predominantly rural character, with agriculture and forestry the main activities. With the city of Leningrad as its major market, the agriculture of the entire surrounding area is oriented toward production for urban needs -- milk, meat, fruits, and vegetables. This relationship between urban center and rural hinterland is repeated throughout the region on a much smaller scale.

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Most of the cultivated land is in rye, barley, oats, and fodder grasses. Very little wheat is grown in any part of the region, and most of the bread grains are imported. In the Novgorod and Pskov Oblasts, with their clay soils, damp climate, and surplus of rural labor (especially women), flax is one of the chief crops. Agriculture is of least importance in the northern and the forested parts of Region Ia, but traces of dairying and truck farming reach even beyond the Arctic Circle, and reindeer breeding reaches sizable proportions in parts of the Kola Peninsula. Agriculture is totally eclipsed by forestry in many parts of the region, such as the area east of Lake Ladoga, where there are many forests and few roads and the best avenues of movement are the rivers.

The population of Region Ia is about 8.1 million, with a characteristically high urban concentration and a very low rural density. The major portion of the population lives in the south -- in Leningrad and in Novgorod and Pskov Oblasts. Within this area the average density of the rural population is 50 persons per square mile, but it reaches about 75 in the southwest and 25 in the north-east. The rural population lives in small villages of 15 to 10 or less households. Urban dwellers constitute over 60 percent of the population of the southern area, and about 50 percent of the population in Region Ia live in the city of Leningrad. In the Karelo-Finnish part of the region the average rural population density is 9 persons per square mile but reaches 25 in the southern sections, where agriculture is more prevalent. Villages number from 5 to 10 households. Nearly a third of the population of this part of the region is urban, about 50 percent living in Petrozavodsk, the capital of the Karelo-Finnish SSR. Urban concentration reaches its maximum on the Kola Peninsula, where 80 percent of the population is urban. Rural density reaches a minimum of less than 5 persons per square mile.

Almost 80 percent of the population of Region Ia is Great Russian; the remainder is made up of Karelians, Finns, Estonians, Lapps, and a few very small groups of Finnish origin that inhabit the southern lakes area.

The terrain of Region Ia is mostly gently undulating or flat, but in the Kola Peninsula and Karelia of the extreme northwest, much of the land is furrowed and hilly. Granite and gneiss bedrock protrude above the ground in many places, and fields are frequently strewn with boulders. The highest elevations in the region are

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found on the Kola Peninsula, where the plateau-like Khibiny Mountains rise more than 4,000 feet above the surrounding plains. A mass of lakes and rivers covers a major part of the land. Lakes Ladoga, Onega, Vygozero, Il'men', and Chudskoye, together with the many rivers (Volkhov, Svir', Msta) of the region, form the densest lake-river net in the USSR. The region lies almost completely in the zone of taiga vegetation, and forests cover many parts of the area. Swampy open forests of spruce, with admixtures of pine and birch, are found on the Kola Peninsula, whereas the Karelo-Finnish area has extensive forests of pure pine. In the southern parts of the region, large areas have been cleared for agriculture, but many predominantly evergreen stands remain.

The climate of Region Ia is continental, with long, severe winters and short, cool summers. Because of the moderating influence of the White Sea in the north and the Baltic Sea in the south, the climate is less severe than that at similar latitudes farther east. Of great significance to shipping is the influence of the Gulf Stream, which prevents the Barents Sea along the coast of the Kola Peninsula from freezing in winter. The southern half of the peninsula is actually cooler in winter than the northern half. Periods of below-zero temperatures are common throughout the region during the winter. Spells of above-freezing temperatures, however, may continue for several days, even in midwinter. The July average is 60°F, and the highest temperatures seldom exceed 70°F, even on the hottest days of summer. Precipitation averages 15 to 20 inches a year and is generally heavier in the south than in the north. Although the maximum is in summer, a considerable amount of the total precipitation falls as snow in winter. Both spring and fall are short transitional seasons.

II. Economic Region Ib.

Economic Region Ib, North, covering 442,548 square miles, is for the most part a frontier area whose economy is geared to the exploitation of natural resources. The abundant resources include forests, coal, petroleum, furs, and fish. Agriculture, chiefly dairying, and some manufacturing are also of importance. Stretching from the Central Industrial Region to beyond the Arctic Circle and extending west-east from the Karelo-Finnish SSR to the Urals, the region also includes the island groups of Novaya Zemlya and Franz Josef Land. This vast area includes only three administrative units: Vologda

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Oblast, noted for its dairy industry; Arkhangel'sk Oblast, best known for the flourishing sawmill industry and Arctic port activities of its administrative center; and the Komi ASSR, notorious for the forced labor camps that provide labor for its coal mines and oil-fields.

Forests cover three-fifths of the region, extending to the Arctic Circle, and contain the best lumber trees in the European USSR. Logs are floated down the Onega, Northern Dvina, and Mezen' to the mills at ports along the rivers. From there the lumber is exported abroad and to the central and southern regions of the USSR. Industry in Region Ib is based on the forest resources. Arkhangel'sk is the largest sawmilling center in the country and the hub of the lumbering industry and allied activities. Paper and pulp, plywood, prefabricated houses, and distilled products including tar, resin, and methyl alcohol are produced in the city. Arkhangel'sk is a supply port for the Northern Sea Route and has shipyards, repair docks, and cordage mills. Nearby Molotovsk has in the last 20 years developed into an important sawmilling center. Kotlas, at the confluence of the Northern Dvina and Vychegda Rivers, also has sawmills and wood distilleries.

Other manufacturing in Region Ib, though of minor importance, includes the production of linen and of dairy and meat products. An aluminum industry is being developed at Cherepovets in Vologda Oblast; large bauxite deposits were discovered during World War II, and a processing plant has been under construction since 1949.

Coal deposits are concentrated at Vorkuta in the eastern Pechora Basin. The mines produce excellent coking and heating coal. The Leningrad industrial complex has been the principal consumer of Vorkuta coal since the completion of the North Pechora Railroad in 1942. The Pechora Basin also contains petroleum deposits near Ukhta. The oil is refined locally, and the products are sent to Leningrad.

Furs and fish are obtained in the Arctic sector of the region. Seals, the major source of fur, are hunted along the mainland shore and the coast of Novaya Zemlya. Reindeer are herded in the Nenetskiy National Okrug, Novaya Zemlya, and Kolguyev and Vaygach Islands. The chief types of fish -- cod, herring, haddock, and flounder -- are caught in the White Sea and offshore waters east to Kolguyev Island.

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Agriculture in the region is severely restricted by unfavorable climatic and soil conditions. Only in recent years, as a result of modern farming practices, has it expanded to the north. Flax is the most important crop and grows especially well in the southwest. In scattered areas, rye, barley, oats, and spring wheat are grown, and in recent years grain production has been pushed into the far north. Livestock graze in the rich meadows of the river flood valleys and provide dairy products and meat.

The transportation net is sparse and consists of the rivers and a few strategic railroad lines. The principal rail lines connect Arkhangel'sk and Vorkuta with Moscow and Leningrad to the south and southwest. Rivers are extensively used for transportation and, in combination with the Mariinsk and Northern Dvina Canals, form a good network of waterways. By these routes, Arkhangel'sk is connected with Leningrad and Moscow.

The population of Region Ib is the sparsest in all European USSR, averaging only 8 persons per square mile. The lowest density is in the Pechora Basin, but at Vorkuta there is an island of high density. Novaya Zemlya is devoid of population except at isolated points on the western shore. Great Russians are found only in cities and other highly developed areas, and national minorities in the region are organized into political units -- the Komi into an autonomous republic and the Nentsy into a national okrug.

Region Ib consists of the broad Dvina-Pechora Lowland and the northern Ural Mountains. The lowland is a nearly featureless, glaciated plain that slopes northward from the Ural Range to the Arctic Sea. The lowland is divided near its center by the low, glacially eroded Timan Range. The Northern Dvina River and its tributaries drain the western part of the lowland, and the lowland east of the Timan Range is drained by the Pechora River system.

The vegetation of the Dvina-Pechora Lowland consists of coniferous forests that extend north to the vicinity of the Arctic Circle; farther north is the tundra which continues northward to the Sea. Spruce and pine, the principal trees, grow in boggy soils covered with lichens. Many peat bogs are scattered throughout the forest. Beyond the Arctic Circle a bushy lichen tundra is underlaid by permafrost.

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The northern Urals, which form the eastern border of Region Ib, comprise the highest and most rugged and inaccessible segment within the 1,200-mile length of the Urals. Snow remains in sheltered spots all summer, and small glaciers have recently been found in several valleys.

The climate of Region Ib is rigorous, especially in the north-eastern part. January temperatures average a few degrees below 0°F. The winters are long, the Pechora Basin having an average of 200 days per year with temperatures below freezing. In the southern part of the region the winters are equally severe, but the short, warm summers provide some relief from the cold. Precipitation varies from 12 inches along the coast to 20 inches inland. The Northern Urals stand out as an island of heavier precipitation and average 30 inches per year. During December and January the area north of the Arctic Circle experiences continuous darkness, except for a faint twilight condition at noon. This is also the season for brilliant aurora borealis displays. During June and July, these northern regions have continuous daylight.

III. Economic Region IIa.

Economic Region IIa, Baltic, is significant chiefly because it provides the USSR with year-round access to the open sea by way of the Baltic ports. The area has long served Moscow and central Russia as a commercial outlet. In area it is the smallest economic region of the USSR, comprising 73,591 square miles. The region includes the Estonian, Latvian, and Lithuanian SSR's, which were formerly independent states, and the Kaliningrad Oblast of the RSFSR, which was formerly the northern part of East Prussia. Since its incorporation into the USSR, the economy of the region has never been stabilized, largely as a result of war devastation, forced collectivization, and population migration. The goals of the Soviet Five Year Plans for the region were designed to make it as nearly self-sufficient as possible and, in particular, to expand those industries that are important to the USSR as a whole.

The mineral resources of the region are not rich. The oil shale of Estonia, however, is a source of fuel oil, gasoline, and other products, which are extracted from the shale at a large industrial complex centered at Kokhtla-Yarve. The products are of special importance because they are easily accessible to Leningrad and the

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Baltic ports. Plans have been made to construct pipelines to Leningrad and Tallin. Peat cutting and phosphate mining are the only other extractive industries. Both are chiefly of regional importance.

Except for shale-oil extraction, industrial activities are concentrated chiefly in the ports. Food processing, textile weaving, and paper manufacturing are common to the four units comprising the region, as are also fishing, lumbering, and the production of various construction materials. Efforts are being made to expand the machine-manufacturing and shipbuilding industries of the Baltic region, and especially the steel industry of Latvia. Latvia was relatively well developed industrially prior to Soviet occupation and is still the most industrialized part of the region. A fundamental prerequisite to industrial expansion is an increase in power production. Much of the power now produced is thermal electric, but hydroelectric developments, including the huge Narva dam, are under construction.

Although Soviet planning calls for increasing industrialization, the region was about 70 percent agricultural before World War II, and agriculture remains of paramount importance. Dairy farming and the production of grains -- especially rye, oats, and barley -- are the most important types of agriculture, but potatoes, hogs, and poultry are also raised. Flax is the chief industrial crop. Butter, eggs, and bacon are major export items, and the processing of agricultural products is relatively important. Agriculture has not been particularly prosperous in the Baltic area since sovietization, because of drastic livestock losses, scarcity of farm labor, and the slowness and reluctance of the people to adopt collective farming. Forests still cover about one-third of the region and constitute a significant natural resource. The combination of terrain, soils, and climate, however, favors agriculture.

The population of Region IIA is estimated at 7.2 million. The major national groups are the Estonian, Latvian, and Lithuanian, each predominating in its respective republic. In Latvia the Latgales are an important minority group. Great Russians are most numerous in the cities. In Kaliningrad Oblast, Great Russians form the majority, the original German population having been drastically reduced. The chief cities in the region are Riga (with a population of over half a million) followed by the ports of Tallin and Kaliningrad and the inland cities of Vil'nyus and Kaunas. The four latter range in size from 180,000 to 250,000 in population.

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Region IIa is generally well served by transport facilities. A dense rail net connects the ports and the interior, and major lines continue on to central European USSR. Both the roads and the road net are generally better than in the USSR as a whole.

The region lies within the East European plain and has typically glaciated terrain, with extensive swamp areas and many lakes. Although relief in general is low, the landscape is varied and a few elevations exceed 1,000 feet. Low hills are common, and the upland areas of Latvia and Lithuania have been so deeply dissected that they give the impression of miniature mountain regions.

The coastline of Region IIa is of two general types. The north coast of Estonia, along the Gulf of Finland, is rugged and lined with cliffs and includes a number of good natural harbors. By contrast, the Baltic Coast in the west is characterized by low beaches backed by dunes and fringed in places by lagoons and sandbars. Harbors here are located at river mouths or are artificially maintained.

The climate of Region IIa is milder than that of most of the USSR, being transitional between the maritime climate of Western Europe and the continental climate of European USSR. Winters are moderate and summers are relatively cool, and the annual range of temperature is low. Precipitation averages 20 to 25 inches annually, and there is a high incidence of cloudiness.

IV. Economic Region IIb.

Economic Region II, Belorussia, situated along the western border of the USSR, is of greatest importance as the main transit corridor between Central European Russia and Western Europe. It is one of the least industrialized of the western economic regions of the USSR. Although the region is primarily agricultural, farming is backward and crop yields are low. In area, Region IIb and the Belorussian SSR are coextensive, covering about 80,154 square miles, or a little less than the state of Kansas. On the west the region is bordered by Poland, on the north by the Soviet Republics of Latvia and Lithuania, and on the south by the Ukrainian SSR.

Because of its role as a transit corridor between the east and the west, the region has a more highly developed transportation system than its internal economy would justify. Transportation relies chiefly on the railroads, and traffic is heaviest along the east-west lines.

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Of these the Moscow-Minsk-Brest-Warsaw railroad is by far the most important. This double-track line, which is the shortest route between Moscow and Berlin, carries heavy traffic in both directions. The north-south railroads serve chiefly as connecting links between the east-west lines. Brest, with a number of railroad reloading stations, is the main interchange point between the broad-gage Soviet railroads and the standard-gage lines of Poland.

The road network of the region, by contrast, is sparse and of poor quality. Its primary function is to feed the railroads. Except for a few main gravel- or clinker-surfaced highways, dirt roads of seasonal trafficability predominate. The best and most heavily traveled road leads east-northeast from Minsk to Smolensk and thence to Moscow.

The most important inland waterway artery is the Dnepr River system. Together with the Dnepr-Bug Canal, it provides a connection between the Black and Baltic Seas. The Bug and Pripjat' Rivers are also important links in Baltic-to-Black Sea navigation. The Oginskiy and Serguchskiy Canals provide additional waterway connections. The former connects the Neman and Dnepr Rivers, and the latter links the Berezina with the Dvina River system.

Farming in Region IIb is for the most part organized on a collective basis, with relatively large fields of cultivated crops and consolidated pastures and meadowlands. The cool, damp climate, combined with sandy and clayey soils, favors the production of winter rye, potatoes, oats, summer barley, and fodder crops such as clover. Flax growing is widely distributed throughout all the farming areas, and buckwheat is grown as a local food staple. Hog raising and dairy farming are also widespread. Near urban centers, orchard and garden crops, as well as poultry raising, are of local importance.

The relatively unimportant industries of the region are based on its agriculture, forests, and very limited mineral resources. Among the main industries are flax processing, linen weaving, tanning, production of hog bristles, food processing, plywood and match manufacture, and the production of peat briquettes.

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Region IIB has a population of 9.3 million, with an average density of 116 per square mile. Belorussians form the largest ethnic group. Although Belorussians are seldom dominant in cities or towns, they make up 90 percent of the rural population. Poles, who were a strong minority in the area until 1945, were largely repatriated in the course of the population exchange following the establishment of the present Soviet-Polish boundary, but a few Poles still remain. Great Russians are comparatively few in number. They are concentrated mainly in the cities and towns, where they hold most of the administrative posts. The region has a very small Ukrainian population along the southern margin, and a few isolated colonies of Tatars and Karaims. Small numbers of Lithuanians also live along the northern fringe of Belorussia. Before World War II, Jews formed a substantial urban minority, but they were largely exterminated as the result of mass executions.

A number of large cities are distributed throughout Region IIB and include Minsk, Pinsk, Brest, Polotsk, Vitebsk, Mogilev, and Gomel'. The rural population is densest near the cities and sparsest in remote areas such as the Pripyat' Marshes. Villages are the characteristic type of rural settlement. Individual farms are rare and are limited chiefly to the formerly Polish section of the northern plain. The eastern part of the Republic, which has been under continuous Soviet rule longest, is the most highly collectivized. Villages are fairly uniformly distributed and characteristically average about 300 inhabitants. Most commonly, village houses are built in a row along one or both sides of a dirt road, in some cases for a distance of a mile or more. The houses are generally built of rough-hewn logs and have thatched roofs.

Belorussia forms part of the East European Plain and is separated by the Lithuanian-Belorussian Upland into a small northern and a larger southern lowland. The northern plain around Polotsk is nearly flat and is dotted with lakes, marshes, and forests. The southern plain, occupying the combined basins of the Pripyat' and Dnepr Rivers, measures about 350 miles from east to west and 150 miles from north to south. The surface is practically level, with an almost imperceptible slope to the east and southeast. Drainage is poor and sluggish, and nearly half of the total surface is covered with swamp forest. With their dense undergrowth, these swamps and forests constitute a considerable barrier, even to movement on foot.

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The Lithuanian-Belorussian Upland forms the watershed between rivers draining to the Baltic and Black Seas. This ridge is essentially gently rolling land interrupted occasionally by sandy transverse passes. Local differences in relief average 150 to 200 feet and rarely exceed 300 feet. A maximum elevation of 1,150 feet is found northwest of Minsk.

The climate of Region IIb is relatively moderate and humid, representing a transition between the maritime climate of northwestern Europe and the strongly continental climate of the central European USSR. Summers are fairly warm, with a July mean temperature of 65°F. Winters are long and severe, with January temperatures averaging about 18° to 23°F. Precipitation is distributed evenly throughout the year and averages 20 to 24 inches annually. The prevailing winds are from the south and west.

V. Economic Region III.

Economic Region III, South (Ukraine and Moldavia), is one of the most important regions in the USSR both agriculturally and industrially. Its 246,000 square miles include the Ukrainian SSR and the Moldavian SSR, and its vast plains extend about 750 miles from the wooded slopes of the Carpathians in the west to the Don River in the east; to the South are the Black and Azov Seas. This is the famous "black earth region," whose rich farmlands have long been "the breadbasket of Russia." Twenty-five million acres are devoted to wheat. Among the other important crops are rye, barley, oats, and sugar beets, and large numbers of livestock are produced. The heavy industries of Region III are among the most important in the USSR. Coal in the Donets Basin and iron ore from Krivoy Rog have made possible the development of a large ferrous metallurgical industry. About half of the pig iron and a third of the steel of the USSR are produced here. The output of machinery accounts for about one-fifth of the nation's total, that of chemicals for about one-third. Since the completion of the Dnepr River Dam, a large aluminum plant has been established at Zaporozh'ye.

Region III is the most densely populated area of the USSR. Its 47 million inhabitants represent over one-fifth of the total population. In the Ukrainian SSR, composition of the population is relatively homogeneous, with Ukrainians constituting about 80 percent of the total. Important minorities are Great Russians in the Donets Basin, the Crimea, and the north; Belorussians in the north-

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northwest; and Poles in the west. In the Moldavian SSR, Moldavians constitute 65 percent of the total; others include Ukrainians, Great Russians, and Bulgarians.

Rural villages, generally collective-farm centers, are the most characteristic features of the rural settlement pattern. They stretch along the river valleys or along dry ravines, where dams have created artificial ponds that provide the water supply. The white-washed sun-dried brick houses are usually evenly spaced along wide dirt roads. Behind the houses are small garden patches.

About one-third of the population lives in large urban centers. Twenty cities have over 100,000 inhabitants, and more than forty have over 50,000. Those with over a half-million persons each are Khar'kov, Kiev, Odessa, Dnepropetrovsk, and Stalino. The large centers lie mainly in the Donets Basin, along the Dnepr River and the Black and Azov Seas, and in the western Ukraine.

The highly developed economy of the region has required a relatively well-developed transportation network. Most of the traffic load is carried by the railroads. The region has the densest rail network of the USSR, the chief centers being at L'vov, Kiev, and Khar'kov. Three main lines originate in the industrialized Donets Basin and connect it with the Moscow industrial region. The road network, which is less adequate, is densest in the west. In general, the net consists of roads radiating from important urban centers. Only a few major roads pass through the Ukraine, the most important being the Moscow-Khar'kov-Simferopol' and the Moscow-Kiev-Odessa highways. Most of the roads are unimproved, muddy in spring and fall, and dusty in summer. Along the seacoast and on the Dnepr River, water transport has attained considerable importance.

The dominant relief features of Region III are plains or low, rolling plateaus, broken by an irregular pattern of stream and river valleys. Interrupting the expansive plain are a few slightly higher elevations, such as the Donets Ridge in the southeast and the Volyn-Podolian Plateau in the west. Seacoasts are generally low, but at a short distance back from the beach there are likely to be steep, loamy cliffs of various heights. Only in the Carpathian area and the Crimea is there any mountainous terrain. The Carpathians are steep and forested, with slopes cut by deep transverse valleys. The partially forested Crimean Mountains skirt the southern shore of the peninsula and drop off abruptly to the sea.

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The climate of Region III is characterized by cold winters and hot summers. The major exception is the southern coast of the Crimea, where summers are hot and dry and winters mild and rainy. The period of winter freezing varies in length from 2 months in the south to 3 or 3½ months in the north. The snow cover is usually light. Winter is followed by the notorious spring thaw, accompanied by deep mud that brings vehicular movement almost to a standstill along the dirt roads for 3 or 4 weeks. During the hot summers cloud-bursts are common. A second period of mud conditions occurs in the fall before the onset of winter, but it is shorter and somewhat less severe than in the spring.

VI. Economic Region IV.

Economic Region IV, Southeast (Lower Don and North Caucasus), ranks as one of the leading petroleum producers of the USSR, as well as an important agricultural area. Bounded by the Sea of Azov and the Black Sea on the west and by the Caspian Sea on the east, the region stretches northward from the Caucasus Mountains across the lower Don River. The total area is about 138,000 square miles.* The landscape ranges from fertile grain fields in the Kuban and lower Don Basins to dry pastures in the Caspian plains. Along the southern fringe of the region are oilfields and forested mountains.

The petroleum fields and polymetallic-ore deposits of the foothills and northern slopes of the Great Caucasus Range, the rich agricultural steppe lands to the north, and the large coal mines centered at Shakhty in the eastern part of the Donets Basin support a variety of local industries and provide commodities for export. Rostov on the Don River, with an estimated population of 500,000, is the largest industrial and transportation center of the region. Taganrog, farther west on the Sea of Azov, ranks high as a coal- and grain-shipping port. The major petroleum districts are located in the vicinity of Groznyy, Makhachkala, and Maykop. From these fields a series of pipelines carries the petroleum to the principal refineries at Groznyy, Makhachkala, Krasnodar, and Tuapse. Makhachkala on the Caspian and Tuapse on the Black Sea are also important ports. Krasnodar, Armavir, Stavropol', and Rostov are the most important centers for the processing of local agricultural raw materials. Novorossiysk, the largest cement-milling center of

* See Table 7, p. 30, above.

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the USSR, is also a well-equipped Black Sea port. A number of health resorts -- notably Sochi and Matsesta on the Black Sea coast and Mineral'nyye Vody, Pyatigorsk, and Kislovodsk in the foothills of the Caucasus -- are also located within the region.

The population of Region IV numbers approximately 9.9 million, giving it an average density of 72 persons per square mile. Nine cities have estimated populations exceeding 100,000. Most of the population consists of Great Russians and Ukrainians, who are concentrated in industrial centers, along the Kuban River, and in the northern steppes. Nomadic Turkic tribes occupy much of the Caspian Sea littoral and parts of the dry southeastern plains. In the south are indigenous mountain peoples -- Adyge, Karbardinians, Ossetians, and Avars -- who are organized into autonomous units that vary in importance and size.

Two major railroad lines and three military highways form the core of the transport net. The Rostov-Baku line runs along the northern foothills of the Caucasus Range and serves the principal centers of Armavir, Groznyy, and Makhachkala. The second line runs southwestward from Stalingrad through Krasnodar to the Black Sea port of Novorossiysk. The lines intersect at the rail junction of Tikhoretsk. Many single-track lines branch off these two trunk lines and lead to mining and farming areas and to ports of the region. One important branch crosses the western mountains from Armavir to Tuapse and then follows the Black Sea coast southeastward to the Georgian SSR. The three highways, the major routes across the Great Caucasus range, are the Sukhumi Military Road (Cherkessk-Sukhumi), the Ossetian Military Road (Alagir-Kutaisi), and the Georgian Military Road (Dzardzhikau-Tbilisi). A network of dirt roads serves the rural areas of the region.

The Lower Don Basin consists mainly of low rolling plains, which favor the development of large-scale mechanized farming. The southern part of the region is dominated by the foothills and northern slopes of the Great Caucasus Range, which rises to elevations over 10,000 feet. In the north the basin of the Don River and the Manych-Kumo Depression are the major relief features. Most of this pre-Caucasus plains area is covered with steppe vegetation, which becomes sparser from west to east. The Kuban and Terek are two main rivers of the Great Caucasus Range. The mountain slopes are forest covered.

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The climate of Region IV is primarily continental, but it is alternately subject to the influence of mild, moist air masses from the west and dry air masses from Siberia and Central Asia, which are hot in summer and cold in winter. Although the mountains have pronounced vertical climatic zonation, there is also a marked decrease in annual precipitation from west to east, as well as an increase in severity of both winters and summers. Throughout the region, winters are short and relatively snow free, but easterly winds may be accompanied by prolonged periods of intense cold, and west winds may bring milder, humid weather and cloudy skies. Average monthly temperatures in winter range from 20°F to -40°F. Summers are hot everywhere except in the high mountains. The average summer temperatures range from 65°F to 75°F. Most of the precipitation occurs during the summer. The areas of heaviest rainfall are the western and central foothills, the Black Sea coast, and the exposed slopes of the higher mountains. Semidesert conditions prevail along the Caspian coast.

VII. Economic Region V.

Economic Region V, Transcaucasus, commonly called Transcaucasia, is the most important oil-producing region in the USSR. Its 74,093 square miles occupy a peripheral position along the southern boundary of the USSR, with the greater part of the region lying between the main range of the Caucasus Mountains and the Turkish and Iranian borders. To the west is the Black Sea, and to the east the Caspian. From the point of view of terrain and economy, it is the most complex economic region of the USSR.

The economic importance of Transcaucasia is based primarily upon deposits of petroleum and other minerals. The vast quantities of petroleum extracted from the Azerbaydzhan (notably Baku) and eastern Georgian oilfields are shipped to all parts of the USSR by rail, or by water through the ports of Baku and Batumi. Petroleum refineries are located at both ports as well as in Tbilisi. The manganese deposits in the Chiatura area of Georgia are the second largest in the world. Other significant minerals being exploited include copper in Armenia, iron in Azerbaydzhan, and coal in Georgia. The hydroelectric potential, which is roughly equal to that of the entire area of European USSR, is being tapped to provide power for the rapidly increasing needs of manufacturing. Heavy industry is represented in the recently constructed steel mills in Rustavi and

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the ferromanganese works in Zestafoni. The manufacture of machinery, textiles, and chemicals and the processing of the local agricultural products are also important.

The agricultural pattern within the region is extremely diverse. In the humid lowland along the Black Sea coast and in the narrow Lenkoran' Lowland in the extreme southeast, emphasis is on the production of subtropical crops such as citrus fruits and tea. In the irrigated lowland of the Kura and Araks Valleys, cotton, fruits, vegetables, and rice are the dominant crops. On the lower slopes of the mountains, wheat, fruit, silk, and tobacco are produced in significant quantities, and the vineyards form the basis for a wine-making and distilling industry. Nomadic herdsmen graze their livestock on the dry eastern lowlands in winter and on the mountain meadows in summer.

The 8.4 million inhabitants of Region V are distributed very unevenly. The highest population density (over 250 persons per square mile) is found in the Rioni Valley near Kutaisi, and high densities prevail in the rest of the Black Sea coastal lowland, in the portions of the Caspian Sea littoral near Baku and Lenkoran', and in the upper Araks Valley near Yerevan. Densities then diminish progressively from the irrigated lowlands to the dry steppes and the lower mountain slopes. The higher mountain slopes are virtually devoid of permanent settlement.

About 30 to 35 percent of the population is classified as urban. Baku, with a population of approximately 800,000, is the largest city in Transcaucasia and the fifth largest in the USSR. Tbilisi is the only other city with a population of over 500,000. Yerevan, the capital of Armenia, has a population of approximately a quarter million. Four other cities -- Batumi, Leninakan, Kutaisi, and Kirovabad -- range from 70,000 to 110,000 in population.

The Transcaucasus region contains an extremely complex patchwork of nationalities. The dominant position of the largest groups, the Georgians, the Armenians, and the Azerbaydzans, has been recognized by the establishment of three Union Republics. Other sizable groups include the Abkhazes, Adzhars, and Southern Ossetians, who have been organized into lower administrative units. Many smaller groups such as the Kurds, the Talysh, the Svans, and the Pshavs have received no official political-territorial recognition. In the cities the

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number of Great Russians, most of whom are officials and technicians, has been increasing in recent years.

Almost three-fifths of the region is over 2,000 feet in elevation, and one-fifth is above 6,000 feet, but there are also extensive lowlands and plains. Bordering the region on the north are the southern slopes of the Great Caucasus, a rugged range whose sheer cliffs and steep slopes form an immense natural barrier to movement. Crest elevations generally range between 5,000 and 10,000 feet, but in the 150-mile middle stretch the ridge summits are practically all above 10,000 feet and some peaks tower to heights of 15,000 and 18,000 feet. Between the ridges are deep, isolated valleys and gorges.

The Lesser Caucasus consists of a series of ranges that extend in a broad arc south of the Great Caucasus. These two roughly parallel mountain systems are connected near Chiatura by the transverse Surami Range. The Lesser Caucasus Mountains, although somewhat lower and less extensive than the Great Caucasus, are also rugged barriers with steep descents on their eastern, western, and northern flanks. To the south they merge gradually with the elevated Armenian Plateau. Plateau elevations average about 5,000 feet, but northwest of Yerevan is the immense volcanic cone Gora Alagez, which rises to 13,435 feet.

Two strips of lowland are wedged between the Great and the Lesser Caucasus. To the west is the triangular-shaped Rioni Lowland, which covers an area of about 2,100 square miles. Marshes border the coast and the lower course of the Rioni River; farther inland the undulating terrain is higher and drier. The eastern lowland, including the basin of the Kura and lower Araks Rivers, broadens steadily from the narrow plateau-like plains of Gori and Tbilisi in the west to the extensive plain almost 90 miles wide along the Caspian coast.

Region V has a dense network of rivers, most of which originate as swift-flowing mountain streams that flow through deep canyons to the lowlands. Although the rivers seldom freeze over, they are not navigable, because of the torrential character of the upper courses and the shallowness of the lower stretches.

The vegetation pattern in Transcaucasia is extremely complex. The Black Sea coast has a dense cover of alder and willow tangled with sarsaparilla, which forms nearly inaccessible jungles in some areas. By contrast, the eastern part of the region is dominated by semidesert vegetation of fescue, feathergrass, and timothy, with

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sagebrush, saltwort, and thorny bushes. On most of the Armenian Plateau the original cover of rich grass, with oak and scrub juniper at higher elevation, has been supplanted by cultivated crops. Above the grassy meadow of the foothills of the Great and Lesser Caucasus Mountains, vegetation is zoned altitudinally from broad-leaf forests through coniferous forests and alpine meadows to a zone of permanent snow and glaciers devoid of vegetation.

Sheltered from cold northern winds by the main range of the Caucasus, Transcaucasia enjoys a considerably warmer climate than the adjacent regions of the USSR. The Black Sea coast of the region has a humid subtropical climate. Winters are mild, with January temperature averaging from 43°F to 45°F. Summers are hot and humid, with heavy rainfall ranging up to about 100 inches a year in the Batumi area. East of the Surami Range the climate is generally more continental. On the lowland, winters are rather warm, but temperatures are lower than in the west, and frosts occur occasionally. Summers are generally very hot and dry, precipitation being less than 8 inches a year immediately south of Baku. In the humid subtropical Lenkoran' Lowland, precipitation increases again to an annual average of 65 inches. On the higher elevations of the Armenian Plateau in the south, winters are considerably colder, with January temperatures averaging from 14°F to 20°F.

VIII. Economic Region VI.

Economic Region VI, Volga, borders the middle and lower courses of the Volga River, the all-important waterway of the USSR. The 186,679 square miles* of the region include the Tatar ASSR and Ul'yanovsk and Kuybyshev Oblasts along the middle course of the river, and Saratov, Stalingrad, and Astrakhan' Oblasts along the lower course.

The Volga unifies the region and is the focus of all of its important economic activities. The river, with its far-reaching tributaries and connecting canals, forms the core of a network of through waterways extending from the Baltic and Arctic Seas on the north to the Caspian and Black Seas on the south. Important east-west railroads cross the Volga at the large cities along its course and link the economic regions of the west with the Urals and Siberia. The cities are favorably located to receive raw materials both by rail and by water and have become important industrial centers. Fig

* See Table 7. p. 30, above.

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iron is brought in from the Ukraine and the Donets Basin, steel from the Urals, coal from Kuznets Basin, and timber from the north. Supplementing these imports are the local resources of the Volga Region -- agricultural products, fish, petroleum and oil shale, salt, and rock suitable for building stone and the manufacture of cement.

The local and imported raw materials are the basis for the industries of the region. Transport equipment, chemicals, and construction materials are manufactured at Kazan' and Kuybyshev and iron and steel products, including agricultural machinery, at Stalingrad and Saratov. The development of the oilfields of the "Second Baku" in the Tatar ASSR and in Kuybyshev Oblast has recently become a major factor in the regional economy. Kuybyshev, Syzran', and Vol'sk are the oil-refining centers. Vol'sk is important for the manufacture of cement, and Krasnoarmeysk and Astrakhan' are important for timber and wood products as well as for shipbuilding. Astrakhan' is also famous as a fish-processing center.

The fertile soils of a large part of the Volga Region favor the development of agriculture, but frequent droughts and dry, hot southerly winds often cause crop failures. Chief among the crops are rye, oats, and wheat, and among the industrial crops are sunflowers, hemp, tobacco, and mustard. Vegetables, tree fruits, grapes, and cotton are also produced in the Volga Valley.

The current level of output of the Volga Region, however, is relatively low compared to its potential productive capacity. The economic future of the region lies in the development of its vast water resources to provide power for the expansion of industry and water for irrigating the semiarid plains. At present, two large dams and hydroelectric stations are under construction along the Volga near the cities of Kuybyshev and Stalingrad. The generating capacity of these stations will be among the highest in the world, 2.1 million kilowatts (kw) at Kuybyshev and 1.7 million kw at Stalingrad. Although most of the power from both stations is to be sent by high-tension lines to the Moscow Industrial Region, the amount allocated for local use is expected to increase greatly the productive capacity of the region. In addition the water stored upstream from the Stalingrad Dam will serve to irrigate extensive areas of dry agricultural land east of the river.

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With a total population of approximately 11.1 million people, the Volga Region is a densely populated part of the USSR. The average density is about 60 per square mile, with the greatest concentration in the northern part of the region (about 100) and the lowest in the southern part (about 40). The largest cities are Stalingrad and Kuybyshev, each with a population exceeding 600,000, followed by Kazan' and Saratov, with over 400,000 each, and Astrakhan', with about 300,000.

Great Russians comprise the largest population group within the region and Ukrainians rank second. Together they constitute about 85 percent of the total population. Great Russians, however, are a minority in the Tatar ASSR, where more than 50 percent of the people are Tatars. There are also small numbers of Mari, Mordvinian, Udmurt, and Chuvash peoples in the north and of Kazakh and Turkmen peoples in the south.

The terrain of Region VI is varied. From Kazan' south to Stalingrad the east and west banks of the Volga differ radically in relief. The east bank is low and level along the entire course. In sharp contrast is the high, abrupt west bank along the Volga Uplands to the west. The highest part of the Volga Uplands is the Zhiguli Mountains, located within the Samara bend of the Volga opposite the city of Kuybyshev. These mountains, with elevations over 1,200 feet in some places, are the most striking relief feature of the region. Downstream from Stalingrad the Volga swings to the southeast, and the banks of the river are fairly uniform in appearance. Together they form a lowland, dotted with saline lakes, that slopes gently toward the Caspian Sea.

Other than the Volga, there are few large rivers in the region. The lower course of the Kama River, the largest affluent of the Volga, crosses the eastern part of the Tatar ASSR. West of Stalingrad and the Volga Uplands, a bend of the Don River cuts across a comparatively small part of the region. The Don flows into the Sea of Azov. The waters of the Don and the Volga are interconnected by the recently constructed Volga-Don Canal, which extends from Kalach on the Don to Stalingrad on the Volga. Via this canal, Region VI now has access by water to the Azov and Black Seas.

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The vegetation of the Volga Region shows marked contrasts from north to south. In the north are dense coniferous forests of fir and spruce; the south has a cover of sparse grasses and desert herbs. Large areas in the Volga Uplands west of the Volga have a deciduous forest (mainly oak) cover, whereas the plains east of the river have a cover of steppe grasses and herbs.

The climate of the region is continental, with some desertlike areas in the south. Winters are long and cold, and summers short and hot. In the northern part of the region, periods of below-zero temperatures are common during the winter, and the cold air frequently moves southward toward the Caspian Sea. Precipitation is generally light throughout the region but is heavier in the north and west than in the south and east. In some years the summer heat and dryness of the south spread far to the north, causing droughts and crop failures. Spring and fall are short transitional seasons, with summer and winter characteristics intermingled in varying degrees.

IX. Economic Region VII.

Economic Region VII (Central) in the center of European USSR is in many ways the heart of the country. It is the historical and political center of the Great Russian people. Important railroad lines and waterways radiate in all directions from the hub at Moscow. With an output of industrial goods about one-third greater than that of the Ukraine, the region also holds the leading position in the economy of the USSR. This position is due not to the presence of raw materials or power, both of which are imported, but to the central location and the availability of skilled labor.

Although textile processing was the first large-scale industry to develop in the region, the production of machinery and chemicals now ranks first. The processing of leather, food, and timber and the production of building materials are also of importance. Agriculture plays a considerable role in the economy of the region. The north produces flax for the textile mills; the central part of the region supplies the large urban population with dairy products, vegetables, and meat; and the south specializes in the production of grains. All three areas produce potatoes for the chemical industry.

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With a total of 48.6 million people, this region is one of the most densely populated parts of the USSR. For most of the region the average rural population density ranges from 65 to 150 persons per square mile. The higher densities are found in the more fertile agricultural areas to the south. The many cities within the region support a large urban population, about a third of the total.

Ethnically, the population within Region VII is relatively uniform. Great Russians are the dominant group, amounting to nearly 100 percent of the population in the central oblasts. Only along the periphery of the region are other ethnic groups found in any considerable numbers. Small numbers of Belorussians and Ukrainians live along the western and southern boundaries. In the east, somewhat larger groups of Mari, Chuvash, and Mordvinians are found in their respective autonomous republics. Tatars, another minority group, are scattered along the eastern boundary.

The region is a part of the East European Lowland and has no distinct natural boundaries. Except for the wide belts of low hills along the western and southeastern fringes, a great lowland stretches uninterruptedly across the entire northern part of the region and extends southward between the two hilly belts. This flat lowland includes large stretches of forest and swamp in the north and considerable areas of open countryside in the south.

In the western belt of hills, elevations average 700 to 1,000 feet, but local differences in relief only occasionally exceed 200 feet. The southern two-thirds of the hill belt, called the Central Russian Upland, is a broad plateau dissected by deep river valleys and ravines. The plateau forms the divide between the Dnepr to the west and the Oka and Don systems to the east. Directly north of the Central Russian Upland is the Moscow-Smolensk Ridge, the eastern half of which is a narrow forested spur running north of Moscow. The northern part of the highland belt is known as the Valdai Hills. In this area the dome-shaped hills frequently rise to elevations of over 1,000 feet. Scattered among the forested hills are many small lakes and patches of marsh.

The southeastern belt of hill land, the Pre-Volga Hills, extends along the western side of the middle Volga. The hills are flat-topped with elevations increasing gradually to over 1,000 feet along the eastern border. Numerous steep-sided valleys 60 to 400 feet

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deep have cut sharply into the flat upland. Valley bottoms are generally narrow and winding.

A network of great rivers radiates from the hilly land along the western margin of the region to all parts of European USSR. The upper courses of the rivers are so close to each other that the construction of connecting canals has been comparatively easy. A considerable proportion of the area's bulk traffic, consisting chiefly of oil and timber, is carried by these water routes. The full utilization of the waterways, however, is hampered by low water and silting during the dry summer and by ice during the 5 months of winter. For a month after the spring thaws the rivers flood large sections of their valleys.

Throughout the region there are stretches of forest interrupted by many clearings, but the amount of land in forest decreases rapidly to the south. North of the Volga, spruce and fir predominate, with pine in the dry, sandy areas. South of the Volga the forest is a mixture of coniferous and broadleaf (oak, beech, and maple) trees. Near the southern boundary, oaks predominate. Clearings in the north consist chiefly of patches of cultivated land, meadows, and swamps. In the south the open areas are more extensive, forming an almost continuous expanse of fields and pastures, most of which is in state and collective farms.

The climate of the region is characterized by long, cold winters, short, moderately warm summers, and extremely brief transitional seasons. The mean January temperature for Moscow is 14°F, but cold spells frequently bring the temperatures down to -20°F. The July average is 64°F, but temperatures often reach the 80's. Precipitation averages about 20 to 25 inches a year. It is fairly well distributed, with a slight maximum in summer. A considerable amount of the precipitation is in the form of snow. By late winter the snow cover reaches a depth of about 12 inches in the south and over 20 inches in the north.

X. Economic Region VIII.

Economic Region VIII, the Urals industrial complex, leads the USSR in the production of nonferrous metals and steel and ranks second only to the Donets Basin of Region III as a producer of iron. The region extends in a north-south direction astride the central and southern Urals. Its 294,000 square miles include the Bashkir and Udmurt

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Autonomous SSR's that flank the western slopes of the Urals and the oblasts of Sverdlovsk in the northeast, Molotov in the northwest, Chelyabinsk in the east, and Chakalov in the south.

The industrial complex of the Urals centers around the mining and processing of its rich deposits of metallic ores. Iron ore is the principal mineral resource and iron and steel manufacture the major industry, contributing more than one third of the nation's total. The largest plants are located near the ore deposits at Magnitogorsk, Nizhniy-Tagil, and Chelyabinsk. The Urals region leads all other economic regions in the USSR in the production of nonferrous metals. Side by side with iron ore are important alloys such as nickel and tungsten, as well as all of the nation's magnesium resources. Copper in combination with lead, zinc, silver, and gold is mined along both the western and eastern slopes of the mountains, and the extraction of bauxite ores is important in the northeast. The production of nonferrous metals provides the basis for metalworking industries centered in the areas of Sverdlovsk, Chelyabinsk, Kamensk-Ural'skiy, Krasnotur'insk, Solikamsk; and Berezniki. In addition, the Urals region has a large chemical industry based on the extensive potash deposits at Solikamsk and an expanding petroleum industry centered around Ishimbay and Sterlitamak.

Large deposits of mineral fuels provide power for the region, but it is lacking in coking coal. Power generated at the newly constructed hydroelectric station on the Kama River near Molotov is now being made available to industries of the Urals.

In the south and east, agriculture is of major importance, chiefly grain and livestock production. Some industrial crops such as flax, hemp, and sunflowers are grown in the west and southwest.

Railroads provide the principal means of transportation in the region. Of greatest importance are the lines that cross the Urals from west to east, linking European USSR with Siberia. The few navigable rivers of Region VIII are much less important as routes of transportation. The main waterway is the Kama River system, which connects the region with the Volga area and the central part of European USSR.

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The population density in Region VIII as a whole is low, especially in the mountainous areas. In the lowlands on either side of the mountains and in the vicinity of urban centers, population density is generally greater, in some places as high as 100 persons per square mile. The agricultural southern part of the region has a higher density than the forested area in the north. The city of Sverdlovsk (Sverdlovsk Oblast), with a population of more than 600,000, is the largest city and the economic hub of the region. Among the other leading cities are Molotov (Molotov Oblast), Ufa (Bashkir ASSR), and Chelyabinsk (Chelyabinsk Oblast).

Great Russians constitute about three-fourths of the population. The remainder is largely made up of indigenous national groups of the Urals, of which the Bashkirs are the most numerous, but sizable groups of Tatars, Udmurts, and Komi-Permyaks live within the region.

The dominant terrain features of Region VIII are the central and southern Urals. Although their average elevation is only 1,500 feet, a few heights exceed 5,000 feet. To the west the mountains gradually descend to a hilly plain deeply dissected by wide river valleys and ravines; to the east they give way to a level plain studded with deep fresh-water and shallow saline lakes. In the Urals region, rivers and streams are numerous and water resources are abundant. Of the rivers the largest is the Kama, which parallels the western slopes of the mountains.

The vegetation of the Urals region is varied. Higher elevations are generally wooded. In the north, much of the lower land also has a cover of coniferous forest of spruce, fir, and pine. To the south, conifers are mixed with birch, aspen, oak, and other broadleaf species. Stands of oak are also common. In the most southerly part of the region are open steppe lands.

The climate of Region VIII is characterized by long cold winters and short moderate summers. Prolonged periods with temperatures below zero occur during the winter, and snowstorms are light but frequent. Relatively high temperatures may be experienced in summer, and heavy thunderstorms of short duration bring most of the precipitation.

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XI. Economic Region IX.

Economic Region IX, West Siberia, extending eastward from the Urals, includes great diversity of economic development, ranging from the highly industrialized Kuznetsk Basin and the fertile black-earth belt in the south to primitive tundras of the north. Most of the region is a vast plain that slopes almost imperceptibly northward toward the Kara Sea, but in the southeast are the rugged Altay Mountains. Within the last two decades the south has become one of the major industrial centers of the USSR, as a result of the exploitation of the rich mineral resources of the Kuznetsk Basin and the transportation provided by the Trans-Siberian and Turkestan-Siberian Railroads and their branch lines. The area, however, still ranks high in the production of wheat and animals.

The Kuznetsk Basin, occupying an area of 10,000 square miles, is enclosed between outliers of the Altay Mountains. Coal reserves of the basin are estimated at 450 billion tons and, for the world as a whole, rank second only to the Appalachian coalfields of the US. The area also has rich deposits of iron and manganese ore. The industrial center of the basin is Stalinsk, which has rolling mills, ferro-alloy plants, and aluminum plants and also manufactures locomotives and rolling stock. Kemerovo has become an important center for the manufacture of chemicals and fertilizers as byproducts of the coke ovens.

Other industrial centers in Region IX are concentrated along the Trans-Siberian Railroad in the southern part of the area. Novosibirsk, the "Chicago of Siberia," is at the junction of the Ob' River, the Trans-Siberian and Turkestan-Siberian Railroads, and a branch line to the Kuznetsk Basin. The city produces cold-rolled steel, river vessels, machinery, and other metal goods. The surrounding agricultural lands raise wheat for its flour mills and animals for its many slaughterhouses. Timber from the extensive taiga to the north is brought to Novosibirsk via the Ob' River for processing.

Omsk, at the junction of the Irtysh River and Trans-Siberian Railroad, is the second largest city in Western Siberia and an important industrial center. The agricultural products of the fertile black-soil region south of the railroad provide raw materials for its flour mills, slaughterhouses, and tanneries. The city is also a center for the manufacture of agricultural machinery, locomotives, and river vessels and for the assembly of automobiles.

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Tomsk, to the north, is one of the principal educational centers of Siberia. Although some of its industrial importance was lost when it was bypassed by the Trans-Siberian Railroad, the city continues to manufacture electric motors, light bulbs, and matches.

The industries of the taiga and tundra to the north are of minor importance. They include lumbering, fishing, hunting, trapping, and reindeer herding. The fir, cedar, and larch trees of the taiga provide lumber of good quality. Logs from the northern part of the taiga are sent to Salekhard for processing and export; those from the southern part are sent to cities along the Trans-Siberian Railroad. Products of these cities include lumber, cellulose, paper, and matches. The taiga is also the home of many fur-bearing animals, which are extensively hunted and trapped. The lower course of the Ob' and other rivers flowing north across the taiga and tundra supply fish, which are canned in many settlements along the rivers. In the tundra the nomadic tribes engage in trapping and reindeer herding. Furs are sent out of the region, but the skins and other products from the reindeer are used locally by the natives.

Population density in Region IX averages 12 persons per square mile, but large areas in the north are practically uninhabited and most of the population lives in the agricultural lands of the black-earth belt and in the industrial complex of the Kuznetsk Basin. Ninety-two percent of the people are Great Russians. The remainder consists of native tribes -- the Khanty, Mansi, Komi, and Nentsy in the north, and the Tatars, Oyrots, and Kazakhs in the south.

The temperatures of Region IX vary considerably from north to south because of its great latitudinal extent, but in general the region is characterized by severe winters, cold springs, short summers that are hot in the south and cool in the north, and short autumns. The greatest variation is in precipitation, which ranges from 12 inches along the Arctic coast to over 60 inches in the Altay Mountains. The steppe zone receives from 15 to 20 inches a year. Average January temperatures range from -10°F in the Arctic to 0°F in the Kuznetsk Basin. July averages from 40°F in the north to 66°F in the south.

XII. Economic Region Xa.

Economic Region Xa, Kazakhstan, which is coterminous with the Kazakh Soviet Socialist Republic of Soviet Central Asia, is an area

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of rapidly expanding mineral exploitation. Its area is slightly over a million square miles, or about one-third that of the US. From the lower Volga, Kazakhstan extends eastward for more than 1,800 miles to the Altay Range, and from the Trans-Siberian Railroad southward for over 1,000 miles to the Tyan'-Shan Range.

The region is one of the richest ore-bearing areas of the USSR. It ranks first in reserves of copper, lead, zinc, silver, chromium, nickel, and molybdenum ores, and high in its reserves of salt, antimony, tin, and bauxite. The Republic is an important source of two major fuels -- high-quality petroleum from the Ural-Emba oil-fields and coal from the Karaganda Basin. Karaganda is the third largest coal producer in the USSR and is the main source of coal for the many metallurgical industries of Kazakhstan.

The agricultural economy of Region Xa has become increasingly important. Wheat and other grains are extensively grown in the north. In the south the development of irrigation permits the production of a variety of crops -- tree fruits, grapes, rice, cotton, and sugar beets. The region is also noted for its livestock, particularly its sheep, from which wool of excellent quality is obtained.

The population of the Kazakh SSR is currently estimated at 7.2 million. The distribution, however, is very uneven, the density being greatest where water is available for irrigation and where important ores are mined. Kazakhs comprise about half of the total population and are primarily farmers and herdsmen. The Great Russians and Ukrainians, who together constitute about one-third of the total, live chiefly in the cities and are engaged in industrial or commercial activities. About 400,000 Uzbeks are found along the southern boundary, where they are engaged primarily in irrigation agriculture.

Urban growth in Region Xa has proceeded at a remarkable rate during the last three decades. Whereas there was only one city with a population of over 50,000 in 1926, there were 13 in 1948. Cities that are centers of mineral industries include Karaganda (estimated population 220,000), Gur'yev, Leninogorsk, Ust'-Kamenogorsk, and Aktyubinsk. Cities important for the processing of agricultural products include Alma-Ata (the capital of the Republic, with an estimated population of 300,000), Semipalatinsk, Petropavlovsk, Akmolinsk, Dzhambul, and Ural'sk.

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Transportation is not well developed. The rail net, although sparse, provides the principal means of transportation. Rail lines were built primarily to move mineral and agricultural raw materials to other parts of the USSR and secondarily to provide intraregional lines of communication. Three major routes cut across the region from north to south; shorter sections run east-west. The road system is antiquated and inadequate for the needs of the expanding economy. It consists primarily of a framework of improved dirt roads, supplemented by many unimproved dirt roads and trails. The roads are mainly of local importance; there are no heavily traveled interregional routes.

Region Xa is largely an arid land of low plains, sandy deserts, hills, plateaus, and mountains. Low plains fringe the Caspian Sea, extend eastward from the Aral Sea, and border the Irtysh River. Sandy deserts include the vast Kyzyl-Kum, south of the Syr-Dar'ya River, and the Muyun-Kum and Sary-Ishik-Otrau, both located near Lake Balkhash. Much of the eastern half of the region, as well as smaller areas in the west, is hill land. Plateaus are found north and west of the Aral Sea, and high mountains along the eastern and southeastern borders.

Low bushes, mainly wormwood (sagebrush), are the dominant type of vegetation over most of the region. In the north are some grasslands, and some of the higher mountain slopes are forested.

Throughout much of the region, rivers and streams terminate in landlocked seas, lakes, or local depressions. The Caspian, Aral, and Balkhash Seas are three of the largest landlocked bodies of water in the world. Only in the north, where the Irtysh and Ishim flow northward to the Ob', is there any exterior drainage. The major rivers of the region are the Syr-Dar'ya, Ural, Irtysh, Ishim, Ili, and Chu.

Most of Kazakhstan is a desert region with hot summers and cold winters. The only exceptions are the high mountains along the southern and southeastern borders, where rainfall is heavier and temperatures are cooler at all seasons.

XIII. Economic Region Xb.

Economic Region Xb, Central Asia, is a desert and mountain area whose chief contributions to Soviet economy are the products of its

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fertile irrigated agricultural lands. It includes four republics of southern Soviet Central Asia -- the Turkmen, Uzbek, Kirgiz, and Tadzhik SSR's. From the Caspian Sea the region extends eastward about 1,450 miles to Sinkiang. The total area is about 475,000 square miles, or about three times that of the state of California.

Irrigation farming plays the leading role in the economy of the region. The main crop is cotton, which is grown chiefly in the Fergana and Vakhsh Valleys and around the oases of Tashkent, Samarkand, and Bukhara. The region provides most of the cotton grown in the USSR. Other irrigated crops are rice, alfalfa, wheat, corn, and melons. Orchards producing peaches, apples, and pears are widespread, as are vineyards. Grain crops are grown on nonirrigated lower mountain slopes. Also important is the raising of livestock, including sheep, cattle, goats, and camels.

Heavy industries are concentrated in the vicinity of Tashkent, a center of metallurgy, textile, machine-construction, and food processing. Processing plants, such as ginning mills, oil presses, and canneries, are located in many parts of the region, especially in the larger cities. The region has considerable reserves of mineral resources, but their exploitation has been slow. Current exploitation includes petroleum, coal, salt, sulfur, and nonferrous metals.

The population of Region Xb is somewhat over 11.4 million of whom approximately half are Uzbeks. Tadzhiks number about 1.2 million and Kirgizi and Turkmenians about a million each. Other important groups include Great Russians, Ukrainians, and Kara-Kalpaks. Many of the native peoples live in villages of clustered homes, with communal fields nearby. The Great Russians and Ukrainians have settled chiefly in the cities, where they are engaged in industrial and commercial activities. The larger cities are Tashkent (population 600,000; largest city in Central Asia), Samarkand (150,000), Frunze (140,000), Ashkhabad (120,000), Stalinabad (110,000), Andizhan (90,000), Kokand (75,000), and Namangan (75,000).

The transportation network of the region is poorly developed according to Western standards. The railroads, which are the primary means of passenger and cargo transport, have been developed primarily to move agricultural and mineral raw materials to other parts of the USSR and secondarily as intraregional lines of communication. The main line runs east from the Caspian Sea along the Kopet-Dag foothills, across the Kara-Kum Desert, and along the

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foothills of the Tyan'-Shan, connecting all the larger cities of the region. The main railroad to European Russia leads northwest from Tashkent. Roads are few and disconnected. There are only a few stretches of paved roads, and most of these are in the Samarkand-Stalinabad area. The majority of the roads are dirt-surfaced, poorly maintained, and muddy after rains.

On the basis of terrain the region can be divided into two parts. The western half is largely desert plain, and the eastern half is mostly mountainous. The desert plain in the west extends from the Caspian Sea to the western foothills of the Tyan'-Shan. Much of the area is occupied by the Kara-Kum and Kyzyl-Kum Deserts, which are separated by the Amu-Dar'ya River. Along the southern border are irrigated oases at the foot of the Kopet-Dag Mountains. In the eastern half are the forested Tyan'-Shan and Pamir Mountain systems, with some of the highest and most heavily glaciated ranges in the world. Both systems rise to over 24,000 feet above sea level. Between the various ranges are wide mountain valleys, constituting rich agricultural and pasture lands. Particularly notable are the Fergana and Vakhsh Valleys.

All the waters of the region drain into inland basins. The two most important river systems are the Amu-Dar'ya and Syr-Dar'ya, which flow into the Aral Sea. The waters of both rivers are used extensively for irrigation. In eastern Kirgiz is the large mountain lake, Issyk-Kul', which is about a mile above sea level.

The climate of the desert plain is characterized by long and hot summers, cold winters, wide daily temperature ranges, scant precipitation, and continuously dry air. In the higher mountains to the east, the temperatures are generally lower and winters are severe; precipitation varies from 7 to 30 inches, depending upon the character of the relief and exposure of slope.

XIV. Economic Region XI.

Economic Region XI, East Siberia, is a remote region of taiga and tundra that extends from the Yenisey River to the Far Eastern Economic Region. On the north is the Arctic Ocean, and on the south are the mountains of the Mongolian People's Republic. Although approximately the size of the US, the region has a total population smaller than that of New York City. The only industrial development of note is in the south, in areas accessible to the Trans-Siberian Railroad.

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The contributions of Region XI to the national economy are lumber, gold, and furs. Most of its coal and the products of its manufacturing industries are for local consumption. The coniferous forests of the taiga of East Siberia supply most of the lumber for exporting -- primarily larch, with some pine from the southern half of the region. Most of the logs are floated down the Yenisey and Lena Rivers to Igarka and Tiksi to be milled and exported, but logs from the southern part of the region are processed at many cities along the Trans-Siberian Railroad. Lumber, paper, cellulose, furniture, and matches are the principal products. Gold is mined in many places in the southern and central parts of Eastern Siberia. The region supplies nearly one-third of the total Soviet gold production. Furs are procured chiefly in the taiga of the Evenki National Okrug and the Yakutsk ASSR. The principal types are sable, ermine, marten, mink, and squirrel.

Coal is the chief mineral mined for local use in Region XI. Although extensive deposits are found within the region, they are little developed because of their isolation. The largest deposits are in the Lena River valley and in the highland east of the Yenisey River. Smaller deposits in the south are mined to supply fuel for the industries in Krasnoyarsk, Irkutsk, and Chita.

The largest cities in Region XI have developed where the Trans-Siberian Railroad crosses the northward-flowing rivers. Krasnoyarsk, on the Yenisey, produces locomotives, gold-mining and agricultural machinery, paper, cellulose, lumber, and flour. The industries of Irkutsk produce machinery, plywood, meat products, and flour. Power for these industries is obtained from coal mined at the neighboring Cheremkovo Basin. The Angara River is being harnessed to provide Irkutsk with hydroelectric power. Ulan-Ude, the capital of Buryat-Mongol ASSR, produces locomotives and railroad cars, meat products, glass, and flour. Yakutsk, the only major city not on the Trans-Siberian Railroad, processes most of the farm products grown in the Yakutsk ASSR.

Agriculture is concentrated in the scattered steppe areas that appear as islands in the southern taiga. Of these, the largest is the Minusinsk Basin, where the fertile black soil produces spring wheat, sugar beets, and flax. Elsewhere in East Siberia the mountainous relief, severe climate, light rainfall, and frozen sub-soil limit the expansion of agriculture; but small amounts of barley and spring rye are grown as far north as the Arctic Circle.

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The principal routes of transportation for most of Region XI are the rivers that flow northward and empty into the Arctic Ocean. The Yenisey and Lena are the longest, but both are navigable only during the summer. The rivers connect with the Northern Sea Route at the Arctic ports of Dikson and Tiksi.

The Trans-Siberian Railroad serves the southern part of Region XI and is responsible for the establishment and growth of cities at river crossings. The Baykal-Amur-Magistral' (BAM) branches off the Trans-Siberian to the northeast at Tayshet. At present, the line is believed to extend only from Tayshet to the Bodaybo gold fields, but the planned eastern terminus is Komsomol'sk on the Amur River.

The population of Region XI is sparse, averaging only 3 persons per square mile, but in much of northern Yakutsk ASSR the density drops to 1 person for every 30 square miles. The heaviest concentration of population, 10 per square mile, is along the Trans-Siberian Railroad. Great Russians, who are the most numerous, live in the areas of higher economic development. The remainder of the population consists of native groups -- the Evenki in the north, Tuvinians and Khakassi in the southwest, and the Buryat-Mongols in the southeast.

East Siberia consists of a large plateau bordered by mountains on the south and east. This Central Siberian Plateau is drained by numerous rivers that flow through deep, steep-sided valleys. All of them are tributaries of the broad, majestic Yenisey and Lena Rivers, which border the plateau on the west and east. In the south, mountains form broad arcs along the edge of the plateau and rise to elevations of 11,000 feet. The Sayan Mountains have rounded, dome-like summits devoid of vegetation. The region surrounding Lake Baykal is composed of plateaus and mountain ridges of various elevations, separated by wide, deep river valleys. On the east the Central Siberian Plateau is bordered by the jagged, alpine peaks of the Verkhoyansk Range. These mountains give way in the extreme northeast to the lowland of the Indigirka and Kolyma Rivers.

Permafrost underlies all of East Siberia except for an area between the upper Yenisey and Angara Rivers. The thickness of this permanently frozen subsoil varies from 3 feet in the south to 2,000 feet at Nordvik.

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Taiga vegetation is predominant in East Siberia and extends from the southern mountains to 70° latitude. Scattered throughout the southern taiga are small islands of steppe vegetation, which are extensions of the vast Mongolian steppes. The Minusinsk Basin is the largest of the steppe areas. Beyond the northern limit of the taiga, the vegetation consists of stunted, bushy tundra plants, which continue northward to the Arctic littoral.

Because of its great latitudinal extent, East Siberia has an extremely varied climate. The region in general has humid, cool summers and long, cold winters. Precipitation ranges from 5 to 7 inches along the Arctic coast to over 40 inches in the Sayan Mountains. In summer, rain falls in short, heavy thunderstorms. Little snow falls in winter and skies are clear. The interior of Eastern Siberia has extremely cold winters -- Verkhoyansk averages -58°F during January and has recorded a low of -94°F. The maximum temperature recorded at Verkhoyansk is 94°F -- giving it a temperature range of nearly 200°. Farther north, on approaching the Arctic coast, temperatures become somewhat higher and average -30°F for January.

XV. Economic Region XII.

Economic Region XII, the Soviet Far East, stretches from Korea to Mys Dezhneva, only 50 miles from the North American continent. This vast region covers approximately 1,207,000 square miles, an area equal to one-half that of European USSR. It includes the Primorskiy (Maritime) and Khabarovskiy Krays, and the Amur, Magadan, and Sakhalin Oblasts.

The economic importance of the Far East lies in its range of natural resources. Mining, fishing, lumbering, and fur trapping are the basic activities of the region. The Magadan-Kolyma area in the north is one of the most important gold-mining districts of the USSR. Gold is also mined in the Zeya, Seledzha, and Bureya River valleys in the south. Coal is mined at Artem and Suchan in the vicinity of Vladivostok, in the Bureya Basin, and on Sakhalin Island. Sakhalin is also a producer of petroleum. The Bureya coking coal supplies the metallurgical industry at Komsomol'sk-na-Amure. A variety of other mineral resources are also mined to a lesser extent throughout the region. The region ranks as the leading fish producer of the USSR. Fishing grounds include the Sea of Okhotsk, the waters along the Kamchatka Peninsula, the lower Amur River, and the Sea of Japan. Along the coast are a number of fishing and canning centers. The

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dense forests of the region provide a rich source of lumber and a variety of fur-bearing animals. Agriculture is limited chiefly to the Amur and Ussuri River valleys. The principal cultivated areas are the Zeya-Bureya Plain, the middle Amur Valley, and the Khanka-Ussuri Lowland. Spring grain, rice, and soy beans are among the crops grown in these areas.

The population of Region XII, numbering approximately 5.1 million, is concentrated chiefly in the south along the Amur River and its tributaries and along the Trans-Siberian Railroad. Great Russians and Ukrainians, who make up the bulk of the farmers and industrial workers, constitute approximately 80 percent of the total population. The Paleoasiatic and Tungus-Manchurian tribes, the original inhabitants of the region, now comprise about 10 percent of the population. Chinese and Koreans, constituting less than 10 percent, live mostly in the southern areas. Yakuts and Jews also form sizable minorities.

The most important cities of the Far East are located along major transportation arteries and serve chiefly as administrative, industrial, and transportation centers. The cities of Vladivostok and Khabarovsk, each with over 300,000 population, are the largest urban centers of the region. Vladivostok is the chief Soviet port on the Pacific and the terminus of the Trans-Siberian Railroad. The port of Vladivostok and the adjacent port of Nakhodka are kept open year-round with the aid of ice-breakers. Industries of Vladivostok are based primarily upon maritime commerce, fishing, shipbuilding, sawmilling, and the manufacture of machinery. Khabarovsk, located on the Amur River at its junction with the Trans-Siberian Railroad, is the most important transportation center of the region. Major industries of Khabarovsk include oil refining, shipbuilding, aircraft and auto assembly, the manufacture of machinery, and food processing. Other industrial and transportation centers of the region include Voroshilov, Komsomol'sk-na-Amure, Blagoveshchensk, Nikolayevsk-na-Amure, Sovetskaya Gavan', and Oka and Yuzhno-Sakhalinsk on Sakhalin Island.

The Trans-Siberian Railroad, which links the Far East with other regions of the USSR, and the Amur River are the chief transportation routes of the region. A second railroad farther north, the Baykal-Amur-Magistral' (BAM), is reportedly under construction. The road network of the region is poorly developed except in the Amur River basin. A few improved roads extend inland from major settlements along the coast. During the ice-free navigation season, coast-

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wise shipping is of some importance. Air routes linking remote areas of the region are becoming increasingly important.

A series of extensive rugged mountains lying roughly parallel to the coast forms the principal relief feature of the region. The major mountain chains include the Sikhote-Alin', Stanovoy, Dzhugdzhur, and Kolyma, and two parallel ranges on Kamchatka Peninsula. Many permanently snowcapped peaks protrude above the surrounding mountain ranges. The Amur in the south, and the Kolyma, Anadyr', and Kamchatka in the north are the major rivers of the region. Most of the mountain slopes and intervening valleys are covered by a dense forest growth. In the south the Amur Valley and Maritime Kray have a cover of mixed deciduous and coniferous forest; in the north, coniferous trees prevail. Grasslands are found in the river valleys, at higher altitudes along the mountain slopes, and on plateaus. Most of the Kamchatka Peninsula is forested, but tundra covers the entire Chukotsk-Anadyr' area to the north.

The climate of the region is largely monsoonal, except in the north, where Arctic conditions prevail. The maritime effect of the Sea of Okhotsk and the Pacific Ocean, and the mountain ranges that parallel the east coast have an ameliorating effect on the climate of the region. Summers are usually hot and humid in the south but become cooler and drier toward the north. Most of the precipitation falls during the summer. Precipitation is heaviest on the Kurile Islands, along the east coast of the Kamchatka Peninsula, and in the Amur Valley and Maritime Kray. Winters are severe, dry, and clear. In winter, cold air masses from Siberia flow across Region XII, but they are modified somewhat by the Sea of Okhotsk and the Pacific Ocean.

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APPENDIX B

METHODOLOGY

Conceptually, the problems involved in a measure of the total volume of goods and services produced within one region of a country are no more or less complex than the problems involved in measuring the total volume of production for the country as a whole (that is, gross national product).* Operationally, however, the attempt to measure gross or net regional product is likely to encounter manifold additional complexities because the necessary data on a regional basis are always more scarce and less reliable than similar figures for the entire country.

1. Statistical Procedure.

The estimates of gross regional product presented here are based on estimates of GNP and its components for the entire USSR and on data especially developed for this purpose. The basic regional data represent estimates for the years 1938,** 1948, 1951, and 1953 of the total physical output of a long list of commodities together with the percent of the total produced in each economic region (Tables 8-11).*** This commodity detail thus provides a sample of the regional output of the major industrial sectors producing physical goods. The commodity output data were weighted by their 1951 prices and thus combined into appropriate industrial groups to yield a weighted sample of regional output by industrial categories. These samples were then inflated to full coverage by applying them to the national value-added estimates for the industry, the results being combined with estimates of the value added by the service sectors to yield a measure of total regional production.

* For a discussion of the meaning of various measures of national product and the problems involved in their measurement, see US Department of Commerce, National Income, A Supplement to the Survey of Current Business, 1951; see Appendix C for a discussion of the national value-added figures.

** Data for 1938 were adjusted to postwar boundaries where necessary.

*** Pp. 81-103, below.

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The principal steps in the statistical determination of the size of gross regional product can be described as follows:

$$(1) P_1Q_1 + P_2Q_2 + \dots + P_nQ_n = S_I$$

where $P_1, P_2 \dots P_n$ represent the 1951 national prices of the list of commodities contained in the sample of a specific industry group

and $Q_1, Q_2 \dots Q_n$ represent the production in physical units for the entire country of each of the commodities in the sample of a specific industry group

and S_I represents the value of the national output of a sample of a specific industry group.

$$(2) p_1q_1 + p_2q_2 + \dots + p_nq_n = s_i$$

where the lower case symbols represent the prices, production, and output value of a sample of a specific industrial group within a given economic region.

$$(3) \phi_{I_1} + \phi_{I_2} + \dots + \phi_{I_n} \pm Y$$

where $\phi_{I_1}, \phi_{I_2}, \phi_{I_n}$ represent the value added in 1951 prices by specific industries 1, 2, 3 . . . n to commodity or service output, and Y represents the 1951 value of gross national product.

$$(4) \frac{\phi_{I_1}s_{i1}}{S_{I_1}} = y_1$$

$$\frac{\phi_{I_2}s_{i2}}{S_{I_2}} = y_2$$

$$\frac{\phi_{I_n}s_{in}}{S_{I_n}} = y_n$$

where $y_1, y_2, \dots y_n$ represent the value added to production in 1951 prices by industries 1, 2, 3 . . . n within any given region, and

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$$(5) \quad y_1 + y_2 + y_3 + \dots + y_n = y_r$$

where y_r represents the 1951 value of gross regional product in any one economic region.

$$(6) \quad y_{r_1} + y_{r_2} + y_{r_3} \dots + y_{r_{15}} = Y$$

The sum of the gross regional products of each of the 15 regions is equal to gross national product.

2. Implicit Assumptions.

The procedure outlined in steps (1) through (6) implies certain assumptions which are more or less arbitrary. First, the list of commodities used as a sample of the output of an entire industry is assumed to be uniformly representative in its distribution among the 15 economic regions -- that $\frac{s_1}{S_I}$ in equations (4) above applies to

the universe as well as to the sample. For example, assume that industry group C contains three specific commodities, C_1, C_2, C_3 . If the sample taken of industry C is composed of C_1 and C_2 , which together account for 95 percent of the total value of the output of the industry, and if in every region the output of C_3 represents only 5 percent of the total regional output of the industry, then the regional distribution of the output of C_3 will be the same as that of C_1 and C_2 combined. In other words, the assumption that the sample is uniformly representative among regions implies that the regional distribution of the output of those commodities not included in the sample is the same in aggregate as that of the sample.

Obviously this assumption is the less arbitrary the more complete is the coverage of the sample. In many cases the degree of coverage is not known but is believed to be very high (for example, the energy group or the automotive equipment group). In other cases the sample is known to be small (for example, the chemicals group, where in 1948 only about 10 percent of the total national output could be distributed regionally; or the manufactured consumer goods group, which contains only three commodities, boots and shoes, woolen textiles, and cotton textiles). Thus the degree of sample coverage varies, not only among narrowly defined industrial sectors but also among larger industry aggregates. The samples, however, were carefully chosen from the total of those commodities for which relatively accurate data were

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available, to include commodities whose output distribution regionally was most likely to be representative. It seems likely, therefore, that any errors which result from the sampling process will be of lesser importance the larger the regional aggregate being considered. Insofar as error is introduced into the measure of regional output because the sample is small, it is in general as likely to be positive as negative and consequently in a larger aggregate less likely to be subject to cumulation.

Second, the use of national value-added data for specific industries (ϕI in equation (3) above) to estimate the value added to production by those plants in the industry located in any one region (equations (4) above) assumes that the ratio of direct factor cost to market price within an industry does not vary from region to region. In large part this assumption accords with reality. Profits will tend to compensate for variations in the labor and capital cost components resulting from variations in such factors as techniques and efficiency. In the extractive industries, where labor and capital costs reflect the quality of resources, rent also may be regarded as a compensating factor. The principal error which results from the use of national value-added data will be found in the implied averaging of transportation costs. In the newer regions, which are relatively far removed from the major consumption centers, this element of error may be large. Insofar as the USSR does progress toward its goal of regional autarky, however, the error from this source would be reduced. Even in industries (and in regions) in which this error is not likely to be large, the fact that value added bears a relatively uniform relation to gross output value does not tell anything about the factor-cost structure of a particular industry in a particular region. It is known, however, that Soviet planning stresses the achievement of uniform techniques and efficiency throughout each industry, and it seems likely that those industries which have been favored in the allocation of capital, labor, and management will have a fairly uniform factor-cost structure. Further investigation of the operation of such priorities and of the impact of transportation costs should make possible a considerable refinement of the regional data.

It should be noted that the assumptions made in using national value-added data to obtain regional value-added data within an industry do not imply uniform ratios of factor cost to market price throughout the industry. It is implied only that the ratios are not affected by geographic location -- that the regional averages for the industry are the same. It may be added that if lower transporta-

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tion costs are characteristic of the older industrial regions the resulting error may be partly offset in some industries by higher costs associated with obsolescent equipment and partly depleted resources.

For those industries whose production is almost wholly concentrated in one region, these assumptions are virtually unnecessary and, therefore, are not a source of error. Also for those industries where production is nearly evenly distributed among regions and carried on in a large number of small plants, it is likely that average cost-price ratios will be similar. Some of the extractive industries satisfy to a large extent the first condition, as do many manufacturing industries; consumer goods industries and part of the agricultural industries satisfy, to a large extent, the second condition. Moreover, insofar as cost-price ratios do vary among the plants of an industry, it is likely that any one region will contain both the more efficient plants of some industries and the less efficient plants of others. In other words, regional aggregates will be more accurate than the regional industrial detail. The random geographic distribution of efficient and inefficient plants among various industries is likely because no cultural factors can be adduced to create the presumption that any one region would be inefficient in all forms of productive activity.

Third, it is assumed that the price of a given commodity in any one region is the same as that in any other region and equal to the national price -- that is, that p in step (2) above is equal to P in step (1). In general, reality is in accord with this assumption. With the exception of commodities sold on the free markets, the prices of most commodities are the same throughout the USSR. Certain commodities are subject to zoned pricing, but in these cases the differentials between prices in different zones largely reflect transport costs. On balance, it appears that little distortion results from the use of national prices. It should also be emphasized that the P 's and p 's in steps (1) and (2) are important only as they reflect relative values, for they are used to weight the output of different commodities among regions in order to obtain a weighted average regional distribution of production among larger industrial categories.

Taken together, the effect of these assumptions, the adoption of which was forced by data limitations, is to make the regional value-added estimates less reliable for the more narrowly defined industrial categories, especially those based on a small sample. Thus

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the probable error of estimate is smaller for the estimates of gross regional product than for any of its components.

3. Data.

The data on commodity production by regions, which provide the foundation for the estimates of gross regional product, are based, in the main, on plant studies or plan analysis [redacted]

50X1
50X1

[redacted] The margins of error in the regional distribution are estimated at magnitudes ranging from 5 percent to 35 percent, with one estimate of 75 percent. The mode seems to lie in the vicinity of 15 percent. These stated margins of error apply only to the regional distribution and not to the national output estimate, which itself in many cases carries a sizable probable error.

Despite the size of the probable error in the data, the tables in Appendix D carry figures in terms of millions of rubles. Although such detail gives a false impression of the degree of accuracy, it is carried in order that the reader may himself trace through the statistical manipulation of any commodity or industry in which he is interested.

With the exception of transport and communications, the regional distribution of the service industries (trade, construction, and other services) is based on the assumption of certain functional relationships. It is assumed that the regional volume of retail and wholesale trade is a function of population and income; consequently, value added in the trade sector of the economy is distributed regionally according to the arithmetic average of the percentage distribution of the entire population and of that of industrial employment, the latter being assumed to reflect income variations.

An attempt was made to check the adequacy of this assumption by examining the correlation between the regional distribution of the volume of turnover in state retail stores and that of population and industrial employment averaged. A relatively low correlation was observed. This result can be at least partially explained in terms of the omission from the turnover data of sales in free markets and in terms of the margin of error in the turnover figures themselves. The correlation between the turnover data, moreover, and population and industrial employment combined was larger than that between turnover and either population alone or industrial employment alone.

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Social services are distributed according to the regional distribution of population on the assumption that expenditures for health, education, and so on are a function of the size of the population. It is believed that this assumption produces little error.

The regional distribution of the value added by the construction industry is assumed to be a function of the relative size and growth of each region and is therefore allocated among regions according to the relative importance of the total of gross regional product, excluding only construction.

50X1

The 1951 prices used to weight the sample commodity data in the main they are based on quotations found in price books and other Soviet publications. The actual prices used are the more accurate for the most narrowly defined commodities; for the broader commodity categories (for example, machine tools), the price used is a weighted average or a mode, but in most such cases a subjective decision was required to determine the representative price.

50X1

The derivation of the national value-added figures and gross national product is described in Appendix C. It might be pointed out here that these estimates attempt to include in the value added by the industry all factor cost payments made by that industry, implicit as well as explicit costs. Thus not only are payments to labor included but also payments for the use of capital and agricultural land are imputed, with the result that the sum of such factor cost payments represents gross product rather than net product.

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APPENDIX C

CALCULATIONS OF VALUE ADDED BY SECTORS AND BRANCHES, 1951

The value-added weights used to distribute Soviet GNP by sector and branch of origin in 1951

50X1
50X1

Essentially they are obtained by multiplying measures of the 1953 labor force by 1941 average annual wages, adding 1941 amortization allowances, then expressing each sector or branch value thus computed as a percentage of total value added for the economy as a whole. The agriculture sector weight is based on the proportion of total national income produced in agriculture,

50X1

The estimates for the years before 1951 were derived by applying to the 1951 data indexes of the volume of output of each subsector. It should be noted that this method of estimating GNP in constant prices for a period as extended as 15 years is capable of distorting industrial relationships and the industrial structure of GNP. Thus the application of this method indicates that in 1938 agriculture contributed 45 percent of total output, or nearly twice as much as manufacturing, measured in 1951 prices. Since there is some evidence that between 1938 and 1951 the prices of agricultural goods rose even more than did the prices of manufactured commodities, this method may overstate the relative importance of agriculture in 1938 and understate that of manufacture. By the same token, rates of growth of manufacturing output from 1938 to 1953 would be overstated and those of agriculture would be understated.

50X1

The classification of production by sector and branch closely conforms to the Soviet administrative structure. For this reason, mining activity is classified under the industrial ministry which exercises administrative responsibility over it. The services sector includes the armed forces, health, education, the arts, personal services, police, the judiciary, and other noneconomic governmental administrative services.

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Interest and profits, however, represent special problems in the USSR, and at present are not included in the industrial value-added estimates. For the purposes for which the value-added data are here used, their exclusion is the equivalent of assuming that interest and profits are distributed among industries in proportion to the sum of the other factor costs.

The tables in Appendix D contain the basic sample production data (Tables 8-11),* the weighted average regional distribution of commodity production by industries (Tables 12-15),** the regional value-added estimates by industries (Tables 16-23),*** and the regional distribution of the population (Table 24),**** for 1938, 1948, 1951, and 1953.

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- * Tables 8-11 follow on pp. 81-103, below.
 - ** Tables 12-15 follow on pp. 110-117, below.
 - *** Tables 16-23 follow on pp. 119-139, below.
 - **** Table 24 follows on p. 143, below.

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APPENDIX D

STATISTICAL TABLES

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Table 8
Regional Distribution of Soviet Production by Commodity Group*
1938

Commodity	Total Production		Price per Unit (1950 Rubles)	Percent of Total Production														
	Quantity (Thousands)	Unit		Region														
				Ia	Ib	IIa	IIb	III	IV	V	VI	VII	VIII	IX	Xa	Xb	XI	XII
Manufacturing industries																		
Energy																		
Electric power a/**	39,600,000	kwh	0.244	12	1	0	1	28	5	8	3	31	9	1	Negl	1	Negl	Negl
Solid fuels																		
Hard coal	113,779	MT	88.4	Negl	Negl	0	0	61	11	Negl	0	0	3	15	4	Negl	5	1
Brown coal	19,109	MT	54.2	0	0	0	0	5	0	0	0	39	22	0	1	5	8	20
Peat	26,780	MT	49.7	13	Negl	1	9	8	Negl	Negl	2	63	4	Negl	Negl	Negl	0	0
Petroleum products b/	25,421	MT	434.3	0	0	0	0	0	17	74	2	0	2	0	1	2	0	2
Metals																		
Nonferrous																		
Aluminum, primary and secondary	56.9	MT	7,060	18	0	0	0	64	0	0	0	18	0	0	0	0	0	0
Antimony	0.2	MT	23,200	0	0	0	0	30	0	0	0	0	20	0	0	50	0	0
Bauxite	250.0	MT	424	52	0	0	0	0	0	0	0	0	48	0	0	0	0	0
Copper, primary	95.5	MT	6,600	0	0	0	0	0	0	5	0	17	72	0	6	0	0	0
Copper, secondary	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
Fluorspar	75.0	MT	640	0	10	0	0	0	0	0	0	0	0	0	6	14	70	0
Gold	N.A.	oz t	77	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	0	0	83	0	0	6
Lead	69.0	MT	3,750	0	0	0	0	0	11	0	0	0	0	0	0	0	0	0
Magnesium	1.0	MT	16,500	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
Mercury	0.3	MT	120,000	0	0	0	0	100	0	0	0	0	0	0	0	0	0	0
Platinum	120.0	oz t	16	0	0	0	0	0	0	0	0	0	99	0	0	0	1	0
Pyrites	978.0	MT	17.8	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
Silver	0.25	MT	385,000	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
Tin metal, primary	1.4	MT	109,000	0	0	0	0	0	0	0	0	100	0	0	0	0	0	0
Zinc	78.0	MT	3,070	0	0	0	0	16	37	0	0	0	26	21	0	0	0	0

* For sources of these data, see pp. 74 and 75, above.

** Footnotes for Table 8 follow on p. 86.

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Table 8
Regional Distribution of Soviet Production by Commodity Group
1938
(Continued)

Commodity	Total Production			Percent of Total Production														
	Quantity (Thousands)	Unit	Price per Unit (1950 Rubles)	Region														
				Ia	Ib	IIa	IIb	III	IV	V	VI	VII	VIII	IX	Xa	Xb	XI	XII
Ferrous																		
Cobalt	Negl	MT	442,000	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
Iron ore	26,500.0	MT	73	N.A.	N.A.	0	0	65	0	0	0	4	27	0	0	0	0	0
Manganese (100 percent)	2,300.0	MT	450	0	0	0	0	34	0	60	0	3	0	0	0	0	0	3
Molybdenum	Negl	MT	370,000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Nickel	3.0	MT	32,300	0	0	0	0	0	0	0	0	0	100	0	0	0	0	0
Steel ingots	18,000.0	MT	768	2	0	0	0	48	5	Negl	7	9	19	10	0	Negl	Negl	0
Pig iron	14,600.0	MT	431	0	0	0	0	64	3	0	Negl	6	17	10	0	0	0	0
Steel, finished	13,300.0	MT	921	2	0	0	0	48	5	Negl	7	9	19	10	0	Negl	Negl	0
Vanadium	0.25	MT	15,000	0	0	0	0	60	0	0	0	0	40	0	0	0	0	0
Fabricated metals																		
Shipbuilding																		
Naval	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
Merchant	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
Bearings	26,000.0	Units	6	0	0	0	0	0	0	0	0	100	0	0	0	0	0	0
Automotive equipment																		
Trucks c/	2,600,000.0	Rubles		0	0	0	0	0	0	0	0	100	0	0	0	0	0	0
Tractors	1,030,000.0	Rubles		7	0	0	0	27	0	0	27	0	39	0	0	0	0	0

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Table 8
Regional Distribution of Soviet Production by Commodity Group
1938
(Continued)

Commodity	Total Production		Price per Unit (1950 Rubles)	Percent of Total Production													
	Quantity (Thousands)	Units		Region													
				Ia	Ib	IIa	IIb	III	IV	V	VI	VII	VIII	IX	Xa	Xb	XI
Electrical equipment																	
Motors	N.A.			N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
Generators	N.A.			N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
Switchgear	N.A.			N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
Wire and cable	N.A.			N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
Lamps	N.A.			N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
Electron tubes d/	10,000.0	1950 US \$		N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
Wire communications equipment				N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
Electron components	N.A.			N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
Storage batteries	N.A.			N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
Primary batteries	N.A.			N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
Turbines	36,000.0	1950 US \$		N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
Railroad equipment																	
Steam locomotives e/	1.14	Units	595,000	0	0	0	0	16	38	0	0	46	0	0	0	0	0
Mining locomotives	0.169	Units	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
Freight cars f/	24.15	Units	10,000	0	0	0	0	41	18	0	18	18	0	5	0	0	0
Passenger cars	1.0	Units	225,000	35	0	15	0	0	50	0	0	50	0	0	0	0	0
Agricultural machinery																	
Grain combines	22.9	Units	22,500	0	0	0	0	45	55	0	0	0	0	0	0	0	0
Tractor moldboard plows	68.3	Units	1,575	0	0	0	0	55	7	0	0	25	0	13	0	0	0
Tractor seed drills	42.0	Units	2,520	0	0	0	0	75	5	0	0	10	0	0	0	10	0
Tractor cultivators	40.7	Units	1,485	0	0	0	0	20	70	0	0	5	0	0	0	5	0

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Table 8
Regional Distribution of Soviet Production by Commodity Group
1938
(Continued)

Commodity	Total Production		Price per Unit (1950 Rubles)	Percent of Total Production														
	Quantity (Thousands)	Unit		Region														
				Ia	Ib	IIa	IIb	III	IV	V	VI	VII	VIII	IX	Xa	Xb	XI	XII
Machine tools and metalworking machinery																		
Machine tools	53.9	Units	40,000	11	0	1	11	9	2	5	5	47	7	2	0	0	Negl	0
Chemicals																		
Sulfuric acid	1,520.0	MT	265	11	0	0	0	18	2	3	3	29	24	5	2	0	0	3
Nitric acid	230.0	MT	502	1	0	0	0	10	0	0	N.A.	37	35	17	0	0	0	0
Ammonia (nitrogen content)	263.0	MT	1,200	0	0	0	0	35	0	0	0	28	33	4	0	0	0	0
Soda ash	536.0	MT	380	0	0	0	0	77	0	0	0	0	19	4				0
Chlorine	75 to 95.0	MT	338	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
Benzol, refined	156.0	MT	1,440	1	0	0	0	72	0	0	0	1	13	13	0	0	0	0
Toluol	38.0	MT	1,980	1	0	0	0	72	0	0	0	1	13	13	0	0	0	0
Phenol	7.3	MT	2,880	1	0	0	0	72	0	0	0	1	13	13	0	0	0	0
Cresols	11.5	MT	456	1	0	0	0	72	0	0	0	1	13	13	0	0	0	0
Xylo	13.6	MT	1,000	1	0	0	0	72	0	0	0	1	13	13	0	0	0	0
Naphthalene	34.5	MT	2,500	1	0	0	0	72	0	0	0	1	13	13	0	0	0	0
Construction materials																		
Asbestos	86.0	MT	319	0	0	0	0	0	0	0	0	0	99	0	0	0	1	0
Brick g/	8,700.0	MT	305					71	5			15		6		3		0
Cement	5,700.0	MT	185					59	24			11		3		3		0
Forest products																		
Roundwood h/	322,000.0	cu m	73.5	10	13	5	5	4	1	Negl	2	24	18	5	1	Negl	6	6
Fuelwood	212,000.0	cu m	49	9	10	7	3	3	1	Negl	3	27	20	4	1	Negl	6	6
Industrial wood	119,000.0	cu m	93	10	16	5	6	6	1	Negl	1	20	15	6	Negl	Negl	7	7

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Table 8
Regional Distribution of Soviet Production by Commodity Group
1938
(Continued)

Commodity	Total Production		Price per Unit (1950 Rubles)	Percent of Total Production													
	Quantity (Thousands)	Unit		Ia	Ib	IIa	IIb	III	IV	V	VI	VII	VIII	IX	Xa	Xb	XI
Food products																	
Canned foods	N.A.			N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
Meat 1/	3,980.0	MT	22,150	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
Sugar, refined	1,986.0	MT	12,350	0	0	3	0	68	2	Negl	Negl	22	Negl	1	2	2	0
Vegetable oil	858.0	MT	26,000	1	1	1	2	20	15	3	9	20	4	4	2	17	Negl
Butter	250.0	MT	37,050	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
Manufactured consumer goods																	
Boots and shoes	189,500.0	Pairs	33	Negl	0	N.A.	4	17	10	4	9	49	Negl	3	Negl	2	0
Cotton yarn	558.9	MT	18,500	14	Negl	Negl	Negl	Negl	Negl	2	1	81	Negl	Negl	2	Negl	0
Wool yarn	78.0	MT	24,700	5	0	Negl	Negl	5	1	2	27	56	3	1	Negl	0	Negl
Defense industry																	
Small arms 1/	672.0	Units	332.5	0	0	0	0	0	3	0	25	30	40	2	0	0	0
Artillery 1/	7.0	Units	188,100	20	0	0	0	0	0	0	0	0	57	23	0	0	0
Ammunition 1/	480.8	MT	9,150	14	0	0	0	7	11	0	18	19	28	3	0	0	0
Agriculture																	
Food crops and livestock 1/																	
Bread grains	52,410.0	MT	1,950	1	1	3	3	25	7	2	10	20	11	8	4	2	3
Other grains	35,770.0	MT	2,520	1	1	5	3	27	9	3	6	21	9	6	3	2	1
Rice	400.0	MT	9,000	0	0	0	0	1	7	16	Negl	0	0	0	14	59	0
Potatoes	73,838.0	MT	787	2	1	7	15	26	2	1	4	21	7	7	3	4	6
Horses	19,918.0	Head	2,000	2	2	7	6	23	5	2	4	21	7	7	3	4	6
Cattle	59,176.0	Head	1,200	2	2	6	5	19	7	7	6	16	7	9	5	4	5
Swine	31,622.3	Head	600	2	1	10	9	30	6	3	4	20	5	5	1	1	2
Sheep and goats	73,052.6	Head	150	2	1	2	3	9	10	8	8	17	7	8	7	13	5

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Table 8
Regional Distribution of Soviet Production by Commodity Group
1938
(Continued)

Commodity	Total Production		Price per Unit (1950 Rubles)	Percent of Total Production														
	Quantity (Thousands)	Unit		Region														
				Ia	Ib	IIa	IIb	III	IV	V	VI	VII	VIII	IX	Xa	Xb	XI	XII
Industrial crops																		
Cotton, ginned	732.0	MT	10,260	0	0	0	0	3	5	10	1	0	0	0	5	76	0	0
Wool	130.0	MT	8,340	1	1	2	4	12	11	6	8	18	7	9	8	10	3	Negl
Hemp	120.0	MT	630	Negl	Negl	1	4	25	5	Negl	5	43	5	7	1	1	3	0
Silk	1.7	MT	400	0	0	0	0	2	1	28	0	0	0	0	1	68	0	0
Flax	600.9	MT	2,590	6	5	5	9	8	1	Negl	5	44	7	6	Negl	3	1	Negl
Transportation																		
Rail n/	384,000,000.0	Ton-km	0.0488	4	2	Negl	3	27	4	3	6	20	9	7	3	4	4	4
Inland water	35,500,000.0	Ton-km	0.0400	10	10	1	2	6	3	Negl	17	27	7	6	1	3	4	3
Communications o/																		
Telegrams	126,500.0	Units	5															
Telephone messages	7,271,000.0	Units	0.3	4	1	2	2	23	4	3	4	36	7	5	2	4	2	1

a. Data are for 1937.

b. Regions VI and VIII combined produced 4 percent of total crude oil output, which was divided equally between the two regions. The regional distribution of output is assumed to be equal to that of crude oil production, an assumption which probably overstates the degree of concentration in the industry.

c. These data include passenger cars (valued at 400 million rubles). They are stated in terms of 1951 rubles.

d. Data are for 1940.

e. In addition, 30 electric locomotives were produced entirely in Region VII; there was no production of diesels. Price given is price of steam locomotives; price of electric locomotives is estimated to be at 885,000 rubles per unit; that of diesels, 805,000 rubles per unit.

f. Data are in physical units; price shown is for a 2-axle unit, thereby understating value insofar as 4-axle units are produced. After 1935 the predominant part of the Soviet output was of 4-axle units. Thus the percentage share of railroad equipment produced in Regions III and VI, especially, is understated. Railroad equipment, however, accounts for less than 15 percent of fabricated metals production, and therefore the effects on the latter would be insignificant.

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Table 8
Regional Distribution of Soviet Production by Commodity Group
1938
(Continued)

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- g. Approximately 70 percent of bricks were produced in Regions IIA, IIB, III, IV, V, VI, and VII. Production of bricks was estimated to be 8.7 billion bricks. This was converted to metric tons at the rate of 1 kilogram per brick.
 - h. Production data for forestry products include planned production as well as local gathering.
 - i. These data include beef, veal, mutton, lamb, goat meat, and pork on a carcass-weight basis. Also includes slaughter fats, fat cuts, and bacon.
 - j. These data include rifles and machine guns: the unit price for rifles is 546 rubles per unit, and the price for machine guns is 2,387 rubles per unit. Data are for 1940.
 - k. The estimate is for 37-millimeter and higher caliber pieces.
 - l. Data are for 1937. Prices are for 1945.
 - m. A prewar comparison base was obtained by applying average yields to 1938 acreage.
 - n. Total production is in terms of operating ton-kilometers; regional distribution represents an average of tons originated, tons terminated, and railroad track mileage for each region.
 - o. Data are for 1939, adjusted to postwar boundaries for 1938. The regional percentage distribution of telegrams conforms generally to percentages given for telephone conversations. If differing markedly, the vast, undeveloped regions of the USSR (IX, Xa, XI, and XII) might possibly show a greater percentage than those stated. The reasons seem to be twofold: (1) the paucity of wire lines for either telephone or telegraph use, resulting in more reliance on the radio medium; and (2) the apparently greater use of the radio medium to transmit telegrams rather than telephone conversation.

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Table 9
Regional Distribution of Soviet Production by Commodity Group*
1948

Commodity	Total Production		Price per Unit (1950 Rubles)	Percent of Total Production															
	Quantity (Thousands)	Unit		Region												Xa	Xb	XI	XII
				Ia	Ib	IIa	IIb	III	IV	V	VI	VII	VIII	IX					
Manufacturing industries																			
Energy																			
Electric power a/**	66,000,000.0	kwh	0.244	9	1	1	1	16	1	7	3	23	23	7	3	2	2	1	
Solid Fuels																			
Hard coal	147,000.0	MT	88.4	1	5	0	0	38	9	1	0	0	8	21	8	Negl	7	2	
Brown coal	62,650.0	MT	54.2	1	0	0	0	4	0	Negl	Negl	38	30	0	4	4	5	14	
Peat	33,600.0	MT	49.7	11	Negl	4	10	11	Negl	Negl	1	56	6	Negl	Negl	Negl	0	0	
Petroleum products b/	26,023.0	MT	421.7	0	1	0	0	1	14	47	11	0	12	0	2	9	0	3	
Metals																			
Nonferrous																			
Aluminum, ingots	200.0	MT	7,060	8	0	0	0	5	0	0	0	26	51	10	0	0	0	0	
Antimony	2.0	MT	23,200	0	0	0	0	5	0	0	0	0	10	0	15	70	0	0	
Bauxite	500.0	MT	424	52	0	0	0	0	0	0	0	0	48	0	0	0	0	0	
Copper, primary	200.0	MT	6,600	0	0	0	0	0	0	3	0	13	56	0	28	0	0	0	
Copper, secondary	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	
Fluorspar	100.0	MT	640	0	12	0	0	0	0	0	0	0	0	0	8	15	65	0	
Gold	10,000.0	oz t	77	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	
Lead, primary	76.4	MT	3,750	0	0	0	0	0	13	0	0	0	0	0	76	0	0	11	
Magnesium	5.0	MT	16,500																

* For sources of these data, see pp. 74 and 75, above.

** Footnotes for Table 9 follow on p. 94.

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Table 9
Regional Distribution of Soviet Production by Commodity Group
1948
(Continued)

Commodity	Total Production		Price per Unit (1950 Rubles)	Percent of Total Production														
	Quantity (Thousands)	Unit		Region														
				Ia	Ib	IIa	IIb	III	IV	V	VI	VII	VIII	IX	Xa	Xb	XI	XII
Metals (Continued)																		
Nonferrous (Continued)																		
Mercury	0.364	MT	120,000	0	0	0	0	5	0	0	0	0	0	0	0	95	0	0
Platinum	125.0	oz t	15	0	0	0	0	0	0	0	0	0	99	0	0	0	1	0
Pyrites	1,800.0	MT	17.8	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
Silver	0.23	MT	385	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
Tin metal, primary	6.3	MT	109,000	0	0	0	0	0	0	0	0	100	0	0	0	0	0	0
Zinc	81.0	MT	3,070	0	0	0	0	16	37	0	0	0	26	21	0	0	0	0
Ferrous																		
Cobalt	1.17	MT	442,000	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
Iron ore	30,000.0	MT	73	N.A.	N.A.	0	0	52	0	4	N.A.	3	33	6	N.A.	N.A.	2	N.A.
Manganese (100 percent)	2,600.0	MT	450	0	0	0	0	26	0	47	0	0	11	3	5	0	8	0
Molybdenum	2.55	MT	370,000	0	0	0	0	0	27	7	0	0	0	0	44	0	18	4
Nickel	25.0	MT	32,300	34	0	0	0	0	0	0	0	0	42	0	0	0	24	0
Steel ingots	18,700.0	MT	768	2	0	0	0	25	3	Negl	2	8	44	14	Negl	Negl	1	Negl
Pig iron	14,000.0	MT	431	0	0	0	0	34	1	0	0	8	45	11	0	0	1	0
Steel, finished	14,100.0	MT	921	2	0	0	0	25	3	Negl	2	9	45	13	Negl	Negl	1	Negl
Vanadium	0.34	MT	15,000	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.

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Table 9
Regional Distribution of Soviet Production by Commodity Group
1948
(Continued)

Commodity	Total Production			Percent of Total Production													
	Quantity (Thousands)	Unit	Price per Unit (1950 Rubles)	Region												XI	XII
				Ia	Ib	IIa	IIb	III	IV	V	VI	VII	VIII	IX	Xa		
Fabricated metals																	
Shipbuilding																	
Naval	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
Merchant	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
Bearings	54,000.0	Units	6	0	0	0	0	3	0	Negl	27	61	1	8	0	0	0
Automotive equipment																	
Trucks c/	2,990,000.0	Rubles		0	0	0	1	Negl	0	0	2	84	13	0	0	0	0
Tractors	1,570,000.0	Rubles		3	0	0	0	19	0	0	21	9	37	11	0	0	0
Electrical equipment																	
Motors	220,000.0	1950 US \$		46	0	0	0	34	0	11	0	5	4	0	0	0	0
Generators	32,000.0	1950 US \$		44	0	0	0	38	0	0	0	0	18	0	0	0	0
Transformers	24,000.0	1950 US \$		0	0	0	0	0	0	35	0	52	13	0	0	0	0
Wire and cable	60,000.0	1950 US \$		18	0	0	0	8	0	10	0	51	3	3	0	7	0
Lamps	10,000.0	1950 US \$		22	0	1	0	1	0	0	1	38	0	33	0	3	0
Electron tubes	22,000.0	1950 US \$		22	0	2	0	2	0	0	2	38	0	31	0	3	0
Telephone and telegraph equipment	32,000.0	1950 US \$		36	0	30	0	8	0	1	0	2	21	2	0	0	0
Electron components	11,000.0	1950 US \$		N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
Storage batteries d/	14,000.0	1950 US \$		15	0	0	3	46	0	0	0	3	0	6	0	9	9
Primary batteries a/	8,000.0	1950 US \$		7	0	0	7	0	0	0	0	57	0	7	0	0	22
Turbines	36,000.0	1950 US \$		63	0	1	0	15	Negl	1	0	2	17	0	1	0	0

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Table 9
Regional Distribution of Soviet Production by Commodity Group
1948
(Continued)

Commodity	Total Production		Price per Unit (1950 Rubles)	Percent of Total Production														
	Quantity (Thousands)	Unit		Region														
				Ia	Ib	IIa	IIb	III	IV	V	VI	VII	VIII	IX	Xa	Xb	XI	XII
Railroad equipment																		
Diesel locomotives <i>g/</i>	0.075	Units	805,000	0	0	0	0	100	0	0	0	0	0	0	0	0	0	0
Mining locomotives <i>f/</i>	0.901	Units	33,500	0	0	0	0	34	0	Negl	0	33	33	0	0	0	0	0
Freight cars <i>g/</i>	42.50	Units	10,000	0	0	9	0	18	14	0	6	7	44	2	0	0	0	0
Passenger cars	1.14	Units	225,000	32	0	18	0	0	0	0	0	50	0	0	0	0	0	0
Agricultural machinery																		
Grain combines	14.40	Units	22,500	0	0	0	0	15	61	0	8	7	3	0	0	0	4	0
Tractor moldboard plows	53.30	Units	1,575	0	0	0	1	50	22	0	2	20	3	2	0	0	0	0
Tractor seed drills	41.70	Units	2,520	0	0	0	5	65	0	0	0	5	0	10	0	15	0	0
Tractor cultivators	42.10	Units	1,485	0	0	2	1	15	60	1	2	4	4	1	0	10	0	0
Machine tools and metalworking machinery																		
Machine tools	59.2	Units	40,000	11	0	1	11	9	2	5	5	47	7	2	0	0	Negl	0
Chemicals																		
Sulfuric acid	1,590.0	MT	265	N.A.	0	N.A.	0	N.A.	0	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
Nitric acid	820.0	MT	502	Negl	0	0	0	27	0	0	4	31	10	5	0	22	0	1
Ammonia	358.0	MT	1,200	0	0	0	0	N.A.	0	0	0	N.A.	N.A.	0	0	N.A.	0	0
Soda ash	427.0	MT	380	0	0	0	0	73	0	0	0	0	22	5	5	0	0	0
Chlorine	120 to 150.0	MT	338	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
Benzol, refined	163.0	MT	1,440	1	0	0	0	13	0	0	0	1	52	32	0	0	1	0
Toluol	61.4	MT	1,980	1	0	0	0	13	0	0	0	1	52	32	0	0	1	0
Phenol	18.8	MT	2,880	1	0	0	0	13	0	0	0	1	52	32	0	0	1	0

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Table 9
Regional Distribution of Soviet Production by Commodity Group
1948
(Continued)

Commodity	Total Production		Price per Unit (1950 Rubles)	Percent of Total Production														
	Quantity (Thousands)	Unit		Region														
				Ia	Ib	IIa	IIb	III	IV	V	VI	VII	VIII	IX	Xa	Xb	XI	XII
Chemicals (Continued)																		
Cresols	8.2	MT	456	1	0	0	0	13	0	0	0	1	52	32	0	0	1	0
Xylol	9.6	MT	1,800	1	0	0	0	13	0	0	0	1	52	32	0	0	1	0
Naphthalene	53.2	MT	2,600	1	0	0	0	13	0	0	0	1	52	32	0	0	1	0
Construction materials																		
Asbestos	90.0	MT	319	0	0	0	0	0	0	0	0	0	99	0	0	0	1	0
Brick	6,864.0	MT	305	2	1	5	3	12	5	6	9	16	7	6	9	3	6	11
Cement	6,400.0	MT	185	2	1	5	4	6	15	5	10	17	9	3	3	3	5	12
Forest products																		
Roundwood	360,000.0	cu m.	73.5	6	10	6	5	4	1	Negl	2	27	17	8	1	Negl	7	5
Fuelwood h/	175,000.0	cu m	49	9	10	6	4	3	1	Negl	3	27	20	4	1	Negl	6	6
Industrial wood b/	134,000.0	cu m	93	14	16	5	6	6	1	Negl	1	20	15	6	1	Negl	6	6
Food products																		
Canned foods	N.A.			N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
Meat 1/	2,438.0	MT	22,150	4	0	6	3	20	5	3	5	26	6	6	8	4	4	Negl
Sugar, refined	1,800.0	MT	12,350	0	0	3	1	57	2	1	1	20	1	2	3	9	0	Negl
Vegetable oil	515.0	MT	26,000	1	1	1	1	11	8	5	15	11	7	7	2	28	Negl	3
Butter	275.0	MT	37,050	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.

S-E-C-R-E-T

S-E-C-R-E-T

Table 9
Regional Distribution of Soviet Production by Commodity Group
1948
(Continued)

Commodity	Total Production		Price per Unit (1950 Rubles)	Percent of Total Production														
	Quantity (Thousands)	Unit		Region														
				Ia	Ib	IIa	IIb	III	IV	V	VI	VII	VIII	IX	Xa	Xb	XI	XII
Manufactured consumer goods																		
Boots and shoes	205,500.0	Pairs	33	Negl	0	1	5	17	9	6	13	41	Negl	5	Negl	3	0	Negl
Cotton yarn	493.2	MT	18,500	12	1	Negl	Negl	1	1	3	1	71	1	3	2	4	Negl	0
Wool yarn	71.4	MT	24,700	5	0	Negl	Negl	5	1	2	27	56	3	1	Negl	0	Negl	Negl
Defense industry																		
Small arms ^{1/}	282.5	Units	332.5	0	0	0	0	0	0	0	5	40	55	0	0	0	0	0
Artillery ^{2/}	14.3	Units	188,100	5	0	0	0	0	0	0	10	25	50	5	0	0	5	0
Ammunition ^{1/}	231.3	MT	9,150	6	0	1	0	10	6	0	12	13	18	21	0	10	2	- 1
Agriculture																		
Food crops and livestock																		
Bread grains ^{m/}	45,900.0	MT	1,950	1	1	3	3	25	7	2	10	20	11	8	4	3	3	Negl
Other grains ^{m/}	29,150.0	MT	2,520	1	1	5	3	28	9	2	6	21	9	6	3	2	3	1
Rice ^{m/}	390.0	MT	9,000	0	0	0	0	1	6	16	Negl	0	0	0	14	60	0	3
Potatoes	65,000.0	MT	787	3	1	7	15	24	2	1	3	30	6	3	1	1	2	1
Horses	11,300.0	Head	2,000	2	2	7	5	17	4	2	4	18	7	10	8	6	7	1
Cattle	50,000.0	Head	1,200	2	1	5	4	19	7	6	6	16	7	9	8	5	5	Negl
Pigs	12,000.0	Head	600	2	1	8	8	32	7	3	5	18	6	6	1	1	2	1
Sheep and goats	74,500.0	Head	150	2	1	1	2	6	9	8	9	11	5	6	20	16	3	1

S-E-C-R-E-T

Table 9
Regional Distribution of Soviet Production by Commodity Group
1948
(Continued)

Commodity	Total Production			Percent of Total Production														
	Quantity (Thousands)	Unit	Price per Unit (1950 Rubles)	Region														
				Ia	Ib	IIa	IIb	III	IV	V	VI	VII	VIII	IX	Xa	Xb	XI	XII
Industrial crops																		
Cotton, ginned	656.9	MF	10,260	0	0	0	0	1	Negl	7	0	0	0	0	4	88	0	0
Wool	129.0	MF	8,340	1	1	1	1	7	10	7	9	11	3	7	25	14	2	1
Hemp	141.7	MF	630	Negl	Negl	1	4	25	5	Negl	5	43	5	7	1	1	3	0
Silk	1.5	MF	400,000	0	0	0	0	2	1	28	0	0	0	0	1	68	0	0
Flax	410.0	MF	2,590	6	5	5	9	8	1	Negl	5	44	7	6	Negl	3	1	Negl
Transportation																		
Railway	468,000,000.0	ton-km	0.0488	3	2	1	Negl	24	5	3	6	21	10	8	3	5	5	4
Inland water	32,400,000.0	ton-km	0.0400	10	10	1	2	6	3	Negl	17	27	7	6	1	3	4	3
Communications																		
Telegrams	213,000.0	Units	5															
Telephone messages	6,384,000.0	Units	0.3	4	1	2	3	24	3	3	4	34	8	5	2	4	2	1

a. Data are for 1950.

b. Regions VI and VIII produced 23 percent of total crude oil output; this was divided equally between the two regions. The regional distribution of output is assumed to be equal to that of crude oil production, an assumption which probably overstates the degree of concentration in the industry.

c. This production includes 300 million 1951 rubles of passenger cars in Region VII.

d. The regional breakdown is probably the same as in 1951.

e. In addition, 1,360 steam locomotives and 60 electric locomotives were produced: the latter were produced entirely in Region IV; 27 percent of the former were produced in Region IV, 41 percent in Region VII, and 25 percent in Region XI; the remainder could not be allocated regionally. The price shown is that of diesel locomotives.

f. Data are for electric coal mine locomotives only.

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Table 9
Regional Distribution of Soviet Production by Commodity Group
1948
(Continued)

- g. Data are in physical units. The price shown is for a 2-axle unit, thereby understating value insofar as 4-axle units are produced. After 1935 the predominant part of Soviet output was of 4-axle units. Thus the percentage share of railroad equipment produced in Regions III and VI especially is understated. Railroad equipment, however, accounts for less than 15 percent of fabricated metals production, and therefore the effects on the latter would be insignificant.
- h. The regional distribution is believed to be comparable to 1938, as indicated.
- i. Data include beef, veal, mutton, lamb, goat meat, and pork, on a carcass weight basis. They also include slaughter fats, fat cuts, and bacon. The regional distribution is assumed to be comparable to 1951.
- j. These data include rifles and machine guns: the price for rifles is 546 rubles per unit; the price for machine guns is 2,387 rubles per unit.
- k. The estimate is for 37-millimeter and higher caliber pieces. Data are for 1937.
- l. Prices are for 1945.
- m. The regional distribution is assumed to be the same as in 1938 because the negative effects of weather on 1948 yields were not available.
- n. Data are for operating ton-kilometers. The regional distribution is assumed to be equal to the average of tons originated, tons terminated, and track mileage in each region.
- o. See Table 8, footnote o, p. 87, above.

S-E-C-R-E-T

Table 10
Regional Distribution of Soviet Production by Commodity Group*
1951

Commodity	Total Production		Price per Unit (1950 Rubles)	Percent of Total Production														
	Quantity (Thousands)	Unit		Region														
				Ia	Ib	IIa	IIb	III	IV	V	VI	VII	VIII	IX	Xa	Xb	XI	XII
Manufacturing industries																		
Energy																		
Electric power a/**	103,000,000.0	kwh	0.244	9	1	1	1	16	1	7	3	23	23	7	3	2	2	1
Solid fuels																		
Hard coal	202,200.0	MT	88.4	1	6	0	0	43	8	1	0	0	7	20	7	Negl	5	2
Brown coal	79,800.0	MT	54.2	1	0	0	0	4	0	Negl	Negl	40	29	0	4	6	4	12
Peat	41,600.0	MT	49.7	11	Negl	4	10	11	Negl	Negl	1	40	22	Negl	Negl	Negl	Negl	0
Petroleum products b/	37,189.0	MT	423.9	Negl	1	11	0	1	25	41	9	3	10	Negl	1	5	Negl	3
Metals																		
Nonferrous																		
Aluminum, primary and secondary	268.5	MT	7,060.0	11	0	0	0	13	0	5	0	9	47	15	0	0	0	0
Antimony	4.0	MT	23,200	0	0	0	0	5	0	0	0	0	10	0	15	70	0	0
Bauxite	665.0	MT	424	2	0	0	0	0	0	7	0	0	70	21	0	0	0	0
Copper, primary	250.0	MT	6,600	0	0	0	0	0	0	4	0	12	57	0	27	0	0	0
Copper, secondary	N.A.			N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	0	0	0	0	0	0	0
Fluorspar	150.0	MT	640	0	25	0	0	0	0	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
Gold	10,000.0	oz t	77	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
Lead, primary	120.0	MT	3,750	0	0	0	0	0	12	0	0	0	0	0	80	0	0	0
Magnesium	13.5	MT	16,500	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.

* For sources of these data, see pp. 74 and 75, above.

** Footnotes for Table 10 follow on p. 102.

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Table 10
Regional Distribution of Soviet Production by Commodity Group
1951
(Continued)

Commodity	Total Production		Price per Unit (1950 Rubles)	Percent of Total Production														
	Quantity (Thousands)	Unit		Region														
				Ia	Ib	IIa	IIb	III	IV	V	VI	VII	VIII	IX	Xa	Xb	XI	XII
Nonferrous (Continued)																		
Mercury	0.729	MT	120,000	0	0	0	0	33	0	0	0	0	0	0	0	67	0	0
Platinum	95.0	oz t	16	0	0	0	0	0	0	0	0	0	99	0	0	0	1	0
Pyrites	3,300.0	MT	17.8	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
Silver	0.39	MT	385,000	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
Tin metal, primary	9.0	MT	109,000	0	0	0	0	0	0	0	0	50	0	50	0	0	0	0
Zinc	132.0	MT	3,070	0	0	0	0	14	21	0	0	0	21	17	27	0	0	0
Ferrous																		
Cobalt	1.54	MT	442,000	34	0	0	0	0	0	0	0	0	42	0	0	0	24	0
Iron ore	51,200.0	MT	73	N.A.	N.A.	0	0	53	0	4	N.A.	3	33	6	N.A.	N.A.	1	N.A.
Manganese (100 percent)	4,500.0	MT	450	0	0	0	0	31	0	50	0	6	3	5	0	5	0	0
Molybdenum	3.3	MT	370,000	0	0	0	0	0	27	7	0	0	0	0	44	0	18	4
Nickel	35.4	MT	32,300	34	0	0	0	0	0	0	0	0	42	0	0	0	24	0
Steel ingots	31,200.0	MT	768	2	0	Negl	0	36	3	Negl	3	8	35	10	1	1	1	Negl
Pig iron	22,000.0	MT	431	0	0	0	0	47	1	0	0	9	35	7	0	0	1	0
Steel, finished	23,800.0	MT	921	2	0	1	0	35	3	Negl	3	9	34	11	1	Negl	1	Negl
Vanadium	0.57	MT	15,000	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
Fabricated metals																		
Shipbuilding																		
Naval c/	1,319,000.0	1951 US \$		47	4	2	0	21	0	0	3	14	0	0	0	0	0	9
Merchant d/	96,000.0	1951 US \$		18	8	4	1	14	2	Negl	15	19	4	3	Negl	2	2	8

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Table 10
Regional Distribution of Soviet Production by Commodity Group
1951
(Continued)

Commodity	Total Production		Price per Unit (1950 Rubles)	Percent of Total Production														
	Quantity (Thousands)	Unit		Region														
				Ia	Ib	IIa	IIb	III	IV	V	VI	VII	VIII	IX	Xa	Xb	XI	XII
Bearings	103,000.0	Units	6	0	0	0	0	6	0	1	25	60	1	7	0	0	0	0
Automotive equipment																		
Trucks	5,770,000.0	Rubles		0	0	0	3	1	0	Negl	0	89	7	0	0	0	0	0
Tractors	2,730,000.0	Rubles		3	0	0	3	20	0	0	22	13	29	10	0	0	0	0
Electrical equipment																		
Motors	390,000.0	1950 US \$		46	0	0	0	34	0	11	0	5	4	0	0	0	0	0
Generators	57,000.0	1950 US \$		44	0	0	0	40	0	0	0	0	16	0	0	0	0	0
Switchgear	43,000.0	1950 US \$		0	0	0	0	0	0	34	0	53	13	0	0	0	0	0
Wire and cable	72,000.0	1950 US \$		18	0	0	0	8	0	10	0	50	4	4	0	6	0	0
Lamps	13,000.0	1950 US \$		20	0	1	0	1	0	0	2	40	0	29	0	7	0	0
Electron tubes	50,000.0	1950 US \$		20	0	2	0	2	0	0	2	40	0	27	0	7	0	0
Telegraph and telephone equipment	33,000.0	1950 US \$		36	0	30	0	8	0	1	0	2	21	2	0	0	0	0
Electron components	33,000.0	1950 US \$		28	0	0	0	21	0	0	0	30	0	21	0	0	0	0
Storage batteries	23,000.0	1950 US \$		15	0	0	3	46	0	0	0	3	0	6	0	9	9	9
Primary batteries	10,000.0	1950 US \$		7	0	0	7	0	0	0	0	57	0	7	0	0	22	0
Turbines	96,000.0	1950 US \$		62	0	3	0	14	Negl	1	0	3	16	0	Negl	0	0	Negl
Railroad																		
Railroad equipment																		
Diesel locomotives e/	0.17	Units	805,000	0	0	0	0	100	0	0	0	0	0	0	0	0	0	0
Mining locomotives f/	1.7	Units	33,500	0	0	0	0	24	0	46	0	7	23	0	0	0	0	0
Freight cars g/	70.0	Units	10,000	0	0	13	0	25	9	0	5	12	34	2	0	0	0	0
Passenger cars	2.74	Units	225,000	32	0	18	0	0	0	0	0	50	0	0	0	0	0	0

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Table 10
Regional Distribution of Soviet Production by Commodity Group
1951
(Continued)

Commodity	Total Production		Price per Unit (1950 Rubles)	Percent of Total Production														
	Quantity (Thousands)	Unit		Region														
				Ia	Ib	Iia	Iib	III	IV	V	VI	VII	VIII	IX	Xa	Xb	XI	XII
Agricultural machinery																		
Grain combines	53.0	Units	22,500	0	0	0	0	17	42	0	14	13	5	0	0	0	9	0
Tractor moldboard plows	139.6	Units	1,575	0	1	1	2	36	12	0	3	12	7	20	1	2	1	0
Tractor seed drills	138.3	Units	2,520	0	0	2	5	45	0	0	5	5	1	10	2	25	0	0
Tractor cultivators	116.8	Units	1,485	0	0	3	2	20	40	1	4	6	5	3	1	15	0	0
Machine tools and metalworking machinery																		
Machine tools	82.0	Units	40,000	11	0	1	11	9	2	5	5	47	7	2	0	0	Negl	0
Chemicals																		
Sulfuric acid	2,280.0	MT	265	11	0	4	0	19	1	3	2	26	19	0	8	6	0	1
Nitric acid	1,065.0	MT	502	Negl	0	0	0	23	0	0	3	27	15	8	0	23	0	1
Ammonia (nitrogen content)	467.0	MT	1,200	0	0	0	0	26	0	0	0	23	27	9	0	15	0	0
Soda ash	715.0	MT	380	0	0	0	0	65	0	0	0	0	32					
Chlorine	250.6	MT	338	5	5	0	0	12	0	6	20	26	24	Negl	0	1	1	0
Benzol, refined	85.0	MT	1,440	1	0	0	0	51	0	0	0	1	29	17	0	0	1	0
Toluol	250.6	MT	1,980	1	0	0	0	51	0	0	0	1	29	17	0	0	1	0
Phenol	22.3	MT	2,880	1	0	0	0	51	0	0	0	1	29	17	0	0	1	0
Cresols	15.0	MT	456	1	0	0	0	51	0	0	0	1	29	17	0	0	1	0
Xylol	17.5	MT	1,800	1	0	0	0	51	0	0	0	1	29	17	0	0	1	0
Naphthalene	79.7	MT	2,600	1	0	0	0	51	0	0	0	1	29	17	0	0	1	0
Construction materials																		
Asbestos	100.0	MT	319	0	0	0	0	0	0	0	0	0	99	0	0	0	1	0
Brick	12,300.0	MT	305	1	3	5	3	10	6	6	8	15	8	6	8	4	7	10
Cement	12,100.0	MT	185	3	1	4	4	6	15	5	10	17	10	3	3	2	5	12

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Table 10
Regional Distribution of Soviet Production by Commodity Group
1951
(Continued)

Commodity	Total Production		Price per Unit (1950 Rubles)	Percent of Total Production														
	Quantity (Thousands)	Unit		Region														
				Ia	Ib	IIa	IIb	III	IV	V	VI	VII	VIII	IX	Xa	Xb	XI	XII
Forest products																		
Roundwood	375,000.0	cu m	73.5	8	12	5	3	4	1	Negl	2	22	18	8	1	Negl	8	7
Fuelwood ^{b/}	182,000.0	cu m	49	9	10	6	4	3	1	Negl	3	27	20	4	1	Negl	6	6
Industrial wood ^{1/}	193,000.0	cu m	93	10	16	5	6	6	1	Negl	1	20	15	6	1	Negl	7	6
Food products																		
Canned foods	N.A.																	
Meat	3,460.0	MT	22,150	4	0	6	3	20	5	3	5	26	6	6	8	4	4	Negl
Sugar, refined	2,160.0	MT	12,350	0	0	3	1	57	2	1	1	20	1	2	3	9	0	Negl
Vegetable oil ^{3/}	925.0	MT	26,000	1	1	1	2	20	15	3	9	20	4	4	2	17	Negl	1
Butter	360.0	MT	37,050	4	4	14	4	15	2	1	6	22	7	7	7	2	5	Negl
Manufactured consumer goods																		
Boots and shoes	356,900.0	Pairs	33	Negl	0	1	5	17	9	6	13	41	Negl	5	Negl	3	0	Negl
Cotton yarn	667.0	MT	18,500	12	1	Negl	Negl	1	1	3	1	71	1	3	2	4	Negl	0
Wool yarn	113.4	MT	24,700	5	0	Negl	Negl	5	1	2	27	57	2	1	Negl	0	Negl	0
Defense industry																		
Small arms ^{k/}	282.5	Units	332.5	0	0	0	0	0	0	0	5	40	55	0	0	0	0	0
Artillery ^{l/}	12.8	Units	188.1	5	0	0	0	0	0	0	10	25	50	5	0	0	5	0
Ammunition ^{m/}	471.74	MT	9,150.0	4	0	1	0	10	7	0	15	12	18	20	0	10	2	1

S-E-C-R-E-T

S-E-C-R-E-T

Table 10
Regional Distribution of Soviet Production by Commodity Group
1951
(Continued)

Commodity	Total Production		Price per Unit (1950 Rubles)	Percent of Total Production														
	Quantity (Thousands)	Unit		Region														
				Ia	Ib	IIa	IIb	III	IV	V	VI	VII	VIII	IX	Xa	Xb	XI	XII
Agriculture																		
Food crops and livestock																		
Bread grains	54,600.0	MT	1,950	1	1	2	3	26	7	2	9	20	10	8	4	3	3	1
Other grains	27,400.0	MT	2,520	1	1	4	3	28	9	3	6	21	9	6	3	2	3	1
Rice	400.0	MT	9,000	0	0	0	0	1	6	16	Negl	0	0	0	14	60	0	3
Potatoes	59,500.0	MT	787	3	1	7	15	24	2	1	3	30	6	3	1	1	2	1
Horses	13,700.0	Head	2,000	2	2	7	5	17	4	2	4	18	7	10	8	6	7	1
Cattle	57,200.0	Head	1,200	2	2	5	4	19	7	6	4	16	7	9	8	5	5	Negl
Swine	24,100.0	Head	600	2	1	8	8	32	7	3	5	18	5	6	1	1	2	1
Sheep and goats	99,000.0	Head	150	2	1	1	1	7	9	8	9	11	5	6	20	16	3	1
Industrial crops																		
Cotton, ginned	972.0	MT	10,260	0	0	0	0	2	3	9	1	0	0	0	3	82	0	0
Wool	160.0	MT	8,340	1	1	1	1	7	10	7	9	11	3	7	25	14	2	1
Hemp	174.0	MT	630	Negl	Negl	1	4	25	5	Negl	5	43	5	7	1	1	3	0
Silk	1.5	MT	400,000	0	0	0	0	2	1	28	0	0	0	0	1	68	0	0
Flax	540.0	MT	2,590	6	5	5	8	8	1	Negl	5	44	7	6	Negl	3	1	1
Transportation																		
Rail n/	685,000,000.0	ton-km	0.0488	3	2	1	Negl	26	5	3	6	19	10	8	3	5	5	4
Inland water	51,000,000.0	ton-km	0.0400	10	10	1	2	6	3	Negl	17	27	7	6	1	3	4	3
Communications																		
Telegrams o/	283,500.0	Units	5															
Telephone messages	7,980,000.0	Units	0.3	4	1	2	3	23	3	3	4	33	8	6	2	4	2	2

S-E-C-R-E-T

S-E-C-R-E-T

Table 10
Regional Distribution of Soviet Production by Commodity Group
1951
(Continued)

- a. Data are for 1950.
- b. The regional distribution of output is assumed to be equal to that of refining capacity. For regions where refining capacity is large, the product-mix is likely to approximate that of the entire country; for regions with a small refining capacity, the product-mix may be highly specialized and therefore the average price per ton is unrepresentative.
- c. 142,064 Standard Displacement Tons were produced; regional distribution is the same as in 1954.
- d. The regional distribution of inland merchant shipbuilding is the same as in 1954.
- e. In addition, 1,200 steam locomotives were produced (42 percent in Region III and 58 percent in Region VII), and 150 electric locomotives were produced entirely in Rostov (IV). The price shown is that of diesel locomotives. Price of locomotives is estimated to be 885,000 rubles per unit; that of diesels to be 805,000 rubles per unit.
- f. Data are for electric coal-mining locomotives only.
- g. Data are in physical units; price shown is for a 2-axle unit, thereby understating value insofar as 4-axle units are produced. After 1935 the predominant part of Soviet output was of 4-axle units. Thus the percentage share of railroad equipment produced in Regions III and VI, especially, is understated. Railroad equipment, however, accounts for less than 15 percent of fabricated metals production, and therefore the effects on the latter would be insignificant.
- h. The regional distribution is believed to be comparable to 1938, as indicated.
- i. Data do not include Kaliningrad. They include beef, veal, mutton, lamb, goat, meat, and pork, on a carcass weight basis. Data also include slaughter fats, fat cuts, and bacon.
- j. The regional distribution is assumed to be comparable to that of 1938.
- k. These data include rifles and machine guns: the unit price for rifles is 546 rubles per unit, and the price for machine guns is 2,387 rubles per unit. Data are for 1940.
- l. The estimate is for 37-millimeter and higher caliber pieces.
- m. Data are for 1937. Prices are for 1945.
- n. Total production is in terms of operating ton-kilometers; regional distribution represents an average of tons originated, tons terminated, and railroad track mileage for each region.
- o. Data are for 1939, adjusted to postwar boundaries for 1938. The regional percentage distribution of telegrams conforms generally to percentages given for telephone conversations. If differing markedly, the vast, undeveloped regions of the USSR (IX, Xa, XI, and XII) might possibly show a greater percentage than those stated. The reasons seem to be twofold: (1) the paucity of wire lines for either telephone or telegraph use, resulting in more reliance on the radio medium; and (2) the apparently greater use of the radio medium to transmit telegrams rather than telephone conversation.

S-E-C-R-E-T

Table 11
Regional Distribution of Soviet Production by Commodity Group*
1953

Commodity	Total Production		Price per Unit (1950 Rubles)	Percent of Total Production														
	Quantity (Thousands)	Unit		Region														
				Ia	Ib	Ia	Ib	III	IV	V	VI	VII	VIII	IX	Xa	Xb	XI	XII
Manufacturing industries																		
Energy																		
Electric power a/**	133,000,000.0	kwh	0.244	9	1	1	1	16	1	7	3	23	23	7	3	2	2	1
Solid fuels																		
Hard coal	228,000.0	MT	88.4	1	6	0	0	43	8	1	0	0	6	20	7	Negl	6	2
Brown coal	92,000.0	MT	54.2	1	0	0	0	4	0	Negl	Negl	40	29	0	4	6	4	12
Peat	38,000.0	MT	49.7	11	Negl	4	10	11	Negl	Negl	1	40	16	6	Negl	Negl	Negl	Negl
Petroleum products b/	44,258.0	MT	445.2	Negl	1	1	0	1	20	33	16	3	16	Negl	1	6	Negl	2
Metals																		
Nonferrous																		
Aluminum, primary and secondary	388.0	MT	7,060	13	6	0	0	15	0	10	0	0	43	13	0	0	0	0
Antimony	5.0	MT	23,200	0	0	0	0	5	0	0	0	0	10	0	15	70	0	0
Bauxite	800.0	MT	424	0	10	0	0	0	0	7	0	0	63	20	0	0	0	0
Copper, primary	310.0	MT	6,600	0	0	0	0	0	0	3	0	0	57	0	0	0	0	0
Copper, secondary	40.0	MT	3,870	0	0	0	0	0	0	0	0	100	0	0	0	0	0	0
Fluorspar	175.0	MT	640	0	25	0	0	0	0	0	0	0	0	0	15	0	30	35
Gold	14,950.0	oz t	77	0	0	0	0	0	0	0	0	0	0	0	79	0	0	12
Lead, primary	168.0	MT	3,750	0	0	0	0	5	0	0	0	0	0	0	0	0	0	0
Magnesium	23.5	MT	16,500	0	0	0	0	5	0	0	0	0	95	0	0	0	0	0
Mercury	1.093	MT	120,000	0	0	0	0	33	0	0	0	0	0	0	67	0	0	0

* For sources of these data, see pp. 74 and 75, above.

** Footnotes for Table 11 follow on p. 109.

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Table 11
Regional Distribution of Soviet Production by Commodity Group
1953
(Continued)

Commodity	Total Production		Price per Unit (1950 Rubles)	Percent of Total Production														
	Quantity (Thousands)	Unit		Region														
				Ia	Ib	IIa	IIb	III	IV	V	VI	VII	VIII	IX	Xa	Xb	XI	XII
Nonferrous (Continued)																		
Platinum	110.0	oz t	16	0	0	0	0	0	0	0	0	0	99	0	0	0	1	0
Pyrites	3,300.0	MT	17.8	5	0	0	0	5	0	5	5	5	60	0	10	5	0	0
Silver	0.567	MT	385,000	0	0	0	0	0	5	0	0	0	15	20	40	0	15	5
Tin metal, primary	11.0	MT	109,000	0	0	0	0	0	0	0	0	50	0	50	0	0	0	0
Zinc	185.0	MT	3,070	0	0	0	0	11	22	0	0	0	21	11	35	0	0	0
Ferrous																		
Cobalt	1.8	MT	442,000	35	0	0	0	0	0	0	0	0	42	0	0	0	23	0
Iron ore	66,700.0	MT	73	0	0	0	0	52	0	0	0	1	37	5	5	0	0	0
Manganese (100 percent)	4,917.0	MT	450	0	0	0	0	28	0	56	0	0	10	0	4	0	2	0
Molybdenum	3.75	MT	370,000	0	0	0	0	0	27	6	0	0	0	0	44	0	18	5
Nickel	42.0	MT	32,300	36	0	0	0	0	0	0	0	0	45	0	0	0	19	0
Steel ingots	38,000.0	MT	763	4	0	Negl	0	32	3	1	4	7	37	9	1	0	1	1
Pig iron	27,400.0	MT	431	0	0	0	0	49	1	0	0	9	33	8	0	0	0	0
Steel, finished	29,400.0	MT	921	3	0	Negl	0	32	3	1	4	8	37	9	1	0	1	1
Vanadium	0.795	MT	15,000	0	0	0	0	0	0	0	0	0	100	0	0	0	0	0
Fabricated metals																		
Shipbuilding																		
Naval c/	1,111,000.0	1951 US \$		47	4	2	0	21	0	0	3	14	0	0	0	0	0	9
Merchant	134,000.0	1951 US \$		19	7	6	1	18	1	Negl	13	16	3	3	1	1	1	10
Bearings	139,000.0	Units	6	0	0	0	0	7	0	Negl	25	59	1	7	0	0	0	0

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Table 11
Regional Distribution of Soviet Production by Commodity Group,
1953
(continued)

Commodity	Total Production			Percent of Total Production													
	Quantity (Thousands)	Unit	Price per Unit (1950 Rubles)	Region													
				Ia	Ib	IIa	IIb	III	IV	V	VI	VII	VIII	IX	Xa	Xb	XI
Automotive equipment																	
Trucks	7,550,000.0	Rubles	33,000	0	0	0	5	Regl	0	1	0	86	8	0	0	0	0
Tractors	3,190,000.0	Rubles	30,000	0	0	0	9	19	0	0	20	15	25	12	0	0	0
Electrical equipment																	
Motors	500,000.0	1950 US \$		47	0	0	0	33	0	11	0	5	4	0	0	0	0
Generators	72,000.0	1950 US \$		43	0	0	0	39	0	0	0	0	18	0	0	0	0
Switchgear	54,000.0	1950 US \$		0	0	0	0	35	0	0	0	52	13	0	0	0	0
Wire and cable	96,000.0	1950 US \$		19	0	0	0	8	0	10	0	50	4	3	0	6	0
Lamps	15,000.0	1950 US \$		19	0	1	0	1	0	2	0	44	0	25	0	8	0
Electron tubes	78,000.0	1950 US \$		20	0	1	0	2	0	0	2	40	0	28	0	7	0
Telephone and telegraph equipment	33,000.0	1950 US \$		36	0	30	0	8	0	1	0	2	21	2	0	0	0
Electron components	76,000.0	1950 US \$		27	0	0	0	21	0	0	0	31	0	21	0	0	0
Storage batteries	27,000.0	1950 US \$		14	0	0	3	42	0	0	0	3	0	5	0	11	11
Primary batteries	12,000.0	1950 US \$		7	0	0	6	0	0	0	0	63	0	5	0	0	19
Turbines	120,000.0	1950 US \$		62	0	3	0	14	0	1	0	4	16	0	0	0	0
Railroad equipment																	
Diesel locomotives d/	0.2	Units	805,000	0	0	0	0	100	0	0	0	0	0	0	0	0	0
Mining locomotives	1.88	Units	33,500	0	0	0	0	24	0	46	0	7	23	0	0	0	0
Freight cars g/	140.04	Units	10,000	0	0	13	0	25	9	0	5	12	34	2	0	0	0
Passenger cars	2.84	Units	225,000	32	0	18	0	0	0	0	0	50	0	0	0	0	0

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Table 11
Regional Distribution of Soviet Production by Commodity Group
1953
(Continued)

Commodity	Total Production		Price per Unit (1950 Rubles)	Percent of Total Production														
	Quantity (Thousands)	Unit		Region												XI	XII	
				Ia	Ib	IIa	IIb	III	IV	V	VI	VII	VIII	IX	Xa			Xb
Agricultural machinery																		
Grain combines f/	19.0	Units	22,500	0	0	0	0	17	42	0	14	13	5	0	0	0	9	0
Tractor moldboard plows	101.0	Units	1,575	0	1	1	2	38	12	0	3	12	7	20	1	2	1	0
Tractor seed drills	90.0	Units	2,520	0	0	2	5	45	0	0	5	5	1	10	2	25	0	0
Tractor cultivators	97.0	Units	1,485	0	0	3	2	20	40	1	4	6	5	3	1	15	0	0
Machine tools and metalworking machinery																		
Machine tools f/	88.0	Units	40,000	11	0	1	11	9	2	5	5	47	7	2	0	0	Negl	0
Chemicals																		
Sulfuric acid	2,750.0	MT	265	11	0	0	0	18	2	3	3	29	24	5	2	0	3	0
Nitric acid	1,195.0	MT	502	Negl	0	0	0	27	0	4	2	24	15	7	0	21	0	0
Ammonia (nitrogen content)	558.0	MT	1,200	0	0	0	0	27	0	0	0	22	27	9	0	15	0	0
Soda ash	945.0	MT	380	0	0	0	0	49	0	0	0	0	48	0	0	0	1	2
Chlorine	295.0	MT	338	5	5	0	0	12	0	6	20	26	24	Negl	0	1	1	0
Benzol, refined	310.6	MT	1,440	Negl	0	0	0	54	Negl	1	Negl	1	28	15	0	Negl	1	0
Toluol	98.0	MT	1,980	Negl	0	0	0	43	3	7	2	5	24	12	0	3	1	0
Phenol	24.6	MT	2,880	Negl	0	0	0	28	0	Negl	0	14	32	25	0	0	1	0
Cresols	26.0	MT	456	Negl	0	0	0	55	0	1	0	0	28	16	0	0	Negl	0
Xylol	16.7	MT	1,800	Negl	0	0	0	52	0	0	0	Negl	29	18	0	0	1	0
Naphthalene	97.2	MT	2,600	Negl	0	0	0	52	1	3	1	1	26	14	0	1	1	0
Construction materials																		
Asbestos	130.0	MT	319	0	0	0	0	0	0	0	0	0	99	0	0	0	1	0
Brick	17,000.0	MT	305	2	2	5	3	10	6	6	8	15	7	7	8	4	7	10
Cement	16,000.0	MT	185	3	1	4	4	6	15	5	10	17	9	3	3	2	5	12
Glass	97,000.0	sq m.	11.3	3	0	0	12	15	15	8	3	25	5	0	5	4	5	0

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Table 11
Regional Distribution of Soviet Production by Commodity Group
1953
(Continued)

Commodity	Total Production			Percent of Total Production														
	Quantity (Thousands)	Units	Price per Unit (1950 Rubles)	Region														
				Ia	Ib	IIa	IIb	III	IV	V	VI	VII	VIII	IX	Xa	Xb	XI	XII
Forest products																		
Roundwood	385,000.0	cu m	73.5	9	13	9	0	0	0	0	0	24	20	9	0	0	8	8
Fuelwood	170,000.0	cu m	49	9	10	6	3	3	1	0	3	21	21	4	1	0	6	6
Industrial wood	215,000.0	cu m	93	10	16	5	7	6	1	Negl	1	20	15	6	Negl	Negl	7	6
Food products																		
Canned foods g/	2,223,000.0	Cans	5.6	3	2	2	2	14	16	9	10	5	3	4	6	10	4	10
Meat h/	3,890.0	MT	22,150	4	0	6	4	19	5	3	5	26	6	6	8	4	4	0
Sugar, refined	2,520.0	MT	12,350	0	0	3	1	57	2	1	1	20	1	2	3	9	0	Negl
Vegetable oil i/	1,246.0	MT	26,000	1	1	1	2	20	15	3	9	20	4	4	2	17	Negl	1
Butter	400.0	MT	37,050	4	4	14	4	15	2	1	6	22	7	7	7	2	5	1
Manufactured consumer goods																		
Boots and shoes	395,000.0	Pairs	33	Negl	0	1	5	17	9	6	13	41	0	5	Negl	3	0	Negl
Cotton yarn	691.0	MT	18,500	12	1	Negl	Negl	1	1	3	1	71	1	3	2	4	Negl	0
Wool yarn	125.0	MT	24,700	5	0	Negl	Negl	5	1	2	27	56	3	1	Negl	0	Negl	Negl
Defense industry																		
Small arms j/	320.0	Units	332.5	0	0	0	0	0	0	0	5	40	55	0	0	0	0	0
Artillery k/	22.5	Units	188,100	5	0	0	0	0	0	0	10	25	50	5	0	0	5	0
Ammunition l/	624.154	MT	9,150	4	0	1	0	10	7	0	15	11	18	21	0	9	3	1

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Table 11
Regional Distribution of Soviet Production by Commodity Group
1953
(Continued)

Commodity	Total Production		Price per Unit (1950 Rubles)	Percent of Total Production														
	Quantity (Thousands)	Unit		Region														
				Ia	Ib	IIa	IIb	III	IV	V	VI	VII	VIII	IX	Xa	Xb	XI	XII
Agriculture																		
Food crops and livestock																		
Bread grains	53,400.0	MT	1,950	1	1	2	3	26	7	2	9	20	10	8	4	3	3	1
Other grains	26,900.0	MT	2,520	1	1	4	3	28	9	3	6	21	9	6	3	2	3	1
Rice	400.0	MT	9,000	0	0	0	0	1	6	16	Negl	0	0	0	14	60	0	3
Potatoes	66,400.0	MT	787	3	1	7	15	23	2	1	3	30	6	4	1	1	2	1
Horses	15,300.0	Head	2,000	2	2	7	5	17	4	2	4	18	7	10	8	6	7	1
Cattle	56,600.0	Head	1,200	1	2	5	4	19	7	6	6	16	7	9	8	5	5	Negl
Swine	28,000.0	Head	600	2	1	8	8	32	7	3	5	18	5	6	1	1	2	1
Sheep and goats	109,900.0	Head	150	2	1	1	1	7	9	8	9	11	5	6	20	16	3	1
Industrial crops																		
Cotton, ginned	972.0	MT	10,260	0	0	0	0	3	5	10	1	0	0	0	5	76	0	0
Wool	175.0	MT	8,340	1	1	1	1	7	10	7	9	11	3	7	25	14	2	1
Hemp	177.6	MT	630	Negl	Negl	1	4	25	5	Negl	5	43	5	7	1	1	3	0
Silk	1.7	MT	400,000	0	0	0	0	1	1	28	0	0	0	0	1	1	68	0
Flax	576.0	MT	2,590	6	5	5	8	8	1	Negl	5	44	7	6	Negl	3	1	1
Transportation																		
Rail ^{a/}	865,000,000.0	ton-km	0.0488	3	2	1	Negl	25	5	3	6	19	10	8	3	6	5	4
Inland water ^{b/}	61,800,000.0	ton-km	0.0400	10	10	1	2	6	3	Negl	17	27	7	6	1	3	4	3
Communications																		
Telegrams ^{c/}	343,000.0	Units	5.0															
Telephone messages	7,854,000.0	Units	0.3	4	1	2	3	23	3	3	4	33	8	6	2	4	2	2

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Table 11
Regional Distribution of Soviet Production by Commodity Group
1953
(Continued)

- a. The regional distribution is assumed to be equal to that of 1951.
- b. The regional distribution of output is assumed to be equal to that of refining capacity. For regions where refining capacity is large; the product mix is likely to approximate that of the entire country; for regions with a small refining capacity, the product mix may be highly specialized and therefore the average price per ton is unrepresentative.
- c. 112,469 Standard Displacement Tons were produced. The regional distribution is the same as in 1952.
- d. In addition, 2,600 units of steam locomotives were produced (35 percent in Region III and 65 percent in Region VII), and 225 electric locomotives (all in Region IV). Price given is price of diesel locomotives; price of electric locomotives is estimated to be 885,000 rubles per unit; that of steam locomotives, 595,000 rubles per unit.
- e. Data are in 2-axle units.
- f. Data are for tractor-drawn combines only, which represent about 50 percent of the total value of production. The addition of self-propelled units would tend to increase the proportion of total agricultural machinery production contributed by Regions IV and VI, but by less than 10 percent, and would not significantly affect the regional distribution of fabricated metals.
- g. Data are for cans of 400 grams each. The price is per can.
- h. Data include beef, veal, mutton, lamb, goat meat, and pork on a carcass weight basis. They also include slaughter fats, fat cuts, and bacon.
- i. The regional distribution is assumed to be comparable to that of 1938.
- j. These data include rifles and machine guns: the unit price for rifles is 546 rubles per unit, and the price for machine guns is 2,387 rubles per unit. Data are for 1940.
- k. The estimate is for 37-millimeter and higher caliber prices.
- l. Data are for 1937. Prices are for 1945.
- m. Total production is in terms of operating ton-kilometers; regional distribution represents an average of tons originated, tons terminated, and railroad track mileage for each region.
- n. Data exclude oceanic transportation.
- o. Data are for 1939, adjusted to postwar boundaries for 1938. The regional percentage distribution of telegrams conforms generally to percentages given for telephone conversations. If differing markedly, the vast, undeveloped regions of the USSR (IX, Xa, XI, and XII) might possibly show a greater percentage than those stated. The reasons seem to be twofold: (1) the paucity of wire lines for either telephone or telegraph use, resulting in more reliance on the radio medium; and (2) the apparently greater use of the radio medium to transmit telegrams rather than telephone conversation.

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Table 12
Regional Distribution of Soviet Production by Industry a/*
1938

Commodity	Total Production b/ (Million 1951 Rubles)	Percent of Total Value														
		Region														
		Ia	Ib	IIa	IIb	III	IV	V	VI	VII	VIII	IX	Xa	Xb	XI	XII
Manufacturing industries																
Energy																
Electric power c/	9,663	12	1	0	1	28	5	8	3	31	9	1	Negl	1	Negl	Negl
Solid fuels	12,425	2	Negl	Negl	1	51	8	Negl	Negl	10	5	13	3	1	4	2
Petroleum products d/	11,040	0	0	0	0	0	17	74	2	0	2	0	1	2	0	2
Metals																
Nonferrous metals	1,880	7	Negl	0	0	18	6	2	0	18	30	2	14	Negl	2	1
Ferrous metals e/	26,908	1	0	0	0	57	3	2	3	6	18	10	Negl	Negl	Negl	0
Fabricated metals																
Shipbuilding	N.A.															
Bearings	156	0	0	0	0	0	0	0	0	100	0	0	0	0	0	0
Automotive equipment	3,630	2	0	0	0	8	0	0	8	71	11	0	0	0	0	0
Electrical equipment	N.A.															
Railroad equipment	1,175	7	0	3	0	18	26	0	4	41	0	1	0	0	0	0
Agricultural machinery	789	0	0	0	0	48	43	0	0	5	0	2	0	2	0	0
Machine tools and metalworking machinery	2,156	11	0	1	11	9	2	5	5	47	7	2	0	0	Negl	0
Chemicals f/	1,479	3	0	0	0	47	Negl	1	1	17	23	8	Negl	Negl	Negl	Negl
Construction materials g/	3,850	3	1	7	5	14	6	4	13	24	10	5	3	2	1	2
Forest products	45,122	10	13	5	5	4	1	Negl	2	24	18	5	1	Negl	6	6
Food products	46,835	1	1	2	1	45	8	1	4	21	2	2	2	9	Negl	1
Manufactured consumer goods	18,520	8	1	Negl	2	6	4	3	6	67	Negl	1	1	1	Negl	Negl
Defense Industry	5,939	15	0	0	0	5	8	0	14	29	27	2	0	0	0	0

* Footnotes for Table 12 follow on p. 111.

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Table 12
Regional Distribution of Soviet Production by Industry ^{a/}
1938
(Continued)

Commodity	Total Production ^{b/} (Million 1951 Rubles)	Percent of Total Value														
		Region														
		Ia	Ib	IIa	IIb	III	IV	V	VI	VII	VIII	IX	Xa	Xb	XI	XII
Agriculture																
Food crops and livestock	394,829	2	1	5	6	25	7	3	6	21	8	7	3	3	3	Negl
Industrial crops	10,907	1	1	1	2	5	5	9	2	8	2	2	4	58	Negl	Negl
Transportation																
Rail	18,739	4	2	Negl	3	27	4	3	6	20	9	7	3	4	4	4
Inland water	1,420	10	10	1	2	6	3	Negl	17	27	7	6	1	3	4	3
Communications ^{h/}																
Construction ^{i/}	2,813	4	1	2	2	23	4	3	4	36	7	5	2	4	2	1
Trade ^{j/}		3	1	3	4	25	6	4	6	24	8	6	3	4	2	1
Services ^{k/}		6	1	3	4	26	4	3	4	29	7	4	2	4	2	1
		4	2	3	4	24	5	4	6	24	7	5	3	5	3	1

- a. The regional distribution of industrial output was computed from Table 8 by aggregating the value of the output of each commodity in the industry and computing the regional distribution of the sum.
- b. Data represent the total market value (1951 prices) of the specific commodities included in the sample of the industry (see Table 8).
- c. The regional distribution is the same as that for 1937.
- d. The regional distribution is in proportion to the regional crude oil production.
- e. In addition to the commodities listed in Table 11, 5,300 million rubles of coke were produced, a total of 20 million metric tons; 14 million tons in Region III, 3 million tons in Region VIII, and 3 million tons in Region IX. Steel ingots and vanadium are excluded.
- f. Total production equals 9,880 million rubles of which only 1,505 could be distributed regionally.
- g. The regional groupings (I, II, III, VI, and VII); (IV and V); (VIII and IX); (Xa and Xb); and (XI and XII) are distributed among regions according to the 1948 distribution. In addition to the commodities listed in Tables 8-11, 114 million rubles of gypsum were produced, a total of 999,000 metric tons; 569,000 tons in Regions I, II, III, VI, and VII, 60,000 tons in IV and V, 240,000 tons in VIII and IX, 50,000 tons in Xa, and 80,000 tons in XI and XII.
- h. Data are for 1939.
- i. Distribution is the regional distribution of GNP, excluding construction.
- j. Data are for the average of the regional percentage distribution of population and nonagricultural employment.
- k. It is assumed that the regional distribution of service production is proportionate to that of the population. See Appendix B.

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Table 13

Regional Distribution of Soviet Production by Industry a/*
1948

Commodity	Total Production b/ (Million 1951 Rubles)	Percent of Total Value														
		Region														
		Ia	Ib	IIa	IIb	III	IV	V	VI	VII	VIII	IX	Xa	Xb	XI	XII
Manufacturing Industries																
Energy																
Electric power c/	16,104	9	1	1	1	16	1	7	3	23	23	7	3	2	2	1
Solid fuels	18,061	1	4	Negl	1	29	7	1	Negl	12	12	15	7	1	6	4
Petroleum products d/	10,975	0	1	0	0	1	14	47	11	0	12	0	2	9	0	3
Metals																
Nonferrous metals	4,323	5	Negl	0	0	3	3	1	0	28	38	4	14	2	1	1
Ferrous metals	28,902	2	0	0	0	28	2	3	1	6	41	13	2	Negl	2	Negl
Fabricated metals																
Shipbuilding	N.A.															
Bearings	324	0	0	0	0	3	0	Negl	27	61	1	8	0	0	0	0
Automotive equipment	4,560	1	0	0	Negl	7	0	0	9	58	21	4	0	0	0	0
Electrical equipment f/	458	38	0	2	Negl	23	Negl	8	Negl	16	7	3	1	1	1	Negl
Railroad equipment	1,633	5	0	5	0	9	22	1	1	32	12	1	0	0	12	0
Agricultural machinery	577	0	0	Negl	1	29	46	Negl	5	8	3	2	0	4	2	0
Machine tools and metalworking machinery g/	2,368	11	0	1	11	9	2	5	5	47	7	2	0	0	Negl	0
Chemicals h/	1,145	Negl	0	0	0	27	0	0	1	12	34	18	Negl	8	Negl	Negl
Construction materials i/	3,412	2	1	5	3	10	9	5	9	16	9	5	7	3	5	11
Forest products j/	47,497	8	12	6	5	4	1	Negl	2	25	17	7	1	Negl	7	5
Food products	89,622	3	Negl	4	2	28	5	3	6	22	5	5	6	9	2	Negl
Manufactured consumer goods	17,670	7	Negl	1	2	8	4	4	8	58	1	3	1	3	Negl	Negl
Defense industry k/	4,900	5	0	Negl	0	4	3	0	11	20	37	12	0	4	4	Negl

* Footnotes for Table 13 follow on p. 113.

S-E-C-R-E-T

S-E-C-R-E-T

Table 13
Regional Distribution of Soviet Production by Industry a/
1948
(Continued)

Commodity	Total Production b/ (Million 1951 Rubles)	Percent of Total Value														
		Region														
		Ia	Ib	IIa	IIb	III	IV	V	VI	VII	VIII	IX	Xa	Xb	XI	XII
Agriculture																
Food crops and livestock	318,603	2	1	5	5	23	6	3	6	21	8	7	5	4	4	Negl
Industrial crops	9,567	1	Negl	1	1	3	1	7	2	7	1	2	6	68	Negl	Negl
Transportation																
Rail	22,838	3	2	1	Negl	24	5	3	6	21	10	8	3	5	5	4
Inland water <u>l/</u>	1,296	10	10	1	2	6	3	Negl.	17	27	7	6	1	3	4	3
Communications																
Construction <u>m/</u>	2,980	4	1	2	3	24	3	3	4	34	8	5	2	4	2	1
Trade <u>n/</u>		4	1	3	3	21	5	4	6	23	10	7	4	5	3	1
Services <u>o/</u>		5	1	2	3	22	4	3	5	27	10	6	3	4	3	2
		4	2	3	4	23	5	4	6	24	7	5	3	5	3	2

- a. The regional distribution of industrial output was computed from Table 9, by aggregating the value of the output of each commodity in the industry and computing the regional distribution of the sum.
- b. Data represent total market value (1951 prices) of the specific commodities included in the sample of the industry (see Table 9).
- c. Data are for 1950.
- d. The regional distribution is assumed to be equal to that of crude oil production.
- e. In addition, 4,770 million rubles of coke were produced, a total of 18 million tons, of which 5 million tons came from Region III, 8 million from Region VIII, and 5 million from Region IX; steel ingots and vanadium are excluded.
- f. Data are in terms of million 1950 US dollars.
- g. Regional distribution is the same as that for 1951.
- h. Total production equals 8,520 million rubles, of which only 1,145 million could be distributed regionally. The regional distribution of sulfuric acid is available for all other years except 1948.
- i. In addition to the commodities listed in Table 9, 105 million rubles of gypsum were produced, a total of 924,000 metric tons, with the following distributions: Ia, 2 percent; Ib, 2 percent; IIa, 4 percent; IIb, 5 percent; III, 12 percent; IV, 12 percent; V, 7 percent; VI, 11 percent; VII, 17 percent; VIII, 11 percent; IX, 7 percent; Xa, 3 percent; Xb, 2 percent; XI, 3 percent; and XII, 2 percent.
- j. The total for Region II is distributed according to the breakdown for fuelwood.
- k. The total for Region X is divided equally between Xa and Xb.
- l. The regional distribution is assumed to be the same as that for 1953.
- m. Distribution is the regional distribution of GRP, excluding construction.
- n. Data are for the average of the regional percentage distribution of population and nonagricultural employment.
- o. It is assumed that the regional distribution of service production is proportionate to that of the population.

S-E-C-R-E-T

Table 14
Regional Distribution of Soviet Production by Industry a/*
1951.

Commodity	Total Production b/ (Million 1951 Rubles)	Percent of Total Value														
		Region														
		Ia	Ib	IIa	IIb	III	IV	V	VI	VII	VIII	IX	Xa	Xb	XI	XII
Manufacturing industries																
Energy																
Electric power <u>c</u> /	25,132	9	1	1	1	16	1	7	3	23	23	7	3	2	2	1
Solid fuels	24,267	1	4	Negl	1	33	6	1	Negl	12	11	15	6	1	5	4
Petroleum products <u>d</u> /	15,763	-	Negl	1	1	0	1	25	41	9	3	10	Negl	1	5	Negl 3
Metals																
Nonferrous metals	5,945	4	Negl	0	0	6	2	3	0	14	36	15	16	2	1	1
Ferrous metals <u>e</u> /	47,892	2	0	1	0	39	2	3	1	6	32	10	2	Negl	2	Negl
Fabricated metals																
Shipbuilding <u>f</u> /	1,415	46	4	2	Negl	20	Negl	Negl	4	14	1	Negl	Negl	Negl	Negl	9
Bearings	618	0	0	0	0	6	0	1	25	60	1	7	0	0	0	0
Automotive equipment	8,500	1	0	0	3	7	0	Negl	7	65	14	3	0	0	0	0
Electrical equipment <u>g</u> /	820	39	0	2	Negl	24	Negl	8	Negl	15	7	4	Negl	1	Negl	Negl
Railroad equipment	2,357	9	0	9	0	26	8	1	1	35	10	1	0	0	0	0
Agricultural machinery	1,934	0	Negl	1	1	25	31	Negl	10	11	4	4	1	6	6	0
Machine tools and metalworking machinery	3,280	11	0	1	11	9	2	5	5	47	7	2	0	0	Negl	0
Chemicals <u>h</u> /	2,889	3	Negl	1	0	38	Negl	1	1	14	25	9	1	7	Negl	Negl
Construction materials <u>i</u> /	6,221	2	2	5	3	9	9	5	9	16	9	5	6	3	6	11
Forest products <u>j</u> /	54,430	9	13	4	4	4	1	Negl	2	22	18	7	1	Negl	8	7
Food products	140,703	3	1	5	3	26	6	2	5	23	5	5	6	7	3	Negl
Manufactured consumer goods	26,919	6	Negl	Negl	2	8	5	4	9	57	1	4	1	3	Negl	Negl
Defense industry <u>k</u> /	6,818	4	0	1	0	6	4	0	13	17	30	15	0	6	3	1

* Footnotes for Table 14 follow on p. 115.

S-E-C-R-E-T

S-E-C-R-E-T

Table 14
Regional Distribution of Soviet Production by Industry a/
1951
(Continued)

Commodity	Total Production b/ (Million 1951 Rubles)	Percent of Total Value														
		Region														
		Ia	Ib	IIa	IIb	III	IV	V	VI	VII	VIII	IX	Xa	Xb	XI	XII
Agriculture																
Food crops and livestock	351,295	2	1	4	5	23	7	3	6	20	8	7	5	4	4	1
Industrial crops	13,416	1	1	1	1	3	3	9	2	6	1	1	5	66	Negl	Negl
Transportation																
Rail	33,428	3	2	1	Negl	26	5	3	6	19	10	8	3	5	5	4
Inland water l/	2,040	10	10	1	2	6	3	Negl	17	27	7	6	1	3	4	3
Communications	3,812	4	1	2	3	23	3	3	4	33	8	6	2	4	2	2
Construction m/		4	1	3	3	21	6	3	6	22	10	7	4	5	3	2
Trade n/		6	1	3	3	22	4	3	5	27	9	5	3	4	3	2
Services o/		4	2	3	4	23	5	4	6	24	7	5	3	5	3	2

a. The regional distribution of industrial output was computed from Table 10 by aggregating the value of the output of each commodity in the industry and computing the regional distribution of the sum.

b. The total market value (1951 prices) of the specific commodities is included in the sample of the industry (Table 9).

c. Data are for 1950.

d. The regional distribution is in proportion to the distribution of refining capacity.

e. In addition to those commodities listed in Table 10, 7,685 million rubles of coke were produced, a total of 29 million tons, of which 14 million tons came from Region III, 10 million from VIII, 5 million from IX; steel ingots and vanadium are excluded.

f. Data are in millions of 1951 US dollars; the 1954 regional distribution is weighted according to value; merchant shipbuilding includes maritime and fishing ships produced, in addition to those shown in Table 10.

g. Data are in millions of 1950 US dollars.

h. The total output of 12,858 million rubles could not be entirely allocated.

i. In addition to the commodities listed in Table 10, 190 million rubles of gypsum were produced, a total of 1,736,000 metric tons; 2 percent in Region Ia; 2 percent in Ib; 4 percent in IIa; 5 percent in IIb; 12 percent in III; 11 percent in IV; 6 percent in V; 11 percent in VI; 17 percent

S-E-C-R-E-T

Table 14
Regional Distribution of Soviet Production by Industry a/
1951
(Continued)

-
- VII; 10 percent in VIII; 8 percent in IX; 3 percent in Xa; 2 percent in Xb; 3 percent in XI; and 4 percent in XII.
 - J. The total for Region II is divided between two parts according to their relative output of fuelwood.
 - k. The total for Region X is divided equally between Regions Xa and Xb.
 - l. The distribution is assumed to be the same as in 1953.
 - m. Distribution is the regional distribution of GNP excluding construction.
 - n. Data are for the average of the regional percentage distribution of population and nonagricultural employment.
 - o. It is assumed that the regional distribution of service production is proportionate to that of the population.

S-E-C-R-E-T

Table 15

Regional Distribution of Soviet Production by Industry a/*
1953

Commodity	Total Production b/ (Million 1951 Rubles)	Percent of Total Value														
		Region														
		Ia	Ib	IIa	IIb	III	IV	V	VI	VII	VIII	IX	Xa	Xb	XI	XII
Manufacturing industries																
Energy																
Electric power	32,452	9	1	1	1	16	1	7	3	23	23	7	3	2	2	1
Solid fuels	27,030	1	4	Negl	1	34	6	1	Negl	10	12	15	6	1	5	4
Petroleum products	19,703	Negl	1	1	0	1	20	33	16	3	16	Negl	1	6	Negl	2
Metals																
Nonferrous metals	9,853	4	2	0	0	5	2	4	Negl	8	35	11	18	2	4	5
Ferrous metals	78,705	3	0	Negl	0	34	3	1	3	7	36	8	2	0	2	1
Fabricated metals																
Shipbuilding c/	1,245	45	4	2	Negl	21	Negl	Negl	4	14	1	Negl	Negl	Negl	Negl	9
Bearings	834	0	0	0	0	7	0	Negl	26	59	1	7	0	0	0	0
Automotive equipment	10,740	0	0	0	6	6	0	1	6	64	13	4	0	0	0	0
Electrical equipment d/	1,083	39	0	2	Negl	23	2	6	Negl	17	6	4	0	1	Negl	Negl
Railroad equipment	4,009	5	0	8	0	26	8	Negl	2	38	12	1	0	0	0	0
Agricultural machinery	957	0	Negl	1	2	28	27	Negl	9	10	4	6	1	8	4	0
Machine tools and metalworking machinery	3,520	11	0	1	11	9	2	5	5	47	7	2	0	0	Negl	0
Chemicals																
Construction materials e/	3,465	3	Negl	0	0	33	1	2	2	17	26	8	1	6	1	Negl
Forest products	9,282	2	2	4	4	9	10	6	8	17	8	5	6	3	6	10
Food products	56,623	9	13	7	3	2	1	Negl	1	23	19	7	Negl	1	7	7
Manufactured consumer goods	164,533	3	1	5	3	26	6	2	5	23	5	5	6	7	3	Negl
Defense industry	28,907	6	Negl	Negl	2	9	5	4	9	56	1	4	1	3	Negl	Negl
	10,048	4	0	1	0	6	4	0	13	17	31	14	0	5	4	1

* Footnotes for Table 15 follow on p. 118.

S-E-C-R-E-T

S-E-C-R-E-T

Table 15
Regional Distribution of Soviet Production by Industry a/
1953
(Continued)

Commodity	Total Production b/ (Million 1951 Rubles)	Percent of Total Value														
		Region														
		Ia	Ib	IIa	IIb	III	IV	V	VI	VII	VIII	IX	Xa	Xb	XI	XII
Agriculture																
Food crops and livestock	359,880	2	1	4	5	23	7	3	6	20	8	7	5	4	4	1
Industrial crops	13,717	1	1	1	1	4	5	10	2	6	1	1	6	61	Negl	Negl
Transportation																
Rail	42,212	3	2	1	Negl	25	5	3	6	19	10	8	3	6	5	4
Inland water	2,472	10	10	1	2	6	3	Negl	17	27	7	6	1	3	4	3
Communications	4,071	4	1	2	3	23	3	3	4	33	8	6	2	4	2	2
Construction z/		4	2	3	3	20	6	3	6	22	10	7	4	5	3	2
Trade g/		6	1	3	3	22	4	3	5	26	9	6	3	4	3	2
Services h/		3	3	3	4	23	5	4	5	23	7	6	3	6	3	2

a. The regional distribution of industrial output was computed from Table 11 by aggregating the value of the output of each commodity in the industry and computing the regional distribution of the sum.
 b. The total market value (1951 prices) of the specific commodities is included in the sample of the industry (Table 11).
 c. Data are in millions of 1951 US dollars; the 1954 regional distribution is weighted according to value; merchant shipbuilding includes maritime and fishing ships in addition to those shown in Table 11.
 d. Data are in million 1950 US dollars.
 e. In addition to the commodities listed in Table 11, 1,096 million rubles of flat glass were produced, a total of 97 million square meters: 3 percent in Region Ia; 12 percent in IIb; 15 percent in III; 15 percent in IV; 8 percent in V; 3 percent in VI; 25 percent in VII; 5 percent in VIII; 5 percent in Xa; 4 percent in Xb; and 5 percent in XI.
 f. Distribution is the regional distribution of GNP excluding construction.
 g. Data are for the average of the regional percentage distribution of population and nonagricultural employment.
 h. It is assumed that the regional distribution of service production is proportionate to that of the population.

S-E-C-R-E-T

S-E-C-R-E-T

Table 16
Regional Distribution of Soviet Production, Value Added by Industry a/*
1938

Million 1951 Rubles

Commodity	Total Value Added	Region														
		Ia.	Ib	IIa	IIb	III	IV	V	VI	VII	VIII	IX	Xa	Xb	XI	XII
Manufacturing industries																
Energy																
Electric power	5,400	648	54	0	54	1,512	270	432	162	1,674	486	54	Negl	54	Negl	Negl
Solid fuels	16,100	322	Negl	Negl	161	8,211	1,288	Negl	Negl	1,610	805	2,093	483	161	644	322
Petroleum products	9,900	0	0	0	0	0	1,683	7,326	198	0	198	0	99	198	0	198
Metals																
Nonferrous metals	3,800	266	Negl	0	0	684	228	76	0	684	1,140	76	532	Negl	76	38
Ferrous metals	14,500	145	0	0	0	8,265	435	290	435	870	2,610	1,450	Negl	Negl	Negl	0
Fabricated metals																
Shipbuilding	4,100	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
Bearings	100	0	0	0	0	0	0	0	0	100	0	0	0	0	0	0
Automotive equipment	12,200	244	0	0	0	976	0	0	976	8,662	1,342	0	0	0	0	0
Electrical equipment	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
Railroad equipment	5,800	406	0	174	0	1,044	1,508	0	232	2,378	0	58	0	0	0	0
Agricultural machinery	1,800	0	0	0	0	864	774	0	0	90	0	36	0	36	0	0
Machine tools and metalworking machinery	2,300	253	0	23	253	207	46	115	115	1,081	161	46	0	0	Negl	0
Chemicals																
Chemicals	5,400	162	0	0	0	2,538	Negl	54	54	918	1,242	432	Negl	Negl	Negl	Negl
Construction materials	6,900	207	69	483	345	966	414	276	897	1,656	690	345	207	138	69	138
Forest products	14,500	1,450	1,885	725	725	580	145	Negl	290	3,480	2,610	725	145	Negl	870	870
Food products	48,900	489	489	978	489	22,005	3,912	489	1,956	10,269	978	978	978	4,401	Negl	489
Manufactured consumer goods	19,100	1,528	191	Negl	382	1,146	764	573	1,146	12,797	Negl	191	191	191	Negl	Negl
Defense industry	12,200	1,830	0	0	0	610	976	0	1,708	3,538	3,294	244	0	0	0	0

* Footnote for Table 16 follows on p. 120.

S-E-C-R-E-T

Table 16
Regional Distribution of Soviet Production, Value Added by Industry a/
1938
(Continued)

Commodity	Total Value Added	Region														
		Ia	Ib	IIa	IIb	III	IV	V	VI	VII	VIII	IX	Xa	Xb	XI	XII
Agriculture																
Food crops and livestock	330,800	6,616	3,308	16,540	19,848	82,700	23,156	9,924	19,848	69,468	26,464	23,156	9,924	9,924	9,924	Negl
Industrial crops	10,700	107	107	107	214	535	535	963	214	856	214	214	428	6,206	Negl	Negl
Transportation																
Rail	39,000	1,560	780	Negl	1,170	10,530	1,560	1,170	2,340	7,800	3,510	2,730	1,170	1,560	1,560	1,560
Inland water	3,000	300	300	30	60	180	90	Negl	510	810	210	180	30	90	120	90
Communications																
Construction	3,800	152	38	76	76	874	152	114	152	1,368	266	190	76	152	76	38
Trade	37,400	1,122	374	1,122	1,496	9,350	2,244	1,496	2,244	8,976	2,992	2,244	1,122	1,496	748	374
Services	26,000	1,560	260	780	1,040	6,760	1,040	780	1,040	7,540	1,820	1,040	520	1,040	520	260
	126,800	5,072	2,536	3,804	5,072	30,432	6,340	5,072	7,608	30,432	8,876	6,340	3,804	6,340	3,804	1,268

a. Data are derived from Table 12 by applying the percentage distribution of an industrial output to the value added by that industry for the entire country.

S-E-C-R-E-T

S-E-C-R-E-T

Table 17
Regional Distribution of Soviet Production, Value Added by Industry a/*
1948

Commodity	Total Value Added	Region														
		Ia	Ib	IIa	IIb	III	IV	V	VI	VII	VIII	IX	Xa	Xb	XI	XII
Manufacturing industries																
Energy																
Electric power	7,600	684	76	76	76	1,216	76	532	228	1,748	1,748	532	228	152	152	76
Solid fuels	23,500	235	940	Negl	235	6,815	1,645	235	Negl	2,820	2,820	3,525	1,645	235	1,410	940
Petroleum products	9,200	0	92	0	0	92	1,288	4,324	1,012	0	1,104	0	184	828	0	276
Metals																
Nonferrous metals	9,200	460	Negl	0	0	276	276	92	0	2,576	3,496	368	1,288	184	92	92
Ferrous metals	14,300	286	0	0	0	4,004	286	429	143	858	5,863	1,859	286	Negl	286	Negl
Fabricated metals																
Shipbuilding	3,200	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
Bearings	200	0	0	0	0	6	0	Negl	54	122	2	16	0	0	0	0
Automotive equipment	10,500	105	0	0	Negl	735	0	0	945	6,090	2,205	420	0	0	0	0
Electrical equipment	7,200	2,736	0	144	Negl	1,656	Negl	576	Negl	1,152	504	216	72	72	72	Negl
Railroad equipment	7,100	355	0	355	0	639	1,562	71	71	2,272	852	71	0	0	852	0
Agricultural machinery	1,900	0	0	Negl	19	551	874	Negl	95	152	57	38	0	76	38	0
Machine tools and metalworking machinery	2,100	231	0	21	231	189	42	105	105	987	147	42	0	0	Negl	0
Chemicals	7,600	Negl	0	0	0	2,052	0	0	76	912	2,584	1,368	Negl	608	Negl	Negl
Construction materials	5,900	118	59	295	177	590	531	295	531	944	531	295	413	177	295	649
Forest products	23,500	1,880	2,820	1,410	1,175	940	235	Negl	470	5,875	3,995	1,645	235	Negl	1,645	1,175
Food products	39,400	1,182	Negl	1,576	788	11,032	1,970	1,182	2,364	8,668	1,970	1,970	2,364	3,546	788	Negl
Manufactured consumer goods	18,400	1,288	Negl	184	368	1,472	736	736	1,472	10,672	184	552	184	552	804	Negl
Defense industry	20,100	1,005	0	Negl	0	804	603	0	2,211	4,020	7,437	2,412	0	804	804	Negl

* Footnote for Table 17 follows on p. 122.

S-E-C-R-E-T

S-E-C-R-E-T

Table 17
Regional Distribution of Soviet Production, Value Added by Industry a/
1948
(Continued)

Commodity	Total Value Added	Region														
		Ia	Ib	IIa	IIb	III	IV	V	VI	VII	VIII	IX	Xa	Xb	XI	XII
Agriculture																
Food crops and livestock	280,200	5,604	2,802	14,010	14,010	64,446	16,812	8,406	16,812	58,842	22,416	19,614	14,010	11,208	11,208	Negl
Industrial crops	10,100	101	Negl	101	101	303	101	707	202	707	101	202	606	6,868	Negl	Negl
Transportation																
Rail	48,700	1,461	974	487	Negl	11,688	2,435	1,461	2,922	10,227	4,870	3,896	1,461	2,435	2,435	1,948
Inland water	2,500	250	250	25	50	150	75	Negl	425	675	175	150	25	75	100	75
Communications																
Construction	51,200	2,048	512	1,536	1,536	10,752	2,560	2,048	3,072	11,776	5,120	3,584	2,048	2,560	1,536	512
Trade	40,300	2,015	403	806	1,209	8,866	1,612	1,209	2,015	10,881	4,030	2,418	1,209	1,612	1,209	806
Services	182,000	7,280	3,640	5,460	7,280	41,860	9,100	7,280	10,920	43,680	12,740	9,100	5,460	9,100	5,460	3,640

a. Data are derived from Table 13 by applying the percentage distribution of an industrial output to the value added by that industry for the entire country.

S-E-C-R-E-T

S-E-C-R-E-T

Table 18
Regional Distribution of Soviet Production, Value Added by Industry a/*
1951

Commodity	Total Value Added	Region														
		Ia	Ib	IIa	IIb	III	IV	V	VI	VII	VIII	IX	Xa	Xb	XI	XII
Manufacturing industries																
Energy																
Electric power	12,900	1,161	129	129	129	2,064	129	903	387	2,967	2,967	903	387	387	258	129
Solid fuels	33,400	334	1,336	Negl	334	11,022	2,004	334	Negl	4,008	3,674	5,010	2,004	334	1,670	1,336
Petroleum products	14,000	Negl	140	140	0	140	3,500	5,740	1,260	420	1,400	Negl	140	700	Negl	420
Metals																
Nonferrous metals	12,900	516	Negl	0	0	774	258	387	0	1,806	4,644	1,935	2,064	258	129	129
Ferrous metals	24,800	496	0	248	0	9,672	496	744	248	1,488	7,936	2,480	496	Negl	496	Negl
Fabricated metals																
Shipbuilding	3,500	1,610	140	70	Negl	700	Negl	Negl	140	490	35	Negl	Negl	Negl	Negl	315
Bearings	300	0	0	0	0	18	0	3	75	180	3	21	0	0	0	0
Automotive equipment	20,700	207	0	0	621	1,449	0	Negl	1,449	13,455	2,898	621	0	0	0	0
Electrical equipment	13,700	5,343	0	274	Negl	3,288	Negl	1,096	Negl	2,055	959	548	Negl	137	Negl	Negl
Railroad equipment	13,300	1,197	0	1,197	0	3,458	1,064	133	133	4,655	1,330	133	0	0	0	0
Agricultural machinery	6,800	0	Negl	68	68	1,700	2,108	Negl	680	748	272	272	68	408	408	0
Machine tools and metalworking machinery	3,400	374	0	34	374	306	68	170	170	1,598	238	68	0	0	Negl	0
Chemicals	11,800	354	Negl	118	0	4,484	Negl	118	118	1,652	2,950	1,062	118	826	Negl	Negl
Construction materials	11,800	236	236	590	354	1,062	1,062	590	1,062	1,888	1,062	590	708	354	708	1,298
Forest products	25,800	2,322	3,354	1,032	1,032	1,032	258	Negl	516	5,676	4,644	1,806	258	Negl	2,064	1,806
Food products	49,500	1,485	495	2,475	1,485	12,870	2,970	990	2,475	11,385	2,475	2,475	2,970	3,465	1,485	Negl
Manufactured consumer goods	36,600	2,196	Negl	Negl	732	2,928	1,830	1,464	3,294	20,862	366	1,464	366	1,098	Negl	Negl
Defense industry	44,100	1,764	0	441	0	2,646	1,764	0	5,733	7,497	13,230	6,615	0	2,646	1,323	441

* Footnote for Table 18 follows on p. 124.

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Table 18
Regional Distribution of Soviet Production, Value Added by Industry a/
1951
(Continued)

Commodity	Total Value Added	Region														
		Ia	Ib	IIa	IIb	III	IV	V	VI	VII	VIII	IX	Xa	Xb	XI	XII
Agriculture																
Food crops and livestock	302,300	6,046	3,023	12,092	15,115	69,529	21,161	9,069	18,138	60,460	24,184	21,161	15,115	12,092	12,092	3,023
Industrial crops	14,000	140	140	140	140	420	420	1,260	280	840	140	140	700	9,240	Negl	Negl
Transportation																
Rail	71,000	2,130	1,420	710	Negl	18,460	3,550	2,130	4,260	13,490	7,100	5,680	2,130	3,550	3,550	2,840
Inland water	4,300	430	430	43	86	258	129	Negl	731	1,161	301	258	43	129	172	129
Communications	9,700	388	97	194	291	2,231	291	291	388	3,201	776	582	194	388	194	194
Construction	75,300	3,012	753	2,259	2,259	15,813	4,518	2,259	4,518	16,566	7,530	5,271	3,012	3,765	2,259	1,506
Trade	44,100	2,646	441	1,323	1,323	9,702	1,764	1,323	2,205	11,907	3,969	2,205	1,323	1,764	1,323	882
Services	206,600	8,264	4,132	6,198	8,264	47,518	10,330	8,264	12,396	49,584	14,462	10,330	6,198	10,330	6,198	4,132

a. Data are derived from Table 14 by applying the percentage distribution of an industrial output to the value added by that industry for the entire country.

S-E-C-R-E-T

Table 19
Regional Distribution of Soviet Production, Value Added by Industry a/*
1953

Million 1951 Rubles

Commodity	Total Value Added	Region														
		Ia	Ib	IIa	IIb	III	IV	V	VI	VII	VIII	IX	Xa	Xb	XI	XII
Manufacturing industries																
Energy																
Electric power	15,700	1,413	157	157	157	2,512	157	1,099	471	3,611	3,611	1,099	471	314	314	157
Solid fuels	36,100	361	1,444	Negl	361	12,274	2,166	361	Negl	3,610	4,332	5,415	2,166	361	1,805	1,444
Petroleum products	18,100	Negl	181	181	0	181	3,620	5,973	2,896	543	2,896	Negl	181	1,086	Negl	362
Metals																
Nonferrous metals	16,900	676	338	0	0	845	338	676	Negl	1,352	5,915	1,859	3,042	338	676	845
Ferrous metals	30,100	903	0	Negl	0	10,234	903	301	903	2,107	10,836	2,408	602	0	602	301
Fabricated metals																
Shipbuilding	4,100	1,845	164	82	Negl	861	Negl	Negl	164	574	41	Negl	Negl	Negl	Negl	369
Bearings	400	0	0	0	0	28	0	Negl	104	236	4	28	0	0	0	0
Automotive equipment	21,800	0	0	0	1,308	1,308	0	218	1,308	13,952	2,834	872	0	0	0	0
Electrical equipment	18,200	7,098	0	364	Negl	4,186	364	1,092	Negl	3,094	1,092	728	0	182	Negl	Negl
Railroad equipment	14,900	745	0	1,192	0	3,874	1,192	Negl	298	5,662	1,788	149	0	0	0	0
Agricultural machinery	7,900	0	Negl	79	158	2,212	2,133	Negl	711	790	316	474	79	632	316	0
Machine tools and metalworking machinery	4,000	440	0	40	440	360	80	200	200	1,880	280	80	0	0	Negl	0
Chemicals																
Chemicals	14,500	435	Negl	0	0	4,785	145	290	290	2,465	3,770	1,160	145	870	145	Negl
Construction materials	15,700	314	314	628	628	1,413	1,570	942	1,256	2,669	1,256	785	942	471	942	1,570
Forest products	27,700	2,493	3,601	1,939	831	554	277	Negl	277	6,371	5,263	1,939	Negl	277	1,939	1,939
Food products	55,400	1,662	554	2,770	1,662	14,404	3,324	1,108	2,770	12,742	2,770	2,770	3,324	3,878	1,662	Negl
Manufactured consumer goods	44,600	2,676	Negl	Negl	892	4,014	2,230	1,784	4,014	24,976	446	1,784	446	1,338	Negl	Negl
Defense industry	56,600	2,264	0	566	0	3,396	2,264	0	7,358	9,622	17,546	7,924	0	2,830	2,264	566

* Footnote for Table 19 follows on p. 126.

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Table 19
Regional Distribution of Soviet Production, Value Added by Industry a/
1953
(Continued)

Million 1951 Rubles

Commodity	Total Value Added	Region														
		Ia	Ib	IIa	IIb	III	IV	V	VI	VII	VIII	IX	Xa	Xb	XI	XII
Agriculture																
Food crops and livestock	313,300	6,266	3,133	12,532	15,665	72,059	21,931	9,399	18,798	62,660	25,064	21,931	15,665	12,532	12,532	3,133
Industrial crops	14,500	145	145	145	145	580	725	1,450	290	870	145	145	870	8,845	Negl	Negl
Transportation																
Rail	83,200	2,496	1,664	832	Negl	20,800	4,160	2,496	4,992	15,808	8,320	6,656	2,496	4,992	4,160	3,328
Inland water	4,800	480	480	48	96	288	144	Negl	816	1,296	336	288	48	144	192	144
Communications																
Construction	12,000	480	120	240	360	2,760	360	360	480	3,960	960	720	240	480	240	240
Trade	85,600	3,424	1,712	2,568	2,568	17,120	5,136	2,568	5,136	18,832	8,560	5,992	3,424	4,280	2,568	1,712
Services	48,200	2,892	482	1,446	1,446	10,604	1,928	1,446	2,410	12,532	4,338	2,892	1,446	1,928	1,446	964
	228,900	6,867	6,867	6,867	9,156	52,647	11,445	9,156	11,445	52,647	16,023	13,734	6,867	13,734	6,867	4,578

a. Data are derived from Table 15 by applying the percentage distribution of an industrial output to the value added by that industry for the entire country.

S-E-C-R-E-T

Table 20
Regional Distribution of Soviet Production, Value Added by Major Industrial Group
1938

Industry	Total Value Added by Production (Million 1951 Rubles)	Region														
		Ia	Ib	IIa	IIb	III	IV	V	VI	VII	VIII	IX	Xa	Xb	XI	XII
Energy																
Value added (million rubles)	31,400	970	54	Negl	215	9,723	3,241	7,758	360	3,284	1,489	2,147	582	413	644	520
Percent of value added		3	Negl	Negl	Negl	31	10	25	1	11	5	7	2	1	2	2
Metals																
Value added (million rubles)	18,300	411	Negl	0	0	8,949	663	366	435	1,554	3,750	1,526	532	Negl	76	38
Percent of value added		2	Negl	0	0	49	4	2	2	9	21	8	3	Negl	Negl	Negl
Fabricated metals																
Value added (million rubles)	26,700	1,068	0	267	267	3,738	2,670	267	1,602	14,685	1,869	267	0	Negl	Negl	0
Percent of value added a/*		4	0	1	1	14	10	1	6	55	7	1	0	Negl	Negl	0
Chemicals																
Value added (million rubles)	5,400	162	0	0	0	2,538	Negl	54	54	918	1,242	432	Negl	Negl	Negl	Negl
Percent of value added		3	0	0	0	47	Negl	1	1	17	23	8	Negl	Negl	Negl	Negl
Construction materials																
Value added (million rubles)	6,900	207	69	483	345	966	414	276	897	1,656	690	345	207	138	69	138
Percent of value added		3	1	7	5	14	6	4	13	24	10	5	3	2	1	2

* Footnote for Table 20 follows on p. 130.

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Table 20
Regional Distribution of Soviet Production, Value Added by Major Industrial Group
1938
(Continued)

Industry (Continued)	Total Value Added by Production (Million 1951 Rubles)	Region														
		Ia	Ib	IIa	IIb	III	IV	V	VI	VII	VIII	IX	Xa	Xb	XI	XII
Forest products																
Value added (million rubles)	14,500	1,450	1,885	725	725	580	145	Negl	290	3,480	2,610	725	145	Negl	870	870
Percent of value added		10	13	5	5	4	1	Negl	2	24	18	5	1	Negl	6	6
Food products																
Value added (million rubles)	48,900	489	489	978	489	22,005	3,912	489	1,956	10,269	978	978	978	4,401	Negl	489
Percent of value added		1	1	2	1	45	8	1	4	21	2	2	2	9	Negl	1
Manufactured consumer goods																
Value added (million rubles)	19,100	1,528	191	Negl	382	1,146	764	573	1,146	12,797	Negl	191	191	191	Negl	Negl
Percent of value added		8	1	Negl	2	6	4	3	6	67	Negl	1	1	1	Negl	Negl
Defense industry																
Value added (million rubles)	12,200	1,830	0	0	0	610	976	0	1,708	3,538	3,294	244	0	0	0	0
Percent of value added		15	0	0	0	5	8	0	14	29	27	2	0	0	0	0
Subtotal value added by industry (million rubles)	183,400	8,115	2,688	2,453	2,423	50,255	12,785	9,783	8,448	52,181	15,922	6,855	2,635	5,143	1,659	2,055
Percent of value added		4	1	1	1	27	7	5	5	29	9	4	1	3	1	1

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Table 20
Regional Distribution of Soviet Production, Value Added by Major Industrial Group
1938
(Continued)

	Total Value Added by Production (Million 1951 Rubles)	Region														
		Ia	Ib	IIa	IIb	III	IV	V	VI	VII	VIII	IX	Xa	Xb	XI	XII
Agriculture																
Value added (million rubles)	341,500	6,723	3,415	16,647	20,062	83,235	23,691	10,887	20,062	70,324	26,678	23,370	10,352	16,130	9,924	Negl
Percent of value added		2	1	5	6	24	7	3	6	20	8	7	3	5	3	Negl
Transportation																
Value added (million rubles)	45,100	1,804	902	Negl	1,353	11,726	1,804	1,353	3,157	9,020	4,059	3,157	1,353	1,804	1,804	1,804
Percent of value added		4	2	Negl	3	26	4	3	7	20	9	7	3	4	4	4
Communications																
Value added (million rubles)	3,800	152	38	76	76	874	152	114	152	1,368	266	190	76	152	76	38
Percent of value added		4	1	2	2	23	4	3	4	36	7	5	2	4	2	1
Trade																
Value added (million rubles)	26,000	1,560	260	780	1,040	6,760	1,040	780	1,040	7,540	1,820	1,040	520	1,040	520	260
Percent of value added		6	1	3	4	26	4	3	4	29	7	4	2	4	2	1
Services																
Value added (million rubles)	126,800	5,072	2,536	3,804	5,072	30,432	6,340	5,072	7,608	30,432	8,876	6,340	3,804	6,340	3,804	1,268
Percent of value added		4	2	3	4	24	5	4	6	24	7	5	3	5	3	1

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Table 20
Regional Distribution of Soviet Production, Value Added by Major Industrial Group
1938
(Continued)

	Total Value Added by Production (Million 1951 Rubles)	Region														
		Ia	Ib	IIa	IIb	III	IV	V	VI	VII	VIII	IX	Xa	Xb	XI	XII
Construction																
Value added (million rubles)	37,400	1,122	374	1,122	1,496	9,350	2,244	1,496	2,244	8,976	2,992	2,244	1,122	1,496	748	374
Percent of value added		3	1	3	4	25	6	4	6	24	8	6	3	4	2	1
Total value added (gross national product) (million rubles)	764,000	24,548	10,213	24,882	31,522	192,632	48,056	29,485	42,711	179,841	60,613	43,196	19,862	32,105	18,535	5,799
Percent of value added		3	1	3	4	25	6	4	6	24	8	6	3	4	2	1

a. In certain cases, not all of the total value added could be distributed. The balance was distributed in the same proportions. The amounts that could be distributed in these cases were as follows: fabricated metals, 22.2 billion rubles; and transportation, 42 billion rubles.

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Table 21
Regional Distribution of Soviet Production, Value Added by Major Industrial Group
1948

Industry	Total Value Added by Production (Million 1951 Rubles)	Region														
		Ia	Ib	IIa	IIb	III	IV	V	VI	VII	VIII	IX	Xa	Xb	XI	XII
Energy																
Value added (million rubles)	40,300	919	1,108	76	311	8,123	3,009	5,091	1,240	4,568	5,672	4,057	2,057	1,215	1,562	1,292
Percent of value added		2	3	Negl	1	20	8	13	3	11	14	10	5	3	4	3
Metals																
Value added (million rubles)	23,500	746	Negl	0	0	4,280	562	521	143	3,434	9,359	2,227	1,574	184	378	92
Percent of value added		3	Negl	0	0	18	2	2	1	15	40	9	7	1	2	Negl
Fabricated metals																
Value added (million rubles)	33,600	4,032	0	672	336	4,368	3,024	1,008	1,344	12,432	4,368	1,008	Negl	Negl	1,008	Negl
Percent of value added a/*		12	0	2	1	13	9	3	4	37	13	3	Negl	Negl	3	Negl
Chemicals																
Value added (million rubles)	7,600	Negl	0	0	0	2,052	0	0	76	912	2,584	1,368	Negl	608	Negl	Negl
Percent of value added		Negl	0	0	0	27	0	0	1	12	34	18	Negl	8	Negl	Negl
Construction materials																
Value added (million rubles)	5,900	118	59	295	177	590	531	295	531	944	531	295	413	177	295	649
Percent of value added		2	1	5	3	10	9	5	9	16	9	5	7	3	5	11

* Footnote for Table 21 follows on p. 134.

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Table 21
Regional Distribution of Soviet Production, Value Added by Major Industrial Group
1948
(Continued)

Industry (Continued)	Total Value Added by Production (Million 1951 Rubles)	Region														
		Ia	Ib	IIa	IIb	III	IV	V	VI	VII	VIII	IX	Xa	Xb	XI	XII
Forest products																
Value added (million rubles)	23,500	1,880	2,820	1,410	1,175	940	235	Negl	470	5,875	3,995	1,645	235	Negl	1,645	1,175
Percent of value added		8	12	6	5	4	1	Negl	2	25	17	7	1	Negl	7	5
Food products																
Value added (million rubles)	39,400	1,182	Negl	1,576	788	11,032	1,970	1,182	2,364	8,668	1,970	1,970	2,364	3,546	788	Negl
Percent of value added		3	Negl	4	2	28	5	3	6	22	5	5	6	9	2	Negl
Manufactured consumer goods																
Value added (million rubles)	18,400	1,288	Negl	184	368	1,472	736	736	1,472	10,672	184	552	184	552	Negl	Negl
Percent of value added		7	Negl	1	2	8	4	4	8	58	1	3	1	3	Negl	Negl
Defense industry																
Value added (million rubles)	20,100	1,005	0	Negl	0	804	603	0	2,211	4,020	7,437	2,412	0	804	804	Negl
Percent of value added		5	0	Negl	0	4	3	0	11	20	37	12	0	4	4	Negl
Subtotal value added by industry (million rubles)	212,300	11,170	3,987	4,213	3,155	33,661	10,670	8,833	9,851	51,525	36,100	15,534	6,827	7,086	6,480	3,208
Percent of value added		5	2	2	1	16	5	4	5	25	17	7	3	3	3	2

S-E-C-R-E-T

S-E-C-R-E-T

Table 21
Regional Distribution of Soviet Production, Value Added by Major Industrial Group
1948
(Continued)

	Total Value Added by Production (Million 1951 Rubles)	Region														
		Ia	Ib	IIa	IIb	III	IV	V	VI	VII	VIII	IX	Xa	Xb	XI	XII
Agriculture																
Value added (million rubles)	290,300	5,705	2,802	14,111	14,111	64,749	16,913	9,113	17,014	59,549	22,517	19,816	14,616	18,076	11,208	Negl
Percent of value added		2	1	5	5	22	6	3	6	20	8	7	5	6	4	Negl
Transportation																
Value added (million rubles)	5,400	1,662	1,108	554	Negl	12,742	2,770	1,662	3,878	11,634	5,540	4,432	1,662	2,770	2,770	2,216
Percent of value added a/		3	2	1	Negl	23	5	3	7	21	10	8	3	5	5	4
Communications																
Value added (million rubles)	7,500	300	75	150	225	1,800	225	225	300	2,550	600	375	150	300	150	75
Percent of value added		4	1	2	3	24	3	3	4	34	8	5	2	4	2	1
Trade																
Value added (million rubles)	40,300	2,015	403	806	1,209	8,866	1,612	1,209	2,015	10,881	4,030	2,418	1,209	1,612	1,209	806
Percent of value added		5	1	2	3	22	4	3	5	27	10	6	3	4	3	2
Services																
Value added (million rubles)	182,000	7,280	3,640	5,460	7,280	41,860	9,100	7,280	10,920	43,680	12,740	9,100	5,460	9,100	5,460	3,640
Percent of value added		4	2	3	4	23	5	4	6	24	7	5	3	5	3	2

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Table 21
Regional Distribution of Soviet Production, Value Added by Major Industrial Group
1948
(Continued)

	Total Value Added by Production (Million 1951 Rubles)	Region														
		Ia	Ib	IIa	IIb	III	IV	V	VI	VII	VIII	IX	Xa	Xb	XI	XII
Construction																
Value added (million rubles)	51,200	2,048	512	1,536	1,536	10,752	2,560	2,048	3,072	11,776	5,120	3,584	2,048	2,560	1,536	512
Percent of value added		4	1	3	3	21	5	4	6	23	10	7	4	5	3	1
Total value added (gross national product) (million rubles)	839,000	30,180	12,527	26,830	27,516	174,430	43,850	30,370	47,050	191,595	86,647	55,259	31,972	41,504	28,813	10,457
Percent of value added		4	1	3	3	21	5	4	6	23	10	7	4	5	3	1

a. In certain cases, not all of the total value added could be distributed. The balance was distributed in the same proportions. The amounts that could be distributed in these cases were as follows: fabricated metals, 29 billion rubles; and transportation, 51.2 billion rubles.

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Table 22
Regional Distribution of Soviet Production, Value Added by Major Industrial Group
1951

Industry	Total Value Added by Production (Million 1951 Rubles)	Region														
		Ia	Ib	IIa	IIb	III	IV	V	VI	VII	VIII	IX	Xa	Xb	XI	XII
Energy																
Value added (million rubles)	60,300	1,495	1,605	269	463	13,226	5,633	6,977	1,647	7,395	8,041	5,913	2,531	1,292	1,928	1,885
Percent of value added		3	3	Negl	1	22	9	12	3	12	13	10	4	2	3	3
Metals																
Value added (million rubles)	37,700	1,012	Negl	248	0	10,446	754	1,131	248	3,294	12,580	4,415	2,560	258	625	129
Percent of value added		3	Negl	1	0	28	2	3	Negl	8	33	12	7	1	2	Negl
Fabricated metals																
Value added (million rubles)	64,600	9,044	Negl	1,938	1,292	11,628	3,230	1,292	2,584	24,548	5,814	1,938	Negl	646	646	Negl
Percent of value added a/*		14	Negl	3	2	18	5	2	4	38	9	3	Negl	1	1	Negl
Chemicals																
Value added (million rubles)	11,800	354	Negl	118	0	4,484	Negl	118	118	1,652	2,950	1,062	118	826	Negl	Negl
Percent of value added		3	Negl	1	0	38	Negl	1	1	14	25	9	1	7	Negl	Negl
Construction materials																
Value added (million rubles)	11,800	236	236	590	354	1,062	1,062	590	1,062	1,888	1,062	590	708	354	708	1,298
Percent of value added		2	2	5	3	9	9	5	9	16	9	5	6	3	6	11

* Footnote for Table 22 follows on p. 138.

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Table 22
Regional Distribution of Soviet Production, Value Added by Major Industrial Group
1951
(Continued)

Industry (Continued)	Total Value Added by Production (Million 1951 Rubles)	Region														
		Ia	Ib	IIa	IIb	III	IV	V	VI	VII	VIII	IX	Xa	Xb	XI	XII
Forest products																
Value added (million rubles)	25,800	2,322	3,354	1,032	1,032	1,032	258	Negl	516	5,676	4,644	1,806	258	Negl	2,064	1,806
Percent of value added		9	13	4	4	4	1	Negl	2	22	18	7	1	Negl	8	7
Food products																
Value added (million rubles)	49,500	1,485	495	2,475	1,485	12,870	2,970	990	2,475	11,385	2,475	2,475	2,970	3,465	1,485	Negl
Percent of value added		3	1	5	3	26	6	2	5	23	5	5	6	7	3	Negl
Manufactured consumer goods																
Value added (million rubles)	36,600	2,196	Negl	Negl	732	2,928	1,830	1,464	3,294	20,862	366	1,464	366	1,098	Negl	Negl
Percent of value added		6	Negl	Negl	2	8	5	4	9	57	1	4	1	3	Negl	Negl
Defense industry																
Value added (million rubles)	44,100	1,764	0	441	0	2,646	1,764	0	5,733	7,497	13,230	6,615	0	2,646	1,323	441
Percent of value added		4	0	1	0	6	4	0	13	17	30	15	0	6	3	1
Subtotal value added by industry (million rubles)	342,200	19,908	5,690	7,111	5,358	60,322	17,501	12,562	17,677	84,197	51,162	26,278	9,511	10,585	8,779	5,559
Percent of value added		6	2	2	1	18	5	4	5	24	15	8	3	3	2	2

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Table 22
Regional Distribution of Soviet Production, Value Added by Major Industrial Group
1951
(Continued)

	Total Value Added by Production (Million 1951 Rubles)	Region														
		Ia	Ib	IIa	IIb	III	IV	V	VI	VII	VIII	IX	Xa	Xb	XI	XII
Agriculture																
Value added (million rubles)	316,300	6,186	3,163	12,232	15,255	69,949	21,581	10,329	18,418	61,300	24,324	21,301	15,815	21,332	12,092	3,023
Percent of value added		2	1	4	5	22	7	3	6	19	7	7	5	7	4	1
Transportation																
Value added (million rubles)	81,800	2,454	1,636	818	Negl	20,450	4,090	2,454	5,726	15,542	8,180	6,544	2,454	4,090	4,090	3,272
Percent of value added a/		3	2	1	Negl	25	5	3	7	19	10	8	3	5	5	4
Communications																
Value added (million rubles)	9,700	388	97	194	291	2,231	291	291	388	3,201	776	582	194	388	194	194
Percent of value added		4	1	2	3	23	3	3	4	33	8	6	2	4	2	2
Trade																
Value added (million rubles)	44,100	2,646	441	1,323	1,323	9,702	1,764	1,323	2,205	11,907	3,969	2,205	1,323	1,764	1,323	882
Percent of value added		6	1	3	3	22	4	3	5	27	9	5	3	4	3	2
Services																
Value added (million rubles)	206,600	8,264	4,132	6,198	8,264	47,518	10,330	8,264	12,396	49,584	14,462	10,330	6,198	10,330	6,198	4,132
Percent of value added		4	2	3	4	23	5	4	6	24	7	5	3	5	3	2

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Table 22
Regional Distribution of Soviet Production, Value Added by Major Industrial Group
1951
(Continued)

	Total Value Added by Production (Million 1951 Rubles)	Region														
		Ia	Ib	IIa	IIb	III	IV	V	VI	VII	VIII	IX	Xa	Xb	XI	XII
Construction																
Value added (million rubles)	75,300	3,012	753	2,259	2,259	15,813	4,518	2,259	4,518	16,566	7,530	5,271	3,012	3,765	2,259	1,506
Percent of value added		4	1	3	3	21	6	3	6	22	10	7	4	5	3	2
Total value added (gross national product) (million rubles)	1,076,000	42,858	15,912	30,135	32,750	225,985	60,075	37,482	61,328	242,297	110,403	72,511	38,507	52,254	34,935	18,568
Percent of value added		4	1	3	3	21	6	3	6	22	10	7	4	5	3	2

a. In certain cases, not all of the total value added could be distributed. The balance was distributed in the same proportions. The amounts that could be distributed in these cases were as follows: fabricated metals, 61.7 billion rubles; and transportation, 75.3 billion rubles.

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Table 23
Regional Distribution of Soviet Production, Value Added by Major Industrial Group
1953

Industry	Total Value Added by Production (Million 1951 Rubles)	Region														
		Ia	Ib	IIa	IIb	III	IV	V	VI	VII	VIII	IX	Xa	Xb	XI	XII
Energy																
Value added (million rubles)	69,900	1,774	1,782	338	518	14,967	5,943	7,433	3,367	7,764	10,839	6,514	2,818	1,761	2,119	1,963
Percent of value added		2	2	1	1	21	9	11	5	11	16	9	4	2	3	3
Metals																
Value added (million rubles)	47,000	1,579	338	Negl	0	11,079	1,241	977	903	3,459	16,751	4,267	3,644	338	1,278	1,146
Percent of value added		3	1	Negl	0	23	3	2	2	7	36	9	8	1	3	2
Fabricated metals																
Value added (million rubles)	74,700	10,458	Negl	2,241	2,241	13,446	3,735	1,494	2,988	27,639	6,723	2,241	Negl	747	Negl	747
Percent of value added a/*		14	Negl	3	3	18	5	2	4	37	9	3	Negl	1	Negl	1
Chemicals																
Value added (million rubles)	14,500	435	Negl	0	0	4,785	145	290	290	2,465	3,770	1,160	145	870	145	Negl
Percent of value added		3	Negl	0	0	33	1	2	2	17	26	8	1	6	1	Negl
Construction materials																
Value added (million rubles)	15,700	314	314	628	628	1,413	1,570	942	1,256	2,669	1,256	785	942	471	942	1,570
Percent of value added		2	2	4	4	9	10	6	8	17	8	5	6	3	6	10

* Footnote for Table 23 follows on p. 142.

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Table 23
Regional Distribution of Soviet Production, Value Added by Major Industrial Group
1953
(Continued)

Industry (Continued)	Total Value Added by Production (Million 1951 Rubles)	Region														
		Ia	Ib	IIa	IIb	III	IV	V	VI	VII	VIII	IX	Xa	Xb	Xc	XII
Forest products																
Value added (million rubles)	27,700	2,493	3,601	1,939	831	554	277	Negl	277	6,371	5,263	1,939	Negl	277	1,939	1,939
Percent of value added		9	13	7	3	2	1	Negl	1	23	19	7	Negl	1	7	7
Food products																
Value added (million rubles)	55,400	1,662	554	2,770	1,662	14,404	3,324	1,108	2,770	12,742	2,770	2,770	3,324	3,878	1,662	Negl
Percent of value added		3	1	5	3	26	6	2	5	23	5	5	6	7	3	Negl
Manufactured consumer goods																
Value added (million rubles)	44,600	2,676	Negl	Negl	892	4,014	2,230	1,784	4,014	24,976	446	1,784	446	1,338	Negl	Negl
Percent of value added		6	Negl	Negl	2	9	5	4	9	56	1	4	1	3	Negl	Negl
Defense industry																
Value added (million rubles)	56,600	2,264	0	566	0	3,396	2,264	0	7,358	9,622	17,546	7,924	0	2,830	2,264	566
Percent of value added		4	0	1	0	6	4	0	13	17	31	14	0	5	4	1
Subtotal value added by industry (million rubles)	406,100	23,655	6,589	8,482	6,772	68,058	20,729	14,028	23,223	97,707	65,364	29,384	11,319	12,510	10,349	7,931
Percent of value added		6	2	2	2	17	5	3	6	24	16	7	3	3	2	2

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Table 23
Regional Distribution of Soviet Production, Value Added by Major Industrial Group
1953
(Continued)

	Total Value Added by Production (Million 1951 Rubles)	Region														
		Ia	Ib	IIa	IIb	III	IV	V	VI	VII	VIII	IX	Xa	Xb	XI	XII
Agriculture																
Value added (million rubles)	327,800	6,411	3,278	12,677	15,810	72,639	22,656	10,849	19,088	63,530	25,209	22,076	16,535	21,377	12,532	3,133
Percent of value added		2	1	4	5	22	7	3	6	19	8	7	5	6	4	1
Transportation																
Value added (million rubles)	96,400	2,892	1,928	964	Negl.	23,136	4,820	2,892	6,748	18,316	9,640	7,712	2,892	5,784	4,820	3,856
Percent of value added		3	2	1	Negl.	24	5	3	7	19	10	8	3	6	5	4
Communications																
Value added (million rubles)	12,000	480	120	240	360	2,760	360	360	480	3,960	960	720	240	480	240	240
Percent of value added		4	1	2	3	23	3	3	4	33	8	6	2	4	2	2
Trade																
Value added (million rubles)	48,200	2,892	482	1,446	1,446	10,604	1,928	1,446	2,410	12,532	4,338	2,892	1,446	1,928	1,446	964
Percent of value added		6	1	3	3	22	4	3	5	26	9	6	3	4	3	2
Services																
Value added (million rubles)	228,900	6,867	6,867	6,867	9,156	52,647	11,445	9,156	11,445	52,647	16,023	13,734	6,867	13,734	6,867	4,578
Percent of value added		3	3	3	4	23	5	4	5	23	7	6	3	6	3	2

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Table 23
Regional Distribution of Soviet Production, Value Added by Major Industrial Group
1953
(Continued)

	Total Value Added by Production (Million 1951 Rubles)	Region														
		Ia	Ib	IIa	IIb	III	IV	V	VI	VII	VIII	IX	Xa	Xb	XI	XII
Construction																
Value added (million rubles)	85,600	3,424	1,712	2,568	2,568	17,120	5,136	2,568	5,136	18,832	8,560	5,992	3,424	4,280	2,568	1,712
Percent of value added		4	2	3	3	20	6	3	6	22	10	7	4	5	3	2
Total value added (gross national product) (million rubles)	1,205,000	46,621	20,976	33,244	36,112	246,964	67,074	41,299	68,530	267,524	130,094	82,510	42,723	60,093	38,822	22,414
Percent of value added		4	2	3	3	20	6	3	6	22	10	7	4	5	3	2

a. In certain cases, not all of the total value added could be distributed. The balance was distributed in the same proportions. The amounts that could be distributed in these cases were as follows: fabricated metals, 71.3 billion rubles; and transportation, 88 billion rubles.

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Table 24

Population of the USSR by Regions
1938, 1948, 1951, and 1953 a/

Millions																
Year	Total USSR	Region														
		Ia	Ib	IIa	IIb	III	IV	V	VI	VII	VIII	IX	Xa	Xb	XI	XII
1938 b/	191.0	7.07	3.25	6.11	8.02	45.84	10.31	7.07	10.51	46.59	13.18	8.79	6.11	10.51	5.35	2.29
1948	194.1	7.76	2.91	6.21	7.38	45.61	9.12	8.15	11.45	46.39	13.39	10.29	6.02	10.29	5.63	3.49
1951	203.7	8.35	3.06	6.93	7.94	46.85	9.78	8.35	11.20	47.66	14.06	11.20	6.93	10.59	6.11	4.69
1953	210.0	8.1	3.6	7.2	9.3	46.8	9.9	8.4	11.1	48.6	14.4	11.7	7.2	11.4	7.2	5.1

Percent																
Year	Total USSR	Region														
		Ia	Ib	IIa	IIb	III	IV	V	VI	VII	VIII	IX	Xa	Xb	XI	XII
1938 b/	100.0	3.7	1.7	3.2	4.2	24.0	5.4	3.7	5.5	24.4	6.9	4.6	3.2	5.5	2.8	1.2
1948	100.0	4.0	1.5	3.2	3.8	23.5	4.7	4.2	5.9	23.9	6.9	5.3	3.1	5.3	2.9	1.8
1951	100.0	4.1	1.5	3.4	3.9	23.0	4.8	4.1	5.5	23.4	6.9	5.5	3.4	5.2	3.0	2.3
1953	100.0	3.9	1.7	3.4	4.4	22.4	4.7	4.0	5.3	23.1	6.9	5.6	4.4	5.4	3.4	2.4

a. Data are for 1 January.

b. Boundaries are postwar.

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