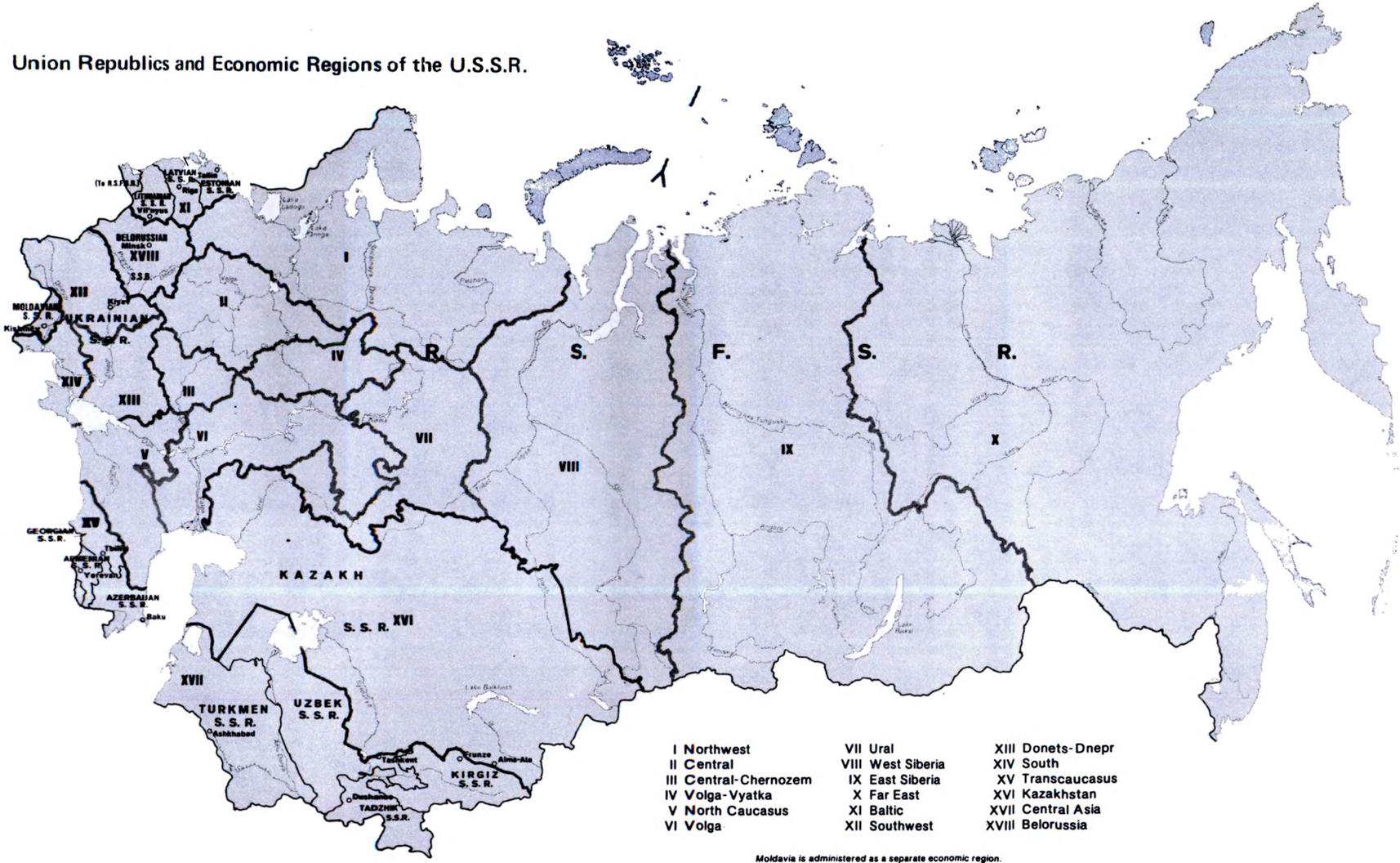


The Regional Distribution of Fixed Capital in the U.S.S.R.

**Foreign Economic
Report No. 17**

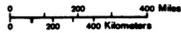
**U.S. DEPARTMENT OF COMMERCE
Bureau of the Census**

Union Republics and Economic Regions of the U.S.S.R.



- | | | |
|-----------------------|-------------------|-------------------|
| I Northwest | VII Ural | XIII Donets-Dnepr |
| II Central | VIII West Siberia | XIV South |
| III Central-Chernozem | IX East Siberia | XV Transcaucasus |
| IV Volga-Vyatka | X Far East | XVI Kazakhstan |
| V North Caucasus | XI Baltic | XVII Central Asia |
| VI Volga | XII Southwest | XVIII Belorussia |

Moldavia is administered as a separate economic region.



The United States Government does not recognize the incorporation of Estonia, Latvia, and Lithuania into the Soviet Union.

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Chapter I. Introduction

Data on the ruble value of fixed capital assets in major branches of the economy of the U.S.S.R. have been published annually in Soviet statistical handbooks since the late 1950's. Accounts of fixed capital stock are also compiled for each of the 15 union republics of the U.S.S.R. However, in the statistical handbooks of most republics, information on fixed capital accounts is reported only in terms of growth indexes or percentage breakdowns of unpublished totals rather than in ruble values. In this paper, values of total fixed capital in branches of material production in 1965 are derived for all republics from data included in a recent study of regional economic development in the U.S.S.R. by a Soviet economist.¹ These base-year values are then combined with data reported in republic statistical handbooks to estimate the values of fixed capital in major branches of the economy for all republics in most years during the period 1960 to 1975.²

These values in turn provide a basis for deriving additional estimates of fixed capital in the republics such as values for: (1) different types of capital assets (buildings and structures, machinery and equipment, etc.); (2) subsectors of the major branches (especially industry); and (3) smaller administrative-territorial subdivisions of the U.S.S.R. Percentage breakdowns of these three types are frequently given either in official statistical handbooks or in published studies by Soviet economists. However, careful consideration must be given to possible differences in methodology employed in various accounts of Soviet capital stock. Although no attempt is made in this paper to exhaust the possibilities of making such additional estimates, some of the problems which arise in combining the republic values of total industrial fixed capital presented here with data from various sources to estimate values by branch of in-

dustry, by type of asset, and by economic region of the U.S.S.R. are described.

The estimates of stocks of fixed capital (*osnovnyye fondy*) for republics presented here must be distinguished from data on capital investment (*kapital'nyye vlozheniya*) and from data on the value of assets installed in a single year (*vvod v deystviye osnovnykh fondov*). The latter two are "flow" rather than "stock" concepts, and the national totals for both are published annually with a breakdown by republic in national statistical handbooks. Values of capital investment by major branch of the economy are also reported in the statistical handbooks of each republic, although there are minor differences among republics in the classifications used. Data on capital investment in individual branches of industry are published for only five republics.

Four different methods of valuation of fixed capital assets must be distinguished in order to understand the various accounts of fixed capital stock compiled in the Soviet Union. The original value (*pervonachal'naya stoimost'*) of fixed assets is their full cost at the time they are put into operation, including the costs of delivery and installation. Original cost figures are the basis for the calculation of depreciation payments but are never reported in Soviet statistical handbooks. When revaluations of the stock of fixed capital are undertaken, all assets are valued at replacement cost (*vosstanovitel'naya stoimost'*) according to a uniform set of prices. The most recent revaluation was in 1972/73. Assets of state and cooperative enterprises and organizations that operate on an independent cost-accounting basis (*khozraschet*) and collective farms (*kolkhozes*) were revalued as of January 1, 1972, and assets of budgetary institutions and organizations were revalued as of January 1, 1973. A prior revaluation took place in the early 1960's. The capital stock of *khozraschet* enterprises and organizations was revalued as of January 1, 1960 and that of *kolkhozes* on January 1, 1962, but the assets of budgetary organizations were not revalued at that time.

In the period between revaluations (e.g., 1960 to 1971), accounts of fixed capital are recorded at book value (*balansovaya stoimost'*), which is a combination of— (1) valuation at replacement cost for those assets existing at the time of the last revaluation, and (2) valuation at original cost for those assets put into operation since the last revaluation. Finally, accounts of fixed capital are compiled in constant prices (*v sopostavimyykh tsenakh*), and it is these accounts which are the basis for most information on the structure and growth of capital stock reported in Soviet statistical handbooks. In order to construct these constant price series, the value of

¹ Zakumbayev, *Ekonomicheskoye*, 1977. A previous attempt to estimate the values of fixed capital assets by branch for all republics in a single year (1966) is described in Tretyakova, *Labor and Capital*, 1977, pp. 2-12 and 27-35. In this report some revisions have been made in the estimates given in the earlier study.

² Over 250 national and republic statistical handbooks were surveyed in preparing this report, and data were drawn from approximately 100 of these. To simplify references to these sources, short forms are used. The abbreviation TsSU is used throughout for the Central Statistical Administrations attached to the Councils of Ministers of republics and the U.S.S.R. (*Tsentral'noye statisticheskoye upravleniye pri Sovete Ministrov*; or, in Ukrainian: *Tsentral'ne statystychnye upravlinnya pry Radi Ministriv*). Abbreviations of the names of the union republics are listed in appendix C. Individual volumes in the series of statistical handbooks for each republic of the form *Narodnoye khozyaystvo RSFSR v 19— godu* are cited by abbreviated title and year, e.g., *Nar. hoz. RSFSR* —. Other handbooks are cited by abbreviated title and date of publication.

assets installed in each year after the most recent revaluation is deflated using price indexes for various types of assets.³

One additional aspect of the accounting of fixed capital assets in the U.S.S.R. should be mentioned. Accounts of fixed capital at book value and replacement cost are maintained both in terms of their full undepreciated value and their depreciated value. Information on the relationship between these two values was published at the time of the revaluation of fixed capital, but most capital stock data given in statistical handbooks, including the accounts in constant prices, are based on the full undepreciated value.

Although there is much more that could be said about Soviet capital stock statistics, this report discusses only those aspects of the Soviet methodology of measuring fixed capital assets that must be explained in order to describe how the values

³The calculation of these constant price series is summarized in Lisitsyn, "On the Question," 1975, pp. 71-73.

presented were estimated. The estimation of values of fixed capital in constant 1955 prices for all republics during the period 1960 to 1975 is described in chapter II. A discussion of the 1972/73 revaluation of fixed capital is included in chapter III primarily to identify regional differences in the results of this revaluation that must be taken into account in order to link the time-series data in 1955 prices presented here with the series recently adopted in Soviet statistical handbooks based on 1973 prices. Some estimates of industrial fixed capital by branch and type of asset for republics and by economic region of the U.S.S.R. are given in chapter IV.

The primary purpose of this report is to explain how the estimates of fixed capital by republic presented here were derived. Some interrepublic comparisons based on these data will be presented in a separate paper.⁴

⁴Gillula, "The Growth," forthcoming.

Chapter II. Fixed Capital in Major Branches of the Economy by Republic

In national statistical handbooks, values of fixed capital stock in major branches of the economy for the U.S.S.R. as a whole are reported in constant 1955 prices prior to the 1972 revaluation and in 1973 prices in recent years. In addition, tables have been included annually giving indexes of the growth of fixed capital stock by branch. Much less information on fixed capital in value terms is available for republics. Following the revaluation of fixed capital assets in the early 1960's, value data on capital stock were given in one or two of the handbooks of about half of the republics. However, until the next revaluation in 1972, value data in 1955 prices of the type available for the U.S.S.R. as a whole were published for only five republics. Similarly, while the results of the 1972 revaluation were reported in a series of tables in national statistical handbooks for 1972 and 1973, only four republics issued such tables. Since the 1972 revaluation, the amount of capital stock data for republics has increased somewhat, but only eight republics now provide such data for major branches of the economy in ruble values.

BASE-YEAR 1965 ESTIMATES OF TOTAL PRODUCTIVE CAPITAL

A 1977 Soviet study by Zakumbayev gave end-of-year values of total productive fixed capital per person of working age by republic for 3 years—1960, 1965, and 1970.⁵ These figures appear to be based on values of fixed capital in 1955 prices as calculated by the Central Statistical Administration but not published in the statistical handbooks of all republics. The only year for which data on population of working age are readily available for all republics is the census year 1970.⁶ Using the values reported by Zakumbayev and the 1970 census data by republic, initial estimates of total fixed productive capital by republic at the end of 1970 were derived. However, a comparison of these estimates with corresponding values published in the statistical handbooks of five republics revealed that the estimated values were from 1 to 5 percent less than the values published in the republic handbooks. Furthermore, Zakumbayev also reported indexes of the growth of fixed productive capital

⁵ Zakumbayev, *Ekonomicheskoye*, 1977, p. 78.

⁶ The Soviet definition of working-age population includes all males of ages 16 to 59 and females of ages 16 to 54. The number of people in this category is not often published for union republics. Zakumbayev assembled data on working-age population by republic in 1970 in an earlier book, *Metody*, 1975, p. 65.

in the republics for three periods—1960 to 1970, 1960 to 1965, and 1965 to 1970⁷—and all of the indexes involving the year 1970 differ slightly from the corresponding indexes reported in republic statistical handbooks.

The inconsistency between Zakumbayev's data and the handbook data was explained when it was discovered that by dividing the initial value estimates for 1970 described above by the growth rates, 1965 to 1970, given for all republics by Zakumbayev, estimates of fixed productive capital at the end of 1965 were obtained which agreed exactly with values in 1955 prices reported in republic handbooks in all cases where such a comparison could be made. Zakumbayev's growth rates for the period 1960 to 1965 also agreed with those published in republic handbooks. The discrepancies probably arose because Zakumbayev was working with preliminary data that were subsequently revised. Therefore, the 1965 values thus estimated were chosen as the basis for subsequent calculations; in the process of making these calculations (as described below), the initial estimates for 1970 were replaced by slightly revised values derived from handbook growth rates.

Before proceeding to the next stage of the estimation process, it is important to note the close correspondence between the sum of the estimates of total productive capital for all republics in each year and the value for the U.S.S.R. derived independently.⁸ The sum of the figures for the republics was within 0.02 percent of the national total in 1960 and 1965 and within 0.2 percent in 1970. This close correspondence suggests that the sum of the values of capital stock in any given branch for all republics should also be approximately equal to the corresponding value for the U.S.S.R. Therefore, some components of capital stock in the R.S.F.S.R. that could not be estimated independently were derived as residuals—the U.S.S.R. value less the sum of all other republics.

FIXED CAPITAL BY BRANCH: 1960 TO 1975

Using the estimates of fixed productive capital and published percentage breakdowns by branch for 1965, values for individual branches were calculated for 13 republics. The estimation of 1965 values for the R.S.F.S.R. and the Turkmen S.S.R., for

⁷ Zakumbayev, *Ekonomicheskoye*, 1977, p. 77.

⁸ Zakumbayev also reported values of fixed productive capital per person of working age in 1960, 1965, and 1970 and rates of growth between these years for the U.S.S.R. as a whole, *ibid.*, p. 78.

which no data on distribution by branch have been published, is described below. Values for each branch in each republic in other years were then calculated by applying published growth rates to the 1965 values. Whenever possible these estimates were subsequently checked for consistency with published percentage breakdowns by branch in years other than 1965. For most republics, it was possible by making minor adjustments to the estimates to achieve very good consistency between the estimates and the published growth rates and branch shares for all years.

The estimates of fixed capital for all republics are given in appendix A. Estimates were made for as many branches and years as possible with the data available for each republic. There was considerable variation among republics in the number of branches for which capital stock data were reported and in the number of years for which estimates could be made. Data for the Estonian S.S.R. were given for 13 branches, whereas estimates for other republics could be made only for 7 branches. The correspondence between this common seven-branch classification and individual branches identified in the handbooks of various republics is summarized in appendix A. Complete estimates for the period 1960 to 1975 could be made using handbook data for only five republics. For the remaining republics, figures for one or more years (especially for the period 1961 to 1964) could not be directly estimated. For the Turkmen S.S.R. estimates could be made for only the 6 years for which estimates were possible for all republics—1960, 1965, and 1970 to 1973.

No estimates for 1975 could be made for either Turkmenistan or Kirgizstan with the handbook data available. However, values for this year were needed for the derivation of estimates in post-revaluation prices in chapter III, section C. Therefore, 1975 estimates for Kirgizstan were made by applying annual average growth rates by branch for 1971 to 1974 to the corresponding 1974 values. For Turkmenistan simple extrapolation to 1975 of the branch growth trends calculated from the available data for 1970 to 1973 resulted in an estimate of total fixed capital in 1975 that appeared somewhat low in the light of the published levels of new fixed capital installed in the republic during 1974 and 1975. Therefore, the increment to total fixed capital during these 2 years was estimated on the assumption that it amounted to 65 percent of total fixed capital installed, a ratio at the low end of the range of the corresponding ratios for other Central Asian republics. Individual branch values in 1975 were then estimated on the basis of the 1973 branch distribution adjusted to reflect a continuation of the trend in branch shares during 1970-73.

The sources used in estimating all values are listed in the notes to appendix A. The remainder of this chapter describes some general aspects of the methodology used in making these estimates and particular problems encountered in estimating the figures for individual republics.

The values of capital stock published in statistical handbooks for the most recent year are often revised slightly in later handbooks. Therefore, whenever possible, the revised capital stock data (whether in the form of ruble values, growth indexes, or percentage breakdowns) were used in preference to the figures as they appeared for the first time.

In addition to these minor revisions, there have also been changes in the definition or branch classification of fixed capital which resulted in revisions of previously published data. In the 1965 statistical yearbook for the U.S.S.R., the growth indexes for capital stock in all major branches of the economy were revised. However, the methodological note in this yearbook did not explain all of these revisions. It indicated only that the values of urban streets and bridges and fruit orchards in private agriculture had been added to accounts of fixed capital assets.⁹ Similar revisions were made in the growth indexes in republic handbooks at about this time. However, since in most cases revised indexes were published only for certain base years (e.g., 1960 and 1965) and not for the intervening years, estimates of capital stock for some republics for the period 1961 to 1964 either could not be made or were less accurate than the rest.

For four republics and for the U.S.S.R. as a whole, rates of growth of capital stock are lacking for either "trade and distribution and other productive branches" or "other nonproductive branches" or both. In these cases, it was necessary to calculate values for these branches as residuals, i.e., in the former case as total productive fixed capital less the sum of fixed capital in all other branches in the productive sphere, and in the latter case as total nonproductive capital less the value of capital stock in housing.

Values of fixed capital stock for the U.S.S.R. as a whole are published annually in the national statistical handbooks, but since the figures are subject to minor revisions that are reflected only in the growth indexes published in subsequent handbooks, a complete new series was constructed consistent with the most recently published growth rates. Values for 1965 were first estimated as follows. Four separate estimates for each branch except agriculture in 1965 were made by dividing the published values for four other years—1968, 1969, 1970, and 1971—by the growth rates between 1965 and the other years as reported in the same handbook. The resulting estimates were then averaged. The 1965 value of fixed capital in agriculture was taken from the statistical handbook on agriculture in the U.S.S.R.¹⁰ Published growth rates were then applied to these 1965 values for all branches to estimate fixed capital in 1960, 1964, and 1966-75.¹¹ Growth rates for the years 1961-63 reflecting subsequent revisions in the capital stock accounts were not published in later statistical yearbooks; with the exception of agriculture and the nonproductive branches for which information was available in other sources,¹² values for these years were estimated using the average annual growth rate for each branch during 1960-64.¹³

⁹ TsSU SSSR, *Nar. khoz.* 65, pp. 812-13.

¹⁰ TsSU SSSR, *Sel'skoye*, 1971, p. 17.

¹¹ Exceptions were the values for agriculture in 1960 and 1966-70 and for nonproductive branches in 1960, 1964, and 1966-68, which were published (Rutgayzer, *Resursy*, 1975, pp. 127, 151, and TsSU SSSR, *Sel'skoye*, 1971, p. 17). Values for years after 1968 reported in the first source were somewhat inconsistent with the growth rates published in statistical handbooks and therefore were not used.

¹² Rutgayzer, *Resursy*, 1975, pp. 127, 151, and TsSU SSSR, *Sel'skoye*, 1971, pp. 17, 23.

¹³ As this study was being completed, the author learned of an unpublished study by Constance B. Krueger in which fixed capital in the U.S.S.R. as a whole was estimated by a procedure very similar to that described here. The differences between her estimates and the figures presented here are minor.

Less information on fixed capital was available for the Turkmen S.S.R. than for any other republic. Growth rates by branch were available for the years 1970 to 1973 relative to 1960 and 1965, but no percentage distribution by branch could be found for any year. Therefore, the relative shares of productive and nonproductive capital stock in 1965 were first derived by using the available growth rates in simultaneous equations of the form—

$${}_{970}^T K_{65}^T = {}_{970}^P K_{65}^P + {}_{970}^N K_{65}^N$$

$${}_{971}^T K_{65}^T = {}_{971}^P K_{65}^P + {}_{971}^N K_{65}^N$$

where

K_{65}^T , K_{65}^P , K_{65}^N are the values of total, productive and nonproductive capital stock in 1965, respectively, and ${}_{970}^T$, ${}_{971}^T$ (with superscripts as above indicating type of capital) are published growth indexes relative to 1965 for 1970 and 1971, respectively.

These two equations may be solved, for example, for the share of nonproductive capital in total capital in 1965:

$$\frac{K_{65}^N}{K_{65}^T} = \frac{\left({}_{971}^T - \frac{P}{970} {}_{971}^T {}_{970}^T \right)}{\left({}_{970}^N - \frac{P}{970} {}_{971}^N {}_{970}^N \right)}$$

Several calculations of this sort were made to derive values for each type of capital in the years 1960, 1965, and 1970-73 which gave the best fit with published growth rates. The relative shares of capital stock in three individual branches of the nonproductive sphere were derived similarly. However, not enough information was available to use the same approach to estimate the relative shares of branches in the productive sphere. It was possible to derive an independent estimate for capital stock in 1965 in industry.¹⁴ For all other productive branches, however, values for 1965 were estimated initially using an average of the shares of each in other Central Asian republics, and these estimates were subsequently revised in an iterative process designed to achieve consistency between the sums of the

¹⁴The value of industrial capital in 1958 was first estimated on the basis of information on increments to capital stock from 1955 to 1958 given in both value and percentage terms in Rakhimov, *Osnovnyye*, 1965, pp. 48-49. The growth rate for 1965 relative to 1958 is given in Rakhimov, *Fondyemkost'*, 1968, p. 72. This estimate was selected over other estimates because values which can be calculated for other Central Asian republics from these two sources agree closely with the estimates in this report derived by other methods.

Table 1. SUMS OF ESTIMATES OF FIXED CAPITAL IN ALL REPUBLICS AS PERCENTAGES OF THE U.S.S.R. FIGURES FOR MAJOR BRANCHES OF THE ECONOMY: 1971 TO 1973

Branch	1971	1972	1973
Total fixed capital	99.9	100.0	100.0
Productive	99.9	99.9	99.9
Industry	100.0	99.6	99.1
Agriculture	99.8	99.9	99.8
Transportation and communications	99.9	100.0	100.0
Construction	100.0	100.0	99.9
Trade and distribution and other productive	100.1	102.0	106.4
Nonproductive	100.0	100.1	100.2
Housing	99.9	99.9	99.0
Other nonproductive	100.0	100.4	102.2

Source: Calculated from values of fixed capital given in appendix A.

figures for all branches and the known control totals for the years 1960 and 1970-73.¹⁵

The estimation of consistent time series for the Uzbek and Kazakh republics was complicated by the transfer of a small amount of territory from the former to the latter in 1971. All estimates for both republics for the entire 1960-75 period were made according to current (i.e., post-1971) boundaries. In making these estimates, some data on fixed capital reported in value terms in pre-1971 handbooks of the two republics were slightly revised, but it was assumed that the territory transfer had no effect on the growth rates for individual branches published in these handbooks. Some data for the Kazakh S.S.R. were reported in terms of book value, and where the rates of growth between various years implied by these values did not match published growth indexes in constant prices, values calculated from the growth indexes were used.

Information on capital stock published in the statistical handbooks of the R.S.F.S.R. is given only in the form of growth indexes; no percentage distributions by branch have been published. Some information on the value of capital stock by branch was published in the early 1960's, but subsequent revisions of these data make them unusable. Therefore, values of capital stock were estimated as follows. First, for the 6 years for which estimates of capital stock were made for all other republics—1960, 1965, and 1970-73—the data for all

¹⁵One rough check of these estimates for Turkmenistan is provided by information on the distribution of fixed productive capital by branch in the republic for 1969 in Zhmuida, *Razvitiye*, 1972, p. 14. Shares were reported for industry (34 percent), agriculture (31 percent), and all other branches combined (35 percent). These figures are very close to the corresponding branch shares for 1970 calculated from the estimates for the republic given in appendix A.

republics were aggregated according to a sector classification identical to that used in making estimates for the U.S.S.R. as a whole. Initial estimates of values of capital stock in each branch in the R.S.F.S.R. for each year were then calculated as residuals—the U.S.S.R. totals less the sum of the figures for all other republics. These values for the R.S.F.S.R. were then checked for consistency with the published growth indexes for the republic. The estimates for 1960, 1965, and 1970 agreed exactly with all available indexes—a very encouraging indication of the overall accuracy of the estimates. For the years 1971 to 1973, there were a few minor inconsistencies between the values estimated as residuals and the published growth rates. Therefore, the values for these 3 years were reestimated by applying published growth rates to the values for 1960, 1965, and 1970 estimated by the residual method. With this method, the sums of all republic estimates for the years 1971-73 differ only slightly from the corresponding estimates for the U.S.S.R., as is shown in table 1. Values of capital stock for the R.S.F.S.R. in all other years—1961-64, 1966-69, and 1974-75—were also estimated by applying published growth rates to the 1960, 1965, and 1970 values. Values of fixed capital in nonproductive

branches in 1961-64 and 1966-69 could not be estimated since no growth rates for nonproductive branches were published for the R.S.F.S.R. prior to 1970.

The two instances in table 1 in which the sum of the republic figures for a particular branch deviates most from the corresponding independent estimate for the U.S.S.R. as a whole are the 1973 values for "trade and distribution and other productive branches" and "other nonproductive branches." These discrepancies are probably due to a combination of two factors. First, the values for each of these branches for the U.S.S.R., the R.S.F.S.R., and some other republics are estimated as residuals. Secondly, in the 3 years following the 1972/73 revaluation, indexes of the growth of fixed capital given in statistical handbooks for the U.S.S.R. and most of the republics were apparently constructed by linking indexes calculated in 1973 prices to indexes for earlier years in 1955 prices. Not until the publication of the handbooks for 1976 and 1977 were the growth indexes for the years prior to the revaluation recalculated on the basis of constant 1973 prices. The inconsistencies that result from linking indexes based on different sets of relative prices have a direct effect on the values estimated as residuals.

Chapter III. The 1972/73 Revaluation of Fixed Capital

The basic guidelines used in valuing various types of assets in the 1972/73 census of fixed capital and some of the results of the revaluation for the U.S.S.R. as a whole have been summarized in a recent article by Powell.¹⁶ The discussion of the revaluation in this chapter focuses on the regional dimension of the capital stock census. The objective of the census was to determine the replacement value of assets, and the values by region were derived using adjustment coefficients designed to reflect regional differences in the cost of construction and the cost of delivering and installing machinery. The various regional cost adjustments are described in the first section of this chapter. Data from Zakumbayev and from republic statistical handbooks are used to trace interrepublic differences in the effects of the revaluation in the second section of this chapter. In the final section, values of fixed capital in 1973 prices are estimated for all republics for the year 1975.

REGIONAL DIFFERENCES IN THE REPLACEMENT COST OF ASSETS

The census of fixed capital was carried out on the basis of prices of machinery and equipment and values of buildings, structures, and other assets listed in 222 price handbooks prepared for use in the revaluation. Separate sets of handbooks were distributed for the two phases of the census—the revaluation of the assets of *khozraschet* enterprises and *kolkhozes* as of January 1, 1972 and of budgetary organizations as of January 1, 1973. Unless otherwise stated, however, the discussion of regional adjustment coefficients which follows applies to both phases of the census.

Three major types of regional coefficients were employed, one relating to the value of machinery and equipment and two relating to the value of buildings and structures. Each of these three types of regional adjustments is discussed below. Using the information included in a large number of the price handbooks published for the revaluation, an attempt is made in each case to determine approximately the overall effect of regional factors on the relative value of assets in the individual republics and the economic regions within the R.S.F.S.R.

First, to account for regional differences in the replacement value of machinery and equipment arising from differences in delivery and installation costs (due to such factors as distance transported and varying wage levels for installation), the country was divided into five zones (see table 2). Each of the price handbooks for a particular type of machinery or equipment

Table 2. COEFFICIENTS FOR REGIONAL DIFFERENCES IN MACHINERY DELIVERY AND INSTALLATION COSTS IN THE 1972/73 REVALUATION OF FIXED CAPITAL

Zone	Component regions	Machinery not requiring installation	Machinery requiring installation
(1)	(2)	(3)	(4)
I	Ukrainian S.S.R.; Moldavian S.R.R.; Belorussian S.S.R.; Baltic region; Transcaucasus region; the R.S.F.S.R. west of the Urals and south of the 60th parallel	1.00	1.00
II	Central Asian region; Ural and West Siberian regions south of the 60th parallel; Arkhangel'sk Oblast and Karelian A.S.S.R. south of the Arctic Circle	1.02	1.02–1.05
III	Kazakh S.S.R.; Komi A.S.S.R.; Murmansk Oblast; most of the East Siberian region	1.03	1.04–1.07
IV	Tuva A.S.S.R.; Amur Oblast; Primorskiy Kray; Khabarovsk Kray south of the 55th parallel	1.09	1.10–1.14
V	Yakut A.S.S.R.; Kamchatka, Magadan, and Sakhalin Oblasts; northern areas not listed elsewhere (north of the 60th parallel in most instances)	1.16	1.18–1.30

Source: See text.

gave the values of assets for zone I. The values of assets in all other zones were determined by applying regional adjustment coefficients given at the beginning of the handbook to the appropriate zone I value.¹⁷ There was a standard set of regional coefficients—identical in almost all machinery and equipment price handbooks—for use in calculating the value of types of machinery and equipment not requiring installation, i.e., coefficients reflecting only differences in delivery costs. These coefficients are given in column 3 of table 2.

Although in some price handbooks only this single set of coefficients was included, others gave one or more additional sets of coefficients for types of machinery or equipment requiring installation. The ranges of values for this type of coefficient identified in a survey of 115 of the 172 price handbooks for machinery and equipment are given in column 4 of table 2.

¹⁶ Powell, "The Soviet," 1979.

¹⁷ Malkina, "Determining," 1971, p. 58.

Most of the zone coefficients were near the lower end of these ranges.

A second regional division of the country into 10 zones was made to take into account regional differences in the cost of construction resulting from such factors as varying local prices for construction materials, rates for electric power, and wages of

Table 3. COEFFICIENTS FOR REGIONAL DIFFERENCES IN UNIT CONSTRUCTION COSTS IN THE 1972/73 REVALUATION OF FIXED CAPITAL

Zone (1)	Component regions (2)	Coefficients (3)
I	Belorussian S.S.R.; Baltic, Central, Volga-Vyatka, and Central Chernozem regions; most of the Volga region; southern parts of the Northwest region; Udmurt A.S.S.R.	1.00
II	Ukrainian S.S.R.; Moldavian S.S.R.; Kazakh S.S.R.; Transcaucasus and North Caucasus regions; most of the Ural and West Siberian regions; Bashkir A.S.S.R.; Kalmyk A.S.S.R.; Vologda Oblast	1.02–1.05
III	Central Asian region.	1.07–1.10
IV	Most of the Northwest and East Siberian regions below the Arctic Circle.	1.15–1.18
V	Far East region below the 55th parallel; Tyumen Oblast between the 60th parallel and the Arctic Circle.	1.25–1.28
VI	Evenkiyskiy National Okrug; Irkutsk Oblast south of the Arctic Circle; Khabarovsk Krai south of the 55th parallel.	1.39–1.80
VII	Arkhangel'sk and Tyumen Oblasts north of the Arctic Circle; Yakut A.S.S.R. south of the Arctic Circle	1.48–2.00
VIII	Sakhalin Oblast; Kamchatka Oblast south of the 55th parallel	1.79–2.11
IX	Kamchatka Oblast between the 55th parallel and the Arctic Circle; Magadan Oblast south of the Arctic Circle.	1.82–2.70
X	Nentskiy National Okrug; Kuril Islands; all regions north of the Arctic Circle not listed elsewhere	see text

Source:

Columns 1 and 2: Gosstroy SSSR, *Obshchaya*, 1971, pp. 17-19.
Column 3: Gosstroy SSSR, *Sbornik no. 1*, 1971.

construction workers (see table 3). In the price handbooks for buildings and structures, values for each type of asset were listed (in terms of some physical unit such as cubic meters for buildings) for each of the first nine zones. Values in the tenth zone—located north of the Arctic Circle—were determined by applying an adjustment factor of 1.20 to the value of the same asset in the adjacent zone just below the Arctic Circle.¹⁸ Thus, regional differences in the replacement value of assets due to differences in unit construction costs can be determined by calculating the adjustment coefficients implicit in the tables in these handbooks, e.g., the ratio of unit values in each of zones II-IX to that of zone I. Only a few of the price handbooks for buildings and structures were available, but the values given in handbook number 1 for the second phase of the census, which covers common types of buildings, structures, and other assets in many branches,¹⁹ should suffice for the purpose. Most of the adjustment coefficients derived from the values given in this handbook were within the ranges given in table 3.

Third, because construction requirements such as the thickness of walls and the depth to which the foundation of a building must be laid vary with climate, the country was divided into four climatic zones (see table 4), and adjustment coefficients reflecting these differences were also included in each of the price handbooks for buildings and structures. The coefficient for zone II was 1.0 in all cases, and the coefficients for other zones ranged from above 1.0 in the north and east to below 1.0 in the south. The regional coefficients for climate differences given in the handbook for common types of buildings and structures are given in columns 3 and 4 of table 4. The range of coefficients for each zone found in the six other handbooks available for individual branches or types of assets is given in column 5 of table 4.

In addition to the three major types of regional adjustments, a few other special factors were taken into account for certain regions or types of capital. The most significant of these was an adjustment to reflect higher construction costs in regions of seismic activity. Coefficients ranging from 1.03 to 1.08 were applied to the values of various types of buildings and structures in the affected regions.²⁰

The combination of coefficients for the various regional factors had different effects in different republics and regions within the R.S.F.S.R. For the Belorussian S.S.R., the three Baltic republics, and the European part of the R.S.F.S.R. south of the 60th parallel but excluding the North Caucasus region, the combined coefficient was 1.0. The overall coefficient for the Ukraine must also have been about 1.0 since the coefficient for the delivery and installation of machinery was 1.0, that for unit construction costs was slightly above 1.0, and that for the climate factor was below 1.0 in the southern part of the republic. For Moldavia the overall coefficient must have been slightly greater than 1.0 since the adjustments for machinery delivery and installation and for climate were both 1.0, while that for unit construction costs was in 1.02-1.05 range. For the three Transcaucasus republics and the North Caucasus economic region, the overall coefficient was probably equal to or slightly

¹⁸ Gosstroy SSSR, *Obshchaya*, 1971, p. 6.

¹⁹ Gosstroy SSSR, *Sbornik No. 1*, 1971.

²⁰ *Ibid.*, p. 14.

less than 1.0. The coefficient for machinery delivery and installation was 1.0, and the coefficients of 1.02 to 1.05 for unit construction costs were probably more than offset by coefficients of 0.89 to 0.99 for climate.

The overall coefficient for Kazakhstan was clearly greater than 1.0. Above average climate coefficients in the northern and central oblasts of the republic were offset to some extent by below average coefficients in the southern oblasts, but the coefficients for machinery delivery and installation were in the range from 1.03 to 1.07 and those for unit construction costs from 1.02 to 1.05. The overall coefficient for the four Central Asian republics was also greater than 1.0. Adjustments for unit construction costs ranged from 1.05 to 1.10 and those for machinery delivery and installation from 1.02 to 1.05. Although the climate coefficients were in the lowest range, the adjustments for seismic activity probably compensated for them to some extent.

Except in the far north, the coefficients for machinery delivery and installation and unit construction cost for the Ural and West Siberian regions were both in the 1.02 to 1.05 range, and climate coefficients ranged from 1.02 to 1.14. For the rest

of the R.S.F.S.R., regional coefficients of all three types were generally higher the farther to the east or the north. As a result, the value of some assets in regions of the far north could be as much as three times that of similar assets in the central region of the country. However, such extreme regional differences in valuation clearly applied to only a small proportion of the total capital stock of the country.

In summary, the net effect of regional cost differences on the relative values of fixed capital for republics was not great. In each of the non-Russian republics in the European part of the country (including the Transcaucasus), a weighted average of the adjustments to various components of fixed capital would differ little from the base coefficient of 1.0. The corresponding coefficient for Kazakhstan and the Central Asian republics would probably be about 1.05. An analogous overall coefficient for R.S.F.S.R. as a whole is more difficult to approximate because of the wide range of coefficients applied in eastern and far northern regions, but it would also probably be about 5 percent above the coefficients for the republics in the European part of the country.

Table 4. COEFFICIENTS FOR REGIONAL DIFFERENCES IN CONSTRUCTION COSTS DUE TO CLIMATE IN THE 1972/73 REVALUATION OF FIXED CAPITAL

Zone (1)	Component regions (2)	Common types of buildings and structures		Specialized buildings and structures (5)
		Buildings (3)	Other structures (4)	
I	Ural, West Siberian, and East Siberian regions; ten northern and central oblasts of Kazakh S.S.R.; Far East region except Kamchatka Oblast; five northern oblasts in the European part of the R.S.F.S.R.	1.09	1.02	1.02-1.14
II	Belorussian S.S.R.; Moldavian S.S.R.; Baltic region; Ukrainian S.S.R. except for five southern oblasts; all of the R.S.F.S.R. west of the Urals except for the North Caucasus region and five northern oblasts	1.00	1.00	1.00
III	Kirgiz S.S.R.; Tadzhik S.S.R.; eight southern and western oblasts of the Kazakh S.S.R.; five southern oblasts of the Ukrainian S.S.R.; North Caucasus region; Volgograd and Astrakhan Oblasts; Nagorno-Karabakh Autonomous Oblasts.	0.94	0.99	0.92-0.99
IV	Uzbek S.S.R.; Turkmen S.S.R.; Armenian S.S.R.; Georgian S.S.R.; Azerbaydzhan S.S.R. except for Nagorno-Karabakh Autonomous Oblast; Chimkent Oblast	0.92	0.98	0.89-0.99

Source:

Columns 1 and 2: Gosstroy SSSR, *Obshchaya*, 1971, pp. 17-19.

Columns 3 and 4: Gosstroy SSSR, *Sbornik no. 1*, 1971, p. 4.

Column 5: See text.

SOME RESULTS OF THE REVALUATION FOR REPUBLICS

The size of the overall upward revision in the value of fixed capital of *khozraschet* enterprises and organizations and of budgetary organizations for all republics can be determined from the published ratios of replacement value to original book value, which are given in table 5. There were some clear differences between republics in different regions of the country in the overall results of the revaluation. The value of fixed capital of *khozraschet* enterprises and organizations was revised upward by 7 to 8 percent in Kazakhstan and the Central Asian republics, 10 to 11 percent in the Transcaucasus, and 14 to 16 percent in the Baltic republics. The size of the revision was near the national average for other republics in the European part of the country. A similar pattern is apparent in the ratios for fixed capital of budgetary organizations, although it is less consistent than that for *khozraschet* enterprises.

More detailed information on the results of the revaluation for individual branches of the economy and types of fixed

Table 5. RATIOS OF REPLACEMENT VALUE TO ORIGINAL BOOK VALUE OF FIXED CAPITAL FOR REPUBLICS AFTER THE 1972/73 REVALUATION

Republic	Total fixed capital of—	
	Khozraschet enterprises (Jan. 1, 1972) (1)	Budgetary organizations (Jan. 1, 1973) (2)
U.S.S.R.	1.11	1.23
R.S.F.S.R.	1.115	1.22
Ukrainian S.S.R.	1.125	1.31
Moldavian S.S.R.	1.10	1.19
Belorussian S.S.R.	1.12	1.27
Latvian S.S.R.	1.16	1.33
Lithuanian S.S.R.	1.14	1.31
Estonian S.S.R.	1.14	1.24
Georgian S.S.R.	1.11	1.17
Armenian S.S.R.	1.10	1.16
Azerbaijdzhan S.S.R.	1.11	1.19
Kazakh S.S.R.	1.07	1.15
Uzbek S.S.R.	1.07	1.15
Kirgiz S.S.R.	1.07	1.31
Tadzhik S.S.R.	1.07	1.23
Turkmen S.S.R.	1.08	1.08

NOTE: Figures are given in the same number of decimal places as in the sources.

Source:

Column 1: Ovcharenko, "Results," 1972, p. 41.

Column 2: *Vestnik statistiki*, 1974, p. 92.

capital are available for only six republics. For Latvia, Lithuania, Georgia, and Azerbaydzhan, such data were reported in statistical yearbooks. For the Ukraine and Armenia, some of the results of the revaluation were published in journal articles. Tables 6 and 7 summarize the available data on the ratios of replacement value to original book value of fixed capital of *khozraschet* enterprises and organizations by branch of the economy and by type of asset for these republics. In general the ratios for each branch and for each type of capital by republic vary little from the national average ratios. But certain patterns apparent in tables 6 and 7 suggest that the overall regional differences observed in table 5 cannot be attributed solely to inter-republic differences in the structure of fixed capital by branch or type of asset. The ratios for the revaluation of "buildings" and "structures" in the two Baltic republics are higher than the corresponding ratios for each of the Transcaucasus republics in all cases. This difference is also reflected in the uniformly higher ratios in the Baltic republics (relative to the Transcaucasus) for three branches of the economy—trade and public dining, other nonproductive, and agriculture.²¹ Thus, interregional differences in the composition of the stock of buildings and structures may be an important factor in explaining the differences in the overall results of the revaluation observed in table 5.

Some figures for all republics on the value of fixed capital in *khozraschet* enterprises and organizations after the revaluation are presented in tables 8 and 9. These data were taken from or were derived from the book by Zakumbayev. Values of fixed capital in "industry" (table 8, column 5) were estimated from an index relating the capital/labor ratio in each republic to that for the U.S.S.R. as a whole.²² The first four columns of table 9 were derived from ratios of machinery and equipment per able-bodied person of working age (*trudospobnoye naseleniye v trudospobnom vozraste*). In order to derive the ruble values given in this table, it was first necessary to estimate the able-bodied population of each republic in 1972. This was accomplished by dividing the value of industrial capital for each republic by the corresponding value of capital per able-bodied person reported by Zakumbayev.²³ The last column of table 9 was estimated from ratios of imported machinery and equipment to all machinery and equipment of *khozraschet* enterprises and organizations by republic also given by Zakumbayev.²⁴ These ratios were applied to the values in column 1.

Since the data in tables 8 and 9 are for *khozraschet* enterprises and organizations only, their coverage of fixed capital in the whole economy is incomplete in varying degrees. For example, for the U.S.S.R. as a whole, the fixed productive capital of *khozraschet* enterprises and organizations on January 1, 1972

²¹ "Buildings" and "structures" comprise 75 to 80 percent of the fixed capital of the former two sectors, and about 55 percent of the fixed capital of "agriculture"; other components of fixed capital in agriculture were not revalued.

²² Data on industrial employment (*promyshlennno-proizvodstvennyy personal*) for republics in 1972 were taken from TsSU SSSR, *Nar. khoz.* 72, p. 182. Capital/labor ratios were calculated directly for the U.S.S.R. and the four republics that published data on the revaluation in statistical handbooks (see notes to table 6). These ratios are consistent with the indexes given by Zakumbayev.

²³ *Ibid.*, p. 85.

²⁴ Zakumbayev, *Ekonomicheskoye*, 1977, p. 80.

Table 6. RATIOS OF REPLACEMENT VALUE TO ORIGINAL BOOK VALUE FOR *KHOZRASCHET* ENTERPRISES BY BRANCH FOR THE U.S.S.R. AND SIX REPUBLICS AFTER THE 1972/73 REVALUATION OF FIXED CAPITAL

Branch	U.S.S.R. (1)	Ukrainian S.S.R. (2)	Latvian S.S.R. (3)	Lithuanian S.S.R. (4)	Georgian S.S.R. (5)	Armenian S.S.R. (6)	Azerbaijdzhan S.S.R. (7)
Total fixed capital	1.11	1.125	1.16	1.14	1.11	1.10	1.11
Productive	1.10	1.11	1.13	1.18	1.09	1.09	1.11
Industry	1.09	1.10	1.12	1.11	1.11	1.09	1.12
Agriculture	1.06	1.09	1.12	1.15	1.06	1.06	1.05
Transportation	1.18	1.20	1.16	1.23	1.16	1.23	1.14
Communications	1.10	1.14	1.14	1.08	1.03	(NA)	1.07
Construction	1.03	1.04	1.04	1.02	1.04	1.00	1.02
Trade and public dining	1.06	1.06	1.12	1.08	1.02	1.04	1.06
Other productive	1.09	1.11	1.10	1.07	1.05	1.03	1.09
Nonproductive	1.15	1.17	1.26	1.13	1.18	1.12	1.13
Housing, utilities, and services	1.16	1.18	1.28	1.20	1.22	1.14	1.13
Other nonproductive	1.10	1.12	1.13	1.10	1.07	1.05	1.09

NOTE: Figures are given in the same number of decimal places as in the sources.
NA Not available.

Source:

Column 1: TsSU SSSR, *Nar. Khoz. SSSR* 72, p. 63.
Column 2: Burlin, "Some Results," 1973, p. 5 (ratios for "Productive" and "Nonproductive" estimated).
Column 3: TsSU LaSSR, *Nar. Khoz. LaSSR* 73, p. 49.
Column 4: TsSU LSSR, *Ekonomika i kul' tura* 73, p. 52.
Column 5: TsSU GSSR, *Nar. Khoz. GSSR* 73, p. 36.
Column 6: Yukhanayev, "Some Basic," 1974, p. 16 (ratios for "Other nonproductive," "Nonproductive," and "Productive" estimated).
Column 7: TsSU AzSSR, *Nar. Khoz. AzSSR* 72, p. 33.

Table 7. RATIOS OF REPLACEMENT VALUE TO ORIGINAL BOOK VALUE FOR *KHOZRASCHET* ENTERPRISES BY TYPE OF ASSET FOR THE U.S.S.R. AND SIX REPUBLICS AFTER THE 1972/73 REVALUATION OF FIXED CAPITAL

Branch	U.S.S.R. (1)	Ukrainian S.S.R. (2)	Latvian S.S.R. (3)	Lithuanian S.S.R. (4)	Georgian S.S.R. (5)	Armenian S.S.R. (6)	Azerbaijdzhan S.S.R. (7)
Total fixed capital	1.11	1.125	1.16	1.14	1.11	1.10	1.11
Buildings	1.13	1.15	1.23	1.16	1.15	1.11	1.12
Residential	1.17	(NA)	1.30	1.21	1.21	(NA)	1.13
Structures	1.21	1.21	1.23	1.27	1.18	1.19	1.21
Power lines, pipelines, etc.	1.18	1.21	1.30	1.38	1.23		1.19
Machinery and equipment (M&E)	1.04	1.04	1.03	1.02	1.04	1.03	1.03
Power M&E	1.07	(NA)	1.07	1.05	1.05	(NA)	1.04
Operating (<i>rabochiye</i>) M&E	1.04	(NA)	1.03	1.02	1.05	(NA)	1.04
Precision instruments and laboratory equipment . . . . .	.93	.94	.91	.94	.94	(NA)	.94
Computers . . . . .	.90	.90	.91	.94	.91	(NA)	.91
Other M&E . . . . .	.995	(NA)	.993	1.01	.98	(NA)	.98
Transportation equipment	1.03	1.04	1.02	.997	.97	.99	.96
Tools and implements . . . . .	.996	(NA)	1.00	1.0	.99	1.0	.997
Other fixed capital	1.0	(NA)	1.00	1.0	1.0		1.0	1.0

NOTE: Figures are given in the same number of decimal places as in the sources.

NA Not available.

Source:

Column 1: TsSU SSR, *NAR. Khoz. SSSR* 72, p. 82.
Column 2: Burlin, "Some Results," 1973, p. 4.
Column 3: TsSU LaSSR, *Nar. Khoz. LaSSR* 73, p. 48.
Column 4: TsSU LSSR, *Ekonomika i kul' tura* 73, p. 51.
Column 5: TsSU GSSR, *Nar. Khoz. GSSR* 73, p. 35.
Column 6: Yukhanayev, "Some Basic," 1974, p. 15.
Column 7: TsSU AzSSR, *Nar. Khoz. AzSSR* 72, p. 32.

Table 8. VALUE OF PRODUCTIVE FIXED CAPITAL OF *KHOZRASCHET* ENTERPRISES AND ORGANIZATIONS AFTER REVALUATION, BY REPUBLIC: JANUARY 1, 1972

(In Millions of rubles)

Republic	All sectors of material production				Industry
	Total fixed capital	Buildings and other structures	Machinery and equipment	All other assets	
	(1)	(2)	(3)	(4)		(5)
U.S.S.R.....	526,977.2	267,651.4	138,837.5	120,488.3	271,732
R.S.F.S.R.	316,430.5	159,455.6	85,682.9	71,292.0	168,423
Ukrainian S.S.R.	96,192.9	50,952.1	24,723.1	20,517.7	51,141
Moldavian S.S.R.	5,104.8	2,534.6	1,183.7	1,386.5	1,900
Belorussian S.S.R.	15,389.1	7,759.3	4,211.1	3,418.7	7,212
Latvian S.S.R.	6,355.7	3,243.8	1,618.0	1,493.9	2,737
Lithuanian S.S.R.	7,073.7	3,760.6	1,836.7	1,476.4	3,152
Estonian S.S.R.	4,171.2	2,034.8	1,266.6	869.8	2,197
Georgian S.S.R.	7,811.2	4,066.5	1,558.4	2,186.4	3,677
Armenian S.S.R.	3,993.2	2,011.2	1,083.7	898.3	2,304
Azerbaydzhan S.S.R.	8,877.4	4,574.3	1,898.0	2,405.1	5,237
Kazakh S.S.R.	31,188.0	15,902.7	7,551.4	7,733.9	13,511
Uzbek S.S.R.	14,279.7	6,378.3	3,822.8	4,078.6	6,009
Kirgiz S.S.R.	3,683.6	1,847.1	804.8	1,031.7	1,566
Tadzhik S.S.R.	2,743.2	1,379.3	687.5	676.4	1,150
Turkmen S.S.R.	3,682.9	1,751.2	908.8	1,022.9	1,516

Source:

Columns 1, 2, and 3: Zakumbayev, *Ekonomicheskoye*, 1977, p. 118.

Column 4: Calculated as a residual—column 1 less the sum of columns 2 and 3.

Column 5: Estimated from Zakumbayev, *Ekonomicheskoye*, 1977, p. 112; see text.

Table 9. VALUE OF MACHINERY AND EQUIPMENT OF *KHOZRASCHET* ENTERPRISES AND ORGANIZATIONS AFTER REVALUATION, BY REPUBLIC: JANUARY 1, 1972

(In millions of rubles)

Republic	Machinery and equipment				Imported machinery and equipment of all types
	Total	Operating equipment	Precision instruments, laboratory equipment, computers	All other equipment	
U.S.S.R.....	147,201	103,341	8,739	35,121	16,002
R.S.F.S.R.	91,420	64,250	5,808	21,362	10,696
Ukrainian S.S.R.	25,893	18,572	1,407	5,914	2,693
Moldavian S.S.R.	1,233	819	66	348	90
Belorussian S.S.R.	4,375	3,098	245	1,032	547
Latvian S.S.R.	1,707	1,307	100	300	309
Lithuanian S.S.R.	1,938	1,413	109	416	252
Estonian S.S.R.	1,315	845	67	403	162
Georgian S.S.R.	1,687	1,226	89	372	194
Armenian S.S.R.	1,160	803	72	285	122
Azerbaydahan S.S.R.	2,000	1,446	96	458	156
Kazakh S.S.R.	7,921	5,227	375	2,319	428
Uzbek S.S.R.	4,002	2,606	188	1,208	200
Kirgiz S.S.R.	854	576	41	237	53
Tadzhik S.S.R.	737	484	37	216	48
Turkmen S.S.R.	959	669	39	251	52

Source: Derived from Zakumbayev, *Ekonomicheskoye*, 1977, p. 85; see text.

Table 10. RATIOS OF VALUES OF FIXED CAPITAL IN 1973 PRICES TO VALUES IN 1955 PRICES FOR THE U.S.S.R. AND EIGHT REPUBLICS: END OF 1975

Branch	U.S.S.R.	Ukrainian S.S.R.	Latvian S.S.R.	Lithuanian S.S.R.	Georgian S.S.R.	Armenian S.S.R.	Azerbaijdzhan S.S.R.	Uzbek S.S.R.	Tadzhik S.S.R.
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Total fixed capital . . .	1.16	1.17	1.23	1.24	1.20	1.17	1.15	1.15	1.16
Productive . . .	1.15	1.16	1.19	1.24	1.23	1.15	1.18	1.14	1.15
Industry . . .	1.12	1.14	1.16	1.17	1.15	1.09	1.13	1.12	1.11
Agriculture . . .	1.15	1.21	1.23	1.17	1.11	1.23	1.13	1.11	1.12
Transportation and communicati	1.23	1.22	1.20	1.82	1.77	1.35	1.41	1.27	1.42
Construction . . .	1.07	.98	1.16	1.07	1.16	1.14	1.07	1.09	1.07
Trade and distribution and other									
productive	1.27	1.12	1.14	1.13	1.01	.90	1.18	1.19	1.11
Nonproductive	1.18	1.20	1.31	1.25	1.14	1.19	1.08	1.17	1.16
Housing	1.14	1.14	1.25	1.15	1.06	1.12	1.10	1.09	1.09
Other nonproductive	1.26	1.30	1.41	1.44	1.27	1.29	1.04	1.29	1.29

Source: All values in 1955 prices were taken from appendix A. Values in 1973 prices were taken from the following sources:

Column 1: Table 12.

Column 2: TsSU UkrRSR, *Nar. hosp. UKRSR 78*, p. 19, with minor revisions, see footnote 23.

Column 3: TsSU LaSSR, *Nar. khoz. LaSSR 77*, p. 36.

Column 4: TsSU LiSSR, *Ekonomika i kul' tura 77*, p. 32.

Column 5: TsSU GSSR, *Nar. khoz. GSSR 77*, p. 21.

Column 6: TsSU ArSSR, *Nar. khoz. ArSSR 75*, p. 25.

Column 7: TsSU AzSSR, *Nar. khoz. AzSSR 75*, p. 24.

Column 8: TsSU UzSSR, *Nar. khoz. UzSSR za 50 let, 1977*, p. 28.

Column 9: TsSU TaSSR, *Nar. khoz. TaSSR 76*, p. 20.

(table 8, column 1) was about 91.5 percent of the total in both *khozraschet* and budgetary enterprises and organizations. However, *khozraschet* enterprises and organizations accounted for about 98 percent of all fixed capital in industry (table 8, column 5). Also the total values of machinery and equipment given in table 9 (column 1) exceed those given in table 8 (column 3) because the former include sectors in the sphere of nonmaterial production as well as all productive sectors. The total value of machinery and equipment for the U.S.S.R. shown in table 9 represents about 95 percent of all machinery and equipment in the economy, i.e., about 5 percent of all machinery and equipment was held by budgetary enterprises and organizations.

FIXED CAPITAL IN 1975 BY REPUBLIC IN 1973 PRICES

In national statistical handbooks published since 1976, data on fixed capital both in value terms and in terms of growth indexes have been given in constant 1973 prices.²⁵ Data on fixed capital by branch in 1973 prices have been published in

²⁵ In the national statistical handbooks for 1972-74, fixed capital data in value terms were said to be "in contemporary (*sovremennyye*) prices." Similar terminology was used in the republic handbooks, although the shift to "constant 1973 prices" occurred later in most instances. It is not clear whether capital data published, for example, in 1974 "in contemporary prices" reflect any price changes during the 1972-74 period that might have affected assets installed after the revaluation, but the differences between "contemporary prices" and "constant 1973 prices" would certainly be minor.

value terms for eight republics.²⁶ However, the only year for which values have been reported for all eight of these republics is 1975. Therefore, this year was selected to develop a complete set of estimates of fixed capital in 1973 prices for all republics.

As an aid to the estimation of the values for the remaining republics, ratios of the value of fixed capital in 1973 prices to the corresponding value in 1955 prices were calculated for these eight republics and for the U.S.S.R. as a whole (see table 10). One surprising result of the comparison of these ratios is the wide range of ratios for "transportation and communications." This is apparently due to a shift in the branch classification of certain assets instituted at about the time the revaluation took place.²⁷ Also noteworthy is the fact that the ratios for "housing" in table 10 are generally positively related to the urban share of total population for the republics included here.

In light of these observations and the regional differences in the results of the revaluation of fixed capital noted in the previous section, values of fixed capital in 1973 prices in the major

²⁶ Data on the value of fixed capital for the Ukraine were published for the first time in the most recent handbook for the republic, TsSU UkrRSR, *Nar. hosp. UKRSR 78*, p. 19. These figures were for values rounded to the nearest billion rubles. Using additional data from this handbook on values of fixed capital in other years, 1970 and 1976-77, and growth indexes linking each of these years to 1975, estimates of fixed capital rounded to the nearest 100 million rubles were derived. These estimates for 1975 are given in table 11.

²⁷ One such shift, which has been documented by Tremblay, "Notes," 1978, p. 6, is the transfer of a major share of the transportation machinery and equipment of the fishing industry (probably the fishing fleet) to the transportation and communications branch.

Table 11. FIXED CAPITAL STOCK IN MAJOR BRANCHES OF THE ECONOMY BY REPUBLIC IN 1973 PRICES: END OF 1975

(In millions of rubles)

Line No.	Republic	Total fixed capital	Total	Industry	Productive fixed capital			Trade and distribution and other productive	Nonproductive fixed capital		
					Agriculture	Transportation and communications	Construction		Total	Housing	Other non-productive
1.	U.S.S.R.	1,256,000	805,000	384,800	166,900	171,200	35,400	46,700	451,000	266,500	184,500
2.	R.S.F.S.R.	759,626	479,762	243,708	81,108	104,424	22,456	28,066	279,864	164,604	115,260
3.	Ukrainian S.S.R.	218,700	141,500	68,500	32,300	28,700	4,300	7,700	77,200	46,500	30,700
4.	Moldavian S.S.R.	13,017	8,726	2,641	3,778	1,437	305	565	4,291	2,446	1,845
5.	Belorussian S.S.R.	38,000	25,000	10,600	7,144	4,864	1,100	1,292	13,000	7,940	5,060
6.	Latvian S.S.R.	15,224	9,507	3,551	2,698	2,428	310	520	5,717	3,445	2,272
7.	Lithuanian S.S.R.	17,563	11,638	4,371	4,123	2,140	429	575	5,925	3,560	2,365
8.	Estonian S.S.R.	10,211	6,464	2,920	1,603	1,450	194	297	3,747	2,246	1,501
9.	Georgian S.S.R.	18,873	11,781	4,603	3,056	2,971	472	679	7,092	4,111	2,981
10.	Armenian S.S.R.	10,143	6,077	2,927	1,373	1,083	375	319	4,066	2,262	1,804
11.	Azerbaijani S.S.R.	17,572	12,431	6,234	2,307	2,778	648	464	5,141	3,046	2,095
12.	Kazakh S.S.R.	71,842	48,267	19,432	12,562	10,730	1,953	3,590	23,575	14,325	9,250
13.	Uzbek S.S.R.	37,344	25,095	8,623	8,685	4,691	1,633	1,463	12,249	6,994	5,255
14.	Kirgiz S.S.R.	9,900	6,365	2,349	2,138	1,134	354	390	3,535	1,960	1,575
15.	Tadzhik S.S.R.	8,730	5,644	2,029	1,974	897	383	361	3,086	1,770	1,316
16.	Turkmen S.S.R.	9,255	6,743	2,312	2,051	1,473	488	419	2,512	1,291	1,221

Source:

Lines 1, 3, 6, 7, 9, 10, 11, 13, and 15: See notes to table 10.
 Lines 2, 4, 5, 8, 12, 14, and 16: Author's estimates; see text.

branches of the economy at the end of 1975 for those republics for which data were not available were estimated as follows:

- (1) For Estonia the value of total fixed capital was calculated from a per capita figure reported in a Latvian handbook, and individual branch values were then calculated from the published branch distribution.²⁸
- (2) The total value of productive fixed capital in Belorussia at the end of 1975 was reported in an article by a division head of the republic planning committee to be more than 25 billion rubles.²⁹ Values for individual branches were estimated from the published percentage distribution using this figure.³⁰ As a check, ratios of these branch values to the corresponding values in 1955 prices were calculated. The resulting ratios were quite reasonable; they were just above those for the Ukraine and just below those for the Baltic republics.
- (3) For Kazakhstan and Turkmenistan, values in 1955 prices were converted to 1973 prices using ratios of implicit price changes from table 10 for Uzbekistan, except that a ratio of 1.11 was used for "housing" in Kazakhstan.³¹ For Kirgizstan, price conversion ratios for Tadzhikistan

were used. For Moldavia, the national average conversion ratios were used.

- (4) For the R.S.F.S.R., all values were calculated as residuals.

The published and estimated figures on fixed capital in 1973 prices are given in table 11. It should be emphasized that given the methods employed, including the fact that even the values in 1955 prices for 1975 for two republics could only be approximated by extrapolation, some of the estimates included in the table must be considered tentative and subject to revision.

These 1975 estimates provide a set of base year values to which growth indexes published in statistical handbooks can be linked to estimate values of fixed capital in 1973 prices in other years. However, rates of growth of fixed capital for years after 1975 are not yet available for all republics, and no additional estimates for republics will be presented here. For the U.S.S.R. as a whole, values of fixed capital in constant 1973 prices have been published or can be derived for the years 1965 and 1970-78. The figures are presented in table 12. The estimated values in the table were derived from the published data on values and growth rates using the method of estimating values for the U.S.S.R. in 1955 prices that was described in chapter II, section A.

²⁸ TsSU ESSR, *Nar. khoz. ESSR 77*, pp. 33-34, and TsSU LaSSR, *Nar. khoz. LaSSR 75*, p. 53.

²⁹ Chernysh, "Improve," 1978, p. 39.

³⁰ TsSU BSSR, *Nar. khoz. BSSR*, 1978, p. 33.

³¹ The value of total productive fixed capital in Kazakhstan estimated by this method is very close to the value of 48.2 billion rubles reported in Ibrayev, "Kazakhstan," p. 69.

Table 12. FIXED CAPITAL STOCK IN MAJOR BRANCHES OF THE ECONOMY FOR THE U.S.S.R. IN 1973 PRICES:
1965 AND 1970 TO 1978

(In billions of rubles)

Branch	1965	1970	1971	1972	1973
Total fixed capital	600.8	860.1	928.7	1,002.9	1,083.1
Productive	360.0	531.1	576.2	625.9	682.2
Industry	167.6	255.2	277.5	299.8	326.4
Agriculture	77.1	106.0	115.6	126.5	139.3
Transportation and communications . . .	83.0	117.0	125.8	136.4	147.5
Construction	11.9	21.6	23.5	26.5	29.2
Trade and distribution and other productive	20.4	31.3	33.8	36.7	39.8
Nonproductive	240.8	329.0	352.5	377.0	400.9
Housing	159.4	204.0	214.8	226.7	239.2
Other nonproductive	81.4	125.0	137.7	150.8	161.7
	1974	1975	1976	1977	1978
Total fixed capital	1,167.4	1,256.0	1,345.0	1,437.4	1,537.3
Productive	742.0	805.0	868.0	932.4	1,003.8
Industry	355.0	384.8	416.1	445.3	479.9
Agriculture	153.0	166.9	180.0	194.3	208.8
Transportation and communications . . .	158.6	171.2	182.1	195.0	209.2
Construction	32.0	35.4	39.2	43.3	47.9
Trade and distribution and other productive	43.4	46.7	50.6	54.5	58.0
Nonproductive	425.4	451.0	477.0	505.0	533.5
Housing	252.8	266.5	280.0	294.0	309.2
Other nonproductive	172.6	184.5	197.0	211.0	224.3

Source: Values from Soviet statistical handbooks for various years adjusted to be consistent with growth indexes in TsSU SSSR, *Nar. Khoz.* 79, p. 55, and TsSU SSSR, *Nar. khoz. SSSR za 60 let*, 1977, p. 81.

Chapter IV. Disaggregation of Industrial Fixed Capital

In addition to the data used in the foregoing chapters, a great deal of regional data on industrial fixed capital have been published both in statistical handbooks and in other Soviet sources. Most of these data are in the form of growth indexes or percentage breakdowns, such as the distribution of industrial capital by branch for a particular region or the distribution of total industrial capital among subregions within a particular republic. Such data can be used in conjunction with the values of industrial fixed capital estimated in the preceding chapters to develop estimates for a larger number of regions and branches of the Soviet economy. However, care must be taken in combining data from different sources because of possible differences in coverage. This chapter presents estimates of industrial capital disaggregated in three ways—by industrial branch, by type of asset, and by subregions within republics—and a discussion of the methodological problems involved. Although the disaggregation could be carried farther, no attempt is made here to exhaust these possibilities. This would involve an extensive search of sources on the economies of regions of the U.S.S.R., which is beyond the scope of this study.

INDUSTRIAL FIXED CAPITAL BY BRANCH

Data for all republics on the distribution by branch of industrial fixed capital were published in national statistical handbooks for each year from 1961 to 1974, except for 1966 when only a shortened anniversary handbook was issued. In all instances the figures covered at least 10 branches of industry, and after 1963 figures were also given for several subbranches. In the statistical handbooks for 1975 and subsequent years, however, such tables have not been published.

An important factor to be considered in using these data is that they refer to enterprises on an independent balance (*na samostoyatel'nom balanse*) and thus exclude a small proportion of total industrial capital as recorded in the accounts of fixed capital by major branch of the economy for which estimates were made in chapter II of this report. The latter accounts also include industrial enterprises of *kolkhozes* and other subsidiary industrial enterprises of nonindustrial branches such as equipment repair and metalworking shops of construction trusts. Little information is available on the share of these subsidiary enterprises in total industrial fixed capital. In a 1967 book on the Kazakh economy, it was reported that enterprises on independent balance accounted for 90 to 92 percent of total industrial fixed capital.³² The ratio for Lithuania in 1970

was 94.3 percent.³³ Although the percentage breakdowns published in national handbooks do not include the fixed capital of subsidiary enterprises, these data are the best available for deriving estimates of the value of industrial capital by branch for all republics. Several republics either do not publish information on the distribution of industrial capital by branch or simply report the data given in the national handbook. Other republics publish percentage breakdowns with subheadings indicating that the coverage is different from that of the national handbook data or with no subheadings at all.

Year-end values of fixed capital by branch for the republics were estimated using the percentage breakdowns published in national handbooks for the first and last years for which such data are available, 1961 and 1974. For five republics the value of total fixed capital in industry in 1961 could not be estimated directly from information in statistical handbooks. Each of these values was estimated by (1) calculating the average annual rate of growth of industrial capital in the republic between 1960 and the next year for which an estimate had been made in appendix A, and (2) applying this growth rate to the 1960 value for the republic. A similar method was used to estimate the industry totals for two republics in 1974. All other industry totals for republics in 1961 and 1974 were taken from appendix A. The values estimated for ten individual branches of industry in these two years are given in appendix B. While it may be possible to derive somewhat more accurate estimates of industrial capital by branch for certain republics using information from secondary Soviet sources, the values given in appendix B should be satisfactory for the purpose of making overall inter-republic comparisons.

INDUSTRIAL FIXED CAPITAL BY TYPE OF ASSET

Most republics have published information regularly on the structure of industrial fixed capital by type of asset. As noted in the previous section, there is some variation among republics in the coverage of published data on the distribution of industrial capital by branch. However, there is no problem of comparability in the data by type of asset since such data are collected only from enterprises on independent balance.³⁴ Some 1975 data of this type are assembled in table 13. Similar

³³ The value of industrial fixed capital for enterprises on independent balance was given in TsSU LiSSR, *Promyshlennost'*, 1973, p. 48. The value for all industry was taken from appendix A.

³⁴ See Ashimbayev, *Problemy*, 1967, p. 64.

³² Ashimbayev, *Problemy*, 1967, p. 64.

Table 13. DISTRIBUTION OF INDUSTRIAL FIXED CAPITAL BY TYPE OF ASSET FOR REPUBLICS: END OF 1975

(In percent)

Line No.	Republic	Total	Buildings	Structures	Transmission systems	Power M&E	Operating M&E	Precision instruments, laboratory equipment	Means of transportation	Other
1.	U.S.S.R.	100.0	29.3	19.6	11.5	8.0	26.8	1.2	2.1	1.5
2.	R.S.F.S.R.	100.0	30.0	18.1	11.4	8.0	27.5	1.2	2.1	1.7
3.	Ukrainian S.S.R.	100.0	60.5			7.6	27.1	1.2	3.6	
4.	Moldavian S.S.R.	100.0	35.6	10.3	14.0	10.0	25.7	1.3	1.4	1.7
5.	Belorussian S.S.R.	100.0	57.6			8.4	29.0	1.6	3.4	
6.	Latvian S.S.R.	100.0	29.7	12.7	12.5	6.4	32.1	1.2	3.4	2.0
7.	Lithuanian S.S.R.	100.0	29.9	9.7	15.9	7.9	30.3	1.3	2.9	2.1
8.	Estonian S.S.R.	100.0	26.5	12.2	11.9	15.5	27.3	1.4	3.4	1.8
9.	Georgian S.S.R.	100.0	65.5			6.7	24.4	0.8	2.6	
10.	Armenian S.S.R.	100.0	32.3	18.1	10.7	9.1	25.3	1.3	1.7	1.5
11.	Azerbaijdzhan S.S.R.	100.0	17.3	42.3	11.3	5.5	20.7	0.8	1.3	0.8
12.	Kazakh S.S.R.	100.0	28.4	24.7	13.8	8.2	20.5	0.8	2.7	0.9
13.	Uzbek S.S.R.	100.0	28.1	19.9	13.9	9.1	24.5	1.1	2.1	1.3
14.	Kirgiz S.S.R.	100.0	67.5			7.7	20.7	0.9	3.2	
15.	Tadzhik S.S.R.	100.0	26.0	33.6	12.5	7.5	17.7	0.7	1.1	0.9
16.	Turkmen S.S.R.	100.0	75.1			6.0	16.0	0.4	2.5	

Source:

Line 1: TsSU SSSR, *Nar. khoz.* 75, p. 220.Line 2: TsSU RSFSR, *Nar. khoz. RSFSR* 75, p. 58.Lines 3, 5, 9, 14, and 16: Zakumbayev, *Ekonomicheskoye*, 1977, p. 120. This source was also used in part for the breakdowns for the Moldavian, Kazakh, and Uzbek republics.Line 4: TsSU MSSR, *Nar. khoz. MSSR* 75, p. 43.Line 6: TsSU LaSSR, *Nar. khoz. LaSSR* 75, p. 94.Line 7: TsSU LiSSR, *Ekonomika i kul'tura* 75, p. 70.Line 8: TsSU ESSR, *Nar. khoz. ESSR* 75, p. 91.Line 10: TsSU ArSSR, *Nar. khoz. ArSSR* 75, p. 66.Line 11: TsSU AzSSR, *Nar. khoz. AzSSR* 75, p. 68.Line 12: TsSU KeSSR, *Nar. khoz. KeSSR* 75, p. 38.Line 13: TsSU UzSSR, *Nar. khoz. UzSSR* 75, p. 74.Line 15: TsSU TaSSR, *Nar. khoz. TaSSR* 76, p. 48.

percentage distributions for individual branches of industry are published annually in the statistical handbooks of about half of the republics.

INDUSTRIAL FIXED CAPITAL BY ECONOMIC REGION

A basic problem in using republic data for the analysis of regional economic problems in the U.S.S.R. is the great disparity in the size of the republics. The R.S.F.S.R. and the Ukraine alone account for about four-fifths of the Soviet economy. They are subdivided into 10 and 3 economic regions, respectively, making a total, with the other 6 regions, of 19 regions in the Soviet system of regionalization used in collecting some types of data. (Soviet sources frequently refer to 18 regions, excluding the Moldavian republic). However, much less information is available for the economic subregions of the R.S.F.S.R. and the Ukraine than for the republics.

With respect to capital stock data, apparently only industrial fixed capital accounts are maintained for these economic regions and for their oblast-level subdivisions. Data on the structure and growth of industrial fixed capital are often included in

oblast statistical handbooks, but similar data for the 13 economic regions within the R.S.F.S.R. and the Ukraine can be found only in secondary sources since (1) statistical handbooks are not published for these regions (they are not administrative units), and (2) capital stock data for these regions are not reported in the national or the republic handbooks.³⁵

On the basis of information given by Zakumbayev, it is possible to derive estimates of industrial fixed capital by economic region for a single year—1972. He reported two ratios for each region (excluding Moldavia): the capital/output ratio and the ratio of capital per able-bodied person of working age.³⁶ Therefore, for economic regions composed of a single republic—Kazakhstan and Belorussia—or of a combination of republics—the Baltic, Transcaucasus, and Central Asian regions—values of fixed capital can be calculated directly from these ratios. For economic regions within the R.S.F.S.R. and the Ukraine, the

³⁵ One exception to this was the publication of such data in the 1957 national handbook for industry, TsSU SSSR, *Promyshlennost'*, 1957, p. 18.

³⁶ Zakumbayev, *Ekonomicheskoye*, 1977, p. 83. The republic population figures used by Zakumbayev in calculating ratios of capital per able-bodied person of working age were estimated in chapter III, section B.

Table 14. INDUSTRIAL FIXED CAPITAL AND GROSS OUTPUT BY ECONOMIC REGION: 1972

(In billions of rubles)

Region	Fixed capital	Gross output
U.S.S.R.	250.35	407.7
Northwest	17.3	26.2
Central	26.5	66.3
Volga-Vyatka	6.96	14.8
Central-Chernozem	6.39	11.2
Volga	26.0	35.2
North Caucasus	11.1	19.8
Ural	24.5	36.0
West Siberia	15.2	21.5
East Siberia	12.6	13.7
Far East	9.56	10.5
Donets-Dnepr	30.8	43.5
Southwest	11.4	23.2
South	4.35	9.3
Moldavia	1.61	4.0
Belorussia	6.63	13.9
Baltic	7.95	15.8
Transcaucasus	9.77	12.7
Kazakhstan	12.4	14.4
Central Asia	9.33	15.7

Source: Author's estimates; see text.

population numbers used are not known, and it is necessary to estimate the value of industrial output by economic region in 1972 and then derive values of fixed capital from the given capital/output ratios.

The share of each region in total industrial output was estimated from the following information given by Zakumbayev:³⁷

- (1) The share of the value of output of the light and food industries, x^r , in total industrial output, X^r , for each region, r . This ratio, x^r/X^r , will be denoted a^r ;
- (2) The same share for the U.S.S.R. as a whole, $a^u = x^u/X^u$; and
- (3) The ratios of per capita output of the light and food industries in each region to the corresponding per capita value for the U.S.S.R.,

$$b^r = \frac{\frac{x^r}{X^r}}{\frac{x^u}{X^u}} = \frac{N^r}{N^u}$$

Expressions (1) and (2) can be combined to form a relation defining the share of a single region in the total industrial output of the U.S.S.R.:

$$\frac{x^r}{x^u} = \left(\frac{x^r}{x^u} \right) \left(\frac{a^u}{a^r} \right)$$

Expression (3) can be rewritten as—

$$\frac{x^r}{x^u} = b^r \left(\frac{N^r}{N^u} \right)$$

Substituting this relation into the preceding one gives an expression for each region's share of industrial output in terms of known values.³⁸

$$\frac{x^r}{X^u} = b^r \left(\frac{N^r}{N^u} \right) \left(\frac{a^u}{a^r} \right)$$

The share thus derived for each region was applied to the value of industrial output for the U.S.S.R., which was estimated from the national capital/output ratio. The estimated values of both industrial output and fixed capital by economic region for 1972 are given in table 14.

Comparison with the estimates made for the republics in chapter II indicates that the capital values in table 14 are in pre-revaluation (i.e., 1955) prices and that they probably represent annual average values. The values of industrial output are consistent with republic estimates made for other years in 1967 prices.³⁹ However, it is impossible to conclude with certainty whether the capital and the output values given here include all industrial activity or exclude some small components, such as *kolkhoz* industry. This same uncertainty is encountered frequently in using data that are poorly described or documented in Soviet secondary sources, but such differences in coverage should not preclude the use of the figures as base-year values to derive estimates of industrial fixed capital and gross output on a more disaggregated basis, both regionally and by branch, that would be satisfactory for most purposes.

³⁸ Mid-year population figures for all regions in 1972 were calculated by averaging the beginning- and end-of-year figures from TsSU SSSR, *Ner. khoz.* 1922-72, p. 12, and TsSU SSSR, *Ner. khoz.* 72, p. 16.

³⁹ See Gillula, *Regional*, 1978, p. 153. The value of industrial output for Moldavia in table 14 was estimated from the 1970 value in this source and the published rate of growth between 1970 and 1972. The annual average value of fixed capital for Moldavia in 1972 was estimated from the end-of-year values for 1971 and 1972 given in appendix A.

³⁷ *Ibid.*, pp. 182 and 185.

Appendix A. Fixed Capital in Major Branches of the Economy for the U.S.S.R. and Union Republics: 1960 to 1975

The general procedures used in estimating the values presented in tables A-1 to A-18 are summarized in chapter II. The sources are listed below. All figures are end-of-year values in 1955 prices. The correspondence between the seven branches for which estimates could be made for all republics and individual branches identified in the handbooks of various republics is summarized below:

Total fixed capital

A. Productive

1. Industry
2. Agriculture
3. Transportation and communications
 - a. Transportation
 - b. Communications
4. Construction
5. Trade and distribution and other productive
 - a. Trade, public dining, procurement, supply
 - b. Other productive

B. Nonproductive

6. Housing
7. Other nonproductive
 - a. Municipal and other services
 - b. Other nonproductive
 - (1) Health
 - (2) Education
 - (3) Science
 - (4) Culture
 - (5) Other

U.S.S.R.

Values of capital stock by branch in 1965 (which differ slightly from those reported in TsSU SSSR, *Nar. khoz.* 65, p. 64) were derived as the average of four estimates, each calculated by dividing the published value of capital stock for a later year by the growth rate since 1965 given in the same source: TsSU SSSR, *Nar. khoz.* 1922-72, p. 60; TsSU SSSR, *Nar. khoz.* 70, pp. 60-61; TsSU SSSR, *Nar. khoz.* 69, pp. 45-46; and TsSU SSSR, *Nar. khoz.* 68, pp. 49-50. With few exceptions (see text, section II.B) the values for other years were then estimated using the 1965 values and the growth rates (base-year 1940) published most recently: TsSU SSSR, *Nar. khoz.* 75, p. 59, for 1970-74; TsSU SSSR, *Nar. khoz.* 70, p. 60, for 1960

and 1969; TsSU SSSR, *Nar. khoz.* 69, p. 45, for 1968; TsSU SSSR, *Nar. khoz.* 68, p. 49, for 1966 and 1967; and TsSU SSSR, *Nar. khoz.* 65, p. 64, for 1964. Values for 1975 were estimated from growth rates relative to 1974, TsSU SSSR, *Nar. khoz. za 60 let*, 1977, p. 81.

R.S.F.S.R.

Values for 1960, 1965, and 1970 were obtained as residuals by subtracting the sum of the corresponding values for all other republics from the U.S.S.R. total. Values for other years were then estimated using these base-year values and published growth rates: base-year 1965 and 1970 rates for 1970-75, TsSU RSFSR, *Nar. khoz. RSFSR 75*, p. 27; base-year 1965 rates for 1966-69, TsSU RSFSR, *Nar. khoz. RSFSR 70*, p. 39; base-year 1960 rates for 1965-68, TsSU RSFSR, *Nar. khoz. RSFSR 69*, p. 32; base-year 1960 rates for 1961-64, TsSU RSFSR, *Nar. khoz. RSFSR 68*, p. 20.

Ukrainian S.S.R.

Distribution by branch and growth rates (base-years 1965 and 1970) for 1974, TsSU UkrRSR, *Nar. hosp. UkrRSR 75*, p. 26; distribution by branch and growth rates (base-years 1965 and 1970) for 1970-73, TsSU UkrRSR, *Nar. hosp. UkrRSR 74*, p. 33; distribution by branch and growth rates (base-year 1960) for 1970 and 1971, TsSU UkrRSR, *Nar. hosp. UkrRSR 72*, p. 49; distribution by branch and growth rates (base-year 1960) for 1960 and 1965-69, TsSU UkrRSR, *Nar. hosp. UkrRSR 69*, p. 48. Values for 1975 were estimated from growth rates relative to 1974, TsSU UkrRSR, *Nar. hosp. UkrRSR*, 1977, p. 35.

Moldavian S.S.R.

Growth rates (base-years 1965 and 1970) for 1974, TsSU MSSR, *Nar. khoz. MSSR 75*, pp. 16-17; growth rates (base-years 1960, 1965, and 1970) for 1970-73, TsSU MSSR, *Nar. khoz. MSSR 74*, pp. 17-19; distribution by branch and growth rates (base-year 1960) for 1965-69, TsSU MSSR, *Nar. khoz. MSSR 70*, pp. 20-21. Values for 1975 were estimated from growth rates relative to 1974, TsSU MSSR, *Sovetskaya*, 1977, p. 24.

Belorussian S.S.R.

Distribution by branch and growth rates (base-years 1960, 1965, and 1970) for 1965 and 1970-75, TsSU BSSR, *Nar. khoz. BSSR 77*, pp. 37-39; distribution by branch for 1960 and growth rates (base-year 1960) for 1970-73, TsSU BSSR, *Nar. khoz. BSSR 75*, pp. 29-31; distribution by branch and growth rates (base-year 1965) for 1966-69, TsSU BSSR, *Nar. khoz. BSSR 70*, pp. 25-26; growth rates (base-year 1960) for 1965-68, TsSU BSSR, *BSSR v tsifrah*, 1970, p. 15; growth rates (base-year 1960) for 1961-64, TsSU BSSR, *BSSR za gody*, 1967, pp. 55-56.

Latvian S.S.R.

Values for 1971, TsSU LaSSR, *Nar. khoz. LaSSR 72*, p. 36; values for 1970, TsSU LaSSR, *Nar. khoz. LaSSR 71*, p. 44; growth rates (base-years 1965 and 1970) for 1975, TsSU LaSSR, *Nar. khoz. LaSSR 76*, p. 28; growth rates (base-years 1965 and 1970) for 1970-74, TsSU LaSSR, *Nar. khoz. LaSSR 75*, p. 36; growth rates (base-year 1960) for 1965, 1972, and 1973, TsSU LaSSR, *LaSSR v tsifrah 74*, p. 56; distribution by branch for 1960 and 1965, TsSU LaSSR, *Nar. khoz. LaSSR 72*, p. 36; distribution by branch and growth rates (base-years 1960 and 1965) for 1968, TsSU LaSSR, *LaSSR v tsifrah 69*, p. 50. distribution by branch and growth rates (base-years 1960 and 1965) for 1967, TsSU LaSSR, *LaSSR v tsifrah 68*, p. 48.

Lithuanian S.S.R.

Values for 1972, TsSU LiSSR, *Ekonomika i kul'tura 73*, p. 47; values for 1971, TsSU LiSSR, *Ekonomika i kul'tura 72*, p. 70; values for 1970, TsSU LiSSR, *Ekonomika i kul'tura*, 1972, p. 129; distribution by branch and growth rates (base-years 1960, 1965, and 1970) for 1973 and 1974, TsSU LiSSR, *Ekonomika i kul'tura 75*, pp. 31-34; distribution by branch and growth rates (base-years 1960 and 1965) for 1965-69, TsSU LiSSR, *Ekonomika i kul'tura 70*, pp. 52-54; distribution by branch and growth rates (base-year 1960) for 1960-64, TsSU LiSSR, *Ekonomika i kul'tura*, 1967, pp. 88-89.

Estonian S.S.R.

Distribution by branch and growth rates (base-years 1960, 1965, and 1970) for 1960, 1965, 1970, and 1975, TsSU ESSR, *Nar. khoz. ESSR 76*, pp. 33-35; distribution by branch and growth rates (base-years 1960, 1965, and 1970) for 1974, TsSU ESSR, *Nar. khoz. ESSR 75*, pp. 47-49; distribution by branch and growth rates (base-years 1960, 1965, and 1970) for 1971-73, TsSU ESSR, *Nar. khoz. ESSR 74*, pp. 62-63; distribution by branch for 1966 and 1969 and growth rates (base-years 1960 and 1965) for 1966-69, TsSU ESSR, *Nar. khoz. ESSR 71*, pp. 63-64; distribution by branch and growth rates (base-year 1959) for 1961-64, TsSU ESSR, *Nar. khoz. ESSR 67*, pp. 33-36.

Georgian S.S.R.

Values for 1960 and 1968 (with some minor revisions based on information in sources cited below), *Ekonomika*, 1972, p. 150; values for 1965 and 1970, TsSU GSSR, *Nar. khoz. GSSR 75*, p. 26; growth rates (base-year 1965) for 1970-73, TsSU GSSR, *Nar. khoz. GSSR 74*, p. 26; growth rates (base-year 1960) for 1965 and 1970-72, TsSU GSSR, *Nar. khoz. GSSR 73*, p. 33; distribution by branch for 1965-67 and 1969 and growth rates (base-year 1960) for 1966-69, TsSU GSSR, *50 let*, 1971, pp. 54-55; growth rates (base-year 1960) for 1961-64, TsSU GSSR, *Sovetskaya*, 1967, p. 26. Values for 1975 were estimated from growth rates (base-years 1965 and 1970), TsSU GSSR, *Nar. khoz. GSSR k 60-letiyu*, 1977, p. 27.

Armenian S.S.R.

Distribution by branch for 1959 and 1965, Isaakyan, *Osnovnyye*, 1970, p. 54. Growth rates (base-year 1965) for 1970-74, TsSU ArSSR, *Nar. khoz. ArSSR 75*, p. 26; growth rates (base-year 1960) for 1965 and 1970, TsSU ArSSR, *Armeniya*, 1972, p. 14; growth rates (base-year 1965) for 1966-69, TsSU ArSSR, *Nar. khoz. ArSSR 70*, p. 22; growth rates (base-year 1959) for 1960-65, TsSU ArSSR, *Ekonomika*, 1967, p. 51. Values for 1975 were estimated from growth rates relative to 1974, TsSU ArSSR, *Nar. khoz. ArSSR 77*, p. 26.

Azerbaijdzhan S.S.R.

Growth rates (base-years 1965 and 1970) for 1974, TsSU AzSSR, *Nar. khoz. AzSSR 75*, p. 25; growth rates (base-years 1965 and 1970) for 1970-73, TsSU AzSSR, *Nar. khoz. AzSSR 74*, p. 24; growth rates (base-year 1960) for 1965 and 1970-73, TsSU AzSSR, *Nar. khoz. AzSSR 73*, p. 24; distribution by branch and growth rates (base-year 1960) for 1960 and 1965-70, TsSU AzSSR, *Nar. khoz. AzSSR 70*, pp. 28-29. Values for 1975 were estimated from growth rates relative to 1974, TsSU AzSSR, *Nar. khoz. AzSSR k 60-letiyu*, 1977, p. 26.

Kazakh S.S.R.

See the discussion in chapter II on the transfer of territory from the Uzbek S.S.R. to the Kazakh S.S.R. in 1970.

Values for 1960, 1965, and 1970, TsSU KaSSR, *Nar. khoz. Kazakhstana 71*, pp. 23-24; values for 1959, 1964, and 1969, TsSU KaSSR, *Kazakhstan v tsifrah*, 1971, p. 7 (these values were adjusted slightly—see chapter II); growth rates (base-years 1965 and 1970) for 1970 and 1975, TsSU KaSSR, *Nar. khoz. Kazakhstana 76*, p. 17; growth rates (base-year 1970) for 1974, TsSU KaSSR, *Nar. khoz. Kazakhstana 75*, p. 11; growth rates (base-year 1965) for 1971-73, TsSU KaSSR, *Nar. khoz. Kazakhstana 74*, pp. 11-12; growth rates (base-year 1960) for 1965 and 1970-72, TsSU KaSSR, *Nar. khoz. Kazakhstana 73*, p. 11.

Uzbek S.S.R.

See the discussion in chapter II of (1) the transfer of territory to the Kazakh S.S.R., and (2) the derivation of separate estimates for industry and construction where information for these two branches was combined.

Values for 1971, TsSU UzSSR, *Nar. khoz. UzSSR 72*, p. 21; growth rates (base-year 1965) for 1970, 1974, and 1975 and (base-year 1970) for 1971-75, TsSU UzSSR, *Nar. khoz. UzSSR 75*, p. 28; growth rates (base-year 1965) for 1970 and 1972, TsSU UzSSR, *Nar. khoz. UzSSR za 50 let*, 1974, p. 51; growth rates (base-year 1960) for 1965 and 1970-72, TsSU UzSSR, *Nar. khoz. UzSSR 72*, p. 21; growth rates (base-year 1960) for 1969, TsSU UzSSR, *Nar. khoz. UzSSR 70*, p. 21; growth rates (base-year 1960) for 1965-68, TsSU UzSSR, *Nar. khoz. UzSSR 69*, p. 29; growth rates (base-year 1960) for 1961-64, TsSU UzSSR, *Nar. khoz. UzSSR za 50 let*, 1967, p. 36.

Kirgiz S.S.R.

Values for 1960, 1965, and 1970-72, TsSU KiSSR, *Kirgizstan za 50 let*, 1974, p. 42; values for 1966-69, TsSU KiSSR, *Kirgizstan v tsifrakh*, 1971, p. 14; growth rates (base-years 1965 and 1970) for 1973 and 1974, TsSU KiSSR, *Nar. khoz. KiSSR 75*, pp. 21-22; distribution by branch for 1959 and 1964 and growth rates (base-year 1959) for 1964, TsSU KiSSR, *Kirgizstan za gody*, 1970, pp. 20-21; distribution

by branch and growth rates (base-year 1959) for 1961-63, TsSU KiSSR, *Kirgizstan za 50 let*, 1967, pp. 24-25.

Tadzhik S.S.R.

Growth rates (base-years 1965, 1970, and 1974) for 1975, TsSU TaSSR, *Nar. khoz. TaSSR 76*, p. 20; growth rates (base-year 1960) for 1965, 1970, and 1973, TsSU TaSSR, *Nar. khoz. TaSSR 74*, p. 22; growth rates (base-year 1960) for 1972, TsSU TaSSR, *Sovetskiy Tadzhikistan*, 1975, p. 31; distribution by branch and growth rates (base-year 1960) for 1971, TsSU TaSSR, *Nar. khoz. TaSSR 72*, p. 31; distribution by branch for 1968 and growth rates (base-year 1960) for 1966-68, TsSU TaSSR, *Nar. khoz. TaSSR 69*, pp. 22-23; growth rates (base-year 1960) for 1961-64, TsSU TaSSR, *Tadzhikistan za gody*, 1967, p. 25; distribution by branch for 1965, TsSU TaSSR, *Nar. khoz. TaSSR 65*, p. 29.

Turkmen S.S.R.

See chapter II for an explanation of the estimation of distribution by branch in 1965.

Growth rates (base-year 1965) for 1970-73, TsSU TuSSR, *Nar. khoz. TuSSR 74*, p. 16; growth rates (base-year 1960) for 1965, 1970, and 1971, TsSU TuSSR, *Turkmenistan za 50 let*, 1974, p. 26.

Table A-1. Fixed Capital in Major Branches of the Economy, 1960 to 1975: U.S.S.R.

(In millions of rubles)

Branch	1960	1961	1962	1963	1964	1965	1966	1967
Total fixed capital.....	341,700	371,700	405,200	440,300	477,100	515,400	553,500	593,900
Productive.....	195,300	214,500	236,400	259,200	284,100	311,000	337,600	363,200
Industry.....	88,800	98,900	110,200	122,800	136,800	149,800	163,200	176,000
Agriculture.....	45,100	48,700	53,200	56,800	60,400	64,700	68,900	73,400
Transportation and communications.....	43,600	47,300	51,400	55,800	60,600	67,300	72,050	77,100
Construction.....	6,355	7,100	8,000	8,900	9,970	11,100	12,540	13,910
Trade and distribution and other productive.....	11,445	12,500	13,600	14,900	16,230	18,100	20,910	22,790
Nonproductive.....	146,400	157,200	168,800	181,100	193,100	204,400	215,900	230,700
Housing.....	106,340	113,040	119,630	126,770	133,490	140,600	146,790	155,190
Other nonproductive.....	40,060	44,160	49,170	54,330	59,610	63,800	69,110	75,510
	1968	1969	1970	1971	1972	1973	1974	1975
Total fixed capital.....	637,200	683,800	740,000	798,000	861,900	930,500	1,003,100	1,079,400
Productive.....	391,400	424,100	461,400	500,300	543,500	591,700	644,200	698,700
Industry.....	191,100	208,000	227,700	247,400	267,500	291,300	316,800	343,400
Agriculture.....	78,600	83,700	90,600	99,300	108,900	120,600	133,400	145,400
Transportation and communications.....	81,700	88,000	94,400	101,500	110,200	119,300	129,400	139,700
Construction.....	15,730	17,960	20,250	22,015	24,845	27,320	29,880	33,100
Trade and distribution and other productive.....	24,270	26,440	28,450	30,085	32,055	33,180	34,720	37,100
Nonproductive.....	245,800	259,700	278,600	297,700	318,400	338,800	358,900	380,700
Housing.....	163,500	171,200	180,300	189,900	200,400	211,200	222,400	234,300
Other nonproductive.....	82,300	88,500	98,300	107,800	118,000	127,600	136,500	146,400

Table A-2. Fixed Capital in Major Branches of the Economy, 1960 to 1975: R.S.F.S.R.

(In millions of rubles)

Branch	1960	1961	1962	1963	1964	1965	1966	1967
Total fixed capital.....	209,439	(NA)	(NA)	(NA)	(NA)	316,325	(NA)	(NA)
Productive.....	120,013	131,400	143,600	157,900	174,100	190,256	204,700	220,300
Industry.....	57,761	64,100	70,500	79,100	88,400	96,485	104,700	112,600
Agriculture.....	22,381	23,900	26,200	27,750	29,800	31,649	33,300	35,400
Transportation and communications.....	28,351	30,900	33,200	36,000	39,400	44,035	47,100	50,200
Construction.....	4,324	4,750	5,230	5,740	6,350	6,986	7,600	8,300
Trade and distribution and other productive.....	7,196	7,750	8,470	9,310	10,150	11,101	12,000	13,800
Nonproductive.....	89,426	(NA)	(NA)	(NA)	(NA)	126,069	(NA)	(NA)
Housing.....	64,064	(NA)	(NA)	(NA)	(NA)	86,016	(NA)	(NA)
Other nonproductive.....	25,362	(NA)	(NA)	(NA)	(NA)	40,053	(NA)	(NA)
	1968	1969	1970	1971	1972	1973	1974	1975
Total fixed capital.....	(NA)	(NA)	449,443	484,200	523,600	565,000	609,000	656,600
Productive.....	236,900	255,600	277,151	299,800	325,600	353,900	386,200	420,000
Industry.....	122,500	132,700	144,706	157,000	169,300	182,800	198,200	217,100
Agriculture.....	37,300	39,900	42,939	47,200	52,100	57,900	64,200	70,900
Transportation and communications.....	53,000	56,300	59,917	64,000	69,200	75,200	81,100	87,700
Construction.....	9,400	10,910	12,517	13,645	15,330	16,900	18,630	20,510
Trade and distribution and other productive.....	14,700	15,790	17,072	17,955	19,670	21,100	24,070	23,790
Nonproductive.....	(NA)	(NA)	172,292	184,400	198,000	211,100	222,800	236,600
Housing.....	(NA)	(NA)	110,448	116,550	123,000	127,500	136,900	144,700
Other nonproductive.....	(NA)	(NA)	61,844	67,850	75,000	83,600	85,900	91,900

NA Not available.

Table A-3. Fixed Capital in Major Branches of the Economy, 1960 to 1975: Ukrainian S.S.R.

(In millions of rubles)

Branch	1960	1961	1962	1963	1964	1965	1966	1967
Total fixed capital.....	65,348	(NA)	(NA)	(NA)	(NA)	95,448	101,320	107,841
Productive.....	35,837	(NA)	(NA)	(NA)	(NA)	56,511	60,761	65,123
Industry.....	16,926	(NA)	(NA)	(NA)	(NA)	27,754	29,790	31,990
Agriculture.....	9,378	(NA)	(NA)	(NA)	(NA)	13,364	14,161	15,005
Transportation and communications.....	6,931	(NA)	(NA)	(NA)	(NA)	10,882	11,644	12,407
Construction.....	676	(NA)	(NA)	(NA)	(NA)	1,527	1,757	1,946
Trade and distribution and other productive.....	1,926	(NA)	(NA)	(NA)	(NA)	2,984	3,409	3,775
Nonproductive.....	29,511	(NA)	(NA)	(NA)	(NA)	38,937	40,559	42,718
Housing.....	22,070	(NA)	(NA)	(NA)	(NA)	27,587	28,028	29,132
Municipal and other services.....	2,049	(NA)	(NA)	(NA)	(NA)	3,331	3,688	3,934
Other nonproductive.....	5,392	(NA)	(NA)	(NA)	(NA)	8,019	8,843	9,652
	1968	1969	1970	1971	1972	1973	1974	1975
Total fixed capital.....	115,519	124,025	133,154	142,288	152,048	163,021	174,132	186,148
Productive.....	70,036	76,730	83,177	89,774	96,816	104,874	113,175	121,704
Industry.....	34,698	38,084	41,345	44,600	47,737	51,622	55,508	60,226
Agriculture.....	15,943	17,068	18,367	19,788	21,516	23,521	25,659	26,728
Transportation and communications.....	13,169	14,971	15,907	17,247	18,608	20,023	21,554	23,505
Construction.....	2,162	2,351	2,580	2,872	3,375	3,680	4,038	4,382
Trade and distribution and other productive.....	4,064	4,256	4,978	5,267	5,580	6,028	6,416	6,863
Nonproductive.....	45,483	47,295	49,977	52,514	55,232	58,147	60,957	64,444
Housing.....	30,677	31,780	32,956	33,987	35,567	37,242	38,898	40,829
Municipal and other services.....	4,346	4,569	4,971	5,532	5,532	5,829	6,262	6,695
Other nonproductive.....	10,460	10,946	12,050	12,995	14,113	15,076	15,797	16,920

NA Not available.

Table A-4. Fixed Capital in Major Branches of the Economy, 1960 to 1975: Moldavian S.S.R.

(In millions of rubles)

Branch	1960	1961	1962	1963	1964	1965	1966	1967
Total fixed capital.....	2,738	3,002	3,313	3,573	3,957	4,353	4,740	5,223
Productive.....	1,439	1,627	1,850	2,034	2,296	2,596	2,858	3,195
Industry.....	383	456	532	597	712	814	919	1,036
Agriculture.....	663	727	823	900	997	1,136	1,235	1,370
Transportation.....	273	287	311	333	352	372	399	430
Communications.....	17	18	20	25	27	31	34	38
Construction.....	31	36	47	49	57	76	91	114
Trade and distribution.....	87	97	110	121	143	159	172	198
Other productive.....	5	6	7	9	8	8	8	9
Nonproductive.....	1,299	1,375	1,463	1,539	1,661	1,757	1,882	2,028
Housing.....	1,021	1,072	1,123	1,164	1,225	1,291	1,349	1,440
Municipal and other services.....	56	59	65	69	76	82	98	109
Other nonproductive.....	222	244	275	306	360	384	435	479
	1968	1969	1970	1971	1972	1973	1974	1975
Total fixed capital.....	5,833	6,322	6,960	7,624	8,445	9,348	10,254	11,151
Productive.....	3,650	4,006	4,473	4,958	5,504	6,153	6,867	7,541
Industry.....	1,149	1,264	1,455	1,601	1,754	1,972	2,173	2,358
Agriculture.....	1,517	1,666	1,826	2,051	2,278	2,578	2,937	3,285
Transportation.....	581	625	674	740	841	906	986	1,043
Communications.....	41	44	60	72	83	97	110	125
Construction.....	127	145	164	181	208	231	255	285
Trade and distribution.....	223	248	280	300	323	351	383	422
Other productive.....	12	14	14	13	17	18	23	23
Nonproductive.....	2,183	2,316	2,487	2,666	2,941	3,195	3,387	3,610
Housing.....	1,521	1,583	1,681	1,766	1,858	1,960	2,045	2,146
Municipal and other services.....	118	125	138	157	168	177	188	201
Other nonproductive.....	544	608	668	743	915	1,058	1,154	1,263

Table A-5. Fixed Capital in Major Branches of the Economy, 1960 to 1975: Belorussian S.S.R.

(In millions of rubles)

Branch	1960	1961	1962	1963	1964	1965	1966	1967
Total fixed capital.....	9,183	9,886	10,566	11,445	12,510	13,396	14,412	15,647
Productive.....	5,005	5,570	5,998	6,583	7,310	7,977	8,655	9,448
Industry.....	1,420	1,562	1,818	2,201	2,570	2,983	3,324	3,722
Agriculture.....	1,892	2,138	2,195	2,289	2,441	2,556	2,707	2,875
Transportation.....	1,228	1,339	1,388	1,449	1,572	1,646	1,732	1,819
Communications.....	76	80	95	101	111	117	149	165
Construction.....	120	145	164	186	216	240	273	347
Trade and distribution and other productive.....	269	306	338	357	400	435	470	520
Nonproductive.....	4,178	4,316	4,568	4,862	5,200	5,419	5,757	6,199
Housing.....	3,224	3,256	3,385	3,514	3,675	3,862	4,087	4,352
Municipal and other services.....	170	190	211	235	255	265	294	342
Other nonproductive.....	784	870	972	1,113	1,270	1,292	1,376	1,505
	1968	1969	1970	1971	1972	1973	1974	1975
Total fixed capital.....	17,061	18,425	20,422	22,361	24,479	26,735	29,398	31,718
Productive.....	10,361	11,346	12,776	14,147	15,629	17,305	19,265	20,920
Industry.....	4,190	4,653	5,510	6,193	6,859	7,640	8,498	9,238
Agriculture.....	3,080	3,308	3,617	3,995	4,484	4,976	5,470	5,970
Transportation.....	1,940	2,041	2,149	2,297	2,444	2,628	3,045	3,254
Communications.....	175	190	217	240	269	299	325	362
Construction.....	417	523	599	657	751	846	923	996
Trade and distribution and other productive.....	559	631	684	765	822	916	1,004	1,100
Nonproductive.....	6,700	7,079	7,646	8,214	8,850	9,430	10,133	10,798
Housing.....	4,664	4,866	5,206	5,542	5,900	6,238	6,643	7,002
Municipal and other services.....	405	443	496	547	614	660	725	806
Other nonproductive.....	1,631	1,770	1,944	2,125	2,336	2,532	2,765	2,990

Table A-6. Fixed Capital in Major Branches of the Economy, 1960 to 1975: Latvian S.S.R.

(In millions of rubles)

Branch	1960	1961	1962	1963	1964	1965	1966	1967
Total fixed capital.....	4,684	(NA)	(NA)	(NA)	(NA)	6,632	(NA)	7,465
Productive.....	2,457	(NA)	(NA)	(NA)	(NA)	3,809	(NA)	4,393
Industry.....	781	(NA)	(NA)	(NA)	(NA)	1,378	(NA)	1,653
Agriculture.....	827	(NA)	(NA)	(NA)	(NA)	1,061	(NA)	1,210
Transportation.....	612	(NA)	(NA)	(NA)	(NA)	971	(NA)	1,054
Communications.....	42	(NA)	(NA)	(NA)	(NA)	63	(NA)	75
Construction.....	68	(NA)	(NA)	(NA)	(NA)	126	(NA)	155
Trade and distribution and other productive.....	127	(NA)	(NA)	(NA)	(NA)	210	(NA)	246
Nonproductive.....	2,227	(NA)	(NA)	(NA)	(NA)	2,823	(NA)	3,072
Housing.....	1,585	(NA)	(NA)	(NA)	(NA)	1,856	(NA)	1,996
Municipal and other services.....	211	(NA)	(NA)	(NA)	(NA)	287	(NA)	317
Other nonproductive.....	431	(NA)	(NA)	(NA)	(NA)	680	(NA)	759
	1968	1969	1970	1971	1972	1973	1974	1975
Total fixed capital.....	7,947	(NA)	8,865	9,385	10,193	10,848	11,590	12,359
Productive.....	4,743	(NA)	5,434	5,807	6,402	6,878	7,434	8,005
Industry.....	1,802	(NA)	2,105	2,264	2,432	2,590	2,768	3,059
Agriculture.....	1,297	(NA)	1,487	1,587	1,756	1,925	2,089	2,202
Transportation.....	1,121	(NA)	1,255	1,336	1,537	1,629	1,776	1,864
Communications.....	81	(NA)	94	107	123	135	148	154
Construction.....	176	(NA)	193	207	219	236	246	268
Trade and distribution and other productive.....	266	(NA)	300	306	335	363	407	458
Nonproductive.....	3,204	(NA)	3,431	3,578	3,791	3,970	4,156	4,354
Housing.....	2,076	(NA)	2,205	2,295	2,424	2,535	2,657	2,746
Municipal and other services.....	331	(NA)	338	352	357	366	384	409
Other nonproductive.....	797	(NA)	888	931	1,010	1,069	1,115	1,199

NA Not available.

Table A-7. Fixed Capital in Major Branches of the Economy, 1960 to 1975: Lithuanian S.S.R.

(In millions of rubles)

Branch	1960	1961	1962	1963	1964	1965	1966	1967
Total fixed capital.....	3,884	4,178	4,537	4,898	5,322	5,765	6,294	6,879
Productive.....	2,224	2,424	2,676	2,919	3,212	3,528	3,917	4,293
Industry.....	681	777	889	1,013	1,154	1,325	1,484	1,643
Agriculture.....	919	973	1,034	1,094	1,164	1,242	1,390	1,520
Transportation.....	428	449	494	514	547	575	603	640
Communications.....	37	41	44	48	55	61	67	72
Construction.....	58	70	83	97	112	124	147	168
Trade and distribution and other productive.....	101	114	132	153	180	201	226	250
Nonproductive.....	1,660	1,754	1,861	1,979	2,110	2,237	2,377	2,586
Housing.....	1,242	1,304	1,351	1,411	1,482	1,553	1,624	1,743
Municipal and other services.....	114	121	131	144	157	171	187	221
Other nonproductive.....	304	329	379	424	471	513	566	622
	1968	1969	1970	1971	1972	1973	1974	1975
Total fixed capital.....	7,551	8,240	9,052	9,922	10,805	11,851	12,881	14,125
Productive.....	4,762	5,262	5,858	6,473	7,097	7,787	8,487	9,381
Industry.....	1,867	2,091	2,334	2,634	2,856	3,119	3,405	3,760
Agriculture.....	1,680	1,859	2,090	2,297	2,553	2,841	3,117	3,534
Transportation.....	668	705	739	783	845	894	954	987
Communications.....	79	82	105	118	135	157	173	191
Construction.....	194	228	262	274	306	340	364	400
Trade and distribution and other productive.....	274	297	328	367	402	436	474	509
Nonproductive.....	2,789	2,978	3,194	3,449	3,708	4,064	4,394	4,744
Housing.....	1,873	1,992	2,112	2,246	2,401	2,634	2,845	3,098
Municipal and other services.....	241	261	278	312	338	372	393	415
Other nonproductive.....	675	725	804	891	969	1,058	1,156	1,231

Table A-8. Fixed Capital in Major Branches of the Economy, 1960 to 1975: Estonian S.S.R.

(In millions of rubles)

Branch	1960	1961	1962	1963	1964	1965	1966	1967
Total fixed capital.....	2,917	3,161	3,402	3,662	3,989	4,235	4,499	4,772
Productive.....	1,678	1,851	2,009	2,182	2,379	2,558	2,744	2,929
Industry.....	588	676	768	863	977	1,088	1,191	1,270
Agriculture.....	445	494	518	545	583	600	638	694
Transportation and communications.....	536	551	580	611	644	672	696	728
Construction.....	29	39	46	53	57	65	77	85
Trade and distribution.....	69	79	84	94	101	110	119	132
Other productive.....	11	12	13	16	17	23	23	20
Nonproductive.....	1,239	1,310	1,393	1,480	1,610	1,677	1,755	1,843
Housing.....	857	901	946	991	1,044	1,082	1,124	1,174
Municipal and other services.....	111	118	130	138	161	170	177	190
Health.....	48	52	55	62	76	78	83	86
Education.....	101	110	122	139	163	169	179	189
Science.....	10	11	13	15	15	16	19	20
Culture.....	24	26	32	33	44	50	47	56
Other nonproductive.....	88	92	95	102	107	112	126	128
	1968	1969	1970	1971	1972	1973	1974	1975
Total fixed capital.....	5,070	5,434	5,835	6,287	6,866	7,364	7,863	8,348
Productive.....	3,105	3,385	3,639	3,940	4,314	4,681	5,050	5,400
Industry.....	1,358	1,534	1,675	1,840	2,040	2,187	2,328	2,463
Agriculture.....	748	806	877	946	1,037	1,148	1,269	1,384
Transportation and communications.....	745	766	787	830	878	959	1,028	1,098
Construction.....	89	105	116	131	143	153	164	174
Trade and distribution.....	144	152	161	171	188	205	230	248
Other productive.....	21	22	23	22	28	29	31	33
Nonproductive.....	1,965	2,049	2,196	2,347	2,552	2,683	2,813	2,948
Housing.....	1,243	1,311	1,389	1,475	1,561	1,629	1,689	1,757
Municipal and other services.....	214	213	237	264	294	317	342	366
Health.....	91	91	96	105	115	124	133	139
Education.....	203	205	222	243	281	295	314	334
Science.....	21	25	31	35	43	49	57	65
Culture.....	54	56	59	54	55	55	58	61
Other nonproductive.....	139	148	162	171	203	214	220	226

Table A-9. Fixed Capital in Major Branches of the Economy, 1960 to 1975: Georgian S.S.R.

(In millions of rubles)

Branch	1960	1961	1962	1963	1964	1965	1966	1967
Total fixed capital.....	6,420	6,831	7,211	7,815	8,359	8,837	9,392	10,025
Productive.....	3,497	3,703	3,936	4,339	4,653	4,987	5,358	5,711
Industry.....	1,393	1,494	1,602	1,839	1,992	2,151	2,287	2,430
Agriculture.....	1,204	1,242	1,290	1,351	1,435	1,532	1,628	1,730
Transportation.....	571	592	634	692	736	799	864	918
Communications.....	31	37	41	45	49	53	64	70
Construction.....	118	135	145	164	182	185	202	221
Trade and distribution and other productive.....	180	203	224	248	259	267	313	342
Nonproductive.....	2,923	3,128	3,275	3,476	3,706	3,850	4,034	4,314
Housing.....	2,090	2,195	2,278	2,383	2,508	2,623	2,738	2,884
Other nonproductive.....	833	933	997	1,093	1,198	1,227	1,296	1,430
	1968	1969	1970	1971	1972	1973	1974	1975
Total fixed capital.....	10,616	11,094	11,774	12,490	13,236	14,090	(NA)	15,752
Productive.....	6,085	6,417	6,877	7,364	7,833	8,375	(NA)	9,541
Industry.....	2,597	2,758	2,940	3,136	3,308	3,480	(NA)	4,020
Agriculture.....	1,812	1,881	2,017	2,183	2,296	2,463	(NA)	2,762
Transportation.....	998	1,054	1,131	1,198	1,286	1,392	(NA)	1,542
Communications.....	74	78	83	97	104	124	(NA)	137
Construction.....	240	255	276	286	337	350	(NA)	408
Trade and distribution and other productive.....	364	391	430	464	502	566	(NA)	672
Nonproductive.....	4,531	4,677	4,897	5,126	5,403	5,715	(NA)	6,211
Housing.....	3,015	3,093	3,221	3,325	3,440	3,555	(NA)	3,865
Other nonproductive.....	1,516	1,584	1,676	1,801	1,963	2,160	(NA)	2,346

NA Not available.

Table A-10. Fixed Capital in Major Branches of the Economy, 1960 to 1975: Armenian S.S.R.

(In millions of rubles)

Branch	1960	1961	1962	1963	1964	1965	1966	1967
Total fixed capital.....	2,449	2,628	2,920	3,251	3,567	3,865	4,226	4,660
Productive.....	1,298	1,392	1,572	1,768	1,958	2,150	2,380	2,631
Industry.....	588	647	752	862	981	1,078	1,202	1,335
Agriculture.....	379	389	430	471	503	559	593	648
Transportation.....	210	218	239	260	276	287	307	324
Communications.....	20	21	25	28	33	39	44	51
Construction.....	35	40	47	56	66	82	116	135
Trade and distribution and other productive.....	66	77	79	91	99	105	118	138
Nonproductive.....	1,151	1,236	1,348	1,483	1,609	1,715	1,846	2,029
Housing.....	775	843	913	990	1,060	1,141	1,214	1,324
Municipal and other services.....	106	117	128	140	151	164	185	213
Other nonproductive.....	270	276	307	353	398	410	447	492
	1968	1969	1970	1971	1972	1973	1974	1975
Total fixed capital.....	5,013	5,434	5,949	6,426	7,010	7,557	8,061	8,706
Productive.....	2,852	3,126	3,489	3,819	4,175	4,534	4,873	5,288
Industry.....	1,463	1,572	1,799	1,984	2,143	2,286	2,462	2,685
Agriculture.....	679	746	790	845	932	1,035	1,045	1,120
Transportation.....	345	370	415	468	527	572	617	656
Communications.....	57	62	70	83	98	116	129	144
Construction.....	155	195	218	244	267	294	310	328
Trade and distribution and other productive.....	153	181	197	195	208	231	310	355
Nonproductive.....	2,161	2,308	2,460	2,607	2,835	3,023	3,188	3,418
Housing.....	1,400	1,474	1,541	1,577	1,658	1,789	1,893	2,022
Municipal and other services.....	236	264	291	331	350	371	392	418
Other nonproductive.....	525	570	628	699	827	863	903	978

Table A-11. Fixed Capital in Major Branches of the Economy, 1960 to 1975: Azerbaijan S.S.R.

(In millions of rubles)

Branch	1960	1961	1962	1963	1964	1965	1966	1967
Total fixed capital.....	6,321	(NA)	(NA)	(NA)	(NA)	8,748	9,271	9,839
Productive.....	4,239	(NA)	(NA)	(NA)	(NA)	5,828	6,203	6,529
Industry.....	2,554	(NA)	(NA)	(NA)	(NA)	3,422	3,611	3,757
Agriculture.....	693	(NA)	(NA)	(NA)	(NA)	978	1,063	1,149
Transportation and communications.....	721	(NA)	(NA)	(NA)	(NA)	957	990	1,030
Construction.....	134	(NA)	(NA)	(NA)	(NA)	259	295	329
Trade and distribution and other productive.....	137	(NA)	(NA)	(NA)	(NA)	212	244	264
Nonproductive.....	2,082	(NA)	(NA)	(NA)	(NA)	2,920	3,068	3,310
Housing.....	1,485	(NA)	(NA)	(NA)	(NA)	1,959	2,045	2,146
Other nonproductive.....	597	(NA)	(NA)	(NA)	(NA)	961	1,023	1,164
	1968	1969	1970	1971	1972	1973	1974	1975
Total fixed capital.....	10,333	10,862	11,568	12,255	12,961	13,733	14,404	15,325
Productive.....	6,831	7,270	7,829	8,322	8,783	9,360	9,849	10,546
Industry.....	3,861	4,048	4,285	4,548	4,671	4,955	5,177	5,519
Agriculture.....	1,259	1,366	1,460	1,541	1,644	1,789	1,917	2,050
Transportation and communications.....	1,078	1,196	1,347	1,457	1,641	1,742	1,857	1,976
Construction.....	357	373	426	444	474	497	531	608
Trade and distribution and other productive.....	276	287	311	332	353	377	367	393
Nonproductive.....	3,502	3,592	3,739	3,933	4,178	4,373	4,555	4,779
Housing.....	2,252	2,302	2,345	2,423	2,458	2,543	2,652	2,769
Other nonproductive.....	1,250	1,290	1,394	1,510	1,720	1,830	1,903	2,010

NA Not available.

Table A-12. Fixed Capital in Major Branches of the Economy, 1960 to 1975: Kazakh S.S.R.

(In millions of rubles)

Branch	1960	1961	1962	1963	1964	1965	1966	1967
Total fixed capital.....	15,072	(NA)	(NA)	(NA)	23,390	26,223	(NA)	(NA)
Productive.....	9,887	(NA)	(NA)	(NA)	15,385	17,289	(NA)	(NA)
Industry.....	3,082	(NA)	(NA)	(NA)	5,527	6,482	(NA)	(NA)
Agriculture.....	3,405	(NA)	(NA)	(NA)	4,929	5,309	(NA)	(NA)
Transportation.....	2,147	(NA)	(NA)	(NA)	2,904	3,322	(NA)	(NA)
Communications.....	102	(NA)	(NA)	(NA)	164	188	(NA)	(NA)
Construction.....	396	(NA)	(NA)	(NA)	605	659	(NA)	(NA)
Trade and distribution and other productive.....	755	(NA)	(NA)	(NA)	1,256	1,329	(NA)	(NA)
Nonproductive.....	5,185	(NA)	(NA)	(NA)	8,005	8,934	(NA)	(NA)
Housing.....	3,976	(NA)	(NA)	(NA)	5,704	6,295	(NA)	(NA)
Municipal and other services.....	302	(NA)	(NA)	(NA)	644	789	(NA)	(NA)
Other nonproductive.....	907	(NA)	(NA)	(NA)	1,657	1,850	(NA)	(NA)
	1968	1969	1970	1971	1972	1973	1974	1975
Total fixed capital.....	(NA)	36,712	40,956	44,791	48,941	53,288	57,341	61,980
Productive.....	(NA)	24,428	27,261	29,804	32,478	35,502	38,540	41,925
Industry.....	(NA)	9,998	11,218	12,328	13,250	14,585	15,817	17,350
Agriculture.....	(NA)	6,453	7,140	7,797	8,546	9,397	10,424	11,317
Transportation.....	(NA)	4,763	5,303	5,775	6,355	6,810	7,318	7,840
Communications.....	(NA)	280	325	372	421	476	533	609
Construction.....	(NA)	1,041	1,184	1,263	1,402	1,549	1,646	1,792
Trade and distribution and other productive.....	(NA)	1,893	2,091	2,269	2,504	2,685	2,802	3,017
Nonproductive.....	(NA)	12,284	13,695	14,987	16,463	17,786	18,801	20,055
Housing.....	(NA)	8,359	9,185	9,860	10,780	11,583	12,216	12,905
Municipal and other services.....	(NA)	1,168	1,308	1,463	1,565	1,744	1,910	1,970
Other nonproductive.....	(NA)	2,757	3,202	3,664	4,118	4,459	4,675	5,180

NA Not available.

Table A-13. Fixed Capital in Major Branches of the Economy, 1960 to 1975: Uzbek S.S.R.

(In millions of rubles)

Branch	1960	1961	1962	1963	1964	1965	1966	1967
Total fixed capital.....	7,312	8,054	8,807	9,854	10,836	11,893	13,781	15,397
Productive.....	4,197	4,659	5,162	5,960	6,631	7,470	8,678	9,731
Industry.....	1,462	1,652	1,857	2,135	2,427	2,719	3,143	3,509
Agriculture.....	1,620	1,750	1,895	2,187	2,300	2,576	2,961	3,270
Transportation and communications.....	665	738	805	938	1,084	1,270	1,390	1,604
Construction.....	190	224	255	291	329	391	612	697
Trade and distribution and other productive.....	260	295	350	409	491	514	572	651
Nonproductive.....	3,115	3,395	3,645	3,894	4,205	4,423	5,103	5,666
Housing.....	2,284	2,421	2,535	2,649	2,786	2,969	3,424	3,789
Other nonproductive.....	831	974	1,110	1,245	1,419	1,454	1,679	1,877
	1968	1969	1970	1971	1972	1973	1974	1975
Total fixed capital.....	17,097	18,495	20,397	22,591	24,777	27,298	29,808	32,410
Productive.....	10,742	11,796	13,228	14,721	16,285	18,122	19,945	21,918
Industry.....	3,875	4,295	4,813	5,391	5,872	6,546	7,142	7,699
Agriculture.....	3,645	3,921	4,393	4,943	5,461	6,194	6,981	7,807
Transportation and communications.....	1,768	1,986	2,181	2,415	2,845	3,075	3,340	3,689
Construction.....	767	843	927	1,020	1,122	1,251	1,298	1,495
Trade and distribution and other productive.....	687	751	914	952	985	1,056	1,184	1,228
Nonproductive.....	6,355	6,699	7,169	7,870	8,492	9,176	9,863	10,492
Housing.....	4,223	4,474	4,702	5,186	5,404	5,736	6,027	6,430
Other nonproductive.....	2,132	2,225	2,467	2,684	3,088	3,440	3,836	4,062

Table A-14. Fixed Capital in Major Branches of the Economy, 1960 to 1975: Kirgiz S.S.R.

(In millions of rubles)

Branch	1960	1961	1962	1963	1964	1965	1966	1967
Total fixed capital.....	1,998	2,218	2,480	2,730	3,052	3,356	3,830	4,203
Productive.....	1,129	1,262	1,441	1,610	1,832	2,036	2,384	2,629
Industry.....	386	439	502	560	638	723	842	952
Agriculture.....	510	552	626	688	770	839	918	988
Transportation.....	101	119	134	152	194	219	297	321
Communications.....	15	17	19	21	26	29	33	36
Construction.....	46	54	61	69	78	85	140	160
Trade and distribution and other productive.....	71	81	99	120	126	141	154	172
Nonproductive.....	869	956	1,039	1,120	1,220	1,320	1,446	1,574
Housing.....	605	653	700	767	826	882	928	1,001
Municipal and other services.....	58	72	81	90	101	108	125	136
Other nonproductive.....	206	231	258	263	293	330	393	437
	1968	1969	1970	1971	1972	1973	1974	1975
Total fixed capital.....	4,671	5,005	5,477	5,984	6,595	7,145	7,796	8,518
Productive.....	2,924	3,190	3,500	3,757	4,181	4,551	5,024	5,500
Industry.....	1,069	1,184	1,328	1,453	1,593	1,722	1,928	2,116
Agriculture.....	1,082	1,147	1,226	1,310	1,454	1,605	1,747	1,909
Transportation.....	358	398	449	476	549	587	646	707
Communications.....	40	41	47	50	58	67	76	86
Construction.....	195	229	246	246	265	288	312	331
Trade and distribution and other productive.....	180	191	204	222	262	282	315	351
Nonproductive.....	1,747	1,815	1,977	2,227	2,414	2,594	2,772	3,018
Housing.....	1,115	1,176	1,249	1,355	1,470	1,583	1,671	1,797
Municipal and other services.....	146	129	149	226	241	256	280	325
Other nonproductive.....	486	510	579	646	703	755	821	896

Table A-15. Fixed Capital in Major Branches of the Economy, 1960 to 1975: Tadzhik S.S.R.

(In millions of rubles)

Branch	1960	1961	1962	1963	1964	1965	1966	1967
Total fixed capital.....	1,879	2,059	2,289	2,563	2,844	3,115	3,384	3,774
Productive.....	1,039	1,149	1,310	1,483	1,649	1,838	2,036	2,299
Industry.....	310	345	397	478	531	602	652	745
Agriculture.....	442	479	539	601	667	722	795	883
Transportation.....	138	153	175	182	196	207	235	248
Communications.....	16	18	21	24	27	30	34	40
Construction.....	56	64	78	91	105	134	174	207
Trade and distribution and other productive.....	77	90	100	107	123	143	146	176
Nonproductive.....	840	910	979	1,080	1,195	1,277	1,348	1,475
Housing.....	597	632	668	716	764	811	835	896
Municipal and other services.....	47	57	76	90	118	140	161	186
Other nonproductive.....	196	221	235	274	313	326	352	391
	1968	1969	1970	1971	1972	1973	1974	1975
Total fixed capital.....	4,100	(NA)	4,871	5,298	5,929	6,482	7,014	7,552
Productive.....	2,476	(NA)	2,986	3,253	3,741	4,131	4,538	4,902
Industry.....	775	(NA)	950	1,033	1,322	1,504	1,629	1,824
Agriculture.....	959	(NA)	1,159	1,298	1,387	1,517	1,662	1,762
Transportation.....	262	(NA)	336	366	409	443	503	538
Communications.....	43	(NA)	52	58	65	75	88	94
Construction.....	246	(NA)	278	260	294	308	355	359
Trade and distribution and other productive.....	191	(NA)	211	238	264	284	301	325
Nonproductive.....	1,624	(NA)	1,885	2,045	2,188	2,351	2,476	2,650
Housing.....	986	(NA)	1,140	1,240	1,328	1,432	1,506	1,626
Municipal and other services.....	199	(NA)	229	249	237	256	264	283
Other nonproductive.....	439	(NA)	516	556	623	663	706	741

NA Not applicable.

Table A-16. Fixed Capital in Major Branches of the Economy, 1960 to 1975: Turkmen S.S.R.

(In millions of rubles)

Branch	1960	1961	1962	1963	1964	1965	1966	1967
Total fixed capital.....	2,056	(NA)	(NA)	(NA)	(NA)	3,209	(NA)	(NA)
Productive.....	1,361	(NA)	(NA)	(NA)	(NA)	2,167	(NA)	(NA)
Industry.....	485	(NA)	(NA)	(NA)	(NA)	796	(NA)	(NA)
Agriculture.....	362	(NA)	(NA)	(NA)	(NA)	577	(NA)	(NA)
Transportation.....	307	(NA)	(NA)	(NA)	(NA)	453	(NA)	(NA)
Communications.....	25	(NA)	(NA)	(NA)	(NA)	22	(NA)	(NA)
Construction.....	74	(NA)	(NA)	(NA)	(NA)	161	(NA)	(NA)
Trade and distribution.....	100	(NA)	(NA)	(NA)	(NA)	150	(NA)	(NA)
Other productive.....	8	(NA)	(NA)	(NA)	(NA)	8	(NA)	(NA)
Nonproductive.....	695	(NA)	(NA)	(NA)	(NA)	1,042	(NA)	(NA)
Housing.....	465	(NA)	(NA)	(NA)	(NA)	673	(NA)	(NA)
Municipal and other services.....	54	(NA)	(NA)	(NA)	(NA)	91	(NA)	(NA)
Other nonproductive.....	176	(NA)	(NA)	(NA)	(NA)	278	(NA)	(NA)
	1968	1969	1970	1971	1972	1973	1974	1975
Total fixed capital.....	(NA)	(NA)	5,277	5,694	5,959	6,559	(NA)	8,000
Productive.....	(NA)	(NA)	3,722	4,026	4,241	4,733	(NA)	5,872
Industry.....	(NA)	(NA)	1,237	1,323	1,421	1,610	(NA)	2,064
Agriculture.....	(NA)	(NA)	1,212	1,321	1,353	1,514	(NA)	1,848
Transportation.....	(NA)	(NA)	721	787	807	890	(NA)	1,104
Communications.....	(NA)	(NA)	36	42	42	47	(NA)	56
Construction.....	(NA)	(NA)	264	285	349	382	(NA)	448
Trade and distribution.....	(NA)	(NA)	228	242	259	278	(NA)	336
Other productive.....	(NA)	(NA)	24	26	10	12	(NA)	16
Nonproductive.....	(NA)	(NA)	1,555	1,668	1,718	1,826	(NA)	2,128
Housing.....	(NA)	(NA)	920	977	977	1,047	(NA)	1,184
Municipal and other services.....	(NA)	(NA)	162	173	196	204	(NA)	252
Other nonproductive.....	(NA)	(NA)	473	518	545	575	(NA)	692

NA Not available.

Table A-17. Fixed Capital in Major Branches of the Economy by Republic: 1960

(In millions of rubles)

Branch	U.S.S.R.	R.S.F.S.R.	Ukrainian S.S.R.	Moldavian S.S.R.	Belorussian S.S.R.	Latvian S.S.R.	Lithuanian S.S.R.	Estonian S.S.R.
Total fixed capital.....	341,700	209,439	65,348	2,738	9,183	4,684	3,884	2,917
Productive.....	195,300	120,013	35,837	1,439	5,005	2,457	2,224	1,678
Industry.....	88,800	57,761	16,926	383	1,420	781	681	588
Agriculture.....	45,100	22,381	9,378	643	1,892	827	919	445
Transportation and communications.....	43,600	28,351	6,931	290	1,304	654	465	536
Construction.....	6,355	4,324	676	31	120	68	58	29
Trade and distribution and other productive.....	11,445	7,196	1,926	92	269	127	101	80
Nonproductive.....	146,400	89,426	29,511	1,299	4,178	2,227	1,660	1,239
Housing.....	106,340	64,064	22,070	1,021	3,224	1,585	1,242	857
Other nonproductive.....	40,060	25,362	7,441	278	954	642	418	382
	Georgian S.S.R.	Armenian S.S.R.	Azerbaijdzhan S.S.R.	Kazakh S.S.R.	Uzbek S.S.R.	Kirgiz S.S.R.	Tadzhik S.S.R.	Turkmen S.S.R.
Total fixed capital.....	6,420	2,449	6,321	15,072	7,312	1,998	1,879	2,056
Productive.....	3,497	1,298	4,239	9,887	4,197	1,129	1,039	1,361
Industry.....	1,393	588	2,554	3,082	1,462	386	310	485
Agriculture.....	1,204	379	693	3,405	1,620	510	442	362
Transportation and communications.....	602	230	721	2,249	665	116	154	332
Construction.....	118	35	134	396	190	46	56	74
Trade and distribution and other productive.....	180	66	137	755	260	71	77	108
Nonproductive.....	2,923	1,151	2,082	5,185	3,115	869	840	695
Housing.....	2,090	775	1,485	3,976	2,284	605	597	465
Other nonproductive.....	833	376	597	1,209	831	264	243	230

Table A-18. Fixed Capital in Major Branches of the Economy by Republic: 1975

(In millions of rubles)

Branch	U.S.S.R.	R.S.F.S.R.	Ukrainian S.S.R.	Moldavian S.S.R.	Belorussian S.S.R.	Latvian S.S.R.	Lithuanian S.S.R.	Estonian S.S.R.
Total fixed capital.....	1,079,400	656,600	186,148	11,151	31,718	12,359	14,125	8,348
Productive.....	698,700	420,000	121,704	7,541	20,920	8,005	9,381	5,400
Industry.....	343,400	217,100	60,226	2,358	9,238	3,059	3,760	2,463
Agriculture.....	145,400	70,900	26,728	3,285	5,970	2,202	3,534	1,384
Transportation and communications.....	139,700	87,700	23,505	1,168	3,616	2,018	1,178	1,098
Construction.....	33,100	20,510	4,382	285	996	268	400	174
Trade and distribution and other productive.....	37,100	23,790	6,863	445	1,100	458	509	281
Nonproductive.....	380,700	236,600	64,444	3,610	10,798	4,354	4,744	2,948
Housing.....	234,300	144,700	40,829	2,146	7,002	2,746	3,098	1,757
Other nonproductive.....	146,400	91,900	23,615	1,464	3,796	1,608	1,646	1,191
	Georgian S.S.R.	Armenian S.S.R.	Azerbaijdzhan S.S.R.	Kazakh S.S.R.	Uzbek S.S.R.	Kirgiz S.S.R.	Tadzhik S.S.R.	Turkmen S.S.R.
Total fixed capital.....	15,752	8,706	15,325	61,980	32,410	8,518	7,552	8,000
Productive.....	9,541	5,288	10,546	41,925	21,918	5,500	4,902	5,872
Industry.....	4,020	2,685	5,519	17,350	7,699	2,116	1,824	2,064
Agriculture.....	2,762	1,120	2,050	11,317	7,807	1,909	1,762	1,848
Transportation and communications.....	1,679	800	1,976	8,449	3,689	793	632	1,160
Construction.....	408	328	608	1,792	1,495	331	359	448
Trade and distribution and other productive.....	672	355	393	3,017	1,228	351	325	352
Nonproductive.....	6,211	3,418	4,779	20,055	10,492	3,018	2,650	2,128
Housing.....	3,865	2,022	2,769	12,905	6,430	1,797	1,626	1,184
Other nonproductive.....	2,346	1,396	2,010	7,150	4,062	1,221	1,024	944

Appendix B. Fixed Capital in Branches of Industry for the U.S.S.R. and Union Republics: 1961 and 1974

The estimation of the values of industrial fixed capital given in tables B-1 and B-2 is summarized in chapter IV. End-of-year values of fixed capital are given in all cases. All values are in 1955 prices. The distribution by branch of industrial capital for

all republics in each year was taken from the following sources:

1961: TsSU SSSR, *Nar. khoz.* 61, p. 187.

1974: TsSU SSSR, *Nar. khoz.* 74, pp. 198-99.

Table B-1. Industrial Fixed Capital by Branch for Republics: 1961

(In millions of rubles)

Branch	U.S.S.R.	R.S.F.S.R.	Ukrainian S.S.R.	Moldavian S.S.R.	Belorussian S.S.R.	Latvian S.S.R.	Lithuanian S.S.R.	Estonian S.S.R.
Total industry.....	98,900	64,100	18,686	456	1,562	875	777	676
Ferrous metallurgy.....	9,890	5,000	4,055	0	6	14	2	0
Fuels.....	15,428	8,525	3,681	0	100	33	30	89
Electric and thermal power.....	13,154	8,846	1,700	52	237	134	111	135
Machine-building and metalworking.....	19,780	14,487	3,251	43	386	179	137	87
Chemicals.....	5,143	3,590	916	2	72	17	3	15
Wood and paper.....	6,527	5,384	467	17	152	93	63	57
Construction materials.....	6,428	4,038	1,102	46	139	68	87	53
Light industry.....	4,549	3,013	430	32	158	88	91	67
Food industry.....	10,088	6,025	2,018	236	231	216	213	143
All other.....	7,912	5,192	1,065	27	81	32	40	30
	Georgian S.S.R.	Armenian S.S.R.	Azerbaijdzhan S.S.R.	Kazakh S.S.R.	Uzbek S.S.R.	Kirgiz S.S.R.	Tadzhik S.S.R.	Turkmen S.S.R.
Total industry.....	1,494	647	2,708	3,567	1,652	439	345	536
Ferrous metallurgy.....	242	5	100	342	15	0	0	0
Fuels.....	133	0	1,554	564	203	115	20	263
Electric and thermal power.....	336	182	309	524	322	42	85	50
Machine-building and metalworking.....	181	101	160	332	235	70	27	36
Chemicals.....	61	72	114	118	107	0	1	33
Wood and paper.....	55	15	22	111	40	13	8	6
Construction materials.....	100	44	89	350	144	30	45	38
Light industry.....	84	56	95	114	206	40	71	34
Food industry.....	233	76	111	271	155	71	43	48
All other.....	69	96	154	842	225	58	44	28

Table B-2. Industrial Fixed Capital by Branch for Republics: 1974

(In millions of rubles)

Branch	U.S.S.R.	R.S.F.S.R.	Ukrainian S.S.R.	Moldavian S.S.R.	Belorussian S.S.R.	Latvian S.S.R.	Lithuanian S.S.R.	Estonian S.S.R.
Total industry.....	316,800	198,200	55,508	2,173	8,498	2,768	3,405	2,328
Ferrous metallurgy.....	31,046	16,649	10,935	0	25	69	17	0
Fuels.....	39,917	23,388	8,271	0	637	55	51	303
Electric and thermal power.....	53,539	33,099	7,771	532	1,598	559	821	754
Machine-building and metalworking.....	66,845	47,172	11,657	304	1,989	565	674	261
Chemicals.....	29,462	18,433	4,496	13	1,572	216	269	81
Wood and paper.....	15,523	12,883	833	70	382	180	218	147
Construction materials.....	18,374	10,703	2,831	172	654	197	337	156
Light industry.....	14,256	8,126	1,721	237	697	280	306	163
Food industry.....	25,027	13,478	4,940	761	748	545	606	412
All other.....	22,810	14,270	2,054	85	195	102	106	51
	Georgian S.S.R.	Armenian S.S.R.	Azerbaijdzhan S.S.R.	Kazakh S.S.R.	Uzbek S.S.R.	Kirgiz S.S.R.	Tadzhik S.S.R.	Turkmen S.S.R.
Total industry.....	3,740	2,462	5,177	15,817	7,142	1,928	1,629	1,823
Ferrous metallurgy.....	419	5	176	2,183	64	4	0	0
Fuels.....	172	0	2,324	2,167	664	185	62	860
Electric and thermal power.....	815	611	725	3,148	1,578	509	712	270
Machine-building and metalworking.....	475	507	425	1,392	964	440	145	66
Chemicals.....	363	347	513	1,012	900	4	99	184
Wood and paper.....	116	39	52	237	107	23	23	9
Construction materials.....	277	209	192	1,281	757	141	147	149
Light industry.....	273	182	207	585	778	216	200	131
Food industry.....	595	256	362	981	529	254	165	108
All other.....	236	305	202	2,831	800	152	77	46

Appendix C. Abbreviations of Names of Union Republics

ArSSR	Armyanskaya Sovetskaya Sotsialisticheskaya Respublika
AzSSR	Azerbaydzhanskaya Sovetskaya Sotsialisticheskaya Respublika
BSSR	Belorusskaya Sovetskaya Sotsialisticheskaya Respublika
ESSR	Estonskaya Sovetskaya Sotsialisticheskaya Respublika
GSSR	Gruzinskaya Sovetskaya Sotsialisticheskaya Respublika
KaSSR	Kazakhskaya Sovetskaya Sotsialisticheskaya Respublika
KiSSR	Kirgizskaya Sovetskaya Sotsialisticheskaya Respublika
LaSSR	Latviyskaya Sovetskaya Sotsialisticheskaya Respublika
LiSSR	Litovskaya Sovetskaya Sotsialisticheskaya Respublika
MSSR	Moldavskaya Sovetskaya Sotsialisticheskaya Respublika
RSFSR	Rossiyskaya Sovetskaya Federativnaya Sotsialisticheskaya Respublika
SSSR	Soyuz Sovetskikh Sotsialisticheskikh Respublik
TaSSR	Tadzhikskaya Sovetskaya Sotsialisticheskaya Respublika
TuSSR	Turkmenskaya Sovetskaya Sotsialisticheskaya Respublika
UkRSR	Ukrayins'ka Radyans'ka Sotsialistychna Respublika
UzSSR	Uzbekskaya Sovetskaya Sotsialisticheskaya Respublika

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