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NUMBER FOUR

EDITED BY

MICHAEL KASER

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The main emphasis of the work of St Antony's College, Oxford, since its foundation in 1950 has been in the fields of modern history and international affairs. The College organizes a number of regular Seminars at which are read papers produced by its members in the course of their research or by visiting experts from other institutions. The College further sponsors the delivery of lectures in Oxford by scholars of international reputation in their respective fields.

An appreciable volume of contribution to scholarship is thus being produced under the auspices of St Antony's and the present series was started in order to preserve and present a selection of this work. The series is not, however, confined to this material alone and, as in this volume, includes contributions from other places.

Two numbers a year are issued and each number is devoted to a particular topic or a particular part of the world.

By Basile Kerblay

Definitions of the peasantry

Is it still possible to speak of a peasantry in the USSR today? More generally, what is a peasant? Does he exist nearly everywhere at every time whenever agriculture is present, or is he a social phenomenon of a transitory nature?

The term should preferably be restricted to a group presenting some specific features, of which three may be particularly notable. The first is the basic importance of the family. The agricultural activity of individuals in a peasant community is primarily directed to securing the needs of the family; patrimony, chattels, and earnings are not easily divided among the participants, and constitute the undifferentiated return of the family, the survival of which is the main concern of each member (whether he works in or outside the village). A reflection of the importance of the family is provided by the early Russian census in rural areas, where the basic unit of accounting was not the individual but the peasant family, the *dvor*.¹ A second feature is that the soil is considered as the main source of wealth. The fertility of the family plot must be preserved in order to secure the permanence of the family, and the size of the plot is related to the quantity of available manure. Hence the value to the peasant of the horse or the ox. If this instinct for soil-preservation is lacking, is it possible to speak of a peasantry?² Thirdly, the intensity of the work in the field is determined by the head of the family according to need, and varies not only with the season but also with the size of the family. These biological and seasonal factors shape the character and tempo of agricultural work (as opposed to the

* Read to a Seminar at St Antony's College

¹ Similarly in France, villages used to be numbered so many *feux*

² In Madagascar today, for example, French technical assistance is confronted with a rural population which has no idea of the value of the soil, and which lacks the habit of working regularly: thus the economy is in process of monetization before a genuine peasantry has emerged

mechanical rhythm of industrialized work). When the intensity of agricultural labour is no longer decided freely by the producer, or where it is no longer influenced by natural seasonal fluctuation, the worker is not a peasant but either a serf or a wage-earner.

The selection of these three features is intended to convey that present difficulties in Soviet agriculture largely have their origin in a misunderstanding of the true nature of a peasant economy and of its proper laws of development.

How did this arise? The answer must recall the views of Marx and Engels on the fate of the peasantry. The family, the result of the survival of a household economy, was to disappear once the community could undertake the care of children and the collective organization of food and housing for its members.³ The soil had no value as such; socialization of land would obviate the formation of absolute rent (although variation in the quality of land would yield a differential rent), which was responsible for the social inequalities of rural society.⁴ The same economic development would govern industry and agriculture, eventually eliminating under communism the traditional contradiction between country and town.⁵ Marx may well have entertained more elaborate views than these on the destiny of the Russian peasantry — there are four different drafts of the famous letters to Vera Zusulich — and may even have almost reached a populist standpoint.⁶

Nevertheless, Lenin's approach to the "agrarian question" was based on the assumption that capitalism was inevitable in agriculture. In *The Development of Capitalism in Russia*, he contended that the disintegration of peasant society had already reached a stage at which the peasantry could no longer be analysed as a group: a growing gap had been established between the rural proletariat on the one hand and the capitalist rural bourgeoisie on the other. He believed that in agriculture, as in capitalist industry, a horizontal concentration of property was taking place, to such an extent that land reform was merely a pre-

³ F. Engels, *L'origine de la famille, de la propriété privée et de l'Etat* (Paris, 1936), p. 86

⁴ K. Marx, *Le Capital* (Molitor translation, iv, 274); F. Engels, *Anti-Dühring*, Tome I (Paris, 1931), pp. 204-6

⁵ K. Marx and F. Engels, *Oeuvres philosophiques*, Tome VI (1937), pp. 201-2; F. Engels, *Anti-Dühring*, Tome III, pp. 72-4

⁶ M. Rubel, *Karl Marx, essai de biographie intellectuelle* (Paris, 1957), pp. 424-34; and "La Russie dans l'Oeuvre de Marx et d'Engels", *Revue socialiste* (April, 1950). See also Marx's abstracts of Russian books on agrarian problems in *Marx-Engels-Archiv*, vol. xi (Moscow, 1948), vol. xii (Moscow, 1952) and vol. xiii (Moscow, 1955)

requisite for accelerating the creation of large-scale enterprises, and the sole means of applying technical progress to agriculture.⁷

Countering this view was a group of farm economists and agricultural scientists, named by their bolshevik opponents "neo-populists", and defining themselves, first, as the *organizatsionnaya proizvodstvennaya shkola*, and, later, as the school of *krestyanskogo khozyaistva*.⁸ This school of thought may be traced back to the Stolypin Reform and to Chuprov⁹ – hence the emphasis not on the commune but on the peasant family, and (another departure from the old populist view) on the preponderance of the economic interest over the social concept of the general welfare of the peasantry. The aim of this school was to introduce new and more productive forms of organization to the peasant farm. Its influence was mainly felt just before the First World War – with Chelintsev and Makarov – and during the 'twenties – with Kondratiev and Chayanov (who was the head of the Institute of Farm Economics at the Timiryazev Academy from its foundation in 1919) until Stalin imprisoned them in 1930 as counter-revolutionaries responsible for the procurement failure associated with the first peasant reaction to collectivization.¹⁰

Western scholars have paid insufficient attention to this school – a loss to the understanding of rural problems not only in the USSR, but also in countries where a peasant economy still predominates.¹¹ The best summary of these theories is given by Chayanov in his book *The Organization of a Peasant Economy*.¹² His main arguments may be summarized in four propositions.

In the first place – as Chuprov and Chelintsev were the first to

⁷ V. Ilin [Lenin], *Razvitie kapitalizma v Rossii* (St Petersburg, 1899); see also Anna Rochester, *Lenin on the Agrarian Question* (New York, 1942), pp. 34–43

⁸ See S. V. Utechin, *Russian Political Thought – a Concise History* (New York, 1963), pp. 138–9

⁹ A. I. Chuprov, *Melkoe zemledelie* (1st ed., Paris, 1904; 2nd ed., Berlin, 1921)

¹⁰ I. Vermenichev, "Burzhuznye ekonomisty kak oni est (Kondrat' evshchina)", *Bolshevik*, no. 18 (1930), pp. 38–55; see also his paper in *Na agrarnom fronte*, no. 4 (1927)

¹¹ D. Thorner, "Peasant Economy as a Category in Economic History", *The Economic Weekly*, vol. xv (1963), pp. 1243–52, and "L'Économie paysanne, concept pour l'histoire économique", in *Annales* (May–June, 1964), pp. 424 ff.

¹² A. V. Chayanov, *Organizatsiya krestyanskogo khozyaistva* (Moscow, 1925), 215 pp. An English translation of this study is to be published. See also by the same author: *Die Lehre von der bäuerlichen Wirtschaft – Versuch einer Theorie der Familienwirtschaft im Landbau* (Berlin, 1923), 132 pp. and "Zur Frage einer Theorie der nichtkapitalistischen Wirtschaftssysteme", in *Archiv für Socialwissenschaft und Sozialpolitik*, Band 51 (1924), p. 577–613

observe – the peasant-family unit had proved to be much stronger than its capitalist counterpart in resisting the agricultural crisis in the 'nineties, when western European capitalist farms using paid labour were severely hit by cheap agricultural imports from overseas. The vitality of the Russian peasant family – reinforced during the First World War – induced Russian rural economists to analyse why their agriculture had followed a different trend of development from capitalist agriculture. Chayanov explained that the intensity of agricultural work is influenced primarily by the needs of the family and by its labour supply, rather than by the usual capitalist motivation to obtain a net profit: thus in recession, or when zero marginal productivity of capital has been reached, the capitalist refrains from expanding his production or from buying new land, whereas the peasant works harder than ever in order to maintain the balance of his falling income, and sometimes even rents new land if he has surplus labour. It is also worth considering that the smaller and poorer the peasant unit, the higher are land prices or rent in overpopulated areas: this fact similarly contradicts the valuation of land at the margin and the formation of rent. In other words, the classical payments for factors of production (wages, interest on capital, rent, and net profit) are no longer valid in a peasant-family unit where there is no paid labour from outside the family, and where the return is undifferentiated (that is, not divisible into capitalist factor payments).

Chayanov, secondly, did not deny that rent existed in a peasant economy, but claimed that it did not form a measurable income; rent was expressed by variations in labour intensity or by higher consumption. Thus, what the Marxists called "social differentiation" based on the process of rent formation was explained by Chayanov's school in terms of "demographic differentiation". Using the *zemstvo* statistics, he sought to prove that the size of the land in a peasant unit was positively correlated to the size of the family. Economic activity was determined by the number in the household, not by the land at its disposition. Land-holding, hence, had little value for detecting rural social differentiations.

The third contention was that horizontal concentration had limited scope in agriculture because of the growing cost of transport in proportion to the scale of the agricultural unit. A farm of 2,000 hectares may be optimal for the extensive cultivation of grain farming, but one of some 200 hectares is appropriate for the intensive crops and for stockbreeding.¹³ Further, it would be naïve to expect that land con-

¹³ A. V. Chayanov, *Optimalnye razmery sel'skokhozyaystvennykh predpriyati*

centration in large units could make spontaneous progress in the USSR after the abolition of the private ownership of land and with the large majority of the peasantry reluctant to enter the various forms of "collective". The most logical means of introducing technical and organizational change without endangering the productive impulse of the Russian peasant was therefore to promote and to reinforce vertical economic concentration – by way of the cooperative movement. Cooperation – in the classical sense of the term – was in fact a genuinely spontaneous mass movement among the Russian peasantry. An extensive network of cooperative unions working with the state planning agencies could integrate the natural development of a peasant economy into the framework of a socialist régime.¹⁴

Finally, no general solution to the agrarian problem could be proposed for the USSR: regional conditions varied too greatly for any panacea. Land reform would not substantially increase the acreage of arable land available to the peasants, although land consolidation was a prerequisite of further reforms to intensify production.¹⁵ The first task of the agronomist working in a district was to analyse the traditional pattern and the emergence of progressive trends in local farming, without direct interference in the activities of the peasant. The mind of the peasant was the only medium for introducing the new needs and new aims which could induce organizational and technical change. Only a fresh outlook on the part of the peasant could promote agricultural reform: it was essential, therefore, to start with an assessment of the true motivation and structure of the peasant economy.¹⁶

It is unnecessary to stress the contradiction between Chayanov's argument and the Marxist – Leninist approach, although there is some common ground between the school of "peasant economy" and early bolshevik writings on the validity of classical economics in non-capitalist systems. Bukharin's *Economy of the Transitional Period* is very close to Chayanov's thesis on this point: both admit the possibility of a sort of "natural economy" in quantitative terms.¹⁷ On the other hand,

(Moscow, 1928), 91 pp. (in German *Die optimalen Betriebsgrößen in Landwirtschaft*, Berlin, 1930)

¹⁴ A. V. Chayanov, *Osnovnye idei i formy organizatsii krestyanskoj kooperatsii* (Moscow, 1919), 343 pp. (2nd ed., 1927, 384 pp.)

¹⁵ A. V. Chayanov, *Chto takoe agrarnyi vopros?* (Moscow, 1917), 63 pp.

¹⁶ A. V. Chayanov, *Osnovnye idei i metody raboty obshchestvennoi agronomii* (Moscow, 1918), 123 pp. In German translation: *Die Socialagronomie – ihre Grundgedanken und Arbeitmethoden* (Berlin, 1924), 96 pp.

¹⁷ Chayanov (in *Metody bezdenezhnogo ucheta khozyaistvennykh predpriyatii*, Moscow, 1921, 98 pp.) considered the socialist economy to be regulated by a

the voluntarist and authoritarian type of planning which has prevailed since the adoption of the First Five-Year Plan has nothing in common with Kondratiev's proposals for a "genetic" type of planning based on past trends, which takes into account the characteristics of a peasant-run economy.

The Soviet attitude towards the peasant

The human implication of the rural policy chosen by Soviet leaders is well known. The collectivization drive of the 'thirties has produced solutions diametrically opposed to those advocated by the Chayanov school. In the first place, the Soviet authorities chose extensive collective farming, as against intensive individual peasant-family farming. Secondly, their policy laid emphasis on horizontal concentration and land consolidation into large-scale farming; *political* vertical integration used the party as the channel for centralized directives, without *economic* vertical integration (there was grossly insufficient investment in rural transport, roads, marketing services, storage capacities, and cottage industries). Finally, the Soviet government relied on non-economic incentives for promoting the rise of production in the collectivized sector, thereby discounting the genuine roles which might have been played by the peasant and the agronomist, who had only to implement the general directives adopted at the highest levels without consideration of local conditions.

Questions which now arise are whether, after thirty years of collective farming, a Russian peasantry still exists, and whether the difficulties encountered by the Soviet authorities in agriculture may lead to the rediscovery of some of the essential requirements of a peasant economy. The appearance of a Soviet village is so strikingly different from the modern centre of a large Soviet city that a first impression forcefully asserts the survival of the traditional Russian peasantry. But it is hard for a Western student to go beyond this superficial view, for he is not allowed to live in a collective farm: the present writer could do no better than to consult Soviet rural sociologists (or "ethnographers" as they were then called) in Moscow.

One of the questions the author raised in 1962 as a guest of the Institute of Ethnography was the definition of the basic differences between a peasant family and an urban worker family in the con-

single will – that of the State: it was thus a natural economy governed by the requirement of satisfying society's needs. The specific character of economic laws in a socialist régime are an extension of his thesis on the concepts of capitalist economics to a peasant system.

temporary USSR. But instead of some answer derived from the concept of cooperative as distinct from state ownership of the means of production, the reply centred on the nature of income. In the urban family – went the explanation – it was possible to differentiate the earnings of each member, so that the individual has the choice of leaving the family or of moving from one place to another. The physical nature of peasant income and possessions did not permit the same mobility, and hence there were differences in psychological attitudes, notably as between children and parents. From this one may conclude that the concept of undifferentiated return in the peasant household, stressed by Chayanov in the 'twenties, is still considered to be a basic criterion.

The privilege of tilling a private plot is vested in the family (the *dvor*) and not in its individual members. Similarly, those members of the family working outside the village but regularly sending part of their earnings home – still a common feature of the Russian peasant household – are statistically assigned to the rural sector.¹⁸ “*Otkhodnichestvo*”, as in the past, remains the easiest way of supplementing a low income in many rural families.¹⁹ If the *muzhik* goes to work in a nearby town, the *baba* continues to work on the collective farm in order to be entitled to use the plot. When the chief wage-earner is firmly settled there, even the *izba* itself is sometimes dismantled when the household moves to join him, so that in a literal fashion the town is enlarged by the stuff of former villages.²⁰

The present situation of the peasant

What are the main changes which have taken place in the peasant family? They are not in the material sphere – food consumption or housing. The diet is still based, for two-thirds of its calorie content, on cereals and starch; purchased products comprise only 20 per cent of food consumption.²¹ The *izba* is built in the same traditional pattern by the family with the help of handicraftsmen and neighbours. The minor changes in peasant housing are the increasing frequency of iron

¹⁸ *Vestnik statistiki*, no. 11 (1963), p. 93

¹⁹ “Selo Viryatino v proshlom i nastoyashchem” in *Trudy Instituta Etnografii im. N. N. Miklukho-Maklaya*, vol. xli (Moscow, 1958), pp. 162–77

²⁰ See, for example, descriptions in *Novy mir*, no. 8 (1962), p. 19; and no. 10 (1963), p. 14

²¹ See the present writer, “L'évolution de l'alimentation rurale en Russie (1896–1960)”, *Annales: Economies, Sociétés, Civilisations*, no. 5 (September–October, 1962), pp. 885–922

roofs and in timber-deficit areas the substitution for wood of panels made from industrial waste.²² The main change seems to be in the function of the head of the family. The man is no longer, as in past times, the *khozyain*, the manager of an economic unit; he has lost all the prestige derived from his former managerial function in field work, while the orchard and the cow have remained, as they always were, ever the province of the *baba*. In addition, rural migration to towns and war losses have distorted the sex ratio in the village. Rural society has in consequence lost some of its patriarchal features, and the relative importance of women has increased not only demographically but also socially.

To what extent has the traditional attitude of the peasant towards the land changed? The private plot naturally receives as much – and indeed more – care as in the past because of its unique importance as the source of food supply and income for the family. This is reflected in the amount of time devoted to its cultivation – 20–30 per cent of total labour input for 3 per cent of the total acreage.²³ On the other hand, as regards the collectivized land, the changes of attitude are striking. Most importantly, the instinct to conserve soil fertility has deteriorated: weeds and scrub have often overrun arable land.²⁴ Furthermore, the local knowledge and experience on which the managerial prestige of the former peasant was founded no longer count against the obsession of the new manager, the president of the collective farm, to obey the telephoned order from the *raion* committee rather than the dictates of the land.²⁵

The abolition of land ownership was expected to promote social changes in the village. Differential rent evidently persists, despite zonal pricing for agricultural produce and the merging of collective farms to minimize natural inequalities. Indeed, the abolition of deliveries in kind and the introduction of new zonal prices exacerbated rent differentiation, and frequent complaints have been voiced.²⁶ Moreover, within the village or collective farm social differentiation seems again to be emerging. The quarter-century is over during which a peasant –

²² See observations in *Novy mir*, no. 6 (1962), p. 160 and No. 8 (1962), p. 211

²³ A. N. Sakoff, "Le secteur privé dans l'agriculture soviétique", in *Bulletin mensuel – Economie et statistiques agricoles* (F.A.O.), vol. 11, no. 9 (1962)

²⁴ E.g. *Novy mir*, no. 3 (1963), p. 178

²⁵ *Pravda*, 5 March 1962; *Literaturnaya gazeta*, 3 March 1962; *Komsomolskaya pravda*, 25 February 1962; *Izvestia*, 22 January 1964; *Novy mir*, no. 4 (1963), p. 36, and no. 6 (1963), p. 200

²⁶ Reported in the letter of a collective-farm chairman to Khrushchev, *Selskaya zhizn*, 13 December 1960

even had his material situation permitted – would have been foolhardy to display signs of prosperity (one reason for the present uniformity in rural housing).

The scale of inequality within the village cannot, however, yet be assessed, mainly because information on peasant budgets is scarcely available. A recent monograph²⁷ revealed three relevant features. In the first place, the savings of a peasant family were kept in “natura” in the form of edible grains: hence the wealth of the household could be expressed not only in terms of annual income, but also by the number of months (or even years) of cereal consumption stock. The enquiry, secondly, tended to show that the inequalities in annual income per worker among a given family sprang not only from professional status (e.g., as a tractor driver or milkmaid, as opposed to field labourer,) but still more from the relative share of salaries derived from non-agricultural work. A third point was that the level of available income per head in the family varied according to the dependency ratio (i.e., the proportion of dependents to working members). Thus, a widow or a single woman with small children was at the bottom of the scale, with an income per head one-seventh of those at the top of the range.²⁸ We might conclude from this example that the inequalities are no less now than before 1917²⁹ and that the demographic factor (i.e., size of the family) still plays a significant role in the process of social differentiation. The main difference with the past is that these inequalities cannot generate the accumulation of capital and are exhibited solely in consumption (and in stocks for consumption).

The third criterion proposed for defining a peasant economy – the free choice of labour-input by the peasant within the cycle of seasonal occupations – still holds true for the private sector: and the collective-farm market in Soviet towns is the best expression of this seasonal variation. On the other hand, in the collectivized sector it is clear that the collective farmer cannot be considered as a peasant. His work has become subject to the same direction as in industry, except that its remuneration is still a residual income and not a fixed wage. Even the chairman of the collective farm has only limited freedom of decision on the choice of crop, on the start of sowing, or on buying and selling.

²⁷ “Selo Viriatino”, loc. cit., pp. 162–77

²⁸ The incomes of the members of the farm management (chairman, etc.) were excluded from the enquiry

²⁹ The divergences quoted by Lenin in *The Development of Capitalism in Russia* (French translation, ed. cit., pp. 153–68) ranged from one to seven in the level of income per family and only from one to 3·7 in the level of consumption per head

Recent Soviet literature has familiarized the reader with the everyday life of a farm chairman, arguing with party officials on the fitness of a prescribed "campaign" or illegally attempting to secure supplies for his farm.³⁰ In addition to frequent shifts in national or local policy, the inadequacy of income for collective-farm households has undermined the previous stability of peasant communities implicit in long-term improvements in the stock of land and animals, and reduced the incentive for increasing labour productivity and for accumulating capital.

To sum up, the traditional features of the Russian peasantry have been maintained in so far as rural life is linked with the peasant family and the private plot, but the Soviet authorities have failed to promote efficient collective farming not only (as is usually stressed) through the priority given to investment in industry over several decades, but also through failure to understand the peculiarities of a peasant economy.

Prospects for the future

The recent directives for intensive farming based on the application of chemical fertilizers reveal the same short-sighted, authoritarian spirit and are unlikely to produce positive results unless three interrelated factors are re-examined – workable concepts for agricultural salaries and rents to permit economic calculation, the optimum size of economic units, and the vertical integration of agriculture with other sectors of the economy. Recent reforms in these three directions have been inadequate to the requirements either of a peasant economy or of an industrialized type of farming.

Since the value of labour is counted as a residual income, and since there is still no charge for the use of the land (and consequently no possible way of computing rent differentials), agricultural prices can neither reflect production cost nor be used for rational decision-making. The regulation, effective from 1 January 1963, that the cost of labour be calculated as the actual remuneration of collective farmers has not solved the problem. Residuary distribution includes not only costs but also net profit, part of which is also derived from unearned factors (rent-differentials). The approach is thus still influenced by the peasant economy where the income is not easily separated into wages, rent, interest on capital, and profit. Until labour input is computed on a fixed basis as in industry, regardless of the place where it is expended

³⁰ See the novel by F. Abramov in *Neva*, no. 1 (1963) (translated into English as *The Dodgers*, London, 1963), and also *Kommunist*, no. 11 (1961), pp. 106–7

and of the cost attributable to the use of the land, no allocation of resources can be established at the micro-economic level.³¹

One example of this difficulty is the lack of proper economic criteria for the size of the farm. Until recently, the "gigantomania" reflected in farm amalgamations has been used against the peasant economy as a political device for the strengthening of party controls, and for the dissolution of the traditional small village communities. It now appears that the collective farm tends to be considered as an administrative unit, incorporating a series of more or less autonomous economic units of smaller size.³² The brigade constituted by the work force of a single village has become an integrated unit within which smaller units, the *zveno*, sometimes receive a standing allotment of land and machinery. Reports have even been heard of experiments in share-cropping to improve the balance between collective and private interests.³³ Thus it is the traditional pattern of village communities that seems to determine the size of the production unit rather than any rationale of the relationship between agriculture and industry.

Some reforms, albeit limited by lack of resources, have introduced a measure of vertical integration into agriculture. The supply of agricultural machinery, seed, and fertilizer has notably come to flow through normal trade channels. Regional unions of collective farms, however, have been little developed, despite Strumilin's advocacy that they could create a new pattern of relations between industry and agriculture.³⁴ Here again, the proposal is very close to that envisaged by the Russian cooperative leaders in the early 'twenties, and this may be why it is viewed with some distrust by the Soviet authorities.

The continued existence of a peasantry is now more or less recognized in the Soviet Union. Had this recognition come earlier, the traditional pattern could rapidly have been transformed by economic incentives; in fact, after the elimination of the so-called "kulaks", government policies merely precipitated a highly unproductive form of subsistence farming. Having failed to promote a new type of rural worker, the authorities regressed to the pre-reform device of the *barshchina* in the same way as, in the cultural sphere, they

³¹ This point is more fully treated in F. Durgin, Jr., "Monetization and Policy in Soviet Agriculture since 1952", *Soviet Studies* (April 1964), pp. 388-97

³² D. Muratov, "Metody opredeleniya optimalnykh razmerov selskokhozyaistvennogo predpriyatiï", *Voprosy ekonomiki*, no. 2 (1962), pp. 114-20

³³ See Abramov, *op. cit.*, p. 27 and articles in *Pravda Ukrainy*, 28 July 1962 and *Pravda*, 25 August 1962

³⁴ S. Strumilin, *Na putyakh postroeniya kommunizma* (Moscow, 1959), pp. 44-66

went back to the ideals of the generation of Chernishevsky.³⁵ Their main problem is still that of the mid-nineteenth century Russian populists – how to leap from a peasant economy to new forms of agrarian socialism.

Official forecasts of future development are customarily set in ideological terms, and prospects for rural areas look – like the *agrorod* dream – very much utopian.³⁶ An alternative worth examining is industrialized farming, regardless of the political régime. This seems to be more highly developed in Sweden. The industrialization of agriculture (the Marxist ideal) achieved there shows what might be done elsewhere. The Findus corporation controls at present 80 per cent of Swedish production of frozen and preserved foods; the degree of monopolistic control of the market hence scarcely differs from that of a “trust” in a planned economy. The organization chart of each branch of the Findus corporation is headed by a processing enterprise (e.g., a meat-packing plant), the capacity of which is geared to expected market requirements on a calculation of the elasticity of demand. The economic-research unit of the firm computes projected demand and prices, from which the farm-research unit calculates the corresponding inputs and thence the optimum size of subordinated farms for a balanced flow of materials to the factory. Thus the capacity of the factory determines the optimum size of the farms and the other integrated units cooperating along a specific line of production. In other words, the optimum size of the farm could not be determined independently of the vertical integration; the processing industry or the marketing firm is the “leading link”. The peasant has no place in this structure, for the farmer is no longer an independent manager. Only

³⁵ See P. Pascal, “Les grands courants de la pensée russe contemporaine” *Cahiers du Monde russe et soviétique*, vol. iii, no. 1 (1962), p. 69–76

³⁶ Compare the 1980 picture of the USSR by Strumilin (in *Novy mir*, no. 7, 1961) “Kommunizm i rabochy byt”, and that for 1984 sketched by Chayanov under the pen-name Ivan Kremnev with the title *Puteshestvie moego brata Alekseya v stranu krestyanskoi utopii* (Moscow, 1920). Certainly the contrast between the two pictures is striking. According to Strumilin, the family will undergo radical changes and the industrial factory will provide urban centres with all modern amenities; in Kremnev’s vision, however, not only is the traditional family stronger than ever, but urban civilization has disappeared, having been absorbed by rural society after a drastic transfer of the factories to the country, leaving, for example, Moscow with a mere 100,000 inhabitants by 1984. The two approaches are, nevertheless, not too dissimilar: they derive perhaps from the Russian anarchist tradition. Both were thinking in terms of rather small autonomous *communes*, both envisaged the possibility of polytechnical education, and both favoured cultural values inherited from the *predvizniki*

the most competent farmers are chosen by the firm – those who can produce at a specific cost: under a seven-year contract the farmer is guaranteed a regular fixed income or salary, but the agricultural research unit of the firm instructs him on work to be done and supplies all material (seeds, pesticides, etc.). To place the whole process under the direct supervision of the agricultural scientist in the research unit, the optimum for the farmer is viewed with reference not to a higher net profit but to a stable flow of income. The former marginal producer, the farmer whose productivity and costs are not of the level required by the firm, cannot participate: in effect he cannot continue farming and must find another occupation.

The adoption of such a system in the Soviet Union would involve reforms along three lines. First, the agricultural scientist must become the technical manager with adequate power to adopt independent decisions in the light of local conditions; second, direct and organic relations between the factory or the marketing firm and the farms subordinated to it must be set up within united agro-industrial regional administrations. In a Soviet oblast the management of agriculture and industry are distinct, but the integrated firm has already become commonplace in the field of local and light industry, and the idea of “agro-industrial combines” has been discussed in the Soviet press.³⁷ Third, the variable residual income must be replaced by a fixed salary to all those working on the land. In the USSR this change-over slackened recently because the state has been unwilling – or unable – to finance it. The volume of investment and purchasing power that the Soviet government is prepared to allocate to agriculture, and to raising the incentives of agricultural man-power, depends on current political decisions on resource allocation. Evidently the possibility of a transformation along the lines envisaged here, its pace, and its effect on the Russian peasant, can only be subjects for speculation.

History suggests, however, that cultural change in rural societies is a long-term process. Soviet experience shows particularly that technical and organizational changes are inadequate for the creation of a new type of peasantry. The process is rather the reverse: the process of agricultural production is a consequence of the nature of the rural population. Until the peasant is conquered in a peaceful manner, it is difficult to expect any creative impulse in Soviet agriculture. The key of tomorrow is not the fertilizer programme – it is the peasant mind.

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³⁷ *Izvestia*, 4 March 1964; 25 March 1964; 24 April 1964; and *Selskaya zhizn*, 23 March 1964

CHOICES FACING THE SOVIET PLANNER*

By John P. Hardt

INTRODUCTION

In 1920 the Austrian economist Ludwig von Mises argued that the new Soviet planned economy could not operate because of its inability to resolve all the simultaneous equations necessary in a modern economy.¹ Von Mises was particularly concerned about the rational pricing of producer goods without a market. The Soviet economy did operate and, in fact, over some forty years has performed remarkably well in meeting those requirements deemed important by Soviet planners. But there was logic to von Mises' argument. The main reason why it did not hold was that Lenin chose not to solve all the equations required for planning the economy as a whole, but to concentrate on a small number of major sectors, his "commanding heights". Stalin, in turn, emphasized the rapid growth of certain key industrial sectors crucial to military development and to the establishment of an industrial base.² Under both Lenin and Stalin, producer-goods allocation for the priority sectors was handled by physical allocation rather than through reliance on a price mechanism.

Now, some four decades later, Soviet leaders are concerned with more than these key sectors, as the requirements for sustaining growth and improving living conditions, both of which imply an increase in the consumer-good industries and in agriculture, shift their planning to a broader economic front. Moreover, with changing technology the traditional key economic sectors for augmenting military power have become more complex. Finally, to continue the high economic

* Read to a Seminar at St Antony's College

¹ Barone laid the basis for the von Mises argument, but it was to von Mises that Lange directed his response for the planners in: O. Lange and F. N. Taylor, *On the Economic Theory of Socialism* (Minneapolis, 1938)

² Cf. N. Spulber, *Soviet Strategy for Economic Growth and Foundations of Soviet Strategy for Economic Growth, Selected Soviet Essays 1924-1930* (both Bloomington (Ind.), 1964), *passim*. (hereafter referred to as *Soviet Strategy and Foundations* respectively)

growth rate, the industry based on coal and steel is now giving way to a more modern industry increasingly based on petroleum and non-ferrous metals. These new factors also give greater significance to the dimensions in planning, in that decisions made now more heavily commit future decisions and limit flexibility. Thus the planning process is now more broadly based, more complex in technique, and directed to a longer time-frame. Problems such as that of rational pricing for capital goods posed by Ludwig von Mises in 1920 are now quite relevant to Soviet planners in 1966.

The old system did not die with Joseph Stalin in 1953, but at the same time, the Soviet system was ripe for change. Consequently, the Soviet economy has been going through a period of economic transition under Khrushchev and his successors. Modest reforms in agriculture and industrial planning have accompanied a wider pattern of resource allocation to include more goods and services for transportation, agriculture and Soviet households within the planning machinery. This current transition may be likened to the period in the 'twenties when the climate was likewise conducive to change. But why change? What in Soviet eyes is wrong with Stalin's system?

There are apparent many problems in Soviet economic development and significant opportunities for increased production and satisfaction of needs. The problems are centred in the economic slowdown. Recently Soviet claims for world leadership in the rate of national economic growth have been muted, owing to a succession of years which have seen the Soviet economy grow more slowly than many of those in Western Europe and Japan.³ Indeed, since Kennedy called direct attention in 1960 to the Soviet economic challenge to the USA, the comparative growth pattern between the two nations has drastically changed. In the decade of the 'fifties, the USA growth rate was averaging 3 per cent per annum while the Soviet rate was about double, that is, a 6 per cent increase in the gross national product (GNP) per year. Since 1960, the annual increase in the production of goods and services in the USA and the Soviet Union has been virtually the same, or about 4·4 per cent.⁴ But while the USA has been enjoying an unprecedented period of economic expansion, the Soviets have

³ S. Cohn, "Trends in Soviet Gross National Product", in *Current Economic Indicators for the USSR*, Joint Economic Committee, Washington, D.C. (June, 1965), pp. 12-13

⁴ *Wall Street Journal*, 1 October 1965. See also J. Hardt et al., *The Cold War Economic Gap, the Increasing Threat to American Supremacy* (New York, Praeger, 1961)

suffered retardation not only in their agricultural production but also in industrial sectors. A number of reasons have been cited for this relative sluggishness in Soviet economic development: agricultural production, which carries a large share in the overall value of output, has lagged because of climatic and organizational problems, and external grain purchases have absorbed scarce foreign currency; industrial growth has been adversely affected by competition among military and industrial claimants for scarce manpower and capital goods, as missile programmes compete with projects for new industrial plant; and the modernization of Soviet industry and transportation, in creating institutional frictions, has led to a slowdown in production while the Soviet economy adjusts from the steel-coal type of economy of the past to the technological changes wrought by the current petroleum-non-ferrous-metals-chemical world.

The focusing on the slowdown in the rate of Soviet economic development has directed attention primarily to the problems in the Soviet economy, and has highlighted the inefficiencies and institutional rigidities which now appear to hamper progress. In fact, some commentators have suggested that Soviet economic problems have put into question the utility of the Soviet system, and even that the Soviet leaders, in desperation, are on the verge of emulating the Western, market-oriented economy. However, a more balanced approach would be to view this transition as a matter not solely of problems but also of opportunities. We might argue that the burgeoning Soviet economy, with its increasing supply of goods and services, requires adjustments in the same way as other economies going through structural changes, many of whose problems derive from the success of rational economic changes. For example, the Soviet economy is undergoing a transformation from heavy reliance on coal to more efficient petroleum-natural-gas sources of energy. In this process, Soviet railways have in the last eight years experienced a rapid transition from coal similar to that which occurred a decade earlier in the USA. As there, Soviet success has also been accompanied by problems in the form of pockets of unemployment and imperfect technical adjustments to new economic patterns - for example, in the Ukrainian coal-fields they have the regional equivalent to the Appalachian problem of the USA. However, as in the American case, the net effects on the Soviet economy of these changes in energy sources have been clearly beneficial, and time should bring accommodation to institutional frictions, leading perhaps to a higher rate of growth.

In the Soviet economic slow-down there are also a number of transitory factors, such as unusually poor weather in consecutive years, and a trough in the number of new males coming into the labour force due to losses in the Second World War, which are not likely to recur in the near future.

In any event, there is manifest throughout the political-administrative hierarchy a real concern over the economic state of affairs. From the prolonged and widespread debate in the Soviet press on new methods of economic controls and administration, it would appear that expectations for the solution of current economic problems rest largely on the introduction of electronic computers and the adoption of mathematical techniques in planning.⁵

Without denying the advantages that may accrue from the efficient use of these advanced techniques and equipment in Soviet central planning, it is important to realize that certain crucial alternatives in allocation policy must be more clearly defined and consistently recognized before these means for manipulating data can be effective. Moreover, the planning role of Party policy-makers must be redefined before the necessary guidelines can be set down for orderly implementation of planning for this more broadly based Soviet economy; the delegation of decision-making from the politically-oriented Party to the economic planners would seem to be in order. Unless these preconditions are met, the Soviet planner will find himself caught in a continuing process of compromise with the political and military leaders, encumbered by an antiquated economic planning process.

Two particular policy problems involving the allocation of resources have been emphasized by recent developments. The first is the relationship between the claims on the economy of defence and those of the industrial sectors crucial to maintaining a high growth rate. The second concerns the state of agriculture, which must provide not only a stable grain harvest but also the basis of improvement in the Soviet standard of living through improvement in the diet – a requirement which, incidentally, places new demands on the traditional Soviet industrial branches. Each of these problems will hence be considered in the context of the choices involved and the future role the Soviet central planner may play in allocating resources to meet these requirements.

⁵ A detailed survey of this debate was presented in a number of papers read at a conference at the University of Rochester on "Mathematical Techniques and Soviet Planning" held in May 1965, the proceedings of which are to be published shortly. The author was a member of the coordinating committee of the conference which also included M. Hoffenberg, N. Kaplan, and H. Levine.

MILITARY STRATEGY AND RESOURCE ALLOCATION

The economic importance of Soviet military spending is well accepted, but seldom evaluated in any detail, by Western analysts.⁶ To be sure, the Soviet Union has made it rather difficult to study this important area by its secrecy over its military budget and the production of items critical to military requirements (non-ferrous metals, certain petrochemicals, elements of machine building, etc.). However, some insights can be gained from such sources as the annual plans and performances, reconstruction and analyses of omitted sectors in published data (input-output tables and aggregative industrial production figures), and estimates of the structure of Soviet production by analogy with Western relationships.⁷ These methods of sketching out the allocation of resources to the Soviet military establishment are particularly revealing in periods of sharp change in policy. Such a change occurred in 1961, when there was a patent relationship between programmes known to have been curtailed and the announced policy for a substantial increase in military outlays, for which data are not usually published. It became clear after 1961 that the increment in Soviet military outlays was competing with the industrial investment necessary for continued growth. Not only is the defence burden greater in the USSR than in the West, in the sense that there is no "slack" in the economy, but also the military establishment competes for resources with the industries which stimulate growth.

This recent pressure of Soviet military outlays on resources critical to growth has coincided with considerable discussion on the future course of Soviet military strategy. Unresolved and possibly unresolvable, the strategic debate reveals no definitive guides to the future course of Soviet military policy or to the claims which this policy would make on the economy. Rather, it appears more likely that the nature of the competition between various military programmes and

⁶ For example, in a paper read at the American Association for the Advancement of Slavic Studies in New York, April 1964, entitled, "The Postwar Growth of the Soviet Economy", R. Campbell states that, "with regard to the impact of military allocations on the growth of the economy, we are very much in the dark".

⁷ V. G. Trembl, "Economic Interrelations in the Soviet Union", in *Annual Economic Indicators for the USSR*, Joint Economic Committee, Washington, D. C. (February, 1964), pp. 183-213; M. Kohn, "Soviet Economy in 1961: Plan and Performance", in *Dimensions of Soviet Economic Power*, Joint Economic Committee, Washington, D.C. (December, 1962), pp. 211-323 (hereafter referred to as *Dimensions*); and Greenslade and Wallace, *Dimensions*, pp. 119-30

economic growth requirements will help to determine the military strategy ultimately adopted or the compromise reached.

Uneven economic development and Soviet military choices

The future trends in military spending, their economic impact, and the strategic military choices they reflect should be viewed against the very uneven development of the Soviet economy. Soviet economic development under Stalin was characterized by a concentration of resources on priority sectors referred to in Soviet usage as "heavy industry", which included particularly the traditional basic industries – coal, steel, engineering, and electric power. Stalin's conservative opposition during the industrialization debates of the 'twenties argued that the rapid rate of development proposed for Soviet industry was unattainable because of inability to finance it either from within the Soviet economy or from credits from abroad. His solution – borrowed from the Trotskyite Preobrazhensky – was to take the necessary resources for expanding industry from "primitive accumulation".⁸ This solution starved agriculture and "light industry" (consumers' goods) of investment funds and deliberately failed to provide farmers with goods to exchange through the market for their products. As a result, not only did Soviet agriculture and consumer-oriented industry not benefit from the high rate of economic development in the Soviet Union, but they may be said still to form an underdeveloped economy within the Soviet Union.

At the other extreme of development, there are some sectors in the USSR as advanced as those of the USA. A missile support industry was developed in the late 'fifties to meet the technologically-advanced requirements of strategic forces and other aerospace programmes.⁹ At the same time, moreover, the Soviet government decided that it could no longer rely on an economy predominantly based on coal and steel to provide continued industrial growth. To modernize the sectors of Soviet industry crucial to a continued high industrial growth rate, and necessary for meeting technologically advanced military requirements, involved the development of more sophisticated branches – petroleum refining, non-ferrous metals, petrochemicals, chemicals, and certain branches of engineering. These twin developments of

⁸ Spulber, *Foundations*, pp. 230–57. An English translation of Preobrazhensky's book was published by Oxford University Press in 1965 (trans. B. Pearce, with an introduction by A. Nove)

⁹ J. Hardt, "Strategic Alternatives in Soviet Resource Allocation", in *Dimensions*, especially pp. 17–20, and *Missiles and Rockets*, 7 January 1963

aerospace military requirements and the industrial investment requirements for expanding certain growth sectors of advanced technology led to the emergence of a new advanced economy more comparable in its technological characteristics to American industry.

The traditional Soviet industrial base developed under Stalin still occupies an important position in the economy, and part of the burden of growth requirements falls on this sector. For example, the newly urgent modernization of transportation places requirements on Soviet industry for diesel and electric equipment for the railways and pipe for the construction of a vast network of petroleum and natural gas pipelines.

In this context of uneven economic development the specific resource requirements of the alternative future courses of Soviet strategy suggest specific, rather than general, constraints on resources. The military requirements for continued expansion in the aerospace programmes of the Soviet strategic forces place their demands on the advanced economy and compete with investment for industrial growth. The forces for use in theatres of operations ("theatre forces"), including the large Soviet ground forces, chiefly place their requirements on the traditional economy. These alternatives in military resource requirements may be viewed in Fig. 1 on p. 27.

The competition between the strategic forces – offensive and defensive missiles – and the advanced industrial branches is primarily in the area of new or initial investment: the capacity of a missile-support industry cannot be readily converted to the production of chemicals, non-ferrous metals, and the other advanced industrial branches. A reduction in the requirements for strategic-force development would be more likely to lead to an increase in other aerospace programmes than to go towards industrial increment. For example, if the production requirements for missiles designed for West European targets diminishes, that productive capacity is likely to be converted to other missile, or at least aerospace, programmes rather than to production capacity in sophisticated industrial branches. Similarly, the resource demands for the sophisticated industries are, in turn, competitive with those for *expanding* aerospace programmes, but do not represent capacity readily convertible to supplement the missile-support industrial capacity. Chemical industry and missile programmes are thus largely competitive for the investment necessary for expansion. The lack of ready convertibility also carries over to the skilled (and scarce) labour force in each of the competitive aerospace and sophisticated industrial branches. Doubtless a chemical engineer may eventu-

ally become valuable in the field either of rocket propulsion or plastic production, but the effective transition would probably take some time.

"Theatre forces" still draw primarily on the traditional branches of the Soviet economy. Moreover, the capacity here to produce for either civilian or military production is far more open than it is between strategic forces and the advanced economy. The agricultural equipment and automobile factories can be converted in a way that petrochemical plants and missile-support industries cannot.

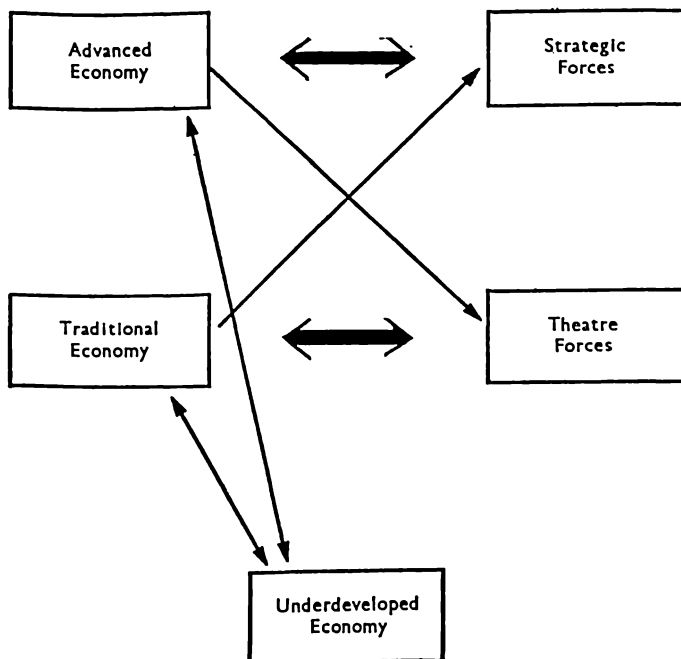


FIG. 1

If, as a consequence both of military strategy and a shortage of manpower, the Soviet Army were partly demobilized, the demands of the theatre forces for resources might well be unaffected. This is partly because sophisticated munitions ("military hardware") would be substituted for manpower and partly because modernization of the Soviet theatre forces might take the form of increased mobility (e.g., for use in Western Europe, in contiguous areas including the Chinese border, and in non-contiguous areas). For this latter purpose, the stress would be transferred to the expansion of transport for troops by air and sea outside the USSR and possibly outside Eurasia.

The debate on military strategy and resource use

There is growing evidence of pressures to change priorities in Soviet resource allocation within and between all the sectors of the economy from the stable pattern of the past favouring heavy industry (and especially the branches supplying military requirements) to the provision of more goods for modernizing the Soviet economy and improving the levels of living. These pressures have apparently been instrumental in bringing about a shift in priorities away from the past dominance of national security considerations in Soviet economic planning.¹⁰ These shifts, however, have not been stable: on at least two occasions during the Seven-Year Plan (1959-65) priority for military requirements and heavy industry was re-asserted. There is some evidence that these shifts were responses to change in the international situation, but domestic considerations in the USSR also appear to have had a central influence. The debate among Soviet policy-makers on economic priorities has a direct bearing on the size and composition of the military budget which in turn conditions the military strategy that can be implemented in the USSR.

An initial phase in the debate covered 1958-61. In 1959, priority for heavy industry and military requirements appeared to be waning, as the emphasis of the Seven-Year Plan, then starting, was on investment for economic modernization and on improvement of living conditions. This shift in priorities was reversed in July 1961 when, in apparent reply to the increase of the military budget in the USA (coinciding with Soviet aggravation of the Berlin situation), Khrushchev announced that the Soviet budget was to be substantially raised and that the earlier orders for demobilization in the armed forces were rescinded. It became evident later that the increment in the military budget and the abandonment of the planned reduction of the armed forces coincided with cuts in the plan for industrial investment, and with deceleration in the growth of industrial production. In effect, both heavy industry and production for consumer needs bore a heavy impact from this shift in policy.

A second phase in the debate on resource allocation may be dated from late 1962 and early 1963. From the announcement of the annual plan for 1963 in December 1962, it appeared that the priorities again

¹⁰ R. K. Crane (ed.), *Soviet Nuclear Strategy, A Critical Appraisal* (Centre for Strategic Studies, Georgetown University, Washington, D.C., 1963); J. P. Hardt, "Strategic Alternatives in Soviet Resource Allocation Policy", J. G. Godaire, "The Claim of the Soviet Military Establishment", and R. V. Greenslade and P. Wallace, "Industrial Production in the USSR" in *Dimensions*

emphasized, at least in part, investment for expanding such economically-advanced critical industries as chemicals, petroleum, and engineering. This annual plan, announced by a newly appointed Chairman of the State Planning Commission (Gosplan), V. E. Dymshits, appeared to represent a return to the policy of shifting the resource allocation pattern away from military and heavy-industrial needs.¹¹ By the end of February 1963, however, Khrushchev was again talking as he had been in July 1961, when the defence budget was substantially increased and demobilization terminated, and in March a Supreme Council of the National Economy of the USSR, superior in authority to Gosplan, was established. D. F. Ustinov, named Chairman of the new Council and Deputy Chairman of the Council of Ministers, had a long history in the administration of defence-production industries. Moreover, it became evident that many of the investment projects planned for 1963 were not receiving adequate supplies. The very severe winter may have been partially responsible, but such reported overstrain among investment projects has often accompanied a change in priorities favouring military projects.

The significance of the changes in administration and policy for the specific priorities of military programmes over investment and consumer-goods production is difficult to deduce from the limited information provided by Soviet sources. Absolute defence expenditures are probably increasing, but not as rapidly as the overall rate of economic growth. The fluctuations in recent years probably vary between maintenance of the absolute level of military budgets and the relative share that military outlays have in the national product.¹² But while Dymshits seemed to be enunciating a policy which could lead to a lower military budget, R. Ya. Malinovsky, the Minister of Defence, was advocating an increase.

If Marshall Sokolovsky's book indicates the current Soviet strategy,¹³ defence requirements have to be met either by increasing the military budget or by changing its composition. The level of the Soviet budget in the future may well be constrained by the pressure of other programmes, as well as by a continuing slow-down in the overall economic

¹¹ *Pravda*, 10 December 1962

¹² This is at best a statement of an order of magnitude in view of the pricing problem in the USSR – a rouble for Soviet defence is not a very accurate measure of either relative scarcity or economic burden

¹³ V. D. Sokolovsky (ed.), *Voennaya strategiya* (Moscow: first edition 1962, 457 pp.; second edition 1963, 503 pp.)

growth rate. The pressure for modernizing certain elements of Soviet industry, transportation, and agriculture apparently may no longer be postponed without running the risk of retarding economic development. Likewise, substantial quantitative and qualitative improvements in living conditions apparently can no longer be deferred without serious consequences. If these aims continue to be recognized by the Soviet government, a substantial increase in the military budget is unlikely.

Civil-Military relations

It may be argued, by those who see in the current Soviet-American relations the development of a meaningful detente, that a significant reduction in the overall Soviet defence effort is likely. Although the USSR may, in fact, slow the expansion of its strategic forces and of military manpower in its ground forces in response partly to economic pressures, its effective capability may continue to increase with modernization of theatre forces. The image projected of a nation willing to negotiate internationally on aspects of its strategic forces and on the size of its army (based on a policy of reduction embraced for domestic reasons) may be persuasive but deceptive, because a larger or stable Soviet defence budget may be directed to less obvious modernization.

A reduction in the theatre forces and the military budget partly depends on the policy of the USA and NATO, and it should be noted that the United States official forecasts for the period to 1970 show a reduction in annual defence spending of just 4-5 per cent.¹⁴ This small change could be easily offset in time by the introduction of new programmes as 1970 draws closer. Without a reduction in expenditures by the USA and NATO, it is unlikely that the Soviet Union would change its defence policy with a mere improvement of the international political climate. Attention may rather settle on a domestic rationale deriving from civil-military relations within the USSR. It should be noted that the military is probably the most influential group acting within, but somewhat autonomous of, the Party guidelines. One would exaggerate in suggesting that the Soviet military establishment has or may gain policy-making power, but it does appear to exercise an important constraint - and even a virtual veto - on changes in policies affecting it, and may succeed in maintaining current levels of defence outlay.¹⁵ It seems, moreover, to have paralleled its resistance to

¹⁴ *New York Times*, 20 April 1964. Moreover, with the Vietnam war the level has been substantially raised; (*New York Times*, 26 December 1965, p. 4E)

¹⁵ Ncmzer has developed a history of the relationship between the officer corps

Party domination on the allocation of resources with autonomy in the administration and operation of its own establishment.¹⁶ Nemzer has argued that the officer corps has become increasingly a force which civilian policy-makers must respect in national security matters. Moreover, the latter must be aware that in the past (notably in 1939, and in 1941-42), their interference in the armed forces had a negative effect on military efficiency, and that they must continue to seek a balance between political control and military effectiveness. They cannot be shown to have neglected the material prerequisites for the armed forces, who may, nevertheless, be expected to press vigorously for greater autonomy and for a higher allocation of resources. The success of the military establishment in tipping the balance in their favour depends in no small degree on other domestic developments and on international events. Urgent economic problems at home may override military considerations, and defence policy may inevitably be influenced by a relaxation of international tension resulting from some basic change in the relations of the Great Powers.

A more significant part, however, could be played by dissension within the political administration. If Khrushchev's mantle comes soon to fall on a single man, the new régime will probably be able, and may consider it desirable, to impose strict controls on the military. If, however, the present diffusion of the leadership lasts for several years, military circles may emerge with considerable power. By then a new generation of Soviet military commanders will have taken over from the current leaders, who were trained in the ground battles of the Second World War. Matured in the age of aerospace, they will not owe their positions to a common past, and hence will entertain different views on the alternatives in military strategy and the requisite budgets. It seems unlikely that, given their profession, they will argue for a limitation of armaments: military requirements may hence continue to retard the Soviet economy in modernization and the reattainment of a high industrial growth rate. The central planning agency would thus remain constrained by political decision in this sphere, and hesitate to devolve its management procedure.

and the Party apparatus within the armed forces. He concludes that there seems to be a set of inherent tensions of some magnitude between military and political leaders. See Nemzer, *Civil-Military Relations in the USSR*, Technical Memorandum 424, Research Analysis Corporation (McLean, Virginia, 1964)

¹⁶ Nemzer, *ibid.*; cf. Fainsod, *How Russia Is Ruled* (Cambridge, Mass., 1953), p. 486; C. J. Friedrich and Z. K. Brzezinski, *Totalitarian Dictatorship and Autocracy* (Cambridge, Mass., 1956), p. 281; and V. P. Artemier, "The Communist Party and the Soviet Armed Forces", *Military Review*, no. 2 (February, 1964), p. 37

IMPROVED LIVING CONDITIONS

Domestically, the present Soviet administration is responsive to pressures from the populace for marked improvements in living conditions, due to a combination of economic and political factors. *Economically*, it can now be seen that to provide adequate production incentives requires significant changes in available resources for consumer satisfaction. *Politically*, the leadership, now unwilling or unable to resort to the methods of coercion employed under Stalin, may be seeking a greater degree of consent from those they govern, and in this manner may wish to mark a difference between Soviet and Chinese Communism. For all or any of these reasons its declared policy and the evidence of programmes initiated suggest a distinctly enhanced concern for consumers' welfare.

There are a number of possible ways to meet the rising expectations of urban and of rural citizens, among them improved housing and an increase in the consumer durables needed to equip the greater living space, improved transportation, and a significantly improved diet. Although other aspects of living conditions such as entertainment and social welfare, including medical services, are relevant and perhaps deserve consideration, they may here be left aside.

The housing problem is probably most clearly illustrated by the failure to achieve the level of housing space associated with West European standards, while investment in residential construction is declining, and there is little promise of substantial improvement.¹⁷ Beyond the physical volume of space available, the whole qualitative environment of the Soviet urban citizen at home is even less likely to change substantially for the better, nor will modern kitchen facilities and electrical appliances for domestic entertainment become widely available.

Soviet clothing, particularly shoes, may improve quantitatively with expansion of the production of textile material and of livestock herds. In a country of such severe climate, clothing is still of the same vital importance as when Gogol's citizen lost his new top-coat and froze to death. But the promise of significant improvement in the quality and quantity of shoes and apparel depends substantially on the progress of the chemical industry.

The entrance of the Soviet economy into the automobile age does not seem an immediate prospect – some current Soviet statements

¹⁷ From 8.3 billion roubles in 1958 and 1959 to 7.7 in both 1962 and 1963. See *Narodnoe khozyaistvo SSR v 1963 godu* and the abstract for the preceding year

notwithstanding – because of the substantial resources that would be necessary for roads and all the investments related to automobile usage. Moreover, there is the possible political consideration that the present regulation of the movements of citizens by internal passports would be vitiated by the large-scale use of private transport.

Harvest stability as the crucial problem

If, as is suggested above, none of these sectors are to show a major improvement in the fairly near future, the prospect of better living conditions lies in the area of better diet.¹⁸ Such a change must involve quality rather than merely an improved supply of items currently available. The Soviet diet, based on bread, potatoes, cabbage, beetroot, and some low-quality meat, is surely not likely to fulfil expectations of improvement: increased quantities and quality of animal and dairy products, fruits and vegetables are needed. Such alterations seem to be comparatively reasonable and economically attainable, and must be one of the reasons for the continuing emphasis on agriculture by the present administration. It should be recalled that in excellent harvest years, such as 1958, attention was directed toward improvement in the diet through an unsuccessful campaign to increase the production of meat, eggs, and dairy products. The extremely poor crops which followed the bumper years of the late 1950s gave rise to an immediately pressing problem of maintaining adequate supplies of cereal grains to provide for minimum commitments, but with good weather the hopes for qualitative change in the diet must again emerge.

The poor crops of 1961–63 raised the problem of the ability of Soviet agriculture to meet minimum requirements, of which the most pressing aspect was that of ensuring an adequate harvest to meet current demands even after bad weather. These requirements include the need for grain not only for bread, but also for feed for existing livestock, and to fulfil foreign commitments for grain deliveries. In years of average weather Soviet agriculture can currently meet its essential food needs at present dietary levels, and its other commitments for livestock and export requirements. The modest increase to ensure a sufficient harvest for these same needs even in years of bad weather also seems attainable from current plans already under way. This immediate problem of increased agricultural production of cereals may well be manageable within the present institutional frame-

¹⁸ Cf. I. Erro, "And What of the Consumer?" *Problems of Communism*, November–December 1963, p. 35

work of the collective farm system by means of some increase in investment in agriculture and improved incentives. Mineral fertilizer, insecticides, herbicides, machinery, and equipment could lead to some modest increase in total output.¹⁹ Focus has been placed particularly on the increased production of mineral fertilizers, which in some regions, if available and properly applied, could substantially increase the yield of grain per acre. Likewise some increased investment can be expected in mechanical power for the collective farms, aimed also at reducing the loss between the grain ripe in the field and that stored in the barn. Brezhnev, at the March 1965 session of the Party Central Committee, resumed the policy – abandoned by Khrushchev in 1958 – of affording incentives to collective farmers through higher incomes. Lower consumer-goods prices, and increased availability of consumer's goods in rural areas, could also be very relevant.

Production and distribution problems of meat, dairy products, fruits and vegetables

Increased grain production to insure against a recurrence of the 1961–63 crises is not, however, enough without increased availability of animal and dairy products, vegetables and fruit. More meat may result from a substantial increase in livestock bred in the area north of the Ukraine and west of the Urals. But this potential is unlikely to be realized within the present institutional and organizational structure of Soviet agriculture. The fields tend to be very small, and land requires minute and detailed attention if it is to be productive, but “neither the collective nor state farms possess the necessary flexibility or quality of management”.²⁰ Moreover, livestock production requires additional attention to transport, distribution, and storage facilities. The translocation of wheat into meat available all the year round in substantial quantity on the table of the urban Soviet citizen poses major problems.²¹ The investment required and the substantial institutional changes in Soviet agriculture needed would appear to make this solution for improving his diet too costly.

¹⁹ *Soviet Agriculture Today, Report of the 1963 Agriculture Exchange Delegation: Foreign Agricultural Economic Report no. 13, US Department of Agriculture, Washington, D.C. (December 1963), p. 73; H. E. Walters, “A New Direction for Soviet Agriculture?”, *Foreign Agriculture*, 13 April 1964*

²⁰ D. Gale Johnson, “Soviet Agriculture”, *Bulletin of Atomic Scientists* (January 1964), p. 12

²¹ H. E. Walter, “The Story Behind the Stalemate in Soviet Agriculture”, *Foreign Agriculture*, 23 March 1964

Likewise improvement in the supply of vegetables, dairy products, and fruits, at present inadequate through most of the year in the majority of Soviet cities, is not solely a production problem. An organized small-farm and special-farm development could provide more of this produce, but, here again, the institutional constraints are considerable, and to provide facilities in intermediate channels from farm to market would require substantial investment.

Another potential solution to the Soviet problem would be to adopt the pattern of the United Kingdom and other West European countries in resolving the problems of their food requirements, namely, import of the necessary farm products from abroad: the USSR as it were should find its own New Zealand, or Denmark. However, this break in the Soviet policy of autarky would pose not only a political problem of reliance on foreign sources of supply but also further balance-of-payments difficulties for a state already hard pressed to earn sufficient exchange for critically-needed imports (chemical equipment, shipping tonnage, etc.). As is well known, the USSR has in recent years drawn heavily upon its apparently small reserve of gold to finance some of these foreign economic activities, as well as to relieve the temporary grain problem. The import of food therefore seems unlikely.

In sum, the limited Soviet resources seem likely to remain over-committed to the continued requirements of defence and industrial growth, as opposed to agricultural improvement and other means of raising the level of living. It can hardly be otherwise when a slowly growing supply of resources has to be parcelled out among a proliferating number of demands.

MODERNIZATION OF THE PLANNING MECHANISM

The need for the delegation of planning authority and for the use of mathematical techniques

What role can planning play in resolving the problem of allocating scarce resources among the major competing demands described above? Will Soviet leaders allow the effective use of modern planning tools, given the high degree of resource commitment? This involves initially a willingness to delegate from the Party to the economic planners some significantly greater degree of decision-making.

The Soviet political leadership has always taken a very active role in the planning of the economy. It may be recalled that Lenin in 1921, turning to consolidate the revolution with the New Economic Policy, focused his personal attention in planning on such industrial sectors as

electric power. This involvement of the leadership in economic planning increased under Stalin in the Five-Year Plan period and led to attempts to mobilize the entire society behind the economic programmes: leading literary figures, it may be recalled, had their energies directed to eulogizing hydro-electric projects and cement plants, while romantic relationships were identified with tractors and agricultural goals. In addition, the Soviet leadership adopted a policy of *shturnovshchina* ("storming"), perhaps to counter the traditional Russian affinity to *Oblomovshchina* (complete obliviousness to life around one). Periodically a "storming" effort was undertaken to attain a critical goal, such as the completion of a particular project or the attainment of a physical production goal. The system was formalized within the labour force by the Stakhanovite system, that is, by sharply graded incentive wage payments conducive to fulfilment and over-fulfilment of production plans.

In 1965 the Soviet Union faced a new and complex family of economic problems. The identification of given targets, easily defined and attained within reasonably short periods, has become difficult: the economy no longer lends itself to the "storming" techniques of the past. In fact, such techniques may be highly disruptive to the orderly attainment of the various economic goals, by producing a short-run over-commitment which further complicates the longer-term strain on resources. The close concern of Soviet leadership in the detailed aspects of planning involved in the ratification and approval of the annual production and investment plan may in itself be disruptive. No longer can a single political leader fully understand the implications of particular goals and their interrelationships. Where Stalin could examine the steel production expansion goals and relate them to production of tanks and construction of critical new factories, today's leaders face a complex of interrelated problems which require the comprehension of a professional economist or planning technician. Merely by retaining control over decision-making in detail, the Soviet leadership may impair economic planning efficiency.

The personal involvement of leaders and the effect of campaign planning can be illustrated in the areas of defence expenditure and industrial growth in 1961 by budget change and by the decision on chemical fertilizers for agriculture in 1964. In July 1961, for reasons noted above, Khrushchev announced an increase in the defence budget of some three billion roubles (approximately eight billion dollars by conventional rouble/dollar conversion methods). There is some question as to how much of this increase was spent in 1961 and for

what purpose, but there can be no doubt that substantial changes in the Soviet civilian economy coincided with this decision. Severe reductions in the investment plans for priority industrial expansion in chemicals, metallurgy, petroleum and natural gas, and engineering coincided with the rise in defence outlays and the reduction in resources for the completion of industrial projects under construction slowed the expansion of Soviet industry. There is, however, another factor in the industrial deceleration which ensued, namely, the shock effect. As a tree that is drastically pruned may go through a period of shock and slow growth for a time, so Soviet industry after the drastic 1961 curtailment in its priority investment sectors may have been shocked into slow advancement for a period beyond that dictated by the lack of necessary equipment. This effect may represent simply a period of readjustment within which the ramifications and interrelations of a given change in policy work their disruptive way through the system.

Again in 1964, when the economy was already developing rather slowly but was stretched to meet the multiple needs of many priority programmes, Khrushchev initiated another campaign, this time to "solve" the agricultural problem through a substantial increase in the supply of chemical fertilizers. Under Stalin, it may be recalled, Khrushchev sponsored the programme of *agroroda* (agricultural cities) and in the intervening decade he gave more attention to the agricultural sector than to any other branch of the economy. It is not yet clear whether the present administration has abandoned this approach, the cost of which can be exorbitant. The implementation of the current chemical fertilizer programme seems to draw heavily on the other already-strained priority sectors. The pre-emption of resources for fertilizer may be more disruptive and retarding to Soviet economic growth than the benefit that might accrue in the form of increased agricultural production. Moreover, the very pressure for maximum growth has side-effects such as over-employment of resources and bottlenecks.

Electronic computers and facilities for gathering and manipulating data are becoming increasingly available to the Soviet economic planners.²² Moreover, the relaxation of ideological constraints affecting mathematical techniques such as input-output and linear programming may ease the implementation of the broad political judgments made by the leadership.²³ However, the new capabilities for marshalling and

²² See G. Paloczi-Horvath, *The Facts Rebel: The Future of Russia and the West* (London, 1964)

²³ Trembl, *op. cit.*

manipulating data may be of limited use in improving the efficiency of Soviet planning. The increasing complexity of the economy, and the difficulties in reconciling priorities at the highest levels, may well enforce the development of criteria for rationally allocating scarce capital goods by some sort of price mechanism. The delegation of authority to intermediate planning levels, or, on broader decisions, from the Party to the economic planning apparatus, can be effective only if stable guidelines and criteria are set up. The reforms announced by Kosygin in September 1965 are a contribution to them, but a core problem remains of the establishment of a policy framework which consistently reflects planners' preferences and offers a mechanism for allocating scarce resources and within which prices may be set and adjusted.

The promise of several years ago that a wide-scale introduction of mathematic techniques and computers would basically change the Soviet planning mechanism has not come to fruition.²⁴ According to Trembl, the authorities are now going through a period of reappraisal.²⁵ Progress has been made in marginal ways (e.g., in linear programming at factory levels, etc.), but the basic problems of Soviet policy on value, capital efficiency, and scarcity are unsolved.

The improvement of planning by the simultaneous introduction of mathematical techniques into the central planning process, and the delegation of more authority to the planner for designing and operating the system, may, however, be prejudiced by political and perhaps ideological considerations. There is Party reluctance to set up the same type of relationship between Party and planner as exists between the civil and the military authorities. The delegation of any substantial degree of decision-making authority on economic planning to the planner, comparable to that enjoyed in varying degrees by the soldier over military matters, does not seem at present likely. It may be that the special compromise with military professionalism dictated by the requirements of survival in the Second World War does not find its counterpart in the current economic crises. Party control and democratic centralism may carry more weight than economic efficiency: the emergence of the new Soviet economist/businessman/planner may be on the horizon, but his form and the rationale for his development are still obscure.

²⁴ The report on a meeting in October 1963 indicated very little real progress (*Voprosy ekonomiki*, no. 3, 1964, pp. 150-3)

²⁵ Trembl, *op. cit.*

The second Soviet economic revolution

At the same time, current events may reflect the early stages of an economic revolution in Soviet society, which would drastically change the personnel and procedures involved in the planning process, and might significantly alter the allocation of resources in the USSR as between defence, investment and consumption. More specifically, a Soviet version of the economist/businessman as we know him in the West might well begin to replace the Communist party-oriented engineer/technician who has dominated the Soviet economic development process to date. Moreover, more resources may be directed towards consumer needs and to modernization of long-neglected sections of the economy, particularly agriculture.

Such significant changes as now appear possible would naturally ameliorate the economic situation, but their chief significance might well lie in the choice they would reveal between economic benefit and the political costs inherent in institutional change. The first Soviet economic revolution in 1928 may provide some insights on current processes of change. By then, the economic debate among the party leaders had been resolved, and Stalin had emerged as the single dominant leader. The changes that followed in the wake of the First Five-Year Plan in the late 'twenties affected not only the economy but all facets of Soviet life. Basically, the judgment made in the First Five-Year Plan was to use the limited resources available for maximum increase of those industrial sectors critical to developing military power and for the expansion of the heavy industrial base on which industrialization and urbanization were presumed to rest. To administer that plan, Party-disciplined engineers and managers replaced economists and statisticians trained in Western techniques and approaches to economic problems. Soviet agriculture and urban consumers, together with other sectors and citizens, paid a heavy economic price for this rapid rate of expansion. As resources for expanding industrial production in the USSR were not available in sufficient quantity from either internal accumulation or foreign assistance, it was necessary to reduce the share allocated to non-industrial sections and to depress living conditions. Implementation of this basically unpopular policy required political coercion. Once unleashed, the high tempo of growth in the output of steel, coal, petroleum, electric power and engineering was accompanied by other basic changes in Soviet society, including an agricultural collectivization policy that led to a virtual war between the State and the peasants, rigid control of all aspects of life, including the arts, and, finally, the use of terror.

Whether or not this Stalinist system of economic development was necessary is a moot question,²⁶ but the central role that economic decisions and changes played in this period of social change seems clearly evident. Stalin may have been personally responsible for many of the excesses, but some derived from the general nature of his economic system, which displayed an internal logic once the basic political commitment to a high rate of industrial growth had been made. The plan launched in 1928 took on a momentum of its own, sweeping aside those who formerly controlled the economy, and requiring peasants, urban industrial workers, and other groups in varying degrees to make involuntary sacrifices.

It can be argued that the kind of fundamental changes now required in the economy will also generate forces that will effect a comprehensive transformation of the Soviet system comparable to that following the inauguration of the five-year plans, and one which could affect the leadership hierarchy. The increasing complexity of the economy makes it clear that the manner of planning and the type of people involved in controlling the Soviet economy do not provide for the efficient utilization of resources, and that, with better management, substantially more could be done to improve the levels and quality of goods and services. This is a separate issue from the question of who is to receive the benefits from the Soviet economy; productive efficiency is a problem whether or not Soviet military and heavy industrial requirements continue to dominate the resource allocation pattern. In the Stalinist planning system the Party engineers could plan the output and input relationships in the relatively primitive coal/steel type of economy using *physical unit planning*, such as the tons of steel and the number of tanks to be produced, and could concentrate on balancing the supplying of critical factors for a limited number of priority industrial sectors, which would be given prior claim on scarce metal, machinery production, or skilled manpower. However, the current technology and size of the Soviet economy has not only outmoded that type of physical planning procedure but rendered it highly inefficient. Moreover, the multiplicity and variety of decisions that must be made throughout the economy cannot be well controlled with physical-output indicators. In order to provide efficiently for the current priority needs of sophisticated military equipment and industrial output in petroleum-chemicals and other advanced sectors, *financial planning* must replace physical planning, so that prices which con-

²⁶ See A. Nove, *Was Stalin Really Necessary? Some Problems of Soviet Political Economy*, (London, 1964), pp. 17-39

sistently reflect the administration's values may be traced through the successive steps of the economic process, and hence provide a guide for an allocation of resources according to these political judgments. In recognition of these needs for better measures of control and value, the Soviet planning agency has been preparing input-output tables of the Soviet economy in various years, starting in 1959.²⁷ Economic data are increasingly being prepared in this form, in which each step of the production process can be measured and presented – from raw materials to final products. There is no consistent way of doing this in physical units – the rouble must be the common measure of value. This means that the direct and indirect relationships of the inputs to outputs are reflected in the data more accurately than they had previously been. Likewise, increasing attention is being given to the development of a meaningful price-system. A logical approach to the problem is to use an appropriate mathematical technique, such as linear programming, to reflect *ex ante* the priorities of policy-makers consistently through the input and output flows in the economy, instead of using arbitrarily fixed *ex post* prices. The first major step announced was, in fact, the reform of wholesale pricing for industrial goods.

What may be troubling many of the Soviet planners (and currently impeding change) is that the type of official and manager who rose to prominence when planning was in terms of physical output will probably not be able to succeed in the new system required by the transition to financial planning. The new conditions of technological improvement and production-sophistication in the USSR may require a professional background similar to that characteristic of economic and business training in the West – in short, the Party engineers might be replaced by economists. Many of the new economist type are already present in the Soviet hierarchy – for example, A. G. Aganbegyan, who might be considered a spokesman of the rising and increasingly influential generation of economic planners. In a recent unpublished but apparently authenticated speech, he criticized the present system in terms that the most rabidly anti-Soviet economist might hesitate to use. He is reported to have said:

“Our systems of planning, of establishing incentives, and of managing industry were developed in the 1930s. Since then nothing has changed except the names given things, but in fact everything remained based on the administrative methods of planning and

²⁷ Treml, *op. cit.*

management. The extreme centralization and the absence of economic democracy have a very serious effect on our economy.”

He continued:

“As a matter of fact our prices and our monetary value relationships serve no purpose at all. The thing held most important is centralized distribution.”

Again, Aganbegyan noted of the Soviet economic system:

“We have an absolute lack of information. The figures published by the Central Statistical Office are blown up. Thus we are planning and managing the economy when we do not have any real information about the actual situation.”²⁸

At the same time, inefficiencies stemming from old patterns of resource allocation are becoming more and more evident. It is increasingly clear that Soviet industrial and peasant labour needs more incentives in the form of an increasing supply of quality consumers' goods. The replacement of institutional coercion through an exploitative wage system in the Soviet factory, and through the collective-farm system in Stalin's agriculture, by motivation towards higher productivity through more goods and services has apparently run its course. In an increasingly complex and highly sophisticated modern industrial economy, high rates of productivity cannot be achieved by methods developed in a coercive system. More real income expressed in improved living conditions seems to be an attractive route for increasing productivity throughout the Soviet economy.

Moreover, in an increasingly affluent society, the Soviet citizen appears to require more benefits from the society he serves. The keener attention to the relationship between incentives and the supply of consumers' goods may be changing Soviet agriculture from its collective and coercive mould. Hopes for increased labour productivity in Soviet industry may be tied to the supply of consumers' goods designed to satisfy the needs of Soviet citizens. Conversely, however, the Soviet authorities may at the same time be faced with the problem (found elsewhere) that, once increasing benefits reveal the potentialities of the system to provide satisfaction, the citizens' appetite may be whetted for more, resulting in what has been called in other connec-

²⁸ The speech reported to have been made by Aganbegyan has been published in an English translation in *The ASTE Bulletin*, vol. vii, no. 2 (Summer 1965) and in *Socialist Commentary* (October 1965)

tions "the revolution of rising expectations". This phenomenon may tend to dampen the Soviet leadership's ardour for more productivity through increasing incentives.

In spite of the advantages that would accrue to Soviet leaders from a change from planning in physical units to financial planning, and despite a shift in resource allocation to provide consumer-good incentives to production, the economic reforms of Brezhnev and Kosygin to date have been minimal. From their current statements it seems clear that they would like to take advantage of their opportunities and to meet their economic problems by relatively modest changes. Apparently, they also fear that drastic and sudden change may, in the short run, disrupt the economy and reduce output at a time when performance is already less than desired. So far they have launched no frontal attack on physical-output planning and incentives for workers and peasants, and even the price reform was once again postponed at the session of the Party Central Committee in September 1965. The same often inappropriate information and the same officials are involved in the economic-planning process: electronic computers cannot change this fundamental material of planning.

As this temporization is likely to produce little improvement in economic performance, there may emerge within the current succession period a strong Soviet leader. Like Stalin, he may judge that in order to benefit from the potentialities of the economy basic changes are necessary. Once again these changes may precipitate a chain of actions and reactions profoundly influencing all facets of Soviet life.

The changes to be brought about are likely to differ as much as do the opportunities and problems from those prevailing in the 1920s, but the degree and scope of change may be similar. At the same time – just as elsewhere – there is no law of change in the USSR. The Soviet system and the Russian régime preceding it have alike shown remarkable facility for avoiding change even when the problems and the answers were very evident (or appeared so to many within and outside the country). Frustration in improving the economy among the enlightened élite under both Tsarist and Soviet power seems an historical characteristic of the country. Yet the basic rationale for far-reaching change is there, and what might be called the objective situation appears to require changes with regard to both financial planning and greater incentives for labour. The reshuffling of ministries, the more effective use of computers, or other like equivocations in change, will not meet the challenges of this current stage in Soviet economic development.

The USA has perhaps learned to accommodate to its major economic problem of the business cycle some thirty-five years after the Great Depression, and this adjustment may have allowed the benefits of its enormous productive potential to be more fully experienced. It may be too soon to expect the USSR to respond to the new factors which slow the rate of economic growth while opening up new opportunities; but the possibility should not be ruled out. If the change follows the historical pattern of the first Soviet economic revolution, we may see a transformation of the controllers and the beneficiaries. These changes may in turn have a profound and lasting effect on the entire Soviet society.

Affluent Soviet citizens would not necessarily be less of a danger than the modest consumer of today. But changes in the Soviet system resulting from a second economic revolution would require the USA to be prepared to respond: we need at least to reflect on our reply to the different, and more sophisticated, challenge which a new Soviet society would present.

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THE SOVIET CONSUMER AND THE OPTIMAL PLAN*

By Philip Hanson

How MUCH influence does Soviet consumer demand exert on the working of the Soviet economy? How much, if at all, is this influence strengthened by current attempts to rationalize the planning system and make greater use of market forces? I should like, in this paper, to attempt a general and summary answer to these questions.

First, a disclaimer. I do not wish to imply that all or any extensions of consumer sovereignty are inherently good. To begin with, the influence of consumer demand is not the same as the influence of the population in general on the economy. All states, on the basis of collective expenditure, subsidize the supply to individuals of some goods and services and hinder the provision of others by the market. Economic processes can therefore be influenced not only by spending behaviour but by voting, by pressure groups, by rioting, by rebellion, or by actual or imagined threats of any of these things. In other words, the population at large may influence the economy either as consumers or as citizens, and gain in one form of influence might be purchased only by the loss of the other, as where a state welfare service is returned to the "market". How much control the Soviet population has over collective expenditure is a question for political analysis. Whether this or that item should in fact be supplied collectively or in accordance with individuals' effective demands expressed on a market can only be decided by a judgment of value. Finally, the extent to which the choices of consumers promote their own economic welfare, let alone their general happiness, is in the last resort unknown.

These observations are commonplace, but need repeating in the present context. Circumstances and traditions may well cause Russians to value the sovereignty of the individual consumer less highly than

* I am indebted to those who commented on an earlier version of this paper at the Conference of Research Workers and Teachers on the U.S.S.R. at Westfield College, London, in April 1965 and in particular to Dr F. Seton.

do many Western people. They may also derive at least some satisfaction from Soviet military and space expenditure, from the comparative lack of inequalities due to the investment and accumulation of private capital, and from the absence of such capitalist phenomena as traffic jams, and intensive advertising inducing previously unsuspected wants. Increased consumer sovereignty might well reduce some of these sources of satisfaction.

Thus, the degree of influence of consumer demand means simply the extent to which, for better or worse, production decisions are dictated by the effective demands of consumers – and we may perhaps consider also the extent to which “market” preference for present over future consumption is able to influence the rate of investment, as against current consumption, in the economy. All the signs are that an extension of consumer influence is in fact wanted by the Soviet people and that recent and proposed changes in Soviet economic management are intended in part to meet this wish. The question is, how far does this attempt go?

A simplified model of consumption planning

The situation in the Soviet Union, at least until the industrial reorganization measures announced at the September 1965 Plenum are implemented, could be characterized as follows. The current production levels of various consumer goods and services, and to some extent their prices, may be adjusted to fit supply to the pattern of consumer demand. It has not been a part of the system, however, to allocate investment funds between different consumer-good industries according to their relative profitability – that is, in a way dictated by the pattern of demand. In practice, moreover, there are severe limitations on the adjustments that can be made. However, the sort of adjustment involved, if used sufficiently widely and frequently, could lead to results that were efficient in the sense used in Western welfare economics, even if only in the short-run. That is to say, consumers' welfare, as shown by preferences revealed on the market, could in principle be maximized from total resources allocated to the consumer sector. This follows, not from a conscious attempt by planners to maximize the welfare of consumers, but from a willingness to adjust their own plans in order to get rid of queues on the one hand and surplus stocks on the other. In more detail, the argument can be presented as follows.

We consider short-term planning of consumer goods output, that is, roughly speaking, quarterly and annual plans in this sector. It is

assumed that the rates of defence and other government current spending, and of gross investment, have already been decided, as well as the regional and sectoral allocation of investment projects. There will then be certain limits within which the planned outputs of various consumer goods and services can be altered, if anybody wants to alter them. Greater productive efficiency in the consumer-good sector may be seen as enabling that sector to reach its production-possibility surface, which is determined not only by general resource limitations and technological coefficients, but also by the pre-empting of some resources for other purposes.

If there are only two consumer goods, C_1 and C_2 , and constant costs, the situation will be as in Fig. 1. This would correspond to the simplest static input-output model, where C_1 and C_2 may be interdependent in production; given their interdependencies and the productivity of labour in each of them, full use of the available labour, the only scarce factor, enables any combination along AB to be produced.

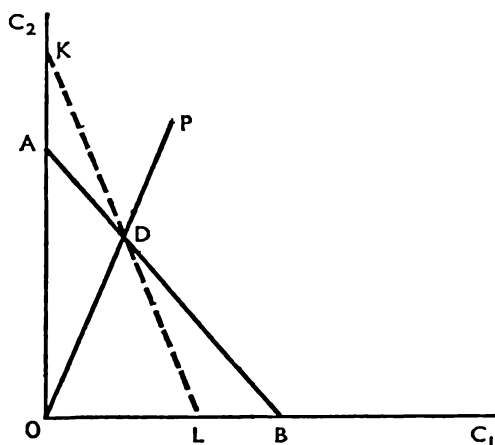


FIG. 1

The planners' initial aim is to maximize an output in which C_1 and C_2 are kept in some arbitrarily predetermined ratio to one another. This is represented by the planners' assortment ray, OP , the purpose being to move as far along it from the origin as possible. Maximization in the given production conditions means producing assortment D on AB .

However, the planners are also concerned to clear the market and will attempt to set prices and consumers' disposable incomes in such

a way that this will be achieved. Consumers are provided with a budget line that passes through D. Its slope may differ from that of AB, that is, relative market prices may not correspond to relative production costs. Let us consider a budget line (the dotted line KL) whose slope does differ from that of AB. It is possible that the consumers' preferred position along the production-possibility line is in fact at D, but there is no particular reason for this to be so, since the plan did not aim at maximizing consumers' welfare. However, the consumers' preferred position along the budget line may be at D. In this case there will be an equilibrium which is satisfactory from the planners' point of view but not optimal from that of the consumer: there is a clash between consumers' and planners' sovereignty. In other cases, this would not occur: if the preferred position on KL is, say, between D and L, there will be queues for C₁ and unsold stocks of C₂. This is not a state of affairs to which in practice Soviet officials and managers are indifferent, and some attempt will probably be made to improve things. In other words, there are many situations like this where the planners' assortment ray of consumer goods is not regarded as sacred; it is simply admitted to be "wrong".

If adjustment is made to a point between D and L on the budget line, the market will be cleared, but production will not be optimal by the planners' own criteria; it will be below the production-possibility line which their programming should tell them is attainable. (If the preferred point were between D and K, of course, adjustment to it would simply be impossible and the market would remain out of balance.)

In other words, where D is not the preferred point along the budget line, the situation does not appear to be stable. One answer would be to alter the relative prices of C₁ and C₂ (and perhaps also consumers' disposable incomes) until the budget line coincides with the production-possibility line AB. The situation will then be the same as if AB had originally been chosen as the budget line: if the consumers' preferred position on it is at D, the situation is optimal from the consumers' point of view; if it is not at D, production may be adjusted until the market is cleared, when the consumers' position will become optimal.

An alternative answer is to alter KL until the preferred point on it is at D. Retail price ratios are then different from marginal cost ratios for the two goods and the result is not strictly optimal. But this divergence of price and marginal cost ratios must be assumed to prevail in any economy where differential rates of indirect tax exist.

In principle, at least, there would be no difference between this sort of "adjusted" planned system and any actual market systems.

The general conclusions of this argument seem applicable to a more realistic and complicated situation. More than two products can be handled if the planners have the requisite calculating equipment. Even with convex or irregular production surfaces, it remains possible and desirable for planners to alter their assortment of consumer goods to adjust to consumer demand, and the tendency could, on the face of it, be towards a Pareto-optimal situation within the limits set by the resources allocated to consumer-good production. More attention in costing to scarce factors other than labour, and towards prices more in line with costs, would make such adjustment more likely.

The relation to Soviet practice

Does the situation in the USSR approximate to this simplified model? If not, is it likely to do so in the foreseeable future?

There are, in fact, a number of incentives in the Soviet economy to clear the market in consumer goods; these incentives are being strengthened and the processes of adaptation to consumer demand are being improved. These changes are being made crudely and pragmatically and have little connection with the theoretical discussions of optimal planning and price-formation.

The incentives to clear the market in consumer goods are extremely simple. The accumulation of stocks in retail and wholesale trade above the planned level means that the trading organizations can no longer carry stocks merely on the interest-free working capital provided by the State budget. Above-plan stocks must be financed by short-term borrowing from the State Bank, which involves the payment of interest. This is a disadvantage not only to the trading organizations, but also to the financial planners, who did not intend the State Bank's resources to be used in this way. Local financial organs collect turnover tax on goods sold by producers to the trade network. They therefore put pressure on the trade network to accept unwanted goods. The trade network then has to borrow from the State Bank in order to carry its above-plan stocks, and will borrow more than has been contributed in turnover tax, since its borrowing is equal to the whole value of the goods, not merely to the element of turnover tax. Receipts from turnover tax are therefore often gained at a cost greater than their own value to the State budget.

The appearance of shortages, on the other hand, is not in itself painful to planners and managers. As one Soviet economist has put it:

"Until recently, in connection with the limited production of a whole range of consumer goods, significant changes in absolute and relative prices of many products were unnecessary. Therefore almost no attention was given in price-planning to a factor so important in price-formation as the state of demand and supply. Errors in pricing had no substantial effect on sales, and hence on production, since everything that was produced could be disposed of. Now conditions have changed".¹

It is, in other words, the simultaneous existence of shortages and surpluses that has forced attention on adjustment to consumer demand. Surpluses are important not only because of the immediate cost they impose, but also because of the very tangible evidence of inefficiency which they afford. Even if a certain growth of living standards is viewed simply as a constraint on the pursuit of other aims, the more efficiently resources devoted to consumers are used, the better – since with greater efficiency in this sector, more resources are available elsewhere. It may also be true that, while surpluses have directly worried planners, shortages have at the same time become more of a political liability as Soviet régimes have become more liberal and allowed more grumbles to be aired.

Soviet writers now generally agree on the necessity of clearing the market. The growth of end-year stocks at retail, from the equivalent of 77 days' turnover in 1955 to 94 in 1961, is invoked repeatedly in discussion of internal trade. Nobody knows what the optimum stock : turnover ratio should be, but all agree that it has been exceeded. Stocks in most lines were not unduly low in 1955 and there is a general presupposition from theory and from experience that stocks will rise more slowly than turnover as a rule. This view, that recent growth is excessive, therefore seems reasonable. It is highly unlikely that changes in location, transport arrangements, and the assortment of goods could fully explain it.²

The pressure to clear the market has led to some changes, and more are now being made. These changes are meant to provide an adjustment mechanism. Some involve price changes, some involve changes in production plans, and some involve both.

¹ D. F. Timoshevsky, in *Zakon stoimosti i problema tsenoobrazovaniya* (Moscow, 1964), p. 53

² See R. W. Campbell, "Soviet and American Inventory-Output Ratios", *American Economic Review* (September 1958), and P. Hanson, "The Assortment Problem in Soviet Retail Trade", *Soviet Studies* (April 1963)

Price changes have taken two forms: the introduction of price-cutting to get rid of unsold goods, and the elaboration of special temporary prices for new goods. The former is so far on a relatively small scale: the price-cutting fund of 0.5 per cent of the value of retail turnover is a subsidy made available from the state budget to trading organizations to cover losses in their profit margins from cutting their selling prices. It is small, and it is not surprising that it has been fully, though not always "correctly", used.³ In late 1964 and early 1965 some substantial price cuts were made, often of as much as 50 per cent. Temporary prices on new goods are meant to cover the costs of change-over in production and of initial low levels of output. This measure (the present arrangements date from 1962) does not appear to have had much success. Its vagueness and internal inconsistency have been persistently attacked,⁴ but the aim of the critics has been to clarify and strengthen a measure of which the general desirability is not in doubt. Some advocate that it should be extended in the sense of providing a higher rate of profit in the production of new goods, a pleasingly Schumpeterian notion.⁵

The general idea that prices of "scarce" goods (i.e., those for which there are queues) should rise is not so easily accepted. It has been proposed as a corollary to, and as a method of financing, price-cutting. The objections are, first, that the net effect of adjustments to equilibrium prices would be to raise the cost of living (i.e., repressed inflation is admitted), and second, that there would be "elements of chaos" – an obsessive nightmare of Soviet price-planners.⁶ Kosygin, in his report to the Central Committee in September 1965, declared that retail prices could only be altered downwards, but the contrary opinion had certainly been put forward. Thus Timoshevsky, after rejecting "chaotic" and "inflationary" price increases, went on to argue that retail-price relatives between (but not within) major groups of goods were often seriously wrong in a market-clearing sense, and that, in particular, Soviet prices of consumer durables, including cars, were too low. He supported this, not with any discussion of production cost, but with price ratios of selected durables and non-durables in "almost all industrially-developed socialist and capitalist countries of

³ See V. Budaragin in *Voprosy ekonomiki*, no. 5 (1964), p. 57, and V. Nikitin in *Sovetskaya torgovlya* (monthly), no. 8 (1964), pp. 12-16

⁴ Most comprehensively by A. Voronkov, *ibid.*, pp. 8-12

⁵ Budaragin, *loc. cit.*

⁶ M. Zak proposed this in an article on price-cutting in *Sovetskaya torgovlya* (monthly), no. 10 (1960). The proposal was attacked by other contributors to the same journal, no. 2 (1961), and by Timoshevsky, *op. cit.*, pp. 51-57

Europe and in the USA". These are indeed generally much lower in the Soviet Union than elsewhere, as any visitor to Russia can testify.

So far as retail prices are concerned, then, there is some movement towards equilibrium prices. A further reform of industrial wholesale prices should be carried out, according to Kosygin's report, in 1966-68. However, pricing that is either flexible or decentralized seems still to be a fairly remote prospect, and one reason for this is clearly the fear of inflation after any loosening of the central control over prices.

The adaptation of supply to demand

The ways in which the outputs⁷ of different Soviet consumer goods are adapted to changes in the pattern of demand are, in Western eyes, rather devious, highly "institutional", unautomatic, and of late frequently changed: they may be listed briefly as follows. First, the general intention now is that output plans should be based on trade orders, rather than set arbitrarily and the resulting production unloaded on to trade organizations willy-nilly. This intention is partly met by the trade fairs in industrial consumer goods, at which preliminary orders are placed before production plans are made; annual plans were primarily in view, but the fairs are now held with increasing frequency over the course of the year, and quarterly plans are probably also affected. Secondly, the right of trading organizations to refuse to accept consignments of sub-standard or out-of-fashion goods has been somewhat strengthened. Thirdly, changed orders based on changes in demand must be accepted by industry within the limit set by inputs and other commitments, and provided that a certain period of notice has been given.⁸ Fourthly, experiments have been made with "direct links" whereby one or more retail outlets are attached to the producing enterprise, selling its output and, by their success in doing so, affecting its profitability. Fifthly, various rather rudimentary kinds of market research are carried out by some trading organizations and by light-industry research institutes. An all-union market research institute has been planned for some time but does not seem so far to be in operation. Family budget studies are carried out by the Central Statistical

⁷ Strictly speaking "domestically-available supplies" rather than "output", but the difference so far as consumer goods are concerned is small. Exports and imports in 1961 at foreign trade prices were equivalent to about 0.5 and 1.5 per cent respectively of retail turnover. Even if measurement in retail prices would double or treble these shares, they would still be a very small element relative to domestic production

⁸ Usually about twenty days - rather long by the standards of at least some large retailers in the United Kingdom

Administration, but they have not yet been developed in a way that makes them very useful for demand projections. The sample appears not to be representative of the Soviet population in general.⁹ Rapid development of market research is widely advocated, linked with the demand for a general Marxian theory of consumption.¹⁰

All these techniques are already in existence. Kosygin's report to the September 1965 Plenum announced mechanisms of a simpler and more automatic kind. Enterprises whose premia are determined mainly by their sales and profit performance should be more amenable to consumer demand than before.

The adjustment mechanisms, however, work within narrow limits. First, the trade network, interposed between producer and consumer, has still to be related to the new system. Sales, for an industrial enterprise or firm, will generally mean sales to the trade network and not to the final consumer. The trade network itself, one of whose main success indicators is already its sales to consumers, has not in the past ordered in a way that appeared to match consumers' demand. Some further improvements are needed. Not only industrial wholesale prices but gross margins in trade have to be revised, since the margins on many goods do not make their sale profitable, and distributors refuse to handle them on that ground.¹¹ There is a further difficulty about trade ordering. It is doubtful whether wholesale, let alone retail, trade organizations should properly be concerned with market research and advertising, and hence with the determination of the assortment of goods to be produced. The trader who cannot sell product X is usually in a position to switch to selling product Y

⁹ For an account in English of Soviet budget surveys see a contribution by S. V. Postnikov to an ILO symposium, *Family Living Studies* (Geneva, 1961), pp. 54-66. According to him, in 1958, at least, no collective farm workers or pensioners were included in the sample. Soviet economists still complain in conversation of the inadequacies of the sample, though in any case few seem to have access to the data

¹⁰ The analysis of revealed preference may prove to be acceptable while that of utility is not. V. A. Volkonsky and P. P. Maslov have discussed indifference analysis as a theoretical background to econometric demand studies: see their paper in A. L. Vainstein (ed.), *Narodnokhozyaistvennye modeli - i teoreticheskiye problemy potrebleniya* (Moscow, 1963). Vainstein suggests that a concept of "social consumer value", or "social utility", should be developed, expressed in labour terms, partial derivatives of which (presumably with respect to quantities of different products) will be proportionate to objectively-determined valuations (Kantorovich's marginal-cost shadow prices), and therefore also proportionate to properly-constructed prices (*ibid.*, p. 75)

¹¹ See D. Pavlov in *Ekonomicheskaya gazeta*, 13 October 1965, pp. 10-11

instead and, given freedom to choose his suppliers, has little or no commitment to any one producer. The producer, on the other hand, has less flexibility. His production-sales process is generally longer than the purchase-sales process in retail or wholesale trade; and his decisions on what to try to sell are less reversible, because his capital equipment is often very specific. The range of products to which he could switch in the short run is hence probably more limited both by his fixed capital and by his current technical know-how. This is realized by many Soviet writers, and the new branch production ministries have been welcomed on the very ground that they can undertake market research by the Minister of Trade of the RSFSR.¹²

Production will not, it seems, be based solely on orders. Instructions from the centre will be retained for "scarce" (*defitsitniye*) goods, orders for which would simply produce longer waiting lists.¹³ This is perhaps more important in relation to food and producers' goods than to manufactured consumers' goods, many of which are only too abundant. But this reservation again reveals the desire to avoid inflation even at the cost of some loss of the new "flexibility".

A great deal will depend on the freedom of manoeuvre allowed to management of shops, trade organizations and wholesale offices. Some have been running experimentally since July 1965 on a system parallel to that outlined by Kosygin for industrial enterprises: profits and sales as the two main indicators. An extension of this to other trade organizations is presumably likely. Their ability to enter freely into contract with suppliers, and to refuse sub-standard or unwanted goods, will probably also need to be strengthened if their stores are not to continue to be a dumping-ground for unwanted goods, even if these goods are supplied by more "flexibly"-operated manufacturing enterprises. Nor is it yet clear whether there will be any feed-back effect on the producer whose goods have to be price-cut at retail in order to be sold. This has been proposed, but it would require some further special measures to implement it. In general, the new system appears to rely on orders and refusals by the trade network as the main way of inducing industrial management, via their sales and profit indicators, to cater more efficiently for the consumer.

The basic constraints on current production

These, then, are difficulties that may obstruct the working of the

¹² Ibid.

¹³ See G. Khosyachenko (Director of the Research Institute of the USSR Ministry of Finance), in *Ekonomicheskaya gazeta*, 27 October 1965, pp. 6-7

new adjustment mechanisms. But there are more fundamental restrictions on the adjustment of production which make current output decisions in the Soviet system less responsive to consumer demand than they would be in the simplified model described above. Allocations of consumer-sector resources between different lines of production on the basis of profitability is subject to two main sorts of constraints.

First, there is the political preference for a certain institutional framework. Perhaps the most serious instance is in agriculture. Some growth of private plots or small collectives at the expense of large collectives and state farms might well be dictated by relative profitability. But clearly this will not happen easily, if at all. There may be closely similar constraints on a (possibly) desirable expansion of trade, crafts and service activities by small-scale private or cooperative enterprise. One should perhaps treat maximum social ownership of the means of production as a part of the framework within which consumer preference may operate, but one which cannot be varied even if change can be shown to be in the consumers' immediate interest. There is a preference also for a framework of near-autarky which cannot be justified on these grounds, but which probably has unfortunate repercussions on the real incomes of the Soviet population.

The second type of constraint is more direct. Certain categories of goods are subsidized and others are kept in short supply at their existing prices. This may be because of technical inter-linkages with other sectors of the economy in which state preferences are supreme. Thus the strong popular demand for cars is so far resisted, perhaps partly because of the diversion of resources from commercial and military vehicles that would be involved and perhaps partly because of the complementary need that would arise for an extensive programme of road-building; possibly similar considerations weigh against a freer market in housing. The well-stocked and peaceful bookshops in industrial suburbs are evidence of a policy based on different sorts of inter-linkages. Here are consumer goods which may be very directly used to promote productive efficiency and political loyalty. Their prices are kept relatively low and their supply is often pushed beyond the level of demand even at these prices.

In conditions where the supply of agricultural produce has been unresponsive to demand because of the special problems of agriculture and the disinclination to import food, where light industry has also responded very badly because of the weaknesses of the adjustment mechanisms so far used, and where consumers have little chance to

spend more on housing, some odd results have arisen. Thus, in spite of all the attempts to "rationalize" the economy since the late 1950's and the impression of greater orientation towards the consumer, living standards in this period have risen slowly, if at all.¹⁴ One improvement that has been obtainable has been in consumer durables. The relatively low prices of these have already been commented on. They arise naturally from conditions of increasing supply of these goods while supplies of other consumer goods change little. Increased money incomes might have been absorbed by higher prices for food or housing, but on the whole it has been thought preferable to reduce prices on those goods (probably price-elastic in demand) of which production was expanding rather than to increase them on goods (probably price-inelastic) in short supply. The increase in retail prices of livestock products in 1962 was perhaps as much as could be attempted for the time being. Quite apart from its general unpopularity, it had – according to some Soviet writers – unfortunate repercussions in other markets: the resulting reduction in real incomes led people to purchase cheaper grades of fabrics and garments than before, but adjustment mechanisms in light industry did not work well, and there was little or no corresponding change in the assortment produced. Thus the growth of textile and clothing stocks was accelerated.¹⁵ In general, the growth of stocks has continued strongly. Retail stocks rose by 72 per cent between the beginning of 1959 and the beginning of 1965, while turnover rose only 45 per cent. The growth in stocks was paralleled by a growth of deposits in the State Savings Bank. Soviet commentators are agreed that a large share of these is, in a sense, involuntary savings, representing unsatisfied demand.

Altogether, in the early 1960's, the adjustment to consumer demand of prices and quantities made has been relatively ineffectual. While it was conceivable that efficient results from the consumer-standpoint could be achieved, in fact they were not. One might reasonably expect

¹⁴ Some recent, though hardly conclusive, evidence for a growth rate of per capita real incomes from 1958 to 1965, about equivalent to the growth rate in, of all places, the United Kingdom, is put forward by the present author, in "Soviet Living Standards", *Bulletin of the Oxford University Institute of Economics and Statistics* (August 1965). Notes allegedly of a speech in early 1965 by the distinguished Soviet economist Aganbegyan, published in *Socialist Commentary* (October 1965), attribute to him the view that Soviet real incomes have "to all intents and purposes" not risen at all "in recent years", and that for about ten million of the population they have actually fallen. It is only fair to note that Aganbegyan has denied authorship of this speech

¹⁵ See Ya. Orlov, in *Voprosy ekonomiki*, no. 9 (1965), p. 90

some improvement from the measures adopted by the Central Committee at its meeting of September 1965, but subject to complementary improvements in distribution and marketing and within the limits imposed by some of the major "state" preferences discussed above. Broadly, the adjustments seem to be intended to fit the assortment of alternative sub-commodities – different types of footwear, for instance – more closely to demand, while "state" preferences restrict considerably the assortment, in a less detailed sense, of commodities. However, the pressures for adjustment in a wider sense are the same as those for changes of detail – the cost of excess stocks and, perhaps, the dissatisfaction embodied in queues and waiting-lists. The feed-backs from demand to supply might perhaps be allowed to affect, in time, more fundamental choices in production.

Limits to changes in capacity

So far, only current-output decisions have been discussed. The question remains: what is the welfare significance of a rationalized planning system beyond the sphere of current decisions on consumer-goods output? Soviet mathematical economists tend to treat the rate of savings as something subject to political decision. The task of the planners should in their eyes consist in working out the implications of different savings rates and putting forward variants of long-term plans; or they may be given a maximand to begin with, and simply set out to see how it may be maximized. Thus Nemchinov, in one of his last articles, suggested two possible aims: the "optimal achievement of a given rate of growth over a given period of either total national income or of national income per head".¹⁶ It is implied that the choice of a rate and a time-horizon is political. Notkin considers variants in which the savings rate rises, falls, or is constant over different time-periods, and judges these alternatives according to their results in terms of accumulated consumption up to the end of the period. Again, it is implied that the choice of time horizon is not a question of economics; no rate of time discount is applied to future as against present consumption, but the relative weight to be given them can be decided by choice of horizon, which will determine the variant adopted.¹⁷

Kantorovich's dynamic model of optimal planning subsumes these various criteria, but similarly takes the choice of a criterion to be beyond the scope of economic analysis alone. He is concerned with

¹⁶ V. S. Nemchinov, in *Voprosy ekonomiki*, no. 7 (1964), p. 83

¹⁷ A. Notkin, *ibid.*, no. 8 (1964), pp. 92–105

10- to 15-year planning, and takes final consumption in the widest sense, private and state, as the ultimate objective of the plan. The optimal plan may be that which yields the desired end-year total consumption at least cost, or which enables some total consumption to be reached in the shortest possible time, or which achieves given rates of growth of output and consumption at the least cost (reduced to labour time). While the stress is on consumption as the objective, it clearly is not to be increased at the expense of the stock of fixed and working capital at the end of the plan period – the level of which may presumably also be taken to be a partly political decision. Consumption is here treated as highly aggregated – a total the component parts of which may be specified more and more clearly as time passes. Ignorance about the composition of final demand in the end year (and about some aspects at least of technical progress) is not important since, according to Kantorovich, these have no “very noticeable effect” on operational decisions taken at the beginning of the plan period.¹⁸

The notion that the choice of growth rates is inevitably political and cannot in a socialist state be left to market forces is incorrect.¹⁹ But the prospect of Soviet “surplus product” being turned over to the population, to spend, hoard or invest in government securities on a free capital market, is perhaps as distant as any vista conjured up in the economic theory of socialism. In the meantime the large element of political decision built into models of “dynamic optimal planning” at least reflects reality.

There is a different and more down-to-earth question about market influence on investment policy in the Soviet Union. How far can the pattern of demand, as reflected by varying rates of profit on capital in different consumer-goods industries, influence the allocation of investment funds? Even though the total investment funds allotted to these industries might be considered as fixed, they could still be concentrated on sectors where returns were highest. This would represent a further stage in the influence of market demand on the economy.

In the early 1960's there can have been very little tendency for market forces to be allowed to work in this way. It has been possible for an enterprise manager to earn premia for achievements in gross output or

¹⁸ See the paper by L. V. Kantorovich on a dynamic model of optimal planning in *Planirovanie i ekonomiko-matematicheskiye metody* (Moscow, 1964)

¹⁹ That it is possible to have a socialist economy with a market-determined savings rate is convincingly argued by F. J. Atkinson in “Saving and Investment in a Socialist State”, *Review of Economic Studies* (1948-9)

cost reduction without earning profits. Budget grants for investment were not accompanied by automatic penalties for loss-making or low rates of return and do not appear to have been systematically related to enterprise profitability or to rates of surplus product (including, for instance, turnover tax) in various sectors.

Kosygin's Report of September 1965 suggested considerable changes in this. He emphasized the need to link profitability with access to investment funds. Several of the measures adopted then by the Central Committee would strengthen this link, particularly the increased use of credit and of self-finance from retained profits. This is presented simply as a way of avoiding "wastefulness" in the use of investment funds, as indeed it should be. But a deeper aspect of this "wastefulness" is that the waste is often in relation to consumer demands expressed on a market. The most rapid and effective conversion of investment funds into productive capacity is wasteful if the capacity so created yields goods on which profit is low or negative. The problem is in the long run the same as in current-output decisions: to avoid both shortages and surplus stocks. As with current output, there must be considerable incentive for this to be done. But again, there are the same substantial obstacles of "state" priorities to its systematic implementation. In the long run, moreover, there is perhaps considerable opportunity to mould demand to fit investment decisions based originally on "state" preferences. An assumption that the state will guide the broad patterns of demand is surely behind Kantorovich's treatment of the consumer-good sector as adaptable enough to make prediction of the components of consumption even ten years ahead unnecessary. This is plausible in relation to the choice, for example, between high and low-heeled shoes, but not to that between books and housing.

Both in the short and long run, the influence of consumer demand is subject to some major barriers; but it is growing, and will perhaps grow further. It may be that in the process some of the major barriers, for instance in agriculture, will be attacked and overcome. The greater encouragement of private plots, and the free discussion of alternatives in agricultural organization, suggest this.

There is one qualification that must be added, though relatively little can usefully be said about it. Demand is not something which can be perceived in a precise form, and to which production responds. Innovations in the consumer sector, and persuasive advertising of both old and new products, involve a shaping of market demand in the interests of producers. If producers are to come forward with totally

new types of products and forms of organization, they need very considerable room for manoeuvre. If they are to advertise enough to keep total consumption buoyant, they need to be fighting for markets: this hardly seems to be the attitude that state enterprises grouped under the same ministry would strike naturally.

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THE MARKET MECHANISM IN A SOCIALIST ECONOMY*

By Oldřich Křyn

THE NEW system of economic planning and management which is now being put into effect in Czechoslovakia is of particularly wide interest because it is based on a renewal of the role of the market mechanism in a socialist economy. This interest is well deserved, since, until quite recently and with the sole exception of Yugoslavia, the socialist countries denied the positive role, or even the possibility, of its widespread use. Indeed, for many years Marxist as well as non-Marxist economists seem to have held the over-simplified belief that socialism should be as thoroughly equated to centralized planning as is capitalism to a free market. This equation, together with variant methods of distributing the national income and different class and political relationships, were considered to be the decisive characteristics distinguishing socialism from capitalism.

Both viewpoints are evidently founded on similarly arbitrary attributions of a positive or negative role to the market mechanism and to central planning. Thus Marxists considered only the defects of the market, and their opponents looked for those of centralized planning.

The change of view is recent. Since the Second World War, but especially in the late 'fifties and early 'sixties, Western interest in planning has grown – and not only among theoretical economists: a number of countries have in fact begun practical planning, and among Western economists the number of resolute opponents has steadily declined. At the same time, Marxist antipathy to the market mechanism on both practical and theoretical grounds has weakened. This counter-movement in economic theory may at first seem a paradox. Not long ago Marxist economists who stressed the need for reviving the market mechanism in a socialist economy were criticized for advocating a case already obsolete in the West. But this ignored the evolution in

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economic thinking during recent years towards the compatibility of planning and the operation of a market mechanism. Instead of a paradox one can discern a common goal – a planned market-economy – approached from opposite directions. To say this is not to imply that any and all differences between socialism and capitalism are disappearing. But, it seems to me, the main distinction between Western and Eastern economies will eventually lie not so much in the mechanism of the functioning of the economy, as in meta-economic factors – in different social goals, values, and political structures.

The traditional conflict between planning and the market mechanism arose from mistaken premisses: both sides identified planning with the administrative methods of a highly-centralized system of management. In other words, the term “planning” was used to designate a situation in which virtually all economic decision-making was concentrated in some central agency – in the sense of Barone’s Ministry of Production – leaving individual enterprises merely to fulfil its orders. This view is well enough known from von Mises and subsequent discussion, and was until recently the majority view in the socialist countries. Today, however, it is possible to distinguish between a system of highly-centralized day-to-day management of the economy and long-term planning. To *plan* means primarily to anticipate the probable and preferable evolution of the economy in the future and, within the potential defined by objective characteristics, to choose the optimal path to that development. Planning, so conceived, may be associated with a system of centralized administrative day-to-day management of the economy which aims at an exact fulfilment of the plan, but it may also be connected with an economic system where economic decision-making is largely devolved to the individual enterprise, and co-ordination of the whole is achieved by the market mechanism, not by decree. Correspondingly, a centralized system of administrative management does not necessarily have to be linked with planning, if the orders given by the central agency to enterprises are not based on reliable projections of the long-term development of the economy. In fact the Czechoslovak economy was for a time managed only under annual plans, of which the period covered was so short that it could hardly be said to have been planned. In other words, while highly-centralized administrative management negates the operation of the market mechanism, it does not necessarily coincide with planned development. The alternative to the market mechanism is administrative centralized day-to-day management of the economy – not planning.

Hence four types of economies may be distinguished: first, an economic system based only on the market mechanism, without planning; second, an economic system based only on administrative centralized day-to-day management, without planning; third, a planned economy with administrative centralized day-to-day management; and fourth, a planned economy with a market mechanism. Concrete historical instances of each type can readily be cited; they have their drawbacks and their advantages, but very many economists will today agree that the fewest shortcomings and the most benefits occur in a synthesis between planning and the functioning of the market.

The first of the types listed above – an economy based on the market mechanism, without centralized management or planning – closely resembles European capitalism of the last century. Its theoretical analysis is to be found in Adam Smith, Marx, Walras, and Marshall, to name only a few. Economists writing at the turn of the century (particularly Marshall and Walras) emphasized the positive role of the market, rightly stressing that its mechanism can spontaneously co-ordinate the decisions of millions of producers and consumers – or, in more modern terminology, that it is automatically self-regulating. These positive aspects of the functioning of the market mechanism are today very highly thought of among Czechoslovak economists. On the other hand, one cannot idealize the market mechanism. The market as an automatic regulator is never perfect, so that an economy based only on its functioning is usually unstable. The principal negative aspects of the market mechanism have been analysed within Western economic theory, especially in the context of imperfect and monopolistic competition and of time-lags which inhibit equilibrium (the “Cobweb Theorem”). Keynes’s interpretation of business cycles led, moreover, to entirely different conclusions from those of Walras and Marshall, and initiated recognition of the need for a system of state intervention, central control, and planning as accessories to the market.

It is relevant to note that Marx had long before referred to this negative aspect of the functioning of the market, concluding that rational central control would eventually replace “blind” market forces. Marx himself was, however, no utopian and never concerned himself with describing or advocating any operational technique of management and planning in a socialist economy. It is nevertheless true that in socialist economic writings the opinion long prevailed that the market would disappear in the transition from capitalism to socialism, and that socialism, being incompatible with the market

mechanism, would replace it by a rational centralized system of management of the whole economy. The sources of such theories are indeed the utopian socialists – such as John Gray; it was the ideal society of Campanella which was organized on virtually military principles. Marx himself never implied a hierarchical arrangement of socialist society: he assumed the creative self-assertion of man under socialism to be achieved uniquely by eliminating all economic and social exploitation. He explicitly stated many times that in this sense socialism and communism were identical with humanism.

This point needs emphasis because the equation of the market mechanism with capitalism, and of socialism with centralized administrative management, which was typical of some Marxists, has no Marxian foundation. One may even venture to say that such a system of management under a socialist economy would contradict Marx, for whom the essence of a socialist or communist society was not mere efficiency, but democracy and humanism.

There is much to be said for the belief that the administrative centralization of management under socialism evolved more from specific economic and political circumstances than from any theory. To this view may be added the fact that under extraordinary conditions – such as wars or natural disasters – even capitalist countries to some degree limit the free functioning of the market and introduce direct methods of economic regulation (price control, rationing, etc.). It is further true that the new economic system of the socialist countries came into existence in an environment which appeared to preclude successful functioning of the market mechanism. To accord full freedom for market forces under such conditions would have made it virtually impossible to reconstruct the national economy and to restore its normal activity. The very limited resources of the country could not be monopolized and exploited by private interests, but had to be controlled for use on a scale of priorities which took full account of the needs of the economy as a whole. Such a form of economic management was a necessary instrument for solving certain specific situations, but Marxist economists for a while erroneously considered it as the only adequate means of managing a socialist economy and, hence, as superior to the market mechanism.

Experience has now shown that abolishing (or radically limiting) market relations, and replacing them by a system of central decrees, cannot of itself ensure long-term market equilibrium. With the aim of achieving this, long-term planning is added to the administrative, centralized system of day-to-day management, but such planning

inevitably tends towards conformity with the system of management. The plans were thus based on extensive systems of mutually-interconnected financial and material balances, whence the production programmes for individual enterprises took the form of detailed directives concerning the composition of output, which were binding on the producers. Plans were thus conceived deterministically as a list of tasks, allowing no room for manoeuvre when unforeseen difficulties or technical improvements appeared. The economy was hence inflexible and averse to innovation. In such a system the desired rate of growth is achieved by maximal mobilization of the sources of accumulation, and economic management is reduced to a set of instruments for plan fulfilment. Material incentives are used not for ensuring proper relations between producer and consumer, or for encouraging innovation, but only as a technique of plan implementation.

According to the theory, such a system of management should have nullified the negative aspects of the market mechanism and ensured fast and smooth growth. In fact, such measures as the general determination and long-term stabilization of prices succeed solely in eliminating external signs of economic instability and disequilibrium (i.e., inflation or fluctuation), while being incompatible with the complex inter-relationship of a contemporary economy. Thus overt movement of prices might disappear but internal tension remained. Disequilibrium manifested itself in other, and sometimes worse, forms. Chronic shortages of some raw materials and consumers' goods occurred while at the same time goods were being produced for which no consumer existed. Any unexpected change external to economy, such as in foreign relations or simply bad weather, aggravated the situation.

Methods for drawing up the plan according to extensive systems of balances have, furthermore, proved themselves inadequate: they require voluminous paper work, are very slow, and barely permit the elaboration of a single variant of the plan. The problem of discovering the optimum variant among many has not even arisen. Some economists have deluded themselves that mathematical methods, such as input-output or linear programming, combined with computers, would make it possible to eliminate all those negative aspects of planning just described and to achieve scientific planning and management through a further centralization of decision-making. As soon as such methods were tried, it became clear that their use within the framework of an administrative centralized system of planning and management was difficult, if not impossible. It is not without interest that in Czechoslovakia mathematical economists were among the first to call

for decentralization and a renewal of the function of the market mechanism.

Economists not concerned with mathematical methods came to a similar conclusion. Deficiencies in the economic situation in Czechoslovakia became a strong incentive to radical measures. At the end of the 'fifties and the beginning of the 'sixties economic difficulties began to accumulate, in turn generating disequilibrium, slowing the rate of growth, and leading to tension in the balance of payments and to the belated introduction of technical innovations. A thorough analysis of the whole economy brought the conclusion that the source of these difficulties was the inadequate and obsolete system of planned management. Before a proposal for a new system of planned management of the economy could be worked out, however, it was necessary first to re-examine without prejudice all the theoretical postulates. One prejudice to be disposed of was the theory of the incompatibility of the market mechanism with planned development. In this connection it was shown that highly centralized management methods are simply transitory, and are not permanent attributes of a socialist economy. Some concepts on the form and role of the plan also required revision. The theory for a new system of planned management was gradually worked out, and is now being put into practice in Czechoslovakia in accordance with laws approved by the National Assembly in November 1965.

Renewal of the function of the market can bring many favourable results for a socialist economy. First, it will set off a process of automatic regulation of production and consumption, which should eliminate much of the work of central agencies of economic management which were created to deal with the day-to-day coordination. Administrative staff could then be reduced, giving greater flexibility to the whole system, and the central agencies will be free to concentrate on more important problems – notably, long-term planning, and the question of the social aims of the economy. The renewal of market forces is also important to the consumer and to the enterprise. The consumer would regain relative sovereignty (everywhere a fiction in absolute terms), in that his preferences need not be dictated by the producer.

From the point of view of a socialist enterprise, the most important aspect of a renewal of the market mechanism is its association with a revival of entrepreneurial activity. Schumpeter's concept of the entrepreneur – one who carries out innovations – is by no means appropriate only to capitalist ownership. I am convinced that the entrepreneurial phenomenon is possible under socialism – and that

“socialist entrepreneurship” is one of the most important aspects of the new system. To experiment, to take decisions involving uncertainty or risk, to seek truly new combinations of productive factors – these are all essential if the economy is to absorb sufficiently the flow of innovations. The concept of a socialist enterprise as an exactly defined technological unit fulfilling orders received from a central body seems to have been displaced.

Concepts and methods of central management are also changing. Renewal of the market mechanism and decentralization of economic decision-making do not entirely obviate centralized choice. The central authority should simply retain such decisions as it can usefully make, viz., those which the spontaneous market mechanism cannot successfully resolve. Nevertheless, intervention from the centre must as far as possible be implemented through economic incentives, while decrees should be limited to a minimum. In this connection the most important function of an economic centre is to draw up “the rules of the game” to which producers, consumers and other economic units must conform. Suitable “rules” should facilitate the manipulation of otherwise completely spontaneous economic processes.

One of the most important instruments of the new system is still, of course, the plan. It must primarily serve as a source of information for the enterprise, on the basis of which decisions may be taken; it must not constitute a list of orders to be fulfilled at any cost, yet this should not exclude the use of a limited number of directives. The plan must essentially be a long-term forecast of the development of the economy, and not, as formerly, lay the stress on annual production programmes. This does not, however, imply that the plan cannot shape future development, for objectively-existing material relationships can be used for many different paths. It is the role of the plan to influence social preferences.

In putting all these concepts into effect, aims must still be modest. The social-welfare function is complex and the methods and data required for optimal planning are still incomplete; work in this direction is however, under way and the results are beginning to be perceived.

RECENT POPULATION TRENDS IN THE USSR

By R. A. French

THE STUDY of the demographic geography of the Soviet Union is greatly handicapped by the paucity of statistics. Only five censuses have been taken on its territory, in 1897, 1926, 1936, 1939 and 1959. That of 1936 was abrogated and that of 1939, which replaced it, was not published in full. Moreover changes in administrative areas in the intervening periods make comparisons extremely difficult. From 1939 until the later 1950s all information on population was secret and only guesses at the total figure could be made. More recently the situation has improved markedly, with the publication of the results of the 1959 census and the annual publication of population estimates. The latter include population totals (both urban and rural) for administrative units of oblast level and above, populations of administrative centres and annual USSR birth, death and infant mortality rates.

Nevertheless the sixteen-volume publication of the 1959 census (a general volume and one volume for each union republic) still leaves much to be desired. The smallest unit for which figures are given is the oblast. The population of individual towns and urban districts is given only where it exceeds 15,000 in the RSFSR, whereas the minimum population for town status is 12,000 and for urban district status, 3,000. For the Ukraine towns over 10,000 are listed, which includes all towns, but excludes urban districts between 2,000 and 10,000. Some sets of figures are provided at union republic level only; most significant of these are statistics relating to occupation. In the breakdown of ethnic groups in lesser administrative areas, only the most numerous groups are included. The census gives Life Tables only for the USSR as a whole. No information at all relating to movement of population, such as place of birth, is published. Despite these inadequacies, the available statistics permit some assessment of population dynamics, both in structure and in geographical distribution.

Population and its structure in 1959

On 15 January 1959 the total population of the USSR was 208,826,650.¹ That it was no higher was a consequence of the grievous losses inflicted on the Soviet population during the Second World War, losses to which the census bears eloquent witness. The 1939 census recorded a total of 170,557,093, which was raised to an estimated 190,677,890 by the acquisition of the Baltic States, eastern Poland and Bessarabia. In 1950, five years after the cessation of hostilities, the population was an estimated 178,500,000, more than twelve million

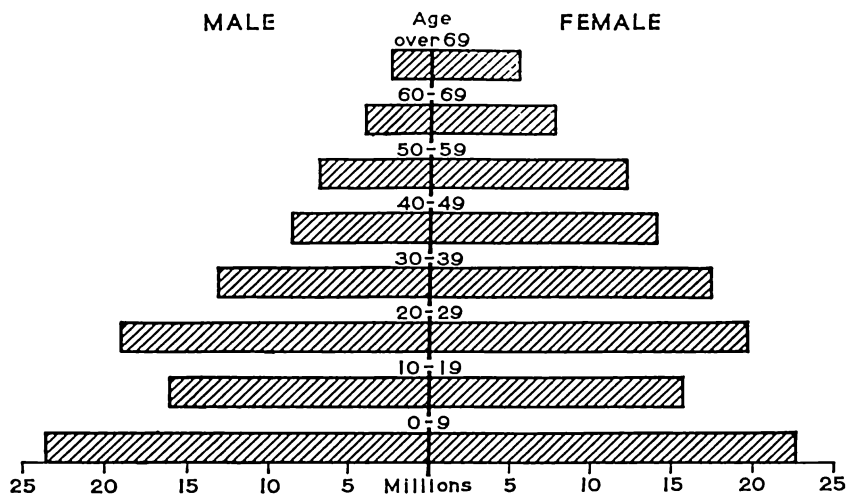


FIG. 1. Age/sex structure of Soviet population in 1959

below the pre-war figure.² Between 1 January 1950 and 1 January 1951 the total grew by 3.1 million and this rate of growth increased in subsequent years. It is reasonable, therefore, to assume that between 1 January 1946 and 1 January 1950 there was an increase of some eight to ten million. On this assumption, the population decrease during the war years was of the order of 20-22 million.

The heaviest casualties, of course, were inflicted on men of service age and this is clearly seen in the age/sex pyramid for 1959 (Fig. 1).

¹ All figures, unless otherwise stated, are derived from Tsentralnoe Statisticheskoe Upravlenie, *Itogi Vsesoyuznoi perepisi naseleniya 1959 goda*, 16 vols. (Moscow, 1962-3)

² Population estimates and annual birth and death rates are derived from Tsentralnoe Statisticheskoe Upravlenie, *Narodnoe khozyaistvo SSSR v 1963 godu* (Moscow, 1965)

In the age groups 30 and over in 1959, females outnumber males by nearly two to one. Of every thousand persons aged 32 and over, only 375 were males and 625 were females. In the oldest age groups the decimation of the male population was the consequence of the First World War and the civil war. Females formed 55 per cent of the 1959 population as a whole, that is a surplus of 20,726,044 women. For this reason alone, quite apart from questions of social convention and family income, the large-scale employment of women in the country's labour force is understandable, indeed inevitable. By 1964 the female proportion had fallen to 54.4 per cent, or an excess of 19.9 million women. About three decades of normal conditions are required before a proper balance of male and female population is restored. The age/sex pyramid also displays the great birth deficit of the war years, in the age group 10-19 in 1959. This deficit may be very roughly estimated as being of the order of ten million.

The general characteristics of the population pyramid for the whole USSR, that is to say a birth deficit in the 10-19 age group and a preponderance of women in age groups over 30, are also broadly applicable to each of the union republics (Table 1). The excess of females is somewhat lower in Central Asia and the Transcaucasus than in the RSFSR and the European republics, and particularly so in the Tadzhik Republic. This no doubt reflects their freedom from enemy occupation and from the removal of males for forced labour.

TABLE I
Female proportion of population aged 30 and over, 1959
(per cent)

USSR	61.6	Georgia	58.0
RSFSR	62.7	Armenia	56.3
Ukraine	61.7	Azerbaijan	57.8
Belorussia	61.7	Kazakhstan	58.5
Lithuania	58.0	Uzbekistan	56.3
Latvia	61.1	Kirgizia	58.0
Estonia	61.7	Turkmenistan	56.5
Moldavia	57.3	Tadzhikistan	54.7

The relative importance of each age group in the 1959 population varies considerably (Table 2). One might perhaps distinguish, on this basis, three types of pyramid. The first has an age structure very similar to that of the USSR as a whole. It includes inevitably the RSFSR,

where over half the Soviet population lives, and also Belorussia and Georgia. Moldavia has a rather higher proportion of the youngest age group (0-9 years) and a lower proportion of age groups over 50. The second type might be termed "Soviet European", including the Ukraine and the Baltic republics. This structure is top-heavy, with the youngest age group making up a far lower proportion and the over 40's (particularly the over 60's) a higher proportion than in the country as a whole. Thirdly, the Central Asian republics, including Kazakhstan, and the Transcaucasian republics of Armenia and Azerbaidzhan all show a very similar structure - the "Soviet Asiatic" type. Its principal characteristic is the very high proportion of the population aged nine or less.

TABLE 2
Percentage of total population in each age group

Republic	0-9	10-19	20-29	30-39	40-49	50-59	60-69	Over 70
USSR	22.2	15.2	18.4	14.7	10.9	9.2	5.6	3.8
RSFSR	21.9	14.8	18.8	15.0	11.4	9.1	5.3	3.7
Belorussia	21.9	16.3	18.4	15.0	9.4	9.3	6.2	4.5
Georgia	21.5	16.1	19.0	15.5	9.6	8.4	5.8	5.1
Moldavia	25.8	16.1	17.3	14.8	10.4	7.9	4.8	2.9
Ukraine	18.8	15.5	17.8	15.3	11.8	10.3	6.4	4.1
Lithuania	18.7	16.9	17.4	14.3	9.7	11.1	7.2	4.7
Latvia	15.1	14.9	16.7	14.5	11.7	12.1	8.2	6.8
Estonia	15.8	14.1	16.9	14.5	11.7	11.9	8.5	6.6
Kazakhstan	27.8	16.1	18.6	13.3	9.0	7.4	4.7	3.1
Uzbekistan	30.2	15.6	16.9	12.3	7.6	8.0	6.0	3.4
Kirgizia	29.5	15.2	17.2	13.1	8.0	7.3	5.9	3.8
Turkmenistan	30.4	15.6	17.2	13.0	8.6	7.3	4.9	3.0
Tadzhikistan	30.8	15.9	17.9	12.9	7.6	7.0	5.0	2.9
Armenia	29.0	15.6	20.2	13.1	7.2	6.9	4.3	3.7
Azerbaidzhan	29.4	15.7	20.0	12.1	7.6	6.8	4.6	3.8

Trends in population growth

The census material portrays the population at one given moment; of greater significance are the demographic trends over the post-war period. After 1950, the first post-war year for which an estimate has been published, the population increased by 3 to 3.2 million a year up to 1954. Thereafter the growth accelerated, and between 1954 and 1960 the annual increment of population varied between 3.4 and 3.9

million, that is, annual increases of 1.7 to 1.9 per cent. The peak years were 1957-8 and 1959-60, with rises of 3.9 and 3.8 million respectively. Since 1960 the annual growth has fallen off very significantly:

Annual increment in millions				
1960-1	1961-2	1962-3	1963-4	1964-5
3.6	3.4	3.2	2.9	2.8

The reason for this reduction in growth is clearly evident in Fig. 2. The birth rate has been falling throughout the twentieth century, from about 50 per 1,000 in 1900-4³ to 26.7 in 1950, naturally with very

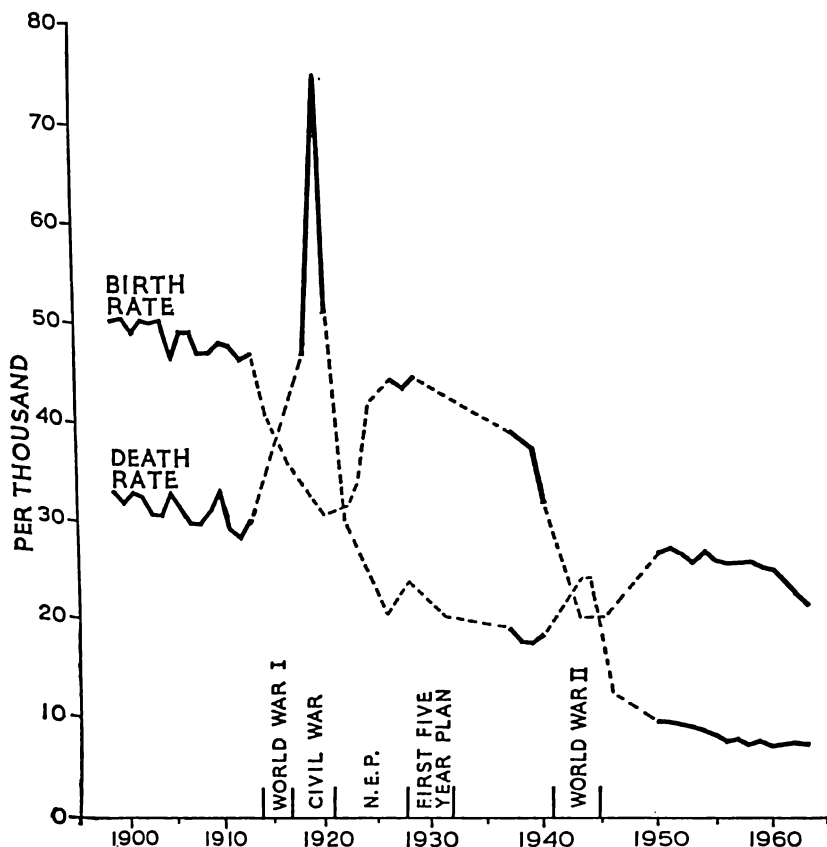


FIG. 2. Birth and death rates

³ F. Lorimer, *The Population of the Soviet Union* (League of Nations, Geneva, 1946), p. 34

sharp fluctuations during the war periods. Between 1950 and 1957 the birth rate fluctuated a little, with a very slight overall decline from about 27 to about 25 per 1,000. Since 1957 the fall in the birth rate has been continuous, and it has become much steeper since 1960. In 1963 at 21.2 per 1,000, the rate fell below that of the USA and in 1964 a new low of 19.7 per 1,000 was reached.⁴

As a consequence of the falling birth rate, the crude rate of natural increase (excess of births over deaths in a given year) has also fallen (Table 3). That this rate of natural increase is still fairly high is due in part to an exceptionally low death rate. This, too, has fallen steadily since the beginning of the century, apart from the great increases during the periods of fighting. In 1950 the death rate was 9.7 per 1,000; thereafter it declined gradually to 7.6 in 1956, since when it has fluctuated between 7.8 and 7.0 (in 1964). This drop in the death rate from 30 to 33 in pre-revolutionary times is in large measure the result of improved medical services and hygiene. It is possible that non-reporting of deaths may affect the rate in a very minor degree, but a far more significant contributory factor is the decimation of the older age groups in two world wars, the civil war and the famines, thus prematurely ending the lives of people who under normal life expectancy would be dying in the 1950's and 1960's. In this sense the death rate is artificially low and one may expect not only that it will not fall any lower, but also that it may possibly increase slightly over the next two or three decades to a figure nearer that of West European countries, 9 to 11 per 1,000.

TABLE 3
Crude rate of natural increase per 1,000

1950	17.0	1955	17.5	1960	17.8
1951	17.3	1956	17.6	1961	16.6
1952	17.1	1957	17.6	1962	14.9
1953	16.0	1958	18.1	1963	14.0
1954	17.7	1959	17.4	1964	12.7

Even if further advances in medicine can hold the death rate steady at 7 per 1,000 or thereabouts, were the birth rate to continue falling at the same rate as over the period 1960 to 1964, by 1974 or 1975 the population of the Soviet Union would be static. Any further fall in the

⁴ Tsentralnoe Statisticheskoe Upravlenie, *SSSR v tsifrakh v 1964 godu* (Moscow, 1965), p. 14

birth rate thereafter would mean an absolute decline in population. That the birth rate will indeed continue to fall is suggested by various pieces of demographic evidence. A similar fall is discernible in the age-specific birth rates, seen in Table 4,⁵ with the exception only of the 20-24 age group. In 1959 the female birth ratio was 0·4898; the ratio of female to male births for 1962-3 is not available, but assuming it to be the same as in 1959, the age-specific birth rate of female babies for 1958-9 and 1962-3 were as shown in Table 5.

TABLE 4
Births per 1,000 women of given age groups

	1938-9	1958-9	1962-3
15-19	32·8	29·2	24·1
20-24	214·4	162·2	162·1
25-29	230·6	164·8	151·4
30-34	183·5	110·1	101·3
35-39	131·7	66·6	54·2
40-44	68·1	24·1	22·3
45-49	19·0	5·0	3·7

TABLE 5
Female births per 1,000 women of given age groups

	1958-9	1962-3
15-19	14·3	11·8
20-24	79·45	79·4
25-29	80·72	74·16
30-34	53·93	49·62
35-39	32·62	26·55
40-44	11·8	10·92
45-49	2·45	1·81

No less pertinent as a pointer to a continued fall in the national birth rate is the marked difference between urban and rural birth rates (Table 6). The urban rate has always been lower, but in 1940 and in 1950 the difference was not great. Since 1950 the urban rate has fallen considerably, while the rural rate remained steady until 1960. By 1963 the urban areas had a rate 5·4 per 1,000 below that of rural areas. Various reasons may be adduced to account for the lower urban rate -

⁵ *Narodnoe khozyaistvo SSSR v 1963 godu*, p. 31

er standard of living in the towns, shortage of accommodation, usually smaller family unit in towns, which often lacks an relative to mind children when both parents are working.

TABLE 6
Births per 1,000⁶

1913	1926	1940	1950	1955	1958	1959	1960	1961	1962	1963
30.2	34.1	30.5	26.0	23.5	22.5	22.0	22.0	21.2	20.0	18.6
48.8	46.1	31.5	27.1	27.4	27.9	27.8	27.8	26.5	24.9	24.0

At the same time the urban population is rising every year, both absolutely and proportionately (Fig. 3). In 1917 the urban population numbered 29,100,000 (within present boundaries of the USSR), or

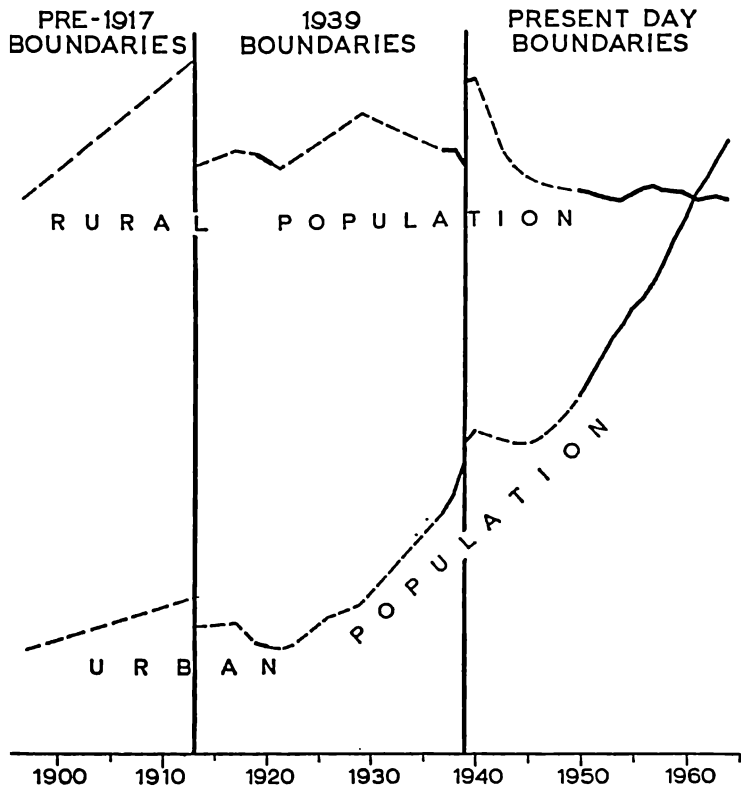


Fig. 3. Changes in urban and rural population

⁶ Ibid.

18 per cent of the total. By the 1959 census, 99,977,695 people were living in towns and urban districts, 48 per cent of the total. In 1961 the urban proportion passed half the total and by 1 January 1965 the 121,600,000 urban dwellers constituted 53 per cent of the whole population. Moreover, as Fig. 4 indicates, women of child-bearing age are more strongly represented in the urban areas than in the countryside.

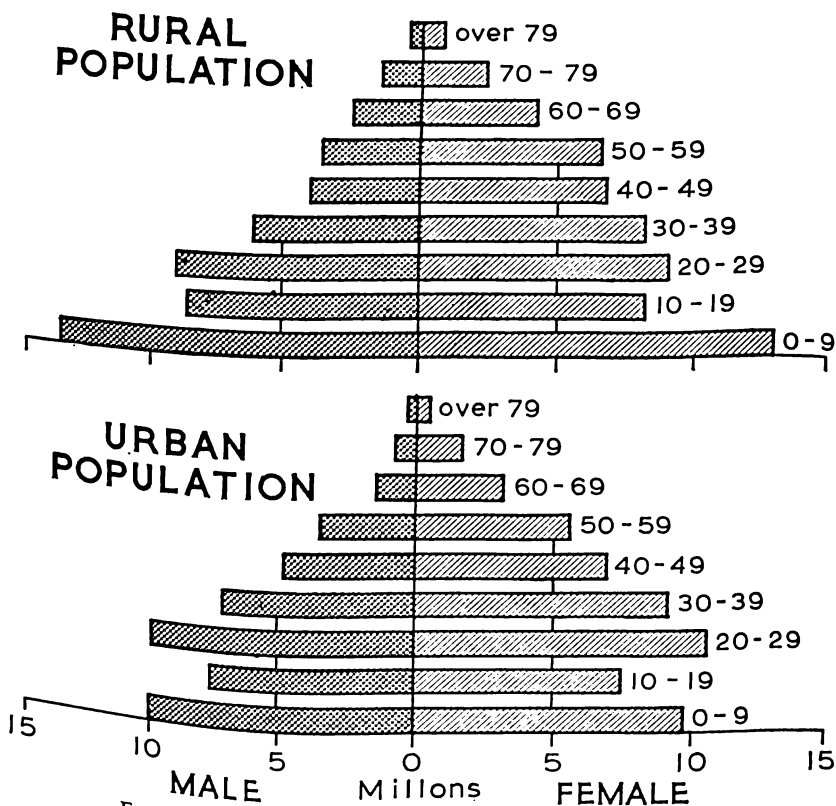


FIG. 4. Age/sex structure of urban and rural areas in 1959

Of the total population in 1959, 48 per cent were urban; of women in the 20-29 and 30-39 age groups, 53 per cent were urban; and of women in the 40-49 group, 51 per cent were urban. The 15-19 age group is not given separately in the census, and the urban proportion cannot therefore be calculated. The greater preponderance of women in these age groups in the towns doubtless accounts for the higher ratio of married women in urban areas, 53.1 per cent of all females aged 16 and over as against 51.4 per cent in rural areas. The graphs in

Fig. 4 also indicate the consequences of the lower urban birth rate. In 1959 the under-nine age group formed 19·7 per cent of the total urban population, but 24·5 per cent of the total rural population. In Leningrad and Moscow the under-nine age group made up only 13 per cent of the total city populations.

The urban population one may expect to continue growing, due to further industrial expansion and to the greater attractiveness of urban life, with its higher standard of living. The force of this attraction is underlined by the "ceiling" imposed on the growth of Moscow and Leningrad and the consequent requirement of a police permit to live in these cities. As the urban population rises and in particular as the urban proportion of women of child-bearing age rises, it appears certain, in view of the much lower urban birth rate, that the national birth rate must inevitably drop still further.

Yet more evidence to this effect is that the greatly reduced age group that was 10-19 years old in 1959 is now in 1965 entering the child-bearing age (16-25). As this group passes into the period of maximum fertility, the birth rate must fall sharply as the number of potential mothers decreases. Correspondingly the birth rate should recover when the large 0-9 age group reaches child-bearing age, but this is not likely to have a significant effect much before 1980. Certainly the prospect that the Soviet population will achieve the official forecast of 250 million by the end of 1970, 263 million by 1975, and 280 million by 1980⁷ is in the highest degree unlikely. A crude calculation, based on the assumption that the death rate remains steady at 7·2 per 1,000 and that the birth rate continues to fall, but at a lessening rate, to 1975, suggests that the total population will be only 240 million in 1970 and about 243 million in 1975. Assuming also that after 1975 the birth rate picks up as the 1959 age group 0-9 reaches child-bearing age, one might hazard a guess that by 1980 the total population might be of the order of 245 million. This very rough computation does not take into account a number of factors such as change in the age of marriage or in infant mortality.

Regional variation

The national picture described shows very great variation from one part of the Soviet Union to another. In particular the birth rate in the union republics displays wide differences (Table 7). Throughout European Russia (except Moldavia) the birth rate is low. It is especially

⁷ Ibid, p. 8

low in the Baltic republics of Estonia and Latvia. The Ukraine and Lithuania also have rates well below the national average, which according to Nevelshtein⁸ was 24·6 per 1,000 in 1959 (and according to the 1963 statistical yearbook was 25·0). Belorussia and Georgia are about the national average. The two other Caucasian republics and the five Asian republics have extremely high birth rates and Moldavia, too, is well above average.

TABLE 7
1959 Birth rates per 1,000. Percentage aged 9 or less

RSFSR	22·9	21·9
Ukraine	20·3	18·8
Belorussia	24·4	21·9
Lithuania	21·3	18·7
Latvia	16·6	15·1
Estonia	16·9	15·8
Moldavia	29·3	25·8
Georgia	24·6	21·5
Armenia	39·5	29·0
Azerbaidzhan	42·1	29·4
Kazakhstan	37·0	27·8
Uzbekistan	37·7	30·2
Kirgizia	35·3	29·5
Turkmenistan	41·0	30·4
Tadzhikistan	33·5	30·8

The entire RSFSR is below the national average; variations within its vast territory are harder to assess, since birth rates for units within a union republic are not available. It seems clear, however, that in the RSFSR the birth rate is lowest in European Russia, higher in Siberia, and at its highest in some of the autonomous republics and oblasti. Nevelshtein quotes birth rates (without giving the source) for the European part of 20–22 per 1,000, as against 26–31 per 1,000 in the Urals, Siberia, and the Far East.⁹ As a further, but very approximate, guide one may take the 0–9 age group as a proportion of the total population. Obviously other factors, such as a large number of older people, affect this percentage and therefore limit the validity of such a guide. Nevertheless as Table 7 shows, at union republic level there

⁸ G. N. Nevelshtein, "Territorialnye razlichiya estestvennogo dvizheniya naseleniya SSSR" in *Geografiya naseleniya v SSSR* (Moscow-Leningrad, 1964), p. 152 (also the source for Table 7)

⁹ Nevelshtein, op. cit., p. 149

is a fair correlation between birth rate and the under-nine age group as a percentage (see also Fig. 5). In the European part of the RSFSR the under-nine age group is about 19–21 per cent (for example, Saratov Oblast, 19 per cent; Smolensk Oblast, 20 per cent; Gorky Oblast, 21 per cent). The proportion is higher in the Far North, Arkhangel'sk and Murmansk Oblasti both having 24 per cent. In the Urals and Siberia this age group also forms a higher percentage – Sverdlovsk Oblast, 23 per cent; Omsk Oblast, 25 per cent; Kemerovo Oblast, 25 per cent; Khabarovsk Kray, 24 per cent; Amur Oblast, 26 per cent. In the Chechen-Ingush ASSR the figure is 28 per cent and in the Buryat ASSR still higher at 30 per cent; both of these are comparable to the Central Asian republics.

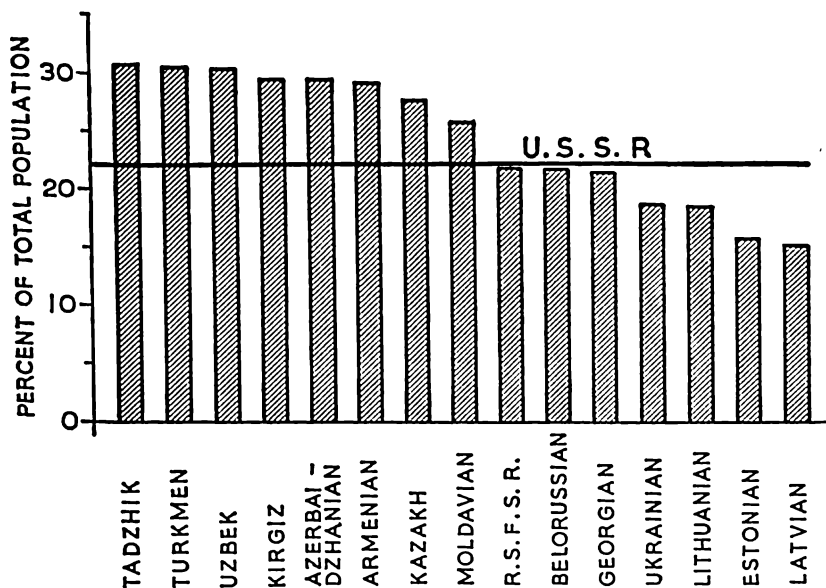


FIG. 5. Under-9 age group in 1959 as a percentage of total population

The regional variations in the birth rate carry an implication that they are linked to different ethnic groups. Birth rates by ethnic groups are also not available, but there are marked differences in the age of marriage between the various nationalities. In the Central Asian republics a high proportion (27–45 per cent) of girls in the 16–19 age group are already married and 78–89 per cent of girls in the 20–24 group are married (Table 8). Only 9 per cent of Russian girls in the RSFSR aged 16–19 are married and 48 per cent of girls aged 20–24.

To a slight extent, Russian girls living in other republics tend to be influenced by local trends; thus rather more Russians aged 16-19 are married in the Central Asian and Caucasian republics and fewer in the Baltic republics and Belorussia. There are exceptions to this; in Tadzhikistan, although 38 per cent of Tadzhik girls aged 16-19 are married, only 9 per cent of Russian girls of that age living in the republic are married. The lowest proportion of young married girls is found in Belorussia (6 per cent) and the Baltic republics (4.2-4.7 per cent). The correspondence between age of marriage by ethnic groups and the birth rate by union republics is very close and lends support to the view that the regional variations in birth rate are primarily ethnic.

TABLE 8
Married women per 1,000 women in given age groups

<i>Republic</i>	<i>Nationality</i>	<i>16-19</i>	<i>20-24</i>	<i>25-29</i>
RSFSR	Russian	91	477	757
Ukraine	Ukrainian	96	468	727
Tadzhikistan	Tadzhik	384	869	939
	Russian	86	465	746
Kirgizia	Kirgiz	448	874	916
	Russian	106	530	790
Uzbekistan	Uzbek	323	839	930
	Russian	89	458	743
Turkmenistan	Turkmen	320	894	952
	Russian	102	493	769
Kazakhstan	Kazakh	275	776	904
	Russian	125	551	795
Azerbaidzhan	Azerbaidzhani	272	680	839
	Russian	100	480	761
Armenia	Armenian	166	566	800
	Russian	150	535	789
Georgia	Georgian	107	456	733
	Russian	125	469	700
Belorussia	Belorussian	60	425	710
	Russian	65	476	799
Lithuania	Lithuanian	47	365	654
	Russian	71	479	744
Latvia	Latvian	45	359	645
	Russian	73	476	764
Estonia	Estonian	42	367	668
	Russian	81	496	791
Moldavia	Moldavian	150	572	771
	Russian	93	520	784

The same pattern is seen in the proportion of all women aged 16 and over who are married. It is lowest in the Baltic Republics, the RSFSR, Ukraine and Belorussia (48·8–52·5 per cent), and highest in Central Asia, Armenia, Azerbaidzhan, and Moldavia (58·1–64·9 per cent). Over the country as a whole the percentage of women aged 16 and over who were married fell between 1939 and 1959 from 60·5 to 52·2 per cent. There are other regional differences which must affect the birth rate. In the Baltic republics there is a high proportion of older women, those aged 50 and over forming 26·3 per cent of the population, as against 18·6 per cent in the USSR as a whole. Yet again, the Baltic republics and Belorussia have the highest percentage of their women in employment; in Central Asia fewer women take up employment. Moldavia in this respect is a notable exception; no less than 51·1 per cent of the women in the republic are employed, the highest percentage in the Soviet Union, but the birth rate is well above the national average (Table 9).

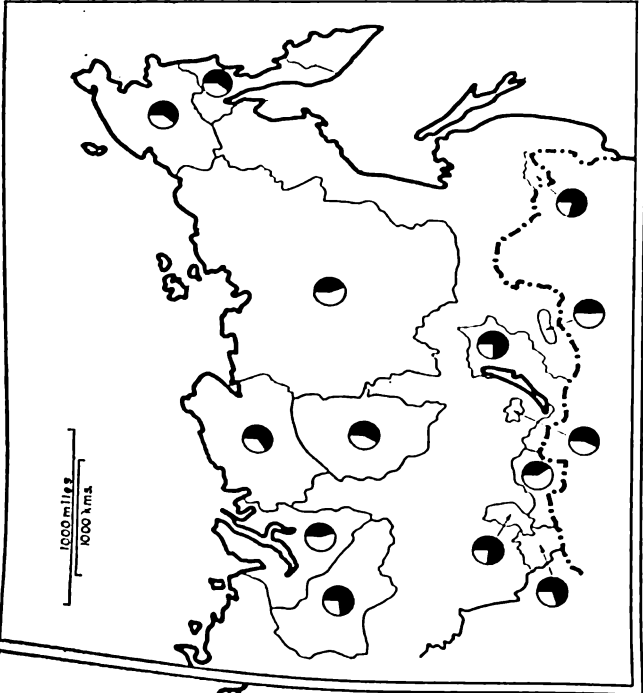
Although birth rate shows great variability from one region to another, the death rate is much the same over the entire USSR. It is at its lowest, about 6 per 1,000, in the north Caucasus and in parts of the Far East and extreme north. This no doubt reflects the younger age composition of Russian migrant workers who nowadays make up the bulk of the population of far northern and eastern regions. The highest death rate, 10 per 1,000, is found in Pskov Oblast.¹⁰

TABLE 9
Percentage of all women in employment

USSR	41·5	Georgia	38·8
RSFSR	42·0	Armenia	31·9
Ukraine	43·7	Azerbaidzhan	34·5
Belorussia	48·6	Kazakhstan	30·4
Lithuania	42·6	Uzbekistan	33·9
Latvia	44·4	Kirgizia	34·0
Estonia	44·9	Turkmenistan	32·2
Moldavia	51·1	Tadzhikistan	35·0

The variations in fertility and therefore in the rate of natural increase will bring about changes in the relative significance of the different ethnic groups in the make-up of the Soviet population. Between 1939 and 1959 the Russian share of the total population fell from 58·1 per cent

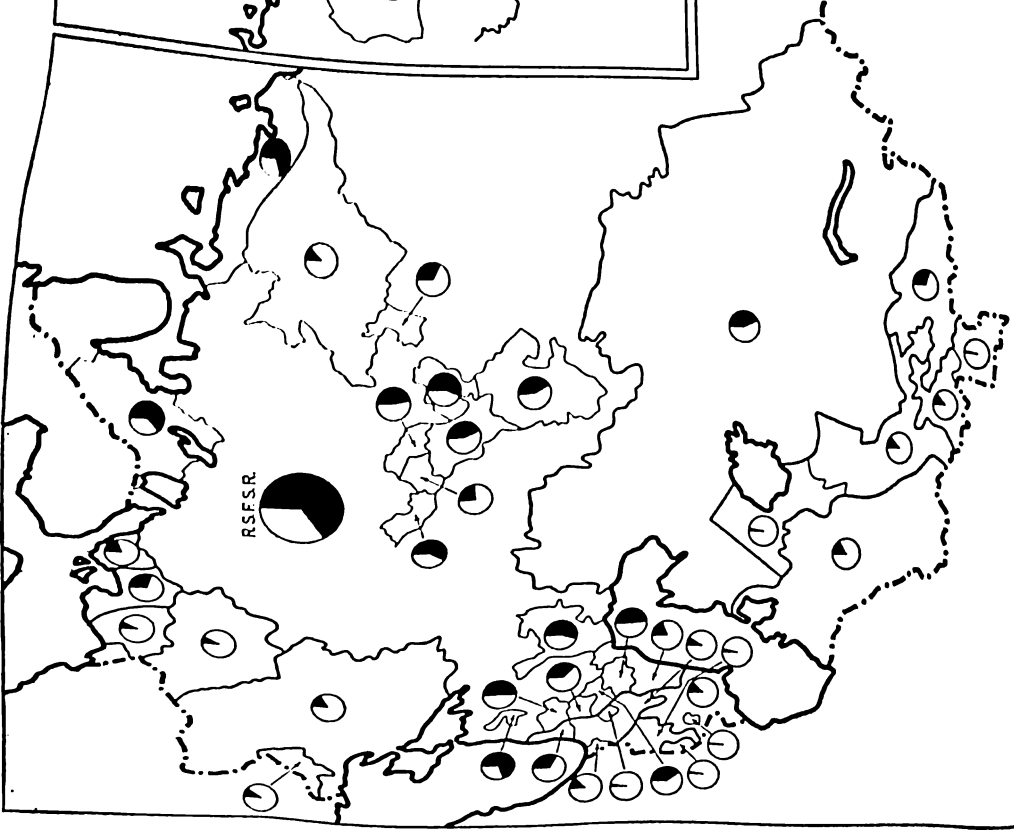
¹⁰ Nevelshtein, loc. cit.



Russian proportion
of population of
nationality areas



500 miles
500 kms.

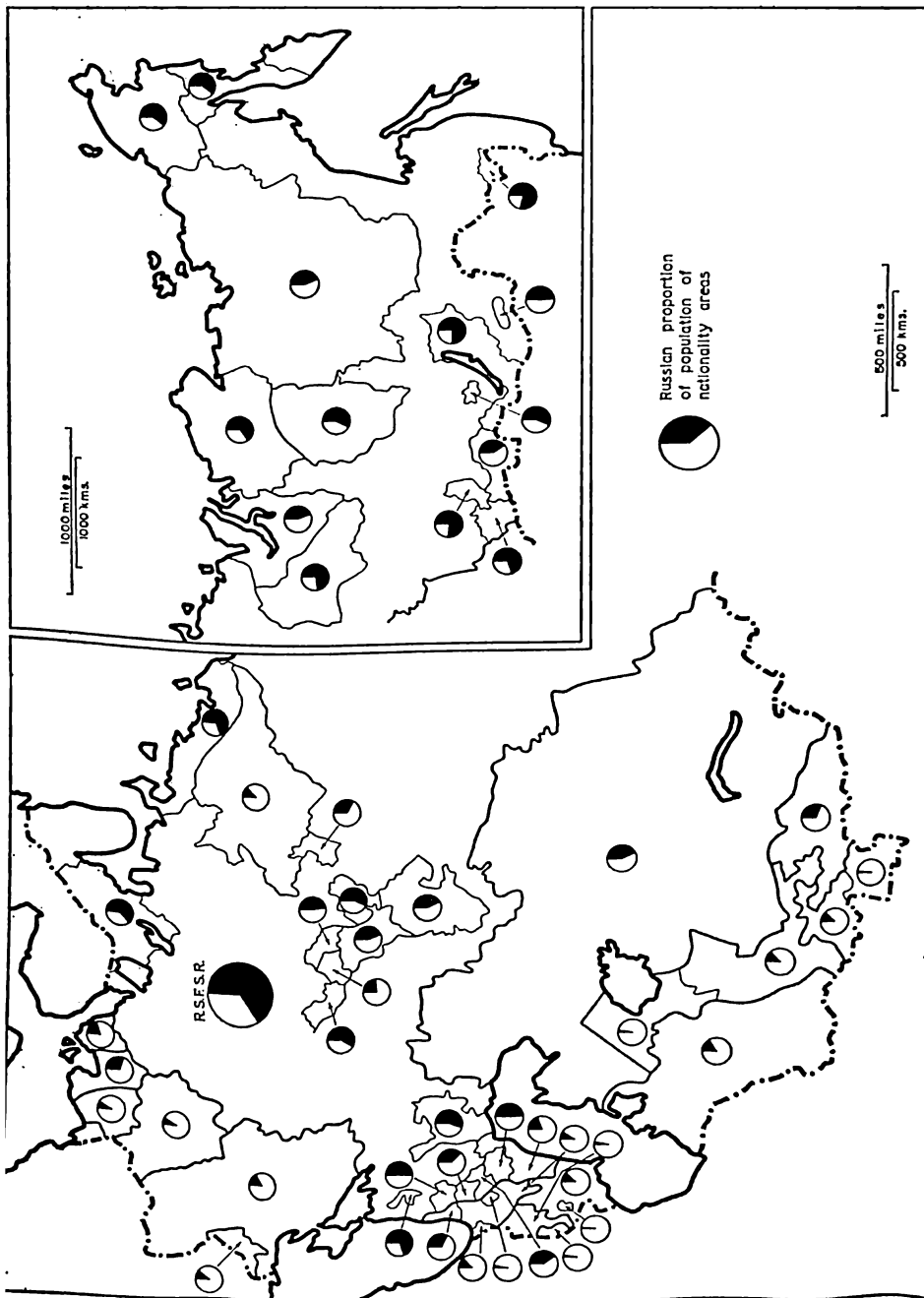


to 54·6 per cent, largely as a consequence of the addition of Ukrainians, Poles, Belorussians and the Baltic peoples in the territories acquired on the western frontier. Over the next twenty years the Russian proportion will decline still further as a result of far more vigorous growth by the Asian and Caucasian nationalities.

In absolute terms, all the major nationalities of the Soviet Union increased in number over the period 1939-59. The only exceptions amongst groups of union republic or autonomous republic status were the Kara-Kalpaks, Mordvinians, Karelians, and Kalmyks. The last two of these were rather special cases. Many Karelians took the opportunity to migrate into Finland during the Second World War; the Kalmyks were dispersed during the war on suspicion of disaffection, a process which doubtless stimulated assimilation. The Balkars, who were similarly dispersed, remained static over the period. The other large nationality group to show an absolute decline was that of the Jews, a tragic consequence of their martyrdom. For smaller nationalities, it is necessary to go back to the 1926 census for comparison and much greater variation in trends is found. In some cases, comparison is very difficult or misleading, because certain nationalities listed in 1926 were not separately included in 1959. The 1926 census acknowledged 169 nationalities, that of 1959 only 115. But it seems clear that the numbers of people in many small ethnic groups of the far north and east have stagnated or even declined (Table 10). In most of the northern nationality areas the indigenous population is heavily outnumbered by Russians (Fig. 6) and one may suppose assimilation to be the principal cause of their decline. Small nationalities living in more southerly localities have in general increased and in some cases substantially. The Uygury of south-eastern Kazakhstan more than doubled between 1926 and 1959, from 42,550 to 95,208.

TABLE 10
Numbers of selected nationalities in 1926 and 1959

	1926	1959
Yakuts	240,709	236,655
Khanti	22,306	19,410
Chukchi	12,332	11,727
Itelmeny	4,217	1,109
Eskimo	1,294	1,118
Yukagiry	443	442

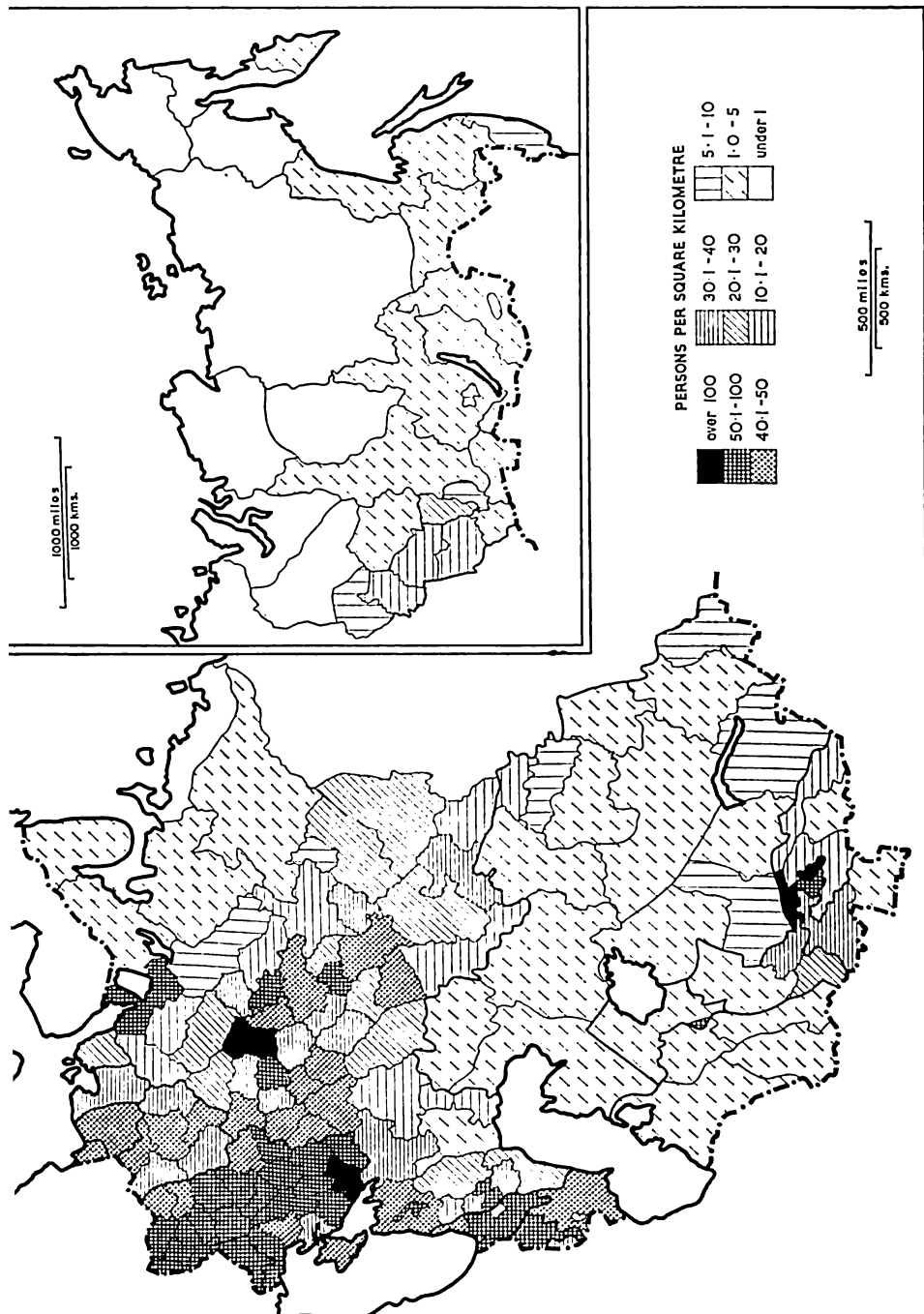


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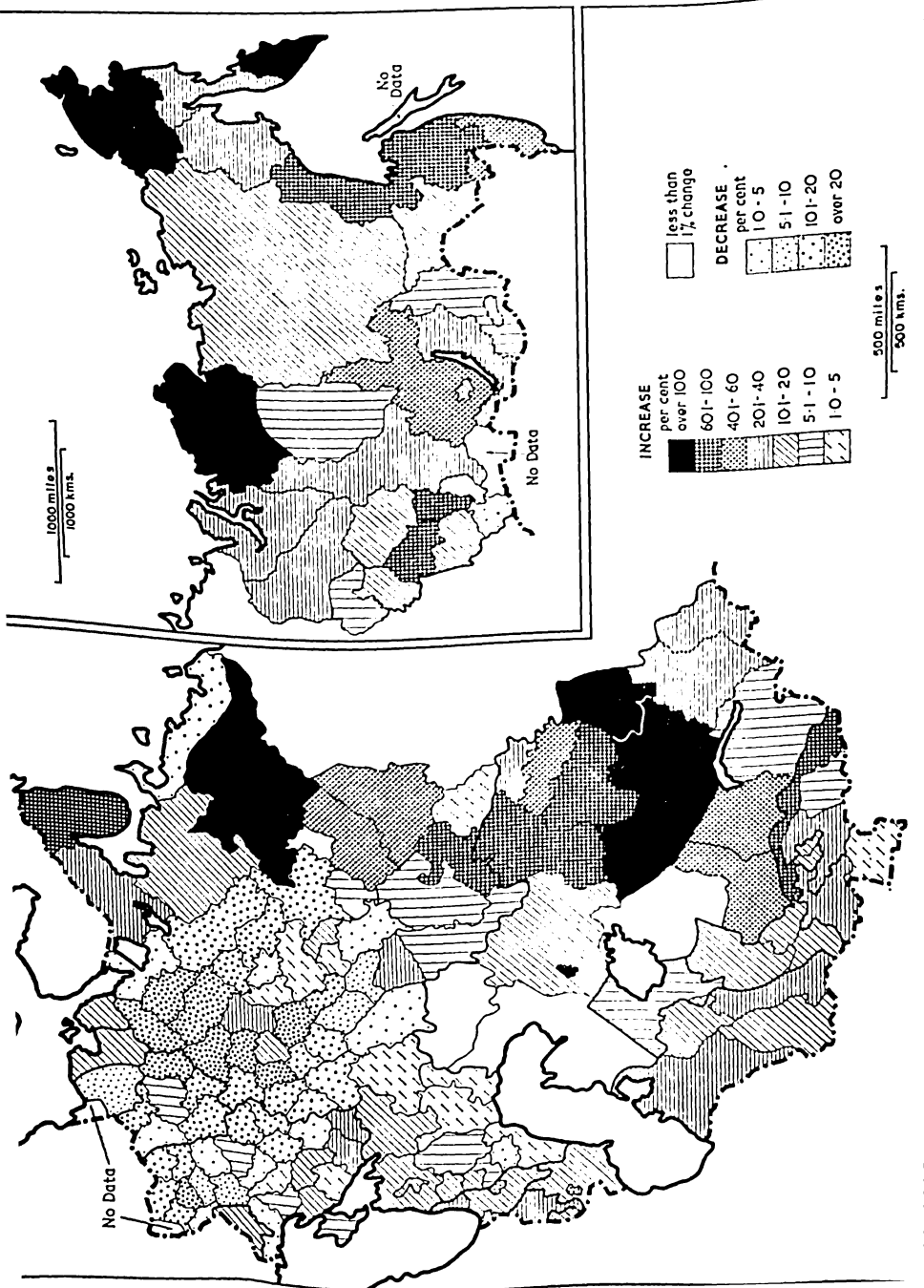


Changes in distribution

Analysis of population movements in the USSR is greatly hampered by the lack of published data relating to place of birth. It is possible, however, to examine the consequences of movements, that is to say changes in the population of individual areas. The distribution of population in terms of density is seen in Fig. 7. The much greater densities of the European part stand out clearly; in particular the zone of chernozem soils in the Ukraine and on the southern Central Russian Uplands has high densities, although even these are not very high if compared with most parts of western Europe. North of this zone densities are far less, except in the industrialized districts of central European Russia. Moscow Oblast has the highest density in the USSR, 232.9 persons per square kilometre (603.2 per square mile). Similarly the city of Leningrad raises the density of its oblast in the otherwise very thinly populated north.

Outside European Russia, only the Caucasus and the oases of Central Asia have comparatively high densities. The Fergana valley of the Tyan Shan, one of the principal areas of irrigation agriculture, has a density second only to that of Moscow Oblast; Andizhan Oblast has 181.7 persons per square kilometre (470.6 per square mile). All the rest of Central Asia, consisting of desert or high mountains, has very low densities. So, too, has the whole of Siberia. Even major industrial concentrations such as the Kuzbass coalfield, with over two million urban dwellers in 1959, are lost in the vast spaces of Siberia. Kemerovo Oblast, which encompasses the Kuzbass, has a density of only 29.2 persons per square kilometre (65.6 per square mile). Throughout the remainder of Siberia, only the districts of the west Siberian steppe and the Maritime Krai of the Far East have densities greater than five persons per square kilometre. In fact, within the large administrative units of Siberia, most of the population is concentrated in the extreme south; in a belt along the Trans-Siberian Railway. North of this belt densities do not exceed one person per square kilometre. The Evenki National Okrug of central Siberia has an area greater than France, the Low Countries and West Germany together, but a total population of 10,320. The Yakut ASSR, with an area approaching that of India, has 487,343 inhabitants.

Fig. 8 shows population change by administrative areas over the twenty-year period 1939-59. The areas which displayed the greatest percentage increases were those of lowest density. All Siberia, except the Gorno-Altai Autonomous Oblast of Altai Krai, increased its population. The fastest growth was in the extreme north and east,



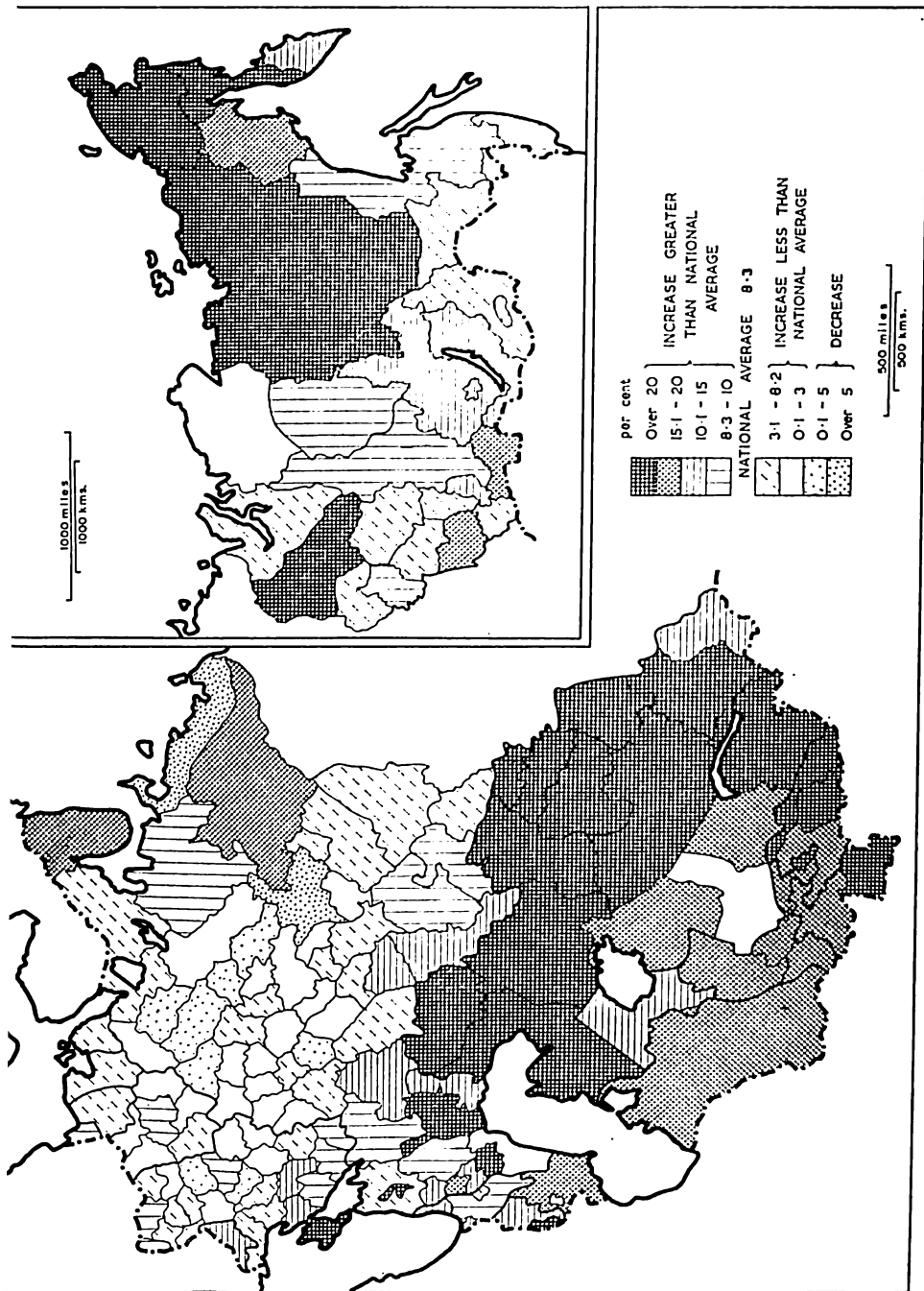
although in terms of absolute numbers such increases were not large. The Chukchi National Okrug, with over 100 per cent increase, grew in absolute numbers by 25,165. These increases in remote and inhospitable regions were due almost entirely to the development of new mining operations and the associated influx of labour from other parts of the country. Mining activities were also principally responsible for the large percentage increases of the European north, in Murmansk Oblast, and the Komi ASSR.

Most of Central Asia and the Trans-Caucasus experienced growth. Increases were greatest in the north of Kazakhstan, in large measure as a result of the Virgin and Idle Lands ploughing-up campaign of 1954-59. In 1954-5 alone, 330,000 persons were sent to the areas of virgin land development.¹¹ The ploughing up of very extensive acreages and the associated inflow of population also affected adjacent parts of the RSFSR. Karaganda Oblast of Kazakhstan, immediately south of the Virgin Lands area, increased its population by 153 per cent as a consequence of mining and industrial developments.

Industrial areas generally and districts containing major cities showed moderate to considerable increases: Kemerovo and Novosibirsk Oblasti in Siberia, the Urals, Moscow Oblast and adjacent districts of the Central Industrial Region, Kuibyshev Oblast, the Donbass and Dnepropetrovsk, Kiev and Minsk Oblasti. Apart from industrial areas and the far north, nearly the whole of European Russia decreased absolutely. The decrease was most marked in the regions to the west and north-west of Moscow, generally surpassing 20 per cent. These areas have only minor industry and agricultural possibilities are greatly limited by the terrain, the poor podzol soils, and the climatic régime. The very widespread decreases in European Russia were partly the result of population movement into the industrial areas, partly the result of migration to eastern regions of the USSR and partly also a consequence of the Second World War. Whereas over the whole USSR, nearly every town had expanded its population significantly between 1939 and 1959, in the west a number of seriously damaged towns had still not regained pre-war size by 1959. Notable amongst these were Leningrad, Smolensk, Vitebsk, Berdichev, and Kremenchug, as well as Konstantinovka, Novorossiisk, and Kerch in the south.

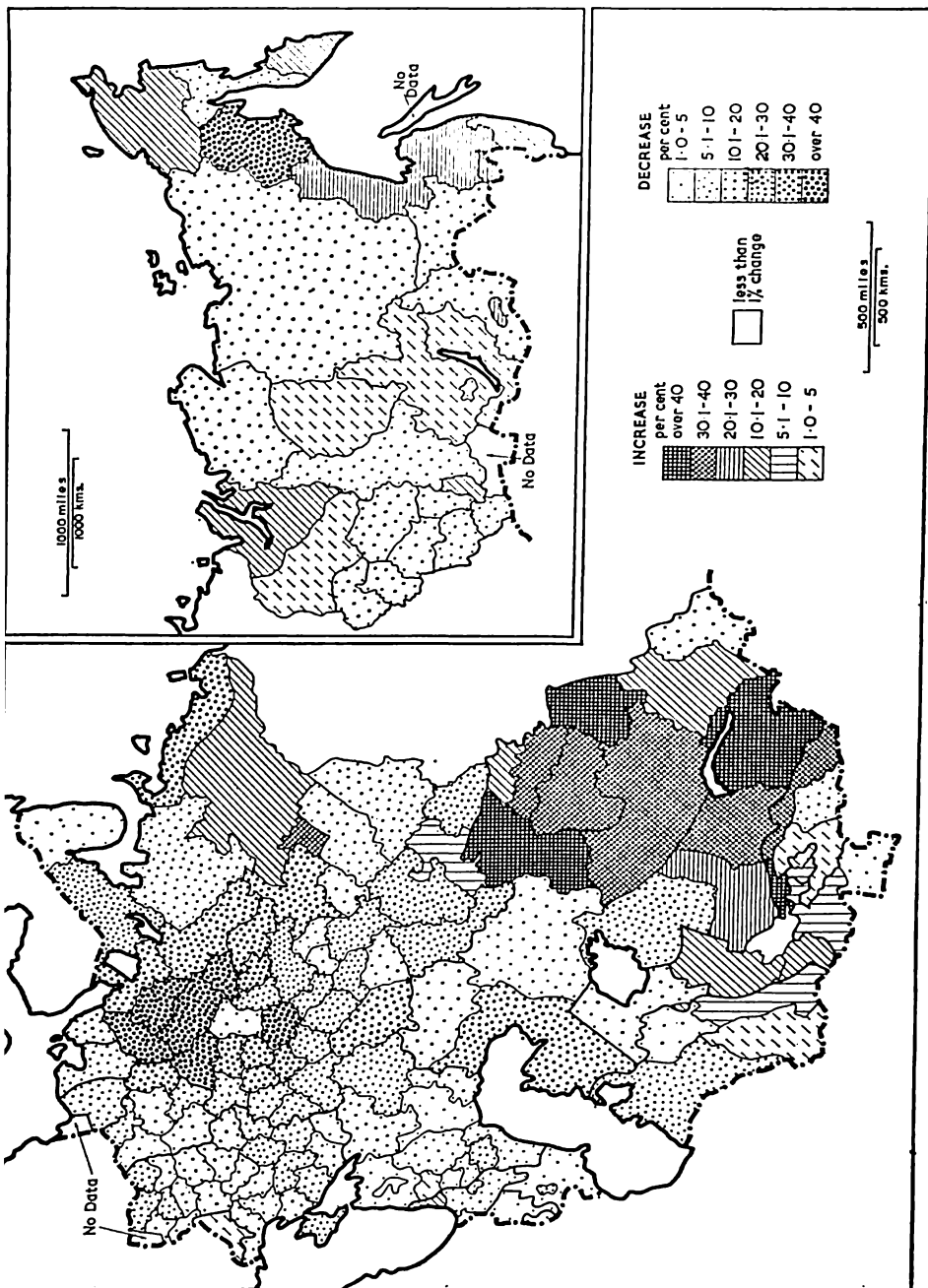
Basically similar trends can be observed over the five-year period following the 1959 census, up to 1964 (Fig. 9). In European Russia, although a decline in population was less widespread, it was still

¹¹ M. Ya. Sonin, *Vosproizvodstvo rabochei sily SSSR i balans truda* (Moscow, 1959), p. 234-5



continuing in west and north central areas, while other districts were increasing at rates below the national average. Once again the thinly populated regions of the European north (except the Nenets National Okrug) and Siberia showed above-average increases. But whereas between 1939 and 1959 almost all Siberia was growing faster than the national average rate of 9·5 per cent, between 1959 and 1964 certain important districts (Novosibirsk, Omsk, Kemerovo, Chita and Amur Oblasti) increased at rates below the national average. The main feature of the five-year period is the accelerated rate of increase throughout the Central Asian republics. The very slight increase in Chimkent Oblast, an apparent exception, was the result of distortion through boundary changes. As an example of the accelerated growth, Andizhan Oblast, which increased at an average rate of 0·84 per cent per year between 1939 and 1959, grew at an average rate of 6·24 per cent per year in the next five years. Since this oblast did not have any very large industrial projects commenced between 1959 and 1964 which might have attracted population from elsewhere, it forms a telling illustration of the effect of the high Central Asian birth rate. By contrast, Karaganda Oblast, which grew at 8 per cent per year between 1959 and 1964 (as against 7·6 per cent between 1939 and 1959), saw major industrial developments, doubtless leading to considerable immigration. All the various changes in population distribution from 1939 until 1964 have led to changes in the relative weight of the major regions of the country (Table 11) and above all to a decrease in the dominance of European Russia in the Soviet population.

Throughout both periods the greatest movement of people has been, both in numbers and importance, the flow from rural areas to urban areas. In addition to migration of persons, new industrial developments have meant reclassification of various rural areas as urban, thus adding population "in situ" to the urban total. The growth of towns has been almost universal. Apart from towns in the war zone already mentioned, only 22 towns and urban districts out of 4,619 failed to grow between 1939 and 1959. All of these were small, with less than 30,000 inhabitants. Those towns in the war zone which were below pre-war levels in 1959 and which were listed in the statistical year-books, have all subsequently surpassed 1939 size. Frequently the rates of urban growth have been considerable, especially in the Urals and Siberia. Novosibirsk grew at an average annual rate of 6 per cent between 1939 and 1964, when it topped the million mark; the average annual growth rate of Chelyabinsk was over 7½ per cent. Generally rates were slower in the European part and in particular in



the war zone. Nevertheless some towns have made great progress in spite of heavy destruction. Volgograd, 445,000 in 1939, had by 1964 reached 684,000, half as large again.

TABLE II
Percentage of total population living in major regions

	1939	1959	1964
European Russia	67.3	61.2	59.6
Urals*	7.5	8.9	7.8
Siberia and Far East	8.2	10.3	11.3
Kazakhstan and Central Asia	8.7	11.0	12.4
Caucasus†	8.3	8.6	8.9

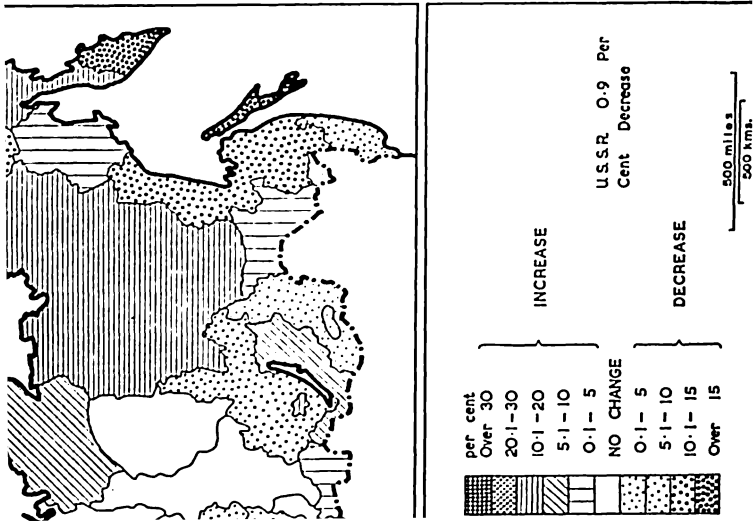
* Perm, Sverdlovsk, Chelyabinsk and Orenburg Oblasti, Bashkir and Udmurt ASSRs.

† Georgia, Armenia and Azerbaidzhan, with Stavropol and Krasnodar Kraia and the north Caucasus ASSRs.

The corollary of the urban increase has been rural decrease, not only proportionately but also absolutely. Over the whole country, the rural population fell by 16.2 per cent between 1939 and 1959, or 0.81 per cent per year on average. Fig. 10 shows the decrease of rural population to be very widespread. Parts of Siberia and the Far East, Moldavia, the Komi and Abkhaz ASSRs and the Karachai-Cherkess Autonomous Oblast all increased, but the major regions of rural growth were the Virgin Lands area of Kazakhstan and the oases of Central Asia.

Similar trends for 1959-64 are observable in Fig. 11, save that increases in Kazakhstan and Central Asia have been more widespread and more rapid. The rural population of the four Central Asian republics grew by 13.4 to 14.2 per cent, or 2.7 to 2.8 per cent per year. This rate was matched by Azerbaidzhan. Undoubtedly this fast increase in the countryside was due more to the high birth rate than to migration. In Siberia, increase and decrease between 1959 and 1964 have been antithetic to changes between 1939 and 1959. Areas such as the Yakut ASSR, which decreased in the earlier period, subsequently increased. The Far East, which had previously increased its rural population, displayed heavy losses in the later period. The rural population fell by 13.3 per cent in Khabarovsk Krai (excluding the Jewish National Okrug), by 7.1 per cent in the Maritime Krai, by 15.3 per cent in Kamchatka Oblast (excluding the Koryak National Okrug) and by no less than 21.7 per cent in Sakhalin. This last decrease

RECENT POPULATION TRENDS IN THE USSR



outweighed the growth of towns in Sakhalin, giving a net outflow of 2·8 per cent. This recent trend suggests that the Soviet government is finding difficulty in maintaining, let alone increasing, the Russian settlement of the Far East, despite the inducements of wage bonuses.

In movements of people from region to region and from rural to urban areas, the major role has been played by Russians, as has been demonstrated by Perevedentsev.¹² Thus of migrants from the Ukraine to towns in Novosibirsk Oblast, only 31 per cent were Ukrainians, but 65 per cent were Russians. Of those who had migrated there from Central Asia, only 1 per cent were of the indigenous nationalities and 86 per cent were Russians.¹³ This greater mobility of the Russians has brought about a steady increase in the proportion of Russians in non-Russian areas. In 1926 Russians constituted 0·9 per cent of the population of Tadzhikistan; by 1959 they formed 13·3 per cent. The vast majority of Russian migrants moved into the towns, and above all into the capital, Dushanbe, where they comprised 47·8 per cent of the inhabitants. The Tadzhiks themselves were only 18·7 per cent of Dushanbe's population. In industry within Dushanbe, the Russians

TABLE 12
Russians as a percentage of

	<i>total population</i>	<i>urban population</i>
RSFSR	83·3	87·2
Ukraine	16·9	29·9
Belorussia	8·2	19·4
Lithuania	8·5	17·0
Latvia	26·6	34·5
Estonia	20·1	30·8
Moldavia	10·2	30·4
Georgia	10·1	18·8
Armenia	3·2	4·5
Azerbaidzhan	13·6	24·9
Kazakhstan	42·7	57·6
Uzbekistan	13·5	33·4
Kirgizia	30·2	51·8
Turkmenistan	17·3	35·4
Tadzhikistan	13·3	35·3

¹² V. I. Perevedentsev, "O vliyanii etnicheskikh faktorov na territorialnoe pereraspredelenie naseleniya", *Izvestiya Akademii Nauk; Seriya Geograficheskaya* (1965), part 4, pp. 31-39

¹³ Perevedentsev, *op. cit.*, p. 33

were still more in evidence, making up 55·7 per cent of the workers in the Dushanbe textile mill.¹⁴ This tendency of Russian labour to dominate new industrial developments and thus to form a high and often pre-eminent proportion of urban inhabitants, is very widespread (Table 12). In the far northern nationality areas almost all mining and industry is operated by Russians, with some Ukrainians and Belorussians. As Fig. 6 indicates, in such areas the Russians are not only the largest single nationality, but in most they constitute two-thirds or more of the total population. The indigenous tribes are chiefly occupied in reindeer herding, fishing, fur trapping, and hunting.

Conclusion

Of all the various features of Soviet population structure and trends, surely the most significant in the long run must be the falling birth rate. Over the next fifteen years the expansion of population is likely to slow down to a nearly static situation. At the same time stated Soviet government policy is for large-scale further expansion of industry. Demand for labour will correspondingly increase. No doubt this increased demand can be met in part, or even altogether, by developments in automation and by further transference of population from agriculture to industry. In 1959 persons employed in agriculture were 34·2 per cent of the total labour force, a very high proportion for an industrialized country. But for agriculture to continue as a major reservoir of labour for industry, as it has been since 1928, a marked increase in productivity per head on the farms is needed. As yet there is little sign of such an increase.

Moreover huge tracts of Asiatic Russia are very thinly populated. The greater part of Siberia is not fitted by its physical conditions for much economic development other than mining. Even mining is hardly economic in view of the very long hauls required, save for high value metals such as gold, or relatively scarce metals such as tin. Possibilities of agricultural development are very limited indeed. Nevertheless considerable areas of Siberia, especially in the south, are under-populated. Most recent trends indicate a tendency for people to move away from such areas, more particularly from the countryside. This may well have long-term political-strategic implications, since southern Siberia lies adjacent to China, with its rapidly growing population of 700-800 million. Not only is Siberia the only population vacuum near China, but also the Chinese have an historical claim to

¹⁴ Perevedentsev, *op. cit.*, p. 35

the Amur-Ussuri basins of the southern Far East. If the Soviet Government wishes to increase Russian settlement and development in Siberia and at the same time increase industrialization, it can hardly view present population trends with equanimity. For the last twenty years, some encouragement has been given to stimulate the birth rate by cash bonuses and awards to mothers of large families. It would seem that further material help and incentives are needed.

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LONG-RUN EXPORT POLICY IN A CENTRALLY PLANNED ECONOMY

By Joseph Rudziński

THE PURPOSE of this paper is twofold: to suggest, initially, that it is detrimental to a Marxist economy¹ to look upon exports merely as "payment for imports" detached from the general productive cycle of the economy; and to devise, subsequently, a set of criteria which could serve as a basis for a study of the efficiency of the long-term export policy. It will be understood that an export policy consists of rational decisions made by a public authority, concerning the content and quantity, as well as the methods used and the location of the production, of exported goods. It is also assumed that such an authority has sufficient power to enforce the decisions at which it arrives. Finally, we shall define as long-term policy those decisions only which are not determined by the immediate availability of foreign exchange.

In a dynamic approach, once increasing returns to scale appear in the process of industrialization, an open economy is forced into a vicious circle: it is bound to specialize its production in order to compete successfully abroad at relatively low costs at home, which in turn makes it increasingly dependent on the import of all goods whose production it decides to discontinue, and makes the needs for foreign exchange ever more pressing and exports an ever larger part of the national income. In Poland the share of exports in the gross national product doubled in the years 1957-63, and a threefold rise is planned between 1960 and 1980. Foreign trade thus becomes a national problem, particularly in a smaller and less autarkic economy. More specifically, the necessity arises to buy abroad ever-increasing quantities of producers' goods in order to hold down the costs of production of other, exportable producers' goods; and concurrently to import fewer basic raw materials and to work them up on a larger scale in order to hold

¹ We shall be concerned here with countries of Eastern Europe other than the USSR, as the latter's export policies are of little importance within its essentially autarkic economy

down the costs of production of consumer goods. The weakest point in the development of foreign trade is no longer the inadequacy of inventions and projects, but rather the organization of export production and its integration within the national economy. The importance of reorganization seems to receive far more recognition among eastern European planners at the moment than does long-term thinking. Yet the latter amounts to no less than deciding on the structure of the economy that will emerge from the last stage of its development, on the types of products in which the country will finally specialize (whether this be producers' goods, or "light", or "medium"² consumers' goods) and which it could therefore most profitably export in the future.

For a long time foreign trade was seen in those economies as the outcome of a series of shortages of certain goods, combined with difficulties inherent in payment for those goods. Virtually anything that could be exported was offered in exchange for the so-called "indispensable" imports (which in the 'fifties paradoxically included cereals and fodder). This habit, in combination with doctrinal considerations, gave rise to the idea of exports being a payment for imports and little else. The concept became intimately part of economics as it was then taught in eastern Europe. It is repeated even recently: "The chief function of exports in the economic development of People's Poland was and still is the financing of imports".³ We can read in an article by Szyber: "Imports must be paid for by exports. The utility of exported products has no real significance to the exporting country".⁴

This manner of thought, it is argued below, could be extremely harmful, especially if adopted by central planners. The harm is not obvious, for it comes only with time. It should be mentioned here, by way of a digression, that with respect to short-run improvements, much constructive work has been done in recent years on techniques aiming at the maximization of the value of exports over the value of the necessary imports. This involved the rational choice of those particular products of the country which would yield the most favourable "indicative exchange rate", a figure arrived at by relating the price obtained for an exported article to the cost of its production. The latter, however, is generally valued only in terms of "social labour" in

² E.g., motor cars

³ *Polish Economic Survey*, no. 14 (1964), p. 23

⁴ W. Szyber, *Ekonomista*, no. 4 (1963), p. 731

units of wage-hours.⁵ One highly elegant method of optimization of foreign trade, elaborated recently by W. Trzeciakowski,⁶ makes use of this social-labour valuation of costs of production. The method is based on linear programming: a linear matrix is built from a system of equations in n unknowns representing outputs of groups of productive activities involved in exporting production. Implicit prices are replaced by the "indicative exchange rates" for each group of goods. In the primal solution the total value of goods purchased with foreign exchange is maximized, given the parameters of home aggregate demand, costs of production, etc. In the dual solution the exchange cost of import is minimized. The maximization is obtained through Dantzig's simplex method. A basic feasible solution to start the iteration is obtained from current statistical data which are meant to represent a near-optimal solution already. The value of methods of this kind, and of the above model in particular, is indisputable. In the short run, profit maximization techniques in foreign trade can only benefit a planned economy; in the long run, however, optimization becomes an ambiguous word which, even though fashionable, could be damaging if used indiscriminately.

Great hopes of relieving the administrative burdens created by public ownership are currently placed on mathematical techniques of maximization and minimization, input-output analysis, and mathematical programming of many kinds. It has been suggested that computers will be capable of solving planning problems, so that value judgments could be avoided once and for all. Programming, however, can at best indicate what (and how much) is most economic to produce, from the point of view of a producer who takes the interest of consumers into consideration only through a market mechanism. In other words, the most efficient use of national bottleneck resources could only satisfy consumer demand by luck, and even then the rapid progress of science and technique would make such an equilibrium unstable.

Implicit awareness of this situation has led some economists of eastern Europe into advocating "optimization" in the choice of exported goods - the only type of output whose prices cannot as a rule be influenced. Future export production could be optimized,

⁵ There are exceptions to this valuation. See H. Fiszcl, *Efektywność inwestycji i optimum produkcji* (Warsaw, 1961), chapter I

⁶ "Model optymalizacji bieżącej handlu zagranicznego i jego zastosowania" in *Prace i Materiały Zakładu Badań Koniunktur i Cen Handlu Zagranicznego* (Warsaw), no. I (1962)

their argument goes on, given the prices obtainable abroad and the costs of production at home. The possible export products being innumerable, one must doubt the feasibility of such a programme. However, more fundamental objections arise in connection with its logical infrastructure. Again, mathematics proves to be a dangerous weapon in the hands of an economist: its use in long-term planning by the authorities of industrialized countries paradoxically assimilates the notion of a socialist economy with that of private enterprise, with all its known ill-effects: an operational technique can take account of stochastic changes in demand, but it could never forecast the development of new methods or substitutes, especially on a national scale. We can only compute the profitability of investments whose "prospective yield" is calculated on the basis of current prices. Planning of national investments requires that attention be paid to secondary investments, external economies, complementarities, and extra-economic considerations, and, one would think, especially so in a socially-oriented political system.

It is reasonable for a planned economy in the short run to seek to minimize the current foreign-exchange cost of indispensable imports. In the long run, however, one cannot apply, *faute de mieux*, the profit-maximization technique of a private enterprise to the plans of a whole economy with socialist aspirations.⁷ An export policy so devised will either fail to take account of external economies, diseconomies and links with the whole national productive system, resulting in an inadequate solution, or such impacts will be duly considered, but without satisfactorily evaluating consumers' demand.

The external factors which cannot be neglected since Pigou defined the concept of "social product" are numerous. Firstly, it is common knowledge that in most eastern European countries the marginal productivity of certain "administrative" and other workers is nil. The state is pledged to their employment. In these conditions it would seem to be logical to develop exports of relatively labour-intensive products in the best classical tradition, thus avoiding purchases of expensive machinery abroad, and providing productive jobs at home. This criterion of choice between production (not yet export) possibilities has recently come to be officially advocated in Poland and Rumania, even though it contradicts the Leninist precepts of heavy industrialization.

⁷ S. Wellisz (*Economies of the Soviet Bloc*, New York, 1964, p. 127) considers the use of mathematical programming in long-term planning unsatisfactory, but does not give his reasons

Secondly, the choices made must at this stage of industrialization take account of the economics of scale: if a commodity is produced both for export and for home consumption, its unit-cost will in most cases be lower than if it were produced entirely for export or entirely for home consumption. The Danzig shipyards, which produce 95 per cent of their output for export, are a case in point. The difficulty here is that standards of production for exports and home consumption are sharply differentiated. Integration implies a risk of cuts in the volume of foreign revenue. On the other hand, it could (and in the long run would) render the invaluable service of improving the standards and quality of home consumption. This is not to say that all goods produced for home consumption should also be produced for export; it means simply that, if long-term planning is to yield optimal results, the utilities of a product in foreign and home markets cannot be considered separately.

Thirdly, relevant complementarities must be considered when specialization in a group of products is decided upon with a view to mass export in the future. Motor-cars are a good example: it is very doubtful whether the burdens that their large-scale production imposes on the steel industry, together with the highly specialized labour-training required, make them a viable proposition for expansion in Poland.

Finally, most exported industrial goods yield by-products, and it is certainly preferable to choose export goods where by-products can also be exported, or are at least necessary at home; a good example – though it implies a concept of “by-product” somewhat larger than usual – is the export of tin and tinned foods.

In the light of these considerations it seems imperative that long-term export planning be integrated with the development of the economy as a whole. The complete solution of the export problems in the long run is part of the solution of the planning problem, and would require institutional and fiscal reforms. Without indulging, however, in the apparent perfectionism of those economists who emphasize the elegance of mathematical methods in this respect, it seems possible to set up a number of criteria which the planning bodies could take into consideration in their investment projects, ranking these latter in order of priority.

A specialized institute in each socialist country could study the future export trends in world markets. A few such institutes already exist, but they confine themselves mainly to the analysis of current situations. Among the particular tasks set one would include:

- (i) The evaluation of price and income elasticities of foreign demand for actual and projected export products, and the detection of likely trends in these elasticities.⁸
- (ii) Tracing foreign developments among the close substitutes for exported products; and determining reasons for the rejection of exports.
- (iii) Close observation of changes in both labour costs⁹ and the raw material situation¹⁰ in competing exporting countries.

In addition to the above "expansive" criteria, which portray a general search for quasi-monopolistic positions in the world markets, other "permissive" criteria could be kept in mind on the planning side:

- (iv) Technical capabilities and labour training, when investment in production of exportable goods is considered.
- (v) The availability of natural resources. It may seem obvious to a Western economist, but until recently this element of choice was completely overshadowed by considerations of a political nature,¹¹ of employment, or of foreign exchange.
- (vi) In the light of previous considerations, special stress would be laid on the criteria linking export policies with the rest of the economy: labour-intensity of projects, economies of scale, complementarities and by-products. Attention given to complementarities in planning for future projects would include for completeness an effort towards full exploitation of unused capacities created in the past.
- (vii) Finally, long-run planning for exports could not overlook the energy and transport bottlenecks. In other words, it is not desirable that because of such shortages export programmes be executed, as often in the past, at the cost of home output.

Import and export policies are not merely linked through the exchange problem: imports to Poland of certain types of modern machinery make possible continuous specialization in the export of entire plants to developing countries. Planners are often driven to encourage home-substitution of such indispensable imports, against all

⁸ Such studies would, for instance, put into doubt the wisdom of developing cotton-textile production in Poland

⁹ E.g., the decreasing competitiveness of goods produced in capitalist countries as a consequence of inflation

¹⁰ E.g., rising costs of certain imported raw materials.

¹¹ See Fiszal, *op. cit.*, p. 93

standards of social efficiency¹² embodied in the "permissive" criteria above, and sometimes to the detriment of the quality and volume of the exported product concerned.

It should be noted here that long-term trade agreements are often geared to central plans in order – so it is argued – to protect against fluctuations in prices and demand both at home and abroad. In this respect one should bear in mind that such agreements, while making planning and exports easier, could (if excessively specific as regards the content of the exchanges) be damaging to the competitiveness of exports, and defeat their own aim whenever the so-called "world prices" of imports and exports were respectively lower and higher than those agreed upon.

The volume and direction of the exports are relatively unimportant questions to the extent to which one can sell profitably and adjust the size to these possibilities. In this context the quality of advertisements published abroad, the servicing, packaging and finishing of exports all require sustained attention, provided possibly by agencies of a less central character than the National Bank.¹³ The place of the export sale matters mainly in the case of bulky goods and raw materials,¹⁴ or of electric power. The methods used in export production probably give least reason for concern, exports being the part of national product which is submitted to the most competitive conditions of all.

The promotion of mathematical optimization techniques in central planning presents one definite advantage in that it forces the planning staff at most levels out of their generalized apathy into some further logical thinking and occasionally causes their replacement by better-qualified people. Yet it was argued above that in the long run such methods do not achieve full social efficiency (i.e., profits are maximized except where this would be socially undesirable). A widespread use of such methods is, moreover, in the present circumstances relatively impracticable, for it implies the surrender by the political authorities of a part of the decision-making process. A system of criteria of the type outlined above seems more likely to be put into application, for it does not require even a partial transfer of power. Furthermore, the political stability experienced in the socialist countries could help the consistent

¹² The term "social efficiency" seems best to convey the variant of optimization that is desirable in long-term planning, contrasting it with the "absolute efficiency" of a firm minimizing its costs. It certainly involves a political decision as to what is socially desirable

¹³ This body does the bulk of the quality control of exports in Poland

¹⁴ See criterion (vii) above (transport bottlenecks)

implementation of such long-run programmes; conversely, in Britain or the United States long-run economic ventures are politically unprofitable.

Difficulties are more likely to emerge in connection with the philosophical and administrative aspects of the matter. Marxist economists raise objections to export surpluses even today,¹⁵ on the premise that these can only serve the purpose of curing insufficient employment, a problem which cannot occur in a planned economy. Other Marxists still object to labour-intensive production on the very theoretical grounds that a high proportion of labour costs in the selling price is uneconomical in terms of the labour theory of value. On the production side, concern with the execution of plans of "financial turnover" still induces factory directors to adopt expensive methods and materials where cheaper ones could be used. Recently, however, some political leaders have openly admitted the necessity of increasing industrial efficiency, providing new jobs and expanding foreign-exchange reserves.¹⁶ On the other hand, the "universal character" of exports is being constantly emphasized in accordance with Lenin's doctrine of industrial self-reliance. It can be argued that so wide a spread in the variety of exported products merely bears witness to the absence of previous specialization. It is planned, nevertheless, that capital goods will constitute 37 per cent of Polish exports by 1970. With the expansion of a qualified technical labour force it is possible to envisage a gradual shift towards specialized and complex goods, within a continuing preference for labour-intensive methods.

The fact that, in 1965, 59 per cent of Polish exports were sold to other members of Comecon makes the case for a set of choice criteria all the more valid and the case for short-run optimization relatively less important. If seriously applied these, or similar, criteria could, it is hoped, make a small contribution to the rationalization of planning in eastern Europe.

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¹⁵ See, for instance, K. Laski in *Ekonomista*, no. 1 (1964), p. 34

¹⁶ See the speech by W. Gomulka at the IV Congress of the Polish United Worker's Party (15 June 1964)

SOVIET FARM OUTPUT AND FOOD SUPPLY IN 1970*

By W. Klatt

ALTHOUGH Khrushchev saw himself as the architect of Communism proper, he was astonishingly vague when in 1961 he formulated the 'material-technical basis' on which the welfare of the Soviet citizen would largely depend when approaching the Communist millennium in 1980. The targets of his food and farm policy, which was to lay one of the foundations of future living standards, were particularly imprecise. Real incomes per capita were supposed to double between 1961 and 1970, and farm production, like labour productivity in agriculture, was to exceed by 150 per cent the level attained in 1960 (implying no change in the size of the agricultural labour force). At the request of the Central Committee of the Communist Party of the Soviet Union, the State Economic Council had submitted certain targets for the chief farm commodities, but there was no indication that these targets were the result of carefully calculated balances in physical, let alone financial, terms. They could at best be regarded as inspired guesses.

The original plans for 1970 and their revision

When Khrushchev presented his plan to the 22nd Party Congress, Soviet farming had had some disappointing results following the exceptionally good harvest of 1958, on which the Seven-year Plan (1959-65) was based. Crop production had increased by only 1 per cent in three years, and the overall rise of farm output by 5 per cent was almost entirely due to some modest improvements in livestock farming. The setbacks did not deter Khrushchev from presenting a programme which depended, throughout the 'sixties, on an average annual rate of growth in farm production of 9.6 per cent (which somewhat surprisingly was to decline to a mere 3.4 per cent during the

* An earlier version of this paper was read to the Conference on Soviet and East European Agriculture at Santa Barbara, California, in August 1965.

decade from 1970-80). The individual targets approved by the Party Congress implied that output in 1970 would be approximately double that of 1960 for milk and dairy products, natural fibres, and vegetable oils, whilst the supply of meat and fruit would have to increase almost three-fold. The output of grain, a subject of considerable concern to every Soviet leader, was to increase by four-fifths. These were ambitious targets by any standards. Details on delivery quotas, consumption levels, and foreign trade in foodstuffs were either kept to a minimum or not given at all.

As it was clear at the time that the targets set for 1965, the last year of the current Seven-year Plan, were well beyond reach, there was reason to expect certain adjustments of the long term 'perspective' Ten-year Plan. In fact these were announced by Khrushchev during the Party Plenum held in December 1963 at which the development of the chemical industry was the chief item on the agenda. Some of the original single goals set for 1970 were replaced by a range of targets. In the case of meat and milk; the upper limits of these were identical with the original targets; in the case of grain, however, the sights were raised. It had yielded a particularly unsatisfactory crop prior to the Plenum, but it was expected, optimistically, to do very much better as soon as the chemical industry was able to meet the fertilizer requirements not only of the commercial crops, such as cotton, oil seeds, flax and sugar beet, but also those of grain which until then had hardly received any fertilizer dressings. Again information was lacking on such important aspects as the expected levels of farm procurement, foreign trade or food consumption. Delivery targets were announced for the first time in March 1964.

There is no evidence that the new targets had been fixed as the result of any detailed calculations of input and output, in either physical or financial terms. The level at which fertilizers were to become available to farming was, however, a matter of some considerable debate, both within the Party and by the press. Some 4,500 million roubles or almost one-fifth of the total investment in the chemical industry were set aside for the achievement of the target for fertilizer production in 1970. This was originally set at 77 million tons, later tentatively raised by Khrushchev to 100 million tons, and eventually fixed in December 1963 at a range of 70 to 80 million tons (commercial weight). As to farm machinery, certain optimum targets had been set before priority was shifted to the 'chemicalization' programme. At the Plenum held in March 1962 Khrushchev had announced certain optimum levels of farm equipment which, bearing in mind existing

stocks of machinery and current rates of production and replacement, could be expected to be reached in or after 1970. No provision was apparently made for adjusting the labour force to the changing requirements of a farm industry which was to become increasingly capital-intensive.

It will probably not be possible for some years to come to establish, with any degree of certainty the reasons for the removal of Khrushchev, in mid-October 1964, from his position of leadership in both Party and government. There can be little doubt that his failure to succeed with his farm programme played a significant rôle in the Party's decision to depose him. This is borne out by the fact that the first measures taken by Brezhnev and Kosygin, the new leaders, were designed to alleviate certain hardships caused to food producers and consumers as the result of Khrushchev's policies. The first steps taken were small and cautious, yet designed to please some important sections of the community. The distribution of wheat flour at the end of October in some towns, which had gone short as a result of the poor harvest of 1963, accounted for less than 1 per cent of their annual requirements, but was bound to create a favourable impression among the urban dwellers. A few months later the reduction of certain retail prices (excluding foodstuffs), equal to approximately 1 per cent of the annual retail trade turnover, and the release from central control of textile and shoe factories, equal to 1 per cent of Russia's industrial establishment, probably had a similarly favourable effect.

In the countryside concessions had to be made on a larger scale if the shortcomings of the past were to be put right. Yet the first measures taken seemed to be aimed at having a maximum impact for a minimal outlay. In his speech on the anniversary of the revolution in November 1964, Brezhnev announced the restoration to their former size of the private plots belonging to members of collectives, workers and employees, which had been reduced since Khrushchev had taken a stand against the private sector in 1956. The area affected by the new ruling was less than 1 per cent of the country's farmland. Its effect must have been felt, nevertheless, throughout the rural community, all the more so as active steps were taken to encourage private animal farming. The livestock tax was abolished, almost a million tons of feed grains were allotted to the private sector and five-year credits of up to 300 roubles were allowed for the purchase of cows and 150 roubles for acquiring calves. In this way the restrictive policies towards the plot and the cow of the kolkhoznik were terminated and a new lease of life was given to the private sector of the farm economy.

The next measure was directed at the reorganization of the Party and government organs concerned with running the farm industry. At the Plenary Session of the Central Committee held in November 1964 it was decided to reverse the decision which split the Party into an agricultural and an industrial wing and to recreate, at all levels, the single Party organization which Khrushchev had disrupted two years earlier. At the same time, Party committees attached to the offices of the production administration were abolished. These measures were supplemented on the governmental side when in February 1965 the reorganization of the Ministry of Agriculture was entrusted to Matskevich, whom Khrushchev had removed from his post as Minister in December 1960 and had sent into the wilderness of the Tselinny Kray, where the past minister had proved himself successful as Chairman of the Party Executive Committee. On the advice of Matskevich the agricultural administration was restored basically to its former pattern with the ministry being responsible for all major decisions in matters of farm policy, instead of merely looking after agricultural research and extension services as Khrushchev had ruled. Volovchenko, the former Minister of Agriculture and a nominee of Khrushchev's, had to take second place as first deputy to Matskevich. Republican ministries were recreated on lines similar to those operating at the all-Union level with a dual chain of command from the Republican Council of Ministers and the all-Union Ministry in Moscow. The future rôle of the agencies concerned with the procurement of farm products and the purchase of farm requisites remained undecided at the time, but Matskevich made it clear¹ that he intended to interpret his ministerial powers to give him the right to veto, if not direct, any matters of sales and purchases.

Finally the new leaders felt the need to dispose of an issue which had bedevilled the farming industry for thirty years. Lysenko, who had terrorized the scientific scene under Stalin and who had regained his eminence after a temporary eclipse in the early years of Khrushchev's rule, presented an obstacle to any rationalization and modernization of Soviet plant and animal husbandry. With the removal of Lysenko early in 1965 as Director of the Institute of Genetics at the Academy of Sciences, and the replacement of Olshansky as President of the Lenin All-Union Academy of Agricultural Sciences, the chief barriers to scientific research and to effective contacts with foreign biologists were removed. These measures, though indicative of the attitude the new leaders intended to take in matters of urgency, did

¹ Tass, 1 April 1965 and *Voprosy ekonomiki*, no. 6, 1965

not add up to a new farm programme. Kosygin's speech in December 1964 on the plan for 1965 hardly referred to agriculture, and Garbuzov's mention, in his statement on the budget, of an increase in the procurement price of milk seemed hardly intended to attract notice.

In the meantime several of Khrushchev's agricultural projects had come under attack in public, suggesting that the new leaders might wish to look critically at the virgin lands, maize, and ploughing-up campaigns before deciding how far to associate themselves with their continuation. At the same time the problem of efficiency and productivity in farming and the right of managers and Party organs to make decisions were debated in the press. The debate conveyed the impression that the Soviet leadership was experiencing certain difficulties in agreeing on a concerted policy and on an economic plan which was to take account of conflicting interests and commitments. This impression was confirmed when a speech by Kosygin was published belatedly.² In his speech Kosygin had expressed his dissatisfaction with the preliminary targets for the forthcoming Five Year Plan (1966-70) as presented by Lomako, the Chairman of Gosplan. Apparently the reallocation of resources, planned all too tightly in the past, created some difficulties in view of certain policy changes considered essential in view of Khrushchev's past errors and failures. Agriculture must have ranked high on the list of priorities.

The Plenary Session of March 1965

The first authentic statement of the new leaders on major issues of farm policy was made at the Plenary Meeting of the Central Committee of the Party held in March 1965, when Brezhnev, its First Secretary, presented his report on "Urgent Measures for the Further Development of Soviet Agriculture". The title was strangely reminiscent of Khrushchev's first speech on agriculture after he had come to power. In tone and presentation, however, Brezhnev's speech was miles apart from that of his predecessor. In content it was less revolutionary than might have been thought on first reading it. Much of what he had to say amounted to a continuation of Khrushchev's policies - by different means. Some of it, however, clearly represented an amendment to the Plan for 1970 as it had been sketched out by Khrushchev in 1961. The main innovations were three-fold.

First, delivery quotas for grain and livestock products were fixed at levels substantially lower than those anticipated by or enforced under

² *Planovoe khoziaistvo*, no. 4, 1965

Khrushchev. They were fixed for six years in advance so as to provide farm managers and chairmen of collectives with a yardstick against which to measure present production patterns and any intended changes thereof. Secondly, prices for obligatory deliveries of grains and meats were raised (in addition to those of milk covered by Garbuzov's speech on the budget), and above-quota deliveries of grain were to be paid a bonus of 50 per cent. Lastly, investment in agriculture was to be raised on both State and collective farms, the former drawing a total of 41,000 million roubles, of which half was to be spent on farm buildings during the forthcoming Five-year Plan, whilst the latter were expected to make available from their indivisible collective funds a total of 30,000 million roubles over five years. In addition 4,000 million roubles will be spent on the expansion of factories producing farm machinery and spare parts, while investment in the chemical industry is likely to be reduced. Certain farm debts will be cancelled; specified taxes will be adjusted; and some prices of farm requisites and consumer's goods will be reduced. The urban consumer has been assured that he will not be burdened with any of the cost of this programme (though there has been no mention of a reduction of the retail prices for meat and dairy products which, in the summer of 1962, Khrushchev had promised to raise only temporarily). No institutional changes like those introduced frequently in the years of Khrushchev's rule were contemplated.

Whereas the last Plenary Session on agriculture convened by Khrushchev had been attended by a large number of government officials and agricultural specialists who spoke in the debate, the meeting at which Brezhnev outlined the new farm policy was addressed mostly by regional Party secretaries and a few officials, though not by the new Minister of Agriculture. Apart from the official report, publication of the contributions to the debate was delayed.³ Much appears to have remained unsettled. It is worth noting in particular that nothing has been said so far about the production targets set originally by Khrushchev in 1961. The fixing of lower delivery quotas in itself does not provide sufficient guidance as to the level of production anticipated in total and commodity by commodity. The level of grain deliveries fixed at approximately 56 million tons per annum for the six years from 1965 to 1970 may seem low if set against the extraordinarily high figure of over 68 million tons in 1964. It is worth bearing in mind, however, that 56 million tons of grain have

³ The Stenographic Report of the Central Committee Plenum was published in *Pravda*, 31 August 1965

been collected only twice before, in the good years of 1958 and 1962. State purchases of livestock products, though reduced in comparison with previous delivery targets, are planned to rise substantially in each of the next six years.

Average procurement prices for wheat and rye are expected to increase from approximately 74 roubles to 83 and 92 roubles per ton respectively. The increase will be larger in the case of deliveries by the State farms, which in the past have always received considerably lower prices than those paid to collectives. In future, State farms will receive on average 60 and 75 roubles per ton for wheat and rye respectively. Barley and oats will fetch 50 per cent more when sold by collectives, but 125 and 200 per cent more when sold by State farms. The increase in grain prices cost the State some 800 million roubles in 1965.

The position is even more complicated in the case of livestock prices. If it is assumed that large price increases are reserved here, as in grain farming, for marginal areas, overall price increases may be estimated to range from 30 per cent for pigs to 35 per cent for beef cattle. Again, delivery prices for State farms are lower than procurement prices for collectives. Taking these various factors into account, the procurement of meat animals cost the State an additional 2,000 million roubles in 1965. To this has to be added an allocation of 700 million roubles for the price support of milk. At prevailing levels of procurement and delivery the total outlay caused by the improvements of grain, meat and milk prices amounted to approximately 3,500 million roubles in 1965. It will rise in the course of the next five years in direct relation to the increase in farm deliveries. In addition, there have been tax concessions and reductions in prices of farm requisites, each worth about 500 million roubles. Moreover, Gosbank has been authorized to write off, as a one-time measure, State loans to financially insolvent collectives to the amount of approximately 2,000 million roubles. A further small debt of some 120 million roubles outstanding from the transfer of machine tractor stations to collectives has also been cancelled. The repayment of advances from procurement agencies totalling 120 million roubles has been deferred. Lastly, expenses incurred in the course of land improvement schemes, such as liming acid soils, are to be borne by the exchequer. The recurrent official commitments may be estimated to add some 5 per cent to the planned budgetary expenditure. In the course of the Five-year Plan the cost of the farm support programme may account for over 20,000 million roubles – a large transfer indeed of national resources to the farming industry. The size of the financial burden helps to explain why the agricultural

plan cannot be taken to be more than an expression of intent as long as it has not been integrated fully in the country's overall economic plan and the budget has not been adjusted to meet the new contingency.

Not unnaturally the investment targets have met with particular interest. They provide the clearest indication of the Soviet leaders' intentions. Though ambitious by any standard, the new investment programme represents on balance a continuation of the policy that has been in operation for the last seven years. Compared with the record of investment during the five year span from 1959 to 1963, the level of investment is to be doubled; based on the amount likely to be invested in 1965, an annual rate of growth of 15 per cent is planned during the forthcoming Five-year Plan, compared with approximately 10 per cent during the Seven-year Plan and 20 per cent during the first five years following the death of Stalin. While at that time the share of the farm industry in total investment was about 15 per cent, it is now 20 per cent and it is to rise to approximately 25 per cent by 1970.

In evaluating this programme it is worth bearing in mind how drastically the investment targets of the Seven-year Plan have had to be changed. Whereas the farm investment reached a total of some 55,000 million roubles at the end of 1965, collectives made available 10,000 million roubles less than planned from their "indivisible funds" and and the State had to raise its contribution by a corresponding amount. As matters stand at present, the public contribution to farm investment will have to increase further from 55 per cent during the Seven-year Plan to 60 per cent during the forthcoming Five-year Plan; it was originally planned to provide little more than one-third when targets were set for the Seven-year Plan. Some of the failure of the collectives to meet their share of the total investment burden was due to the conversion, after 1958, of collectives into State farms; but this transfer provides by no means the whole answer. If the collectives were to fail again in their planned obligation during the new Five-year Plan, much of the farm programme would be in jeopardy once more. There is therefore good reason to remain sceptical about the new programme of which some additional data have become available since the Plenum held in March, 1965.

Food and farming at the 23rd Party Congress

The directives for the new Five-year Plan, presented in draft in February 1966, and approved during the 23rd Party Congress six weeks later, confirmed in all essentials the farm policy as set out by

Brezhnev in March 1965. As expected, the agricultural output targets were scaled down below the levels which Khrushchev had tried to attain. In fact, farm production is not expected to be larger in 1970 than Khrushchev had planned it to be by 1960. The goals of the Seven-year Plan were based, rather foolishly, on the exceptionally favourable crop of 1958. This kind of mistake has been avoided; the targets of the new plan are based on the average performance of the last five years. Annual fluctuations will thus seem less alarming than in the recent past. At a rate of 4.5 per cent a year, based on the average of 1961 to 1965, the sights have been set high, and setbacks must be expected. A certain ambiguity can be detected in the Plan about the extent to which farm labour is assumed to migrate from rural to urban areas. In fact, the need for farm hands might well increase rather than decline, if agriculture is to be intensified as much as is implied by the planned increase in the use of such farm requisites as fertilizers.

At the Plenary Session of the Central Committee held in September 1965, Brezhnev criticized certain government departments for delaying or frustrating the implementation of the farm policy that had been approved at the March Plenum. However, if last year Brezhnev and Kosygin did not see entirely eye to eye on matters of economic priorities, no disagreement was discernible during the proceedings of the 23rd Party Congress. The innovation for which Brezhnev may be remembered best was his proposal to introduce a guaranteed monthly pay for members of collective farms at the rates in force on State farms. If this proposal were put into effect, it would amount to an annual outlay of 6,000 million roubles – a large sum indeed, which collective farms can hardly be expected to find from their own funds. Not surprisingly, the project was not endorsed by the Party Congress. More may be heard about it when the new model statute is considered at the congress of collectives for which no official date has yet been given (though the Ukrainian kolkhoz chairman Buznitsky mentioned in the debate that it will be held at the end of 1966). All decisions regarding the role of the private sector and the relations between collectives and State farms were thus deferred for another nine months; for the present, the private plot is to be kept intact as a source of farm income. At the same time the consumer is to be given a better deal than in the past. The consumption of food is to rise in the next five years; the increase is to range widely from one-sixth in the case of milk and dairy produce to over one-half in the case of fish and fish products. Certain food prices are to be reduced in the course of the new plan, but no details have yet become known. These and other aspects of the

plan require further clarification before a full assessment will be possible.

The lessons of the past

An assessment of this kind is best undertaken on the basis of the farm record that has been compiled during the years since Stalin's death. In agriculture, as anywhere else, development has to be seen in its proper perspective and judgement has to be kept free from the emotional influences of the moment. Much has been published about success and failure during the 'Great Decade' of Soviet agriculture;⁴ Brezhnev himself had a good deal to say about the mistakes of the past when introducing his new programme.⁵ He blamed his predecessor rather than the weather, but Khrushchev's order might well have been the reverse. The objective reviewer will consider the views of both without necessarily accepting either. Brezhnev (at one time First Secretary of the Party in Kazakhstan and thus not without experience in matters of farming under difficult conditions) considered that the law of proportional economic development had not been taken fully into account by his predecessor; that the rôle of material incentives had been disregarded; that procurement prices had been fixed arbitrarily; and that output targets had been laid down without sufficient provision of resources having been made for their fulfilment. He dissociated himself from "people, incompetent in science, who sometimes in the past took upon themselves the rôle of arbiters in disputes between scientists", and he sharply rejected "pettifogging tutelage" and "empty ostentation". These were harsh and justified criticisms, but did not add up to a comprehensive assessment.

To give Khrushchev his due, his farm policy must be divided into two clearly distinct periods. During the first five years, from 1953 to 1958 he was remarkably successful, mobilizing one of the untapped, but readily available reserves without touching any of the basic causes of Soviet agriculture's consumptive disease. It is worth remembering that Malenkov, whilst acknowledging the poor state of the livestock industry, regarded grain production as the only sector of the farm economy capable of satisfying the needs of the country. Khrushchev spent the first five years of his rule trying to make this claim true.

⁴ See Roy D. Laird (ed.) *The Great Decade in Soviet Agriculture*, Munich 1964; Nancy Nimitz, "The Agricultural Scene", *Problems of Communism*, Vol. XIV, no. 3; Jerzy F. Karcz, "The New Soviet Agricultural Programme", *Soviet Studies*, Vol. XVII, No. 2, October 1965

⁵ L. I. Brezhnev, Report to the March 1965 Plenum, *Pravda*, 27 March 1965

During these years, thanks to the mobilization of marginal lands on a truly unprecedented scale, he increased the country's sown acreage by one-quarter, and the farm output by one-half. The outlay was on an equally enormous scale, but the financial rewards were also substantial. Capital investment and capital stock were increased two and one-half fold and twofold respectively. Procurement prices were doubled and disposable farm earnings in cash and kind were raised by 50 per cent. These were momentous achievements which might have turned the head of any man. It is worth recalling that India shifted its investment priorities from agriculture to industry when farming had done exceptionally well during its first Five-year Plan following independence. It is a mark of immature and unbalanced economies that they move in fits and starts, and it is a mark of their leaders' attitudes that they tend to be easily impressed by extreme changes and to draw conclusions from them. This certainly was so in Khrushchev's case. His shifts in economic policy to industry and in budgetary expenditure to science and defence were certainly premature.

Some of those analysing Soviet agricultural events in the years after Stalin's death warned against minimizing the possibilities of the virgin lands campaign. In an emergency, such as the man-made grain crisis of the spring of 1954, following the four- to four-and-one-half- fold increase of livestock procurement prices, it was the right policy to mobilize the reserves of marginal areas. It would have remained a sound decision, had it been supplemented by setting up forthwith a large-scale fertilizer industry so as to prepare the traditional grain-growing areas to take the place of the virgin lands if and when they began to give out. If the political crises over Berlin and the arms race with the United States had been avoided, there might well have been ample resources to support the marginal land scheme by a chemical programme which might have allowed the intensification of Soviet agriculture five years ahead of its eventual schedule. In that event Khrushchev might have reaped the political benefits from a decade of success in agriculture. In reality his great initial success turned into failure on an equally grandiose scale.

The danger signals, which ought to have been seen after the good crop of 1956, were ignored. The turning point came with the prospect of an all-time record harvest in 1958, leading to the abolition of the machine tractor stations, the introduction of maize and the abolition of ley farming on a vast scale. When the MTS were dissolved, this step was equated by some observers with the beginning of the end of Communism. It was nothing of the kind. It was a sensible step in that it

did away with an outmoded and oppressive means of taxation at source; it was at the same time a dangerous measure in that it burdened collectives with the purchase of machines well beyond their means. More important still, as the MTS disappeared, so did the system of differential payment for services rendered which had operated, though crudely, as a substitute for a direct land rent – something which is anathema to Communist doctrine. After the abolition of the MTS, no alternative was created to take the place of the disappearing substitute. As a result farms operating under favourable natural or economic conditions began to prosper whilst others lagged behind badly. A dangerous cleavage developed in the countryside.

Other mistakes were committed. The drive to catch up with the United States might have been regarded as a joke, had it not been for its serious consequences. The slogan was probably conceived when Khrushchev was locked in a political life-and-death struggle against men whom he later branded as an “anti-Party group”. Whereas Malenkov had promised the nation enough bread, Khrushchev undertook to provide the butter and meat to go with it. When he had succeeded in bringing the Central Committee majority to his side and had gained the position of supreme leadership, instead of abandoning a convenient vote-catching slogan, he turned it into the basis of his ‘Great Decade of Soviet Agriculture’. Scientists and economists tried in vain to convince him that it would take 15 to 20 years rather than four to five years to catch up with the United States in per capita food production or consumption. Where technical and financial resources proved to be insufficient, Khrushchev relied, increasingly, on organizational solutions and on the political leadership which the Party was supposed to provide in the countryside. In fact, Party cadres and government officials, interfering arbitrarily and unable to understand the complicated interplay of natural and economic forces in farming, became more and more divorced from the affairs of the land. In the last years of Khrushchev’s rule no effective overall organizational supervision of State farms and collectives was discernible. The conversion of collectives into State farms and the enlargement of both were probably not even among Khrushchev’s worst mistakes, though many farms became unwieldy and unmanageable. Khrushchev’s interference with the private sector of the farm economy was probably his greatest psychological error, particularly as it coincided with a halt, if not a decline, in peasant incomes. There were other errors of a technical or economic nature. Whilst the area under crops continued to increase slightly, the pattern of land utilization and the rotation of crops were

wrong in many instances. The expenditure on farm equipment was insufficient and the price ratios were unrealistic. Whilst the maize campaign provided, besides much weed, a welcome supplementary feeding-stuff for the dairy herds, it was badly lacking in vegetable protein. As this was to be supplied by crops grown on ploughed-up fallows and marginal grass land, the lack of fertilizers made itself badly felt. There was no other panacea in sight.

In the outcome, the Seven-year Plan saw an increase of farm production over 1958 of a mere 14 per cent, at an increase twice as high in capital investment, largely in the form of farm buildings, and in mineral fertilizers. If the weather was inclement in certain areas, it was responsible in part only for the setbacks suffered. The lack of any tangible financial rewards, in spite of continued expenditure on a large scale, was to be blamed primarily on the mistakes of man rather than the hazards of nature; and Khrushchev was more responsible than any of his contemporaries. The crop failure of 1963 which necessitated the import of 12 million tons of grain and led to a decline in pig numbers by 30 million (or over 40 per cent), was more than the revenge of nature; it proved how vulnerable Soviet agriculture has remained, despite an investment, since Stalin's death, of close on 80,000 million roubles. As the net increase in farm production is unlikely to amount to more than 80,000 million roubles (at constant prices), this has indeed been an expensive lesson.

Prospects for food and farming in 1970

Whereas the gross output of farm production was planned to increase by 70 per cent during the Seven-year Plan, it rose by only 14 per cent. As plans have gone wrong to such an extent in the past, it would seem prudent to calculate independently the likelihood and degree of success during the planning period that lies ahead. In the absence of Soviet documentation on many aspects of the forthcoming Five-year Plan, any independent calculation is bound to be in the nature of a rough guess rather than a precise prediction. Western assessments are few, but a study by Johnson and Kahan⁶, covering the Seven-year Plan, may serve as a useful guide to any projection as far ahead as 1970. The authors of this analysis expected long-term advances in agriculture as a result of the priority given to it by the Soviet government, but they did not accept the planned goals for many of the main commodities.

⁶ D. Gale Johnson and Arcadius Kahan, *The Soviet Agricultural Program and Evaluation of the 1965 Goals*, the Rand Corporation, Santa Monica, California, 1962

They reckoned that the sown area would increase by no more than one-tenth; that the investment target would be met; that the industrial crops would be given priority; that the fertilizer programme would remain unfulfilled to the extent of almost one-third; and that the output of livestock produce would increase by more than one-third. Assuming normal weather, they calculated that the aggregate output of eleven main farm commodities would increase between 1958 and 1965 by almost one-quarter compared with a planned increase of over three-fifths at constant 1958 procurement prices or by as much as 70 per cent, in terms of gross output and including changes in stocks, as claimed by Khrushchev. In fact the total increase in the volume of net output during the Seven-year Plan is unlikely to be more than 10 per cent; it may be less. It might serve as a warning that even the most cautious and painstaking analysts, in spite of scaling down substantially the original plan targets, over-estimated the chances of success of the Seven-year Plan, though at the time of their assessment the main lines were discernible of the policy pursued by Khrushchev during the second half of his term of office.

A word may be appropriate here about the statistical raw material on which to base any assessment of Soviet farm performance. Soviet statistics have been recorded and critically assessed by a number of western students—most prominently among them Naum Jasny,⁷ who wrote when official claims were accepted all too readily in the West. In the meantime others have continued these critical analyses.⁸ When the practice of expressing crop yields in ‘biological’ terms was abandoned by Stalin’s successors, it was held by many western observers that a flat allowance for moisture and alien ingredients would reduce official claims, expressed in terms of bunker weight, to the western concept of ‘barn yield’. If this was a correct procedure in 1953, it had become questionable by 1958 when grain had become, once again, an indicator of political success – besides being the chief ingredient of the human diet. Unhappily it does not seem possible to apply a constant conversion factor to Soviet claims. In years of good harvests the exaggeration seems to be greatest, whilst it is probably smallest in the case of a poor crop. It would be wrong to assume that the bias is always up-

⁷ Naum Jasny, *The Socialized Agriculture of the U.S.S.R.*, Stanford, California, 1949

⁸ Luba O. Richter, “Some Remarks on Soviet Agricultural Statistics”, *The American Statistician*, June 1961; Arcadius Kahan, “Soviet Statistics of Agricultural Output”, and Commentary by Luba O. Richter, in Roy D. Laird (ed.), *Soviet Agricultural and Peasant Affairs*, Laurence, Kansas, 1963

wards. The grain harvest of 1963 which symbolized Khrushchev's failure in agriculture may well have been minimized when it was announced by his successors. In years in which pressure to deliver grain is particularly great, the temptation must be great also to under-estimate the potato crop, the chief alternative source of carbohydrates in pig feeding. It seems most improbable, for instance, that less than 70 million tons of potatoes were harvested in 1962, a year when there was an exceptionally good grain harvest and the highest grain procurement rate ever recorded (45 per cent of claimed production). Nor can the possibility be ruled out that pig numbers in the private sector are at times understated, e.g., after the bad grain harvest of 1963. Revisions of grains and other crops necessitate, of course, corresponding adjustments of the official claims for livestock products. At the Plenary Sessions held in January 1961 and November 1962 Khrushchev criticized outspokenly the statistical malpractices and "fraudulent recordings". His remarks were by no means limited to crops. Shortages of meat and dairy produce which have occurred at times during the last decade, particularly in the second half of Khrushchev's rule, cannot be squared with certain official claims. In this respect western analysts have not been as sceptical of official Soviet data as seems warranted in view of the evidence that has accumulated in the last ten years. Official claims concerning consumption levels also seem to have been accepted all too readily by western observers.

The question may well be asked how meaningful adjustments can be, if the statistical raw material is as faulty as these remarks imply. The answer lies in a combination of statistical balances, each of which may serve as a check on all other related calculations. Ideally, calculations should be made covering output and use of all major foodstuffs as well as those of feeds and fertilizers. Of these the feed balance is bound to be the least satisfactory, particularly in a country which publishes next to nothing about the feeding-stuffs derived from its vast areas of grassland, much of which is of very poor quality. The food balance should be checked against cost (at retail prices) of the food consumption basket and its share in total personal income or expenditure. Finally, Soviet claims and achievements may usefully be compared with the recordings of countries with comparable farming conditions but more reliable statistical data than those provided by the Soviet authorities. Whilst it would be presumptuous to claim perfection – which is impossible where the original data are as open to doubt as in the case of the Soviet Union – a combined statistical operation of this kind tends to eliminate the improbable and to narrow down considerably the area

of what seems possible. Much, though not all, of what has been described here, was done in the "Evaluation of the 1965 Goals" undertaken by Johnson and Kahan. Further refinements should be capable of reducing still more the margin of uncertainty in any projection of food and farming as far ahead as 1970.

It would be tedious to explain in detail the techniques that have been employed in the estimate for 1965 and the projection of likely results of Soviet food and farming in 1970. Suffice it to say that the methods employed by Johnson and Kahan are suitable as one of the major checks on various calculations designed to reduce the margin of error – which is bound to be large in any calculation of this kind. The allowance made for peculiarities of Soviet definitions, such as 'bunker weight', and for statistical exaggerations, not to say "fraudulent recordings" have to be more liberal, however, than those of the two American authors; nor can conversion factors be applied to official grain figures without variation from year to year. Finally, the need for downward revisions may not necessarily be limited to grains; they may also have to be applied to other arable crops. Of necessity they must be accompanied by corresponding adjustments of the official Soviet claims for milk and meat, the output of which depends largely on the amount of crops available for feeding purposes. Food balances, the calculation of which is familiar in many countries,⁹ tend to reveal any sizeable discrepancies between output claimed and its possible use for human and animal consumption. Feeding balances serve as a useful check, but it must be emphasized that the records of output and quality of fodder supplied by non-arable grasses in the Soviet Union are wrapped in almost total obscurity. These may provide as much as one-third of the fodder units supplied (though less than one-third of the vegetable protein digested by the animals kept on Soviet farms). As livestock contributes not only to the human diet but also to the balance of nutrients in the soil, some advantage is derived from calculating the likely supply of farm manure, particularly as this increases with the rise in livestock numbers and thus does so less rapidly than the output of fertilizer factories. The overall trend of nutrients supplied to plants is therefore more modest than fertilizer figures tend to suggest. Finally, there is the comparison with the performance as recorded in countries other than the Soviet Union. Although natural and economic condi-

⁹ J. H. Richter *et al.*, *Agricultural Production and Food Consumption*, OFAR, U.S. Department of Agriculture, Washington, 1951; F.A.O., *Food Balance Sheets*, Rome, 1963; U.S. Department of Agriculture, *Food Balances for Eight East European Countries, 1959-1961*, Washington, 1965

tions in the United States differ substantially from those in the Soviet Union, there is virtue in a comparison between these two countries, if for no other reason than to fall in with the Soviet Union's desire to measure its own farm targets – if not its achievements – against those of the United States.

It would be a mistake to limit calculations, designed to provide the basis of forecasts, to an assessment in physical terms. The Soviet documentation of prices at wholesale and retail levels is even more restricted than it is in the sphere of production; in particular, far too little has been made known about the differences between basic prices as officially fixed and actual prices paid or charged. This applies to both farm and consumer prices. Some western studies¹⁰ have thrown a considerable amount of light on this, but global calculations unhappily have to ignore regional or temporary price variations; the same applies, unfortunately, to differences in prices paid to collectives and State farms, as not enough is known about the quantities to which these different prices apply. Little can be done to eliminate certain crudities due to this lack of data, and it would be wrong to think that any errors resulting from it would be of the same order over a period of years. The deviations from basic prices of farm products and farm requisites, which were permitted during the second half of Khrushchev's rule, were unquestionably responsible to some extent for the stagnation, after 1958, of farm output and farm income. In spite of the shortcomings due to lack of price data, output can be expressed at current and constant prices and thus its volume and value can be estimated. Lastly, there is a check on official Soviet claims introduced by calculations of the cost of the average food basket and its likely share in total average family expenditure. Here the student finds himself once more rather badly served by official Soviet sources. Industrial wage data have been published, for the first time in more than thirty years, but retail prices are not yet attainable from official sources. Whilst some 50,000 family budgets are reportedly collected, the largest sample recorded in recent years included a mere 100 urban families earning and spending well above the level possible for the average industrial working-class family. Although the sample was thus unrepresentative, it revealed certain trends which are likely to gain in importance as urban incomes rise. It is no easy task to calculate the various balances described and to in-

¹⁰ Nancy Nimitz, "Soviet Agricultural Prices and Costs" in *Comparison of the United States and Soviet Economies*, Washington, 1959; Jerzy F. Karcz, *Soviet Agricultural Marketings and Prices, 1928-1954*, the Rand Corporation, Santa Monica, California, 1957

produce the various checks suggested. Nor should it be thought that the result can be one set of firm figures, and one set only. However, although several variants might be presented with some justification, they are unlikely to differ greatly, and certain extremes can in any event be excluded.

Independent projections

If the techniques described above are applied to 1970, they provide projections of food and farming which differ from official Soviet targets. In fact, none of the goals set either by Khrushchev before his departure from the political arena, or by Brezhnev and Kosygin since then, is likely to be reached. Unless the burden of investment is lightened, particularly in the collective sector of farming, the State will have to step in, once again. Unless the targets of production and procurement are revised downward, there will be disappointments in several sectors of the farming industry. Finally, unless urban incomes are raised or retail prices are considerably reduced, there is no likelihood of diets becoming as varied as the plan suggests. If incomes increase at current rates, even a modestly improved diet (excluding luxuries and drink) will absorb half the future average industrial income. The scope for a reallocation of both public and private resources is thus fairly limited. The sights have been set too high, and they will have to be lowered when final plan targets are made known, if disappointments are to be avoided.

Before giving the results of the calculations in any detail, it may be as well to state certain assumptions on which they have been based. The population of the Soviet Union, which amounts at present to approximately 230 millions, has been estimated, in line with Soviet forecasts, to reach 250 millions by 1970; it may well not do so, in which case total requirements for human consumption will be correspondingly smaller. The rural population (whose share in the total fell below one-half for the first time in 1960) may be assumed to remain fairly stationary at about 107 million, the natural increase accruing to the urban population, which may grow during the next five years from 123 to 143 millions. Agricultural labour (including workers minding their private plots), still accounts for almost two-fifths of the total labour force. It is unlikely to suffer a marked decline during a period in which the demand for managers, extension workers, machine operators and cattlemen will increase rather than decrease. Some three-quarters of the agricultural labour force is still tied up in collec-

tives and private plots attached to them. As no major institutional innovations are contemplated, there is unlikely to be any great change in this respect. The density of labour on the land is such that there is one worker for little more than four hectares of sown area. No major change is to be expected in the share which State farms and collectives have in the overall operation of Soviet farming. At present some 10,000 State farms with an average arable area of 10,000 hectares each occupy slightly less than half the arable land of the country; some 55 per cent of the total area is farmed by approximately 38,000 collectives, each holding on average close on 3,000 hectares of arable land. State farms have an average labour force of 850 men and women (or one labourer per 12 hectares), whilst collectives employ an average labour of 500 on the collective land (or one labourer per six hectares), but there is usually an equally large number of people cultivating the private plots (thus altering the labour: land ratio to close on one per three hectares). The supply of power-driven machines, tools, working animals and productive livestock per man employed is on average twice to three times as large on State farms as it is on collectives. Here lies Soviet Russia's largest untapped agricultural reserve. It is unlikely to be mobilized to any great extent, as long as the private plot provides approximately one-third of the total farm output, one-sixth of the total market supply and one-third of the total income of the members of collectives. There is no reason to think that the waste of manpower which has been a feature of Soviet farming for five decades will be reduced substantially in the next five years.

The pattern of land utilization may be expected to undergo certain changes in the course of the current plan. The unfavourable effects of Khrushchev's virgin land, maize and plough-up campaigns are likely to be reduced as far as possible, but the need for green fodder and silage will prevent a full return to the cropping pattern of 1953. Grains are likely to absorb, as in the past, three-fifths of the sown area and bread grains two-thirds of the total grain acreage. Summer grains, which have taken up well over two-thirds of the whole grain area in recent years and have contributed to the difficulties of spring cultivation, might well be curtailed slightly in favour of winter crops, e.g., in the Ukraine. The present pattern indicates an extensive rather than intensive crop rotation. There is no dramatic change of this in sight. Irrigated agriculture, a most costly form of farming, is unlikely to progress as much as the Plan anticipates; nor is it likely to be available to crops other than cotton, vegetables and green fodder. The switch from oats to barley, which Khrushchev instigated, is likely to be

reversed. The livestock sector will receive increased attention. The size of the herds and the output of meat and milk will be influenced, however, by the way in which farm managers and chairmen of collectives interpret the price relations created as a result of Brezhnev's decisions of March 1965. Whereas it may be profitable in some of the chief grain-growing areas to aim at earning a bonus of 50 per cent for surplus grain deliveries, elsewhere the balance will probably be in favour of increased feeding of home-grown and purchased concentrated feeding-stuffs. The pig : grain ration is now likely to be 17 : 1 (against 7 : 1 in the United States), i.e., more favourable than at any other time in Soviet history. On the other hand, feeding-stuffs continue to be in short supply in the private sector. Whereas some 45 per cent of total milk and meat supplies are produced in the private sector, less than one-third of all fodder available appears to reach the livestock held by private individuals. Total supplies of feeding-stuffs are unlikely to increase within the next five years by more than 20 per cent; they may increase by less. The new purchase prices and other concessions offered by Brezhnev in March 1965 can be regarded as the chief factors leading to improvements in animal farming output. Against this, there is the fact that a growing portion of the collective farm income will have to be diverted into the indivisible funds so as to be available for increasing investments. As State farms are expected to become independent of subsidies, they will have to face similar diversions of profits into capital construction projects. These factors are likely to have a restraining effect not only on farm incomes, but also on the farming community's readiness to aim at increased production.

Expenditure in the farm industry has been tilted heavily in recent years in favour of major construction programmes. Of the total collective farm investment as planned for the period from 1959-65, over two-thirds were earmarked for construction, of which the building of cattle sheds and pigsties formed the largest item. A great amount of financial and material resources has been tied up in this instead of being available for current expenditure. Many 'white elephants' have resulted all over the Russian countryside. Substantial economies will be necessary if the output of farm produce is to be helped instead of being hindered. The most important input will be in the form of farm equipment and chemical fertilizers. During the second half of Khrushchev's rule the supply of farm machinery was badly neglected. If the programme of mechanization as outlined at the Plenary Session held in February 1964 were to be implemented, the tractor park would have to be increased from approximately 1.5 million units at the beginning

of the Five-year Plan to over 2.5 million units at its end; and the number of lorries would have to increase from 1 million to over 1.5 million. These are targets which seem hardly attainable if allowance is made for inevitable replacements. The same applies to some other farm equipment. The fertilizer programme, though scaled down, is still ambitious. By 1970 there may be an output of 50 million tons (against a Plan target of 64 million tons); allowing for exports and waste there may be no more than 40 million tons available, equal to 9.5 million tons in terms of plant nutrients. Whereas the supply of commercial fertilisers might increase by approximately 90 per cent in five years – a formidable achievement indeed – total supplies of plant nutrients from natural and commercial sources are unlikely to increase by more than 60 per cent.

So large an increase in farm input is bound to lead to an increase in crop yields, and thus indirectly in milk yields and carcass weights. Grain yields may increase by 30 per cent and livestock yields by as much as 25 per cent over the level attained in 1965, though not that of 1961 to 1965. How much the increase will in fact be, will depend ultimately on the effective use of farm requisites. This in turn will depend to a large extent on the degree of freedom allowed by the authorities to the most competent men in the farming industry. At present the waste of professional skill is great. Only every twentieth Soviet graduate specialises in agriculture and only one-half of those trained in agriculture actually enter employment in the farming industry. Ten years of priority given to agriculture have had only a limited favourable effect in this sphere. Even if Party interference is reduced, the reorganization of the farm administration may lead to a renewed tightening up of controls. This could have a detrimental effect on output.

The new Soviet leaders do not share Khrushchev's optimistic forecasts on the level of food consumption in 1970. At the 22nd Party Congress (October 1961) and again at the Plenary Session held in March 1962, Khrushchev promised production levels in 1970 needed to satisfy domestic requirements which were to amount to 44 kilos of sugar per head of population, 90 to 100 kilos of meat and 467 kilos of milk and dairy products (expressed in terms of milk). These targets, apart from being completely beyond the possibilities of Soviet farming as we know it today, bore no relation to the level of earnings of the Soviet citizen as it was known in 1961 or as it might be in 1970. Unless wages are increased greatly or retail prices are reduced substantially for the expensive items of the diet, there is no room in the family budget

for the purchase of a greatly improved diet. Although the Plan anticipates annual wage increases of 3·7 per cent, there is little likelihood of either substantial net income increases or price reductions, since a rising portion of the turnover tax is needed to meet the growing cost of farm production, and wage concessions can only be expected in direct proportion to improvements in productivity. The composition of the Soviet diet is therefore bound to continue to compare unfavourably with that customary in the United States, but also with the consumption levels maintained in Western Europe.

Khrushchev's promises of 1961 and 1962 followed his boast made in May 1957 that the Soviet Union would reach, if not surpass, the United States in the per capita output of meat and milk. Although the Soviet leaders are unlikely to repeat any boasts or promises of this kind, it seems worth recalling some of the comparisons between the two countries so as to measure the length of the road the Soviet Union has yet to travel before catching up with the United States in the sphere of food and farming. At present agriculture in the United States produces, with one-fifth of the Soviet farm labour force on an area equal to two-thirds of the Soviet sown acreage, a volume of farm products approximately 60 per cent larger than that of the Soviet Union. Whereas the crop area per head of the Russian population is almost 50 per cent larger than in the United States, the productive livestock per head of the Soviet population is only four-fifths of the corresponding figure in the United States. Yields of all major crops, as well as milk yields and carcass weights, are at best half as much in the Soviet Union as those attained in the United States. These results are attributable largely to the use in the United States of electricity at three times, and of tractors and fertilizers at five times, the level reached in the Soviet Union. The consumption per capita of livestock products in the Soviet Union amounts to little more than one-third of that customary in the United States. There is thus no prospect of bridging the gap by 1970 in any of the major spheres of food and farming.

The gap between the level of farm production and food consumption in the United States and in the Soviet Union is due only in part to differences in climatic and economic conditions. It cannot be understood fully unless it is recognized as being due largely to doctrinal errors that underlie the communist concept of farm policy and that have bedevilled the farm industry of the Soviet Union for almost five decades. It has not yet been understood fully by any of the Soviet leaders that farming, in contrast to industry, has to take into account weather and space as its chief limitations; otherwise the temptation

TABLE I
*Estimated Gross and Net Output of Farm Products
 in the Soviet Union*
 (thousand million new roubles at 1958 prices)

<i>Commodity</i>	1953-54 (<i>actual</i>)	1958-59 (<i>actual</i>)	1965-66 (<i>estimate</i>)	1970-71 (<i>projection</i>)
<i>Gross Output*</i>				
Grains	6.10	10.45	9.99	13.32
Potatoes	2.90	3.46	3.40	4.00
Fruit and vegetables	1.53	1.99	2.28	2.96
Sugar beet	0.55	1.28	1.41	1.69
Oilseeds	0.60	0.89	0.95	1.00
Flax	0.34	1.03	1.03	1.15
Cotton	1.31	1.47	1.70	2.04
Wool	0.80	1.11	1.22	1.56
Milk	4.31	6.92	6.90	8.60
Meat	6.16	9.11	11.37	14.25
Eggs	1.00	1.44	1.80	2.28
Total	25.60	39.15	42.05	52.85
<i>Net Output†</i>				
Grains	3.37	4.92	3.81	4.82
Potatoes	1.30	1.30	1.34	1.40
Fruit and vegetables	1.38	1.78	2.07	2.70
Sugar beet	0.54	1.20	1.29	1.53
Oilseeds	0.60	0.89	0.95	1.00
Flax	0.34	1.03	1.03	1.15
Cotton	1.31	1.47	1.70	2.04
Wool	0.80	1.11	1.22	1.56
Milk	3.28	5.00	5.00	6.20
Meat	4.52	6.58	8.77	11.37
Eggs	0.78	1.14	1.44	1.80
Total	18.22	26.42	28.62	35.57

* Based on production levels officially claimed or likely to be claimed

† Net of waste, seed, feed and statistical exaggeration

would have been resisted to increase rather than reduce the size of farms, whilst preference is being given increasingly to intensive livestock farming in place of extensive grain production. The cultivator of the land, unprotected by a roof and uninhibited by the watching

eye of a supervisor operating at close quarters, has to be left with a degree of freedom of decision unheard of in industry, except at the highest managerial level. Nor has it apparently ever been understood in the Soviet Union that in agriculture, in contrast to industry, the producer is invariably to a large extent also a processor of raw products and a consumer of finished goods. He has thus almost unlimited possibilities of changing his pattern of production and utilization, and of thereby denying the State the chance of effective control. Khrushchev, when faced with these dilemmas, invariably chose administrative measures in place of economic inducements. His successors have taken certain steps that may be to their advantage as well as to the benefit of the farming community; but they have not yet shown any signs of a real understanding of the errors underlying Soviet farm policies and practices. They have deferred any decisions on farm sizes, on the relationship of collectives and State farms and on the rôle of the private farm economy. When the present Charter for the collectives which was issued thirty years ago is replaced by a new statute at the Third Kolkhoz Congress to be held before the end of 1966, it may be possible to see a little more clearly what institutional changes, if any, are intended. At present, the Soviet leadership is unlikely to engage in institutional reforms whilst faced with the general problem of reallocating scarce national resources throughout the economy.

It may seem impossible to give due weight to the various assumptions underlying any projection of food and farming in 1970 and the many factors influencing it. If the attempt is made here to reach certain conclusions, they should not be taken to be more than indicators of the directions in which the farm industry of the Soviet Union is likely to move in the course of the next five years, and the level of production and consumption that is likely to emerge. If due allowance is made for the main factors influencing the industry, it seems unlikely that the total volume of growth and net output will rise, in the next five years, by more than 25 per cent beyond the level attained in 1965 (see Table 1). The annual rate of growth will thus be at best 4.5 per cent per year, or approximately one-half of the rate of growth anticipated by Khrushchev at the time of the 22nd Party Congress; it may well be less. Farm output could increase, in the course of the Five-year Plan, by as much as 30 per cent in the case of exceptionally favourable weather, but the increase could be as little as 15 per cent in adverse circumstances. On present showing the lower rate seems more probable. The Plan anticipates an annual growth rate of 4.5 per cent based on the average performance of 1961 to 1965 rather than on that of the dis-

TABLE 2

Estimated Food Balances for the Soviet Union in 1965
(million tons, kilograms per head, and calor:

<i>Commodity</i>	<i>Domestic produc- tion</i>	<i>Net trade</i>	<i>Domestic supply</i>	<i>Waste, seed, feed</i>	<i>Indus- trial use</i>
<i>1965-66 (Population 230 million)</i>					
Grains and pulses					
(as such)	110.00	+ 5.00	113.00*	58.50	4.00
(as flour)	..	..	..	..	..
Potatoes (fresh)	85.00	—	85.00	51.50	4.75
Sugar (refined)	7.00	+ 1.00	7.75†	0.25	0.60
Fruit and vegetables	25.50	—	25.50	2.50	—
Meat (dressed)	8.00	—	8.00	—	0.75
Fish (landed)	5.00	—	5.00	1.70	—
Milk (liquid)	48.00	—	48.00	4.50	20.50
Cheese	0.70	—	0.70	—	—
Eggs	1.20	—	1.20	—	—
Fats and oils (as such)	3.50	—	3.50	—	0.75
(pure)	..	..	..	..	..
* stocks + 2.00	..	..	..	..	..
† stocks + 0.25					

1970-71 (Population 250 million)

Grains and Pulses	140.00	- 7.00	130.00*	75.00	5.00
(as flour)	..	..	..	65.00	..
Potatoes (fresh)	100.00	—	100.00	65.00	5.00
Sugar (refined)	8.50	+ 1.50	9.80†	0.30	0.75
Fruit and vegetables	33.00	—	33.00	3.00	—
Meat (dressed)	10.00	—	10.00	—	1.00
Fish (landed)	6.00	—	6.00	2.00	—
Milk (liquid)	60.00	—	60.00	6.00	22.75
Cheese	1.00	—	1.00	—	—
Eggs	1.50	—	1.50	—	—
Fats and oils (as such)	4.50	—	4.50	—	0.75
(pure)	..	..	..	..	..
* stocks + 3.00					
† stocks + 0.20					

TABLE 3
Cost of Soviet Food Supplies
 (new roubles at retail prices)

	1953-54 (estimate)	1958-59 (estimate)	1965-66 (estimate)	1970-71 (projection)
<i>At 1938 prices</i>				
Bread	24.00	22.50	22.50	21.00
Flour	19.50	19.50	18.00	15.00
Potatoes	12.00	10.80	10.00	9.60
Sugar	15.00	21.60	28.20	32.90
Fruit and vegetables	40.00	42.50	50.00	60.00
Meat	28.00	36.40	44.10	50.40
Fish	9.60	11.50	17.40	19.20
Milk	16.00	24.00	20.00	25.00
Cheese	8.00	9.60	9.60	12.80
Eggs	4.90	6.30	7.00	8.40
Fats and oils	21.80	22.90	26.60	32.00
Total per head	198.80	227.60	252.40	286.30
<i>At current prices</i>				
Bread	20.80	22.50	24.00	21.00
Flour	19.50	19.50	18.00	15.00
Potatoes	7.50	10.80	10.00	9.60
Sugar	15.00	21.60	28.20	32.90
Fruit and vegetables	40.00	42.50	50.00	60.00
Meat	28.00	36.40	56.70	64.80
Fish	8.00	11.50	10.90	12.00
Milk	20.80	24.00	26.00	32.50
Cheese	8.00	9.60	9.60	12.80
Eggs	6.30	6.30	9.00	10.80
Fats and oils	23.80	22.90	27.90	34.00
Total per head	197.70	227.60	269.60	305.40
Total per family (of 3.5 persons)	692.00	796.50	943.50	1,069.00
Earnings per industrial worker	850.00	940.00	1,140.00	1,310.00
Earnings per family (of 1.6 industrial workers)	1,360.00	1,505.00	1,825.00	2,109.60
Cost of food supplies (in per cent of industrial family earnings)	51%	53%	52%	51%

TABLE 4

Supply and Requirement of Feeding-stuffs in the Soviet Union
(million tons of fodder units)

	1953-54 (estimate)	1958-59 (estimate)	1965-66 (estimate)	1970-71 (projection)
<i>Supply*</i>				
Concentrated fodder	28	40	50	67
Succulent fodder	8	35	42	45
Green fodder	60	70	65	75
Coarse fodder	45	55	55	60
Milk for calves	1	2	2	3
<hr/>				
Total per livestock units (tons)	142 1.8	202 2.2	214 2.1	250 2.2
<hr/>				
<i>Requirement†</i>				
Meat animals	66	96	128	149
Milk animals	38	57	58	78
Hens (egg-producing)	4	6	7	8
Draught animals	38	29	21	15
<hr/>				
Total	146	188	214	250
Surplus/Deficit	-4	+ 14	±0	±0

* 1 unit of concentrated fodder	=	1.00 fodder unit
1 unit of succulent fodder	=	0.15 fodder unit
1 unit of green fodder	=	0.20 fodder unit
1 unit of coarse fodder	=	0.35 fodder unit
1 unit of milk	=	0.35 fodder unit
† 1 unit of meat	=	10.0 fodder units
(1 unit of meat in 1970-71)	=	9.0 fodder units)
1 unit of milk	=	1.2 fodder units
1 unit of eggs	=	6.0 fodder units
(1 unit of eggs in 1970-71)	=	5.0 fodder units)
1 draught animal	=	2.5 tons concentrated fodder

TABLE 5
Supply of Plant Nutrients in the Soviet Union
 (million tons)

	1953-54 (estimate)	1958-59 (estimate)	1965-66 (estimate)	1970-71 (projection)
<i>Natural manure</i>				
Livestock units × 2.5 tons	195.00	230.00	260.00	275.00
Commercial fertiliser equivalent	9.75	11.50	13.00	13.25
<i>Nutrient equivalent</i>				
N	0.78	0.92	1.04	1.10
P ₂ O ₅	0.39	0.46	0.52	0.55
K ₂ O	0.78	0.92	1.04	1.10
Sub-total	1.95	2.30	2.60	2.75
<i>Commercial fertilisers</i>				
Commercial weight	6.50	10.60	20.00	40.00
Nutrient equivalent				
N	0.40	0.70	1.60	3.10
P ₂ O ₅	0.60	1.00	1.70	3.30
K ₂ O	0.50	2.50	5.00	9.50
Sub-total	1.50	2.50	5.00	9.50
<i>Total supply of plant nutrients</i>				
Nutrient equivalent				
N	1.18	1.62	2.64	4.20
P ₂ O ₅	0.99	1.46	2.22	3.85
K ₂ O	1.28	1.72	2.74	4.20
Grand Total	3.45	4.80	7.60	12.25

TABLE 6
Supply of Plant Nutrients per Hectare of Arable Land
 (Kilos)

	1953-54 (estimate)	1958-59 (estimate)	1965-66 (estimate)	1970-71 (projection)
Natural manure	10.2	10.5	11.8	12.0
Commercial fertilisers	7.8	11.4	22.7	41.3
Total	18.0	21.9	34.5	53.3

appointing year of 1965. This growth rate is unlikely to materialize; a rate of 5.5 per cent in the case of grain is even less probable. Kazakhstan's resources continue to be overtaxed; its grain delivery targets are therefore bound to remain unfulfilled. The target for irrigation, though scaled down below Brezhnev's original goal announced in March 1965, is unlikely to be reached; the same is true in respect of the drainage programme, which covers 6 million hectares of land.

The Soviet consumer will (following Tables 2 and 3) gain a modest improvement in the composition of his diet, in line with an equally modest increase in his net earnings. However, the consumption targets which are given in the directives of the Five-year Plan do not

TABLE 7
*Performance of Farming in the Soviet Union and the United States
in 1965*

	Soviet Union	United States	Soviet Union in per cent of United States
Agriculture labour force (per cent of total labour force)	36	7	510
Cropland (hectares per head of population)	0.95	0.65	145
Productive livestock (per head of population)	0.40	0.50	80
Grain yield (tons per hectare)	1.00	2.25	45
Milk yield (tons per cow)	1.45	2.90	50
Carcass weight (tons per animal)	0.09	0.15	60
Mechanical power (HP per hectare of arable land)	0.90	1.60	55
Electricity (KWh per hectare of arable land)	65	215	30
Tractors (per 100 hectares of cropland)	0.70	3.70	20
Fertilisers (tons per hectares of cropland)	1.70	7.60	20
Agricultural output (Soviet Union = 100)	100	160	60
Pig : grain farm price ration	17 : 1	7 : 1	245
Sugar : potato retail price ration	12 : 1	2 : 1	600
Butter : potato retail price ratio	44 : 1	10 : 1	440

seem within reach. The goals set for sugar and meat, though high, may be attainable; those set for fish, fruit and vegetables, ranging from 35 to 60 per cent, seem unrealistic, since the additional movement of 3 million tons of fish and 15 million tons of fruit and vegetables would probably overtax the transport and refrigeration facilities available for highly-perishable foodstuffs. The supplies of farm requisites (as Tables 4, 5 and 6 show) such as fertilizers and feeding-stuffs, are also unlikely to become available in the quantities envisaged by the Plan. The knowledge of the benefits that can be derived from the use of fertilizers is far from general, and the waste of farm machinery is of stupendous dimensions. The gap that exists between the performance of agriculture in the Soviet Union and in the United States may shrink, but it will not disappear (see Table 7).

The targets set for farm output and food consumption are thus more ambitious than is warranted by the present state of the farm industry and its likely recovery during the next five years. If agriculture confounded the planners' forecasts, this could have far-reaching consequences. It might jeopardize the target of 7 per cent a year set for both the retail trade and the national income. It might also put out of reach the equally ambitious goal of 6.5 per cent for the annual increase planned for the income of collective farmers. The present state of depletion in the areas of dry farming in Central Asia makes occasional crop failures during the next five years almost a certainty. A sum equal to \$1,000 million may well be required for the purchase of grain before the Soviet Union's own farm production matches needs.

By Michael Kaser

BETWEEN 1939 and 1956 virtually the only sources of official statistics in the Soviet economy – usually in the form of percentage changes, rarely as absolute values – were plan-fulfilment reports and the speeches of members of the government. For those sixteen years after the last pre-war issues,¹ no abstract of economic statistics was published. The speeches of Khrushchev and Mikoyan at the Twentieth Congress of the CPSU announced a change in policy, and *Narodnoe khozyaistvo SSSR*; *statisticheskyy sbornik* was sent to press six weeks after the session. In the ten years since its appearance the total number of abstracts issued has risen to 431.²

All but 33 of these are in one or another of seven Western libraries notable for their substantial holdings of Soviet economic publications (viz. the Library of Congress, Washington, D.C.,³ the United Nations Library, Geneva, and five British libraries). The list brings up to date the library accessions recorded annually in *Soviet Studies*.⁴ All the abstracts published in Moscow are available in the libraries from which returns were requested. Of the missing volumes produced by union-republican or local authorities, six abstracts were issued in the Ukraine, four in the Russian Federation, three each in Latvia, Lithuania and Turkmenistan, two each in Armenia, Azerbaidzhan, Kirgizia and Tadzhikistan, and one in each other republic.

The list separates central from regional issues and classifies each group into volumes of general statistics (including demographic)

¹ The abstracts published in 1939 comprised a general compendium (*Sotsialisticheskoe stroitelstvo Soyuzov SSR*) and volumes on agriculture (*Sotsialisticheskoe selskoe khozyaistvo SSSR*) and on foreign trade (*Vneshnyaya torgovlya SSSR za dvatsat let, 1918-1937 gg.*)

² Including *Pechat SSSR v 1954 godu*, published in 1955, which did not cover economic statistics

³ With location of the book elsewhere in the USA if not held by that library

⁴ Including that in *Soviet Studies*, January 1966

statistics,⁵ and those devoted to branches of economic or social activity ("sector abstracts"). The cumulative distribution of the issues of the decade is shown in the following table.

	General	Sector	Total
All-Union	20	53	73
Regional	301	50	351
of which:			
Inter-republican	1	—	1
RSFSR	141	7	148
Ukraine	41	6	47
Belorussia	8	1	9
Uzbekistan	11	1	12
Kazakhstan	7	2	9
Georgia	16	—	16
Azerbaijan	11	2	13
Lithuania	8	6	14
Moldavia	9	2	11
Latvia	10	6	16
Kirgizia	11	1	12
Tadzhikistan	9	3	12
Armenia	5	3	8
Turkmenia	8	8	16
Estonia	5	2	7
International	7	—	7
Total	328	103	431

In the regional groups, issues dealing with the entire republic are put first, followed by those for an oblast, krai or ASSR in the alphabetical order of the English transliteration. The very few abstracts for individual towns follow immediately after the place for the oblast in which they are situated. Any abbreviated abstract (*kratky statistichesky sbornik*) is listed after all full versions. Unless otherwise stated, all books are in Russian (occasionally with a parallel text in the local language); when both a Russian and a separate local language edition have appeared, only the former is included. Regions of which the names were changed during the decade reviewed are listed under the contemporary designation (e.g., Chkalov, subsequently Orenburg; Molotov, subsequently Perm; and Stalingrad, subsequently Volgograd).

The list shows that over the ten years not every region below the

⁵ Abstracts dealing with the occupational distribution of females and related matters are treated as demographic

level of a union-republic has issued an abstract. On the basis of the administrative subdivision at the beginning of 1965, issues for an oblast, krai or ASSR have been as follows.

<i>Union-republics with regional subdivisions</i>	<i>No. of Regions</i>	<i>Abstracts published</i>		
		<i>None</i>	<i>Once</i>	<i>Twice or more</i>
RSFSR	71*	2	29	40
Ukraine	25	6	14	5
Belorussia	6	6	-	-
Uzbekistan	10	9	1	-
Kazakhstan	15	13	2	-
Georgia	3	-	-	3
Azerbaidzhan	2	-	2	-
Kirgizia	1	-	1	-
Tadzhikistan	1	1	-	-

* Five for which an abstract has been published are further subdivided into autonomous oblasts, for one of which a separate abstract has appeared.

The cooperation of Mr N. Field, Miss J. Fyfe, Mr G. Gömöri, Mr B. Hunter, Mrs M. Novicka, Mr G. Spinney, Dr S. Utechin, Mr J. Wall and Dr S. Yakobson is gratefully acknowledged. Holdings are indicated by the numbers below:

- (1) Library of Congress Washington, D.C.
- (2) United Nations Library, Geneva.
- (3) Centre for Russian and East European Studies,
University of Birmingham.
- (4) Institute of Soviet and East European Studies,
University of Glasgow.
- (5) British Library of Political and Economic Science,
London School of Economics.
- (6) Department of Printed Books, British Museum.
- (7) Bodleian Library, University of Oxford.

I. GENERAL ABSTRACTS

1234567	Dostizheniya Sovetskoi vlasti za 40 let v tsifrakh; st. sb.	Moscow, 1957, 370 pp.
1234567	Itogi Vsesoyuznoi perepisi naseleniya 1959 goda: SSSR Svodny tom.	Moscow, 1962, 284 pp.
1234567	Narodnoe khozyaistvo SSSR; st. sb.	Moscow, 1956, 262 pp.
1234567	Narodnoe khozyaistvo SSSR v 1956 g.; st. ezh.	Moscow, 1957, 296 pp.

- 1234567 Narodnoe khozyaistvo SSSR v 1958 godu; Moscow, 1959, 959 pp.
st. czh.
- 1234567 Narodnoe khozyaistvo SSSR v 1959 godu; Moscow, 1960, 896 pp.
st. czh.
- 1234567 Narodnoe khozyaistvo SSSR v 1960 godu; Moscow, 1961, 943 pp.
st. czh.
- 1234567 Narodnoe khozyaistvo SSSR v 1961 godu; Moscow, 1962, 861 pp.
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- 1234567 Narodnoe khozyaistvo SSSR v 1962 godu; Moscow, 1963, 735 pp.
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- 1234567 SSSR v tsifrakh; st. sb. Moscow, 1958, 468 pp.
- 1234567 SSSR v tsifrakh v 1959 godu; st. sb. Moscow, 1960, 302 pp.
- 1234567 SSSR v tsifrakh v 1960 godu; kr. st. sb. Moscow, 1961, 381 pp.
- 1234567 SSSR v tsifrakh v 1961 godu; kr. st. sb. Moscow, 1962, 400 pp.
- 1234567 SSSR v tsifrakh v 1962 godu; kr. st. sb. Moscow, 1963, 360 pp.
- 1234567 SSSR v tsifrakh v 1963 godu; kr. st. sb. Moscow, 1964, 223 pp.
- 1234567 SSSR v tsifrakh v 1964 godu; kr. st. sb. Moscow, 1965, 160 pp.
- I 34567 Zhenshchiny i deti v SSSR; st. sb. Moscow, 1961, 230 pp.
- 123456 Zhenshchiny i deti v SSSR; sb. sb., 2-oe Moscow, 1963, 203 pp.
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- I 3456 Zhenshchina v SSSR; kr. st. spr. Moscow, 1960, 102 pp.

II. ALL-UNION SECTOR ABSTRACTS

- 123456 Chislennost porodnogo skota v Moscow, 1961, 517 pp.
kolkhozakh i sovkhovov SSSR na I
yanvarya 1960 g.; st. sb.
- 123456 Chislennost skota v SSSR; st. sb. Moscow, 1957, 619 pp.
- I 3 567 Chislennost, sostav i razmeshchenie Moscow, 1961, 64 pp.
naseleniya SSSR.
- 2 Ezhegodnik po sakharnoi promyshlennosti Moscow, 1958, 279 pp.
za 1955/56 proizvodstvenny god
- 12 Gosundarstvennyye byudzhety soyuznykh Moscow, 1957, 174 pp.
respublik v pyatoi pyatiletke; st. sb.
- 1234 67 Gosundarstvenny byudzhety SSSR i Moscow, 1962, 223 pp.
byudzhety soyuznykh republik; st. sb.
- I 5 Itogi vyborov i sostav deputatov Moscow, 1961, 121 pp.
trudyashchikhsya 1961 g.; st. sb.
- 456 Itogi vyborov i sostav deputatov Moscow, 1963, 222 pp.
Verkhovnykh Sovetov, avtonomnykh
respublik i mestnykh Sovetov deputatov
trudyashchikhsya 1963 g.; st. sb.
- 1234 67 Kapitalnoe stroitelstvo v SSSR; st. sb. Moscow, 1961, 280 pp.
- 1234567 Kulturnoe stroitelstvo SSSR; st. sb. Moscow, 1956, 331 pp.

- 1234 67 Lesnaya promyshlennost SSSR; st. sb. Moscow-Leningrad, 1957, 295 pp.
- 12 4 6 Mestnye byudzhetny SSSR; st. sb. Moscow, 1960, 327 pp.
- 12 67 Pechat SSSR v 1954 godu; st. mat. Moscow, 1955, 172 pp.
- 123456 Pechat SSSR v 1955 godu; st. mat. Moscow, 1956, 191 pp.
- 1234567 Pechat SSSR v 1956 i 1957 godakh; st. mat. Moscow, 1958, 192 pp.
- 12 4567 Pechat SSSR v 1958 godu; st. mat. Moscow, 1959, 179 pp.
- 1234567 Pechat SSSR v 1959 godu; st. mat. Moscow, 1960, 180 pp.
- 234567 Pechat SSSR v 1960 godu; st. mat. Moscow, 1961, 180 pp.
- 234567 Pechat SSSR v 1961 godu; st. mat. Moscow, 1962, 178 pp.
- 234567 Pechat SSSR v 1962 godu; st. mat. Moscow, 1963, 184 pp.
- 234567 Pechat SSSR v 1963 godu; st. mat. Moscow, 1964, 175 pp.
- 23 567 Pechat SSSR v 1964 godu; st. mat. Moscow, 1965, 304 pp.
- 1234567 Pechat SSSR za sorok let 1917-57; st. mat. Moscow, 1957, 143 pp.
- 123456 Posevnye ploshchadi SSSR; st. sb. Moscow, 1957, 2 vol., 514 pp., 501 pp.
- 1234567 Promyshlennost SSSR; st. sb. Moscow, 1957, 446 pp.
- 1234567 Promyshlennost SSSR; st. sb. Moscow, 1964, 495 pp.
- I 345 Raskhody na sotsialno-kulturnye meropyriyatiya po gosudarstvennomu byudzhetu SSSR; st. sb. Moscow, 1958, 91 pp.
- 12 4567 Selskoe khozyaistvo SSSR; st. sb. Moscow, 1960, 665 pp.
- 123456 Sortovye posevy SSSR; st. sb. Moscow, 1957, 424 pp.
- I 7 Sovetskaya pechat. K 400-letiyu russkogo knigopechataniya; st. mat. Moscow, 1964, 45 pp.
- I 34567 Sovetskaya pechat v period mezhdud XX i XXII S"ezdami. Moscow, 1961, 168 pp.
- 123456 Sovetskaya trgovlya; st. sb. Moscow, 1956, 351 pp.
- 12 4 6 Sovetskaya trgovlya; st. sb. Moscow, 1964, 503 pp.
- I 34567 Srednee spetsialnoe obrazovanie v SSSR; st. sb. Moscow, 1962, 155 pp.
- 123 6 Tekhniko-ekonomicheskie pokazateli raboty ugolnykh razvozov, st. sb. Moscow, 1958, 122 pp.
- 1234567 Transport i svyaz SSSR; st. sb. Moscow, 1957, 259 pp.
- 123456 Ugolnaya promyshlennost SSSR; st. sb. Moscow, 1957, 368 pp.
- I 345 7 Vneshnyaya trgovlya SSSR za 1918-40 gg.; st. obzor Moscow, 1960, 1, 134 pp.
- 12345 Vneshnyaya trgovlya SSSR za 1955-59 gody; st. sb. Moscow, 1961, 623 pp.
- 1234567 Vneshnyaya trgovlya SSSR za 1956 god; st. obzor Moscow, 1958, 154 pp.
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- 1234567 Vysshee obrazovanie v SSSR; st. sb. Moscow, 1961, 255 pp.
- I 56 Zdravookhranenie v SSSR; st. spr. Moscow, 1956, 130 pp.
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- I2 56 Zhivotnovodstvo SSSR; st. sb. Moscow, 1959, 252 pp.

III. REGIONAL GENERAL ABSTRACTS

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- 1234567 Narodnoe khozyaistvo Srednei Azii v 1963 godu; st. sb. Tashkent, 1964, 372 pp.

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- I2 456 Itogi Vsesoyuznoi perepisi naseleniya 1959 godu: RSFSR Moscow, 1963, 456 pp.
- 1234567 Narodnoe khozyaistvo RSFSR; st. sb. Moscow, 1957, 370 pp.
- 123456 Narodnoe khozyaistvo RSFSR v 1958 godu; st. czh. Moscow, 1959, 508 pp.
- 123456 Narodnoe khozyaistvo RSFSR v 1959 st. czh. Moscow, 1960, 600 pp.
- 1234567 Narodnoe khozyaistvo RSFSR v 1960 godu; st. czh. Moscow, 1961, 572 pp.
- I23 56 Narodnoe khozyaistvo RSFSR v 1961 godu; st. czh. Moscow, 1962, 624 pp.
- 123456 Narodnoe khozyaistvo RSFSR v 1962 godu; st. czh. Moscow, 1963, 608 pp.
- 123456 Narodnoe khozyaistvo RSFSR v 1963 godu; st. czh. Moscow, 1965, 600 pp.
- 12345 7 RSFSR za 40 let; st. sb. Moscow, 1957, 223 pp.
- I2 45 7 RSFSR v 1959 godu; kr. st. spr. Moscow, 1960, 224 pp.
- I2 4567 RSFSR v 1962 godu; kr. st. sb. Moscow, 1963, 237 pp.
- I2 4567 RSFSR v 1963 godu; kr. st. sb. Moscow, 1964, 176 pp.
- I2 4 67 RSFSR v 1964 godu; kr. st. sb. Moscow, 1965, 127 pp.
- I23 6 Rossiiskaya Federatsiya, st. sb. Moscow, 1959, 239 pp.

- 12 Narodnoe khozyaistvo Adygeiskoi avtonomnoi oblasti; st. sb. Krasnodar, 1957, 178 pp.
- 12 5 Narodnoe khozyaistvo Altaiskogo kraja; st. sb. Barnaul, 1958, 299 pp.
- 123 Narodnoe khozyaistvo Altaiskogo kraja za 40 let sovetsskoi vlasti; st. sb. Barnaul, 1957, 111 pp.
- 12345 7 Narodnoe khozyaistvo Amurskoi oblasti; st. sb. Blagovoshchensk, 1957, 112 pp.
Narodnoe khozyaistvo Amurskoi oblasti v 1963 godu Khabarovsk, 1965, 212 pp.
- 12 4 6 Narodnoe khozyaistvo Arkhangel'skoi oblasti; st. sb. Arkhangel'sk, 1957, 147 pp.
- 1234 67 Narodnoe khozyaistvo Arkhangel'skoi oblasti; st. sb. Vologda, 1962, 159 pp.
- I 5 Narodnoe khozyaistvo Astrakhanskoi oblasti; st. sb. Saratov, 1958, 160 pp.
- 1234567 Narodnoe khozyaistvo Astrakhanskoi oblasti; st. sb. Saratov, 1963, 109 pp.
- 12 Osnovnye pokazateli narodnogo khozyaistva goroda Astrakhani; st. sb. Astrakhan, 1958, 58 pp.
- 23 56 Narodnoe khozyaistvo i kulturnoe stroitel'stvo Bashkirskoi ASSR; st. sb. Ufa, 1959, 170 pp.
- I 4 Narodnoe khozyaistvo Bashkirskoi ASSR; st. sb. Ufa, 1964, 292 pp.
- 12 5 Narodnoe khozyaistvo Belgorodskoi oblasti; st. sb. Orcl, 1957, 166 pp.
- 123 56 Narodnoe khozyaistvo Belgorodskoi oblasti; st. sb. Orcl, 1959, 254 pp.
- 123 56 Narodnoe khozyaistvo Bryanskoi oblasti; st. sb. Orcl, 1958, 195 pp.
- I 4 67 Narodnoe khozyaistvo Bryanskoi oblasti; st. sb. Orcl, 1962, 256 pp.
- 12345 7 Narodnoe khozyaistvo Buryat-Mongol'skoi ASSR; st. sb. Ulan-Ude, 1957, 156 pp.
- 1234567 Narodnoe khozyaistvo Buryatskoi ASSR; st. sb. Ulan-Ude, 1963, 240 pp.
- 12345 Narodnoe khozyaistvo Checheno-Ingushskoi ASSR; st. sb. Grozny, 1957, 132 pp.
- 123 6 Checheno-Ingushskaya ASSR za 40 let; st. sb. Grozny, 1960, 185 pp.
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- 123456 Narodnoe khozyaistvo Chelyabinskoi oblasti; st. sb. Chelyabinsk, 1957, 167 pp.

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- 2 4 Narodnoye khozyaistvo Chitinskoi oblasti; st. sb. Irkutsk, 1960, 200 pp.
- 123456 Narodnoe khozyaistvo Chkalovskoi oblasti; st. sb. Chkalov, 1957, 139 pp.
- 12345 Narodnoe khozyaistvo Chuvashskoi ASSR; st. sb. Cheboksary, 1957, 155 pp.
- 123 56 Chuvashiya za 40 let v tsifrah; st. sb. Cheboksary, 1960, 195 pp.
- 23 5 Narodnoe khozyaistvo Dagestanskoi ASSR; st. sb. Makhachkala, 1958, 120 pp.
- 123 56 Sovetsky Dagestan za 40 let; st. sb. Makhachkala, 1960, 158 pp.
- 123 6 Narodnoe khozyaistvo Gorkovskoi oblasti; st. sb. Gorky, 1960, 245 pp.
- I 345 Razvitiye otraslei narodnogo khozyaistva Irkutskoi oblasti; st. sb. Irkutsk, 1957, 199 pp.
- 12 5 Irkutskaya oblast; kr. ekonomicheskyy-statisticheskyy sb. Irkutsk, 1958, 166 pp.
- 1234567 Narodnoe khozyaistvo Irkutskoi oblasti; st. sb. Irkutsk, 1962, 262 pp.
- Naseleniye Irkutskoi oblasti po dannym Vsesoyuznogo perepis na 15. I. 1961 g. Irkutsk, 1961, 20 pp.
- 12 45 Narodnoe khozyaistvo Ivanovskoi oblasti; st. sb. Moscow, 1957, 171 pp.
- 1234567 Narodnoe khozyaistvo Ivanovskoi oblasti; st. sb. Ivanovo, 1962, 228 pp.
- 123 5 Narodnoe khozyaistvo Kabardino-Balkarskoi ASSR; st. sb. Nalchik, 1957, 113 pp.
- I 67 Narodnoe khozyaistvo Kabardino-Balkarskoi ASSR; st. sb. Nalchik, 1964, 211 pp.
- 12 45 Narodnoe khozyaistvo Kalininskoi oblasti; st. sb. Kalinin, 1957, 110 pp.
- Narodnoe khozyaistvo Kalininskoi oblasti v 1960 godu; st. sb. Moscow, 1961, 183 pp.
- 123 56 Narodnoe khozyaistvo Kalmytskoi ASSR; st. sb. Elista, 1960, 142 pp.
- 234567 Narodnoe khozyaistvo Kaluzhskoi oblasti; st. sb. Moscow, 1957, 143 pp.
- 123 6 Narodnoe khozyaistvo Kaluzhskoi oblasti v 1959 godu; st. sb. Moscow, 1960, 192 pp.
- 12 Narodnoe khozyaistvo Karelskoi ASSR; st. sb. Petrozavodsk, 1957, 158 pp.

- 12 567 40 let Karelskoi ASSR; st. sb. Petrozavodsk, 1960, 112 pp.
- 12 Narodnoe khozyaistvo Kemerovskoi oblasti; st. sb. Kemerovo, 1958, 141 pp.
- 123 5 Narodnoe khozyaistvo Khabarovskogo kraja; st. sb. Khabarovsk, 1957, 128 pp.
- 123456 Narodnoe khozyaistvo Kirovskoi oblasti; st. sb. Kirov, 1957, 136 pp.
- 123456 Narodnoe khozyaistvo Kirovskoi oblasti; st. sb. Gorky, 1960, 184 pp.
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- 12 456 Narodnoe khozyaistvo Komi ASSR; st. sb. Syktyvkar, 1957, 175 pp.
- I 34 67 Komi ASSR za 40 let; st. sb. Syktyvkar, 1961, 200 pp.
- 12 45 Narodnoe khozyaistvo Kostromskoi oblasti; st. sb. Kostroma, 1956, 154 pp.
- 123 5 Narodnoe khozyaistvo Krasnodarskogo kraja; st. sb. Krasnodar, 1958, 234 pp.
- 123 5 Narodnoe khozyaistvo Krasnoyarskogo kraja; st. sb. Krasnoyarsk, 1958, 332 pp.
- 123 5 Narodnoe khozyaistvo Kuibyshevskoi oblasti i goroda Kuibysheva; st. sb. Kuibyshev, 1957, 198 pp.
- 12 567 Narodnoe khozyaistvo Kuibyshevskoi oblasti za 1958-59 gody Kuibyshev, 1960, 175 pp.
- 123 6 Narodnoe khozyaistvo Kurganskoi oblasti; st. sb. Chelyabinsk, 1957, 147 pp.
- I 34567 Narodnoe khozyaistvo Kurganskoi oblasti; st. sb. Chelyabinsk, 1963, 270 pp.
- 12 Narodnoe khozyaistvo Kurskoi oblasti; st. sb. Orcl, 1958, 199 pp.
- 12 5 Narodnoe khozyaistvo Kurskoi oblasti; st. sb. Orcl, 1960, 139 pp.
- 12 45 Narodnoe khozyaistvo goroda Leningrada; st. sb. Leningrad, 1957, 162 pp.
- 12 5 Narodnoe khozyaistvo Leningradskoi oblasti; st. sb. Moscow, 1957, 142 pp.
- I 4567 Leningrad i Leningradskaya oblast v tsifrah; st. sb. Leningrad, 1961, 287 pp.
- I 34 67 Leningrad i Leningradskaya oblast v tsifrah; st. sb. Leningrad, 1964, 251 pp.
- 12 Narodnoe khozyaistvo Lipetskoi oblasti; st. sb. Lipetsk, 1959, 183 pp.

- 123 67 Narodnoe khozyaistvo Magadanskoi oblasti; st. sb. Magadan, 1960, 110 pp.
- 1234 6 Narodnoe khozyaistvo Mariiskoi ASSR; st. sb. Ioshkar-Ola, 1960, 220 pp.
- 123456 Narodnoe khozyaistvo Molotovskoi oblasti; st. sb. Molotov, 1957, 201 pp.
- 12 56 Narodnoe khozyaistvo Mordovskoi ASSR; st. sb. Saransk, 1958, 143 pp.
- I 3 67 Narodnoe khozyaistvo Mordovskoi ASSR; st. sb. Saransk, 1960, 119 pp.
- 1234567 Narodnoe khozyaistvo Moskovskoi oblasti; st. sb. Moscow, 1958, 271 pp.
- 123456 Narodnoe khozyaistvo Moskovskoi oblasti; st. sb. Moscow, 1964, 152 pp.
- 1234567 Moskva. Razvitie khozyaistva i kultury goroda; st. sb. Moscow, 1958, 146 pp.
- 12 456 Moskva v tsifrah (1959-62 gg.); kr. st. sb. Moscow, 1964, 159 pp.
- 12 5 Narodnoe khozyaistvo Murmanskoi oblasti; st. sb. Murmansk, 1957, 94 pp.
- 123 Narodnoe khozyaistvo Novgorodskoi oblasti; st. sb. Moscow, 1958, 164 pp.
- 123 Novgorodskaya oblast za 40 let Sovetskoi vlasti; st. sb. Novgorod, 1957, 51 pp.
- 123456 Narodnoe khozyaistvo Novosibirskoi oblasti; st. sb. Novosibirsk, 1957, 192 pp.
- 12 456 Narodnoe khozyaistvo Novosibirskoi oblasti; st. sb. Novosibirsk, 1961, 334 pp.
- 12 5 Narodnoe khozyaistvo Omskoi oblasti i goroda Omska; st. sb. Omsk, 1957, 171 pp.
- I 56 Orenburgskaya oblast za 25 let, st. sb. Orenburg, 1960, 203 pp.
- 123456 Narodnoe khozyaistvo Orlovskoi oblasti; st. sb. Orel, 1957, 136 pp.
- I 45 7 Narodnoe khozyaistvo Orlovskoi oblasti; st. sb. Orel, 1960, 282 pp.
- 123 56 Narodnoe khozyaistvo Penzenskoi oblasti; st. sb. Penza, 1958, 191 pp.
- I 4 7 Penzenskaya oblast v tsifrah; st. sb. Penza, 1963, 244 pp.
- 123 567 Narodnoe khozyaistvo Permskoi oblasti; st. sb. Sverdlovsk, 1961, 157 pp.
- 123 5 7 Narodnoe khozyaistvo Primorskogo kraya; st. sb. Vladivostok, 1958, 190 pp.
- 1234 6 Narodnoe khozyaistvo Pskovskoi oblasti; st. sb. Leningrad, 1960, 176 pp.

- 1234567 Narodnoe khozyaistvo Rostovskoi oblasti; Rostov n/D, 1961,
st. sb. 238 pp.
- 1234567 Narodnoe khozyaistvo Rostovskoi oblasti; Rostov n/D, 1964,
st. sb. 271 pp.
- 123 56 Narodnoe khozyaistvo Ryazanskoi oblasti; Moscow, 1958, 156 pp.
st. sb.
- 12 6 Narodnoe khozyaistvo Sakhalinskoi Yuzhno-Sakhalinsk,
oblasti; st. sb. 1960, 104 pp.
- 12 567 Narodnoe khozyaistvo Saratovskoi Saratov, 1959, 205 pp.
oblasti; st. sb.
- 1234567 Narodnoe khozyaistvo Saratovskoi oblasti Saratov, 1962, 326 pp.
v 1960 godu; st. sb.
- 123 Narodnoe khozyaistvo Severo- Ordzhonikidze, 1958,
Osetinskoi ASSR; st. sb. 131 pp.
- I Narodnoe khozyaistvo k 44-letiyu Ordzhonikidze &
avtonomii Severnoi Osetii; st. sb. Rostov n/D, 1965,
223 pp.
- 12345 Narodnoe khozyaistvo Smolenskoi Smolensk, 1957,
oblasti; st. sb. 107 pp.
- 123 56 Narodnoe khozyaistvo Smolenskoi Smolensk, 1958,
oblasti za 1957 god; st. sb. 160 pp.
- 12 4 67 Narodnoe khozyaistvo Smolenskoi Moscow, 1963, 238 pp.
oblasti; st. sb.
- 12345 Narodnoe khozyaistvo Stalingradskoi Saratov, 1957, 319 pp.
oblasti; st. sb.
- 12 Narodnoe khozyaistvo Stavropolskogo Krasnodar, 1959,
kraya; st. sb. 310 pp.
- 12 456 Narodnoe khozyaistvo Sverdlovskoi Sverdlovsk, 1956,
oblasti i goroda Sverdlovsk; st. sb. 151 pp.
- 1234567 Narodnoe khozyaistvo Sverdlovskoi Sverdlovsk, 1962,
oblasti; st. sb. 231 pp.
- 123 5 Narodnoe khozyaistvo Tambovskoi Tambov, 1957, 188 pp.
oblasti; st. sb.
- 1234567 Narodnoe khozyaistvo Tatarskoi ASSR; Kazan, 1957, 268 pp.
st. sb.
- 1234 6 Tatarskaya ASSR za 40 let; st. sb. Kazan, 1960, 172 pp.
- 123 56 Narodnoe khozyaistvo Tomskoi oblasti; Tomsk, 1957, 204 pp.
st. sb.
- 123 5 Narodnoe khozyaistvo Tulskoi oblasti; Tula, 1958, 216 pp.
st. sb.
- I Narodnoe khozyaistvo Tuvinskoi ASSR; Kyzyl, 1962, 260 pp.
st. sb.
- 12 5 Narodnoe khozyaistvo Tyumenskoi Omsk, 1958, 198 pp.
oblasti i goroda Tyumeni; st. sb.

- I 3456 Narodnoe khozyaistvo Tyumenskoj oblasti; st. sb. Tyumen, 1964, 253 pp.
- I23456 Narodnoe khozyaistvo Udmurtskoj ASSR; st. sb. Izhevsk, 1957, 135 pp.
- 2 567 Udmurtskaya ASSR za 40 let; st. sb. Izhevsk, 1960, 215 pp.
- 12 56 Narodnoe khozyaistvo Ulyanovskoj oblasti; st. sb. Ulyanovsk, 1957, 273 pp.
- 12 56 Narodnoe khozyaistvo Ulyanovskoj oblasti; kr. st. sb. Ulyanovsk, 1958, 200 pp.
- I 3456 Narodnoe khozyaistvo Ulyanovskoj oblasti; st. sb. Ulyanovsk, 1961, 271 pp.
- 12 5 Narodnoe khozyaistvo Velikolukskoj oblasti; st. sb. Veliki Luki, 1957, 127 pp.
- 12 Narodnoe khozyaistvo goroda Vladimira; st. sb. Vladimir, 1958, 39 pp.
- I23 5 Narodnoe khozyaistvo Vladimirskoj oblasti; st. sb. Gorky, 1958, 171 pp.
- I 4 67 Narodnoe khozyaistvo Volgogradskoj oblasti; st. sb. Saratov, 1962, 279 pp.
- I23 567 Narodnoe khozyaistvo Vologodskoj oblasti; st. sb. Vologda, 1960, 133 pp.
- I23 56 Narodnoe khozyaistvo Voronezhskoj oblasti; st. sb. Voronezh, 1957, 139 pp.
- I2 456 Narodnoe khozyaistvo Voronezhskoj oblasti v 1960 godu; st. sb. Voronezh, 1961, 140 pp.
- * 4 6 Narodnoe khozyaistvo Yakutskoj ASSR; st. sb. Yakutsk, 1964, 179 pp.
- 12 5 Narodnoe khozyaistvo Yaroslavskoj oblasti; kr. st. sb. Yaroslavl, 1957, 95 pp.
- 2 4 6 Yaroslavl. Razvitie khozyaistva i kultury goroda; st. sb. Yaroslavl, 1961, 139 pp.

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- I2 45 Dostizheniya Sovetskoi Ukrainy za 40 let; st. sb. Kiev, 1957, 152 pp.
- I 3456 Itogi Vsesoyuznoi perepisi naseleniya 1959 goda: Ukrainskaya SSR Moscow, 1963, 210 pp.
- I234567 Narodnoe khozyaistvo Ukrainskoj SSR; st. sb. Kiev, 1957, 534 pp.
- I2 5 7 Narodnoe khozyaistvo Ukrainskoj SSR; st. czh. 1957 g. Kiev, 1958, 264 pp.
- I23 67 Narodnoe khozyaistvo Ukrainskoj SSR v 1959 godu; st. czh. Kiev, 1960, 731 pp.

* Available in Hoover Institution, Stanford University.

- 12 45 7 Narodnoe khozyaistvo Ukrainskoi SSR v Kiev, 1960, 556 pp.
1960 godu; st. czh.
- I 56 Narodnoe khozyaistvo Ukrainskoi SSR v Kiev, 1962, 751 pp.
1961 godu; st. czh.
- 6 Narodnoe khozyaistvo Ukrainskoi SSR v Kiev, 1963, 675 pp.
1962 godu; st. czh.
- 12 56 Narodnoe khozyaistvo Ukrainskoi SSR v Kiev, 1965, 654 pp.
1963 godu; st. czh.
- 12 5 Sovetskaya Ukraina v tsifrakh; st. sb. Kiev, 1960, 356 pp.
- 123 67 Ukrainskaya SSR v tsifrakh v 1961 godu; Kiev, 1962, 270 pp.
kr. st. spr.
- 12 Ukrainskaya SSR v tsifrakh v 1962 godu; Kiev, 1963, 261 pp.
kr. st. spr.
- 2 4 6 Ukrainskaya SSR v tsifrakh v 1964 godu; Kiev, 1965, 654 pp.
kr. st. spr.
- 12 Narodnoe khozyaistvo Cherkasskoi Cherkassy, 1957,
oblasti; st. sb. 127 pp.
- 12 5 Narodnoe khozyaistvo Chernovitskoi Chernovitsy, 1959,
oblasti; st. sb. 172 pp.
- 123 56 Narodnoe khozyaistvo Dnepropetrovskoi Dnepropetrovsk, 1960,
oblasti; st. sb. 221 pp.
- 12 5 Narodnoe khozyaistvo Drogobychskoi Drogobych, 1958,
oblasti; st. sb. 159 pp.
- Narodnoe khozyaistvo Kharkovskoi Kharkov, 1965,
oblasti; st. sb. 124 pp.
- 1234567 Narodnoe khozyaistvo Khersonskoi Kherson, 1960, 207 pp.
oblasti; st. sb. (in Russian).
- I 5 Narodnoe khozyaistvo Kievskoi oblasti; Kiev, 1959, 256 pp.
st. sb.
- Narodnoe khozyaistvo Kievskoi oblasti; Kiev, 1960, 255 pp.
st. sb.
- 12 Narodnoe khozyaistvo goroda Kiev; Kiev, 1960, 151 pp.
st. sb.
- I 34 Narodnoe khozyaistvo goroda Kiev; Kiev, 1963, 182 pp.
st. sb.
- 12 Narodnoe khozyaistvo Kirovogradskoi Kirovograd, 1957,
oblasti; st. sb. 196 pp.
- 1234 Narodnoe khozyaistvo Krymskoi oblasti; Simferopol, 1957,
st. sb. 272 pp.
- 4 67 Narodnoe khozyaistvo Luganskoi oblasti; Donetsk, 1963, 263 pp.
st. sb.
- Lvovskaya oblast v tsifrakh v 1960 godu; Lvov, 1961, 179 pp.
kr. st. sb.
- 12 456 Narodnoe khozyaistvo Lvovskoi oblasti; Lvov, 1958, 339 pp.
st. sb.

- 234567 Narodnoe khozyaistvo Nikolaevskoi oblasti; st. sb. Nikolaev, 1962, 173 pp.
- 234 67 Narodnoe khozyaistvo Odesskoi oblasti; st. sb. Odessa, 1960, 333 pp.
- 6 Narodnoe khozyaistvo Rovenskoi oblasti; st. sb. Lvov, 1963, 187 pp.
- 3 67 Narodnoe khozyaistvo Stanislavskoi oblasti v 1961 godu; st. sb. Lvov, 1962, 125 pp.
- 12 5 Narodnoe khozyaistvo Ternopolskoi oblasti; st. sb. Ternopol, 1957, 271 pp.
- 123 67 Narodnoe khozyaistvo Ternopolskoi oblasti; st. sb. Lvov, 1962, 280 pp.
- 12 5 Osnovnye pokazateli razvitiya narodnogo khozyaistva Vinnitskoi oblasti; st. sb. Vinnitskaya oblast v tsifrakh; st. sb. Vinnitsa, 1957, 278 pp.
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- 2 5 Narodnoe khozyaistvo Volynskoi oblasti; st. sb. Lvov, 1958, 212 pp.
- 12 45 Narodnoe khozyaistvo Zakarpatskoi oblasti; st. sb. Uzhgorod, 1957, 168 pp.
- I Sovetskoe Zakarpatie v tsifrakh; st. sb. Uzhgorod, 1960, 167 pp.
- 7 Narodnoe khozyaistvo Zakarpatskoi oblasti v 1963 godu; kr. st. sb. Lvov, 1964, 141 pp.
- 12 45 Narodnoe khozyaistvo Zhitomirskoi oblasti; st. sb. Zhitomir, 1957, 150 pp.

Belorussian SSR

- 123 67 Belorusskaya SSR v tsifrakh; kr. st. sb. Minsk, 1962, 255 pp.
- 12 67 Belorusskaya SSR v tsifrakh; kr. st. sb. Minsk, 1963, 284 pp.
- 12 45 7 Dostizheniya Sovetskoi Belorussii za 40 let; st. sb. Minsk, 1958, 204 + vii pp.
- 1234567 Itogi Vsesoyuznoi perepisi naseleniya 1959 godu: Belorusskaya SSR Moscow, 1963, 146 pp.
- 12 Narodnoe khozyaistvo Belorusskoi SSR; st. sb. Minsk, 1957, 319 pp.
- 12 56 Narodnoe khozyaistvo Belorusskoi SSR za 40 let. Minsk, 1957, 288 pp.
- I 456 Narodnoe khozyaistvo BSSR; st. sb. Minsk, 1963, 511 pp.
- I 4567 Razvitie narodnogo khozyaistva Belorusskoi SSR za 20 let (1944-63 gg.) Minsk, 1964, 214 pp.

Uzbek SSR

- 123456 Itogi Vsesoyuznoi perepisi naseleniya 1959 goda: Uzbekskaya SSR Moscow, 1962, 168 pp.
Kratky statistichesky sbornik Tashkent, 1960, 127 pp.

- 123 5 Narodnoe khozyaistvo Uzbekskoi SSR; Tashkent, 1957, 197 pp.
st. sb.
- 12 56 Narodnoe khozyaistvo Uzbekskoi SSR v Tashkent, 1959, 223 pp.
1958 godu; st. sb.
- I Narodnoe khozyaistvo Uzbekskoi SSR v Tashkent, 1961, 95 pp.
1960 godu; kr. st. sb.
- 1234 67 Narodnoe khozyaistvo Uzbekskoi SSR v Tashkent, 1962, 227 pp.
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- I 4 67 Sovetsky Uzbekistan za 40 let; st. sb. Tashkent, 1964, 379 pp.
- 12 Osnovnye pokazateli razvitiya narodnogo Tashkent, 1957, 32 pp.
khozyaistva i kulturnogo stroitelstva
Uzbekskoi SSR za 1913-57 gody
- I 5 Uzbekistan za 40 let sovetsskoi vlasti; st. sb. Tashkent, 1958, 135 pp.
- 123 5 Narodnoe khozyaistvo Samarkandskoi Samarkand, 1958,
oblasti; st. sb. 96 pp.
- I 456 Narodnoe khozyaistvo goroda Tashkent, 1961, 112 pp.
Tashkenta; st. sb.

Kazakh SSR

- 12 4567 Itogi Vsesoyuznoi perepisi naseleniya 1959 Moscow, 1962, 202 pp.
goda: Kazakhskaya SSR
- 123 567 Kazakhstan za 40 let; st. sb. Alma-Ata, 1960,
525 pp.
- 12345 7 Narodnoe khozyaistvo Kazakhskoi SSR; Alma-Ata, 1957,
st. sb. 381 pp.
- 234 6 Narodnoe khozyaistvo Kazakhskoi SSR v Alma-Ata, 1963,
1960 i 1961 gg.; st. sb. 544 pp.
Narodnoe khozyaistvo i kultura
Kazakhskoi SSR mezhdu VII i X
S"ezdami K. P. Kazakhstana Alma-Ata, 1960,
211 pp.
- 123 67 Narodnoe khozyaistvo Severo- Petropavlovsk, 1962,
Kazakhstanskoi oblasti; st. sb. 207 pp.
- I 3 67 Vostochny Kazakhstan v tsifrah; st. sb. Alma-Ata, 1962,
245 pp.

Georgian SSR

- Dostizheniya Sovetskoi Gruzii za 40 let; Tbilisi, 1961, 101 pp.
kr. st. sb.
- I 3456 Itogi Vsesoyuznoi perepisi naseleniya 1959 Moscow, 1963, 162 pp.
goda: Gruzinskaya SSR
- 123 56 Narodnoe khozyaistvo Gruzinskoi SSR; Tbilisi, 1957, 304 pp.
st. sb.
- 12 56 Narodnoe khozyaistvo Gruzinskoi SSR; Tbilisi, 1959, 357 pp.
st. sb.
- 123 56 Narodnoe khozyaistvo Gruzinskoi SSR Tbilisi, 1963, 568 pp.
v 1961 godu; st. ezh.

- 12 4567 Narodnoe khozyaistvo Gruzinskoj SSR v Tbilisi, 1963, 444 pp.
1962 godu; st. ezh.
- I Narodnoe khozyaistvo Gruzinskoj SSR v Tbilisi, 1964, 353 pp.
1963 godu; st. ezh.
- 12 56 Sovetskaya Gruzija za 40 let; st. sb. Tbilisi, 1961, 208 pp.
- I Dostizheniya Sovetskoi Abkhazii za 40 let Tbilisi, 1961, 207 pp.
v tsifrah; st. sb.
- 12 56 Narodnoe khozyaistvo Abkhazskoi ASSR; Sukhumi, 1957, 116 pp.
st. sb.
- I 56 Narodnoe khozyaistvo Abkhazskoi ASSR; Sukhumi, 1960, 190 pp.
st. sb.
- 12 5 Narodnoe khozyaistvo Adzharskoi ASSR; Batumi, 1958, 92 pp.
st. sb. (in Georgian)
- I 40 let Sovetskoi Adzharii; st. sb. (in Batumi, 1961, 164 pp.
Georgian)
- I Tbilisi. K 40-letiyu Sovetskoi vlasti v Tbilisi, 1961, 181 pp.
Gruzii; st. sb.
- 12 4 Narodnoe khozyaistvo Yugo-Osetinskoi Stalinir, 1959, 36 pp.
avtonomnoi oblasti.
- 123 67 Narodnoe khozyaistvo Yugo-Osetinskoi Stalinir, 1960, 240 pp.
avtonomnoi oblasti; st. sb.

Azerbaidzhan SSR

- 1234 6 Azerbaidzhan v tsifrah; kr. st. sb. Baku, 1964, 302 pp.
- 123 567 Dostizheniya Sovetskogo Azerbaidzhana Baku, 1960, 259 pp.
za 40 let v tsifrah; st. sb.
- I 3456 Itogi Vsesoyuznoi perepisi naseleniya 1959 Baku, 1963, 158 pp.
goda: Azerbaidzhanskaya SSR
- 123 5 7 Narodnoe khozyaistvo Azerbaidzhanskoi Baku, 1957, 525 pp.
SSR; st. sb.
- 1234 67 Narodnoe khozyaistvo Azerbaidzhanskoi Baku, 1963, 255 pp.
SSR v 1962 godu; st. sb.
- 67 Razvitie ekonomiki i kultury Baku, 1963, 280 pp.
Azerbaidzhanskoi SSR (1953-63 gg.)
- Narodnoe khozyaistvo Azerbaidzhanskoi Baku, 1965, 294 pp.
SSR v 1963 godu; st. sb.
- 12 4 6 Razvitie narodnogo khozyaistva Baku, 1961, 258 pp.
Azerbaidzhanskoi SSR i rost materialnogo
i kulturnogo urovnya zhizni naroda;
st. sb.
- I 45 Baku za 40 let v tsifrah; st. sb. Baku, 1960, 116 pp.
- 12 4 7 Dostizhenie sovetskogo Karabakha za 40 Stepanakert, 1963,
let v tsifrah; st. sb. 171 pp.
- I 6 Razvitie narodnogo khozyaistva Baku, 1964, 142 pp.
Nakhichevanskoi ASSR; st. sb.

Lithuanian SSR

- 123 5 7 20 let Sovetskoi Litvy; st. sb. Vilnius, 1960, 352 pp.
 12 4567 Ekonomika i kultura Litovskoi SSR v 1963 godu; st. ezh. Vilnius, 1964, 221 pp.
 I 34567 Itogi Vsesoyuznoi perepisi naseleniya 1959 goda: Litovskaya SSR Vilnius, 1963, 179 pp.
 I 567 Litovskaya SSR v tsifrakh v 1962 godu; kr. st. sb. Vilnius, 1963, 212 pp.
 123456 Narodnoe khozyaistvo Litovskoi SSR; st. sb. Vilnius, 1957, 224 pp.
 1234567 Narodnoe khozyaistvo Litovskoi SSR v 1960 godu; kr. st. sb. Vilnius, 1962, 192 pp.
 123456 Narodnoe khozyaistvo Litovskoi SSR v 1961 godu; st. sb. Vilnius, 1963, 228 pp.
 Statisticheskie dannye ob ekonomike i kulture Litovskoi SSR mezhdru X i XI S"ezdami KP Litvy. Vilnius, 1959, 96 pp.

Moldavian SSR

- 12 456 Itogi Vsesoyuznoi perepisi naseleniya 1959 goda: Moldavskaya SSR Moscow, 1962, 104 pp.
 123 67 Moldavskaya SSR v tsifrakh v 1961 godu; kr. st. sb. Kishinev, 1962, 365 pp.
 12 45 7 Narodnoe khozyaistvo Moldavskoi SSR; st. sb. Kishinev, 1957, 197 pp.
 12 45 Narodnoe khozyaistvo Moldavskoi SSR; st. sb. Kishinev, 1959, 287 pp.
 234567 Narodnoe khozyaistvo Moldavskoi SSR v 1960 g.; st. ezh. Kishinev, 1961, 362 pp.
 12 456 Narodnoe khozyaistvo Moldavskoi SSR v 1962 godu; st. sb. Kishinev, 1963, 384 pp.
 1234 67 Sovetskaya Moldaviya za 40 let; st. sb. Kishinev, 1964, 197 pp.
 I 456 Zhenshchina Moldavii; kr. st. spr. Kishinev, 1960, 70 pp.
 I 4567 Kishinev; st. sb. Kishinev, 1963, 192 pp.

Latvian SSR

- 12 456 Itogi Vsesoyuznoi perepisi naseleniya 1959 goda: Latviiskaya SSR Moscow, 1962, 106 pp.
 I 6 Latviiskaya SSR v tsifrakh v 1960 godu; kr. st. sb. Riga, 1961, 344 pp.
 12 567 Latviiskaya SSR v tsifrakh v 1961 godu; kr. st. sb. Riga, 1962, 199 pp.
 1234567 Latviiskaya SSR v tsifrakh v 1962 godu; kr. st. sb. Riga, 1963, 212 pp.

- 234567 Narodnoe khozyaistvo Latviiskoi SSR; st. sb. Riga, 1957, 227 pp.
- 2 45 7 Narodnoe khozyaistvo Sovetskoi Latvii za 20 let; st. sb. Riga, 1960, 311 pp.
- 2 45 7 Razvitie narodnogo khozyaistva Latviiskoi SSR; st. sb. Riga, 1962, 374 pp.
- 5 Sovetskaya Latvija v tsifrah (1940-63 gg.); st. sb. Riga, 1965, 400 pp.
- 3 56 Statistichesky Atlas Latviiskoi Sotsialisticheskoi Respubliki Riga, 1960, 51 pp.
- 45 7 Riga; st. sb. Riga, 1963, 299 pp.

Kirgiz SSR

- 12 4567 Itogi Vsesoyuznoi perepisi naseleniya 1959 goda: Kirgizskaya SSR Moscow, 1963, 150 pp.
- 1 456 Kirgiziya v tsifrah; st. sb. Frunze, 1963, 199 pp.
- 12 567 Narodnoe khozyaistvo Kirgizskoi SSR; st. sb. Frunze, 1957, 207 pp.
- 12 67 Narodnoe khozyaistvo Kirgizskoi SSR; st. sb. Frunze, 1960, 183 pp.
- 2 4567 Narodnoe khozyaistvo Kirgizskoi SSR v 1960 godu; st. czh. Frunze, 1961, 274 pp.
- 1 3 67 Narodnoe khozyaistvo Kirgizskoi SSR v 1961 godu; st. czh. Frunze, 1962, 232 pp.
- 1 34 6 Narodnoe khozyaistvo Kirgizskoi SSR v 1963 godu; st. czh. Frunze, 1964, 238 pp.
- 1 567 Zhenshchina v Kirgizskoi SSR; kr. st. spr. Frunze, 1960, 96 pp.
- 12 Narodnoe khozyaistvo Frunzenskoi oblasti; st. sb. Frunze, 1957, 125 pp.
- Narodnoe khozyaistvo Oshskoi oblasti; st. sb. Osh, 1963, 196 pp.
- 12 Narodnoe khozyaistvo Tian-Shanskoi oblasti; st. sb. Frunze, 1958, 112 pp.

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