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SURVEY OF SOVIET ECONOMISTS AND
ECONOMIC RESEARCH ORGANIZATIONS

NOVEMBER 1971

CENTRAL INTELLIGENCE AGENCY

Directorate of Intelligence

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FOREWORD

Contacts between Western and Soviet economists present a problem for those Western economists who are unfamiliar with the institutional organization of Soviet economic research activities or with individual Soviet economists. A brief survey of the pattern of economic research activity in the USSR is given in this report, the activities of the more important research organizations are described, and the most recently observed interests and affiliations of a number of the major Soviet economists are identified. Not fully covered in this report are specialized economic research organizations and the substantial number of economists, commodity specialists, and others active in these organizations. The activities of these specialized economic research organizations are focused primarily on research on detailed problems of industry, commerce, or agriculture rather than on theoretical and applied research of a general character that is of wider interest to Western economists. Because of the considerable interest generated by recent Soviet activities in the field of econometrics and mathematical programming, however, some of the specialized research organizations and economists in this field are included. Also included are prominent economists or other administrators in government positions relating to economic planning or management—for example, in Gosplan or the Central Statistical Administration. Soviet names, titles, and terms are transliterated according to the United States Board on Geographic Names throughout this report.

Notes on Ranks, Positions, and Degrees Indicated for Soviet Economists

Soviet economists may be distinguished by both rank and position within an organization and by academic degree. The transliterated titles for these positions are compared below with those in universities in the United States. However, a substantial number of the economists included in this report are not identified as holding advanced degrees. Such identification is difficult because Soviet sources often do not refer to the positions and degrees held by persons in official capacities or by the authors of books and journal articles. Hence, a failure to mention academic attainments does not necessarily mean that the economist in question holds no advanced degrees.

1. Academic Rank

<i>Aspirant</i>	An assistant to a member of the teaching staff or of a laboratory. Usually a graduate student in a department for a probationary period to determine his qualifications for a teaching position.
<i>Prepodavatel'</i>	The lowest teaching position. Equivalent to an instructor in a US university.
<i>Starshiy prepodavatel'</i>	A senior instructor.
<i>Assistent</i>	The lowest of "full" academic ranks. Though close to assistant professor, he is not called <i>assistant professor</i> but rather <i>assistent</i> within the <i>kafedra</i> .
<i>Dotsent</i>	The second of "full" academic ranks. Close to associate professor.
<i>Professor</i>	The highest rank. Equivalent to a full professor in a US university.

2. Positions

- Rektor* The head of the university and equivalent to a university president. Heads the *rektorat* or university administration.
- Dekan* Heads a *fakul'tet*. Close to chairman of a department. If the *fakul'tet* is large, it is headed by a *dekanat*.
- Zaveduyushchiy kafedry* ... The head of a subdivision of a *fakul'tet*. *Kafedra* is close to a chair, but usually there are several professors of a given *kafedra*.
- Nauchnyy sotrudnik* A scientific associate, usually designated as *mladshiy* or *stárshiy* (junior or senior). These positions are usually found in research institutions rather than in universities. Occasionally one finds a *nauchnyy sotrudnik* attached to a university laboratory or computer center.

3. Degrees

- Kandidat ekonomicheskikh nauk* Closely comparable to the Ph.D. degree in economics in the United States. Because of the variations in requirements for the degree among institutions in both countries, the extent of comparability depends on which institutions awarding the degrees in the two countries are compared.
- Doktorant* A person, usually already a candidate of sciences, in residence at a university working toward the doctor of sciences degree.
- Doktor ekonomicheskikh nauk* A degree higher than *kandidat* of economic sciences, having no counterpart in the United States. Normally it requires no further training but does require the defense of an additional thesis. Approximately 500 degrees were awarded from 1965 through 1970.
- Akademik* An honorary title that can be interpreted as academician or full member of a given academy. An honorary title of somewhat lesser rank is *chlen-korrespondent*, or corresponding member. Full membership in the Academy of Sciences, USSR, is, of course, highly prestigious. Unless stated otherwise, the term academician means an academician of the Academy of Sciences, USSR.

Notes on Terminology

Because of the lack of familiarity of many Western economists with Soviet economic phraseology, an effort was made in the body of this report to substitute, for a number of Soviet phrases, terms that more accurately convey equivalent meanings in English. However, in many cases a more meaningful equivalent in English would have required the use of some further explanation. Hence, the following is a list of certain Soviet terms appearing in the text with a literal rendering into English accompanied by a more detailed description of their meanings.

<u>RUSSIAN (TRANSLITERATED)</u>	<u>LITERAL TRANSLATION</u>	<u>DEFINITION</u>
<i>Khozraschet</i>	Economic accountability	An organization operating on a <i>khozraschet</i> basis charges its costs against its receipts from the sale of goods or services and seeks to realize a profit or minimize its losses.

<u>RUSSIAN (TRANSLITERATED)</u>	<u>LITERAL TRANSLATION</u>	<u>DEFINITION</u>
<i>Vosproizvodstvo</i>	Reproduction	A Marxist term for the phenomena generally included under the heading of economic growth.
<i>Normativ</i>	Norm	A standard that is established by planners and supervisors for inventory levels, work accomplishments, and other variables.
<i>Politicheskaya ekonomiya</i> ..	Political economy	A field of specialization in economics that could more meaningfully be labeled "Marxist economic theory."
<i>Proportional'nost ili balans</i>	Proportionality or balance	A field of economic specialization that deals with the internal consistency of economic planning and the determination of desirable relative rates of growth of various industries.
<i>Nauchno-tekhnicheskij progress</i>	Scientific-technical progress	Technological improvement.
<i>Zakonomernoye razvitiye</i> ...	Regular development ...	Economic development in conformity with natural laws.
<i>Mezhdunarodnaya sotsialisticheskaya spetsializatsiya proizvodstva</i>	International socialist specialization of production	Specialization of the various Communist countries in different economic activities.
<i>Material'no-tekhnicheskoye snabzheniye</i>	Material-technical supply	The distribution of equipment and materials of all types to producing organizations.
<i>Upravleniye</i>	Management	Translated as either management, control, government, direction, or administration. Its most appropriate English rendition, especially in cybernetics literature, is management or control.
<i>Matematicheskaya model'</i> ..	Mathematical model	A general characterization of a process, object, or concept in terms of mathematics which enables the relatively simple manipulation of variables to determine how the process, object, or concept would behave in different situations.
<i>Kibernetika</i>	Cybernetics	The study of communications and control in organized systems of varying complexity; in its more sophisticated manifestations employing mathematical models and computers.

<u>RUSSIAN (TRANSLITERATED)</u>	<u>LITERAL TRANSLATION</u>	<u>DEFINITION</u>
<i>Osnovnyye fondy</i>	Basic funds	A term restricted to fixed capital when that is taken to include stocks of durable physical assets (buildings, structures, and equipment) that are used for more than one year and have a value of 50 rubles or more.
<i>Oborotnyye sredstva</i>	Circulating means	Working capital in the form of inventories of supplies, goods in process or in the finished product, equipment having a life span of less than one year, and financial assets.
<i>VUZy</i>	Higher educational institutions	Common Russian abbreviation (in the plural) for <i>vysshiye uchebnyye zavedeniya</i> . Based on the premise that teaching and research must be combined, VUZy include universities, polytechnical institutes, and other specialized institutes. Their graduates have completed 4-6 years of education past high school. All VUZy are subordinate to the Ministry of Higher Education.
<i>Akademiya nauk</i>	Academy of Sciences ..	The general term for organizations administering and controlling Soviet science. Three main types must be distinguished: 1. Academy of Sciences, USSR (All-Union); 2. Union Republic Academy of Sciences; 3. Branch Academy of Sciences. Unless otherwise noted, all references to the Academy of Sciences are to the All-Union Academy of Sciences. For a detailed discussion, see Section IV, A.
<i>Sovnarkhoz</i>	Council of National Economy	Common Russian acronym for <i>sovet narodnogo khozyaystva</i> . A system of regional economic councils was established in 1957 in an abortive attempt to facilitate economic decision-making by centralizing economic management. The system was abolished in 1965.

For transliterated and translated titles of organizations and titles of journals, addresses of organizations, and an index of economists, see the Appendixes.

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SURVEY OF SOVIET ECONOMISTS AND ECONOMIC RESEARCH ORGANIZATIONS

I. INTRODUCTION

General economic research in the USSR is performed mainly by economists at the professional level who are engaged in full-time research or in a combination of research and teaching. Most of these economists have completed three-year graduate courses in economics in universities and educational institutes or in research institutes leading to the degree of Candidate of Economic Sciences and many have attained the degree of Doctor of Economic Sciences. These highly trained economists constitute only a small fraction of the total number of "economists" in the USSR as enumerated in official occupational statistics. In the USSR the term *ekonomist* also is used to refer to personnel trained in business administration and management skills such as accounting, to technologists or engineer-economists, and to semiprofessional and clerical personnel such as bookkeepers. Of the total number of economists in this broader sense, 493,000 specialized in "economics" in the higher educational establishments (*vysshiye uchebnyye zavedeniya*—hereafter referred to as "VUZy"), and over 950,000 in the middle schools. Still others lack even the middle school preparation. Only 20% of "economists" are employed in production enterprises.

Beyond the undergraduate level of training, there are over 800 holders of doctorates and over 13,000 candidates of economic sciences engaged in teaching, research, and consulting, or working in applied fields. In all there are 19 graduate areas or recognized fields of activity included under the rubric of economic sciences. Most dissertations traditionally are written on political economy,¹ with contemporary capitalism a distant second. The recently introduced speciality of "economic cybernetics" is increasingly popular among younger graduate students as an area of specialization.

Economists at the professional level are disproportionately concentrated in Moscow, where the principal economic research establishments and most of the outstanding educational and governmental institutions are located. Leningrad and Novosibirsk also have sizable groups of economists. Most of these economists are employed at research institutions, although many are affiliated with more than one type of organization. For example, numerous economists are affiliated with one of the economic research institutes of the Academy of Sciences

¹In contrast to the traditional political economy curriculum in the West, the Soviet curriculum is a mixture of political science, economics, business administration, and accounting with 20% of the total classwork devoted to courses that are ideological in content. Included under the latter category are courses on Communist Party history, foundation of Marxism-Leninism, dialectical and historical materialism, and history of economic doctrines.

in Moscow and concurrently with one of the VUZy or with one of the governmental economic research establishments such as the Scientific Research Economic Institute under Gosplan.

The organization and operation of economic research in the Soviet Union is the product of the authoritarian political and social system. Economics, like all branches of science, is funded and controlled—albeit not as effectively as one might think—by the government and monitored by the Communist Party of the Soviet Union (CPSU). The Politburo of the CPSU Central Committee is the ultimate authority on economic doctrine as well as policy. It relies on the Council of Ministers of the USSR (the highest body of the executive arm of the central government and the apex of the economic administrative structure) to implement policy. Similarly, the enforcement of the party's position on economic science and doctrine is carried out by the Academy of Sciences (AN) and various government committees.

As in most Soviet professions, the prestige of an economist is positively correlated with earnings, although both prestige and wages in social sciences in general, and economics in particular, do not rank as high as those in the physical and biological sciences or in engineering. Most economists would appear in the "above average" wage category, while research economists (typically employed in teaching as well as research positions) would be categorized as "high" wages earners (the average annual wage of all wage earners is 1,460; above average, between 1,460 and 3,500; and high, above 3,500 rubles).²

There are two distinguishable age groups of Soviet economists: those born between 1900 and 1930, referred to as the "Stalinist generation," and those born after 1930 and affected only indirectly by the events of the Stalin era.³ The older element of the Stalinist generation were thrust into positions of importance during the great purges of the 1930s and the survivors still, in general, tend to orthodoxy. The younger element of that generation, their education limited to the narrowest interpretation of Marxist orthodoxy, also tend to be ultra-conservative. (Notable exceptions are discussed in Section III.) On the other hand, the post-1930 generation, too young for positions of responsibility before Stalin's death, has generally been relatively more receptive to change and innovation. Such a dichotomy led one prominent liberal Soviet economist, visiting in the West in 1965, to remark that in the USSR he could talk only to people below 35 and over 65 years of age.

Marxist economic theory is ostensibly the basis for Soviet economic goals and policies. These goals and policies are achieved, according to Soviet theorists, through the application of operating principles embodied in a set of "objective laws," in the sense that these "laws . . . emerge and act independently of the will of men. . . . They cannot be created, transformed or abolished by the will of men." Stalin, in seeking to legitimize his overriding goal to mobilize the economy for rapid development and to maintain and enhance the country's internal and external power, dogmatically employed these "laws" to justify his policies. But given the general nature of these "laws" any policy that he wished

²Data are for 1970. When converted by the official exchange (0.90 rubles to US\$1) the nominal value of the average wage would come to \$1,622. But when converted to dollars by the average purchasing power ratio of the dollar and the ruble calculated from actual prices paid for various goods and services in the two economies, the average industrial wage would be equivalent to \$2,642.

³This feature is not unique among economists—other professional groups experience the same division.

to enforce could be conveniently rationalized without recourse to economists or economic theory. Hence, during the Stalin era, economic science in the normal sense of a "problem solving" discipline, organized to deal with the efficient allocation of resources, was virtually non-existent.

While the role of "economic science" under Stalin was principally one of apologetics, the Khrushchevian era witnessed a dramatic revival of economics in the conventional Western meaning of that term. The old Stalinist "command economy" methods were not suitable for modernizing and expanding an already developed economy but the new regime was less doctrinaire and more flexible. As a result, the Party was willing to allow professional economists greater freedom to discuss, to do research, and to seek solutions to problems confronting the economy.⁴ While ideological goals remained the same, economists were invited to study practical problems such as the effectiveness of investment and the establishment of prices that would play an allocative role. Indeed, in the period from the denunciation of Stalin in 1956 to the late 1960s, the erosion of Marxist ideology proceeded apace, as liberal economists devised a skeleton of theoretical constructs embracing the main elements of conventional Western equilibrium theory. However, the effort to harness this theory and adapt it to the needs of central planning without benefit of markets, or other capitalist institutions proscribed by the Party, has been frustrating for the economists and so far unsuccessful.

II. ORGANIZATION AND DIRECTION OF ECONOMIC RESEARCH

A. Organization

Most economic research in the Soviet Union is performed in the various institutes of the Department of Economic Sciences of the Academy of Sciences. To a lesser extent, central governmental agencies and leading universities also contribute to the research effort. There is very little economic research performed at other economic levels.

1. Academy of Sciences

The Soviet Academy of Sciences has no counterpart in the West. Like the Institut de France, the Svenska Vetenskapsakademien, or the British Royal Society, it is financed from the State budget. But, unlike the Western organizations, the Soviet Academy also has many research institutes under direct subordination in nearly all scientific fields, sponsors research projects (where results have an immediate impact on the economy) at institutes subordinate to other governmental agencies,⁵ and awards advanced degrees in most scientific fields (a function limited to universities elsewhere). Finally, its charter directs the organization to "build a Communist society in the USSR and to ensure world peace." Academy leaders must not only be eminent scientists, they must also be apt politicians.

All questions of the organization of economic research considered by the Council of Ministers or other state organs are sent through the Academy of Sciences or are considered with active participation of Academy representatives. The interest of the Academy's top leadership in economic theory, policy, and

⁴ This policy change is discussed in more detail in Section III.

⁵ Western academies, including the National Science Foundation in the United States, sponsor research in scientific fields but such research is long run in nature. Research with a more current impact is handled by either those Western governmental or private agencies and businesses benefiting from such research.

methodology has varied greatly over the years, but its presidents have been valuable sources of support for the advocates of change in Soviet economics.

The elite among the economists at the professional level include principally those who have gained prominence both through exceptional research and through the performance of high-level administrative duties such as direction of economic research institutions or government organizations. Many of these have received recognition by election to full or corresponding membership in the Academy of Sciences. Academicians are elected by their peers for life at intervals of two years; the last election was 24 November 1970. There are two classes of membership, Academician and Corresponding Member, although only Academicians can vote on matters of Academy policy and administration. Those members of the Academy who are economists or whose work is related to economics are listed below:

ACADEMY OF SCIENCES		
	<u>FIELD</u>	<u>YEAR OF ELECTION</u>
ACADEMICIAN		
N.P. Fedorenko	Economics	1964
V.M. Glushkov	Cybernetics	1964
N.N. Inozemtsev	Economics	1968
L.V. Kantorovich	Economics-mathematics	1964
T.S. Khachaturov	Economics	1966
A.N. Kolmogorov	Mathematics	1939
N.V. Mel'nikov	Mining	1962
N.N. Nekrasov	Economics	1968
L.S. Pontryagin	Mathematics	1958
A.M. Rumyantsev	Economics	1966
S.G. Strumilin	Economics	1931
A.N. Yefimov	Economics	1970
CORRESPONDING MEMBER		
A.G. Aganbegyan	Economics	1964
G.A. Arbatov	Economics	1970
P.G. Bunich	Economics	1970
L.M. Gatovskiy	Economics	1960
D.M. Gvishiani	Philosophy and law	1970
G.A. Kozlov	Economics	1968
L.A. Leont'yev	Economics	1939
A.G. Mileyskiy	Economics	1966
A.I. Pashkov	Economics	1953
K.N. Plotnikov	Economics	1960
V.F. Pugachev	Computers	1966
T.V. Ryabushkin	Economics	1966
V.G. Solodovnikov	Economics	1966
G.M. Sorokin	Economics	1962
T.T. Timofeyev	Economics	1966
V.L. Tyagunenko	Economics	1968
V.A. Vinogradov	Economics	1966
T.I. Zaslavskaya	Economics	1968

The organization of economic affairs within the Academy of Sciences is controlled by the Department of Economic Sciences. The Department is responsible for economic research in all institutes and affiliates of the parent organization, in the republican academies, and in higher educational institutions. The major research organizations under its subordination include the Institute of Economics, the Institute of the United States of America, the Central Mathematical-Economics Institute, and the Siberian Department of the Academy of Sciences. These and other subordinate organizations are discussed in more detail in Section IV.

2. Governmental Agencies and VUZy

Several governmental agencies conduct economic research through their own research institutes. Gosplan and the Central Statistical Administration employ large numbers of economists in their normal operations, and in addition they maintain research institutes. Other research institutes are attached to ministries such as finance, foreign trade, or agriculture, and to government committees such as the State Committee on Prices (see Section IV).

Organizations subordinate to governmental agencies typically engage in applied research primarily in support of the administrative functions of their parent organizations. This approach differs from institutes under the Academy of Sciences which develop broad theoretical approaches to the solution of important economic problems and make general recommendations based on those approaches. Such division of labor is a general rule, but there are notable exceptions on each side. For example, the Siberian Department of the Academy of Sciences performs much applied research for Siberian industry while several of Gosplan's research institutes engage in totally theoretical problems.

Among the VUZy, those located in Moscow, Leningrad, and Novosibirsk tend to have economics faculties of relatively higher caliber and to engage in more research on broader topics than do their counterparts elsewhere in the USSR. The economics faculties in other VUZy devote a greater proportion of their time to teaching and perform only a limited amount of economic research, much of which is oriented toward local problems.

B. Direction and Coordination

At the present time there is no single organization responsible for overall direction and coordination of economic research on national problems. Nearly all economic research is financed directly from the State budget and thus is controlled by both the Party and the government. Because of the large number of parent units to which research organizations are subordinate, however, the direction and coordination of economic research on important national problems have often proved to be difficult. The Soviet leadership is aware of this deficiency but, rather than take firm measures to correct it, has simply been content to "tinker" in hopes that the various agencies will contain the problem at lower levels. Those agencies involved in the coordination process include the State Committee for Science and Technology; Gosplan, USSR; and the Department of Economic Sciences for the Academy of Sciences.

1. State Committee for Science and Technology (SCST)

Since its inception in 1965, the SCST has performed the function of providing general state surveillance over the execution of the most important economic research and the formulation of policy recommendations based on research findings. The SCST and the Academy of Sciences, whose mutual relations are defined by Soviet law, jointly work out an ordering of research priorities. Both organizations join with the Ministry of Finance and Gosplan in working out the budget allocation for research and development, including that for economic research. It is believed that the SCST also has the responsibility for implementing long-run economic projects.

2. Gosplan, USSR

Gosplan, USSR, is responsible for the supervision of current economic research by government agencies in those individual cases where such research

is *not* in support of the administrative functions of the parent organization. As an overseer of the research and development budget, it must be assumed that Gosplan has some influence in guiding the direction and coordination of all economic research. Presumably because of the large number of economic research organizations and their relatively narrow interests, Gosplan performs its coordination function primarily by means of *ad hoc* conferences that are convened to discuss specific research problems and at which only several of these organizations are represented.

3. Department of Economic Sciences of the Academy of Sciences, USSR

The Department of Economic Sciences is charged specifically with the direction and coordination of economic research among institutes of the Academy of Sciences, the departments of economics of the RSFSR regional affiliates of the Academy of Sciences, the institutes of economics of the academies of sciences of the union republics, and the economics faculties of VUZy. Direction and coordination are effected through an association of Soviet economic scientific institutes, a permanent staff within the Department that comprises those organizations under Department of Economic Sciences subordination. In the performance of its duties the association assigns research priorities and coordinates the annual research plans of the member organizations. The association also promotes continuing coordination through the holding of regular national and regional conferences, through exchanges of working programs and draft research reports, and through the encouragement of personal contacts among researchers. The association is subdivided into problem sections that correspond roughly to the fields of research covered by the scientific problem councils at the national level (discussed below).

C. Scientific Problem Councils

Overall coordination between the research on national problems conducted in the Department of Economic Sciences and that conducted in governmental units is effected primarily by individual research organizations and economists rather than through parent units. This coordination is facilitated by numerous *ad hoc* conferences convened to discuss specific research topics. Since 1960 the Department has exerted control through a large, interlocking network of semi-permanent "scientific problem" councils, most of which are directed by the Department of Economic Sciences and which have authority only to advise and recommend.

These problem councils, which coordinate research on the most important national problems as specified by Gosplan and the Academy of Sciences, are composed of economists with common interests employed in a wide variety of research organizations within the system of the Academy of Sciences, in government, and in the economics faculties of the VUZy. The councils, which remain active only as long as the problems on which they are to work remain on the priority list, plan research programs in their fields in accordance with the directives of the regime, apportion research work among their members, and review the results of the research.

Most of the councils are directed by "head" research organizations to which they are assigned on the basis of special competence, and are chaired by individual economists who are outstanding in the field of research covered

by the council. The principal councils that are believed to be still active are listed in the following tabulation, together with their head organizations and their chairmen:

<u>NAME</u>	<u>HEAD ORGANIZATION</u>	<u>CHAIRMAN</u>
Council on Scientific Principles of Price Formation	Department of Economic Sciences	(Unknown)
Council on the Economic Effectiveness of Basic Funds, Capital Investments, and New Equipment	Department of Economic Sciences	T.S. Khachaturov
Council on Economic Accounting and Material Incentives	Department of Economic Sciences	L.M. Gatovskiy
Council on Economic Comparison of the Two Systems and Underdeveloped Countries	Department of Economic Sciences	A.M. Rumyantsev
Council on Optimal Planning and Administration of the National Economy	Department of Economic Sciences	N.P. Fedorenko
Council on the Economics, Planning, and Organization of Industrial Enterprises	Department of Economic Sciences	K.N. Plotnikov
Council on Chemicalization of the National Economy	Department of Economic Sciences	N.P. Fedorenko
Council on the Development of the Laws of Socialism and the Transition to Communism	Department of Economic Sciences	(Unknown)
Council on the Problems of Specific Social Research	Department of Economic Sciences	A.M. Rumyantsev
Council on the Social-Economic Problems of the Population	Department of Economic Sciences	T.V. Ryabushkin
Council on the Problems of the World Socialist System	Department of Economic Sciences	G.M. Sorokin
Council on Problems of Cybernetics	Department of Economic Sciences	A.I. Berg

III. A SKETCH OF SOME RECENT DEVELOPMENTS IN SOVIET ECONOMIC THOUGHT

During the Stalinist era, economic research was devoted to the investigation of closely circumscribed questions and to the development of Marxist doctrine in a strictly orthodox fashion. Since the death of Stalin, investigation and public discussion of economic issues have ranged over a progressively broader field. The ideological constraints of Marxism have not been cast off, but they have been reduced and circumvented in part by many Soviet economic thinkers. Very often these thinkers appear to approach problems quite pragmatically, although they express themselves in Marxist terminology and pay at least nominal obeisance to Marxist dogmas. Such tactics have moved Soviet economic thought far along the path toward conventional economic theory. Nevertheless, the remaining elements of Marxism in Soviet economic thought still are a good deal more than nominal or vestigial.

The roots of the modernization of Soviet economic thought can be traced to contributions made during the Stalin era by L.V. Kantorovich and two of his late colleagues, V.S. Nemchinov and V.V. Novozhilov. These men pioneered research in the field of econometrics at approximately the same time that the science was developing in the West. Kantorovich developed the concept

of linear programming and applied his discovery to problems of resource allocation within the woodworking industry. Nemchinov, a prominent agricultural economist and statistician, did much to keep mathematical-economic science alive during the Stalin years. Novozhilov stumbled upon the principle of opportunity cost while seeking logical rules to guide capital allocation. Inherent in the work of these men are concepts of marginal analysis and of scarcity of non-labor resources on the supply side, both of which are anathema to orthodox Marxists. With respect to the demand side the eroding of Marxist constraints has proved much more difficult. During the Stalin era economists had carefully refrained from discussing the determination of the optimal product mix to be turned out. By 1960, however, three late econometricians, A.A. Konus, A.L. Lur'ye, and A.L. Vaynshteyn, had succeeded in producing a partial reconciliation of Western demand theory with Marxist terminology concepts. Following this achievement, discussion problems using conventional economic theory and concepts became much more evident.

The majority of the mathematically inclined followers of these innovators constitute the mathematical school⁶ that has gained prominence and flourished despite constant criticism from traditionalists. The mathematical school is responsible for (1) the gradual *acceptance* by planners of scarcity-dictated prices; (2) the rediscovery of Western demand theory, long neglected by Soviet proponents of the command economy; (3) the reintroduction of the interest rate into the calculation of "investment efficiency"; and (4) the notion of optimality in planning.⁷

Much of the contemporary mathematical-economic work emanates from the Central Mathematical-Economic Institute of the Academy of Sciences (TsEMI AN SSSR) in Moscow and the Institute of Economics and Organization of Industrial Production of the Siberian Branch of the Academy of Sciences (IE i OPP SO AN) in Novosibirsk. Current research focuses on forecasting economic development and long-term planning of the national economy on the basis of mathematical models. L.V. Kantorovich, A.I. Katsenel'inboigen, Ye.Yu. Fayerman, V.F. Pugachev, and V.A. Volkonskiy have proposed planning "global" models enveloping the national economy as a whole. A.G. Aganbegyan, E.F. Baranov, V.S. Dadayan, V.I. Danilov-Danil'yan, L.Ya. Berri, and V.B. Belkin are among those who have proposed models for specific sectors of the economy. Not surprisingly, these men are major contributors to the expanding Soviet effort in constructing and using input-output (I-O) tables for planning purposes.

As a natural concomitant to the formulation of abstract models with logical rules for resource allocation, the mathematical school encompasses those who frequently and publicly support a price system designed to promote optimal use of resources by reflecting scarcity information. Academician N.P. Fedorenko, the Director of TsEMI, long has been the principal speaker for this so-called "optimality" school of thought. A.N. Yefimov, E.Z. Mayminas,

⁶ The mathematical school is restricted here to refer to that heterogeneous group of mathematically oriented economists who express dissatisfaction with Marxian dogma and seek to inject into their profession applicable Western economic thought. Since 1965 they have aired many new ideas without the usual reinterpretation of official dogma. However, there are many Soviets today who subscribe to the use of mathematics as tools in economics without forsaking Marxian orthodoxy.

⁷ The mathematical school insists on a single optimality criterion. The conservative view of multiple criteria in a socialist economy is the basis of active debate between the two schools of thought.

S.S. Shatalin, K.K. Val'tukh, and Yu.A. Oleynik-Ovod are also in this group. Others include L.A. Vaag and P.G. Bunich in the field of capital, S.A. Kheyman in forecasting, R.A. Belousov in pricing, and V.V. Kossov in planning.

Although the mathematical school provides for and in effect advocates the abandonment of the Stalinist command system of economic organization, its membership does not include all the Soviet economists who favor reform in the general sense of a significant movement away from central command techniques. Non-mathematical economists who have pressed for fairly radical reforms involving the use of markets and market prices include V.O. Chernyavskiy, L.A. Leont'yev, Ye.L. Manevich, V.A. Trapeznikov, G.S. Lisichkin, and A.M. Birman. The economist most widely identified in the West with "reforms" is Ye.G. Liberman, who is neither mathematically oriented nor radical in his approach. Liberman is a moderate whose relatively modest proposals were reflected to some extent in the reforms that have been carried out since 1965. At the time, more thinkers supported Liberman's proposals for modest reform, evidently because they thought they would be politically acceptable to the regime and would not arouse strong vocal opposition among orthodox economists. It seems, however, that the real intellectual setting for the reform was provided by the modern economists of major stature, such as Nemchinov, Novozhilov, and Kantorovich for whom Liberman served as acceptable spokesman.

The division of economists into liberal and traditional (orthodox) groups is, of course, an imperfect and arbitrary exercise. Individuals may be more liberal on some issues than on others, and they may change their positions over time. There is a moderate group of economists that includes a number of important individuals whose views, although heterogeneous, can be characterized as cautiously reformist. Included in that group are F.S. Veselkov, D. L'vov, Z.V. Atlas, and others. N.A. Tsagolov and Sh.Ya. Turetskiy are also moderates despite their criticism of the mathematical school. In most important respects, the reforms that actually are being carried out are more in line with the views of this middle group than those of either the more liberal or the more conservative group. Given the moderate nature of the reforms that have been enacted, it is not surprising that economic writers who are associated with the administrative apparatus frequently can be classified as moderates. Most prominent of this group are academicians A.M. Rumyantsev and T.S. Khachaturov.

Conservative economists, having successfully checked the rapid advances of the mathematical and reform school, are still incapable of producing a coherent "economic theory of socialism." The orthodox economists at times have expended more effort in hurling invectives at the liberals than on contributions to their science. Most vocal have been A.Ya. Boyarskiy, himself a mathematical economist, A.I. Pashkov, a political economist, A.V. Bachurin, a deputy director of Gosplan who invoked Stalin's name in a recent bitter attack on Fedorenko, and Ya.A. Kronrod, another opponent of Fedorenko. The dean of Soviet economists, S.G. Strumilin has also been critical of most liberal proposals. Other conservatives noted for their defense of orthodoxy include L.M. Gatovskiy, B.M. Smekhov, A.I. Kats, K.N. Plotnikov, N.K. Baybakov, V.K. Sitnin, N.S. Maslova, and Yu.B. Sukharevskiy.

Since 1967, conservative economists, who during the Khrushchev era were unable to mount a sustained attack against liberal influence or to propose viable alternatives to the solution of complex economic problems formulated

by the liberals, have been able to reverse the previous trend toward greater freedom in economic thought. The liberals suffered a further set back in 1968 following the events in Czechoslovakia when conservative groups successfully exploited the political climate to stifle economic liberals and to brake the economic reform. In contrast to the Stalin era, however, liberal economists still perform research unmolested. Those who currently publish restrict their writings to approved topics, such as applied research in forecasting, planning, or computers.

In the last decade, several factors have caused Soviet economists, both liberal and orthodox alike, to take increasing interest in computers as a tool to be used in managing the economy. First, these economists have become more cognizant of the constraints imposed on centralized economic planning and management by the existing system for gathering economic information. Second, the work of the mathematical school in programming and input-output analysis has publicized the potential of mathematical methods and models in economics. Third, great technological advances have been made in the development of electronic computers and, despite production difficulties, medium power computers are slowly becoming available. A.A. Dorodnitsyn, G.I. Marchuk, and V.M. Glushkov each direct an important computer center integral to economic work, while A.A. Modin, O.V. Kozlova, I.A. Yevenko, and many other mathematical economists have made significant contributions to computer applications in economics.

IV. ORGANIZATIONS ENGAGED IN ECONOMIC RESEARCH AND THEIR CHIEF PERSONNEL

A. Academy of Sciences, USSR

The charter of the Academy of Sciences calls for the implementation and improvement of scientific research in all branches of science, including economics. Through its membership rolls the Academy unites outstanding Soviet scientists working generally at various research institutes and educational institutions, including those which are not a part of the Academy's system. There is an academy of sciences in every union republic but the RSFSR, which has several republican departments, the most important of which is the Siberian department in Novosibirsk (see Section IV, A, 2). Each of these supports an institute of economics that conducts research on regional aspects of many of the same problems studied by the Institute of Economics of the Academy of Sciences.

Typical of the organization and activities of the regional institutes is that of the Institute of Economics of the Ukrainian Academy of Sciences in Kiev directed by P.I. Bagriy. The main branch employs about 350 people who are organized into 15 divisions. Although the primary interest of the institute and its L'vov and Khar'kov branches and the Institute of Industrial Economics (in Donetsk) is assisting industry, they also participate in other areas of research. With paid contracts for their services, the Ukrainian Institute of Economics and its branches are connected with over 100 industrial enterprises. In 1969 the institute published 12 monographs, six scientific collections of articles, 20 brochures, and 264 articles in magazines and newspapers. About two-thirds of the output is devoted to theoretical problems of the political

economy of socialism, economic efficiency of social production, economic reform, and technical progress.

1. Department of Economic Sciences

The Department of Economic Sciences, formed in June 1962 from the economic research organizations under the former Department of Economics, Philosophy, and Legal Sciences, directs most of the economic research performed under the Academy of Sciences. The principal organizations engaged in economic research under the Department are discussed below.

a. Institute of Economics

The Institute of Economics, founded in 1930 and incorporated into the Academy of Sciences in 1936, has a broader charter and a larger number of the best known economists than any of the other economic research institutes. The institute, which is located in Moscow, comprises eight sections: Economic Efficiency of Capital Investment and New Technology, Economic Accounting and Economic Problems of Management, Formation of Prices, Economics of Agriculture, General Problems of Political Economy, Department of the Economy, History of Soviet Economics and Soviet Economic Thought, and Economic Information.

The director of the institute, L.M. Gatovskiy, described the directions of research at the institute as "proportional development" of various sectors of the Soviet economy, efficiency of technological progress and capital theory, and techniques of long-term forecasting. The institute is primarily responsible for research related to the reform of the economic system, studying new systems of management and incentives, and developing more thoroughgoing systems of *khozraschet*. Studies of the "transition" from socialism to communism, of non-Marxist economic theory, and of the development of socialist and communist theory also continue to occupy the institute.

Much of the econometric research done in the institute, including that making use of mathematical programming and input-output analysis, is done in the sections on Economic Efficiency of Capital Investment and New Technology and Economic Information. The institute publishes the monthly journal, *Voprosy ekonomiki*, which is devoted to presentation of the results of theoretical research and to reporting the results of empirical work.

Some of the more important economists active in the work of the institute are:

- Gatovskiy, L.M. Director of the Institute of Economics; Corresponding Member of the Academy of Sciences; Doctor of Economic Sciences; Professor; head of section of Economic Accounting and Economic Problems of Management; chairman of the Council for Economic Accounting and Material Incentives of Production; member of editorial board of *Voprosy ekonomiki*; specialist in economic theory and incentives.
- Alampiyev, P.M. Doctor of Economic Sciences; Professor; formerly with Gosplan; specialist in economic geography.
- Allakhverdyan, D.A. Deputy director of the institute; Doctor of Economic Sciences; specialist in public finance; also associated with the Moscow Financial Institute.

- Anisimov, G.D. Candidate of Economic Sciences; *Nauchnyy sotrudnik*; specialist in technological progress.
- Batyrev, V.M. Doctor of Economic Sciences; *Starshiy nauchnyy sotrudnik*; specialist in public finance and cost theory.
- Feygin, Ya.G. Corresponding Member of the Academy of Sciences, Ukrainian SSR; Doctor of Economic Sciences; Professor; head of section on Location of Industry; specialist in the geographical distribution of industrial activities.
- Gladkov, I.A. Doctor of Economic Sciences; head of section on History of Soviet Economics and Soviet Economic Thought; specialist in economic history.
- Karnaukhova, Ye.S. Doctor of Economic Sciences; Professor; specialist in agricultural labor.
- Kassirov, L.N. Doctor of Economic Sciences; member of editorial board of *Ekonomika sel'skogo khozyaystva*; specialist in agricultural finance.
- Khachaturov, T.S. Academician; Doctor of Economic Sciences; Professor; head of sub-section on the Efficiency of Capital Investment; former director of the Institute of Complex Transportation Problems; chairman of the Council on the Economic Efficiency of Basic Funds, Capital Investment, and New Technology; chief editor of *Voprosy ekonomiki*; specialist in transportation and capital investment.
- Kheyman, S.A. Doctor of Economic Sciences; *Nauchnyy sotrudnik*; member of the editorial board of *Ekonomika i organizatsiya promyshlennogo proizvodstva*; specialist in industrial organization and labor productivity.
- Khromov, P.A. Corresponding Member of the Academy of Sciences, Ukrainian SSR; Doctor of Economic Sciences; Professor; *Starshiy nauchnyy sotrudnik*; specialist in economic history and industrial organization.
- Komarov, V.Ye. Specialist in labor economics and the structure of the labor force.
- Kondrashev, D.D. Doctor of Economic Sciences; former deputy director of the institute; specialist in pricing and national income accounting.
- Krasovskiy, V.P. Doctor of Economic Sciences; head of department on the Economic Efficiency of Capital Investment, Basic Funds, and New Technology; deputy head of the Council on the Economic Efficiency of Basic Funds, Capital Investment, and New Equipment; specialist in capital investment.
- Kronrod, Ya.A. Doctor of Economic Sciences; head of a sector; specialist in Marxist economic theory.
- Kurskiy, A.D. Doctor of Economic Sciences; specialist in planning and economic reform.
- Kvasha, Ya.V. Doctor of Economic Sciences; specialist in capital investment and planning.
- Laptev, I.D. Professor; formerly director of the institute; Academician of the All-Union Agricultural Academy (VASKhNIL); specialist in the economics of agriculture.
- Liberman, Ya.G. Candidate of Economic Sciences; specialist in public finance.
- Manevich, Ye.L. Doctor of Economic Sciences; Professor; head of sub-section on Labor Problems; specialist in labor economics and living standards.
- Maslova, N.S. Specialist in wages and incentives in industry.
- Mayevskiy, I.V. Deputy director of the institute; Doctor of Economic Sciences; Professor; specialist in technological progress and economic history.

- Mstislavskiy, P.S. Doctor of Economic Sciences; specialist in prices and consumption.
- Notkin, A.I. Doctor of Economic Sciences; Professor; head of subsection on the Regularity of Rates and Proportions of the Economy; specialist in economic development, planning, and national income.
- Pashkov, A.I. Corresponding Member of the Academy of Sciences; Doctor of Economic Sciences; Professor; member of the editorial board of *Seriya ekonomicheskaya*; formerly chairman of the Department of Political Economy of Moscow State University; specialist in history of economic thought and Marxist economic theory.
- Plotnikov, K.N. Corresponding Member of the Academy of Sciences; Doctor of Economic Sciences; chairman of Council on the Economics, Planning, and Organization of Industrial Enterprises; former director of the institute; member of editorial board of *Voprosy ekonomiki*; specialist in public finance.
- Popov, G.M. Scientific secretary for foreign contacts.
- Rumyantsev, A.M. Academician; Vice President of the Academy of Sciences; former academic secretary of the Department of Economics, Academy of Sciences; Professor; Chairman of Council on the Problems of Applied Social Research, Academy of Sciences; member of editorial board of *Mirovaya ekonomika i mezhdunarodnyye otnosheniya*; specialist in organization and management.
- Rusanov, Ye.S. Doctor of Economic Sciences; *Starshiy nauchnyy sotrudnik*; formerly in Scientific Research Institute of Labor; specialist in labor economics.
- Sonin, M.Ya. Doctor of Economic Sciences; Professor; *Starshiy nauchnyy sotrudnik*; specialist in labor economics.
- Strumilin, S.G. Dean of Soviet economists; Academician; former vice-chairman of Gosplan; former vice-chairman of the Council for the Study of Productive Resources; specialist in Marxist economic theory, history, and statistics.
- Urlanis, B.Ts. Doctor of Economic Sciences; Professor; *Starshiy nauchnyy sotrudnik*; specialist in demography.
- Venzher, V.G. Doctor of Economic Sciences; Professor; *Starshiy nauchnyy sotrudnik*; specialist in agricultural economics.
- Veselkov, F.S. *Starshiy nauchnyy sotrudnik*; chief, section of Economic Accounting and Economic Problems of Administration; specialist in material incentives.
- Vilenskiy, M.A. Doctor of Economic Sciences; Professor; specialist in electric power.
- Vishnev, S.M. Doctor of Economic Sciences; specialist in Western economic theory and mathematical economics.
- Vorob'yev, A.V. Specialist in industrial accounting.
- Zhamin, V.A. Doctor of Economic Sciences; Professor; deputy director of the institute; formerly chairman of department of Economics of Foreign Countries, Moscow State University; specialist in the economics of non-Communist countries and growth of less developed countries.

**b. Institute of Economics of World Socialist Systems
(IEMSS AN SSSR)**

The Institute of Economics of World Socialist Systems, established in 1961, conducts research on socialist economies. O. Bogomolov directs this Moscow-based institute which maintains close affiliation with academic departments throughout the USSR. Its main task is to study the development of the economies

in the Communist commonwealth. The institute also surveys the relationship of Communist countries with themselves and with the rest of the world, and gives support to the Council for Mutual Economic Assistance (CEMA). It publishes many of its findings not only in Russian, but also in selected East European languages.

Some of the economists active at the institute are:

- Bogomolov, O. Director of the institute; Doctor of Economic Sciences; former consultant on trade with CEMA countries.
- Dudinskiy, I.V. Deputy director of the institute; Doctor of Economic Sciences; specialist in efficiency of production.
- Kachalov, I. Scientific secretary of the institute.
- Ryabushkin, T.V. Deputy director of the institute; Corresponding Member of the Academy of Sciences; Doctor of Economic Sciences; Professor; specialist in national income.
- Shirayev, Yu. Section chief providing support to CEMA.
- Sorokin, G.M. Corresponding Member of the Academy of Sciences; Doctor of Economic Sciences; specialist in economic history of socialist countries.

c. Institute of World Economics and International Relations (IMEMO AN SSSR)

The Institute of World Economics and International Relations located in Moscow, which emerged in its present form in 1956, is concerned with economic and political research on non-Communist countries. Academician N.N. Inozemtsev currently directs its staff of 500 to 600 persons. The institute's primary mission is to detect changes in the economic and political situation of the world and to assess the significance of these changes in relation to the interests of the USSR.

In 1967 the institute's work was reoriented to deal with specific problems in individual Western countries. Typical research topics deal with international trade, Third World Marxism/Leninism, arms control, and economic planning in Third World countries. The group working on arms control provides support to the Soviet delegation to the Strategic Arms Limitations Talks.

The institute publishes its work in monographs and in its monthly journal, *Mirovaya ekonomika i mezhdunarodnyye otnosheniya* (MEMO).

Some economists who are active in recent research of the institute are:

- Inozemtsev, N.M. Candidate member of the Central Committee of the Communist Party; Director of the institute; Corresponding Member of the Academy of Sciences; Doctor of Historical Sciences; member of editorial board of MEMO; specialist in market conditions in capitalist countries.
- Aboltin, V.Ya. Deputy director of the institute; Doctor of Economic Sciences; Professor; specialist in non-Communist economies.
- Bechin, A.I. Candidate of Economic Sciences; formerly chief of a section in the Institute of Economics, Academy of Sciences; specialist in the economies of foreign countries.
- Kats, A.I. Doctor of Economic Sciences; *Starshiy nauchnyy sotrudnik*; formerly in Scientific Research Institute of Labor; specialist in international comparisons of labor productivity.
- Kostko, Y.A. Scientific secretary of the institute.
- Kudrov, V.M. Doctor of Economic Sciences; specialist in national income account comparisons among countries and in the economy of the United States.

- Mileykovskiy, A.G. Corresponding Member of the Academy of Sciences; Doctor of Economic Sciences; Professor; head of subsection for the Study of Economic Theory in Capitalist Countries.
- Mnogolet, N.I. Doctor of Economic Sciences; specialist in American management.
- Nikitin, S.M. Doctor of Economic Sciences; *Starshiy nauchnyy sotrudnik*; specialist in the economics of non-Communist countries.
- Nikolayev, A.B. Doctor of Economic Sciences; formerly at the Moscow State University; member of editorial board of *SShA: ekonomika, politika, ideologiya*; specialist in economic competition between the United States and the USSR.
- Shapiro, A.I. Head of sector for the Future Economic Development of Capitalism.
- Sobakinskikh, V.I. Specialist in comparative measures of agricultural activity among countries.
- Stepanov, L.V. Doctor of Economic Sciences; associate editor of MEMO; *Starshiy nauchnyy sotrudnik*; specialist in foreign aid and economic development.
- Vasil'yev, Yu.P. Specialist in management.
- Vinogradov, V.A. Corresponding Member of the Academy of Sciences; Doctor of Economic Sciences; head of a sector; specialist in labor productivity.

d. Institute of the United States of America

The Institute of the United States of America was created in 1968, under the Academy of Sciences, and G.A. Arbatov, a member of the editorial board of MEMO, was appointed director. The work of the institute is centered on the US domestic political milieu and foreign policies, but other topics including economics, the legal structure, industrial management, business-government relations, educational trends, and sociological activity are also covered. The institute staff consists of almost 200 professionals, some only part time consultants. In addition to its policy-oriented research, the institute publishes numerous books on specialized American subjects as well as a monthly journal, *SShA: ekonomika, politika, ideologiya*. The staff of the institute endeavors to keep informed about American life by subscribing to most major US periodicals and by maintaining personal contacts both with American visitors to the Soviet Union and by travel abroad.

Some economists active in the institute's research are:

- Arbatov, G.A. Director of the institute; Corresponding Member of the Academy of Sciences; Doctor of Philosophical Sciences; member editorial board of *SShA: ekonomika, politika, ideologiya*; formerly associated with IMEMO.
- Bobrakov, Yu.I. Doctor of Economic Sciences; head of a section; specialist in capitalism and the US economy.
- Gromeka, V.I. Candidate of Economic Sciences; head of a section; specialist in US industrialization and the technology gap between the United States and the USSR.
- Kremen'yuk, V.A. Candidate of Economic Sciences; *Starshiy nauchnyy sotrudnik*.
- Malennikov, V.I. Candidate of Economic Sciences; head of a section.
- Mil'ner, B.Z. Doctor of Economic Sciences; head of a section; specialist in industrial organization and labor.
- Shershnev, E.S. Deputy director of the institute; Doctor of Economic Sciences; specialist in foreign trade.
- Zakhmatov, M.I. Candidate of Economic Sciences; head of a section; specialist in foreign trade and politics.

e. Central Mathematical-Economics Institute (TsEMI AN SSSR)

In 1963 the Central Mathematical-Economics Institute of the Academy of Sciences was formed from the following: the Laboratory for Economic-Mathematical Methods, the Department of Economic Mathematics of the Computer Center's Laboratory for Programming, the Mathematical Group of the Institute of Economics' Department on the Economic Efficiency of Capital Investment, the Department of Transportation Cybernetics of the Institute for Complex Transportation Problems, and the Laboratory for Mathematical Methods of the Council for the Study of Productive Resources.

The main branch of the institute, employing over 800 economists and mathematicians, is in Moscow with smaller branches in Leningrad and Tallin. The main task of TsEMI is to study optimization in planning and management and recommend the application of its research findings to specific branches and enterprises of industry and agriculture. In the course of their theoretical and applied research, members of the institute have pioneered the Soviet use of computers in economics and have developed extensive contacts with planning and economic organs at all levels. Long-standing projects to develop procedures for the application of mathematical methods and computers to planning, pricing, and controls are continuing. Actual applications of TsEMI research, such as the development of a model to forecast demand for direct airline passenger service, are regularly reported in Soviet journals.

The organization of TsEMI consists of four academic departments and one operating department in Moscow with the Leningrad and Estonian branches treated as two additional academic departments. The five Moscow-based departments are the Department of Economic Planning and Forecasting, Department of Theoretical Problems of the Optimal Functioning of the Socialist Economy, the Department of Systems of Control, the Department of Mathematics and Computer Technology, and the Department of Material and Technical Services. It also publishes the journal *Ekonomika i matematicheskiye metody* six times a year. The TsEMI branch in Leningrad specializes in optimal pricing systems, game theory, optimal models of the firm, and queueing theory.

Some economists active in the institute's research are:

- Fedorenko, N.P. Director of TsEMI; Academician; Secretary of the Department of Economic Sciences, Academy of Sciences; Doctor of Economic Sciences; *Kafedra* of Mathematical Analysis of the Economy of the USSR; Economics Faculty of Moscow University; chief editor of *Ekonomika i matematicheskiye metody*; specialist in mathematical economics and the chemical industry.
- Baranov, E.F. Candidate of Economic Sciences; specialist in input-output analysis and regional input-output models.
- Bunich, P.G. Corresponding Member of the Academy of Sciences; Doctor of Economic Sciences; Professor; member of editorial board of *Voprosy ekonomiki*; specialist in optimal planning of *khozraschet* in industry, questions of finance, and use of fixed capital.
- Diderikhs, F.F. Leningrad branch of TsEMI; specialist in theory of planning, price formation, and capital investment.
- Golanskiy, M.M. Candidate of Economic Sciences; *Starshiy nauchnyy sotrudnik*; formerly deputy director of the Laboratory of Economic-Mathematical Methods, Academy of Sciences; specialist in mathematical economics and model building.

- Gorfán, K.L. Scientific secretary of the institute; head of a department; specialist in mathematical economics.
- Katsenelinboygen, A.I. . . . Doctor of Economic Sciences; head of a laboratory in the institute; formerly with the Institute of Economics; specialist in mathematical economics and theory of optimal planning.
- Mash, V.A. Candidate of Economic Sciences; specialist in regional development and in the geographical distribution of productive activities.
- Mikhalevskiy, B.N. Formerly scientific secretary of the Laboratory for Economic-Mathematical Methods, Academy of Sciences; deputy chief editor of *Ekonomika i matematicheskiye metody*; specialist in capital investment and mathematical economics.
- Mints, L.Ye. Doctor of Economic Sciences; was active in directing work of Laboratory for Economic-Mathematical Methods under the Council for the Study of Productive Resources, USSR; member of this council; specialist in mathematical economics, input-output analysis, and labor utilization.
- Modin, A.A. Deputy director of the institute; apparently in semi-service department concerned with management theory; member of editorial board of *Ekonomika i matematicheskiye metody*; specialist in cybernetics and information systems.
- Oleynik-Ovod, Yu.A. Deputy director of the institute; Candidate of Technical Services; specialist in developing computer techniques to solve problems of planning, management, and other economic tasks.
- Petrakov, N.Ya. Candidate of Economic Sciences; head of a laboratory in the institute; specialist in price formation, mathematical economics, and economic management.
- Pugachev, V.F. Corresponding Member of the Academy of Sciences; Candidate of Technical Sciences; *Dotsent*; head of a laboratory in the institute; a mathematician who works on optimal planning.
- Shatalin, S.S. Deputy director of the institute; Doctor of Economic Sciences; specialist in input-output analysis and planning methodology.
- Smirnov, A.D. Doctor of Economic Sciences; head of a laboratory in the institute; specialist in capital investment and input-output analysis.
- Volkonskiy, V.A. Doctor of Economic Sciences; member of editorial board of *Ekonomika i matematicheskiye metody*; specialist in optimal planning, management, and price formation.

2. Siberian Department of the Academy of Sciences (SO AN SSSR)

The Academy of Sciences was the first institute to implement the policy of geographical dispersal of research institutions and personnel by establishing a Siberian Department in Novosibirsk in 1957. Since then a complex of scientific research institutes and a university has evolved into the *akademgorodok* (literally "academic city") located about 20 miles south of Novosibirsk. The Siberian Department, AN SSSR, consists of about 10,000 scientists from most disciplines, with about 80% of them situated at the *akademgorodok*. Geographical dispersal evidently was prompted by the following considerations: (a) the industrial and agricultural development plans for Siberia and the Soviet Far East necessitated greater and improved scientific and technical support, (b) faster application to the economy of scientific and technical advances demanded a closer working relationship between both theoretical and applied

research institutions and production organizations, and (c) dominance of established scientists in the existing science centers threatened the development and advancement of the creativity of young scientists. The Siberian Department is responsible for research on major long-range problems in basic and applied science and for providing scientific and technical support to State organizations in Siberia and the Soviet Far East.

a. Institute of Economics and Organization of Industrial Production
(IE i OPP SO AN)

A.G. Aganbegyan became Director of the Institute of Economics and the Organization of Industrial Production in early 1967 and immediately brought about the merger of the Laboratory for Economic-Mathematical Methods, SO AN, with this institute. Since the merger, emphasis in the institute has shifted from primarily labor-oriented sociological research to development of the use of mathematical methods in economics. The institute does numerous studies for Siberian industry on a fee basis.

Institute researchers specialize in applying mathematical methods in planning and sociological research to the more theoretical problems of the development of the eastern regions of the Soviet Union. In addition, some of the more prominent economists have been instrumental in creating a mutually related system of national economic models. The institute, which employs about 600 persons, also functions as a coordinator of the research of more than 100 scientific research institutes, including central and branch laboratories, economic laboratories, and units in industrial enterprises. The Institute of Economics and Organization of Production publishes two professional journals—(1) *Izvestiya Sibirskogo otdeleniya akademii nauk SSSR, seriya obshchestvennykh nauk*, and (2) *Ekonomika i organizatsiya promyshlennogo proizvodstva*. The former is a monthly series on the social sciences, including economic topics, while the latter provides, among other things, coverage of eastern regional problems, technical economic-mathematical studies, and integration of management techniques into the sphere of economics.

Some of the institute's more prominent economists are:

- Aganbegyan, A.G. Director of the institute; Corresponding Member of the Academy of Sciences; editor-in-chief of *Ekonomika i organizatsiya promyshlennogo proizvodstva*; member of editorial board of *Ekonomika i matematicheskiye metody*; head of the Economics Department of Novosibirsk University; specialist in use of mathematical-economic models, optimal planning, and labor economics.
- Alekseyev, A.M. Member of editorial board of MEMO; specialist in international comparisons of economic activities.
- Gladyshev, A.N. *Starshiy nauchnyy sotrudnik*; specialist in labor economics.
- Gorbunov, V.A. Specialist in water transportation in Siberia.
- Kalinovskiy, N.P. Specialist in labor economics with interest in regional wage differentials.
- Menshikov, S.M. Doctor of Economic Sciences; Professor; member of the editorial board of MEMO; former deputy director of IMEMO; specialist in the US economy.
- Oldak, P.G. Doctor of Economic Sciences; specialist in consumer welfare.

- Orlov, B.P. Deputy director of the institute; Doctor of Economic Sciences; specialist in the development of industry and transport.
- Patrushev, V.D. Doctor of Economic Sciences; section chief; specialist in labor economics.
- Sominskiy, V.S. Doctor of Economic Sciences; Professor; specialist in enterprise management.
- Val'tukh, K.K. Doctor of Economic Sciences; head of department of Economic Model Building; specialist in use of mathematical-economic models, optimal planning, and Marxist economic theory.
- Zaslavskaya, T.I. Corresponding Member of the Academy of Sciences; Doctor of Economic Sciences; department chief; specialist in agricultural economics.

b. Other Institutions Related to the Institute of Economics and Organization of Industrial Production

Several organizations have close ties with the institute. The Institute of Mathematics, SO AN (Academician and Doctor of Mathematical Sciences S.L. Sobolev is the Director) and its Mathematical-Economics Division work closely with the Institute of Economics and Organization of Industrial Production. Academician and Doctor of Mathematical Sciences L.V. Kantorovich is Deputy Director of the Institute of Mathematics, SO AN SSSR. A specialist in mathematical analysis, computer techniques, and economic-mathematical planning, Kantorovich was Director of the former Laboratory for Economic-Mathematical Methods, SO AN SSSR. V.M. Makarov, a mathematician interested in mathematical applications in economics, also works at the Institute of Mathematics.

B. Executive Departments of the Government

1. Gosplan, USSR

a. The Nature of Research Conducted Under Gosplan, USSR

Gosplan (State Planning Committee), USSR, was established in 1921 and subsequently has been reorganized a number of times, most recently in late 1965. Currently headed by N.K. Baybakov, Gosplan primarily is an operational economic planning organization, but the economic research that is conducted under its auspices probably is among the most influential and important performed in the USSR. This research is aimed at perfecting economic plans, improving methods of planning, and finding ways to tighten control over the execution of plans. Because of the comprehensiveness of Soviet economic planning, this research touches practically all aspects of the economy.

To perform this economic research, Gosplan has collected a large group of the best trained and most able economists in the country. For the most part, these economists were obtained in conjunction with transfers of research functions from the Sovnarkhoz, USSR, which was abolished in 1965, and from the Academy of Sciences. In addition, many outstanding individual economists have been brought in on a part-time consulting basis from the research institutions of the Academy of Sciences and from the VUZy. One of the principal features of this group of economists is its heavy weighting with specialists in econometrics and statistics. In addition to those engaged primarily in research in the economic research institutes and laboratories under Gosplan, a number of outstanding economists are engaged in administrative duties in Gosplan itself. Gosplan publishes the monthly journal, *Planovoye khozyaystvo*.

Some of the outstanding economists active in the work of Gosplan are:

- Baybakov, N.K. Chairman of Gosplan (a position of ministerial rank).
- Bachurin, A.V. Deputy chairman of Gosplan; Candidate of Economic Sciences; head of division of Finances and Production Costs; member of editorial board of *Planovoye khozyaystvo*; specialist in real income and its utilization, and the state budget.
- Chernyavskiy, V.O. Doctor of Economic Sciences; head of division on Introducing New Methods of Planning; specialist in optimization of planning, location of industry, productive efficiency, and industrial management.
- Dorovskikh, A.B. Head of the sub-division for the National Economic Balance Sheet; specialist in production statistics.
- Drogichinskiy, N. Member of editorial board of *Planovoye khozyaystvo*; specialist in industrial administration and reform.
- Gaponenko, G.S. Specialist in agricultural planning.
- Gusarov, A.S. Candidate of Economic Sciences; *Dotsent*; head of sub-division on Price Formation of State Price Committee of Gosplan; head of section in the Economics Faculty, Moscow University; specialist in price formation.
- Kolosov, A.F. Specialist in investment.
- Kossov, V.V. Candidate of Economic Sciences; specialist in mathematical economics and input-output analysis.
- Krylov, P.N. Candidate of Economic Sciences; deputy head of consolidated sub-division for the National Economic Plan; specialist in plan balances and consumption.
- Lebedinskiy, N.P. Doctor of Economic Sciences; chief, National Economic Planning Department.
- Mel'nikov, N.V. Academician; also affiliated with the Council for the Study of Productive Resources.
- Oblomskiy, Ya.A. Candidate of Economic Sciences; *Dotsent*; head of department for Introducing Computer Techniques into Planning; member of editorial board of *Ekonomika i matematicheskiye metody*; specialist in the application of mathematical methods in planning.
- Petrov, A.I. Doctor of Economic Sciences; Professor; also affiliated with Moscow University; specialist in economic statistics and plan balances.
- Rakovskiy, M.Ye. Deputy Chairman of Gosplan; member of editorial board of *Ekonomika i matematicheskiye metody*; specialist in mathematical economics and technological progress.
- Rogovskiy, N.I. Head of department of Labor Productivity and Labor Resources; member of editorial board of *Planovoye khozyaystvo*; specialist in labor economics.
- Shvyrkov, V.V. Doctor of Economic Sciences; *Dotsent*; member of department of Introducing Computer Techniques into Planning; also associated with Moscow Institute of National Economy; specialist in consumption.
- Vikhlyayev, A. Candidate of Economic Sciences; member of Committee on Prices of Gosplan; specialist in pricing.
- Volchkov, B.A. Specialist in using computers in plan formation.

Each union republic has its own Gosplan which is responsible for the more localized economic planning tasks within the republic. The most influential republic Gosplan in terms of the quality as well as the scope of its work is that of the RSFSR. The Central Scientific Economic Research Institute (TsNIEI)

of Gosplan RSFSR has emphasized such areas of research as distribution of industry among the republic's economic regions, use of capital in industry, and the overall productive efficiency in industry. A.T. Taranov is the institute's director. Ye.V. Kasimovskiy, Doctor of Economic Sciences, is head of the institute's Department of Labor Productivity and a specialist in labor economics. O.D. Protsenko is a specialist in input-output analysis at the institute.

b. Scientific Research Economic Institute of Gosplan (NIEI Gosplan)⁸

The Scientific Research Economic Institute of Gosplan, under the directorship of A.N. Yefimov, is the most active and influential of the Gosplan organizations engaged in economic research. Established in 1955 and later placed under the USSR Sovnarkhoz, it was transferred to Gosplan in 1960. The objectives of the institute are to generalize the experience of planning and to suggest methods of resolving planning problems. The two basic areas of its research are management of the economy in the near term and long-range economic planning.

The institute, which employs about 350 scientific associates, ten doctors, and 107 candidates of economic sciences, pioneered in the field of input-output analysis (interbranch balance analysis according to Russian terminology) in the USSR. Members of the institute have received government prizes for their recent work in input-output and macroeconomic models; the research has dealt with determining optimal relations among plant locations, transportation facilities, and the supply distribution network. The requirements of the economic reform have stimulated research in the areas of planning the level of output, profits and profitability, and full labor expenditures, among others. Current research includes methodological work for future input-output tables, for planning the scientific base for the development of the national economy, and for increasing the standard of living for the Soviet consumer. The institute continues to emphasize input-output analysis and mathematical methods.

A few of the economists active in the institute are:

- Yefimov, A.N. Director of the institute; Academician; Doctor of Economic Sciences; Professor; member of editorial boards of *Planovoye khozyaystvo* and *Ekonomika i matematicheskiye metody*; specialist in planning theory, mathematical economics, economic forecasting, and input-output analysis.
- Anchiskin, A.I. Candidate of Economic Sciences; member of the editorial board of *Seriya ekonomicheskaya*; specialist in economic development.
- Belousov, R.A. Doctor of Economic Sciences; sector chief, specialist in pricing.
- Braginskiy, B.I. Doctor of Economic Sciences; Professor; specialist in labor productivity in agriculture and industry.
- Doroshin, I.I. Specialist in pricing and the allocation of labor.
- Ioffe, Ya.A. Candidate of Economic Sciences; specialist in comparative economic systems.
- Kats, V.I. Director of section for Planning and National Economic Balance Sheet; chairman of Scientific Methodology Commission of NIEI Gosplan; specialist in planning methodology.
- Kirichenko, V.N. Deputy director of the institute; Candidate of Economic Sciences; specialist in long-term forecasting and planning of economic development.

⁸ Those institutes whose titles end with the words *Gosplana SSSR* are fully subordinate to and an integral part of the Gosplan organization. Institutes designated *pri Gosplane SSSR* are associated with Gosplan but are not actually part of Gosplan. For complete transliterated Russian titles of the institutes, see Appendix A.

- Klemyshev, P.A. Candidate of Economic Sciences; specialist in agricultural economics.
- Klotsvog, F.I. Candidate of Economic Sciences; specialist in dynamic models.
- Kotkovskiy, Ya.Ya. Candidate of Economic Sciences; specialist in comparisons of economic activity among socialist countries.
- Lagutin, N.S. Candidate of Economic Sciences; specialist in consumption, labor, and planning.
- Leibkind, Yu.R. Member of a joint Gosplan-TsEMI-Moscow State University project on computerized planning.
- Litviakov, P.P. Candidate of Economic Sciences; specialist in planning the allocation of labor.
- Mayer, V.F. Candidate of Economic Sciences; head of sub-section on the Standard of Living; specialist in wages and consumption.
- Yershov, E.B. Candidate of Economic Sciences; specialist in mathematical economics with an interest in economic planning.

c. Scientific Methods Commission for the Balance of the National Economy (or Scientific Methodology Commission)

The Scientific Methods Commission for the Balance of the National Economy was created in 1967 under the Academic Council for Scientific Research of the Economics Institute of Gosplan, USSR. Its purpose is to improve methodological work on the maintenance of "economic balance or proportionality." The commission is responsible for preventing duplication by coordinating the research of scientific institutions on balancing problems. Its main activities include the development and recommendation to Gosplan, USSR, and the republic gosplans of changes in planning methods that are aimed at facilitating the maintenance of economic "proportionality." Active in the commission are V.I. Kats, Chairman; A.B. Dorovskikh; and V.F. Mayer.

d. Council for the Study of Productive Resources (SOPS)

The Council for the Study of Productive Resources was organized by the Institute of Economics of the Academy of Sciences in 1930 and transferred to Gosplan in 1960. Its chief concern is questions of the optimal geographical distribution of economic activity, with particular reference to the underdeveloped areas of Siberia, the Far North, and the Far East.

Some of the Council's more outstanding economists are:

- Nekrasov, N.N. Chairman of the Council; Corresponding Member of the Academy of Sciences; Doctor of Economic Sciences; Professor; member of editorial board of *Ekonomika i matematicheskiye metody*; specialist in geographical distribution of industrial activities and economic development of Siberia with special interest in the chemical industry.
- Batova, N. Scientific secretary of the council; specialist in resource distribution.
- Ivanchenko, A.A. Specialist in geographical distribution and utilization of labor.
- Kistanov, V.V. Candidate of Economic Sciences; specialist in regional development.
- Lisichkin, S.M. Deputy chairman of the council; Doctor of Economic Sciences; Professor; specialist in the petroleum industry.

- Meľnikov, N.V. Academician; Doctor of Technical Sciences; also affiliated with Gosplan; Chairman of Commission for the Study of Productive Resources and Natural Resources, Academy of Sciences; specialist in planning the use of natural resources.
- Mints, L.Ye. Doctor of Economic Sciences; also affiliated with TsEMI; specialist in mathematical economics, input-output analysis, and labor utilization.
- Probst, A.Ye. Doctor of Economic Sciences; Professor; specialist in technological progress and in geographical distribution of industry, especially the metallurgical and fuel industries.
- Vasil'yev, P.V. Doctor of Economic Sciences; Professor; specialist in the lumber industry.

e. Institute of Complex Transportation Problems of Gosplan

The Institute of Complex Transportation Problems, under Gosplan, USSR, since 1960, engages in research on the problems of the development of the national transportation system. It is concerned with research on the coordinated development of the transportation system, on the coordination of transportation rates and on optimal use of transportation facilities. Mathematical programming and regional input-output analysis sometimes are used in its research. The institute has concentrated on the development of its contribution to the five-year plan, "Basic Directions of the Development of Transport, 1966-70." Active in the institute are V.I. Dmitriyev, the director, V.N. Livshits, and Ya.V. Shukstal'.

f. Scientific Research Institute for the Organization of Management and Norms

The Scientific Research Institute for the Organization of Management and Norms was established in 1960 when the Scientific Research Economic Institute was transferred to Gosplan. The institute endeavors to raise the level of production efficiency by analyzing planning problems, the distribution and use of material resources in the national economy, and the application of scientific principles to organizing industrial management. In recent years the institute has been the Soviet leader in applications of computers to management problems and has initiated the use of such management tools as "critical path analysis" and the automated system of planning calculations. Current research involves improving the methods of planning, setting norms for material resources and equipment, and organizing industrial management. Professor N.M. Oznobin is director of the institute and N.V. Vorotnikov is his deputy.

2. Central Statistical Administration (TsSU)

a. The Nature of Research Conducted in the Central Statistical Administration

The main tasks of the Central Statistical Administration are the collection, processing, and dissemination of statistical information. TsSU, however, has been reluctant in implementing new developments in information systems and cybernetics despite its responsibility for directing the proposed national computer network. Much of TsSU's work is focused on economic balances, major questions of allocation, the evaluation of new accounting and management procedures, and the compilation and improvement of various indexes. TsSU also has veto power over the collection and publication of data by other organizations.

As with Gosplan, each republic has its own statistical administration responsible for local and regional matters. Many of the economists in the Central Statistical Administration engage in both research and administrative work. Among their duties is editing of the monthly economic and statistical journal, *Vestnik statistiki*, published by TsSU.

Some of the more prominent economists and statisticians in TsSU are:

- Starovskiy, V.N. Director of TsSU (a position of ministerial rank); Corresponding Member of the Academy of Sciences; Professor; specialist in statistics.
- Belyakov, A.A. Head of sector on Statistics of Capital Construction.
- Eydel'man, M.R. Doctor of Economic Sciences; deputy head of sector on the National Economic Balance Sheet; specialist in input-output analysis.
- Genin, S. Ya. Edits all statistical handbooks; specialist in economic statistics.
- Khlebnikov, V.B. Deputy director of the administration of Agricultural Statistics; specialist in agricultural economics; formerly specialized in the ferrous metal industry.
- Kravchenko, Ye. Head of sector on Agricultural Statistics.
- Labok, P.I. Deputy head of sector of Labor and Wage Statistics.
- Maksimov, G.M. Deputy head of sector on the Population Census.
- Matyukha, I.Ya. Candidate of Economic Sciences; head of sector on Family Budget Surveys; specialist in consumption.
- Monakhov, V.F. Deputy head of TsSU; specialist in statistics.
- Partigul, S.P. Head of the sector on Trade Statistics; specialist in housing and consumption.
- Pod'yachikh, P.G. Deputy director of TsSU; head of the Census Administration; specialist in statistics and demography.
- Pogosov, I.A. Head of sector on Industrial Statistics; specialist in industrial production measures.
- Sazonov, S.V. Deputy director of TsSU; head of sector for Computer Operations; specialist in use of computers in economic management.
- Stolyarov, S.G. Candidate of Economic Sciences; head of sector on Price Statistics and Price Formation; specialist in pricing.
- Strumilin, S.G. Academician; Doctor of Economic Sciences; also affiliated with Institute of Economics, Academy of Sciences; formerly deputy director of TsSU; member of Collegium of TsSU; specialist in consumption, Marxist economic theory, and Soviet economic history.
- Tsyrlin, L.M. Head of sector on Statistics of Capitalist Countries; specialist in comparative indexes of industrial production.
- Ufyanova, A.F. Head of sector of Labor and Wage Statistics.
- Vinogradov, K.K. Deputy chief of the department of the National Economic Balance; formerly at Gosplan; specialist in the machine building industry.
- Volodarskiy, L.M. First deputy director of TsSU; Doctor of Economic Sciences; member of editorial board of *Planovoye khozyaystvo*; specialist in industrial statistics.
- Yezhov, A.I. Deputy director of TsSU; specialist in industrial statistics and demography.

b. Scientific Research Institute for Planning Computer Centers and Systems of Economic Information (NII TsSU)

The Scientific Research Institute for Planning Computer Centers and Systems of Economic Information of TsSU was organized in 1963 to introduce mathematical methods and computers in statistical accounting. The institute has devoted itself basically to problems of improving statistical methodology and to developing

and introducing mathematical methods in the collecting, storing, and processing of statistics. As a result, it has contributed to the work on input-output analysis and to the introduction of computer technology into economic information systems. The institute has almost 30 departments covering all sectors of the economy.

Some prominent members of the institute include:

- Boyarskiy, A.Ya. Director of the institute; Doctor of Economic Sciences; specialist in demography and mathematical statistics.
- Dzhaparidze, V.V. Deputy director of the institute; specialist in statistics.
- Rakhmanov, M.K. Deputy director of the institute.
- Siskov, V.I. Candidate of Economic Sciences; formerly at Moscow Economic Statistics Institute; specialist in industrial statistics.
- Smulevich, B.Ya. Doctor of Medical Sciences; Candidate of Economic Sciences; former *Starshiy nauchnyy sotrudnik* with TsSU.
- Volkov, A. Formerly with the Institute of Automation and Telemechanics; specialist in demography.

3. State Committee on Prices: Scientific Research Institute on Price Formation (NII Tsen)

The NII Tsen, located in Moscow, was established in mid-1967 as an agency of the State Committee on Prices.⁹ Directed by Doctor of Economic Sciences Yu. Yakovets, the institute is charged with research on the principles and methods of structuring planned prices. The institute is constantly analyzing the results of wholesale price reform and devising basic improvements of the entire price system.

The problem of using prices as an economic stimulus to technical progress is an important focus of current work. Institute specialists are also engaged in developing methods for forecasting price changes to be incorporated as indexes into annual and long-range plans.

While the past work has centered on wholesale prices, Yakovets recently stated that in the future a greater research effort will be devoted to retail prices and rates for services performed for the population. He also has proposed improvement in price statistics by providing more up-to-date reporting.

4. Institute of Problems of Management

The Institute of Automation and Telemechanics, a large and important Soviet institution since 1939, changed its name early in 1970 to the Institute of Problems of Management. At that time, responsibility was shifted from research in purely technical areas to the development of mathematical models for decision-making in the socio-economic sphere. Recent projects include research in cluster analysis, econometric modeling, computer simulation, inventory theory, and mathematical programming. All such areas are involved in a vast management information system currently under theoretical development.

Official subordination is assumed jointly under the Academy of Sciences and the Ministry of Instrument Making, Automation, and Control Systems—for

⁹ The Committee on Prices was set up in 1965 under Gosplan, USSR, and was headed by Vladimir K. Sitnin, a former deputy minister of finance. The Committee, with the aid of its subordinate republic level committees, was responsible for carrying out the 1966-67 reform of wholesale prices in industry. In 1969 it became an autonomous body reporting directly to the Council of Ministers.

whom the institute is an official consultant. The institute is also an adviser to the State Committee for Science and Technology on problems of computer applications for management purposes and, especially, standardization of computer application techniques.

Academician V.A. Trapeznikov heads the institute staff of about 2,000 personnel, including over 300 graduate students. He is also First Deputy Chairman of the State Committee for Science and Technology.

5. State Committee for Construction Affairs (*Gosstroy*): Scientific Research Institute of Construction Economics (NIIES)

The Scientific Research Institute of Construction Economics was created in 1956 under the Academy of Construction and Architecture, USSR. It was transferred to the jurisdiction of the State Committee for Construction Affairs (*Gosstroy*), USSR, when the administration of construction was reorganized in 1963. It is the principal research organization dealing with applied and theoretical problems in the economics of construction, but much of its most important work is performed in collaboration with other institutes and organizations. The Scientific Research Institute of Construction Economics issues technically oriented manuals and instructions on construction norms and estimates, the employment of building materials, and methodologies for calculating the relative efficiency of investment in the construction and building materials industries. The institute participates in input-output work as it affects the construction sector of the Soviet economy and also participates in CEMA meetings that deal with construction in an intra-bloc context.

Candidate of Technical Sciences P.B. Gorbushin is the Director of the Scientific Research Institute of Construction Economics. The institute is organized conventionally into departments, sectors, and laboratories. It also has a central norm research bureau, a scientific council that sponsors conferences on problems in construction economics, and *kafedra* of higher learning that offer postgraduate work leading to the degree of candidate.

Of the economists who hold positions in the institute, the following are most prominent:

- | | |
|------------------------|--|
| Gorbushin, P.B. | Director of the institute; specialist in the economics of construction. |
| Birman, I.Ya. | Candidate of Economic Sciences; former member of the Institute of Economics of the Academy of Construction and Architecture; member of the Scientific Council for Cybernetics, Academy of Sciences. |
| Chudnovskiy, D.M. | Candidate of Economic Sciences; head of the department of the Material-Technical Base of Construction; specialist in building materials. |
| Kiyevskiy, V.G. | Candidate of Economic Sciences; head of a sector; specialist in the planning of construction. |
| Rekitar, Ya.A. | Candidate of Economic Sciences; specialist in the economics of building materials and designs. |
| Rotshteyn, A.G. | Candidate of Economic Sciences; chief of the department of Planning. |
| Vaynshteyn, B.S. | Deputy director of the institute; Candidate of Economic Sciences; member of the Scientific Council on Economic Effectiveness, Academy of Sciences; specialist in technological progress in construction. |

6. Ministry of Trade: All-Union Scientific Research Institute for the Study of Consumer Demand and Marketing Conditions (VNIKS)

The All-Union Scientific Research Institute for the Study of Consumer Demand and Marketing Conditions was organized in 1965 under the Ministry of Trade. I.M. Khrekin is the institute's director and its deputy director is B.I. Gogol'. The institute, which also has branches in the republics, has its own computer center to process data from consumer surveys and other sources. Economists, commodity specialists, and programmers will implement the institute's mathematical and statistical approach to market study.

The institute's research includes the study of demand for specific products, the evaluation of general conditions in the consumer goods market, and the forecasting of consumer demand. The institute also participates in planning commodity distribution and coordinates market research performed by various organizations.

7. State Committee on Labor and Wages: Scientific Research Institute of Labor (NII Truda)

The Scientific Research Institute of Labor and its parent organization, the State Committee on Labor and Wages, were created in 1955 as a concomitant to increased attention being given to labor and wage problems. The research of the institute is focused on fields related to the allocation of labor services, including labor norms and wage rates, economic incentives, wage administration, and industrial organization. The institute places considerable emphasis on the application of mathematical methods to economic research and employs numerous specialists in input-output analysis and linear programming. The institute's reports frequently appear in the monthly journal *Sotsialisticheskiiy trud*, published by the State Committee on Labor and Wages.

A few of the outstanding economists associated with the work of the institute are:

- Kapustin, Ye.I. Director of the institute; Doctor of Economic Sciences; Professor; head of *Kafedra* of Political Economy of Moscow University; member of editorial board of *Sotsialisticheskiiy trud*; specialist in labor economics, particularly wage matters.
- Figurnov, S.P. Specialist in measurement of real wages and consumption.
- Moshenskiy, M.G. Specialist in wages in non-Communist economies.
- Onika, D.G. Doctor of Technical Sciences; former head of the institute; specialist in labor economics.
- Pravdin, D.I. Candidate of Economic Sciences; head of department of Labor and Wages; specialist in wages.
- Pyatetskiy-Shapiro, I.I. ... Candidate of Economic Sciences; specialist in labor norms and wages.
- Rimashevskaya, N.M. Head of Laboratory for Mathematical and Statistical Methods of the institute; specialist in income analysis, wage differentials, and mathematical economics.
- Shishkin, N.I. Head of section on Labor Productivity and Utilization of Labor Resources.
- Shkurko, S.I. Head of section on Wages; head of a section of State Committee on Labor and Wages; specialist in wage administration.

8. Ministry of Foreign Trade: Scientific Institute of Market Research (NIKI)

The Scientific Institute of Market Research of the Ministry of Foreign Trade, USSR, was established in 1947. Its chief activities are studying economic conditions in the non-Communist world and situations in principal world markets, developing long-term forecasts of conditions in the international markets for principal types of Soviet exports, and studying Soviet trading methods. The institute provides research for the Ministry of Foreign Trade as an aid to the implementation of foreign trade policy.

The institute, which employs over 360 people, has six sections: Economics of Foreign States, Commodity Markets, Prices, Foreign Commercial Information, Statistics, and Study of Foreign Firms. The institute regularly publishes *Byulleten' inostrannoy kommercheskoy informatsii* and a series of papers devoted to more complete studies of particular questions. The Ministry of Foreign Trade's journal, *Vneshnyaya torgovlya*, also provides an outlet for the institute's research. N.V. Orlov is director of the institute.

The Ministry of Foreign Trade also has an Academy of Foreign Trade in Moscow that is almost exclusively devoted to educational activities and, in addition, an Institute of Foreign Trade in Leningrad that conducts a limited amount of research work. Practically all of the research under the Ministry of Foreign Trade is narrowly specialized commercial research; theoretical research in international economics is done primarily in other research organizations.

9. Ministry of Finance: Scientific Research Institute of Finance (NIFI)

The Scientific Research Institute of Finance of the Ministry of Finance, USSR, was established in 1936 to provide research support for the parent ministry. Since then the institute has acquired duties which include basic research in finance and the collection and analysis of statistical material on state budgets, taxes, credit, money flows, and wages in Communist and major non-Communist countries. In addition to its major publications—usually generalizations of experience in administering the financial system—the institute publishes periodic surveys of financial and currency conditions in foreign countries. Many of its reports are published in *Finansy SSSR*, the monthly journal of the Ministry of Finance. The work of the institute is divided among the following four sections: Budgetary Finance; Finance of Branches of the Economy of the USSR; Credit and Monetary Circulation in the USSR; and Finance, Money, and Credit in Foreign Countries.

More currently the institute has conducted research on the role of finances in economic operations under the newly reformed system of organization and management. In addition, it has continued its work on capital investment in agriculture and *khozraschet* in agriculture.

A few of the economists associated with the work of the Scientific Research Institute of Finance are:

- Kosyachenko, G.P. Director of the institute; Professor; specialist in incentives, profit indexes, and Soviet financial history.
- Lavrov, V.V. Specialist in public finance, accounting, and consumption.
- Lushin, S.I. Candidate of Economic Sciences; head of sector for Application of Mathematical Methods in Financial Planning.
- Ryumin, S.M. Deputy director of the institute; member of editorial board of *Finansy SSSR*; specialist in industrial finances.

- Semenov, V.N. Candidate of Economic Sciences; head of sector on Agricultural Finances; specialist in finance, credit, and cost accounting in agriculture.
- Sitaryan, S.A. Deputy director of the institute; Doctor of Economic Sciences; specialist in finance.
- Tul'chinskiy, L.I. Candidate of Economic Sciences; *Starshiy nauchnyy sotrudnik*; specialist in the economics of education.

10. Ministry of Agriculture

The Ministry of Agriculture, USSR, headed by V.V. Matskevich, has administrative control over the primary organs specializing in agricultural economics research. Most of the important research work within the structure of the Ministry is believed to be carried out by two organizations: the All-Union Scientific Research Institute of Agricultural Economics (VNIIESKh), and the Department of Economics and Organization of Agriculture of the All-Union Academy of Agricultural Sciences named for V.I. Lenin (VASKhNIL). The former organization was established in 1955, the latter in 1956.¹⁰

In recent years, the work programs of both VNIIESKh and VASKhNIL increasingly appear to be focused on common research tasks, which taken together with other evidence, suggest close coordination of functions and possibly amalgamation of some facilities and staffs (for example, libraries and administrative staffs). The research effort of both groups is directed to the formulation of planning for the overall development of agriculture. In addition, the studies of both organizations tend to focus on similar topics: land use, labor productivity and incentives, regional distribution of crops and livestock, agricultural prices and finance, and standardized cost accounting for collective and state farms.

A few of the economists active in the work of the two research groups are:

a. All-Union Scientific Research Institute of Agricultural Economics (VNIIESKh)

- Aleksandrov, N.P. Director of the institute; Corresponding Member of VASKhNIL; member of the editorial board of *Ekonomika sel'skogo khozyaystva*.
- Boyev, V.R. Candidate of Economic Sciences; head of Price Division; specialist in agricultural pricing.
- Kotov, G.G. Doctor of Economic Sciences; specialist in agricultural labor.
- Kravchenko, R.G. Deputy director of the institute; Doctor of Economic Sciences; specialist in the application of computers to agricultural management.
- Lapkes, Ya.B. Candidate of Agricultural Sciences; specialist in comparative performance in agriculture among countries and in farming methods.
- Mityushkin, T.S. Candidate of Economic Sciences; head of section on Finances and Record Keeping in Agricultural Enterprises; specialist in agricultural accounting.
- Rusakov, G.K. Deputy director of the institute; Candidate of Agricultural Sciences; specialist in agricultural accounting.
- Vayner, M.G. Candidate of Agricultural Sciences; specialist in investment, supply, and organization in agriculture.

¹⁰ VASKhNIL is not to be confused with the Agricultural Academy named for K.A. Timiryazev. Both are academies, both offer advanced training and research, but only VASKhNIL members are entitled to the rank of academician.

b. Department of Economics and Organization of Agriculture of the All-Union Academy of Agricultural Sciences named for V.I. Lenin (VASKhNIL)

- Kletskiy, L.M. Corresponding Member of VASKhNIL; Professor, Academy of Agriculture, Ukrainian SSR.
- Kolesnev, S.G. Academician of VASKhNIL; Doctor of Economic Sciences; head of the department of Organization of Socialist Agricultural Enterprises at the Moscow Agricultural Academy named for K.A. Timiryazev; specialist in agricultural organization and agricultural labor.
- Loza, G.M. Academic secretary of the department; member of editorial board of *Ekonomika sel'skogo khozyaystva*; specialist in agricultural management and planning.
- Moiseyev, M.I. Corresponding Member of VASKhNIL.
- Obolenskiy, K.P. Corresponding Member of VASKhNIL; Doctor of Economic Sciences; former director of VNIIESKh; specialist in a broad range of agricultural economic matters.
- Romanenko, I.N. Corresponding Member of VASKhNIL; Doctor of Economic Sciences.
- Sergeyev, S.S. Corresponding Member of VASKhNIL; specialist in cost and productivity in agriculture.
- Tikhomirov, M.I. Corresponding Member of VASKhNIL; Doctor of Agricultural Sciences; director of the Siberian Affiliate of the Scientific Research Institute of Agricultural Economics; specialist in mechanization.
- Tikhonov, V.A. Corresponding Member of VASKhNIL; Doctor of Economic Sciences; director of All-Union Scientific Research Institute of Agricultural Labor Organization and Wages (VNIISKhT); specialist in technological progress in agriculture.
- Tulupnikov, A.I. Corresponding Member of VASKhNIL; Doctor of Economic Sciences; director of the All-Union Institute of Scientific-Technical Information on Agriculture; former director of VNIIESKh.
- Udachin, S.A. Academician of VASKhNIL; head of department of the Moscow Institute of Land Survey Engineers; member of editorial board of *Ekonomika sel'skogo khozyaystva*; specialist in the problems of land utilization.
- Vanag, Ya.F. Doctor of Economic Sciences; Corresponding Member of VASKhNIL; Professor.

11. State Committee for Science and Technology (SCST)

The USSR State Committee for Science and Technology was created in October 1965 on the basis of the former State Committee for Coordination of Scientific Research Work, USSR. Where the old committee had been responsible only for coordinating research and development in all phases of Soviet science, the SCST is now the official director of such activity. In relation to economics, the SCST is the Soviet Union's executive agent in uncovering useful innovations and discoveries in applied economic fields, seeing that they are further developed in the appropriate ministry or academy research institute, and following up to make sure that the process as evolved is applied most efficiently in the Soviet economy. In addition, together with the Ministry of Finance, the Academy of Sciences, and Gosplan, the Committee draws up the budget for all research and development.

The SCST is headed by V.A. Kirillin, Academician and former engineer. V.A. Trapeznikov, Academician and head of the Institute of Problems of Management, is Kirillin's first deputy minister and D.M. Gvishiani, a recently elected Cor-

responding Member of the Academy, is one of several deputy ministers. Under the aegis of Gvishiani the SCST has apparently assumed command of most research and development with regard to management organization and techniques. This research is carried out either in SCST subordinate organizations or in institutes specifically designated by them. The Institute of Economic Administration (see section C, 9) was set up in 1970 and is the first Soviet institute dealing exclusively with research on problems of economic management.

C. Universities and Educational Institutes

Higher education for economists is provided by 30 specialized engineering-economic, economic, financial, and trade institutes. One hundred and eighty economics faculties exist in universities and technical and agricultural institutes. In addition to maintaining fairly heavy teaching loads, members of the economic faculties of these institutions engage in some research. Those institutions that perform research of relatively high quality and employ the more outstanding personnel are discussed below.

1. Moscow State University (MGU) named for M.V. Lomonosov

Moscow State University, the largest and most prominent institution of higher education in the USSR, has an Economics Faculty that is divided into 11 chairs, or *kafedra*: Political Economy, History of the National Economy and Economic Thought, Economics of Foreign Countries, Economics of Planning in Industry, Economics of Planning in Agriculture, Statistics and Accounting, Analysis of Economic Activity of Socialist Enterprises, Mathematical Methods in Economic Analysis (Economic Cybernetics), Economics of Labor, Planning of the National Economy, and Population.

The members of each of these departments conduct research primarily of a theoretical character on problems within their fields of specialization. The university publishes a monthly journal, *Vestnik Moskovskogo universiteta*, with a special economics series, *Seriya ekonomika*, appearing bi-monthly.

Some of the members of the Economics Faculty are as follows:

- Solodkov, M.V. *Dekan*; Professor; editor-in-chief *Vestnik Moskovskogo universiteta, seriya ekonomika*.
- Berri, L.Ya. Doctor of Economic Sciences; Professor; head of *Kafedra* of Planning of the National Economy; member of editorial board of *Vestnik Moskovskogo universiteta, seriya ekonomika*; specialist in mathematics, economic planning, and the US economy.
- Boyarskiy, A.Ya. Professor of economic statistics; head of *Kafedra* of Statistics and Accounting; director, Scientific Research Institute of the Central Statistical Administration; specialist in mathematical economics and demography.
- Cheprakov, V.A. Member editorial board of *Kommunist*; specialist in capitalism.
- Cherkovets, V.N. Professor of political economy.
- Chernyak, Yu.I. Candidate of Economic Sciences; formerly at the Central Mathematical-Economics Institute; specialist in computers, information systems, and input-output analysis.
- Dadayan, V.S. Doctor of Economic Sciences; deputy head of *Kafedra* of Mathematical Methods in Economic Analysis; also at the Central Mathematical Economics Institute; specialist in optimal planning, prices, and economic growth.

- Dragilev, M.S. Doctor of Economic Sciences; specialist in the US economy.
- Fedorenko, N.P. Head of *Kafedra* of Economic Cybernetics; see Central Mathematical-Economics Institute.
- Gusarov, A.S. Head of section in the Economics Faculty; also affiliated with Gosplan.
- Kapustin, Ye.I. See Scientific Research Institute of Labor.
- Kolmogorov, A.N. Academician; Professor of Mathematics; specialist in mathematics and information theory (not an economist although he has contributed to Soviet economic theory).
- Kozodoyev, I.I. Doctor of Economic Sciences; specialist in relationship of land to other factors of production under socialism.
- Lamykin, I.A. Specialist in collective-farm economy.
- Mayminas, E.Z. Doctor of Economic Sciences; *Dotsent*; specialist in planning and statistics.
- Nekrasov, N.N. See Council for the Study of Productive Resources.
- Omarovskiy, A.G. Doctor of Economic Sciences; head of *Kafedra* of Economics and Planning of Industry; specialist in the machine building industry.
- Osad'ko, M.P. Doctor of Economic Sciences; Professor, *Kafedra* of Political Economy; specialist in enterprise operations and collective farm organization.
- Pletnev, E.P. Doctor of Economic Sciences.
- Polyanskiy, F.Ya. Doctor of Historical Sciences; Professor.
- Popov, G.K. Doctor of Economic Sciences; laboratory chief working on management problems.
- Probst, A.Ye. See Council for the Study of Productive Resources.
- Ryabushkin, T.V. See Institute of Economics of World Socialist Systems.
- Spiridonova, N.S. Doctor of Economic Sciences; Professor; member of editorial board of *Vestnik Moskovskogo universiteta, seriya ekonomika*; specialist in Marxist economic theory and *khozraschet*.
- Tatur, S.K. Doctor of Economic Sciences; Professor; head of *Kafedra* of Bookkeeping and Analysis of Economic Activity of Enterprises; member of editorial board of *Vestnik Moskovskogo universiteta, seriya ekonomika*; specialist in industrial accounting.
- Tsagolov, N.A. Doctor of Economic Sciences; Professor, *Kafedra* of Political Economy of Economics Faculty; member of editorial board of *Vestnik Moskovskogo universiteta, seriya ekonomika*; specialist in Marxist economic theory and the history of economic thought.
- Tsemko, N.D. *Dotsent*.
- Valentey, D.I. Doctor of Economic Sciences; Professor; scientific director, Center for Study of Population Problems.
- Yagodkin, V.N. Candidate of Economic Sciences; *Kafedra* of Political Economy; member of editorial board of *Vestnik Moskovskogo universiteta, seriya ekonomika*; specialist in price formation, demography, and labor.
- Yemel'yanov, A.M. Candidate of Economic Sciences; *Dotsent*, *Kafedra* of Political Economy; specialist in agricultural economics.
- Yudin, D.B. Doctor of Technical Sciences; Professor; specialist in computers and linear programming.
- Zaltsman, L.M. Doctor of Economic Sciences; Professor, *Kafedra* of Economics of Planning in Agriculture; specialist in agricultural organization.

2. Leningrad State University (LGU) named for A.A. Zhdanov

The university publishes a semi-monthly journal with a quarterly economic series, *Vestnik Leningradskogo universiteta, seriya ekonomika, filosofiya i prava*,

Some of the members of the economics faculty are:

- Blyakhman, L.S. *Dotsent*; Doctor of Economic Sciences; specialist in industrial labor economics and economics of science.
Diderikhs, A. Member of the university's Laboratory for Economic Mathematical Investigations.
Romanchenko, G.P. Doctor of Economic Sciences; specialist in agricultural economics.
Tikhomirov, I. Head of *Kafedra* of Economics.
Tilpanov, S.I. Head of *Kafedra* of the Economics of Contemporary Capitalism.

3. Moscow Institute of National Economy (MINKh) named for G.V. Plekhanov

The institute grew out of a commercial training institute organized in 1906 "by Moscow industrialists." Then, as now, its formal function was to train management personnel for industry and government. At present, the institute has 17,000 students in all faculties, and graduates 2,000 students annually, largely employed in the top levels of the central economic organizations (Gosplan, Gossnab, and ministries). The institute's six faculties are economics of trade, economics of commodities, economics of technology, accounting, economics and planning of state supply, and planning and administration of industrial production.

A few of the institute's economists are:

- Birman, A.M. Pro-rector of the institute; Doctor of Economic Sciences; head of *Kafedra* of Finance and Credit; specialist in finance and management.
Bunimovich, V.A. Doctor of Economic Sciences; specialist in amortization, cost calculation, and pricing.
Fel'd, S.D. Candidate of Economic Sciences; Professor; specialist in planning, energy balances, and technological progress.
Gogol', B.I. Doctor of Economic Sciences; Professor; also affiliated with the All-Union Scientific Research Institute for the Study of Consumer Demand and Marketing Conditions; specialist in retail trade.
Itin, L.I. Doctor of Economic Sciences; Professor; head of *Kafedra* of the Economics of Industry; specialist in productive efficiency in industry.
Kamenitser, S.Ye. Doctor of Economic Sciences; head of *Kafedra* of the Economics and Organization of Industrial Enterprises; specialist in organizing and planning industrial production.
Khanelis, Ya.N. Candidate of Economic Sciences; also affiliated with the Scientific Research Institute of the Central Statistical Administration; specialist in consumption statistics.
Lokshin, E.Yu. Doctor of Economic Sciences; Professor; specialist in industrial organization and material-technical supply.
Malyi, I.G. Doctor of Economic Sciences; Professor; specialist in index number theory and statistics.
Ozira, V. Candidate of Economic Sciences; dean, Faculty of Planning and Administration of Industrial Production; studied at Harvard Business School; specialist in industrial management.
Shvyrvkov, V.V. Doctor of Economic Sciences; also associated with Gosplan; specialist in consumption.
Smekhov, B.M. Doctor of Economic Sciences; specialist in long-term planning of investment.

Turetskiy, Sh.Ya. Doctor of Economic Sciences; Professor; head of *Kafedra* of Special Economic Problems; specialist in costs of production, pricing, economic balances, and consumption.

4. Moscow Financial Institute

The Moscow Financial Institute, founded in 1946, trains specialists in accounting and finance for work in industrial enterprises and in governmental financial organs. The institute consists of five faculties: finance, credit, accounting, international finance, and computers and mechanical data processing.

Among the economists on the faculty of the institute are:

Shcherbakov, V.V. Rector of the institute.
Allakhverdyan, D.A. Doctor of Economic Sciences; Professor; deputy chairman of Council for Cost Accounting and Material Incentives; also affiliated with the Institute of Economics, Academy of Sciences; specialist in public finance and financial planning.
Atlas, M.S. Doctor of Economic Sciences; Professor; specialist in public finance, banking, and Marxist economic theory.
Atlas, Z.V. Doctor of Economic Sciences; Professor; specialist in money flows and finance.
Mar'yakhin, G.L. Doctor of Economic Sciences; *Starshiy nauchnyy sotrudnik*; specialist in finance and taxation.
Maslov, P.P. Doctor of Economic Sciences; Professor; head of *Kafedra* of Statistics; specialist in mathematical model building, statistical theory, and consumption statistics.
Zlobin, I.D. Doctor of Economic Sciences; Professor.

5. Leningrad Finance-Economics Institute named for N.A. Voznesenskiy

The Leningrad Finance-Economics Institute, founded in 1930, offers courses in finance and credit, industrial organization and management, statistics, and accounting. Its main task is to train finance and accounting personnel for industrial enterprises and governmental organizations.

A few of the economists on the faculty of the institute are:

Aleksandrov, A.A. Professor of Finance.
Kantor, L.M. Doctor of Economic Sciences; specialist in price formation and industrial finance and management.
Lavrikov, Ya.A. Director of the institute.
Rotshteyn, A.I. Doctor of Economic Sciences; Professor; head of *Kafedra* of Statistics; specialist in industrial statistics.

6. Moscow Economic Statistics Institute (MESI)

The Moscow Economic Statistics Institute, created in 1932, trains specialists in statistics and mechanized data processing for work in various state organizations. Research at the institute concentrates on the application of statistical techniques to rather narrowly defined economic problems in such areas as quality control, the analysis of wage scales, and the study of housing needs. The institute offers courses in industrial and transportation statistics, demographic studies, and automatic data processing.

Among the economists doing research at the institute are:

Baklanov, G.I. Professor; head of *Kafedra* of Industrial Statistics; specialist in industrial statistics.
Freimundt, E.N. Head of *Kafedra* of Economic Statistics.
Korolev, M.A. Director of the institute; Doctor of Economic Sciences; specialist in data processing and computer languages.
Ovisenko, V.E. Head of *Kafedra* of Statistical Theory.

7. Moscow Engineering-Economics Institute named for S. Ordzhonikidze

The most recent research efforts of the Moscow Engineering-Economics Institute, created in 1923, have been concentrated on improving control of industrial production and introducing computer technology into management. The institute has a Laboratory for the Economics and Organization of Production. Courses offered at the institute cover the organization and management of the machine building, chemical, power, automotive transport, and air transport industries. The institute's director, Professor O.V. Kozlova, is a doctor of economic sciences and a specialist in economic management.

8. Leningrad Engineering-Economics Institute named for Tol'yatti

The Leningrad Engineering-Economics Institute, founded in 1930, though primarily an engineering school, offers some training in economics, especially in terms of the organization and management of various branches of the economy. The institute offers courses dealing with the machine building, automotive transport, and the chemical and power industries.

9. Institute of Economic Administration

The Institute of Economic Administration, under the State Committee for Science and Technology, opened in February 1971. Since the early 1960s the USSR has shown an increasing interest in management techniques used in market economies, with special emphasis on the American setting. The more liberal Soviet leaders appear to be persuaded that the adoption of Western innovations in modern managerial methods can improve efficiency. The major advocate for employing Western techniques is D.M. Gvishiani, who was active in determining the role of the institute. It is concerned with upgrading the skills of management personnel, and its students are restricted to leaders in government and industry. The current course consists of three months of intensive instruction with a brief refresher program planned after five years. At present no research is performed, only training from four *kafedra*: social-economic sciences, economic-mathematical planning methods, administration and forecasting, and sociological and psychological aspects of management.

The rector of the new institute is Vitaliy Shorin, Doctor of Technical Sciences, and V.I. Fedorov is head of instruction. Lecturers are leading scientists and specialists, with as many as 40 speakers scheduled during the three-month program.

D. Input-Output Analysis in the Soviet Union

In the past 15 years, input-output analysis has attracted ever greater attention among Soviet economists and statisticians as an important tool of quantitative economics and as an aid in economic planning. To date they have constructed two complete *ex post* national tables (for 1950 and for 1966), several regional tables, and some *ex ante* (planning) tables. The published tables are in value terms, but tables in physical units apparently have also been constructed. Recently it was announced that a 1972 input-output table would be constructed. The input-output tables have been used to construct both static models and dynamic models for planning. Use of the tables in planning is still experimental. However, claims have been made that the five-year plans have been influenced by input-output models.

Much of the centralized input-output work in the Soviet Union takes place in the Scientific Research Institutes of Gosplan and the Central Statistical Administration. Soviet input-output specialists, however, are widely distributed, with contributors coming from TsEMI, Moscow State University, the Siberian Department of the Academy of Sciences, and other economic and mathematical research organizations.

The following list (not meant to be comprehensive) identifies input-output specialists with their particular specialty:

Soviet Specialists in Input-Output Analysis, with Their Affiliations

1. General Specialists (Theory, Application, Dynamic Models)

A.G. Aganbegyan, IE i OPP	A. Komin, Gosplan
V.D. Belkin, IE AN SSSR	Yu.R. Leibkind, NIEI Gosplan
L.Ya. Berri, Moscow State University	B.N. Mikhalevskiy, TsEMI
Yu.I. Chernyak, TsEMI	N.M. Oznobin, NII Planning and Norms
V.S. Dadayan, Moscow State University	S.S. Shatalin, TsEMI
M.R. Eydel'man, NII TsSU	Yu.M. Shvyrkov, unknown
M. Fidler, unknown	B.M. Smekhov, Moscow Institute of the National Economy
A.G. Granberg, IE i OPP	A.N. Yefimov, NIEI Gosplan
F.I. Klotsvog, NIEI Gosplan	

2. Regional Input-Output Models

E.F. Baranov, TsEMI	L.Ye. Mints, TsEMI
M. Keklidze, unknown	A.A. Modin, TsEMI
V.V. Kossov, Gosplan	A.D. Smirnov, TsEMI

3. Labor in Input-Output

R.A. Belousov, NIEI Gosplan	D.Ya. Komarova, unknown
I.I. Doroshin, NIEI Gosplan	E.F. Komina, unknown

4. Capital in Input-Output

O.D. Protsenko, Gosplan RSFSR	Yu.V. Sukhotin, IE AN SSSR
G. Simakova, unknown	

E. Other Economists

In this section are listed other important research economists who have not been clearly identified with a particular research organization or whose organization is not described elsewhere in Section IV.

Aleksandrov, A.P.	Academician; director of the Institute of Atomic Energy; Doctor of Physical-Mathematical Sciences; specialist in the economics of nuclear power engineering in the USSR.
Arkipov, A.I.	Candidate of Economic Sciences; Council of Ministers, USSR; specialist in agricultural finances.
Ashimbayev, T.A.	Institute of Economics, Academy of Sciences, Kazakh SSR; specialist in the Kazakh economy.
Bashin, M.L.	Director of a department of the Central Scientific Research Institute of Technical-Economic Research and Scientific Information; specialist in planning.
Basyuk, T.L.	Candidate of Economic Sciences; specialist in agricultural organization and in the application of mathematical methods in agricultural economics.
Belkin, V.B.	Candidate of Economic Sciences; member of State Committee for Vocational-Technical Education; specialist in the training and utilization of industrial workers.

- Berg, A.I. Academician; specialist in cybernetics.
- Bor, M.Z. Doctor of Economic Sciences; Professor; Chair of Economic Sciences of the Academy of Social Sciences, CPSU Central Committee; former director of Scientific Research Institute for Administration and Norms; specialist in planning, management, and consumption.
- Fayerman, Ye.Yu. Candidate of Economic Sciences; specialist in mathematical economics.
- Kaplan, I.I. Head of laboratory on Problems of the Economics of Public Education at Moscow Pedagogical Institute; specialist in labor economics.
- Konnik, I.I. Candidate of Economic Sciences; specialist in finance.
- Korzhenevskiy, I.I. Ukrainian Scientific Research Institute of Trade; specialist in consumption.
- Kudryavtsev, A.S. Doctor of Economic Sciences; Professor; All-Union Correspondence Trade Union VUZ; specialist in labor economics.
- Laptev, V.V. Institute of State and Law, Academy of Sciences; specialist in the legal rights of enterprises.
- Leont'yev, L.A. Corresponding Member, Academy of Sciences; specialist in economic organization and Marxist economic theory.
- Liberman, Ye.G. Doctor of Economic Sciences; Professor; chairman of the department of Political Economy of Khar'kov Engineering-Economic Institute; specialist in economic organization, management methods, and incentives.
- Lisichkin, G.S. Candidate of Economic Sciences; Professor; sector head Institute for Concrete Social Research; formerly with *Pravda*.
- Lyando, A.M. Head of a *Kafedra* of Kazan' Financial-Economic Institute; specialist in the planning of financial balances for economy.
- Makarova, M.F. Professor at Academy of Social Sciences of the Central Committee of the Communist Party of the Soviet Union, *Kafedra* of Economic Sciences; specialist in distribution of consumer goods and Marxist economic theory.
- Malafeyev, A.N. Candidate of Economic Sciences; has written a history of Soviet price formation; specialist in pricing.
- Mayzenberg, L.I. Deputy chairman of State Committee on Price Formation.
- Morozov, V.A. Candidate of Economic Sciences; deputy director of the All-Union Institute for Scientific-Technical Information on Agriculture.
- Nesmiy, M. Specialist in collective farm finances.
- Okhapkin, K.A. Specialist in remuneration in collective farms.
- Orlov, Ya. Candidate of Economic Sciences; specialist in the distribution of consumer goods.
- Perevedentsev, V.I. Candidate of Economic Sciences; formerly at the Institute of Economics and Organization of Industrial Production, Siberian Department, Academy of Sciences; currently at the Institute of World Trade Union Movements; specialist in population migration and censuses.
- Petrochenko, P.F. Institute of World Trade Union Movements; specialist in wages and labor.
- Plyshevskiy, B.P. Candidate of Economic Sciences; specialist in national income accounting.
- Pontryagin, L.S. Academician; Professor; head of a section of the Mathematics Institute named for V.A. Steklov; a mathematician who specializes in the application of mathematics to basic economic problems.
- Sarkisyan, G.S. Candidate of Economic Sciences; specialist in consumption and income.
- Shvyrvkov, Yu.M. Specialist in systems for classifying Soviet industrial production.

- Skovoroda, K.M. Head of the Planning Economics Administration of the Ministry of Trade; specialist in planning and the development of retail trade.
- Solov'yev, Yu.P. Specialist in econometrics, with interest in the aggregate production function of the USSR.
- Sukharevskiy, Yu.B. Deputy chairman of State Committee on Labor and Wages.
- Suslov, I.F. *Dotsent*, Department of Economics of the Academy of Social Sciences of the Central Committee of the CPSU; specialist in agricultural economics.
- Terekhov, L.L. Candidate of Economic Sciences; head of *Kafedra* of Mathematical Methods in Planning of Kiev Institute of National Economy; specialist in Marxist economic theory, mathematical economics, and optimal planning.
- Terent'yev, M.L. Chief of the economics division of the Department of Economic Development and Planning, Ministry of Agriculture; specialist in agricultural finances.
- Tikhonov, I.A. Doctor of Economic Sciences; Professor; head of the Leningrad affiliate of the Institute of World Trade Union Movements; member of editorial board of MEMO; specialist in labor economics and labor history.
- Timofeyev, T.T. Corresponding Member of the Academy of Sciences; Doctor of Historical Sciences; director of the Institute of World Trade Union Movements; member of the editorial board of MEMO; specialist in labor economics and labor history.
- Vaag, L.A. Doctor of Economic Sciences; deputy department head SCST; specialist in price formation and industrial administration.
- Veduta, N.I. Director of the Central Scientific Research and Technological Planning Institute for the Organization and Technology of Control; Doctor of Economic Sciences; specialist in scientific administration and technological progress.
- Yampol'skiy, S.M. Academician of the Academy of Sciences, Ukrainian SSR; Corresponding Member of the Academy of Sciences. Doctor of Economic Sciences; former director, Institute of Economics, Academy of Sciences, Ukrainian SSR; specialist in labor economics.
- Yevenko, I.A. Candidate of Economic Sciences; member of State Committee on Material-Technical Supply; specialist in economic planning and use of computer techniques in management.

F. Necrology

Some of the more prominent economists who have died since the publication of the last edition of the *Survey of Soviet Economists and Economic Research Organizations* are:

- D'yachenko, V.P. Corresponding Member of the Academy of Sciences; Doctor of Economic Sciences; Professor; chairman of the Council on Scientific Principles for Price Formation; head of department on Formation of Prices of the Institute of Economics; former director of the Institute; member of editorial board of *Voprosy ekonomiki*; specialist in public finance, banking, and price formation.
- Klimenko, K.I. Doctor of Economic Sciences; specialist in the machine building industry and technological progress at the Institute of Economics.
- Konus, A.A. Specialist in consumption theory.
- Kovalev, N.I. Director of Gosplan's computer center.

- Lur'ye, A.L. Doctor of Economic Sciences; *Starshiy sotrudnik* at the Central Mathematical-Economics Institute; member of editorial board of *Ekonomika i matematicheskiye metody*; Professor in *Kafedra* of Mathematical Analysis of the Economy of the USSR, of the Economics Faculty, Moscow University; specialist in the theory of optimal planning and economic cybernetics.
- Novozhilov, V.V. Corresponding Member of the Academy of Sciences; director of Leningrad branch of the Central Mathematical-Economics Institute; Doctor of Economic Sciences; Professor; member of editorial board of *Ekonomika i matematicheskiye metody*; specialist in mathematical economics, optimal planning, and economic management.
- Ostrovityanov, K.V. Academician; Doctor of Economic Sciences; chairman of the Council on the Economic Regularity of the Development of Socialism and Its Transition to Communism; specialist in Marxist economic theory at the Council for the Study of Productive Resources.
- Sobol', V.A. Chief editor of *Vestnik Statistiki*; Central Statistical Administration Sector Chief.
- Sokolov, M.M. Dean of Faculty of Economics, Moscow State University; Doctor of Economic Sciences; Professor; head of *Kafedra* of Economics of Planning in Agriculture; formerly Chief Editor of *Vestnik Moskovskogo universiteta*; specialist in agricultural economics, particularly the pricing of agricultural products.
- Vaynshteyn, A.L. Doctor of Economic Sciences; Professor; *Starshiy sotrudnik* at the Central Mathematical-Economics Institute; member of the Presidium of the Council for the Use of Mathematics and Computers in Economic Research and Planning; specialist in economic and mathematical statistics and comparative measures of economic activity among countries.
- Zverev, A.G. Former Minister of Finance, USSR; Doctor of Economic Sciences; specialist in finance at the Institute of Economics.

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APPENDIX A

Transliterated and Translated Titles of Institutes and Organizations

This appendix provides a transliteration of the Russian language designations (and their abbreviations) for the several institutes referred to in translated form in the text.

1. Academy of Sciences of the USSR (Akademiya Nauk, SSSR—AN SSSR)
2. Department of Economic Sciences (Otdeleniye ekonomicheskikh nauk, AN SSSR).
3. Institute of Economics (Institut ekonomiki, AN SSSR—IE AN SSSR).
4. Institute of Economics of World Socialist System (Institut ekonomiki mirovoy sotsialisticheskoy sistemy, AN SSSR—IEMSS AN SSSR).
5. Institute of World Economics and International Relations (Institut mirovoy ekonomiki i mezhdunarodnykh otnosheniy, AN SSSR—IMEMO AN SSSR).
6. Institute of the United States of America (Institut po Soyedinennym Shtatam Ameriki—ISShA).
7. Central Mathematical Economics Institute (Tsentral'nyy ekonomiko-matematicheskyy institut—TsEMI).
8. Siberian Department of the Academy of Sciences (Sibirskoye otdeleniye, AN SSSR—SO AN SSSR).
9. Institute of Economics and Organization of Industrial Production (Institut ekonomiki i organizatsii promyshlennogo proizvodstva Sibirskogo otdeleniya, AN SSSR—IE i OPP SO AN SSSR).
10. Computer Center of the Academy of Sciences USSR, Siberian Department (Vychislitel'nyy tsentr, AN SSSR, Sibirskoye otdeleniye).
11. Gosplan USSR (Gosudarstvennyy planovoy komitet, SSSR).
12. Central Scientific Economic Research Institute of Gosplan, RSFSR (Tsentral'nyy nauchno-issledovatel'skiy ekonomicheskyy institut pri Gosplane, RSFSR—TsNIEI).
13. Scientific Research Economic Institute of Gosplan (Nauchno-issledovatel'skiy ekonomicheskyy institut Gosplana, SSSR—NIEI Gosplan).
14. Scientific-Research Institute on Price Formation of the State Committee on Prices (Nauchno-issledovatel'skiy institut po tsenoobrazovaniyu gosudarstvennogo komiteta tsen—NII Tsen).
15. Scientific Methods Commission for the Balance of the National Economy (Komissiya nauchno-issledovatel'skikh metodov po balansu narodnogo khozyaystva pri uchenom sovete—NIEI).
16. Council for the Study of Productive Resources of Gosplan, USSR (Sovet po izucheniyu proizvoditel'nykh sil pri Gosplane, SSSR—SOPS).
17. Institute of Electronic Controlling Machines (Institut elektronnykh upravlyayushchikh mashin—IEUM).
18. Institute of Complex Transportation Problems of Gosplan, USSR (Institut kompleksnykh transportnykh problem pri Gosplane, SSSR).
19. Main Computer Center of Gosplan (Glavnyy vychislitel'nyy tsentr pri Gosplane—GVTs).
20. Scientific Research Institute for the Organization of Management and Norms (Nauchno-issledovatel'skiy institut planirovaniya i normativov pri Gosplane).
21. Central Statistical Administration (Tsentral'noye statisticheskoye upravleniye—TsSU).
22. Scientific Research Institute for Planning Computer Centers and Systems of Economic Information, TsSU (Nauchno issledovatel'skiy institut po proyektirovaniyu vychislitel'nykh tsentrov i sistem ekonomicheskoy informatsii, TsSU, SSSR—NII TsSU SSSR).

23. Scientific Research Institute of Construction Economics (Nauchno-issledovatel'skiy institut ekonomiki stroitel'stva—NIIES).
24. All-Union Scientific Research Institute for the Study of Consumer Demand and Marketing Conditions (Vsesoyuznyy nauchno-issledovatel'skiy institut po izucheniyu sprosya naseleniya na tovary narodnogo potrebleniya i kon'yunktury trgovli—VNIKS).
25. Scientific Research Institute of Labor (Nauchno-issledovatel'skiy institut truda—NII Truda).
26. Scientific Institute of Market Research (Nauchno-issledovatel'skiy kon'yunkturnyy institut—NIKI).
27. Scientific Research Institute of Finance (Nauchno-issledovatel'skiy finansovyy institut ministerstva finansov, SSSR—NIFI).
28. All-Union Scientific Research Institute of Agricultural Economics (Vsesoyuznyy nauchno-issledovatel'skiy institut ekonomiki sel'skogo khozyaystva—VNIIESKh).
29. Department of Economics and Organization of Agriculture of the All-Union Academy of Agricultural Sciences named for V.I. Lenin (Vsesoyuznaya akademiya sel'skokhozyaystvennykh nauk imeni V.I. Lenina—VASKhNIL).
30. Moscow State University (Moskovskiy ordena Lenina i ordena trudovogo krasnogo znameniy gosudarstvennyy universitet imeni M.V. Lomonosova—MGU).
31. Leningrad State University (Leningradskiy ordena Lenina gosudarstvennyy universitet imeni A.A. Zhdanova—LGU).
32. Moscow Institute of National Economy (Moskovskiy ordena trudovogo krasnogo znameniy institut narodnogo khozyaystva imeni G.V. Plekhanova—MINKh).
33. Moscow Financial Institute (Moskovskiy finansovyy institut—MFI).
34. Leningrad Finance-Economics Institute (Leningradskiy finansovo-ekonomicheskyy institut—LFEI).
35. Moscow Economics Statistics Institute (Moskovskiy ekonomiko-statisticheskyy institut—MESI).
36. Moscow Engineering Economics Institute (Moskovskiy inzhenerno-ekonomicheskyy institut imeni S. Ordzhonikidze—MIEI).
37. Leningrad Engineering Economics Institute (Leningradskiy inzhenerno-ekonomicheskyy institut).
38. Institute of Problems of Management (Institut problem upravleniy).
39. State Committee for Science and Technology (Gosudarstvennyy komitet nauki i tekhniki).

APPENDIX B

Transliterated and Translated Titles of Journals

The following list of transliterated and translated journals is not intended to be an exhaustive compendium of economic journals. Journals are included only if they are mentioned in the text as the publication of a particular institute or if their editors are described.

1. *Byulleten' inostrannoy kommercheskoy informatsii* (Bulletin of Foreign Commercial Information).
2. *Den'gi i kredit* (Money and Credit).
3. *Ekonomika i matematicheskiye metody* (Economics and Mathematical Methods).
4. *Ekonomika i organizatsiya promyshlennogo proizvodstva* (Economics and Organization of Industrial Production).
5. *Ekonomika sel'skogo khozyaystva* (Economics of Agriculture).
6. *Finansy SSSR* (Finances of the USSR).
7. *Izvestiya akademii nauk, SSSR, seriya ekonomicheskaya* (News of the Academy of Sciences, USSR, Economic Series).
8. *Izvestiya Sibirskogo otdeleniya akademii nauk, SSSR, seriya obshchestvennykh nauk* (News of the Siberian Department of the Academy of Sciences, USSR, Social Sciences Series).
9. *Mirovaya ekonomika i mezhdunarodnyye otnosheniya* (World Economics and International Relations—MEMO).
10. *Planovoye khozyaystvo* (Planned Economy).
11. *Sotsialisticheskiy trud* (Socialist Labor).
12. *SShA: ekonomika, politika, ideologiya* (USA: Economics, Politics, Ideology).
13. *Vestnik akademii nauk, SSSR* (Herald of the Academy of Sciences, USSR).
14. *Vestnik Leningradskogo universiteta, seriya ekonomika, filosofiya, pravo* (Herald of Leningrad University, Economics, Philosophy, Law Series).
15. *Vestnik Moskovskogo universiteta, seriya ekonomika* (Herald of Moscow University, Economics Series).
16. *Vestnik statistiki* (Herald of Statistics).
17. *Vneshnyaya trgovlya* (Foreign Trade).
18. *Voprosy ekonomiki* (Problems of Economics).

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APPENDIX C

Addresses of Research Institutes and Organizations

INSTITUTE	ADDRESS
Akademiya Nauk, SSSR	Leninskiy Prospekt, 14, Moscow
Otdeleniye ekonomicheskikh nauk, AN SSSR ..	Ulitsa Yaroslavskaya, 13, Komnata 48, Moscow
Institut ekonomiki, AN SSSR	Ulitsa Volkhonka, 14, Moscow G-19
Institut ekonomiki mirovoy sotsialisticheskoy sistemy, AN SSSR	Novocheryemushkinskaya Ulitsa, 46, Moscow
Institut mirovoy ekonomiki i mezhdunarod- nykh otnosheniy, AN SSSR	Ulitsa Yaroslavskaya, 13, Moscow I-243
Institut po Soyedinennym Shtatam Ameriki ..	Khlebnyy Pereulok, 2/3, Moscow G-69
Tsentral'nyy ekonomiko-matematicheskyy in- stitut	Korpus 7, Leninskiy Prospekt, 14, Moscow V-71
Sibirskoye otdeleniye, AN SSSR	Akademicheskyy gorodok, Novosibirsk 90
Institut ekonomiki i organizatsii promyshlen- nogo proizvodstva Sibirskogo otdeleniya, AN SSSR	Akademicheskyy gorodok, Novosibirsk
Vychislitel'nyy tsentr, AN SSSR, Sibirskoye otdeleniye	Akademicheskyy gorodok, Novosibirsk
Gosudarstvennyy planovoy komitet, SSSR ...	Prospekt Marksa, 12, Moscow
Tsentral'nyy nauchno-issledovatel'skiy ekono- micheskyy institut pri Gosplane, RSFSR	Smolenskiy Bul'var, 3/5, Moscow
Nauchno-issledovatel'skiy ekonomicheskyy in- stitut Gosplana, SSSR	Khoroshevskiy Pervyy Proyezd A-284, Dom 3a, Moscow
Nauchno-issledovatel'skiy institut po tseno- obrazovaniyu gosudarstvennogo komiteta tsen pri Gosplane, SSSR	Ulitsa Razina, 3, Komnata 66, Moscow
Komissiya nauchno-issledovatel'skikh metodov po balansu narodnogo khozyaystva pri uchenom sovete—NIEI	Khoroshevskiy Pervyy Proyezd 3a, Moscow
Sovet po izucheniyu proizvoditel'nykh sil pri Gosplane, SSSR	Ulitsa Vavilova, 7, Moscow
Institut elektronnykh upravlyayushchikh mashin	Ulitsa Vavilova, 24, Moscow
Institut kompleksnykh transportnykh prob- lem pri Gosplane, SSSR	Ulitsa Krasnosel'skaya Nizhnaya, 39, Moscow
Glavnyy vychislitel'nyy tsentr pri Gosplane ...	Ulitsa Kirova, 45, Moscow
Nauchno-issledovatel'skiy institut planiro- vaniya i normativov pri Gosplane	Ulitsa Chernyakhovskogo, 16, Moscow
Tsentral'noye statisticheskoye upravleniye ...	Ulitsa Kirova, 39, Moscow
Nauchno-issledovatel'skiy institut po proyek- tirovaniyu vychislitel'nykh tsentrov i sistem ekonomicheskoy informatsii, TsSU, SSSR	Ulitsa Kirova, 39, Moscow
Nauchno-issledovatel'skiy institut ekonomiki stroitel'stva	Karetnyy Ryad, Dom 5/10, Moscow K-6
Vsesoyuznyy nauchno-issledovatel'skiy institut po izucheniyu sprosa naseleniya na tovary narodnogo potrebleniya i kon'yunktury tor- govli	Kolpachnyy Pereulok, 7
Nauchno-issledovatel'skiy institut truda	Ulitsa Chkalova, 34, Moscow
Nauchno-issledovatel'skiy kon'yunkturnyy in- stitut	Ulitsa Pudovkina, 4, Moscow

INSTITUTE	ADDRESS
Nauchno-issledovatel'skiy finansovyy institut . .	Ulitsa Kuybysheva, 9, Moscow
Vsesoyuznyy nauchno-issledovatel'skiy institut ekonomiki sel'skogo khozyaystva	Orlikov Pereulok, 3, Moscow
Vsesoyuznaya akademiya sel'skokhozyaystvennykh nauk imeni V.I. Lenina	Khariton'yevskiy Bol'shoy Pereulok, 21, Moscow
Moskovskiy gosudarstvennyy universitet imeni M.V. Lomonosova	Ulitsa Mokhovaya, Leninskiye gory, Moscow
Leningradskiy gosudarstvennyy universitet imeni A.A. Zhdanova	Universitetskaya Naberezhnaya, 7/9, Leningrad
Moskovskiy institut narodnogo khozyaystva imeni G.V. Plekhanova	Stremyannyy Pereulok, 28, Moscow
Moskovskiy finansovyy institut	Ulitsa Kibal'chicha, 1, Moscow
Leningradskiy finansovo-ekonomicheskyy institut	Kanal Griboyedova, 30/32, Leningrad
Moskovskiy ekonomiko-statisticheskyy institut .	Savvinskiy Bol'shoy Pereulok, 14, Moscow
Moskovskiy inzhenerno-ekonomicheskyy institut imeni S. Ordzhonikidze	Podsosenskiy Pereulok, 20, Moscow
Leningradskiy inzhenerno-ekonomicheskyy institut	Ulitsa Marata, 27, Leningrad
Vychislitel'nyy tsentr, AN SSSR	Ulitsa Vavilova, 40, Moscow
Akademiya sel'skokhozyaystvennykh nauk imeni K.A. Timiryazeva	Timiryazevskiy Prospekt, 49, Moscow

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