

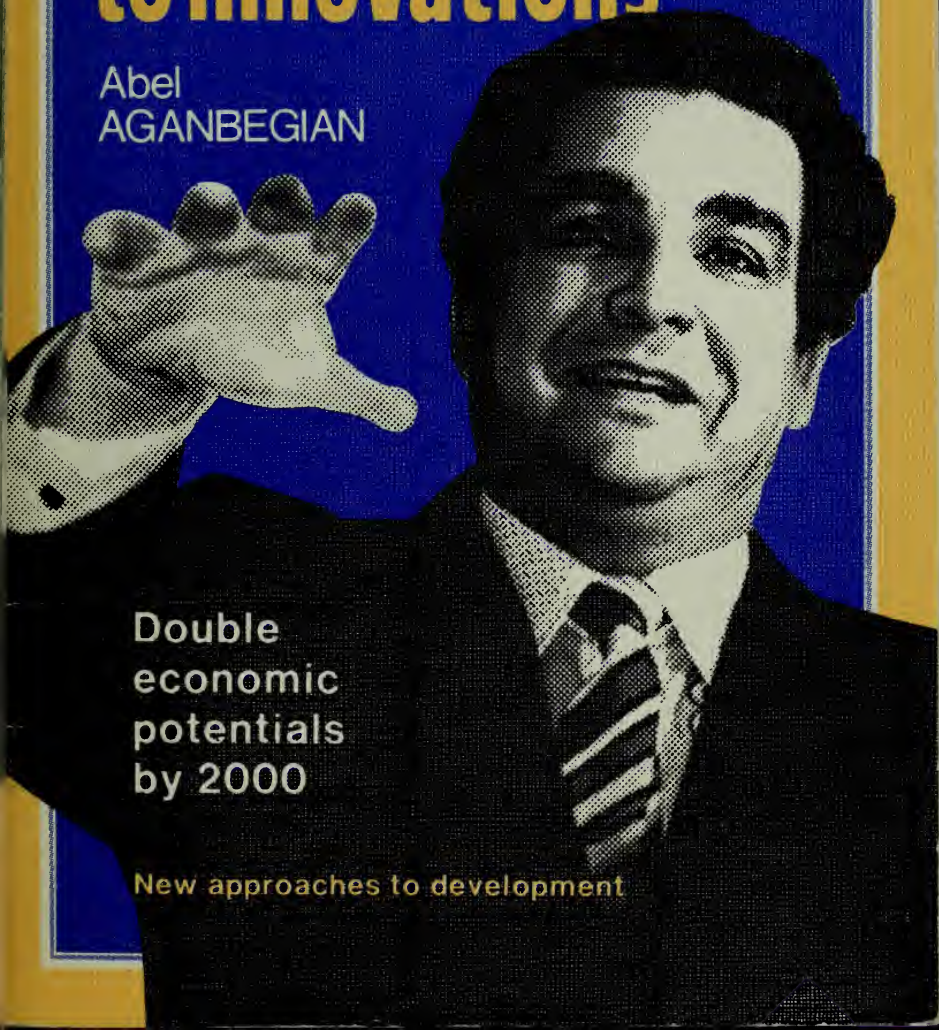
Expert Opinion

Make the Economy Responsive to Innovations

Abel
AGANBEGIAN

Double
economic
potentials
by 2000

New approaches to development



Expert Opinion

If you want first-hand information on how the Soviet Union is accelerating its economic and social development, read this new series offered by the APN Publishing House.

The issues feature interviews given by Academician Guri Marchuk, Chairman of the USSR State Committee for Science and Technology, Vsevolod Murakhovsky, Chairman of the State Agro-Industrial Committee of the USSR, and other prominent statesmen, public figures and scientists.

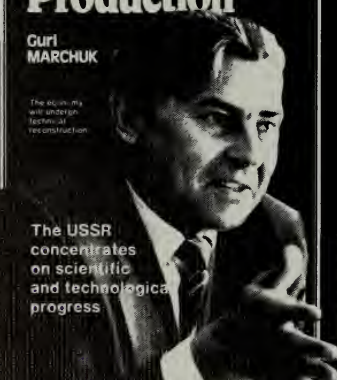
Expert Opinion

Science Will Help Speed Production

Guri
MARCHUK

The economy
will undergo
technical
reconstruction

The USSR
concentrates
on scientific
and technological
progress

A black and white portrait of Guri Marchuk, a man with short dark hair, wearing a suit and tie, looking slightly to the right of the camera.

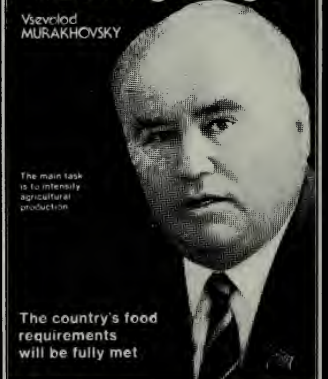
Expert Opinion

The Whole Agro-Industrial Complex will Undergo Changes

Vsevolod
MURAKHOVSKY

The main task
is to intensify
agricultural
production

The country's food
requirements
will be fully met

A black and white portrait of Vsevolod Murakhovsky, a man with a receding hairline, wearing a suit and tie, looking directly at the camera.

CH 15

Bigger, Better, Faster

**Academician
Abel Aganbegian
talks to APN
correspondent
Anatoli Lepikhov
about new
priorities
in the Soviet
economy.**

In twenty-five years the Soviet Union has increased its national income fourfold and its industrial output fivefold. No advanced capitalist country, except Japan, has such high growth rates. Nevertheless, in the Soviet Union it is considered that the potentialities of the socialist economic system can be used more efficiently, that more can be produced much better and faster, and with less expenditure of labour, energy and materials.

At the 27th Congress of Soviet Communists a new strategy for the country's economic and social development was worked out. This strategy involves the overall intensification of production on the basis of scientific and technological progress, the restructuring of the economy and the improvement of the forms of economic management and labour organization and stimulation. It is a radical, carefully considered and comprehensive programme aimed at making development more dynamic, finding optimal methods of solving problems, and at eradicating all that is outdated and obsolete. The programme is based on a balanced combination of innovation and realism.

What achievements had been made in the country's development before the 27th CPSU Congress?

The Soviet Union had scored impressive achievements in the 25 years after the Third CPSU Programme was adopted in 1961. The fixed production assets of the national economy had grown sevenfold. Thousands of enterprises had been built and new industries appeared. National income had increased almost fourfold, industrial output fivefold and agricultural output by 70 per cent.

Whereas the economic level of the United States seemed difficult to reach in the 1950s, by the 1970s the Soviet economy had already made substantial progress in approaching this level in terms of scientific, technological and economic potential, and had exceeded it in the output of several highly significant products. Below are listed a few of the features of scientific and technological progress in the Soviet Union before the 27th Party Congress. In 1985 alone, 23,000 inventions were put into practical use in the national economy. The implementation of important programmes for the development and application of highly efficient equipment and technologies continued. Joint studies had been conducted with CMEA member states, and the Comprehensive Programme for Scientific and Technological Progress of CMEA Member Countries up to the Year 2000 had been drafted and approved by the heads of government.

The technical level of production and output in the Soviet Union had risen and the scale of retooling and modernizing existing enterprises grown. In industry, 3,600 models of new machines, equipment, instruments and automation facilities had been developed. Over 11,000 mechanized, automatic and rotary transfer lines and over 13,000 robots had been installed and 775 automated process control systems built.

During the previous five-year period research and development was completed and production started of turbo-generators with a capacity of 500-1,200 megawatts and of sets of equipment for unique main gas and oil pipelines. New types of up-to-date machinery were also developed for the country's agro-industrial complex. These include



GROWTH OF THE NATIONAL INCOME

nearly double

2000

1990

1985

119-122.1
per cent

100
per cent

the Don type, cotton and potato harvesters, tractors with engines of 150-350 h.p., heavy-duty trucks, and a complex of specialized and multipurpose machines for the small-scale mechanization of agricultural work. New types of machines and equipment which meet modern technological and economic requirements were introduced in such leading industries as aircraft manufacture, petrochemical production, metalmaking, and in transport.

Worldwide experience has proved that the doubling of per capita real incomes results in a qualitatively new pattern of consumption and a qualitatively new living standard. Real incomes in the Soviet Union have increased by 160 per cent since 1960. These are substantial changes.

The basic component of the documents adopted by the 27th CPSU Congress is the Party's programme of accelerating the country's economic and social development. Why have the problems of acceleration become so acute precisely today?

The economic situation in the USSR has radically changed in the past 10-15 years. Certain difficulties, including objective ones, have affected the country's economic development. First, there are external difficulties: I have in mind the arms race that has been forced on us. And, second, there are internal difficulties, such as a considerable growth of expenditure on the extraction and transportation of oil, gas, ores, and virtually all other raw materials. Let us consider just one figure—5,000 million tons—which is the annual output of all fuels in our country. With this output we are able not only to meet our own demand but also to supply large quantities to those socialist countries that have insufficient sources of fuel or raw materials. But the extraction of natural resources at such a rate leads to the quick depletion of easily accessible deposits, so our main fuel and energy production centres are constantly being relocated to the east and to the unsettled northern areas.

The demographic situation is also a problem for us, as Soviet society is suffering today from the "second echo" of the demographic damage caused by the war.* The children of those born when the birth rate dropped sharply are now joining the able-bodied work force. At the same time those who did not fight in the war have started to retire and receive pensions, and their number is 2-3 times greater than that of pensioners who fought in the war. As a result, the work force is shorthanded by about eight million workers in each five-year period as compared to the previous one. Thus we can no longer depend on the enlistment of additional natural and manpower resources in order to maintain high growth rates.

But these difficulties are only a partial explanation for a considerable reduction in the rate of socio-economic development in the past three five-year periods. National income that was used increased by 41 per cent in the 8th five-year period (1966-1970), by 28 per cent in the 9th, by 21 per cent in the 10th, and by 16.5 per cent in the previous, 11th five-year period (1981-1985). But the primary causes for these negative trends stem from mistakes and shortcomings in economic management.

As was emphasized at the 27th CPSU Congress, the fundamental changes in the economy were not taken into careful consideration. The restructuring of social production and the management system, the changes in methods and the remoulding of psychology of economic management were insufficient. The economy continued to develop mostly on an extensive basis. Some examples as to what effect this had on the economy are listed below.

Repairs of productive assets grew at an excessive rate. As a result, over 35,000 million roubles is now spent annually on repairs. A paradoxical situation developed in the iron-and-steel industry where the annual cost of repairs exceeded the amount of capital investment. The

* The Great Patriotic War of the Soviet Union against Nazi Germany (1941-1945) in which 20 million Soviet people lost their lives.

number of manual workers did not decrease because modernization had been stalled for quite some time. Mechanization at new work places was not always comprehensive either.

Previously, economic development in the Soviet Union was characterized by a diminishing increase of investments in the national economy. Whereas investments increased by 32 per cent in the 10th five-year period (1976-1980), in the 11th five-year period (1981-1985) they increased by only 16 per cent. At the same time, the development rate of the extractive industry also dropped due to the aggravated geological conditions and the time-consuming development of new sources of fuel and energy in the eastern and northern areas of the country. In the past five-year period the output of fuel and raw materials grew by about eight per cent, as compared to ten per cent in the 10th and 25 per cent in the 9th five-year period.

Reversing these tendencies demanded forceful and decisive measures, which could give a new impetus to our economy and to social processes. And thus at the 27th Congress the Party set the task of accelerating the country's social and economic development. It is projected, taking into consideration the fundamentally qualitative renovation, that the country's production potential will double in the next 15 years.

Acceleration of scientific and technological progress is the main source of economic growth in the 12th five-year period.

— Two-thirds of the growth of labour productivity in 1986-1990 will be secured through the use of scientific and technological achievements.

— Expenditure on science (without capital investment) will reach 33,000 million roubles in 1990 as compared to 24,800 million roubles in 1985.

— The growth rate of expenditure on science will be 50 per cent higher than the growth rate of the national income.

— Capital investment in the reinforcement of material and technological facilities of science will grow by 70 per cent.



GROWTH OF THE NATIONAL INCOME
THROUGH HIGHER LABOUR PRODUCTIVITY

75
per cent

1980

96
per cent

1985

100
per cent

1990

The serious and frank discussion held at the congress concerning both the positive and negative tendencies in the country's previous economic development has led some Western experts to question the feasibility of the economic development programme adopted in the USSR for the next 15 years.

It is certainly an intensive programme; its implementation will require the exhaustive use of our economic capacity. But the programme's feasibility lies exactly in this capacity, which is inherent in the advantages of a planned economy and the creative efforts of Soviet people.

Above all, this task involves more effective use of available resources in order to mobilize organizational and social reserves. As a rule, such measures can provide results within a short period and usually without major capital investments. This work which is aimed, above all, at raising the importance of the "human factor" is being carried out successfully nationwide. When meeting with the working people of Kuibyshev Region in April 1986 Mikhail Gorbachev, General Secretary of the CPSU Central Committee, cited several appropriate examples. As a result of the personal efforts of workers at the Kursk Leather Processing Amalgamation, equipment was manufactured which made possible the comprehensive processing of all waste and the

Resource saving is an important condition for the development of the Soviet economy in the 12th five-year period.

— The implementation of a range of scientific and technological undertakings in the field of resource saving alone will reduce the cost of industrial production by 28,600 million roubles as compared to 16,300 million roubles saved in the 11th five-year period.

— Energy consumption per rouble of national income will drop by 8.5 per cent and metal consumption by 14 per cent.

8 *— 65 to 70 per cent, and in some cases 100 per cent of new requirements for fuel and raw materials will be met by saving them.*



LABOUR PRODUCTIVITY

230-250 per cent

125 per cent

100 per cent

2000

1990

1985

Growth in the productivity
of social labour
in industry

complete utilization of all raw materials. The Vatra Production Amalgamation of the Ministry of Electrical Engineering developed and started large-scale production of lighting equipment within two months, or nine times faster than the usual rate. At collective and state farms in Estonia the efficient use of farm machinery and the proper storage and use of petroleum products resulted in a 22 per cent decrease in petrol consumption and a 29 per cent decrease in diesel fuel consumption. If the techniques of the Estonian workers were applied throughout the country nearly nine million tons of liquid fuel could be saved annually.

The engineers and designers of the Urals Engineering Plant in Sverdlovsk have assumed a commitment over and above the plan to develop within a short period new and highly efficient equipment for modernizing the Magnitogorsk Iron and Steel Mill. Within this year they will have already completed the designs of new machines for continuous steel casting. The practical application of these machines will result in 200,000 more tons of rolled steel per million tons of molten metal than is obtained at present.

The June session of the USSR Supreme Soviet approved the State Plan of Economic and Social Development for 1986-1990. In what ways does it differ from previous five-year plans?

I should first note that the plan has defined in concrete terms the socio-economic guidelines established at the 27th CPSU Congress. Its characteristic feature is that for the first time the principal tasks of the country's social and economic development have been interlinked and combined with the consistent restructuring of the entire system of economic management. As a result, the economic mechanism is becoming an effective lever of economic growth.

The concept of acceleration, underlying the targets of the new five-year plan for 1986-1990, is realized not only in growth rates but also in a substantial rise in the absolute increment of key economic indicators. For example, national income, which reflects the end results and efficiency of economic activity, is planned to grow by 124,000 million roubles in the 12th five-year plan period as compared to an increase of 79,000 million roubles in the previous five-year period (in 1983 prices). The resulting growth rate is 4.1 per



POWER CONSUMPTION

1985

1990

2000

100 per cent
91.5 per cent
approximately 71 per cent

Reduction
in power
consumption
per rouble
of national income

cent. In the 13th and 14th five-year periods, the growth rate is projected to reach five per cent or higher, and thus the country's national income should nearly double in the course of 15 years. I emphasize the fact that these targets are not only feasible, but also scientifically substantiated. However, due to the continually diminishing growth of resources for objective reasons, these targets can be reached only through a sharp increase in economic efficiency.

The country has launched a course of all-round intensification of the entire national economic complex, the further development and efficient use of the scientific and technological potential, and a more exact correspondence between the forms of socialist economic management and the conditions and requirements of modern society. As Mikhail Gorbachev stressed in his report to the congress, only with this approach will it be possible to raise labour productivity by 130-150 per cent by the end of the century and at the same time reduce power consumption per rouble of national income by 29 per cent and metal consumption by nearly 50 per cent. It is intended to reverse radically the tendency of diminishing capital productivity by the stabilization of this ratio followed by the acceleration of its growth.

Soviet science holds a strong position and is advancing pioneering projects. An increasing number of new technologies are developed from the achievements of basic research. These technologies include laser and radiation machining of materials, powder metallurgy, and genetic and cellular engineering.

Integral technological systems are being gradually developed to transform whole production cycles and not only individual parts of these cycles. Examples of such systems are many: the converter process of steelmaking with continuous casting and controlled rolling, rotary and rotary-conveyor transfer lines, flexible production systems in engineering, and various biotechnological processes.

You have mentioned several different technologies. What do they have in common?

12 First, they all involve a minimal number of operations. For instance, traditional techniques of metalworking are being replaced by the methods of plastic deformation by means of

rolling or pressing. Rotary lines combine the conveyance and machining of articles. The number of stages in chemical production is being reduced with the use of modern catalysts.

A minimal number of operations usually results in a more intensive production cycle, which sharply raises output and promotes greater reliability and stability in production. In turn, this is a compulsory prerequisite for automation and reduction of operating costs.

Second, these are low-waste or waste-free processes which are more economical. They reduce environmental pollution and thus yield a perceptible gain for society. Most important, electronics is becoming an organic component of modern production systems. For example, today's machining centres combine the latest machine tools and microcomputers. They serve as the basis for flexible production modules, which in turn are used to build entire production sections and departments. Another example is automated mills in which the rolling process is regulated and which incorporate feedback to the control computer.

But the introduction of the technologies which you have mentioned, and computer-controlled machinery and equipment are still very costly. For instance, a machining centre capable of performing dozens of operations according to a preset programme costs from 100 to 200 thousand roubles.

It is true that an ordinary multipurpose machine tool is several times less expensive. But the productivity of two lines of 4 to 5 machining centres, which form the basis of a flexible production system, is equal to that of a large department with multipurpose machine tools. It is true that if these machining centres operate in one or even one and a half shifts there is almost no advantage. But when they operate around the clock they are very effective in all economic respects. Machining centres should be highly reliable and operate at night automatically, without human participation. Furthermore, there is the immutable economic law under which batch production inevitably leads to cost reduction. But metalworking is only one area where new

technologies are used. New technologies will be even more effective in chemical industry, the iron-and-steel industry, and in other sectors of the national economy.

After the 27th Party Congress some Western media published stories about the "spectre of mass dismissals" already haunting the Soviet Union as a result of the scientific and technological revolution and economic reorganization. What can you say on this account?

In my opinion, the assertions that scientific and technological progress in the Soviet Union may result in unemployment testify to the insufficient or simply erroneous knowledge of the real conditions in our country. This is a peculiar interpretation of our plans to release about 30 million manual workers by the year 2000. But the overwhelming majority of these workers are of relatively advanced age, and replacing them has already become a problem since young people tend to be unwilling to work on these jobs. We have difficulties, for instance, with manning assembly

Machine building is an industry allocated top priority in the Soviet economy in the 12th five-year period.

— *80 per cent more capital will be invested in its renovation than in the previous five years.*

— *The output of machine building is to grow by 43 per cent, or by 70 per cent more than the total industrial output.*

— *The application of advanced basic technologies is to increase by 50-100 per cent.*

— *The level of automation will grow by 100 per cent.*

— *The rate of renovation of machine-building output will rise to 13 per cent in 1990 as compared to 3.1 per cent in 1985.*

— *It is planned to increase the output of computer facilities by 140 per cent as compared to the previous five-year period, and to manufacture 1.1 million personal computers.*

— *Funds allocated to the retooling and modernization of existing enterprises will be twice as large as those spent in the 11th five-year period.*



Overall growth of industrial output

PRODUCTION

Growth of output of machine-building industry



lines. Of course, some of the relieved manual workers will have to be retrained, and the appropriate measures are being taken. Some jobs will simply cease to exist. But the reduction of monotonous and arduous manual labour is a natural and progressive development. In socialist society the scientific and technological revolution is aimed at lightening the work load and enhancing the creative character of work.

Workers replaced by machines will be moved in a regulated manner to other sectors of production where the appropriate opportunities for employment and retraining are being provided. This process will last several years in the course of which those unwilling to quit their jobs will go to work at other enterprises where their specialities will still be in demand. Those inclined to change their occupation will have time to retrain. Suitable jobs can be found in sectors where the work force is growing. In production these include, above all, high-tech industries. There are also vast opportunities in the fields of services, housing and utilities, public health, education and culture. The development of this social infrastructure is one of the basic conditions required for increasing economic efficiency of production as a whole. To sum up, the centralized planning of economic development under socialism provides every opportunity for total employment.

As you have stated, modern technologies are developed from the latest achievements of the basic sciences. Their speedy application presumably requires a certain reorientation in research.

It certainly does. We must enhance the role of research collectives in establishing the theoretical basis of fundamentally new machines, equipment and technologies while simultaneously maintaining the priority development of basic sciences. Progressive organizational forms of integrating science with production will play an important role in promoting this process.

The first intersectoral scientific and technological complexes (ISTC) in our country were formed last December. There are 17 such complexes today, and their number is growing. The world-famous Paton Electric Welding Institute of the Ukrainian Academy of Sciences is one of them. It

160-180
per cent

2000

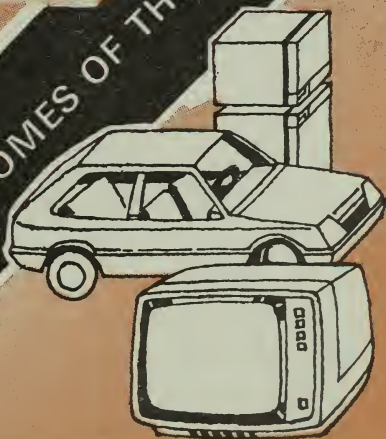
114
per cent

1990

100
per cent

1985

REAL INCOMES OF THE POPULATION



has a large staff of researchers, a design office and several industrial enterprises.

This organizational form makes it possible not only to conduct research and development but also to manufacture prototypes and the first batches of equipment, introduce it in industry and sell licences. The institute has contracts with hundreds of industrial enterprises which are mastering electric-welding processes, primarily automated ones. At the same time the institute coordinates all the research done in this field in the Soviet Union and is the principal organization responsible for fulfilling the assignments of the Comprehensive Programme for Scientific and Technological Progress of CMEA Member Countries.

Similar complexes have been established to develop personal computers and laser technological units, and to solve problems of powder metallurgy, biotechnology and other major scientific and technological problems.

The network of research and production amalgamations (RPA) is also growing. Amalgamations such as the Kriogenmash near Moscow or the Svetlana in Leningrad are capable of developing and putting into operation integrated production systems. The country's nearly 300 RPAs include research establishments, design and development organizations, pilot and batch-production plants, personnel training centres, etc.

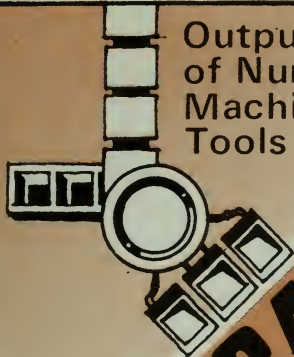
The research facilities at industrial enterprises are also being expanded. In many cases sectoral research institutes and design and technological offices are incorporated into major production amalgamations.

Research results have created an immense scientific potential. There are such projects which, when implemented, will transform entire sectors of the national economy. Many types of highly effective equipment have been developed. Their broad application in all spheres of economic activity should follow.

What "levers" can help in tackling the tasks of retooling the national economy?

The most important lever is the new investment and structural policy. Until recently two-thirds of capital investments were used for new construction and for expanding the existing capacities. Only one-third remained for retooling and modernizing the existing enterprises. This ratio has

Output
of Numerically-Controlled
Machine-
Tools



34,200
17,700

1990

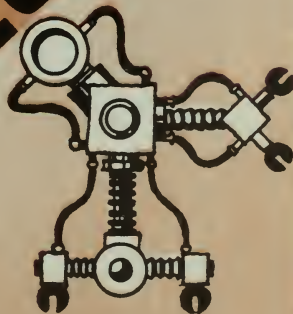
1985

MACHINE-TOOLS AND ROBOTS

28,600
13,200

1990

1985



Output
of Industrial Robots

already changed to 50:50 in the current five-year period; in the future modernization will be of top priority. One example is served by the Lenin Metallurgy Plant in Kuibyshev where a feasibility study has been made of modernization of a hot-rolling line. The cost of the modernization will be three times less than new construction and will be recouped in about two years. In many respects the project's level of technology exceeds that of leading foreign firms.

Investments will be also redistributed from resource-extracting to resource-saving sectors. This approach is understandable and justifiable considering the fact that saving one ton of natural resources is today 2-3 times cheaper than their extraction.

Greater attention is being paid to the country's machine-building complex. Its capital investment growth rate will be 4-5 times higher than the average rate in other sectors of the national economy. The Bureau of the USSR Council of Ministers for Machine Building has been established in order to coordinate the work of the ministries involved.

Improvement of the structure of the fuel and energy complex is the basis of the USSR Energy Programme.

— *Capital investment in the development of the fuel and energy complex will grow by 35 per cent.*

— *The gas industry which will have an annual growth rate of 6-7 per cent is given priority.*

— *Nine-tenths of the increase in gas output in the 12th five-year period will come from Western Siberia. Seven powerful main gas pipelines, each several thousand kilometres long, will be built to convey gas to the central areas of the country.*

— *The role of coal in the country's fuel and energy balance will grow considerably. By 1990 the output of coal will grow by 69 million tons by means of more efficient open-cast mining.*

— *The output of oil (including gas condensate) will grow by 40 million tons to reach 635 million tons by 1990 (595 million tons in 1985).*

— *The increase of the yield of oil-bearing strata will be an efficient means of raising oil output. The plan provides for a threefold increase of oil extraction by such means.*

— *The share of electricity generated by nuclear power stations will double to reach almost 20 per cent of all electric power produced in the country.*

Growth of Computer Output

2.4

1990

1

1985

COMPUTERS



About three-quarters of sectoral research institutes are now affiliated with the respective production amalgamations to strengthen the links between science and industry and to speed up the development of new machinery.

Successful operation of the machine-building complex depends on the rate of development of its important branches, such as electrical engineering, instrument making, electronics and computer engineering. Therefore it is planned to develop them faster than machine building as a whole.

Major changes are also under way in the fuel and energy complex whose development is now also coordinated by a corresponding Bureau of the USSR Council of Ministers. In this sector the gas industry whose planned annual growth rate is 6-7 per cent has top priority.

In general, capital investment is now being concentrated in economic sectors which give the greatest returns and facilitate the most rapid scientific and technological progress. This accounts for the substantial change in the national economy's structure which was formed in the period of primarily extensive development. Primary raw materials are being exhaustively and comprehensively utilized at a sharply increased rate, fundamentally new technologies and construction materials are being given top priority, and high-tech industries are developing at particularly fast rates.

A large-scale economic experiment has been conducted in the Soviet Union since 1984. What can you say about its results?

It is in fact no longer an experiment. One half of all industrial enterprises started working under its conditions in 1986 and by 1987 all enterprises will be included. The basic idea of the experiment is the extension of the rights and responsibilities of individual enterprises. These are steps in the right direction. The experiment has on the whole yielded specific results: the fulfilment of contractual deliveries has improved, labour productivity has risen and production costs have dropped. But in my opinion, this is an evolutionary way of improving the functioning and management of the economy. What we need, however, as the 27th CPSU Congress pointed out, is radical reform.

We seek to make our economic mechanism more flexible



GRAIN HARVESTERS PROVIDED FOR
AGRICULTURE (thousand)

856

1961-1970

988

1971-1980

1,170

1981-1990

and capable of promptly utilizing scientific and technological achievements. The changeover to new methods of administrative and economic management will help in attaining this goal.

Could you explain this in more detail?

Our enterprises are now being given the right to dispose as they wish of the profit they "earn". Under the previous administrative methods of management profit was collected and then redistributed by central agencies. Today new measures of economic regulation of the production processes are coming to the fore. These include bank credit and the direct links of our socialist market. Such an economic reform has become necessary since the Soviet Union now accounts for one-fifth of the world production. It is no longer possible to manage effectively "from the centre only" an economic complex that comprises scores of thousands of enterprises.

It is by no means a matter of discarding the well-tested methods of planning socialist economy, but of a rational combination of centralization and decentralization. Moreover, the role of central planning bodies will be further enhanced in regulating the proportionate and balanced development of the national economy and the optimal combination of state, sectoral and regional interests. At the same time, they will be freed from their petty tutelage over enterprises and their amalgamations and from settling matters which can well be managed by the enterprises' work collectives. For instance, the personnel at the Frunze Machine-building Amalgamation in the Ukrainian city of Sumy last year raised labour productivity by more than 13 per cent and profit by 32 per cent. All members of the amalgamation's work force have become more interested and active in attaining higher production targets. Since the beginning of the current five-year period, the leading enterprise of the Soviet automotive industry, the Volzhsky Motor Works in Togliatti, has also been operating on the self-financing principles. This system of cost accounting and self-financing, tested at Sumy and Togliatti, marks a major step forward in reforming industrial management as compared to the conditions of the large-scale experiment mentioned above.

Russia,
per cent
of USA

12.5

1917

INDUSTRIAL OUTPUT

30

over
75

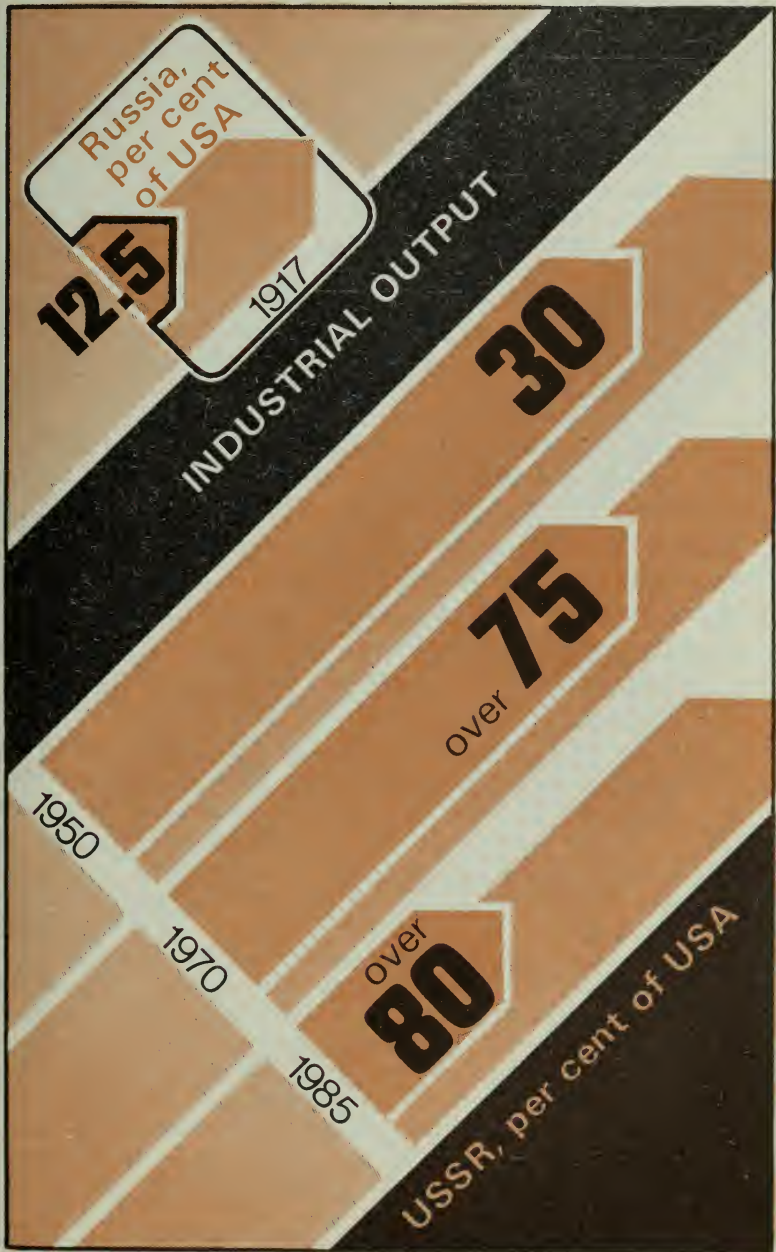
1950

1970

over
80

1985

USSR, per cent of USA



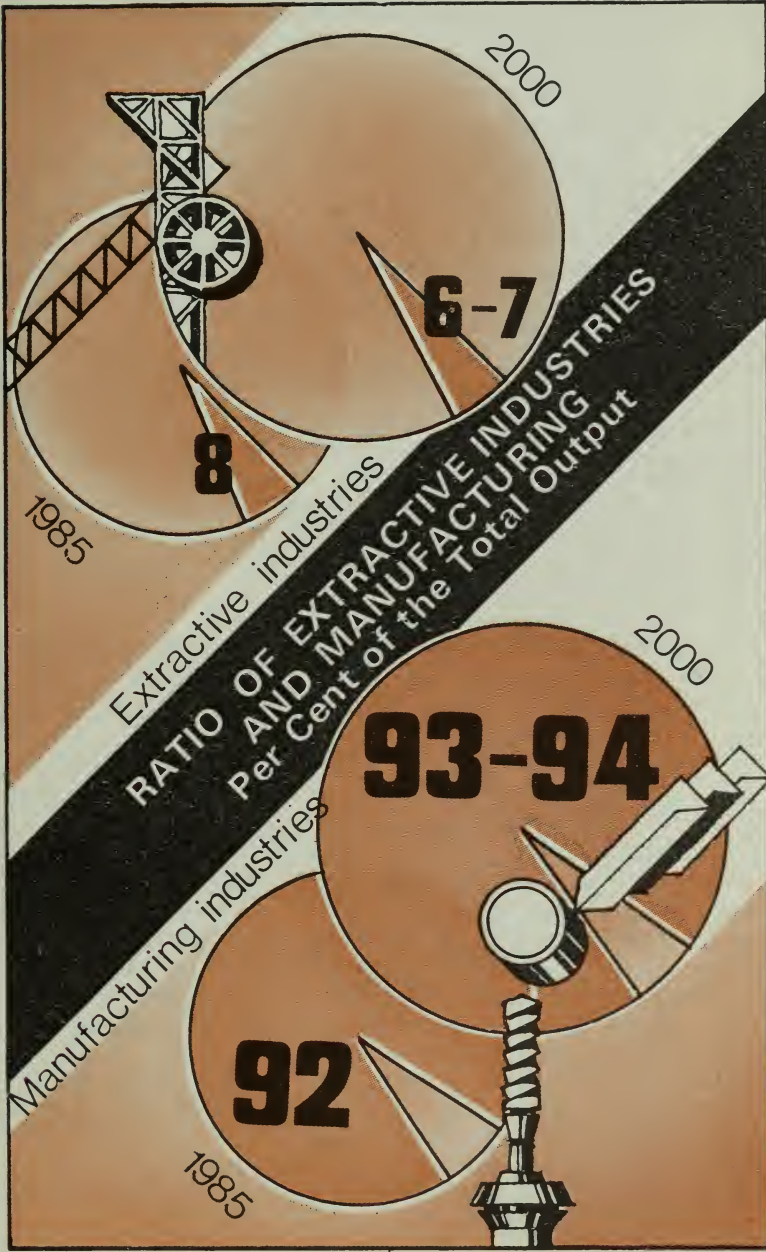
mical Machine Building and dozens of enterprises of other industries will switch over to the self-financing system in the near future.

I would like to point out the following aspect of the current improvement of our economic mechanism. The extension of the rights of work collectives and their greater independence naturally requires that the enterprises and their amalgamations be profitable, self-sufficient and eventually self-financing. In other words, the state "absolves itself" of the responsibility for the results of work collectives' efforts to the same degree that centralized interference has been decreased. Let's take, for instance, a problem that our enterprises will be faced with in the present five-year period. The government has decided to raise wage rates and salaries in the production sectors by an average of 25-30 per cent. But for the first time the enterprises themselves operating under the new conditions will finance these raises from their own funds.

Many Soviet economists believe that the system of prices and price formation, which is an important incentive for technological progress and for raising the quality of goods, needs to be greatly improved. Do you share this view?

The price-formation system certainly needs to be improved. The direction of improvement is quite clear: prices should more closely reflect the social necessity of expenditure and more closely correspond to the effectiveness, quality and competitiveness of goods. In general, profitability of production should be determined by its benefit to society.

Certain measures have already been taken. For example, a more effective system of price surcharges and rebates was introduced at the beginning of 1986. The prices of goods of insufficient quality and with inferior technical characteristics are now being rapidly reduced. Price reduction will continue until such goods are withdrawn from production. Contractual prices between trade and industry, for example, are being established on a much broader scale. In general, of the 24 million kinds of goods produced in this country, the prices of half a million are fixed in various centralized ways. I think it will take several years to prepare more



substantial innovations in the wholesale price system.

Economists are constantly discussing the problems in the formation of retail prices, which also need improvement. But this does not mean that any radical reforms in this sphere have been planned for the very near future.

Proposals have been published in the press to raise the prices of bread, meat, milk and butter, whose production is subsidized by the state budget which annually allocates many thousands of millions of roubles for this purpose. From the economic point of view this cannot be considered normal. The prices of these foods have not changed for more than 20 years.

I personally believe that price formation demands great improvement. This could include cancelling subsidies other than those for such items as goods for children and pensioners, medicines, etc., and thus freeing funds which could be used for other social needs.

It should be stated quite definitely, however, that if at some point such a price reform were to be carried out, in the conditions of a socialist economy such a reform would have to be combined with a compensation programme. In other

The social thrust of economic development is a distinguishing feature of the 12th five-year period.

— About four-fifths of the national income will be allocated to improving the living standard.

— The wages and salaries of 90 million people will be raised as compared to those of 20 million in 1981-1985.

— More housing, kindergartens, schools, hospitals, clinics and vocational training schools will be built in the 12th five-year period than in any other five-year period.

— Special attention is given to the housing problem. Housing construction during the 12th five-year period will total 595 million square metres, and by the end of the century not less than 2,000 million square metres. As a result, practically every Soviet family will have a separate flat or its own house.

— At the same time social consumption funds will continue to grow. They are used to provide free education, medical assistance, paid annual leaves, pensions, students' stipends, and other allowances and benefits. They will considerably increase in five years and exceed 600 roubles per capita in 1990 (530 roubles in 1985).

words, no matter how this very complex problem is resolved, the principles of social justice will not be violated.

I would like to ask you the following question. You have lived and worked for many years in Novosibirsk and much of your work deals with the economic problems of Siberia and the Far East. Aren't the problems of these areas still near to you as a scientist?

They certainly are. In April 1986 I attended a session of the Learned Council of the USSR Academy of Sciences, which discussed the problems of developing the extensive zone along the Baikal-Amur Mainline (BAM).

It can be said with confidence that the BAM is given a key role in the implementation of the Party's strategy of giving top priority to the development of productive forces in the country's eastern areas. The decisions of the 27th CPSU Congress include the tasks of ensuring the regular operation of the entire BAM and launching large-scale economic development in the zone along the railway.

The USSR has embarked on a course of economic intensification while the work in the BAM zone is based on extensive development. Isn't there a contradiction here?

There is no such thing as an extensive or intensive economy in its "pure form". It is a matter of what factors are predominant at a given stage of economic development. The growing role of intensive factors by no means precludes new construction or the development of new areas and mineral deposits. It is noteworthy, however, that today this seemingly traditional process also includes elements of intensification. The use of outdated machinery and equipment would lead to considerable delay and inefficiency in the development of new regions. Therefore the emphasis in the BAM zone and in other areas of Siberia and the North is laid on fundamentally new machinery which is highly productive, reliable and capable of operating under strenuous conditions.

I would like particularly to stress that all questions of regional development receive special attention from the Commission of the USSR Academy of Sciences for the Study of Productive Forces and Natural Resources, which I have chaired for some time. I have thus remained true to my old scientific interests.

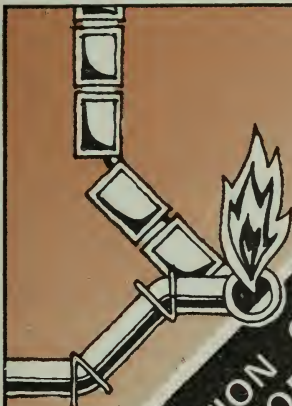
By the end of this century the eastern areas of our country will provide the necessary increase in the production of fuel, non-ferrous metals and timber, and generate a greater portion of electricity. No scientist is likely to remain indifferent to the economic problems of this vast region. I often recall the prophetic words of the great Russian scientist Mikhail Lomonosov that Russia's might would be augmented by Siberia and the Arctic Ocean.

And the last question: could you briefly define the essence of the tasks facing us today?

I think it can be described in one word: "breakthrough". We have to achieve a breakthrough in economic, scientific, technological and social development. The human factor is certainly decisive here. We will be able to resolve the complex problems of our development if we achieve a breakthrough in human minds and attitudes, learn effectively to stimulate work at all levels and concentrate on accelerating scientific and technological progress.

The principal objective of the Communist Party's policy has always been and remains the concern for man and his needs and for the steady rise of the material and cultural level of the people. The Party associates the attainment of this goal with the renovation of the productive forces on the basis of the highest achievements in science and engineering, the improvement of production relations and of the system of management and administration, and with the carrying out of profound changes in the sphere of labour. These are the most vital conditions for social progress today.

In conclusion, I would like to emphasize that the policy of the 27th Party Congress with regard to scientific and technological progress will enable the Soviet Union's economy to become responsive to constant innovations and will help in solving the complex problems of accelerating our social and economic development.



**SATISFACTION OF THE GROWTH
IN DEMAND FOR FUEL, ENERGY, RAW
AND OTHER MATERIALS**
(to be achieved by the year 2000)

30-35 per cent

Additional
production

Resource
saving

65-70
per cent

Designed by Valentin BLINOV and Yevgeni SEROV

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Абел Гезевич Аганбегян

ЭКОНОМИКА СТАНЕТ ЧУТКОЙ К ОБНОВЛЕНИЮ

на английском языке

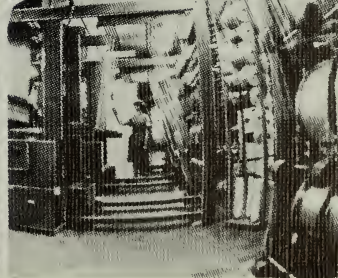
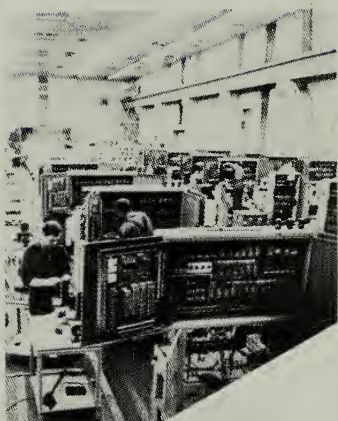
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Expert Opinion

INTRODUCTION OF UP-TO-DATE MACHINERY AND EQUIPMENT AND ADVANCED TECHNOLOGIES IS NOW A PRIORITY TASK FOR ALL SOVIET INDUSTRIES, WITH THE EMPHASIS BEING LAID ON ELECTRONICS, MICROPROCESSORS, NUMERICALLY-CONTROLLED MACHINES, ROBOTICS, FLEXIBLE PRODUCTION SYSTEMS, AND AUTOMATED DESIGNING SYSTEMS.

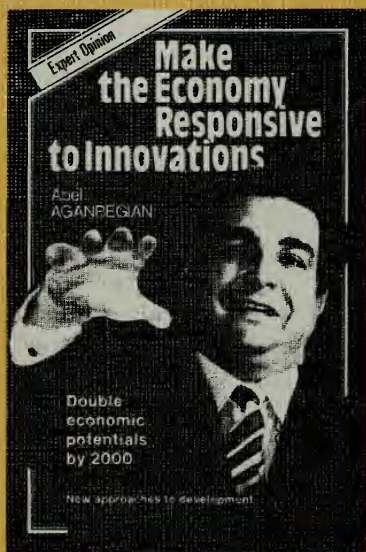


Abel AGANBEGIAN

Abel AGANBEGIAN is one of the best-known Soviet economists. Born in 1932, he graduated from the Moscow Economics Institute in 1955 and became a D.Sc. at the age of 31. A year later he was elected a corresponding member of the USSR Academy of Sciences and became a full member at the age of 42. In 1967 he became the director of one of the most interesting research establishments in the country, the Institute of Economics and Organization of Industrial Production of the Siberian Branch of the USSR Academy of Sciences.

The range of Academician Aganbегian's scientific interests is surprisingly broad in today's age of narrow specialization. He has given much time and energy to the problems of labour productivity, economic management and organization, and economic growth, and to political-economic problems. He has studied the problems of wages and salaries and living conditions of various social groups, worked out various optimization models, and has done extensive econometric research.

Abel Aganbегian is today Deputy Academic Secretary of the Economics Department of the USSR Academy of Sciences, Chairman of the Commission for the Study of Productive Forces and Natural Resources and the founder and Editor-in-Chief of the magazine *EKO* (Economics and Organization of Industrial Production), the largest publication of its kind in the country. It is published in Novosibirsk and has subscribers from around the world.



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