Interim Report to the National Council for Soviet and East European Research

TITLE: The Investment Process in Siberian Industry

Soviet Industrial Investments: Problems of the 1981-85 Plan

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The present report is the first part of the research project, *The Investment Process in Siberian Industry*. It was not originally included in the project outline. However, in November, 1981, materials relating to the eleventh five-year plan appeared in the Soviet press, and shortly thereafter a whole series of secondary works were published. Therefore, the author felt that it would be most appropriate to analyze the plan's investment section against the background of the investment situation in the late 1970s, and to evaluate the feasibility of the projects elaborated in the plan. In no way does this work affect the volume of work envisaged by the above project. This subject is organically connected to the investment programs of Siberian industry. Moreover, since the research has been conducted on the basis of an analysis of the current five-year plan, this report has great practical value.
Summary

A drop in investment activity in the Soviet economy led to a slump in the late 1970s. Soviet leadership has gambled by giving priority to investments in renovation and modernization of existing enterprises, and by reducing new construction's share to a minimum, thereby hoping to invigorate the whole investment sphere. This policy has not been vindicated: instead of a reduction in the capital coefficient, a speed-up of capital turnover through a shortening of the time periods needed for construction and the breaking in of new capacities, a speedier renovation of technology on a progressive basis, and a drop in productive expenditures, there has been a worsening of all these indicators of investment activity.

Analyzing the investment program of the eleventh five-year plan against the background of the situation in the second half of the '70s reveals confusion and contradictions. For every thesis in the plan, there is an antithesis. On the one hand, they plan to increase the share of consumption in the national income and proclaim the primacy of social programs; on the other, they plan to further reduce the share of investments in housing and services, which had already reached a record low in the late '70s.

On the one hand, the plan calls for maximizing the percentage of investments in existing industry, most of which is situated in the
European part of the USSR; on the other, it calls for the transfer of funds to the northeast in connection with the new investment impulse aimed at increasing the production of oil and gas, at transporting and refining it, and at the associated infrastructure. Shifts in the regional structure of capital investments which occurred in the second half of the 1970s testify to the fact that this second alternative has already started to be realized. The inevitable result is an increase in the percentage of investments in new construction and, correspondingly, a reduction of the share of existing enterprises.

On the one hand, investments in the so-called fuel-and-energy complex have sharply increased, while on the other, investments in the industries which create the foundation for the development of this complex have been reduced.

On the one hand, they plan to concentrate investment resources on almost-completed construction projects, which will provoke a sharp increase in the demand for equipment; on the other, they are reducing the percentage of investments in the machine-building industry, even in light of the fact that in recent years there has been a fall in output and in the number of new productive capacities put into operation for many kinds of equipment.

Thus there is no way one can speak of any sort of investment strategy in the eleventh five-year plan. Investment activity reflects the state of emergency in the Soviet economy, and is subordinated to the pressing need to save its most vital branches, evidently those directly related to the production of arms in particular.

For industry as a whole, growth in capital investments is close to non-existent; when you consider growing inflation, investments for all
practical purposes are being reduced. There will be fewer and fewer new productive capacities put into operation in an ever-widening circle of industries.

Among the planning projects which relate to industrial investment, one super-task stands out: increasing the output of the fuel-and-energy complex in the eastern regions of the country. There is currently an intensive transfer of funds going on in this direction, and this has weakened investments in other industries. One should expect an absolute reduction in investments in many branches of the machine-building industry, in chemistry, in ferrous metallurgy, in the building-materials industry, in forestry, in light industry, and in the food industry, as well as in housing and services.

Despite these maximal investment efforts, an increase in the output of oil and gas can be attained only if imports of metal and equipment are sharply increased, and if investment injections from the West are intensified; this is because the corresponding Soviet industries were not prepared for this policy in time.

Such is the investment picture the Brezhnev gerontocracy is bequeathing to the upcoming new Soviet leadership.
Never before has the Soviet leadership issued a five-year plan as unrealistic as the eleventh (1981-85); indeed, they themselves can hardly believe that it will be fulfilled. The main feature of this most recent five-year plan is a projected 18% increase in national income, combined with a 10% increase in capital investments. Never before has the planned level of these indicators been so low. However, what is more important is the fact that never before has the growth of national income outstripped the growth of capital investments in the five-year plan—it has always been the other way around.

At what cost does the Soviet leadership intend to attain such unprecedented results? What shifts are planned in what economic spheres in the current five-year plan, as compared to the fifteen years of Brezhnev’s reign (1965-80), when the rhythm and proportions which are determining Soviet economic development in the '80s took shape?

If we throw out the usual incantations about the growth of labor productivity and economizing of material resources, it turns out that the most significant innovations are outlined mostly in the section of the plan which concerns investment. This report is devoted to an analysis of this key aspect of the five-year plan, and to an appraisal of the actual possibilities for its fulfillment.

Investment Activity in the Brezhnev Era and Its Fruits

In the late 1970s, the pulse-rate of Soviet economic investment had become so weak and irregular that it may no longer be capable of sustaining
the steady flow of investment funds necessary for a healthy economy. The dynamics of national economic investment and volume of construction for the whole of Brezhnev's tenure are characterized by the following figures:

<table>
<thead>
<tr>
<th>Capital investments</th>
<th>Average annual growth rate in the national economy as a whole (by %, comparable prices)</th>
<th>Annual Growth, %</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>107.6</td>
<td>107</td>
</tr>
<tr>
<td>Vol. of construction &amp; installation work</td>
<td>107.2</td>
<td>105.8</td>
</tr>
</tbody>
</table>

The slump in investment activity which occurred in the late 1970s is entirely without precedent for a peacetime Soviet economy.

In the contemporary investment situation in the Soviet Union the following characteristic factors have become especially significant and are rapidly developing. First, there is the growing disproportion between the financial expression of investment and the physical resources needed to realize it, which is manifested in the gap between the volume of construction work and capital investments. Second, there is the rise in the cost of new productive capacities having roughly identical structural and qualitative characteristics. According to the calculations of Vladimir Fal'tsman (Central Institute of Economics and Mathematics, Moscow), one of the most competent specialists in Soviet investment practice, the average annual rate of this cost increase amounted to more than 6% in the latter half of the '70s, while in the same period the average annual growth rate of capital investment amounted to 3.4%.² Apparently, the discrepancy between these two dynamic characteristics of the investment process is growing wider and
wider. Presently, growing inflation in the area of investment (and in all other areas of the Soviet economy) is not taken into account in planning, statistics, or design. The inflation rate is almost double the rate of investment in the economy.

The reduction of actual investment capabilities has resulted in an unprecedented curtailment of the introduction of productive capacities in all spheres of the economy. In the period 1976-80, only sixteen of the 54 kinds of new capacities recorded annually in published Soviet sources showed an increase over the period 1971-75, while 38 suffered a reduction. There were major reductions in such important and scarce products as rolled ferrous metals (40%), steel pipes (21%), turbines (46%), machine tools (200%), automobiles (almost 400%), cement (almost 300%), chemical fibers (35%), and footwear (more than 300%). The number of new capacities was significantly reduced in the production of meat, milk, and sugar. There were fewer gas and oil pipelines built, and fewer railroad tracks and roads were laid. There was a reduction in the amount of drained and irrigated land put into use, as well as in the number of livestock and poultry farms put into operation. Less housing was made available. Moreover, production of many of these items either grew only insignificantly or was curtailed in the late 1970s. Such are the fruits of investment activity in this period.

Let us consider how the major characteristics of the investment process in Soviet industry changed in the 1970s, and try to analyze the situation which is taking shape in the early 1980s.
The Structure of Investment: The Reduction of the Share of Social Investment Programs

The distribution of capital investments within the national economy as a whole changed somewhat in the period we are considering (i.e., the late '70s). At this level, the fundamental change was a diversion of funds from the so-called "non-productive sphere" to agriculture: agriculture's share increased from 22% to 27%, while the share of investment in the social sphere (home construction, trade, education, health care, etc.) dropped from 36% to 28%. Industry's share remained unchanged (a little more than 35%), and the share of transportation and communication grew somewhat. 4 Within industrial investment, producer's goods started to receive a larger share at the expense of consumer goods, although this increase has been slow.

Changes in the structure of industrial investment by no means conform to the logic of Soviet economic policy. The leading role of the petroleum industry and the increase in the share of the machine-building industry are explicable. However, the reduction in the share of electrical energy, the coal industry, and ferrous metallurgy can be explained more readily as willful, impulsive decisions than as part of the long-term strategy for Soviet industrial development.

The building materials industry has lost priority, and the share of the lumber and paper industries is being reduced. Light industry is slipping, and the food industry's share has been steadily shrinking, no matter what the situation in agriculture has been. The main direction of the shifts in the structure of industrial capital investment can be more clearly traced when one aggregates the different industries into func-
tional complexes. In recent years, Soviet practice has made wide use of
the following categories of industrial complexes:

--Fuel and Energy, including electrical energy, and the oil, gas, and
coal industries;

--Raw and Processed Materials, which includes ferrous metallurgy, chemis-
try and petrochemistry, the timber and paper industries, etc.

--The so-called "Investment Complex*" which consists of the machine-
building, metalworking, and industrial materials industries;

--Consumer Goods, that is, light industry and the food industry.

Within the context of the above classification, the following shifts
have occurred in the structure of industrial capital investment:

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Fuel and energy</td>
<td>30.4</td>
<td>28.8</td>
<td>30</td>
<td>32.5</td>
</tr>
<tr>
<td>Raw and processed materials</td>
<td>22.3</td>
<td>21.5</td>
<td>21.2</td>
<td>18.9</td>
</tr>
<tr>
<td>&quot;Investment&quot;</td>
<td>24.1</td>
<td>27.4</td>
<td>28.8</td>
<td>28.7</td>
</tr>
<tr>
<td>Consumer goods</td>
<td>12.2</td>
<td>11.1</td>
<td>10</td>
<td>9.9</td>
</tr>
</tbody>
</table>

The following clearly pronounced tendencies deserve special atten-
tion:

--the growing disproportion between investment in industries which de-
liver raw materials, and investment in the industries of the "invest-
ment" complex, which are fed by them. In particular, there is no way
to justify the systematic reduction in the share of ferrous metallurgy

*In Soviet practice, the term "investment complex" refers to all of those
branches of industry which produce materials and equipment necessary for
the establishment of new productive capacities.
in light of the growth in the machine-building industry's share if
one is striving for the balanced development of both industries.
In the final analysis, the crisis in metallurgy and the drop in
production in many of the machine-building industries which has
occurred in recent years are to a significant extent results of
this disproportion;
--lowering the share of the consumer industries, while increasing
the share of consumption in the national income in the same
period. In the 1970s, in spite of the decisions made at party
congresses regarding the necessity to speed up development of
the consumer sphere, planning practice was subordinated to in-
vestment in the productive sphere, and thus the traditional
priorities of heavy industry.

The share of capital investment in the construction of housing,
schools, stores, hospitals, nurseries, laundries, and other objects of
the social infrastructure, of the so-called "non-productive sphere,"
dropped to 28% in the last five-year plan of the Brezhnev era (cf. 33% 
at the zenith of Khrushchev's reign, 1965-60), and thus reached the record
low level for the whole of Soviet post-war history.

Reconstruction Versus New Construction: The Main Direction
of Investment Policy

In the period we are considering, the decisions of every party
congress or Central Committee plenum on industry or construction would
contain some demand for increasing investments in the renovation ("recon-
struction") and modernization of existing industry at the expense of in-
vestments in the construction of new enterprises. At the 26th Congress
of the Communist Party of the Soviet Union, Premier Tikhonov declared:

In particular, it is necessary to speak about capital investments as directed to the reconstruction and technological retooling of existing enterprises. The resources directed to this end will be recouped on the average three times faster than if they were aimed at the creation of analogous new construction. They will diminish the drain on manpower reserves. The task before us consists of even greater (emphasis ours) application of investments to reconstruction and an increase in its share of overall capital investments.\textsuperscript{6}

Throughout the 1970s, the policy of renovating already existing industry was intensified. The central planning bureaucracy has been rooting objects of new construction out of the projected plans of branch ministries, and switching resources over to the renovation and perfection of already existing enterprises. This "reconstruction" policy is considered the best way to intensify production, and is viewed as a panacea against all of the ills of the investment sphere in Soviet industry. The advantages seemed indisputable:

--An increase in the volume of production with fewer expenditures of capital as compared to new construction, since "reconstruction" and modernization of existing facilities--in the opinion of the Soviet party leadership--demands investments mostly for the renovation of machines and equipment, and only minimally for rebuilding or the construction of new buildings and installations. In addition, expenditures on the social and productive infrastructures are reduced.

--A speeding up of the withdrawal of old technology from operation (which has to be facilitated by the amortization reform of 1975) and its replacement by new, economical technology; on the basis of this, production expenses are reduced.
A hastening of capital turnover through a shortening of the time needed to set up and break in productive capacities.

Let us now consider how this triune goal was realized over the past ten years, and how beneficial was the effect of Brezhnev's renovation investment policy on the results of investment activity in Soviet industry. Please note that here we do not mean to explain the dynamics of various indicators exclusively through the influence of this factor. In every case this is the result of innumerable contrary forces. But for all of that, a change in the investment flow in the direction of already existing enterprises, such as occurred in the '70s, could not help but render a dominant influence on the functioning of the whole industrial investment sphere; furthermore, it could not but decisively affect (directly or indirectly) the economics of industrial production as a whole, including the dynamics of production expenses.

Reducing Capital Expenditures on Increment in Output. Increasing the Share of Equipment and Reducing the Share of Construction

In this area the Soviet leadership sees the primary condition for successfully carrying out the capital-economizing policy of renovation and modernizing existing industry. But even official Soviet statistics bear witness to the fact that this condition is not being fulfilled.

The capital coefficient of industrial production (capital investments/the increment of industrial output, both in comparable prices) increased more rapidly in the '70s than in the '60s. Calculations based on Central Statistical Administration data show an increase of almost 60% in capital expenditures on the increment per unit of industrial output in the second half of the '70s as compared to the first.
Basing himself on the party imperative, Tigran Khachaturov, the leading Soviet theoretician in the field of investment, formulated the idea of the economically expedient renovation of an enterprise in this way: "Renovation ["reconstruction"] is effective when replacing equipment with better equipment does not demand significant and expensive construction or installation." Thus the criterion for the economically effective renovation of an enterprise is seen as a minimum of expenditures on construction and installation, and a maximum of expenditures on equipment in capital investments.

In the information we have on this question there is a contradiction between official Soviet statistics, which demonstrate an increase in the share of equipment in capital investment and a corresponding reduction in the share of construction and installation, and the publications of highly trustworthy Soviet authors, which give the completely opposite picture. In order to solve this problem, let us reject an analysis of capital investments, and turn instead to a more reliable indicator—the structure of fixed capital stock.

According to statistical yearbooks in the 1970s, the share of equipment in industrial fixed capital increased from 36% to 38%, while the share of buildings dropped from 30% to 29%. According to data published by Vladimir Kremyansky (The Scientific Institute of Gosplan USSR), the share of equipment for all intents and purposes did not change over this period: it grew from 39.2% to 39.8%. Over the past ten years, fixed capital newly put into operation comprised more than 3/4 in relation to the capital which functioned in 1970. If a significant increase in the share of equipment in industrial investment had really occurred, then this could not but
have led to an analogous process in fixed capital stock. This did not take place, however.

Moreover, if, after ten years of a persistent policy which gave preference to investment in the renovation of equipment in existing enterprises and did its utmost to hold back investment in the construction of new and the rebuilding of old industrial structures, the share of buildings in fixed capital stock drops only one percentage point, then according to Khachaturov's criterion, this policy has proved to be groundless.

Why did this happen? Reality amended the ideal scheme of the Soviet planners. It turned out that the condition of industrial structures, communication and technological networks, energy systems, raw-material systems, repair and other auxiliary services was such that in a majority of plants it was impossible to modernize the basic technological components without a substantial (and frequently radical) renovation of the entire enterprise. And expenditures on the rebuilding of buildings and other structures, namely the whole production infrastructure, are swallowing the lion's share of investments in industrial renovation.

The Savings in Capital Investments in the Infrastructure Allegedly Realized through Renovation and Expansion

In most cases, actions such as the maintenance, rebuilding, or expansion of various elements of the infrastructure (not to mention the construction of new buildings and communications networks) entail large expenditures, and are for the most part circumscribed by nature, energy considerations, and territory. These endeavors generally run such a tortured course, that compared to the construction of new enterprises in new regions, and the concomitant creation of a new social infrastructure they
have no effect either in the sense of saving investments, or in the sense of social progress. This is especially true when old enterprises are expanded or rebuilt in the thickly populated regions of the European center, the Northwest, the Ural region, or the Donetsk-Pridnepr basis—in other words, in the old industrial core of the Russian Empire.

**Speeding Up the Replacement of Old Technology by More Modern and Economical Technology**

Has the replacement of machines and equipment been speeded up? We may judge this from the dynamics of writing off, which should have increased both through growing investment in the renovation of the existing stock of equipment and through the amortization reform of 1975, as a consequence of which the service life of industrial equipment was reduced on the average from fifteen to twelve years.

Even in this case, however, official statistics do not reflect the desired shifts. The writing off of fixed capital stock on the whole actually dropped off somewhat (in relative terms) in the 1970s: from 1.8% in 1970 to 1.4% in 1980.\(^1\) Over the course of the decade the yearly writing off of equipment stayed at a level of 2.4–2.5%. With the introduction of new rates of amortization, the only thing that increased was the gap between scheduled and actual writing off of equipment. Thus the coefficient of writing off industrial fixed capital stock in 1979 amounted to 1.4%, with an average rate of amortization for renovation of 4.8%.\(^2\)

In the opinion of Soviet specialists, which is based on a study of the dynamics of technological progress, the rates of amortization in Soviet industry should be reviewed every ten years.\(^3\) The interval between the last two amortization reforms was twelve years (1963 and 1975). Judging
by a number of convincing signs, however, the new amortization reform cannot be implemented earlier than the second half of the 1980s. Thus, retaining the existing amortization norms in the first half of the '80s will not stimulate more intensive renovation of fixed capital stock through replacement.

But even with the existing guidelines for attaining the rates of writing off equipment scheduled for the 1980s, it is necessary to increase the write-off of fixed capital stock more than three times the actual level of the late 70s. Neither the present level of machine-building production nor its specialization, which is predominantly oriented toward equipping new productive capacities, even approximates such a requirement.

Is the share of really new equipment within replacement technology increasing? The dynamics of renovating the output of the Soviet machine-building industry show that the very potential for expanding the scope of equipment replacement on a new scientific and technical framework is being reduced. In the output of some machine-building industries, the share of products which take five years or less to produce was 55% in 1967, while in 1978 it was 42%. The share of products which take more than ten years to manufacture rose in the same period from 16% to 27%. Furthermore, do products newly approved for production possess any real novelty, if only for the USSR? That is, are they things being accepted in the USSR for the first time? In 1973, 48% of the output of the machine-building industry conformed to this stipulation, while in 1978 only 39.5% did.

No less telling an indicator of the development of the technological level of the Soviet machine-building industry is how many new kinds of equipment are created annually. In the latter part of the 1970s on the
whole, there was a drop in the number of prototypes for various kinds of new machinery being created. This included a 27% reduction in energy-related equipment, a 12% reduction in machine tools, a 20% reduction in equipment for metallurgy, and a reduction of 15% in chemical equipment.\textsuperscript{17} Particularly sensitive for industrial technological progress is the drop in the number of new models in the precision machine-building industries: instrument making, automation devices, and computer science.

Replacement is taking place chiefly on the basis of an improved, partially perfected technology, but with the old technological foundation and the old technological plans and methods of production being retained.

**Repair Versus Replacement**

As regards receiving new (and not renovated) technology, industry has been on starvation rations, and the situation in recent years has taken an abrupt turn for the worse. Consequently, the role of major overhauls has grown not only in maintenance, but also in the partial modernization of equipment, despite the lowering of the share of major overhauls in the 1975 amortization rates.

In 1979, means for major overhauls totalled as much as 32% of the general sum of capital investments; in a number of industries this number was even higher. For example, according to the calculations of the Ferrous Metallurgy Scientific Research Institute, capital investments in this branch of industry totalled 2.2 billion rubles in 1970, while expenditures on major overhauls totalled 694 million, or nearly 32%. In 1978, these numbers were 3.1 and 1.28 billion respectively—that is, 41%.\textsuperscript{18} Thus, instead of replacing old equipment with new, it is repaired
many times, restored while retaining the old technological foundation.

Let us take by way of example two metallurgical giants—the pride of Soviet metallurgy: the plants at Magnitogorsk and Novokuznetsk. Mill no. 1150 of blooming 3 of the Magnitogorsk plant has been repaired 39 times. Expenditures on repairs are more than twice its original cost. The agglomeration machines Nos. 1 and 2 have been given 16 and 28 major overhauls respectively; the cost of the repairs has exceeded the original cost nine and 17 times respectively. At the Kuznetsk plant, cogging mill 1100 was overhauled 38 times in its 46-year service life, at a price which almost doubled its original cost. Such a situation is typical for Soviet industrial enterprises. The galvanization of old equipment is being practiced on an ever wider scale, in proportion to the growing dearth of genuinely new equipment to replace obsolete and worn-out machinery.

As mentioned earlier, one of the most important results of the industrial renovation currently in progress should be the lowering of production expenditures per unit of industrial output. A lowering of expenditures is actually taking place. But if in the "pre-reconstruction" period (if you will pardon the expression) from 1966 to 1970, the yearly index in comparable prices was 1%, in the second half of the '70s it was merely 0.2% in all. Moreover, there is absolutely no way one can explain such movement as shifts in the branch structure of industry: an analogous, if not more strikingly pronounced tendency can be seen in most branches of industry.

Of course, various factors affect the dynamics of production expenditures. But bearing in mind the scale of investment in already existing enterprises, one cannot but agree that the most important of these
factors is the nature of replacement technology and equipment. If the renovation of fixed capital stock occurred through the introduction of new resource-economical technology and machinery, then this should lead to an increased saving of production expenses.

The abrupt deceleration in the lowering of expenditures per unit of production reflects the low level of technological progress in industry. Renovation is not improving the situation.

**Speeding Up Capital Turnover by Reducing the Amount of Time Needed for the Creation and Breaking in of Productive Capacities**

It had seemed obvious that a positive result of the policy by which the share of investments in already existing enterprises was increased would be a natural shortening of the time between when investments are realized and when there is an increment in output. Inordinately prolonged periods needed for construction and the breaking in of newly-introduced productive capacities are an immament characteristic of the Soviet investment process; indeed, the need for shortening these time-periods (and the grave consequences in store for the Soviet economy if this is not done) has been a de rigueur topic of innumerable congresses and conferences, starting with the very first years of Soviet power. Did the Soviet union manage to speed up the construction in the 1970s by transferring investments from new construction to renovation? Did it succeed in bringing the incrementing output closer to the moment of investment?

What has occurred is not a shortening, but on the contrary, a lengthening of construction periods. Testifying to this is the fact that the volume of unfinished industrial construction more than doubled over
the decade, while as regards annual capital investments it increased from 73% to 87%. 21

As for the time necessary for breaking in newly-introduced productive capacities, reality did not match expectations here, either: the relation of increment in output to increment in capacity took a sharp turn for the worse in the second half of the '70s as compared to the first half.

THE RELATION OF INCREMENT IN OUTPUT TO INCREMENT IN PRODUCTIVE CAPACITIES

<table>
<thead>
<tr>
<th>Product</th>
<th>1971-75</th>
<th>1976-80</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pig Iron</td>
<td>1.32</td>
<td>0.71</td>
</tr>
<tr>
<td>Steel</td>
<td>2.29</td>
<td>0.49</td>
</tr>
<tr>
<td>Rolled ferrous metals</td>
<td>1.47</td>
<td>0.58</td>
</tr>
<tr>
<td>Steel pipes</td>
<td>1.51</td>
<td>1.16</td>
</tr>
<tr>
<td>Sulphuric acid</td>
<td>0.75</td>
<td>0.45</td>
</tr>
<tr>
<td>Mineral fertilizers (in conventional units)</td>
<td>0.91</td>
<td>0.35</td>
</tr>
<tr>
<td>Plastics and synthetic resins</td>
<td>1.19</td>
<td>0.53</td>
</tr>
<tr>
<td>Fibers and chemical fibers</td>
<td>0.95</td>
<td>0.95</td>
</tr>
<tr>
<td>Automobile tires</td>
<td>1.31</td>
<td>0.63</td>
</tr>
<tr>
<td>Turbines</td>
<td>0.48</td>
<td>0.46</td>
</tr>
<tr>
<td>Automobiles (including buses)</td>
<td>1.07</td>
<td>0.96</td>
</tr>
<tr>
<td>Excavators</td>
<td>1.22</td>
<td>0.22</td>
</tr>
<tr>
<td>Cellulose</td>
<td>0.81</td>
<td>0.33</td>
</tr>
<tr>
<td>Paper</td>
<td>2.02</td>
<td>0.26</td>
</tr>
<tr>
<td>Cement</td>
<td>1.29</td>
<td>0.27</td>
</tr>
<tr>
<td>Knitted underwear and outer garments</td>
<td>1.18</td>
<td>3.20</td>
</tr>
<tr>
<td>Leather footwear</td>
<td>0.28</td>
<td>2.13</td>
</tr>
</tbody>
</table>

In only two of the items listed in the above table (knitted underwear and outer garments, and leather footwear) did the increment in output grow in relation to the increment in productive capacity in the second half of the '70s; in all the others, it dropped. In the coal industry between 1976 and 1980, the increment in productive capacities for coal output was 90.4 million tons, while the actual increment in output was only 15 million tons. In the chemical industry, an increment in capacities for the produc-
tion of sulfuric acid of 9.7 million tons corresponded to an increment in production of 4.4 million tons; in the production of soda ash, this relationship was 505 and 88 thousand tons respectively; and in the production of mineral fertilizers, it was 39.3 and 13.8 million tons (in conventional units). 23

In the machine-tool industry, productive capacities were put into operation for an increment of 12.5 thousand machine tools, but in actual fact the industry tolerated a drop in production of 15 thousand units. In eight of the seventeen items, the increment in output came to less than 50% of the increment in capacities. 24

The reasons for the increase in unused productive potential, combined with the huge and growing output deficit, are numerous and varied. Among them we may note the languishing of the raw materials industries and inadequacies of transport conditioned by the growing distance between where the raw materials are produced and where they are used; irregularities in fuel deliveries; and finally, the growing lack of control over the economy as a whole.

But all of these factors are of a general economic and even political nature. The concrete reasons are these: the fact that technologically interconnected productive components are not put into operation simultaneously; the fact that the exploitation of accessory objects intended for use throughout a plant lags behind the basic technological objects; and the fact that enterprises are forced to move ahead with production even when bottlenecks at certain stages of the production line are holding output levels down. For example, three years after blooming mill no. 1150 of the Krivoi Rog (Ukraine) metallurgy works was put into operation, it for the most part attained only 70% of its projected capacities because of the inadequate
The blooming mill was working with only eight pit-furnace complexes, instead of the 16 specified in the plans. Such cases are typical, and it would be possible to cite numerous examples.

Reasons for the Failure of the Reconstruction Policy and Substituting Expansion for Renovation

Thus not one of the goals of the reconstruction policy which was under way in the 1970s was met. They did not succeed in attaining either the increase and speeding up of the increment in output, or the saving of resources. They did not succeed in making the investment process more healthy. The policy slowed down technological progress in industry: in the second half of the '70s the capital intensity of industrial production almost doubled as compared to the first half, while the annual rate of increase in labor productivity in industry fell by almost 200%.

The reason for the failure is that the economy's investment sphere was totally unprepared for such a large-scale program. The corresponding scientific, design, planning, and machine-building bases were not reoriented or prepared. The construction industry was not reorganized, nor was it equipped to engage in renovations. Finally, no one established the kind of material stimulation which would encourage people toward more labor-intensive work in already functioning enterprises, the kind of stimulation which would compensate for running the risk of not fulfilling the production plan, with all the material consequences resulting therefrom.

However, it is impossible to admit that the most important party directives on economic policy proved to be poorly thought out and badly prepared. The press, the party decrees, and the planning sector kept de-
manding the largest possible increases in investments in the renovation and modernization of industry. Without material support, however, these appeals are left hanging in mid-air:

--design organizations for the most part concentrate on designing new enterprises—standard serial projects which are easier and more profitable for them;

--the machine-building industry prefers to manufacture serial, standardized equipment, not machines made to fit the specific conditions and dimensions of an enterprise under renovation;

--builders exert the most strenuous efforts to avoid contracts for reconstruction work, the labor intensity of which is 20% higher than in new construction, and the earnings four times less.26

The simple and (it would seem) judicious idea of renovation could not withstand the ordeal of practice. As it was being realized, it was supplanted by a more viable palliative, "expansion," which in essence was nothing more than the addition of new shops, or the building of genuinely new enterprises on the grounds of those already in operation, or on adjacent territories.

The heads of the ministries and enterprises are well aware of all of these phenomena. In order to obtain capital investments from the government, they resort to camouflage: under the flag of renovation, they carry out new construction, which is spatially attached to the old enterprises.

Expansion is preferable to renovation for clients and contractors alike. In doing this, they formally observe the political line of the party leadership and Gosplan, but at the same time, the client adds on
new productive capacities while disturbing the normal production rhythm of the enterprise as little as possible. It is incomparably easier for the contractor to work on open building sites. Besides this, expansion gives the contractor much larger volumes of work.

Of course, expansion demands more significant expenditures of labor for an increment in output than does renovation. But even under the present conditions of a growing labor deficit, this problem assumes secondary importance compared to investments. Capital remains the main concern of Soviet "executives." Vadim Kirichenko, the director of the Gosplan Scientific Institute, made the following observation in this regard in 1981:

One can sense a certain inertia of economic thinking, in accordance with which the most important thing is to create capital stock, to erect new objects; meanwhile, the feeling is that labor can be found anywhere. 27

Thus Soviet industrial executives circumvent Gosplan regulations like a river flowing around a boulder which lies in its path.

Official statistics conceal the fact that the predominant form in which capital investments are utilized is not "renovation and technological re-equipping," but rather "expansion." Published statistics merely lump all such forms of investment activity together under one indicator, which is then opposed to investment in the construction of new enterprises. According to official Central Statistical Administration statistics, the share of "renovation, expansion, and the re-equipping of existing enterprises" in the general volume of industrial capital investments increased from 58% to 72% in the 1970s. 28 Meanwhile, Nikolai Baibakov, the chairman of the Soviet Gosplan, intimated in his report at a session of the Supreme Soviet on 17 November 1981 that the share of "technological re-equipping and renovation" in industrial capital investments was only 29%
between 1976 and 1980.\textsuperscript{29} Therefore, it follows that almost 60\% of the money invested in existing enterprises was swallowed up by expansion.

Expansion, however, is being carried out under circumstances in which the technological resources of the Soviet machine-building industry are shrinking; in which the opportunities for importing advanced technology are extremely limited; and in which raw-material, energy, and ecological factors in the European part of the USSR (where most of Soviet industry is concentrated) are becoming increasingly restricted. Expansion thus represents an extensive, resource-wasting way to increase productive potential.

**Renovation Spins Its Wheels During the Eleventh Five-Year Plan (1981-85)**

Although the thesis about the need to increase the share of renovation runs throughout the entire investment section in the 11th five-year plan, one gets the distinct impression from recently published materials that this general idea is provoking resistance among "industrial executives" at every level, and that they are currently impeding its implementation.

Over the whole of the past decade, when renovation was the focus of party and government decrees and propaganda, its share in industrial investments did not exceed 30\%. In his already-mentioned speech at the Nov. 11, 1981, session of the Supreme Soviet, Nikolai Baibakov suggested that this indicator would increase to 32.5\% between 1981 and 1985.\textsuperscript{30} On the other hand, A. Stepun, one of the key people in Soviet investment planning, reports that in the current five-year plan, the share of technological re-equipping and renovation will remain practically unchanged.
increasing from 29.4% to only 29.7%. And judging from the speech of Garbuzov, the minister of finance, at the same session, the share of re-equipping and renovation in capital investments in 1982 will be . . . 17.3%. Let us see what the most authoritative Soviet experts have to say about this. A. Stepun, the deputy director of Gosplan's capital investment department, whom we met above, writes:

The ministries and industrial associations suppose that it is simpler to "order" a new enterprise from builders and then allege that they have violated the terms of construction, than to bear responsibility for the completion of renovation and technological re-equipping projects. The heads of many enterprises continue to feel that renovation is an irksome task, and somehow less prestigious than new construction.

The ministries did not work out, in time for the eleventh five-year plan, long-term plans for technological re-equipping on the basis of new technology--plans which would have determined the scope and order of priority of work which has to be fulfilled at individual enterprises, and which would give us a clear impression of the economic efficiency of this work vis-a-vis new construction.

P. Ignatovsky, the editor-in-chief of Gosplan's journal Planovoe khoziaistvo, says:

...renovation and re-equipping must be of an obligatory (emphasis mine--B.R.) nature, and the activity of enterprise collectives and production organizers must be evaluated while bearing in mind the implementation of the planned volumes of enterprise renovation. Such renovation secures the growth of the enterprise's efficiency, an increase in the quality of its products, and an improvement in their consumer characteristics.

But later on, when speaking of "the ratio of capital investments in renovation to investments in new construction," the author characterizes this question as
and planning organs toward renovation. After all, it is no accident that, at present, more and more efforts are being made to receive capital investments for new construction: the latter better guarantees fixed capital stock, and labor reserves, while putting new objects into operation expands the productive potential of an industry (emphasis mine—B.R.).

The confrontation between Gosplan and the leaders of industry regarding the distribution of investments between renovation and the construction of new enterprises is intensifying. This is especially borne out by the fact that despite all the restrictions and an unprecedented drop in capital investments in 1982, the heads of the ministries and the union republics included in their 1982 investment programs three times more new construction than in the previous year. Gosplan, in turn, cut back sharply on these proposals. But Gosplan doesn't always win: Stepun observes that ". . . In a number of cases, we had to (emphasis mine—B.R.) resort to new construction in order to guarantee the assigned levels of production in the current five-year plan, and to create the necessary surpluses for coming years." 35 Later, the author cites the following statistics: in the sum total of capital investments earmarked for production in the 1981 plan, the share of new construction was 50%, the share of expansion 31%, and the share of renovation—a mere 19% in all. 36 So much for reality.

When summing up his discussion of the five-year plan in his concluding remarks before the Supreme Soviet, Baibakov noted: "In their presentations, a number of deputies asked that we provide additional construction of new enterprises and structures in the five-year plan." 37 Judging by the fact that the chairman of Gosplan did not come out positively for these requests, it is evident that they have not found support among the Soviet leadership.
Features of the Investment Program in the Eleventh Five-Year Plan

The following features distinguish the investment section of the current five-year plan. First is the stabilization of capital investments at 1980 levels. Official sources have given two distinctly different directions regarding the dynamics of capital investments in the current five-year plan:

1) Published in the five-year plan itself: an insignificant annual growth, 2 1/2 times less than in the previous five-year plan, with abatements in 1982 and 1985.

2) Given by Garryuzov, the minister of finance, in his report before the November, 1981, session of the Supreme Soviet, which was devoted to the five-year plan: capital investments will remain at 1980 levels for each year of the five-year plan.

Without going into the essence of this contradiction, let us conclude that as a whole, the growth of capital investments in the national economy has for all intents and purposes not been provided for in the current five-year plan.

The second feature is the sharp increase in industry's share. Along with the tendency to stabilize capital investments in the national economy as a whole, a significant (23%) increase in industrial investment is projected. In this regard, industry's share has grown from 35-36% in the '70s to approximately 40%--an unprecedented peacetime increase. Meanwhile, the projected share of agriculture remains unchanged at 27%.

At the expense of which branches of the national economy will the
increase in industry's investment quota be realized? At the expense of transport? This is a bottleneck in the country's economy, and given the growing territorial polarization of the raw-material and fuel industries vis-a-vis the processing industries, the need for transcontinental conveyance has been growing significantly of late. This bring to the fore the need for additional investments in transport; it would hardly justify a reduction.

As before, it is the non-productive sphere of the economy which will be sacrificed. Garbuzov most definitely talks about this in his report:

> We have resolved that our task is to limit the construction of administrative buildings, entertainment facilities, and sports facilities, as well as structures erected over and above the limits of state capital investments, through non-centralized sources of financing.³⁸

Here he is also talking about housing construction, since nearly one-fourth of the new housing built in the '70s was financed through non-centralized capital investments "over and above the limits of state capital investments."

The third feature: the extraordinary efforts being made to cut down on uncompleted construction and the concentration of investment resources on a limited number of projects in the final stages of construction. Strictly speaking, this cannot be considered a feature of the investment policy of the current five-year plan, since in Soviet history there has never been a five-year plan which has not proclaimed the need for cutting down on uncompleted construction and concentrating capital investments. Nevertheless, never before did investment dispersion reach such appalling proportions as in the late '70s, when nearly 80,000 industrial establishments were being built or renovated at the same time.³⁹ Despite all the efforts
of the central leadership to reduce—or at least not to increase—the number of newly-started construction projects, they have until now not succeeded in doing so, and the increase in the number of such projects has been as spontaneous as a chain reaction.

Ever-dwindling resources in this rapidly expanding construction galaxy have turned industrial construction into an uncontrollable process. The reduction in investment potentialities dictates the iron necessity to concentrate resources and organizational efforts on those construction projects most vital to the national economy. Judging from the Soviet press, the resolve of the Soviet leadership on this question is attaining hitherto unheard-of proportions.

Three points in Brezhnev’s report on the five-year plan at the Central Committee plenum in November, 1981 testify to this:

-- a 30-billion-ruble reduction in "the volume of capital investments and construction-installation work originally projected for the five-year plan"; 40
-- an indication of the necessity to take measures to maintain frozen ("temporarily discontinued") construction projects;
-- concern over establishing construction reserves for the 12th five-year plan, "especially in the raw-material industries."

Concentrating investment activity on a limited number of nearly completed projects must inevitably lead to a reduction in the number of construction projects proper, and to hypertrophy in the volume of equipment assembly and installation.

The Possible Consequences of This Construction Spasm

Naturally, the abrupt violation of the investment rhythm which had
been established in Soviet industry cannot but lead to a disturbance in
the stratification of industrial construction. Since the main effort is
supposed to be directed at partially-completed projects, one should ex-
pect a sharp increase in the demand for equipment. Meanwhile, the Soviet
machine-building industry is presented with a task that it is not up to.

In the late 1970s, for the first time in Soviet history (excluding
the war years), production of most types of metallurgic, metal-working,
chemistry-related, and energy-related equipment was curtailed. There was
also a reduction in the output of many kinds of equipment intended for the
fuel-extraction industries (coal-cutters, pipe-borers, pumps, machinery for
the petroleum industry). But at the same time, the five-year plan stipu-
lates growth in precisely these industries, and more and more investments
are being directed toward their accelerated development.

Even more important is the fact that there has been a decline in
the number of new productive capacities put into operation in the machine-
building industry, despite the systematic increase--both relative and ab-
solute--in investment in this branch of the economy. The drop in the pro-
duction of metal, and its low quality, merely aggravate the situation.

Therefore, there are no grounds for expecting that the Soviet machine-
building industry will be able to deal with such excessive obligations--ob-
ligations which are arising because of the sharp increase in demand for
equipment occasioned by the planned transfer of resources to construction
projects in the final stages of completion.

Accelerating the development of the machine-building industry is a
process which has major ramifications for the forward development of many
other industries, and which, making allowances for time lags, demands a
significant period of time.
Ameliorating Factors

It would be a mistake, however, to suppose that the transfer of investment activity from the first stages of construction to the installation and adjustment of equipment will immediately provoke catastrophic shortages of equipment. Two factors will soften this collision.

The first factor—the reserves of spare equipment—will play an essential, though short-term, role in the beginning of the period. Equipment inventories have been building up for many years in the warehouses of industrial enterprises, construction sites, and material-technological supply organizations. One can guess the extent of this phenomenon if only by the fact that between 1976 and 1978, the volume of equipment inventories over and above the set norms increased by more than a billion rubles; a significant part of this was taken up by imported equipment. This spare equipment is frequently kept in storage for five years or more.

For the national economy as a whole in the late 1970s, nearly 12.5% of the gross national product was diverted to the establishment of reserves of the means of production. By early 1980, the reserves of the means of production totalled over 128 billion rubles, of which 91 billion, or 71%, was earmarked for industry.

By no means do industrial enterprises need this whole mass of equipment and spare parts for their normal functioning. This accumulation is predominantly associated with a constantly growing deficit. Under such conditions, enterprises regularly strive to build up inventories of equipment for exchange, or merely for a rainy day. It frequently happens that this equipment has nothing to do with the enterprise's technology. Helping to broaden the scope of this phenomenon is the growing tendency to turn
enterprises into autarchic units having their own repair centers, building departments, etc. In his report at the 26th CPSU congress, Premier Tikhonov declared: "We cannot accept the fact that many enterprises are hoarding more than their share of equipment, raw materials, and processed materials, while others do not have enough."43

Eliminating these extra reserves and then redistributing the equipment is no small task, even for a centralized economy. Nevertheless, it will be possible, apparently, to mobilize a significant portion of these reserves and put them into operation, especially within a given industry. Although this circumstance will not solve the principal problem, it will to a certain extent alleviate the situation, at least within the limits of the current five-year plan.

The second factor—the importation of equipment—is of a long-term nature, and its role will seemingly intensify.

It would be natural, given the conditions described above, to increase equipment imports. However, it is no less vitally important to increase imports of agricultural products. So, it is a case of "grain or machines," and here lies the fatal conflict in Soviet import planning, a problem which became especially acute in the early '80s.

In the second half of the 1970s, the percentage of equipment imports in the total volume of Soviet imports changed dramatically. Over the whole 25-year period 1950-75 it increased steadily, growing from 22% to 34%, but in only three years, between 1976 and 1978, it jumped to 42%, only to drop again to 34% in the last two years of the decade.44

Meanwhile, the percentage of agricultural products was reduced from 23% to 19% between 1976 and 1978, then once again increased, to 24%, in
Agricultural import quotas depend on the nature of the grain harvest: they were reduced in 1976-78, which were years of good harvest, and increased in 1979 and 1980, which saw poor harvests. The relation between the level of the grain harvests and the volume of equipment imports will be felt in the foreseeable future as well. Thus, the volume of equipment imports to a certain extent depends on the elements.

But the need to transfer foreign-currency reserves to larger and larger purchases of grain, meat, and other agricultural products is not the only thing which has caused a drop in the volume of Soviet equipment imports. Another reason is the increased stockpiling of uninstalled imported equipment (see above), and its low level of utilization due to poor maintenance. Periodic inspections by the investment bank of the USSR and other organizations, which became more frequent toward the end of the 1970s, revealed such facts, and led the Soviet leadership to conclude that it would be expedient to curtail equipment imports for certain industries in this period. But this is a temporary phenomenon, and one should expect the pendulum to swing the other way again shortly.

In the above section, we have been discussing only the importation of machinery from Western countries. But in evaluating the possibilities for providing the Soviet economy with equipment, we must also consider another important factor, a factor of ever-increasing significance—the expanding role of the Comecon countries.

In the latter half of the 1970s, there occurred a shift in the geographical structure of Soviet equipment imports, in the direction of the Comecon countries. This was felt especially strongly in the importation of subsurface and open-pit mining equipment, and equipment for oil refineries. At the same time,
Western imports of several other kinds of equipment (e.g. equipment for rolling mills and the chemical industry) increased.

Without delving deeply into the problem of equipment imports, let us at least draw a cautious conclusion from what has been said: if the Soviet leadership really manages to realize the policy of concentrating investment resources on virtually-completed construction projects which has been incorporated into the five-year plan, and can hold the fort on new construction, then the demand for Western machinery will inevitably increase.

A Regional Metamorphosis

Let us begin with a reminiscence. In the critical period of the war, in 1941, the extremely powerful State Defense Committee, which was headed by Stalin, set up its authorized representatives in the provinces. These SDC representatives were invested with extraordinary power, and were told to increase arms production at all costs.

Forty years later, in 1981, in peace time, the Soviet leadership once again established a corps of authorized representatives, this time for Gosplan. Instead of being sent around to many different regions, these representatives work only in Siberia and the Far East. Their function is to guarantee that the Siberian fuel-and-energy program is realized.

Apparently, this decision has been dictated by the realization that Siberia will play the decisive role in rescuing the Soviet economy from the desperate position into which Brezhnev’s government has led it.

It turns out that the provincial state and party beaurocracies have been inadequate for realizing the policies of the central leadership and for overcoming the problems of regionalism and "departmentism" in carrying out the plan in the vast territories of the East. This will now be the job of special
emissaries from the Center.

What is more, efforts to organize and realize the investment programs set up in these regions have led to the creation of an all-union ministry of Siberian construction.*

We are thus confronted with remarkable organizational-management decisions which testify to the growing nervousness of the Soviet regime vis-a-vis fulfilling the plans for developing the Siberian economy.

A critical feature of the Siberian five-year plan is the projected jump in investment in the fuel and energy industries: with a 23% increase in capital investments in industry as a whole, investments in the fuel-and energy complex have been increased by 50% over the last five-year plan (1976-80). In addition, practically the entire output increment in this complex will be achieved in Siberia.

Whatever large-scale economic problems may have been solved in Siberia in the Soviet years, its share of the investment pie has never exceeded 17%.**

For a quarter of a century, from 1951 to 1975, it increased by approximately two percentage points: from 15% to 17%. After 1975, data on the territorial distribution of capital investments disappear from published sources. However, Minas Chentemirov, the first deputy chairman of the State Committee for Construction in the USSR and one of the architects of Soviet investment policy, referring to a statistical handbook for 1978 which was never put on sale, reported that

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* For the sake of convenience, we use the term "Siberia" here and below to designate both Siberia proper and the Far East.

** Except for the war years, when Siberia's share increased to 18%, because of the fact that industry was evacuated there from the Western regions of the country.
Siberia's share that year was 20%. Consequently, in three years (from 1976 to 1978) there has been a 3% increase.

Such a disturbance in the territorial structure of capital investments--unprecedented for the Soviet Union's inert investment planning--corresponds to an equally dramatic shift in the branch structure of industrial investments.

As we noted above, the share of a majority of industries, including such important ones as ferrous metallurgy, chemical, and petrochemical, was reduced in the second half of the 1970s. But at the same time, the oil industry's share jumped from 9.7% in 1975 to 14.3% in 1980. It should be noted that in the previous five-year plan, the oil industry's share increased by less than one percent (from 8.8% to 9.7%), and the leader was the machine-building industry.

From all appearances, all notions about proportional, balanced development in the industrial structure were set aside toward the end of the last decade, and subordinated to one super task: to maximally increase oil and gas production no matter what the cost. In the current five-year plan one should expect further shifts in the branch structure of industrial investment in the same direction. If in considering this situation we bear in mind the completion of the Baikal-Amur railroad, then the reasons for the shift of investments from the West to East in the last years of the '70s seem obvious.

Of course, the [sudden and unprecedented] increase in the investment share of Siberia is something remarkable in and of itself. One should not, however, overestimate the consequences of this phenomenon for the Siberian economy.
There are sufficient grounds for supposing that this impetuous investment outflow is basically limited to Tyumen' oblast, a territory one-seventh the size of the United States in which are located the most important gas and oil deposits. In growth of investments, Tyumen oblast, especially its northern part, long ago shot ahead of the other regions of Siberia, and has left them far behind. While capital investments in the rest of Siberia increased by 141% between 1970 and 1975, investments in Tyumen' oblast grew by almost 250%. Apparently this gap increased even more in the favor of Tyumen' oblast in the late '70s. The increased investments in the Tyumen' oil and gas fields, especially those close to the Arctic circle, explains the increase in the investment share of Siberia as a whole. This is why the fall in the growth rate of capital investments in the Siberian economy was not nearly as dramatic as in the Soviet Union as a whole: the annual growth rate of Soviet capital investments as a whole dropped from 7% in 1971-75 to 3.4% in 1976-80, while the analogous indicators for investment in Siberia are 8.9% and 7%.

The worsening natural conditions, the increased remoteness from communication, and the fact that these newly opened-up deposits are scattered throughout Northern Siberia are causing a growth of relative capital requirements. Maintaining the output level which has already been reached demands increased per unit expenditures of capital investments. Therefore a stronger injection of investments into the oil and gas industries of Western Siberia will hardly provoke an adequate increment in oil and gas production.
Here it would be appropriate to again look into the past. Already once in the post-war period has there been a huge, sudden increase in investments in a particular industry, and this ended in failure. In the early 60's, Khrushchev thought it would be a good idea to dramatically develop "big chemistry"; but the chemical industry was in no position to swallow such a large amount of investment rubles, and wound up choking on them instead. In four years this industry's share of industrial investment increased by almost five percentage points. However, results, in the form of an increase in the number of productive capacities put into operation and an increment in output, were totally inadequate, given the extraordinary nature of this investment activity. The basic reason for this is the fact that "big chemistry's" investment program was only 50% covered by equipment. Industries closely connected to the chemical industry were not prepared to carry out this program.

At that time, all of the economy's investment proportions were violated, thousands of construction projects were put on hold, and for the first time there appeared surplusses of construction materials and many kinds of equipment. In a word, this action created chaos throughout the investment sphere, and the consequences of this chaos were felt not only throughout the 1960s, but also well into the 1970s. Given the nature of the Soviet economy, one should never (in the words of Victor Krasovsky) "attempt such a sharp turn in the ship of construction". Could the hypertrophied investment program for the Siberian fuel industries be a recurrence of the "big chemistry" fever, and will it not aggravate the drop in Soviet investment potential for a long time?
The fuel-and energy complex, which involves many different processes such as extraction, transformation, transportation, and the distribution of energy resources, is one of the most capital-intensive spheres of the economy. Directly or indirectly, it uses up nearly 20% of all the metal produced in the Soviet Union, and more than 15% of the output of the machine-building industry. This is why its development is so very dependent on the resources of those industries which supply it. Increasing the growth rate of the fuel-and-energy industries must entail the accelerated development of many other industries—industries both closely interconnected and far removed—with an allowance for the corresponding time lags.

According to the calculations of Soviet scholars, in order to increase gas production by 50 billion cubic meters a year (which is what the current five-year plan calls for), it would have been necessary to increase auxiliary capacities for the production of rolled ferrous metals, metallurgic equipment, and cement six to eight years ago. By the same token, the Soviet economy should have been preparing for an increment in the output of gas in 1981 by appropriately developing closely-connected industries between 1976 and 1980. However, in the '70s there was a reduction in the number of capacities put into operation, as well as a drop in output, in all these industries, among others. We have already mentioned the reduction in output of cutters for the coal industry, and pipe-borers, drilling apparatus, and compressors for the oil industry.

Thus, only a sharp increase in the importation of machines, other equipment, high-quality steel, etc. can make up for the drop in production, the decreasing number of new capacities, and the inadequacy of investment reserves in those industries which supply the fuel-and-energy complex; and
only this will make the fulfillment of the five-year plan for fuel and energy possible.

It is entirely a question of whether or not the Soviet leadership will be able to redistribute import reserves to this end, and whether or not the state of Soviet agriculture will allow this. If not, there is only one alternative left: cut back on the arms program. In the final analysis, it all depends on how one selects one's political priorities.
The new Soviet leadership, which is just around the corner, will have to grapple with the necessity of working out the sort of investment program which can help pull the Soviet economy out of the dead end it currently finds itself in, thanks to Brezhnev's policies. One of the unavoidable--if extremely painful metamorphoses on the way will be the rejection of the idea of unlimited renovation ("reconstruction") and expansion of enterprises operating in the European part of the USSR, which is being foisted upon industry; this, of course, will entail ceasing the unlimited transfer of investments thereto, as well as the rapidly growing isolation of the basic part of industry from the sources of raw materials and energy.

Also unavoidable will be a turn towards intensified investment in the development of the processing industries, (especially the most energy-intensive ones) in the eastern regions of the country and in the development of the associated infrastructure. The practically unlimited natural resources in the east make this problem increasingly urgent for the Soviet Union's plans for industrial development.

Will the new leadership have the will to break with tradition in planning the regional aspects of investment--that is the question. To do this it will have to resort at least temporarily, to reducing industrial output, to looking for investment sources in the West, and inevitably, to compromising not only in domestic policy, but in foreign policy as well.
Footnotes.


3 Narkhoz 1980, pp. 328-330


6 Izvestiya, 28 February, 1981, p. 3.


8 Narkhoz 1972, p. 64; Narkhoz 1980, p. 143.


10 Narkhoz 1980, p. 146.


16. Ibid.


19. Ibid.


23. Ibid.

24. Ibid.


29  Izvestiya, 18 November, 1981, p. 3.

30  Ibid.


33  A. Stepun. "O ratsional'nom...," p. 36.


40  Pravda, 17 November, p. 2.


42  Ibid.
Materialy 26 s"ezda KPSS. Moscow, 1981, p.126.


Ibid.

Metody i praktika. . . , p. 130.


Ibid.

Narkhoz RSFSR 1975, p. 329.


