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PREFACE

The Soviet Union, as well as the United States, is striving for reindustrialization, and its investment policy is subordinated to this goal.

For the USSR reindustrialization means a shift from the hypertrophied extracting and primary industries towards advanced industries. The more resources are diverted to production of raw and primary stage materials and fuels, the less can be allocated to production of new technology. This trend must be reversed if the Soviets are not to increase their dependency on the West for industrial innovation. But implementation of the reindustrialization takes place when investment activity is undergoing a period of decline unknown during the entire history of the USSR.

The investment mechanism is increasingly spinning its wheels. The growth of capital investment actually stopped, the volume of construction-installation work declined, the share of unfinished construction in capital investment attained a record level for the period since 1955, the growth of fixed capital stopped, and the amount of production capacity put into operation declined for most types of industrial production.

An even greater part of capital investment was channeled into replacement of machinery and equipment and the investment possibilities for expanding the scale of production and maintaining or increasing rates of economic growth declined correspondingly. Capital expenditures per unit increase in output continued to grow. All these phenomena are taking place simultaneously with a deteriorating demographic situation and a worsening of indicators characterizing the utilization of labor resources.

The key idea of reindustrialization under these conditions is the progressive shifting of investment flows into the development of existing production to the detriment of new construction. By this means it is proposed to combine more rapid amortization for updating and retooling industrial production facilities with growth in the volume of industrial output achieved through minimal capital investment.

The growing orientation of industrial capital investment toward the expansion and improvement of existing facilities hinders the solution of one of the most important tasks of the development of industry and the Soviet economy as a whole—the spatial deconcentration of industrial production and the creation of priority conditions for the industrial development of eastern regions of the country. Industrial enterprises in the western parts of the country, which produce 80 percent of industrial output, absorb more than 70 percent of industrial capital investment. With the increase in the share of reconstruction in capital investment, the investment quota of western regions also grows.

Such an investment policy increases the spatial polarization of the concentration of production of fuel-energy and raw material resources in the east and the production of manufacturing industry in the west, which has serious consequences for the economy of the USSR and increases its strategic-material vulnerability. Siberia, which is the center of economic development in the Asiatic part of the Soviet Union, is at the same time the focus of investment activity for the country as a whole. During the entire period of existence of the USSR, the Soviet leadership has always recognized the great significance of the intensive and comprehensive development of Siberia, both for the economy of the country and for military-strategic purposes. However, in practice the extent to which eastern and especially northeastern regions were provided with resources was always determined by some single narrow goal for which all else was sacrificed, putting the entire economic structure of a huge unsettled territory into the background. Stalin's proclaimed "law of planned proportional development of the economy," with respect to Siberia, can rightly be called the "law of disproportional and unplanned development of the economy." And in the Brezhnev period also, Siberia developed as a narrowly oriented part of the national economic system. Its development was like a swollen cheek.

Within this boundless topic, I will focus attention on the nerve centers of the contemporary industrial development of a huge region whose economic growth will determine to a decisive extent the rhythm and dynamics of the entire Soviet economy in the foreseeable future. Thus, the present work does not pretend in any way to an exhaustive treatment of investment problems or the problems of economic development in the eastern regions of the USSR, focusing instead on the key issues: power shortage, slow development of machine-building, and construction industry.

This monograph is based on data drawn from official Soviet statistical sources and articles and monographs published in the USSR. I evaluate the reliability of this sort of information completely realistically. However, in spite of all its shortcomings, in my opinion it reflects the basic trends, reveals structural changes and explains the essence of the phenomenon examined.

Boris Z. Rumer

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CHAPTER ONE

PATTERNS OF INVESTMENT ACTIVITY IN SOVIET INDUSTRY IN THE 1970s

Strategically, from the point of view of solving fundamental problems, the reserves of operating plants are almost exhausted .... Under such conditions, there occurred an absolute reduction in the real dimensions of industrial capital investments between the ninth and tenth five-year plans.

Prof. Konstantin Val'tukh,
Siberian Branch, USSR Academy of Science

DYNAMICS OF INVESTMENT IN THE 1970s

The development of the Soviet economy since the second half of the 1970s differed qualitatively from earlier periods in that there was an absolute decline in the increments to capital and labor resources.

By the late 1970s, the pulse rate of Soviet economic investment had become so weak and irregular that it appeared scarcely 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 in Figure 1.

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

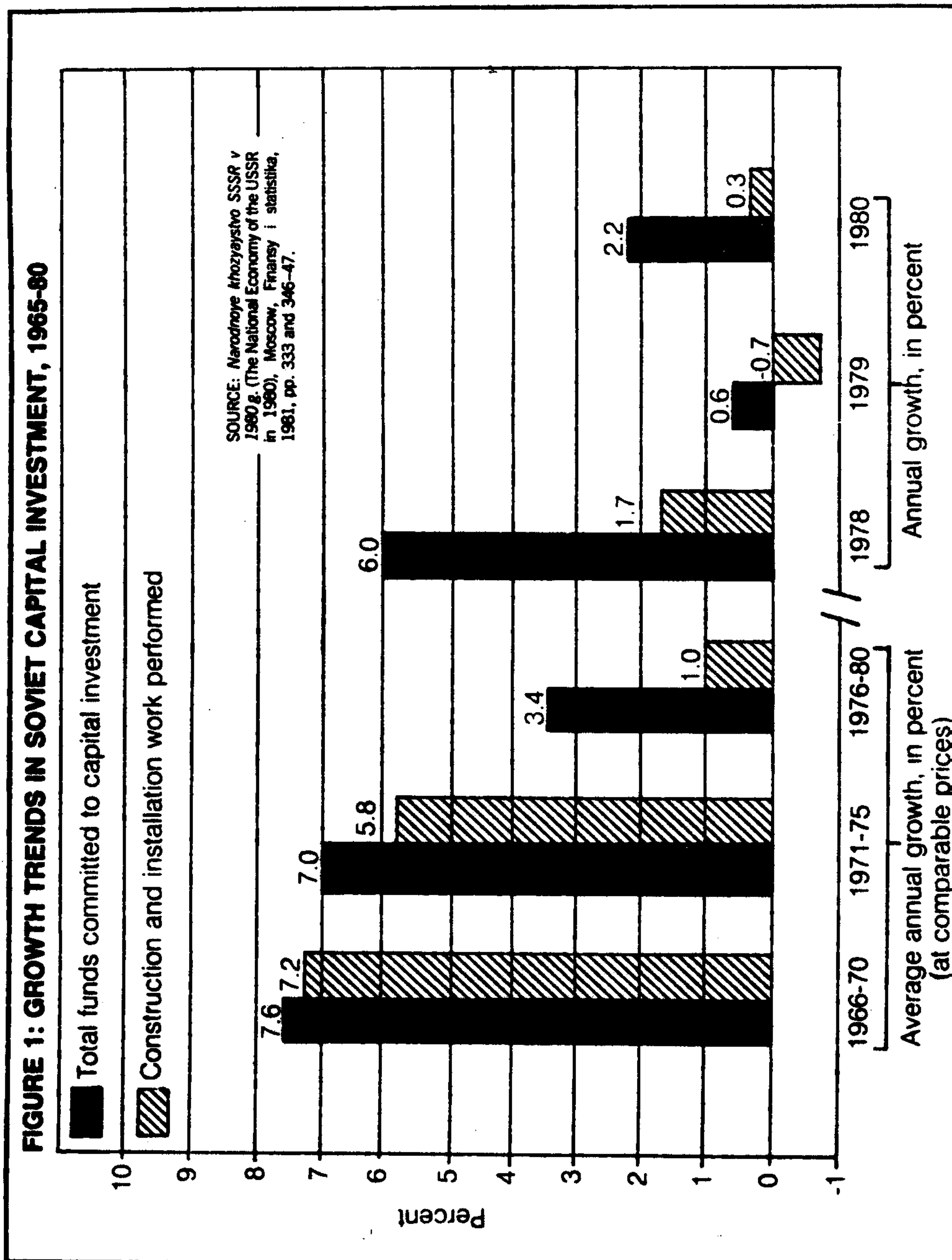

FIGURE 1: GROWTH TRENDS IN SOVIET CAPITAL INVESTMENT, 1965-80

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.[1] Such are the fruits of investment activity in this period.

Within the framework of a planned economy, the investment sphere is much more subject to direct control than are labor resources, which are the result of long demographic processes. Therefore, the attention of Soviet economists is largely focused on improving the investment process at all stages. Among the factors that determined the nature of investment activity in the Soviet economy in the second half of the 1970s are the following:

- the reduction of the absolute increments to the gross social product. The average annual increment (in constant prices) declined from 46 billion rubles in 1971-75 to 40 billion rubles in 1976-80.[2]

- the reduction in the absolute increments to national income. The average annual increment (in constant prices) was 18 billion rubles in 1971-75 and 17 billion rubles in 1976-80.[3]

- the reduction of the share of accumulation in the national income from 29.5% in 1970 to 23.8% in 1980.[4] Such a trend is apparently a function of the realization of the dangers to the regime of any deterioration in the population's standard of living and of the need for economic incentives to stimulate labor productivity. However, in this regard it should be noted that, in contradiction to the Party directives, the output of the "means of production" has been growing more rapidly than consumer goods output. The output of means of production increased by 183 percent between 1970 and 1980, while consumer goods output increased by 165 percent.[5]

- the growing need to offset the decline in increments to the labor force through improved investment policies in order to maintain rates of growth of production.

[1] *Narkhoz 1980*, pp. 333, 346-347.
[2] *Narkhoz 1980*, pp. 328, 154, 158, 161-163, 165-173, 178-180.
[3] *Narkhoz 1980*, pp. 41-49.
[4] *Narkhoz 1980*, pp. 379-380.
[5] Loc cit.

- the continuing redistribution of capital investment in favor of agriculture and, thus, the decline in the share of other branches of the economy. The share of all forms of agriculture in total capital investment increased from 23.4 percent in 1966-70 to 27 percent in 1976-80.[6]

- the need to allocate growing investments just to maintain existing output levels in connection with the declining growth of the output of fuels and raw materials, which is in turn due to the reduced possibilities for expanding the raw material base and the insufficient scale of geological-prospecting work.

- the need for reducing the growing spatial disparity between the points of extraction of raw materials and fuel and their use. The amount of fuel transported from the east to European regions of the USSR increased from 130 million tons of standard fuel in 1970 to 360 in 1975. During this period the average length of haul for fuel increased by 22 percent, and total ton-kilometers of fuel shipments increased by 60 percent.[7]

Thus, on the one hand there is an obvious investment slump and a decline in the ability to invest, and on the other hand there is a growing need for a substantial increase in investment activity in order to slow the decline in the rate of economic growth.

CHARACTERISTICS OF THE INVESTMENT PROCESS

The distribution of capital investments within the national economy as a whole changed somewhat in the late '70s. At this level, the fundamental change was a diversion of funds from the so-called "nonproductive sphere" to agriculture, while the share of investment in the social sphere (home construction, trade, education, health care, etc.) dropped from 36 percent to 28 percent. Industry's share remained unchanged (a little more than 35 percent), and the share of transportation and communication grew somewhat. Within industrial investment, producers' goods started to receive a larger share at the expense of consumer goods.

In the investment dilemmas of the 1970s, the following factors were especially prominent.

[6] *Narkhoz 1980*, p. 124.
[7] *Narkhoz 1980*, p. 340.

First, as Figure 1 shows, there was a growing disproportion between the financial expression of investment and the physical resources needed to realize it.

Second, there was a rise in the cost of all new productive capacities, even those having roughly the same structural and qualitative characteristics as those already in operation. According to the calculations of Vladimir Fal'tsman, one of the most competent specialists in Soviet investment practice, the average annual rate of this cost increase amounted to more than 6 percent in the latter half of the '70s, while in the same period the average annual growth rate of capital investment amounted to 3.4 per cent.[8] 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 is not taken into account in planning, statistics, or design. The inflation rate is almost double the rate of investment in the economy.

Third, the explosion of investments in the oil and gas industry which characterized this period as well as the growth of investments in agriculture, came at the expense of investments in metallurgy, machine-building, and construction materials. As a result, fewer productive capacities are being put into operation in these industries. The capacities that already exist are being utilized at a level which cannot be raised given the concrete conditions under which the Soviet economy is functioning. Therefore, we are starting to see an absolute drop in the production of metal, many kinds of machinery, and construction materials. The replacement of machinery and equipment is being curtailed, which means a drop in the technical level of production and a slower rate of automation. This, in turn, has slowed down technological progress throughout the economy as a whole, and is hindering the realization of the investment programs in agriculture and the oil-gas complex besides. Thus we can see that the new Soviet investment policy has boomeranged badly. Finally, there has been a lowering of investments in the consumer industries (i.e., light industry and food processing) and in the construction of housing, schools, stores, hospitals, nursuries, laundries, and other social programs. Investment in this so-called "non-productive" sphere dropped to 28 percent in the last five-year plan of the Brezhnev era (cf. 38 percent at the height of Krushchev's reign, 1955-60), and thus reached a record low for the whole Soviet postwar history.[9]

[8] Ia. Mazover, "Razmeshchenie toplivodobyvaiushchei promyshlennosti," *Planovoe khoziaistvo*, 1977, no. 11, pp. 137-149.

[9] V. Fal'tsman, "Moshchnostnoi ekvivalent osnovnykh fondov," *Voprosy ekonomiki*, no. 8, 1980.

THE DYNAMICS OF THE CAPITAL COEFFICIENT

Under these conditions the Soviet rulers were forced to reexamine both theoretical and practical approaches to economic growth. With the declining growth rates of basic factors of production, increased attention has been given to increasing the efficiency of their use. Soviet economists have created the concept of a special, *intensive*, type of expanded reproduction under the conditions of "developed socialism," which differs from the *extensive* type that is characteristic of socialism per se. In attempting to reflect reality, contemporary Soviet economic theory explains that the need for intensifying the reproduction process under conditions of "developed socialism" is due to the fact that the possibilities for economic development based on "extensive" factors, which previously resulted in high growth rates, are now exhausted. It follows from this that the only way to avoid a slowing of economic development is to increase the return on capital and labor.

However, in point of fact the return on both capital and on labor declined during the second half of the 1970s in comparison with the first half of the decade. The increment in national income per ruble of capital investment for the economy as a whole in constant prices was 28 percent lower during 1976-80 than during 1971-1975.[10] The average annual increment to produced national income per employee in material production (in constant prices) declined by approximately 10 percent during this period.[11]

Facing very limited possibilities due to the demographic situation for managing the economy by manipulating labor resources (more than 90 percent of the able-bodied population is employed), Soviet economic managers to a large degree have concentrated their efforts in the investment sphere. The increase in the intensiveness of production must be attained through a growth in labor productivity by supplying the labor force with ever more sophisticated and effective fixed assets. This means that the rate of growth of labor productivity must be greater than the growth of the capital/labor ratio. And this in turn implies an increase in the output/capital ratio. The intensification of production must be manifested in an increase in the return on capital or a reduction in the capital coefficient (capital/output ratio).

[10] *Narkhoz 1980*, pp. 333, 379; *Narkhoz 1980*, p. 563; *Vestnik statistiki*, 1980, no. 4, p. 68.

[11] *Narkhoz 1980*, p. 379; *Narkhoz 1975*, p. 563; *Vestnik statistiki*, 1980, no. 4, p. 68. Aggregate labor productivity was calculated according to the methodology of the USSR Central Statistical Administration as defined in *Narkhoz 1978*, p. 575. The number employed in material production was calculated from data given in *Narkhoz 1980*, pp. 355, 357.

In fact just the opposite phenomenon is observed in the Soviet economy the output/capital ratio is steadily falling both in the economy as a whole and in all of its branches. The decline in this ratio in Soviet industry is a trend that began at the end of the 1950s. However, in the second half of the 1970s it took on new scope. The output/capital ratio in industry, calculated as the increment in gross output per ruble of capital investment in industry (both in constant prices), with no lag considered, declined from 0.88 rubles in 1971-75 to 0.53 rubles in 1976-80,[12] or by 40 percent.

It is possible that the decline in the output/capital ratio might have been compensated by a reduction in current production expenditures. But the facts refute this suggestion: the recoupment period of capital investment in industry increased from 5 to 11 years during 1960-75 and it increased still further to 25 years by 1977, when it was three times greater than the established norm.[13]

Nor can this trend in the output/capital ratio and the sharp jump in the investment recoupment period be explained by changes in the branch structure of industry. The share of branches with relatively low output/capital ratios has tended to decline, and there is no trend toward an increase in the share of branches with a relatively high ratio of current production expenditures to gross output.

The shift of extractive industry to the east also does not explain this phenomenon. The share of Siberia and the Far East in total national capital investment has remained practically stable over a period of many years at the level of about 15-16 percent.[14] Furthermore, the negative effects of the shift of industry to eastern regions on the output/capital ratio should in general not be exaggerated. Although the greater demands of the climate and other natural conditions are often emphasized, some favorable conditions in the east must also be taken into account—the larger coal seams in the coal industry, the richer ores in nonferrous metallurgy, and the better quality of timber in the lumber industry.[15]

[12] *Narkhoz 1980*, p. 336; *Vestnik statistiki*, 1980, no. 4, p. 68; *Narkhoz 1975*, p. 191; *Narkhoz 1980*, p. 123. Capital investment in industry in 1979 was determined using the average share of industry in total capital investment in the economy during 1975-80—35 percent.

[13] T. Khachaturov, "Puti povysheniia effektivnosti kapital'nykh vlozhenii," *Voprosy ekonomiki*, 1979, no. 7, p. 124.

[14] V. Krasovskii, "Ekonomicheskie problemy fondootdachi," *Voprosy ekonomiki*, 1980, no. 1, p. 108.

[15] A. Aganbegian, "Ekonomicheskie problemy razvitiia Sibiri," *Ekonomika i matematicheskie methody*, vol. XV, 1979, vypusk 5, pp. 843-844.

There is a growing discussion in the Soviet economic literature about increasing ecological expenditures as a factor that is making new production capacity more expensive. However, this factor does not have a very significant effect on the capital intensiveness of production. Its share in the over all increase in the capital/output ratio in ferrous metallurgy, for example, is no more than 10-11 percent.[16]

The output/capital ratio depends to a certain extent on fluctuations in the utilization of productive capacities that were put into operation earlier and that have no relation to investments made during the period being considered. This is especially significant in the Soviet economy since bringing new production capacity to full utilization in some instances can take years. This phenomenon is of particular importance during the period of extensive reconstruction of an industrial enterprise. It is not possible with available statistics to determine an output/capital ratio for industry as a whole or for its individual branches that is free of the distorting influence of this factor. However, data on the utilization of basic types of equipment in several branches of industry (electrical power, ferrous metallurgy, and cement)[17] over a number of years do not reflect any deterioration in the utilization of productive capacities. It is unlikely that this is a factor underlying the decline in the output/capital ratio. Judging from these data and from trends in indicators reflecting the average number of shifts worked, the level of utilization of existing capacities has not changed substantially over time.

Thus, the share of newly activated fixed capital is declining, and the productivity of assets put into operation earlier is not showing any tendency to decline but has rather remained more or less stable. The decline in the output/capital ratio therefore can be explained only by an accelerating decline in the productivity of new assets.

BASIC FACTORS WHICH RAISE THE CAPITAL COEFFICIENT

Two basic factors are inherent in the investment process in the USSR a growth in the cost of new technology and equipment that is more rapid than the increase in its productivity, and an imbalance between the number of projects under construction and the material resources for carrying out this extensive construction program.

With respect to the first factor, there is a special directive in the "Basic Directions for the Development of the National Economy of the USSR during 1976-1980" adopted by the 25th Party Congress: "The

[16] P. Shiriaev and V. Shtanskii, *Effektivnost' kapitalnykh vlozhenii v chernoi metallurgii*, Moscow: Metallurgiia, 1977, p. 188.

[17] *Narkhoz 1978*, p. 139.