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The Changes that have occurred in the  
Industrial Development Strategy in the USSR

Over the Past Sixty Years

by

A.S. Manyara

Industrial development in the USSR since the 1920's has involved not only large scale expansion of output but also major changes in the location of industry, including its development in areas where it was previously non-existent.

After much of the political and military upheaval of the Revolution had ended in 1920 Lenin initiated the New Economic Policy (NEP) to rehabilitate the economy of the country. From about 1921 through 1928 much of the industrial management was turned back to many of the original owners to operate on a semi-capitalist basis in order to effect a rapid improvement in economic conditions. Although the central government retained control of banks and all financial arrangements, the economy was much more free to operate on its own than it had been during the period 1917-1920.

Under the private initiative allowed during the 1920's, the economy was re-established to the level that it had been in 1913. Only after this period of reconstruction did Stalin, Lenin's successor, institute his famous Five-Year Plans, which were conceived to re-establish complete central control and to effect a rapid industrialisation. At the time of the Revolution much of the industrial production of the Soviet Union was concentrated in the European part of the country. The Central Industrial Region accounted for 80% of the textile industry, while Ukraine and Donetz Basin accounted for over 90% of coal production, almost all the iron-ore production and nearly 75% of pig iron production.

Communist ideology adopted by the Soviets did not approve of such an uneven distribution of industrial development. Desire for industrial expansion was sounded in Stalin's words in 1928: "In order to achieve the final victory of Socialism in our country, it is necessary to catch up and surpass the advanced countries in both a technical and an economic respect. Either we achieve this or they destroy us." (Shaw, D.J.B., 1978). In the next ten years after this declaration the USSR underwent a vast industrial expansion. Advances were achieved through a system of state planning. As industry and trade were owned and controlled by the state, the government was able to concentrate men and materials on key industries. This system enabled the establishment of a powerful industry which formed the backbone of the Soviet Union's military strength.

In the early 1920's foreign capital was invited on a limited scale in the form of concession grants. To overcome the shortage of trained personnel in this period reliance was placed on foreign engineers and technicians - Americans, Germans and some English. At the same time a campaign was launched to increase the number of technical institutions to increase training of local skilled workers. By the end of the first Five-Year Plan (1928-32) there were reported to be some 200 000 students in the higher technical colleges and some 900 000 receiving education in secondary technical schools. Factory schools handled about a million workers a year.

The first Five-Year Plan (1928-32) assigned a lot of investment to heavy industry such as mining, metallurgical industries and construction. In the iron and steel industry new blast furnaces brought into operation during this period represent a quarter of the total number of blast furnaces in operation at the beginning of the period, and nearly two-thirds of their output capacity. In the engineering industry nearly half of the machine-tools in operation in 1932 had been installed during the period of the first Five-Year Plan. By the end of the first Five-Year Plan period both the number of workers in industry and the total number of wage - and salary - earners had almost doubled, while the number employed in building and construction was more than four times what it had been in 1928.

Collectivization of agriculture, the scientific-educational programme, Lenin's "electrification" programme, construction of railways and canals, imports of foreign capital equipment, technical personnel and strategic raw materials were all harnessed primarily to bring about industrial development in the USSR. In little more than a decade of the 1930's, the USSR was changed from a largely agrarian, illiterate and militarily disorganized nation into a great industrial power. The period from 1928 to the outbreak of the war was one of major achievement in terms of industrial development and the range of state control was greatly extended. The techniques of centralized planning and resource allocation were developed. There was a rise in the Soviet G.N.P. of 11.9% per year and in the same period the rate of investment was raised from 12.5% to 26% of G.N.P. and the output of heavy industry grew twice as fast as that of light industry. There was a rise in the non-agricultural proportion of the labour force from 29% to 46% and of non-agricultural output from 52% to 69% of total output.

The initial period of industrialization in the Soviet Union was also enhanced during the 1930's by the fact that much of the Western world was in an economic depression. Thus the USSR was able to import significant quantities of prototype equipment and skilled technical know-how at relatively low costs.

Although the industrial development strategy carried out in the first Five-Year Plan was quite a success it did very little to distribute industrial activities throughout the USSR. It is clear that the basic problem facing the Soviet government and planning authorities was the fundamental difference between the western and eastern parts of the USSR. The European part which is heavily settled with 65-70% of the Soviet population had its resource base under strain and many resources showed signs of depletion after centuries of vigorous use.

Stalin's government encouraged a west to east shift of population and industry to achieve a balanced and proportional growth of industry. In response to this awareness from the Second Five-Year Plan onwards far greater emphasis has been placed on industrialization of the Eastern areas of the country. The Soviet easterly industrial movement dates from 1930 when the decision to build the "Ural-Kuzbas Combine" was made. Involved in this move were the modernized resurrection of the Urals iron industry and the first serious utilization of the greatest Soviet accessible coal reserves in the Kuzbas.

In the Second Five-Year Plan (1933-37) both a high rate of investment and the priority assigned to heavy industry were maintained. Machine-tool production was planned to increase nearly two and three-quarter times. In non-ferrous metallurgy there was to be special concentration on developing production of copper, zinc, nickel, tin and aluminium. Transport improvements especially railway were carried out. Production of pig-iron showed marked improvement; the 1937 output being more than double that of 1932. The motor-car industry

fulfilled its target of an eight-fold increase. The industry as a whole registered a three-fold rise of output.

In the Third Five-Year Plan (1938-42) transport systems, both rail and water received special attention. This period was disturbed by the German invasion during the Second World War. There was eastward evacuation of Soviet industry from threatened industrial districts of the west. A few months after the German attack in June 1941, more than 1360 major industrial enterprises, mainly of military significance were moved from European Russia and the Ukraine into the eastern regions of the country. These hastily relocated industries remained in the eastern regions after the war and new industries were added to them. At the same time existing plants and industries of these eastern regions were expanded at impressive speed. By 1945, Siberia accounted for 12% of the Soviet Union's gross industrial output.

The three pre-war plans, (1928-32, 1933-37 and 1938-42) were all designed to make the USSR a strategic self-contained economy, with emphasis on capital goods production. The first Five-Year Plan emphasized expansion in the Moscow and Donbas areas, the Second the Ural and Kuzbas as well and the Third went into the eastward bound shift of people and industry. These three plans converted the country from a chaotic backward state in which 78% of the population were peasants into a major industrial power capable of defeating Nazi Germany in the war. To a certain extent the war helped industrial development in bringing about industrial relocation that the Soviet policy before the war had been unable to do.

In the Fourth Five-Year Plan (1946-50) investment priority was to remain with heavy industry. Special emphasis was laid upon restoration of industry in the older industrial centres of the west and south-east. Electricity production was to double. Although the period (1937-48) was of industrial retardation and retrogression after 1948 industrial production received a boom. From 1948 through the first half of the 1950's Soviet industrialization proceeded at a high pace spurred onward by extreme needs for all sorts of industrial goods and guided by the simple principle of producing the utmost. The output of industry as a whole was raised by 1950, to 23% above the pre-war level and 73% above the 1940 level. During the late 1950's industrial expansion began to slow down as needs became less acute and the economy became much more complex.

For the period 1937-53 the Soviet economy grew at 3.5% per annum and output per head at 3.4%. In the Stalin era the output of the economy was trebled; the state achieved ownership and control of all means of production and the distribution of resources was drastically shifted to provide for a very high level of investment which was the key to growth.

In the Fifth Five-Year Plan (1951-55) Siberia's share in capital investment declined by almost 2% but it began to rise, though slowly, after the completion of the reconstruction process. In other parts of the country especially Central Asia the Soviet government aimed at increasing industrial production by 72% above the 1950 level. There was also a desire to narrow the gap between industries producing capital goods and those producing consumer goods. The output of the former was to grow by 80% and the latter by 65% per annum, but previously the former grew about twice as fast as the latter.

As pointed out in the official directives, "The main task of the Sixth Five-Year Plan for the development of the Soviet State economy for the period (1956-60) is the further intensive development of all branches of the economy based primarily on the growth of heavy industry" (Cressey, G.B. 1962). The goals of this plan like those of its predecessors were to give a balanced attention to all parts of

the country including the once neglected outlying areas of the east. The plan proposed to double industrial production and increase rail-freight by one-third. To achieve its goals 40% of the capital input was to be devoted to the undeveloped eastern regions. It was hoped that at the end of the period this eastern area would produce 50% of the coal, 30% of the oil, 46% of the electricity, 48% of the steel and 45% of the lumber and forest products.

At the end of the Seventh Five-Year Plan (1961-65) reorganisation of industrial administration along regional lines, begun in 1957 was abandoned. The table below shows the growth of Soviet G.N.P. between the Fifth and the Seventh Five-Year Plans.

**Table 1: Growth of Soviet G.N.P. (1950-1965).**  
(Using Moorsteen and Powell's weights)

|                 | 1950 | 1955  | 1965  |
|-----------------|------|-------|-------|
| AGRICULTURE     | 100  | 126   | 171   |
| NON-AGRICULTURE | 100  | 153.8 | 288.1 |
| TOTAL G.N.P.    | 100  | 147.4 | 260.8 |

Source: Maddison, 1969.

The Eighth Five-Year Plan stated that 70% of new industrial development capital was to go to small and medium-sized towns in the European part of the country. In spite of this renewed emphasis on the industries in old established areas, new industrial areas emerged in the east. This was in response to the development of huge energy resources, for instance the building of a hydro-electric power station in eastern Siberia between the Yenisey River and Lake Baykal.

At the end of the Eighth Five-Year Plan the Eastern parts of the USSR (Urals, Central Asian Republics, Siberia and the Far East) accounted for 51% of all the coal production, 25% of the crude oil, 37% of the pig-iron, 41% of steel and 41% of the electrical energy produced, but they had only 35% of the Soviet population.

In the Ninth Five-Year Plan (1971-75) all republics achieved respectable rates of growth in industry. They did not, however, all reach their plan targets but a few, especially in Central Asia almost made it. Table 2 below shows the industrial output in percentage of increase in Central Asian republics during this period (1971-75).

**Table 2: Industrial Output Increase in %**

|                | Plan | Actual |
|----------------|------|--------|
| U.S.S.R.       | 47   | 43     |
| Kasakh S.S.R.  | 59   | 42.3   |
| Uzbek S.S.R.   | 51   | 51     |
| Kirgiz S.S.R.  | 55   | 52     |
| Tadzhik S.S.R. | 38   | 38     |
| Turkmen S.S.R. | 64   | 55.7   |

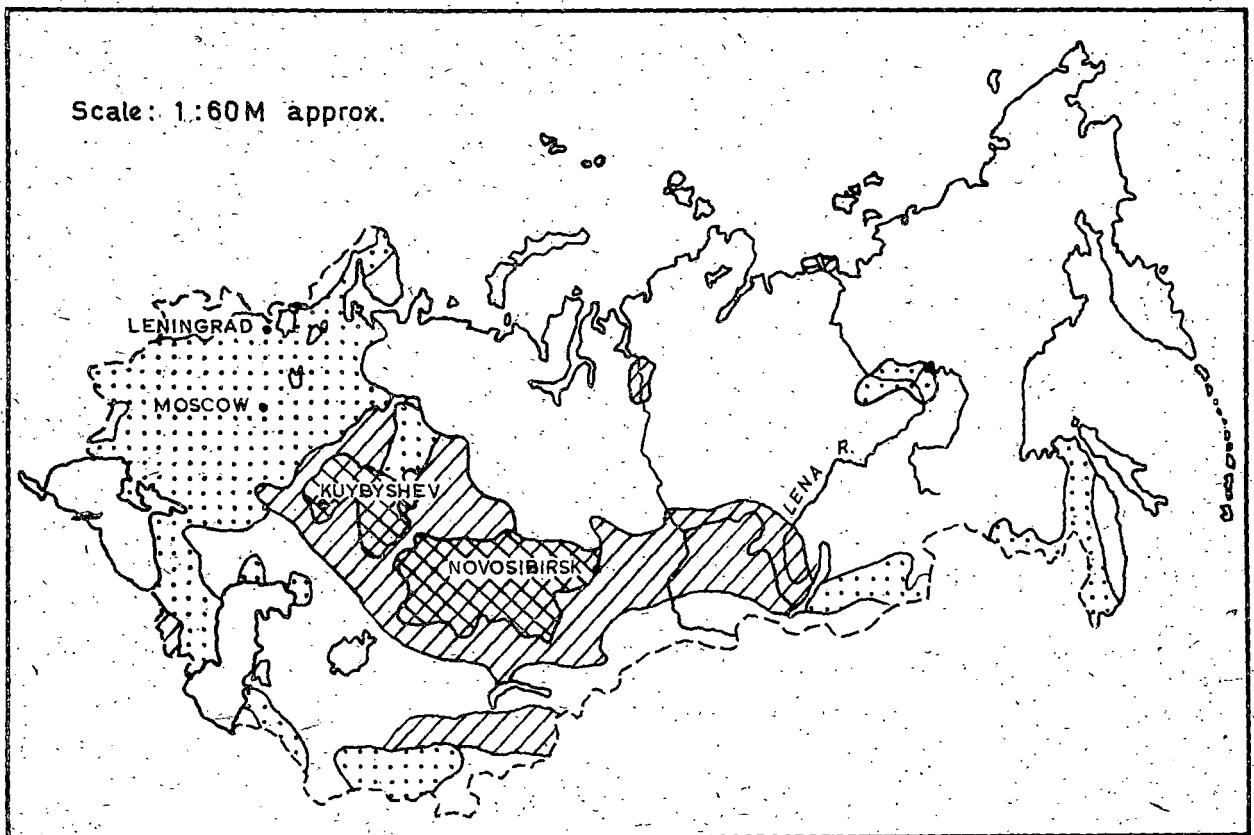
Source: Shaw and Davies, 1978.

In the Tenth Five-Year Plan (1976-80) three quarters of the investment in the non-ferrous metals industry was to be devoted to developing the raw material base, and prospecting for extra resources was to be stepped up especially in East Kazakhstan, the Balkhash area and South Kazakhstan. Table 3 shows the targets of industrial output increase in the period (1976-80) in the USSR and in four republics of Central Asia.

**Table 3: Tenth Five-Year Plan (1976-80) Industrial Output Target**  
(Increase in %)

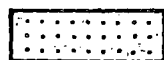
|                |           |
|----------------|-----------|
| U.S.S.R.       | 35 - 39 % |
| Kasakh S.S.R.  | 39 - 43 % |
| Kirgiz S.S.R.  | 33 - 37 % |
| Tadzhik S.S.R. | 38 - 42 % |
| Turkmen S.S.R. | 30 - 34 % |

Source: Pravda: March, 1976.



**GROWTH OF INDUSTRY (1940-1960)**

Index (1940-1960)



100 - 600



600 - 1000



Over 1000

Blank areas indicate no appreciable industrial growth

Source: Hooson, 1964.

The map shows the shift of industrial concentration and growth from the west to Central Asia, a move most of the five-year plans took or planned to take.

Throughout the Soviet period there has been an unusually heavy emphasis on the metallurgical industries and on capital goods as compared with light industry.

To date a good deal of Soviet scientific research has been devoted to the most advanced technology in order to explore and exploit the vast resources of the East. In atomic and space research the USSR is among the leading nations. However, the formulation and effecting of the changes that occurred in industrial development strategy in the last sixty years in the USSR are attributable to the successive Five-Year Plans adopted by the USSR since 1928.

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