Industrial Growth: Where Next?

By

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INDUSTRIAL GROWTH—
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WHATEVER place may eventually be accorded to communism in
Lenin’s famous equation, there can be little doubt that the extent
of Soviet power in the modern world bears a close relation to the
degree of success which has attended its efforts at industrialisation.
In little more than a quarter of a century (writing off the decade of the
forties) the USSR has been transformed, albeit at enormous cost, from a
largely agrarian, non-scientific, and militarily disorganised nation into
an industrial and scientific power, universally acknowledged as the main
counterpoise to the United States in the modern world.
The ‘whole country’ was not a mere afterthought to Lenin’s dictum,
since he held that the uneven development of the face of a country was
an inevitable product of capitalism, whereas under communism population
and wealth would eventually be evenly distributed. While the
fatality of such a literal forecast ensured its early abandonment, the fact
remains that one of the major characteristics of the Soviet industrial
revolution has been geographical dispersion within at least the triangle
of tolerable farmland.

Industrial dispersion in Russia had, of course, begun before the
Soviet era. Before the eighteenth century everything was indeed confined
to the river world of the Moscow region—still today called the ‘Central
Industrial District’—which was convenient for assembly of materials and
distribution to markets. The personal influence of Peter the Great set
in train the first dispersions from this region, to the metal-bearing Urals
and to his own capital on the Baltic. In the late nineteenth century
a radical shift to the south occurred, when Ukrainian iron ore and coking
coal were combined with modern technology to supplant the charcoal-
based Urals as the chief Russian metallurgical base, and Baku oil became
the main fuel supplier for Russian industry as well as the chief factor in
its exports.

However, the scale and scope of industrial dispersion has greatly
expanded in the Soviet period, particularly over the past three decades
or so. In 1913, and still as late as 1930, there was very little industry
of national significance east of the river Volga. The most modern phase
of dispersal dates from the decision, taken in 1930, to institute the
so-called Urals-Kuzbas Combine, involving the resurrection of the Urals
iron industry through the use of coke from the almost virgin Kuznetsk
basin coalfields 1,500 miles away—the largest accessible reserves in the
country. The full impact of the easterly displacement, however, came
only after 1939, with the approach of war, and has clearly been slowing

1 ‘Communism is Soviet power plus electrification of the whole country. . . .’
down within the last decade. Its scale has been greater than that of anything comparable in Russian history, and although its force may now largely be spent, a new type of region, authentically Soviet in its character and stage of development, has been created between the Volga and Lake Baikal—the main industrial reception area of the last quarter century.² So much so that, in place of the traditional but rather meaningless division along the crest of the Urals between Europe and Asia, one may propose a division into four ‘worlds’.

First there is European Russia, between the northern coniferous forest and the Caucasus, and west of the Volga, whose agricultural and industrial foundations were laid before the Soviet time, and which is basically European in character. Then, between the Volga and Lake Baikal, wedged between the northern forests and the southern desert, lies what may be called ‘American Russia’—the effective, viable part of the vast eastern regions, distinguished by its raw, pioneering ‘frontier’ character, with a mobility and an American scale of agricultural and industrial activity, populated, like America, almost exclusively by Europeans. This zone certainly has very little in common with the rest of Asia, if that word signifies anything more than an arbitrarily defined expanse of land. On the other hand, Soviet Middle Asia (Turkestan) and Transcaucasia, separated respectively by the Kazakh desert and the Caucasus range from the Russian world to the north, do bear truly Asian characteristics in their ethnic and economic structure, and in their colonial history, and should alone qualify as the Asian part of the USSR. Finally, there are the vast Northlands, in which the Soviet Far East may be included, which are largely unpopulated except where subsidised for special, often temporary reasons. Of these worlds, only the first two are fundamentally important from the industrial point of view—a Europe and a North America in symbiosis—but still recognisably set apart from each other. It will be these two which will therefore figure mainly in the discussion of Soviet industrial patterns which follows.

The new energy balance

The Soviet Union may well have greater total reserves—coal, oil, gas, and water—than any other country, but their location is by no means entirely favourable. At least two-thirds of the present population and industry are located in European Russia including the Urals, whereas about four-fifths of the estimated energy reserves are in Siberia. However, the significance of this geographical non-coincidence can be exaggerated. For one thing, a large portion of these technically available reserves, particularly of coal and water power, is in reality economically inaccessible because of handicaps such as distance, climate, or rugged and permanently frozen terrain, and will remain so for the foreseeable future. But an even more crucial qualification which needs to be made concerning the gross physical reserves is that oil and gas have recently become

² This zone has been discussed in some detail in the author’s book A New Soviet Heartland? (London, 1964).
the most-favoured types of energy, and the reserves of these are mainly in the European area. To understand the significance of this, it is necessary to mention the dramatic shifts in the balance between different types of energy in the Russian economy during this century, shifts which have, more often than not, been quite at variance with those in the world at large.

The strong tendency in the industrialised countries towards the substitution of oil and gas for coal has been proceeding steadily in the United States for several decades, to the point where oil and gas now account for two-thirds of the energy generated. This is the rough proportion to which the Soviet Union aspires by the early 1970s; in the mid-fifties it was about a quarter and is now about half of a greatly increased energy output. The need for such a rapid transformation of the country's energy structure stems from the fact that the economy had become exceptionally, and quite archaically, dependent on coal during the Stalin period. Although, paradoxically, the Russia of 1913 had a more 'modern' energy balance than the United States, with coal accounting for half the total in Russia compared with four-fifths in America, the clock was put back during the period of the five-year plans. The Soviet Union in the three decades before 1958 resembled, in its fuel structure, the United States in the three decades before the first world war—indeed these periods, in terms of stage of industrial development, have often been compared.

This concentration on coal and the relative neglect of oil and gas cost the hard-pressed Russians dear. The world average increase in the calorific value of a given weight of fuel, from the first world war to the mid-fifties, was about five times greater than that of the Soviet Union. Nor was this due to shortages in the Soviet Union or to ignorance of the possibilities—the presence of oil in the area between the Middle Volga and the Urals, soon to be dubbed the Second Baku, was known by the mid-thirties, but official support for its proper exploitation was lacking. At the same time the subsidised production of poor and expensive 'local' fuels, such as peat, brown coal, and oil shale was encouraged.* The cost, in terms not only of calorific output, but also of overloaded transport facilities and denial of valuable petrochemical by-products, was exorbitant.

The belated recasting of the country's energy structure since the mid-fifties has involved above all a massive infusion of oil and gas and the relative, though not absolute, decline of coal. Hydroelectric power has maintained a fairly constant, if relatively minor position, although explicit policy statements in recent years have tended to play it down, vis-à-vis thermally produced power.

All this has been reflected on the map in a spreading out of energy production compared with the Stalin era. The geographical change

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* S. Lisichkin and L. Tomashpolsky. 'Nekotorye metodologicheskie voprosy toplivnoenergeticheskikh balansov', Voprosy Ekonomiki, 1962, No. 11.
has been particularly dramatic in the case of oil. When the Germans invaded in 1941 over four-fifths of Soviet oil came from the vulnerable Caucasus region. Now the same proportion of a vastly increased output comes from the extensive new fields between the Volga and the Urals, comparable in size and promise to the American mid-continent fields.

The recent expansion of natural gas has been even more startling than that of oil—a fifteen-fold increase in the last decade. Again, four-fifths of the output comes from European Russia—notably the North Caucasus, the Ukraine and the Volga—and much of it is absorbed by the Moscow region. About half the known national reserves is also located in these regions. However, very large sources are also present in Central Asia and are piped to the furnaces of the Urals. More recently still, extensive reserves of both oil and gas have been discovered and exploitation begun in Western Siberia, which had long proved barren. The European supplies of gas, according to present rates of consumption, are likely to be exhausted in the next decade or two, when the Siberian reserves will apparently come into their own as the chief national suppliers.

Dispersal has also taken place in coal and hydro-electric power since the war, to accord rather more closely with the distribution of reserves. The Donets coal basin in the Ukraine, which was producing two-thirds of the national output when the Germans overrun it in 1941, now accounts only for one-third—the difference being largely due to the development of other fields, notably the Kuznetsk basin, in Central Siberia. When Stalin died, virtually all the developed hydro-electric power was in European Russia, whereas now some of the largest dams in the world are operating (e.g. at Bratsk) or under construction (e.g. Krasnoyarsk) in the rocky upper reaches of some of the great rivers of Siberia, notably the Yenisei and the Angara. However, the economical disposal of much of the latter power, as well as of the very cheap opencast brown coal in the area, is partly contingent on the completion of the projected extra-high-voltage, long-distance electrical transmission lines, to link up the already established Central Siberian and European-Ural grids.

The accumulated geographical effect of this decentralisation of production has been that a new energy axis has developed. When the German invasion came in 1941 two-thirds of the Soviet Union’s energy was generated within a belt of country joining the Donets coal basin with Baku on the Caspian. Now, three-quarters of output comes from a very much longer zone, stretching from the Donets basin and the North Caucasus gas fields through the Volga-Ural oilfields to Central Siberia. But although the orientation of the energy belt has been changed, it should be emphasised that the greater part of the energy is still both produced and consumed west of the Urals, and integrated into the

4 Yu. I. Bokserman, Puti razvitiya novoi tekhniki gazovoy promyshlennosti SSSR (Moscow, 1964), p. 27.
European electrical grid. Nevertheless, the greatest storehouse of long-term energy (black and brown coals and water) remains between the upper reaches of the Ob and Lake Baikal, and this has recently been galvanised in the Central Siberian grid. The eventual plan, probably for the early 1970s, is to join up these two grids, to make full use of the much cheaper Eastern energy, take advantage of the difference in time zones for peak-hours, reap the benefit of seasonal floods, and avoid transporting bulky solid fuels. When this is done, some four-fifths of the country’s accessible energy and over three-quarters of its people will be welded into a formidably effective national territory.

Accompanying the change-over to oil and gas has been the equally belated increase in the relative importance of chemicals in the traditionally steel-heavy structure of Soviet industry, although Khrushchev’s chemical crash programme has been toned down somewhat by his successors. The growing significance of oil and gas by-products as raw materials for the chemical industries (petrochemicals) has led to their rapid localisation in places like the Middle Volga about Kul’sk, or in the Moscow region, at the hub of the pipeline network.

**Manpower and the market**

The majority of the Soviet people still live west of the Volga and will continue to do so for the foreseeable future. Nevertheless a substantial easterly displacement of the population has been the most distinctive geographical phenomenon of this century—one which has broadened the whole base of the effective national territory. Its scale can be roughly demonstrated if we compare European Russia (north of the Caucasus and west of the Volga) with the chief eastern zone of increment between the Volga and Lake Baikal. During the half-century before 1911 the population of the European zone increased by about forty millions, compared with ten millions (about half of them after 1897) in the Volga-Baikal zone. However, during the half-century 1911–1961 the Volga-Baikal zone had added about twenty-five millions, or more than double the contemporaneous gains of the European zone. Of course, the catastrophic warfare over much of the European zone, with the corollary of the easterly evacuation, was mainly responsible for the speed, but the scale of the net redistribution is still remarkable, considering that the European zone had about four times the population of Volga-Baikal in 1911. The cities of the latter zone easily outstripped those of all other Soviet regions between 1939 and 1959, but there has, of course, been a tendency towards more equal regional growth since the reconstruction and resumption of more normal conditions. However, even between 1959 and 1964 the Eastern cities seemed to be growing, if anything, slightly more quickly than the western; for instance (to take

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8 Soviet Middle Asia (Turkestan) has been ignored here: its very high population increase is attributable, as in many other parts of formerly colonial Asia, to a rapid reduction in the death rate.
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comparable pairs), Novosibirsk, Omsk, and Krasnoyarsk experienced faster rates than Gorky, Rostov-on-Don, and Voronezh respectively. But herein lies a paradox, for it is becoming increasingly clear that much of Siberia has had for some time an acute labour shortage, and has actually suffered a net loss of migrants in the course of a disturbingly rapid turnover of recruited workers. Many factors are operative, such as poor living conditions, low real income, the shortage of jobs for women, and the severe climate. Thus, in spite of continuing disproportionate capital investment, Siberia is again getting the poor image which it had begun to lose in the eyes of the European population at the time of the great agricultural migration at the end of the nineteenth century. In the present conditions of exclusively voluntary migration, very special incentives and still more investment preference are clearly necessary, but whether, in view of the uncertain return, they will be forthcoming, remains to be seen.

Meanwhile, the continued growth of the East in the face of an adverse migration balance, obviously indicates an unusually high rate of natural increase, though how long this will continue remains uncertain. Siberia is relatively more urbanised than European Russia, which gives it a younger age-structure, with an absence of the top-heavy rural population which is still characteristic of much of the European area.

Notwithstanding the cumulative easterly shift of the Russian population in the last three-quarters of a century, the fact is that one cannot foresee a time when the European part of the country will have less than two-thirds of the total numbers. This obviously has fundamental implications for both the market and manpower factors in the long-term location of Soviet industry.

Transport problems

The transport system of the Soviet Union is probably more over-worked than that of any other important country, and its inadequacy has frequently proved to be a critical factor limiting industrial development. The ton-mileage of freight has increased more than fifteen-fold since the revolution, while the rail mileage has scarcely doubled. Capacity was stretched to the limit in the Stalin era but at the same time long hauls—often irrational cross-hauls—of unnecessarily bulky materials were made. The advent of the oil and gas pipeline and the high voltage electrical transmission line have made many of these hauls, especially of coal, redundant, but the pressure remains, since the increase in transport facilities has not kept pace with that of economic development, especially in some regions. The railway network, on which the Soviet economy is still heavily dependent (road transport remaining in quite a rudimentary state), is most adequate in European Russia, and least between the Urals and Lake Baikal. Consequently almost all of the railway building (and the Soviet Union is one of the very few advanced countries still actively extending its railways) done since the war has been in this
Eastern zone. Early in 1965, for example, the 400-mile Abakan-Tayshet line, in Central Siberia, was opened after seven years' effort in difficult mountainous country, indicating the continuing importance placed upon opening up new resources and developing industry in this remote part of the country. However, a very real and continuing problem with regard to the Trans-Siberian and its flanking railways remains the procession of eastbound empty rolling-stock, which has been estimated at seventy million tons a year capacity in Western Siberia. The cutting down of demand for Eastern coal in the Urals, the projected long-distance high voltage electrical transmission lines, and the increase of processing of products like timber at source, would go far towards reducing this waste, but at present it undoubtedly adds to the costs of industrial operations in the more remote eastern districts.

Generally speaking, the greatest density of freight-flows—largely on the railways—follows what may be called the 'economic spine' of the country, from the eastern Ukraine and North Caucasus to Moscow and thence eastward, through the Middle Volga and the Urals, to Central Siberia. Dominant directions of movement are northbound from the Ukraine, and westbound from Siberia and the Urals, which reveals the Moscow region in its historical role, like Paris or London, at the feed-in centre of a radiating system of rail, river, roads and, most recently, pipelines. This has basic implications for the character of industry and its regional growth.

The industrial regions

Sizeable industrial concentrations are rarely located anywhere in the world away from tolerably good farmland, and the Soviet Union is no exception. Therefore any survey of the location of Soviet industry must begin with the basic fact of the thin triangle of settled farmland bounded by a line joining Leningrad with Krasnoyarsk and thence to the North Caucasus. Within these bounds over four-fifths of the Soviet people are living on barely a quarter of the national area, and virtually all the nationally important industrial activity is carried on. Outside these bounds there are pockets of primary production, especially of certain metals, timber, and fish, and also some industries for local consumption, notably in Central Asia. They are, however, either special subsidised cases, in a chronically pioneering context, and therefore often temporary, or they make very little contribution outside the immediate region.

Thus we need to look along or near the 'economic spine', as outlined above, to discover the nationally significant concentrations of industry, always remembering, of course, the vast distances involved and therefore the considerable gaps between these concentrations. These can be grouped into at least three general categories (excluding industries of ubiquitous or purely local importance), based on function and stage of

development. The first category—established centres of market-oriented, labour-intensive industries—is also the oldest, and the Moscow region, or the Central Industrial District, as it has long been known, stands out. Its admirable nodality with reference to the medieval river-routes gave it, in favourable historical circumstances, a head start and a precious reserve of experience, invested capital, skill, literacy, and political patronage. These ingredients provided a momentum which kept the region's industry reasonably viable during St. Petersburg's long 'usurpation' and has enabled it to blossom forth again in the Soviet era. As before, with hardly any local natural resources, it has depended on an inflow of energy and raw materials from other regions and on its own inherited intangible assets. The former has presented no particular problem under modern conditions—the gas pipeline has proved worthy heir to the coal train and the timber barge. The gas-revolution has been most spectacular in Moscow city itself, where it now supplies the great bulk of the energy needs, and in the surrounding region use of gas as a raw material has quickly reduced costs in the chemical industry, which is the most important concentration in the country. The resilience of the factor of skills, however, is more difficult to evaluate now that technical education has, for the first time, become diffused across the country. As in other metropolises, the attractions of the capital are very persuasive, and Moscow's unduly centralised role as a scientific and educational Mecca reinforces this attraction in the industrial field. Greater Moscow continues to grow rapidly, in spite of an elaborate system of restrictive work-permits and supposed prohibitions on expansion (echoes of London's problem!), and this inevitably enhances the already considerable market attractions of this region for a manufacturing industry which is becoming more consumer-centred.

Leningrad is in a weaker position than Moscow, since its situation away from the main stream of national development, without the former support of its imperial privileges, and without a hinterland of satellite towns, industrial or agricultural resources, means that it must depend more exclusively on the momentum of its past. Other cities of European Russia which fit into this industrial category, such as Riga, Minsk, Kiev, and Odessa have an advantage over Leningrad in the sense that, in addition to traditions and skills, they have the security of a well-populated regional hinterland. It should be noted here that the rate of growth of industrial production since 1958 (the year preceding the seven-year plan) has been faster in the Baltic Republics and Byelorussia than elsewhere, particularly in relation to expected plan fulfilsments.¹

The second category—the centres of heavy industry (iron and steel)—are, of course, poles apart from the regions of the first category in

¹ Where 100 indicates complete fulfillment of seven-year-plan target, the figures for 1963 were: Latvia 105, Lithuania 94, Estonia 84, Byelorussia 89, compared with the RSFSR 70 and the USSR 74.5. This may, of course, indicate an unrealistically low expectation; for instance, although Kazakhstan's fulfillment percentage was only 45, its actual rate of industrial growth between 1958 and 1963 was slightly higher than that of the four Baltic Republics. SSSR v tseifrakh v 1963 godu (Moscow, 1964), p. 77.
their youth, historical development, and present industrial character, but together they may be said to be about as important. They have been fundamental to the rapid advances of the industrial revolution from the late Tsarist period on. The Eastern Ukraine takes pride of place, both chronologically in terms of modern steel development and, though only just, in terms of current output. Its core is the Donbas coalfield which, although a high-cost mining area, is well located near the rich iron ore fields of Krivoy Rog and in relation to the Eastern European market generally. Its dominance over other regions of heavy industry has been greatly reduced in the Soviet era, notably through the use—more accurately the resuscitation—of the Eastern Urals, which lay beyond the reach of the German armies, and has been able to make steel more cheaply. The main disadvantage of the Urals as a metallurgical centre has been a lack of nearby coking coal, which is still a problem, though the arrival of gas from Central Asia has mitigated this somewhat.

In fact the needs of the Urals for coal led directly to the creation of a third steel region, 1,500 miles away in the Kuznetsk basin of Central Siberia; their iron and coal respectively were joined in a massive shuttle-service from 1930. This was one of Stalin's brainwaves, carried through in the teeth of expert disapproval and rational counter-arguments, but which was, in the event, to save the day for the Soviet Union a decade later. Although the Kuznetsk basin in more recent times had continued to expand its industrial capacity, freed from dependence on Urals iron ore, and relying on its major asset—plentiful and cheap coking coal—the inexorable factor of great distance from the main markets will undoubtedly set clear limits to the scale of its operations in the foreseeable future.

Particularly has this become so since the beginning of the exploitation of the so-called Kursk Magnetic Anomaly in South-Central European Russia in 1959. Though known for nearly a century, these immense iron ore reserves, overlaid by water-logged strata, were technologically out of reach until recently. Now accessible, and with gas readily available, they are being made the basis for a very large iron and steel complex (particularly the integrated plant at Lipetsk) which is excellently located for the chief Soviet (and East European) markets.

All the industrial regions considered above (with the exception of the last-named) were founded before the war, and by any yardstick they still account for the bulk of the country's manufacturing industry. But there are several other regions whose industrial significance was very small before the war but which have since begun to emerge as industrial regions of national stature. In this third general category, which is related primarily to affluent energy resources, much the most important is the zone between the middle reaches of the river Volga and the crest of the Urals. This more or less coincides with the great oil-bearing zone, which is rapidly shaping the industrial character of the region. Before the war this region had a deficit of fuel and only locally significant
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Industries. The southward-flowing Volga had long symbolised the boundary between ‘civilization’ and Siberia, the sown and the desert, Europe and Asia. The recent rapid exploitation of the oil fields and also the harnessing of the Volga for hydro-electricity, together with its situation near the centre of gravity of the Soviet population and well connected with other important parts of the country, have set the seal on the creation of a new industrial region. It is now the largest producer of energy of any Soviet region, contributing about a third of the total. It is very much a child of the post-Stalin era—as the Kuznetsk region was of the thirties—conceived in the new age of oil and gas, of the petrochemical industries, and of greater attention to the consumer.

Similar in its dependence on abundant energy is the mountainous region of Central Siberia between the Yenisei and Lake Baikal, where the great rivers of Siberia take their rise, and where the greater part of the country’s accessible hydro-electric power and cheap brown coal is found. However, although some of the most powerful dams in the world have been, or are being built on the Angara and Yenisei rivers (the one at Bratsk, 24 million kilowatt capacity, being the best-known to date), the future of this region is by no means as assured as that of the Volga oilfields. The chief handicaps are the great distance from the main markets of European Russia, the severe climate (it is the only part of the broadly settled territory of the Soviet Union which has patches of permanently frozen ground), and its raw pioneering character, with all that this means in terms of living conditions and amenities. Nevertheless the whole vast region is integrated in the Central Siberian grid, and various energy-intensive industries, such as aluminium, chemicals, and timber-processing, have taken root. In short, the capital investment in this region in the past decade has been too substantial to be neglected, and there is an urgent need even now for more industries to use up energy already being generated, not to mention all the rest which has been committed.

The region’s share in the national generation of electricity is supposed to grow steadily in the next decade or two and eventually about 15 per cent of it is to be transmitted to European Russia. Whether this will materialise is a moot point, but it seems clear that industrial growth will be of an energy-intensive character, requiring a minimum of labour.

Outside the broadly settled triangle, or effective national territory, there are a number of islands of national significance amid an ocean of negativity. They are, as the Russians might say in other contexts, ‘colonial-type’ of one sort or another. Much the most important in population and agricultural terms are the lowlands of the Transcaucausus and the foothill and river oases of Middle Asia (Turkestan), but they have very little significance from the industrial point of view. Each of them accounts for only 3 per cent of the national fuel consumption, very much less than their population would warrant. Although Middle Asia has begun to exploit its rich store of gas, this is almost all sent to
the furnaces of the Urals. The Transcaucasia was certainly in the economic mainstream of the country up to about 1950, when Baku was the main source of oil, but now that it is just a minor contributor (and oil and gas for general purposes are now even imported into the Transcaucasia) this seems no longer to be justified. The Far East, beyond Lake Baikal, is similarly a non-contributing area industrially from a national point of view, stranded in a poor environment with a crippling distance between it and European Russia, and stultified by the proximity of a potentially hostile China and a rather unresponsive Japan.

At isolated points through the great empty northern forests and southern deserts there are pioneer settlements, often ephemeral, concerned with exploiting metals or minerals much in demand, like nickel, gold, or diamonds. Such settlements, which only a short time ago were manned by forced labour, now have to provide expensive incentives, plus high transport costs, for their marooned communities, and thus can be expected to be subjected to increasingly critical scrutiny in the seemingly more hard-headed and calculating economy characterising the post-Khrushchev regime.

Where next?
The hazards of getting to know the facts, let alone correctly interpreting the economic and geographical trends, of the past are only slightly less acute than those which beset attempts to read the future. For instance, in the absence of migration statistics, and in the presence of apparently weighty circumstantial evidence, it seemed entirely justified to attribute at least in part, an increase in population in Siberia between 1939 and 1959, amounting to three times the national rate, to migration factors. However, a recent astounding statement in Kommunist asserts that studies have shown that there was 'no population increase resulting from migration in Siberia between 1939 and 1959.' The fact that 'Siberia' as a geographical unit is basically unsatisfactory, since it excludes Northern Kazakhstan which is, in real economic and geographical terms, part of it (and where growth is admitted to be rapid), while at the same time lumping together large areas of former forced labour country with the southern industrial cities, may explain some of the implied discrepancy between myth and reality. This assertion may well be challenged later, as others have been, but such bald, undocumented, and yet apparently authoritative utterances illustrate the frustrations accompanying any attempt to identify processes and trends in the Soviet social scene. The ambiguous status of the forced labourers, who may have been counted in European Russia in 1939, while actually being in Siberia, may also confuse the situation. Another familiar phenomenon is the index number for growth of industrial production, so that increases for areas which had been devastated in war, or which

had had a very small industrial base, may well give an exaggerated impression, in the absence of the steadying check of absolute quantities.

With such caveats in mind then, we may suggest a few generalisations in conclusion. The outstanding fact about the distribution of industry, as of population, is that the bulk of it remains in European Russia—about half to the west of the Volga and about three-quarters if the whole Urals and Caucasus regions are included. This is still a notable concentration, comparable with the so-called manufacturing belt of the north-east quadrant of the United States. Equally outstanding, however, in the redistribution of industry in the Soviet planned era has been its expansion into the funnel of farmland east of the Volga; first through the Urals-Kuzbas combination and later to the west and east of it. Although this Volga-Baikal zone is certainly not dominant in itself (with barely a third of the country's industry), it indicates a new extension of the country's industrial base which may well be permanent.

This said, one must go on to add that the shift of the industrial centre of gravity to the east, and particularly east of the Urals, which has been a cumulative, though by no means steady feature of the past few decades, seems to have come to an end for the time being. In an important respect it has been a beneficiary of the fear of military invasion, the war itself and its aftermath, just as, to a lesser extent and for less specific reasons, the war provided a fillip to industrial growth in the United States western region. If some of this peak capacity is, through force of normalising circumstances, 'put in mothballs', this does not necessarily mean a reversion to the status quo ante. There may well be some validity in the hypothesis that when the politico-economic atmosphere is one of aggressive, optimistic expansiveness and/or comparative affluence, there is a tendency to invest more in some of the eastern regions, even though the expectation of return may be very long-term and the yield less than might be obtained from a similar investment in places closer to home. The converse to this is, of course, that in a period of capital stringency and growing clamour for maximising short-run returns in a variety of overdue projects—which might be said to characterise the present phase—there is a strong temptation to a conservatism which favours established, reliable projects, other things being equal.

Even if the east-west see-saw has begun to tip somewhat towards the west, it is likely to remain in a certain state of equilibrium, with a division of labour based on the recognition of their distinctive resource and locational advantages, and an increasing complementarity between the two ends. The advantages of the European core in the present phase of oil and gas, and the growing importance of people as skilled workers and consumers, are irresistible. However, the conservative and adventurous are to some extent blended in the development of the Middle

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9 This hypothesis was suggested by Professor Gregory Grossman, whose general criticism and encouragement is gratefully acknowledged.
Volga, which is from many points of view the best located region in a national context; and also the North Caucasus and Southern Ukraine which, though no Californias, have a definite climatic and amenity advantage over Siberia, to say the least. As far as the scale of development is concerned, much depends on what will happen in the East European trading bloc.

Siberia west of Lake Baikal (including North Kazakhstan) will continue to develop its energy resources, which should (oil and gas as well as coal and water) become steadily more important nationally in the next phase after 1970, when the European supplies become exhausted or expensive. There should be an increase in the processing industries based on metals and timber particularly, and a gradual strengthening of the links with the west, leading to the filling in of the relative gap which still exists between Central Siberia and the Urals. But the malaise of Siberia in relation to recruitment of labour, which will not be overcome rapidly, will probably preclude the widespread establishment of labour-intensive industries, although for ideological or strategic reasons—which should not be ignored—they may be encouraged and subsidised up to a certain point.

In general, the Soviet Union is by no means an overcrowded country, and this gives the government considerable flexibility in its regional policies. The likelihood is that the economic spine, from the Ukraine to Lake Baikal, will increase still further its already overwhelming share of the effective population, wealth, and strength of the country. Much, perhaps most, of the Soviet Union will remain of very little value, agriculturally or industrially, but the maintenance of the country’s super-power status, in an increasingly competitive world, necessitates as comprehensive use as possible of its really usable land, which covers an area and carries a population as large as that of the entire United States.