

THE UKRAINIAN ECONOMY

N. Chirovsky — The Ukrainian Economy

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НАУКОВЕ ТОВАРИСТВО ІМ. ШЕВЧЕНКА

Бібліотека Українознавства ч. 16

(Англійська Секція том II)

УКРАЇНСЬКА ЕКОНОМІЯ

ІІ ПІДЛОЖЖЯ, СЬОГОДНІШНІЙ СТАН І МОЖЛИВОСТІ
МАЙБУТНЬОГО РОСТУ

МИКОЛА Л. ФР.-ЧИРОВСЬКИЙ

НЮ ЙОРК — ПАРИЖ — ТОРОНТО 1965

SHEVCHENKO SCIENTIFIC SOCIETY
SOCIÉTÉ SCIENTIFIQUE ŠEVČENKO
SCHEWTSCHENKO GESELLSCHAFT
DER WISSENSCHAFTEN

Ukrainian Studies Vol. 16

English Section Vol. 2

THE UKRAINIAN ECONOMY

ITS BACKGROUND, PRESENT STATUS, AND POTENTIALS
OF FUTURE GROWTH

NICHOLAS L. FR.-CHIROVSKY

NEW YORK — PARIS — TORONTO 1965

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Printed by "LUNA" Printing Co., St. Marks Pl., New York, N.Y.

ACKNOWLEDGMENTS

The author wishes to express his deep appreciation and to make his grateful acknowledgments to Messrs. Charles J. Weiss and Clarence L. Lewis, Professors at Seton Hall University, who aided him with most valuable advice in the preparation of his various publications in the past, and who again have painstakingly read this entire manuscript, and contributed to its editing. He thanks Dr. Mathew Stakhiv, Professor, Ukrainian University in Munich, for his most constructive suggestions, and Mr. Roman Kocherzuk for preparing the map of Ukraine for this and other publications.

South Orange, 1964

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I. INTRODUCTION

The historical and geo-political perspective.

Present status of Ukraine. Evaluation criteria.

The vast Ukrainian country is located in Southeastern Europe, almost on the outskirts of the European continent and almost on the borders of Asia. It extends from 43 to 54 degrees of Northern latitude and from 21 to 47 degrees of Eastern longitude (from Greenwich), covering almost 280,000 square miles of the Ukrainian ethnographical territory. It is a rich country as far as its natural resources are concerned, having very fertile black soil throughout two-thirds of its territory, diversified but temperate climate, diversified relief coming from various geological epochs, numerous metallic and non-metallic resources, and vast resources of power. One of the writers of the past century said, referring possibly to the Ukraine's black soil and her agricultural potentials, and having the vision of the future, that she was reputed to be the land of incredible riches, where a slight touch of earth opened streams of gold¹).

This geo-political position of Ukraine on the crossroads between the Orient and the Occident, two different cultural, commercial-economic, and ethno-political centers of the world, and on the crossroads from the north to the south, economically and psychologically such differently shaped spheres of man's settlements, on the one hand, and the great natural wealth of the country, on the other, largely formed the destiny of the Ukrainian land and people, also in the economic aspect. Thus, the economic potentials of Ukraine have always been great and almost unlimited, and this fact was convincingly attested by her economic-historical past.

At the time of the primitive extensive economy of the Ukrainian tribes from the sixth to the ninth centuries, when hunting, fishing, and cattle raising were the main occupations to make a living, rich forest resources and the vast steppe areas,

full of wild animals and birds, rivers full of all kinds of fish, and the availability of good and rich grass, enabled the old Ukrainians to develop a rich economic life of its kind. Later on, beginning with the tenth or eleventh century, the agricultural economy began to emerge in Ukraine, and then flourished, following the fifteenth and sixteenth centuries. Again, her most fertile black soil rendered fabulous opportunities of growth for her farm economy. In the nineteenth century, because of her grain production, and her wide distribution of it throughout the entire European continent, Ukraine acquired her well-known name as the granary of Europe. At the beginning of the eighteenth century, manufacturing began to grow because of the abundance of agricultural raw material and many rich mineral deposits. By the end of the nineteenth century, there were already a few important industrial centers in Ukraine; Donets Basin, Kryvyi Rih, Kharkiv, and Carpathian and Fore-Caucasian industrial areas.

The geo-political site of Ukraine and her natural shape, plateau country, made her a center of the transit trade between Asia and Europe. Hence, since remote times, the Ukrainians were always engaged in large-scale commercial and exchange trade activities. In the eighth and ninth centuries, Ukrainian merchant caravans were seen in the Middle East and in the commercial centers of west Europe, and numerous foreign merchants, Arabs, Jews, Mongols, Greeks and Germans, visited the Ukrainian towns, such as Kiev and Halych, and the countryside²). Commercial trading flourished in the Kievan state, the Ukrainian-Lithuanian state, and in the Cossacko-Hetmanic state—the three sovereign political formations of the Ukrainian people³). Commerce always grew in Ukraine, whenever freedom prevailed there, as a natural occupation of the country that had a central geographical site among the areas of different economies and diversified business activities.

The natural riches and the easy accessibility, since Ukraine has but few natural boundaries and is like a nature-made passage from the east to the west, made her an attraction for the conquest attempts of any strong nation, planning an imperialistic expansion. The Asiatic nomad tribes, Avars, Cumans, and Mongols, harassed Ukraine at the time of the ex-

tensive economizing, because her steppes afforded unlimited opportunities for their cattle raising and hunting projects. In the struggle against the nomads, Ukraine largely exhausted her political and military potentials, while behind the Ukrainian defense wall the powerful Polish state emerged. Soon the Poles dominated Ukraine by warfare and diplomatic maneuvers to take advantage of her black soil and agricultural opportunities. Again, history repeated itself. At the time when the Ukrainian people continued to struggle against the Asiatic hordes and the Polish political and economic oppression, the new and young Muscovite state in the north developed into a military and extremely imperialistic power. In the second half of the seventeenth century, the Muscovites-Russians initiated their long-range project of dominating Ukraine, which was successfully accomplished around 1781-82. The Swedes and the Germans also tried to conquer Ukraine at the peak of their imperial growth.

This brief historical account of events is a very important factor for a correct understanding of the present economic status of Ukraine, and for a proper appraisal of her future economic possibilities. Thus, at the time of national freedom and statehood of the Ukrainian people, when their national and inborn characteristics of economic and business individualism and freedom of enterprise were allowed to grow and develop, they always succeeded in forming and building a large-scale and advanced economy of their own. This was the case with the Kievan Empire, when the Ukrainian economy surpassed by its development any West-European nation at that time⁴). Similarly, in the second half of the seventeenth and the first half of the eighteenth centuries, the economy of the Cossacko-Hetmanic state was growing rapidly rich until the Russian occupation brought an end to it⁵).

Foreign rule and foreign social and economic institutions always greatly interfered with the Ukrainian concept of economics and business, and exposed the Ukrainian national economy to regimentation and exploitation in favor of the interests of the foreign (Polish, Russian, or German) occupational powers. Originally, free peasantry, freedom of economic activity, private property, and other "semi-capitalistic" insti-

tutions, were the foundations of the Ukrainian economy. Polish rule in the fifteenth to the sixteenth century brought into Ukraine the essentially Polish institutions of large noble landed estates, general peasant serfdom and bondage, noble domination and dramatic discrimination against other social classes. Russian rule in the eighteenth century brought even more drastic peasant bondage and government regimentation of business activities in Ukraine⁶). In both cases, these foreign institutions, together with national discrimination, and the placing of Ukraine in the position of a colonial land to serve the interests of the dominant nation, Polish crown, or Russia Czardom, considerably reduced the economic potentials and the economic growth of the Ukrainian national economy, — far below the levels which could have been reached if the Ukrainian national socio-economic interest would have been respected and preserved.

Presently, in terms of constitutional, public, and international law, Ukraine is a union republic within the Union of Soviet Socialist Republics, a member nation in a federation, the sovereignty of which is somewhat restricted by the federal constitution, voluntarily taken upon herself by the sovereign will of her people. Her economic system is radically socialist, with a strong tendency toward becoming Communist some day, in the future. In fact, Ukraine is a colonial land of the Russian Empire called the USSR, placed in the position of a Russian colony by force and military conquest, accomplished by the Russian revolutionary government of the Communist Bolsheviks, between 1920 and 1921. A radically socialist economic system, eliminating traditionally Ukrainian individual social-economic institutions, was forced upon Ukraine and her people, in order to build her tightly into the framework of the Eurasian large scale economy of Bolshevik Russia. Ukrainian economy, as a component element of the Russian Eurasian market, is directly and centrally managed and administered by Moscow, and not decentrally by Kiev, thereby fitting the Russian political and economic interests, and not those of Ukraine and the Ukrainian people⁷).

The preponderance of the Russian political and economic interest, collectivist economic institutions, economic planning,

and the colonial economic status of Ukraine as a country are the primary determinants of the present economic plight of the country. Real factors of economic growth, natural resources, population, and capital resources, their utilization and productivity, greatly depend upon the socio-economic institutions of the given economic system. The present collectivist institutions shaped up the Ukrainian national economy in one specific and extreme direction. It is growing, no doubt, to help the Soviet Union build up its military power, to conquer space, to finance the subversive Communist movements throughout the world; and at the same time, it is indicating great inadequacies in agriculture, housing, services, light industry, consumer goods production, and mining, and a low standard of living. Thus, it is featured, along with the entire economy of the USSR, by a lack of an internal balance among its individual and component business and industrial branches.

When attempting to evaluate the potentials and possibilities of the future growth of the Ukrainian economy, these factors must be borne in mind. It certainly would cause a great difference in the type, direction, and rate of growth, whether the economic potentials of Ukraine would be evaluated and projected in the future under the present status of this country as a Soviet colony with its collectivistic institutions, or under an assumed national freedom and the traditional Ukrainian economic individualism with private property, freedom of business, and individual economic motivation.

In both cases, there would be considerable difficulties to encounter. In the first instance, if the colonial status of the Ukrainian SSR would continue, the State Plans, Seven or Fifteen Year Plans, which are grossly inflated and largely unrealistic, would be still the logical start and framework of the evaluation analysis. In the second instance, assuming national freedom and economic individualism, the economic status of Ukraine prior to the First World War would have to be used as the working base. Ukraine was not nationally free at that time, but at least semi-capitalistic economic institutions prevailed. Furthermore, analogies with other countries and possibility counts would have to be employed.

II. RESOURCES

Natural resources. Human resources. Capital resources. Colonial status of Ukraine.

Even a brief analysis and account of the Ukrainian natural resources point out the tremendous production capacity of the Ukraine's national economy. The Ukrainian geological structure is greatly diversified, indicating its formation during various geological epochs. Also, the geological history of Ukraine was different from that of the rest of Europe; this country was in the past in part flooded and covered by sea waters. Doubtlessly, the circumstances have had a specific impact on the formation of the natural wealth of Ukraine. Some ten major geological areas can be identified in Ukraine: the Ukrainian central crystalloid plateau, the Dniepre-Donets Plain, the Donets Plateau Basin, the Volhynian-Podolian Plateau, the Galician-Volhynian Plateau, the Carpathian Mountains, the Great Black Sea Plain, the Crimean Peninsula, the Kuban Plain, and the Subcaucasian Plateau.

From the economically important aspect of vegetation, the whole Ukrainian country can be divided into three belts: the forest belt, extending over the northern and northwestern regions of Ukraine; the forest-steppe belt, extending south from the former, although the transition from one to another is not clearly recognizable; and the steppe belt, covering the southern and eastern parts of the country, around the Black and Azov Seas.

The geographical concept of Ukraine, which has been adopted in this short study, is not identical with the political concept of the Ukrainian Soviet Socialist Republic of today. The Ukrainian SSR does not include the economically and extremely important Kuban Plain, the Subcaucasian Plateau, and the southern Voronizh region, remaining within the so-called Russian Federal SSR, as well as some small ethnographical plots of the Ukrainian land in the west, the Pidlasha,

Kholm and Lemko regions, under Polish domination, and a part of Polissia country, within the Byeloruthenian SSR. This fact must be carefully borne in mind when evaluating and interpreting statistical data about the production capacity of the Ukrainian economy. So far, the Soviet and western sources refer to the Ukrainian SSR only. This is not correct when attempting to appraise the economic capacity of Ukraine at the present and its possibilities of future growth. Also, when evaluating the over-all importance of the Ukraine for the economy of the Soviet Union, its value is grossly deflated by accepting the criterion of an artificial political creation of the Ukrainian SSR and not that of the entire Ukraine.

The whole Ukrainian country covers some 280,000 square miles, while the Ukrainian SSR, according to the official statistics, extends over only 231,990 square miles. Thus, about 50,000 square miles of mostly fertile land and of some ore-rich-land have been excluded from the concept of the Ukrainian national economy. This means that in the Ukraine there are some 179,200,000 acres of land, some 70 per cent of which is extremely fertile black soil.

The black soil or black earth of Ukraine is one of the best soils for agriculture on our globe. It contains a high percentage of humus; it dries quickly on the surface, but keeps moisture underneath, which is very important in view of the relatively scarce rainfalls and occasional droughts in the south of Ukraine. Black soil preserves its natural fertility for a longer period of time than other kinds of soil; it does not require much of any manure; and it is easy to work and to cultivate⁸). The remaining 30 per cent of soil in Ukraine is the so-called podsol, usually sandy or clay-like, in Pidlasha, Kholm district, northern Volhinia, Polissia, and northern parts of Chernyhiiv area; mountain soil, usually stony and sandy, in the mountainous regions; and a good renzine earth in Galicia.

Ukraine's climate is of the continental type, growing more and more severe as one moves further toward her eastern provinces. Winters are cold and snowy, colder in the east than in the west; summers are hot and dry, hotter toward the east. Rainfalls, which are heavier in the west, become considerably more scarce in the eastern regions, and very rare in the south-

ern steppe areas, along the Black and Azov Sea littorals. Thus, in the Ukrainian North-West, the rainfalls amount annually to some 24 inches per annum, in Galicia, some 28; in the central steppe regions, some 19.5 inches; in the southern steppes, only 16 inches; and in the littoral sections around the seas, they fall down to only 11 inches. Winds are frequent, fast, and strong, again more violent in the central and eastern parts of the country. These winds supply tremendous energy, once utilized by the popular wind-milling.

Because of the growing severity of the Ukrainian climate toward the east, the days of vegetation decrease also in the eastern regions. Droughts frequently damage vegetation in the southern steppes, along the Black Sea and Asov Sea shores, in the present, as occurred also in the past. Hence, the second quarter of the twentieth century brought the idea of grand irrigation plans, but these have thus far been realized only in a limited degree. The most important irrigation projects, so far realized, have been so-called Kakhovske Sea, created by erecting a dam on the Dniepre River at Kakhovka. The dam raised the water level by some 18½ yards, flooding some 527.5 square miles of land. From there on, the so-called Krasnoznameniansky Canal has been built across the dry steppe area, irrigating and watering some parts of Kherson and Perekop districts. Similar irrigation projects have been initiated in the Zaporozhe, Mykolaiv, and Dniepropetrovsk regions, as well as in Kharkiv, Odessa, Donetsk, Kryvyi Rih, Kramatorske, and Melitopol. There seems to be an extensive plan in work to construct a North-Crimean Canal, a mighty artificial river to water the northern area of the peninsula.

It has been estimated, that by proper irrigation, some 15 million acres of land can be added to the Ukrainian economy to raise its agricultural power and industrial capacity. So far, however, only 223 thousand acres have been obtained by irrigation. Neither the great Dniepre Dam nor the Kremenchuk Hydro-Electric powerhouse has been properly utilized for irrigation purposes. The war-oriented Soviet economy cannot afford to invest enough capital and labor in the projects it considers to be of secondary importance. It has been planned by the Soviets to irrigate some 10 million acres of land by 1980,

but it seems hardly probable in view of the lack of progress in this field so far⁹). In particular, the great economic set-backs in the Soviet Union, decline of agricultural productivity, shortages of food, decline in the light industry, reduction of the housing plans, grafts and embezzlements, and a general depression of the planned economy in 1962 and 1963, greatly hampered the original irrigation plans in Ukraine.

On the average, about 60-65 per cent of the total acreage of Ukraine, some 100,000 acres, is arable land. About 81,000 acres in the Ukrainian SSR alone. Forests amount only to 12 per cent, and only 15 per cent of the land falls into the meadows and pasture area. Of course, the percentage ratio among arable land, forests, and meadows varies from region to region. Hence, in the central steppe Ukraine, for example, arable land makes some 80 per cent, and forests only 4 per cent of the acreage, while in the mountain regions and the Polissia country arable land would amount up to 30 per cent.

Natural resources of Ukraine, as far as the development of farming is concerned, are extremely rich and useful. For that reason, since the sixteenth century Ukraine has been a very important European grain producing, wheat, in particular, country. At present, however, the Soviet collectivism in agriculture does not allow a full-scale development of the productive capacity of Ukrainian farming. The incentives and the initiative are largely destroyed by collectivism, planning, and regimentation.

Growth of agriculture would enable growth of the Ukrainian industries, processing of agricultural raw materials, distilling, brewing, textile manufacturing, food processing, tobacco production, sugar production, and other branches of the economy similar to these. However, the rich mineral and non-mineral resources, and tremendous power resource, especially the potentials of electric power production in Ukraine, enable development of other industries also, such as steel and iron manufacturing, machine industry, coal processing, and petroleum extraction and processing.

Among the metal resources, iron ore doubtlessly occupies the leading position. The principal iron ore deposits are located in the Kryvyi-Rih and Kerch regions, on the littorals of

the Azov Sea, on the borders of the Zaporozhe, Donetsk, and Voroshilovhrad Districts, in the Donets Basin, which were known already in the nineteenth century, on the left bank of the Dniepre River toward the city of Poltava, the so-called Kremenchuk iron deposits, newly discovered iron ore deposits in the Dniepropetrovsk region, as well as the relatively poor deposits, but easily accessible in the Odessa, Kiev, Zhytomyr, Sub-Caucasia, and Polissia areas. In Polissia iron ores were exploited as early as the ninth and tenth centuries, serving as the source of iron supply for the Kievan empire.

Iron ore deposits in the Kryvyi Rih area are rich and of a high iron content, about 60 per cent. There are also poorer ores, some 25-45 per cent containing a percentage of other minerals, but little sulphur. The Kryvyi Rih deposits extend on the territory some 70-75 miles long and from 3-4 miles wide, and from 350 to 550 yards deep. The reserves are estimated as high as 1245 million tons.

The iron ore deposits in the Kerch Peninsula, estimated up to 2722 million tons, are of poorer quality; iron content runs 33-42 per cent with considerable content of manganese and phosphorite. In other areas, including a southern part of the Kursk region, iron deposits do not have the same economic importance as these of the Kryvyi Rih and Kerch regions because they are not as rich, either qualitatively or quantitatively. Dniepropetrovsk, Odessa, and Kiev have brown oxygenic ores, but they have been only recently discovered and not yet adequately estimated and exploited, such as the Kremenchuk iron ore deposits, the quality of which is expected to be equal to the Kryvyi Rih ores¹⁰). Recently, also, in the Kryvyi Rih area, small deposits of uranium were discovered, the size of which is not disclosed by the Soviets.

Ukraine maintains the fifth place among the iron ore producing nations of the world. She is producing some 56 per cent of the total iron ore extraction, 51 per cent of pig iron, and 38 per cent of the steel production of the entire Soviet Union. Only the United States, the Russian SSR, England, and France exceed Ukraine in this respect.

In the area of Nikopol, South Ukraine, on the right bank of the River Dniepre, are the richest deposits of manganese

ores in the world. They cover an area of some 60 square miles, the western section of which has richer and better quality ores, averaging some 30 per cent manganese content. The deposits run there about 25-90 yards deep, on the average of 2 yards to a foot thickness. Only the manganese ores, extracted in Chiatura, Georgia, and in India, are of higher content and quality than those produced in Nikopol Ukraine. Furthermore, in about 30 other places in Ukraine, in the Kirovohrad regions and the Carpathian mountains, manganese ores can be found, too, but so far, without any outstanding significance. However, Ukraine is, no doubt, the first manganese ore producing country in the world, with a total estimated supply quantity of about 450 million tons, making some 40 per cent of the world and some 70 per cent of the total Soviet reserves of manganese.

Titanic ores are available in small quantities in several places in Ukraine. Mercury deposits in the Donets basin, which are estimated up to 14,000 tons of reserves, are very important for industrial uses. Quantitatively significant are the deposits of zinc and lead ores in the Kuban region, and in the Donets Basin. Negligible are the reserves of the copper ores. Also in several places in Ukraine, aluminum, nickel, and chrome ore deposits have been recently discovered as a result of intensive scientific explorations sponsored by the Soviet government. The deposits, however, have so far not been utilized to an adequate extent for the country's industrial purposes.

Among the non-metallic mineral resources in Ukraine, certainly, the coal deposits are most important. Large and rich coal deposits are available in the Donets Basin, covering an area of about 9,000 square miles, and the supply quantity estimated at some 90 billion tons. For a long time, coal was mined in the seams, which were immediately under the surface. This made mining possible at rather low costs. Currently, however, deeper and deeper digging is required, which presents a major cost problem today of industrial mining for the Soviets. The Donets coal is of a lower quality than that mined in the Soviet Kuzbas and the German Ruhr area; it contains more impurities, such as ashes and sulphur, making the carbonization process so much more difficult.

In the forties of this century, considerable coal deposits were discovered in West Ukraine, in the so-called Galician-Volhynian coal basin, the industrial capacity of which has not yet been fully developed and utilized. The sub-Caucasian and Kuban coal reserves, presently outside of the political territory of Ukraine, have been estimated as high as 855 million tons, and have considerable industrial significance, although their quality and calorific value are relatively low. The coal deposits in the Crimean Peninsula, estimated up to 340 million tons, are approximately of the same quality as those in the sub-Caucasia and Kuban. Some coal deposits exist also in various places in the Dniepropetrovsk, Sumy, southern Kharkiv, and Chernyhiiv regions.

Many varieties of coal can be identified in Ukraine; in the Donets Basin, high quality anthracite makes up some 30 per cent of its total coal reserves; bituminous coal constitutes some 25 per cent of the Donets deposits; gas and furnace coal, available mostly in the central and western sections of the Basin; and other kinds of coal are scattered all over in various sections of the country. Numerous deposits of brown coal in West Ukraine, Kryvyi Rih, Volhinia, Dniepropetrovsk, sub-Carpathian, Carpathian Ukraine, and Bukovina, represent a very important industrial raw material for the manufacture of gas and the several by-products.

Among the other fuels, natural gas is most abundantly supplied in Ukraine and in quantities which may suffice for many future generations. Its industrial uses and applications are currently increasing at a very fast rate. It will also be used to cover consumer and household needs¹¹). Natural gas deposits are available in many sections of the country; in the sub-Carpathian petroleum area and the Volhynian-Podolian Plateau in west Ukraine, in particular, in the regions of Dashava, Boryslav, Opary, and Kalush; in the Dniepropetrovsk, Donets and Kharkiv areas of southern and eastern Ukraine; and in the Crimean Peninsula and on the shores of the Black and Azov Seas. Production of natural gas is relatively cheap, and it is servicing today, through delivery by way of huge pipe lines, several cities such as Kiev, Kharkiv, Dniepropetrovsk, Zaporozhe, Ternopil, Zhytomyr, Chernyhiiv, as well as servicing

some villages. A huge pipe line, Dashava-Kiev-Bryansk-Moscow, delivers Ukrainian natural gas to Moscow and other Russian cities. Presently, new pipe lines are under construction, Dashava-Minsk-Vilnius-Riga and Minsk-Leningrad, being another evidence of the colonial exploitation of the Ukrainian resources to further the Russian imperial industrial growth¹²). Currently some 26 billion cubic meters of natural gas are being produced, and the Soviets have developed plans to increase the output in the next 15 years to 300 billion cubic meters yearly. Some natural gas was located in the north Caucasias; and it usually appears along with petroleum deposits.

Also, as far as oil reserves and production are concerned, Ukraine ranks among the important petroleum producing nations of the world. Her petroleum reserves are estimated up to 450 million tons. The main centers of the oil reserves of Ukraine are located in the sub-Carpathian west Ukraine, Kuban, and the sub-Caucasia. West Ukrainian oil fields extend for some 300 miles, from the city of Jaslo to the Bukovina region, covering an area of some 23,000 acres, with the wells located in Drohobych, Boryslav, Tustanovychi, Skhidnytsia, Bytkiv and Jaslo. In the Kuban region, the oil fields extend from the Taman Peninsula to the city of Maikop, the center of the industry, and the River Laba. The sub-Caucasian oil area is located around the city of Groznyi and on the banks of the River Terek. The best petroleum is produced in Groznyi, the sub-Carpathian oil ranking second. Recently petroleum deposits, not yet fully estimated and utilized, were discovered in the Dniepropetrovsk, Romni, Poltava, and Myrhorod regions. Mineral wax, which is rare throughout the world, is available in small quantities in Boryslav and other places in the sub-Carpathian Galicia.

Pear or turf reserves are to be found mainly in the northern section of Ukraine, Polissia, Chernyhiv, Volhinia, and the northern Kiev area, as well as partially in Poltava and West Ukraine. Their reserves are estimated up to 3.5 billion tons, but only a small fraction of peat lands were actually studied, prospected, and utilized.

Salt deposits, cooking rock, potash salts, occur all over and throughout the entire country. Ukraine is probably the third

ranking country, after the United States and Germany, as far as the riches of the salt reserves of the world are concerned. Already, in the Middle Ages, salt from Galicia was a very important factor in the economy of the Kievan state, and an important commercial article in the Cossack-Hetmanic Ukraine. The rich salt deposits are located in the sub-Carpathian West Ukraine, in the towns of Kalush, Stebnyk, and Solotvyna, in particular, in the North-west area of the Donets Basin, near the cities of Artimivske and Slavyanske, in the Poltava and Sumy regions, and in many salt lakes on the shores of the Black and Azov Seas. In the Crimean Peninsula alone, brine salt is derived from about 300 salt lakes. In Kuban, the glauber salt is available. It is hard to estimate the total salt supply in the Ukrainian deposits, but roughly up to 120 billion tons of extraordinarily pure salt, uniform in its chemical composition, may be received in the Donets area; about 450 million tons in West Ukraine; and many more millions of tons in other places and from the lakes. In the salt lakes on the sea shores, there are considerable quantities of other minerals, such as kaolin, bromide, and magnesium, along with salt.

Phosphorite deposits are in three sections of Ukraine — on the banks of the River Dniestre and its left bank tributories in Galicia and Podolia, in the Chernyhiv region, on the right bank of the Desna River, and in the north-western section of the Donets Basin. The total phosphorite reserves in Ukraine are estimated up to 62 million tons. Podolian phosphorites are of the highest quality with up to 38 per cent of phosphorite acid content; Galician phosphorites contain up to 25 per cent, Desna phosphorites, up to 20 per cent, and Donets deposits, up to 18 per cent of the phosphorite acids.

Among the other minerals worthwhile mentioning, there are in Ukraine sulphur, kaolin, clay, limestone, gypsum, granite, graphite, quartz, sand, and labrodit. Sulphur deposits, in connection with gypsum and other minerals, are available in the Donets Basin, Podolia, Galicia, and Chernyhiv Regions. Kaolin deposits cover a large area, from the Volhinian marshes to the shores of the Azov Sea, the central section of the Ukrainian crystalloid plateau, and can be found in more than 1000 locations. The quality of the deposits varies considerably and

are estimated to have up to 50 million tons of pure content, Dyminsky says¹³). Clay deposits, like those of kaolin, are spread all over Ukraine, in the Donets Basin, Dniepropetrovsk, Kirovohrad, Podolia, Volhinia, and Galicia. Gypsum deposits are in the Artymovsk and Podolia regions. Limestone, also, can be found all over Ukraine, ranging from the best to the poorest quality. Granite of a great variety is available on the central crystaloid plateau, and in the Carpathian and Caucasian mountains. Graphite can be found in substantial quantities in Podolia, the Kryvyi Rih region, and on the littorals of the Azov Sea.

And finally, the water resources must be mentioned as an important element in the development of the Ukrainian inland transportation and as the source of the electric energy production, indispensable for the industrial growth of the country. In the south of Ukraine there are two seas, the Black Sea and the Azov Sea, which can be used well for the development of foreign trade with the countries of the Black Sea Basin, the Balkan nations and the nations of the Middle East. The Straits of Dardanelles and Bosphorus, which can easily be controlled by one political power, greatly reduce the opportunity of a large scale and world-wide commercial navigation for Ukraine. The littorals of both Seas are not favorably developed from the commercial point of view, there being not many natural harbors. Nevertheless, ports can be easily constructed in the limans of various rivers. There are the following important ports today in Ukraine: Odessa, Mykolaiv, Kherson, Sevastopil, Theodosia, Mariupil, Osypenko, Tahanrih, Kerch, Novorossiiske and Tuapse. They serve as the outlets for the Ukrainian export articles, grain, sugar, ores, wood, oil, fruit, coal, salt, and spirits, as well as points of receipt of various imports.

Although the inland water system of Ukraine is one of the largest in Europe, some 22,400 rivers, its navigability is not of the best, because of frequent windings, shallows, and falls, great variations in the water levels in summer, and frozen streams for three or more months in the winter. The majority of the rivers join the Black and Azov Sea water system, some 90 per cent of them, and only a few flow to the Baltic and

Caspian Seas. Navigable in the commercial sense are the rivers Dniepre with some of its tributories, the Danube, Dniestre, Kuban, Boh, and Don with its main tributory, the Donets, constituting all together only some 1,500 miles of practically useable waterways. The main water route is the river Dniepre, the navigability of which has been greatly improved by the construction of the Dniepre Dam in the thirties which put an end to the historically famous cataracts, and recently, by the Kremenchuk hydro-electric power station. Additional power stations in Kaniv and Kiev have been planned. The realization of these plans would actually make the capital of Kiev a seaport, accessible for sea-going vessels¹⁴). The River Pripyat, a Dniepre's tributory, is connected by a canal with the River Buh and the Baltic Sea River system. Although the Ukrainian territory is only tangent to the mouth of the River Danube for a short distance, the Danube is still an important waterway for Ukraine, since it connects this country with all Balkan nations, Austria, and Germany — commercially, a significant fact.

The navigability of the Ukrainian rivers would be greatly increased by substantial building of canals. Not much has been done in this respect, however, either by the Czarist or the Soviet regimes, although prolonged discussions have been held and plans drawn, to the point of developing a huge canal system in Ukraine. So far, the Soviets have paid more attention to the canal construction in the Russian SSR than in the Ukrainian SSR. Presently, the total mileage of canals in Ukraine, having commercial significance, does not exceed 90 miles.

Waterpower of the Ukrainian rivers has been estimated up to 12 million HP; 9.5 million produced by the mountain rivers of North Caucasus; 1.1 million, by the Carpathians; and some 1.3 million, by the river Dniepre. Now, only the Dniepre water energy has been utilized to a certain extent for industrial purposes. It is doubtful whether the mountain rivers of Caucasus will ever be very useful.

This would be, briefly, the picture of the natural resources of Ukraine, the riches of which represent one of the factors,

along with population and capital, precluding the opportunity and the rate of growth of her national economy.

The population of a country, its density, vitality, industry, entrepreneurship, and inventive skills, set the pace of economic growth. The Ukrainian people possess all the necessary qualities to make their economy one of the first in Europe, except the political atmosphere of independence and the environment of economic freedom. The official statistics of the Ukrainian SSR showed for July 1963, 44,338,000 people residing in the republic, of which 77 per cent constitute the Ukrainians, 17 per cent, the Russians, and 6 per cent, all other nationalities. The estimates of the population in these ethnographical parts of Ukraine, which are outside the political body of the Ukr. SSR, and heavily mixed with the non-Ukrainian, foreign ethnic element, indicate some 11 million people, of whom roughly 55 per cent are Ukrainian. Of course, the ratio between the Ukrainian ethnic element and the foreign varies widely in the Ukr. SSR, as well outside of its borders. In the so-called right-bank Ukraine, the Ukrainians make up some 95 per cent of the total rural population. In some borderlands of Ukraine, the percentage falls as low as 55 per cent. Especially in the urban areas, the percentage of the foreign (Russian) element is very high. Taking the yearly population of the Soviet Union as the basis, it can be assumed that the population of the ethnical Ukrainian territory increased from January 1959 by some 3 million people, up to approximately 53,800,000 people, of whom about 36-37 million are Ukrainians, living in a relatively compact mass on their ethnical territory. In addition, some 10 million Ukrainians live outside Ukraine, according to the count of Professor Kubiovych, in foreign countries, such as the United States, Canada, Germany, France, and others¹⁵).

The average density of population in Ukraine today is approximately 189 people per square mile, and in this respect Ukraine ranges as second among the territories of the USSR, after the Moldavian SSR, the density of population of which is some 212 people per square mile. The density of population of Ukraine is lower than in the industrial countries of West Europe. As long as Ukraine remains a predominantly agricultural nation, however, her density of people per square

mile will be rather heavy. Since the thirties, nevertheless, two trends were set in motion: progressive industrialization and urbanization of the country, reducing the density of population in the relative respect. Table I, illustrates briefly the urbanization trend:

T A B L E I¹⁶)
URBANIZATION OF UKRAINE

Year	Urban population as percentage of total population figure
1914	19.3
1926	19.2
1939	34.0
1963	50.0

Of course, the ratio of the urban population to the total population of Ukraine varies widely from one section to the other. In the Donets Basin, for example, the percentage of the urban population rises up to 85 per cent, while in the Kharkiv and Dniepropetrovsk regions it is only 20 per cent. Also, the number and the size of large cities have increased considerably in recent years. Table II, indicates the approximate growth of the Ukrainian city:

T A B L E II¹⁷)
POPULATION GROWTH OF CITIES
(IN THOUSANDS OF PERSONS)

City	1926	1939	1954	1963
Kiev	514	846	900	1.248
Kharkiv	417	833	900	1.006
Odessa	421	604	590	709
Dniepropetrovsk	237	501	600	738

Living conditions in the cities are considerably better than in the countryside, where people live next to misery. And in this fact, the colonial policy of Russia is most evident. In the cities, the Russians constitute a larger percentage of the po-

pulation, while in the villages the Ukrainians prevail. The Soviet regime, therefore, has so much less concern for the countryside. Thus, during the great artificial, Stalin-made, famine in Ukraine, in 1932-1933, over 6 million Ukrainian peasants starved to death, while the city was largely spared from the catastrophe.

The labor force and the rate of employment of human labor in Ukraine represent a lower percentage of the total population than in the United States or Western Europe. In Ukraine, the labor force accounts for some 24-25 per cent of the entire population, as the Soviet statistics show, while in the United States, some 38-42 per cent, which means, therefore, that under the capitalistic monetary labor incentives more people work or look for work than under conditions of the communistic harsh labor discipline and work compulsion. There is still another difference in this regard. In Ukraine, as well as in all Soviet dominated areas, there is a close quantitative identity between the concepts of the labor force and the rate of employment. In other words, there is at the present a total employment of the labor force and no unemployment, because of the planned economic system. In the United States, and other free market economies, the employment rate is sometimes more, at other times less, below the labor force, constituting a normal rate or an excessively high rate of unemployment.

By their nature, the Ukrainian people are freedom loving, industrious, full of initiative, commercially minded, and extremely individualistic. Ukrainian peasants are patiently attached to the soil. It was pointed out before that whenever those productive qualities of the Ukrainian people were allowed to develop freely, the Ukrainian national economy grew speedily and impressively. It is enough to mention the commercial growth of the Polany tribe in the eighth and ninth centuries, the marvelous economy of the Kievan Empire, the industrial development of the Hetmanic State in the seventeenth and eighteenth centuries, and the speedy commercial growth of West Ukraine in the twentieth century under the capitalistic rule of the Polish Republic. The Soviet socialist planning, political terror, and colonial exploitation, do not let

the Ukrainian people develop their natural and inborn economic and commercial abilities. Furthermore, the Russian and the Russian loyal foreign elements exercise an extremely unfavorable impact on the Ukrainian economy by serving the alien interests and foregoing domestic Ukrainian issues. The position of the Ukrainians in the Ukr. SSR and other areas, as second-class citizens under constant suspicion and terror, reduces their initiative and efficiency¹⁸).

In order to develop a strong national economy, it is necessary to have rich natural resources, industrious and inventive people, and large capital resources. Ukraine has rich natural resources, presently exploited by a foreign power. The Ukrainian people are not allowed to develop their economic abilities. Let us now analyze briefly the problem of the capital-factor in Ukraine today, to be able eventually to evaluate the Ukraine's present economic status and the possibilities of her future economic growth.

The Ukrainian economic development in the past and at the present time has been hampered by a dramatic shortage of capital. During the Czarist times, Russian and foreign capital was invested in the Ukrainian economy, and any form of accumulation of Ukrainian owned capital was discouraged. Russian authorities opposed and suppressed the producers' cooperative movement among the Ukrainians, on political and economic grounds. Dyminsky stated that at the beginning of the twentieth century, some 75 per cent of all interest and dividends on capitalization went abroad, and that income was used, in particular, in Russia proper, to establish industries there competing with the Ukraine's firms and products. Also, the imperial public finance policy was directed toward a reduction of Ukrainian owned capital funds, keeping the government investments in Ukraine at a minimum, and impoverishing her population, in order to preserve the country as an agricultural colony of the imperial Eurasian market. Thus, between 1909-1913, the Ukrainian economy contributed some 20 per cent to the total revenue collections of the Czarist Empire, while only 12 per cent of the total imperial public expenditures was allocated to Ukraine. Some 45-46 per cent, therefore, of all public receipts from Ukraine at this period

was diverted to the Russian areas, to assist their economic growth at the expense of the Ukrainian national economy¹⁹).

After the Communist Revolution and the Soviet domination of Ukraine, things did not change much. Of course, with the introduction of the concept of socialist government ownership of all production means, the factor of privately owned capital accumulation and investment did not exist any more. From then on, all capitalization was a state matter. Yet, the capital investments of the Soviet government since 1918 have shown a systematic discrimination against capital accumulation and unhampered economic growth in Ukraine. The following two statistical tables of capital investment in the USSR, as a whole, and in the Ukr. SSR, prove how colonial the policy of the Soviet regime in the Ukraine has been:

T A B L E III²⁰)
CAPITAL INVESTMENTS IN THE USSR, AND IN THE
UKR.-SSR (collective farms excluded) IN BILLIONS
OF RUBLES

Years	USSR	Ukr.-SSR
1918-26	16.5	3.0
1941-45	137.1	16.6
1951-55	720.1	103.4
1959-65	1970.0	219.0

The figures of the table translated into percentages, expressing the capital investments in Ukraine as compared with the investments in the USSR, in total, give the picture as follows:

T A B L E IV²¹)
CAPITAL INVESTMENT IN THE USSR AND IN THE
UKR.-SSR. THE USSR INVESTMENT = 100; THE UKR.-SSR
INVESTMENT = 0/0 OF THE USSR TOTAL

Years	USSR	Ukr.-SSR
1918-26	100 %	18.2%
1941-45	100 %	12.1%
1951-55	100 %	14.3%
1959-65	100 %	11.1%

Table IV is extremely indicative of the economic status of Ukraine within the Soviet union. The population of the Ukr.-SSR constitutes 20 per cent of the total population of the USSR; and percentage-wise, the importance of the Ukrainian economy in the Eurasian economy of the Soviet Union, with respect to natural resources, pig iron and steel manufacturing, coal production and coal reserves, tractors and locomotive production, wheat and sugar beets raising, and many other items, makes some 30-68 per cent of the Soviet total²²). At the same time, the investments to develop and to secure the growth of the Ukrainian economy are hopelessly below the relative economic potential of Ukraine. And what is more, the Seven Year Plan of 1958-65 allocated to the Ukrainian economy the record low level of capital investments, only some 11.1 per cent of the Soviet total. It is, therefore, evident that the Soviets continue the Czarist tradition of diverting a great deal of economic capacity and revenue of Ukraine away from her own national economic life, and are using them to develop and to build up their Eurasian industries and other economic fields. Vinar mentioned that during the Fourth Five Year Plan, the Ukrainian capital investments, as allocated by the all-Union plan, constituted 15.9 per cent of those allocated to the entire USSR²³).

The quoted statistical figures refer to the Ukr.-SSR only. No doubt that the Soviet capital investments in Kuban and Southern Kursk and Voronizh, those Ukrainian ethnical areas which have been incorporated in the Russian FSSR, increase the rate of investments in favor of the entire Ukrainian country within the USSR. At the same time, however, those areas also increase the percentage of the Ukrainian population and the national income power of Ukraine as a whole, in proportion to the total Eurasian economy of the Soviet Union. Although it is difficult to determine the exact percentage and ratio in this connection, the fact of colonial exploitation of Ukraine, and in particular, of its portion, the Ukr.-SSR, by the Soviet regime is beyond any doubts. This causes a shortage of investment funds in Ukraine, hampering her economic growth, although the natural wealth of the country is great.

III. EXTRACTIVE INDUSTRIES

Agriculture, cattle raising and forestry. Hunting and fishing.
Mining.

Ukrainian agriculture experienced a terrifying shock as the result of the forced collectivization carried out by the Soviets in 1928-1933. The sowing area, the grain production, the livestock, the productivity per acre and per worker, and the amount of agricultural exports declined catastrophically at that time. The reasons for such a situation are obvious to those who understand the individualistic psychology, the sense of private property right, and the deep love of his land on the part of the Ukrainian peasant. Collectivistic trends were never popular in Ukraine, in contrast to the Russian agricultural-village collectives of the "mir", which prevailed in the northern Muscovite regions until the end of the nineteenth century²⁴). Hence, the forced Soviet collectivization of the Ukrainian village, attempting to crush the peasant individualism, taking away his beloved soil, and denying him any property right to land, adversely affected his psyche, lowered his industry and initiative, broke his morale, and as a consequence, produced a decline of the Ukrainian agriculture. The reluctance to collectivize among the Ukrainian peasants has been best proven by the collectivization progress prior to 1928, while it was voluntary, and thereafter, when it became compulsory.

T A B L E V²⁵)

COLLECTIVIZATION OF FARMS IN UKRAINE

Year	Number of collective farms
1922	2810
1925	5454
1934	26000
1954	15600
1958	13300
1962	9888

Thus, only 5454 collective farms were established in Ukraine in the course of some six years when the compulsion was not too intense. Under the forced collectivization after 1928, during some three years, about 18,000 collectives were organized. A decline in the number of collective farms in 1954 and 1962 came as a result of the government action to combine and amalgamate the relatively small farms into large units, the so-called super-collectives.

Theoretically, collective farms are owned and operated by the community of the village peasant population which works there and shares the farm's income. Practically, however, the state assumes all controlling authority over the collective farms. The peasants do not share the income but are paid per "working day," a norm, which usually exceeds the physical ability of the peasant to perform in one day. In the fifties and in the sixties again, Krushchov advanced the idea of combining the collective farms into the giant agro-cities, where presumably the industrial improvements could be more successfully applied, such as mass production, scientific management, economy of farm implements, economy of procurement, and automation. However, the idea of agro-cities was never much advanced beyond the stage of planning.

Up to 1958, agricultural equipment and machinery were owned by the state, however, and operated by the so-called Machine-Tractor Stations, serving a number of surrounding farms. Since 1958, MTS's have been under a progressive liquidation, and the collective farms have been taking over the ownership of the technical equipment.

At present, along with the 9,888 collective farms, there are in Ukraine some 994 state farms, directly owned and operated by the government, where agricultural production is more specialized along one or a few cultures. Historically, state farms were organized from the pre-revolutionary landed properties of the Czarist family, the nobility, and the Orthodox Church, while the collective farms, from the land owned by the peasantry.

The number of the state farms was also fluctuating over the years due to the destructions during the Second World

War and the post-war policies to amalgamate the small farm units into the "super-farms" for a greater efficiency:

Year	Number of state farms
1937	865
1950	935
1954	811
1960	816
1962	994

Actually, the Soviet system prefers the form of state farms over that of the collective farms. Stalin stated in 1953 that the conversion of the entire Soviet agriculture to the government owned and operated state farms would be one of the prerequisites of introduction of full communism. However, the practical developments have spoken against either form of socialist farming, state or collective.

Prior to the Soviet domination, and further back, before the First World War, Ukraine was one of the largest grain exporting countries. The Soviet regime and collectivization greatly impaired and reduced the significance of the Ukrainian agricultural economy, although some modernization of farm economics, such as mechanization, has been introduced. Thus, the Soviet statistics gives the following data with respect to the farm area of the Ukr.-SSR:

T A B L E VI²⁶⁾

Total farm sowing area in Ukraine prior and after the First and Second World War in mill. of hectares.

Year	Hectares
1913	27.9
1940	31.3
1955	32.9
1958	32.5
1962	34.3

Table VI indicates an increase in the over-all hectare sowing area in the respective years after the communist revolution. Nevertheless, the study of the acreage really used for grain

production for the immediate consumer's needs for the same period supplies a quite different and much more pessimistic picture, as the next table shows:

T A B L E VII²⁷⁾
Grain sowing area in mill. of hectares.

Year	Hectares
1913	24.7
1940	21.3
1955	21.7
1958	18.3
1962	19.5

Hence, the sowing area directly used for grain production in the present is smaller per acres and hectares than some fifty years ago, although the population of the country increased by some 10 million people during the same period of time. It has been the Soviet farm policy over the years to withdraw considerable acreage of soil from grain production, and to convert it to production of sugar beets, cotton, and other staples, the so-called technical crops. Nevertheless, the decreased acreage in the grain production would be no problem, if compensated by an increase in the farm productivity. But, this has not been the case to any substantial degree.

For example, in the years 1909-1913, Ukraine produced some 25 million tons of the four leading crops, wheat, rye, barley, and oats, amounting to 10 per cent of the total world grain crops. In the years 1931-35, Ukrainian grain output decreased to 24.6 million tons, making only 9 per cent of the world total. In the later years, the Soviets claimed to have considerably increased the land productivity per acre, but the western economists, taking into consideration notorious Soviet troubles with their farm economy, did not believe the official Russian statistics. Harry Schwartz, summarizing the western evaluating views, said that between 1949 and 1955 the Soviet grain production remained essentially stationary, while 1952-1953, brought serious grain shortages due to low productivity²⁸⁾. The years 1959-1960 again resulted in serious shortages

in the Soviet agriculture, and in the Ukr. SSR in particular. Krushchov in 1960, officially accused the Ukrainian government and the Ukrainian people of negligence, lack of industry and socialist zeal, and even of sabotage. A purge followed.

It cannot be denied that the Soviets have made sincere attempts since the First Year Plan, in 1928, to increase the agricultural productivity of their farm economies. Mechanization was advanced, scientific management of farms introduced, electrification installed in more than half of the collective, and in almost all of the state farms. Emphasis was put on rational specialization in related crops²⁹). Power farm machinery has been newly stressed since 1958. Tractors, trucks, combines, elevators, tractor-drawn machines, such as corn planters, pickers, plows, and rotary hoes, have aided the farm worker in the attempt to raise "socialist" efficiency³⁰). The following statistical table attempts to give an approximate and sample picture of the mechanization status of farming of the Ukr. SSR:

T A B L E VIII³¹)

The number of tractors and combines between 1940 and 1960 in thousands.

	1940	1958	1962
Tractors	77.3	251.2	339.2
Combines	27.9	66.8	64.2

Of course, these figures are low when compared with the status of mechanization of the American, German, or French farming. American farmers operated in 1962 over 5 million, and German farmers, close to 750 thousand tractors. At the same time in these two countries agricultural efficiency was rising while the number of the mechanical implements was increasing and the percentage of the farm workers in relation to the total population, declining. It was not always the case in Ukrainian farming under the Soviets.

As a matter of fact, success has been only mediocre in the Soviet effort to lift up the farm productivity. Finally, in order to conceal the discouraging facts, the Soviet government

has chosen in recent years to publish its current agricultural statistics in terms of sowing acreage and percentages, rather than in absolute terms of volumes and tons of grain production per acre or per farm worker. The reason for that lack of farm success in Ukraine lies primarily in the psyche of the Ukrainian peasant, who psychologically did not accept collectivization, and in the internal deficiencies of Soviet economic planning, which is less adaptable to farming than to any other industry.

This situation is seen also in the case of the so-called farmsteads, small plots of land ranging from a half to two acres of land, left in the disposition of individual peasant families for their private use. Although these farmsteads were small, peasants both prior to the Second World War and thereafter managed to get from them a relatively high yield in flux, potatoes, sugar beets, hemp, vegetables, and sun flowers, breeding some chickens and keeping a cow or goat, and adding in this way substantially to their meagre standard of living. They worked much more industriously on their plots than in the collective farms. Eventually, in the fifties, the Soviet government accused the farmsteads of being responsible for low productivity in the collectives, and began partial liquidation³²).

As a result of the Soviet agricultural experiment, however, Ukraine, which prior to the First World War was a granary of Europe, with big surpluses in grain production, in the Dniepropetrovsk, Kherson, Tavria, and Kuban regions, in particular, now had serious difficulties with her "socialist" economics. Today, her production acreage of wheat, rye, barley, and oats is considerably below the 1913 levels, and only the acreage and output of corn have substantially increased, according to the official **National Economy of the Ukr. SSR**, and other Soviet publications³³). There was, however, some improvement in the nineteen-fifties in comparison with the forties and the first years of collectivization.

In the field of the industrial crops, such as raising potatoes, sugar beets, cotton, hemp and flax, and tobacco, the Soviets achieved a highly diversified result as far as their volume and productivity rates are concerned. Production of potatoes was considerable in Ukraine, also prior to the First World War,

although its efficiency per acre was low, and far behind the United States, Germany, Belgium, or France. At that time, Ukraine occupied the fourth place among the potato producing nations of the world. During the forced collectivization, the productivity of potato raising per acre declined drastically, as in the case of the production of grain. Later on, raising potatoes greatly increased, especially in the farmsteads, to supplement the peasant diet.

Considerable success has been scored by the Soviets in the field of sugar beet production. From 1913 to 1962, the sugar beet crops were increased from 9.3 to 29.9 million tons, obviously at the expense of grain production. Already in 1935, Ukraine was the largest sugar beet producer of the world, and she ranks as second today. The productivity per acre of sugar beet crops is, however, still low in Ukraine, again as compared with Germany, Denmark, the Netherlands, and the United States.

Production of tobacco is in relative regression. The tobacco acreage has not increased since 1913, while productivity per acre rose only slightly, without offsetting the needs of the growing population. Production of cotton was successful. First experiments failed because of inadequate irrigation. According to the official Soviet statistics, the cotton acreage was reduced since 1940, by some 55-60 per cent. Once in the eighteenth century, hemp and flax were important crops in Ukraine, and they are also today considerable cultures. Hemp acreage increased since 1913, by some 30 per cent, from 316.5 to 412.5 thousand acres of sowing area. In production of hemp and flax, Ukraine supposedly stands in second place in the world.

The early nineteen sixties brought again and rather unexpectedly a grave worsening of the farm conditions in the whole USSR, the Ukrainian SSR included. It was admitted by Khrushchov himself, as it was pointed out before. The Seven Year plan called for raising the Soviet agricultural productivity by some 20 to 25 per cent. Instead, in 1961, it decreased in some parts of the Soviet Union by even more than 6 per cent. The things were not better in 1962 at all, as the Soviet statistics indicated. **Narodnoie Khaziaistvo SSSR v 1962 gadu**, the official publication of the Central Statistical Agency of

the USSR supplied the following figures with respect to the achievements of the Ukrainian agriculture in millions of tons:

Product	1961	1962
Wheat	15.2	10.2
Maize	14.0	10.0
Other grains	8.3	7.4
Sugar beets	29.4	29.9
Sunflower	2.2	2.1
Flax	0.7	0.8
Potatoes	19.1	17.3
Meat and fats	2.0	2.3
Milk	14.3	14.7

The decline in the grain production is here all too apparent, signifying real trouble to come, if the trend would continue. The situation really got out of hand at the end of 1963 while the government of the USSR began negotiating with the United States, Canada, France, and some other countries, to contract a purchase of grain and flour for more than one billion dollars to alleviate its dramatic food shortage. Droughts, mismanagement, lack of fertilizers, the rapidly declining labor efficiency of the farm, and undernourished farm workers culminated in the over-all deep dip of the agricultural economy of the Ukr. SSR.

Then, in January 1964, the American Central Intelligence Agency published a report on the over-all plight of the Soviet economy in general: the decline of its annual growth from 8-10 down to 2½ per cent; its shrinking gold reserves; its decline in food production by some 25 per cent of the 1961 level; the decrease in the wheat production by 10 million tons of the 1962 level, and other serious economic problems. According to the report, farming and consumer goods industries seemed again to be to be traditional soft spots of the Soviet economy; the heavy and armament industries were much sounder. Although the Soviets have tried to some extent to conceal the gravity of their farm depression, yet the foreign visitors, in particular in Ukraine, and private letters, received in America and West Europe, both disclosed that there were neither

wheat flour, rice, cereals, fats, meat, nor other basic foods in any near adequate supply, especially for the rural population. And by the late Spring, 1964 a serious threat of famine developed in Ukraine, the wheat basket of Europe³⁴).

Fruit orchards were famous in Ukraine prior to the First World War. Collectivization largely destroyed fruit growing. Then the industry began to revive, but the Second World War diminished the orchard acreage even more. In the early fifties, the Soviets stressed again the orchard and fruit growing, and its acreage has been gradually rising, but too slowly and inadequately, and it is still far below the 1913 and 1940 levels.

The forced collectivization process most adversely affected the cattle, horse, and hog raising in Ukraine. Since the domination of Ukraine by the Soviets the live stock declined there until 1934, and then, a gradual revival was introduced in the industry, according to the Soviet statistics. The figures seem to be, however, considerably inflated in view of the notorious shortages of meat, meat products, and dairy goods reported otherwise. Table IX gives an approximate picture of the situation:

T A B L E IX
Livestock in Ukraine in millions of heads.

Live-stock	1916	1929	1933	1959	1963
Horses	34.2	32.6	17.3	11.5	9.1
Cows	24.9	29.2	19.4	33.3	38.0
Hogs	17.3	19.4	9.9	48.7	70.0
Sheep	82.5	97.4	34.0	129.9	139.7
Goats	6.2	9.7	3.3	9.3	6.7

Of course, these statistical data need some explanation. Otherwise, when taken superficially at their face value, they may be grossly misleading. First of all, until 1928, the livestock presented a slightly mixed picture, because this was the era of the so-called New Economic Policy, which was some what of a Soviet temporary compromise with the economic individualism. Hence, the Ukrainian peasant was relatively free at that time to pursue his economic self-interest. His standard

of living and his properties could progress to some extent. This is the explanation for a relatively high livestock holding in Ukraine in 1928. The year 1933 is a dramatic contrast. The forced collectivization of 1929-1933 slaughtered and decimated the livestock; neither the peasants wanted to cooperate with the collectivization, nor did the collective farm management have the knowledge and facilities to prevent the disaster. The level of livestock holding in 1933 was a critically low one³⁵). The years 1940 and 1959 presented a mixed picture; the number of horses and goats progressively declined, making a poor showing. The decline of horse breeding may be justified to some extent, however, by the progressive mechanization of the collective and state farms, although a considerable amount of farm work is still done there in a primitive way, where the horse could certainly be helpful. The increase of sheep breeding can be easily explained. Objectively, there are in Ukraine, especially in the mountain areas, good conditions for developing sheep rearing and wool production. The number of cows and hogs has increased in the Ukr. SSR since the Second World War. But it must be borne in mind that a considerable percentage, perhaps up to 30 per cent, of the total cow and hog stock holding belongs to the small peasant "farmsteads," which still harbor the idea of private self-interest. "Statistical Collection" of the Ukr. SSR indicated for 1955 that some 3.1 million cows and some 4.5 million hogs were raised in the "private" peasant farmsteads. These numbers certainly increased since 1955, so the high statistical figures of livestock in Ukraine in 1959 and 1962, as far as cows and hogs are concerned, do not reflect in their totals the achievements of collectivization at all, while the relative significance of the individual "farmsteads" as the main source of food supply for the farmer's own household steadily increased³⁶).

So far, cattle raising developed to some extent in North Caucasus, while the opportunities of available pasture lands in the Carpathian Mountains were not properly utilized as yet. Of course, where more intensive methods of agriculture were applied, as in Galicia, cattle raising and in particular sheep rearing had to yield ground.

Forestry is another weak spot of the collective economy of the Soviet type in Ukraine. In the past, Ukrainian forest resources were very rich, and forestry was an important industry. But in the fifteenth and sixteenth centuries, the profit-motivated Polish or Polandized nobility, which claimed at that time the ownership of land resources, ruthlessly exploited the Ukrainian forests by cutting timber, manufacturing tar and potash, and exporting these products on a grand scale. Woods were decimated and forest reserves dangerously depleted, and until the end of the nineteenth century no forest conservation nor reforestation programs were undertaken at all in Ukraine by the occupational governments. The First World War and the collectivization experiment caused a further depletion of the forests. Thus, from 1880 to 1932, forest reserves declined from 10.5 million to 6.2 million acres. The forest reserves exist in the mountain areas of the Carpathians and Caucasus, and in northern regions of Ukraine, Chernyhiv, Polissia, North Volhnia, and Pidlasha. The Soviet regime, practically speaking, did next to nothing to conserve or to develop the forest resources of the Ukr.-SSR, although the opportunities for reforestation of the country are considerable.

As far as two other extractive industries, hunting and fishing, are concerned, their economic significance in Ukraine was relatively negligible in the Soviet era. The Communist government of the Ukr.-SSR did not pay much attention to hunting and fishing, inasmuch as these two fields do not have any considerable war and industrial importance. It seems, however, that the Soviets have so far been interested mostly in those industries, the military potentials and uses of which have been directly or indirectly significant. With the depletion of the forest resources and the progress of the scientific farming in the steppe areas, the reserves of game also decreased throughout Ukraine, and therefore, the hunting industry had declined by the end of the nineteenth century. Now, hunting may add only a small amount to the diets of the country folk in the forest areas, such as the Polissia marshes; and it is recreation for the Communist grandees. Fishing is a little more important brand of business than hunting, and it can be classified in three categories: the high-sea, the

river-mouth (or lyman), and the interior-land fishing, in the rivers, lakes, and ponds. **The Soviet Union in Facts and Figures** says only, that "a rich fish population is found in the rivers of the Baltic, Black Sea Basin. The fish population of the Black and Azov Seas contains herrings, bull-heads, grey mullets, sturgeons, sea-pike, perch, etc." Not much statistical material has been published on the volume of the fishing industry; neither much attention has been paid to fishing in the collective scholarly works on the economy and economic geography of Ukraine, published by the Academy of Learning of the Ukr. SSR. This is, no doubt, an indication of the relatively minor significance of the industry in the framework of the Ukrainian national economy, as a whole, although there are great opportunities for its development. **Narodnoie Khazai-stvo SSSR v 1962 gadu** indicates simply, that there is a considerable decline in in the industry since 1960:

Total fish production ³⁷⁾	1960	1961	1962
in thousand tons	535.8	521.7	489.0

In general, it should be indicated that the collective fishing industry of the Danube River is centered in Vilkivo and Kilia. High-sea fishing and the sea-fish processing industries, as a state-run business, developed in the Crimean Peninsula, in the cities of Odessa, Mykolaiv, Kherson, Ismail, and Tahanrih. In the city of Kerch, in the Crimea, there is a large harbor in which fishing is concentrated in the fall and spring when fish travel from the Black to Azov Sea. The interior-land, river and lake fishing, in particular, in large rivers and in the Polissia regions, amounts to something economically, but otherwise, it is the least significant category of that industry³⁸⁾.

In spite of the great weaknesses of the Ukrainian agriculture and related extractive industries, brought down upon them largely by the collective measures and the Soviet-Russian colonial exploitation, their economic significance and potentials within the Soviet Eurasian economy are very considerable, as the following table illustrates for 1961-62:

T A B L E X³⁹)

OUTPUT OF SELECTED COMMODITIES IN UKRAINE
AS PERCENTAGE OF THE TOTAL PRODUCTION
OF THE USSR

Commodity	USSR	Ukr. SSR
Sugar Beets	100	72.0
Grain	100	17.2
Potatoes	100	24.0
Fruits	100	30.0
Cattle	100	20.0
Hogs	100	28.0
Horses	100	16.8
Milk and Meat	100	25.0

Economics includes mining also among the extractive industries, although it represents a basis for and a transition to manufacturing. The potentials of the mining industry were indicated already in the analysis of the metallic and non-metallic ore resources available in Ukraine. Yet, before the new topic of the Ukrainian manufacturing industries will be discussed, it seems to be expedient to evaluate briefly the extent, volume, and growth of mining under the Soviet regime in Ukraine, as compared with the pre-revolutionary times. This time, however, the comparison will be a more favorable one for the Soviets, than in the case of agriculture. Mining, being essential for heavy industry and armament, became one of the first concerns for the Russian-Communist regime. Hence, growth in output of the mining industry has been an enforced one, and therefore, frequently a rapid one, and at expense of other branches of the economy of the Ukr. SSR. A few statistical figures, given below, will clearly illustrate the great increase in mining from 1913 to 1962 being especially impressive in the post-war years. Production volumes of coal, iron ore, petroleum, natural gas, manganese ore, and turf, shall serve as the reliable indicators of the trend between 1913 and 1962.

T A B L E XI⁴⁰)

GROWTH OF MINING OUTPUT OF SELECTED MINERALS

Product and Year	Tons
A. Coal	
1913	22,796.000
1928	24,832.000
1956	137,700.000
1958	164,000.000
1962	175,100
B. Iron Ore	
1913	6,870.000
1928	4,700.000
1933	17,200.000
1957	22,300.000
1961	66,600.000
C. Petroleum (Ukr. SSR)	
1913	1,047.000
1948	253.500
1958	1,226.000
1962	3,785.000
D. Petroleum (Etnic Ukraine)	
1913	2,490.000
1928	4,540.000
1958	5,300.000
1962	7,000.000 (approximately)
E. Manganese Ore	
1913	276.000
1928	531.000
1937	960.000
1958	1,648.000
1962	2,300.000 (approximately)
F. Natural Gas	Cubic Meters (in millions)
1913	—
1948	1,228.000
1955	2,927.600
1960	14,300.000
1962	26,150.000

Unfortunately, however, this impressive increase in the mining output of various mineral resources of Ukraine is not made available for sponsoring an overall development of her national economy, nor for covering the civilian needs and raising the standard of living of her population. It is used rather to facilitate the growth of the aggressive Soviet-Russian war machine, at the expense of the Ukrainian land and the Ukrainian people.

Nevertheless, modest achievements in the extractive industries and in agriculture, in particular, in Ukraine and other parts of the U.S.S.R., compelled Khrushchov to admit the value of capitalistic business methods. He made an appeal to the people to act capitalistic, but to remain loyal to communism. At one time, Khrushchov made even a reference to abandon collective farming. Eventually, economic chaos on the home-front coupled with political and diplomatic unrest, brought his dismissal from office in October 1964.

Hence, less than one month later, the new leadership of the USSR announced important relaxations in farming and gardening, in particular, in Ukraine, where the things were very bad. Brezhnev, admitting the great productivity of the privately managed peasant "farmsteads" (33 p. c. of the agricultural output and almost 50 p. c. of cattle holding), abolished previous restrictions and granted the peasants a greater freedom in their small-scale farming and cattle-raising and indicated a need to compensate individual efficiency in this respect. However, as long as collectivism prevails in the USSR, there will be little economic improvement in the country, and even less in Ukraine.

IV. MANUFACTURING

Introduction. General development. Metalurgy. Machine industry. Chemical industry. Power production. Textile and leather manufacturing. Food processing. Others.

The Russian imperial interests began to penetrate Ukraine at the end of the seventeenth century. At that time also, the principles of Mercantilism were applied in the politics and economics of the Czarist empire, projecting the future of Ukraine as an agricultural colony of the Russian Eurasian market. This immediately determined the specific trend of an industrial development of this country. Only those industries were permitted to grow in Ukraine which were not potential competitors for the Russian industrial development, or were dependent upon exclusive availability of the weight-saving raw materials on the Ukrainian territory, the transportation of which was too costly to process them in Russia proper⁴¹). Established as policy, this was then pursued by St. Petersburg with an iron consequence throughout. The field of machine and metal goods manufacturing may well serve as an example. It indicated an employment in Ukraine of only 17 per cent of the total number of machine and metal workers of the empire, while at the same time, Ukraine supplied some 66 to 75 per cent of all raw materials for machine and metal goods and tool making of the entire Czarist-Russian economy. Processing of those raw materials, therefore, was largely done in the Muscovite regions.

With the advent of the Communist revolution and the Communist domination of Ukraine, things changed a little, but not for long. During the New Economic Policy era, various branches of manufacturing recovered from their war-time destruction and once more reached their pre-war levels of output, and continued to rise steadily in terms of their facilities and production volumes. During the Five-Year planning

eras, however, although the Ukrainian manufacturing industries were still increasing and expanding, their percentage-wise share in the total production of the USSR gradually declined. This came as a result of the economic policy of the Kremlin, which by all means favored, protected and enforced a dramatic increase of manufacturing on the territories of the Russian FSSR, in particular, of Russia proper, and discriminated against Ukraine⁴²). Great losses were suffered by Ukraine during the Second World War, not only because of war destruction due to military operations, but also because of the specific and discriminatory Soviet policies at that time. Military operations ruined some sixteen thousand industrial plants and establishments in Ukraine. Over and above that, however, the Soviets dismantled and evacuated a great many Ukrainian plants to the distant regions of the Russian FSSR, to save them from the German invasion but never returned them to Ukraine, in this way diminishing the Ukrainian future industrial potentials, and building up the Russian. The Kharkiv Tractor plant, one of the largest in the pre-war Soviet Union, was transferred and installed in the Asian Altai land. The Kharkiv Transport-Machine plant was evacuated to the Ural. Many industrial, machine, electrical, locomotive-construction, ship-building, and other establishments from Kharkiv, Novokramatorske, Voroshylovhrad, Zaporozhe, and Odessa were dismantled, and totally or in greatest part shipped to the eastern USSR and left there permanently, in line with the new Soviet economic policy to develop the industrial centers in the distant Asian regions of the Union, because of the military considerations⁴³). To the Ukrainian SSR, and its manufacturing, the secondary industrial jobs and tasks were left to be done in the years to come.

The Soviet discrimination against the national economy of Ukraine in the post-war era was evident in the Fourth and Fifth Five-Year Plans, and in the whole process of the post-war reconstruction. The Fourth Five-Year Plan allocated to the Ukr. SSR only 15.9 per cent of the total Soviet capital investments, designed for reconstruction and development. The Fifth Five-Year Plan reduced that percentage to 15.2 per cent, and the Seven-Year Plan, to 11.1 per cent. The allocated quota

of capital investment in Ukraine has been by far smaller than the over-all specific weight and contribution of the Ukrainian economy in the all-Union market, as already mentioned⁴⁴). This has been reflected in the rate of the post-war development of Ukrainian manufacturing, which was considerably behind the rate of the industrial growth of the Ural and Siberian manufacturing basins. The comparison of the years 1940 and 1955 in production of pig iron and steel, using 1940 as the base, indicates the trend:

T A B L E XII⁴⁵)

PIG IRON AND STEEL PRODUCTION IN UKRAINE,
AND THE URAL AND SIBERIAN REGIONS, 1940-1955
1940 OUTPUT = 100

Area	Increase in pig iron output by 1955	Increase in steel output by 1955
Ukraine	60	55
Ural	260	270
Siberia	120	170

At the same time also, the production of coal in Ukraine increased by 66 per cent, while in the Russian coal regions (Muscovy, Kusbas, Ural, and Karaganda) by more than 300 per cent on the average. It is most evident that the Soviets cared less for the war-torn Ukrainian manufacturing than for the relatively war-preserved Russian industries; and this major economic-political trend has continued during the Seven-Year Plan of the USSR.

In order to properly evaluate the development of manufacturing in Ukraine, it is indispensable to analyze briefly the rate of growth of labor productivity in the USSR, in general, and in the Ukr. SSR, in particular. In the Czarist Russia, the industrial labor productivity was drastically lower than in the European West, according to Balzak⁴⁶). And also, in 1928, and still in 1932, it was far behind that in the United States, Great Britain, and Germany, as Schwartz attested. Although, on the eve of the Second World War, it seemed that the Soviet

labor productivity was catching up with that of Great Britain and Germany, it was still only some 40 per cent of the labor efficiency in the United States.

T A B L E XIII⁴⁷⁾

SOVIET INDUSTRIAL PRODUCTIVITY AS PER CENT

Year	USA	Great Britain	Germany
1928	16.2	55.3	44.6
1932	26.2	70.7	60.5
1937	40.5	103.1	97.0

The war greatly reduced the efficiency of labor in Ukraine because a great deal of capital equipment in industry was either demolished or evacuated to Russia; and during the first post-war years, the Ukrainian worker had to produce with primitive and inadequate tools and appliances.

Now, the official Soviet statistics claim the labor efficiency in the Ukrainian industries has increased, in average, since 1940 by 66 per cent in 1955, and by almost 100 per cent in 1960. The statement is grossly inflated and deceiving. First of all, in the course of the post-war fifties, the Soviet press repeatedly complained about low productivity in various plants throughout the USSR and the Ukr. SSR. This clearly indicated that not everything in this respect was all right in the Soviet Union. Secondly, assuming that by 1940 the Ukrainian labor efficiency was about 45 per cent of that in America (it was 40.5 per cent for the whole USSR in 1937), it would mean that presently it would be some 90 per cent of the work efficiency level in manufacturing in the United States, as followed from the Soviet **Statistical Collection**⁴⁸⁾. Campbell, however, supplies a diagram, which indicates that the Soviet labor productivity ranges from less than 10 per cent to 96.5 per cent of the American productivity per worker for various industries. He concludes, therefore, that on the average, by 1960, the Soviet labor efficiency per worker was about 40 per cent of the level in the United States⁴⁹⁾. Galenson estimates that the Soviet work efficiency will become about 65 per cent of the Amer-

ican by 1970⁵⁰). The Russians themselves now claim some 50 per cent of the American level of labor productivity, Campbell said. Lack of proper incentive system, uneven programs of mechanization for various industries, poor organization, faulty planning, and other reasons are given as an explanation of the shortcoming in the Soviet economy⁵¹).

Hence, the increase in labor productivity in Ukraine looks much more modest and less pretentious than the official statistical data of the Ukr. SSR claim. It is lower than for the whole USSR because of the obvious reasons, such as the greater war destruction in Ukraine, her colonial position in the Union, and lower capital investments in Ukraine than elsewhere in the Soviet industrial basins. It does not mean, however, that there was no progress in labor productivity per worker in the economy of the Ukr. SSR. Mechanization, rationalization, minute division of labor, the system of assembly line and conveyor, and most recently, intense automation have been applied to increase the efficiency in the plants in Ukraine, in Kharkiv, Kremenchuk, Odessa, and Kiev; automation has been introduced in the transportation industry⁵²).

Although the potentials of industrial growth have not been fully utilized and developed in Ukraine, her share in the industrial output of the economy of the Soviet Union as a whole for 1958-59 was still a very considerable one. According to the Statesman's Yearbook for 1960, the Ukr. SSR manufactured the following percentage of the total Soviet production, which actually did not change substantially since that time, as the more recent statistical publications, such as **Narodnoie Khatziaistvo SSSR** in 1962, do reveal:

Iron ore	56 per cent
Pig iron	51 per cent
Steel	38 per cent
Tractors	37 per cent
Locomotives	78 per cent
Cement	20 per cent
Soda ash	50 per cent

Bearing in mind that these figures refer to the Ukrainian SSR, and not to the whole Ukrainian ethnic territory, this per-

centage wise share of the Ukraine's manufacturing must be substantially raised, some 4-5 per cent in average, in order to give a true picture of its value and significance for war-oriented economy of the USSR. Nevertheless, the statistics above, if compared with the share and the specific weight of the Ukraine in the over-all Russian-Soviet economy in 1913 and 1928, indicates the Ukraine's slowly and gradually declining relative industrial importance due to the already indicated Kremlin's policy of diverting its attention and care to other industrial regions of its vast Eurasian markets because of the military and other considerations⁵³).

Although Ukrainian manufacturing industries spread throughout the nation, five distinct industrial centers can be differentiated in particular: namely, the Donets Basin, Azov steel, Dniepre Bend, Kerch, and Lviv (Galician) — Volhynian region. In most cases, these industrial concentrations are raw material bound and oriented, while in other cases — available labor and labor skills, abundant supply of power and fuel, and still some other reasons were the determining factors in the development of specific industrial fields in certain areas.

In the Donets Basin, or the Donbas, heavy iron industry, heavy engineering, non-ferrous, chemical, heavy machine construction, transportation equipment, iron and steel building construction equipment, coke, gypsum, and salt processing industries develop frequently, in the form of huge factory establishments like the Novo-Kramatorske giant machine construction plant, one of the largest in the world⁵⁴). The industrial processes of the Basin are concentrated in the cities of Donetsk, Voroshylovhrad, Kramatorske, Horlivka, Makilivka, Constantynivka, Artymovske, and Slavyanske.

In the Dniepre bend industrial center, in the cities of Kryvyi Rih, Dniepropetrovsk, Zaporozhe, Dnieprodzierzhynsk, Kremenchuk, and Nikopol, pig iron and steel manufacturing, ship building, electro-technical, radio and television equipment manufacturing, chemical industry, agricultural machinery production, railroad construction material, equipment for mines and industrial plant construction manufacturing, metal finishing, heavy metalurgy equipment production, and

other industrial branches developed well because of the availability of ores, nearness of the Donets coal, and most recently, abundant supply of electrical power from the Dniepre Hydro-Electric stations in Kachovka, Dniepro-Stan, and Kremenchuk.

In the Azov steel region with its centers in the cities of Zhdaniv (Mariupil) and Osypenko, in large plant establishments, heavy metalurgy, machine and turbogenerator construction, agricultural equipment manufacturing, food processing, and some other industries are on a speedy rise.

In the Kerch center, in the Crimean Peninsula, mining and heavy manufacturing develop, being largely raw material bound. Recently, also the chemical industry, in connection with the petroleum processing, machine construction, and food processing gained in importance. However, the Kerch basin indicates a heavy economic gravitation to the Donbas industrial center, and it can be partially considered as an extension of the Donbas interests. Thus, the present economic administration of the Ukrainian SSR, tying Kerch with the Kherson administrative unit, is a faulty one.

The most recently developed industrial region, the first since the Second World War, is that of the Galician-Volhinian coal basin. Its center is the city of Lviv, the capital of West Ukraine. Prior to 1940, manufacturing was practically non-existent there. Today, Lviv and some other cities of the basin produce agricultural machinery, mining equipment and tools, elevators, petroleum and natural gas extraction equipment, and some chemicals.

Otherwise, industrial plants and manufacturing establishments can be found all over Ukraine, throughout the country and, in particular, in larger cities, which depend upon the market needs, available resources, raw material, labor, and capital, and constitute by themselves their own industrial centers, Dyminsky said.

Hence, in the central agrarian (farm) sections of the country, the agricultural raw material processing industries (dairy, sugar, textile, leather, distillery, brewery), medium heavy machinery, in particular, agricultural machinery and equipment manufacturing, and building construction develop in the small and medium-large plants, considerably smaller in size than

those in the coal and ore industrial basins. In the Carpathian Mountains area, some chemical industries have importance in connection with petroleum and natural gas extraction and mining of various kinds of salts. In the Caucasus region, petroleum and tobacco processing, leather manufacturing, and medium size machine construction develop.

From among the large cities, Kharkiv, Kiev, Odessa, Kirovohrad, Donetsk, Sumy, Poltava, and Kherson have reached a high level of industrialization. Kharkiv is the center of heavy engineering plants for transportation equipment, machine construction, tractors, trucks, and automobiles, electro-technical equipment and appliances, mine equipment, shipyards and construction industries, and food processing. Kiev, the capital city of the Ukrainian SSR, concentrates in its area ship building, machine construction, in particular, automation and excavation equipment, manufacturing of electro-technical, transportation, chemical and laboratory equipment, textile and garment plants, sugar refineries, and food processing. In the city of Odessa, plant equipment manufacturing, locomotive, and machinery, tractors, ploughs, and combines, refrigeration and freezer production, gas generator manufacturing, mining equipment, cinema, radio, and television equipment, food conservation equipment, motor car manufacturing, can industry, and leather works are operating and producing on a large scale. In Kirovohrad, tractors and other farm machines are manufactured. In Sumy, large scale production of petroleum, sugar, and nitrate processing and refining equipment, serving the whole nation, is going on. In Poltava, the textile, meat processing, and electrical equipment plants operate. In Kherson, mainly farm machinery and tools are manufactured.

According to modern needs, industrial activities (throughout the country) are carried out on the mass production principle, by application of progressively modern technology and equipment, especially, in the giant plants. In many cases, however, in particular, in the small towns and country side, an utter primitivism still prevails, drastically reducing industrial productivity⁵⁵). Automation is stressed and feverishly attempted in Ukraine, primarily in her giant plants, to enable

the Soviet economy to match and to surpass the economy of the United States. Compared, however, with the great automation strides in American manufacturing, the Soviet attempts do not seem to be either great or impressive in this regard. Ukraine is not an exception here. Many things which are considered in America or West Europe as commonplace when recently introduced in Ukraine or other parts of the USSR, are hailed by the Soviet press as tremendous achievements, particularly, when these improvements or advancements take place in food processing and handling⁵⁶).

Great progress in metalurgy, heavy industry, machine construction, and electro-technology in the Soviet Union as a whole, and in the Ukrainian SSR, as a part of it, cannot be denied, but little progress, if any, has been achieved in the consumer goods industry, private home construction, and services production. Lack of any balance in the rate of growth of various industrial fields in the Soviet economy is admitted by the Soviets themselves.

T A B L E XIV⁵⁷)

INCREASE IN THE OUTPUT OF PRODUCER AND CONSUMER
GOODS IN THE USSR BETWEEN 1928-54
IN MILLION RUBLES

Year	Producer goods	Consumer goods
1928	8.5	12.9
1940	84.8	53.0
1953	240.0	100.0

Thus, in 1928, producer goods constituted some 46.2 per cent, and consumer goods, 53.8 per cent of the total Soviet industrial production. In 1953, according to Malenkov's declaration, Schwartz said, producer goods were supposed to constitute 70 per cent, and consumer goods, only 30 per cent of the manufacturing output of the USSR. And the ratio did not change even today in favor of consumer goods. According to **USSR in Figures in 1960**, using 1940 as the base in course of the realization of the all-Union Seven Year Plan, the output of means of production is supposed to increase by 7.7 times,

and of the civilian goods — by 4.5 times by 1965, when the Plan will be completed⁵⁸).

It means, therefore, that by 1965, the ruble value of the production of producer goods will amount to some 653 billions, and of the consumer goods, to some 408 billions of rubles. Hence, the output of civilian goods will constitute some 37 per cent of the total industrial production. Although it may indicate some slight improvement in the coverage of consumer needs in the years to come, the war-oriented preference shown by the Soviet government for manufacturing the producer goods (metalurgy, heavy machinery, arms) is clearly evident and apparent. Similar discrimination against the consumer good production is also indirectly disclosed in the Khrushchov's economic goals for 1980, presented to the Congress of the Communist Party, in Moscow, in October, 1961. Finally, the revelations of the American Central Intelligence Agency from January, 1964 on the dramatic decline of the Soviet rate of economic growth clearly imply that the most responsibility for that decline is borne by the Soviet farming, housing, and consumer good industries, while the growth of heavy and armament industries has been held on a much higher level. Hence, for 1964, the contrast between the growth of heavy industry and consumer good industry is greater than ever⁵⁹).

Metalurgy, production of pig and wrought iron and steel, developed in Ukraine since the sixties of the nineteenth century. By 1888, Ukraine produced only about 67.000 tons of pig iron, some 7 per cent of the total output of the Russian empire. Production of steel was quite smaller. But, in 1913, because of the inclusion of the Kryvyi Rih Basin in the industry, Ukraine was already an important producer of these two leading industrial commodities. The First World War damaged the Ukrainian heavy metalurgy to a considerable extent. By 1930, the pre-war capacity of pig iron and steel manufacturing was restored. During the era of the planned economy in the Ukr. SSR, impressive progress in heavy metalurgy was achieved.

T A B L E XV⁶⁰)
 FIG IRON AND STEEL PRODUCTION IN THE UKR. SSR
 (1913-1962) IN MILLIONS OF TONS

Year	Pig iron	Steel
1913	2.9	2.4
1940	9.6	8.9
1958	20.0	21.7
1960	24.1	26.1
1962	28.1	30.5

The capacity of the Ukrainian metalurgy may be fully understood and appreciated when compared with that of other countries. Thus, in 1959-60, the Ukraine's steel output, for example, exceeded that of France by some 10 million tons, and it was almost equal to the steel production of the Federal Republic of Germany. Of course, the Ukrainian metalurgy suffered tremendous destruction during the war operations 1941-45, but because of its strategic importance, it was soon rebuilt. New blast furnaces were constructed; new production methods applied; and electric energy from the old and new, post-war, giant hydroelectric stations extensively used. However, in spite of this impressive growth, the share of the Ukrainian iron and steel manufacturing in the total Soviet output of these two commodities steadily declined because of the indicated political and military considerations.

Ukraine's heavy metalurgy is centered in the Donets Basin, Dniepre Bend (Kryvyi Rih), and Azov Steel Area.

Of course, in Ukraine, a great agricultural country prior to the First World War, production of agricultural (farm) machinery began the growth of its machinery industry. Then, the Soviets initiated manufacturing of other machinery on a large scale. Tractors, motor cars, mining machinery, precision instruments, locomotive and railroad equipment, elevators, ships, heavy transport equipment, factory machines and equipment and other heavy machinery and industrial tools, are currently manufactured in various parts of the Ukraine.

In 1913, there were only 450 machine construction establishments, with 52,000 employees. According to Nesterenko, by

1928, the Ukrainian machine industry increased by 2.5 times, and by 1940, by 50 times, compared with the 1913 industrial level. The Second World War badly hurt the country's machine manufacturing, but due to an intensive reconstruction program, the 1940 level was reached again in the mid-fifties, the Soviet sources report. In 1960 the Ukrainian machine industry produced:

Machine equipment	126,600 Units
Buses and trucks	6,700 Units
Tractors	88,000 Units
Combines	4,700 Units

These figures, given by **USSR in Numbers in 1960**, are not very impressive, however, when compared with Germany, which in 1959 produced 1,571,209 passenger cars, commercial vehicles, and buses, or with England, which in 1960 manufactured 458,000 commercial motor vehicles. The proportions are equally unfavorable for the Ukrainian machine and other industries, according to **The Statesman's Yearbook, 1961-62**.

Some giant machine plant establishments in Ukraine deserve, however, special mention, such as the huge tractor plant in Kharkiv, where motor vehicles are manufactured also; the machine construction plant "Bolshevik" in Kiev; the Kharkiv and Luhansk locomotive production; the Novo-Kramatorsk heavy machine construction plant; and automobile construction establishments in Zaporozhe, Lviv, and Kremenchuk, where also tractors are produced. Donbas, Dniepre Bend, Kharkiv, Kiev, and Odessa are the centers of the machine construction.

Electric energy has been for forty years an essential factor in the development of modern industrial capacity. Of course, in the near future, atomic energy for peaceful uses may largely replace electric power. The dawn of the new era has actually begun. The Soviets, however, in the early years of their drawing the plans to make the USSR an industrial giant and military power, had to rely on the development of electric energy production, first of all. Ukraine had to be included in this project. Prior to 1932, there was not much done

in the field. In this very year, the whole Ukr. SSR produced only 2,800 mill. KWH of electric energy. At the same time, however, Germany made available for her industrial, commercial, and consumption uses 23,460 mill.; Italy, 10,230 mill.; and small Switzerland, 4,800 mill.

During 1927-33, the first huge hydro-electric station was constructed on the River Dniepre, the so-called Dniepro-Stan, with 558 thousand KWH production capacity. It was built by American engineers, and at that time, it was the second largest HES (hydro-electric station) in the world. Its importance projected itself in the field of transportation as well, since it eliminated the historical cataracts on the Dniepre and made shipping up the river there possible. During the Second World War, Dniepre HES was destroyed, but soon thereafter was reconstructed with 650 thousand KWH production capacity. Later on within the framework of the electrification and industrialization program, huge HES were constructed in Kakhovka (312 thousand KWH), in Terebla-Rikska (27 thousand KWH), and most recently, in Kremenchuk (650 thousand KWH). Dniepro-Stan, Kakhovka, and Kremenchuk hydro-electric stations are the gradual steps in the plan of a full utilization of the electro-producing capacity of the River Dniepre. Additional stations are under construction or planned to be constructed in Dnieprodzierzhynsk, Kaniv, and Kiev. So far, Dniepre is navigable up to Kremenchuk, and after the whole electrification project would be completed, it would be navigable and accesible for sea-going vessels up to Kiev and further⁶¹).

A number of small electric power houses were constructed in the fifties and sixties throughout the entire country, in West Ukraine, Donbas, Sub-Caucasia; and the electric energy has been used primarily for industrial and production purposes, and for consumption needs, as well. More than 50 per cent of all collective farms are electrified.

The growth in the output of electric power in the Ukr. SSR, has been impressive, as Table XVI does indicate:

T A B L E XVI⁶²⁾

ELECTRIC POWER PRODUCTION IN THE UKR. SSR

Year	Output
1932	2,800 mill. KWH
1940	12,411 mill. KWH
1950	14,711 mill. KWH
1955	30,099 mill. KWH
1960	54,000 mill. KWH
1962	69,000 mill. KWH

In 1932, Ukraine was primitive and backward, insofar as the production of electric power was concerned. In 1962, however, her electricity output was substantial, and already comparable with the advanced West European nations, such as Germany, France, Italy, and Switzerland, as indicated by Table XVII:

T A B L E XVII⁶³⁾

ELECTRICITY OUTPUT OF VARIOUS COUNTRIES IN 1961

Country	Output
W. Germany	116,500 mill. KWH
France	76,500 mill. KWH
Italy	60,600 mill. KWH
Ukr. SSR	69,000 mill. KWH
Switzerland	over 22,300 mill. KWH

The electric power production of the whole ethnic area of the Ukrainian people is considerably more (from 5 to 10 mill. KWH) than that of the Ukr. SSR. It must be stressed also, that the Ukraine's natural potentials to produce electricity are by far larger than that so far utilized.

The chemical industry, again being war-essential, has been greatly developed by the Soviets according to their statistics. A considerable portion of investment capital, allocated to the Ukr. SSR by the Seven-Year Plan, is channeled into the chemical-industrial fields⁶⁴⁾. Traditionally, manufacturing of

chemical goods was done in connection with processing certain raw materials or utilizing semi-finished industrial products, such as petroleum, natural gas, salts, bromites, phosphorites, sulphorites, nitrates, amonia, anthracite and coke, wood, kaolin and gypsum, and other resources. Hence, chemical industries developed where raw material was available, in the Donbas, the Dniepre Bend, the sub-Carpathian and sub-Caucasian oil fields, the Galician-Volhinian coal basin, the Kerch region, and to a lesser degree in some other places. Then, in these areas also the manufacturing of pharmaceutical, dyestuff, and synthetic chemicals emerged as the by-product of the industry, or because the facilities and skilled labor were available.

Production of soda ashes, potash, tar, artificial manure, lime, sulphuric acid and sulphuric base, was going on in Ukraine already in the pre-revolutionary period, but the growth of the chemical industry was slow, and even later on, during the post-war and the New Economic Policy era. In 1934, there were in the Ukr. SSR and West Ukraine, some 220 chemical-industrial establishments, employing altogether about 31,000 workers. The Five-Year Plans then encouraged the industry since its strategic value could not be overlooked.

Currently, in the Donets Basin, sulphuric acids, superphosphorites, by-products of coke and bensol processing amonia, nitrate acids, amonia, potash salts, dye-stuffs, some pharmaceutical products and other chemicals are manufactured in various cities, like Konstantynivka, Donetsk, and Slavianske. These and other chemical goods are also produced in the Dniepre Bend industrial center. In the city and area of Kryvyi Rih, dye-stuffs from iron ore, anilin stuffs, chemicals from coke processing, amonia, and sulpho-amonia; in Dnieprodzierzhynsk, nitrate; in Dniepropetrovsk, hundreds of coke and bensol by-products and acids are manufactured. Salts, including potash and cali salts, and artificial manure production are centered in the Galician sub-Carpathian regions. In the cities of Kalush, Holyn, and also others, such as Konstantynivka in Donbas, petroleum by-products, hundreds of them, are manufactured in the sub-Carpathian and sub-Caucasian oil field sections, along with the extraction and pro-

cessing of petroleum, in the regions of Lviv, Drohobych, Bo-ryslav, Truskavets, Maikop and Groznyi. There also, pharmaceutical and drug industries are in progress. Dye-stuffs are produced in Zhytomyr, Chernyhiv, Iziium, Slavianske, Kaniv and Kharkiv. In Chernyhiv, Iziium, Ternopil and Stanyslaviv regions are the common place of the phosphorites production; kaolin processing develops in Zaporozhe, Kiev, Donetsk, Rivne, and Dniepropetrovsk, while in the cities of Sumy, Kharkiv, and Kiev, there is considerable pharmaceutical manufacturing. Dry distillation of wood is done in the Kievan region and Carpathian Ukraine. According to Krushchov's disclosures, however, production and use of artificial fertilizer have been very inadequate.

Some progress was also achieved by the Soviets in developing the construction materials and related industries. Hence, cement, insulation materials, paper boards, tiles, bricks, asbestos, lime architectural materials, steel construction equipment, gypsum, granite rock polishing and finishing, and other construction materials are being manufactured throughout Ukraine. In particular, production of cement for concrete and construction works increased substantially.

T A B L E XVIII⁶⁵⁾

CEMENT PRODUCTION IN THE UKR. SSR, 1913-62
IN THOUSAND TONS

Year	Output
1913	269
1928	297
1940	1218
1958	6290
1960	8010
1962	9900

Not much progress in cement production was achieved by the Soviets until 1928; but by 1940, it exceeded the 1913 level by 4.5 times. In 1960, however, the Ukraine's cement manufacturing was still considerable below the production levels of the leading West European nations; France produced in this

year 14 million and Germany almost 23 million tons of cement. Cement manufacturing establishments operate in Yenakievo, Donetsk, Mykolaiv, Kiev, Kharkiv, Zdolbunovo, and other places. Gypsum is produced in Donetsk, Kiev, Odessa, and Kharkiv regions, while Donetsk region supplies some 70 per cent of the total gypsum output of the Ukr. SSR. Paper boards and other wall construction and decoration materials are manufactured up to 67 per cent of their country's total production volume in the following administrative regions: Voroshilovhrad, Donetsk, Dniepropetrovske, Zaporozhe, Kiev, Odessa, and Kharkiv. Bricks and tiles are produced in large establishments in Kiev, Donetsk, Kharkiv, and Poltava, and of course, in many small plants in various parts of the Republic. Glass manufacturing is inadequately developed in Ukraine, although its share in the total Soviet glass production is considerable — about 30 per cent. There are huge glass-works, primarily in the Donets Basin, where the industry is concentrated in the cities of Konstantynivka, Artymovsk and Popasna, amounting to some 70 per cent of all the glass and mirror manufacturing of the Ukrainian SSR. Other large glass-works are located in the cities of Kiev, Odessa, and Kher-son, and the regions of Zhytomyr and Kharkiv. Window glass, glass for industrial uses, mirrors, table glass, bottles, and other glassware, are there produced far below the level of the consumer needs of the country.

Lumber industry and wood manufacturing have been traditional in Ukraine. Cutting wood, lumber exportation, carpentry, turnery, wheelery, barrel production, shingle making, wooden house construction were known there since time immemorial. Cutting wood for lumber export and production of tar and potash, were once almost the leading industries in northern and mountainous Ukraine. The industry is concentrating in four major areas: West Ukraine with the Carpathian and trans-Carpathian regions, Polissia, the steppe-forest regions with the Crimean Peninsula, and the sub-Caucasian regions. There, mechanical and electrical, large sawing mills and other wood manufacturing plants and concerns, including furniture production, along with the small-scale and primi-

tive mills and work-shops do operate, either as the state or cooperative industrial establishments.

The wood manufacturing and furniture production in Ukraine are backward and underdeveloped, according to the American and European standards, since their military-strategic significance is a minor one, and therefore, the Soviets do not pay any special attention to them. The official statistics may indicate a considerable increase, for example, in the furniture production in Ukraine, stating that from 1955 to 1960, the ruble value of its total output rose from 13 to more than 20 million rubles, by more than 7.3 million rubles. The supply of furniture as far as their quantity and quality are concerned, is hopelessly inadequate for the decent coverage of consumer wants and needs⁶⁶). Some larger lumber processing and furniture manufacturing plants are worthy of mention, such as the Rakhiv, Yasyn, and Yaremche lumber-industrial plants in West Ukraine, or lumber-industrial plants in Korosten and the huge furniture factories in Chernyhiv and Zhytomyr, in North Ukraine, or the factories of furniture production in Kiev and Kharkiv, and giant lumber-industrial plants in Cherkasy, Donetsk, Kherson, Kirovohrad, Odessa, and other places in the central and southern Ukraine.

It was mentioned before that agricultural raw material, including the food processing industry, serving primarily the consumer needs, was all-along discriminated against by the Soviet regime, and thus, could not well develop in Ukraine since her domination by the Bolsheviks, and since the comprehensive state planning, in particular. Among various branches of that industry, however, since the last quarter of the nineteenth century continuously, sugar refining and manufacturing was most important, ranking as a third in the country's economy, after iron and coal production. In 1913, there were in Ukraine 198 refineries, producing 1.2 million tons of sugar. At that time, Ukraine was the second largest, after Germany, producer of beet sugar in the world. During the First World War and the post-war years, the sugar industry considerably declined, like so many other economic fields of Ukraine at that time. Five-Year planning took a little interest in recovery of the Ukrainian sugar production, but not too much,

since the Soviets were too busy to develop sugar manufacturing in central Russia, Central Asia, and southern Siberia. In consequence of such policies, the Ukraine's share in the total Soviet production of sugar, percentagewise declined.

First in 1934, the pre-war level of sugar output in the country was again restored, while only 170 refineries were in operation as against 197 in 1913. And then, sugar production gradually was rising in the Ukrainian SSR, as follows⁶⁷):

1913	1.2 mill. tons
1928	1.0 mill. tons
1932	0.5 mill. tons
1940	1.5 mill. tons
1950	1.8 mill. tons
1955	2.4 mill. tons
1960	3.8 mill. tons
1962	4.5 mill. tons

The table indicates also, among other things, a great damage done to the sugar industry by the first measures of the forced collectivization (1928-1933). On the over-all, however, the above statistical figures should be raised a little, since meanwhile sugar production was introduced by the Soviets in the Kuban area, the south-eastern section of the Ukrainian ethnical territory, which is not included in the political body of the Ukr. SSR. Sugar refineries are located mainly in the Vynnytsia, Cherkasy, Khmelnytsky, Sumy, Kiev, Poltava, Kharkiv, and Kirovohrad regions.

The agricultural raw material processing industries otherwise can be classified in dairy, meat, flour-milling, bakery, brewing, and distilling business branches, distributed actually throughout the entire country with some individual concentrations of certain specific fields according to the natural conditions. Butter production develops mainly in the Podolia and south-steppe Ukraine. Meat production and processing is centered in approximately the same area, including Kharkiv, Lviv, Odessa, and the Donbas. Huge slaughter houses are located in Vynnytsia, Darnytsia, Poltava, Kremenchuk, Kharkiv, Donetsk, Voroshilovhrad, Dniepropetrovsk, Zaporozhe, Zhda-

nov, Odessa, and Lviv. Flour-milling, once a very important industry in Ukraine, is on a steady decline, and it is centered in the grain producing sections of the country. Huge grain elevators operate in Kiev, Dniepropetrovsk, Kherson, Odessa, Mykolaiv, Zhdanov, Kharkiv, Kremenchuk, Lviv, and other large cities, ports, or railroad crossings. Canned food, macaroni, candy, and frozen food industries are really small and inadequate. Production of alcoholic beverages substantially increased under the Soviet regime, and distilleries and breweries are operating mainly in the Polissia, Vynnytsia, Zhytomyr, Ternopil, Sumy, Poltava, Kiev, Kharkiv, Chernyhiv, and Cherkasy regions. Table XIX, supplies statistical figures about production of some leading food articles:

T A B L E XIX⁶⁸⁾

SAMPLING OF FOOD PRODUCTION IN THE UKR. SSR

Product	1958	1962
Sugar (mill. tons)	3.6	4.5
Meat (mill. tons)	0.8	1.0
Butter (mill. tons)	7.7	0.9
Fish (mill. tons)	0.3	0.5
Can food (mill. cans)	944.3	1418.0
Wine (mill. decalit)	13.6	23.8

And finally, a few words must be said about the so-called "light" industry, leather and footwear and textile and garment manufacturing. The industries, associated with the traditional farm and cattle raising occupation of the population, and its daily needs, were also traditional in the country for centuries. Because of the Soviet heavy industry and armament oriented economic policy, the leather and textile manufacturing also suffered a considerable halt and slow down in their development. Although the Soviets attempt to deny the fact, the comparison of the total output of shoes and textiles of the Ukr. SSR with the production of these items in West Europe clearly illustrates the unfavorable situation of the economic planning in the USSR, in this respect⁶⁹⁾. Of course, some technical prog-

ress through mechanization, electrification, and scientific management, has been accomplished by the Soviets in the field.

Leather and shoe industries are concentrated in the huge factory establishments in the cities of Berdychiv, Vasytkiv, Odessa, Kharkiv, Kiev, Kremenchuk, Konstantynivka, Voroshilovhrad, and Lviv. Soviet statistics for 1962 indicated for that year a production of 84.3 mill. pairs of leather footwear in Ukraine only. The figure is grossly inflated and misleading, since the Soviets classify as leather footwear any shoe or boot, which could be made from cloth or rubber and contains only a negligible portion of leather, like heels or decoration. Hence, the output of leather footwear in the Ukr. SSR, is by far smaller than given by the official statistics.

Textile industry flourished in old Cossack Ukraine. It was then suppressed by the Czarist regime⁷⁰). In course of the nineteenth century, it was dominated by the foreign capital, Nesterenko complained. But today, being collectivized and run by the Soviets, it is also controlled by the foreign interests, and does not serve the needs of the Ukrainian people. Large textile and garment factories operate in various cities: Kiev, Korostyshiv, Radomyshl, Chernivtsi, Stanyslaviv, Kolomya, Poltava, Lviv, Kharkiv, Odessa, Sumy, Kremenchuk, and other places. **USSR in Figures for 1960 and National Economy of the USSR in 1962**, gave the following picture of growth in the output of all kinds of textile materials in million meters:

1940	38.8
1958	127.9
1960	154.0
1962	202.0

The total output of the textiles included the woolen, cotton, and silk materials, while the garment industry produced in 1962 some 135.7 million units of all kind of clothing, including underwear⁷¹).

In 1940, there was a real scarcity of textile materials and clothing. In the late fifties some improvement was achieved,

but the needs of the Ukrainian population are still not adequately covered.

The whole manufacturing industry and all its branches are organized in a collective way, either in the form of the so-called state factories or cooperative factories (producers' cooperatives). State factory establishments are owned and managed directly by the Soviet government, and all their employees are the state hirelings. Metalurgy, heavy machine industry, electric power production, chemical industry, and construction industry, are all largely carried out in the enormous state factories and works. The bulk of the Soviet manufacturing is carried out by the state-owned establishments. Producers' cooperatives, supposedly owned and operated by the collectives of the workers, turn out a minor and less important portion of the industrial production. The cooperatives, manufacturing strictly in the framework of the state economic plan, are chiefly operating in the fields of knitted goods, footwear, hardware, kitchen utensils, toys, furniture, processed food, and instrument production. In brief, cooperative factories are manufacturing primarily consumer goods from the locally available raw materials, or from the by-products of the state establishments.

Until 1958, the whole industrial production process of the Soviet Union was extremely centralized, not only with respect to its planning but with respect to its administration as well. In 1958-59, a reorganization toward decentralization and greater efficiency was undertaken. Practically, however, the entire project remained on paper, rather than being really projected in the economic process of the country. The Ukrainian SSR was territorially divided into eleven economic administrative units (regions), which according to their economic characteristics make up five economic areas. The division was not very carefully and rationally made. **Ukrainian SSR**, the previously quoted publication of the Ukrainian Academy of Learning, gives the following division pattern: first, the economic-administrative regions of the Donbas and Dniepre Ukraine including four regions, Dniepropetrovske, Zaporozhe, Donetsk, and Voroshilovhrad; second, the central economic-administrative regions, including two regions, Kiev

and Vynnytsia; third, the Kharkiv economic-administrative region; fourth, the Black Sea littoral regions, including two regions, Odessa and Kharkiv; and fifth, the western economic-administrative regions, including two regions, Lviv and Stanyslaviv. The above territorial division of Soviet Ukraine was essentially more interested in its expediency as far as the development and growth of the industrial manufacturing are concerned, than any other aspect of business and economy. The Soviets always have been obsessed by the idea of constant changes in the economic-administrative structure and division to assure a greater production efficiency, hence, frequent changes in the territorial and vertical division of the economy of the Ukrainian SSR. Centralization followed by decentralization and then again, decentralization — by centralization in 1963. The changes have been rarely successful.

V. MARKETING

Transportation. Communication. Domestic trade.

Foreign trade.

The whole marketing system of the Ukr. SSR, in all its segments, transportation, communication, and trade, again is very inadequate, compared with the West-European or American standards. Marketing was traditionally neglected in the Czarist empire, and since its primary service is to the consumer, its growth was behind the schedule in the Soviet era, as well. Transportation has so far made the most progress, because of its military-strategic significance, but in the fields of communication and trading, the Soviet citizens in general, and the citizens of the Ukr. SSR, in particular, must encounter painful shortcomings.

Presently, railroads are the most important means of transportation in Ukraine. The first railroad track was built there in 1863-65, between Odessa and Balta for about 190 miles. In 1870, the tracks were extended to Kirovohrad. Subsequently, the construction of railroad tracks was continued primarily to connect the grain producing areas and the industrial centers, like the Donets Basin with the leading export ports, such as Odessa and Zhdanov. Also, the history of railroad construction in Ukraine indicates the country's colonial status. St. Petersburg took care of connecting Ukraine with Russian Eurasian markets, by means of the railroad. Hence, at first most tracks were built to run either in the north-west (Baltic Sea) and south-west directions, or connecting the main Ukrainian cities, Kiev, Kharkiv, and Odessa with Moscow and St. Petersburg, and not hooked up on the central European railroad system. For a long time, too, there was no direct railroad connection between the two leading cities in the country, Kiev and Kharkiv. Being essential for the Ukrainian economic interests, but not for the imperial large-scale economy, the matter was just neglected by the Czarist regime. The scheme of railroad construction was also used to divert the Ukrainian

export from the Black Sea ports, and to direct it to the Baltic Sea harbors⁷²).

It seems that the Russians did not have a sense of a good transportation, and their transportation affairs were always in poor shape. In Ukraine, things were even worse, since there the transportation matters were predetermined by the Russian idea to keep her in the colonial status. The railroad phase of the economy was in a better state in West Ukraine, where the Austrian government organized the transportation affairs more efficiently.

The First World War fully proved the inherent deficiencies of the Czarist railroad system, which were partially responsible for the military defeats of the Russian armies. Also in consequence of the war operations a great deal of railroad equipment was demolished — some 61 per cent of all locomotives and 30 per cent of railroad cars, Dyminsky said. The Soviets partially understood the essential role of efficient transportation for an industrial growth, and attempted to build up the railroad during the Five-Year Plans prior to the Second World War, and to reconstruct it after that, by adding some 4000 km. of tracks in Ukraine. The intense electrification and automation of the Ukrainian railroad system was undertaken, although overall it is far behind the efficiency and modernization of West European and American railways⁷³).

Total length of the tracks in the Ukrainian SSR, was in 1962, about 21,350 km., being shorter than in West Germany (36.524 km.), and France (39.350 km.), although territorially both nations are smaller than this Union republic of the USSR. The main railroad junctions essential for the country's economy, are Kharkiv, Lviv, Kovel, Kiev, Dniepropetrovsk, Zaporozhe, Zhmerynka, Znamenka, Pomoshna, Khrystynivka, Kryvyi Rih, Yasynovata, Slavianske, and some others.

Prior to the First World War, Ukraine had only 2,770 km. of paved or concrete highway, and poor, muddy, and dusty country roads prevailed. The problem of highway construction was neither understood nor appreciated by the Czarist occupational rule, and consequently, it was also completely neglected until the initiation of the war-minded Soviet era. The first Five-Year Plan began highway construction in Ukraine.

Until 1935, some 4,000 km. of highways were built in the Ukr. SSR, and some 600 km. in sub-Caucasia. In West Ukraine, there were some 10,100 km. of paved highways. In 1940, on the eve of the war 1941-45, Ukraine had some 36,800 km. of highways, with little of motor car traffic, however. After the Second World War, the Soviet government undertook a considerable program of the post-war highway reconstruction and expansion, and for 1962, there were in the Ukr. SSR, some 54,800 km. of paved highways and turnpikes available for military-strategic purposes and the country's economic needs. The road system, however, covers the Ukrainian territory very unevenly; there are areas of a considerably developed net of paved highways, while other regions at the same time are still primitive in this respect. The military consideration in the road building program and pattern should not be denied and overlooked. Nevertheless, in spite of the considerable road construction in Ukraine in the fifties, the country is still substantially behind the West European nations; Germany has, for example, 135,172 km. and France, some 356,800 km. of paved highways and turnpikes, with much more of motor vehicle traffic than in the Ukr. SSR⁷⁴).

The conditions of the sea and inland waterway transportation were briefly discussed above in connection with the analysis of the Ukraine's natural resources. The Soviets improved slightly the navigability of the rivers by increasing their mileage. In 1940, for example, there were in Ukraine only about 2,000 km. of navigable rivers, while in 1962 some 2,851 km. Also the volume of the inland water shipments increased for the above years from 4.6 to 14.6 million tons of goods, and from 6.8 to 17.0 million passengers, according to the Soviet statistics, which seems a little exaggerated⁷⁵). Again, in comparison with the West European countries, the navigability of the Ukrainian Rivers is poor, as was indicated before. In 1959, Germany's navigable rivers amounted to as much as 4,493, and France's 31,260 km. The Black and Azov Sea transportation is far below the level it deserves to be. First of all, the Black and Azov Sea harbors were neglected and discriminated against already in the Czarist times. The Black Sea commercial fleet was always small. The Czars preferred to develop

the Baltic ports⁷⁶). Secondly, the Straits of Dardanelles and Bosphorus greatly reduced the navigability of the Black Sea. Some 70 per cent of all sea traffic constitutes the coastal shipping (cabotage), and only 30 per cent of it may be considered for foreign trade, carried through the Black and Azov Seas.

Ukrainian aviation is still very small, still in the cradles. The air routes do not exceed 41,000 km. in distance covered, connecting Kiev, Kharkiv, Odessa, Dniepropetrovsk, Donetsk, and Lviv, from the Ukrainian cities, and Kiev in the international aspect, with Sophia in Bulgaria, Budapest in Hungary, Bukarest in Rumania, Prague in Czecho-Slovakia, Belgrad in Yugoslavia, and Moscow and Leningrad in Russia. All air navigation is run by government, of course. Passenger traffic in the air is carried out mainly by planes of the makes, IL-14, LI-2, AN-2, and some others. Soviet statistics claim that air transportation increased from 1940 to 1960 in average by some 17 times, but it is still far behind Germany, France and England⁷⁷).

How poorly the Soviet communication system developed, and its framework, that of Ukraine, too, may be easily proven by a recent statistical data.

T A B L E XX⁷⁸)

COMMUNICATION MEDIA IN THE USSR, US, GERMAN
FEDERAL REPUBLIC, AND FRANCE IN 1961-1962

Media	USSR	US	W. Germany	France
Telephone sets (in mill.)	2,9	75,2	6,0	4,1
Radio sets (in mill.)	30,6	48,5	16,6	12,0
Television sets (in mill.)	6,5	41,0	5,9	3,5
No. of radio stations (units)	—	4613	150	97
No. of tele- vision stations (units)	347	543	386	33
Press (Daily (publ. in thous.)	9,111	1,854	1,400	130

Of course, there is no comparison in this respect with the US; the American communication is fabulous and unique. Taking into consideration, however, the enormous territory of the USSR, being 1/6 of the entire continental surface of our globe, with its 224.8 million people, and comparing it with West Germany and France, it must be admitted, that it is not much for the Soviet Union to have 2.9 mill. telephone, 30.6 mill. radio, and only 6.5 mill. television sets. As far as the press is concerned, it is very well developed, numerically, in the USSR, serving however, more for the Communist and state propaganda, than for objective information for the citizens.

Consequently, the communication system of Ukraine is not impressive, according to the Western standards, either, bearing all deficient features of the Soviet communication. In Ukraine, in 1961, there were in operation or under construction, twelve television stations, in Kiev, Kharkiv, Donetsk, Odessa, Lviv, Yalta, Voroshilovhrad, Zaporozhe, Kryvyi Rih, Chernyhiiv, Dnepropetrovsk, and Krasnodar, about 1.6 million radio and television sets, no more than some 0.3 million telephone sets all-together, used mainly by government, party, and other offices and agencies, state and collective farms, state and cooperative factories, and marketing agencies, and seldom installed in and made available to private homes⁷⁹). Some 3,518 newspapers are published daily or periodically in Ukraine, from which about 2,800 are in Ukrainian, and others primarily in Russian.

Trading in Soviet Ukraine is primarily a government run affair; foreign trade is an exclusive state monopoly, and only in domestic trading is a tiny element of private initiative admitted with the so-called peasant markets. Wholesaling is carried out by the state owned and operated system of huge warehouses, called Prombazy. The warehouses receive merchandise from industrial, agricultural, and other establishments via the respective organizations, and then supply the goods to various retail distribution centers and agencies, according to the Soviet economic plan. The Soviet retail trade is a complicated matter, being carried out by a variety of store establishments, state stores, cooperative stores, and peasant markets. The state stores are operated by various ministries

of the Ukrainian SSR. What particular ministry operates a particular store depends upon the kind of goods sold. The Ministry of Trade operates the huge system of the Trade (TORH) Stores, supplying the bulk of necessities for the population; the Ministry of Electrotechnical Instruments operates electric appliances stores; and so on. The Ministry of Trade accounts for some 40 per cent, and other ministries for about 6 per cent, the rest going to cooperative and peasant market trading. Some state stores sell to the general public without any restrictions, and others restrict their sales to select groups of people. In large cities, huge department stores handle a great variety of goods. There are also some mail-order houses.

An extensive network of consumer cooperative stores covers the country, being organized in the regional and central associations of cooperatives, supplying the needs of their members, prevailing, the village and countryside population. The peasant markets, being actually suppressed by the government, account little in the over-all exchange process of the Ukr. SSR. Food and living necessities are in the cooperative stores and peasant markets, while finished fabricates of manufacturing, all kinds of appliances, drugs and medicine, and quality and luxury goods are sold mostly in the state-run commercial establishments.

Prices are greatly differentiated, though fixed by government in most cases, excepting in the peasant markets; quality goods of ample supply at high prices are available for select groups of the population, while for the general public relatively lower prices are charged, but the goods may be scarce and of poor quality. In the urban areas, things are better in this respect than in the rural regions, although some progress has been achieved in the countryside too, as far as the availability of merchandise is concerned. Advertising and sales promotion are very little developed. State control has certainly hampered and slowed down commerce in Ukraine, since trading needs freedom of initiative, perhaps more than any other economic sector. The Soviets claim a continuous growth in the Ukrainian domestic commerce, but it is certainly below the

western standards with respect to organization, volume, and efficiency.

T A B L E XXI⁸⁰)
VOLUME OF RETAIL TRADE
(In billions of rubles; in prices of respective years; peasant markets excluded)

Year	Volume
1924	0.5
1930	3.7
1940	32.0
1950	57.3
1960	13.3
1962	15.0

The change in the ruble value of the retail trade volume in 1960 is explainable in terms of a sweeping currency reform in the USSR on January 1, 1961, to which the prices were partially adjusted.

The above figures indicate a considerable development of Ukrainian domestic trading. It is questionable, however, to what extent the ruble and price inflation factor, which was continuously present throughout those years in the economy, was acknowledged and eliminated from the figures by the Soviet statisticians.

Recently, the Soviets slightly improved the delivery systems and introduced some automation in their local marketing, primarily, in the large cities, however⁸¹).

Ukrainian people, since most ancient times of their history, have always been greatly interested in foreign trade. They exported their main produce, honey, wax, skins, furs, lumber, grain, and in the most recent past, also, industrial products, depending upon the stage of their economic evolution. Prior to the First World War, Ukrainian export amounted to 720 million rubles, and it was composed mostly of agricultural products, while foreign made manufactured goods constituted her imports.

However, an important instance has to be pointed out, and a differentiation to be made, when discussing Ukrainian

foreign trade in the twentieth century. No matter whether prior to or after the First World War, Ukraine was mostly included, except during the short era of her national independence (1918-21), in a large-space economic block called either the Russian empire or the Union of Soviet Socialist Republics. Statistical figures for the imperial and Soviet foreign trading are largely available, and the Ukraine's participation in it may be generally traceable, and can be estimated. Thus, the Ukrainian trading with the foreign nations, included in the international trade of the Russia-Soviet economic complex, represents one aspect of the problem, which can be qualitatively and quantitatively analyzed. Ukraine's trading with other provinces of the Russian empire or other Union Republics of the USSR, will be the second aspect of the problem, the quantitative analysis of which is an extremely difficult task. There are, actually, very few data available in this field. Kryvchenko, Shrah, Kobersky, and Kubiovyeh, did some pioneering work to estimate and to appraise the Ukrainian trading with Russia and her colonies.

It was estimated that before the First World War, Ukraine's foreign trading was constituted as follows:

Export to Russia and her colonies	426 mill. rubles
Export to foreign nations	364 mill. rubles
	—
Total	790 mill. rubles
Import from Russia and her colonies	361 mill. rubles
Import from foreign nations	106 mill. rubles
	—
Total	467 mill. rubles

Exports exceeded imports by 323 mill. rubles, making the Ukrainian balance of trade highly favorable⁸²). Of course, Ukrainian grain production and export were primarily re-

sponsible for that high degree of favorability. Only due to that export, for example, the Czarist empire managed to have its own favorable balance of trade with the outside world. Ukraine accounted for 90 per cent of the whole imperial export of wheat alone. Of course, Ukraine's foreign balance of payments was not favorable to the same degree due to her heavy dividend, interest, and fee payments to Russia and other nations for their capital investments and services rendered.

The Soviet domination of Ukraine produced very important changes in her international economics. First of all, private initiative was completely eliminated from foreign trading and the whole field was nationalized and made a state monopoly. This brought a dramatic decline in the volume and value of the Ukrainian foreign commerce by some 70 per cent in the first post-war years. In the thirties (1934-45), the pre-war levels of exports and imports, with the balance of trade in favor of Ukraine to a high degree, were approximately restored⁸³). But the composition of the balance was very much different; the Russian share in it increased, and that of other nations decreased; also, the percentage of the industrial exports increased, and that of the agricultural declined. After the Second World War, immediately after recuperating from the war destruction, the volume of the Ukrainian foreign trading began to rise quickly with respect to the so-called satellite countries. Especially, since 1949, when the communist common market, the so-called Council for Mutual Economic Assistance, or popularly called Comecon, has been established for the purpose of promoting economic cooperation among the European communist nations, the USSR, Poland, East Germany, Czecho-Slovakia, Hungary, Rumania, Bulgaria, and Albania, with later admittance of Outer-Mongolia to the block. Although, the Russian SSR has well understood how to secure for itself considerable advantages from that Comecon trade. The terms of that trade, however, have not been always favorable and profitable for Ukraine, since its pattern was designed by the Soviet economic planning in Moscow, and thus, did not always correspond with the interests of the Ukrainian national economy. It has been true, however, during the entire Russian-imperial and Russian-Soviet eras, that the Ukraine's interests

were discriminated against also in the field of foreign economy⁸⁴).

Ukraine's main export articles have been grain, sugar, cattle and meat, eggs, coal, iron ore, manganese ore, petroleum and petroleum products, machinery, and tools. Prior to the First World War, agricultural products accounted for 86 per cent of the exports, and during the Soviet era their percentage declined to 30 per cent, while industrial and mining products increased their export percentage in the reverse proportion. This came as a direct result of the Soviet economic policies, and above all, the Soviet farm troubles, and forced industrialization. Ukrainian grain went to Russia, Poland, Byeloruthenia, Baltic countries, Germany, the Netherlands, England, France, Greece and some other countries; cattle and meat were exported to Russia, Poland, Germany, and Austria; sugar, to Russia, the Near East, and England; coal, to Turkey, Rumania, Bulgaria, Greece, Italy, and France; iron ore, to Russia, Germany, Luxemburgh, France, England, and Poland; petroleum products, to Poland, Russia, and Germany.

Ukrainian imports come above all from Russia and her colonies. This was forced upon Ukraine by the Czarist government, and the same policy is continued by the Soviets. From Russia, the Ukr. SSR imports today manufactured products, machinery, tools, textiles, petroleum, tea, to some extent, steel, cement, wood, phosphorites, and some other articles. From other countries Ukraine receives machinery, citrus fruit, and electrical appliances, but the percentage is small, compared to the total import figure. From the Comecon countries, excluding Russia, the Ukr. SSR receives, in particular, machinery and machine tools, mechanical equipment, some building material, fabrics, ores, and other items⁸⁵).

Failurers in industrial production and distribution finally forced the Soviets to adopt in 1964 some individual initiative on a limited scale. A few factories were allowed to buy at low-price bits and to sell by capitalistic profit-seeking principle at a "best" possible price.

VI. CONCLUSIONS

The possibilities of the future economic growth of Ukraine.

An analysis of the production resources, economic development, and present status of the Ukrainian economy, enables us to draw some conclusions as far as the possibilities of its future growth are concerned.

Ukraine has at her disposal rich natural resources, which may easily secure her economic growth. Also it can not be denied, that making use of these resources, considerable progress has been done in developing only certain segments of that economy. Presently, the national economy of Ukraine represents a mixed picture of industrial growth, on the one hand, and regression and shortages, on the other. It was pointed out in the introduction, that socio-economic institutions, Ukraine's colonial status, the collectivist economic system, and the Soviet war-oriented economic policies are here at fault, being responsible for the lack of balance in her growth. Beyond any doubt, however, there are objective factors present in Ukraine to substantiate her harmonious and multi-sided economic development without those dramatic contractions.

Agriculture, the so-called light industry (leather, textile, glass), food and other consumer goods production, transportation, and communication represent the very soft spots in the economic life of Ukraine. The lack of private property rights, private initiative and individual profit motivation, the Soviet-oriented discrimination against the so-called less important industries, and the lack of adequate capital investments, hampered the development of the above industries. The significance of private property rights and individual initiative can be best illustrated by a comparison of the Ukrainian and American agriculture. Thus, in the United States, some 9 per cent of its labor force is employed in farming, being able to produce a tremendous surplus of farm produce and food. One person employed in agriculture in the United States produces

enough food for himself and for twenty-eight more individuals. In Ukraine, as well as in the entire USSR, some 50 per cent of all labor force is employed in farming, and a serious food shortage still prevails, although a slight improvement has been recently achieved. One person employed in Ukrainian farming scarcely produces enough for himself and for two more individuals⁸⁶). The example is full proof of the superior quality of economic individualism. Ukraine was once also producing a substantial grain surplus prior to the First World War, when economic individualism prevailed there. Abolition of collectivism, even without substantial capital investments, will immediately raise the farm productivity. This was evident during the first months of German occupation of Ukraine, 1941-42, before the Nazis established their full political and economic grip of the country. At that time, neither the state nor collective farms were in full operation, and the peasant could enjoy a little economic freedom. His economic status and the food market soon improved. And currently, the Soviets are worrying about the interest and care the peasants apply to their farmsteads, from which they derive some 80 per cent of their living necessities, and also about the indifference of the peasants toward the collectives⁸⁷).

The same factor of economic individualism, private initiative in particular, would improve the situation in all other deficient economic fields, consumer goods industries, transportation, communication, and domestic and foreign trading, without slowing down the growth of manufacturing industries.

The Soviet discrimination between the industries of a first and of a second importance, is another significant hindrance to a balanced economic growth. Its origin is contained in the basic deficiencies of collectivism and planning. The Soviets have been obsessed by industrialization mania and have made industrialization a supreme goal of their economic policies. Natural resources, labor, and capital were made available first of all for industrial growth, which in its turn was supposed to be the base for their expanding war potentials. On the other hand, however, lack of private initiative and the inherent faults of planning raised the price of industrialization. Hence, resources were progressively taken away from other fields of

the economy and channeled into the armament industry, and related sectors. More proportionate allocation of those resources would have certainly helped to achieve a more balanced economy in Ukraine. As a matter of fact, all Soviet economic plans, from 1928 on, indicated that discriminatory trend, which fully explained the primitive and underdeveloped stage of certain aspects of the Soviet economy in general, and of the Ukrainian, in particular.

Colonial exploitation of Ukraine by the Czarist and Bolshevik rulers most substantially retarded her economic growth and hindered her balanced development. In particular, the Russian discrimination against Ukraine, as far as capital investments are concerned, greatly hurt and hurts her economic interests. The reader must here be referred to TABLE III, contained earlier in this analysis. It showed the sum total of the capital investments in Ukraine between 1918 and 1965, amounting to some 342 billion rubles. If, however, these capital investments during the Soviet era would have corresponded to the Ukraine's relative weight and value, some 20 per cent of the entire national economy of the USSR, they would have been around 568.8 billion rubles, 226.8 billion rubles more. This enormous money value of investments would have enabled a balanced growth of the Ukrainian economy and built up its potentials for its further upward cumulative development. Ukraine's agriculture, transportation, consumer goods industries, and other fields, would have grown by keeping the pace with the present rate of industrialization, without endangering the current industrialization plans and programs. Instead, these 226.8 billion rubles, which rightly belonged to Ukraine, were channeled by the Soviets to Russia in order to build up there the military power of the USSR. The same type of exploitation, although of a different extent, was going on in Ukraine during the two hundred years-long Czarist rule, having robbed this country of billions of rubles. This added, of course, to the country's economic retardation.

It was pointed out, that during the Second World War, the Soviets dismantled a number of large Ukrainian manufacturing establishments, shipped them, together with all kinds of industrial equipment from various parts of Ukraine to Rus-

sia and never returned them to Ukraine where they truly belonged. It affected negatively the industrialization of the country, which, perhaps, could have been even more successful without applying the harsh measures of collectivization and planning. Warren Nutter, of the University of Virginia, reported in his preliminary findings to the joint Economic Committee of Congress, that Russia's growth under the Communists has been less rapid than in the last forty years of the Czars⁸⁸). In the years 1870-1917, actually economic individualism prevailed in the Russian empire, creating an extremely favorable atmosphere for industrial economic development. The Soviets purposely underestimate the industrial achievements of the last half century of the Czarate.

Abolition of the colonial status of Ukraine, de-emphasis of a war-oriented economy, and introduction of economic individualism there would have enabled an upsurge of this country in the future. It would soon again become a granary of Europe, cattle raising and sheep rearing would recover, consumer goods industries would immediately cover the consumption needs, consumer goods shortage would disappear, standard of living would rise rapidly and substantially. In the atmosphere of freedom, also foreign trading would increase, especially, Ukrainian grain would be made available for the West European and Near East markets, while the Ukrainian market would be open to the Western industrial goods and Eastern foods and luxuries. The Ukrainian trading with West Europe and Asia Minor has a long historical tradition, since the seventh and eighth centuries A. D., as a most natural trend, corresponding with the Ukraine's resources and needs.

In order to go along with the modern trend to build large-space economic blocks, such as the British Commonwealth, and the European Common Market, to help the Ukraine's immediate neighbors, Byeloruthenia, Lithuania, Latvia, Estonia, the Don Cossacks, Georgia and other Caucasian nations, the Kalmycks, and others, and to obtain for Ukraine herself the advantages of a large-space economy, the Ukrainian circles have advanced for the future the idea of the so-called Inter-mare or Baltico-Ponte-Caspean economic block of the nations. This would extend their large-scale economy in the territorial

triangle, among the Baltic, Black, and Caspian seas. The countries of the Intermare block complete themselves, as far as their resources and industries are concerned; their economies would be based on the principles of freedom, economic individualism, and close cooperation among themselves. Otherwise, the institutions and policies of that large organization would be similar to those of the European Common Market. In the framework of such an economic block, the natural potentials of Ukraine to grow and expand economically would be even greater in the future⁸⁹).

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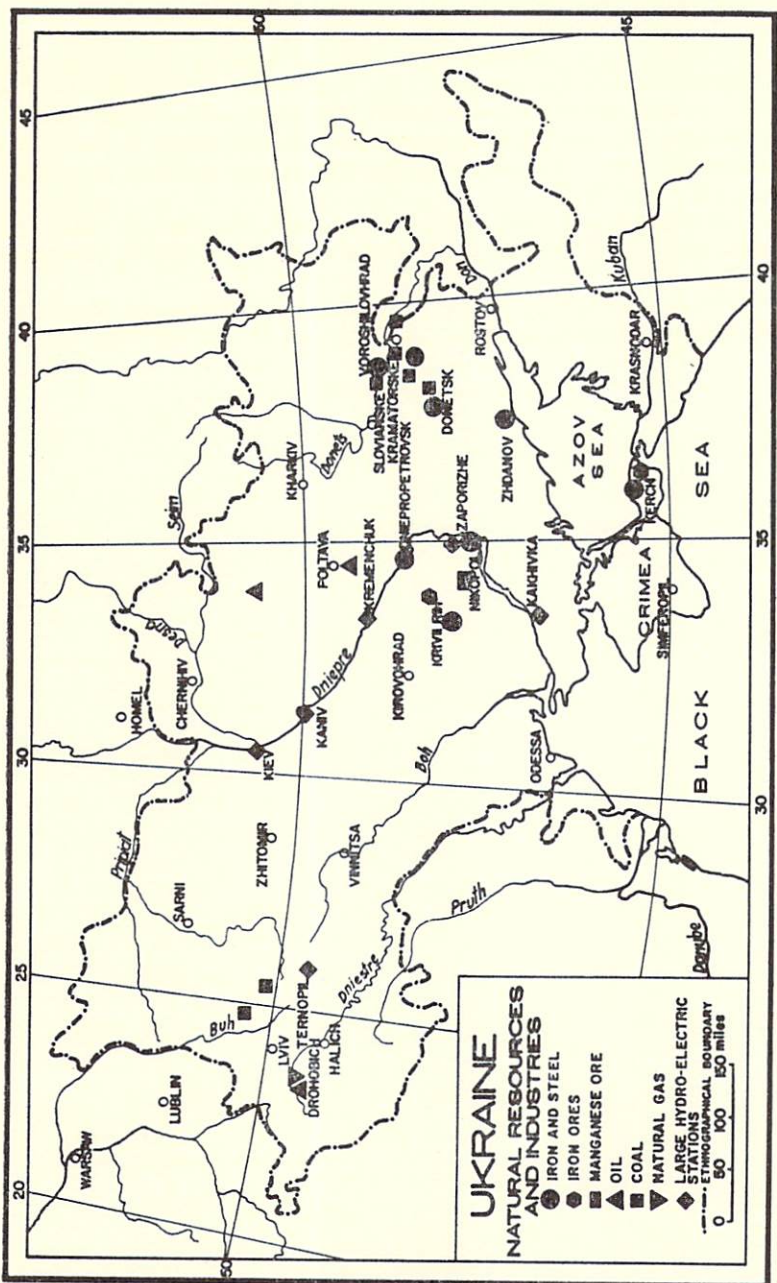
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