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Intelligence Memorandum

A Comparison of the US and Soviet Economies

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A Comparison of the US and Soviet Economies

GROSS NATIONAL PRODUCT

Overall Economy

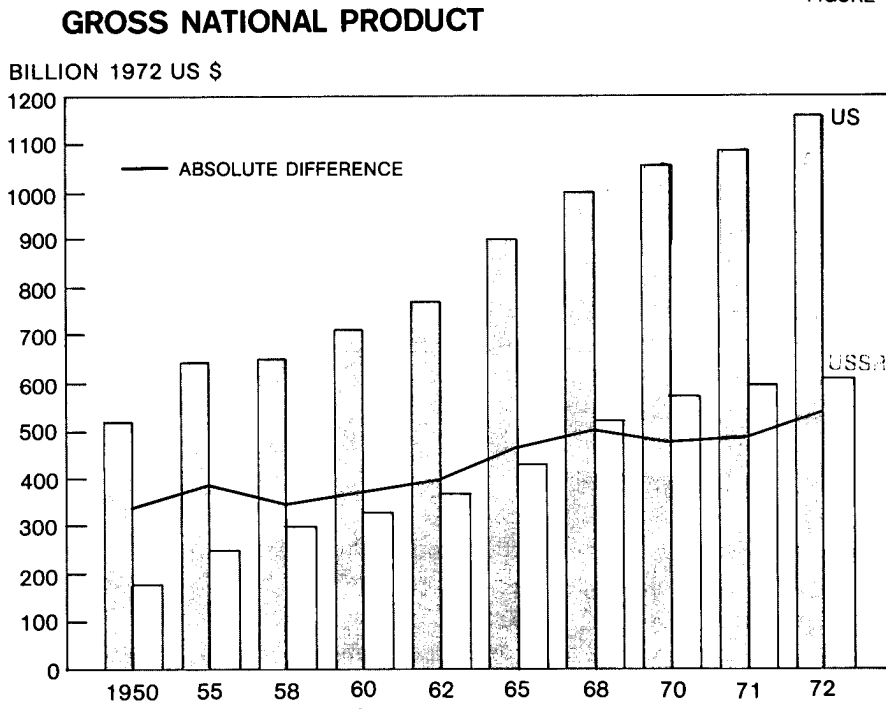
The USSR, with a gross national product (GNP) of about US \$610 billion, has the world's second largest economy, somewhat more than half that of the United States. It has consistently grown faster than the US economy, although Soviet growth slowed after 1960, as follows:

	Average Annual Rate of Growth (Percent)	
	USSR ¹	US
1951-60	6.3	3.2
1961-65	5.0	4.8
1966-70	5.6	3.2
1971-72	2.9	4.6

1. GNP at factor cost.

In absolute terms, however, the gap between the US and Soviet economies has increased in recent years (Figure 1).

FIGURE 1



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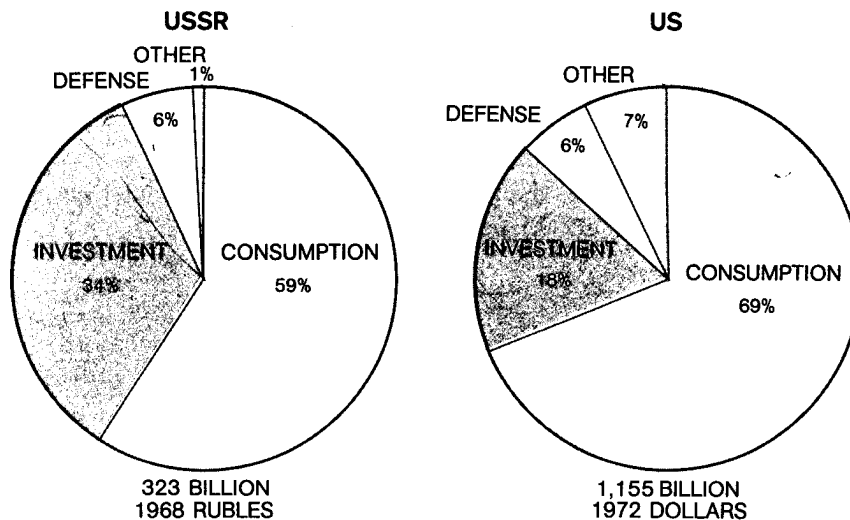
Growth of Soviet GNP was about 2% in 1972, the lowest annual rate in almost 10 years, as farm output declined by about 7%. Unexpected setbacks in industry also contributed to the poor overall performance in 1972.

Uses of Output

Soviet leaders have always given priority to defense needs and to providing for rapid industrial growth. The USSR allocates much more of its GNP to investment than does the United States, but the same proportion to defense (Figure 2). The Soviet consumer, in contrast, receives a smaller share

GROSS NATIONAL PRODUCT, BY END USE, 1972

FIGURE 2



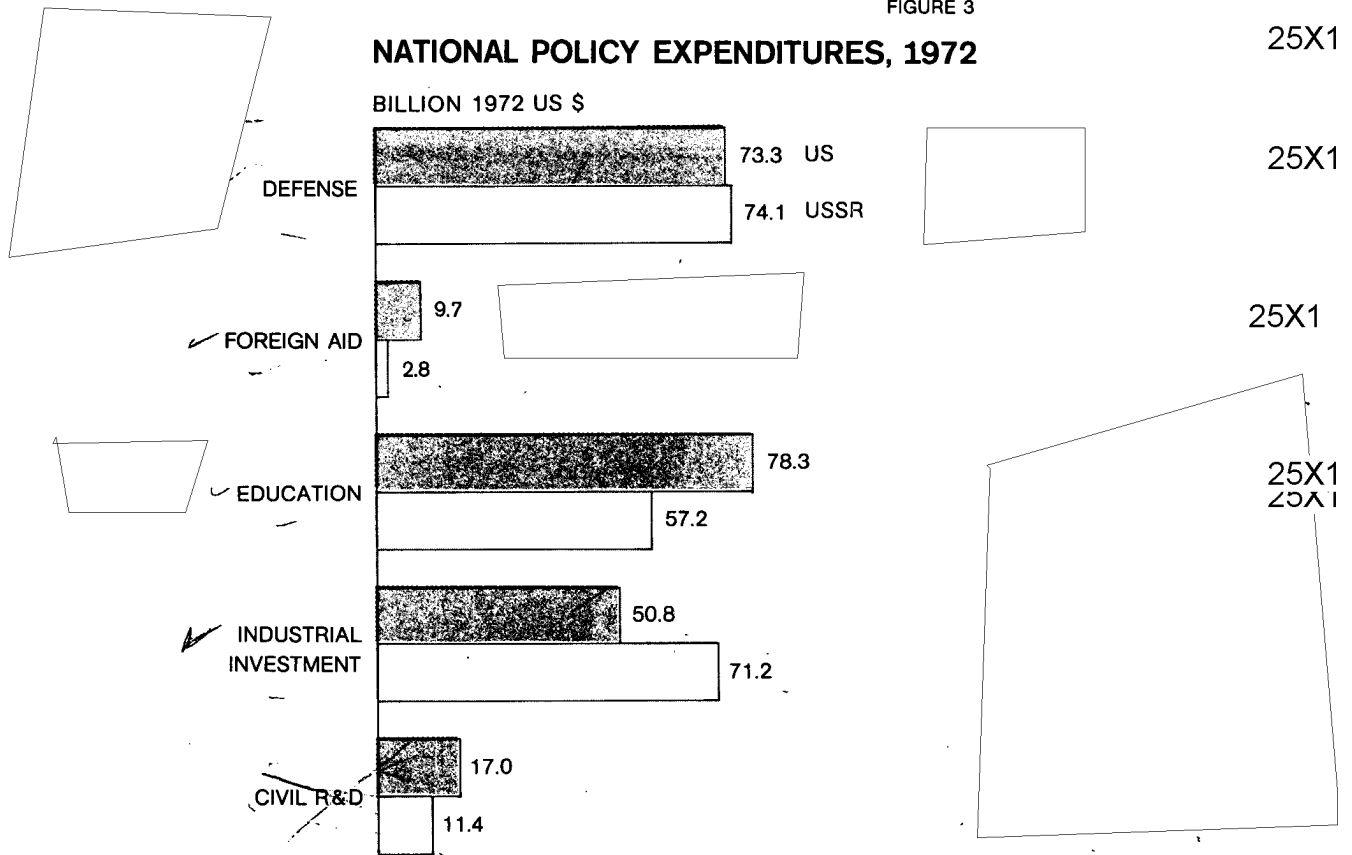
of national output than does his US counterpart, and his per capita consumption is only one-third that of the average US citizen. This quantitative comparison, moreover, does not measure the very great differences in the quality and variety of diets, clothing, and consumer durables in the two countries.

National Policy Expenditures

Important aspects of Soviet economic policy are illustrated by comparison of a group of strategic components of GNP that may be termed national policy expenditures (Figure 3). Industrial investment and expenditures on education and civilian research and development reflect the emphasis on economic growth; defense and foreign aid expenditures reflect foreign policy priorities.

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FIGURE 3



Taken as a whole, Soviet national policy expenditures (measured in dollars) are not far below those of the United States. The Soviets have long regarded education as an important element in the economic growth process. The large investment in industrial plant and equipment indicates the strenuous Soviet effort to catch up with US industry. The USSR spends heavily on advanced education and on research and development and frequently achieves impressive results in research. Nevertheless, an inflexible management system and inadequate incentives unduly delay the development and introduction of innovations.

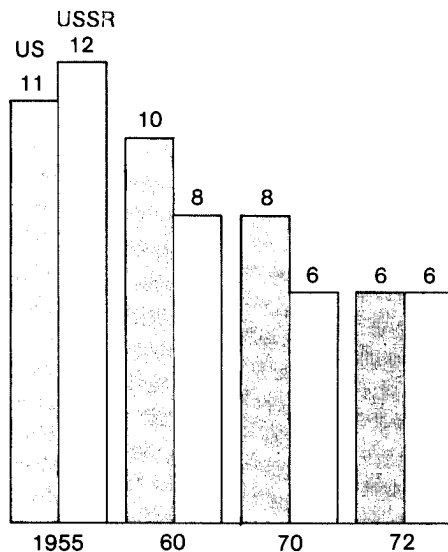
Defense Spending

The burden of maintaining and adding to military capability can be viewed in a number of ways, including the share of total machinery output going to defense uses; the demands of the defense sector on specific metals, materials, or products; or the degree to which skilled manpower is diverted from civilian to military uses. The most comprehensive measure of

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FIGURE 4
**DEFENSE AS A PERCENT OF
 GROSS NATIONAL PRODUCT***



*Measured in 1968 rubles for the USSR and 1972 dollars for the US. The use of dollar estimates of Soviet GNP in measuring the defense share of GNP would be incorrect because the high costs of defense goods (relative to non-defense goods) in the US are imputed to the relatively large output of Soviet defense goods.

“burden,” however, is the share of total defense spending in GNP. Burden in this sense is properly measured only in a country’s own currency—rubles for the USSR and dollars for the United States (Figure 4). The rapid growth of Soviet GNP since 1955 (more than 5% annually) relative to the average annual growth in defense spending of 3% has led to a steady decline in the Soviet use of national output for defense.

INDUSTRY

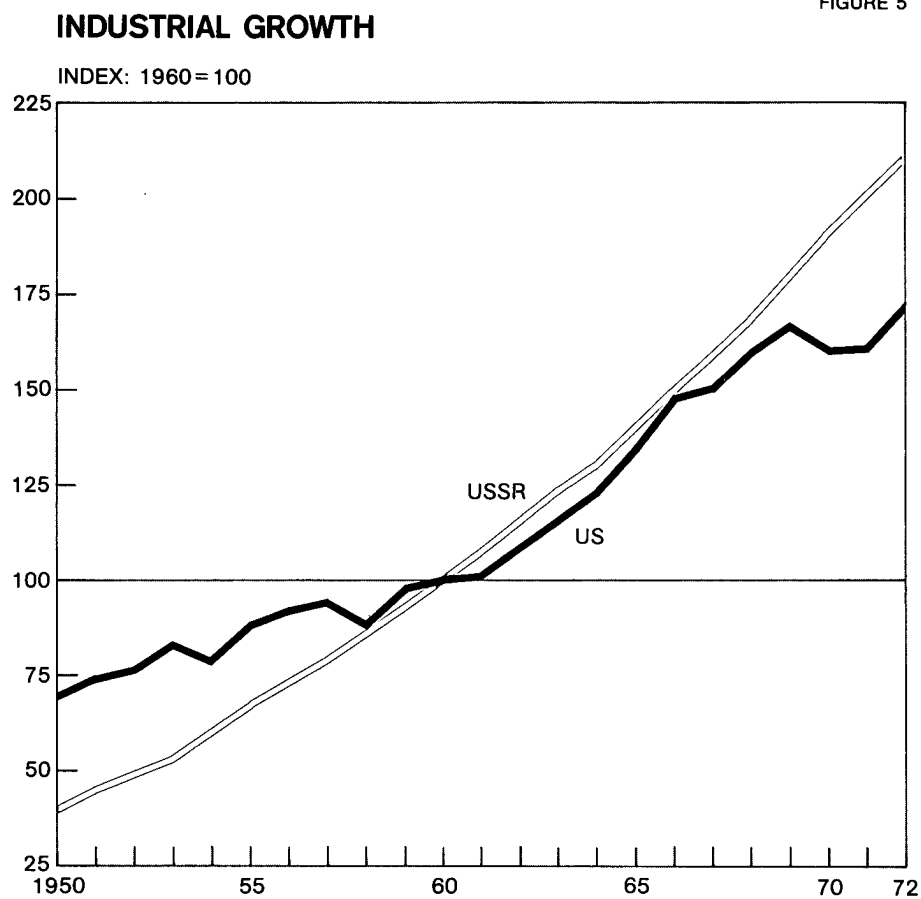
Industrial Output

During most of the post-war period, industrial production grew faster in the USSR than in the United States. As a

result, production in Soviet industry now stands at about two-thirds that of the United States.

Soviet industrial growth was especially rapid in the 1950s—about 10% a year—but slowed to about 7% a year in the 1960s (Figure 5). The decline has continued in 1971 and 1972. Industrial production increased by 6% in 1971 and 5% in 1972. Part of the explanation for the slump in 1971-72 was the poor performance of Soviet agriculture, which drew men from industry to aid in the harvest and slowed deliveries of agricultural commodities to industrial processors. More important for the future, however, were failures to meet deadlines for introducing new productive capacity and inefficient use of existing capacity, which caused Soviet leaders to take a hard look at their capital investment program. The setbacks in industry in 1971 and 1972 led Soviet planners to revise downward industrial output goals for 1973.

A hallmark of Soviet economic development has been the priority expansion of the producers’ goods sector, a policy that has begun to be relaxed only in the last few years. A comparison of the output of the two countries’ producers’ goods industries shows how much progress the USSR

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has made (Figure 6). The USSR now outproduces the United States in cement, but remains far behind in production of goods such as electronics and computers, which play a critical role in modern technology. Large-scale production of Soviet automobiles is just beginning.

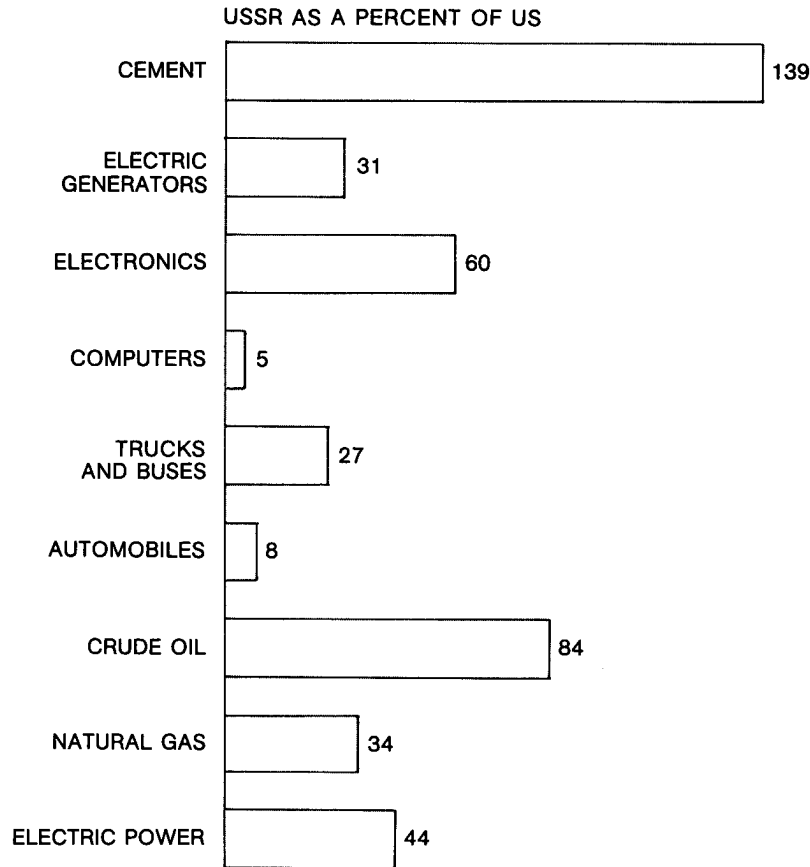
Although the volume of Soviet output is large, the USSR, outside of its military-space sector, lags behind the West in the quality of the output of most heavy industries. Metalcutting machine tool production, which was five times US production in 1972 in terms of number of units, consists largely of standard types. The Soviets have had to turn to the West to get a number of crucial components for their several motor vehicle plants now under construction. They have only recently begun limited production of third-generation computers based on integrated circuits.

There are exceptions, however. Soviet goods of some kinds have equaled the best in Western designs. These include hydroelectric generating equip-

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FIGURE 6

OUTPUT OF PRODUCERS' GOODS, 1972

ment, high-voltage transmission equipment, electroslag remelting furnaces, and some kinds of radios and cameras.

Primary Energy Consumption

Both the United States and the USSR are well supplied with the primary sources of energy—coal, oil, natural gas, and hydroelectric power. Production continues to rise in both countries in response to escalating demands, but more rapidly in the USSR. Newly discovered resources (especially in the USSR) and increased imports (particularly for the United States) have prevented major shortages thus far. This trend is likely to persist.

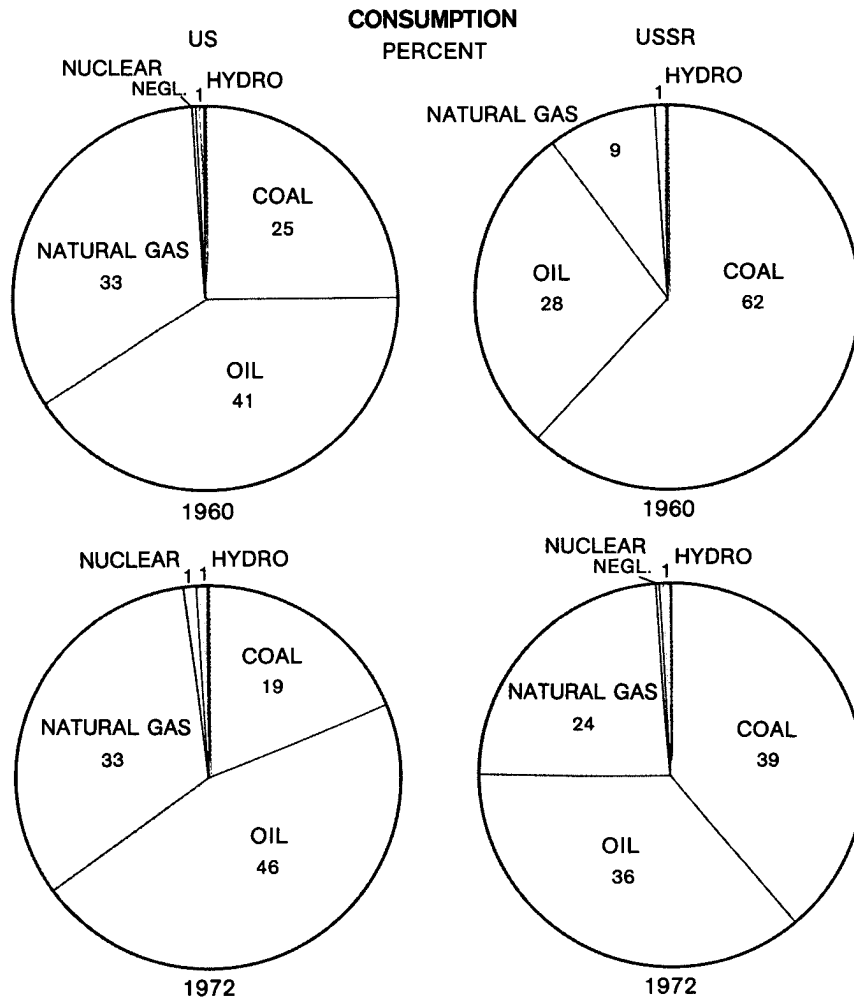
The pattern of energy consumption differs greatly in the two countries. About 39% of Soviet energy comes from coal, compared with 19% in the United States, and the Soviet shares of oil and gas are correspondingly much smaller (Figure 7). However, the Soviet consumption pattern is shifting

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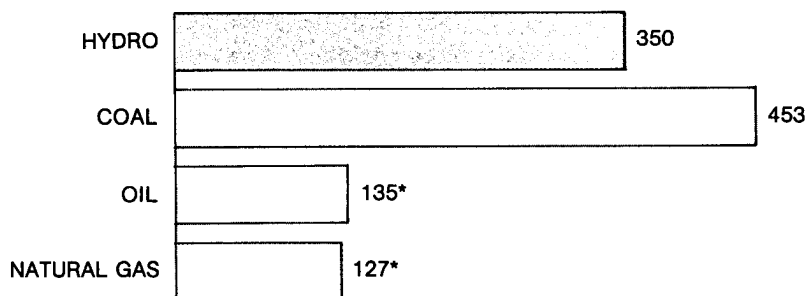
FIGURE 7

PRIMARY ENERGY



RESERVES, 1972

USSR AS A PERCENT OF US



*Midpoint of a range of estimates.

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rapidly from coal to oil and gas, following the path of the United States, Western Europe, and Japan.

Both countries are self-sufficient in coal, although the USSR produced much more than the United States in 1972. Soviet industry is, however, increasingly forced to exploit low-grade deposits far removed from major consumption centers. The United States and the USSR are the world's leading crude oil producers. Each country has about 5% of total proved world reserves, but potential reserves may be more abundant in the USSR. Although US production of natural gas was almost three times Soviet output in 1972, potential reserves are much larger in the USSR. Nuclear power will continue to play only a minor role in the overall energy balance of both countries for the next several years.

Metals and Minerals

A significant factor in the growth of the Soviet economy has been the country's extensive deposits of generally high-quality ores and metals. Many of these deposits, however, are found in the country's northern and eastern regions where exploration and developmental expenditures as well as transportation costs to major consumption areas are extremely high. Until recently the USSR has postponed these expenses by exploiting reserves located in more accessible areas, but these deposits are being depleted and consequently reliance is increasing on development of the more distant sources.

In 1972, Soviet production of platinum-group metals, manganese, nickel, and iron ore far exceeded US output. As for chrome ore and industrial diamonds, the USSR produced significant proportions of total world output while the United States produced neither of these items. US production of copper and phosphates exceeded that of the USSR in 1972, but primarily as a result of lower Soviet demand. The USSR is well endowed in both of these resources (Figure 8).

Soviet steel output surpasses that of the United States, but the quality of output lags behind that of the West. Most of the steel produced by the USSR consists of the simpler, less specialized varieties. As a result, the Soviets have been unable to produce the large-diameter pipe needed to develop their distant oil and gas fields.

Currently the United States imports large amounts of Soviet chrome ore and platinum-group metals and lesser but significant amounts of diamonds and nickel. Copper and manganese may join this list over time as US demand outstrips domestic supply or alternative sources for imports become less attractive.

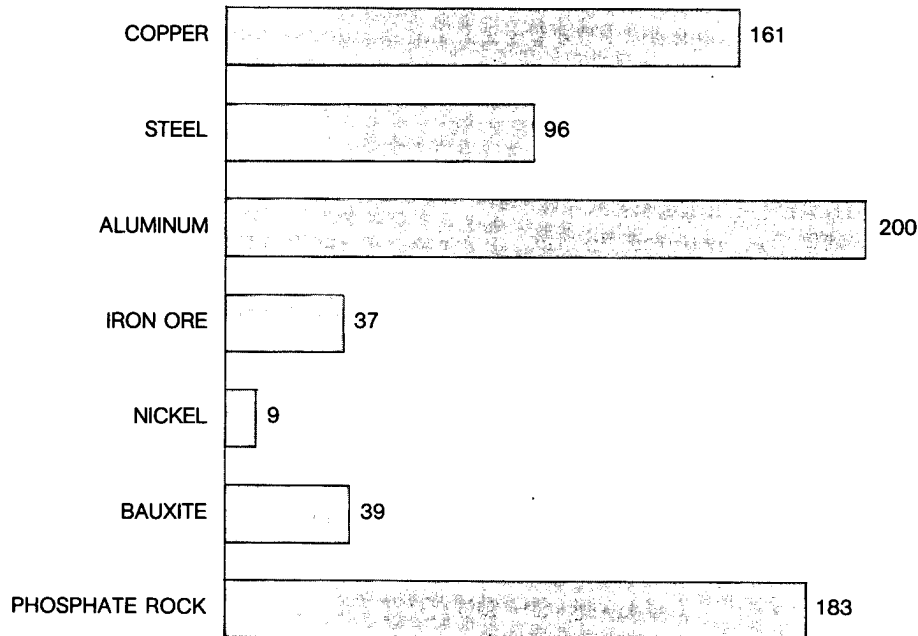
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FIGURE 8

OUTPUT OF METALS AND MINERALS, 1972

US AS A PERCENT OF USSR



As in a number of other industrial areas, the USSR is looking to the West for the technology and equipment to develop the country's mineral resources. Currently, the Soviets are seeking Western aid in developing their raw materials sector through joint ventures involving self-liquidating credit—that is, credit to be repaid out of the product of the joint venture.

AGRICULTURE

Of all sectors of the US and Soviet economies, agriculture offers the greatest contrast in terms of organization and efficiency. Successive Soviet leaders have had recurring difficulties in assuring an adequate food supply for a growing population. While the USSR has been expanding sown acreage in an effort to increase production, the United States until the early 1970s had been reducing the area under cultivation and struggling with farm surpluses.

In some respects, US and Soviet agriculture are similar. Both countries have very large expanses of farmland relative to their populations. Despite the USSR's much larger total area, the amount of arable land in the two countries is roughly equal, as only 11% of the USSR's huge land mass is

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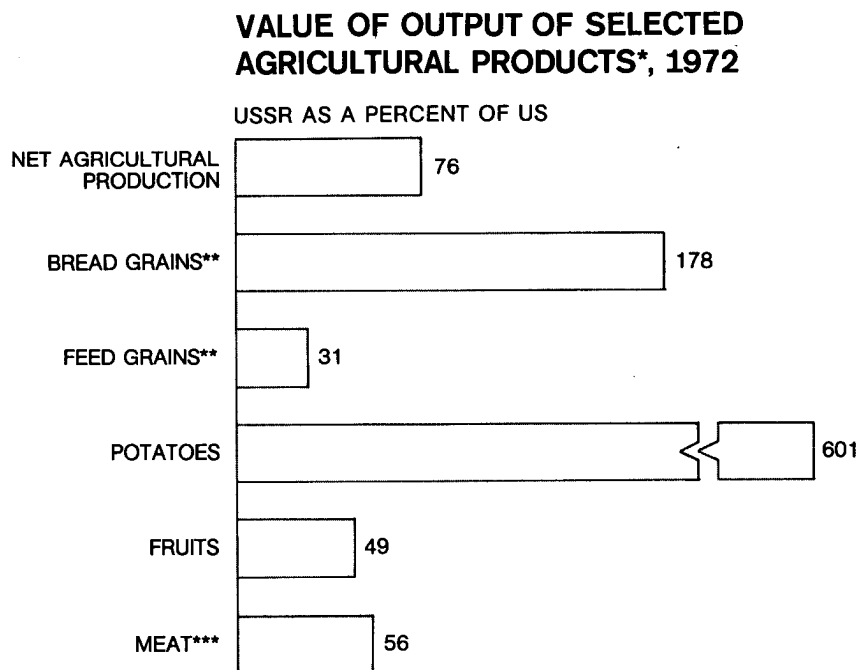
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suitable for farming. Most of the farmland of both countries lies in the north temperate zone. The USSR, however, is less favorably situated because of its more northerly location and because much of its grain acreage receives marginal rainfall. The USSR has no cropland corresponding to the most productive farm regions of the United States: the combination of fertile soil, adequate moisture, and long growing seasons found in the US corn belt is lacking in the USSR, where low temperature and overly moist lands prevail in the north and aridity characterizes the south.

Institutional differences are vast. The collectivization of agriculture in the USSR has resulted in the division of farm organization into two sectors—the socialized sector, which consists of state and collective farms and which accounts for two-thirds of agricultural production; and the private sector, which consists of small private garden plots that account for the remainder of total farm output.

Soviet agricultural output was about 70% of the US level in 1960. Since that time the dollar value of Soviet output has increased by about 35% and now stands at about three-fourths of US production (Figure 9). However,

FIGURE 9



*Value of production of crops and livestock for human use in average 1957-59 dollars. The dollar value of the USSR's output reflects the geometric mean of alternative comparisons of US and USSR production computed in 1968 ruble prices and 1957-59 dollar prices.

**Based on production in million metric tons.

***Based on marketed or slaughtered cattle, sheep, poultry, and other meat animals, adjusted for changes in herd sizes.

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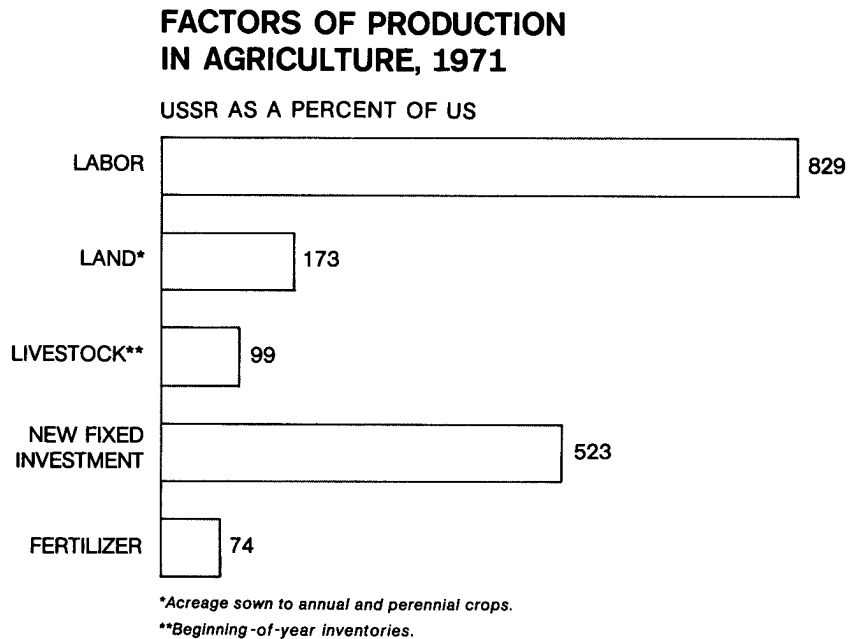
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Soviet farm output is still dominated by bread grains and potatoes—the USSR normally produces about twice as much wheat as the United States but only 7% as much corn—while output of higher quality foods, particularly meat and fruits, lags far behind that of the United States and is patently inadequate to satisfy the growing demands of the Soviet consumer.

Although Soviet farm output has increased and diets have improved somewhat, the additions to agricultural production in recent years resulting from the larger flows of new plant, equipment, and soil additives have been below expectations. Thus the USSR has recently imported large quantities of grain, sugar, and some butter from the West and has scheduled further imports of bread grains and feed grains for fiscal year 1974.

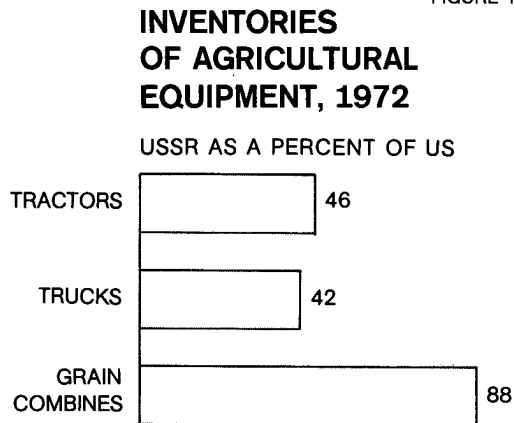
The USSR employs a farm labor force more than eight times the size of that in the United States on three-fourths more cultivated land (Figure 10).

FIGURE 10



But in the USSR, one farm worker feeds seven while in the United States he feeds 47. The USSR maintains more than one-fourth of its labor force in agriculture, by far the largest share among industrialized nations; the United States employs only 5% of its labor force in agriculture.

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Despite heavy capital investment—19% of total investment in the USSR versus 4% in the United States—the withdrawal of manpower from Soviet farms is relatively slow, and mechanization of the agricultural sector lags far behind the US level. Deliveries of equipment to agriculture are large but erratic and have not always coincided with needs. Thus, although inventories have increased substantially since the 1950s, Soviet farms still have only about 45% as many tractors and trucks as

US farms and 90% as many combines (Figure 11). Moreover, efficient utilization of Soviet mechanized equipment is hampered by the poor state of repair work.

A major cause of inefficiency in Soviet agriculture is the collective farm system. Soviet farmers and their families work their private plots intensively and are not given adequate incentives to produce efficiently on the collective land.

CONSUMER WELFARE

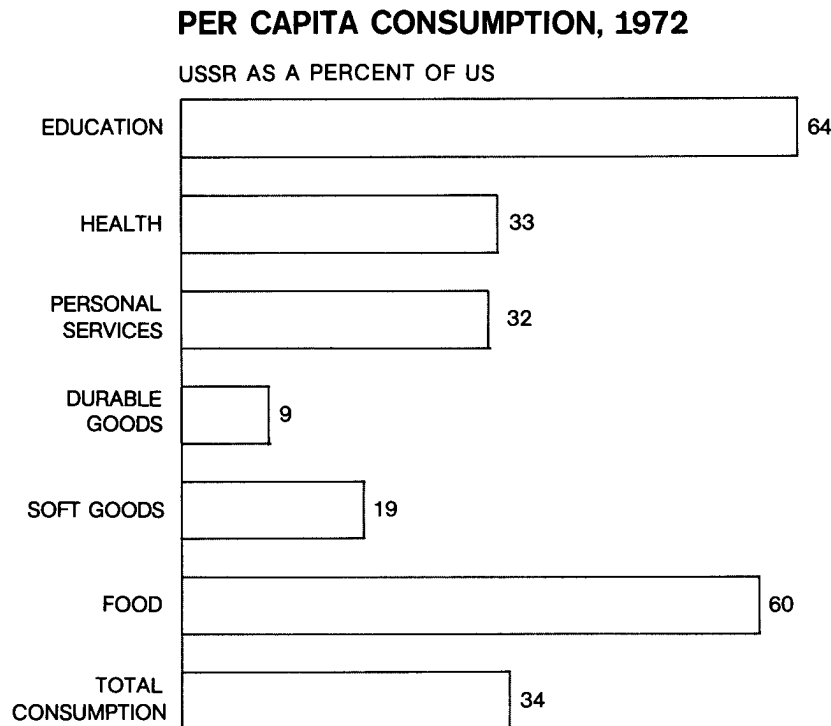
In 1972 the average Soviet citizen consumed about one-third of the goods and services consumed by his US counterpart, but this comparison fails to reflect fully the inferior quality, assortment, and styling of Soviet clothes and durables; the chronic shortages; or the long queues at retail stores (Figure 12).

Except for sewing machines, Soviet consumers enjoy only a fraction of the durables owned by their US counterparts (Figure 13). In the last two years, production at the new Tol'yatti plant has brought about large increases in passenger car output. This has reduced the waiting period for a new car from 6 years to 2-3 years. Shorter delays exist for the best-quality refrigerators and furniture. Many durables—automatic washers, dryers, and freezers—are not manufactured or sold in the USSR. On the other hand, both color and black-and-white television sets, radio-phonographs, transistor radios, and tape recorders are available off the sales floor. The poor quality of the color in Soviet television sets, their high price, and the few hours of color programming per week have turned Soviet consumers away from this product.

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FIGURE 12



Housing conditions in the USSR are one of the major causes of popular discontent. The Soviets have built urban housing at a very rapid rate during the last decade, but, because of the large growth of urban population, the number of square meters of space per person increased from only 6 in 1960 to about 7.8 in 1972. Housing space per capita for the total population in the USSR, however, is still only one-third that in the United States. A substantial percentage of the urban apartments share bathrooms and kitchens, and a considerable number of communal dwelling units exist. However, increasingly larger numbers of urban families are obtaining apartments with their own bath and kitchen facilities.

Soviet consumers receive enough to eat in terms of daily calories, but their diet is heavily weighted with starches and deficient in meat, vegetables, and fruit (Figure 14). Although per capita consumption of meat has increased by one-fourth since 1965, the average Soviet citizen still eats about 40% as much meat as that consumed by his US counterpart (Figure 15). However, the Brezhnev regime is clearly committed to expanded meat production to alleviate the worst shortages.

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FIGURE 13

STOCK OF CONSUMER DURABLES, 1972

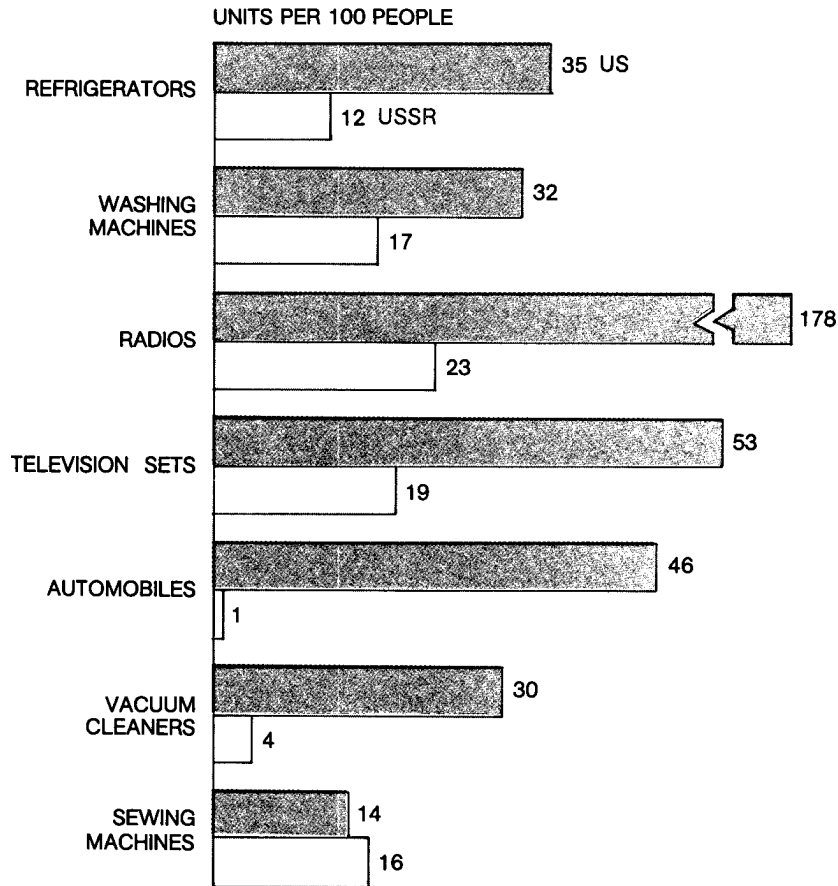
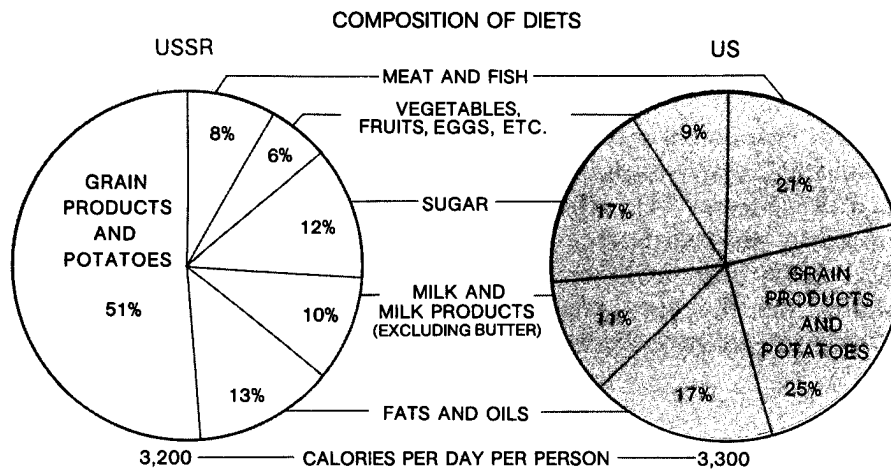


FIGURE 14

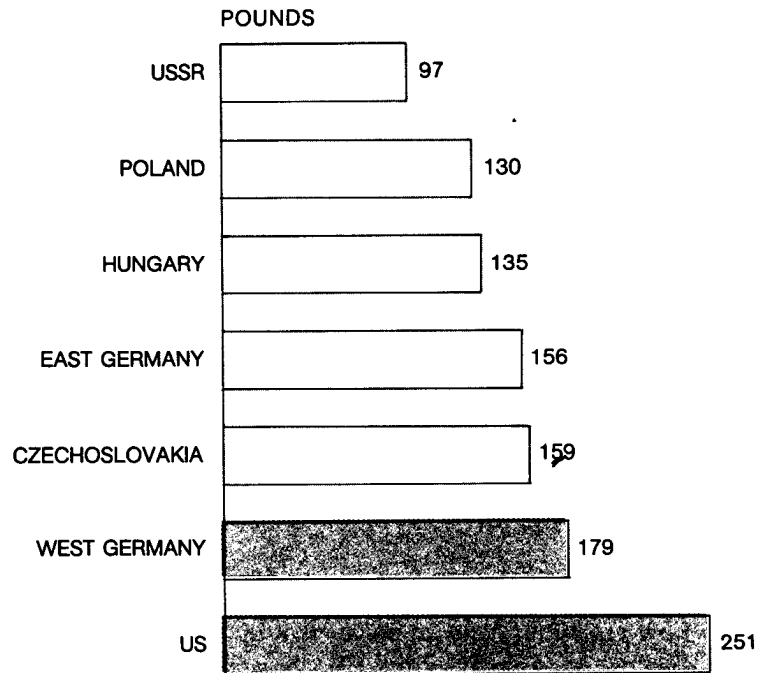
AVERAGE DIETS, 1972



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FIGURE 15

**PER CAPITA MEAT CONSUMPTION
IN SELECTED COUNTRIES, 1972****LABOR FORCE**

The Soviet population is 19% larger than the US population, but the total labor force of the USSR exceeds that of the United States by 44%, a ratio which has been diminishing gradually since 1955 (Figure 16). A basic factor accounting for the larger share of employed persons in the USSR is the greater use of women workers. In 1972, one worker in two in the USSR was a woman, while in the United States the ratio was roughly one out of three.

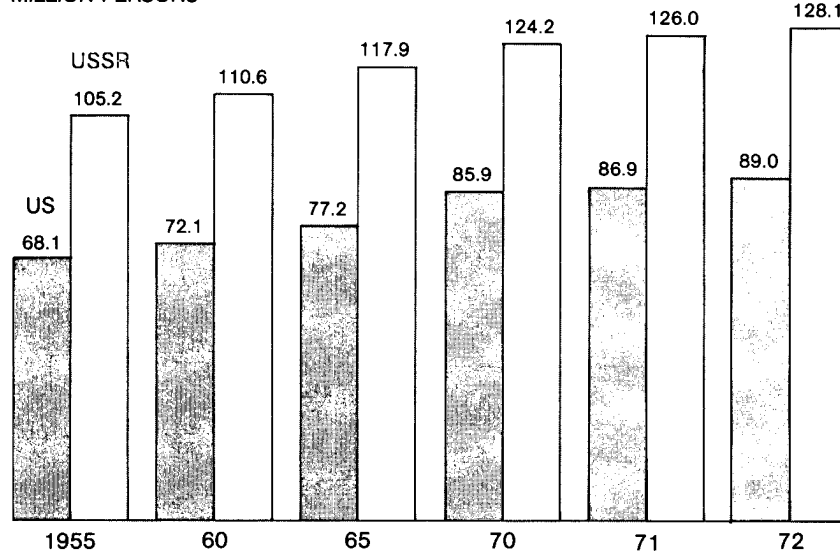
The sharpest difference in structure between the US and the Soviet labor force is in agriculture, where Soviet employment now reaches a level eight times that of the United States in 1972. By contrast, only one-third of the US labor force is employed in services, whereas less than one-fifth are so employed in the USSR (Figure 17). However, the Soviet service sector is growing rapidly as a proportion of the nonagricultural labor force—from 24% in 1960 to 27% in 1972.

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CONFIDENTIAL**TOTAL LABOR FORCE**

FIGURE 16

MILLION PERSONS



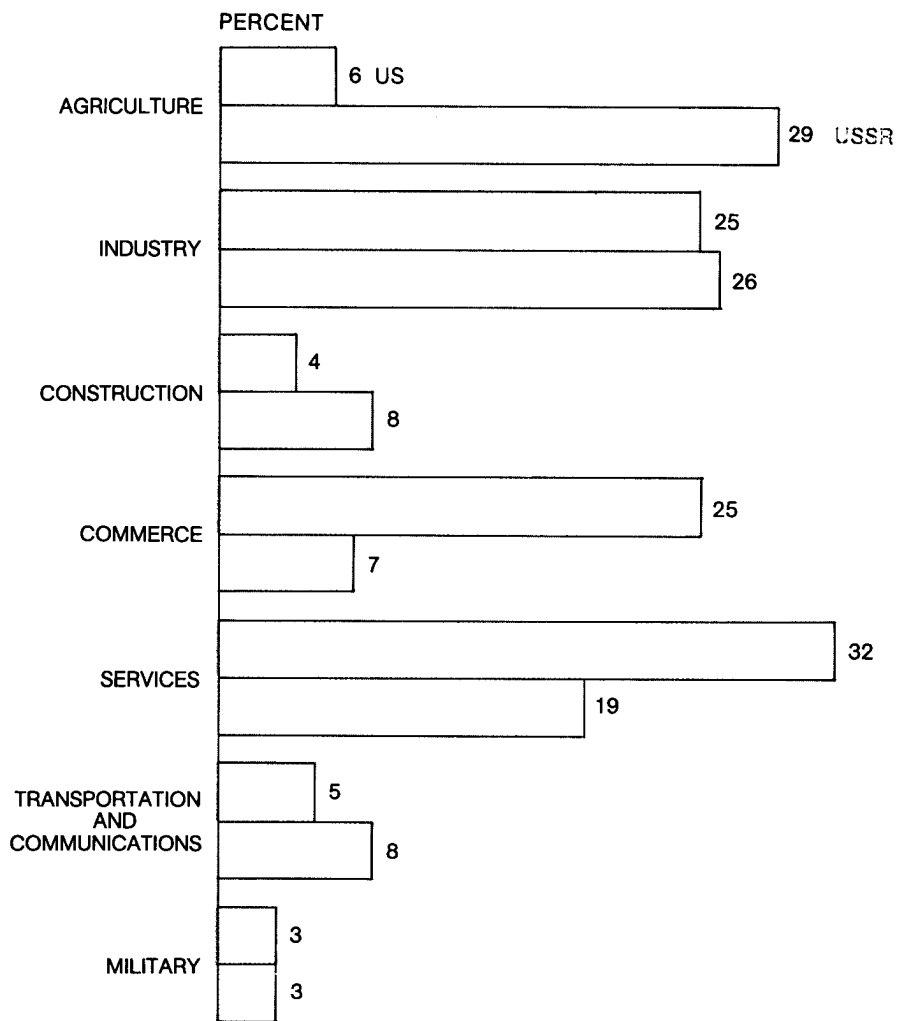
Commerce (that is, retail trade, banking, insurance, and real estate), like services, is only now emerging from an embryonic stage in the Soviet Union. These activities employ one-fourth of the US labor force and only 7% of the Soviet force. The United States has fewer men under arms than the USSR—2.4 million in the United States, compared with 3.3 million in the USSR. In both countries, about one-fourth of the work force is employed in industry, while construction takes 4% and 8% of the labor force and transportation-communications 5% and 8%, respectively, in the United States and the USSR.

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FIGURE 17

DISTRIBUTION OF TOTAL EMPLOYMENT BY SECTOR, 1972



PRODUCTIVITY

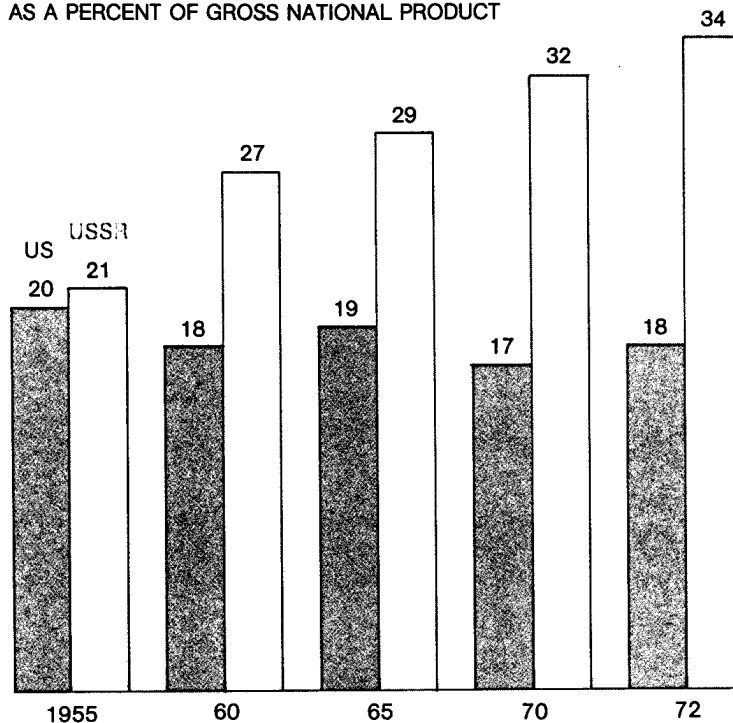
Soviet growth in the past has been fueled by large and increasing outlays on investment (Figure 18). In 1972 the share of GNP allocated to capital formation was about 34%, compared with 18% in the United States. In spite of this high rate of investment, relative labor productivity in the two countries has been about the same since 1955 (Figure 19). Labor productivity in Soviet industry was almost 40% of the US level in both 1955

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CONFIDENTIAL**TOTAL INVESTMENT***

FIGURE 18

AS A PERCENT OF GROSS NATIONAL PRODUCT



*Investment includes expenditures for new plant and equipment, capital repair, and R&D.

and 1972. The marked Soviet advantage over the United States in the rate of growth of industrial output reflects a more rapid increase in employment, not in productivity. Similarly, growth in agricultural productivity has barely matched US performance, and agricultural labor is only about 10% as productive in the USSR as in the United States in spite of a decade of much larger investments in Soviet agriculture.

The consistently poor performance in productivity stems from the many managerial problems of a centralized and bureaucratic socialism. Rewards and pressures are directed toward increasing output, while the introduction of new technology involves risks of failure. In addition, the armed forces preempt the larger share of research and development (R&D) funds and get the best scientific talent (Figure 20). Civilian R&D currently receives about 40% of total R&D outlays in the USSR against 60% in the United States. Moreover, three-fourths of the funds allocated to all R&D in the USSR go for basic and applied research rather than to translating research into the development of new processes and products. In contrast, the United States spends three-fifths of its total allocation to R&D on developing new processes and products.

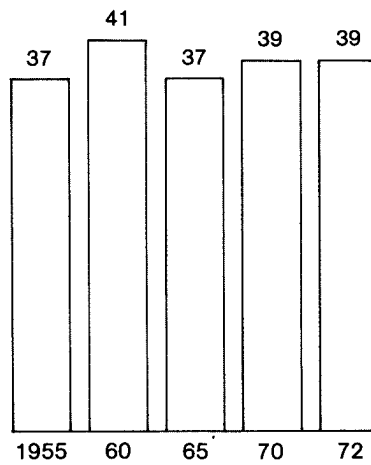
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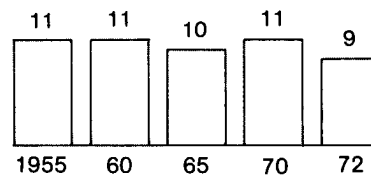
FIGURE 19

LABOR PRODUCTIVITY*
USSR AS A PERCENT OF US

INDUSTRY



AGRICULTURE



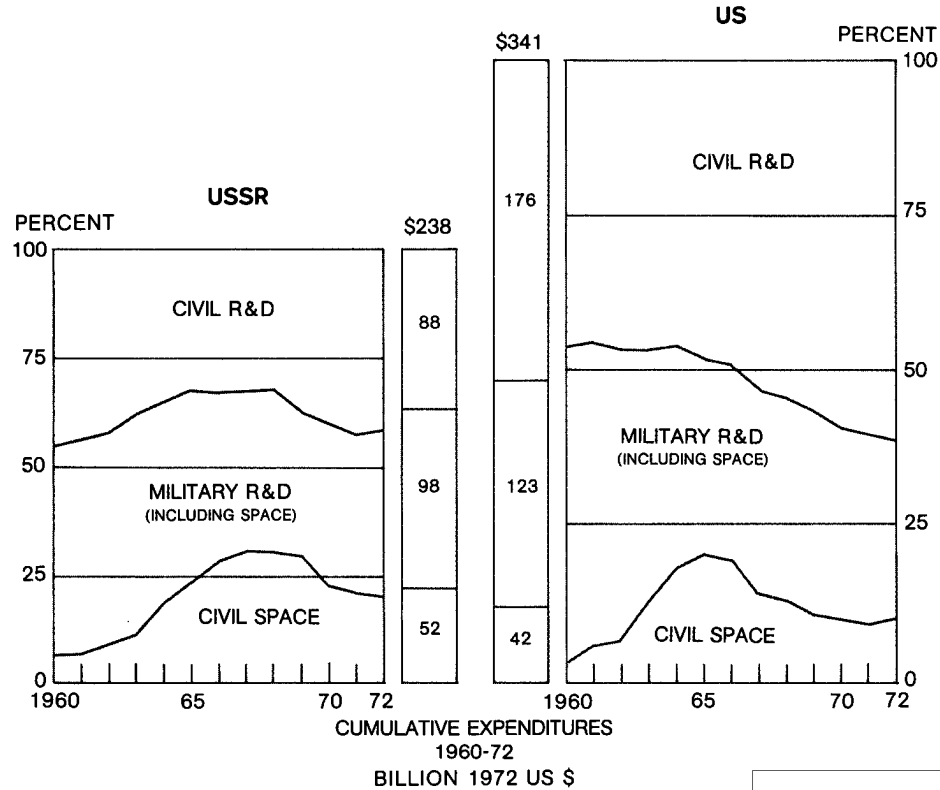
**Computed using net industrial and agricultural output and the average annual number of workers employed in each sector.*

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FIGURE 20

EXPENDITURES FOR RESEARCH AND DEVELOPMENT AND SPACE



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FOREIGN TRADE

The USSR is less dependent on foreign trade than is the United States. In 1972, imports were about 3% of Soviet GNP and about 5% of US GNP. Soviet foreign trade is less than one-third that of the United States. Soviet exports totaled \$15.4 billion in 1972, compared with US exports of \$49.2 billion, while Soviet imports were \$16.1 billion, compared with US imports of \$55.6 billion (Figure 21).

Almost two-thirds of Soviet foreign trade is with Communist countries, particularly the East European countries, while about one-fifth of total trade is with industrialized Western countries and the balance is with less developed countries. (Figure 22).

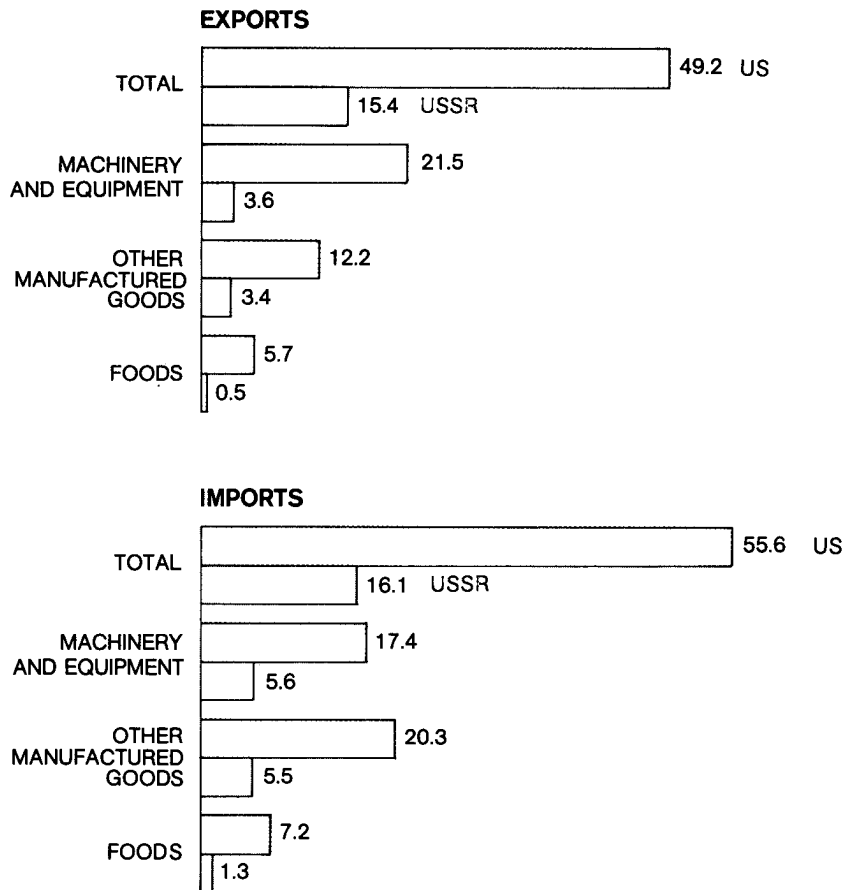
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FIGURE 21

**EXPORTS AND IMPORTS
BY MAJOR COMMODITIES, 1972**

BILLION 1972 US \$



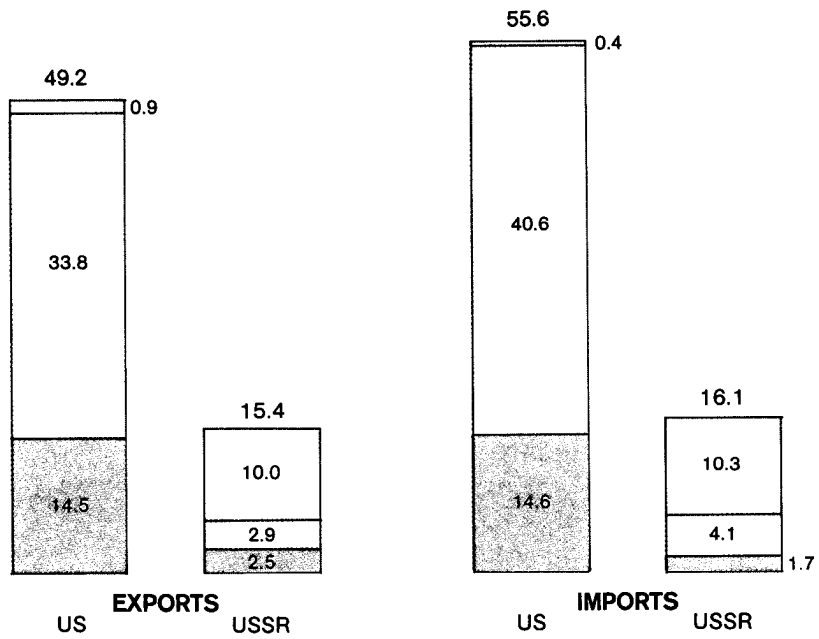
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FIGURE 22

EXPORTS AND IMPORTS, BY MAJOR AREA, 1972

BILLION 1972 US \$

- COMMUNIST COUNTRIES
- DEVELOPED WESTERN COUNTRIES
- ▨ LESS DEVELOPED COUNTRIES



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APPENDIX

Economic Indicators

	USSR						US
	1955	1960	1965	1970	1971	1972	1972
Gross National Product (billion 1972 US \$)	248.9	329.7	433.8	573.8	596.9	610.6 ¹	1,155.2
Population, mid-year (million persons)	196.2	214.3	230.9	242.8	245.1	247.5	208.8
Per capita Gross National Product (1972 US \$)	1,270	1,540	1,880	2,360	2,440	2,470 ¹	5,530
Industrial production index (1960 = 100)	67.0	100.0	138.7	189.6	201.0	211.0 ¹	172.7
Net agricultural production index (1960 = 100)	80.5	100.0	115.0	144.4	144.6	134.7 ¹	124.4
Bread grains (million metric tons)	63.6	59.8	62.7	90.5	91.0	76.3	42.9
Feed grains (million metric tons)	38.1	32.5	35.8	57.5	54.6	55.8	181.2
Potatoes (million metric tons)	71.8	84.4	88.7	96.8	92.7	78.3	13.4
Meat ² (million metric tons)	5.8	8.7	10.0	12.3	12.2	13.6	16.8
Total labor force (including the armed forces) ³ (million persons)	105.2	110.6	117.9	124.2	126.0	128.1	89.0
Non-agricultural ³ (million persons)	55.3	64.0	75.5	86.7	89.1	92.1	78.2
Agricultural ³ (million persons)	49.9	46.6	42.3	37.5	36.9	36.0	4.4
Total investment index (1960 = 100)	58.7	100.0	141.0	199.6	214.6	228.4	156.2 ⁴
Per capita consumption index (1960 = 100)	82.9	100.0	111.9	143.2	148.9	150.5	142.3
Crude oil (million metric tons)	71	147	242	349	377	394	467
Natural gas (billion cubic meters)	9	45	128	198	212	221	648
Electric power (billion kilowatt-hours)	170	292	507	741	800	858	1,968
Petroleum products (million metric tons)	61	114	174	252	266	285	544
Coal (million metric tons)	390	490	545	577	592	604	535
Primary energy production (million metric tons of coal equivalent)	435	663	942	1,218	1,291	1,323	2,183
Crude steel (million metric tons)	45.3	65.3	91.0	115.9	120.9	126.0	120.8
Cement (million metric tons)	22.5	45.5	72.4	95.2	100.3	104.3	75.0
Aluminum (thousand metric tons)	430	630	1,000	1,720	1,760	1,870	3,744
Bauxite (thousand metric tons)	2,700	3,110	4,860	5,000	5,000	5,000	1,930
Copper, refined (thousand metric tons)	377	490	772	1,100	1,190	1,250	2,010
Chromite (million metric tons)	0.3	0.5	1.2	1.4	1.4	1.4	0
Manganese ore (million metric tons)	4.7	5.9	7.6	6.8	6.8	7.5	0
Iron ore (million metric tons)	71.9	105.9	153.4	195.5	203.0	208.0	77.1
Nickel, refined (thousand metric tons)	46	72	100	137	151	156	14
Phosphate rock ⁵ (million metric tons)	N.A.	5.8	11.5	18.0	19.9	21.0	38.5 ¹
Automobiles (thousand units)	107.8	138.8	201.2	344.2	529.0	730.1	8,824
Trucks, including buses (thousand units)	337.5	384.8	415.1	571.9	613.7	648.7	2,447
Electric generators (thousand kilowatts)	4,526	7,915	14,390	10,578	13,354	13,700	44,199
Machine tools, metalcutting (thousand units)	117.1	155.9	186.1	202.3	206.0	210.0	41.6
Instruments (million rubles, 1967 prices)	268	820	1,440	3,079	3,490	4,100	N.A.
Computers, digital (units)	60	280	470	800	1,000	1,300	24,000
Refrigerators (thousand units)	151	529	1,675	4,140	4,557	5,030	6,315 ⁶
Washing machines (thousand units)	87	895	3,430	5,243	4,052	3,002	5,107 ⁶
Radios (thousand units)	3,549	4,165	5,160	7,815	8,794	8,842	21,311
Television sets (thousand units)	495	1,726	3,655	6,682	5,814	5,968	13,507
Vacuum cleaners (thousand units)	131	501	800	1,509	1,718	2,168	8,337 ⁶
Sewing machines (thousand units)	1,611	3,096	800	1,400	1,408	1,439	N.A.
Gold production (thousand troy ounces)	2,970	3,500	5,000	6,600	6,960	8,200	1,450
Imports (million US \$)	3,061	5,628	8,058	11,732	12,480	16,097	55,555
Exports (million US \$)	3,427	5,564	8,175	12,800	13,806	15,409	49,208

¹ Preliminary.² Carcass weight, bone in, includes beef, veal, mutton-lamb, goat, pork, poultry, and edible offals, but excludes lard.³ Adjusted annual average.⁴ New fixed investment⁵ Estimated.⁶ Factory sales.

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