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OLL 84-4428

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Joint Economic Committee Briefing Paper

USSR: The Recent Performance of the Soviet Economy and Prospects for the Future

Office of Soviet Analysis

Central Intelligence Agency

20 November 1984

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Introduction

In our past testimony we have analyzed Soviet economic performance and military spending over the last two decades. Summarizing that testimony, we reported that economic growth in the USSR was relatively robust during the decade of the sixties and the first half of the 1970s. The mid-1970s, however, marked a turning point in the economy's fortunes. Economic growth began to decelerate and eventually fell below 2 percent for three consecutive years--1979, 1980, and 1981. But the economy has been doing somewhat better recently. GNP increased by about 3 percent in 1983 and growth continues to be higher in most sectors in 1984, although the USSR's national product will rise by only 2 percent this year because of a poor harvest.

Our testimony this year will focus mainly on the developments of the past two years. First we will review the performance of the Soviet economy and its major sectors in the last two years in an effort to assess the extent of the economic upturn and the distribution of the modest growth dividend available to the leadership. We will try to identify the reasons for the improved performance and weigh their relative importance. We then will give our assessment of Soviet economic prospects over the next few years and for the second half of the 1980s and discuss the implications for the West in general, and the United States in particular.

Economic Performance in 1983 and 1984

Soviet economic performance picked up marginally in 1983, a trend that has continued in most sectors of the economy through

October of this year. The 3-percent increase in GNP in 1983 represents an improvement over the poor showing the four previous years when growth averaged only about 1-1/2 percent per year. This better performance does not mean that the economy has rounded the corner, leaving its economic difficulties behind, however. Growth of GNP is still well below the rates posted in the early and mid-1970s and thus is unlikely to provide much relief for the leadership as they search for ways to devote more resources to both defense and consumption without sacrificing industrial modernization.

USSR: Growth of GNP and Selected Sectors of the Economy

	Average Annual Percent Change				
	1971-75	1976-78	1979-82	1983	1984[c]
GNP[a]	3.7	3.7	1.6	3.2	2
Agriculture[b]	-0.4	5.2	-0.9	6.3	0
Industry	5.9	3.8	2.4	3.4	3.5

[a] Calculated at factor cost.

[b] Excludes use of farm products within agriculture but does not adjust for purchases by agriculture from other sectors.

[c] Preliminary.

Some of the improvement in Soviet economic growth in 1983 and 1984 represents a rebound from 1982's low growth in much the same way that the US economy records rapid rates of growth in the initial stages of recovery from a recession. Moreover, for the Soviet Union, the trend in GNP can be a misleading indicator of the underlying health of the economy because of its sensitivity to the ups and downs of agriculture. For instance, during the

worst of the slowdown beginning in 1979 and continuing until 1982 and during the subsequent recovery, the change in agricultural output explains roughly two-thirds of the change in GNP growth even though agriculture accounts for only about 15 percent of the national product.

An alternative measure of the condition of the Soviet economy excludes agriculture from GNP to remove most of the volatility of agricultural performance. Abstracting from agriculture in this way gives a slightly different picture of the economy since 1975 (figure 1). First, it shows that a substantial part of the slump in GNP growth from 1979 to 1982 is the result of unusually poor harvests in most of these years. The rate of increase of non-agricultural GNP fell by only one percentage point compared with the 2-percentage point decline in the growth of total GNP. Second, the economic recovery in 1983 and 1984, although heavily influenced by agricultural performance in 1983, also reflected improved performance in industry and key service sectors outside of agriculture. Growth in non-agricultural GNP has continued in 1984 at about the same rate as in 1983. But because of the poor grain harvest this year, overall GNP growth is likely to be around only 2 percent this year. Problems in branches producing industrial materials and fuel and the shortfalls in agriculture this year could, moreover, curb economic development once again in 1985.

Agriculture

Farm output rose by 6.3 percent in 1983, reaching an all-time high. Nevertheless, the value of total agriculture output in

1983 was less than 5 percent greater than the previous record achieved in 1978. The livestock sector performed particularly well last year; production of meat and milk reached new records. Some 16.4 million tons of meat were produced, one million tons more than in 1982. The grain, potato, and sugar beet crops also registered increases over the depressed 1982 levels.

Net agricultural production is expected to remain at roughly the 1983 level this year. Output of livestock products will rise again, but most crops will fall. The increased emphasis on production of forage crops such as hay and silage--aided by longer and more favorable growing seasons in both 1982 and 1983--boosted feed supplies and led to higher milk yields and heavier slaughter weights. On the other hand, we estimate that grain production in 1984 will be only about 180 million tons--15 million tons below our estimate for 1983.

USSR: Output of Selected Agricultural Products[a]

	Average Annual 1976-80	1981	1982	1983
Grain[b]	205	158.0	180.0	195.0
Potatoes	82.6	72.1	78.2	83.1
Sugar beets	88.7	60.8	71.4	81.8
Cotton	8.93	9.64	9.28	9.22
Meat	14.8	15.2	15.4	16.4

a In million metric tons.
b See table 5 in appendix B.

Industry

The 3.4-percent increase in industrial production in 1983 was the highest since 1977. Growth at about the same pace seems likely in 1984, although earlier in the year prospects appeared

brighter than they do now. Industry has thus almost returned to the rate of growth experienced in 1976-78, but not to the much higher rates of the first half of the 1970s (figure 2). 25X1

Industrial Materials. The most significant improvement has been in sectors producing industrial materials (figure 3). These industries, which produce the raw materials and intermediate products used throughout Soviet industry, faltered in the last half of the 1970s. Their sluggish performance had transformed some of the sectors into bottlenecks as plan requirements outstripped domestic supplies. In some cases, notably steel, imports have had to be increased to make up some of the difference. 25X1

In 1983 and 1984, production in these branches grew by 3.6 and 3.1 percent per year respectively, compared with an average growth of 1.4 percent during 1979-82. The turnaround in the fortunes of the ferrous and forest products sectors was especially helpful in easing the industrial materials situation. In addition, chemical output has increased as much in the last two years as in the previous four combined. Nonetheless, there are already indications that the recovery in industrial materials has begun to lose steam during 1984, casting doubt on its strength. 25X1

Energy. Unlike industrial materials, the performance of fuel industry as a whole has deteriorated even further (figure 4). The combined output of fuels grew at about 1 percent a year in 1983-84 compared with 2 percent during the worst slowdown years. The fall in coal production continues, and oil production

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has stagnated this year. An important offset to the coal and oil picture is the robust growth in gas output, which hardly slowed during 1979-82 and has accelerated slightly the last two years. The electric power sector has also enjoyed a resurgence as a result both of more reliable fuel supplies and the influence of faster economic growth on the demand for power.

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Whether slow growth in the fuels sector will ultimately brake the recovery in industry depends on the success of energy conservation and Soviet hard currency requirements. In 1982 and 1983, some progress seems to have been made in reducing the consumption of fuel per ruble of GNP, permitting Moscow to increase its sales of oil to the West.

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Industries Supporting Investment. The performance of the industries supporting investment shows a stabilization in the growth of machinery production and some pickup in the output of construction materials. The planners must be distressed by the apparent failure of civilian machinery to rebound along with the rest of the economy. During 1979-82, this branch had been about the only the bright spot in the entire economy, even though its growth had also slowed. This industry is important because it produces the machinery and equipment used to promote future growth.

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Output of construction materials on the other hand, began to rise at a comfortable rate after falling in 1979-82. Shortages of construction materials and metals had limited construction activity, so this reversal will help the construction-intensive part of the Soviet investment plans, especially housing and the Food Program.

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Consumer Nondurables. On the whole, the industries that cater to the Soviet consumer did no better in 1983-84 than in 1979-82 (figure 5). The growth of output of soft goods continued to decline, to a rate of only about one percent per year. But production of processed foods grew slightly faster. To a large extent, performance in this sector is the result of larger harvests of vegetables and fruit and the continued large imports of grain that were instrumental in spurring growth in output of milk, meat, and eggs.

Transportation

During the past two years, the better showing of the railroads, which carry 70 percent of nonpipeline traffic, is the most significant development (figure 6). A smoothly running transportation system is particularly important in a country the size of the USSR because disruptions in deliveries that hurt one plant can quickly multiply in effect throughout the economy. We believe that the severity of the slump from 1979 to 1982 can be partly blamed on gridlock in the transportation sector. Thus, a sizeable portion of the industrial recovery can equally well be attributed to improvements in this sector's performance.

The picture is mixed with respect to other modes of transportation. The amount of gas transported by gas pipelines continues to rise at double-digit rates, but traffic on highways and rivers has declined.

Foreign Trade

The Soviet hard currency position by mid-1984 was quite solid. In 1983, Moscow balanced off an increase in imports of

machinery and equipment and pipe (needed to built the new gas export pipeline) with a reduction in agricultural imports. At the same time hard currency exports rose by almost half a billion dollars, primarily because the USSR reacted to falling oil prices by increasing the amount of oil exported to the West. The rise in the volume of oil sales for hard currency was made possible by an increase in oil obtained from OPEC countries in partial payment for past deliveries of arms and a tight-fisted attitude toward deliveries to Eastern Europe. The net result of these transactions was a gain of almost $300 million in Moscow's merchandise trade balance for the year.

The trend in Moscow's hard currency position continued to be favorable in the first six months of 1984. Both exports and imports, measured in current prices, fell compared with the same period the previous year, but imports dropped by almost $1.3 billion more than exports. Machinery and pipe deliveries have fallen off as the Urengoy-Uzhgorod gas export pipeline nears completion. Meanwhile, unspecified exports, most of which are sales of arms, were down by 15 percent during January-June. The volume of oil exports to hard currency OECD countries, however, apparently increased by at least 6 percent, offsetting a roughly 5-percent drop in average oil prices.

Although the Soviet hard currency trade surplus for 1984 as a whole may be higher than the $4.7-billion surplus realized last year, the overall improvement is not likely to be as marked as it was during the first six months.

-- The USSR will find it more difficult to raise the volume of oil exports because domestic production has leveled off.

-- Soft world oil prices will reduce hard currency receipts for a given volume of oil exports.

-- Soviet grain purchases will increase sharply in the second half of the year. Soviet hard currency grain purchases in the 1984 calendar year will probably exceed the 1983 bill by about $2 billion.

-- We do, however, expect imports of other agricultural products and machinery and equipment to continue to fall. Soviet equipment orders have fallen from $6.9 billion worth in 1982--when large orders for the export pipeline were placed--to $2.2 billion in 1983 and to less than $500 million in the first six months of 1984.

Moscow's healthy international financial position (and the waning of sanctions) has been recognized in the increased credit worthiness assigned to the USSR by Western banks. Soviet assets in the West are at near record amounts, and Moscow's gross debt to the West is at manageable levels--the ratio of debt service to hard currency receipts is currently a respectable 15-16 percent.

The Beneficiaries of Better Economic Performance

How the leadership responded to the improved economic picture in 1983 and 1984 provides a window on the regime's current policies and intentions.

Defense

Defense has been considered to have priority in the allocation of resources in the Soviet economy. We cannot yet conclusively establish how the economic recovery affected defense spending, however, or, for that matter, how defense spending might have impinged on the recovery. Nonetheless, since reporting to you last year, we have noted evidence of some acceleration in the rate of increase in defense spending.

The Burden of Defense. To understand the role of defense in the economy, it is important to measure how defense diverts national resources from other purposes. One such measure is the share of GNP allocated to defense spending. In the Soviet Union, this amounts to 13 to 14 percent of GNP, which is considerably higher than the comparable 7-percent figure for the United States. The Soviet defense share of GNP has remained roughly constant since 1965 because the growth of defense spending has matched overall economic growth. When economic growth slowed after 1975, defense spending growth slowed correspondingly.

This ratio of defense spending to GNP simply measures the trend in average share of all resources going to defense. Certainly the impact of defense falls unevenly on different parts of the economy. Material inputs must not only be made directly available for defense, but other resources are needed indirectly as inputs to produce the materials used for defense.

Some key industries must devote especially large shares of their output to support defense programs (figure 7). For example, more than 25 percent of all machinery production is

allocated to military procurement even though procurement is no more than 7 percent of GNP. In the process, resources are denied to the civilian sector that otherwise could be used to promote economic growth through investment or to bolster consumer morale by increasing the supply of consumer durables. In addition, as much as a fifth of all metallurgy production, a key input for construction and machinery production, may be needed to support procurement. That the metallurgy industry has encountered considerable difficulties in sustaining the growth of output in recent years makes this large share all the more significant to civilian industries. Other industries that contributed--directly or indirectly--significant shares of their output in 1982 to support military procurement include chemicals, electric power, fuels, transportation and communications, and forest products. If other resource categories of defense are taken into account, such as O&M and RDT&E, the military demand on these industries would be even greater.

The true burden of defense includes many intangibles associated with defense activity that cannot be easily measured sin quantitative terms. Examples of some that would raise the burden include giving the military establishment priority access to:

-- The highest quality raw materials for defense industry;

-- Transportation and distribution of raw materials for defense purposes;

-- The best industrial workers for defense industry;

-- The national pool of research and development talent; and

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-- The best, most advanced machinery. [redacted] 25X1

Some other intangibles could lower the burden. Examples of these include:

-- Using military construction troops on civilian projects;

-- Sending troops and military trucks to help with the harvest; and

-- Training largely untrained and unskilled non-Slavic minorities.

Finally, there are other activities that might be construed as defense-related, which we do not even consider in our estimates. This would include subsidized weapons sales, support for surrogates such as Vietnam and Cuba, civil defense programs, the dispersal and hardening of industrial sites, many intelligence activities, some communications facilities, and joint purpose projects, such as the BAM Railroad and city subway systems. Although we have not been able to measure these activities, it is clear that they would imply a defense burden higher than our estimate of 13 to 14 percent of GNP.

Defense Spending Trends. In the ruble estimate, we use constant prices (1970 is the base year) so that we can measure the real growth in defense--that is changes in military manpower, the volume of procurement and construction, and the scale of research and development (RDT&E) and operations and maintenance (O&M), excluding the effects of inflation. Budgetary discussions in the USSR are presumably often conducted in terms of current price data, however. We do not have access to current Soviet defense budget figures, and our information at present is

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inadequate to update the price base to a more recent year. Thus, our defense spending estimates do not replicate the figures the present Soviet leaders consider in discussing their own defense issues. Figures on actual defense outlays measured in current prices, if available, would show higher growth than our constant price estimates because of inflation that characterizes the Soviet economy generally. But since so much of Soviet planning is conducted in physical rather than financial terms, considerable information is undoubtedly available to the leadership to permit them to identify the real trends underlying expenditures in current rubles.

There have been two distinct periods in Soviet defense spending since 1965. Before 1976, growth in total defense spending had averaged about 4 to 5 percent per year; after 1976, the rate of increase in spending dropped appreciably, to about 2 percent a year.* Nevertheless, spending levels were so high that the defense establishment was able to continue to modernize its forces and to enhance substantially its military capabilities. Between 1976 and 1983, the Soviets purchased 1,100 ICBMs and more than 700 SLBMs for their arsenal of strategic forces, even while they were adhering to the SALT II restrictions and spending in this category was declining. At the same time, they added about 300 bombers and 5,000 fighters, including the MIG-23/27 Flogger fighter and a new version of the Backfire bomber. Modernization of ground forces continued by introducing more sophisticated

* Unless specifically stated, all defense spending growth rates are measured in constant 1970 rubles.

armament. Some new models of self-propelled artillery, for example, were nuclear capable, and 15,500 new tanks were added to the forces, including the costly T-72 and improved T-64 tanks. Finally, the buildup of the Soviet navy continued. During this period, the Soviets added 33 major surface combatants, 15 nuclear-powered ballistic missile submarines, and 71 attack submarines.

Despite the scale of the ongoing Soviet defense programs, the growth of spending did slow. Its impact can be seen by reviewing trends in the outlays of military services and by trends in major resource categories (procurement, construction, personnel, O&M, and RDT&E). Military service expenditures provide insights into competition among conflicting military interests in a period of slower growth in defense (figure 8).* The most striking feature of service spending trends is that all services, including the command and support function, shared in the reduced growth in spending. Before 1976, total outlays of the services increased by 3-5 percent annually. Starting in 1977, however, the rate of growth of total spending in all the services decreased substantially. Some services were hit harder than others. For example, total outlays for Strategic Rocket Forces grew by 4 percent per year during 1966-76, but fell by more than 5 percent per year after 1977. Spending on Air Defense also declined in absolute terms. The growth in outlays on the

* Because we cannot allocate RDT&E costs among the services, the following analysis measures service shares of total spending less RDT&E. "National command and support functions" tends to be a catchall category and is also not included in this breakout.

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remaining services declined from 3-5 percent per year in 1966-76 to 1-3 percent annually after 1977.

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Trends in resource category spending before and after 1976 (figure 9) demonstrate that the main source of slower growth in defense spending was a stagnation in spending for military procurement after 1976. Year-by-year estimates of the level of total defense spending and outlays for procurement since 1965 (figure 10) confirm this judgment.

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Could we be wrong about the procurement slowdown? This is a reasonable question that has been raised, in part because our building block (item-by-item) approach toward estimating procurement is obviously subject to uncertainty. We have audited our results to examine three possible sources of uncertainty: military production estimates; the cost of the new sophisticated Soviet weapons systems relative to costs of older systems; and possible increases in the real cost of defense production caused by declining productivity since the mid-1970s, which means more resources might have been required to produce the same product.

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Based on this audit we have reasonable confidence in our estimates of the level and trend of Soviet military procurement.

-- We have considerable confidence in our production estimates for large programs, which make up the bulk of procurement.

-- We found that actual prices for the most expensive and complex systems would have to be twice our present estimate to raise procurement growth back to pre-1976 trends. We do not believe we could be this far off.

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-- Productivity changes in Soviet industry were not significant enough to alter our judgment about recent procurement trends.

Smaller increases in spending in the other categories of Soviet military programs, however, also contributed to slower growth in defense spending. After 1976, the estimated cost of operations and maintenance grew about half as rapidly as before the slowdown. Since 1976, the main driver of defense spending has been the estimated 6-7 percent per year growth in RDT&E; in the earlier period, procurement had been the leading source of growth.

The Procurement Slowdown

Why did Soviet procurement stop growing after 1976? Many explanations have been offered, including policy decisions, technical difficulties, manufacturing constraints, and industrial bottlenecks. But there is still disagreement as to whether one factor dominated or even if the list is complete.

Policy decisions. We would note that the stagnation in the level of procurement has now lasted for 7 years--from 1977 to 1983. This plateau has arguably lasted too long to be the result exclusively of bottlenecks or technological problems. In a period so long, the leadership of the Soviet Union could have used its control of industrial priorities to ensure a higher rate of growth of military procurement. Older-generation weapons could have been kept in production while problems with new systems were ironed out, or once the problems were overcome, the new systems could have been produced at catchup rates. We believe they chose to pursue neither alternative.

In deciding to hold procurement growth down the Soviet leadership in the mid-1970s may have viewed the external threat as manageable and the existing high level of procurement as enough, possibly recognizing that the USSR was entering a period of generally slower economic growth and counting on a continuation of the decline in US military spending. But even if a policy decision was made to put a temporary though high cap on military procurement--and we want to emphasize we have no direct evidence this is so--other factors clearly played a supporting role. [redacted] 25X1

Technical Difficulties. Modern Soviet weapons embody ever higher levels of technology, and there is evidence that the Soviets have experienced some difficulty, particularly in the R&D phase, in solving technological problems encountered in producing new weapons. Although problems in design or on the test ranges are nothing new, some of the delays encountered during this period were prolonged and may have contributed to the procurement slowdown. [redacted] 25X1

Manufacturing Constraints. Even after production of new weapons has begun, the Soviets have encountered delays in achieving a high level of serial production of some high technology weapons systems in recent years. These delays would reduce the rate of growth of military procurement below the level planned. [redacted] 25X1

Industrial Bottlenecks. The shortages of key materials and transportation problems that affected much of Soviet industry since the 1970s clearly also affected defense. Soviet industrial

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growth as a whole has been slower since 1975 than in the past. Despite the traditional priority accorded to defense it has become more difficult to isolate defense from these economic disruptions. [redacted]

Defense Spending During the Recovery

What can we say about defense spending in 1983? Our preliminary estimates for 1983 suggest that procurement is higher in 1983 than in 1982, growing at a rate of 2-3 percent. The upturn is largely the result of a projected 11-percent increase in construction of ships and boats, mainly the Delta and Typhoon SSBN submarines, and a projected 5-percent increase in missiles. [redacted]

Our conclusions are tentative because of the difficulty we have in estimating the distribution through time of the costs of systems that are built over several years. The phasing problem is a particular problem for recent years like 1983 because it involves judgments about new systems that we think will be deployed in the future but for which the lead costs must be phased back to the present. Estimates of missiles andships are especially influenced by the lead costs of weapons that have not yet come on stream. If the system is never deployed, enters at a reduced level, or is stretched out longer than expected, then our current estimates for 1983 will be revised downwards. This has been our experience in recent years. [redacted]

What interpretation should then be placed on the higher apparent growth of procurement in 1983? One possibility is that this figure will be revised downwards as we collect more

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information about the pace of weapons production in 1984 and 1985. This happened to our 1982 procurement estimate when we did the update this year. Another interpretation is that this growth lies within the range of the year-to-year fluctuations of the previous six years and does not signify a new trend. A third possibility is that this estimate is sufficiently above the average of the last six years to be an early indicator of a return to more rapid growth. Another year of data is required before we can choose among these interpretations.

Investment

While defense has been maintaining its place as a claimant on Soviet production, new fixed capital investment--annual outlays for plant and equipment--has absorbed a rising share of GNP in the 1981-85 Plan period. Investment increased at an average annual rate of more than 4 percent during 1981-83, and the economic plan calls for an increase of 3.9 percent this year. Since investment has been running well ahead of plan each year, the actual increase in investment in 1984 could be even greater. Assuming that the 1984 target is reached or exceeded and that new fixed investment grows by 4 percent in 1985--about the 1981-84 average--investment in the first half of the decade would rise by roughly 20 percent compared with 1976-80, almost double the planned growth of 10.4 percent.

The 1981-85 Plan had called for slower growth in investment than in overall economic growth. The slowdown in investment growth planned--the lowest in Soviet post-war history--was predicated on the assumption that offsetting increases in capital

(and labor) productivity would stimulate growth in GNP and in individual sectors of the economy.

-- Plans for building new facilities were pruned, and construction activity was refocused on renovating existing structures.

-- Existing machinery was to be replaced more rapidly by new, technologically advanced equipment as the primary means of introducing new technology into the economy.

At the same time, inventories of unfinished construction were to be markedly reduced in order to maintain the annual flow of new production capacity brought on line. Indeed, the commissioning of new capacity was targeted to rise by an average of almost 4 percent a year.

As we noted in our testimony last year, this investment policy apparently was abandoned by the leadership from the very outset of the 11th Five-Year Plan. Investment has been accelerated markedly in order to provide more balance between renovation and reconstruction of existing facilities--the cornerstone of the original plan--and expansion of existing facilities and the building of new ones. During 1981-83, for example, state expenditures on the reconstruction of the "productive" capital stock grew by about 6-1/2 percent a year while state spending on construction of new "productive" facilities increased by approximately 4-1/2 percent a year.

As far as the allocation of investment thus far in the 11th FYP is concerned, investment in industry has increased by slightly more than 4 percent a year on average. The fuel and

power branches have absorbed the largest share--more than one-third of industrial investment during 1981-83. Investment in the oil industry has grown particularly rapidly--by more than 10 percent per year.

Investment in the machinebuilding sector has risen by less than 4 percent a year. This is a vitally important sector of Soviet industry; it produces defense hardware for the military, durable goods for the consumer, and machinery for investment. Because the modernization of the machinery sector has lagged, it is not producing the quantity, and more importantly the quality, of equipment required to refurbish Soviet industrial facilities. Indeed, some Soviet experts argue that the rise in capital-output ratios in the USSR will not be arrested until the technological level of Soviet machinery is raised substantially and on a continuing basis.

Meanwhile, the share of investment going directly to agriculture has remained about 27 percent. Investment in the railroads has been flat since 1981 even though rail freight transport has been a major bottleneck in the economy.

USSR: Average Annual Percentage Growth in New Fixed Investment

	Actual 1981-83	1981-85 Plan
Total investment	4.4	1.6
Industry	4.1	4.2[a]
Fuels and power	6.5	8.7[a]
Ferrous metals	5.6	5.4[a]
MBMW	3.8	3.4[a]
Agriculture	2.5	1.4[a]
Transportation and communications	5.5	NA
Construction	3.0	NA

[a] Estimated.

Consumption

Consumption has grown at a rate only slightly less than that of GNP during the current five-year plan period except for 1982 when it grew much more slowly than GNP. This year official Soviet data imply an increase in consumption (about 4 percent) in excess of GNP growth.

General Secretary Chernenko, like Andropov before him, has shown concern for the welfare of the population in investment allocations, program proposals, and import decisions, but in public statements both leaders were careful not to raise consumer expectations too much. They played down the material aspects of consumption while still stressing the link between increases in income and labor productivity.

The regime is trying to reduce the imbalances between demand and supply of individual consumer goods that have made persistent

shortages and rationing--formal and informal--a way of life in the USSR. The growth of personal incomes has been restrained to bring wages more in line with the availability of consumer goods. Average wages increased about 2.5 percent a year during 1981-83 compared with 3 percent during 1976-80 and 3.6 percent in 1971-75.

The regime also is taking steps to increase supplies of food and nonfood consumer goods, housing, and consumer services. To increase the availability of quality foods Moscow is (1) banking on a quick payoff from the Food Program to increase domestic production of agricultural products and (2) continuing to import large quantities of agricultural products. More than $9 billion of hard currency--about one-third of Moscow's total hard currency receipts--were spent in 1983 on agricultural imports. The Kremlin also is trying to spur domestic production of consumer goods, although improvement in this area has been slow or even negligible, and is continuing to import large quantities of nonfood consumer goods. About $11 billion worth of such goods were purchased abroad last year--almost 60 percent from Eastern Europe. In internal prices these accounted for a substantial share of retail sales of nonfood consumer goods--about 10-15 percent. As a result of these policies, retail trade turnover, which had been stagnant in 1982, increased in real terms by about 3 percent in 1983. Based on statistics for the first six months of 1984, growth in retail turnover may be even faster this year.

The Soviets also have stepped up construction of new housing. The 112.4 million square meters of housing constructed in 1983 represents the largest yearly increase in housing construction in more than two decades. In addition, a flurry of party-government resolutions in recent years have called for improvements in the consumer services area--expansion of repair and cleaning shops, more personal services, and the establishment of more convenient shopping hours in the service sector.

Still, consumption levels in the USSR have risen only slowly in the 1980s. Per capita consumption, for instance, dropped in 1982 and increased by only about 1-1/2 percent in 1983. Certainly the regime has a considerable distance to go in eliminating the disequilibria plaguing consumer markets and in providing more adequate incentives for workers. This will not be accomplished, we think, until the leadership is willing to restructure retail prices and bring the mix of products produced into greater conformity with demand and is able to provide the population with more substantial and continuing increases in the supply of quality food, housing, and personal services.

USSR: Annual Growth of Per Capita Consumption

(percent in established prices)

	1971-75	1976-80	1981	1982	1983
Total consumption per capita	2.9	2.1	1.9	-0.6	1.4
Consumer goods	2.8	2.0	2.0	-1.2	1.2
Food	1.6	0.8	0.7	-0.6	1.8
Soft goods	3.0	3.1	2.4	-1.5	0.7
Durables	10.0	5.4	6.4	-2.7	-0.3
Consumer services	3.0	2.3	1.7	1.52.2	

Reasons for the Improved Economic Performance

Ordinarily, we might have expected Soviet leaders to be enthusiastic about the results of the last two years, but their reaction has been restrained. This unusual reticence reinforces our caution in assessing the recovery. The lack of euphoria on the part of the Soviets can perhaps be better understood by looking at the trends in the level of output since 1975 rather than growth rates.

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From 1976 to 1978, Soviet industry recorded unprecedentedly low rates of growth. At the time we believed this development reflected serious economic difficulties even though a continuation of those basic trends would still have output in 1984 some 40 percent above the 1975 level. From 1979 to 1982, industrial growth slowed even more, opening a gap between actual achievements and the then historically slow 1976-78 trend. The 1983-84 recovery put industry back on its 1976-78 growth path, but left it substantially below the level that could have been reached if the Soviet growth recession had not occurred. Still, the question remains, why has measured economic growth turned up

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after several years of mediocre performance? We have considered a number of possible explanations. [redacted]

The Recovery As A Statistical Anomaly?

Our estimates of Soviet economic performance in 1983 and 1984 are preliminary. The statistics for 1983 are subject to change and the size of the sample for 1984 will increase considerably next year when we have access to a larger volume of information. Often the early sample exaggerates the growth rate because it relies on press reports that tend to emphasize the positive features of economic performance. As more data become available, we expand our sample and revise our estimates accordingly. A good example of this happened recently. We had been carrying an estimate for the growth of production of processed foods for 1983 as 5 percent, but a reassessment this fall lowered that figure to 2.9 percent. While we do not expect large changes in every part of the economy, further revisions may reduce the measured extent of the recovery. [redacted]

Restoration of Balance

In the late 1970s, a lack of balance in Soviet industrial development became increasingly apparent. Shortages of industrial materials and energy pushed down capacity utilization rates. Then, the economy suffered two severe shocks from extremely harsh winters in 1978-1979 and 1981-1982. Plants were idled while waiting for raw materials to be produced and shipped. The cold weather increased the demand for fuels and electric power. In factories, choices had to be made whether to slash output and keep energy use constant or maintain output and

[redacted]

accept disproportionate increases in energy use. In some locations, electric power stations were forced to reduce the amount of power they supplied.

Unusually extreme winter weather also snarled the transportation network, further complicating the shipping of products to their ultimate destination. These effects spilled over into other sectors, as their supplies of raw and intermediate materials dwindled, and hampered production of several commodities, some of which suffered unprecedented declines in the level of output. In turn these large shortfalls created other imbalances which further disrupted the economy.

The regime began to focus on these bottlenecks early in the 1981-85 Plan. In 1983 and 1984, the process gained momentum. Transportation benefited from fewer weather-related interruptions and decreased demand for freight cars to support activities related to the invasion of Afghanistan and efforts to deal with the crisis in Poland. Shortages of ferrous and nonferrous metals also eased. With more reliable transportation, better performance in the raw materials sector, and more dependable supplies of electric power, production of steel, chemicals, and construction materials was able to rebound. Just as the effects of bottlenecks had spread throughout the economy during the poor years, so breaking them produced the opposite effect.

Productivity Growth

The economic acceleration in the past two years has not been the result of faster growth in the supply of labor or fixed

capital. Rather, it has reflected improvements in productivity. The combined productivity of labor and capital in nonagricultural sectors, which had declined by 1.3 percent a year in 1979-82, levelled out at -0.4 percent in 1983 and may be increasing in 1984.

The breaking of bottlenecks and improved supplies of raw materials helped on the productivity front by permitting a more complete utilization of the capital stock and labor force. Other factors have been at play, however. For example, Andropov's discipline campaign (discussed below) probably had an appreciable effect. If, for example, the campaign managed to reduce average absenteeism by only one-half hour per week, labor productivity (as measured by output per worker) would have been raised by one percent, provided that the necessary raw and intermediate materials were available. Improvements in the supply of consumer goods may also have boosted worker morale and productivity by reducing the time spent off-the-job in queues to purchase consumer goods or by simply increasing incentives.

Policy Decisions

Whatever the reason for the continued restraint on military procurement, it did give the economy some breathing space. A continuation of procurement growth at its historical rate after 1976 would have raised the level of procurement by 25 percent and the defense burden by at least one percentage point (figure 10). The resources used for investment are the ones that are most substitutable for procurement. If the resources were diverted entirely from investment, the rate of investment growth

would have fallen by as much as two percentage points a year. The stagnation in procurement permitted the leadership to raise investment above the levels originally planned for 1981-85.

Continued growth in military procurement would not only have hampered investment; it would have increased demand for the products of those industries that were finding it hard to expand output. The effects of an increase in procurement spread across the economy as inputs--both direct and indirect--must be provided to accommodate it. In particular, metallurgy, machinery, electric power, and fuels would have to devote a larger share of their output to supporting defense. (We should note, however, that increased investment, especially in machinery production, will pay dividends in terms of long range military procurement.)

Outlook

In sum, we think that economic pressures have eased somewhat in the USSR during the past two years. To recapitulate, the better economic performance was due to:

-- Better weather, which helped boost farm output and industrial production and ease snarls in rail transport;
-- Relief from the shortages of raw materials that had been severely constraining industrial production;
-- Increases in hours actually worked per day and greater utilization of production capacity; and
-- Greater efficiency resulting from more effective management and, perhaps, an improvement in worker morale.

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The Near Term

Can the Soviet economy's better showing be sustained in the years ahead? In our judgment, the recent upswing in GNP growth could continue for another year or two. This would require continued improvement in some of the same factors that have been responsible for the better performance in the last two years, especially increases in actual hours worked and further relief from bottlenecks.

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Whether the labor discipline campaign has run its course is a major uncertainty in near-term projections. Because of the prevalence of long lines at markets and the difficulties encountered in obtaining many goods, Soviet workers frequently spent part of the working day away from the job shopping. Drunkenness at work also is a serious problem. The campaign introduced by Yuri Andropov in late 1982 was intended to prevent such violation of work rules, to enforce tighter discipline in management, and to punish corruption. One of Andropov's first acts, in fact, after taking office was to fire some allegedly corrupt or incompetent officials. The Minister of the Railways, for instance, was summarily dismissed within weeks of Brezhnev's death.

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General Secretary Chernenko has followed Andropov's lead in stressing the need to maintain labor discipline. In a recent speech he underlined the importance of increasing discipline, ending "parasitism," and eliminating alcoholism. He pointed out that increased discipline had produced an "immediate and noticeable" improvement in production and in conserving

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resources. Chernenko also appears to be continuing the crackdown on corruption. This past July, in fact, a former manager of Moscow's most prestigious food store was executed by a firing squad for "illegal speculation" in consumer goods.

We are skeptical that the campaign actually has made people work significantly harder, although it apparently has succeeded in forcing people to spend more time on the job. Nonetheless, even if Chernenko matches Andropov's zeal for discipline and cracking down on corruption, the discipline campaign offers only temporary assistance in raising productivity in the economy. Without more stringent application, the impact of the discipline campaign will weaken. There are, in fact, indications that the campaign has begun to wind down; the crackdown on people who, contrary to law, offer merchandise for private sale has abated as has the police campaign to check on people absent from work.

Further progress in eliminating adverse bottlenecks in the economywon'tcomeeasyeither.Therailroads,forinstance, continue to operate at near-maximum capacity, and serious freight transport snarls could resurface at any time.

On balance, underlying trends suggest that GNP growth the next year or two will remain in the 2-3 percent range. This estimate reflects primarily a judgment that industry and other key sectors outside of agriculture will continue their improved performance of the last two years. Because year-to-year movements in GNP depend heavily on agricultural output, which, in turn, depends so heavily on the weather, growth in a particular year could even be outside of this range if the weather is unusually good or bad.

Longer Run

The stronger showing in 1983 and 1984, even if it continues another year or two, would not in our view foreshadow a higher growth rate over the longer term unless Moscow begins to take effective steps to remove the inherent inefficiencies of the Soviet economic system. The primary sources of improved growth in recent years will not overcome the more fundamental problems that have pulled economic growth down in the Soviet Union since the mid-1970s.

Slower Growth in Labor and Capital. Additions to the working-age population have been falling since the mid-1970s because of the lower birth rates of the 1960s, an increase in the number of workers reaching retirement age, and a rising mortality rate among males in the 25- to -44 age range. These increments will be lower in the next several years than at any time in the last several decades. In fact, they will be less than one-third of the annual additions to the work force in the first half of the 1970s.

Growth of the Soviet capital stock has also slowed, although less than we previously expected because of the faster-than-planned growth in investment and some success in holding down the growth of unfinished construction. The value of the stock of fixed capital in the Soviet economy increased by slightly more than 6 percent per year during 1981-83, compared with 8 percent in the first half of the 1970s and 7 percent in 1976-80. A more pressing problem has been an inability to employ capital assets more effectively and a failure to embody more modern technology

in new capacity being brought on line. A large part of the Soviet capital stock is old and obsolete. One Soviet author estimates, for instance, that 30 to 40 percent of all equipment now in operation in the USSR has been in use for 15-20 years or more. [redacted]

Rising Costs of Industrial and Agricultural Raw Materials. Even though the Soviet Union is endowed with enormous quantities and a wide variety of raw materials, these materials in many instances have become increasingly inaccessible and the cost of exploiting them has risen sharply:

-- The economy has become more dependent on Siberia for fuels and other raw materials. Developing these new areas requires large capital investments, particularly in construction.

-- Most of the new areas require social overhead capital--roads, housing, cultural, and service facilities--in addition to the basic facilities for exploration and exploitation.

-- The declining quality of readily available raw materials has pushed up capital requirements because of the cost of enriching poor-grade minerals and ores.

If oil and coal production does not begin to increase again energy supplies will remain taut and spot shortages of the sort experienced in recent years will continue. [redacted]

Agriculture and its supporting industries currently preempt about one-third of total Soviet investment, one-fourth of hard currency earnings, and require growing subsidies to maintain

[redacted]

stable food prices. A number of factors will continue to sap productivity in the farm sector in the years ahead.

-- Until the leadership eliminates output quotas, revises the success indicator system, and stops interfering in day-to-day operations, farm production will be plagued by high costs and low productivity.

-- The relatively slow pace of industrial growth in the second half of the decade will limit the support industry can give to agriculture unless the planners give the Food Program very high and continuing priority.

-- The renewed commitment to land relamation at the October Plenum on agriculture suggests that a considerable part of farm investment will have long-delayed and uncertain returns if past experience with these programs is a reliable guide.

-- Technical progress in farm production will occur slowly because of inadequate incentives and poor support from industry.

-- Shortages of younger, skilled workers will persist in many regions until there are major improvements in rural living conditions and an upturn in annual increments to the general labor force.

Systemic Problems. Economic growth will also be held back by the USSR's highly centralized system of planning and management. As the Soviet economy has grown in size and complexity, it has become more and more difficult to manage from the center. Moreover, a perverse system of incentives promotes

inefficient behavior by enterprise managers and dampens the introduction of new technology into the economy.

The inflexible Soviet system contributes to their technological backwardness. The gap between the USSR and developed western countries continues to grow in technologies not directly confined to weapon systems. The Soviets have been particularly unsuccessful in stimulating advance in the technologies that underlie the resurgence of western productivity growth--microelectronics, computers, robotics, and advanced materials. They concentrate on copying western developments, and only a massive program for acquiring western technology has prevented them from falling further behind.

Indeed, the greatest potential for economic gain in the USSR over the longer term probably lies in economic reform. However, true reform--that is a major restructuring of the Soviet economy to include greater use of markets--is not likely. The political elite strongly oppose full-scale marketization because they fear it would lessen party authority and control. Most policy advisers in the Soviet Union do not believe it would be the right solution even if it were politically feasible. Soviet leaders not only view centralized planning as being mandated by "Marxism-Leninism"; they see it as being responsible for elevating the USSR to world superpower status.

Certainly nothing in Chernenko's background or past pronouncements indicates an inclination toward bold systemic change that would significantly reduce centralized planning and management. After almost a year in office the General Secretary

has not put forward a clear-cut economic strategy let alone any new initiatives in the area of economic reform. He has largely carried over the programs of the previous administration which focus on seeking modest improvements in the system of incentives and performance indicators. 25X1

The most important of the "new" programs carried over from the Andropov regime is the "economic experiment" introduced in January 1984 in two All-Union and three republic-level industrial ministries. The experiment gives enterprises managers more latitude in using investment and wage funds, reduces the number of success indicators (making contract fulfillment the key indicator), increases the role of production associations and enterprises in drafting plans, and ties worker benefits and managerial bonuses more closely to enterprise performance. Soviet planning officials have characterized the experiment as a "strategic study" or "proving ground" for measures to be introduced throughout the economy as a whole. Those innovations that "justify" themselves during a two-year experimental period--1984-85--will be adopted on a national scale for the 12th Five-Year Plan (1986-90). 25X1

The Soviet leadership has already expressed satisfaction with preliminary results of the experiment and has announced plans to expand it to include enterprises in six new All-Union and twenty new republic level ministries. (Participating industries will then account for 15 percent of industrial production.) According to Soviet officials, there has been substantial improvement in fulfillment of contracted sales

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obligations, product quality and productivity, reduction of production costs, and more rapid introduction of technological innovation in those enterprises participating in the experiment.

Nonetheless, a steady undercurrent of skepticism and criticism of the experiment appears to be building among Soviet economists and government officials and even factory managers. One Soviet economist, for instance, has questioned the effectiveness of the new measures in ensuring contract deliveries and has suggested that there will be even larger problems in extending the experiment to the entire economy. The noted Soviet economist, A.N. Aganbegyan, director of the Novosibirsk Institute of Economics of the USSR Academy of Sciences, said recently that incentives provided under the experiment have had little, if any, effect on the productivity of the average worker.

More generally, economists at the Novosibirsk Institute have termed the achievements of the experiment during the first seven months "modest". Enterprise managers have complained that despite the stipulations that they be given a larger role in the planning process and that plans remain stable over a 5-year period, their submissions have been largely ignored and plans are still frequently changed. Our own assessment is that the experiment is too limited to have much potential for improving industrial performance and that the success reported so far is largely the result of the priority given to the participants in receiving supplies of labor and materials.

Foreign Trade as a Spur to Economic Growth

The Soviet economy would certainly benefit from continued or increased access to Western goods.

-- Large quantities of farm products will be required to support the livestock program and to keep per capita consumption of quality foods at present levels.

-- Imports of industrial materials such as phosphate materials and other specialty chemicals, ferrous metal ores, and alloying materials would prevent or alleviate bottlenecks that could constrain industrial production.

-- More and more modern machinery and equipment is badly needed to help modernize industry and to carry out Moscow's investment policy calling for the renovation and reconstruction of existing production facilities.

-- Significant amounts of construction and transportation equipment also may have to be imported.

The Soviet need for imported capital goods will be most pressing and the potential payoff the greatest in the energy sector. During the remainder of the 1980s, the cost and pace of certain phases of Soviet energy development will depend substantially on the level of imports of Western oil and gas equipment and know-how. Soviet interest in imports of Western equipment and technology should increase as exploration and development shifts to deeper and more complex onshore deposits, especially as exploitation of the deep sulfurous petroleum deposits in the Pre-Caspian Depression and Central Asia proceeds. Exploration and development of Arctic offshore

deposits in the Barents and Kara Seas would also be helped by Western equipment and technology. The pace of Arctic offshore development will depend on the degree to which the Soviets are willing to permit major Western firms to man and manage operations and, possibly, on the availability of Western financing of project costs measured in tens of billions of dollars.

Still, we do not believe that the Kremlin can rely much on increased imports to avoid resource pressures in the domestic economy during this decade. Our projections indicate that--barring another round of spiraling oil prices--Soviet hard currency purchasing power will not rise significantly through 1990. Consequently the USSR will have difficulty financing more than modest growth in hard currency imports unless it is willing to accept a sharp increase in its debt. Western credits are one--and a relatively immediate--means of financing additional hard currency imports. But Soviet debt management policy would first have to become less conservative, and Western governments would have to provide significantly greater encouragement and guarantees to Western banks. If Moscow were willing to rely more on Western loans to buy equipment and technology--as it did in the early and mid-1970s--the benefits would be sizable. For example, if Moscow had adopted a less restrictive borrowing policy during 1981-83--perhaps allowing a doubling of equipment imports from the West--the machinery component of new fixed investment would have increased by about 10 percent annually compared with the 5-percent annual growth actually attained.

The Soviets, however, appear reluctant to step up overall imports from the West on political grounds. The recent credit and trade embargoes have persuaded Moscow that becoming too dependent on the West is dangerous. Imported Western plant and equipment, moreover, has fallen short of its potential for improving the USSR's overall economic performance because of problems in assimilating and diffusing Western technology. 25X1

Moscow could attempt to squeeze more out of Eastern Europe by pressuring Warsaw Pact allies to reduce their deficits on bilateral trade with the USSR in the second half of the 1980s and to boost their exports--especially those of higher quality goods--to the Soviet Union. In fact, the Soviets now appear more willing to lean on Eastern Europe than they have in the past.

-- The Soviets are envious, even resentful, of the higher standard of living in most East European countries than in the USSR.

-- Moscow is probably confident that social order can be maintained. Martial law has effectively controlled tensions in Poland, and there has been little overt discontent in any of the East European countries despite harder economic times.

-- The regime probably believes that the East European nations could compensate for increased Soviet demands by cutting down waste and inefficiency in their economies.

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We don't believe, however, that the Kremlin will have much success in reducing net exports to Eastern Europe. Most East

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European countries are struggling to sustain some positive economic growth of their own while putting their hard currency balances in order. Moreover, the technological level of most East European finished goods is still below that of the West.

Overall Long Term Assessment

All things considered, we believe Soviet economic growth will average 1.5-2.5 percent per year in the second half of the 1980s. If the low end of the range is to be avoided, capital investment will have to continue to increase at above-plan rates (as seems likely), weather conditions for agriculture will have to approximate the 1960-83 average, and Moscow must succeed in implementing plans for fuel conservation and fuel substitution. Energy shortages are not likely to be a major hindrance to growth of GNP this decade unless the oil sector goes rapidly downhill--a point that was emphasized in last year's testimony. In fact, the Soviets appear to have had some success in slowing the rate of growth of energy consumption relative to GNP.

To reach or exceed the high end of the GNP growth range the USSR would have to achieve productivity gains like those recorded in the late 1960s and early 1970s. Until 1983, combined productivity of inputs of labor, capital, and land had been falling for over a decade--as the tabulation below shows. Our judgment is that the USSR will not be able to reverse this trend over the next several years. Soviet policymakers have not adopted the changes in investment policy or in economic management that might arrest the long-established decline in factor productivity.

USSR: Growth of Factor Productivity

(average annual percentage change)

	1966-70	1971-75	1976-80	1981-82	1983
GNP	5.3	3.7	2.6	2.1	3.2
Inputs of labor and capital	4.1	4.2	3.5	3.1	3.0
Factor productivity	1.1	-0.5	-0.8	-1.0	0.1

Policy Implications

Domestic Policy

Moscow's room for maneuver in resource allocation among military and civilian claimants in the second half of 1980s will be severely limited. Admittedly, it is difficult to speculate on what they will do because the Soviets have released little information about their plans and policies for 1986-90. We do know, however, that the Soviet leaders have already adopted two expensive programs as part of the 12th FYP--the Food Program and a long-term Energy Program. The cost of the Food Program could run as high as 265 billion rubles--suggesting that agriculture's priority will not be decreased. Indeed, at a recent special Party Plenum devoted to agriculture, Chernenko announced increased output and investment goals for land reclamation, calling success of the Food Program critical to the leadership's effort to raise consumer welfare and productivity. Investment in energy also is likely to be an enormous drain. At a minimum, we expect investment in the energy complex to total 170 billion rubles, an increase of 28 percent over planned investment in 1981-85. Although the Soviets have announced no official target

for total investment during the 12th FYP, one high level Soviet planner informally told [redacted] earlier this year that investment will continue to increase at the current rate of growth--about 4 percent per year. Anything less--assuming they go ahead with the Food and Energy Programs--would put a severe crimp in the amount of investment resources available for other areas essential for future economic growth, such as machinebuilding and transportation. [redacted]

In our judgment, the leadership will probably attempt a precariously balanced policy of at least some growth in living standards and increasing allocations for new plant and equipment combined with some growth of military procurement. Certainly the pressure to step up defense procurement must be intense given the state of Soviet-American relations and the recent increases in US spending on military hardware. But a decision on increasing the rate of growth of defense spending has to be a tough one, not so much because of the impact it would have on overall economic growth but because of the implications for Soviet society. Our analysis indicates, for instance, that at current rates of investment even with defense growing at our present estimate of 2 percent a year, per capita consumption would grow by only 1-1.5 percent annually during 1986-90. Accelerating defense spending to a rate of 5 percent a year--a rate approximating the 4 to 5 percent growth observed during 1966-76--would jeopardize Soviet prospects for anything but minimal improvements in consumption levels. [redacted]

[redacted]

Sluggish improvement in living standards over a prolonged period would not sit well with the Soviet population. At a minimum it could erode recent gains in productivity. It could even provoke a crisis between the regime and Soviet society if it continued over a long period.

It is important to note, however, that even if defense spending growth is not increased during 1986-90 and overall economic growth is in the 2-2.5 percent range, the Soviets could continue to deploy major weapon programs and modernize their forces. Important programs in development that could still be deployed through the early 1990s include several military space systems, strategic cruise missiles, another generation of strategic ballistic missiles, a strategic bomber, a large transport aircraft, and a large carrier for conventional aircraft.

Foreign Policy

Continued slow economic growth in the range indicated is unlikely to result in major changes in Soviet foreign policy. We do not see economic problems at home motivating the leadership to undertake high-risk adventures abroad that are designed to distract an unhappy public or produce economically beneficial geo-strategic breakthroughs. Nor, on the other hand, would a continuing economic slowdown be likely to significantly constrain Soviet political and military activity in the Third World.

Eastern Europe. An economic slowdown would have its most serious external impact on relations between the USSR and its client regimes in Eastern Europe, which currently receive most of

Soviet economic and military aid. To achieve the levels of GNP growth and per capita consumption we have projected by 1990, for instance, Moscow may have to impose cuts in oil deliveries to Eastern Europe beyond those already levied. Reductions in raw materials deliveries from the USSR are also possible. Measures such as these could cause new political and economic strains to develop between Moscow and its East European allies. 25X1

Relations with the Third World. A continuation of the slowdown in economic growth would be a factor affecting Soviet policy toward the Third World, although it would be of less importance than military and geopolitical considerations. In general, Moscow is likely to become more tightfisted in giving economic assistance. However, exceptions are likely to continue to be made to this policy in the case of Cuba, Vietnam, and Afghanistan where political and military-strategic factors outweigh economic considerations, but where the USSR incurs most of its Third World economic burden. 25X1

Bilateral US-USSR Relations. Although we don't believe that Moscow can rely much on increased imports to avoid resource pressures on the domestic economy, economic difficulties will give the Soviets a continuing incentive to obtain US grain and state-of-the-art technology in such key areas as energy, agricultural technology, and machine tools. The robust outlook for global grain production over the next few years suggests that in years of average harvests the Soviets will have only a limited need for purchases from the United States above the Long-Term Grain Agreement minimum commitment of 8 to 9 million tons.

Therefore, US grain-based political leverage is likely to be quite limited. Nonetheless, Moscow will still find the United States attractive as a supplier because of its unique year-around capacity to deliver large volumes of grain quickly--especially corn--at short notice.

As noted above, large-scale US assistance would be helpful to Moscow in maintaining oil output and developing Arctic offshore resources. Whether this degree of technological dependence on a narrow range of US equipment--particularly high-capacity submersible pumps and offshore equipment--translates into much political leverage for the United States is doubtful. Soviet willingness to accommodate US political interests in return for assistance in oil production would be questionable in any event and would depend greatly upon Moscow's assessment of the overall state of US-USSR relations.

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Appendix A
List of Tables

Table 1

USSR: GNP by Sector of Origin at Factor Cost*
(billion 1970 rubles)

	1970	1975	1978	1980	1981	1982	1983
GNP**	383.3	459.8	513.4	522.9	533.1	546.3	563.7
Industry	122.6	163.2	182.4	191.2	195.7	200.2	207.0
Agriculture	81.0	72.0	85.9	73.9	73.2	78.1	83.1
Construction	28.0	36.8	40.1	40.4	41.3	41.6	43.0
Transportation	33.4	45.8	51.1	54.4	56.5	57.0	58.5
Communications	3.3	4.7	5.6	6.2	6.5	6.7	7.0
Trade	28.0	35.0	38.4	40.4	41.4	41.7	42.9
Services	78.5	92.7	100.0	106.1	108.2	110.5	113.1
Other (including military personnel)	8.4	9.5	9.9	10.3	10.4	10.4	9.0

* See USSR: Measures of Economic Growth and Development, 1950-80, US Congress, Joint Economic Committee, Washington, 1982, for a description of the methodology underlying this and the other GNP tables in this appendix.

** Components may not add exactly to total because of rounding.

Table 2

USSR: GNP by End Use at Factor Cost*
(billion 1970 rubles)

	1970	1975	1978	1980	1981	1982	1983
GNP**	383.3	459.8	513.4	522.9	533.1	546.3	563.7
Consumption	207.8	247.3	266.2	282.1	288.1	290.2	297.3
Goods	133.1	158.6	169.9	180.2	183.8	183.6	187.5
Services	74.6	88.7	96.3	101.9	104.3	106.6	109.8
Investment	108.2	140.6	165.4	171.1	178.0	184.0	191.0
Other***	67.3	71.9	81.8	69.7	67.0	72.1	75.4

* (See footnote on Table 1.)

** Components may not add exactly to total because of rounding.

*** Includes government administrative services, research and development, and outlays not elsewhere classified.

Table 3

USSR: Value Added in Industry at Factor Cost (billion 1970 rubles)

	1970	1975	1978	1980	1981	1982	1983
Industry*	122.6	163.2	182.4	191.2	195.7	200.2	207.0
Ferrous metals	8.8	10.7	11.3	11.2	11.1	11.2	11.6
Nonferrous metals	4.8	6.4	6.9	7.2	7.3	7.4	7.6
Fuel	12.1	15.4	17.2	18.0	18.2	18.6	18.8
Electric power	8.3	11.7	13.5	14.6	14.9	15.4	15.9
Machinebuilding & metalworking	38.5	56.0	65.6	71.3	73.5	76.3	79.0
Chemicals	7.8	11.7	13.4	14.0	14.5	14.8	15.7
Wood, pulp, and paper	9.4	10.7	10.7	10.4	10.6	10.6	11.0
Construction materials	8.0	10.4	11.5	11.0	11.1	11.1	11.5
Light industry	9.8	11.2	12.2	12.7	13.0	12.9	13.0
Food industry	11.6	14.3	14.9	15.3	15.6	16.1	16.9
Other industry	3.6	4.7	5.3	5.6	5.7	5.8	6.0

* Components may not add exactly to total because of rounding.

Table 4

United States and USSR: Production of Selected Commodities in Selected Years

	1970	1975	1978	1980	1981	1982	1983
Primary energy[a] (million b/d oe)							
US	30.8	30.2	30.9	32.6	32.4	32.2	30.8
USSR	17.1	21.9	25.4	27.0	27.7	28.5	29.2
Oil[b] (million b/d)							
US	11.3	10.0	10.3	10.2	10.2	10.3	10.3
USSR	7.1	9.8	11.4	12.0	12.2	12.3	12.3
Natural gas (dry) (trillion cubic feet)							
US	21.9	20.1	20.0	20.2	20.0	18.5	16.7
USSR	7.0	10.2	13.1	15.4	16.4	17.7	18.9
Coal (million metric tons)							
US	557.6	593.9	608.0	752.7	747.3	760.3	712.0
USSR	577.5	645.0	664.0	653.0	638.0	647.0	645.0
Electricity (gross) (billion kilowatt-hours)							
US[c]	1,743	2,131	2,436	2,438	2,448	2,387	2,459
USSR	741	1,039	1,202	1,294	1,326	1,367	1,416
Iron ore (million metric tons)							
US	91.2	80.1	82.9	70.7	75.5	37.0	38.6
USSR	197.1	234.7	246.2	245.0	242.0	244.0	245.2
Pig iron (million metric tons)							
US	83.0	72.5	79.6	62.3	67.3	39.1	44.2
USSR	85.9	103.0	110.7	107.0	108.0	107	110.2
Crude steel (million metric tons)							
US	119.3	105.8	124.3	101.5	108.8	65.7	75.6
USSR	115.9	141.3	151.5	148.0	149.0	147.0	152.5

[a] Excluding minor fuels such as peat, shale, and fuelwood.

[b] Including natural gas liquids.

[c] Estimated.

Table 4 (cont.)

	1970	1975	1978	1980	1981	1982	1983
Primary aluminum (thousand metric tons)							
US	3,607	3,519	4,358	4,654	4,489	3,274	3,353
USSR	1,640	2,345	2,525	2,705	2,720	2,745	2,795
Synthetic ammonia (million metric tons of N)							
US	10.3	12.2	12.8	14.7	14.2	11.5	10.0
USSR	6.3	9.9	11.5	13.8	14.7	14.6	16.7
Mineral fertilizer (million metric tons, nutrient content)							
US	14.8	17.1	19.0	22.5	23.2	19.2	18.0
USSR	13.1	22.0	23.7	24.8	26.0	26.7	29.7
Nitrogen fertilizer (million metric tons of N)							
US	7.6	8.5	9.5	11.2	11.8	10.5	8.7
USSR	5.4	8.5	9.3	10.2	10.7	11.6	13.0
Plastics (million metric tons)							
US	9.7	10.2	12.4	12.8	13.1	12.4	14.0
USSR	1.7	2.8	3.5	3.6	4.1	4.1	4.4
Synthetic rubber (million metric tons)							
US	2.2	2.0	2.7	2.2	2.2	1.8	2.0
USSR	0.9	1.4	1.8	1.9	1.9	1.8	1.8
Woven cotton fabrics (billion square meters)							
US	6.7	4.4	4.4	3.9	3.3	3.3	3.5
USSR	6.2	6.6	7.0	7.1	7.2	7.1	7.3
Tractors (thousands)							
US	191.7	232.0	197.3	155.4	149.8	80.8	91.6
USSR	458.5	550.4	576.1	555.0	559.0	555.0	564.0
Automobiles (millions)							
US	6.5	6.7	9.2	6.4	6.2	5.0	6.7
USSR	0.3	1.2	1.3	1.3	1.3	1.3	1.3
Trucks and buses (millions)							
US	1.7	2.3	3.7	1.7	1.9	2.4	3.7
USSR	0.6	0.8	0.8	0.9	0.9	0.9	0.9

Table 4 (cont.)

	1970	1975	1978	1980	1981	1982	1983
Cement (million metric tons)							
US	67.4	61.8	76.2	68.2	65.0	57.5	63.9
USSR	95.2	122.1	127.0	125.0	127.2	123.7	128.2
Grain (million metric tons)							
US	186.7	249.2	276.5	269.7	333.4	338.1	208.5
USSR[d]	186.8	140.1	237.4	189.1	158[e]	180[f]	195[f]
Wheat (million metric tons)							
US	36.8	57.9	48.3	64.5	76.0	76.5	66.0
USSR	99.7	66.2	120.8	98.2	81.0	86.0[f]	78.0[f]
Coarse grain (million metric tons)							
US	146.1	185.5	222.1	198.4	249.0	254.6	138.0
USSR[g]	85.8	71.9	114.5	88.3	72.0	86.0	105[f]
Potatoes (million metric tons)							
US	14.8	14.6	16.6	13.7	15.4	16.0	14.8
USSR	96.8	88.7	86.1	67.0	72.1	78.2	83.0
Sugar (million metric tons)							
US	5.3	6.0	5.1	5.3	5.8	5.4	5.2
USSR	11.1	11.3	13.3	11.0	10.3	13.2	13.6
Meat (million metric tons)							
US	22.5	23.0	25.0	24.2	24.7	24.1	25.0
USSR	12.3	15.0	15.5	15.1	15.2	15.4	16.4
Milk (million metric tons)							
US	53.3	52.3	55.1	58.3	60.3	61.6	63.5
USSR	83.0	90.8	94.7	90.9	88.9	91.0	96.4
Ginned cotton (thousand metric tons)							
US	2,219	1,808	2,364	2,422	3,405	2,605	1,682
USSR	2,343	2,674	2,669	2,958	2,882	2,673	2,609

[d] Measured in bunker weight. For comparison with the United States' or another country's grain output, an average discunt of 11 percent should be used.

[e] Unofficially reported.

[f] USDA estimate.

[g] Excluding rice.

Table 4 (cont.)

	1970	1975	1978	1980	1981	1982	1983
Cement (million metric tons)							
US	67.4	61.8	76.2	68.2	65.0	57.5	63.9
USSR	95.2	122.1	127.0	125.0	127.2	123.7	128.2
Grain (million metric tons)							
US	186.7	249.2	276.5	269.7	333.4	338.1	208.5
USSR[d]	186.8	140.1	237.4	189.1	158[e]	180[f]	195[f]
Wheat (million metric tons)							
US	36.8	57.9	48.3	64.5	76.0	76.5	66.0
USSR	99.7	66.2	120.8	98.2	81.0	86.0[f]	78.0[f]
Coarse grain (million metric tons)							
US	146.1	185.5	222.1	198.4	249.0	254.6	138.0
USSR[g]	85.8	71.9	114.5	88.3	72.0	86.0	105[f]
Potatoes (million metric tons)							
US	14.8	14.6	16.6	13.7	15.4	16.0	14.8
USSR	96.8	88.7	86.1	67.0	72.1	78.2	83.0
Sugar (million metric tons)							
US	5.3	6.0	5.1	5.3	5.8	5.4	5.2
USSR	11.1	11.3	13.3	11.0	10.3	13.2	13.6
Meat (million metric tons)							
US	22.5	23.0	25.0	24.2	24.7	24.1	25.0
USSR	12.3	15.0	15.5	15.1	15.2	15.4	16.4
Milk (million metric tons)							
US	53.3	52.3	55.1	58.3	60.3	61.6	63.5
USSR	83.0	90.8	94.7	90.9	88.9	91.0	96.4
Ginned cotton (thousand metric tons)							
US	2,219	1,808	2,364	2,422	3,405	2,605	1,682
USSR	2,343	2,674	2,669	2,958	2,882	2,673	2,609

d Measured in bunker weight. For comparison with the United States' or another country's grain output, an average discunt of 11 percent should be used.

e Unofficially reported.

f USDA estimate.

g Excluding rice.

Table 5

USSR: Selected Indicators of Agricultural Output

	1970	1975	1978	1980	1981	1982	1983
Value of output[a] (billion rubles)	83.6	81.9	95.4	86.8	86.7	92.0	97.7
Commodity production (million metric tons)							
Grain[b]	186.8	140.1	237.4	189.1	158.0[c]	180.0[d]	195.0[d]
Potatoes	96.8	88.7	86.1	67.0	72.1	78.2	83.1
Sugar beets	78.9	66.3	93.5	81.0	60.8	71.4	81.8
Sunflower seed	6.14	4.99	5.33	4.62	4.68	5.34	5.04
Cotton	6.89	7.86	8.50	9.96	9.64	9.28	9.22
Vegetables	21.2	23.4	27.9	27.3	27.1	30.0	29.1
Meat	12.3	15.0	15.5	15.1	15.2	15.4	16.4
Milk	83.0	90.8	94.7	90.9	88.9	91.0	96.4
Wool	.402	.448	.449	.443	.460	.452	.462
Eggs (billions)	40.7	57.4	64.5	67.9	70.9	72.4	75.1

[a] Net of feed, seed, and waste in constant 1970 prices.

[b] Bunker weight. To be comparable to Western measures, an average reduction of 11 percent is required.

[c] Unofficially reported.

[d] USDA estimate.

Table 6

USSR: Freight Turnover by Transport Mode
(billions of ton/kilometers)

Year	Total All Modes	Railroads	Roads	Inland Waterways	Maritime	Pipelines (Oil & Oil Products)	Air
1970	3829.2	2494.7	220.8	174.0	656.1	281.7	1.88
1975	5200.9	3236.5	337.9	221.7	736.3	665.9	2.59
1976	5432.7	3295.4	355.1	222.7	762.2	794.6	2.71
1977	5632.7	3330.9	373.3	230.7	772.6	922.4	2.80
1978	5948.7	3429.4	396.0	243.7	827.6	1049.1	2.86
1979	5986.3	3349.3	409.6	232.7	851.1	1140.7	2.91
1980	6184.2	3439.9	432.1	244.9	848.2	1216.0	3.09
1981	6337.4	3503.2	458.9	255.6	853.5	1263.2	3.08
1982	6328.4	3464.5	464.0	262.4	834.5	1306.8	3.03
1983	6585.8	3600.1	464.5	273.2	891.7	1353.1	3.19

Table 7
USSR: Estimated Hard Currency Balance of Payments

(million current US dollars)

	1970	1975	1978	1980	1981	1982	1983
Current account balance	260	-4,607	422	1,904	-175	4,333	4,663
Trade balance	-160	-4,797	275	1,714	200	4,433	4,713
Exports, f.o.b.	2,824	9,780	17,301	27,784	27,978	31,977	32,428
Imports, f.o.b.	2,984	14,577	17,026	26,070	27,778	27,544	27,715
Net interest	-80	-570	-880	-700	-1,375	-1,200	-1,150
Other invisibles and transfers	500	760	1,030	900	1,000	1,100	1,100
Capital account balance	NA	6,520	1,735	1,630	5,840	-1,340	1,650
Gross drawings[a]	NA	6,371	3,095	2,865	6,200	2,450	4,300
Government backed	450	1,972	2,565	2,195	2,000	2,850	2,800
Commercial	NA	4,399	530	670	4,200	-400	1,500
Repayments	NA	969	2,330	3,050	3,200	3,315	3,800
Government backed	160	730	1,455	1,915	2,000	2,000	2,500
Commercial	NA	239	875	1,135	1,200	1,315	1,300
Net change in assets held in Western banks	NA	-395	1,550	-235	-140	1,575	-400
Gold sales	Negl.	725	2,520	1,580	2,700	1,100	750
Net errors and omissions[b]	NA	-1,913	-2,157	-3,534	-5,665	-2,993	-6,313

[a] Including additions to short-term debt.

[b] Reflects hard currency assistance to other Communist countries; hard currency trade with other Communist countries; hard currency credits to LDCs to finance Soviet sales of machinery and equipment (including military equipment); and credits to developed Western countries to finance sales of oil and other commodities, as well as errors in other line items of the accounts.

Table 8

USSR: Estimated Hard Currency Debt to the West

(million US dollars, yearend)

	1975	1978	1980	1981	1982	1983
Gross debt	10,577	16,375	17,865	20,865	20,000	20,500
Commercial debt	6,947	9,515	10,015	13,015	11,300	11,500
Government and government-backed debt	3,630	6,860	7,850	7,850	8,700	9,000
Assets in Western banks	3,125	5,975	8,565	8,425	10,000	9,600
Net debt	7,452	10,400	9,300	12,440	10,000	10,900

Table 9

USSR: Foreign Trade by Major Region

(million current rubles)

	1970	1975	1978	1980	1981	1982	1983
Total Exports	11,520	24,034	35,668	49,635	57,108	63,165	67,891
Communist Countries	7,530	14,584	21,254	26,903	31,192	34,136	37,714
Developed West	2,154	6,140	8,699	15,862	17,247	18,849	19,653
Less Developed Countries	1,836	3,310	5,715	6,870	8,669	10,180	10,524
Total Imports	10,559	26,671	34,556	44,463	52,631	56,411	59,586
Communist Countries	6,873	13,968	20,744	23,650	26,742	30,816	33,692
Developed West	2,540	9,704	10,981	15,721	18,112	18,892	18,719
Less Developed Countries	1,146	2,999	2,831	5,092	7,777	6,703	7,175

Table 10

USSR: Average Annual Growth of Per-Capita Consumption

(1970 established prices)

Percent

	1971-75	1976-80	1981	1982	1983[a]
Total consumption	2.9	2.1	1.9	-0.6	1.4
Food	1.6	0.8	0.7	-0.6	1.8
Soft goods	3.0	3.1	2.4	-1.5	0.7
Durables	10.0	5.4	6.4	-2.7	-0.3
Services	3.0	2.3	1.7	1.5	2.2
Housing	1.7	1.3	1.3	1.2	2.2
Utilities	5.3	3.8	2.7	3.0	3.0
Transportation	6.2	2.7	2.9	1.0	1.3
Communications	6.3	4.9	4.1	2.3	3.3
Repair and personal care	5.7	5.5	4.9	3.2	4.2
Recreation, art and physical culture	0.7	0.2	-0.1	-0.9	-0.9
Health	1.5	0.8	0.2	0.9	1.3
Education	1.5	1.3	0	0.8	2.0

[a] Preliminary.

Table 11
United States and USSR: Production of Selected Consumer Goods

	1970	1975	1978	1980	1981	1982	1983
Food							
Grain[a] (kilograms per capita)							
US[b]	910	1,154	1,242	1,184	1,450	1,456	889
USSR[c]	769	551	908	712	598	667	716
Meat[d] (kilograms per capita)							
US	110	106	112	106	107	104	107
USSR	51	59	59	57	57	57	59
Transportation							
Passenger automobile production[e] (units per hundred persons)							
US	3.19	3.11	4.12	2.81	2.71	2.17	2.87
USSR	0.14	0.47	0.50	0.50	0.49	0.48	0.48
Household equipment							
Washing machine production[e] (units per thousand persons)							
US	20	20	23	20	19	17	20
USSR	22	13	14	14	15	15	15
Washing machines in use[f] (units per thousand persons)							
US[g]	194	238	263	269	266	262	260
USSR	141	189	203	205	205	205	205
Refrigerator production (units per thousand persons)							
US[e]	26	21	26	23	22	19	23
USSR	17	22	23	22	22	21	21
Refrigerators in use[f] (units per thousand persons)							
US[g]	336	340	349	352	352	349	NA
USSR	89	178	225	252	262	268	NA

a The data do not necessarily represent food available for consumption, because imports of foreign grain and exports of domestically produced grain are not included.
b Excluding corn silage and forage but including sorghum for grain.
c Including miscellaneous grains and pulses. Measured in bunker weight, i.e., gross output from the combine which includes excess moisture, unripe and damaged kernels, weed seeds, and other trash. For comparison with output in the United States or other countries, an average discount of 11 percent should be applied.
d Data for both countries are on a carcass weight, bone-in basis.
e Data are for factory sales and include complete units exported for assembly.
f As of the end of the year.
g Data are understated because they are based on the number of households with one or more units; thus, a household with more than one is counted as having only one.

Table 12

USSR: Average Annual Employment by Sector
(thousands)

	1970	1975	1978	1980	1981	1982	1983
Total	107,186	117,560	122,916	125,998	127,161	128,263	129,05
Industry	31,593	34,054	36,014	36,891	37,236	37,610	37,83
Construction	9,052	10,574	11,034	11,240	11,298	11,299	11,31
Socialized agriculture	26,419	25,921	25,558	25,150	25,014	25,119	25,16
Transport and communications	9,315	10,743	11,462	11,958	12,172	12,337	12,43
Trade, public dining, sales & material technical supply, procurement	7,537	8,857	9,361	9,694	9,828	9,863	9,88
Health, education, social security, cultural arts, science & scientific services	16,561	19,196	20,468	21,515	21,909	21,782	21,18
Government administration, credit & insurance organizations	2,226	2,707	2,952	3,144	3,218	3,267	3,30
Other (housing, personnel services, etc.)	4,483	5,508	6,067	6,406	6,486	6,986	7,92

Table 13

USSR: Gross Fixed Capital Investment[a]

(billion rubles, 1973 prices)

	1970	1975	1978	1980	1981	1982	1983
Total[b]	80.7	112.9	129.7	133.7	138.8	143.8	152.0
of which: State	69.2	98.0	113.9	117.7	122.7	127.0	133.8
Collective farms	7.6	10.7	11.6	11.9	11.9	12.4	13.2
Cooperative enterprises and organizations	2.2	2.4	2.5	2.5	2.5	2.7	3.0
Private housing and apartments	1.6	1.8	1.7	1.6	1.7	1.7	2.0
Industry	28.5	39.7	45.6	47.6	49.5	50.9	53.7
Agriculture	14.3	23.3	25.8	26.9	27.6	28.0	29.0
Transport and communications	8.0	12.7	16.3	16.1	16.7	17.6	18.9
Construction	3.0	4.3	5.2	5.4	5.4	5.9	5.9
Other	26.9	32.9	36.8	37.7	39.6	41.4	44.5

[a] Published Soviet data.

[b] Components may not add exactly because of rounding.

Table 14

USSR: Growth of GNP and Factor Productivity (average annual percentage change)

	1971-75[a]	1976-80[a]	1981	1982	1983
Gross national product[b]	3.7	2.6	1.9	2.5	3.2
Combined inputs[c]	4.2	3.5	3.0	3.1	3.0
Manhours	1.7	1.1	0.8	0.9	0.8
Capital	8.0	6.9	6.4	6.3	6.3
Land	0.8	-0.1	-1.3	0.4	0.4
Total factor productivity	-0.5	-0.8	-1.0	-0.6	0.1
Manhour productivity	2.0	1.4	1.1	1.6	2.3
Capital productivity	-4.0	-4.1	-4.2	-3.6	-3.0

[a] For computing average annual rates of growth, the base year is the year prior to the stated period

[b] Based on indexes of GNP (1970 rubles), by sector of origin, at factor cost.

[c] Inputs of manhours, capital, and land are combined using weights of 56 percent, 41 percent, 3 percent, respectively, in a Cobb-Douglas (linear homogeneous) production function. These weights represent the distribution of labor costs (wages, other income, and social insurance deductions), capital costs (depreciation and a calculated capital charge), and land rent in 1970, the base year for all indexes underlying the growth rate calculations.

Table 15

USSR: Growth of Industrial Output and Factor Productivity (average annual percentage change)

	1971-75[a]	1976-80[a]	1981	1982	1983
Industrial production	5.9	3.2	2.4	2.3	3.4
Combined inputs[b]	5.2	4.6	4.3	3.9	3.9
Manhours	1.5	1.3	0.6	0.7	0.6
Capital	8.7	7.7	7.8	7.0	6.9
Total factor productivity	0.7	-1.3	-1.9	-1.6	-0.4
Manhour productivity	4.4	1.9	1.8	1.7	2.8
Capital productivity	-2.6	-4.2	-5.0	-4.4	-3.3

[a] For computing the average annual rates of growth, the base year is the year prior to the stated period.

[b] Inputs of manhours and capital are combined using weights of 48 percent and 52 percent, respectively, in a Cobb-Douglas (linear homogeneous) production function. These weights represent the distribution of labor costs (wages and social insurance deductions) and capital costs (depreciation and a capital charge) in 1970, the base year for all indexes underlying the growth rate calculations.

Figure 1
USSR: Average Annual Percentage
Growth of GNP and Non-Agricultural GNP

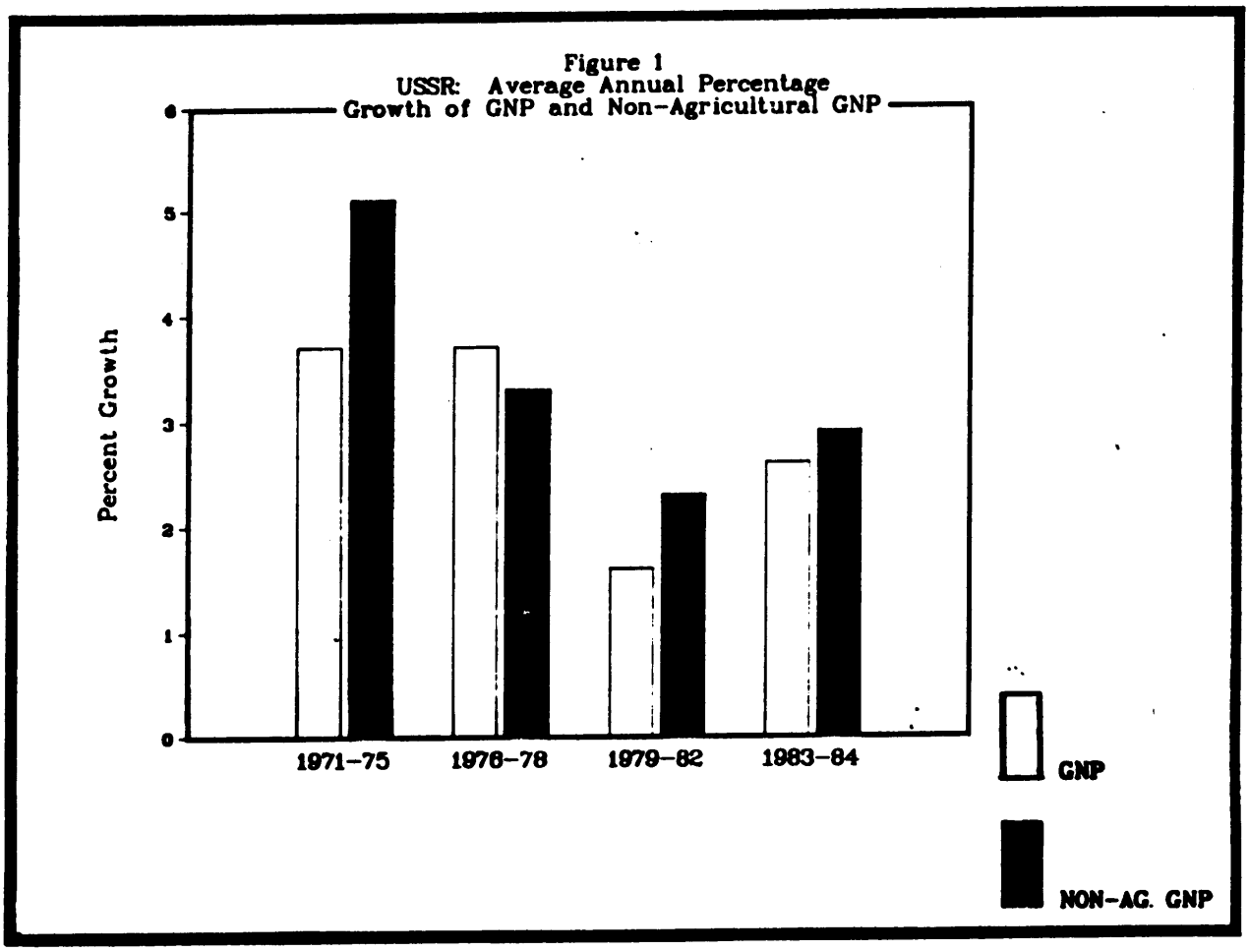


Figure 2
USSR: Average Annual Percentage Growth of Industrial Output

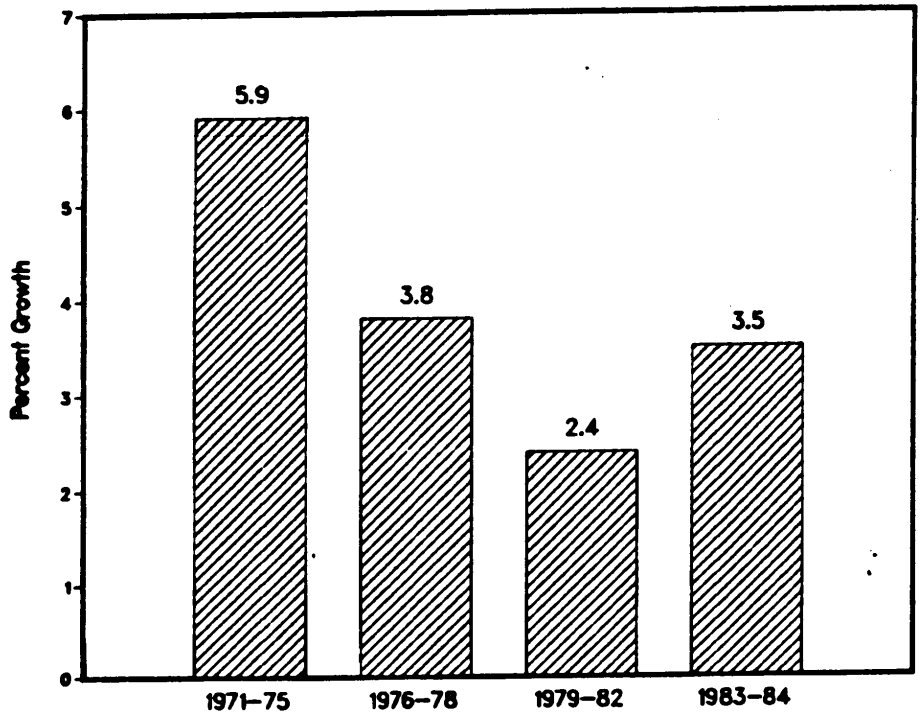


Figure 3
USSR: Average Annual Percentage Growth of Output of Key Industrial Materials

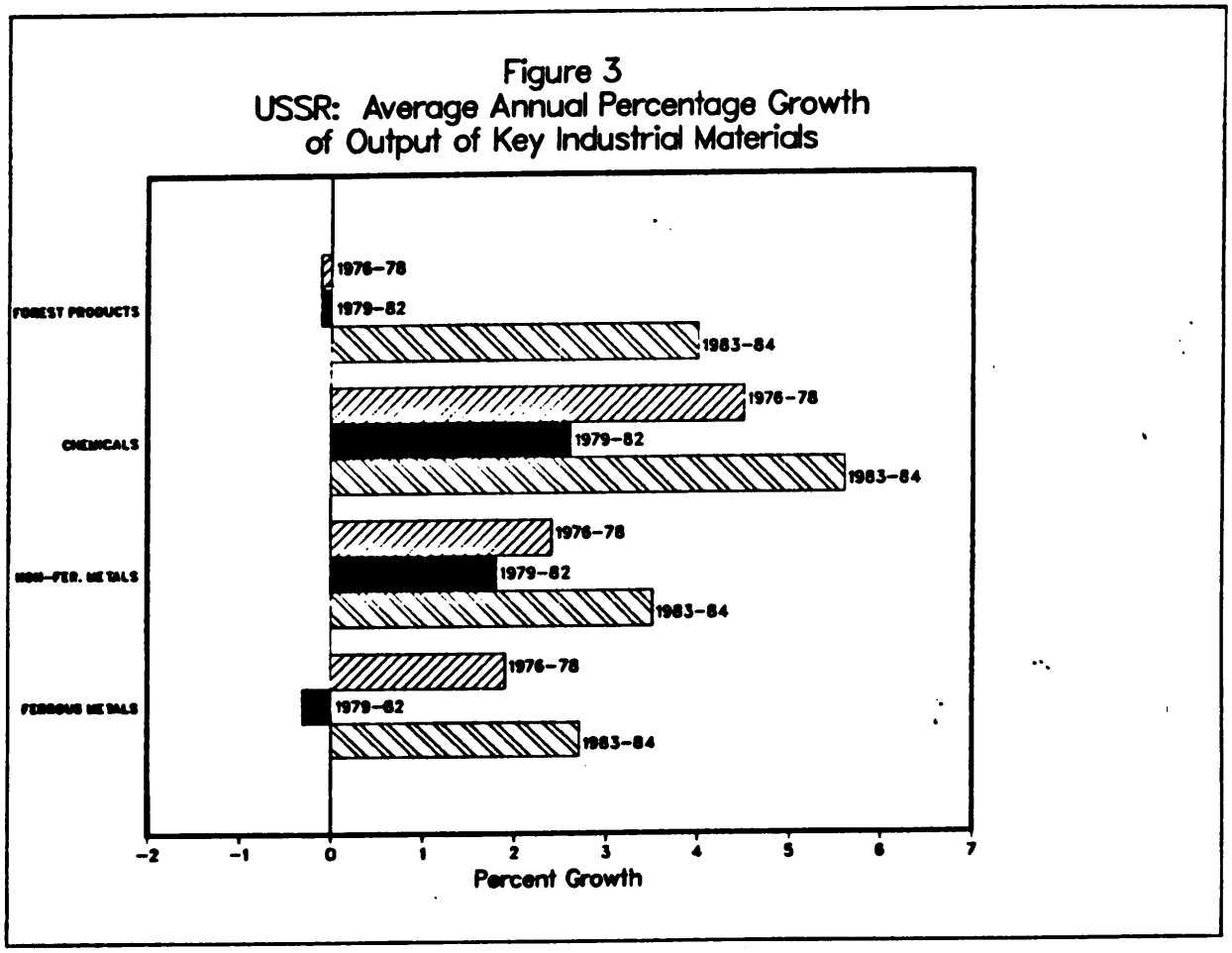


Figure 4
USSR: Average Annual Percentage Growth of Output of Fuels

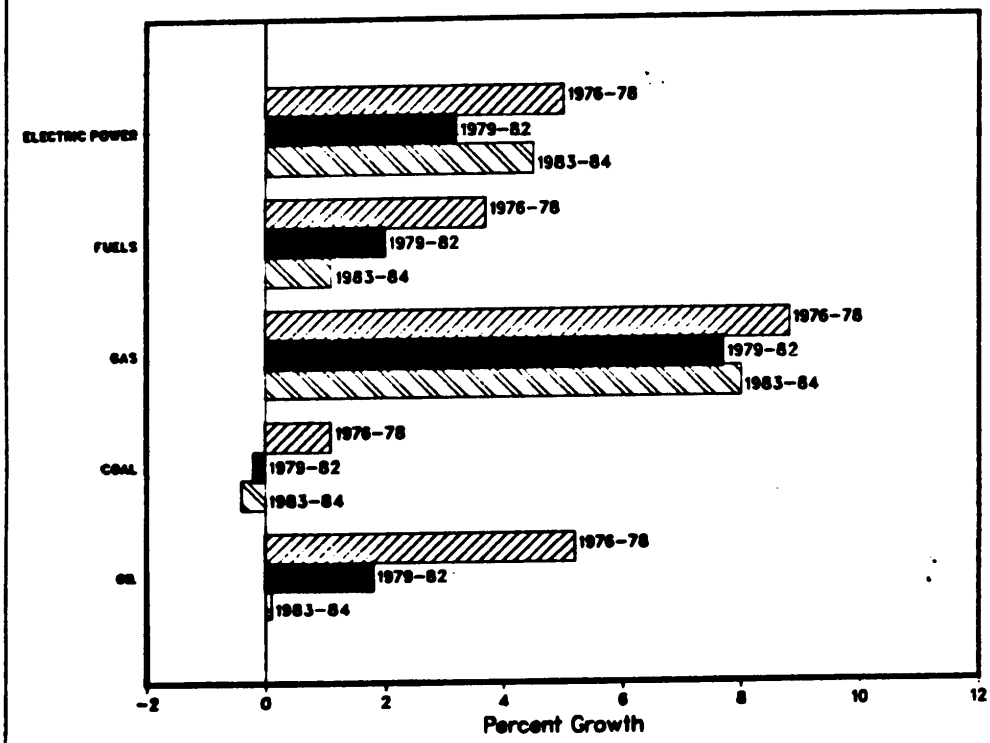


Figure 5

USSR: Average Annual Percentage Growth of Output of Consumer Nondurables

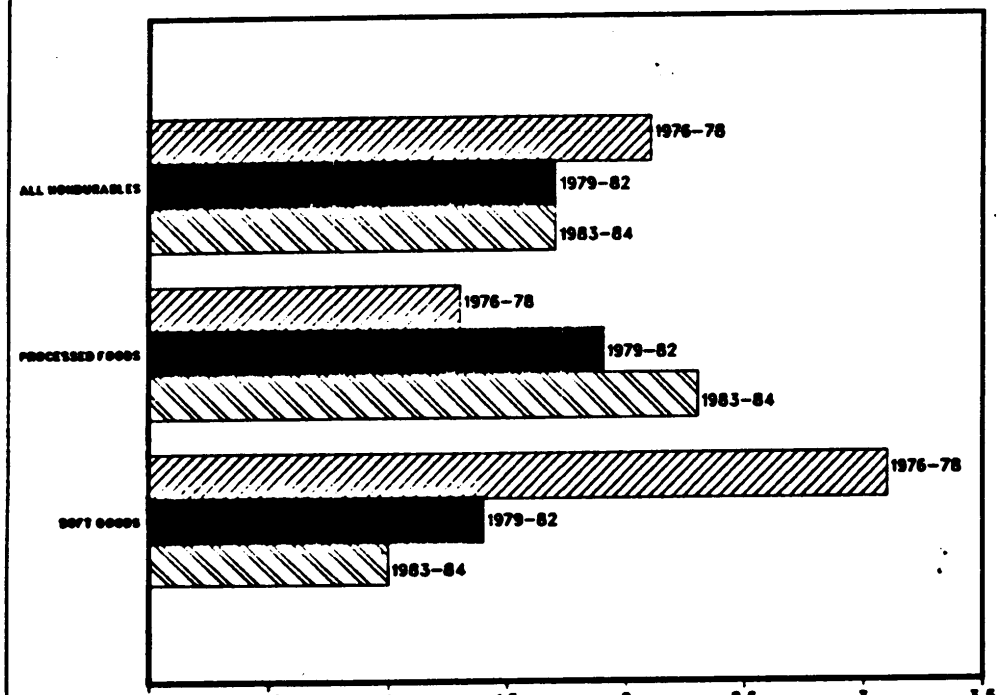


Figure 6
USSR: Average Annual Percentage Growth of Transportation Activity

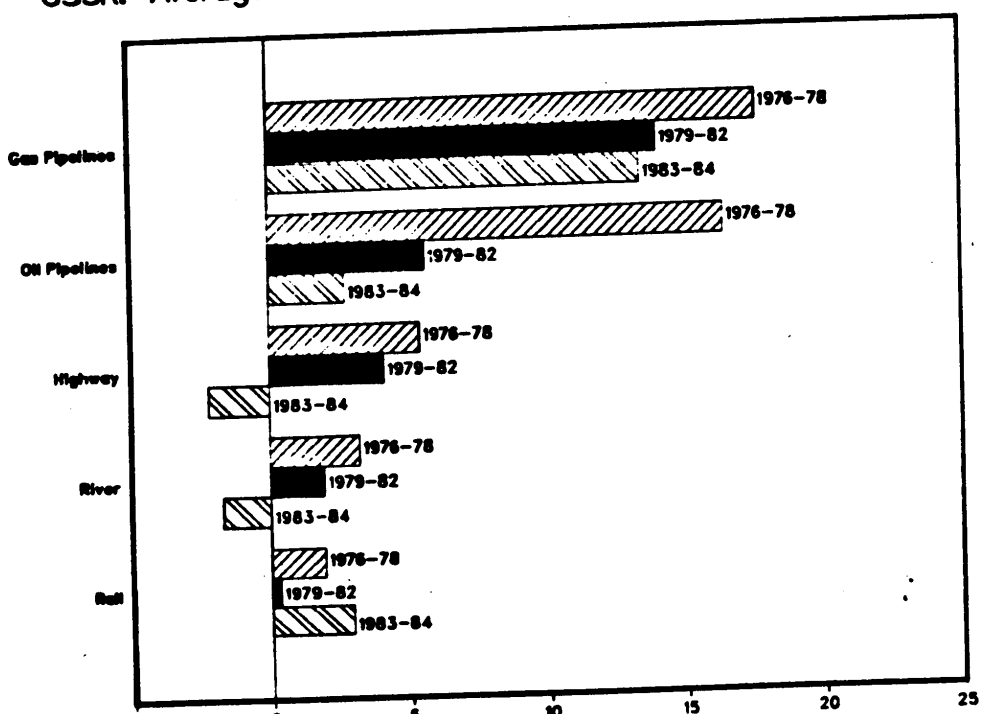
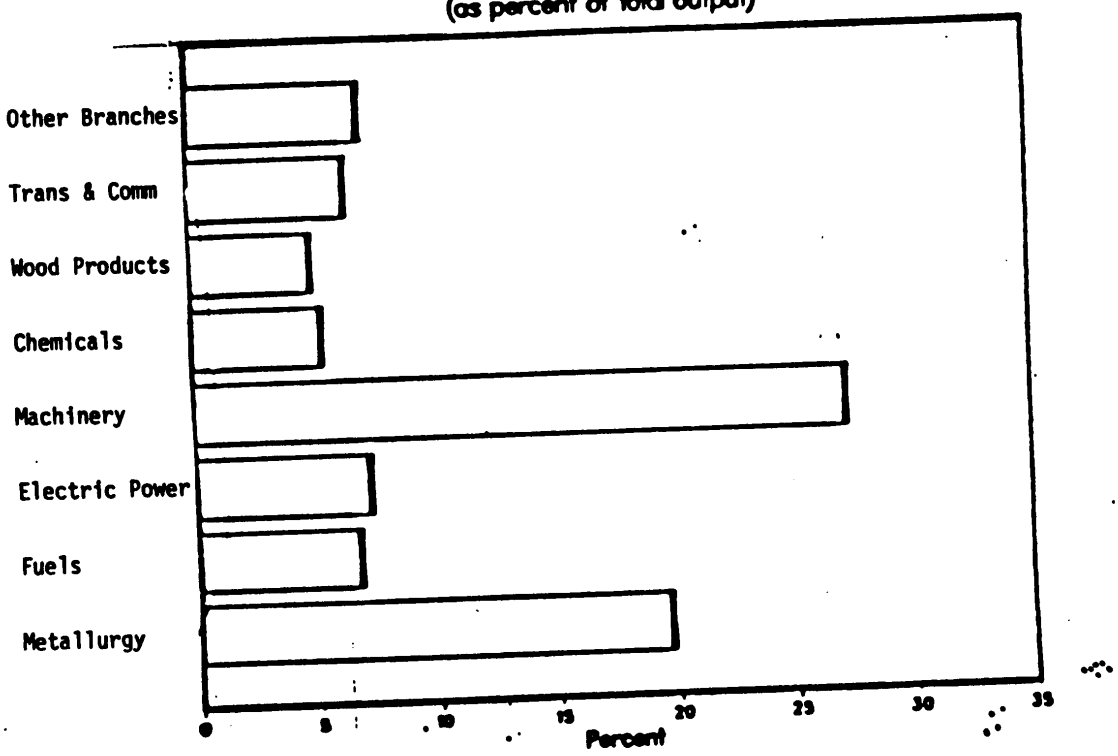


Figure 7
USSR: Key Estimated Direct and Indirect Deliveries to Military Procurement by Key Industries in 1982*
(as percent of total output)



* Direct deliveries consist of raw and intermediate materials actually used to manufacture procurement goods, such as steel for a tank. Indirect deliveries account for all additional materials that are needed to support military procurement. For example, indirect deliveries would account for the electric power consumed to smelt the steel embodied in the tank as well as the coal to generate that electric power.

Figure 8
USSR: Average Annual Percentage Growth of Service Outlays

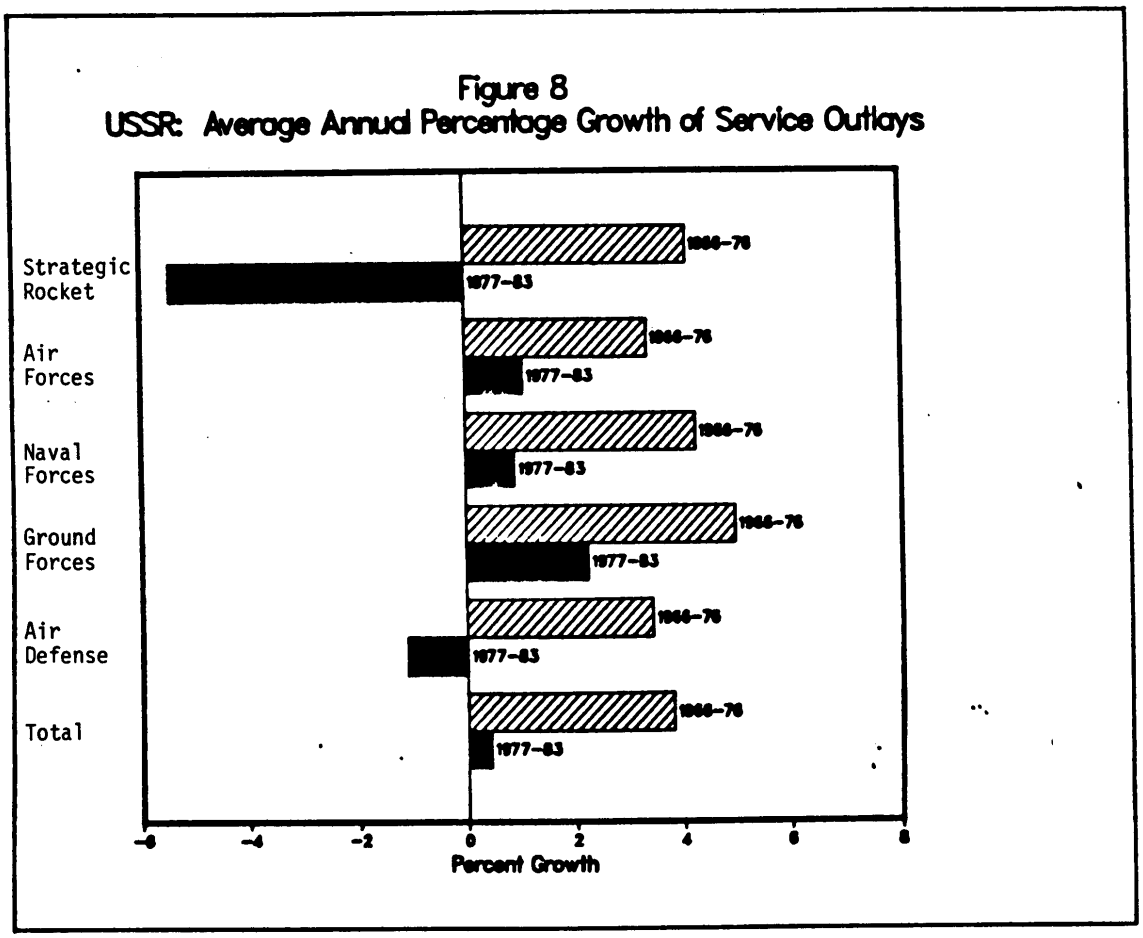


Figure 9
USSR: Average Annual Percentage Growth of Defense Spending by Resource Category

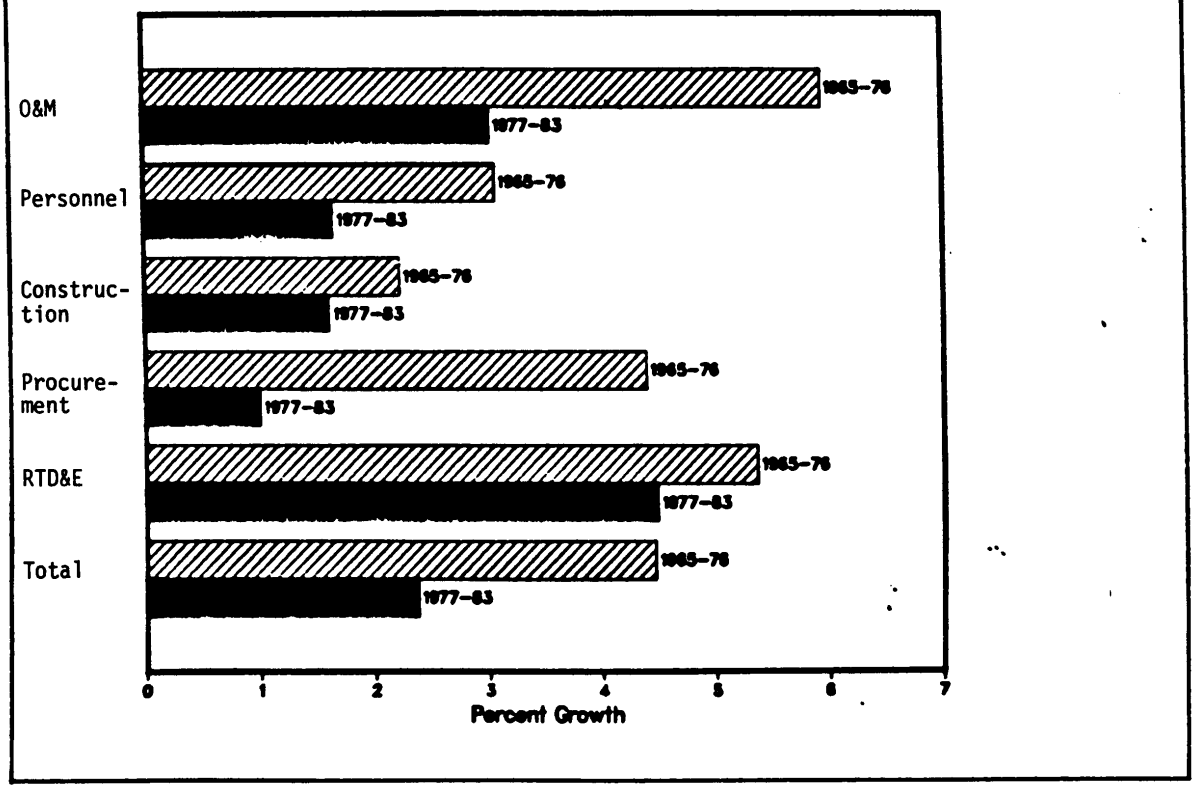


Figure 10
USSR: Defense Spending and Procurement, 1965–83