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Soviet Basic Industry and Transportation in 1986:  
A Windfall Year? [Redacted]

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Summary

In 1986 Soviet basic industrial branches posted their fastest rate of growth in nearly a decade. Improved performance was buoyed by a rebound from 1985's middling results, but also reflected good weather, better transportation support, and continued benefits from the "human factors" campaign. Despite the favorable numbers, most industrial branches still heard a steady drumbeat of criticism. The litany of complaints centered on below-plan additions of new capacity, shortcomings in quality, and poor product mix, all of which illustrate weaknesses in implementation of the Soviet leader's plan to revitalize the economy. [Redacted]

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Prospects for 1987 appear less favorable. Industrial production sputtered in late 1986 and record cold and heavy snows early this year will undoubtedly hamper efforts to maintain last year's momentum. Recent Soviet experience with bad winters suggests basic industry and transportation could recover quickly, but current disruptions may be more severe than in the past because Soviet managers probably cut corners in winter preparations in order to concentrate on meeting Gorbachev's ambitious modernization goals. Moreover, the application of a new quality-control system at a large number of enterprises has held down output of machinery necessary to renovate much of civilian industry. Expansion of contract fulfillment indicators could help offset the year's slow start, but gains will undoubtedly fall short of Moscow's expectations. [Redacted]

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<sup>1</sup> Excluding energy and machine building. [Redacted]

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This memorandum was prepared by the Industrial Analysis Branch, National Issues Group, Office of Soviet Analysis. Comments and questions are welcome and can be directed to Chief, Economic Performance Division [Redacted]

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Introduction

Soviet economic health rests fundamentally on the performance of the basic industrial branches and transportation. Materials such as steel, cement, and chemicals are critical to construction, machine building, and agriculture. Output of soft goods and processed foods is a major determinant of living standards. Freight transportation provides the essential means for keeping the flow of raw materials and finished products moving. This memorandum looks at 1986 performance of the ferrous and nonferrous metals, chemicals, construction materials, wood products, soft goods, and processed foods industries and transportation, giving special attention to the reasons behind last year's generally good showing and the outlook for 1987. The energy and machine-building branches of industry are not included. 

Overview


Overall, basic materials and transportation posted their fastest rate of growth in a decade (see table 1). With the exception of soft goods, production growth equaled or bettered 1985 across the board, and plan targets for many key commodities were met or exceeded. Construction materials, wood products, and processed foods (excluding alcoholic beverages) led the surge, more than doubling their previous year's growth. The improved performance was buoyed by a rebound from middling 1985 results, but reflected real expansion as well. 



Table 1

USSR: Growth of Output of Selected Industrial Branches and Transportation<sup>a</sup>

(average annual rate of growth, percent)

	<u>1971-75</u>	<u>1976-80</u>	<u>1981-85</u>	<u>1985</u>	<u>1986<sup>b</sup></u>
Ferrous metals	4.2	0.8	1.2	2.8	2.8
Nonferrous metals	5.7	1.5	2.0	3.0	3.0
Chemicals	8.3	3.0	3.8	4.3	4.4
Construction materials	5.1	1.4	1.5	1.5	3.2
Wood products	2.5	-0.6	2.1	2.1	5.4
Soft goods	2.6	2.4	1.6	2.4	1.5
Processed foods <sup>c</sup>	4.1	1.4	1.8	-1.6	0.7
Freight transportation <sup>d</sup>	6.6	4.3	2.9	1.7	4.8

<sup>a</sup> Official Soviet measures of aggregate growth are believed to contain an upward bias because of increased double counting over time and disguised inflation. Although we accept official Soviet data for physical output of various commodities, the aggregate measures shown for each industrial branch were derived synthetically. The growth rates are formed by combining the value of a sample of products for each branch, with interbranch purchases excluded, using 1982 value-added weights.

<sup>b</sup> Preliminary.

<sup>c</sup> Including alcoholic beverages. Growth of the food-processing industry in 1985 and 1986 excluding alcohol was 2.0 percent and 6.5 percent, respectively.

<sup>d</sup> Growth rates calculated from ton-kilometer data.



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Improved flows of raw materials--sparked mainly by smoother transportation deliveries--contributed much to last year's good results. Milder-than-normal winter weather helped prevent serious bottlenecks on the rail lines and eased demand for energy--constraints that have hamstrung industrial production and distribution in the past. Benefits from Gorbachev's "human factors" drive added a diminishing--yet important--impetus to growth. Soviet sources report reduced absenteeism, less drunkenness on the job, and fewer industrial accidents in 1986. More effective management--a likely result of personnel changes and modest administrative tinkering--appears to have sparked further gains. Under the gun to raise production volumes and improve quality, new ministers in several branches of industry apparently managed to tap hidden caches of labor, raw materials, and equipment. [REDACTED]

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Despite the favorable growth rates, most industrial branches still heard a steady drumbeat of criticism. Singled out for harsh words were ferrous metals, chemicals, wood products, and light industry (see figure). The litany of complaints centered on unevenness of production, shortcomings in quality, and contract delivery shortfalls, suggesting Gorbachev's restructuring campaign has not been as successful as last year's performance data indicate. Indeed, by some measures last year's results fall far short of the "acceleration" needed to meet the Soviet leader's ambitious goals for industrial modernization.

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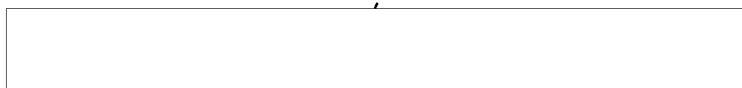
## Figure

USSR: Incidence of Criticism of Selected  
Basic Industrial Ministries in 1986<sup>a</sup>

	January	February	March	April	May	June	July	August	September	October	November	December
Chemical Industry	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Ferrous Metallurgy		✓	✓		✓	✓	✓	✓		✓	✓	✓
Timber, Pulp, Paper & Wood Processing Industry	✓		✓	✓	✓	✓		✓	✓	✓	✓	✓
Light Industry	✓	✓	✓	✓	✓	✓	✓	✓	✓			✓
Construction Materials Industry					✓	✓						

Source: USSR Central Statistical Administration (CSA)  
monthly plan fulfillment reports.

<sup>a</sup> In the CSA monthly writeups--usually published in Ekonomicheskaya gazeta, the weekly organ of the Central Committee of the Soviet Communist party--the criticisms take the form of phrases such as "contractual obligations not met," "nonfulfillment of plan targets," "arrears in production," "contract discipline breaches," and "output delivery shortfalls."





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The growth of commissionings of new capital, for example, in nearly all the areas examined was well below planned levels. Without new and better machinery, industry will have a hard time meeting targets for new and improved products.<sup>2</sup>

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Prospects for 1987 appear less favorable. Industrial production sputtered in the latter months of 1986 and record cold and heavy snows early in the year have prevented a good start this year. Recent Soviet experience with bad winters suggests industry could recover quickly. After the hard winter of 1984/85, for example, industrial activity returned to normal levels by the second quarter, although lingering effects held down growth for the year. Disruptions in 1987, however, could be more severe than in the past because Soviet managers probably cut corners in winter preparations in order to concentrate on meeting Gorbachev's ambitious modernization goals. For example, the usual practices of winterizing machinery with anti-freeze and special lubricants and building up stockpiles of fuel and raw materials may have been glossed over and were insufficient to deal with the winter's unexpected severity.

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Although it is too early to draw definitive conclusions, the application of a rigorous new quality-control system at 1,500

<sup>2</sup> Indeed, the machine-building sectors were heavily criticized during 1986 for failing to provide needed increments of more modern capital equipment. Moreover, growth of output of advanced machinery--industrial robots, numerically controlled machine tools, and computers, for example--was not significantly higher last year than in previous years.

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enterprises in 28 ministries is also apt to affect industrial production in 1987. Under this system, products that do not meet state standards are not counted in output statistics.

Preliminary results indicate that stiff rejection rates are disrupting production and spawning resistance in a number of key industries--including the machine-building sectors that basic industry is counting on for renovation. Although rejected products that later come up to standards can be counted toward enterprise output, the impact on overall performance could be severe.



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A few industries could see a limited payoff this year--in the form of improved supplies of raw materials and finished products with the expansion of contract fulfillment as a success indicator to all of basic industry, although current problems suggest any gains will fall short of Moscow's expectations. Increased investment and assimilation of new machinery--the key to real modernization and growth in these branches--is not likely in the short run because of increasing competition for resources from higher priority areas such as agriculture and energy, and the cumbersome and ineffective Soviet planning and management system is still largely intact.



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Ferrous Metals


Output of the ferrous metals industry grew 2.8 percent in 1986, rebounding from the severe winter of 1984/85. Crude steel production reached a record 161 million tons, and rolled steel




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output increased to 112 million tons (see table 2). Output gains were similar to those made in 1983 after another severe winter. Good weather and Gorbachev's "human factors" policies combined to help the industry meet its 1986 production goals for crude steel, rolled steel, pipe, and iron ore. 

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The industry was also aided by some progress in modernization. Pravda reported that during the first six months of 1986, 21 percent more of state capital investments in ferrous metals were used for retooling and reconstruction of existing enterprises than in the previous year. Gross additions of new fixed capital increased by 7 percent in 1986, but still missed the industry's goal of 30 percent. Capacity was added at the minimill at Rybnitsa, where a line for production of wire was completed, and the first stage of a plant to produce electrical sheet went into operation at Novolipetsk. A new rolling mill at Zhdanov--which produces steel plate for use in large-diameter pipe--reached rated capacity. 

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The ferrous metals industry did not perform as well in providing specific steel products needed in key sectors of the economy. The industry was criticized throughout the year for failing to fulfill production targets for such high-quality steel products as high-strength drill pipes, cold-rolled steel sheets, and electrical steel. A mid-year Izvestiya article claimed that enterprises had not fulfilled plan targets for almost one-third of the steel products needed to increase the efficiency of metal



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Table 2

## USSR: Ferrous Metals Production


	<u>1981</u>	<u>1982</u>	<u>1983</u>	<u>1984</u>	<u>1985</u>	<u>1981</u> <u>-85<sup>a</sup></u>	<u>1986<sup>b</sup></u>	<u>1990</u> <u>Plan<sup>a</sup></u>
Crude steel (million tons)	148.4	147.2	152.5	154.2	155	-	161	NA
(annual growth, percent)	0.3	-0.9	3.6	1.1	0.2	0.9	3.9	
Rolled steel products (million tons)	103.0	102.3	106.4	107.3	108.3	-	112	116-119
(annual growth, percent)	0.1	-0.6	4.0	0.8	0.9	1.0	3.4	1.4-1.9
Steel pipe (million tons)	18.3	17.9	18.7	18.9	19.4	-	19.8	NA
(annual growth, percent)	0.5	-1.8	4.4	0.8	2.6	1.3	2.1	
Iron ore (million tons)	242.4	244.4	245.2	247.1	248	-	250	NA
(annual growth, percent)	-0.9	0.8	0.3	0.8	0.2	0.3	0.9	
Manganese ore (million tons)	9.15	9.82	9.88	10.09	9.9	-	NA	NA
(annual growth, percent)	-6.2	7.3	0.6	2.2	-1.9	0.2		

<sup>a</sup> Growth rates shown are annual averages for 1981-85 and 1986-90.


<sup>b</sup> The apparent discrepancy between volume and growth indicators for 1986 is a result of Soviet reporting practices. Production volumes shown are those reported by the Central Statistical Administration. Because the reported volumes and growth rates embody different degrees of rounding by the Soviets, however, the rate of growth shown here may be based on either volume or reported growth, whichever yields the most precise measure of the actual percentage increase achieved in 1986.



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use in the economy. The industry was also criticized for not meeting targets for the production of continuously cast products. 

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Although many of the results of the current steel modernization program will not be seen until the late 1980s, several problems reported during 1986 indicate that progress will probably be slower than the Soviets expect. The machine-building industry was soundly criticized for failing to meet supply and quality requirements for a variety of metallurgical equipment. During the year the Soviet press reported production shortfalls for blast furnaces, steelmaking furnaces, and rolling equipment. Soviet metallurgical equipment continued to lag Western counterparts in metal consumption, reliability, level of mechanization and automation, consumption of lubricants and spare parts, and output per worker. Moreover, renovation work is not proceeding as quickly as hoped. A Pravda editorial indicated that construction workers still remain reluctant to tackle renovation projects. 

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As expected, only small production gains were realized in the iron ore sector. The current five-year plan calls for output of pig iron to remain steady--despite planned increases in rolled steel production--through greater use of resource-saving steelmaking techniques and scrap. Unless these measures are successful, Moscow will find it difficult to stabilize the share of investment allocated for production of raw materials. During



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1986 the Soviets investigated an alternative for replacing low-grade domestic manganese ore in the production of ferromanganese. Brazil and the USSR have tentatively agreed to construct a ferromanganese plant in Brazil. The manganese ore supply would come from Brazilian mines. Moscow would receive, for at least 12 years, one-half of the plant's projected annual output of 150,000 tons of ferromanganese, roughly 5 to 10 percent of estimated Soviet consumption. The plan, however, is meeting heavy opposition in Brazil. [REDACTED]

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Rolled steel production is slated to increase to 112.8 million tons in 1987--an increase of less than 1 percent over 1986 output. During 1987 we expect rolled steel capacity to be added at the second stage of the minimill at Zhlobin and at the Staryy Oskol iron and steel complex. As new capacity and renovation projects are completed during the year, the steel industry should be able to meet its modest 1987 target and to provide more high-quality steel products to the economy. [REDACTED]

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#### Nonferrous Metals

Output of nonferrous metals increased 3 percent in 1986 for the fourth consecutive year. A detailed performance assessment is difficult because nonferrous metal output figures remain a state secret and, for 1986-90, planned percentage increases in production for individual metals have been withheld for the first time. [REDACTED] the open press suggest that output growth in 1986 was mainly the result of additions of new

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capacity and modernization of several aluminum, copper, and nickel plants. The industry reportedly managed a 14-percent increase in gross commissionings of fixed capital over the 1985 level but was criticized for fulfilling only 84 percent of its planned target. In the gold sector, delays in commissioning new capacity and declining gold content of mined ores held output growth to about 1 percent during 1986. Part of last year's gains in nonferrous metals probably stemmed from Gorbachev's campaign to increase worker discipline, improve management, and reduce waste. The Soviet press, for example, reported that several nonferrous metals plant managers were severely disciplined for fraudulent accounting practices and waste. [REDACTED]

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The industry's accomplishments during 1986 reflect Moscow's plan for 1986-90 to: (1) modernize aging production facilities with "world-class" technology, (2) expand the raw materials base, (3) use energy more efficiently, (4) increase the quantity and number of metals extracted from ores, (5) increase scrap and waste recycling, (6) increase the output and variety of semifinished metal products (angles, rods, bars, for example) to meet rapidly increasing demand from the machine-building sector, and (7) reduce the amount of metal used in finished products.

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Specifically, the Soviet press [REDACTED] indicate:


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- o Outdated electrolysis pots were replaced at the Bratsk

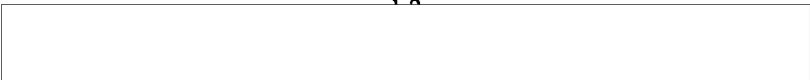
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aluminum plant by ones that produce higher quality aluminum and consume much less electricity.

- o The first stage of the Sayansk aluminum plant--which uses advanced West German automated equipment--started production.
- o An agreement was signed with an Italian firm to build an advanced, computer-controlled, 200,000-ton-per-year zinc plant at Chelyabinsk. Although this did not affect last year's production, the new plant will eventually replace a 150,000-ton-per-year plant built in 1935.
- o Production began of very thin aluminum alloys for food containers at the Lenin metallurgical plant in Kuybyshev, which will reportedly save large quantities of tin, a metal that the USSR currently imports.
- o Installation of highly automated equipment was completed at the Pavlodar alumina plant in Kazakhstan that will increase the recovery of alumina and other minerals from bauxite ores. 

Although plans were fulfilled for the production of new types of products and for the introduction of advanced equipment according to the Soviets, they recognize that continued progress in these areas depends on additional imports of foreign equipment and some raw materials. Accordingly, Moscow is looking for ways to acquire Western equipment while minimizing its up-front hard currency outlays. 



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Despite a number of accomplishments in the nonferrous metals industry, the year was not without setbacks. A general disregard for operating safety appears to have caused recently installed, advanced furnaces--used in producing copper--to explode at two Soviet metallurgical facilities. These mishaps contributed to delays in bringing production up to capacity at both facilities. The Soviet press reported that outdated rolling mills were replaced by automated mills at the Lenin Metallurgical plant in Kuybyshev but that older equipment still in operation cannot produce enough rolled metal to fully supply the new equipment.

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Chemicals

Output of the chemical industry rose 4.4 percent last year, roughly the same increase registered in 1985. A decline in pesticide production and a slowdown in the rate of growth of fertilizer output held back overall performance (see table 3).

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Increased growth in output of plastics, chemical fibers, sulfuric acid, and caustic soda resulted in part from an improved supply situation, better discipline, and the rebound from depressed 1985 levels when the severe winter disrupted transportation and caused serious supply bottlenecks. Nevertheless, some production associations and enterprises of the Ministries of Mineral Fertilizer Production and the Chemical Industry failed to fulfill contract commitments, and plans for the production of fertilizers, plastics, caustic soda, and soda ash were not met. Although the Soviets were favored with milder weather in 1986, transportation disruptions, material shortages, construction delays, and power cuts continued to cause problems for the industry. [REDACTED]

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Despite the addition of more than 3 million tons of new gross capacity in 1985-86, major problems in the fertilizer industry contributed to the failure to meet the plan. Serious flooding early in the year halted production at a major potash mine at Berezniki, which accounts for about 15 percent of potash

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Table 3

## USSR: Production of Selected Chemicals

	<u>1981.</u>	<u>1982</u>	<u>1983</u>	<u>1984</u>	<u>1985</u>	<u>1981</u> <u>-85<sup>a</sup></u>	<u>1986<sup>b</sup></u>	<u>1990</u> <u>Plan<sup>a</sup></u>
<b>Mineral fertilizers</b>								
(million tons 100% nutrient equivalent)	26.00	26.74	29.73	30.81	33.19	-	34.7	41-43
(annual growth, percent)	5.0	2.8	11.2	3.6	7.7	6.0	4.5	4.3-5.3
<b>Pesticides</b>								
(thousand tons 100% active ingredient)	299	316	332	343	348	-	332	440-480
(annual growth, percent)	4.9	5.7	5.1	3.3	1.5	4.1	-4	4.8-6.6
<b>Caustic soda</b>								
(million tons)	2.76	2.78	2.85	2.97	3.06	-	3.2	NA
(annual growth, percent)	0.1	0.9	2.5	4.2	2.8	2.1	6	
<b>Sulfuric acid</b>								
(million tons)	24.10	23.80	24.71	25.34	26.04	-	27.9	NA
(annual growth, percent)	4.6	-1.2	3.8	2.5	2.8	2.5	7.2	
<b>Synthetic resins and plastics</b>								
(million tons)	4.09	4.06	4.42	4.82	5.02	-	5.3	6.8-7.1
(annual growth, percent)	12.4	-0.8	8.9	9.1	4.2	6.7	5.6	6.3-7.2
<b>Chemical fibers</b>								
(million tons)	1.21	1.24	1.35	1.40	1.39	-	1.5	1.85
(annual growth, percent)	3.1	1.8	9.6	3.5	-0.5	3.5	6	5.9
<b>Motor vehicle tires</b>								
(million units)	60.5	61.7	62.0	63.7	65.2	-	66.0	NA
(annual growth, percent)	0.7	2.0	0.5	2.7	2.4	1.6	1.2	
<b>Synthetic detergents</b>								
(million tons)	1.08	1.08	1.11	1.10	1.15	-	1.2	NA
(annual growth, percent)	6.3	0	2.9	-1.0	4.9	2.6	4.3	

<sup>a</sup> Growth rates shown are annual averages for 1981-85 and 1986-90.

<sup>b</sup> The apparent discrepancy between volume and growth indicators for 1986 is a result of Soviet reporting practices. Production volumes shown are those reported by the Central Statistical Administration. Because the reported volumes and growth rates embody different degrees of rounding by the Soviets, however, the rate of growth shown here may be based on either volume or reported growth, whichever yields the most precise measure of the actual percentage increase achieved in 1986.



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output. Inefficient mining and beneficiation processes at another potash facility caused serious production shortfalls, and large power cuts in early 1986 at a third potash complex reduced output. Phosphate fertilizer output was affected by shortfalls in the output of Kola apatite, the major raw material. The poor quality of phosphate rock reaching fertilizer plants also held down production. Ammonia production difficulties early in the year and the delay in start-up of an ammonia plant caused by design defects also probably hampered nitrogen fertilizer output. [REDACTED]

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The 4-percent drop in pesticide output is surprising in view of the priority attached to this sector as a vital input in raising crop yields. The Soviets claim that the 1986 production plan was met--a paradox we cannot fully explain. Average annual growth rates of 4.8-6.6 percent are required to meet the 1990 goals of the 12th Five-Year Plan. Moscow may have recently decided to satisfy more of its needs from imports of modern, more-effective pesticides, particularly herbicides, which are crucial to Gorbachev's "intensive technology" program for grain cultivation. In 1985 imports of pesticides were up 30 percent over the previous year, including a 58-percent increase in herbicide imports. Shortages of principal raw materials are probably the dominant factor delaying development of domestic pesticide production. [REDACTED]

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In the synthetic materials sector, growth in the production of plastics and chemical fibers showed a decided improvement over 1985. The start-up of several new plants for producing plastics and fibers in 1985 and early 1986 helped boost output. Nevertheless, shortfalls of refinery feedstocks idled a petrochemical plant for one-third of the year. Lack of feedstocks also forced a resin plant to halt production, which in turn caused the shut-down of pipe-coating equipment at a pipe plant. Serious problems with low-density polyethylene production reduced exports and deliveries to domestic customers. 

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Sulfuric acid and caustic soda output moved out of the doldrums in 1986. Increased growth in sulfuric acid output reflected the introduction of 1.6 million tons of gross new capacity in 1985. Also, sulfur raw material supplies were boosted in 1986 by increased imports of Canadian sulfur and the start-up of two sulfur-recovery units and a new sulfur production facility. 

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Construction Materials

Production of construction materials grew by 3.2 percent in 1986, compared with 1.5 percent in 1985. Cement production increased by 3.1 percent to 135 million tons, and output of precast ferroconcrete rose by 4 percent to 141 million tons (see table 4). Despite improved production performance, only 45

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Table 4

USSR: Construction Materials Production								
	<u>1981</u>	<u>1982</u>	<u>1983</u>	<u>1984</u>	<u>1985</u>	<u>1981</u> <u>-85<sup>a</sup></u>	<u>1986<sup>b</sup></u>	<u>1990</u> <u>Plan<sup>a</sup></u>
Cement								
(million tons)	127.17	123.68	128.16	129.87	131	-	135	140-142
(annual growth, percent)	1.7	-2.7	3.6	1.3	0.7	0.9	3.1	1.3-1.6
Precast ferroconcrete								
(million m <sup>3</sup> )	124.48	123.57	128.28	132.42	137	-	141	NA
(annual growth, percent)	1.8	-0.8	3.9	3.2	3.5	2.3	4	
Wall materials								
(billion conventional bricks)	58.26	58.09	59.55	59.21	59.1	-	NA	NA
(annual growth, percent)	0.4	-0.3	2.5	-0.6	-0.2	0.4		
Roofing materials								
(billion m <sup>2</sup> ) <sup>c</sup>	1.71	1.70	1.84	1.88	1.93	-	NA	NA
(annual growth, percent)	-0.8	-0.4	7.9	2.4	2.3	2.3		
Window glass								
(million m <sup>2</sup> )	245	243	247	247	243	-	NA	NA
(annual growth, percent)	0	-0.8	1.6	0	-1.6	-0.2		

<sup>a</sup> Growth rates shown are annual averages for 1981-85 and 1986-90.

<sup>b</sup> The apparent discrepancy between volume and growth indicators for 1986 is a result of Soviet reporting practices. Production volumes shown are those reported by the Central Statistical Administration. Because the reported volumes and growth rates embody different degrees of rounding by the Soviets, however, the rate of growth shown here may be based on either volume or reported growth, whichever yields the most precise measure of the actual percentage increase achieved in 1986.

<sup>c</sup> Including pliable roofing materials and waterproofing.

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percent of the target for sales of materials was fulfilled. Renewed attention to housing needs--partly in response to the Chernobyl' disaster--and plans to finish up old construction projects place a heavy burden on this industry, and timely delivery of materials to construction sites remains a serious problem. [REDACTED]

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Criticism directed at the industry in early 1986 focused on poor product quality and outdated production methods. In response, the State Planning Committee and the State Committee for Material and Technical Supply formulated new procedures for improving the processing of cement and non-ore materials, particularly stone and sand. Several developments during the year focused on improving other materials and processes, as well as developing new brick and ceramic materials through cooperation with Western firms. Increased use of the "dry method" of cement production is planned as part of increased Soviet study of Western methods of manufacturing. The Soviets are considering awarding a contract to a US firm to design and build equipment and production lines to enable switching two large cement plants to the more efficient dry method, but these projects are still in the negotiating stage. [REDACTED]

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A reorganization of the construction sector announced in August expanded the responsibilities of the State Construction Committee to include more direct contact with and responsibility for individual ministries. Whether this results in improved

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performance remains to be seen. Further gains in the construction materials industry will be needed to meet many of the goals of Moscow's industrial modernization plan. Moreover, Gorbachev's program to improve consumer welfare is heavily dependent on the ability of the construction materials industry to provide more and better housing materials. Competition for building materials for renovating existing civilian and defense plants will put even more strain on the industry--already troubled by labor shortages and irregular deliveries of raw materials. 

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Wood Products (Timber, Pulp, and Paper, and Wood Processing)

Output of wood products rose by 5.4 percent in 1986, compared with 2.1 percent in 1985. Improved performance figures reflect, in part, a rebound from relatively poor performance in 1985 (see table 5). Although increased use of the Baikal-Amur Mainline railroad made virgin Siberian forests more accessible and greatly improved timber transport in some areas, the industry undersupplied the national economy as a whole. Problems delivering raw materials to downstream operations continued to plague the industry, sparking official criticism that forest-based industries have achieved only modest results in updating and improving their operations. Overall performance within the wood-products industry, particularly in the plywood sector, was sharply criticized throughout the year. In mid-1986, a number of industry leaders were fired or severely reprimanded. 

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Table 5

## USSR: Wood Products Production

	<u>1981</u>	<u>1982</u>	<u>1983</u>	<u>1984</u>	<u>1985</u>	<u>1981</u> <u>-85<sup>a</sup></u>	<u>1986<sup>b</sup></u>	<u>1990</u> <u>Plan<sup>a</sup></u>
Commercial timber <sup>cd</sup> (million trimmed m <sup>3</sup> )	274	270	271	280	277	-	296	NA
(annual growth, percent)	-0.3	-2.0	1.0	3.0	-0.8	0.3	6.9	
Paper (million tons)	5.40	5.44	5.67	5.86	5.99	-	6.2	7.0-7.2
(annual growth, percent)	2.1	0.7	4.2	3.4	2.1	2.5	3	3.2-3.7
Newsprint (billion m <sup>2</sup> )	30.1	30.7	31.6	32.1	33.3	-	34.5	NA
(annual growth, percent)	0.3	2.0	2.9	1.6	3.7	2.1	3.6	
Pulp (million tons)	7.32	7.44	7.91	8.15	8.37	-	NA	10.0-10.2
(annual growth, percent)	2.8	1.7	6.3	3.0	2.7	3.3		3.5-4.1
Cardboard (million tons)	3.56	3.54	3.89	3.96	4.03	-	NA	5.2
(annual growth, percent)	3.2	-0.5	9.9	2.0	1.7	3.2		5.4
Furniture <sup>c</sup> (billion 1982 rubles)	6.4	6.7	7.1	7.5	7.9	-	8.3	10.5-10.7
(annual growth, percent)	5.0	5.0	6.0	5.0	6.0	5.3	5.1	5.9-6.2

<sup>a</sup> Growth rates shown are annual averages for 1981-85 and 1986-90.

<sup>b</sup> The apparent discrepancy between volume and growth indicators for 1986 is a result of Soviet reporting practices. Production volumes shown are those reported by the Central Statistical Administration. Because the reported volumes and growth rates embody different degrees of rounding by the Soviets, however, the rate of growth shown here may be based on either volume or reported growth, whichever yields the most precise measure of the actual percentage increase achieved in 1986.

<sup>c</sup> These data are contained in the annual plan fulfillment reports; they do not agree with those published in the annual statistical handbook, Narodnoye khozyaystvo SSSR.

<sup>d</sup> Excluding procurement by collective farms.

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[REDACTED]

The chronic need for radical retooling in the industry was underscored in 1986 by high levels of downtime for logging equipment and breakdowns of already obsolete timber transport machinery. Funds earmarked for modernizing plant and equipment in the industry during 1986-90 are nearly double those spent in the last five-year plan. The renovation program outlined for the plywood branch is particularly extensive; solidly entrenched among the poorest performers of the industry, this sector has had a difficult time introducing automated equipment. [REDACTED]

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Commercial timber production rebounded 7 percent in 1986 from the absolute decline posted in 1985, but slow assimilation of new equipment may slow performance for the remainder of the 1986-90 Five-Year Plan. Moreover, the industry's prime supply point--the logging sector--still suffers from severe transportation snarls. Delays due to severe weather in early 1987 will likely result in poor output during the first quarter of this year--the period during which a hefty proportion of annual output is normally produced. Combined with labor shortages in the Far East and a rising average age of workers in Soviet forestry overall, we do not expect much more than a moderate climb in output for 1987. [REDACTED]


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Paper production was up 3 percent in 1986, largely due to successful rebuilding and equipment replacement. Fewer work stoppages, partly due to better weather conditions compared with the previous winter and improved assimilation of imported paper


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technology, prompted industry officials to assure Moscow that they will be able to meet domestic demand for paper and cellulose products in the near future. 

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The Soviets are emphasizing the use of more timber wastes and the development of new products for 1987. Several steps were taken in 1986 to improve the use of waste products, including the production of fiberboard from the wastes produced in furniture-making. For the most part, however, existing capacities limit the ability of most enterprises to process wastes from storage sites and lumber mills. The historical inability of forest-based industries to absorb even the limited investment they receive suggests only a moderate improvement in the use of timber wastes in 1987. 

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#### Soft Goods

Output of light industry increased only 1.5 percent in 1986, a decline from the respectable growth rates achieved in 1984 and 1985. Sewn goods was the big loser, with growth dropping from 3.6 percent in 1985 to only 0.1 percent last year (see table 6). Sewn goods output is measured in rubles, however, and earlier growth may reflect price increases resulting from the introduction of an experiment in industrial management in several republics in 1984. No new republic ministries of light industry were brought under the new management system in 1986, and further opportunities for easy growth may have been lost. In addition, there has been intense administrative pressure to increase the



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Table 6

## USSR: Soft Goods Production

	<u>1981</u>	<u>1982</u>	<u>1983</u>	<u>1984</u>	<u>1985</u>	<u>1981 -85<sup>a</sup></u>	<u>1986<sup>b</sup></u>	<u>1990 Plan<sup>a</sup></u>
Textiles (billion m <sup>2</sup> )	10.95	11.08	11.36	11.76	12.05	-	12.3	14-15
(annual growth, percent)	1.9	1.2	2.5	3.6	2.5	2.3	2.1	3.0-4.5
Knitwear (billion articles)	1.65	1.61	1.64	1.68	1.73	-	1.8	2.2-2.3
(annual growth, percent)	1.5	-2.1	2.0	2.2	3.0	1.3	3	4.9-5.9
Sewn goods (billion 1982 rubles)	24.3	24.2	24.2	25.1	26.0	-	26.1	NA
(annual growth, percent)	3.4	-0.4	0	3.7	3.6	2.0	0.1	
Leather footwear (billion pairs)	738	734	745	764	788	-	801	900
(annual growth, percent)	-0.7	-0.5	1.5	2.6	3.1	1.2	1.6	2.7

<sup>a</sup> Growth rates shown are annual averages for 1981-85 and 1986-90.

<sup>b</sup> The apparent discrepancy between volume and growth indicators for 1986 is a result of Soviet reporting practices. Production volumes shown are those reported by the Central Statistical Administration. Because the reported volumes and growth rates embody different degrees of rounding by the Soviets, however, the rate of growth shown here may be based on either volume or reported growth, whichever yields the most precise measure of the actual percentage increase achieved in 1986.

[Redacted]

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output of children's sewn goods, which are in high demand and priced below the cost of production. Although the plan for output of children's goods was not met in 1986, production increased substantially, according to Izvestiya. As a result, growth was further depressed. [Redacted]

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Increases in textile and knitwear production were no better than the modest pace achieved in recent years. Shortfalls in some footwear production probably resulted from continuing problems of improper handling and hide preservation in the leather industry. [Redacted]

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In 1987 the new conditions of management make contract fulfillment the main indicator of enterprise performance. Although the Belorussian Ministry of Light Industry performed well under an experiment of this system in 1984, it was receiving preferential treatment, and its enterprises have experienced difficulties in meeting contracts since they lost their supply advantage. In August of last year, some 42 percent of Soviet light industrial enterprises were behind on contract deliveries. [Redacted]

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The Consumer Goods and Services Program calls for major improvements in the quality of soft goods in order to improve consumer welfare and to reduce the waste that results when many goods go unsold.<sup>3</sup> The measures taken thus far, however, have not

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resulted in substantial improvements in quality. The industry was criticized throughout the year for its low-quality products, and unless it can succeed in making some progress, the unsatisfactory quality of Soviet soft goods likely will continue to foster cynicism and social malaise, which Gorbachev is trying to alleviate. [REDACTED]

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#### Processed Foods

Output of the food-processing industry rose only 0.7 percent last year, largely because of the huge decline in the production of alcoholic beverages.<sup>4</sup> If we exclude alcohol, growth was a healthy 6.5 percent. [REDACTED]

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The food-processing industry has benefitted from generally improved agricultural performance over the last several years. Greater attention to improving feed supplies for livestock helped boost production of processed animal products. Expansion of processing capacity also enabled the industry to make better use of available supplies. The output of processed meat, sausage, dairy products, and animal fats and oils all demonstrated strong growth in 1986 (see table 7). The good 1986 harvest is likely to provide for continued improvements in 1987. [REDACTED]

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Vegetable oil and margarine production made a good recovery from poor performance in 1984-85. Earlier problems were caused

<sup>4</sup> Last year, for the first time in decades, the Soviets provided production data for the full range of alcoholic beverages in their annual statistical handbook, Narodnoye khozyaystvo SSSR, presumably to demonstrate the success of Gorbachev's anti-alcohol campaign. Complete data for 1986 are not yet available. [REDACTED]

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[REDACTED]

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Table 7

## USSR: Processed Foods Production

	<u>1981</u>	<u>1982</u>	<u>1983</u>	<u>1984</u>	<u>1985</u>	<u>1981</u> <u>-85<sup>a</sup></u>	<u>1986<sup>b</sup></u>	<u>1990</u> <u>Plan<sup>a</sup></u>
<b>Meat<sup>c</sup></b>								
(million tons)	9.28	9.27	10.11	10.66	10.81	-	11.5	11.7-12.2
(annual growth, percent)	1.6	-0.2	9.0	5.4	1.4	3.4	7	1.6-2.4
<b>Sausage</b>								
(million tons)	3.06	3.08	3.19	3.30	3.41	-	3.5	NA
(annual growth, percent)	-0.6	0.7	3.7	3.3	3.5	2.1	4	
<b>Fish<sup>d</sup></b>								
(billion 1982 rubles)	6.1	6.4	6.7	7.0	7.3	-	7.4	NA
(annual growth, percent)	1.7	4.9	4.7	4.5	4.3	4.0	1	
<b>Animal fats/oils<sup>e</sup></b>								
(million tons)	1.21	1.29	1.46	1.50	1.52	-	1.6	1.5-1.7
(annual growth, percent)	-5.3	6.6	12.8	2.9	1.3	3.5	5.5	0-2.3
<b>Whole milk products</b>								
(million tons)	25.7	26.4	27.8	28.6	29.8	-	31	31-32
(annual growth, percent)	0.8	2.7	5.3	2.9	4.2	3.2	5	0.8-1.4
<b>Margarine</b>								
(million tons)	1.36	1.43	1.48	1.43	1.41	-	1.5	NA
(annual growth, percent)	7.8	5.2	3.6	-3.4	-1.1	2.2	3	
<b>Vegetable oil</b>								
(million tons)	2.61	2.63	2.78	2.68	2.54	-	2.9	3.7-4.0
(annual growth, percent)	-1.7	0.9	5.8	-3.8	-4.9	-0.8	13.9	7.8-9.5
<b>Granulated sugar</b>								
(million tons)	9.5	12.1	12.4	12.5	11.8	-	12.7	NA
(annual growth, percent)	-5.9	27.4	2.5	0.8	-5.6	3.2	7.6	
<b>Confectionary goods<sup>f</sup></b>								
(million tons)	3.95	4.02	4.10	4.15	4.28	-	4.4	NA
(annual growth, percent)	2.3	1.7	1.9	1.4	3.2	2.1	4	
<b>Canned goods</b>								
(billion standard cans)	15.86	16.60	17.10	17.16	17.99	-	19.7	NA
(annual growth, percent)	3.9	4.7	3.0	0.3	4.9	3.3	9.5	
<b>Nonalcoholic drinks</b>								
(million dekaliters)	375	348	357	357	383	-	497	NA
(annual growth, percent)	6.8	-7.2	2.6	0	7.3	1.8	29.8	

Table 7 (continued)

	<u>1981</u>	<u>1982</u>	<u>1983</u>	<u>1984</u>	<u>1985</u>	<u>1981</u> <u>-85<sup>a</sup></u>	<u>1986<sup>b</sup></u>	<u>1990</u> <u>Plan<sup>a</sup></u>
<b>Mineral water</b>								
(million dekaliters)	113	116	126	131	131	-	148	NA
(annual growth, percent)	1.8	2.7	8.6	4.0	0	3.4	14	
<b>Vodka products</b>								
(million dekaliters)	292	277	277	281	238	-	NA	NA
(annual growth, percent)	-1.0	-5.1	0	1.4	-15.3	-4.2		
<b>Wines</b>								
(million dekaliters)	479	473	474	453	335	-	NA	NA
(annual growth, percent)	1.5	-1.3	0.2	-4.4	-26.0	-6.6		
<b>"Cognac"</b>								
(million dekaliters)	8.1	7.6	10.5	9.9	7.0	-	NA	NA
(annual growth, percent)	-13.8	-6.2	38.2	-5.7	-29.3	-5.7		
<b>"Champagne"</b>								
(million bottles)	204	216	233	254	248	-	NA	NA
(annual growth, percent)	14.6	5.9	7.9	9.0	-2.4	6.9		
<b>Beer</b>								
(million dekaliters)	630	647	661	654	657	-	NA	NA
(annual growth, percent)	2.8	2.7	2.2	-1.1	0.5	1.4		

<sup>a</sup> Growth rates shown are annual averages for 1981-85 and 1986-90.

<sup>b</sup> The apparent discrepancy between volume and growth indicators for 1986 is a result of Soviet reporting practices. Production volumes shown are those reported by the Central Statistical Administration. Because the reported volumes and growth rates embody different degrees of rounding by the Soviets, however, the rate of growth shown here may be based on either volume or reported growth, whichever yields the most precise measure of the actual percentage increase achieved in 1986.

<sup>c</sup> Industrially processed meat. The 1990 target reflects meat from state resources only, roughly 90 percent of all industrially processed meat. The remainder is meat from private sources that is custom processed at food-processing enterprises.



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Table 7 (continued)

d Including canned fish. Beginning in 1986, the Soviets began reporting edible fish output in tons, rather than in value terms they had given up to 1985. Data for 1986 are estimated based on a reported 1-percent increase in the production of edible fish (5.6 million tons). The gross fish catch has been running 10-11 million tons per year.

e Excluding production from private sources.

f Excluding production in public catering facilities.



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by declines in the harvests of sunflowers and cotton, the major source of oilseeds. In 1985 the sunflower harvest was up 16 percent over 1984, and a large share of this crop was processed in 1986. Cotton seed processing may also have benefited from the reorganization of the cotton ginning sector, responsibility for which was transferred from the Ministry of Light Industry to the new State Committee for the Agro-Industrial Complex.

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The sugar industry regained lost ground last year after experiencing a 5.6-percent decline in production in 1985, but, compared with 1984, its gain was small. Because imports of raw sugar held fairly constant and the 1986 sugar beet harvest was down, most of the gain came through increasing the extraction rate: the 1986 harvest was better organized, resulting in fewer losses, and retooling and expansion of processing capacities enabled the Soviets to make better use of the harvested beets.



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The Soviets have had success in carrying out the objectives of the anti-alcohol campaign. The output of nonalcoholic drinks increased 30 percent in 1986, although production was below plan. Output of mineral water increased 14 percent, and canned fruit juice production rose 47 percent. The high output of fruit juices is partially responsible for the strong performance of canned goods output, which grew 9.5 percent. The Soviets were able to achieve these dramatic increases in beverage production through the conversion of wine and spirits factories to




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nonalcoholic beverage production. Industrial production of vodka, wine, and other high-alcohol drinks declined 35 percent in 1986, according to the Central Statistical Administration, although reports indicate that production of home brew has increased. 

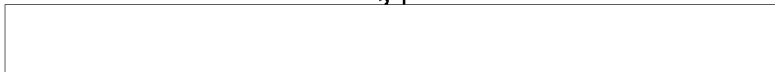
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The healthy performance of the food-processing industry in 1986 after earlier problems demonstrates that measures of the Food Program are gradually beginning to pay off in the form of improved food supplies for the consumer, and further improvements are likely. The rapid conversion of alcohol factories to production of nonalcoholic beverages was a major success. The major obstacle lay not in technology--conversion was relatively easy--but in planning. The very high priority accorded by the leadership to the antialcohol program obliged planners to modify targets for the beverage sector, and industry was able to respond quickly. 

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Transportation

Transport carriers posted strong performance in 1986 with freight traffic rising by 4.8 percent--compared with only 1.7 percent in 1985--well ahead of the planned rate of 3.5 percent. High growth rates for the freight carriers in 1986 resulted from improved weather, which spurred the recovery of industrial customers from depressed output and shipment growth rates in 1985; the good fortune of Soviet agriculture, which increased the growth of shipments on rail and highway carriers; and an increase



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in oil production, which reversed the fall in 1985 in oil pipeline shipments (see table 8). [Redacted]

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Railroads--Performance Peaking?

The railroads--still the main barometer for general transport performance in the USSR--reportedly squeezed 2.8 percent more tonnage onto the heavily used system in 1986. The rail leadership pushed the same formula it has counted on to increase rail tonnages since 1982--increasing train weights and accelerating turnaround times for freight cars. Improvements in these areas control congestion on rail lines and the incidence of freight car shortages--two factors that seriously limited growth of freight traffic in the late 1970s and early 1980s and created a drag on overall industrial production. In addition, as part of their overall campaign to increase efficiency and combat rising costs, rail managers began trimming excess labor during 1986--the start of a sizable force reduction planned for 1986-90. As a result, labor productivity soared by 7.5 percent last year.

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Although 1986 was a good year for the railroads, we believe the strong recovery we have observed since 1982 may have come to an end. According to our analysis of quarterly rail performance, following the strong comeback in the first quarter of 1986, the railroads achieved little real growth in freight traffic during the remainder of the year. Also, the increase in average train weight of 60-70 tons, although enough to boost shipments in 1986,

[Redacted]

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Table 8

USSR: Freight Transportation Shipments<sup>a</sup>

(million tons)

	<u>1981</u>	<u>1982</u>	<u>1983</u>	<u>1984</u>	<u>1985</u>	<u>1986</u>	<u>1990 Plan</u>
Rail	3,762	3,725	3,851	3,910	3,951	4,061	4,267-4,346
Maritime	223	224	238	235	240	249	NA
River	594	605	607	619	633	649	690-703
Highway <sup>b</sup>	6,651	6,739	6,612	6,357	6,320	6,648	7,458-7,521
Air	3	3	3	3	3	NA	NA
Oil pipelines	634	641	649	648	631	653	NA
Gas pipelines	345	373	400	440	482	NA	NA

(annual growth, percent)

	<u>1981</u>	<u>1982</u>	<u>1983</u>	<u>1984</u>	<u>1985</u>	<u>1981 -85<sup>c</sup></u>	<u>1986</u>	<u>1990 Plan<sup>c</sup></u>
Rail	0.9	-1.0	3.4	1.5	1.0	1.2	2.8	1.6-1.9
Maritime	-2.2	0.4	6.2	-1.3	2.1	1.0	3.8	NA
River	4.6	1.9	0.3	2.0	2.3	2.2	2.5	1.7-2.1
Highway	3.0	1.3	-1.9	-3.9	-0.6	-0.4	5.2	3.4-3.5
Air	3.3	0	0	0	3.2	1.3	NA	NA
Oil pipelines	1.1	1.1	1.2	-0.2	-2.6	0.1	3.5	NA
Gas pipelines	6.8	8.1	7.2	10.0	9.5	8.3	NA	NA

<sup>a</sup> Because of multiple counting (shipments moved on more than one carrier), no total is shown.

<sup>b</sup> Excluding the non-common carrier highway fleet.

<sup>c</sup> Growth rates shown are annual averages for 1981-85 and 1986-90.

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was far short of the 100-ton-per-year increases planned for reaching overall 1986-90 shipment targets. This probably indicates that the easier opportunities for putting more tonnage on the mainlines have been exhausted. Finally, the criticism of railroad management and performance, which became more frequent in the Soviet press after about mid-year, tends to confirm our suspicions that the sector's overall performance may be deteriorating. Criticism even reached rail minister Nikolay Konarev--an Andropov appointee--who until last fall had been viewed as an unusually successful administrator. [REDACTED]

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If rail performance is reaching a plateau, it is probably because Soviet planners are not moving rapidly enough to field the new capital--rolling stock and automated equipment--necessary to continue to expand the capacity of the rail system. For example, in order to increase train weight further--still considered by the Soviets as a key for increasing the capacity of existing rail lines--the railroads must introduce many more new "super-large" locomotives, increase the length of station and bypass tracks to accommodate longer trains, and push automated control to manage the increasing volumes of traffic passing through major rail hubs. Konarev plans to concentrate additions to capital on electrifying track, upgrading rolling stock, and automating freight and passenger service--all areas that will increase tonnages. But his plans cannot succeed if upstream suppliers in industry--particularly in machine building--fail to

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meet their contract deliveries. We can expect Konarev to become more vocal about contract shortfalls in industrial sectors this year if performance in his sector weakens. [Redacted]

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Highway Shipping--Greater Centralization

Shipments on the centrally directed highway carriers rebounded by 5.2 percent last year after three years of declining volumes, but total shipments were still short of the 1982 peak. The magnitude of last year's increase probably reflects, in part, a policy of shifting a greater share of trucking from departmental carriers--those managed by the industrial ministries--to the centralized fleet. [Redacted]

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The Soviets hope that greater centralization of highway shipping will improve the notorious inefficiency of overall trucking with respect to labor, capital, and fuel usage. Centralized trucking can more easily fill the gap posed by an underdeveloped inter-city trucking network and, during 1985, centrally directed shippers took over responsibility for more shipments involving longer truck hauls. This trend will benefit overall transport efficiency--hauls of 200 to 300 kilometers are efficient for trucks, but are inefficient short hauls for the overburdened railroads that carry them now. On the other hand, the centralization of most other shipments is a more difficult task. The non-transport ministries, which control the lion's share of trucks and are responsible for three-fourths of all highway shipments, will resist any attempt to centralize control

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of their trucks, drivers, or shipments, particularly established intra-city connections with suppliers. Nevertheless, the magnitude of growth for the centralized shippers in 1986 suggests that they are making inroads on the departmental carriers' shipments as well. Indeed, we suspect that when the final data are in for 1986, the departmental carriers will show little--if any--shipment growth.



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