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169565	MEMO	TO ASST. TO PRESIDENT FOR NATIONAL SECURITY	1	1/30/1981	B1	
	R	***4/8/2013 CREST NLR-748-20-121-1-0***				
169567	REPORT	RE USSR/GRAIN EMBARGO	26	1/30/1981	B1	B3
	PAR	***10/12/2010 CREST 748-20-121-2-9***				
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THE WHITE HOUSE

WASHINGTON

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169564

February 2, 1981

Bruce

Dear ~~Mr. Clarke~~:

Thank you for sending the two assessments of the effects of the grain embargo on the Soviet Union. Both were most concise and informative. I know they took special efforts to complete, and you may assure the authors they will be of significant benefit during the Cabinet discussion on this subject next Wednesday.

We're looking forward to working closely with you and your colleagues.

With best regards,

Sincerely,

Dick

Richard V. Allen
Assistant to the President
for National Security Affairs

Mr. Bruce C. Clarke, Jr.
Deputy Director for National Foreign Assessment
Central Intelligence Agency
Washington, D.C. 20505

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169565

The Director of Central Intelligence

Washington, D.C. 20505

Deputy Director for National Foreign Assessment

30 January 1981

MEMORANDUM FOR: The Assistant to the President for National Security

Attached are two papers related to the impact of the economic denial measures on the USSR following its intervention in Afghanistan. The first report reviews the status of the sanctions in general and discusses their effects. The second paper provides a more detailed assessment of the impact of the US grain embargo on Soviet grain imports and meat production and discusses the probable effects of lifting the US grain sanctions.

Bruce Clarke

Bruce C. Clarke, Jr.

2/81 Staff action thank him for sending reports

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USSR: ADJUSTING TO THE US GRAIN EMBARGO

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Office of Economic Research
National Foreign Assessment Center
Central Intelligence Agency

30 January 1981

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USSR: ADJUSTING TO THE US GRAIN EMBARGO

Introduction

In January 1980 the US and its major allies adopted a package of economic denial measures against the USSR following the Soviet intervention in Afghanistan. The denial measure that shocked the Soviet Union the most and since has been the most controversial was the partial-embargo placed on grain shipments by the US and cooperating exporters. Differences continue to exist in the media and among exporters about the effectiveness of the US sanctions denying the USSR 17 million tons of US grain in the US-USSR Long Term Agreement (LTA) year ending September 1980. (U)

In an effort to clarify the grain embargo's impact, this paper traces our pre-embargo estimate of Soviet grain import intentions through the US post-embargo period and analyzes its effectiveness. It covers the embargo's impact on (1) 1979/80 grain imports for July/June and October/September marketing years, (2) the livestock sector, and (3) port congestion. The probable effects of lifting the US grain sanctions in early 1981 on Soviet grain imports and meat production are also discussed. (Ø)

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Key Findings

The impact of the US grain embargo on the USSR was substantially lessened by Moscow's ability to find alternative sources of grain. Only the United States actually cut back on grain exports; Argentina refused to cooperate and the other exporters sold more grain to the Soviets than projected when the embargo was announced. Consequently, the Soviets were able to replace half of the 17 million tons denied them by the US in the Long-Term Agreement (LTA) year ending 30 September 1980. (C)

The embargo reduced Soviet grain imports in the LTA year 1979/80 from an expected 36 million to 28 million tons, which exacerbated an already tight feed situation. It reduced grain available for feed by roughly 8 percent -- assuming no equivalent drawdown in stock -- or an amount sufficient to produce 650,000 tons of pork (carcass weight), equal to about 4 percent of meat production in 1979. To soften the impact of the sanctions, however, the Soviets by drawing down stocks were able to hold the drops in grain fed to livestock to 2 percent and meat production to 3 percent. The low stock level has left Moscow more dependent on grain imports in 1980/81 following another disastrous grain harvest in 1980. We estimate that to maintain a status quo in 1981 livestock production would require the importation of over 40 million tons of grain during the 1980/81 LTA year. Such a high level of import is not feasible. (C)

Whether or not the US partial embargo is continued, the Soviets should be able to obtain enough grain in world markets --

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including 8 million US -- to import during the year ending 30 September 1981 up to their current handling capacity of 34 million tons; 6 million tons more than in 1979/80. Support for the embargo among our Allies has eroded to the point where availability of non-US grain will be less of a problem for Moscow than port congestion. In addition, the Soviets should have no difficulty purchasing 2 to 3 million tons of soybeans and products, including some US origin from West European firms. Should the embargo be lifted, the Soviets would take additional quantities of US corn and soybeans, if offered, and probably defer or cancel delivery on similar quantities from other origins. Such a move would enable Moscow to use larger ships to carry grain, thereby reducing shipping costs and easing congestion at Soviet ports. ~~(C/NF)~~

Per capita production of meat in CY 1981 will be down for the third consecutive year. Meat production is forecast to be no larger, and possibly smaller, than last year, when it dropped 3 percent below 1979. Prior to the embargo we had projected no drop in 1980 meat production. The dominant problem for Soviet meat production in 1981 is a second successive bad harvest of grain and other feeds. A continuation of the US partial embargo on grain would have little effect. ~~(C)~~

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Soviet Grain Import Needs, 1979/80

In the fall of 1979 Moscow expected to use large grain imports and drawdown of stocks to soften the impact of a poor grain harvest on the livestock sector. A disastrous 179 million ton grain crop and poor forage crops implied a very large deficit (in the 50 to 60 million ton range) relative to requirements to maintain herds and flocks, and fulfill livestock production goals for 1980. Carryover stocks from the 1978 crop were very roughly estimated to be about 20 million tons. (C)

By mid-September trade sources were reporting relatively large Soviet purchases of non-US grain and Soviet interest in being permitted to buy considerably more than 8 million tons of US grain permitted under the upcoming long-term agreement (LTA) year beginning 1 October 1979. The confirmation of Soviet intentions to launch a massive grain import program surfaced at the October US-USSR grain consultations when USDA officials offered them 25 million tons of wheat and corn in the year ending September 1980. Intelligence sources almost immediately indicated the Soviets would take all the US grain offered, plus about 11 million of non-US grain, and 2.5 million tons of soybeans and meal. The total expected purchases of roughly 38 million tons during the year ending 30 September 1980 was near the limit of our estimated Soviet annual port capacity for handling bulk agricultural commodities. ~~(C/NF)~~

Maximizing imports and drawing down stocks would have softened, but not eliminated the adverse impact of the production

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shortfall on livestock goals. Supplies of grain for feed still would have been below requirements. (U)

US Sanctions Imposed 4 January 1980

The unilateral suspension of US agricultural exports to the USSR on 4 January was targeted at the important and highly vulnerable livestock sector of the Soviet economy. It immediately denied the USSR 17 million tons of grain, 1.2 million tons of soybeans and meal, and smaller quantities of poultry scheduled for delivery in the LTA year ending 30 September 1980. The trade sanctions imposed several restrictions on US exporters.

- o The remainder of 8 million tons of wheat and corn not shipped as of 4 January had to leave US ports by 1 April 1980.
- o Export licenses were required to ship grain to USSR.
- o It was illegal to sell Soviets US grain not licensed under the 8 million ton limit through a third country.
- o Processed agricultural products made in foreign countries from US raw products could not be sold to the USSR, e.g., soymeal made from US soybeans.
- o Non-US grain could not be sold by US traders to the USSR. (This restriction was rescinded last June.) (U)

To make the US embargo effective, US officials after imposing the embargo met with representatives of other major grain exporter nations on 12 January to obtain their cooperation. None of the exporters -- Argentina, Australia, Canada, and the EC -- agreed to cut back grain sales to the

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Soviets but stated they would not replace directly or indirectly the 17 million tons of US grain denied. In turn, the US agreed not to increase sales to other exporters' traditional markets. Because commodities other than grain were not discussed, no agreement was reached on sales of oilseeds, meal, and livestock products. Subsequent discussions with the exporter governments concerning their actions to control grain exports to the USSR made it clear that Argentina was not going to cooperate. Moreover, the other exporters could not be pinned down on specific export ceilings, but only "traditional or historic levels." This turned out to mean a level as large as or larger than in any other previous year. ~~(C)~~

The exporters, including Argentina, agreed to participate in monitoring grain trade to the USSR. They have regularly met with US officials to exchange information on new sales, measures taken to control exports to the USSR, and actual shipping data. The EC has not cooperated in providing transshipping data through north European ports, citing commercial secrets as the reason. (C)

CIA and USDA estimated that in the marketing year ending 30 September 1980, the Soviets could probably replace 12-15 million of the denied 17 million tons without exporter cooperation and 6-9 million tons with cooperation. Considerably less grain was available in the marketing year ending 30 June 1980 because of the shorter time the Soviets had to arrange new chartering and shipping schedules to move large quantities of Argentine corn and soybeans available from the April harvest. ~~(C/NF)~~

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Sanctions Reduced Soviet Grain Imports, 1979/80

We estimate that Soviet grain imports on the 1 October 1979-30 September 1980 year totaled nearly 28 million tons, as shown in Table 1.* This amount fell 8.4 million tons short of pre-embargo expectations. It included 8.4 million of US grain and 19.2 million tons from other origins. Without the suspension we had expected the US to export about 26 million tons and other suppliers 10 million tons to the USSR. Thus, the Soviets have been able to make up only about half of the 17 million tons of US grain embargoed; near the high end of the 6-9 million ton range we estimated last January. ~~(C)~~

Estimated imports on the 1 July-30 June 1979/80 marketing year (MY 1980) were larger at 31 million tons but still 6 million tons below pre-embargo projections. US exports at 15 million tons were nearly 7 million tons larger, however, than during the October/September year (see Table 2). This reflects the large US grain shipments during July-September 1979, before the LTA year began on 1 October 1979 and the year in which the sanctions applied. ~~(C)~~

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* The press -- both domestic and foreign -- has contributed to some confusion regarding the effectiveness of the embargo because import statistics differ between the marketing and the LTA years. The usual marketing year for grain begins 1 July and the years under the LTA begin 1 October. It was under the agreement year beginning 1 October 1979 that we denied the Soviets 17 million tons of US grain. Some published reports have incorrectly chosen to use the July/June year statistics to show that US exports greatly exceeded the 8 million tons agreed to under the sanctions. The marketing year ending 30 June is normally used to analyze availability of grain for livestock feeding.

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Table 1

USSR: Total Grain Imports, 1976/77 - 1980/81
October/September Years
(million tons)

Exporters	1976/77	1977/78	1978/79	1979/80 Estimated	1979/80 Pre-Embargo Forecast	1980/81 Forecast	1980/81 Known Purchases or Agreements To Date
US	6.1	14.8	15.3	8.40	25.9	8.0	8.0
Canada	1.5	2.7	1.9	4.30	2.4	6.5	6.5
Australia	.5	.3	.6	4.40	3.0	3.5	3.3
EC	--	--	.2	1.60[1]	.6	2.1	1.5[1,2]
Argentina	.2[3]	3.2	1.6	6.00	3.0	10.0	7.0
E. Europe	.4[3]	.22[3]	.7[3]	1.80	.9	1.8	.8
Thailand	--	--	.02	.10		.4	.4
S. Africa	--	--	--	.10		--	--
Sweden	--	--	--	.30	.2	.6	.4
Turkey	--	--	--	.10		.2	.1
N. Zealand	--	--	--	.04		--	--
Brazil	.06	.16	--	--	--	--	--
Spain	--	--	--	--	--	1.0	1.0
Total[5]	8.79	21.38	20.32	27.64[4]	36.0	34.1	29.0

1. Includes wheat flour.
2. Includes 500,000 tons mixed feed, at least 50 percent of which is grain.
3. Calculated by dividing calendar year statistics by 4 and adding appropriate quarters.
4. Includes estimated 500,000 tons of diverted US grain.
5. Excludes .5 million tons of rice.

Table 2

USSR: Grain Imports, 1978/79 - 1980/81
1 July/30 June Years
(million tons)

	1978/79	1979/80 Preliminary	1980/81 Forecast	1980/81 Sales and Agreements[1]
US	11.1	15.3	8.0	8.0
Canada	2.0	3.4	5.9	5.9
Australia	.1	4.0	3.5	3.9
EC	.2	1.0	1.8	1.3
Argentina	1.4	5.1	8.0	7.0
E. Europe	.2	1.5	1.5	.8
Thailand	--	.1	.4	.6
S. Africa	--	.1		--
Sweden	--	.2	.5	.4
Turkey	--	--	.2	.1
Spain	--	--	1.0	1.0
Total[2]	15.1	30.7	30.8	29.0

1. As of 25 January 1981.
2. Excludes .5 million tons of rice.

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Circumvention of Embargo

We have no evidence that large amounts of US grain were diverted through third countries to the USSR. Based on incomplete information we estimate that 500,000 tons of US grain could have gone that route --divided between Romania and northern European transshipping operations. Similar quantities ofUS soybeans and meal were probably transshipped through northern Europe ports. [redacted] 25X1

West European reports claiming large amounts of US grain were transshipped through Eastern Europe are exaggerated and unsubstantiated. Larger East European imports were needed to support livestock production goals because of a shortfall in their 1979 harvests. We estimate that less than a million tons out of East Europe's total import of 17 million tons --3 million more than 1978/79 -- were used to replace exports of domestic grain and transshipments to the USSR. (C)

Over 75 percent of the estimated 8.6 million tons of US grain replaced came from Argentina, Canada, and Australia (see Table 1). Shipments to the USSR in 1979/80 were a record for all of the major exporters except Canada. The other 25 percent was imported from a number of exporters, including Sweden, Thailand, Eastern Europe, and France. (C)

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Embargo Imposed Logistical Constraints

The US sanctions added to logistical constraints on the quantity of imported grain and oilseeds the USSR could handle in 1979/80. We estimate the throughput capacity of the ports was reduced by several million tons. Thus, even if more non-US grain had been available, it is doubtful the Soviets could have imported more than the estimated 30 million tons (including soybeans) they were able to purchase during the LTA year 1979/80. (C)

Prior to the embargo, CIA estimated the annual Soviet grain handling capacity of its major ports at 36 million tons. Adding 2-4 million tons in minor ports and for imports by rail gives a total of 38-40 million tons.* Suspending shipments of over 18 million tons of US grains, soybeans, and meal, which would have moved in large bulk ocean carriers, forced the Soviets to buy from a larger number of suppliers who were unable to sustain the same scale of grain movements. The shift away from US deep water ports substantially increased the number of smaller ships arriving in Soviet ports. For example, because of draft limits roughly twice as many ships are needed to move the same quantity of grain out of Argentine ports. Congestion existed at most ports during 1980, with berth throughput rates down and turnaround times up. The increased use of transshipment

* This estimate was also supported in October 1979 by trade sources based on their knowledge of known purchases and delivery schedules for grain and oilseeds worked out with the Soviets for 1979/80. See Appendix for discussion of Soviet port and transport capabilities for handling grain.

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facilities in Western Europe, which required the use of large numbers of coasters, also added to congestion in Baltic ports. ~~(S/NF)~~

Impact of Sanctions on Soviet Livestock Sector

The consequences of reducing grain imports from 36 to 28 million tons because of the embargo have fallen most heavily on the livestock sector. Because port capacity limited imports, even without the embargo the poor 1979 grain and forage crops would have forced the Soviets to make adjustments. Meat production in 1980 probably would have shown no increase and a downward adjustment in growth of livestock inventories also would have been needed to match the reduced feed base. However, the embargo worsened the situation by further limiting grain imports. (U)

The 8.4 million tons of grain denied the Soviets by the embargo would have resulted roughly in an 8 percent reduction in grain available for feed, assuming it was not replaced from stocks. Expressed in another way, this was enough to produce roughly 650,000 tons of pork (carcass weight), equivalent to slightly more than 4 percent of meat output in 1979. Because of a large stock drawdown, however, the total grain available for feeding only dropped an estimated 2 percent in 1979/80. The short feedgrain supplies actually impinged on the livestock sector in three ways -- a lower meat and milk output, lower animal weights, and slower growth in herd numbers. ~~(C)~~

Meat production in 1980 came to 15.1 million tons -- 3 percent less than last year and 5 percent below the sharply

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reduced plan of 15.7 million tons. Livestock inventories at yearend 1980 were roughly equal to those of a year earlier because of a determined campaign to sustain herds in the socialized sector. Poultry is the only category that probably showed much increase in numbers and product output over last year. Given official data for egg production, the poultry sector undoubtedly received priority in the distribution of concentrated feed supplies because of its relatively high efficiency in converting feed into products. (C)

Outlook for 1980/81 Soviet Grain Imports

The USSR will try to import as much grain as possible during 1980/81 to hold down losses in the livestock sector following a second successive poor grain harvest. A 1980 grain harvest of 189 million tons will leave the Soviets far short of requirements.* We also believe Soviet dependence on imports is much greater than a year ago because of smaller grain stocks and a poor potato crop. The estimated stock drawdown of roughly 12

* We estimate a deficit of roughly 40 million tons exists if: (1) livestock herds are not reduced, (2) no additions to grain stocks are made, (3) livestock production is maintained at current levels, and (4) no decrease occurs in non-fuel uses of grain.

million tons in 1979/80 has probably reduced operating stocks to a dangerously low level by Soviet standards.* Additional drawdowns this year may be tempered by Moscow's likely concerns over the uncertain outlook for the 1981 winter grain crop and Western threats of new grain embargo action over Poland. ~~(C)~~

We expect Moscow to import about 34 million tons of grain in the current LTA year ending September 1981, 6 million tons above 1979/80, even if the US partial embargo continues. Imports will be limited more by port and internal transport constraints than Moscow's ability to buy grain in world markets, especially if Argentina has a good coarse grain harvest this spring. Although grain supplies are tight, the willingness of the Soviets to pay premium prices should attract all the non-US grain they can handle. Moscow also should have no difficulty purchasing some 2-3 million tons of soybeans and meal. So far we estimate the Soviets have purchased or agreed to purchase some 29 million tons of grain and 2 million tons of soybeans, soymeal, and manioc. ~~(C/NF)~~

The continued effectiveness of the partial US embargo on grain exports is being rapidly eroded by increased sales from other exporting countries and by the Soviet ability to circumvent some of the logistical constraints present during the last LTA year. Only Australia and the EC of the major exporters are cooperating with the US to hold exports at last year's level, but

* The USSR holds an unknown quantity of strategic stocks of grain to supply their military forces and civilian consumers in time of war. This is in addition to operating and buffer stocks accumulated or drawn down in years of good and bad harvest, respectively.

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both planned to review this policy after 20 January. US diplomatic representations that the embargo was important as a continuing sign of disapproval to the Russians have been undercut by the signing of the US-China grain agreement. Both Canada and Australia regard that agreement as a violation of the US pledge not to increase grain sales to their traditional markets during the embargo. ~~(C)~~

In the marketing year ending 30 June 1981 (MY 1981), the 12-month period normally used to analyze feed availability, Soviet grain imports will be limited to about 31 million tons plus 2-3 million tons of oilseeds and bulk feeds or roughly the same as MY 1980. This reduced level of grain import compared to the 34 million tons projected for the LTA year ending 30September 1981 reflects the continued adverse impact of January's partial-embargo on both availability of grain from non-US sources and congestion at Soviet ports in the July-December 1980 period.* Despite the logistical constraints we expect Moscow to contract

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* During this period we estimate that a total of only 17 million tons of grain, soybeans and meal were unloaded at Soviet ports or transported by rail from Europe. Without the embargo we expected the USSR to import upwards of 20 million tons in this period. Thus another 17 million tons will have to be imported in the first half of 1981 to achieve our total estimate of 33-34 million tons for MY 1981. (C)

We believe the Soviet ports will be hard pressed to handle more than 17 million tons of grain and oilseeds during January-June 1981. This period includes the usual severe winter months of January-March that normally reduces the number of active Baltic ports, slows offloading operations, and disrupts rail transport. For the first time, the Soviets have chartered six grain ships with ice cutters in an apparent effort to maximize imports this winter through Baltic ports. Reliable trade sources also claim there must be no hitches in shipping schedules from the ports of two major western suppliers, Argentina and Canada.

for delivery in MY 1981 for more than 31 million tons of grain to ensure adequate supplies should unforeseen shipping delays by selected exporters develop. The USSR has already purchased over 28 million tons of grain plus 2 million of soybeans and bulk feeds for delivery by 30 June 1981. ~~(C/NF)~~

Lifting the Embargo

Should the United States lift the partial embargo on grain this month, the Soviets could help ease port congestion by rescheduling larger bottoms to move it and stretch out or reduce deliveries of Argentine grain. For the same reason, if no longer embargoed, US soybean meal would be imported directly rather than transshipped or processed through West European suppliers. These measures would have little impact on total imports in the first half of 1981, but by the third quarter of the year they might ease the port problem enough to raise grain import potential by some 2 million tons. The railroad system hauling grain away from the ports, however, would have to be assigned a higher priority to move the additional grain to interior locations. Problems of rail car shortages at Odessa, the largest Soviet port, indicate that such a priority has yet to be assigned to hauling grain. ~~(S/NF)~~

Moscow would be interested in additional quantities of US corn rather than wheat. We would expect Moscow to immediately purchase for nearby delivery several million tons of corn, if made available, and cut back or delay shipments of Argentine wheat and possibly sorghum. Shifting to US grain could substantially reduce Moscow's costs by lowering shipping charges

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and largely eliminating current high premiums being paid for non-US grain. [redacted]

Impact of Continued Embargo on Livestock Sector, 1981

Following a second successive poor grain crop -- estimated at 189 million tons -- the Soviet feed grain problem will be worse this marketing year. The use of grain stocks will be limited by the large drawdown last year necessitated to a large extent by the embargo. Given the level of projected grain imports for 1980/81, as outlined above, and no stock drawdown, we estimate that grain available for feed use could be down roughly 5-10 percent from a year ago. If the Soviets allow livestock herds to decline, we believe 1981 meat production would roughly equal the 1980 level of 15.1 million tons. Alternatively, should the Soviets attempt to maintain herds on the assumption of a return to normal grain crops in 1981, meat production could drop to 14.5 million tons, or 4 percent. If the US rescinded the partial embargo on grain another 100,000 tons of meat might be produced in 1981 from the net increase in imported grain. ~~(C)~~

* The Soviet agency responsible for purchasing foreign grain.

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Meat shortages will be serious during 1981 with or without an embargo. Moscow can be expected to be active in international markets for large meat imports to help fill the gap. We estimate that Soviet meat imports reached at least 700,000 tons in calendar year 1980 -- a record -- and could approach one million tons this year. ~~(S/NF)~~

IV

APPENDIX

Transport Constraints on Soviet Grain Imports

In addition to external grain market conditions, the amount of grain that can be imported annually by the USSR is constrained by three key transportation factors:

- o the capacity ofSoviet ports to offload grain;
- o the limited ability of the internal Soviet transportation network -- primarily the railroads --to haul the grain from the ports to storage areas; and,
- o Soviet grain storage capacity. (U)

Soviet Port Capacity

We estimate that Soviet ports could handle as much as 36 million metric tons* of grain imports over 12 months without serious problems. The four main Soviet ports -- Odessa, Leningrad, Ilichevsk, and Novorossiysk -- have a combined annual capacity to import grain in excess of 24 million tons. This rate was observed during 1973, 1975, and recently when grain imports reached historic peaks. We also know of 14 other Soviet ports that have been used to unload grain and these are factored into our total estimate (see Table A-1). ~~(S)~~

* To estimate grain handling capacity at selected Soviet ports, the following factors were considered:

- o Total number of berths used for grain imports at 18 ports (total of around 70).
- o Grain unloading rate (has ranged from 1,500 to 8,000 tons per day.
- o Ship turnaround time and average deliveries (current average turnaround of 20.3 days and average load of 17.3 tons).
- o Port working hours (assumes two 8-hour shifts).

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The task of handling large quantities of grain up to port capacity is difficult. The Soviets have a barely adequate inventory of excess railroad cars to move grain imports inland and have had difficulty in developing efficient transportation schedules from the port to internal storage areas. Moreover, the entire Soviet rail system suffers from poor management. ~~(C)~~

The USSR major grain ports are currently working the same number of ships as during the peak periods of past lifts, but are operating at reduced efficiency. The maximum number of berths currently used for grain is near historic highs, but the average load delivered is down while turnaround time is up (see Table A-2). There are several factors contributing to this inefficient performance.

- o The US embargo, which has forced Moscow to increase grain imports from Argentina. Such imports must move on smaller ships due to draft restrictions at Argentine grain ports compared to US Gulf ports. This has increased the number of ships that must now be handled at Soviet ports to deliver a given quantity of grain and led, in some cases, to longer turnaround times.
- o Continued problems in the USSR with railcar availability, especially those designed to carry grain.
- o Increased transshipment of grain on Soviet account in Antwerp, Hamburg, and Rotterdam for delivery by small coastal vessels to river and sea ports in the Soviet Baltic area, which has increased congestion there.

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- Ongoing Soviet labor and management problems in coordinating the grain import program.

Internal Transportation Constraints

The Soviet transportation system moves a large volume of grain annually in conjunction with the domestic harvest and the distribution of imported grain. The overwhelming share is transported by rail -- the primary mode of transportation in the Soviet Union; some 93 percent of all grain tonnage was shipped by rail in 1975 while only six percent were transported on the rivers. (U)

Until the early to mid-1970s, when nearly all economic activity was concentrated west of the Urals, railroads were able to handle the increased demand for freight and passenger services along with the growth of the Soviet economy. In recent years, however, the continued growth of the economy, the geographical shift in demand for longer-haul freight services as Soviet dependence on Siberian resources has increased, and the relative neglect of the railroads in the allocation of investment resources have severely strained the capacity and flexibility of the rail system. Shocks to the rail system, such as surges in demand for rail transport services in connection with larger grain imports and transit traffic to Iran have resulted in disruptions, delays, and tempory embargoes. ~~(S)~~

While the Soviet rail system serving the grain ports has sufficient capacity to handle more than the 36 million tons of grain that the ports can handle, the actual operation of the rail system is stretched so tightly that any additional strain would

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lead to further deterioration in performance. The current strains in the system are reflected in several ways.

- o Rail car turnaround time is increasing rapidly, leading to inefficient fleet utilization.
- o Labor productivity on the railroads is declining.
- o Train speeds are slowing.
- o The annual rate of increase in traffic hauled is stagnating.

Only by enhanced rail productivity (decreased turnaround time, increased average loads, shorter average length of haul), improved management (particularly more efficient scheduling and allocation of rail cars and locomotives), and by not moving low-priority items or assigning these to other transport modes can the rail system relax some of its tautness and be able to accept the movement of additional grain. (U)

Moscow must make a decision on economic priorities for this to occur. If the internal grain supply situation becomes critical enough, we feel that the Soviets will divert non-essential trade and allocate the required transport assets to do so. The drawback to such an undertaking, however, would be disruptions to the domestic economy. (U)

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Table A-1

USSR: Unloading Capacity at Grain Ports

	Maximum Number of Berths Used for Grain	Average Daily Unloading Rate Per Berth (Tons)	Total Daily Grain Unloading Capacity (Tons)
Black Sea			
Odessa	8	2500	20,000
Novorossiysk	7	2500	17,500
Ilichevsk	7	2500	17,500
Nikolayev	3	1750	5,250
Poti	2	1750	3,500
Tuapse	3	1750	5,250
Batumi	1	1750	1,750
Kherson	3	1750	5,250
Zhednov	2	1750	3,500
Baltic			
Leningrad	8	2500	20,000
Klaipeda	5	1750	8,750
Riga	4	1750	7,000
Ventspils	3	1750	5,250
Talliman	2	1750	3,500
Baltiysk	3	1750	5,250
Kaliningrad	6	1750	10,500
Pacific			
Nakhodka	3	1750	5,250
Vladivostok	3	1750	5,250

150,250 tons/day
x 240 day year
= 36,060,000 tons/year

(S)

Table A-2

Soviet Grain Ports: Average Load and Average Turnaround Time

Annual Average	Load (thousand tons)	Turnaround Time (number of days)	Turnaround Ti (during peak import
1973	24.7	15.5	22.7
1975	32.0	19.7	35.9
1979	31.1	18.7	--
1980 (Jan-Nov)	18.1	21.4	--

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USSR: Impact of Economic Denial Measures

An Intelligence Assessment

Secret

ER 81-10021
January 1981

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USSR: Impact of Economic Denial Measures (U)

An Intelligence Assessment

Research for this report was completed on 23 January 1981.

This assessment was prepared [redacted] Trade and Aid Branch, USSR/Eastern Europe Division, Office of Economic Research. Comments and queries are welcome and should be directed to the Acting Chief, [redacted]

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This paper was coordinated with the Office of Political Analysis and the National Intelligence Officer for USSR and Eastern Europe. [redacted]

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ER 81-10021
January 1981

USSR: Impact of Economic Denial Measures (U)

Key Judgments

Economic denial measures imposed on the USSR in January 1980 following the Afghan invasion have had only a small impact on the Soviet economy. In large part, this reflects a limited willingness by the major grain exporters and key governments in Western Europe and Japan to support US calls for meaningful sanctions. Because of actions taken by Moscow and faltering Western support, the impact of the measures will continue to wane. 25X1

Grain Sanctions

When sanctions were announced a year ago, Moscow was in the process of trying to soften the effect of the poor 1979 harvest by importing as much grain as its ports could handle, about 38 million tons. In spite of a massive and costly effort to replace the embargoed US grain from other sources, the USSR was only able to purchase 28 million tons in the year ending last September. This year, despite the sanctions, Soviet grain imports will total 34 million tons. Meat production—expected to decline regardless of the embargo—will suffer further. Meat output could drop to 14.5 million tons in 1981, or 7 percent below preembargo levels. 25X1

The embargo on other agriculture-related commodites has caused Moscow fewer problems:

- The roughly 2 million tons of soybeans and soybean meal denied by the United States in the 1980 Long-Term Agreement (LTA) year have been fully replaced by Argentina and firms in Western Europe.
- Moscow purchased phosphate materials and products equal to about one-half of the nutrient value of the 1 million tons in annual shipments of superphosphoric acid that were canceled by the United States. 25X1

Industrial Sanctions

Western sanctions have not impaired Soviet industrial production appreciably, in large part because France, West Germany, and Japan have not fully supported restrictions on trade in technology and equipment. New Western contracts to supply equipment have rebounded after falling sharply during the first half of 1980. 25X1

Even so, Western and Japanese economic relations with the Soviets have not returned to business as usual. Tokyo is withholding support for Soviet projects outside of Siberia, the United Kingdom is maintaining its freeze on government-backed credits, and Italy has not yet signed a scheduled new credit agreement. The post-Afghanistan tightening of COCOM controls on technology exports is basically intact. Support for restrictive measures, however, is likely to erode further in the absence of new Soviet aggressive moves. [redacted] 25X1

Vulnerable Industries

The interruption in US technology sales will retard urgently needed modernization of some industries:

- Soviet oil and gas exploration schedules, especially in promising offshore and arctic areas, have been set back by recent delays in granting export licenses for such items as drillships and rigs.
- The revocation of licenses for the Dresser drill bit plant will complicate efforts to improve drilling efficiency.
- Similar action already has delayed plans for important Soviet steel and aluminum projects.
- US denial of computer parts and assembly line equipment has further retarded an already lagging Soviet effort to double production capacity for diesel engines at the Kama truck plant.

The impact of these denials will be diminished severely to the extent Western Europe and Japan continue to step in as US replacements. [redacted] 25X1

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[redacted]

Contents

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Principal US-USSR Economic Denial Measures

Agriculture

- Limit the USSR to purchases of 8 million tons of US-origin *grain* in each of the 1979/80 and 1980/81 US-USSR Long-Term Agreement years (1 October–30 September accounting basis).
- Agreement among all the major grain exporters except Argentina not to replace denied US grain.
- Denial of all additional sales of *oilseeds, meals,* and *meat* after 4 January 1980.
- Ban on the sale of *processed agricultural products* made in foreign countries from US raw products (for example, soybean meal made from US beans).
- Suspension of shipments of 1 million tons a year of US-origin *superphosphoric acid* to the USSR.

Technology

- A total cutoff of government-supported credits and guarantees subsequently revised to a request for less concessionary terms on new credits.
- Assurances that West European and Japanese firms would not be allowed to substitute for projects US firms could not pursue because of the suspension order on export licenses.
- A US Government review of all outstanding and pending export license applications for sale of equipment and technology to the USSR.
- Tighter contols on equipment and technology sales to the USSR within COCOM channels to include:
  — De facto observance of a *"no exceptions" policy* by COCOM member states for those items identified on COCOM lists.
  — Consideration of a *process know-how* policy to include COCOM review of any large ($100 million plus) transaction in which Western technology contributes to the development of Soviet industry in a military-relevant area, even if neither the technology nor the equipment is currently on the list of COCOM-embargoed items.
  — Agreement on new review procedures for fiber optics, lasers, and polycrystalline silicon essential in the manufacture of integrated circuits (ICs).
  — Agreement on strengthening controls on computer and related software sales.

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USSR: Impact of Economic Denial Measures (U)

Introduction

In January 1980, following the Soviet intervention in Afghanistan, the United States and the major Allies announced a sanctions program against the USSR. A package of economic denial measures was adopted to hinder Soviet agricultural production and to limit access to Western technology (see chart).

So far, the Soviet Union has been affected most by the grain embargo. Because Moscow obtained substantially less grain in the US-USSR Long-Term Agreement (LTA) year than it needed,[1] the important livestock program—already in jeopardy because of the poor 1979 crop—was dealt a major added setback. The impact of the technology denial measures, however, is less evident because any impact would be felt only over a period of years. Soviet dependence on Western goods is small in most areas and Allied cooperation has been weak. From the start, the key governments in Western Europe and Japan opposed tough technology sanctions; they all interpreted our requests for cooperation narrowly. They worried about developing an adversary relationship with the USSR, and they did not want to reduce their own access to Soviet markets or Soviet energy. In general, they doubted that Soviet actions in Afghanistan were serious enough to jeopardize the gains from detente.

This paper is the latest in a series of assessments by the Office of Economic Research of the impact of Western economic sanctions on the Soviet economy. We will first review the status of the sanctions and then discuss their effects.

The Sanctions Effort

The Grain Embargo During the 1979/80 LTA Year. The 1979 grain crop of 179 million tons left the Soviet Union far short of the amount needed to sustain planned growth in the livestock sector, maintain carryover stocks, and meet requirements for food, feed, and industrial uses. To soften the effect of the poor harvest, we estimate Moscow would have imported 38-40 million tons of grain and soybeans in the 1979/80 LTA year ending on 30 September 1980—as much as the Soviets could have handled logistically. Although Moscow was counting on 25 million tons of US grain, the imposition of sanctions reduced allowable Soviet purchases to the LTA agreement minimum of 8 million tons. (The USSR also received 400,000 tons of US grain ordered in the preceding LTA year.) 25X1 25X1

The Soviets bought an estimated 28 million tons of grain from all sources during the 1979/80 LTA year (see table 1). Moscow obtained nearly 20 million tons of grain from non-US sources for delivery by 30 September. Of this total, 9 million tons represents replacement of the 17 million tons of denied US grain. Argentina increased its sales to the USSR more than any other country and in July signed an LTA of its own through 1985 to provide the Soviet Union with a minimum 4.5 million tons annually of grain and soybeans (3 million tons of corn, 1.0 million tons of sorghum, and one-half million tons of soybeans). In addition to the major grain exporting countries, Eastern Europe supplied an estimated 1.8 million tons of grain. The remaining 1.1 million tons were provided by Sweden, Turkey, Thailand, and South Africa and through some small-scale diversion. 25X1 25X1

We believe only a small amount of embargoed US grain has been diverted to the USSR. Last spring, US corn reportedly was being transshipped through the Romanian port of Constanta and, in early September, 25,000 tons of US wheat allegedly had arrived in the same port destined for the USSR. 25X1 25X1

Soybeans, Soybean Meal, and Meat. The Soviets have encountered little difficulty in coping with the embargo on other agricultural commodities. Moscow was scheduled to receive 1.5 million tons of soybeans and

[1] Unless otherwise indicated, reference to an agricultural marketing year is limited to the LTA year (1 October-30 September). 25X1

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USSR: Total Estimated Grain Imports [a]

Million Tons

Exporters	Total LTA Sales				1980/81	
	1976/77	1977/78	1978/79	1979/80 Estimated	Forecast	Actual Sales or Agreements to Date
Total	**8.79**	**21.38**	**20.32**	**27.64** [b]	**34.1**	**29.0**
United States	6.1	14.8	15.3	8.40	8.0	8.0
Canada	1.5	2.7	1.9	4.30	6.5	6.5
Australia	0.5	0.3	0.6	4.40	3.5	3.3
European Community			0.2	1.60	2.1	1.5 [c d]
Argentina	0.23	3.2	1.6	6.00	10.0	7.0
Eastern Europe	0.4 [e]	0.22 [e]	0.7 [e]	1.80	1.8	0.8
Thailand			0.02	0.10	0.4	0.4
South Africa				0.10		
Sweden				0.30	0.6	0.4
Turkey				0.10	0.2	0.1
New Zealand				0.04		
Brazil	0.06	0.16				
Spain					1.0	1.0

[a] Data are for LTA years 1 October–30 September and exclude rice imports.
[b] Including an assumed but undocumented 500,000 tons received through diversion.
[c] Including wheat flour.
[d] Including 500,000 tons mixed feed, at least 65 percent of which is grain.
[e] Calculated from calendar year statistics.

This table is [redacted] 25X1

400,000 tons of soybean meal from the United States in the 1979/80 LTA year but received only 700,000 tons of beans because of the sanctions. The denied beans and meal have been fully replaced; Argentina sold 800,000 tons of soybeans to the USSR, and firms in Western Europe have supplied at least 1 million tons of soybean meal—more than was denied [redacted] a large portion of the meal was processed in Western Europe from US-origin beans. [redacted]

Despite the embargo on US meat sales, Soviet meat imports should reach a record 700,000 tons in calendar 1980—100,000 tons above the calendar 1979 level. Although Argentina seems to have supplied most of the increment, Eastern Europe also may have stepped up deliveries. [redacted] 25X1

Prospects for the 1980/81 LTA Year. The 1980 grain crop of 189.2 million tons has again left production far short of requirements. The impact of a combined US embargo on grain exports beyond the 10 million tons would be considerably smaller than last year, reducing Soviet grain imports by perhaps 4 million tons in comparison with import possibilities if the embargo were lifted. Moscow has already lined up more grain for the 1980/81 LTA year than it imported in the

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in the 1979/80 LTA year. Substantial additional amounts will be available from Argentina and the European Community, which has had a record harvest. Smaller amounts could come from other countries, including Romania, which could at the same time import grain from the United States. [redacted]

Although there is little question that even with a continued US embargo the USSR will be able to purchase all the grain it can handle, continuation of the embargo will reduce soviet port handling capacity. Under optimum conditions the Soviets can handle logistically 38-40 million tons of grain, soybean products, and other bulk feedstuffs per year. The US embargo, however, has forced the use of a larger number of small ships (particularly form Argentina), tying up Soviet port facilities and creating additional congestion—effectively reducing port capacity to 34-36 million tons of grain, oilseeds, and other feedstuffs for the 12-months ending 30 September 1981. Internal rail congestion is also hampering the movement of grain from the ports, especially at Odessa, the largest Soviet grain port, where railcars not suited for grain shipments are being pressed into service. [redacted]

Phosphate Fertilizers. According to a 20-year fertilizer exchange agreement concluded in the early 1970s, Occidental was to sell the USSR 1 million tons of superphosphoric acid annually (equivalent to 700,000 tons of P_2O_5), purchasing in return ammonia, urea fertilizer, and potash. The Soviets intended to use the superphosphoric acid to produce "liquid complex" fertilizers, with a fairly high (34 percent) phosphate nutrient content, in seven plants ordered from French firms in 1976. [redacted]

Soviet officials have been only partly successful in replacing US-origin acid after shipments were halted in February. We estimate that the USSR has purchased materials equivalent to about one-half of the quantity originally expected from the United States. Soviet orders of superphosphate and phosphoric acid have totaled about 350,000 tons in nutrient value in 1980. Most of the material was sold by firms in Morocco, Tunisia, Finland, Belgium, and South Africa. As for post-1980 supplies, the Soviet Union in October signed a five-year contract with two Belgian firms for the delivery of 100,000 tons per year of superphosphoric acid to the USSR beginning in April 1981. Each annual shipment—equal to 70,000 tons of nutrients—will represent 10 percent of the yearly amount the Soviet Union was to receive from the United States before the US embargo was imposed. [redacted] 25X1

Technology and Equipment. In March 1980, following a review of US export control policy, the United States applied stricter controls on technology exports to the Soviet Union—particularly computers, computer software, and technology to produce oil and gas equipment. As a result, a number of license applications that probably would have been approved under pre-Afghanistan guidelines were denied, and some goods whose export licenses were revoked remain unshipped. [redacted] 25X1

Other NATO partners and Japan, which make up COCOM,[2] were asked to adopt similar policies to prevent the US measures from being undermined. Specifically, the Allies were asked to:

- Agree to a general tightening of COCOM controls on high-technology exports to the Soviet Union. 25X1
- Give assurances that their firms would not be allowed to step in and fulfill contracts vacated by US companies.
- Suspend concessionary government-backed credits and guarantees. [redacted] 25X1

Central to the call for tightened COCOM controls was a request for a blanket "no-exceptions" policy under which the member countries were asked not to request exceptions to sell COCOM embargoed items to the USSR. A "process know-how" proposal also was tabled for nearly all major plant sales to the USSR not now subject to COCOM review, and COCOM members were asked to consider tightened administrative and processing procedures for the sales of computers and related software, polycrystalline silicon needed for the production of intergrated circuits (ICs), and fiber optics and lasers. [redacted] 25X1

[2] The Coordinating Committee (COCOM) consisting of NATO countries (except Iceland) plus Japan, approves or disapproves sales of equipment and high technology to the Communist countries (see appendix A for a discussion of export controls under COCOM). [redacted] 25X1

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The second proposal—not to replace US contracts—was aimed at two large deals affected by US actions. The US firm, Armco, in partnership with Nippon Steel of Japan, had won a $350 million contract in December 1979 to participate in equipping the Novolipetsk speciality steel plant but was unable to fulfill it because of the denial of export licenses for Armco's technology. Similarly, Alcoa and a West German partner Kloeckner were on the verge of concluding a contract for a $400-500 million aluminum smelter at Sayansk when sanctions were announced. [redacted]

On the financing issue, the major Allied, countries were asked not to provide official credits or guarantees for exports to the USSR. The request was subsequently modified to an appeal to limit the flow of new credits, adopt Organization for Economic Cooperation and Development (OECD) consensus export credit terms, and shorten credit maturities. [redacted]

Even though the countries initially supported the measures, their support was reluctant, vague, and contingent on the support of competitors. While neither the West Europeans nor the Japanese wanted to defy the US openly on the sanctions issue, they clearly were unwilling to sacrifice much Soviet business to protest the Soviet move into Afghanistan, an attitude strongly reinforced by domestic European and Japanese commercial interests active in the Soviet market. The Allies also noted that because the US Export-Import Bank no longer extended credits for Soviet projects, the United States request regarding credit terms did not involve equivalent US restraint. [redacted]

Despite their reservations, the countries generally complied with the US demarches at first. Request for stiffer COCOM controls were honored, with the "no-exceptions" request seemingly enjoying the most support. Those countries potentially able to substitute for the United States in major USSR contracts instructed their firms not to reenter the bidding for the Novolipetsk and Sayansk projects, and new export credits lines from Canada, Italy, the United Kingdom, and France were held up. Japan and West Germany indicated they had suspended or would delay Soviet credit applications. [redacted]

Erosion of Allied Support. With the Allied cooperation, the signing of new contracts with the USSR slowed significantly. Through the first half of the year, Soviet orders for Western machinery and equipment totaled less than $600 million, compared with $1.9 billion in the first half of 1979 (see table 2). The only major deal ($100 million or more) to be concluded was a $118 million contract with France to build offshore rig facilities at Baku and Astrakhan. The cooperation was particularly evident for Japan, Italy, and the United Kingdom; the combined value of sales by the three totaled just $67 million during January-June—about one-tenth that in the comparable 1979 period. [redacted] 25X1 25X1

But the commitments proved to be neither categorical nor lasting. In May, French officials indicated an intent to proceed with a new multiyear credit pact—a decision which would allow French firms to conduct trade on virtually the same terms that had been in effect before Afghanistan. In late July, President Giscard allowed the French firm Creusot-Loire to reopen the bidding on the suspended Novolipetsk steel plant contract. In September, a Creusot-Loire subsidiary won a $200 million chemical plant contract, which, like Novolipetsk, almost certainly will be financed with official credits. The other major Allies began to follow the French lead. The West Germans in early August approved roughly $300 million in credit guarantees for the sale of large diameter pipe to the USSR and signaled Kloeckner it could renew negotiations for the Sayansk aluminum smelter. Tokyo also announced it was moving ahead with Soviet credit applications for Siberian development projects and general trade. As a result, Soviet orders for machinery and equipment soared in the second half of 1980 to about $1.5 billion. [redacted] 25X1 25X1 25X1

Relations with the Soviets, however, have still not reached a business-as-usual basis. In spite of its announced plans to proceed with support for some Siberian development projects, Tokyo is holding off on other projects. The United Kingdom is maintaining its freeze on government-backed credits to the USSR, and Italy, although complaining about losing business to

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USSR: Orders of Western Machinery and Equipment — Million US $

	1977		1978		1979		1980	
	Jan-Jun	Jul-Dec	Jan-Jun	Jul-Dec	Jan-Jun	Jul-Dec	Jan-Jun	Jul-Dec
Total	**1,925.8**	**1,850.4**	**1,378.1**	**1,425.4**	**1,894.0**	**744.3**	**547.9**	**1,452.9**
By type of equipment:								
Oil and natural gas	136.7	171.1	402.0	430.2	104.9	84.9	139.7	
Chemical and petrochemical	1,078.5	549.5	404.3	297.8	447.4	160.0	33.9	310.0
Metalworking and metallurgical	198.4	442.5	103.5	244.5	672.0	94.7	73.3	692.1
Electronics	49.3	100.7	10.7	168.5	193.9	146.7	20.2	1.1
Other	462.9	586.6	457.6	284.4	475.8	258.0	280.8	449.7 [a]
By country of origin:								
West Germany	271.0	561.7	381.5	312.5	488.7	125.9	140.3	633.1
France	226.8	183.3	110.2	480.3	341.3	36.4	169.8	506.9 [a]
Japan	498.8	239.4	183.4	161.4	173.0	158.4	37.2	152.9
United Kingdom	421.8	193.5	33.8	158.4	190.6	23.2	19.8	100.9
Italy	212.0	296.9	107.0	62.7	253.0	252.0	9.6	8.1
United States	140.4	170.9	347.4	212.7	190.4	81.8	119.3	.5
Other	155.0	204.7	214.8	37.4	257.0	66.6	51.9	50.5

[a] Includes $200 million order for a methionine plant for production of animal feed.

[redacted] 25X1

France and West Germany, still has not yet signed a new credit pact. Perhaps most importantly, the tighter COCOM guidelines still are basically intact. Norwegian notification in late 1980 of intent to sell computer equipment to the USSR under an administrative procedure for processing lower performance computer sales, however, could set a precedent for other countries to back away on requests for tighter COCOM controls. These pressures will mount further if France chooses to proceed with the export of a telephone switching equipment plant. [redacted]

Pressures for expanded trade relations with Moscow also will intensify if the Soviets continue to offer lucrative projects to Western firms and emphasize that contracts will go to those countries that reject sanctions. The Soviet message is especially pointed with regard to the newly proposed West Siberian–Western Europe gas pipeline. Trumpeted as the biggest East-West deal ever, the roughly $15 billion natural gas pipeline project will carry substantial quantities of Soviet natural gas a distance of 4,400 kilometers from Siberia to Western Europe. Although West European and Japanese firms are eager to win contracts that could total $10 billion or more for compressors, pipe, and related equipment, businessmen have been told they will receive contracts only if official financing is made available. [redacted] 25X1

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Impact of the Denial Measures on the USSR

The Grain Embargo. The consequences of reduced grain imports have fallen most heavily on the livestock sector, already suffering because of the poor 1979 grain and forage crops. In an average year, the livestock sector consumes roughly half of all grain; processed foods account for about one-third, and the remainder is used for seed, alcohol and other products, and stock accumulation. When the crop is below average, stocks are drawn down and the leadership has to import to make up the deficit insofar as possible. [redacted] 25X1

Stock drawndowns and large imports partially closed the gap between the poor 1979 crop and requirements. Because of the US embargo, however, the USSR was denied roughly 10 million tons of grain during the period 1 October 1979–30 September 1980. In the absence of stock drawdowns, grain feed availability would have been reduced by 8 percent. Expressed in another way, this was enough grain to produce roughly 650,000 tons of pork (carcass weight), equivalent to slightly more than 4 percent of meat output in 1979. Because of a large stock drawdown, however, the total grain availability for feeding only dropped an estimated 2 percentage points. [redacted] 25X1

The impact of the denied grain on the livestock sector has been manifested in lower meat output, reductions in herd numbers, and lower liveweights of the animal inventories. Farms were forced to stretch available feed supplies by increasing slaughter rates in the early months of 1980 and by reducing feed rations. By midyear, slaughter rates had returned to more nearly normal levels, but reduced feed rations continued to be reflected in slowing growth in livestock inventories and reduced slaughter weights. [redacted] 25X1

We expect meat production in calendar 1980 to be about 15 million tons—3 percent less than 1979. In addition, herd numbers by yearend 1980 may have been roughly equal to those of the corresponding date in 1979 because of a determined campaign to retain herds in the socialized sector. Excessive slaughtering of private herds, for which data are not yet available, may have been sufficient, however, to offset any inventory gains in the socialized sector, particularly for hogs. Poultry is the only category expected to show much increase in numbers and product output over 1980. [redacted] 25X1

Record imports of meat in calendar 1980 will offset some of the production shortfall. Nevertheless, per capita meat consumption will begin to decline in early 1981. Soviet consumers have been complaining of severe, continuing shortages of meat, butter, and milk. The food situation has been described as the worst in many years. The recent strikes at the motor vehicle plants in Tol'yatti and Gor'kiy, for example, reportedly were touched off by food shortages and stopped only after authorities rushed in supplies from surrounding areas. Reports of local rationing and of sales of meat to selected groups through places of work have risen to a level unprecedented since the harvest disaster of 1963. [redacted] 25X1

Following a second successive crop failure, the Soviets' feed grain problem will be worse this year. We estimate that grain supplies for feed could be down roughly 5 percent from a year ago, if the grain embargo remains in effect. Depending on whether the Soviets adjust herds downward or attempt to maintain them on the assumption of a return to a more normal grain crop next year, we believe meat production in 1981 could drop to 14.5 million tons. At best, meat output would again roughly equal the 1980 production level of 15 million tons. In any event, meat shortages will be serious during the next 18 months. As noted earlier, the USSR will probably import more than 700,000 tons of meat in calendar 1980—a record for Soviet meat imports. We expect Moscow to try to import as much as 1 million tons this year. [redacted] 25X1

Denial of Phosphate Fertilizers. The suspension of exports of US-origin acid has delayed the Soviet "liquid complex" fertilizer program for at least a year because the available material is of a lower grade than US acid and is not immediately usable in the Soviet program. Accordingly, we believe the "liquid complex" fertilizer plants have been unable to operate at more than a small fraction of their intended capacity. The impact on the 1980 grain crop is difficult to assess. If the fertilizer had been applied entirely to grain, it is possible that the effect of using substitute materials could have resulted in the loss of grain between 2 million and 2.5 million tons of grain. [redacted] 25X1

In the longer term, the Soviets probably can purchase sufficient quantities of phosphate intermediates and finished products to overcome their deficit in phosphate fertilizers. The new Soviet contract with two Belgian firms to supply 100,000 tons of superphosphoric acid in each of the next five years apparently is part of the Soviet effort to find alternate suppliers for embargoed US materials. In addition, the

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USSR signed a 30-year agreement with Morocco in 1978 under which the Soviets will assist in developing phosphate deposits at Meskala in return for 10 million tons of phosphate rock a year by 1990. Although implementation of the agreement has been slow, Soviet officials could decide to speed up the development of the Moroccan project if the sanctions stay in effect. Finally, Soviet efforts to obtain replacement acid may be made easier by the decision to allow Occidental Petroleum to sell non-US origin materials to the USSR, an arrangement similar to that allowed the multinational grain companies. [redacted]

Imports of Machinery and Equipment. Aside from the slowdown in new orders in the first half of 1980 and scattered reports of production disruptions because of lack of spare parts or denial of equipment scheduled to be delivered under pre-Afghanistan contracts, we are not aware that production in any Soviet industry has suffered a noticeable setback to date from technology and equipment sanctions. Indeed, since the thrust of the embargo is toward limiting future exports, a tangible impact would not be readily apparent until some time in the future. Except for the United States, which accounts for only a small share of Western exports of manufactures to the USSR, the sanctions were restricted to new business; shipments of Western machinery and equipment ordered before sanctions were imposed have continued unimpeded. Even the US sanctions have been highly selective, with a number of items still approved for export. [redacted]

For any individual industrial sector, it would take considerable time for the denial of technology or production equipment to work its way through the production process—far longer than the 11 months the embargo has been in place. We think that the sanctions will have some impact on the future, especially in the energy, metallurgical, and motor vehicle industries. [redacted]

Energy Equipment and Technology. The impact on Soviet oil production has been minimal to date because most energy equipment sales have been exempted from sanctions. Deliveries of high capacity submersible pumps that are needed to support oil production, for example, have continued to be supplied under pre-embargo contracts. The contract signed with a US firm for delivery of 300 pumps to the Soviet Union through 1981 has not been canceled, and shipments have continued unimpeded. [redacted] 25X1

Because of production shortcomings, the USSR has been turning increasingly to the West to help upgrade its large petroleum equipment industry. Western sanctions probably have reduced future production prospects because of disruptions to Soviet explorat[redacted] 25X1 schedules. A holdup of export licenses, for example, delayed the start of the scheduled summer 1980 Sakhalin exploration program. [redacted] 25X1 The delivery of drillships built in Finland with US technology and components also is behind schedule. [redacted] 25X1

The mid-1982 startup date of the Dresser drill plant also could be delayed for some time now that export licenses for training and assistance in setting up the plant have been revoked. The project is especially important because the drilling sector is a major bottleneck in the Soviet oil industry, and Moscow has been counting heavily on the plants to increase drilling efficiency. The plant will produce 100,000 tungsten-carbide journal bearing drill bits a year—bits which are expected to last considerably longer (five to 20 times) than Soviet bits under comparable operating conditions. The greater efficiency would help reduce Soviet downtime for bit replacement, thereby boosting productivity and reducing the need to expand the drilling park. All of this equipment and technology is critical to Soviet efforts to sustain oil production in the 1980s. [redacted] 25X1 25X1

On the other hand, there is no evidence that Soviet gas production has been affected thus far by the embargo. Sales of large-diameter pipe in support of the USSR's ambitious pipeline construction program were interrupted only for a few months and, in fact, set a new record of 2 million tons in 1980. Western governments are not likely to restrict pipe sales in the future. Indeed, Japanese and Italian firms earlier this year signed general agreements with the USSR to provide pipe on a multiyear basis. [redacted] 25X1 25X1

Nor is the proposed new West Siberian gas project calling for swaps of Soviet gas for Western pipes and compressors likely to be affected by sanctions in light of the apparent government decisions to proceed with negotiations. In any event, any delays that do occur are likely to be more the result of disagreement over prices for the gas and credit terms than any difficulties in purchasing equipment and technology. [redacted]

Metallurgical Equipment and Technology. The denial of metallurgical technology in the two cases of the steel and aluminum industries could be troublesome to the USSR in the event US technology remains embargoed. Shortages of ferrous and nonferrous metals have plagued Soviet planners for several years. Even though French and West German firms are proceeding with the Novolipetsk and Sayansk deals, lengthy delays will be encountered if US technology—which the USSR is still counting on—is not obtained eventually. The deals have already been stalled for eight months by the US withdrawal. The purported startup date for Novolipetsk has been delayed several years because of the need to redesign original proposals incorporating US technology now denied the USSR; industry sources now are targeting 1985 for initial operation. Since the Novolipetsk plant would have reduced Soviet dependence on Western specialty steels, the delay will ensure continued Soviet purchases of these steels from the West. Moscow spent a record $1.7 billion for steel imports, excluding pipe, in 1979, and imports are expected to be higher this year. [redacted]

Motor Vehicle Technology. The Soviet Union has been importing high-volume, high-productivity machinery from the West for producing, machining, and assembling engines, drive-train components, and body parts for a number of years as part of an ongoing effort to modernize the motor vehicle industry. Toward that end, the USSR in the early 1970s received US approval for the purchase of $500 million worth of machinery and technology for the production of diesel trucks at the Kama Truck Plant. Among the more important US equipment sold to the USSR was a complete foundry, including a sophisticated IBM computer system for monitoring its production and a complex Ingersoll-Rand diesel engine assembly line. At capacity, Kama will produce 150,000 three-axle diesel trucks and 250,000 engines annually. Trucks produced at Kama have been integrated into Soviet military transportation units as well as into Soviet units in the Warsaw Pact countries. Most recently, Kama trucks have been used in support of Soviet military operations in Afghanistan. Because of this usage, the resupply of spare parts for the plant's US-supplied computer was embargoed and a second US diesel engine assembly line for the plant was denied. [redacted] 25X1 25X1

The US actions have greatly complicated and delayed Soviet plans for doubling output capacity for diesel engines. Although negotiations are under way with several Japanese and West European firms to replace the Ingersoll-Rand diesel engine assembly line, it will probably be two years before a new line can be put into place, even if Moscow concludes a contract soon. In the meantime, the lack of engine production capacity is severely curtailing the output of new classes of trucks and buses dependent on the use of the Kama engines, most notably a new Ural truck intended primarily for military use. Since the trucks can be used for both civilian and military purposes, both sectors will be affected. Current production activity at the facility has not been affected by sanctions. [redacted] 25X1

Computers. The sanctions have had a major effect in arresting the movement to further liberalize the COCOM controls on computers. Before Afghanistan, proposals were being discussed in COCOM to permit the export of much higher performance models than in the past. [redacted] 25X1 25X1

Controls are now directed most heavily at monitoring the export of large computer systems to the USSR. The tightened COCOM controls on computers have effectively stalled the sale of large computer systems to the Soviet Union since January. While the number of such large systems sold has never been great, imports often have filled a critical Soviet need. For example, several large US systems have provided the Soviets with unique capabilities for geophysical exploration related to oil and gas prospecting. Similarly, a US computer at the Kama Truck Plant foundry was expected to play a significant role in increasing productivity. In the absence of sanctions, the USSR probably would have purchased additional seismic computers for petroleum exploration. We also believe existing systems already in place in the USSR would have been upgraded. [redacted] 25X1

The COCOM countries seem to be less willing to restrain sales of medium- and small-size computers (for the most part minicomputers), also controlled by

COCOM under various administrative procedures. Indeed, sales of medium and small computer systems, which traditionally account for the bulk of Western sales, continue to be exportable to the USSR under the post-Afghanistan sanctions and have increased this year. Through October 1980, 90 computers were purchased by the USSR compared with 67 for all of 1979 and an average of 86 units for the past three years. While they are relatively low-performance equipment in Western terms, these computers offer important features unmatched by Soviet models. Soviet minicomputers do not measure up to Western performance and reliability standards and lack the versatile software packages that come with Western models.

Electronic Components. The USSR is engaged in a major, long-term effort to modernize its telecommunications system. Most of the equipment acquired from the West is either not controlled by COCOM or currently available under procedures similar to those for computers. The French, however, have indicated that they may submit an exceptions request to COCOM involving manufacturing technology for computer-controlled telephone switching systems. The significance of the French contract may go far beyond that of an improved communications system. There is evidence that the French also intend to supply a related component manufacturing facility valued at over $40 million. A transaction of this magnitude is probably related to integrated circuits (ICs). Such a facility would allow the production of large numbers of ICs for a variety of military applications.

In addition to dependence on Western IC technology and production equipment, the USSR relies on the West for silicon—the essential raw material for the IC production process. With the imposition of tighter COCOM controls, the USSR has been cut off from the supply of silicon.

Because of sketchy information, we are unable to assess to what extent Moscow has been able to circumvent technology sanctions through illegal means—either the clandestine acquisition of Western technology or the diversion of overtly purchased items for unauthorized military use. The leadership traditionally has devoted a high priority to, and resources for, such efforts. These priorities have not lessened with the imposition of Western denial measures (see appendix B for discussion on the diversion effort). 25X1

Impact on Soviet Planning and Attitudes

The economic sanctions have heightened the debate between advocates of expanding trade with the West and those favoring greater autarky. Sanctions have strengthened the hand of those favoring self-sufficiency who have long argued that the USSR is dissipating its patrimony by exporting vital raw materials for Western technology. 25X1

Within this context, the denial measures have introduced an element of uncertainty at a time when Soviet officials are putting the finishing touches on the 1981-85 plan and have forced the leadership to re-examine the long-term future of USSR-Western trade. Nevertheless, Moscow probably sees little alternative to continued Western trade. More than ever, Moscow probably is convinced that Western Europe and Japan are anxious to secure export markets and future energy supplies and do not intend to jeopardize long-term cooperation with the USSR. In any event, the USSR's pursuit of new credit lines from Western governments and its discussions with Western firms on new projects indicate that the Soviet leadership is not seriously entertaining the notion of autarky, at least with respect to its industrial sector. In all likelihood, they see the sanctions as a temporary disruption requiring ad hoc adjustments rather than a sufficient reason to redraft plans for future development. 25X1 25X1

The continuing interest of Soviet buyers in US grain, oil and gas equipment, and other high technology also argues that Moscow still views the United States as a supplier of key imports. But even if Washington 25X1 naled a willingness to improve trade relations, the Soviets are likely to be cautious about reviving trade with the United States. Even those Soviets who favor US-USSR trade claim that they have now lowered their expectations and that no series of US actions can automatically restore the pre-Afghanistan situation. 25X1

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Agriculture is a different story. The denial of Western grain has hurt the USSR and has reinforced its long-held hope of seeking agricultural self-sufficiency. But the Soviets are realistic enough to know that it will take time to achieve self-sufficiency, given the vagaries of weather and numerous inefficiencies in Soviet agriculture, and have actively sought long-term agreements with non-US suppliers to ensure future grain deliveries. [redacted] 25X1

Appendix A

COCOM Controls: A Historical Overview

The current program of export controls on trade with the USSR and other Communist countries goes back more than 30 years. After World War II, the consolidation of Soviet power over Eastern Europe and the perceived Soviet military threat to Western interest led the United States and its allies to consider the use of export controls to help maintain economic and technical superiority over the Bloc. Accordingly, in November 1949, the United States and six of the West European Allies formed the Consultative Group, an informal working group at the ministerial level to develop a multilateral approach for control of trade with the USSR and Eastern Europe. A permanent organization—the Coordinating Committee (COCOM)—was established in January 1950 to develop procedures for export controls and serve as the forum of negotiation among the cooperating Western countries. Membership in COCOM was eventually extended to 15 countries comprising Japan and all the NATO signatories except Iceland. [redacted]

COCOM as an organization has no formal treaty or charter basis and is not a part of any other international organization. It operates on the basis of a gentlemen's agreement using a rule of unanimity for all decisions. Thus, maintaining COCOM effectiveness requires countries to act in a spirit of compromise. [redacted]

Although the formal COCOM criteria state that items are to be embargoed only if they are designed for, principally used for, or critical in relation to implements of war, many of the items on the original COCOM list were oriented toward impeding Soviet industrial and technological development in general. For the most part, the embargo lists encompassed industrial equipment and raw materials that were either in short supply in Communist countries or were technologically superior to similar products made in those countries. Acquiescence by the COCOM membership was possible at least in part because several NATO members were engaged in an armed conflict in Korea and because commercial pressures for trade were still minimal. [redacted] 25X1

The end to the Korean war, the reduction in East-West tensions after 1953, and growing commercial relationships with Communist countries led to severe European pressure to relax export controls. Major revisions of the embargo lists in 1954 and 1958 greatly reduced the number of items embargoed to Communist countries. Periodic COCOM List Reviews since then have normally followed a pattern of the United States proposing new items for the embargo list to protect emerging militarily significant technologies and their products, while agreeing as a quid pro quo to the reduction of controls on items of less significance.
[redacted] 25X1

Reduction of controls has been accomplished in three ways: (1) items have been removed from the embargo lists, (2) administrative procedures have been developed that permit individual COCOM members to authorize certain exports of items on the lists without having to seek COCOM approval, and (3) a body of case law has evolved providing nearly automatic approval by COCOM for certain types of requests for exceptions to the embargo. [redacted] 25X1

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This reduction of controls continued unimpeded throughout the 1960s and 1970s. As in the 1950s, the impetus came from the European members of COCOM who sought the economic benefits from increased trade with the East and who argued that much of the embargo list was outdated and ineffective because of the economic growth and technical advances in Communist countries. By the mid-1960s, the pace of liberalization increased as the United States also began to take more of an interest in cultivating

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East-West trade—first with the USSR and Eastern Europe and most recently, with China. [redacted] 25X1

As a result, COCOM controls by the late 1970s had evolved from a broadly based embargo on industrial equipment and materials to one focused on military related equipment and certain advanced technologies and their products. Although new technologies have been added to the list of controlled items, this is largely nullified by administrative procedures for unilateral approvals and the practice of pro forma approvals of exceptions requests in COCOM. [redacted] 25X1

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Appendix B

Soviet Efforts To Circumvent COCOM Controls

Moscow was probably able to circumvent some of the sanctions through illegal measures, but there is little hard evidence to enable us to estimate the extent to which this has occurred. Diversions fall into two categories. One is clandestine acquisition whereby the importing country is able to disguise its own involvement in the transaction, or the exporter misrepresents the item being exported. The other is in-place diversion whereby an overtly acquired item, approved for export, is transferred to a different end user or end use. [redacted] 25X1

The Soviet leadership has traditionally given high priority and devoted large resources to the acquisition of Western technology by all means at its disposal. These include legal importation through open trade channels, scientific and technological exchanges, illegal diversion through trade channels that evade export controls, and classic clandestine acquisition through secret agents, industrial espionage, and communications intercepts. [redacted] 25X1

Clandestine Acquisition
The Soviet clandestine effort places highest priority on weapons design and military production technologies that have military applications—that is, technologies associated with the production of semiconductors, computers, instrumentation, microprocessors essential to computer-controlled machine tools, and so forth. [redacted] 25X1

While the effort is large, the yield from the effort probably is less than satisfactory to the Soviet leadership. In some weapons design areas, their clandestine successes have been substantial. In the 1960s, for example, Moscow was able to obtain a complete US Sidewinder air-to-air missile as well as a complete set of production drawings. In many other areas they have been less successful. Because of the inherent unreliability of clandestine purchases, large outlays often yield small returns; more important, since clandestine acquisitions are rarely accompanied by documentation and engineering assistance, the task of absorption of the foreign technology is rendered far more difficult. [redacted] 25X1

An overall assessment of Soviet success in clandestine acquisition is not possible. Our information is too sketchy. In some areas we have developed a relatively complete picture of the scope of these acquisitions. The semiconductor industry is a case in point. Here, the Soviets have made a systematic effort to acquire all of the ingredients of a semiconductor industry. It has enabled the USSR to rapidly build up their semiconductor industry and to make major progress in closing the gap with the West in semiconductor technology. Diversions of advanced production machinery have also permitted the USSR to field military hardware with more advanced electronic systems than otherwise would have been possible in the same time frame. [redacted] 25X1

In-Place Diversion
The term usually refers to diversion of equipment or technology from a stated civilian end use to a military use. The distinction between civilian and military end use is somewhat artificial when talking about technology. Military production is built on a pyramid of basic civilian industrial capabilities. Thus, authorized civilian technology, installed in civilian industries, often yield important benefits for military production. [redacted] 25X1

Aside from this, we believe occasional diversions of US equipment and associated technology from authorized to unauthorized end uses do occur in the Soviet system. Although we know of only a few such instances, our end-use controls are an imperfect mechanism for limiting such diversions. Soviet authorities have strong motivations for treating diversion activities with absolute secrecy. Consequently, our ability to detect them is inherently severely restricted. [redacted] 25X1

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