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The USSR's Hard Currency Payments Position

An Intelligence Assessment

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July [illegible]

The USSR's Hard Currency Payments Position

Key Judgments
Information available as of 1 June 1983 was used in this report.

The USSR had remarkable success in slashing its hard currency debt last year, following an increase of $3 billion in 1981. The payments turnaround—due mainly to sharply increased oil exports—will not last long, however, without a dramatic and unexpected improvement in Soviet export prospects. Although the Soviets will probably not run into serious payments problems in the near future, they could have their hands full sorting out import needs.

After reducing growth of its hard currency debt during 1977-80, the USSR was hit in 1981 by a soaring agricultural import bill, soft oil prices in its Western markets, and the need to increase aid to Poland. Although its hard currency position is still relatively strong—the debt service ratio is less than 20 percent—Moscow did not take lightly the turnaround in its fortunes in 1981. Paradoxically, Soviet willingness to depend on economic ties with the West has declined as Moscow's domestic difficulties have mounted and economic growth has slowed.

In 1982 the USSR cut its hard currency trade deficit to $1.3 billion, compared with $4 billion in 1981, by strongly pushing oil exports and reducing imports. Agricultural imports fell substantially due both to a decline in the volume of grain purchased and lower prices for most agricultural commodities. However, most of this decline was offset by stepped-up imports of Western machinery and equipment and steel pipe—underwritten by Western government-backed credits—as deliveries began for the Siberia-to-Western Europe gas pipeline.

Moscow's success, however, was purchased at considerable cost. In 1982 the volume of oil exports sold for hard currency was increased by reducing exports to Eastern Europe, importing increased quantities of OPEC oil for resale in the West, and holding down domestic oil consumption and/or drawing down oil inventories. On the import side, Moscow's apparent decision to limit grain purchases is being felt by the Soviet consumer in terms of per capita availability of meat and dairy products. Earlier efforts to curb debt growth resulted in a sharp decline in the volume of Western machinery and equipment imported during 1977-81.

One of the serious problems facing the Soviet leadership in the 1980s is re-emerging hard currency shortages, which could limit imports at a time of increasing economic stringency. The USSR's hard currency prospects are poor. Not only are oil prices likely to remain soft for the next few years, but revenues from other key export earners such as gas—and, perhaps, gold and arms—which are linked to oil prices, may also be affected. Although energy prices could recover later in the decade, the USSR may not be in a strong position to benefit. Domestic oil production shortfalls could result in a large decline in oil exports and force the USSR to hold down imports paid for in hard currency or to negotiate loans from the West.

Our projections indicate that—barring another round of spiraling oil prices—Soviet hard currency purchasing power will at best remain level through 1990. Oil exports are expected to return to the downward trend of 1979-81, and expected real increases in gas exports may fall short of covering the decline in oil exports. In this circumstance the USSR will have a difficult time achieving more than a modest real growth in hard currency imports in the second half of the decade, unless it is willing to accept a sharp increase in its debt burden.

Hard currency imports are important for easing food shortages, raising energy production, sustaining technological advances and productivity, and making up for unexpected shortfalls of key products. Within the limits of hard currency availability, world supplies, and political considerations, Moscow's priorities are probably aimed at: (1) obtaining sufficient grain and other agricultural products to maintain consumption of quality foods at least near current levels, (2) purchasing the necessary industrial materials—notably steel—to operate productive plant at planned levels, and (3) importing machinery and technology to meet targets for investment in energy and other priority sectors.

If forced to choose, the Soviets would be hard pressed to decide whether to concentrate import cuts in the nonagricultural or agricultural areas. Despite the recent renewed emphasis on agricultural self-sufficiency, annual imports of 20-30 million tons of grain and 2-3 million tons of oilseeds and oilseed meal will be needed to support livestock expansion plans during the next several years, even with a return to normal harvests. Agricultural imports will depend partly on domestic production but also on the extent of the leadership's commitment to maintain or increase per capita consumption of quality foods. The 5-million-ton decline in grain imports and the slight decline in per capita meat consumption the Soviets permitted in 1982, however, indicate that the present leadership is not willing to increase imports of farm products indefinitely.

Purchases of Western steel and other industrial inputs, meanwhile, will also need priority. Not only will imports of large-diameter steel pipe remain critical for the construction of oil and gas pipelines, but the Soviets probably will continue to buy—at least for the next few years—large amounts of cold rolled sheet steel, tin plate, and specialty steels. Meanwhile, we expect that Moscow will emphasize equipment purchases for developing energy resources. Finally, the stepped-up investment allocations for industries supporting the Food Program are likely to give these industries a larger share in imports of Western machinery.

The Andropov administration will consider a range of economic policy alternatives if import constraints prove too severe. Western credits are one—and a relatively immediate—means of financing substantial additional Soviet hard currency imports. Even so, Soviet debt management policy would have to become less conservative, and Western governments would probably have to provide encouragement and insurance to private lenders to permit a large increase in lending. While Soviet debt is now relatively low, in the longer term the USSR may find it increasingly attractive to try to augment hard currency imports by expanding gas exports to Western Europe. The new export pipeline now being built, when completed, will have substantial capacity to carry additional Soviet gas to Western Europe. If needed, the USSR would be more than willing to build additional pipelines to supply gas for Western Europe.

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Introduction

The USSR has moved vigorously since mid-1981 to deal with a deteriorating hard currency [1] position caused by soft energy prices and weak demand for Soviet goods. This paper provides an estimate of the USSR's hard currency payments position and reviews the steps Moscow has taken to strengthen this position. It also analyzes the outlook for Soviet hard currency earnings through the rest of the decade and discusses the options available to the USSR in view of the likely need to curb import growth

Developments During 1971-80

The USSR has capitalized on its economic relations with the West to expand its resource base, raise the technological level of its industry, relieve industrial bottlenecks, increase domestic food supplies, and lessen the burden of defense. This policy reached its zenith in the early and mid-1970s, as postwar productivity gains evaporated and Moscow turned to the West for equipment and technology to spur its industry and for grain to offset shortfalls in its inefficient farm sector.

Expectations were similarly high in the West, where businessmen hoped to sell equipment and technology from underemployed capital goods industries and to develop a large and growing market in the USSR for consumer goods. The Politburo's decision to give full support to the Brezhnev program for upgrading the Soviet diet was an added sign that more attention would be given to the consumer, who would in turn require large Soviet imports of Western agricultural goods. For its part, the West viewed the USSR as an important new source of energy supplies as well as a supplier of timber, various ores and metals, diamonds, and other raw materials.

Because of increasing reliance on the West for equipment and grain, the USSR incurred large trade deficits in the mid-1970s. Concern over these deficits and the rapidly rising hard currency debt led Moscow in 1977 to begin to limit growth in imports from the West. The main impact was on imports of machinery and equipment, which in real terms fell an estimated 20 percent during 1977-80 (see table B-1 in appendix B). Moscow was greatly aided during its efforts to narrow the trade gap by good harvests in 1977 and 1978 (permitting a reduction in agricultural imports). But the dominant factor was spiraling world oil prices in 1979 and 1980, which resulted in large increments in the value of oil exports in spite of falling volume. During 1979 and 1980, for example, nearly two-thirds of the $10 billion rise in hard currency commodity export earnings was due to increased prices for oil (see table B-2 in appendix B and figure 1). With these trends in the trade accounts, by 1979 the hard currency trade deficit had dropped to $2 billion as compared with $5.8 billion a year in 1975 and 1976 (see table 1).

Imports. Purchases from the West rose nearly eightfold in value terms between 1970 and 1980, boosting the share in total Soviet imports from 23 to 38 percent. In volume terms, however, hard currency imports increased only twofold and were roughly 30 percent of total imports in 1980. Purchases of machinery, ferrous metal products, and farm products—especially grain—have dominated Soviet imports.

Imports of Western equipment and technology have undoubtedly helped Moscow deal with some critical problems, even though these imports account for less than 5 percent of the machinery and equipment component of Soviet fixed investment, and many of them have been difficult for the USSR to assimilate. In the 1970s, imported chemical equipment, accounting for about one-third of all Western machinery

[1] Unless otherwise noted, references to the USSR's trade and debt are to its hard currency position with non-Communist countries (see appendix A). Reporting on that part of Soviet trade and payments with other Communist countries that is conducted on a hard currency basis is far from complete

Figure 1
USSR: Growth of Hard Currency Oil Exports

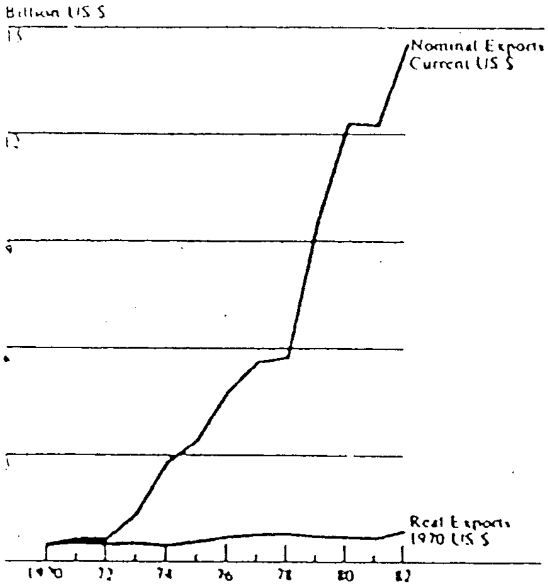
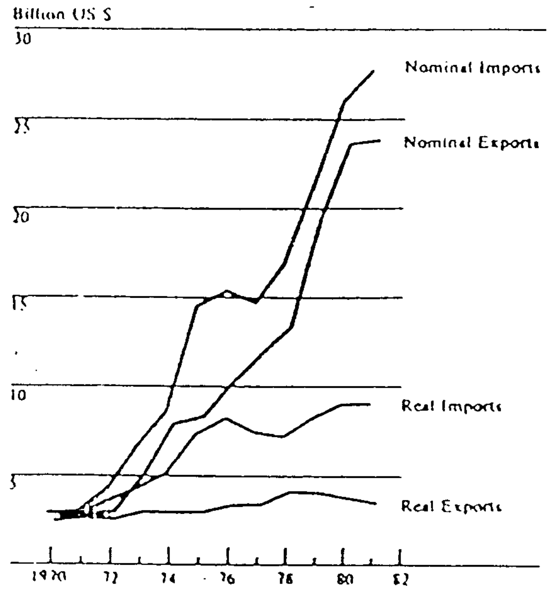


Figure 2
USSR: Growth of Hard Currency Trade



purchased by the Soviets, was partially or largely responsible for doubling the output of ammonia, nitrogen fertilizer, and plastics and for more than tripling synthetic fiber production. In the late 1970s, for example, half of Soviet ammonia output was from Western plants.

Nor could the Soviets have accomplished their ambitious 15-year program of modernization and expansion in the motor vehicle industry without Western help. The Fiat-equipped VAZ plant, for example, produces half of all Soviet passenger cars, and the Kama River truck plant accounts for a similar share of Soviet heavy truck output. Moreover, the Soviets have imported large numbers of Western computer systems and minicomputers.

Imports from the West also have played a key role in supporting the energy sector. Soviet deficiencies in drilling, pumping, and pipeline construction equipment led the USSR to purchase about $5 billion worth of oil and gas equipment in the 1970s. In addition, West Germany and Japan provided virtually all the large-diameter pipe needed for gas pipeline construction

In the case of agricultural imports, Soviet hard currency grain imports jumped from an average of 11 million tons a year during 1971-75 to 17 million tons a year during 1976-78 and 26 million tons a year in 1979 and 1980. By 1980 grain purchases coupled with record imports of meat, sugar, and vegetable oil

Table 1
USSR: Estimated Hard Currency Balance of Payments

Million US $

	1970	1975	1976	1977	1978	1979	1980	1981	1982
Current account balance	260	−4,607	−3,216	458	425	2,177	1,904	−100	4,206
Trade balance	−560	−6,297	−5,253	−2,942	−3,690	−2,018	−2,486	−4,000	−1,294
Exports, f.o.b.	2,424	8,280	10,225	11,863	13,336	19,417	23,584	23,778	26,152
Imports, f.o.b.	2,984	14,577	15,478	14,805	17,026	21,435	26,070	27,778	27,446
Additional military deliveries to LDCs, f.o.b. [a]	400	1,500	1,850	3,220	3,965	3,855	4,200	4,200	5,900
Net interest	−80	−570	−724	−850	−880	−800	−710	−1,300	−1,500
Other invisibles and transfers	500	760	911	1,030	1,030	1,140	900	1,000	1,000
Capital account balance	NA	6,520	3,888	2,330	1,736	340	1,630	5,810	−1,240
Gross drawings [b]	NA	6,371	5,495	2,857	3,097	4,475	2,865	6,200	2,650
Government backed	450	1,972	2,450	1,991	2,565	2,410	2,195	2,900	2,850
Commercial	NA	4,399	3,045	866	532	2,065	670	4,200	−200
Repayments	NA	969	1,365	1,955	2,331	2,800	3,050	3,200	3,415
Government backed	160	730	1,035	1,285	1,456	1,700	1,915	2,000	2,100
Commerical	NA	239	330	670	875	1,100	1,135	1,200	1,315
Net change in assets held in Western banks	25	−395	1,610	−310	1,550	2,825	−235	−140	1,575
Gold sales	NEGL	725	1,370	1,620	2,520	1,490	1,580	2,700	1,100
Net errors and omissions [c]	NA	−1,913	−672	−3,288	−2,161	−2,517	−3,534	−5,740	−2,966

[a] These estimates exclude the value of arms-related commercial exports included in the reporting on Soviet exports to individual LDCs, which we estimate at about $2 billion in 1981. These estimates are based on the reported export residuals in published Soviet data on trade with LDCs (that is, the difference between Soviet reported aggregate exports to the LDCs and Soviet reporting on exports to individual LDCs). The export residuals were reduced by the estimated value of Soviet exports of major arms systems to soft currency paying LDCs on an f.o.b. basis. The estimates also exclude the value of follow-on services, which may be substantial

[b] Including additions to short-term debt.

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

pushed total agricultural imports to more than $9 billion, accounting for 36 percent of hard currency merchandise imports. Without Western grain, Soviet consumers would not have had the increase in meat consumption they realized in the early 1970s, and there would have been a sharp drop in per capita consumption of meat in the late 1970s instead of a leveling off

Exports. Price increases have accounted for more than nine-tenths of the tenfold rise in Soviet hard currency exports since 1970 (see figure 2). Because export prices grew on average twice as fast as import prices, the terms of trade improved at an average annual rate of 8 percent (see table B-3 in appendix B). Soaring prices for oil accounted for more than one-half of the rise in total exports and increased gas prices for another one-tenth. The volume of Soviet hard currency exports grew by only 45 percent between 1970 and 1980—an average of 6 percent a year during 1971-79 followed by a decline of 7 percent in 1980.

The volume of oil exports (crude oil and petroleum products) to hard currency trading partners peaked at 1.1 million b/d in 1978 and dropped to 975,000 b/d by 1980 (see table B-4 in appendix B) as domestic output growth tapered off. (Crude oil accounts for just over one-half of Soviet oil exports to hard currency countries.) As a result of the much greater increase in oil prices (seventeenfold between 1970 and 1980) than in prices of nonoil exports (less than fivefold), the value of oil in total Soviet hard currency exports climbed from 18 percent in 1970 to 52 percent in 1980. In real terms, oil remained at less than 20 percent of total real hard currency exports.

The annual volume of natural gas exports, which climbed from only 1 billion cubic meters in 1970 to 22 billion cubic meters in 1978, leveled off at an annual average of about 23 billion cubic meters in 1979 and 1980. The volume of exports of wood and wood products and diamonds stagnated throughout much of the period, while sales of ferrous metals and agricultural products rose moderately during 1971-75 before falling through 1980. In the case of wood and wood products, labor and equipment shortages have limited the harvesting of timber, which must come from increasingly remote areas, while rising domestic demand for lumber and paper products has caused persistent domestic shortages of these products in the past several years.

Chemical exports grew dramatically in the 1970s but still account for only 3 percent of total hard currency exports. Most of the growth resulted from buy-back deals under which Western firms provided the plant and equipment in return for future product exports. In fact, Western help has allowed the USSR to become the world's leading ammonia exporter—about 2 million tons were exported in 1981. Exports of other chemicals are not as large. Nevertheless, Western chemical exporters already have begun to worry about the rising sales of Soviet polyethylene in their markets.

Exports of machinery and equipment—sold mainly to LDCs—tripled in real terms during 1971-79 and then declined somewhat as sales to Iraq fell. Iraq has, in fact, been the largest customer for the USSR's machinery and equipment. In 1980 transportation equipment accounted for 32 percent of Soviet hard currency exports of machinery and equipment, with automobiles alone accounting for 13 percent and trucks, helicopters, and other items intended for military use an estimated 16 percent.

Most Soviet machinery is not well suited to Western markets, nor is it backstopped by a developed network for service or spare parts. While the Soviets can mass-produce, at low cost, simple machinery and equipment such as standard machine tools and have enjoyed some success in exporting such products to the West, the market for these products has been stagnant in recent years and competition from newly industrialized countries is growing. In addition, given the growing stringencies in steel and other raw material supplies within the USSR, Soviet machine builders are barely able to meet the demands of the domestic economy.

Other Hard Currency Flows. Since the mid-1970s, sizable earnings from sales of gold and arms have permitted the USSR to limit its use of Western credits, while interest earnings on Soviet assets in Western banks and from invisibles and transfers have usually offset interest payments on the debt. Gold traditionally has ranked as one of the USSR's top hard currency earners, with cumulative receipts in the 1970s netting Moscow $15 billion—an amount equal to about 10 percent of Soviet hard currency outlays in the decade. The USSR has a gold inventory of about 2,000 tons, worth some $28 billion at the late May 1983 price of about $440 per ounce.

Beginning in the early 1970s, the USSR became a major supplier of military equipment to the LDCs, with most of the business coming from the Arab countries. We estimate that total hard currency sales rose from $600 million at the beginning of the decade to about $6 billion in 1980. These exports are believed to consist almost entirely of major weapon systems such as fighters, missiles, and tanks. Military sales included in the data for exports to individual LDCs consist primarily of trucks, helicopters, spares, and other support items.

When all of the hard currency current account items in table 1 are added up and net financing received is taken into account, the identified receipts exceed identified expenditures (by an average of $4.1 billion during 1980-82). This calculated residual, "errors and omissions," implies that we have not taken into account all Soviet hard currency outlays. Apart from the likelihood that estimating errors are substantial, the residual reflects the exclusion from the accounts (because of substantial information gaps) of the USSR's:

- Hard currency assistance to other Communist countries.
- Net outlays in hard currency trade with the other Communist countries.
- Net credits granted to LDCs to finance Soviet sales of machinery and equipment, including military equipment.
- Net credits—mainly short term—provided to the developed West to finance sales of oil and other commodities.
- Hard currency expenditures to support Communist parties and terrorist activities in the West

We have been able to estimate values for only part of the items believed to be included in "errors and omissions." In the case of hard currency assistance to Poland, such assistance may have totaled $300 million in 1980 and close to $1 billion in 1981. The USSR incurred a $500-600 million deficit in 1981 in its hard currency trade with Hungary, the only East European country that provides sufficient data to enable us to make such an estimate. Soviet hard currency purchases (mainly sugar) from Cuba totaled $400 million in 1981 and $500 million in 1982. Estimated drawings on Soviet hard currency credits covering sales of machinery and equipment to the LDCs averaged about $500 million a year during 1976-81.[1] LDC repayments to the USSR averaged an estimated $225 million a year, yielding net credits of $275 million a year. The amount outstanding at any one time—assuming 30-day terms—on credits for oil sold to developed Western countries could have been as high as $1 billion in 1980 and 1981, up from $800 million in 1979 if the same terms are assumed. If in 1981 soft world demand forced the USSR to offer more favorable credit terms for oil, the amount outstanding could have been substantially higher

Debt. Soviet net hard currency debt rose from $600 million at the end of 1971 to $11.2 billion at the end of 1975 (see table 2).[1] A determined campaign to curb the rise in net debt resulted in a drop to $9.3 billion by the end of 1980. About three-fifths of the increase in the USSR's gross debt since 1971 originated in private borrowing from commercial banks and other commercial sources. Much of the increase in the Soviet commercial debt in the mid-1970s was the result of large syndicated general purpose loans. Because of its wish to hold down its debt and avoid prevailing high interest rates, the USSR has not engaged in such borrowing since 1979, when it consolidated earlier syndicated loans into one large credit

Soviet debt on Western official and officially backed credits—which since 1976 has grown more rapidly than debt arising from commercial credits—accounts for two-fifths of total gross debt. Since the USSR began large purchases of Western technology in the early 1970s, Moscow has used official and officially backed credits to finance one-third of its imports of plant, equipment, and large-diameter pipe from the West. Annual Soviet drawings on government-backed credits jumped from an average of about $475 million during 1971-73 to nearly $2 billion by 1975 but have been held at an annual average of about $2.2 billion a year since 1977. The volume of new commitments fell from a peak of $4 billion in 1976 to less than $2 billion in 1980, reflecting falling Soviet orders for Western machinery and equipment (see table B-5 in appendix B). Subsidized interest rates and the long

[1] It has been assumed that credits were used to finance 60 percent of machinery and equipment delivered to the USSR's multilateral LDC partners. Repayments were assumed to be spread over eight years on average. The amount owed the Soviets at yearend 1981 is estimated at more than $7 billion

[1] For a discussion of the methodology used in estimating the Soviets' hard currency debt to the West, see appendix

Table 2
USSR: Estimated Hard Currency Debt to the West

Million US $, yearend

	1975	1976	1977	1978	1979	1980	1981	1982
Gross debt	10,577	14,707	15,609	16,375	18,050	17,865	20,865	20,100
Commercial debt	6,947	9,662	9,858	9,515	10,480	10,015	13,015	11,500
Government and government-backed debt	3,630	5,045	5,751	6,860	7,570	7,850	7,850	8,600
Assets in Western banks	3,125	4,735	4,425	5,975	8,809	8,565	8,425	10,000
Net debt	7,452	9,972	11,184	10,400	9,250	9,300	12,440	10,100

maturities attached to most government-backed credits have considerably helped Moscow to conserve scarce hard currency. The interest rate subsidy reached a record level in 1981—on the order of $300-400 million—as commercial rates in most Western countries averaged 6 percentage points more than those charged on official loans.

Sufficient information is not available to estimate the breakdown of the USSR's hard currency debt by major Western creditor. As of mid-1982 the Soviet Union owed $550 million to US banks (in both domestic and foreign branches and net of Soviet deposits in those banks), $400 million to the Export-Import Bank, and $662 million on lend-lease extended in 1945.[1] [redacted] report indicated that, as of 31 March 1982, net liabilities to German banks and their foreign branches were $1.5 billion. [redacted] we estimate Soviet net debt to British banks was $1.8 billion as of 30 June 1981.

[1] In accordance with an October 1945 agreement, the USSR made cumulative repayments on its lend-lease debt of $199 million during 1954-71. In 1972 the two countries agreed that the outstanding Soviet debt on lend-lease would be fixed at $722 million and would be repaid over a 30-year period. However, after making payments of $60 million during 1972-74, the USSR—in renouncing the 1972 Trade Agreement—made additional repayments contingent on renewed access to US Export-Import Bank credits and most-favored-nation status.

Debt size reveals little about a country's ability to meet its financial obligations and to sustain needed imports. To provide perspective on the USSR's situation, several indicators of the hard currency debt have been calculated—all of which show that the Soviet position remains quite manageable (see table B-6 in appendix B). Using the ratio of repayments on medium- and long-term debt plus interest on total debt to merchandise exports shows that, after rising to about 27 percent in 1977 and 1978 following heavy borrowing in the previous two years, the debt service ratio fell to 20 percent in 1980 but rose to 23 percent in 1981 as exports stagnated. This ratio still compares extremely favorably, however, with the 1981 debt service ratios for most East European countries, which we estimate as ranging between 22 percent for Czechoslovakia to about 33 percent for Bulgaria, Hungary, and Romania, 69 percent for East Germany, and 148 percent for Poland. Soviet debt service as a share of total hard currency receipts was 16 percent in 1982.

The maturity structure of Soviet medium- and long-term debt is also fairly comfortable from the USSR's viewpoint. Estimates indicate that, of total gross debt at the end of 1981, about two-fifths would fall due by the end of 1983. The weight of short-term debt has risen sharply, however, from about 20 percent of gross debt in 1978 to nearly 30 percent in 1981 because of heavy use of short-term grain credits. Although such a large short-term debt does not present an immediate problem for Moscow, it could if Western banks were to balk at requests to roll it over.

Two additional indicators reflect the impact of new borrowings and debt service payments upon a country's import capacity. The net transfer measure—new drawings less repayments of principal and interest—shows the increase (or reduction) as a result of borrowing. The USSR's heavy borrowing in 1975 and 1976 produced a net inward resource transfer of nearly $4 billion a year but carried with it the cost of rising debt service. Moscow's policy of slowing down new borrowings during 1977-80—coupled with the decision to prepay some of its Eurodollar syndications—practically eliminated the inward transfer during 1977-79 and resulted in an outward flow of about $1.8 billion in 1980. In 1981 the trend was reversed with a net inward transfer of $900 million. We also calculate that portion of new drawings—90 percent in 1981—used to service existing debt in order to measure the extent to which Moscow is rolling over its debt.

Weakening and Retrenchment in 1981 and 1982

The Payments Position Weakens. After holding its hard currency debt down during 1977-80, the USSR was hit in 1981 by a rising agricultural import bill, soft oil prices in the West, and the need to provide hard currency assistance to Poland. The deficit on merchandise trade rose to $4 billion, compared with $2.5 billion in 1980 (see table 1). The gap would have been even higher had Moscow not pushed exports—mainly oil—and trimmed imports—mainly machinery and equipment—in the last half of 1981. For the year as a whole, the Soviets managed to maintain the value of oil exports at the 1980 level as a 5-percent oil price rise offset the drop in volume.

The value of machinery imports fell by 25 percent during 1981, while imports of steel other than pipe dropped by 10 percent, and purchases of chemicals leveled off. In real terms, the cutbacks were even larger. At the same time, however, imports of agricultural goods increased by more than one-fourth—to $11.7 billion—and pipe imports rose by more than one-fifth. The surge in the agricultural bill resulted mainly from a jump in grain imports to 39 million tons.

The unfavorable developments in the first half of 1981 forced Moscow to draw down its assets in Western banks by an unprecedented $5 billion. To ease its financial situation and rebuild its assets, the USSR borrowed heavily—mainly on short-term credits for grain—and sold substantial amounts of gold in the second half of the year. By the end of the year, assets were back up to $8.4 billion and the gross hard currency debt had climbed to nearly $21 billion.

Reaction in 1982. Moscow continued its efforts to improve its payments position into 1982. By strongly pushing oil exports and holding down imports, the USSR slashed its hard currency trade deficit to $1.3 billion, or one-third of the $4 billion deficit incurred in 1981. Exports were up 10 percent, with about four-fifths of the $2.4 billion rise coming from the sharp jump in oil sales. The volume of oil exports in 1982 for hard currency probably was 280,000 b/d higher than the 920,000 b/d the USSR exported to hard currency customers in 1981 (see table B-4 in appendix B). Even with prices about 10 percent below the 1981 level, the Soviets realized a pronounced increase in oil earnings, and total hard currency merchandise exports for the year exceeded $26 billion.

The Soviets reduced imports by 1 percent compared with those in 1981 by paring purchases of Western grain, chemicals, and nontubular steel. Compared with a year earlier, Soviet hard currency grain imports fell off by 3 million tons to an estimated 36 million tons. Average prices paid for grain declined by roughly 15 percent, with the monthly volume shipped falling substantially after May

The estimated volume of agricultural imports other than grain increased substantially, on the other hand, due mainly to a sharp rise in purchases of Western sugar. Because of overall lower prices, total Soviet hard currency expenditures on agricultural products fell by an estimated 15 percent. Partial-year Western trade data suggest that purchases of chemicals and of steel other than pipe also fell. Imports of machinery and equipment and of steel pipe, however, rose sharply—to an estimated $6 billion and $2.5 billion, respectively—as deliveries began for the Siberia-to-Western Europe gas pipeline. Total hard currency imports were $27.4 billion, down $300 million from 1981.

Soviet trade data indicate that deliveries of major weapon systems to hard currency LDC customers rose substantially. This, together with the improvement in the trade picture, should have allowed the USSR to realize a current account surplus of more than $4 billion, up from a small deficit in 1981. It is possible, however, that much of the rise in arms deliveries went to Syria (which, in the case of arms, is considered to be a hard currency customer) on credit and thus did not represent real hard currency inflows. In addition, the Soviets may have earned about $1.1 billion from sales of perhaps 100 tons of gold.

The improvement in its current account position coupled with a probable fall in hard currency assistance to Poland—which may have totaled as much as $1 billion in 1981—allowed Moscow to reduce its debt in 1982. By the end of 1982 the gross hard currency debt fell by an estimated $800 million, to $20.1 billion. The amount outstanding on Western government-backed credits rose by $750 million to $8.6 billion as deliveries of pipe and equipment for the Siberia-to-Western Europe pipeline began.

From Bank for International Settlements (BIS) data, we estimate that the USSR's commercial debt declined by roughly $1.5 billion to $11.5 billion by the end of the year. All of this decline probably occurred in the short-term debt. Drawings on medium- and long-term bank credits are estimated at $1.3 billion or about the same as repayments. Moscow's assets in Western banks—which fell by $1.8 billion during January to June—hit a record high of $10 billion by the end of 1982.

The Cost to Moscow. Moscow has had to pay a substantial price for the improvement in its hard currency position. The 1982 increase in oil exports for hard currency was achieved largely by cutting back exports to Eastern Europe, increasing imports for resale in hard currency markets, and holding down Soviet domestic oil consumption and/or drawing down oil inventories. In late 1981 the USSR decided to reduce—perhaps by 10 percent—its highly subsidized exports of crude oil to Czechoslovakia, East Germany, and Hungary. (Originally, Moscow had promised to maintain oil exports to its East European allies at the 1980 level through 1985.) At the same time, Poland apparently reduced its imports of oil—especially of oil products—from the USSR as its domestic requirements were down because its industrial plant was operating way below capacity. Thus, a major share of the 1982 increase in oil exports to hard currency countries came from the reduction in exports to Eastern Europe. In addition, the Soviets are believed to have substantially increased oil imports for sale in the West; purchases of Libyan crude oil—presumably in payment for arms deliveries—rose to an estimated 140,000 b/d in 1982 from an estimated 40,000 b/d in 1981. This brought total oil imports in 1982 to an estimated 250,000 b/d. Although part of this oil went to soft currency countries such as Finland, most of the additional imported oil presumably was used to boost Soviet oil exports to hard currency countries.

Since Soviet oil production increased by only 70,000 b/d in 1982, the approximate leveling off of total net oil exports implies either very little growth—perhaps on the order of 0.5 to 1 percent—in domestic oil consumption and/or a drawdown of oil stocks. Because of the frequency of reports of fuel shortages in the USSR in the past few years, we believe that inventories have been taut. If domestic oil consumption did grow by 1 percent or less in 1982, the USSR probably found it exceedingly difficult to obtain the 2.2-percent rise in industrial production and the 2-percent increase in GNP realized for the year without making remarkable strides in conservation or interfuel substitution, or both. We do not believe, however, that the Soviets made such strides in such a short period. On the contrary, regime attempts to impose conservation through rationing very likely held down production in industry and other sectors of the economy.

In addition, Moscow has forgone substantial imports of grain and nonagricultural commodities. Imports of machinery and equipment declined in volume by more than 40 percent during 1977-81. Continued import cuts clearly would interfere with regime efforts to improve productivity. The USSR's apparent decision to limit imports of grain will be felt by the Soviet consumer in terms of per capita availability of meat and dairy products.

Balance-of-Payments Prospects

In spite of the substantial help the USSR received from hard currency imports in the 1970s, a poor outlook for Soviet exports suggests that the USSR will be compelled to limit severely the growth of hard currency imports in the 1980s. Although the USSR could obtain some additional relief by further tightening the screws on Eastern Europe, as it did last year with oil, such a course would be politically difficult for Moscow, given the economic problems already confront[illegible] that area. In limiting or cutting imports, Moscow faces hard decisions regarding who at home should bear the burden—the Soviet consumer, the partisans for more investment, or industrial managers who need intermediate materials such as steel and chemical feedstocks.

Export Trends in the 1980s. The improvement in Soviet hard currency oil exports recorded in 1982 probably will not last long. Oil production of 12.3 billion b/d last year was only 0.7 percent above the level in 1981. Output is expected to show little if any growth through mid-decade before starting to decline. The ability of East European or Soviet consumers to absorb further cuts in oil supplies is one of the critical factors determining the level to which oil revenues will fall. Although Moscow probably has given some thought to making further cuts in oil deliveries to Eastern Europe, it apparently is holding off for the time being

Additional cutbacks in deliveries of Soviet oil would be a blow to the East Europeans, who could ill afford to buy oil on the world market or from the Soviets for hard currency. Although in 1983 the East Europeans will be paying close to world market prices for Soviet oil, they will continue to obtain this oil mostly in exchange for soft goods, that is, goods not readily salable in Western markets. Attempts to hold down oil consumption within the Soviet Union also are likely to fall short of plans, especially since extensive substitution and conservation depend on large investments.

Natural gas offers the only hope for sharply increased Soviet exports over the next few years. Deliveries through the Siberia–to–Western Europe gas pipeline now under construction should begin on a small scale by 1984, and the line could be operating near full capacity a couple of years later. The sharp increase expected in earnings from natural gas exports, however, probably will fall short in real terms of covering the decline in oil exports, even if Western demand is higher than we now foresee. However, although the Soviets have their hands full for the time being juggling construction schedules for the Siberia–to–Western Europe and other domestic gas pipelines, they would certainly agree to build a second or even a third line if they felt the West Europeans would buy more gas.

Commodity exports other than oil, gas, and gold, meanwhile, are likely to show little, if any, early growth.[3] Of the thousands of products and services on the Soviet export list, only a few offer much chance for increased hard currency earnings during the 1980s. In a number of industries (for example, nonferrous metals and timber), domestic production is stagnating and domestic requirements are rising, squeezing the exportable surplus. Platinum-group metals, nickel, and chemical fertilizer offer the greatest opportunities for expo t expansion. Chances are poor that the Soviets will be able to boost their hard currency earnings from sales of machinery. Sales of timber, diamonds, and cotton are expected to remain substantial but not to increase much because production of these goods is leveling off or, in the case of timber, declining.

[3] See

We calculate that earnings from exports other than oil, gas, arms, and gold could increase at best by roughly 4 percent a year in real terms. This estimate assumes that Soviet planners are willing and able to increase investment and allocations of labor to sustain an export push on a broad front. It also assumes that Western demand will be robust enough to accommodate a large volume of Soviet sales. Because of these factors, we believe a more realistic real growth rate for these exports is between 0 and 2 percent per year. Although Moscow could step up gold sales—it could sell about 300 tons a year without dipping into reserves—it would have to be careful not to push too hard on the market because of the effect on prices.

The outlook for Soviet export earnings is colored in the short term by weakness in Western markets. World oil prices may remain soft for a few years. The roughly $3 a barrel drop in price already experienced by the USSR in 1983 could reduce hard currency earnings from oil sales by about $1.5 billion. Moreover, continued soft oil prices could also impact severely on Soviet earnings from other sources. In the case of natural gas, the $3.35 per million Btu that Italy agreed in March 1983 to pay the Soviets was roughly $1.35 below the base price negotiated for 1982 sales. Moreover, Moscow may earn less hard currency from arms sales because of large declines in oil earnings in the Middle East.

Higher oil prices would once more yield windfall profits for the USSR. Increased oil revenues might also help the Middle Eastern countries to increase their purchases of Soviet arms for hard currency. A spurt in Soviet oil earnings probably would much more than offset the likely slowdown in Western demand for Soviet nonenergy commodity exports because of increased competition from LDCs and newly industrialized countries.

Hard Currency Projections. At this time, we foresee little if any increase in the real value of the USSR's hard currency purchasing power through 1990. Much depends on oil price trends, however. A great deal more uncertainty attaches to our estimates for the second half of the decade than to those for the next three years.

We have made projections on the basis of our estimates of Soviet export capabilities to suggest the magnitude of the hard currency constraints facing the USSR through the rest of the decade. With the help of a series of standard accounting identities, we have calculated trends in Soviet financing requirements on the basis of specified values for key earnings items such as the volume and price of oil and gas exports and sales of arms and gold.

The key unknown in the calculation is, of course, Soviet hard currency oil exports, which we have projected to decline annually by 70,000 b/d a year on average to some 600,000 b/d in 1990, about one-half the 1982 level. This assumes that:

- Soviet oil production averages about 12.5 million b/d a year in 1984 and 1985 and about 12 million b/d during 1986-90.[a]
- Domestic requirements for oil—estimated at about 9.2 million b/d in 1982—rise no higher than 9.5 million b/d in 1990.
- Oil imports average 250,000 b/d.
- Oil exports to Communist countries remain at the 1982 level of about 1.85 million b/d.
- Oil exports for soft currency to non-Communist countries (mainly Finland and India) remain at the 1982 level of roughly 300,000 b/d.

Because of soft demand in Western Europe for oil, nominal prices are projected to fall in 1983, level off in 1984, and rise with the rate of inflation for the rest of the decade. We estimate that gas exports for hard currency will rise to 32 billion cubic meters (m^3) per year by 1985 and to 52 billion m^3 by 1990 as gas sales to Western Europe rise. This assumes that West European demand for gas picks up substantially and that contracts for gas coming through the new pipeline are not scaled back significantly. Although some forecasters are projecting much softer demand for gas, we believe it likely that this demand will pick up again in the second half of the decade as economic

[a] According to the recent CIA oil estimate, we expect Soviet oil production to rise to 12.6 million b/d in 1985 and then level off before declining to about 11-12 million b/d by 1990. Domestic oil requirements are [illegible]

Assumptions Underlying Hard Currency Balance-of-Payments Projections

***Oil exports** rise to 1.2 million b/d in 1982 and decline by an average of 70,000 b/d a year during 1983-90.*

***Gas exports** from existing pipelines drop from an average of 28 billion cubic meters (m³) a year during 1981-83 to 25.5 billion m³ a year during 1984-90. Deliveries through the Siberia-to-Western Europe pipeline rise from 3 billion m³ in 1984 to 27 billion m³ by 1990.*

***Real nonoil, nongas exports** grow by 1 percent a year in 1983-90.*

***Additional real arms sales** hit an extraordinary $5.9 billion in 1982 before dropping off to $4.5 billion a year during 1983-90*

***Real net earnings from invisibles (excluding interest)** grow by 5 percent a year during 1983-90. (c)*

***Gold sales** rise from 100 tons in 1982 to (1) 200 tons a year or (2) 300 tons a year during 1983-90 depending on the need for such sales.*

***Real imports** are (1) held constant or (2) allowed to rise 2 percent a year during 1983-90.*

***Real unrecorded expenditures** (errors and omissions) are held constant at $3.5 billion during 1983-90.*

***The overall annual inflation rate** applying to all trade except oil and gas is 5 percent in 1983 and 7 percent during 1984-90.*

***Nominal oil prices** drop from an average of $32.25 for the mix of crude oil and petroleum products exported to hard currency countries in 1982 to $29.50 a barrel in 1983 and 1984 and then rise with the rate of inflation.*

***Nominal gas prices** for gas piped through existing lines drop from $145.80 per thousand m³ in 1982 (equal to $4.13 per million Btu) to $137.13 in 1983 before rising to $166.95 in 1984 and $198.35 in 1985. They then rise with the rate of inflation. The nominal price of gas going through the new Siberia-to-Western Europe pipeline starts at $186.39 per thousand m³ in 1984 and then rises with the rate of inflation.*

***The nominal gold price** rises from $356 a troy ounce in 1982 to $395 in 1983 and then rises with the rate of inflation.*

***Drawings on nonpipeline Western government-backed credits** are held at $2 billion a year in real terms during 1983-90.*

***Drawings on credits for the pipeline** are $800 million in 1982, $2.5 billion in 1983, $1.7 billion in 1984, and $1 billion in 1985.*

***Nominal short-term commercial debt** remains at the estimated 1982 level of $5 billion*

***Drawings on commercial medium- and long-term credits** vary to fill the annual financial gap.*

***Interest rates** run at an average annual rate of about 11 percent.*

***The average maturity structure** is eight years on nonpipeline official credits, 11 years (with a three-year grace period) on credits for pipeline equipment, and five years on medium- and long-term commercial credits.*

recovery in Western Europe picks up.' We allow the nominal price of gas, meanwhile, to increase by 28 percent as contracts under the Siberia-to-Western Europe pipeline start to be filled and then rise with the rate of inflation. In all, the gas project will add an average of about $6.4 billion annually in nominal terms to Soviet hard currency earnings during 1987-90. Nominal earnings from oil exports, however, will be about $9 billion a year lower on average than if the volume of oil exports had remained at the 1982 level.

In our calculations, the volume of projected gas sales is set equal to the amounts: (1) currently contracted for through existing lines, and (2) likely to be purchased through the new export line. In fact, the USSR probably could sell substantially more gas than this should European customers seek additional supplies. The USSR has roughly 10 billion m ' of surplus capacity available now in existing lines and could increase this amount markedly by adding to Czechoslovakian transit capacity.

As noted earlier, we allow commodity exports other than energy, arms, and gold to rise by roughly 1 percent a year in real terms from their 1982 level of $8.3 billion. Even this assumption may be too optimistic. The volume of these exports was lower in 1980 than in 1978, and further slippage occurred in 1981. The volume of wood and wood product exports fell by more than half during 1977-81. Real exports of machinery and equipment leveled off during 1979-81, and sales of ferrous metals and agricultural products fell sharply during 1978-81

Given our assumptions regarding the volume and relative prices of the USSR's hard currency exports—and assuming annual gold sales of 300 tons—Soviet hard currency purchasing power would at best remain level through 1990 as shown in table 3 where nominal earnings have been deflated by the assumed rise in import prices—5 percent in 1983 and 7 percent per year thereafter

Using these assumptions, we estimated financing requirements to: (1) maintain the volume of imports at the 1982 level and (2) increase import volume by 2 percent per year during 1983-90. As shown in table 4, the USSR's debt remains quite manageable through 1985 in both cases and through 1990 in the case where real imports are held constant. If real imports rise by 2 percent a year, by 1990 the debt service ratio would approach 40 percent, a level the Soviets would probably deem too high unless they modified their present conservative attitude toward borrowing

Table 3
USSR: Hard Currency Purchasing Power

Billion 1982 US $

	1982	1985	1990
Total	34.9	32.9	33.4
Merchandise exports	26.2	22.8	22.9
Additional arms sales [a]	5.9	4.5	4.5
Gold sales [b]	1.1	3.6	3.6
Invisibles [c]	1.8	2.0	2.4

[a] Sales not included in reported exports to hard currency countries.
[b] This assumes gold sales of 300 tons a year during 1983-90.
[c] Includes interest receipts.

Our projections are highly sensitive to the volumes of oil, gas, and gold sold. Each additional 100,000 b/d of oil sold would increase annual purchasing power by an average of roughly $1 billion, using the real prices we have assumed. Each additional billion m ' of natural gas sold would yield about $165 million in real terms. And for each additional 50 tons of gold sold, real hard currency receipts would rise by $575 million

Finally, we have assumed that export prices—except for oil, gas, and gold as noted above—and import prices move together. Because of the decline in real oil, gas, and gold prices in 1983, Soviet terms of trade deteriorate in that year but improve in 1984 and 1985 because of the rise in real gas prices. They then show no change through the rest of the decade. The situation could be far different, however, if a battle among the world's major oil producers over prices and

Se

Table 4
USSR: Hard Currency Financing Requirements Under Alternative Scenarios

Billion Current US $ (except where noted)

		Real Imports Constant		Real Imports Growth (2 Percent per Year)	
	1982	1985	1990	1985	1990
Total exports	26.2	27.4	38.6	27.4	38.6
Total imports	27.4	33.1	44.4	36.3	54.1
Gold sales	1.1	2.9	4.1	4.3	6.1
Net credits drawn	−2.4	2.6	3.4	5.0	12.5
Net debt	10.1	14.2	20.8	19.4	51.8
Debt service ratio (percent)	16.0	18.5	21.5	21.0	38.2

market shares becomes a reality. And, although it is unclear where prices resulting from such a struggle would ultimately settle, the USSR would clearly be a major loser if prices fell by $5 to $10 a barrel. As a rough rule of thumb, every $1 fall in the price of oil costs the USSR $450 million in hard currency revenues, assuming volume remains the same. On the other hand, the USSR as a raw materials supplier could derive some near-term benefit from a boost in Western economic growth rates that could follow a reduction in global energy prices. On balance, however, the USSR would be hurt far more than it would be helped by a decline in oil prices.

Conclusion

Paradoxically, as Soviet domestic difficulties mount and economic growth slows, Moscow has been less willing to rely on economic ties with the West. Aversion to the rapid growth of hard currency debt in the mid-1970s led to a sharply slower growth in real imports—2 percent a year during 1977-82 compared with more than 18 percent a year during 1971-76—and restraints on new borrowing. Western trade sanctions following the Afghanistan invasion almost certainly dampened the enthusiasm of planners for relying on imports from the West. Meanwhile the Polish crisis has reinforced the position of those opposing too much dependence on East-West trade.

In remarks to the Supreme Soviet in November 1981, State Planning Committee Chairman Baybakov implied that the volume of non-Communist country trade would grow by only 2.3 percent a year during 1981-85. This compares with just over 5 percent a year during 1976-80. Provisional estimates indicate that the five-year plan for trade with non-Communist countries is ahead of schedule with the sharp rise in imports in 1981 and in exports in 1982.

Import Priorities. The question is whether Moscow is in a position to forgo the benefits that would accrue to the economy from expanding its trade with the West during the remainder of the 1980s. Within the limits of hard currency availability, world supplies, and political considerations, the USSR will at a minimum want to: (1) import sufficient quantities of farm products to keep per capita consumption of quality foods near present levels, (2) purchase necessary industrial materials, and (3) buy enough machinery and technology to meet priority investment goals.

Although Moscow is likely to place great emphasis on increasing agricultural self-sufficiency, imports of 20-30 million tons of grain and 2-3 million tons of oilseeds and oilseed meal will be needed annually to support livestock expansion plans during the next several years even with normal harvests. The Soviets could reduce average grain imports to less than the projected level in the unlikely event that: (1) plans to increase the share of roughage in the average food ration are achieved, and (2) plans to increase feed efficiency are met. Imports of other farm products—sugar, vegetable oil, meat, and butter—will depend partly on domestic production but also on the extent to which the leadership is committed to maintaining per capita consumption levels. The 1-percent decline in per capita meat consumption the Soviets permitted in 1982—as imports of meat were cut back slightly from the record 1981 level despite stagnating domestic production—suggests that the present leadership is not willing to increase imports of farm products indefinitely.

A reduction in the value of farm imports would allow at least moderate increases in nonagricultural imports. Purchases of Western steel and other industrial inputs will continue to be given priority to keep productive capacity operating as fully as possible. Imports of large-diameter steel pipe will remain critical for the construction of oil and gas pipelines. We estimate that the Soviets will need to import at least 3 million tons of steel pipe a year during the 1980s at a cost of about $2 billion a year (1982 prices)—or about the same as in 1982. By the late 1980s, Moscow should be able to lower annual pipe imports because of increased domestic production. The Soviets are well along in building new steel plants to produce large-diameter pipe. We expect these facilities to become operational during the 1986-90 plan period.

In addition, the Soviets will continue to buy—at least for the next few years—large amounts of cold rolled sheet steel for the machine-building, automobile, and consumer durables industries; tin plate for canning and packaging; and various types of high-quality products for use in transformers and electric motors. Purchases of these products are expected to remain at about $2 billion a year until 1986 or 1987, when the Novolipetsk metallurgical plant is expected to go into full operation. If the Soviets decided to import from the West iron ore, coking coal, and scrap metal in the amounts necessary to meet planned 1985 steel production, an additional $1 billion could be added to the annual import bill

In reviewing the USSR's machinery and equipment requirements, we expect that Moscow will continue to give priority to importing equipment necessary for developing energy resources. The allocation of Soviet investment resources is heavily skewed toward energy while neglecting other sectors that are also important to economic development. Although it is too early to know what the 1986-90 Soviet investment plan will look like, energy development will in all likelihood continue to receive priority. To a large extent, the current Soviet energy strategy is driven by an awareness on the part of the leadership that it may have to accept an oil production decline in the late 1980s. In addition to heavy emphasis on West Siberian oil and gas, the major elements of Soviet energy policy include increased substitution of gas for oil, conservation, and modernization of industrial facilities. The energy sectors, including associated infrastructure, are scheduled to receive more than one-half of the increment in total investment during 1981-85. This share will have to rise still further in the second half of the 1980s unless total investment growth is increased sharply.

Our analysis of Soviet equipment manufacturing capabilities and the continuing problems in the oil industry indicate that requirements in the 1980s will center on Western equipment and technology for deeper drilling, fluidlift, and well completion and servicing. In addition, the Soviets will need sophisticated exploration equipment, offshore drilling platforms, and secondary oil refining technology. Because gas is critical to maintaining total Soviet energy production growth in this decade, continued imports of pipelayers, turbines and compressors, and other gas-exploitation equipment will be necessary. Western equipment and technology will be especially crucial for exploiting "sour" gas deposits, such as those at Astrakhan and Tengiz.

The recent greatly increased emphasis on the Food Program suggests that agriculture and the food industry are also likely to receive special attention over the next few years. This program gives top priority to upgrading capital stock in all phases of food production. Investment allocations have been sharply increased for industries that produce machinery for farming and animal husbandry, fertilizer, equipment for food processing, and storage and transportation equipment. Soviet Ministry of Agriculture and trade officials have indicated that imports will play an important role in this food-related investment program. Soviet officials have expressed interest in acquiring Western farm machinery, road construction equipment, food processing and packaging installations, as well as storage facilities for perishable products. Increasing imports of superphosphoric acid from the West for producing phosphate fertilizer are also viewed as important. In addition, Moscow has shown renewed interest in completing factories that were proposed or started in the 1970s with Western assistance. These include the Cheboksary tractor plant, grain combine manufacturing facilities at Taganrog, and a slaughterhouse/meat packing plant near Moscow that would serve as a prototype for future construction.

As in recent years, imports of Western machinery for other sectors of the economy probably will suffer if hard currency constraints continue. Moscow probably will try to continue its imports of necessary spare parts and other maintenance items. For the remainder of the current five-year period, at least, the investment plan calls for increased emphasis on renovation and modernization at the expense of new construction. Modernization efforts are to be directed particularly at labor-intensive auxiliary processes, such as materials handling, loading and unloading, and warehousing, which absorb more than one-third of the USSR's industrial work force.

Soviet Adjustments. The need to curb the growth of hard currency imports comes at a time when slower domestic growth is making resource allocation decisions more difficult year by year. Although they may try, Soviet leaders probably calculate they cannot count on the East European countries for much help. Although it could provide more consumer goods and a limited range of industrial and investment goods, Eastern Europe's capacity to provide significant assistance is limited by its own economic and financial problems.

The possibilities for expanding Soviet hard currency imports in the latter part of the decade and beyond are greater. Apart from the possibility that oil prices will again rise, the main questions concern West European imports of Soviet natural gas and both Soviet and Western policies concerning use of and access to Western credits. The Andropov administration, faced with severe economic difficulties, is likely to consider a wide range of economic policy alternatives, including steps to expand imports from the West to facilitate improvements in productivity and technology.

One way to increase hard currency imports would be to expand gas exports to Western Europe well beyond presently contracted amounts. When the export pipeline now being built is completed, it will have enough capacity for additional Soviet gas deliveries. Unless alternative sources are developed, West European gas demand should be sufficient to cover these additional deliveries in the late 1980s and early 1990s. And even if alternative sources are developed, the USSR could offer gas at substantially lower prices than those projected for new Norwegian gas, make a profit, and obtain a great deal of hard currency. Beyond 1990, the Soviets have ample gas reserves to justify one or several additional gas pipelines of the size of the one under construction. The main constraint will be what Western Europe and, on a much smaller scale, Japan need and are willing to buy.

Western credits are a potential source of substantial additional Soviet hard currency imports, but only if Soviet debt policy becomes less conservative and Western governments provide encouragement and insurance to the lenders. The Soviet debt position is currently easily manageable—with a ratio of debt service to hard currency earnings of 17 percent—and probably will remain so at least through 1985. Moscow could, if it wished, increase the debt service ratio substantially before it reached troublesome levels.

The main impact of an increase in Soviet hard currency earnings or credits would probably be on imports of Western machinery and equipment, which have declined substantially in recent years. Soviet imports of Western machinery and equipment now consist mainly of equipment for the oil, gas, chemical, and metallurgical industries. The main purpose of this equipment is to alleviate severe bottlenecks in the supply of fuels and key industrial materials. A substantial increase in hard currency receipts could mean a growth in imports of machinery and equipment large enough to significantly affect the modernization process. By the same token, a further decline in imports of machinery and equipment would make it even more difficult to reduce the kinds of bottlenecks that have been hampering Soviet economic growth.

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Appendix A

USSR: Hard Currency Trade Partners, 1970-81 [a]
(as Reported by Partner Countries to the IMF) [b]

Developed West

European Community

- Belgium
- Denmark
- Federal Republic of Germany
- France
- Greece (1978 on)
- Ireland
- Italy
- Luxembourg
- Netherlands
- United Kingdom

Other European Countries

- Austria (1971 on)
- Iceland (1977 on)
- Malta
- Norway
- Portugal
- Spain
- Sweden
- Switzerland

Other

- Australia
- Canada
- Japan
- New Zealand
- United States

Less developed countries

Africa

- Algeria (1980 on)
- Angola (1977 on)
- Benin
- Burundi
- Cameroon
- Cape Verde Islands (1978 on)
- Central African Republic
- Congo
- Ethiopia
- Equatorial Guinea
- Gabon
- The Gambia
- Ghana (1976 on)
- Guinea Bissau

Africa (continued)

- Ivory Coast
- Kenya
- Liberia
- Libya
- Madagascar
- Malawi
- Mali (1978 on)
- Mauritania
- Mauritius
- Mozambique
- Niger
- Nigeria
- Rwanda
- Senegal
- Sierra Leone
- Sudan
- Tanzania
- Togo
- Tunisia
- Uganda
- Upper Volta
- Zaire
- Zambia

Latin America

- Argentina
- Bolivia
- Brazil
- Chile
- Colombia
- Costa Rica
- Dominican Republic
- Ecuador
- El Salvador
- Guatemala
- Guyana
- Honduras
- Jamaica
- Mexico
- Nicaragua
- Panama
- Paraguay
- Peru
- Trinidad and Tobago
- Uruguay
- Venezuela

Asia and Middle East

- Burma
- Cyprus
- Hong Kong
- Indonesia
- Iraq
- Israel
- Jordan
- Kuwait
- Lebanon
- Macao
- Malaysia
- Nepal (1977 on)
- Philippines
- Saudi Arabia
- Singapore
- Sri Lanka (1977 on)
- Thailand
- Yemen, Arab Republic
- Yemen, People's Democratic Republic of

[a] We have used data on Soviet trade with the multilateral trade partners in calculating hard currency trade with non-Communist countries. Some of the Soviet trade with the multilateral LDC partners, however, probably is on a barter basis. Conversely, part of the trade with bilateral LDC partners may be on a hard currency settlement basis.

[b] Annual Report on Exchange Restrictions, International Monetary Fund, Washington, D.C. Unless otherwise stated, a multilateral trading relationship was in effect throughout the 1970-81 period.

Appendix B

Statistical Tables

e B-1
R: Hard Currency Imports [a]

	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981
	Million current US $ [b]											
[c]	2,984	3,093	4,342	6,744	8,695	14,577	15,478	14,885	17,826	21,435	26,870	27,778
	101	185	770	1,423	635	2,323	2,627	1,356	2,353	3,279	4,548	6,378
r agricultural ucts	657	600	543	1,118	1,388	1,760	1,665	2,005	1,721	2,854	4,717	5,320
hinery and ment [d]	967	960	1,283	1,739	2,334	4,593	5,074	5,117	5,970	6,032	6,039	4,523
us metals [d]	303	374	498	899	1,942	2,627	2,296	1,819	2,588	3,536	3,606	3,597
nicals	215	206	249	270	707	722	609	658	815	1,190	1,646	1,590
r [c]	741	768	999	1,295	1,689	2,552	3,207	3,850	3,579	4,544	5,615	6,370
	Million 1970 US $ [e]											
d [c]	2,984	2,851	3,677	4,349	5,223	7,419	8,325	7,531	7,294	8,324	9,895	9,130
n	101	185	726	783	245	997	1,257	671	934	1,100	1,188	1,600
er agricultural ucts	657	611	383	406	671	862	816	709	548	945	1,522	1,700
hinery and pment [d]	967	946	1,150	1,353	1,622	2,700	2,929	2,829	2,716	2,513	2,350	1,675
ous metals [d]	303	220	327	593	1,095	1,055	1,170	945	1,151	1,474	1,383	1,305
micals	215	204	245	233	501	448	363	302	340	430	610	575
er [c]	741	685	846	981	1,089	1,357	1,790	2,075	1,605	1,862	2,042	2,275

cludes all countries trading with the Soviet Union on a hard rency basis as of 1 January 1980.
fficial Soviet foreign trade statistics.
cludes the following imports which the USSR reported in tastes and which we believe are associated with the Orenburg ural gas pipeline: $420 million in 1976, $88? million in 1977, 6 million in 1978, $30 million in 1979, $18 million in 1980, and o in 1981.

[d] Excluding imports associated with the Orenburg pipeline.
[e] The constant price series was estimated by using actual quantity data where available (for example, for wheat and corn) or by deflating the value series by UN and other Western price indexes for various commodity groups.

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able B-2
SSR: Hard Currency Exports [a]

	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981
	Million current US $ [b]											
otal	2,424	2,777	2,954	5,009	7,869	8,280	10,225	11,863	13,336	19,417	23,584	23,778
etroleum [c]	430	608	600	1,304	2,741	3,391	4,748	5,583	5,710	9,585	12,295	12,232
atural gas	14	21	24	32	95	220	338	566	1,072	1,404	2,704	3,968
oal and coke	106	127	124	139	256	402	377	366	295	315	366	179
achinery and quipment	193	207	267	360	398	647	803	905	1,299	1,574	1,468	1,534
errous metals	137	131	130	216	236	164	171	181	129	216	246	169
ood and wood roducts	389	379	421	747	1,046	739	889	1,084	991	1,370	1,500	1,016
hemicals	64	65	70	110	246	243	198	215	287	542	758	770
gricultural roducts	192	340	360	367	677	547	553	652	447	457	458	553
iamonds [d]	175	257	371	515	545	478	511	606	773	1,043	1,304	
ther	724	642	587	1,219	1,629	1,449	1,617	1,705	2,333	2,911	2,485	3,357 [e]
	Million 1970 US $ [f]											
Total	2,424	2,589	2,541	2,939	2,910	2,946	3,342	3,359	4,075	4,018	3,747	3,469
Petroleum	430	490	453	487	417	530	655	729	764	694	676	639
Natural gas	14	14	28	28	70	98	168	196	238	294	294	322
Coal and coke	106	81	80	85	93	88	91	90	70	65	59	25
Machinery and equipment	193	172	201	235	232	320	390	360	562	628	535	560
Ferrous metals	137	167	172	182	99	82	109	143	93	102	110	105
Wood and wood products	389	380	420	466	401	375	468	443	415	384	333	200
Chemicals	64	69	91	106	177	151	119	134	188	316	393	385
Agricultural products	192	330	227	153	249	252	200	229	144	111	106	160
Diamonds	175	252	346	359	315	282	284	291	376	380	376	
Other	724	634	523	838	857	768	858	744	1,225	1,044	865	1,073

[a] Includes all countries trading with the Soviet Union on a hard currency basis as of 1 January 1980.
[b] Official Soviet foreign trade statistics.
[c] These data were calculated by adding estimates for oil exports to those LDCs for which there are no Soviet data to the total calculated from Soviet statistics.
[d] OECD statistics.
[e] For 1981 only, diamond exports are included with "Other."
[f] The constant price series was estimated by using actual quantity data where available (for example, for oil and natural gas) or by deflating the value series by UN and other Western price indexes for various commodity groups.

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Table B-3
USSR: Estimated Price Trends in Hard Currency Trade

Annual increase in percent

	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981
Exports	7.2	8.5	46.6	58.7	4.0	8.9	15.4	−7.3	47.7	30.2	7.9
Imports	8.6	8.8	31.3	7.3	18.0	−5.3	6.1	18.3	10.3	11.3	5.7
Terms of trade [a]	−1.3	−0.3	11.7	47.9	−11.9	15.0	8.8	−21.6	33.9	17.0	2.1

[a] Change in export price divided by change in import price.

Table B-4
USSR: Exports of Petroleum and Natural Gas for Hard Currency [a]

	Petroleum and Petroleum Products		Natural Gas	
	Thousand barrels/day [b]	Million US $ [c]	Billion cubic meters/year [b]	Million US $
1970	620	430	1	14
1971	706	608	1	21
1972	653	600	2	24
1973	702	1,304	2	32
1974	601	2,741	5	95
1975	764	3,391	7	220
1976	944	4,748	11	358
1977	1,050	5,583	14	566
1978	1,100	5,710	22	1,072
1979	1,000	9,585	24	1,404
1980	975	12,295	23	2,704
1981	920	12,232	28	3,968
1982	1,200	14,500	26	3,800

[a] Excluding hard currency exports to Communist countries.
[b] From official Soviet foreign trade statistics through 1976 and estimated thereafter.
[c] Based on official Soviet foreign trade statistics with an estimate for deliveries to those hard currency LDCs for which Soviet exports of oil are not reported.

Table B-5
USSR: Equipment Orders Placed With Hard Currency Trading Partners [a]

Million current US $

	Total	Equipment Orders	
		Oil and Natural Gas Projects	Other Projects
1970	500	80	420
1971	850	140	710
1972	1,700	325	1,375
1973	2,600	200	2,400
1974	4,300	600	3,700
1975	4,650	525	4,125
1976	6,000	1,700	4,300
1977	3,800	300	3,500
1978	2,800	825	1,975
1979	2,675	200	2,475
1980	2,600	400	2,200
1981 [b]	6,700	3,800	2,900
1982 [c]	3,407	1,254	2,153

[a] Data on Soviet orders are collected from a variety of sources, including trade journals and Western newspapers.
[b] The value for 1981 includes about $4 billion in orders for the gas export pipeline project. Some of this—such as pipelayers—is included under categories other than oil and natural gas equipment.
[c] Including about $600 million in French and German equipment contracts for the Astrakhan' Gas Project. Because of lags in reporting, information for 1982 is incomplete.

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6
[illegible]stimated Measures of
[illegible] Currency Debt Burden

	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982
	Million US $										
[illegible]se exports (f.o.b.)	2,954	5,009	7,869	8,280	10,225	11,863	13,336	19,417	23,584	23,778	26,152
[illegible] currency earnings [a]	4,300	8,600	11,900	11,700	14,900	18,400	21,500	26,500	30,900	32,600	35,200
[illegible] (end of year)	2,408	3,748	5,175	10,577	14,707	15,609	16,375	18,050	17,865	20,865	20,100
[illegible]ayments [b]	306	397	625	969	1,365	1,955	2,331	2,800	3,050	3,200	3,415
[illegible]yments	170	332	508	804	1,012	1,140	1,219	1,430	1,620	2,200	2,200
[illegible]	906	1,737	2,052	6,371	5,495	2,857	3,097	4,475	2,865	6,200	2,650
[illegible]e	430	1,008	919	4,598	3,118	−238	−453	245	−1,805	800	−2,965
	Percent										
[illegible]e to merchandise	16	15	14	21	23	26	27	22	20	23	21
[illegible]e to total hard [illegible]rnings	11	8	10	15	16	17	17	16	15	17	16
[illegible]anding debt to total [illegible]ncy earnings	56	44	43	90	99	85	76	68	58	64	57
[illegible]e to drawings	53	42	55	28	43	108	115	95	163	87	212
[illegible] debt to total gross	NA	NA	NA	NA	NA	NA	19	18	20	29	20

[illegible]rency earnings from merchandise exports, sales of gold [illegible] invisibles, and transfers.
[illegible]m- and long-term debt.
[illegible]wings on medium- and long-term credits plus additions to [illegible] debt.

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Appendix C

Estimating Soviet Hard Currency Debt

Because the USSR does not release information regarding its financial position vis-a-vis the West, estimates of Soviet indebtedness must rely on Western financial reporting. Such reporting, however, continues to be seriously deficient in both scope and quality of coverage. This paucity of data has necessitated numerous, and sometimes tenuous, assumptions in calculating the structure and size of Soviet debt to the West. See table C-1 for a summary of the methodology used in estimating Soviet debt.

Table C-1
Methodology for Estimating Soviet Debt

Soviet liabilities =
Soviet official debt to NATO countries estimated from drawings data provided by NATO
Soviet official debt to Sweden, Switzerland, Austria, and Japan estimated by annual drawings based on machinery, equipment, and pipe trade
Commercial bank assets vis-a-vis the USSR as reported to the Bank for International Settlements (BIS)
Plus
Austrian bank assets for 1971-76
Swiss, Japanese, and Dutch bank assets estimated from the USSR–East European residual given in the quarterly BIS reports for 1971-76
Soviet promissory notes held in the West but not included in reporting to the BIS
Net Soviet borrowing outside the BIS reporting area
Less
Member bank assets held in the CEMA international banks
Government-supported credits included in member bank submissions to the BIS
Soviet Assets =
Commercial bank liabilities vis-a-vis the USSR as reported to the BIS
Plus
Austrian bank liabilities for 1971-76
Swiss, Japanese, and Dutch bank liabilities estimated from the USSR–East European residual given in the quarterly BIS reports for 1971-76

Commercial Debt

We use as the basis of our estimates of Soviet commercial debt reporting by the Bank for International Settlements (BIS) on the asset and liability positions of Western commercial banks vis-a-vis the USSR. The BIS series is adjusted to account for: (1) reported bank lending supported by official credit guarantees, (2) Swiss and Japanese bank positions reported to the BIS but not broken out with respect to the USSR until 1978, (3) Austrian bank positions not reported to the BIS until 1977, (4) net Soviet borrowing from outside the BIS reporting area, (5) Soviet promissory notes held in the West but not included in BIS reporting, and (6) net borrowing by the international banks of the Council for Mutual Economic Assistance (CEMA), which Western banks include in their position relative to the USSR.

From available data on officially backed export credits, we estimate that portion of bank lending that also is counted under our estimates of officially supported debt. Since we lack authoritative information on the amount of double counting, our estimates are subject to a wide range of error. For example, in 1981 we allowed for $750 million in double counting in estimating the USSR's debt. We believe that the actual total probably ranged between $500 million and $1 billion.

In the case of borrowing by CEMA's international banks, Western banks include their positions vis-a-vis the International Bank for Economic Cooperation (IBEC) and the International Investment Bank (IIB) in their position with the USSR. Using published IBEC and IIB balance sheets, we estimate that portion of Western bank net assets with the USSR that actually represents lending to the two international banks. We subtract these amounts from reported Western bank claims against the USSR to derive the position against the USSR alone.

Table C-2
USSR: Estimated Debt on Western Government and Government-Backed Credits

Million US $, yearend

	New Commitments	Drawings	Undrawn Commitments	Principal Repayments	Interest Payments	Yearend Position	
						Outstanding Debt	Total Commitments
1970	612	450	691	160	83	1,113	1,804
1971	373	511	616	223	106	1,401	2,016
1972	777	425	1,020	276	119	1,550	1,571
1973	1,415	495	2,704	338	133	1,707	4,412
1974	3,585	1,164	4,959	483	187	2,388	7,348
1975	2,311	1,972	5,394	730	284	3,630	9,025
1976	4,404	2,450	6,395	1,035	424	5,045	11,581
1977	2,892	1,991	7,923	1,285	492	5,751	13,736
1978	1,998	2,565	8,557	1,456	590	6,860	15,517
1979	2,292	2,410	6,748	1,700	670	7,570	14,396
1980	1,510	2,195	7,471	1,915	730	7,848	15,702
1981	4,900	2,000	10,200	2,000	750	7,850	18,600

This

With regard to double counting, apparently neither the BIS nor those familiar with Western bank reporting procedures can identify that portion of assets that member banks report to the BIS that is backed by government-credit guarantees. Reporting procedures and conventions appear to vary by country. We have assumed that officially supported credits have not constituted a sizable share of Western bank claims on the USSR. There are indications that a portion of officially supported credits held by French and Japanese banks is reported to the BIS, as are all officially supported nonsterling credits held by British banks and all officially guaranteed US credits. To date, the amount of UK loans not denominated in pounds sterling has been minimal, and US banks have not requested official credit guarantees on their loans to the USSR.

Soviet Debt Backed by Western Governments

Annual NATO reporting on official credits and on government-guaranteed Western credits to Communist countries is the primary data source for estimating the official portion of Soviet debt. Although the NATO reporting does not provide separate totals for each lender, it is preferred to that made available by the OECD because it contains more comprehensive reporting by member governments. Because of lags in the OECD reporting, we draw upon machinery and pipe trade data to supplement the NATO data for countries outside NATO. The separate estimates for the NATO group, Japan, Austria, Sweden, and Switzerland are then combined to derive total Western government-guaranteed debt (see table C-2).

From the aforementioned statistical sources, we have derived new commitments of guaranteed credits, drawings on these credits, outstanding undrawn commitments, outstanding debt, and total exposure. Since we must make a number of simplifying assumptions in computing these totals, we ascribe a 10-percent range of error to our estimates. The information on commitments apparently refers, in part, to offers of Western credit for specific projects. The estimate of Soviet exposure—as measured by total commitments reported by the West—is inflated to the extent that Western commitments have not been matched by Soviet orders for Western equipment, pipe, or other products that have yet to be delivered.

The NATO Countries. The NATO Economic Directorate mechanism of reporting on official credit extensions to the USSR has proved to be very useful in determining the hard currency debt position of the USSR. This reporting relies on data collected by NATO from member countries on a semiannual basis. The NATO report provides information both on officially guaranteed supplier and buyer credits as well as direct government export credits. NATO's report is not a reprint of individual member country reports, but an aggregation of these reports into a series of tables with analysis that highlights key aspects of the Soviet debt and finance position.

From the NATO and OECD data, we compile a time series composed of (1) new commitments of guaranteed credits, (2) total Soviet exposure (debt and undrawn commitments), (3) drawings on commitments, and (4) debt service payments. NATO does not report a total for Soviet debt on drawn commitments from member governments. Furthermore, debt cannot be directly computed from reported data because the NATO statistics are capitalized—that is, principal and interest are included in the totals reported by NATO.

Thus, we must also decapitalize the NATO total, which requires making an assumption about average terms of Western credits extended to the USSR. Because NATO does not report lending by individual member country nor does it report average interest rates and maturities, we have had to develop a series of average credit terms to apply against the aggregated data. To this data we apply as average terms a maturity of eight years with repayment of principal in equal installments. On the basis of information on the terms of individual credits to the USSR, we apply a 6.5-percent annual interest rate for credits committed before 1976, 7.2 percent for those committed during 1976-79, 7.6 percent for 1979 and 1980, and 7.8 percent for 1980. When used to decapitalize the NATO series, except for the years 1974 and 1975, these terms yield a debt service total that closely approximates the figures reported by NATO.

Using the average credit terms, we compute directly for the NATO time series: (1) new commitments of principal, (2) drawings of principal, and (3) total exposure on principal. Application of the average credit terms against estimated drawings in turn generates repayment schedules for both principal and interest. We estimated a beginning value for the debt series by computing the level of debt that would produce—given the assumed credit terms—NATO's published data on debt service for 1971. We constructed the debt series by adding cumulative drawings through each year to the 1970 base value and subtracting cumulative repayments of principal. Subtracting estimated debt from the decapitalized exposure totals yielded undrawn commitments.

The Non-NATO Countries. Estimates of Soviet drawings on credits from major government lenders outside NATO (Japan, Sweden, Switzerland, and Austria) were derived by applying to imports of machinery and equipment from these countries the ratio of imports of machinery and equipment from the NATO countries to the drawings reported by NATO. Repayments of principal and interest on drawn credits were computed using the same average terms applied to the NATO drawings series. OECD reporting is the basis for data on new commitments from Sweden, Austria, Switzerland, and Japan.

The computed initial value for each nation's debt series was constructed to conform with debt service estimates for 1971 and reported commitments. The debt estimates for subsequent years were computed in the same way as those for the NATO group. Undrawn commitments from Austria, Sweden, Switzerland, and Japan are calculated by subtracting total debt from total financial claims as reported to OECD.