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USSR–Eastern Europe: Confronting the Oil Question

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An Intelligence Assessment

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July 1987

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USSR–Eastern Europe: Confronting the Oil Question [redacted]

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An Intelligence Assessment

This paper was prepared by [redacted] the Office of Soviet Analysis, with contributions from [redacted] analysts in the Office of European Analysis. [redacted] 25X1 25X1 25X1

Comments and queries are welcome and may be directed to the Chief, Economic Performance Division, SOVA [redacted] 25X1

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USSR–Eastern Europe: Confronting the Oil Question [redacted] 25X1

Key Judgments

Information available as of 4 May 1987 was used in this report.

In the next year or two, Moscow will probably have to grapple with the dilemma of cutting soft currency oil exports to Eastern Europe or sharply reducing its oil sales for hard currency. We believe the USSR will not be able to sustain for long the 400,000-barrel-per-day (b/d) increase in oil production achieved in 1986. Without an increase in investment much greater than currently planned, we believe that by 1990 production will fall by about 1 million b/d, to a rate of 11.25 million b/d. Soviet domestic demand for oil during the period 1987-90 is likely to remain close to the current rate of 9 million b/d—even allowing for some success in conservation and fuel substitution measures—thus freeing no additional oil for export. [redacted] 25X1

Moscow's hard currency bind makes it unlikely that the Soviets would let deliveries to the West take the full brunt of production declines as they did in 1985. At current prices, a reduction in sales to the West comparable to the projected production decline could reduce hard currency oil earnings to under $5 billion, which is less than one-third of the peak revenues of almost $16 billion in 1983. Moscow has stepped up foreign borrowing and gold sales in the past two years to help cope with declining hard currency oil revenues, but we doubt that it will maintain the current pace over the longer term. The Soviets' net hard currency debt of about $22 billion is more than double the 1980 level, and Moscow appears hesitant to let it double again over the next few years, even if foreign bankers are eager to lend. [redacted] 25X1

Thus, in addition to the stiffer pricing terms the USSR is pushing on Eastern Europe, Moscow will probably cut soft currency oil deliveries to the region over the next few years. The size and timing of the cut will depend on trends in Soviet oil production and world oil prices. As with the 10-percent cut in 1982, even a small cut could make a difference in Moscow's ability to purchase Western goods on the margin. For example, a 5-percent diversion of oil from Eastern Europe to the West phased in between 1988 and 1990 would generate an additional $150 million the first year and almost $500 million in 1990, if world oil prices held at about $17 per barrel. A 10-percent diversion implemented at the beginning of 1988 would boost Moscow's annual oil earnings by roughly $1 billion. [redacted] 25X1

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Moscow will carefully weigh these potential benefits against the costs—economic and political—of reducing soft currency oil exports to the region. A cut of more than 10 percent seems unlikely. The Soviets have traditionally supplied oil to Eastern Europe on favorable terms to foster political and economic stability in the region. Oil deliveries make up almost 40 percent of the value of total Soviet exports to Eastern Europe. Therefore, a sharp cut could impede Gorbachev's efforts to get the region to meet more of the USSR's import needs through increased deliveries of better quality goods. [redacted] 25X1

The East Europeans would resist any Soviet effort to reduce soft currency deliveries. Although its nominal price is currently higher than world levels, Soviet oil is still a bargain for Eastern Europe because payment is largely made in soft goods. Moreover, the East Europeans would have difficulty replacing sizable cuts in Soviet oil deliveries and would see economic growth suffer. In addition, reduced Soviet oil deliveries would probably put a crimp in East European reexports of crude oil and oil products to the West for hard currency. [redacted] 25X1

A more serious conservation program in Eastern Europe would mitigate a reduction in Soviet oil deliveries, but success would require an extensive infusion of new capital—an effort already impeded by the slowdown of investment throughout the region. Attempts to replace Soviet oil with other energy sources would provide only limited savings because of the extremely tight energy balances in the region. Even Soviet gas deliveries above planned levels appear unworkable because Eastern Europe is unable to absorb the additional gas without massive expenditures to expand the gas pipeline network and convert plants to gas use. [redacted] 25X1

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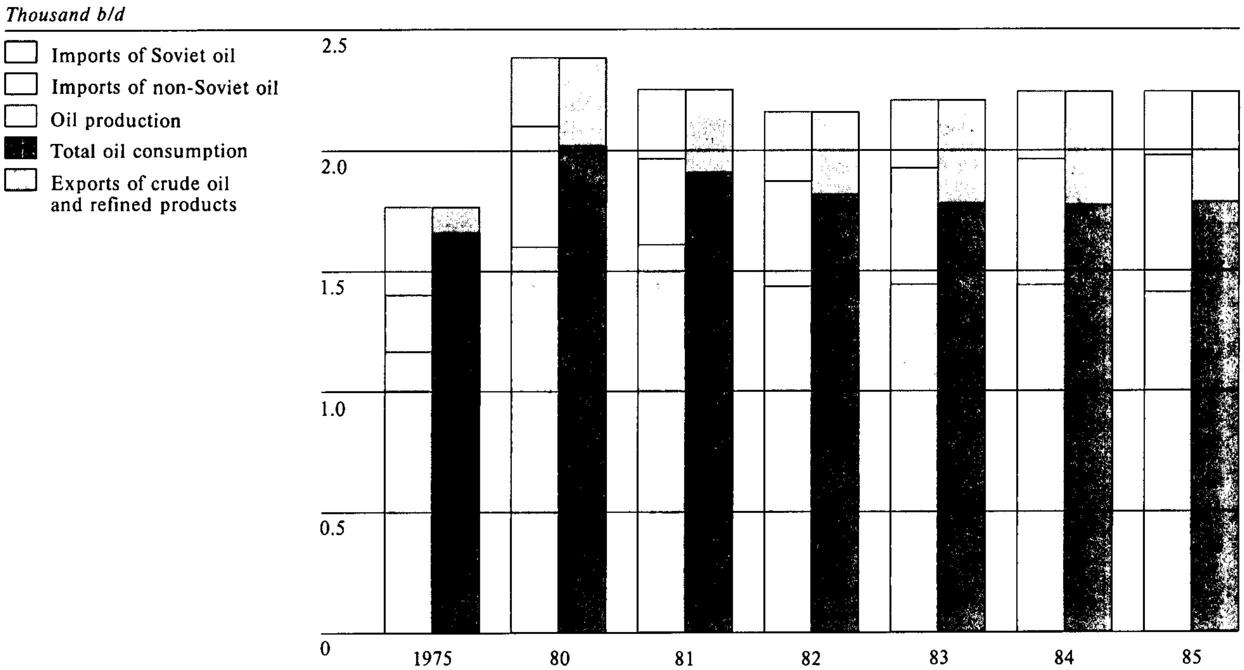
Figure 1
Eastern Europe: Oil Balance



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USSR–Eastern Europe: Confronting the Oil Question [redacted]

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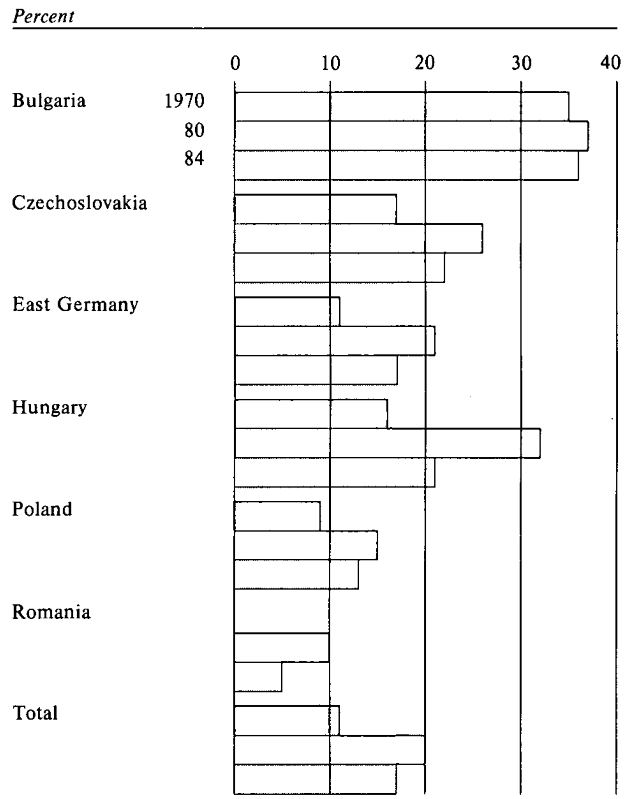
Two consecutive years of declining hard currency oil earnings have renewed speculation that the USSR might divert oil deliveries from Eastern Europe to the West.[1] The drop in hard currency oil revenues—1986 earnings of about $7 billion were just half the level recorded two years earlier—comes at a time when General Secretary Gorbachev probably is counting on purchases of Western technology and equipment vital to his modernization efforts. The Soviets, nonetheless, continue to direct roughly 40 percent of their total oil exports to Eastern Europe, almost entirely on soft currency arrangements. During Moscow's last hard currency crunch in 1981-82—which was also at the beginning of a new five-year plan—the Soviet leadership chose to cut Eastern Europe's oil deliveries by 10 percent and may opt to do so again if world prices remain depressed and Soviet oil production falters. [redacted] 25X1

Oil: The Linchpin of Trade . . .

Oil deliveries have for some time played a key role in Moscow's relationship with Eastern Europe. Soviet oil exports to Eastern Europe of 1.5 million barrels per day (b/d) constitute over 90 percent of the region's net oil imports and roughly 40 percent of the total value of Soviet exports to Eastern Europe. The region's dependency on oil began in the 1960s when it reduced its reliance on domestic coal in favor of oil. Eastern Europe's net oil imports of just 40,000 b/d in 1960—about 1 percent of primary energy consumption—climbed to over 1.7 million b/d by 1980, or a fifth of primary energy consumption. The Soviet Union was the chief source of the import surge, supplying Eastern Europe with almost 1.6 million b/d by 1980 (see figures 1 and 2). [redacted]

Figure 2
Eastern Europe: Net Oil Imports as a Share of Total Energy Consumption



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[1] Eastern Europe refers to the six East European members of the Council for Mutual Economic Assistance (CEMA): Bulgaria, Czechoslovakia, East Germany, Hungary, Poland, and Romania. [redacted]

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Eastern Europe's growing dependence on Soviet oil can largely be explained by the favorable payment terms Moscow provided. The Soviets did not raise oil prices to Eastern Europe during the first OPEC price explosion in 1973, and, although the USSR modified the CEMA pricing mechanism in 1975 to benefit from rising world oil prices, CEMA oil prices still lagged considerably behind world levels (see inset). Moreover, Moscow did not require payment in hard currency and was willing to tolerate large trade deficits once the CEMA oil price began to rise, tilting the terms of trade heavily in Moscow's favor. This arrangement shielded most of Eastern Europe from the worldwide oil price shocks of 1973 and 1979 and provided a continuing subsidy as world oil prices climbed. [redacted]

The USSR'S willingness to provide this assistance hinged on economic and political factors. Moscow's initial decision to subsidize oil deliveries may have been made because the cost was small. But even as the growth in world oil prices made the program more costly, overall trade with the region was still characterized by a net flow of real resources from Eastern Europe to the USSR. Supplying oil to Eastern Europe on easy terms also furthered Soviet interest in fostering political and economic stability in the region. Making Eastern Europe dependent on the USSR for oil has helped Moscow to maintain some control over the region and extract unconventional gains from trade, such as Eastern Europe's contributions to Soviet security through manpower and military bases. [redacted]

... But Also a Center of Controversy

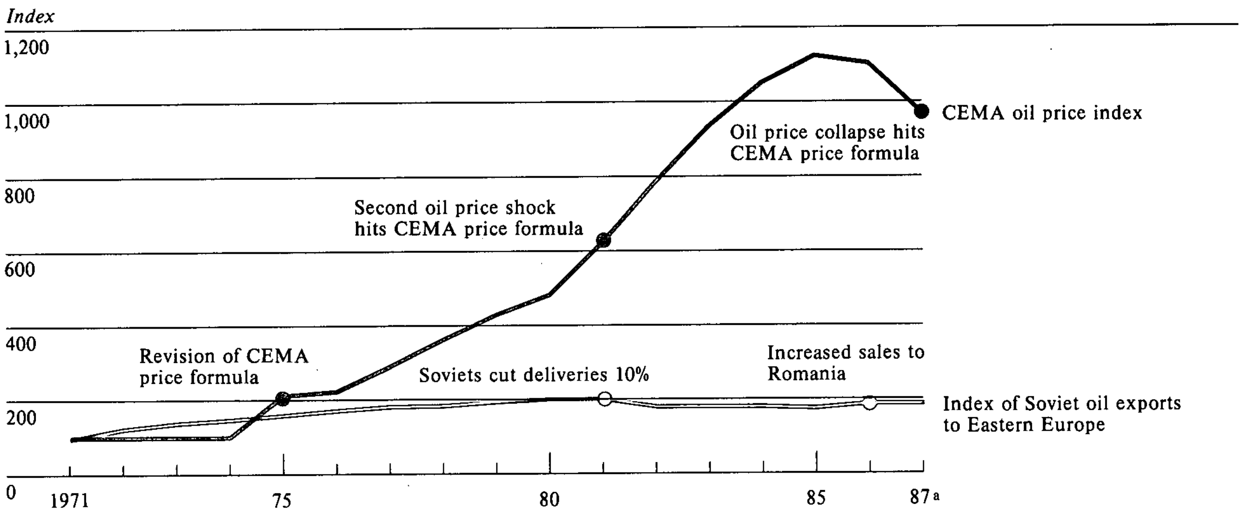
The Soviet–East European oil connection has produced disagreements, especially during Moscow's periodic attempts to reduce the growing economic burden of its policy. Moscow has apparently been willing to test how much of the costs can be passed on to Eastern Europe without jeopardizing Soviet leverage and regional stability. The 1974 revision of the CEMA oil pricing formula, for example, caused prices to rise by more than 100 percent by 1975, forcing Eastern Europe to divert goods from domestic and hard currency markets to the Soviet Union to pay for the higher priced oil (see figure 3). According to US Embassy reporting, the East Europeans fought off

Oil Pricing in Intra-CEMA Trade

Although world oil prices serve as the basis for CEMA oil prices, various formulas have been adopted over the past three decades. Until 1974, prices in intra-CEMA oil trade were set at five-year intervals, based on the average of world oil prices during the preceding five-year period. With prices for the period 1971-75 set at the average world oil price for 1966-70, the boost in OPEC prices in 1973 had no immediate impact on CEMA prices except to create a large gap between CEMA and world oil prices. To reduce this discrepancy, the Soviets changed the pricing system to allow CEMA oil prices to adjust more rapidly to world prices. The new method calculated CEMA oil prices in 1975 as the average of world prices during 1972-74, and, beginning in 1976, prices were to change annually according to average world oil prices during the previous five years. For example, in 1976 the CEMA price was approximately $6 per barrel and the world price was $12 per barrel. Following the second oil price shock, the CEMA price climbed to only $13 per barrel in 1980, while the world price jumped to $31 per barrel. [redacted] 25X1 25X1

Actual oil prices charged the individual CEMA countries have sometimes differed from the CEMA pricing formula because of special pricing arrangements on a portion of oil deliveries worked out between Moscow and the individual countries. [redacted] 25X1 [redacted] *under one such arrangement, Czechoslovakia received 5 million tons of crude oil annually between 1973 and 1984 at a fixed price of 15 rubles per metric ton (or $3 per barrel) in exchange for Czechoslovak investments in the Soviet Union. East Germany may have had a similar arrangement with the USSR. Romania, on the other hand, until recently paid for its Soviet oil in hard currency or hard goods at world market prices. To the extent Moscow accepts overpriced East European manufactured goods in exchange for oil—a claim Moscow has made repeatedly—the real price charged each country becomes even more blurred. Moreover, official Soviet and East European exchange rates—dollar to ruble or ruble to some East European currency—do not accurately reflect resource costs and further distort an estimated "dollar price" of CEMA oil.* [redacted] 25X1 25X1 25X1

Figure 3
Chronology of Soviet-East European Oil Trade



a Projected

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a Soviet plan to accelerate the rise in CEMA oil prices following the second surge in OPEC prices in 1979-80. As it was, the CEMA oil price rose 35 percent between 1978 and 1980, but it would have climbed almost 140 percent had Moscow charged the world price.

Perhaps of even greater concern to the East Europeans has been Moscow's efforts to limit the growth of oil deliveries. To meet their own growing oil needs—both domestically and for export to the West—the Soviets initially proposed that annual oil deliveries during the period 1976-80 be kept at the 1975 level of 1.2 million b/d. They eventually eased the limitations because of the region's willingness to undertake new investments in the USSR and growing economic difficulties in some of the countries. Nonetheless, the average annual growth in Soviet oil deliveries to the region in 1976-80 was only half the 10-percent average annual growth registered in 1971-75. The slower growth in oil deliveries was probably a contributing factor to the estimated 60-percent slowdown in GNP growth recorded by Eastern Europe in the second half of the 1970s. 25X1

The Soviets again sought to curtail growth in oil deliveries during 1981-85. In 1979, then Soviet Premier Kosygin publicly stated that annual deliveries of crude oil to Eastern Europe were to remain at approximately 1980 levels over the next five years. East European trade statistics confirm that the Soviets did indeed limit oil exports to Eastern Europe in 1981 to roughly the 1980 level of 1.6 million b/d. This was the first time in over 10 years that oil deliveries had not increased from one year to the next. 25X1 25X1

The most telling blow came in the fall of 1981 when Moscow informed most of its Eastern Bloc allies—the one notable exception being Poland—that soft currency oil deliveries would be cut beginning in

1982.[2] Authoritative statements by both East European and Soviet officials up to that time provided little warning of the impending shock. For example, Erich Honecker, the East German Communist Party leader, speaking at that party's national congress in April 1981, assured his audience that annual deliveries of oil from the USSR "have been securely agreed upon on a long-term basis." Shortly thereafter, the Secretary General of CEMA reiterated that "under no circumstances" would Moscow reduce oil deliveries to Eastern Europe before 1985. Despite these assurances, annual deliveries to Czechoslovakia, East Germany, Hungary, and possibly Bulgaria were each cut by about 10 percent, or almost 200,000 b/d total for the region. The decision to spare Poland—which was in a state of economic and political turmoil at the time—reflects the Soviet decision not to push any one country over the brink. [redacted] 25X1

Moscow's desire for increased hard currency revenues—not increased domestic oil needs—was probably the major factor in the cuts because record grain purchases in 1981 pushed imports to an alltime high when world oil prices were beginning to fall. The Soviets also may have believed that the East Europeans were not making adequate progress in either conserving oil or finding alternative oil supplies despite Moscow's continual prodding. The countries singled out by the USSR had, as a group, boosted reexports of Soviet oil to the West in 1980-81 to twice the 1979 level, thus earning hard currency at Soviet expense. The 350,000-b/d increase in Soviet oil exports for hard currency between 1981 and 1982—while Soviet oil consumption increased only 100,000 b/d—supports the argument that hard currency needs were at the heart of the decision. [redacted]

Since 1982, Moscow has leaned on Eastern Europe in other ways. The Soviets have stepped up pressure on the region to raise the quality and quantity of its exports to the USSR in payment for oil and other raw materials. At the CEMA Council meeting in October 1983, Soviet Premier Nikolay Tikhonov announced a tougher policy on trade with Eastern Europe:

- Eastern Europe would have to export more and better quality machinery, foodstuffs, and consumer goods to the USSR to continue receiving energy and raw materials.
- The region would have to help shoulder the increasing costs of Soviet energy production by investing in energy development projects in the USSR. [redacted] 25X1

The USSR repeated these demands in June 1984 when East European party leaders met in Moscow for the first CEMA economic summit in 15 years. In response, Eastern Europe agreed to boost exports and undertake a number of projects benefiting the USSR:

- Poland agreed to build a series of compressor stations for the Progress Gas Pipeline.
- East Germany was slated to build plants and supply equipment for the Soviet oil and gas industry.
- Romania planned to invest and participate in offshore oil development in the Caspian Sea and to increase deliveries of meat and grain. [redacted] 25X1

Tensions over the CEMA oil-pricing formula were evident at the 1984 CEMA summit. Pressures from both sides for change apparently led to a decision to consider pricing alternatives. At the postsummit press conference, a Soviet official noted that the five-year moving average would be replaced by a new system that would better reflect current world price levels. [redacted] 25X1 25X1 however, the CEMA foreign trade commission in December 1984 decided to maintain the status quo and to set foreign trade prices during the period 1986-90 according to the established formula. [redacted] 25X1

The issue resurfaced in 1986. According to the US Embassy in Berlin, prices of both Soviet and East European goods were a contentious issue at the summit among CEMA party officials in Moscow last November. Although no public declaration was made, [redacted] a compromise solution 25X1

[2] Eastern Europe was given the opportunity to acquire additional quantities of Soviet oil for hard currency, but poor financial conditions throughout most of the region ruled out any large purchases. [redacted] 25X1

was reached. Recent Polish press releases, however, indicate that Poland is paying the CEMA oil price in 1987, suggesting that no binding agreement was reached on an immediate revision of the CEMA pricing formula.

The Tables Are Turned

Moscow has not reduced oil deliveries to Eastern Europe even though its hard currency oil trade picture has darkened considerably in the past two years. A 300,000-b/d fall in domestic oil production—including natural gas liquids—in 1985 resulted in a decline of the same amount in oil exports to the West, costing Moscow about $3.7 billion in hard currency. The Soviets maintained deliveries to Eastern Europe that year at the 1982-84 level of 1.4 million b/d. Although Moscow did not publicly provide any reasons for sparing Eastern Europe, it is likely that the 1985 production drop was seen as only temporary, and the Soviets did not want to strain relations when they were pushing for still closer economic integration with the region. The dent in Soviet hard currency oil earnings was offset by increased gold sales, additional borrowing from the West, and a reduction of hard currency imports.

By favoring East over West, however, the Soviets were left in a weakened hard currency position when oil prices unexpectedly collapsed in early 1986. A 400,000-b/d rebound in domestic oil production last year enabled Moscow to boost oil deliveries to hard currency markets by roughly 100,000 b/d, but it was not enough to offset the price decline.[3] Estimated total hard currency oil earnings plummeted by over $4 billion in 1986 to roughly $7 billion. Although part of last year's decline in oil earnings was offset by an estimated $2 billion increase in arms exports, much of the gain was only on paper, as Moscow extended credits to the LDCs to finance a large portion of these sales.

[3] Deliveries to Eastern Europe also increased in 1986, with Romania receiving an additional 80,000 b/d. Unlike the past, when Bucharest had purchased Soviet oil with hard currency at world prices, the 1986 deliveries were apparently priced at the CEMA level on a soft currency basis, according to US Embassy reporting from Bucharest.

Moscow again responded to low export earnings by increasing gold sales and continuing heavy borrowing in Western financial markets. Nonetheless, Soviet hard currency imports dropped by more than 10 percent during the year, a cut made somewhat less painful because of Moscow's reduced need to import grain in the wake of last year's good harvest. Moscow's financial position is more precarious than it was in the fall of 1981 when it chose to cut Eastern Europe's oil rations. Its net hard currency debt has increased by 100 percent since 1981 to approximately $22 billion, and its debt service ratio climbed from 14 percent in 1984 to 25 percent by yearend 1986 (see table).

Moscow's hard currency oil earnings are projected to remain depressed for the foreseeable future—annual revenues through 1990 are likely to average less than $7 billion at current prices, about half the average annual oil revenues for the period 1981-85. A projected production decline adds to the problem of low energy prices; we believe the USSR will not be able to sustain for long the 400,000-b/d pickup in oil production achieved in 1986.[4] Our judgment is that oil production could begin falling by the end of 1987 and—without an increase in investment much greater than currently planned—will drop from the 1986 rate of 12.3 million b/d to a rate of about 11.25 million b/d by 1990. Moreover, the USSR's domestic oil demand in 1987-90 is likely to remain close to the current rate of 9 million b/d (see inset). As Gorbachev pushes forward with his industrial modernization program, demand for oil will pick up in some sectors of the economy and offset success in conservation and fuel substitution elsewhere.

If Moscow takes the brunt of production declines in reduced exports to the West as it did in 1985 and if oil prices remain constant, annual hard currency oil revenues could fall below $5 billion by 1990. Other

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Table 1
USSR: Selected Hard Currency Indicators [a]

Billion current US $
(except where noted)

	1979	1980	1981	1982	1983	1984	1985 [d]	1986 [d]
Merchandise trade balance	1.8	1.8	0.4	4.5	4.7	4.7	0.5	2.0
Exports, f.o.b.	23.2	27.9	28.3	32.0	32.4	32.2	26.4	25.1
Oil	9.6	12.3	12.2	14.8	15.6	15.1	11.4	7.0
Imports, f.o.b.	21.4	26.1	27.9	27.5	27.7	27.4	25.9	23.1
Gross debt	19.7	18.8	20.0	19.4	21.0	21.5	28.2	36.7
Net debt [b]	10.3	9.5	10.8	8.3	8.9	10.0	14.9	21.7
Debt service ratio [c] *(percent)*	20	17	16	13	15	14	22	25

[a] Totals may not add because of rounding.
[b] Net debt is gross debt minus assets held in Western banks.
[c] The debt service ratio is defined as the percentage share of payments of principal and interest on Soviet debt in total hard currency receipts and is a widely used indicator of a country's financial soundness.

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than maintaining a high volume of gold sales and increasing borrowing, the USSR has few options to counter these declining revenues:

- An estimated 50-percent increase in the volume of gas exports by 1990 will only partially compensate for falling earnings from oil exports as lower gas prices—following that of oil—will depress gas revenues.

- The level of arms sales is tightly linked to the oil market, and we doubt that Moscow can greatly expand these exports as long as depressed oil prices weaken the economies of major arms purchasers in the Middle East.

- Attempts to boost exports of nonoil commodities—such as machinery and equipment and raw materials—are likely to have limited success given generally weak demand for raw materials and Western resistance to shoddy Soviet manufactured goods.[5]

Low energy prices will further strain trade relations with Eastern Europe.[6] As the fall in world oil prices is worked into CEMA oil prices, it could complicate Gorbachev's efforts to extract more resources from his allies and possibly result in reversing the creditor-debtor roles in the Soviet–East European economic relationship. CEMA oil prices are projected to fall by a third between 1986 and 1990 (see figure 4). Lower energy prices could create Soviet trade deficits beginning as early as this year, not only enabling Eastern Europe to repay its trade debt to the USSR—estimated to be at most 16 billion rubles—but also possibly making the Soviets debtors to Eastern Europe by 1990 if no adjustments were made to current five-year trade plans. 25X1

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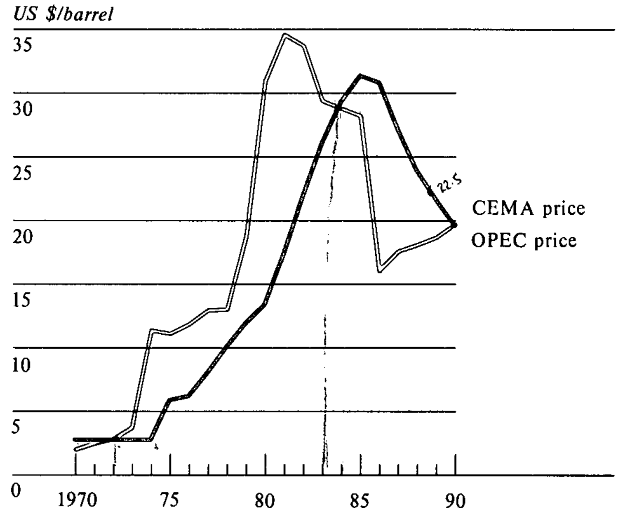
The USSR's Domestic Demand for Oil in 1987-90

Domestic demand for oil is likely to remain close to the current rate of 9 million b/d as Gorbachev pushes forward with his industrial modernization program. Most of the easy gains in substituting gas for oil have already been made, especially for boiler fuel in electric power generation. A further decline in the power industry's use of oil is possible—as much as 300,000 b/d oil equivalent by 1990 if coal supplies increase, nuclear power plant construction accelerates, and hydropower generation is not constrained by low water levels. Additional gas substitution—though technically feasible—is likely to be constrained by the lack of feeder pipelines and control instrumentation. 25X1

Forced conservation through reduced oil allocations, though possible, is risky. Most Soviet enterprises lack the proper measurement and control instrumentation to effectively monitor and adjust their expenditure of fuel (either oil or gas). Given the heavy emphasis on rapid output growth in the energy-intensive sectors of the economy, such as machine building and metalworking, it seems unlikely that much forced conservation could occur without seriously jeopardizing Gorbachev's plans for modernization.

The modernization program will also increase demand for more light fractions in the mix of refined oil products (gasoline, jet fuel, diesel fuel). Importing refining equipment from the West would be the fastest and technically most efficient option to meet increases in demand, but could cost over $1 billion in hard currency.

Figure 4
Eastern Europe: Nominal Crude Oil Prices[a]



[a] OPEC prices are assumed to climb to almost $20 per barrel by 1990.

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Old Options Revisited
Faced with the prospect of reducing imports or increasing indebtedness in its trade with East and West, Moscow is likely to reexamine its oil export policies toward Eastern Europe.

Altering CEMA Prices. Although Moscow has no control over world oil prices, or hard currency markets, it has more flexibility regarding CEMA oil prices. The effective oil price received from Eastern Europe is a function not only of the CEMA formula but also of the value of East European goods received in exchange, both of which the Soviets have sought to change in the past. With the official CEMA price still well above world oil prices, it is unlikely that Moscow would seek to alter the CEMA pricing formula in the near term. (Indeed, Moscow may have to fend off East European pressures to lower CEMA oil prices.) 25X1 25X1

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Moscow's efforts are more likely to be directed at acquiring lower prices for imports from Eastern Europe in exchange for oil. Price concessions could go a long way toward maintaining the real growth of East European imports at rates that had been agreed on before the fall in world energy prices. For example, a 5-percent across-the-board reduction in Eastern Europe's export prices could offset the loss in Moscow's purchasing power resulting from a roughly $10 drop 25X1 in the CEMA price of oil. Alternatively, the Soviets might opt to increase pressure on Eastern Europe to provide higher quality goods without an increase in price.

The East Europeans, for their part, would resist efforts by Moscow to change trade terms that are now moving in their favor. They hope that lower priced Soviet oil will allow them to reduce the growth rate of exports to the Soviet Union and instead to use the resources domestically. Eastern Europe's economic outlook is dimmed by many of the same problems facing Soviet planners—raw material constraints, limited hard currency import capacity, and outdated technology—and most of the countries are particularly anxious to restore the investment cuts of recent years. The East Europeans would also like to boost hard currency oil and petrochemical export revenues that are lagging because of current world oil prices. Their plastic, chemical, and petroleum refinery industries have continued to take advantage of the differential between higher Western prices and inexpensive Soviet oil, even after the 1982 reduction in Soviet oil deliveries. Now that the price advantage has narrowed during the last five years, so have profits on reexports of Soviet oil and other commodities that use the oil as an input.

Another Round of Soft Currency Oil Cuts? Given their hard currency dilemma, the Soviets will probably consider cutting soft currency oil deliveries to Eastern Europe to free oil for hard currency sales. One option would be an immediate cut in soft currency oil deliveries similar to the 10-percent cut in 1982, or perhaps a cut introduced in phases over several years. Another option, which amounts to a de facto cut, would be for Moscow to require hard currency payment for a portion of the oil now delivered to Eastern Europe on soft currency terms. In the past the East European countries have purchased Soviet oil outside trade protocols for hard currency. Although the lack of data precludes an exact breakdown of deliveries between hard and soft currency purchases, we believe that Hungary and East Germany have purchased marginal amounts of Soviet oil at world prices in exchange for hard currency or hard goods.[7] Romania, until recently, has been required to pay in hard currency or hard currency goods for nearly all of its imported Soviet oil. 25X1

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Moscow would have to weigh carefully the costs and benefits of cutting soft currency oil exports to the region. Given low world oil prices and some continuing waste in oil consumption, Eastern Europe could probably absorb marginal cuts in Soviet oil deliveries without much damage to economic growth, especially if the cuts were implemented over an extended period—say three years. But small, gradual reductions would only partially offset the decline in Moscow's hard currency oil revenues. For example, a 5-percent diversion of oil from Eastern Europe to the West, phased in between 1988 and 1990, would increase the Soviets' annual hard currency oil revenues by approximately $150 million the first year and $450 million by 1990 if world oil prices held at about $17 per barrel. A 10-percent cut implemented at the beginning of 1988 would boost Moscow's annual oil earnings by roughly $1 billion (see figure 5). To match the $2.1 billion generated by the 10-percent cut in 1982, Moscow would now have to trim deliveries by almost 25 percent. 25X1

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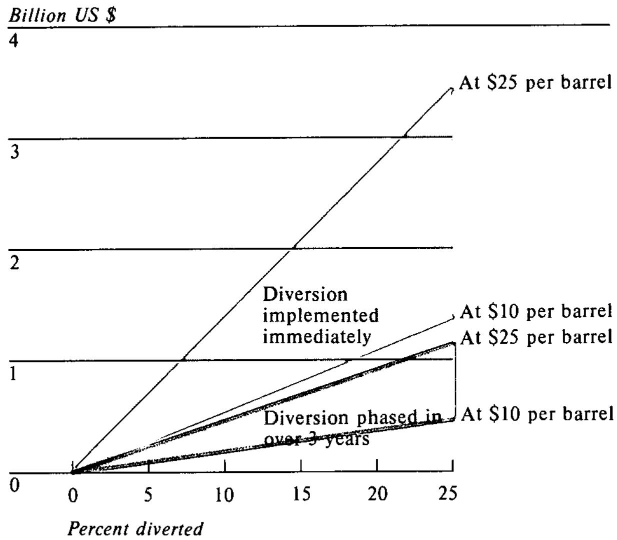
Nevertheless, even small gains in hard currency earnings would benefit Moscow's purchasing power in the West at the margin. We estimate that a $1 billion increase in annual hard currency revenues, above our current projection for 1988 and 1990, could enable Moscow to boost hard currency imports by 5 percent annually. Even a small boost in annual hard currency oil earnings of less than $1 billion could be a contributing factor in Moscow's plans to undertake those projects that depend on imports of Western machinery and equipment. 25X1

A sharp cut in deliveries to Eastern Europe at a time when Gorbachev is pressing these countries to meet more of the USSR's import needs could be self-defeating. Although the East Europeans would probably not argue openly with the cuts, they might use

[7] Moscow may also receive hard currency or hard goods as payment for those oil deliveries to East Germany that East Berlin refines and reexports to the West. 25X1

Figure 5
USSR: Hard Currency Revenues From Diversion of Oil From East to West[a]



[a] Diversions based on Soviet oil deliveries to Eastern Europe of 1.5 million barrels per day.

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them as an excuse to drag their feet on deliveries of better quality goods. Such foot-dragging occurred last year when economic disputes between Moscow and Berlin reportedly contributed to a decline in East German exports to the USSR. Moreover, with oil making up 40 percent of the value of total exports to Eastern Europe, sharp cuts that reduced Soviet–Eastern Europe trade could also impede Moscow's efforts to develop joint enterprises and to increase cooperation in science and technology. [redacted]

Impact on Eastern Europe

Although the East Europeans could probably cope with price adjustments or minor reductions in Soviet-supplied oil, they have few means at their disposal to offset sizable cuts in oil deliveries. The impact of an oil cut on GNP would vary by country and would depend on several economic factors, including the structure of the economy, the efficiency of energy use, and the state of technology. Poland—if its imports were cut this time around—would probably be most affected, while Romania would be hurt the least. According to our estimates, a 10-percent cut in oil deliveries to Eastern Europe could reduce annual GNP growth for the region by as much as 3 percentage points, if no adjustments were made. These estimates are based on historical patterns of East European oil consumption, trade, and domestic production. [redacted] 25X1

Reduced Soviet oil deliveries would probably put a crimp in East European trade with the West. The region continues with the brisk sales of oil and oil products—some of which are of Soviet origin—for hard currency. Eastern Europe earned well over $4 billion in both 1984 and 1985 from hard currency sales of oil and oil products—roughly 10 to 15 percent of annual hard currency exports—but saw oil earnings plummet over $1 billion in 1986 as oil prices dropped. Indeed, Eastern Europe's overall hard currency position is deteriorating, with prospects poor for a turnaround in the near term. A cut in Soviet oil imports would probably force some reduction in sales to the West, further depressing hard currency earnings. To offset the loss in hard currency purchasing power, the East Europeans would have to increase borrowing in the West, reduce imports, or find ways to boost nonoil exports. [redacted] 25X1 25X1

The prospects for replacing sizable Soviet oil cuts with imports from OPEC sources are not favorable, even at current low prices. Despite the East Europeans' grumbling over the CEMA oil price, Soviet oil is still preferable to hard currency purchases. Indeed, Romania's recent willingness to pay the CEMA oil price for the right to purchase Soviet oil without expending hard currency underlines the significance the East European regimes attach to clearing account arrangements. The bulk of current transactions with the Middle East takes place on a barter basis, often with the oil exchanged for construction services and manufactured goods, including arms, but reduced earnings have forced the OPEC countries to scale back development projects that usually involve East European inputs. In addition, the Middle Eastern countries continue their attempts to increase nonoil exports to Eastern Europe. [redacted] 25X1 25X1

A more serious energy conservation program in Eastern Europe would also mitigate the effects of lower Soviet oil supplies, but the costs would not be cheap. The oil conservation drive of the early 1980s, aimed at high-volume oil consumers, has met with mixed success in most of the region. Moreover, to tap additional oil savings through technological adjustments, the conservation effort must focus on marginal savings from the large array of small to medium users. Measures that have received little attention in the past include:

- The upgrading of inefficient boilers and furnaces.
- Improved insulation, especially in apartments or along heat-carrying pipelines.
- Better monitoring of consumption through the installation of metering devices.

Success, however, would require an extensive infusion of new capital, an effort already seriously impeded by the slowdown of investment throughout the region.

As with conservation, most of the easy energy substitutions for oil were made in the early 1980s, especially the replacement of a number of oil-fired power plants with those that burned coal. Since most energy supplies in Eastern Europe are already tight, any attempt to replace lost Soviet oil with alternative domestic fuels would probably cause energy shortages elsewhere. Likely shortfalls in planned additions of nuclear power and coal production over the next several years will further aggravate the problem.

Although increased deliveries of Soviet gas above planned levels would appear the best bet to offset a decline in Soviet oil, a number of factors indicate that even this option has limitations. Published CEMA plans for 1986-90 indicate that, even with stable Soviet oil supplies, Soviet gas deliveries for the period are to be one-third larger than the 1981-85 total. On the basis of past trends in Eastern Europe's absorption of Soviet gas, we believe increased gas deliveries substantially above this amount would overwhelm the region's ability to provide the capital necessary to use the gas.[8] In addition, Eastern Europe's commitments to help build the Progress Gas Pipeline over the next four years could cause shortages of skilled labor needed for use on domestic pipelines. 25X1

Near-Term Outlook

There are no indications that reductions of soft currency oil deliveries are imminent. As noted earlier, the Soviets boosted deliveries to Romania by 80,000 b/d last year, and press reports have indicated that Poland, Czechoslovakia, and Hungary may also have received marginal increases. Moreover, Moscow is in a relatively good position to honor this year's commitments—East German press reports indicate that imports of Soviet oil in 1987 will remain at the 1986 level. Indeed, with oil production still high, Moscow plans to increase sales to soft currency partners Finland, Yugoslavia, and India, according to Western press reports, to help cut into rising trade deficits resulting from low oil prices. The oil industry trade press has not reported unusual Soviet behavior in 25X1 Western oil markets, which suggests that Moscow has not responded to low world oil prices by significantly boosting export volumes to hard currency markets. Indeed, oil exports to the West declined in the first quarter of 1987 because of oil production problems and increased domestic consumption associated with the harsh winter. 25X1

On the pricing issue, however, Moscow is likely in the near term to continue its heavy prodding of Eastern Europe to supply better quality goods in exchange for oil. 25X1 Oleg Bogomolov, director of the Main Soviet Institute for Research on CEMA, hinted at such an approach in statements made last year to East European journalists and to US Embassy officers. On both occasions, he said that Moscow pays twice the amount it should for East European goods, suggesting that the Soviets still see bargaining room regarding East European prices. Other Soviet officials apparently hold views similar to Bogomolov's. 25X1
25X1 the Soviets responded to a Hungarian request for lower oil prices sometime during 1985-86 by reminding the Hungarians that 60 percent of

[8] Moscow would need to supply an additional 6 billion cubic meters of gas annually for each 100,000-b/d cutback in oil. 25X1

the machine tools manufactured by Hungary were of insufficient quality for sale in the West, yet were purchased by the USSR. They implied that, if the Hungarians contested oil prices, they would review their purchases of machinery from Hungary.

Moscow is likely to increase pressure on Eastern Europe for increased participation in joint ventures and exchanges of science and technology as a means of indirectly increasing the costs of Soviet oil supplies. Moreover, when formalizing agreements on compensation for Eastern Europe's investment in Soviet development projects, Moscow is reportedly trying to tie the price of future energy deliveries associated with the given project to the prevailing CEMA oil price in the year the agreement is signed. If completed within the next few years, such agreements would lock in a relatively high CEMA oil price on at least some oil deliveries to Eastern Europe, even as CEMA prices continue falling.

Approaching the pricing issue on the quality side would appear to be the easiest avenue over the short run, considering the difficulties of past efforts to revise the pricing formula. Moreover, recent discussions among CEMA members suggest that problems within the CEMA trading network go beyond just prices based on a five-year moving average. The Hungarians, for example, have been particularly vocal with their concerns about exchange-rate issues and the use of the "transferable ruble" in Bloc trade. Such issues suggest that CEMA may wish to forgo piecemeal adjustments to the system—such as coming up with a new pricing accord—since other serious shortcomings would continue to complicate trade.

Beyond 1987

Although Moscow's oil commitment to Eastern Europe beyond 1987 is less certain, we believe that Moscow will confront Eastern Europe with a decision to cut soft currency oil deliveries. So far, the only evidence that reductions may be under consideration is one line in Poland's 1986-90 plan that states Soviet deliveries of gasoline and fuel oil are expected to diminish. No quantities were mentioned, nor was there any indication that increased crude oil would replace the reduced deliveries of refined products.

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Our projection of declining Soviet oil production beyond 1987 leads us to believe that Moscow will have little choice but to cut soft currency oil deliveries to Eastern Europe sometime before 1990. The size of the cut is much more difficult to predict, but we believe it will be small. Moscow could earn about $700 million in hard currency for each 100,000 b/d reduction in deliveries to Eastern Europe. It is keenly aware, however, that a sizable cut—probably greater than 10 percent or more than 150,000 b/d—could jeopardize both economic and political stability in some East European countries and lessen Moscow's leverage over the region. 25X1

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Within the next few years, a number of countries in Eastern Europe are likely to be wrestling with both political and economic problems. Every country in Eastern Europe—with the probable exception of Poland—could face the transition to a new leadership by 1990. Serious hard currency problems remain in Poland and could surface again soon in Hungary and Romania. Moreover, large cuts could impede Gorbachev's efforts to get the region to meet more of the USSR's import needs through better quality goods and participation in Soviet raw materials development projects. 25X1

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Stable or increasing world oil prices would help the Soviets keep reductions in oil deliveries to Eastern Europe to a minimum or even postpone the need for an oil cut. Rising prices may even help offset small declines in Soviet oil production by stabilizing hard currency oil revenues. For example, a drop in production of 100,000 b/d can be roughly offset by a 10-percent price hike. Another price war that lowers oil prices over an extended period, however, would prompt Moscow to consider cutting Eastern Europe's oil supplies even if Soviet oil production rates fell minimally. Although oil deliveries to Eastern Europe were not cut last year when prices fell, Moscow's rising indebtedness may make it less generous the second time around, especially if lower prices are coupled with a sharp drop in domestic oil production. Moreover, Gorbachev would not hesitate to risk pushing the East Europeans harder than before if he felt his own domestic programs were at stake. Such a move might be made easier if Eastern Europe proved unable—or unwilling—to provide much help to his program. [redacted] 25X1

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