CHAPTER 13

Soviet Energy Availability and U.S. Policy

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The Soviet energy situation was brought to the attention of the U.S. public in 1977 when the Central Intelligence Agency (CIA) forecast substantial and steep declines in Soviet oil output by 1985.[1] Although it has since modified its position, the C I A as late as April 1980 was predicting that the Council for Mutual Economic Assistance (CMEA) would be importing "at least" 1 million barrels of oil a day by 1985.[2] The possibility of impending Soviet energy shortages and of increased competition for oil on world markets thus raised a policy debate in the United States, a debate framed largely in terms of whether or not. it is in the best interest of the United States to institute a policy of helping the Soviet Union increase its energy production.

Some favor a policy of promoting American exports of energy production technology to the Soviet Union in order to increase the world total available supply of energy, to obviate extensive CMEA. A pressure on world energy markets, and/or to reduce the likelihood that the U.S.S.R. would intervene in the Middle East to acquire oil it could no longer produce in sufficient quantities at home. Adherents of the opposing view contend that assisting the development of Soviet energy resources would help to strengthen the economy of an adversary and or that such assistance may convey direct or indirect military benefits. The concern here is with the transfer of dual-use technologies which have military application and/or the view that oil itself is a strategic commodity. Another dimension of this position is concerned with the prospects of increasing Soviet energy (i. e., gas) exports to Western Europe and the dangers of increased West European energy "dependence" on the U.S.S.R.

Whichever view one holds, the most direct means by which the United States might affect Soviet energy availability would be by deciding to export or withhold exports of energy (particularly petroleum) equipment and technology to the U.S.S.R. Alternatives for formulating a policy on U.S. energy-related exports to the Soviet Union can be broadly divided into four basic categories:

- policy options designed to bar the transfer of Western energy equipment and technology to the U.S.S.R.;
- policy options designed to use the inducement of increased exports or threat of curtailing production equipment and technology exports to exact political concessions from the Soviet Union, i.e., options designed to further a policy of linkage or leverage;
- policy options designed to facilitate Soviet energy resource development as quickly and efficiently as possible, in order to mitigate future energy shortages in the world as a whole; and
- policy options designed to reap whatever commercial advantages may be available from trade with the U.S.S.R. in all items except those of direct military relevance.

[1] **Central Intelligence Agency,** *Prospects for Soviet oil Production,* April 1, 1977; *Prospects for Soviet Oil Production A Supplement to the 1977 Analysis,* July 1977.

Testimony of Admiral Stansfield Turner, Director of the CIA, before the Committee on Energy and Natural Resources, U.S. Senate, Apr 22, 1980

CURRENT U.S. POLICY

THE EXPORT ADMINISTRATION ACT OF 1979[3]

U.S. exports of energy-related technology and equipment to the U.S.S.R. are regulated by the Export Administration Act of 1979 (Public Law 96-72). This act is the latest in a series of laws which for the past 30 years have sought to balance the dual objectives of promoting international commerce and safeguarding American national security. Controversy over the proper weight to be accorded each of these interests has been continuous, but over the years the thrust of U.S. trading policy has been gradually to expand opportunities for selling U.S. products and know-how to Communist nations.

Under the present legislation, U.S. firms seeking to do business with the Soviet Union must obtain validated export licenses if the goods or technology they plan to sell appear on the U.S. Commodities Control List (CCI.). Most of the CCI. consists of items which are also regulated by CoCom, the informal multilateral export control organization consisting of the United States and its NATO allies (minus Iceland, plus Japan). However, the United States does maintain unilateral controls over some 38 additional products and technologies. Many of these are energy related. The Secretary of Commerce, with the advice of the Secretaries of State and Defense, may delete such items from the CCL. Items may also be added if these are deemed to have significant military applications, to be in short supply, or to relate to specific foreign policy objectives. Inclusion in the CCI. does not mean that the item is necessarily embargoed. Rather, it means that the potential exporter must file a license application with the Department of Commerce (DOC).

There are three circumstances under which a license application may be refused: the export will make a significant contribution to the military potential of another country; the item in question is in domestic short supply; or the restriction is necessary to significantly further the foreign policy of the United States.

Prior to passage of the 1979 Export Administration Act, the President's discretion to control exports for the latter reason was largely unlimited. Now, all foreign policy controls expire at the end of each calendar year. To renew them, the President must notify Congress and justify the reextention on the basis of criteria which include the probability that controls will achieve the intended foreign policy purpose in light of such factors as the availability of the goods or technology in question from other countries.

FOREIGN AVAILABILITY

This concept of "foreign availability"' constitutes an important part of the Export Administration Act. Recognizing that the availability from other sources of items controlled by the United States undermines the impact of U.S. policies and places U.S. firms at a competitive disadvantage, section 5(f) stipulates that the Secretary of Commerce, in consultation with other Government agencies and technical advisory committees, should:

> . . . review, on a continuing basis, the availability to countries to which exports are controlled . . , from sources outside the United States, including countries which participate wit h the United States in multilateral export controls, of any goods or technology the export of which requires a validated license . . . (In the event) that any such goods and technology are available in fact to such destinations from such sources in sufficient quantity and of sufficient quality so that the requirement for a validated license for the export of such goods or technology is or would be ineffective in achieving the purpose set forth . . . the Secretary

'For a legislative history of U.S. export control policy, as well as descriptions of the U.S. export licensing procedure and of CoCom regulations. see Office of Technology Assessment, Technology and East-West *Trade* (Washington, D. C.: U.S. Government Printing Office, November 1979). This volume also contains the text of Public Law 96-72.

> may not, after the determination is made, require a validated license for the export of such goods or technology during the period of such foreign availability, unless the Presidcnt determines that the absence of such export controls under this section would prove detrimental to the national security of the United States,

The section goes on to require that the grounds for such a determination, together with an statement of the estimated economic impact of the decision, be published. The President is further enjoined to undertake negotiations with foreign governments to eliminate the availability. In the absence of such *a* Presidential determination, the Secretary of Commerce is directed to approve any validated license application which meets all other requirements and which is for export of goods or technology for which foreign availability has been established.

Determinations of foreign availability that are to be the basis for these licensing decisions must be supported by "reliable evidence, including scientific or physical examination, expert opinion based on adequate factual information, or intelligence information." The act specifically stipulates that "uncorroborated representations by applicants shall not be deemed sufficient ev'idence of foreign availability. Capability to monitor and gather information on foreign availability of all goods and technologies subject to U.S. export controls was to be established within the office of Export Administration (OEA), the part of DOC responsible for export licensing, and each department or agency of the United States with export control responsibilities, including the intelligence services, were required to furnish OEA with appropriate foreign availability in formation.

However, it is clear by now that the entire concept of foreign availability is fraught with ambiguity and raises important practical difficulties. Nowhere, for instance, does the 1979 Export Administration Act define the terms "available without restriction, "a~'ailable in significant quantity," or "comparable quality." Among the definitional questions pertaining to the meaning of "availability and "comparability" are the following:

- Must a foreign competitor have expressed a willingness to sell to the U.S.S.R. for its goods to be considered "available?" Must the U.S.S.R. have actually approached the competitor; or does the mere existence of goods and technologies outside the United States count as foreign availability?
- How do matters of price affect both availability and comparability: if a foreign item is cheaper or backed by foreign government export credits, how inferior need it be to the U.S. alternative before it is no longer counted as evidence of foreign availability'?
- What are the parameters for assessing comparable quality; are these different for many pieces of equipment or technologies appearing on the CCL'? Must items be identical to be considered comparable?
- Similarly, how are "significant quantities" to be determined? Are these relative to the amounts the Soviets wish to purchase in the immediate sale in question, to total world supply, or does their assessment involve comparison of the manufacturing capacities of U.S. industries and their foreign competitors'?

Aside from these conceptual difficulties, there have been enormous practical problems involved in establishing a foreign availability assessment mechanism in DOC. Assembling sufficient information to answer the kinds of questions suggested above is a massive undertaking and as of this writing it does not appear that the executive branch has released the funds allocated by Congress to allot the staff and other resources necessary to complete this task in a systematic or comprehensive way.

Furthermore, even assuming that a clear conceptual framework for assessing foreign availability and the resources to handle the resulting data existed, it is not clear that present information-gathering mechanisms

would be sufficient to satisfy the terms of the act. Indeed, most of the information required would have to be secured from private firms in foreign countries. Since a great part of this information might reasonably be expected to be company proprietary, serious practical—if not legal and ethical–problems might be encountered.

In short, satisfying the present legal criteria for ascertaining foreign availability will be expensive, time-consuming, and perhaps intrusive. The requirement in the act that this assessment be conducted "on a continuing basis" adds to these burdens. Given the fact that DOC's foreign availability capabilities have yet to be fully instituted, it is difficult to determine whether or not the provisions can be fulfilled in a cost-effective manner.

U.S. POLICY ON EXPORTS OF ENERGY-RELATED GOODS AND TECHNOLOGY

In July 1978, in response to the U.S.S.R.'s policies towards its dissidents, President Carter decided to invoke foreign policy controls and to place exports to the Soviet Union of technology and equipment for the exploration and production of oil and gas on the CCL. These items thereby became subject to U.S. unilateral control, i.e., U.S. exporters were required to obtain validated licenses for petroleum equipment and technology not included on the multilateral CoCom list. The absence of CoCom controls meant that firms in allied countries could continue to export such equipment and technology free of any restriction.[4] Two important assumptions underlay Carter's decision: the Soviet Union had a critical need for the items in question, and it was largely dependent on the United States for their Supply.[5]

Foreign policy controls on petroleum-related items were reaffirmed and reiterated in January 1980, following the Soviet invasion of Afghanistan. In his letter notifying Congress of the renewal of these controls, President Carter asserted that:

> The control on the export of petroleum equipment to the U.S.S.R. provides a flexible foreign policy tool. When necessary and appropriate it can be used to sensitize the Soviets regarding actions which are damaging to United States foreign policy interests . . . Discontinuation of this control would represent a change in policy not warranted by existing circumstances in our relationship with the U.S.S.R.[6]

At this writing, U.S. policy toward energy-related equipment and technology exports to the U.S.S.R. is under review. For the moment, applications for validated licenses for exports of oil and gas equipment and technology to the U.S.S.R. are decided on a case-by-case basis. Sales of end products alone have generally been approved, but those involving industrial manufacturing know-how are acted on with a presumption of denial.[7]

Any new policy direction, as noted above, would fit broadly into one of four basic categories. The following sections describe the four perspectives *from the point of view of their advocates,* and discuss the implications of implementing each.

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[4] Under (J. S. law, technology of U.S. origin requires a U.S. export license in order to he reexported from a third country.

[5] Samuel P. Huntington, "Trade, Technology, and Leverage: Economic Diplomacy, " *Foreign Policy,* fall, 1978, p. 76.

[6] Letter of President Carter to Hon. Thomas P. O' Neill, Dec. 29, 1979, in *The Congressional Record,* Jan. 29, 1980, p. H3/i 1.

[7] *Business America,* Apr. 7, 1980, p. 12.

THE EMBARGO PERSPECTIVE

GOALS AND ASSUMPTIONS

In the past, legislation has been introduced in Congress which has been designed to severely curtail the ability of U.S. firms to sell energy-related equipment. and technology to the U. S. S. R.[8] Those who favor this policy orientation usually hold one or more of the following views with respect to such sales:

1. Energy, and particularly petroleum, equipment and technology are dual-use items, i.e., they may have military applications.
2. Oil is itself a strategic commodity.
3. Helping the U.S.S.R. to maintain or improve its energy output bolsters the Soviet economy, contrary to U.S. national interest.

This perspective, like the linkage perspective discussed below, is often based on the premise that the denial of American equipment and technology will significantly inhibit the development of Soviet energy resources and Soviet energy output. I n those cases where the United States is neither a sole nor a preferred supplier of equipment and technology, adherents of this position hold that the U.S. Government can and should undertake negotiations with its allies to enlist their cooperation in a technology embargo.

DISCUSSION

In a very few cases, energy-related technologies and equipment have had the potential for direct military use, The sophisticated computers and other seismic equipment, including large main-frame computers, array processors, and advanced automated data processing systems, sought by the U.S.S.R. certainly could convey military capabilities. Such computers and software are already under both U.S. national security and CoCom controls. It has been alleged that certain aspects of the technology required for the manufacture of oil drilling bits with tungsten carbide inserts are militarily relevant. These allegations have been the subject of considerable dispute and experts have disagreed over the military utility of this technology.[9] However, the final determination of U.S. export licensing authorities, including the Department of Defense, was that these technologies could be safely exported.

These instances are exceptions. The great majority of the energy equipment and technology which the U.S.S.R. purchases from the West consists of items which have raised few questions from the standpoint of their direct military relevance. Defining fuel itself as a strategic commodity, however, raises a different kind of problem-and invokes a rather different policy, A decision to restrict the export of items because of their economic or indirect, as opposed to direct, military significance would be tantamount to reversing the trend of the last 30 years of export control in the United States.

The Export Control Act of 1949, by allowing the control of items of "indirect" military utility, in fact was aimed at pursuing a policy of economic warfare against the Soviet Union.[10] This policy was abandoned, partly because it was recognized that it could be effective only if adhered to by America's allies. In other words, a wide array of items which the U.S.S.R. wished to purchase from the West had become available outside of the United States, in countries far more dependent than was the United States on foreign trade. The United States appeared to be unable to convince these alternative suppliers to impose the

[8] See, for example, The Technology Transfer Ban Act, 11. R. 14085, introduced in the House of Representatives on Sept. 14, 1978.

[9] "Transfer of Technology and the Dresser Industries Export Licensing Actions, " Hearings before The Permanent Subcommittee on Investigations, Committee on Governmental Affairs, U. S. Senate, Oct. 3, 1978.

[10] OTA, op.cit., ch. V 11.

same restrictive policies. Without such cooperation, American firms lost sales to European and Japanese competitors, and the U.S.S.R. was nonetheless able to obtain the nonmilitary goods and technologies it sought.

OTA has elsewhere explored the general East-West trade policies of those allied nations which are major Western trading partners of the U. S. S. R.[11] The basic conclusions of that analysis were that while America's allies do not deny the basic necessity of withholding items of direct military significance from the U. S. S. R., East-West trade has been economically more important to Western Europe and Japan than to the United States. These countries tend to view trading with the Soviet Union as primarily an economic issue, and to eschew the use of export controls for political purposes. The lukewarm response with which the post-Afghanistan technology embargo was greeted in Western Europe and, to a lesser extent, Japan—as well as the 1980 statistics reported in chapter 12 which show that trade between the Soviet Union and Japan, West Germany, France, Italy, and the United Kingdom actually grew during the "embargo period"- indicate that these basic orientations have not changed.

Chapters 11 and 12 discuss in detail the attitudes of Japan, West Germany, France, Italy, and the United Kingdom to specifically energy-related trade with the U.S.S.R. In general, it appears that for these nations, sales of energy-related technology and equipment to the U.S.S.R. pose no special foreign policy or national security concerns, nor have these transactions sparked intense debate. Indeed, in some of these countries such sales are of significant economic importance. A U.S. policy of extending export controls to energy-related items with economic and political, but little or no direct military relevance, is therefore unlikely to encounter much sympathy or active cooperation.

The highly publicized gas pipeline deal, in which West European and Japanese export credits and equipment will be bartered for Soviet gas may change the context of this trade, however. There is little doubt that the magnitude of the proposed project and its importance to the Soviet economy make it a transaction of particular significance. OTA's research indicates that the potential Western participants are by no means insensitive to both the economic and security implications of embarking on this degree of cooperation and interdependence with the U.S.S.R. Nevertheless, these nations appear to have decided—both in principle, and now in practice—to proceed.

It is possible to posit circumstances under which the United States could persuade its allies to reverse these decisions. A major change in the international climate precipitated by a Soviet invasion of Poland, for instance, could certainly cause either a temporary or a permanent halt to the gas export pipeline project. In the absence of this kind of event, a U.S. policy initiative designed to discourage continued or increased allied energy- related trade with the U.S.S.R. might have its best chance of success if designed to offer allied governments positive alternatives, in the form of either realistic alternative energy supplies to replace Soviet gas or assistance in devising contingency plans for Soviet supply interruption.

[11] Ibid., ch. IX.

THE LINKAGE PERSPECTIVE[12]

GOALS AND ASSUMPTIONS

Linkage is a policy which seeks to use the prospect of expansion or curtailment of trade as a "carrot or stick" to exact policy concessions from a trading partner. The perspective itself accommodates a number of different points of view. Those who favor pursuing a linkage strategy may disagree over the nature and scope of the goals which

[12] Ibid., ch. IV.

such a policy can further. These disagreements center on both the range of policies which linkage can or should hope to affect (i.e.. should future trade be linked to the trading partner's domestic policies—treatment of dissidents in the case of the U.S.S.R.–or should it be restricted to attempting to affect only major foreign policies—such as the invasion of Afghanistan?) and on the kinds of trade which should be used as policy instruments (should the extension of credits and most-favored nation (MFN) become part of a linkage strategy; should all trade be affected—including grain—or should the policy apply only to technology trade?).

Adherents of adopting a linkage policy toward trade with the Soviet Union may also hold different basic perceptions of the nature of the U.S.-Soviet relationship and its potential. Some believe that trade can have a moderating effect on international politics by enmeshing trading partners in a "web of interdependence. Others see a fundamentally adversarial relationship between the United States and the Soviet Union. They may accept the fact that trade can be harnessed to political purposes, but are skeptical of the connection between trade and political moderation. Here trade is justified only if in return the trading partner makes policy concessions.

Regardless of these differences, however, the belief that a linkage policy can be effective entails acceptance of the basic proposition that the potential exports in question must be of sufficient value to the U. S. S. R., and the assumption that the United States either has a monoply on these items, or failing that, is a strongly preferred supplier.

Although different Administrations have disagreed over the ways in which a linkage policy vis-a-vis the Soviet Union should be conducted, for some years America's trade with the Soviet Union has taken place within the context of linkage. U.S. efforts to use trade to moderate Soviet behavior have included linking the extension of MFN status and eligibility for official U.S. export credits with the emigration of Soviet Jews (the Jackson-Vanik amendment): linking the export of a U.S. computer to the Soviet Union's treatment of its dissidents; and curtailing both shipments of U.S. grain and the export of technology after the Soviet invasion of Afghanistan.

There is little clear evidence so far that in any of these cases U.S. trade policy has had a measurable effect on Soviet foreign or domestic activities. Nevertheless, no overall determination of the success or failure of linkage as a basic strategy has yet been made, and the results of these policies have been subject to varying interpretations. The potential effectiveness of a policy specifically linking exports of U.S. petroleum equipment and technology is also the subject of some debate.

Opponents of such a policy may entirely reject the notion that trade can be an effective instrument to achieve political objectives. This view is held by a number of other Western governments and is often espoused by some American corporations. Others—often members of the petroleum equipment industry—contend that the United States has little or no leverage in this area because of the wide foreign availability of the equipment and technologies desired by the U.S.S.R.

On the other side, it has been contended that President Carter's inclusion of energy equipment and technology on the CCL was a major step in placing the United States in a position vis-a-vis the U.S.S.R. "in which the technological door can be more easily closed, or swung near to being closed, if that seems desirable or necessary."[13] This assertion is premised on the belief that for many items in the area of petroleum technology and equipment, including downhole pumps, gas-lift equipment, drill bits, well completion equipment, and offshore drilling technology, the United States has virtually been the Soviet Union's sole supplier, and that "this type of equipment is absolutely essential to the

[13]Huntington, op. cit.

Soviets if they are to stave off a significant decline in their oil production in the early or mid- 1980's.[14]

Such statements are supported by CIA's 1977 report which identified items of technology and equipment particularly crucial to Soviet petroleum output. These included seismic exploration equipment; rock drill bits; oilfield pumps and gas-lift equipment; large diameter pipe; offshore technology; rotary rigs, drill pipe and casings; multiple completion equipment; and secondary and tertiary recovery equipment.

In December 1979, however, President Carter himself acknowledged that the list of items in which the United States was the sole or preferred supplier was somewhat narrower. His letter to Congress on December 29 stated that for most items of petroleum equipment, "adequate quantities of similar equipment are available from foreign sources." At the same time, "there is only limited foreign availability of some deep submersible pumps and seismic equipment."[15] The implication presumably remained that these items were critical enough to the U. S. S. R., and their supply controlled sufficiently by the United States, for the foreign policy controls to continue to be useful in furthering U.S. objectives.

DISCUSSION

As chapter 6 points out, the foreign availability assessment which was performed in the course of this study was inhibited by the same conceptual and practical difficulties described above, and its results should be considered suggestive rather than conclusive. With this caveat, OTA's findings tend to confirm President Carter's assertion that, with few exceptions, adequate quantities of the energy equipment sought by the U.S.S.R. are produced and available outside the United States, and that the quality of these foreign goods is generally comparable to that of their U.S. counterparts. The most important exceptions to this general finding are electric submersible pumps and sophisticated seismic systems. But it does not necessarily follow that obtaining the latter items from U.S. firms is so critical to the U.S.S.R. at this time that the threat of their being withheld would result in significant Soviet policy concessions. Nor is it clear that the fate of Soviet petroleum production in this decade is entirely or even largely dependent on them.

The United States is the only producer of high capacity electric submersible pumps in the Free World. Several years ago, the U.S.S.R. purchased relatively large amounts of such equipment. It will be recalled, however, that although U.S. pumps are of substantially better quality than their Soviet counterparts, they never constituted more than a small portion of total Soviet stocks. Moreover, there is reason to believe that virtually all the American pumps in the U.S.S.R, are by now out of commission, and the Soviet Union has not replaced them. Indeed, the Soviet Union has bought no U.S. pumps for the past 3 years—nor has its oil output declined over this period. I t seems hardly reasonable, therefore, to characterize the Soviet oil industry as dependent on this type of equipment. One or more of three things appears to have occurred: the Soviet Union has found at least a partial substitute for high-quality pumps (gas-lift equipment, purchased in France); in addition, it may have improved the quantity and/or the quality of its domestic pumps; or planners may have decided that less than state-of-the-art equipment is acceptable.

Similarly, it is generally recognized that the United States is a preferred supplier of seismic exploration equipment and that such equipment could significantly improve the quality and efficiency of Soviet seismic work. The United States also appears to be the Western nation best able to provide the U.S.S.R. with the full range of services and capabilities necessary for its exploratory efforts. Most of the oil hitherto discovered in

[14] Ibid.
[15] Letter of President Carter, op. cit.

the world, however, has been found in giant fields with exploration technology that significantly lagged the present state-of-the-art. In any case, long leadtimes are usually necessary before newly discovered deposits can be developed, and it is not clear that exploratory activities initiated now would produce significant results before the latter part of the decade. Moreover, even though systems with components assembled from a number of different suppliers may be less desirable than those purchased in their entirety. the U.S.S.R. might well be able to replace Armerican equipment with a collection of items which, although not ideal, could function significantly better than Soviet domestic equipment.

There is a further issue. An important conclusion of this study is that the status of the Soviet gas industry may be more crucial than that of the oil industry to overall energy availability. Here, the U.S.S.R. is quite dependent on the West—for the large diameter pipe and compressor stations it needs to construct gas pipelines—but the former item is not produced in the United States and there are multiple alternative suppliers for the latter. It has been suggested that the United States may be the sole or preferred supplier of the heaviest pipelaying machinery used for installing gas pipeline, and that foreign manufacturing capabilities may be insufficient to fully supply the needs of the U.S.S.R. in this area. It is difficult to either establish or disprove the accuracy of this claim without access to detailed information about specific foreign corporations, but it must be recognized that the U.S.S.R. has in the past purchased pipelaying equipment from Japan.

The chances of the United States persuading its allies to join it in an energy-related policy of leverage against the U.S.S.R. are as small as those of obtaining agreement to an energy equipment and technology embargo. The point is not simply that the countries examined here—West Germany, France, Italy, Britain, and Japan —each have an economic stake in East-West trade greater than that of the United States, or that they have been traditionally reluctant to engage publicly in linkage practices. While the danger of energy dependence on the U.S.S.R. may seem to some to be the overriding political concern for the entire Western alliance, each nation approaches its trade and energy relations with the U.S.S.R. from its own political perspective. These differ among the allies themselves and from that of the United States. They range from West Germany's natural preoccupation with West Berlin in particular and European security in general to Japan attempts to balance its policies towards both the U.S.S.R. and the People's Republic of China *(see chs. 11* and 12 for a fuller discussion of these perspectives). It would seem that, regardless of U.S. judgments of the wisdom or accuracy of their views, these nations have determined that the risks of a certain degree of energy cooperation with the U.S.S.R. are outweighed by other political benefits.

In sum, the immediate leverage of the United States over the Soviet Union in the area of petroleum equipment and technology is probably limited by at least three factors. First, the United States is the sole supplier of very few petroleum-related items. .Second, the U.S.S.R. has demonstrated some ability to do without these items, at least in the short term. Third, and perhaps most important, gas is the energy sector in which the U.S.S.R. is both most reliant on the West and most dependent for its energy future—and with the possible exception of construction equipment, the United States has little to offer in this area that is unique.

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THE ENERGY COOPERATION PERSPECTIVE

GOALS AND ASSUMPTIONS

Adherents of this perspective may hold one or more of the following views:

1. Increased energy-related exports from the United States to the Soviet Union reduce the chances that the U.S.S.R. will experience the serious oil production problems predicted by the CIA, and therefore the chance that it will either have to import oil on world markets or have an incentive to intervene in the Middle East.
2. Such U.S. exports, by helping the U.S.S.R. to produce more oil, help to increase worldwide energy availability. This is a positive development no matter where such oil is located.
3. The trade ties established with the Soviet Union during the period of detente were a positive step toward drawing the U.S.S.R. into the world economy, a move which should increase that country's interest in maintaining world political and economic stability.

DISCUSSION

Here, the basic premise is the obverse of that of the embargo perspective, i.e., it is assumed that American technology and equipment could make a significant positive contribution toward increasing Soviet energy availability in the present decade. OTA's findings cast doubt on this assertion. It is certainly true that American and or other Western petroleum equipment could assist the U.S.S.R. in overcoming many of the problems presently caused by equipment of inferior quality and insufficient quantity. It could also speed the development of offshore resourses. But while it is undeniable that Western exports have made important, albeit unquantifiable, contributions to Soviet petroleum output in the past and could continue to do so in the future, policy changes in both the United States and the Soviet Union would be required for such assistance to have maximum effect.

In its report, *Technology and East-West Trade, OTA* identified the lack of official U.S. export credits as the primary legal barrier to the expansion of trade between the United States and the Soviet Union. There is no reason to believe that this problem would not continue to hamper such expansion. But the willingness of the United States to sell on favorable terms is only half of what is needed for American exports to extensively aid the U.S.S.R. The Soviet Union must also be both able and willing to buy the items it needs in sufficient quantities, and to use them in an efficient and productive manner.

A frequent theme throughout this report has been the difficulties posed by the Soviet economic system in utilizing both domestic and foreign technology effectively. While it may be true that imported equipment is more productive than the closest Soviet equivalents, it is also usually the case that Western equipment and technology perform less well in the U.S.S.R. than in the country of origin or other Western nations. It cannot necessarily be assumed, therefore, that simple shipments of equipment or transfers of technology could easily solve Soviet energy problems.

This problem is exacerbated by the fact that the U.S.S.R. has traditionally been unwilling to allow the hands-on training by Western personnel which would make Western equipment and technology most productive. Nor has it appeared very willing to allow Western firms to participate extensively in Soviet energy development. Some overtures in this direction were made before the invasion of Afghanistan, but little has come of them. Not only would such active participation greatly expedite this development, but it would also give American and other Western companies the incentive, presently lacking, to become more extensively involed in the U.S.S.R.

Furthermore, hard currency shortages presently constrain the amounts of energy-related items which the U.S. S. R. can import. The Soviet Union has traditional} kept its trade with the West relatively small. Not only has it been unwilling to become dependent on the West, but it has been quite conservative in amassing a Western debt (especially compared to the nations of Eastern Europe). As chapter 8 points out, one consequence of this hard currency shortage is that different sectors of the Soviet economy compete for the ability to purchase from the West. Energy equipment and technology imports have thus been highly selective.

It is not entirely clear, moreover, that the U.S.S.R. will necessarily be propelled onto world markets for oil. Indeed, as chapter 2 has noted, if thc CIA ever intended to foster this expectation, it no longer holds this view. OTA has identified worst case or 'pessimistic' scenarios which show conditions under which the Soviet Union could have a net oil deficit, but a number of factors make this a highly, uncertain basis on which to plan policy. First, more optimistic scenarios are probably more likely, i.e., the U.S.S.R. could continue to export oil for hard currency without extensive U.S. help. Second, the degree to which the U.S.S.R. is able to substitute gas for oil, both in domestic consumption and in exports, seems the more crucial variable. In other words, the overall Soviet energy balance, not simply oil production, will be important in determining the ways in which the U.S.S.R. is able to handle its energy situation in the 1980's. Third, hard currency constraints would almost certainly minimize or even prevent such purchases.

It must also be pointed out that any Soviet decision to intervene in the Middle East—either militarily or through policy initiatives directed at OPEC governments need not necessarily be driven by a domestic need for oil. The vital U.S. interest would seem more than sufficient to give the U.S.S.R. a reason for acting in this area should it wish to do so, The availability of additional oil, assuming that conditions allowed local cooperation or Soviet ability to operate the oil fields itself, might be an attractive bonus, but is is hardly a necessary condition.

Finally, institutions presently exist for fostering multilateral cooperation in energy supply issues. For instance, the Soviet Union has requested that the U.N. Economic Commission for Europe sponsor a high-leve] conference which would consider possibilities for multilateral energy cooperation. The United States has hitherto opposed the convening of such a conference. Presumably the reversal of this position would signal America interest in participanting in Soviet energy development. In addition, policymakers might wish to consider the formulation of a broader allied policy perspective on Soviet energy , arrived at either on a bilateral basis, through NAT(), or through the International Energy Agency. It must be noted that the West European nations themselves hade made little progress toward developing a unified East-West energy policy for their own region.

THE COMMERCIAL PERSPECTIVE

GOALS AND ASSUMPTIONS

This perspective rests on the assumption either that trade and politics should remain separate, i.e., that linkage is a misguided policy; and or that regardless of the export control policy it adopts, the United States is unlikely to be able to significantly affect the U.S.S.R.'s energy future in the present decade. The following reasoning applies in the latter case:

1. The United States retains control of very few of the energy technologies and little of the energy equipment which the U.S.S.R. purchases from the West, and

has little prospect of convincing America's allies to cease their own exports. An embargo of U.S. energy technology would, therefore. have little effect on the U.S.S.R., and the prospect of such an embargo confers very little leverage.

2 on the other hand, the ability of the United States to significantly enhance Soviet oil production, thereby relieving economic pressure on the U.S.S.R. and increasing the amount of oil in the world, is also constrained by the factors discussed in the previous section.

3 I n any case, Soviet energy industries are enormous and the U. S. S. R. has a good record for being largely self-sufficient in areas where Western help is not easily forthcoming.

Given this line of reasoning, it becomes sensible to argue for the United States abandoning the area of energy as a promising context for its Soviet foreign policy, and reaping whatever economic benefits can be conferred by sales of energy and equipment to the U.S.S.R., so long as these have no direct military relevance. Such a policy would not necessarily have to be accompanied by the extension of export credits on favorable terms. The ability of American firms to compete with West European and Japanese companies for sales of energy-related items to the U.S.S.R. could be significantly enhanced simply by removing U.S. unilateral export controls on such items.

DISCUSSION

Givcn a desire to facilitate–or at least not to unduly impede—nonn~ilitarily sensitive exports to the U.S.S.R., there is room for significant improvement in the administration of export license applications. The export licensing system is complex, and given the volume of applications it handles, has worked with reasonable efficiency. Procedures could be instituted to streamline the system. however, without tampering with its basic structure or effectiveness. Such procedures might eliminate the present, seemingly unwarranted. occasional delays which have subjected the entire export licensing system to criticism.

It must be recalled that Soviet trade with the West has never been large in absolute terms and that, except for grain sales, [J. S. market shares in this trade have been relatively modest. The cost and difficulty of doing business with the U.S.S.R., American export license procedures, and the ineligibility of the U.S.S.R. for U.S. export credits have all been limiting factors. There is little or no reason to expect that this situation could change without dramatic changes in both U.S. export and Soviet import policies. Thus, while individual firms might well be able to conclude lucrative individual contracts for items of energy-related equipment or technology, it is highly unlikey that these sales would be large enough to affect the U.S. economy in general or even specific industries in any crucial fashion.

Aside from these economic considrrations, there is a political dimension to the commercial perspective. Given the relatively limited opportunities for the United States alone to significantly influence Soviet energy availability in the present decade, and given the difficulties which would certainly arise in attempting to persuade America allies to curtail their own energy relations with the U.S.S.R., U.S. policymakers might well choose not to expend political "chips"—either in negotiations with the USSR or with allied nations—by making Soviet energy development an area of contention. Removing energy-related export control issues from the political agenda, in other words, might possibly enhance the chances of obtaining allied cooperation in other aspects of East-West policy. If the commercial perspective is pursued for these motives, the extent of the trade it would **engender becomes a** secondary consider-ation.

A FINAL NOTE

The perspectives and policy options discussed in this chapter apply to the present

state of the relationships between the Soviet Union and the West. But the judgments and decisions of both U.S. and Allied policy-makers can and will tend to shift over time, in response to changing economic and political conditions. For instance, dramatic events involving the Soviet position in Eastern Europe could drastically alter the views of both Soviet and Western leaders on the options open to them, and on the national interests which would shape their choices. In contrast, the overall parameters of Soviet energy supply and demand are unlikely to change rapidly, because of the sheer size of the resources and infrastructure involved. Thus, even should their perceptions of national interests change, policy makers will still have to reckon with the limits imposed by the strengths and weaknesses to the Soviet energy industries.